

1 15A NCAC 13B .0533 is proposed for amendment as follows:

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3 **15A NCAC 13B .0533 GENERAL APPLICATION REQUIREMENTS AND PROCESSING FOR C&DLF**  
4 **FACILITIES**

5 (a) An owner or operator of a C&DLF unit or facility shall submit an application document as detailed in Rule .0535  
6 of this Section in accordance with the following criteria and scheduling requirements:

7 (1) New permit.

8 ~~(A) An applicant for a new permit as defined by G.S. 130A-294(a3)(1)a, c, d, and e 130A-~~  
9 ~~294(a3)(1) shall submit a site study and subsequently an application for a permit to~~  
10 ~~construct as set forth in Rule .0535(a) and (b) of this Section.~~

11 ~~(B) An applicant for a new permit as defined by G.S. 130A-294(a3)(1)b shall submit an~~  
12 ~~application for permit as set forth in Rule .0535(b) of this Section.~~

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

15 ~~(D) An application for a new permit is subject to the application fees set forth in G.S. 130A-~~  
16 ~~295.8(d2).~~

17 (2) Amendment to the permit. The owner or operator shall submit an application to amend the permit  
18 to construct in accordance with Rule .0535(c) of this Section for the following circumstances:

19 (A) A subsequent stage of landfill development. A permit to construct issued in accordance  
20 with Paragraph (c) of this Rule approves the life-of-site development of the C&DLF unit  
21 indicated in the facility plan plus a set of plans defined in Rule .0534(b)(1) of this Section  
22 as the Division approved plans submitted by the applicant for either the entire C&DLF unit  
23 or a portion of the C&DLF unit. For any subsequent stage of landfill development that the  
24 applicant has not included in the plans required by Rule .0534(b)(1) of this Section for any  
25 prior stage of landfill development, the owner or operator shall submit the amended permit  
26 application no less than 180 days prior to the date scheduled for commencing construction.

27 (B) A change in ownership or corporate structure of a permitted C&DLF facility in accordance  
28 with G.S. 130A-294(a3)(2)b. The owner or operator shall notify the Division within 30  
29 days of a change in ownership or corporate structure in accordance with G.S. 130A-  
30 295.2(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 .0535(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 C&DLF unit at the facility~~  
37 ~~in accordance with Rule .0535(e) of this Section. Within 180 days following receipt of the notice~~

1 submitted to the Division in accordance with Rule .0543(c)(8) of this Section, the Division shall  
 2 issue a permit for closure and post-closure care that incorporates the plans identified by the owner  
 3 or operator in the notice. Owners or operators that closed all C&DLF units at the facility prior to the  
 4 readopted effective date of this Rule shall not be required to submit the notice described in Rule  
 5 .0543(c)(8) of this Section. If a closure and post-closure care permit has not already been issued, the  
 6 a permit application for closure and post-closure. The Division shall issue a permit for closure and  
 7 post-closure care for these facilities based on that incorporates the plans that were incorporated into  
 8 the most recent permit to operate for the facility. ~~application submittal, if a closure and post-closure~~  
 9 ~~permit has not already been issued.~~

10 (b) Application format requirements. All applications and plans required by Rules .0531 through .0546 of this Section  
 11 shall be prepared in accordance with the following:

12 (1) The application shall:

- 13 (A) contain a cover sheet stating the project title and location, the applicant's name and address,  
 14 and the engineer's name, address, signature, date of signature, and seal;
- 15 (B) contain a statement defining the purpose of the submittal signed and dated by the applicant;
- 16 (C) contain a table of contents or index outlining the body of the application and the  
 17 appendices;
- 18 (D) be paginated consecutively; and
- 19 (E) identify any revised text by noting the date of revision on the page.

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

- 22 (A) the cover sheet shall include the project title, applicant's name, sheet index, legend of  
 23 symbols, and the engineer's name, address, signature, date of signature, and seal; and
- 24 (B) maps and drawings shall be prepared at a scale that illustrates the subject requirements, and  
 25 that is legible if printed at a size of 22 inches by 34 inches.

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

29 (c) Permitting and Public Information Procedures.

30 (1) Purpose and Applicability.

- 31 (A) Purpose. During the permitting process, the Division shall provide for public review of and  
 32 input to permit documents containing the applicable design and operating conditions. The  
 33 Division shall provide for consideration of comments received and notification to the  
 34 public of the permit design as set forth in Subparagraph (4) of this Paragraph.
- 35 (B) Applicability. Applications for a new permit as defined in G.S. 130A-294(a3)(1), or for a  
 36 modification to the permit involving corrective remedy selection required by Rule  
 37 .0545(g)(1) of this Section shall be subject to the requirements of this Paragraph.

1 Applications submitted in accordance with Subparagraphs (a)(2), (a)(3), and (a)(4) of this  
2 Rule are not subject to the requirements of this Paragraph.

3 (2) Draft Permits.

4 (A) The Division shall review all permit applications for compliance with Rules .0531 through  
5 .0546 of this Section and Rule .0203 of this Subchapter. Once an application is complete,  
6 the Division shall either issue a notice of intent to deny the permit to the applicant or  
7 prepare a draft permit.

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

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

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

15 (3) Fact Sheet. The Division shall prepare a fact sheet for every draft permit, and shall send this fact  
16 sheet to the applicant and post the fact sheet on the Division website. The fact sheet shall include:

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

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

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

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

24 (E) the address where comments will be received;

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

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

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

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

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

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

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

37 (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 the name and address of the owner and 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 any  
27 interested person may submit written comments on the draft permit and may request a public hearing  
28 if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall  
29 state the nature of the issues proposed to be raised in the hearing. The Division shall consider all  
30 comments in making a final permit decision. The Division shall respond to all comments as provided  
31 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.

- 1 Public notice of the hearing shall be given as specified in Subparagraph (4) of this  
2 Paragraph.
- 3 (B) Any person may submit oral or written statements and data concerning the draft permit.  
4 The Division shall extend the public comment period under Subparagraph (4) of this  
5 Paragraph to the close of any public hearing conducted under this Subparagraph. The  
6 Division may also extend the public comment period by so stating at the hearing, when  
7 information is presented at the hearing which indicates the importance of extending the  
8 period to receive additional comments, to allow potential commenters to gather more  
9 information, to allow time for submission of written versions of oral comments made at  
10 the hearing, or to allow time for rebuttals of comments made during the hearing. The  
11 Division shall publish the end date of the extended comment period on the Division's  
12 website prior to the end of the existing public comment period.
- 13 (C) The Division shall make available to the public a recording or written transcript of the  
14 hearing upon request.
- 15 (7) Reopening of the Public Comment Period.
- 16 (A) In response to data, information, or arguments received during the public comment period,  
17 the Division may prepare a revised draft permit under Subparagraph (2) of this Paragraph;  
18 prepare a revised fact sheet under Subparagraph (3) of this Paragraph, and reopen or extend  
19 the comment period under Subparagraph (4) of this Paragraph.
- 20 (B) Comments filed during the reopened comment period shall be limited to the information  
21 that was revised in the draft permit following the original comment period. The public  
22 notice shall be in accordance with Subparagraph (4) of this Paragraph and shall define the  
23 scope of the reopening.
- 24 (8) Permit Decision.
- 25 (A) After the close of the public comment period under Subparagraph (4) of this Paragraph on  
26 a draft permit or a notice of intent to deny a permit, the Division shall issue a permit  
27 decision. The Division shall notify the applicant and each person who has submitted a  
28 written request for notice of the permit decision. For the purposes of this Subparagraph, a  
29 permit decision means a decision to issue, deny, or modify a permit in accordance with  
30 Paragraph (d) of this Rule.
- 31 (B) A permit decision shall become effective upon the date of the service of notice of the  
32 decision unless a later date is specified in the decision.
- 33 (9) Response to Comments.
- 34 (A) At the time that a permit decision is issued under Subparagraph (8) of this Paragraph, the  
35 Division shall issue a written response to comments. This response shall specify which  
36 provisions, if any, of the draft permit have been changed in the permit decision, and the  
37 reasons for the change. The response shall also describe and respond to all comments

1                                 pertaining to the requirements in the draft permit raised during the public comment period,  
2                                 or during any public hearing.

