

1 15A NCAC 18E .0601 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0601 LOCATION OF WASTEWATER SYSTEMS**

4 (a) Every wastewater system shall be located the minimum setbacks from the site features specified in Table IX.  
5 The setback shall be measured from the nearest wastewater system component sidewall or as otherwise specified in  
6 a system specific rule or PIA Approval.

7

8

**TABLE IX.** Minimum setbacks from all wastewater systems to site features

Site Features	Setback (feet)
<del>Any public water system or private water supply source, including a private drinking water well or spring</del> Any water supply well	100
A private drinking water [supply] well or upslope spring serving a single family dwelling unit with a wastewater system including the dispersal field repair area [ <del>A private drinking water well or upslope spring serving a single family dwelling and intended for domestic use</del> ]	50
Any other well or source not listed in this table, excluding monitoring wells	50
Surface waters classified <del>Water Supply Class I (WS-I),</del> <u>WS-I</u> , from mean high-water mark	100
Waters classified SA, from mean high-water mark	100
Any Class I or Class II reservoir, from normal pool elevation	100
Lake, pond, or stormwater retention pond, from flood pool elevation	50
Stormwater detention (temporary) pond	25
Any other coastal water, canal, marsh, stream, non-water supply spring, perennial waterbodies, intermittent or perennial streams, or other surface waters, from the mean high-water mark	50
Any water line, including fire protection and irrigation water lines	10
Geothermal aqueous closed loop wells	50
Geothermal direct expansion closed loop wells	50
Horizontal closed-loop geothermal system	15
Building foundation with artificial drainage	15
Building or other foundation without artificial drainage, including patio, deck, porch, stoop, lighting fixtures, or signage	5

supporting columns, or posts	
Any basement, cellar, or in-ground swimming pool	15
Buried storage tank or basin, except stormwater	15
Above ground swimming pool	5
Top of slope of embankment or cuts of two feet or more vertical height	15
Subsurface groundwater lowering system, ditch, or device, as measured on the ground surface from the edge of the feature	25
Surface water diversion, <u>except for an upslope swale or berm</u> , as measured on the ground surface from the edge of the diversion	15
<u>Interceptor drain – upslope</u>	<u>10</u>
<u>Interceptor drain – sideslope</u>	<u>15</u>
<u>Interceptor drain – downslope</u>	<u>25</u>
<u>Swale, Upslope swale or berm</u> , as measured on the ground surface from the edge of the swale	5
<u>Ephemeral stream</u>	<u>15</u>
Any stormwater conveyance (pipe or open <del>channel</del> ) <u>channel</u> , <u>excluding gutter drains [which] that connect to a stormwater conveyance or ephemeral stream</u>	15
Permanent stormwater retention basin or sediment detention basin	50
Bio-retention area, injection well, or infiltration gallery	25
Any other dispersal field, except designated dispersal field repair area for project site	20
Any property line	10
Burial plot or graveyard boundary	15
Above ground storage tank (from dripline or foundation pad, whichever is more limiting)	5
Utility transmission and distribution line poles and towers, including guy wires	15
Utility transformer, ground-surface mounted	10

1  
2 (b) Wastewater systems may be located closer than 100 feet from a private drinking water well water supply wells  
3 [or upslope spring] for repairs, space limitations, and other site-planning considerations. The wastewater system  
4 shall be located the maximum feasible distance and never less than 50 feet from the private drinking water well, a  
5 water supply well or upslope spring. The wastewater system may be located closer than 100 feet for a shared water  
6 supply well or wastewater system installed in saprolite ~~under the following conditions:~~ when a variance for a

1 ~~reduced separation has been issued [for the private drinking water water supply well] in accordance with Rule 15A~~  
2 ~~NCAC 02C .0118.~~

3 (1) ~~the private drinking water well is on a lot serving a single family dwelling and intended for~~  
4 ~~domestic use; or~~

5 (2) ~~a variance for a reduced separation has been issued for the private drinking water well in~~  
6 ~~accordance with 15A NCAC 02C .0118.~~

7 (c) Wastewater systems shall not be located closer than 100 feet to springs and uncased wells used as a source of  
8 drinking water and located downslope from the dispersal field.

9 (d) Initial and repair dispersal field systems shall not be located under impervious surfaces or areas subject to  
10 vehicular traffic unless approved in accordance with G.S. 130A-343 and Section .1700 of this Subchapter.

11 (e) If ~~effluent is conveyed~~ **a collection sewer is installed** under areas subject to vehicular traffic or areas subject to  
12 soil disturbance or compaction, one of the following **pipe materials** shall be used:

13 (1) DIP;

14 (2) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) sleeved in DIP;

15 (3) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) sleeved in DOT traffic rated culvert  
16 pipe;

17 (4) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) with 30 inches of compacted cover  
18 provided over the crown of the pipe; or

19 (5) other pipe materials may be proposed when designed, inspected, and certified by a PE and  
20 approved by the LHD.

21 (f) In addition to the requirements of Paragraph (a) of this Rule, wastewater systems with a proposed DDF greater  
22 than 3,000 gpd, as determined in Rule .0401 of this Subchapter, shall be located the minimum setbacks from the site  
23 features in Table X.

24  
25 **TABLE X.** Minimum setbacks from wastewater systems greater than 3,000 gpd to site ~~features\*~~ **features**

<b>Feature</b>	<b>Setback (feet)</b>
Any Class I or II reservoir or any public water system source utilizing a shallow (under 50 feet) groundwater aquifer	500
Any other public water system source, unless a confined aquifer	200
Any private water supply source, unless a confined aquifer	100
Surface water classified WS- I, from mean high-water mark	200
Surface waters classified WS-II, WS-III, B, or SB, from mean high-water mark	100
Waters classified SA, from mean high-water mark	200
Any property line	25

26 ~~\*Increased setbacks for separate dispersal fields that are part of wastewater systems with a DDF greater than 3,000~~  
27 ~~gpd shall not apply to one or more field(s) that are designed for less than or equal to 1,500 gpd when a Special Site~~

1 Evaluation in accordance with Rule .0510 of this Subchapter demonstrates that the wastewater system will comply  
 2 with the performance requirements in Rule .0510(d) of this Subchapter.

3  
 4 (g) Wastewater systems with a DDF greater than 3,000 gpd that ~~[meets]~~ meet the requirements of Rule ~~[.0510(d)]~~  
 5 .0510(f) of this Subchapter may use the setbacks identified in Table IX of this Rule.

6 ~~(g)(h)~~ In addition to the requirements of Paragraph (a) of this Rule, ~~collection~~ Collection sewers shall be located the  
 7 minimum setbacks to site features shown in Table XI.

8  
 9 **TABLE XI.** Minimum setbacks from collection sewers to site features

Feature	Setback (feet)
Any public water system source, including wells, springs, and Class I or Class II reservoirs	100, unless the collection sewer is constructed of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 50 ft*
Any private water supply source, including wells and springs	50, unless the collection sewer is construction of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 25 ft*
Surface waters classified WS-I, WS-II, WS-III, B, SA, or SB, from flood pool elevation	50, unless the collection sewer is construction of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 10 ft*
Any other stream, canal, <del>marsh,</del> <u>marsh,</u> coastal water, lakes, <u>ponds,</u> and other impoundments, or other surface waters	10
Geothermal aqueous closed loop wells	25
Geothermal direct expansion closed loop wells	25
Horizontal closed loop geothermal wells	5
Any basement, cellar, or in-ground swimming pool	10
Top of slope of embankment or cuts of two feet or more vertical height	5
Surface water diversion, as measured on the ground surface from the edge of the diversion	5
Any stormwater conveyance (pipe or open	10

channel) or ephemeral stream	
Permanent stormwater retention basin or sediment detention basin	10
Bio-retention area, injection well, or infiltration gallery	5
Any other dispersal field except designated dispersal field repair area for project site	5
Any property line	5
Burial plot or graveyard boundary	5
Utility transmission and distribution line poles and towers, including guy wires	5
Utility transformer, ground-surface mounted	5

\*Pipe materials other than DIP shall be acceptable when the materials conform to materials, testing methods, and acceptability standards meeting water main standards and when the line has been designed, installed, inspected, and certified by a PE and approved by the LHD.

(h)(i) The minimum setback from water lines to collection sewers shall be 10 feet. If a 10 foot setback is not maintained, the following criteria shall be met: feet, except as follows:

- (1) the water line is laid in a separate trench with the elevation of the bottom of the water line 18 inches above the top of the collection sewer; or
- (2) the water line is laid in the same trench as the collection sewer with the water line located on one side of the trench, on a bench of undisturbed earth and with the elevation of the bottom of the water line 18 inches above the top of the collection sewer. The collection sewer shall be located the maximum setback width of the trench from the water line within the trench. line.

(i)(j) Crossings of collection sewers and a water line may occur with the following: Collection sewers and water lines shall not cross, except as follows:

- (1) 18 inches clear vertical separation distance is maintained, with the sewer line collection sewer passing crossing under the water line; or
- (2) the water line crosses under the sewer line collection sewer or 18 inches clear vertical separation distance is not maintained and the following criteria are met:
  - (A) the collection sewer shall be is constructed of DIP with joints equivalent to water main standards and extend 10 feet on each side of the point of crossing, with full sections of pipe centered at the point of crossing; and
  - (B) the water line shall be is constructed of ferrous materials and with joints equivalent to water main standards and extend a minimum of 10 feet on each side of the point of crossing, with full sections of pipe centered at the point of crossing.

(i)(k) Collection sewers may cross a storm drain if shall not cross storm drains, except as follows:

- 1 (1) 12 inches clear vertical separation distance is ~~maintained;~~ maintained between the collection sewer  
2 and storm drain;
- 3 (2) the collection sewer is constructed of DIP with mechanical joints or restrained push-on joints  
4 equal to water main standards; or
- 5 (3) the collection sewer is encased in concrete or DIP for a minimum of five feet on either side of the  
6 crossing.

7 ~~(k)(l)~~ Collection sewers ~~may cross over a~~ shall not cross under a ~~stream if:~~ stream, except as follows:

- 8 (1) a minimum of 36 inches of stable cover is maintained;
- 9 (2) the sewer line collection sewer is constructed of DIP with mechanical joints or restrained push-on  
10 joints equal to water main standards; or
- 11 (3) the sewer line collection sewer is encased in concrete or DIP for a minimum of 10 feet on either  
12 side of the crossing and protected against the normal range of high and low water conditions,  
13 including the 100-year flood or wave action.

14 ~~(l)(m)~~ Collection sewer aerial crossings shall be constructed of DIP with mechanical joints or restrained push-on  
15 ~~joints.~~ joints equal to water main standards and freeze protected. Pipe shall be anchored for a minimum of 10 feet  
16 on either side of the crossing.

17 ~~(m)(n)~~ Septic tanks, pump tanks, grease tanks, raw sewage lift stations, wastewater treatment plants, sand filters,  
18 and other advanced pretreatment systems shall not be located in areas subject to flood at a frequency greater than a  
19 10-year storm. ~~frequent flooding (areas inundated at a 10-year or less frequency);~~ unless designed and installed to be  
20 watertight and to remain operable during a 10-year storm. Mechanical or electrical components of treatment systems  
21 shall be above the 100-year flood level or otherwise protected against a 100-year flood.