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

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

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7     *History Note:    Authority G.S. 130A-294;*  
8                                 *Eff. January 1, 2007;*  
9                                 *Readopted Eff. September 16, ~~2021~~2021;*  
10                                 *Amended Eff. Pending Legislative Review.*

11

1 15A NCAC 13B .0535 is proposed for amendment as follows:

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3 **15A NCAC 13B .0535 APPLICATION REQUIREMENTS FOR C&DLF FACILITIES**

4 (a) New permit as defined in G.S. 130A-294(a3)(1)a, c, d, and e. An applicant for a new C&DLF permit as defined  
5 in G.S. 130A-294(a3)(1)a, c, d, and e shall meet the requirements of Rule .0536 of this Section prior to submitting an  
6 application for a permit to construct.

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

9 (A) a facility plan that describes the comprehensive development of the C&DLF facility  
10 prepared in accordance with Rule .0537 of this Section;

11 (B) a design hydrogeologic report prepared in accordance with Rule .0538(b) of this Section;

12 (C) an engineering plan for the initial phase of landfill development prepared in accordance  
13 with Rule .0539 of this Section;

14 (D) a construction quality assurance plan prepared in accordance with Rule .0541 of this  
15 Section;

16 (E) an operation plan prepared in accordance with Rule .0542 of this Section;

17 (F) a closure and post-closure plan prepared in accordance with Rule .0543 of this Section;

18 (G) monitoring plans prepared in accordance with Rule .0544 of this Section;

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

21 (I) 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 and operator shall meet the pre-operative requirements of the permit  
24 to construct to qualify the constructed C&DLF unit for a permit to operate.

25 (b) New permit as defined in G.S. 130A-294(a3)(1)b. An application for a new C&DLF permit as defined in G.S.  
26 ~~130A-294(a3)(1)b~~ 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 C&DLF facility prepared in  
28 accordance with Rule .0537 of this Section;

29 (2) local government approval in accordance with Rule .0536(c)(11) 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 .0533(a)(2)(A) of this Section shall contain the following: contain:

- 1           ~~(A)(4)~~ an updated design hydrogeologic report prepared in accordance with Rule .0538(b) of this  
2           Section;
- 3           ~~(B)(2)~~ an updated engineering plan prepared in accordance with Rule .0539 of this Section;
- 4           ~~(C)(3)~~ an updated construction quality assurance plan prepared in accordance with Rule .0541 of  
5           this Section;
- 6           ~~(D)(4)~~ an updated operation plan prepared in accordance with Rule .0542 of this Section;
- 7           ~~(E)(5)~~ an updated closure and post-closure plan prepared in accordance with Rule .0543 of this  
8           Section;
- 9           ~~(F)(6)~~ an updated monitoring plan prepared in accordance with Rule .0544 of this Section;
- 10          ~~(G)(7)~~ an updated environmental compliance history for the applicant in accordance with G.S.  
11          130A-295.3; and
- 12          ~~(H)(8)~~ for an applicant that is not a federal, State, or local government, an updated organization  
13          chart showing the ownership structure of the applicant.

14          (2) An application for an amendment to the permit for a change in ownership or corporate structure in  
15          accordance with Rule .0533(a)(2)(B) of this Section shall contain the following:

- 16          (A) a description of the proposed ownership change including affected facilities and permit  
17          numbers, the schedule for the change in ownership or corporate structure, and contact name  
18          and information for the applicant;
- 19          (B) any changes to the facility name, property owner, facility operator, or billing contact names  
20          and contact information;
- 21          (C) if the property owner changes, a copy of the recorded property deed for the new property  
22          owner;
- 23          (D) for an applicant that is not a federal, State, or local government, an organization chart  
24          showing the ownership structure of the applicant, which shall be a business entity  
25          registered with the NC Secretary of State;
- 26          (E) an environmental compliance history for the applicant in accordance with G.S. 130A-  
27          295.3;
- 28          (F) any documentation that the Division may request to determine compliance with the  
29          requirements for financial responsibility for the applicant in accordance with G.S. 130A-  
30          295.2 and Section .1800 of this Subchapter, including an executed financial assurance  
31          mechanism for the applicant;
- 32          (G) any updates to the cost estimates required to be submitted in accordance with Section .1800  
33          of this Subchapter;
- 34          (H) any modifications to the plans incorporated into the permit if changes are proposed by the  
35          applicant, or to correct any information included in the plans that has changed because of  
36          the change in ownership or corporate structure, such as the owner or operator names and  
37          contact information;



- 1           (I) for any plans for which no changes or corrections are being made, a statement that the  
 2           applicant shall continue to comply with the plans incorporated into the existing permit,  
 3           which shall be identified in the statement by the date they were incorporated, and the file  
 4           identification number assigned by the Division to the file containing the incorporated plan;  
 5           (J) copies of any federal, State, or local government permits or approvals that were required  
 6           for the facility permit approval to operate, and that have been revised because of the change  
 7           to ownership or corporate structure, or a statement that these documents have not changed;  
 8           and  
 9           (K) any additional information that the Division may request if it is necessary to determine  
 10           whether any additional changes to the permit are necessary to comply with the rules of this  
 11           Section.

12 (d) Modifications to the permit. The owner or operator may propose to modify plans that were prepared and approved  
 13 in accordance with the requirements set forth in Rules .0531 through .0546 of this Section. A complete application  
 14 shall identify the requirement(s) proposed for modification and provide information that demonstrates compliance  
 15 with Rules .0531 through .0546 of this Section.

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

- 17           ~~(1) — an updated engineering plan prepared in accordance with Rule .0539 of this Section;~~  
 18           ~~(2) — an updated construction quality assurance plan prepared in accordance with Rule .0541 of this~~  
 19           ~~Section;~~  
 20           ~~(3) — an updated closure plan and updated post closure plan prepared in accordance with Rule .0543 of~~  
 21           ~~this Section; and~~  
 22           ~~(4) — for an applicant that is not a federal, State, or local government, an updated organization chart~~  
 23           ~~showing the ownership structure of the applicant.~~

24  
 25 *History Note: Authority G.S. 130A-294;*  
 26 *Eff. January 1, 2007;*  
 27 *Readopted Eff. September 16, 2021.2021;*  
 28 *Amended Eff. Pending Legislative Review.*  
 29

1 15A NCAC 13B .0543 is proposed for amendment as follows:

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3 **15A NCAC 13B .0543 CLOSURE AND POST-CLOSURE REQUIREMENTS FOR C&DLF FACILITIES**

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

7 (b) Scope.

8 (1) This Rule shall establish standards for the scheduling and documenting of closure of all C&DLF  
9 units and design of the cap system. Construction requirements for the cap system shall incorporate  
10 requirements from Rules .0540 and .0541 of this Section.

11 (2) This Rule shall establish standards for the monitoring and maintenance of the C&DLF unit(s)  
12 following closure.

13 (c) Closure criteria.

14 (1) A C&DLF unit shall have a cap system installed that shall be designed and constructed to:

15 (A) have a permeability less than or equal to soils underlying the landfill, or the permeability  
16 specified for the final cover in the effective permit, or a permeability no greater than  $1.0 \times$   
17  $10^{-5}$  cm/sec, whichever is less;

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

20 (C) minimize erosion of the cap system and protect the low-permeability barrier from root  
21 penetration by use of an erosion layer that contains no less than 18 inches of earthen  
22 material that is capable of sustaining native plant growth.

23 (2) Construction of the cap system for all C&DLF units shall conform to the plans prepared in  
24 accordance with Rules .0539 and .0541 of this Section and the following requirements:

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

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

29 (3) The owner or operator may submit a request for an alternative cap system or alternative post-  
30 settlement slopes in the closure and post-closure care plan required to be submitted by Rule .0535  
31 of this Section. The request shall include a demonstration of the following:

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

34 (B) the erosion layer will provide protection equivalent to or greater than the erosion layer  
35 specified in Subparagraph (1) of this Paragraph; and

36 (C) the alternative post-settlement slopes will be stable, encourage runoff, be safe to operate,  
37 and be safe to construct during operation and closure activities.