22

23 *History Note: Authority G.S. 130A-334; 130A-335(e) and (f).*

24 *Eff. December 1, 2018*

1 15A NCAC 18E .0602 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0602 APPLICABILITY OF SETBACKS**

4 (a) The minimum setback requirements in Table IX of Rule ~~.0601~~ **.0601(a)** of this Section for SA waters,  
5 basements, property lines, ~~or and~~ cuts of two feet or more vertical height, shall not apply to the installation of a  
6 single wastewater system serving a single-family residence with a maximum DDF of 480 gpd on a lot or tract of  
7 land that meets the following requirements:

- 8 (1) on July 1, 1977, is described in a deed, contract, ~~or~~ other instrument conveying fee ~~title title,~~ or  
9 ~~that is described~~ in a recorded plat;  
10 (2) ~~is of~~ insufficient size to satisfy the minimum setback requirements in Table IX of Rule ~~.0601~~  
11 **.0601(a)** of this Section for SA waters, ~~basement, basements,~~ property lines, ~~or and~~ cuts of two  
12 feet or more vertical height of this Section on July 1, 1977; and  
13 (3) cannot be served by a community or public sewerage system on the date system construction is  
14 proposed to begin.

15 (b) For those lots or tracts of land described in Paragraph (a) of this Rule, the maximum feasible setback ~~as~~  
16 ~~determined by an authorized agent~~ shall be ~~required. The minimum setbacks in Table XII shall be required in all~~  
17 ~~eases. required, but shall not be less than the minimum setbacks in Table XII.~~

18  
19 **TABLE XII.** Minimum setbacks from wastewater systems to specific site features on lots described in this Rule

Feature	Minimum setback (feet)
SA waters from mean high-water mark	50
Basement	8
Property line	5
Cuts of two feet or more vertical height	5

20  
21 (c) For ~~wastewater systems installed in Group I soils on those~~ lots or tracts of land that meet the requirements of  
22 Paragraph (a) of this Rule, ~~and the wastewater system will be installed in Group I soils,~~ the wastewater system shall  
23 be located ~~as far as possible, but not the maximum feasible distance but no~~ less than 10 feet from any other  
24 wastewater system.

25 (d) For ~~wastewater systems installed on those~~ lots or ~~tract tracts~~ of land which, on July 1, 1982, are specifically  
26 described in a deed or recorded ~~plat plat,~~ and the ~~wastewater system cannot meet the~~ minimum ~~horizontal~~ setbacks  
27 in Table IX of Rule ~~.0601~~ **.0601(a)** of this Section for groundwater lowering ~~systems systems,~~ ~~cannot be met,~~ the  
28 ~~wastewater system shall be located the~~ maximum feasible horizontal distance ~~as determined by the authorized agent~~  
29 ~~shall be required. The minimum setback shall not be~~ ~~but no~~ less than 10 feet ~~from the groundwater lowering system.~~

30 (e) Any ~~rules and regulations of the Commission for Public Health or any~~ local board of health ~~ordinances~~ in effect  
31 on June 30, 1977, which establish greater minimum ~~distance setback~~ requirements than those provided for in this

1 Section, shall remain in effect and shall apply to a lot or tract of land to which Table IX of Rule ~~.0601~~ .0601(a) of  
2 this Section does not apply.

3

4 *History Note: Authority G.S. 130A-335(e).*

5 *Eff. December 1, 2018*

1 15A NCAC 18E .0701 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0701 COLLECTION SEWERS**

4 (a) Collection sewers shall be designed and constructed in accordance with the following criteria:

- 5 (1) Building drains and building sewers shall be in accordance with the North Carolina Plumbing  
6 Code and approved by the local building inspector.
- 7 (2) Pipe material shall be specified to comply with the applicable ASTM standards based on pipe  
8 material.
- 9 (3) Gravity sewers shall be designed to maintain minimum scour velocities of two feet per second  
10 with the pipe half full and one-foot per second at the peak projected instantaneous flow rate. Force  
11 mains shall be sized to obtain a minimum two-foot per second scour velocity at the projected  
12 pump operating flow rate.
- 13 (4) Infiltration and exfiltration shall not exceed 100 gpd per inch diameter per mile of gravity sewer  
14 pipe or 20 gpd per inch diameter per mile of pressure pipe in force mains and supply lines.
- 15 (5) Three-foot minimum cover shall be provided for all collection sewers, except as provided for in  
16 Rule ~~.0601(e)~~ .0601(e)(4) of this Subchapter.
- 17 (6) Ferrous material pipe or other pipe designed and bedded for traffic-bearing loads shall be provided  
18 where collection sewers are subject to ~~traffic-bearing loads.~~ vehicular traffic.
- 19 (7) Manholes shall be used for gravity collection sewers at any bends, junctions, and a maximum of  
20 every 425 feet along the ~~sewer lines.~~ collection sewer. Drop manholes are shall be required where  
21 the inlet to outlet elevation difference exceeds two and one half feet. Manhole lids shall be  
22 watertight if located below the 100-year flood elevation, within 100 feet of any public water  
23 supply system source, or within 50 feet of any private water system source or any surface waters  
24 classified WS-I, WS-II, WS-III, SA, SB, or B.
- 25 (8) Cleanouts may be used instead of manholes for four-inch and six-inch sewers serving one or two  
26 design units, or as otherwise allowed by the North Carolina Plumbing Code. Cleanouts are shall be  
27 required a maximum of every 100 feet for four or six-inch sewers and at all junctions and bends  
28 which exceed 45 degrees, unless otherwise allowed by the North Carolina Plumbing Code.
- 29 (9) Collection sewers may require additional ventilation provisions. Air relief valves shall be provided  
30 as needed for force mains. Air relief valves shall be provided as needed for force mains when the  
31 length exceeds 1,000 feet or for intermediate high points that exceed five feet.
- 32 (10) Collection sewers may require additional ventilation provisions, such as a stand pipe, based on  
33 length, size, and location.

34 (b) STEP systems may be used as an alternative to gravity collection sewers.

35  
36 *History Note:* Authority G.S. 130A-335(e), (f), and (f1).

37 Eff. December 1, 2018

1 15A NCAC 18E .0702 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0702 RAW SEWAGE LIFT STATIONS**

4 (a) Raw sewage lift stations permitted by the LHD shall meet all setbacks for wastewater systems in accordance  
5 with Table IX of Rule .0601(a) [.0601] of this Subchapter. If the raw sewage lift station is a sealed, watertight  
6 chamber the setbacks requirements for collection sewers in Rule .0601(g) [.0601(h)] of this Subchapter shall apply.

7 (b) Raw sewage lift stations shall meet the following design and construction standards:

8 ~~(1) sealed, watertight chamber shall be a prefabricated unit with a sealed top cover, and preformed~~  
9 ~~inlet and outlet pipe openings connected with solvent welds, O-ring seals, rubber boots, stainless~~  
10 ~~steel straps, or equivalent;~~

11 ~~(2)~~(1) dual pumps shall be provided for stations serving two or more buildings or for a facility with more  
12 than six water closets;

13 ~~(3)~~(2) pumps shall be listed by a third-party electrical testing and listing agency, such as Underwriter's  
14 Laboratories or an equivalent third party electrical testing and listing agency; Laboratories;

15 ~~(4)~~(3) pumps shall be grinder pumps or solids-handling pumps capable of handling a minimum of three-  
16 inch spheres. If the raw sewage lift station serves no more than a single water closet, lavatory, and  
17 shower, two-inch solids handling pumps shall be acceptable;

18 ~~(5)~~(4) minimum pump ~~operating flow rate~~ capacity shall be two and one half times the average daily  
19 flow;

20 ~~(6)~~(5) raw sewage lift stations serving single buildings shall be designed for pump ~~run times~~ run times  
21 between three to 10 minutes at average daily flow;

22 ~~(7)~~(6) pump station emergency storage capacity and total liquid capacity shall be determined in  
23 accordance with Rule .0802 of this Subchapter except for a sealed, watertight chamber serving an  
24 individual building, in which case a minimum storage capacity of eight hours shall be required;  
25 and

26 ~~(8)~~(7) all ~~other~~ applicable requirements for pump tanks and dosing systems in accordance with as set  
27 forth in Rule .0802 and Section .1100 of this Subchapter shall also apply to raw sewage lift  
28 stations.

29 (c) A raw sewage lift station that is a sealed, watertight chamber shall meet the setbacks requirements for collection  
30 sewers in Rule .0601(h) of this Subchapter. Sealed, watertight chambers shall be a single prefabricated unit with a  
31 sealed top cover, and preformed inlet and outlet pipe openings connected with solvent welds, O-ring seals, rubber  
32 boots, stainless steel straps or equivalent.

33  
34 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

35 *Eff. December 1, 2018*

1 15A NCAC 18E .0703 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0703 PIPE MATERIALS**

4 (a) The gravity pipe between a septic tank, gravity distribution device, and the dispersal field shall be a minimum of  
5 three-inch Schedule 40 PVC, Schedule 40 polyethylene, or Schedule 40 ABS, or alternative pipe material as  
6 specified in this Rule. ABS.

7 (b) Three-inch or greater non-perforated polyethylene corrugated tubing, PVC SDR 21 and SDR 26 pressure rated  
8 at 160 psi or greater and labeled as compliant with ASTM D2241, PVC SDR 35 gravity sewer pipe rated as  
9 compliant with ASTM D3034, or alternative non-perforated pipe materials described in Paragraph (d) of this Rule,  
10 may be substituted for Schedule 40 between the distribution device and the dispersal field when the following  
11 minimum installation criteria are met:

- 12 (1) the pipe is placed on a compacted, smooth surface free of indentations or clods at a uniform grade,  
13 and with an excavation width of one-foot;
- 14 (2) the pipe is placed in the middle of the excavation with three inches of clearance between the pipe  
15 and the walls;
- 16 (3) a washed gravel or crushed stone envelope is placed in the excavation on both sides of the pipe  
17 and to a point two inches above the top of the pipe;
- 18 (4) six inches of soil cover is placed and compacted over the stone or gravel envelope; and
- 19 (5) earthen dams consisting of two feet of undisturbed or compacted soil are placed located at both  
20 ends of the excavation separating the trench from the distribution device.

21 (c) All pipe joints from the septic tank to the dispersal field shall be watertight. Solvent cement-joints shall be made  
22 in a two-step process with primer manufactured for thermoplastic piping systems and solvent cement conforming to  
23 ASTM D2564.

24 (d) Pipe used for gravity distribution laterals shall be corrugated plastic tubing certified as complying with ASTM  
25 F667 or smooth-wall plastic pipe certified as complying with ASTM ~~D2729~~, D2729 or ASTM F810. The pipe shall  
26 be marked as complying with ASTM standards. The corrugated tubing or smooth-wall pipe shall have three rows of  
27 holes, each hole between ½-inch and ¾-inch in diameter, and spaced longitudinally approximately four inches on  
28 centers. The rows of holes may be equally spaced 120 degrees on centers around the pipe periphery, or three rows  
29 may be located in the lower portion of the tubing, the outside rows being approximately on 120-degree centers. The  
30 holes may be located in the same corrugation or staggered in adjacent corrugations. Other types of pipe may be used  
31 for laterals provided the pipe satisfies the requirements of this Section Rule and is approved by the State.