1 (4) Prior to beginning closure of each C&DLF 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 for that portion of each C&DLF unit meeting  
5 one or more of the following requirements, unless an extension has been granted by the Division:

6 (A) no later than 30 days after the date on which the C&DLF unit receives the known final  
7 receipt of wastes;

8 (B) no later than 30 days after the date that a 10 acre or greater area of waste is within 15 feet  
9 of final design grades; or

10 (C) no later than one year after the most recent receipt of wastes, if the C&DLF unit has  
11 remaining capacity.

12 Extensions beyond the deadline for beginning closure may be granted by the Division if the owner  
13 or operator demonstrates that the portion of the C&DLF unit has the capacity to receive additional  
14 wastes and the owner or operator has and will continue to prevent threats to human health and the  
15 environment from the unclosed C&DLF unit.

16 (6) The owner and operator of all C&DLF units shall complete closure activities of each C&DLF unit  
17 in accordance with the closure plan within 180 days following the beginning of closure as specified  
18 in Subparagraph (5) of this Paragraph. Extensions of the closure period may be granted by the  
19 Division if the owner or operator demonstrates that closure will, of necessity, take longer than 180  
20 days and they have and will continue to prevent threats to human health and the environment from  
21 the unclosed C&DLF unit.

22 (7) Following closure of each C&DLF unit, the owner or operator shall notify the Division that a  
23 certification, signed by the project engineer verifying that closure has been completed in accordance  
24 with the closure plan, has been placed in the operating record.

25 (8) 180 days prior to beginning closure of the final permitted C&DLF unit, an owner or operator shall  
26 submit to the Division in writing a notice of intent to close the final unit; and place a copy of the  
27 notice in the operating record. The notice shall include the anticipated date that the facility will cease  
28 waste acceptance, and a statement identifying the plans that were incorporated into the permit that  
29 the owner or operator will comply with during the closure and post-closure care period. The notice  
30 shall include the dates that the plans were incorporated into the facility's permit and the file  
31 identification numbers that were assigned by the Division to the files containing these plans. If the  
32 owner or operator determines that updates or revisions to the plans are necessary, the owner or  
33 operator shall submit any changes to the plans to the Division as a permit modification in accordance  
34 with Rules .0533(a)(3) and .0535(d) of this Section.

35 (9)(8) Recordation. Following closure of all C&DLF units, the owner or operator shall record a notice for  
36 the landfill facility property at the local county Register of Deeds office; and notify the Division  
37 that the notice has been recorded and a copy has been placed in the operating record. The notice

1           may be a notation on the deed to the landfill facility property, or may be some other instrument such  
2           as a declaration of restrictions on the property that is discoverable during a title search for the landfill  
3           facility property. The notice shall notify any potential purchaser of the property that the land has  
4           been used as a landfill facility and future use is restricted under the closure plan approved by the  
5           Division. The owner or operator may request approval from the Division to remove the notice. The  
6           Division shall approve removal of the notice if all wastes are removed from the landfill facility  
7           property.

8           (d) Closure plan contents. The owner and operator shall prepare a written closure plan that describes the steps  
9           necessary to close all C&DLF units at any point during their active life in accordance with the cap system requirements  
10          in Paragraph (c) of this Rule. The closure plan shall include the following information:

- 11           (1)       a description of the cap system and the methods and procedures to be used to install the cap that  
12                   conforms to the requirements set forth in Paragraph (c) of this Rule;
- 13           (2)       an estimate of the largest area of the C&DLF unit requiring the specified cap system at any time  
14                   during the active life that is consistent with the drawings prepared for the operation plan for an  
15                   existing C&DLF unit, or the engineering plan or facility plan for a lateral expansion or new C&DLF  
16                   unit;
- 17           (3)       an estimate of the maximum inventory of wastes on-site over the active life of the landfill facility;
- 18           (4)       a schedule for completing all activities necessary to satisfy the closure criteria set forth in Paragraph  
19                   (c) of this Rule; and
- 20           (5)       the cost estimate for closure activities as required under Section .1800 of this Subchapter.

21          (e) Post-closure criteria.

- 22           (1)       Following closure of each C&DLF unit, the owner and operator shall conduct post-closure care.  
23                   Post-closure care shall be conducted for 30 years, except as provided under Subparagraph (2) of this  
24                   Paragraph, and consist of the following:
  - 25                   (A)       maintaining the integrity and effectiveness of any cap system including making repairs to  
26                           the cover as necessary to correct the effects of settlement, subsidence, erosion, or other  
27                           events, and preventing rainwater that drains over land from or onto any part of the facility  
28                           or unit from eroding or damaging the cap system;
  - 29                   (B)       monitoring the surface water and groundwater in accordance with the requirements of  
30                           Rules .0544 and .0545 of this Section and maintaining the groundwater monitoring system;
  - 31                   (C)       maintaining and operating the gas monitoring system in accordance with the requirements  
32                           of Rule .0544 of this Section; and
  - 33                   (D)       maintaining, operating, and decommissioning the leachate collection system, if present, in  
34                           accordance with the requirements of Rule .0544 of this Section. The owner and operator  
35                           may submit a request to stop managing leachate in writing to the Division. The request  
36                           shall include a demonstration with supporting documentation that the operation and  
37                           maintenance of leachate management systems during the active life, closure, and any post-

1 closure care period of the C&DLF unit complied with the permit including the plans  
 2 incorporated into the permit, the rules of this Subchapter, and 15A NCAC 02B and 02L;  
 3 and that the current and projected volume of leachate generated and the results of leachate  
 4 sample analysis during the post-closure care period indicate that the leachate no longer  
 5 poses a threat to human health and the environment. The demonstration shall also include  
 6 the certifications required by Subparagraph (3) of this Paragraph. The Division shall  
 7 consider the information required to be submitted in the demonstration and the owner or  
 8 operator's compliance history to make a determination on approval of the request.

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

10 (A) decreased by the Division if the owner or operator demonstrates that the reduced period is  
 11 protective of human health and the environment and this demonstration is approved by the  
 12 Division; or

13 (B) increased by the Division if the Division determines that the lengthened period is necessary  
 14 to protect human health and the environment.

15 (3) Every five years during the post-closure care period and following completion of the post-closure  
 16 care period for each C&DLF unit, the owner or operator shall notify the Division that a certification  
 17 verifying that post-closure care has been conducted in accordance with the post-closure ~~plan plan~~,  
 18 has been placed in the operating record. If required by G.S. 89C, the certification shall be signed by  
 19 a licensed professional engineer.

20 (f) Post-closure plan contents. The owner and operator of all C&DLF units shall submit a written post-closure plan  
 21 to the Division that includes the following information:

22 (1) a description of the monitoring and maintenance activities required for each C&DLF unit, and the  
 23 frequency at which these activities shall be performed;

24 (2) name, address, and telephone number of the person or office responsible for the facility during the  
 25 post-closure period;

26 (3) a description of the planned uses of the property during the post-closure period. Post-closure use of  
 27 the property shall not disturb the integrity of the cap system, base liner system, or any other  
 28 components of the containment system, or the function of the monitoring systems unless necessary  
 29 to comply with the requirements in Rules .0531 through .0546 of this Section. The owner or operator  
 30 may submit a request in writing to the Division for a disturbance. The request shall include a  
 31 demonstration that disturbance of the cap system, base liner system, or other component of the  
 32 containment system, including any removal of waste, will not increase the potential for fires, vector  
 33 attraction, damage to these systems, or the release of dust, odors, waste, or leachate to the  
 34 environment; and

35 (4) the cost estimate for post-closure activities required under Section .1800 of this Subchapter.

36  
 37 *History Note: Authority G.S. 130A-294;*

1                   *Eff. January 1, 2007;*  
2                   *Readopted Eff. September 16, 2021-2021;*  
3                   *Amended Eff. Pending Legislative Review.*  
4

1 15A NCAC 13B .0544 is proposed for amendment as follows:

2  
3 **15A NCAC 13B .0544 MONITORING PLANS AND REQUIREMENTS FOR C&DLF FACILITIES**

4 (a) The owner or operator of a C&DLF unit shall submit a water quality monitoring plan to the Division in the  
5 application for the permit to construct in accordance with Rule .0535(a)(1) of this Section that shall apply to all  
6 C&DLF units. The water quality monitoring plan shall be prepared in accordance with this Rule, and shall include  
7 information on the proposed groundwater monitoring systems, surface water sampling locations, sampling and  
8 analysis requirements, and detection monitoring requirements provided in Paragraphs (b) and (c) of this Rule.

9 (b) Groundwater monitoring shall be as follows:

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

13 (A) represent the quality of the background groundwater that has not been affected by leakage  
14 from the unit. Determination of background water quality shall be based on sampling of a  
15 well or wells that are hydraulically upgradient of the waste management area. However,  
16 the determination of background water quality may include sampling of wells that are not  
17 hydraulically upgradient of the waste management area where hydrogeologic conditions  
18 do not allow the owner and operator to determine which wells are hydraulically upgradient,  
19 or hydrogeologic conditions do not allow the owner and operator to place a well in a  
20 hydraulically upgradient location, or sampling at other wells will provide an indication of  
21 background groundwater quality that is as representative as that provided by the upgradient  
22 well(s); and

23 (B) represent the quality of groundwater passing the relevant point of compliance as approved  
24 by the Division. The downgradient monitoring system shall be installed at the relevant  
25 point of compliance to ensure detection of groundwater contamination in the uppermost  
26 aquifer. The relevant point of compliance shall be established no more than 250 feet from  
27 a waste boundary, or shall be at least 50 feet within the facility property boundary,  
28 whichever point is closer to the waste boundary. In determining the relevant point of  
29 compliance, the Division shall consider recommendations made by the owner and operator  
30 based upon consideration of at least the hydrogeologic characteristics of the facility and  
31 surrounding land; the quantity, quality, and direction of flow of the groundwater; the  
32 proximity and withdrawal rate of the groundwater users; the existing quality of the  
33 groundwater, including other sources of contamination and their cumulative impacts on the  
34 groundwater, and whether the groundwater is currently used or expected to be used for  
35 drinking water; public health, safety, and welfare effects; and practicable capability of the  
36 owner and operator.

- 1 (C) A water quality monitoring plan shall include consistent sampling and analysis procedures  
2 that are designed to ensure monitoring results that provide an accurate representation of  
3 groundwater quality at the background and downgradient wells. The plan shall include  
4 procedures and techniques for sample collection; sample preservation and shipment; chain-  
5 of-custody control; and quality assurance and quality control.
- 6 (D) The detection groundwater monitoring program shall include sampling and analytical  
7 methods for groundwater sampling that accurately measure target constituents and other  
8 monitoring parameters in groundwater samples. Detection monitoring shall be conducted  
9 at C&DLF units at all groundwater monitoring wells that are part of the detection  
10 monitoring system as established in the approved water quality monitoring plan. The  
11 detection groundwater monitoring program shall include monitoring for the constituents  
12 listed in Appendix I of 40 CFR 258, and the following constituents: mercury, chloride,  
13 manganese, sulfate, iron, specific conductance, pH, temperature, alkalinity, and total  
14 dissolved solids. The monitoring frequency for all detection monitoring constituents shall  
15 be no less than annual during the active life of the facility, and during closure and the post-  
16 closure period. To establish baseline, no less than four independent samples from each  
17 background and downgradient monitoring well shall be collected within a twelve-month  
18 period and analyzed for the constituents required in this Paragraph, with no less than one  
19 sample collected from each new monitoring well before waste placement in each new cell  
20 or phase. The water quality monitoring plan shall include a description of the procedures  
21 used to establish baseline at the C&DLF unit. No less than one sample from each  
22 background and downgradient monitoring well shall be collected and analyzed during  
23 subsequent annual sampling events. C&DLF units shall comply with the groundwater  
24 quality standards ~~and interim maximum allowable concentrations (IMACs)~~ set forth in 15A  
25 NCAC 02L .0202 and the groundwater protection standards established in Rule .0545(c)  
26 of this Section.
- 27 (E) The sampling procedures and frequency shall be protective of human health and the  
28 environment.
- 29 (2) Each time groundwater is sampled, elevations shall be measured in each well prior to purging.  
30 Groundwater elevations in wells which monitor the same waste management area shall be measured  
31 within a ~~24-hour~~ 24-hour period of time to avoid temporal variations in groundwater flow that could  
32 preclude accurate determination of groundwater flow rate and direction. In order to determine  
33 accurate groundwater elevations for each monitoring well, the wells shall have been surveyed by a  
34 licensed professional land surveyor if required by G.S. 89C. The survey of the wells shall conform  
35 to the following levels of accuracy: horizontal location to the nearest 0.1 foot, vertical control for  
36 the ground surface elevation to the nearest 0.01 foot, and vertical control for the measuring reference  
37 point on the top of the inner well casing to the nearest 0.01 foot. In order to determine the rate of



1 groundwater flow, the owner or operator shall provide data for hydraulic conductivity and porosity  
2 for the formation materials at each of the well locations.

3 (3) The owner or operator shall establish existing conditions of groundwater quality in hydraulically  
4 upgradient or background well(s) for each of the monitoring parameters or constituents required in  
5 Part (1)(D) of this Paragraph. Statistical analysis used to establish existing conditions of  
6 groundwater quality shall be in accordance with Subparagraphs (4) and (5) of this Paragraph and  
7 the minimum number of samples required by the statistical method used shall be met.

8 (4) Should the owner or operator choose to perform statistical analysis of groundwater quality data for  
9 the purpose of establishing background concentrations or to determine if there is an exceedance of  
10 the groundwater quality standards ~~and IMACs~~ established in 15A NCAC 02L .0202 or the  
11 groundwater protection standards established in Rule .0545(c) of this Section, the owner or operator  
12 shall select one of the following statistical methods to be used in evaluating groundwater monitoring  
13 data for each constituent of concern. The statistical test chosen shall be conducted separately for  
14 each constituent of concern in each well.

15 (A) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures  
16 to identify statistically significant evidence of contamination. The method shall include  
17 estimation and testing of the contrasts between each compliance well's mean and the  
18 background mean levels for each constituent.

19 (B) A parametric analysis of variance (ANOVA) based on ranks followed by multiple  
20 comparisons procedures to identify statistically significant evidence of contamination. The  
21 method shall include estimation and testing of the contrasts between each compliance  
22 well's median and the background median levels for each constituent.

23 (C) A tolerance or prediction interval procedure in which an interval for each constituent is  
24 established from the distribution of the background data, and the level of each constituent  
25 in each compliance well is compared to the upper tolerance or prediction limit.

26 (D) A control chart approach that gives control limits for each constituent.

27 (E) Another statistical test method that meets the performance standards of this Rule. The  
28 owner or operator shall submit a justification for an alternative test method to the Division  
29 for approval to determine compliance with this Rule. The justification shall demonstrate  
30 that the alternative statistical test method meets the performance standards in Subparagraph  
31 (5) of this Paragraph. If approved, the owner or operator shall place a copy of the  
32 justification for an alternative test method in the operating record.