32 (e) Pump discharge piping, including the force main to the next component in the wastewater system, shall be of  
33 Schedule 40 PVC or stronger material and pressure rated for water service at a minimum of 160 psi or two times the  
34 maximum operating pressure, whichever is greater. The pipe shall meet ASTM D1784, ASTM D1785, and ASTM  
35 D2466.

36 (f) Alternative pipe Pipe materials other than those identified in this Rule may be proposed when designed and  
37 certified by a PE, including any installation and testing procedures. Gravity pipe materials shall be shown to meet

1 the requirements of Paragraphs (a), (b), and (c) of this Rule. Alternative pressure rated pipe materials shall be  
2 constructed of PVC, polyethylene, or other pressure rated pipe and ~~comply with~~ conform to applicable ASTM  
3 standards for pipe material and methods of joining. The proposed pipe shall be installed per ASTM D2774.  
4 Installation testing shall include a hydrostatic pressure test similar to pressure testing required for water mains for  
5 any line exceeding 500 feet in length and shall comply with the requirements of Rule ~~.0701(4)~~ .0701(a)(4) of this  
6 Section.

7  
8 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*  
9 *Eff. December 1, 2018*

1 15A NCAC 18E .0901 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0901 GENERAL DESIGN AND INSTALLATION CRITERIA FOR SUBSURFACE**  
4 **DISPERSAL SYSTEMS**

5 (a) Wastewater systems shall be used on sites classified suitable in accordance with Rule .0509 of this Subchapter.  
6 The sizing and siting criteria in this Rule [Section are] shall be based on soil receiving DSE. The site shall meet the  
7 following minimum criteria:

- 8 (1) 12 inches of naturally occurring soil between the infiltrative surface and any ~~LC or SWC~~; LC; and  
9 (2) 18 inches of separation between the infiltrative surface and any SWC if more than six inches of  
10 separation consists of Group I soils.

11 (b) If any part of the trench or bed media extends above the naturally occurring soil surface, the system shall be a  
12 fill system and must meet the requirements of Rule .0909 of this Section.

13 (c) The LTAR shall be determined in accordance with the following:

- 14 (1) Tables XVI and XVII shall be ~~used~~; used, as applicable;  
15 (2) ~~the LTAR shall be assigned based upon soil textural class or saprolite textural class, as applicable,~~  
16 ~~structure, consistence, SWC, depth, percent coarse rock, landscape position, topography, and~~  
17 ~~system type~~;  
18 (2)(3) LTARs determined from Table XVI shall be based on the soil textural class of the most limiting,  
19 naturally occurring soil horizons ~~horizon within the trench and~~ to a depth of 12 inches below the  
20 infiltrative surface (18 inches to any SWC if more than six inches of the separation consists of  
21 Group I soils);  
22 (3)(4) LTARs determined from Table XVII shall be based on the saprolite textural class of the most  
23 limiting, naturally occurring saprolite to a depth of 24 inches (or less if combined with soil) soil in  
24 accordance with Rule .0506(b) of this Subchapter) below the infiltrative surface; and  
25 (4) ~~the LTAR shall be assigned based upon soil textural class, structure, consistence, SWC, depth,~~  
26 ~~percent coarse rock, landscape position, topography, and system type; and~~  
27 (5) for facilities that generate HSE as specified in Rule .0401(h) of this Subchapter or a facility with a  
28 full kitchen, the LTAR shall not exceed the mean rate for the applicable Soil ~~Group~~ Group. for  
29 effluent exceeding DSE as specified in Table III of Rule .0402 of this Subchapter. ~~[Subchapter or~~  
30 ~~for a facility with a full kitchen.]~~

31  
32 **TABLE XVI. LTAR for wastewater systems based on Soil Group and texture class**

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.8 – 1.2
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.6 – 0.8

		Loam	
III	Fine Loams	Sandy Clay Loam	0.3 – 0.6
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.1 – 0.4
		Silty Clay	
		Clay	

1  
2

**TABLE XVII.** LTAR for wastewater systems in saprolite based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.6 – 0.8
		Loamy Sand	0.5 – 0.7
II	Loams	Sandy Loam	0.4 – 0.6
		Loam	0.2 – 0.4
III	Fine Loams	Silt Loam	0.1 – <del>0.2</del> <u>0.3</u>
		<del>Sand</del> <u>Sandy</u> <del>Clay*</del> <u>Clay</u> <u>Loam*</u>	0.05 – 0.15

3 \* Sandy clay loam saprolite can only be used with advanced pretreatment in accordance with Section .1200 of this  
4 Subchapter.

5

6 (d) The minimum required infiltrative surface area and trench length shall be calculated in accordance with the  
7 following:

8 (1) ~~The the~~ minimum required infiltrative surface area shall be ~~determined~~ calculated by dividing the  
9 DDF by the ~~LTAR.~~ LTAR.

10 (2) ~~The the~~ minimum trench length shall be calculated by dividing the minimum required infiltrative  
11 surface area by the equivalent trench width. ~~The authorized agent may approve trench widths~~  
12 ~~between two and three feet.~~ The following equation shall be used to calculate the minimum trench  
13 length required:

14 TL = (DDF ÷ LTAR) ÷ ETW

15 Where TL = length of trench trench length (feet)

16 DDF = design daily flow (gpd)

17 LTAR = in gpd/ft<sup>2</sup>

- 1                   ETW = equivalent trench width ~~(feet) (feet)~~;
- 2           (3) ~~The the~~ area occupied by step-downs, drop boxes, and supply lines shall not be included as part of
- 3           the minimum required infiltrative surface ~~area. area.~~
- 4           (4) ~~The the~~ total trench length required for trench products other than conventional gravel shall be as
- 5           follows:
- 6           (A) for trench products identified in Section .0900 of this Subchapter, the minimum line
- 7           length shall be calculated in accordance with this Section; or
- 8           (B) for trench products approved under Section .1700 of this Subchapter, the minimum line
- 9           length shall be calculated in accordance with the PIA ~~Approval. Approval; and~~
- 10          (5) ~~When when~~ HSE is proposed to be discharged to a dispersal field with no advanced ~~pretreatment,~~
- 11          ~~pretreatment or has not been reclassified as DSE in accordance with Rule .0402(c) of this~~
- 12          ~~Subchapter, a licensed professional, if required in G.S. 89C, 89E, or 89F, shall calculate the mass~~
- 13          ~~loading on the soil adjusted LTAR in accordance with Rule .0402(b) .0402(b)(2) of this~~
- 14          Subchapter.
- 15          (e) ~~Any dispersal field where cover is [required,] required above the naturally occurring soil surface~~ Systems with
- 16          ~~less than 30 inches of suitable soil (or 36 inches in Group I soils) shall not be installed on slopes greater than 30~~
- 17          ~~percent. percent and shall be installed in accordance with Paragraph (f) of this Rule and soil cover above the original~~
- 18          ~~grade shall be placed over the entire dispersal field and shall extend laterally five feet beyond the trenches, with the~~
- 19          ~~dispersal field crowned at one half percent as measured from the centerline of the dispersal field.~~
- 20          (f) Soil cover above the original grade shall be placed over the entire dispersal field and shall extend laterally five
- 21          feet beyond the trenches. On level sites, the final grade of the dispersal field shall be crowned at one-half percent
- 22          ~~grade~~ as measured from the centerline of the dispersal field.
- 23          ~~(f)(g)~~ Wastewater system installation shall be in accordance with the following criteria:
- 24                  (1) ~~a device that measures elevation, such as~~ an engineer's ~~level, level or~~ laser ~~level, or equivalent~~
- 25                  ~~level~~ shall be used for the following:
- 26                          (A) staking (flagging) or marking on the ground surface the location of trenches on site
- 27                          before installation begins;
- 28                          (B) installation of the trenches; and
- 29                          (C) verification of elevations, excavations, and installation of other system components;
- 30                  (2) trenches shall be installed with 12 inches of naturally occurring suitable soil between the
- 31                  infiltrative surface and any unsuitable ~~LC or SWC. LC.~~ If the vertical separation between the
- 32                  infiltrative surface and any SWC is less than 18 inches, and if more than six inches of the
- 33                  separation consists of Group I soils, a pressure dispersal system shall be required;
- 34                  (3) the trenches shall follow the ground contour. Trenches may be installed level but off contour if an
- 35                  authorized agent has determined that there is sufficient vertical separation ~~distance~~ to a LC ~~or~~
- 36                  SWC along the entire trench length in accordance with ~~Subparagraph (f)(2) (g)(2) of this Rule;~~
- 37                  Paragraph;

- 1 (4) the lateral shall be centered horizontally in the trench;
- 2 (5) ~~final soil cover over the dispersal field shall be a minimum of six inches deep after settling. The~~  
3 ~~finished grade over the tanks and dispersal field shall be sloped to shed surface water. Surface~~  
4 ~~water runoff, including stormwater, gutter drains, or downspouts, shall be diverted away from the~~  
5 ~~wastewater system; the type and placement of soil cover shall be approved by the authorized agent~~  
6 ~~in accordance with this Subparagraph. The cover material shall not have more than 10 percent by~~  
7 ~~volume of fibrous organics, building rubble, rocks, or other debris and shall be Soil Groups II or~~  
8 ~~III.~~
- 9 (6) ~~the type and placement of soil cover shall be approved by the authorized agent. The cover material~~  
10 ~~shall have not more than 10 percent by volume of fibrous organics, building rubble, rocks, or other~~  
11 ~~debris and shall be Soil Groups II or III; final soil cover over the dispersal field shall be a~~  
12 ~~minimum of six inches deep after settling. The finished grade over the tanks and dispersal field~~  
13 ~~shall be sloped to shed surface water;~~
- 14 (7) ~~surface water runoff, including stormwater, gutter drains, or downspouts, shall be diverted away~~  
15 ~~from the wastewater system. No depressions shall be allowed over the dispersal field area;~~
- 16 (7)(8) Schedule 40 PVC or other ~~State approved equivalent~~ pipe ~~approved pursuant to Section .0700 of~~  
17 ~~this Subchapter~~ may be used as needed to connect sections of trench and overcome site limitations.  
18 The ~~trench~~ bottom area ~~of trench~~ where solid piping is installed shall not be included as part of the  
19 minimum ~~area~~ required ~~for infiltrative surfaces;~~ ~~surface area;~~
- 20 (8)(9) gravity effluent distribution components including distribution boxes, drop boxes, and flow  
21 diversion devices shall be ~~of sound construction,~~ watertight, corrosion resistant, ~~constructed to~~  
22 ~~withstand active and passive loads,~~ and ~~their installation shall~~ meet the following criteria:
- 23 (A) separated by a minimum of two feet of undisturbed soil from the septic tank and  
24 trench(es);
- 25 (B) placed level on a solid foundation of undisturbed soil, pea gravel, or concrete to prevent  
26 differential settling of the component; and
- 27 (C) backfilled by hand to minimize disturbance;
- 28 (9)(10) when parallel distribution is used to distribute effluent to the trenches, the installer shall  
29 demonstrate ~~to the authorized agent during the final inspection~~ that the distribution devices  
30 perform as designed;
- 31 (10)(11) serial and sequential distribution ~~shall be approved by the authorized agent when the may be used~~  
32 ~~when approved by the authorized agent. The~~ step-down or drop box in an individual trench ~~shall~~  
33 ~~be is~~ constructed to allow full utilization of the upstream trench prior to overflowing to the next  
34 downslope trench ~~through either a stepdown or drop box~~ in accordance with ~~Subparagraphs (f)(11)~~  
35 ~~(g)(11) and (f)(12) (g)(12) of this Rule; the following criteria:~~
- 36 (A) ~~step-downs shall be constructed of a minimum of two feet of undisturbed soil, bedding~~  
37 ~~material, or concrete and the effluent shall be conveyed over the step-down through~~