33 (5) Any statistical method chosen to evaluate groundwater monitoring data shall comply with the  
34 following performance standards:

35 (A) The statistical method used to evaluate groundwater monitoring data shall be appropriate  
36 for the distribution of chemical parameters or constituents of concern. If the distribution of  
37 the chemical parameters or constituents of concern is shown by the owner or operator or

- 1 the Division to be inappropriate for a normal theory test, then the data shall be transformed  
2 or a distribution-free theory test shall be used. If the distributions for the constituents differ,  
3 more than one statistical method shall be considered.
- 4 (B) If an individual well comparison procedure is used to compare an individual compliance  
5 well constituent concentration with background constituent concentrations or a  
6 groundwater protection standard, the test shall be done at a Type I error level no less than  
7 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I  
8 experiment wise error rate for each testing period shall be no less than 0.05. However, the  
9 Type I error of no less than 0.01 for individual well comparisons shall be maintained. This  
10 performance standard does not apply to tolerance intervals, prediction intervals, or control  
11 charts.
- 12 (C) If a control chart approach is used to evaluate groundwater monitoring data, the specific  
13 type of control chart and its associated parameter values shall be protective of human health  
14 and the environment. The parameters shall be determined by the analyst after considering  
15 the number of samples in the background data base, the data distribution, and the range of  
16 the concentration values for each constituent of concern.
- 17 (D) If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring  
18 data, the levels of confidence and, for tolerance intervals, the percentage of the population  
19 that the interval shall contain, shall be protective of human health and the environment.  
20 These parameters shall be determined by the analyst after considering the number of  
21 samples in the background data base, the data distribution, and the range of the  
22 concentration values for each constituent of concern.
- 23 (E) The statistical method shall account for data below the limit of detection with one or more  
24 statistical procedures that are protective of human health and the environment. Any  
25 practical quantitation limit (pql) that is used in the statistical method shall be the lowest  
26 concentration level that can be reliably achieved within specified limits of precision and  
27 accuracy during routine laboratory operating conditions that are available to the facility.
- 28 (F) If necessary, the statistical method shall include procedures to control or correct for  
29 seasonal and spatial variability as well as temporal correlation in the data.
- 30 (6) Within 120 days of completing a groundwater sampling event, the owner or operator shall submit  
31 to the Division a monitoring report in an electronic format that is accessible and viewable by the  
32 Division that includes information from the sampling event including field observations relating to  
33 the condition of the monitoring wells; field data; a summary of the laboratory analytical data report;  
34 statistical analysis (if utilized), field sampling methods and quality assurance and quality control  
35 data; information on groundwater flow direction; calculations of groundwater flow rate; and for  
36 each well, any constituents that exceed groundwater quality standards and IMACs set forth in 15A

1 NCAC 02L .0202 or the groundwater protection standards established in Rule .0545(c) of this  
2 Section.

- 3 (7) If the owner or operator determines upon evaluation of laboratory data or by a verification sampling  
4 event that there is an exceedance of the groundwater quality standards ~~and IMACs~~ established in  
5 accordance with 15A NCAC 02L .0202, or the groundwater protection standards established in  
6 accordance with Rule .0545(c) of this Section for one or more of the constituents being monitored  
7 at any monitoring well, the owner or operator:

8 (A) shall, within 14 days of this finding, report to the Division and place a notice in the  
9 operating record indicating which constituents have exceeded groundwater quality  
10 standards ~~and IMACs~~ established in accordance with 15A NCAC 02L .0202, or the  
11 groundwater protection standards established in accordance with Rule .0545(c) of this  
12 Section;

13 (B) shall establish an assessment monitoring program in accordance with Rule .0545 of this  
14 Section except as provided for in Part (C) of this Subparagraph; and

15 (C) may demonstrate that a source other than a C&DLF unit caused the exceedance, or the  
16 exceedance resulted from an error in sampling, analysis, statistical evaluation, or natural  
17 variation in groundwater quality. A report documenting this demonstration shall be  
18 submitted to the Division for review. If required by G.S. 89C or G.S. 89E, a licensed  
19 professional engineer or licensed geologist shall prepare these documents. [Note: The  
20 North Carolina Board of Examiners for Engineers and Surveyors and the Board of  
21 Licensing of Geologist has determined, via letters dated July 16, 2010 and November 30,  
22 2010 respectively, that preparation of documents pursuant to this Paragraph constitutes  
23 practicing engineering or geology under G.S. 89C and G.S. 89E.] A copy of this report  
24 shall also be placed in the operating record. If a successful demonstration is made,  
25 documented, and approved by the Division, the owner or operator may continue detection  
26 monitoring. If after 90 days of the initial determination of exceedance, a successful  
27 demonstration is not made, the owner or operator shall initiate an assessment monitoring  
28 program as required by Rule .0545 of this Section.

- 29 (8) Monitoring wells shall be designed and constructed in accordance with 15A NCAC 02C.

30 (A) Owners and operators shall obtain approval from the Division for the design, installation,  
31 development, and decommission of any monitoring well or piezometer. Documentation  
32 shall be placed in the operating record and provided to the Division.

33 (B) The monitoring wells and piezometers shall be operated, maintained, and accessible so that  
34 they perform to design specifications throughout the life of the monitoring program.

- 35 (9) The number, spacing, and depths of groundwater monitoring points shall be determined based upon  
36 site-specific technical information that shall include an investigation of:

- 1 (A) aquifer thickness, groundwater flow rate, and groundwater flow direction, including  
 2 seasonal and temporal fluctuations in groundwater flow; and
- 3 (B) thickness, stratigraphy, lithology, hydraulic conductivities, porosities, and effective  
 4 porosities of the saturated and unsaturated geologic units, including fill ~~materials materials~~,  
 5 overlying and comprising the uppermost ~~aquifer. aquifer~~,
- 6 (10) In addition to groundwater monitoring wells, the use of alternative monitoring systems may be:  
 7 (A) required by the Division at sites where the owner or operator does not control the property  
 8 from any landfill unit to the groundwater discharge features; or  
 9 (B) allowed by the Division at sites with hydrogeologic conditions favorable to detection  
 10 monitoring by alternative methods.
- 11 (11) Owners and operators of C&DLF units shall comply with the groundwater monitoring, assessment,  
 12 and corrective action requirements under Rules .0544 and .0545 of this Section according to the  
 13 following schedule:  
 14 (A) new C&DLF units shall be in compliance with the requirements before waste can be placed  
 15 in the unit; and  
 16 (B) lateral expansions to existing C&DLF units shall be in compliance with the requirements  
 17 before waste can be placed in the expansion area.
- 18 (12) Groundwater quality standards ~~and IMACs~~ established under 15A NCAC 02L .0202 and  
 19 groundwater protection standards established in accordance with Rule .0545(c) of this Section shall  
 20 not be exceeded.
- 21 (c) Surface water monitoring shall meet the following criteria:
- 22 (1) The monitoring shall include sample collection from surface water features on or bordering the  
 23 facility property and include no less than one upstream and one downstream sampling location.  
 24 Surface water samples shall be analyzed for constituents that include those listed in Part (b)(1)(D)  
 25 of this Rule. The monitoring frequency shall be no less than annual during the active life of the  
 26 facility, and no less than annual during the closure and post-closure care period.
- 27 (2) Responsibility for sample collection and analysis shall be defined as a part of the monitoring plan.
- 28 (3) Information used for the development of the surface water monitoring system shall include:  
 29 (A) drainage patterns and other hydrological conditions in the area;  
 30 (B) proximity of surface water to the facility;  
 31 (C) uses that are being or may be made of any surface water that may be affected by the facility;  
 32 and  
 33 (D) any other factors that relate to the potential for surface water impacts from the facility.
- 34 (4) The C&DLF unit shall not cause an exceedance of the surface water standards established under  
 35 15A NCAC 02B .0200.
- 36 (d) The owner or operator of a C&DLF unit shall submit a landfill gas monitoring plan to the Division prepared in  
 37 accordance with this Rule that shall apply to all C&DLF units. Landfill gas monitoring shall be as follows:

- 1 (1) Owners and operators of C&DLF units shall ensure that:
- 2 (A) the concentration of explosive gases generated by the facility does not exceed 25 percent
- 3 of the lower explosive limit in on-site facility structures, excluding gas control or recovery
- 4 system components; and
- 5 (B) the concentration of explosive gases does not exceed the lower explosive limit at the
- 6 facility property boundary.
- 7 (2) Owners and operators of all C&DLF units shall implement a routine landfill gas monitoring program
- 8 to ensure that the standards of Subparagraph (1) of this Paragraph are met as follows:
- 9 (A) The type of monitoring shall be determined based on soil conditions, the hydrogeologic
- 10 conditions under and surrounding the facility, the hydraulic conditions on and surrounding
- 11 the facility, the location of facility structures and property boundaries, and the location of
- 12 all off-site structures adjacent to property boundaries.
- 13 (B) The concentration of methane in landfill gas shall be monitored. The monitoring shall be
- 14 conducted at a frequency of no less than quarterly.
- 15 (C) The Division may also require quarterly monitoring of landfill gas for explosive gases other
- 16 than methane, such as hydrogen sulfide, if it is necessary to ensure compliance with
- 17 Subparagraph (1) of this Paragraph. If the Division requires monitoring of additional
- 18 explosive gases, the Division shall provide written notice to the facility of the requirement.
- 19 (3) If explosive gas levels exceeding the limits specified in Subparagraph (1) of this Paragraph are
- 20 detected, the owner and operator shall:
- 21 (A) upon discovery of detection, notify the Division and take any steps that may be necessary
- 22 to ensure protection of human health, such as evacuation or monitoring of offsite structures
- 23 for explosive gases;
- 24 (B) within seven days of detection, place in the operating record the explosive gas levels
- 25 detected and a description of the steps taken to protect human health; and
- 26 (C) within 60 days of detection, implement a remediation plan for the explosive gas releases,
- 27 place a copy of the plan in the operating record, and notify the Division that the plan has
- 28 been implemented. The plan shall describe the nature and extent of the problem and the
- 29 proposed remedy.
- 30 (4) The owner or operator may submit a request in writing to the Division for an extension or alternate
- 31 schedule for compliance with Parts (3)(B) and (3)(C) of this Paragraph, and the request shall include
- 32 a justification for the alternate schedule. In making the determination on approval of the request, the
- 33 Division shall consider the following factors:
- 34 (A) the justification submitted by the owner or operator;
- 35 (B) actions taken by the owner or operator upon discovery of the exceedances;
- 36 (C) the explosive gas levels measured and reported; and
- 37 (D) the circumstances and use of properties surrounding the facility.

1 (e) Owners or operators of C&DLF units shall develop and implement a waste screening plan as required by G.S.  
2 130A-295.6(g) in accordance with the effective date and applicability requirements of S.L. 2007-550, s. 9.(b). The  
3 plan shall meet the same requirements as municipal solid waste landfills set forth in 40 CFR 258.20 and shall include  
4 screening for the wastes prohibited by Rule .0542(e) of this Section. Owners and operators of ~~C&DLF MSWLF~~ units  
5 that are not subject to G.S. 130A-295.6(g) shall develop and implement a waste screening plan that shall comply with  
6 40 CFR 258.20, and shall include screening and a contingency plan for the wastes prohibited by Rule .0542(e) of this  
7 Section.

8 (f) The water quality monitoring plan shall include any other monitoring plan or program which is necessary according  
9 to the operating plan or the effective permit.

10 (g) Water quality monitoring plans and landfill gas monitoring plans shall be prepared under the charge of and bear  
11 the seal of a licensed professional engineer or licensed geologist if required by G.S. 89C or 89E, respectively.

12 (h) Water quality monitoring plans and landfill gas monitoring plans shall be capable of providing detection of any  
13 release of monitored constituents from any point in a disposal cell or leachate surface impoundment to the uppermost  
14 aquifer, air, surface waters, or proximal area.

15 (i) Water quality monitoring plans and landfill gas monitoring plans shall be submitted to the Division for review.  
16 The Division shall date and stamp the water quality monitoring plan and landfill gas monitoring plan "approved" if  
17 they meet the requirements of this Rule. A copy of the approved monitoring plan shall be placed in the operating  
18 record.

19 (j) Once established at a C&DLF facility, all monitoring shall be conducted throughout the active life and post-closure  
20 care period for all C&DLF units.

21  
22 *History Note: Authority G.S. 130A-294;*  
23 *Eff. January 1, 2007;*  
24 *Readopted Eff. September 16, ~~2021~~ 2021;*  
25 *Amended Eff. Pending Legislative Review.*  
26

1 15A NCAC 13B .0545 is proposed for amendment as follows:

2  
3 **15A NCAC 13B .0545 ASSESSMENT AND CORRECTIVE ACTION PROGRAM FOR C&DLF**  
4 **FACILITIES AND UNITS**

5 (a) Assessment Program. Assessment monitoring shall be required if, in any sampling event, one or more constituents  
6 being monitored in any monitoring well are detected above the groundwater quality standards ~~or interim maximum~~  
7 ~~allowable concentrations (IMACs)~~ established in accordance with 15A NCAC 02L .0202, or the groundwater  
8 protection ~~standard standards~~ established in accordance with Paragraph (c) of this Rule. The owner and operator ~~shall:~~  
9 ~~shall~~

10 (1) ~~within~~ Within 30 days of obtaining the results of any sampling event, notify all persons who own  
11 land or reside on land that directly overlies any part of the plume of contamination if contaminants  
12 have migrated off-site or are thought to have migrated ~~off-site; and off site;~~

13 (2) ~~within~~ Within 90 days of triggering an assessment monitoring program in accordance with this  
14 Paragraph, the owner and operator shall submit an assessment monitoring work plan for Division  
15 review. The Division shall date and stamp the assessment monitoring plan "approved" if the  
16 requirements in Paragraph (b) of this Rule are met. The owner and operator shall place the approved  
17 program in the operation record, and notify appropriate local government officials, such as the  
18 county manager, city manager, and county health department.

19 (b) Assessment Monitoring Work Plan. The assessment monitoring work plan shall be in accordance with the  
20 following:

21 (1) Install additional wells downgradient of the compliance wells where exceedances have been  
22 detected to characterize the nature and extent of the contamination. The additional wells shall  
23 include no less than one additional groundwater monitoring well or methane gas monitoring well at  
24 the facility's property boundary or the compliance boundary, as defined in 15A NCAC 02L .0102,  
25 in the direction of contaminant migration most likely to show impact based on the established  
26 geology and hydrogeology. The additional monitoring wells shall characterize the nature and extent  
27 of the release by determining the following factors:

- 28 (A) lithology of the aquifer and unsaturated zone;
- 29 (B) hydraulic conductivity of the aquifer and unsaturated zone;
- 30 (C) groundwater flow rates;
- 31 (D) horizontal and vertical extent of the release;
- 32 (E) resource value of the aquifer; and
- 33 (F) nature, fate, and transport of any detected constituents.

34 (2) No less than one sample from each monitoring well, including any well installed in accordance with  
35 Subparagraph (1) of this Paragraph, shall be collected and analyzed for the constituents listed in 40  
36 CFR 258 Appendix II during the initial sampling event for assessment monitoring. After the initial  
37 sampling event, for any constituent detected in the downgradient wells as the result of the Appendix

1 II analysis, no less than three additional independent samples from each background and  
2 downgradient monitoring well shall be collected and analyzed to establish a baseline for the new  
3 detected constituents. Once determined, baseline data for the new detected constituents shall be  
4 reported to the Division.

5 (c) For constituents that do not have a groundwater quality standard ~~or IMAC~~ established in accordance with 15A  
6 NCAC 02L .0202, the Division shall establish a groundwater protection standard ~~standards~~ as follows:

- 7 (1) The groundwater protection standard shall be the most protective of the following:
- 8 (A) for constituents for which a maximum contaminant level (MCL) has been promulgated  
9 under 40 CFR 141, the MCL for that constituent;
- 10 (B) for constituents for which a public water quality standard has been established under 15A  
11 NCAC 18C, the public water quality standard for that constituent;
- 12 (C) for constituents for which no MCLs or public water quality standards have been  
13 promulgated, the background concentration for the constituent established from the  
14 monitoring wells required in accordance with Rule .0544(b)(1)(A), (b)(4), and (b)(5) of  
15 this Section; or
- 16 (2) The Division may establish an alternative groundwater protection standard for constituents for  
17 which no MCL or water quality standard have been established. These groundwater protection  
18 standards shall be health-based levels that satisfy the following criteria:
- 19 (A) The level is derived in a manner consistent with U.S. E.P.A. guidelines provided in 40 CFR  
20 258.55(i)(1) for assessing the health risks of environmental pollutants;
- 21 (B) The level is based on scientifically valid studies conducted in accordance with 40 CFR 792,  
22 or equivalent;
- 23 (C) For carcinogens, the level represents a concentration associated with an excess lifetime  
24 cancer risk level due to continuous lifetime exposure of  $1 \times 10^{-6}$ ;  ~~$1 \times 10^{-6}$~~ ;
- 25 (D) For systemic toxicants, the level represents a concentration to which the human population,  
26 including sensitive subgroups, could be exposed on a daily basis that is likely to be without  
27 appreciable risk of deleterious effects during a lifetime. For the purposes of this Rule,  
28 systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.
- 29 (3) In establishing groundwater protection standards under this Paragraph the Division may consider  
30 the following:
- 31 (A) multiple contaminants in the groundwater;
- 32 (B) exposure threats to sensitive environmental receptors; and
- 33 (C) other site-specific exposure or potential exposure to groundwater.
- 34 (4) The owner or operator may request the Division approve a background level for the unit that is  
35 higher than the standard established in 15A NCAC 02L .0202, or the standard established in  
36 Subparagraph (1) of this Paragraph, or health-based levels identified under Subparagraph (2) of this  
37 Paragraph. The background level shall be established in accordance with Rule .0544(b)(1)(A),



1 (b)(4), and (b)(5) of this Section. The approved background level shall be the established  
2 groundwater protection standard.