1 Schedule 40 PVC or other pipe approved in accordance with Rule .0703 of this  
2 Subchapter. The installer shall demonstrate that the step-downs perform as designed. The  
3 authorized agent shall approve the step-downs when the installation and elevations have  
4 been verified in accordance with the CA; and

5 (B) drop boxes shall be separated from the trench by a minimum of two feet of undisturbed  
6 soil and constructed to allow for full utilization of the upstream trench prior to  
7 overflowing to the next lower drop box. The installer shall demonstrate that the drop  
8 boxes perform as designed. The authorized agent shall approve the drop boxes when the  
9 installation and elevations have been verified in accordance with the CA; and

10 ~~(11) — step-downs shall be constructed of a minimum of two feet of undisturbed soil, bedding material, or~~  
11 ~~concrete and the effluent shall be conveyed over the step-down through Schedule 40 PVC or other~~  
12 ~~equivalent State approved pipe in accordance with Rule .0703 of this Subchapter. The installer~~  
13 ~~shall demonstrate that the step-downs perform as designed;~~

14 ~~(12) — drop boxes shall be separated from the trench by a minimum of two feet of undisturbed soil and~~  
15 ~~constructed so that the invert of the inlet supply pipe is a minimum of one inch above the invert of~~  
16 ~~the outlet supply pipe which is connected to the next lower drop box. The installer shall~~  
17 ~~demonstrate that the drop boxes perform as designed; and~~

18 ~~(13)~~(12) trench products other than conventional gravel shall be installed as follows:

- 19 (A) for trench products identified in Section .0900, the trench products shall be installed in  
20 accordance with this Section; or  
21 (B) for trench products approved under Section .1700 of this Subchapter, the trench products  
22 shall be installed in accordance with their PIA Approval.

23 ~~(g)~~(h) Alternating dual dispersal fields shall only be used with DSE in Soil Groups III and IV. Alternating dual  
24 dispersal fields shall be approved when designed and installed in accordance with Paragraph ~~(f)~~ (g) of this Rule and  
25 the following:

- 26 (1) both initial and repair dispersal fields shall be installed at the same time;  
27 (2) initial and repair dispersal fields of the same system type are each sized at a minimum of 75  
28 percent of the total trench length required;  
29 (3) the initial and repair dispersal fields shall be separated by an effluent flow diversion valve(s);  
30 (4) diversion valve(s) shall be resistant to 500 pounds crushing strength and ~~resistant to corrosion;~~  
31 corrosion resistant;  
32 (5) effluent flow diversion valves shall be installed below finished grade in a valve box and be  
33 accessible and operable from the ground surface;  
34 (6) trench products approved under Section .1700 of this Subchapter shall be installed in accordance  
35 with their PIA Approval; and

1           (7)    the maximum reduction in trench length is 25 ~~percent,~~ percent as compared to a conventional  
2                   gravel system, unless a greater percentage is specifically identified specified in a PIA Approval or  
3                   this Subchapter.  
4

5    *History Note:*    *Authority G.S. 130A-335(e), (f), and (f1).*  
6                    *Eff. December 1, 2018*

1 15A NCAC 18E .0902 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0902 CONVENTIONAL WASTEWATER SYSTEMS**

4 (a) A conventional wastewater system consists, at a minimum, shall consist of an approved a septic tank and a  
5 gravity distribution dispersal field. Except as otherwise required in this Rule, the requirements of Rule .0901 of this  
6 Section shall apply. In addition to the requirements set forth in Rule .0901 of this Section, this Rule shall apply to  
7 conventional wastewater systems as defined in G.S. 130A-343.

8 ~~(b) Conventional wastewater systems shall be used on sites that have been classified suitable in accordance with~~  
9 ~~Rules .0509 of this Subchapter. Sites classified suitable as to soil depth may utilize shallow placement of dispersal~~  
10 ~~system~~

11 ~~(c)(b) The LTAR shall be determined in accordance with Rule .0901(c) of this Section. An equivalent trench~~  
12 ~~width of three feet shall be used to determine trench length in accordance with Rule .0901(d) of this Section.~~

13 (e) The authorized agent may approve trench widths between two and three feet.

14 ~~[(d) The minimum required infiltrative surface and trench length shall be calculated in accordance with Rule~~  
15 ~~.0901(d) of this Section.]~~

16 ~~(d)(e)(b) Conventional wastewater system installation shall be in accordance with Rule .0901(e) .0901(g) of this~~  
17 ~~Section and the following: In addition to the installation requirements set forth in Rule .0901(g) of this Section, the~~  
18 ~~following shall apply:~~

- 19 (1) trenches shall be constructed level in all directions with a plus or minus one-half inch tolerance  
20 from side-to-side and the maximum fall ~~in a~~ in a single trench ~~bottom~~ not to exceed one-fourth  
21 inch in 10 feet as determined a device that measures elevation, such as by an engineer's level, level  
22 or laser level, or equivalent; level.
- 23 (2) trenches shall be located not less than three times the trench width on centers. The minimum  
24 spacing for trenches is six feet on center;
- 25 (3) trench widths shall not exceed be at least two feet, but no more than three feet and trench depth  
26 shall not exceed 36 inches on the downslope side of the trench, except as approved by an  
27 authorized agent; ~~and~~
- 28 (4) aggregate used in trenches shall be clean, washed gravel or crushed stone and graded or sized in  
29 accordance with size numbers 4, 5, or 6 of ASTM D448. The aggregate shall be distributed  
30 uniformly across the infiltrative surface and over the pipe and placed 12 inches deep with a  
31 minimum of six inches below the pipe and two inches over the ~~pipe.~~ pipe; and
- 32 (5) the laterals shall meet the requirements of Rule .0703(d) of this Subchapter.

33  
34 *History Note:* Authority G.S. 130A-335(e) and (f)-(f); 130A-343.  
35 Eff. December 1, 2018

1 15A NCAC 18E .0903 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0903 BED SYSTEMS**

4 (a) This Rule ~~provides for the permitting of~~ shall apply to bed systems receiving DSE. ~~Bed systems shall be limited~~  
5 ~~to 600 gpd DDF unless specifically approved for a greater DDF in accordance with a PIA Approval. Except as~~  
6 ~~otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply.~~

7 (b) Bed systems shall be limited to 600 gpd unless approved for a greater DDF in accordance with a PIA Approval.

8 ~~(b)(c) The site has been classified suitable in accordance with Rule .0509 of this Subchapter. Beds may be permitted~~  
9 ~~on sites that~~ Sites for bed systems shall meet the following criteria:

- 10 (1) soil texture is Group I, II, or III; and  
11 (2) design options for the site are limited by topography or available space.

12 ~~(e)(d) The LTAR shall be determined in accordance with Rule .0901(e) of this Section.~~ The number of square feet  
13 of infiltrative surface area required shall be increased by 50 percent over that required for a trench system as  
14 calculated in accordance with Rule .0901(d) of this Section.

15 ~~(d)(c) Bed system installation shall be in accordance with Rule .0901(f) [ .0901(g) ] of this Section and the~~  
16 ~~following:~~ In addition to the installation requirements set forth in Rule .0901(g) of this Section, the following shall  
17 apply:

- 18 (1) the bottom of the bed shall be excavated level, plus or minus one-half inch, in all directions;  
19 (2) laterals shall be ~~a minimum of~~ one and one-half feet from the side of the bed;  
20 (3) laterals shall be placed on three-foot centers;  
21 (4) aggregate used shall comply with the lateral design criteria shall meet the requirements of Rule  
22 ~~.0902(d)(3) and (4) [ .0902(d)(4) ] .0902(b)(4) of this Section; Section for gravity and pressure~~  
23 ~~closed gravity distribution systems;~~  
24 (5) products approved under Section .1700 of this Subchapter shall be installed in accordance with  
25 their PIA Approval;  
26 (6) the gravel surface shall be covered by an approved geo-textile fabric capable of preventing the  
27 downward movement of soil particles while allowing the movement of liquids and gases; and  
28 (7) when pressure dispersal is used, the lateral design criteria shall meet the minimum requirements of  
29 ~~Rules .0907(d) .0907(e) and (e)(f) or .0908(e) .0908(d) and (e)(f) of this Section or in accordance~~  
30 ~~with a PIA Approval when pressure dispersal is used. Approval.~~

31  
32 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

33 *Eff. December 1, 2018*

1 15A NCAC 18E .0904 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0904 LARGE DIAMETER PIPE SYSTEMS**

4 (a) ~~Large diameter pipe (LDP)~~ LDP systems consist of laterals composed of eight-inch inside diameter (10-inch  
5 outside diameter) or 10-inch ~~(inside diameter)~~ inside diameter (12-inch outside diameter) corrugated, polyethylene  
6 tubing encased in a nylon and polyester blend filter wrap that are installed in trenches in the dispersal field. LDP  
7 systems shall only be used with DSE. Except as otherwise required in this Rule, the requirements of Rule .0901 of  
8 this Section shall apply.

9 ~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

10 (b) LDP pipe, filter wrap, and fittings shall meet the following criteria:

11 (1) pipe and fittings shall comply with the requirements of ASTM F667;

12 (2) the corrugated pipe shall have two rows of holes, each hole between three-eighths inch and one-  
13 half inch in diameter, located 120 degrees apart along the bottom half of the pipe (each 60 degrees  
14 from the bottom center line) and staggered so that one hole is present in the valley of each  
15 corrugation;

16 (3) pipe shall be marked with a visible top location indicator, 120 degrees away from each row of  
17 holes;

18 (4) corrugated pipe shall be covered with filter wrap at the factory;

19 (5) filter wrap shall be spun, bonded, or spunlaced nylon, polyester, or nylon/polyester blend filter  
20 wrap meeting the minimum requirements in Table XVIII; and

21 (6) the LDP with filter wrap shall be encased in a black polyethylene sleeve prior to installation in the  
22 trench to prevent physical damage and ultraviolet radiation deterioration of the filter wrap.

23  
24 **Table XVIII. Minimum filter wrap requirements for LDP**

<b>Property</b>	<b>Value</b>
<b>Unit Weight</b>	<b>1.0 ounce per square yard</b>
<b>Sheet Grab Tensile Strength</b>	<b>Machine Direction: 23 pounds</b>
<b>Trapezoid Tear Strength</b>	<b>Machine Direction: 6.2 pounds</b> <b>Cross Direction: 5.1 pounds</b>
<b>Mullen Burst Strength</b>	<b>40 psi or 276 kilopascals</b>
<b>Frazier Air Permeability</b>	<b>500 cubic feet per minute per square foot at</b> <b>pressure differential of 0.5 inches of water</b>

25  
26 (c) The requirements of Rule .0901 of this Section shall apply to LDP systems except as follows:

27 (1) the LTAR determined in accordance with Rule .0901(c) of this Section shall not exceed 0.8  
28 gpd/ft<sup>2</sup>; and

(2) to calculate the minimum trench length in accordance with Rule .0901(d) of this Section, an equivalent trench width of two feet shall be used for eight-inch LDP and two and one-half feet shall be used for 10-inch LDP.