3 (d) Assessment Monitoring. After obtaining the results from the initial sampling event required in Subparagraph  
4 (b)(2) of this Rule, the owner and operator shall perform assessment monitoring in accordance with the following:

- 5 (1) For each assessment monitoring event, including the sampling required in Subparagraph (b)(2) of  
6 this Rule, the owner or operator shall submit an assessment monitoring report to the Division that  
7 complies with Rule .0544(b)(6) of this Section. If required by G.S. 89E, the report shall be certified  
8 by a licensed geologist.
- 9 (2) Within 14 days of receipt of analytical results, the owner or operator shall submit notice to the  
10 Division in writing and place the notice in the operating record identifying the 40 CFR 258  
11 Appendix II constituents that have not previously been detected and reported to the Division.
- 12 (3) Within 90 days, and no less than semiannually thereafter until the Division approves a return to  
13 detection monitoring in accordance with Subparagraphs (6) or (7) of this Paragraph, the owner or  
14 operator shall sample all of the monitoring wells for the unit in the detection monitoring system  
15 established in Rule .0544 of this Section for all constituents listed in 40 CFR 258 Appendix I and  
16 for those constituents in Appendix II not listed in Appendix I that have been detected. Any well with  
17 a reported groundwater standard exceedance shall be sampled for all constituents in 40 CFR 258  
18 Appendix II at least annually unless otherwise approved in accordance with Subparagraphs (4) or  
19 (5) of this Paragraph. A report from each sampling event shall be submitted to the Division as  
20 specified in Subparagraph (1) of this Paragraph and placed in the facility operating record.
- 21 (4) The Division may approve a subset of wells to be sampled and analyzed during assessment  
22 monitoring if the owner or operator demonstrates that the proposed wells to be sampled meet the  
23 requirements for assessment monitoring in accordance with this Paragraph. The Division may  
24 remove any of the additional monitoring parameters not listed in Rule .0544(b)(1)(D) of this Section  
25 from the monitoring list for a C&DLF unit if the owner or operator can show that the constituents  
26 proposed for removal are not expected to be in or derived from the waste contained in the unit.
- 27 (5) The Division may approve an alternate frequency or subset of wells for repeated sampling and  
28 analysis for 40 CFR 258 Appendix II constituents, not listed in Appendix I, required during the  
29 active life and post-closure care of the unit considering all of the following factors:
  - 30 (A) lithology of the aquifer and unsaturated zone;
  - 31 (B) hydraulic conductivity of the aquifer and unsaturated zone;
  - 32 (C) groundwater flow rates;
  - 33 (D) minimum distance between the upgradient edge of the C&DLF unit and the downgradient  
34 monitor well screened interval;
  - 35 (E) resource value of the aquifer; and
  - 36 (F) nature, fate, and transport of any detected constituents.

1 (6) During assessment monitoring, the owner or operator may demonstrate, in accordance with Rule  
2 .0544(b)(7) of this Section for any constituent not previously reported to have a groundwater  
3 standard exceedance, that a source other than a C&DLF unit caused the exceedance of the  
4 groundwater quality standards ~~and IMACs~~ established in accordance with 15A NCAC 02L .0202  
5 or the groundwater protection standards established in accordance with Paragraph (c) of this Rule,  
6 or that the exceedance resulted from error in sampling, analysis, or natural variation in groundwater  
7 quality. If a successful demonstration is made for each exceedance, the owner or operator shall  
8 continue the existing assessment monitoring that was required by this Paragraph unless and until the  
9 requirements of Subparagraph (7) of this Paragraph are met.

10 (7) The Division shall give approval to the owner or operator to return to detection monitoring in  
11 accordance with Rule .0544(b)(1)(D) of this Section if all of the following are met:

12 (A) for two consecutive sampling events, the concentrations of the constituents are shown to  
13 be at or below groundwater quality standards ~~and IMACs~~ established in accordance with  
14 15A NCAC 02L .0202, or the groundwater protection standards established in accordance  
15 with Paragraph (c) of this Rule;

16 (B) the plume is not migrating horizontally or vertically; and

17 (C) the plume has not exceeded the compliance boundary.

18 (8) After completion of Paragraphs (a) and (b) of this Rule and if one or more constituents are detected  
19 for two consecutive semiannual sampling events above background, the groundwater quality  
20 standards established in 15A NCAC 02L .0202, or the groundwater protection standards established  
21 in accordance with Paragraph (c) of this Rule, the owner or operator shall initiate within 90 days an  
22 Assessment of Corrective Measures in accordance with Paragraph (e) of this Rule, and shall  
23 continue to monitor in accordance with the approved assessment monitoring program.

24 (e) Assessment of Corrective Measures. If the assessment of corrective measures is required in accordance with  
25 Subparagraph (d)(8) of this Rule, the assessment of corrective measures shall include an analysis of the effectiveness  
26 of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under  
27 this Rule. An assessment of corrective measures document shall be completed within 120 days, or as approved by the  
28 Division, and shall address the following:

29 (1) the performance, reliability, ease of implementation, and potential impacts of potential remedies,  
30 including safety impacts, cross-media impacts, and control of exposure to any residual  
31 contamination;

32 (2) the time required to begin and to complete the remedy;

33 (3) the costs of remedy implementation; and

34 (4) the institutional requirements such as State and local permit requirements or other environmental or  
35 public health requirements that may affect implementation of the remedy(s).

36 (f) Within 120 days of completion of the assessment of corrective measures in accordance with Paragraph (e) of this  
37 Rule, the owner and operator shall discuss the results of the assessment of corrective measures, prior to the selection

1 of the remedy, in a public meeting with interested and affected parties. The owner and operator shall provide a public  
2 notice of the meeting at least 30 days prior to the meeting. The notice shall include the time, place, date, and purpose  
3 of the public meeting. A copy of the public notice shall be forwarded to the Division at least five days prior to  
4 publication. The owner and operator shall mail a copy of the public notice to those persons requesting notification.  
5 Public notice shall be in accordance with Rule .0533(c)(4) of this Section.

6 (g) Selection of Remedy. Based on the results of the Assessment of Corrective Actions, the owner and operator shall  
7 select a remedy as follows:

8 (1) Within 30 days of selecting a remedy, the permittee shall submit an application to modify the permit  
9 describing the selected remedy to the Division for evaluation and approval. The application shall be  
10 subject to the processing requirements set forth in Rule .0533(c) of this Section. The application  
11 shall include the demonstrations necessary to comply with the financial assurance requirements in  
12 accordance with Rule .0546 of this Section and Section .1800 of this Subchapter.

13 (2) Remedies shall:

14 (A) be protective of human health and the environment;

15 (B) attain the approved groundwater protection standards in accordance with Rule .0544(b)(12)  
16 of this Section;

17 (C) control the source(s) of releases to reduce or eliminate, to the maximum extent practicable,  
18 further releases of 40 CFR 258 Appendix II constituents into the environment; and

19 (D) comply with standards for management of wastes as specified in Paragraph (n) of this Rule.