(e)(b) The LTAR shall be determined in accordance with Rule .0901(e) of this Section except the LTAR shall not exceed 0.8 gpd/ft<sup>2</sup>. To calculate the minimum trench length in accordance with Rule .0901(d) of this Section, an equivalent trench width of two feet shall be used for eight inch LDP and an equivalent trench width of two and one-half feet shall be used for 10 inch LDP.

(d)(c) LDP pipe, filter wrap, and fittings shall meet the following criteria:

(1) pipe and fittings shall comply with the requirements of ASTM F667;

(2) the corrugated pipe shall have two rows of holes, each hole between three eighths inch and one-half inch in diameter, located 120 degrees apart along the bottom half of the pipe (each 60 degrees from the bottom center line) and staggered so that one hole is present in the valley of each corrugation;

(3) pipe shall be marked with a visible top location indicator, 120 degrees away from each row of holes;

(4) corrugated pipe shall be covered with filter wrap at the factory;

(5) filter wrap shall be spun, bonded, or spunlaced nylon, polyester, or nylon/polyester blend filter wrap meeting the minimum requirements in Table XVIII; and

(6) the LDP with filter wrap shall be wrapped encased in a black polyethylene sleeve until immediately prior to installation in the trench to prevent physical damage and ultraviolet radiation deterioration of the filter wrap.

**Table XVIII. Minimum filter wrap requirements for LDP**

Property	Value
Unit Weight	1.0 ounce per square yard
Sheet Grab Tensile Strength	Machine Direction: 23 pounds
Trapezoid Tear Strength	Machine Direction: 6.2 pounds Cross Direction: 5.1 pounds
Mullen Burst Strength	40 psi or 276 kilopascals
Frazier Air Permeability	500 cubic feet per minute per square foot at pressure differential of 0.5 inches of water

(e)(d) LDP system installations shall be in accordance with Rule .0901(f) .0901(g) of this Section and the following: In addition to the requirements set forth in Rule .0901(g) of this Section, LDP system installations shall comply with the following:

(1) trenches for eight-inch LDP trenches shall be a minimum of 10 inches and a maximum of 18 inches wide. Trenches for ten-inch Ten-inch LDP trenches shall be a minimum of 12 inches and a maximum of 24 inches wide;

- (2) the infiltrative surface and pipe shall be level with a maximum fall of one inch in 100 feet;
- (3) backfill material shall have no more than 10 percent by volume of fibrous organics, building rubble, rocks, large clods, or other debris and shall be Soil Groups I, II, or III;
- (4) the LDP shall be connected to the collection sewer or a stepdown pipe using an offset adapter to create a mechanical joint; and
- (5) the minimum on center spacing for eight-inch LDP shall be five feet and for 10-inch LDP shall be six feet.

(d) LDP pipe, filter wrap, and fittings shall meet the following criteria:

- (1) pipe and fittings shall comply with the requirements of ASTM F667;
- (2) the corrugated pipe shall have two rows of holes, each hole between three eighths inch and one-half inch in diameter, located 120 degrees apart along the bottom half of the pipe (each 60 degrees from the bottom center line) and staggered so that one hole is present in the valley of each corrugation;
- (3) pipe shall be marked with a visible top location indicator, 120 degrees away from each row of holes;
- (4) corrugated pipe shall be covered with filter wrap at the factory;
- (5) filter wrap shall be spun, bonded, or spunlaced nylon, polyester, or nylon/polyester blend filter wrap meeting the minimum requirements in Table XVIII of this Paragraph; and
- (6) the LDP with filter wrap shall be wrapped encased in a black polyethylene sleeve until immediately prior to installation in the trench to prevent physical damage and ultraviolet radiation deterioration of the filter wrap.

**Table XVIII. Minimum filter wrap requirements for LDP**

<b>Property</b>	<b>Value</b>
<b>Unit Weight</b>	1.0 ounce per square yard
<b>Sheet Grab Tensile Strength</b>	Machine Direction: 23 pounds
<b>Trapezoid Tear Strength</b>	Machine Direction: 6.2 pounds Cross Direction: 5.1 pounds
<b>Mullen Burst Strength</b>	40 psi or 276 kilopascals
<b>Frazier Air Permeability</b>	500 cubic feet per minute per square foot at pressure differential of 0.5 inches of water

*History Note: Authority G.S. 130A-335(e) and (f).  
Eff. December 1, 2018*

1 15A NCAC 18E .0905 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0905 PREFABRICATED PERMEABLE BLOCK PANEL SYSTEMS**

4 (a) PPBPS utilize both horizontal and vertical air chambers in a 16-inch PPBPS and are constructed to promote  
5 downline and horizontal distribution of effluent. PPBPS systems shall only be used with DSE. Except as otherwise  
6 required in this Rule, the requirements of Rule .0901 of this Section shall apply.

7 (b) The requirements of Rule .0901 of this Section shall apply to PPBPS systems except as follows:

8 (1) the LTAR determined in accordance with Rule .0901(c) of this Section shall not exceed 0.8  
9 gpd/ft<sup>2</sup>; and

10 (2) to calculate the minimum trench length in accordance with Rule .0901(d) of this Section, an  
11 equivalent trench width of six feet shall be used.

12 ~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

13 ~~(c)(b) The LTAR shall be determined in accordance with Rule .0901(c) of this Section except that the LTAR shall~~  
14 ~~not exceed 0.8 gpd/ft<sup>2</sup>. An equivalent trench width of six feet shall be used to determine trench length in accordance~~  
15 ~~with Rule .0901(d) of this Section.~~

16 ~~(d)(c) PPBPS installation shall be in accordance with Rule .0901(f) .0901(g) of this Section, the following, and the~~  
17 ~~manufacturer's specifications: In addition to the requirements set forth in Rule .0901(g) of this Section, PPBPS~~  
18 ~~system installations shall comply with the following and the manufacturer's specifications:~~

- 19 (1) PPBPS trenches shall be located a minimum of eight feet on ~~center~~; center or three times the  
20 trench width, whichever is greater;  
21 (2) trench sidewalls shall be raked in Group IV soils;  
22 (3) pressure dosed gravity distribution or pressure dispersal shall be used when the individual trench  
23 lengths are greater than 50 feet and less than or equal to ~~70 or whenever the DDF exceeds 480~~  
24 ~~gpd; 70 feet;~~ and  
25 (4) pressure dispersal shall be used when the individual trench lengths are greater than 70 feet.

26  
27 *History Note: Authority G.S. 130A-335(e) and (f).*  
28 *Eff. December 1, 2018*

1 15A NCAC 18E .0906 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0906 SAND LINED TRENCH SYSTEMS**

4 (a) Sand lined trench systems receiving DSE may be used on sites originally classified unsuitable due to SWC, soil  
5 morphology, restrictive horizon, or soil depth depth, and which that may be reclassified suitable in accordance with  
6 this Rule. Sand lined trenches can be used with Rule when there is a DDF less than or equal to 1,500 ~~gpd DDF~~ gpd.  
7 Sand lined trench systems with advanced pretreatment shall comply with Rule .1207 [.1205] of this Subchapter.  
8 Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply.

9 (b) Sand lined trench systems with advanced pretreatment shall comply with Rule .1205 of this Subchapter.

10 (b)(c) The soil and site shall meet the following criteria:

- 11 (1) the texture of the receiving permeable horizon is sand, loamy sand, sandy loam, loam, or silt loam;
- 12 (2) the structure of the receiving permeable horizon is classified suitable;
- 13 (3) the moist consistence of the receiving permeable horizon is loose, very friable, friable, or firm;
- 14 (4) if the receiving permeable horizon has zones of heavier textured materials, these zones are  
15 discontinuous with an average thickness not exceeding 1/3 of the required thickness of the  
16 receiving permeable horizon;
- 17 (5) the naturally occurring receiving permeable horizon shall be less than or equal to 60 inches below  
18 the naturally occurring soil surface. If the receiving permeable horizon is greater than 60 inches  
19 below the naturally occurring soil surface, advanced pretreatment shall be used in accordance with  
20 Rule .1205 of this Subchapter;
- 21 (6) artificial drainage shall be provided, as needed, to maintain the following minimum vertical  
22 separation ~~distances~~ from the infiltrative surface to a SWC:
  - 23 (A) 18 inches with gravity or pressure dosed gravity distribution; or
  - 24 (B) 12 inches with pressure dispersal; and
- 25 (7) the minimum required thickness of the receiving permeable horizon shall be determined by the  
26 texture of that horizon as follows:
  - 27 (A) sand or loamy sand texture requires a minimum thickness of one-foot;
  - 28 (B) sandy loam or loam texture requires a minimum thickness of two feet; or
  - 29 (C) silt loam texture requires a minimum thickness of three feet.

30 (e)(d) If a groundwater lowering system is required to meet the minimum vertical separation ~~distance~~ in Paragraph  
31 (b)(6) (c)(6) of this Rule to a SWC that is not related to lateral water movement, design plans and specifications  
32 shall be prepared by a licensed professional if required in G.S. 89C, 89E, or 89F. The following conditions apply to  
33 the groundwater lowering system: The groundwater lowering system shall:

- 34 (1) shall extend into the receiving permeable horizon;
- 35 (2) shall have a suitable an outlet. outlet with location and elevation that allows for free discharge of  
36 groundwater as required for the groundwater lowering system to be functional. The outlet location

and elevation must be shown on the artificial drainage system plan with relative water level elevations and wastewater system site elevations labeled; and

- (3) all groundwater lowering system components are integral to the wastewater system and subject to ownership and control requirements of Rule .0301(b) and (c) of this Subchapter.

~~(d)~~(e) The LTAR shall be determined in accordance with Table XIX for all DSE sand-lined trench systems. An equivalent trench width of three feet shall be used to determine trench length in accordance with Rule .0901(d) of this Section. The LTAR shall be based on ~~one of~~ the lesser of the following:

- (1) LTAR set forth in Table XIX based on the most hydraulically limiting, naturally occurring soils overlying the permeable receiving horizon; or
- (2) 10 percent of the in-situ Ksat of the receiving permeable ~~horizon, whichever is less.~~ horizon.

~~(e) There shall be no reduction in trench length compared to a conventional wastewater system when Accepted or Innovative gravelless trench product is used.~~

**TABLE XIX.** LTAR for sand lined trench systems based on the most hydraulically limiting, naturally occurring soils overlying the permeable receiving horizon

Soil Group	Texture of Most Hydraulically Limiting Overlying Soil Horizon	Distribution Type	LTAR (gpd/ft <sup>2</sup> )
I	Sands	Gravity or Pressure Dosed Gravity	0.7 - 0.9
		Pressure Dispersal	0.8 - 1.2
II	Coarse Loams	Gravity or Pressure Dosed Gravity	0.5 - 0.7
		Pressure Dispersal	0.6 - 0.8
III	Fine Loams	Gravity or Pressure Dosed Gravity	0.2 - 0.4
		Pressure Dispersal	0.3 – 0.6
IV	Clays	Gravity or Pressure Dosed Gravity	0.1 – 0.2
		Pressure Dispersal	0.15 – 0.3

~~(e)~~(f) There shall be no reduction in trench length compared to a conventional wastewater system when Accepted or Innovative gravelless trench product is used.

~~(f)~~(g) A Special Site Evaluation in accordance with Rule .0510 of this Subchapter ~~is~~ shall be required for the following conditions to field verify the LTAR:

- (1) the texture of the receiving permeable horizon is sandy loam or loam and the system DDF is greater than 600 gpd; or
- (2) the texture of the receiving permeable horizon is silt loam.

1 ~~(g)(h)~~ Sand lined trench dispersal field installation shall be in accordance with Rule .0901(f) ~~[(g)]~~ of this  
2 Section and the following: In addition to the requirements set forth in Rule .0901(g) of this Section, sand lined  
3 trench system installations shall comply with the following:

- 4 (1) gravity trenches shall have a maximum width of three feet and a minimum width of one and a half  
5 feet;
- 6 (2) trenches shall be located not less than three times the trench width on centers. The minimum  
7 spacing for trenches ~~is shall be~~ five feet on centers;
- 8 ~~(3)~~ drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing  
9 with emitters: a minimum of two runs within a trench between one and one half and two feet wide;  
10 and a minimum of three runs within a trench between two and three feet wide. The drip tubing  
11 shall be uniformly spaced across the trench with the tubing six inches from the trench sidewalls.  
12 Drip tubing shall be covered by a minimum of six inches of sand lined trench media meeting the  
13 requirements of Subparagraph (6) of this Paragraph. Drip dispersal systems shall comply with the  
14 requirements of Section .1600 of this Subchapter and this Rule;
- 15 ~~(4)~~(3) the sand lined trenches shall be constructed to extend into the naturally occurring receiving  
16 permeable horizon;
- 17 ~~(5)~~(4) the infiltrative surface shall be no deeper than 24 inches below finished grade. The top of the  
18 trench media shall be at or below the naturally occurring soil surface. Drip tubing shall be installed  
19 a minimum of six inches below the natural grade;
- 20 ~~(6)~~(5) sand soil used to line the trench shall be sand in texture. ~~if required by the LHD in the CA, the~~ The  
21 installer shall provide written laboratory verification of the media textural classification and  
22 quality ~~prior to the sand lined trench being installed. when requested by the LHD based on a visual~~  
23 ~~inspection of the sand used during installation.~~ When laboratory analysis is required, the material  
24 shall be ~~determined to be~~ clean, uncoated fine, medium, or coarse sand with a minimum of 90  
25 percent in sizes ranging from 0.1 to 2.0 millimeters, with no more than one percent smaller than  
26 0.074 millimeters (No. 200 Sieve);
- 27 ~~(7)~~(6) pressure dosed gravity distribution ~~or pressure dispersal~~ shall be used when the total dispersal field  
28 line length exceeds 750 linear feet in a single system;
- 29 ~~(8)~~(7) pressure dispersal shall be used when the total dispersal field line length exceeds 1,200 linear feet  
30 in a single system;
- 31 ~~(9)~~(8) ~~if when~~ pressure dispersal is used, the pressure dispersal network shall be designed in accordance  
32 with Rules .0907(e) or ~~.0908(e)~~ .0908(f) of this Section, except that the trench width shall comply  
33 with this Paragraph. The total line length shall be calculated based on infiltrative surface area;
- 34 (9) drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing  
35 with ~~[emitters:]~~ emitters as follows: ~~[a minimum of two runs within a trench between one and one~~  
36 ~~half and two feet wide; and a minimum of three runs within a trench between two and three feet~~  
37 ~~wide.]~~

1 (A) a minimum of two runs within a trench between one and one half and two feet wide; and

2 (B) a minimum of three runs within a trench between two and three feet wide.

3 The drip tubing shall be uniformly spaced across the trench with the tubing six inches from the  
4 trench sidewalls. Drip tubing shall be covered by a minimum of six inches of sand lined trench  
5 media meeting the requirements of Subparagraph ~~(6)~~ (5) of this Paragraph. Drip dispersal  
6 systems shall comply with the requirements of Section .1600 of this Subchapter and this Rule;

7 (10) finished grade shall provide for positive surface drainage away from all system components, with  
8 the dispersal field crowned at  $\frac{1}{2}$  ~~one-half~~ percent as measured from the centerline of the dispersal  
9 field. The finished grade requirements shall be made a condition of the CA; and

10 (11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance  
11 with PIA Approval.

12 ~~(b)(i)~~ Other sand lined trench systems may be approved on a site-specific basis in accordance with Rule ~~.0509(f)~~  
13 ~~.0509(c)~~ of this Subchapter.

14  
15 *History Note: Authority G.S. 130A-335(e) and (f).*

16 *Eff. December 1, 2018*

1 15A NCAC 18E .0907 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0907 LOW PRESSURE PIPE SYSTEMS**

4 (a) LPP systems utilize a network of small diameter pipes with three to six-feet pressure head to distribute effluent  
5 across the entire dispersal field. ~~Except as otherwise required in this Rule, the requirements of Rule .0901 of this~~  
6 ~~Section shall apply.~~ Any subsurface dispersal system listed in this Section may incorporate LPP dispersal. ~~LPP~~  
7 ~~systems with advanced pretreatment shall comply with Rules .1202, .1203, .1205, and or .1206 of this Subchapter.~~

8 ~~(b) LPP systems with advanced pretreatment shall comply with Rules .1202, .1203, .1205, and or .1206 of this~~  
9 ~~Subchapter.~~

10 ~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

11 ~~[(c)(b)]~~ The LTAR shall be determined as follows:

12 (1) ~~Tables XX and XXI shall be used to determine the LTAR for LPP systems, as applicable;~~

13 ~~(+)(2)~~ the LTAR determined from Table XX shall be based on the soil textural class of the most limiting,  
14 naturally occurring soil horizon ~~from the top of the trench~~ to a depth of 12 inches below the  
15 infiltrative surface;

16 ~~(3) the [LTARs] LTAR determined from Table XXI shall be based on the saprolite textural class of~~  
17 ~~the most limiting, naturally occurring saprolite to a depth of 24 inches (or less if combined with~~  
18 ~~soil [and] in accordance with Rule [.0506] .0506(b) of this [Subchapter; Subchapter) below the~~  
19 ~~infiltrative surface; and~~

20 ~~(2) the LTAR shall be assigned based upon soil textural class, structure, consistence, depth, percent~~  
21 ~~rock, landscape position, and topography;~~

22 ~~(3) Tables XX and XXI shall be used to determine the LTAR for LPP systems; and~~

23 ~~(4) for facilities that generate HSE as specified in Rule .0401(h) of this Subchapter or a facility with a~~  
24 ~~full kitcehn, the LTAR shall not exceed the mean rate for the applicable Soil Group Group. for~~  
25 ~~effluent exceeding DSE as specified in Table III of Rule .0402 of this Subchapter.~~

26  
27 **TABLE XX. LTAR for LPP systems based on Soil Group and texture class**

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.4 – 0.6
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.3 – 0.4
		Loam	
III	Fine Loams	Sandy Clay Loam	0.15 – 0.3
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	

		Silt	
IV	Clays	Sandy Clay	0.05 – 0.2
		Silty Clay	
		Clay	

TABLE XXI. LTAR for LPP systems in saprolite based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.3 – 0.4
		Loamy Sand	0.25 – 0.35
II	Loams	Sandy Loam	0.2 – 0.3
		Loam	0.1 – 0.2
		Silt Loam	0.05 – <del>0.1</del> <u>0.15</u>

(d)(e) The minimum required dispersal field area and trench length shall be calculated in accordance with the following:

- (1) ~~the The~~ minimum required dispersal field area shall be ~~determined~~ calculated by dividing the DDF by the ~~LTAR; and LTAR.~~
- (2) ~~the The~~ minimum trench length shall be ~~determined~~ calculated by dividing the required dispersal field area by a lateral spacing of five feet. The following equation shall be used to calculate the minimum line length required.

$$TL = (DDF \div LTAR) \div LS$$

Where TL = length of trench (feet)

DDF = design daily flow (gpd)

LTAR = in gpd/ft<sup>2</sup>

LS = line spacing (five five feet feet)

- (3) When HSE is proposed to be discharged to a an LPP dispersal field with no advanced ~~pretreatment~~, pretreatment or has not been reclassified as DSE in accordance with Rule .0402(c) of this Subchapter, a licensed professional, if required in G.S. 89C, 89E, or 89F, shall calculate the ~~mass loading on the soil~~ adjusted LTAR in accordance with Rule .0402(b) of this Subchapter.

(e)(d) In addition to the requirements set forth in Rule .0901(g) of this Section, LPP system design and installation shall ~~be in accordance with Rule .0901(f) [.0901(g)] of this Section and comply with~~ the following, unless otherwise ~~allowed specified~~ in a PIA Approval:

- (1) the LPP distribution network shall be constructed of small diameter (one to two inches) pressure rated Schedule 40 PVC laterals placed in gravel that meets the requirements in Rule ~~.0902(d)(4)~~ .0902(e)(4) .0902(b)(4) of this Section or other ~~approved media filled trenches; media;~~

- 1 (2) the trench width shall be one to two feet;
- 2 (3) trenches shall be located not less than three times the trench width on center. The minimum  
3 spacing for trenches ~~is shall be~~ five feet on center:
- 4 (4) trenches shall include a minimum of ~~nine~~ eight inches of approved gravel or other approved  
5 media, either from a PIA Approval or subsurface dispersal system listed in Section .0900 of this  
6 Subchapter. ~~The lateral~~ There shall be installed a minimum of five inches vertical separation  
7 distance from the lateral to above the infiltrative surface;
- 8 (5) laterals, manifolds and LPP fields shall comply with the following design criteria:
- 9 (A) the maximum lateral length shall yield no more than a 10 percent difference in orifice  
10 delivery rate between the first and last orifice along the lateral;
- 11 (B) no more than 1/3 of the total number of holes shall be less than [5/32-inch], 5/32-inch  
12 diameter. ~~minimum orifice size shall be 5/32-inch for a minimum of 2/3 of the field~~  
13 ~~lateral lines,~~ with no orifices sized smaller than 1/8-inch diameter in any lateral line;
- 14 (C) all orifices shall face upwards, except for two orifices, 1/3 of the way from the beginning  
15 and end of each lateral, which ~~should shall~~ face down; downward and
- 16 (D) maximum orifice spacing shall be as follows: Soil Group I - five feet; Soil Group II - six  
17 feet; Soil Group III - eight feet; and Soil Group IV - 10 feet;
- 18 (6) the orifices shall be protected by the following:
- 19 (A) lateral sleeved within a three or four-inch perforated corrugated or smooth wall tubing  
20 meeting the requirements of Rule .0703 .0703(d) of this ~~Subchapter; Subchapter; or~~  
21 (B) State approved equivalent tubing or pipe; or  
22 (C)(B) specially designed and approved orifice shields;
- 23 (7) the following additional design provisions are shall be required for sloping sites:
- 24 (A) separately valved manifolds are shall be required for all subfield segments where the  
25 elevation difference between the highest and lowest laterals exceeds three feet;
- 26 (B) the orifice spacing, orifice size or both shall be adjusted to compensate for relative  
27 elevation differences between laterals branching off a common supply manifold and to  
28 compensate for the lines at the lowest elevation receiving more effluent at the beginning  
29 and end of a dosing cycle;
- 30 (C) the lateral network shall be designed to achieve a 10 to 30 percent higher steady state  
31 (pipe full) flow rate into the upper lines, relative to the lower lines, depending on the  
32 amount of elevation difference; and
- 33 (D) maximum elevation difference between the highest and lowest laterals in a field shall not  
34 exceed 10 feet unless the flow is uniformly divided using multiple pumps or split  
35 between subfield segments, ~~such as with State approved automatically alternating valves,~~  
36 segments without requiring simultaneous adjustment of multiple pressure regulating  
37 valves in separate ~~locations,~~ locations. Flow shall be uniformly divided such that the

dose volumes to the subfields does not vary more than 10 percent on an area basis, or as otherwise approved by the State; The State shall approve other designs based upon the authorized designer or PE providing documentation showing equivalent hydraulic performance to this Subparagraph;