20 (3) In selecting a remedy that meets the standards of Subparagraph (2) of this Paragraph, the owner and  
21 operator shall consider the following factors:

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

35 (B) The effectiveness of the remedy in controlling the source to reduce further releases, based  
36 on consideration of the extent to which containment practices will reduce further releases,  
37 and the extent to which treatment technologies may be used.

- 1 (C) The ease or difficulty of implementing a potential remedy, based on consideration of the  
2 degree of difficulty associated with constructing the technology; the expected operational  
3 reliability of the technologies; the need to coordinate with and obtain necessary approvals  
4 and permits from other agencies; the availability of necessary equipment and specialists;  
5 and available capacity and location of needed treatment, storage, and disposal services.
- 6 (D) The practicable capability of the owner and operator, including a consideration of the  
7 technical and economic capability.
- 8 (4) The owner and operator shall specify as part of the selected remedy a schedule for initiating and  
9 completing remedial activities included in a corrective action plan. This schedule shall be submitted  
10 to the Division for review and approval to determine compliance with this Rule. The owner and  
11 operator shall consider the following factors in determining the schedule of remedial activities:
- 12 (A) nature and extent of contamination;
- 13 (B) practical capabilities of remedial technologies in achieving compliance with the approved  
14 groundwater protection standards and other objectives of the remedy;
- 15 (C) availability of treatment or disposal capacity for wastes managed during implementation  
16 of the remedy;
- 17 (D) desirability of utilizing technologies that are not currently available, but which may offer  
18 advantages over already available technologies in terms of effectiveness, reliability, safety,  
19 or ability to achieve remedial objectives;
- 20 (E) potential risks to human health and the environment from exposure to contamination prior  
21 to completion of the remedy;
- 22 (F) resource value of the aquifer, including current and future uses; proximity and withdrawal  
23 rate of users; groundwater quantity and quality; the potential damage to wildlife, crops,  
24 vegetation, and physical structures caused by exposure to contaminants; the hydrogeologic  
25 characteristics of the facility and surrounding land; groundwater removal and treatment  
26 costs; the costs and availability of alternative water supplies; and
- 27 (G) practical capability of the owner and operator.
- 28 (h) The Division may determine that active remediation of a release of any detected constituent from a C&DLF unit  
29 is not necessary if the owner or operator demonstrates to the Division that:
- 30 (1) the groundwater is contaminated by substances that have originated from a source other than a  
31 C&DLF unit and those substances are present in concentrations such that active cleanup of the  
32 release from the C&DLF unit would provide no reduction in risk to actual or potential receptors; ~~or~~
- 33 (2) the constituent or constituents are present in groundwater that is not currently or expected to be a  
34 source of drinking water and is not hydraulically connected with water to which the constituents are  
35 migrating or are likely to migrate in concentrations that would exceed the approved groundwater  
36 protection standards;
- 37 (3) remediation of the release is technically impracticable; or

1 (4) remediation results in unacceptable cross-media impacts.

2 (i) A determination by the Division pursuant to this Paragraph shall not affect the authority of the State to require the  
3 owner and operator to undertake source control measures or other measures that may be necessary to eliminate or  
4 minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate groundwater to  
5 concentrations that are technically practicable and reduce threats to human health or the environment.

6 (j) Implementation of the Corrective Action Program. Based on the approved schedule for initiation and completion  
7 of remedial activities, the owner and operator shall:

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

11 (A) meets the requirements of an assessment monitoring program under Paragraphs (a), (b),  
12 and (d) of this Rule;

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

14 (C) demonstrates compliance with groundwater quality standards ~~or IMACs~~ established in  
15 accordance with 15A NCAC 02L .0202 and groundwater protection standard standards  
16 established in accordance with Paragraph (c) of this Rule, pursuant to Paragraph (o) of this  
17 Rule; Rule.

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

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

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

24 (B) actual or potential exposure of nearby populations or environmental receptors to  
25 constituents;

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

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

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

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

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

32 (k) The owner or operator shall submit a corrective action evaluation report to the Division in an electronic format  
33 that is accessible and viewable by the Division no less than once every five calendar years until the owner and operator  
34 are released from the corrective action program in accordance with Paragraph (q) of this Rule. The report shall contain  
35 a description of the corrective measure remedies that have been implemented or completed since the initiation of the  
36 corrective action program; and an evaluation of the effectiveness of the corrective action program. The owner or  
37 operator may request to submit the corrective action evaluation report to the Division on an alternate schedule. The

1 owner or operator shall submit the request in writing to the Division, and the request shall include a justification for  
2 the alternate schedule. In making the determination on approval of the request, the Division shall consider the  
3 following factors:

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

12 (l) The owner or operator or the Division may determine, based on information developed after implementation of  
13 the remedy has begun or other information, that compliance with requirements of Subparagraph (f)(2) of this Rule are  
14 not being achieved through the remedy selected. In such cases, the owner and operator shall implement other methods  
15 or techniques to comply with Paragraph (g) of this Rule unless the Division determines that active remediation is not  
16 necessary in accordance with Paragraph (h) of this Rule.

17 (m) If the owner or operator determines that compliance with requirements of Subparagraph (g)(2) of this Rule cannot  
18 be achieved with any currently available methods, the owner and operator shall:

- 19 (1) obtain certification of a licensed professional engineer or licensed geologist, if required by G.S. 89C  
20 or 89E, and approval from the Division that compliance with the requirements under Subparagraph  
21 (g)(2) of this Rule cannot be achieved with any currently available methods;
- 22 (2) implement alternate measures to control exposure of humans or the environment to residual  
23 contamination, as necessary to protect human health and the environment;
- 24 (3) implement alternate measures for control of the sources of contamination, or for removal or  
25 decontamination of equipment, units, devices, or structures that are technically practicable and  
26 consistent with the overall objective of the remedy; and
- 27 (4) submit a report justifying the alternative measures to the Division for review. The Division shall  
28 date and stamp the report "approved" if the conditions of this Paragraph are satisfied. The approved  
29 report shall be placed in the operating record prior to implementing the alternative measures.

30 (n) All solid wastes that are managed pursuant to a remedy required under Paragraph (g) of this Rule, or an interim  
31 measure required under Paragraph (g) of this Rule, shall be managed in a manner that is protective of human health  
32 and the environment, and that complies with applicable State and federal requirements.

33 (o) Remedies selected pursuant to Paragraph (g) of this Rule shall be considered complete when:

- 34 (1) the owner and operator complies with the groundwater quality and groundwater protection standards  
35 at all points within the plume of contamination that lie beyond the relevant point of compliance;
- 36 (2) compliance with the groundwater quality and groundwater protection standards has been achieved  
37 by demonstrating that concentrations of constituents have not exceeded these standards for a period

1                   of three consecutive years, consistent with performance standards in Subparagraph (g)(2) of this  
2                   Rule; and

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

4   (p) Upon completion of the remedy, the owner and operator shall submit a report to the Division documenting that  
5   the remedy has been completed in compliance with Paragraph (o) of this Rule. If required by G.S. 89C or 89E, a  
6   licensed professional engineer or licensed geologist shall prepare and sign these documents. This report shall also be  
7   signed by the owner or operator. Upon approval by the Division, this report shall be placed in the operating record.

8   (q) When, upon completion of the certification, the Division determines that the corrective action remedy has been  
9   completed in accordance with Paragraph (o) of this Rule, the owner and operator shall be released from the  
10   requirements for financial assurance for the corrective action program under Rule .0546 of this Section and Section  
11   .1800 of this Subchapter. Nothing in this Paragraph shall release the owner or operator from the requirements for  
12   financial assurance for closure, post-closure care, or potential assessment and corrective action in accordance with  
13   Rule .0546 of this Section and Section .1800 of this Subchapter.

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15   *History Note:     Authority G.S. 130A-294;*  
16                    *Eff. January 1, 2007;*  
17                    *Readopted Eff. September 16, ~~2021~~ 2021;*  
18                    *Amended Eff. Pending Legislative Review.*  
19