- (8) turn-ups shall be provided at the ends of each lateral, constructed of Schedule 40 PVC pipe or stronger pressure-rated pipe, and shall terminate at the ground surface and be installed in a valve box or equivalent that provides access for operation and maintenance;
- (9) the supply manifold shall be constructed of solvent-welded pressure rated Schedule 40 PVC;
- (10) the supply manifold shall be sized large enough based on the size and number of laterals served to prevent more than a 20 percent variation in pressure head between the first and last laterals due to losses within the manifold when feeding the manifold from a lower elevation;
- (11) the supply manifold shall comply with the following design criteria:
  - (A) the ratio of the supply manifold inside cross-sectional area to the sum of the inside cross-sectional areas of the laterals served shall exceed 0.7:1;
  - (B) the reduction between the manifold and connecting laterals shall be made directly off the manifold using reducing tees or fittings; and
  - (C) cleanouts shall be installed at the distal ends of the supply manifold and shall be enclosed in valve boxes accessible from the ground surface;
- (12) pressure regulating valves shall be provided for pressure adjustment at the fields;
- (13) valves shall be installed in an access device, such as a valve box, or other approved access device and be accessible and operable from the ground surface. Valves serving contiguous subfields shall be in a common valve box that facilitates simultaneous adjustment of pressure head; box;
- (14) the LPP dosing system shall comply with the following design criteria:
  - (A) the pump operating flow rate shall be based upon delivering three feet to six feet of residual pressure head at the distal end of all lateral lines; laterals;
  - (B) the dose volume shall be between five and 10 times the liquid capacity of the lateral pipe dosed, plus the liquid capacity of the portions of manifold and supply lines which drain between doses; and
  - (C) when pumping downhill and the supply line volume exceeds 20 percent of the calculated dose volume, special design considerations shall be followed to prevent more than 20 percent of the dose volume from draining by gravity to the dispersal field between doses; and
- (15) the trenches shall be covered to a minimum depth of four inches after settling.

~~(f)(e)~~ Drip dispersal systems used in LPP trenches and other LPP designs may be approved on a site-specific basis. The authorized designer or PE shall provide documentation showing that the proposed design meets the performance requirements of this Rule.

1

2 *History Note: Authority G.S. 130A-335(e) and (f).*

3 *Eff. December 1, 2018*

1 15A NCAC 18E .0908 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0908 DRIP DISPERSAL SYSTEMS**

4 (a) This Rule provides for the permitting of drip dispersal systems receiving DSE. Drip dispersal systems shall  
5 comply with the provisions of this Rule and Section .1600 of this Subchapter. ~~Except as otherwise required in this~~  
6 ~~Rule, the requirements of Rule .0901 of this Section shall apply. Drip dispersal systems with advanced pretreatment~~  
7 ~~shall comply with Rule .1204 of this Subchapter.~~

8 (b) Drip dispersal systems with advanced pretreatment shall comply with Rule .1204 of this Subchapter.

9 ~~(b)(c)~~ Drip dispersal systems shall meet the following soil and site criteria:

10 (1) A minimum of 18 inches of naturally occurring suitable soil above a LC, 13 inches of naturally  
11 occurring suitable soil above a SWC, and the minimum vertical separation ~~distance~~ to any  
12 ~~unsuitable LC or SWC~~ shall be 12 inches. A groundwater lowering system may be used to meet  
13 the vertical separation to a SWC [only when] when only Group I or II soils with suitable structure  
14 are present within 36 inches of the naturally occurring soil surface.

15 (2) For new fill, the soil and site shall meet the following criteria:

- 16 (A) Rule .0909(b) and (c) of this Section, except as otherwise specified in this Subparagraph;  
17 (B) no SWC ~~exists shall exist~~ within the first 12 inches below the naturally occurring soil  
18 surface. ~~A groundwater lowering system may be used to meet the vertical separation~~  
19 ~~distance to a SWC only when Group I or II soils with suitable structure are present within~~  
20 ~~36 inches of the naturally occurring soil surface; shall not be used to meet the initial site~~  
21 ~~requirements for a new fill system; and~~  
22 (C) minimum vertical separation ~~distance~~ to any unsuitable soil horizon or rock shall be 18  
23 inches and 12 inches for any SWC.

24 (3) For existing fill, the soil and site shall meet the following criteria:

- 25 (A) Rule .0909(d) and (e) of this Section, except as otherwise specified in this Subparagraph;  
26 and  
27 (B) minimum vertical separation ~~distance~~ to any LC ~~or SWC~~ shall be 24 inches.

28 ~~(e)(d)~~ Tables XXII and XXIII shall be used to determine the LTAR for all DSE drip dispersal systems:

- 29 (1) Table XXII shall be used for systems utilizing soil. The LTAR shall be based on the most limiting,  
30 naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or to a  
31 depth of 12 inches below the infiltrative surface, whichever is deeper;  
32 (2) Table XXIII shall be used for systems utilizing sapolite. The LTAR shall be based on the most  
33 limiting, naturally occurring sapolite to a depth of 24 inches below the infiltrative surface;  
34 (3) the LTAR for new fill systems shall not exceed 0.5 gpd/ft<sup>2</sup> for Group I, 0.3 for gpd/ft<sup>2</sup> Group II,  
35 0.15 gpd/ft<sup>2</sup> for Group III or 0.05 gpd/ft<sup>2</sup> for Group IV soils, respectively;  
36 (4) sections of tubing without emitters (blank tubing) shall not count towards the minimum dripline  
37 length required; and

(5) the DDF shall be divided by the LTAR, determined from Table XXII or XXIII, to determine the minimum dispersal field area required. The minimum dripline length shall be determined by dividing the required area by the maximum line spacing of two feet. The designer may recommend additional linear footage as soil and site conditions allow. The following equations shall be used to calculate the minimum dispersal field area and dripline length required:

$$MA = DDF \div LTAR$$

$$DL = MA \div LS$$

Where MA = minimum dispersal field area (ft<sup>2</sup>)

DDF = design daily flow (gpd)

LTAR = in gpd/ft<sup>2</sup>

DL = dripline length (feet)

LS = ~~two-foot line spacing~~ **line spacing (two-foot)**

**TABLE XXII. LTAR for DSE drip dispersal systems based on Soil Group and texture class**

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.4 – 0.6
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.3 – 0.4
		Loam	
III	Fine Loams	Sandy Clay Loam	0.15 – 0.3
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.05 – 0.2
		Silty Clay	
		Clay	

**TABLE XXIII. LTAR for DSE drip dispersal systems based on Saprolite Group and texture class**

Saprolite Group	Saprolite Textural Class	LTAR (gpd/ft <sup>2</sup> )
I	Sand	0.3 – 0.4
	Loamy sand	0.25 – 0.35
II	Sandy loam	0.2 – 0.3
	Loam	0.1 – 0.2
	Silt Loam	0.05 – 0.1

~~(d)~~(c) A Special Site Evaluation shall be required in accordance with Rule .0510 of this Subchapter, as applicable.

1 ~~(e)~~(f) Drip dispersal installation shall be in accordance with the following criteria:

- 2 (1) dripline shall be installed in accordance with the approved design. The design shall specify  
3 installation depth, installation equipment, blanking, drainback prevention, and any other site-  
4 specific design requirements identified by the designer;
- 5 (2) dripline shall be installed a minimum of one-inch into naturally occurring soil, except when  
6 installed in a fill system;
- 7 (3) driplines shall be installed level. A maximum variance of plus or minus two inches ~~may shall~~ be  
8 allowed within any contiguous section of dripline containing drip emitters;
- 9 (4) a minimum of six inches of cover shall be maintained over the ~~dripline: dripline. The six inches of~~  
10 ~~cover may be met by the addition of up to six inches, after settling, of suitable Group II or III soil~~  
11 ~~over the drip field;~~
- 12 ~~(5) the requirement for six inches of cover may be met by the addition of up to six inches, after~~  
13 ~~settling, of suitable Group II or III soil over the drip field;~~
- 14 ~~(6)~~(5) drip dispersal fields shall be ~~graded~~ sloped to shed surface water;
- 15 ~~(7)~~(6) if cover material is required and the slope is greater than 30 percent, a slope stabilization plan must  
16 be provided by a licensed ~~professional;~~ professional if required in G.S. 89C, 89E, or 89F; and
- 17 ~~(8)~~(7) the drip dispersal system shall be field tested after installation in accordance with Rule .1603 of  
18 this Subchapter.

19  
20 *History Note: Authority G.S. 130A-335(e) and (f).*  
21 *Eff. December 1, 2018*

1 15A NCAC 18E .0909 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0909 FILL SYSTEMS**

4 (a) A fill system (including new and existing fill) is a system in which all or part of the dispersal field media is  
5 installed in fill material. The system includes both the basal area of dispersal field and the toe slope in all directions.

6 (b) New fill systems may be installed on sites that meet the following requirements:

- 7 (1) a minimum of the first 18 inches below the naturally occurring soil surface consist of suitable soil  
8 with the exception of ~~that~~ no SWC exists within the first 12 inches below the naturally occurring  
9 soil surface and a groundwater lowering system is not used to meet this requirement;
- 10 (2) systems shall be installed only on sites with uniform slopes less than four percent;
- 11 (3) stormwater diversions, subsurface interceptor drains, or swales shall be required as needed upslope  
12 of the system to divert surface runoff or lateral flow from passing over or into the system; and
- 13 (4) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe  
14 slope in all directions.

15 (c) New fill system design and installation shall be in accordance with the following criteria:

- 16 (1) trenches shall be installed with a minimum of 24 inches separating the infiltrative surface and any  
17 ~~LC. LC for gravity distribution and pressure dosed gravity distribution, except for any SWC~~  
18 ~~[which] that requires 18 inches of separation.~~ If pressure dispersal is used, the minimum  
19 separation distance shall be 18 inches ~~with the exception of trenches shall be installed with a~~  
20 ~~minimum of 18 inches separating between~~ the infiltrative surface and any SWC LC and 12 inches  
21 ~~to a SWC.~~ This separation requirement may be met with the use of a groundwater lowering  
22 system only in Soil Groups I and II with suitable ~~structure. If pressure dispersal is used, the~~  
23 ~~minimum separation distance shall be 12 inches; structure;~~
- 24 (2) fill systems with a DDF greater than 480 gpd shall use pressure dispersal systems;
- 25 (3) fill material soil texture shall be classified sand or loamy sand (Soil Group I) up to the top of the  
26 trenches. The final six inches of fill used to cover the system shall have a finer texture (such as  
27 Group II or III) for the establishment of a vegetative cover;
- 28 (4) minimum cover shall be six inches ~~of settled soil; after settling;~~
- 29 (5) additional fill may be added to facilitate drainage and accommodate **final** landscaping  
30 requirements at the site **necessary to stabilize the fill, shed surface water, and establish a**  
31 **vegetative cover. The additional fill may be** provided **if** the infiltrative surface is less than 30  
32 inches below the finished grade;
- 33 (6) where fill material is added, the fill material and the existing soil shall be mixed to a depth of six  
34 inches below the interface. Vegetative cover or organic litter (O horizon) shall be removed before  
35 the additional fill material is incorporated;
- 36 (7) the fill system shall be constructed as an elongated berm with the long axis parallel to the ground  
37 elevation contours of the slope;

- 1 (8) the side slope of the fill system shall not exceed a rise to run ratio of 1:4. If the first 18 inches  
2 below the naturally occurring soil surface is Group I soil, the side slope of the fill shall not exceed  
3 a rise to run ratio of 1:3;
- 4 (9) the outside edge of the trench shall be located a minimum of five feet horizontally from the top of  
5 the side slope;
- 6 (10) the fill system shall be shaped to shed surface water and shall be stabilized with a vegetative  
7 cover;
- 8 (11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance  
9 with PIA Approval; and
- 10 (12) the setback requirements shall be measured from the projected toe of the slope. If this setback  
11 cannot be met, the setback requirements shall be measured five feet from the nearest edge of the  
12 trench if the following conditions are met:
- 13 (A) slope of the site does not exceed two percent;
- 14 (B) the first 18 inches of soil beneath the naturally occurring soil surface shall consist of  
15 Group I soils; and
- 16 (C) the lot or tract of land was recorded on or before December 31, 1989.

17 (d) An existing pre-July 1, 1977 fill site that does not meet the requirements of Paragraph (b) of this Rule may be  
18 utilized for a wastewater system if the following requirements are met:

- 19 (1) substantiating data are provided by the lot owner (if not readily available to the LHD) indicating  
20 that the fill material was placed on the site prior to July 1, 1977;
- 21 (2) the fill material shall have sand or loamy sand (Group I) soil texture for a minimum depth of 24  
22 inches below the existing ground surface;
- 23 (3) the fill material shall have no more than 10 percent by volume of fibrous organics, building  
24 rubble, or other debris, and shall not have discreet layers containing greater than 35 percent of  
25 shell fragments;
- 26 (4) if a minimum of 24 inches of Group I fill material is present, additional fill with soil texture  
27 classified Group I may be added to meet the separation requirements of Subparagraph (e)(5) of  
28 this Rule;
- 29 (5) ~~SWC, as determined by Rule .0504 of this Subchapter,~~ SWC is 18 inches or greater below the  
30 ground surface of the fill. This requirement shall be met without the use of a groundwater  
31 lowering system; and
- 32 (6) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe  
33 slopes in all directions.

34 (e) Existing fill system design and installation shall be in accordance with Paragraph (c) of this Rule and the  
35 following criteria:

- 36 (1) the DDF shall not exceed 480 gpd;

- 1 (2) pressure dispersal shall be used. LPP systems shall meet the requirements of Rule ~~.0907(e), (d),~~  
2 ~~.0907(d), (e),~~ and ~~(e)(f)~~ of this Section. Drip dispersal systems shall meet the requirements of Rule  
3 ~~.0908(e), .0908(d)~~ and ~~(e)(f)~~ of this Section;
- 4 (3) the LTAR shall not exceed 0.5 gpd/ft<sup>2</sup>;
- 5 (4) existing fill sites with 48 inches of Group I soils may use conventional trenches with a maximum  
6 LTAR of 1.0 gpd/ft<sup>2</sup> in lieu of a pressure dispersal system;
- 7 (5) the minimum vertical separation ~~distance~~ to any LC ~~or SWC~~ shall be 24 inches for pressure  
8 dispersal systems and 48 inches for conventional systems. This vertical separation requirement  
9 may be met by adding additional Group I soil, but shall not be met with the use of a groundwater  
10 lowering system;
- 11 (6) where additional Group I fill is to be added, the side slope of the fill shall not exceed a side slope  
12 ratio of 1:3; and
- 13 (7) trench products approved under Section .1700 of this Subchapter shall be installed in accordance  
14 with their PIA Approval.
- 15 (f) The LTAR for new and existing fill systems shall be determined in accordance with Rule .0901(c) of this  
16 Section and the following:
- 17 (1) the LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of  
18 the ground surface or to a depth 12 inches below the infiltrative surface, whichever is deeper;
- 19 (2) the lowest LTAR for the applicable Soil Group shall be used for systems installed in accordance  
20 with this Rule; and
- 21 (3) for sites with a minimum of 18 inches of Group I soils below the naturally occurring soil surface  
22 or to a depth of 12 inches below the infiltrative surface, whichever is deeper, the LTAR shall not  
23 exceed 1.0 gpd/ft<sup>2</sup> for gravity or pressure dosed gravity distribution or 0.5 gpd/ft<sup>2</sup> for pressure  
24 dispersal systems.
- 25 (g) Other fill systems may be approved on a site-specific basis in accordance with a PIA Approval or Rule ~~.0509(f)~~  
26 ~~.0509(c)~~ of this Subchapter.

27  
28 *History Note: Authority G.S. 130A-335(e) and (f).*  
29 *Eff. December 1, 2018*

1 15A NCAC 18E .0910 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0910 ARTIFICIAL DRAINAGE SYSTEMS**

4 (a) Artificial drainage systems are a site modification and may be proposed to reclassify sites as suitable ~~which that~~  
5 were originally classified unsuitable due to a ~~SWC or SWC~~, lateral water ~~movement~~, movement, saturated soils, a  
6 perched water table, or other oxyaquic conditions. Artificial drainage systems include groundwater lowering  
7 systems, interceptor drains, and surface water diversions.

8 (b) ~~Artificial drainage~~ Groundwater lowering systems may be used ~~on the following sites:~~ when the following  
9 criteria are met:

10 (1) the site has Group I or II soils with suitable structure and clay mineralogy; and

11 (2) the ~~artificial drainage groundwater lowering~~ system shall be designed to maintain the required  
12 minimum vertical separation ~~distance~~ to a SWC as specified in Rule ~~.0901(f)(2)~~ .0901(g)(2) of this  
13 Section.

14 (c) Plans and specifications for the use of a groundwater lowering system to meet the vertical separation to a SWC  
15 shall be prepared by a licensed professional if required in G.S. 89C, 89E, or 89F in accordance with Rule .0303 of  
16 this Subchapter. The plans and specifications shall meet the following design criteria:

17 (1) Gravity groundwater lowering systems shall be designed in accordance with the following:

18 (A) substantiating information, calculations and data shall be provided justifying the  
19 effectiveness of the proposed drainage system design;

20 (B) design and devices shall comply with accepted standards of practice as set forth in the  
21 USDA-NRCS National Engineering Handbook, Part 624 - Drainage, Chapter 10 - Water  
22 Table Control, and Part 650 - Engineering Field Handbook, Chapter 14 - Water  
23 Management, Drainage;

24 (C) the effectiveness of groundwater lowering systems shall be determined by use of the  
25 Ellipse, Hooghoudt, or equivalent drainage equations for sites with Group I or II soils.  
26 Justification for use of a specific drainage equation shall be provided;

27 (D) drainage equation input parameters shall be based upon field descriptions of soil profiles  
28 and in-situ Ksat measurements. The drainage coefficient used in these equations shall be  
29 calculated from the highest monthly rainfall value with a 30-percent exceedance  
30 probability from the closest available National Weather Service or North Carolina State  
31 Climate Office station. A source of these data is the WETS tables published on the  
32 Natural Resource Conservation Service ~~Website:~~  
33 [www.wcc.nrcs.usda.gov/climate/wedlands.html](http://www.wcc.nrcs.usda.gov/climate/wedlands.html). Field Office Technical Guides available  
34 online at: [efotg.sc.egov.usda.gov/efotg\\_locator.aspx](http://efotg.sc.egov.usda.gov/efotg_locator.aspx). This monthly value shall be divided  
35 by 14 to give the drainage coefficient (inches per day). For systems ~~designed for over~~  
36 with a DDF greater than 1,500 gpd, the projected contribution of wastewater application  
37 shall be added to the drainage coefficient used in the equations;

- 1 (E) DRAINMOD shall be used to determine the groundwater lowering system effectiveness  
 2 at sites with ~~the following conditions:~~ three or more effective soil ~~layers;~~ layers. Group  
 3 III or IV soils within 36 inches of the naturally occurring soil ~~surface;~~ surface, or sites  
 4 requiring a ~~pump drainage system;~~ groundwater lowering system using pumps; and  
 5 (F) the modeling procedure set forth in Rule ~~.0504(g)~~ .0504(h) of this Subchapter shall be  
 6 followed.
- 7 (2) Groundwater lowering systems using pumps shall be designed in accordance with the following:
- 8 (A) plan and profile detail drawings of pump tank, showing all dimensions, pumps, discharge  
 9 piping, floats, and float and alarm activation levels;
- 10 (B) calculations and supporting information shall be provided as the basis for sizing the  
 11 pumps, dose volume, emergency storage capacity, and overall tank capacity;
- 12 (C) the high-water alarm in the control panel shall automatically contact a 24-hour  
 13 maintenance service;
- 14 (D) information on discharge pipe line, line location, materials, and provisions for erosion  
 15 control at the discharge point;
- 16 (E) except as required otherwise provided in this Rule, Paragraph, the requirements ~~in of~~  
 17 Section .1100 of this Subchapter are applicable shall apply to artificial drainage systems  
 18 using pumps; and
- 19 (F) dual alternating pumps shall be required when serving two or more design units. Each  
 20 pump shall be sized at a capacity of two and one half times the projected peak inflow rate  
 21 to the pump tank.
- 22 (3) Plans and specifications for all groundwater lowering systems shall include the following  
 23 information in addition to the information in Subparagraphs (e)(1) and (e)(2) of this Rule:  
 24 following:
- 25 (A) location of existing and proposed drainage systems in relation to all facilities and  
 26 wastewater system components. Plans shall indicate flow direction, slope and drain outlet  
 27 location;
- 28 (B) profile drawings showing drainage trench dimensions, depth, pipe size, aggregate  
 29 ~~envelop~~ envelope and filter fabric detail, cover, and cleanout detail;
- 30 (C) all relevant elevations with reference to an established benchmark;
- 31 (D) specifications for all groundwater lowering system materials and installation procedures;
- 32 (E) the entire groundwater lowering system, including the outlet, shall be on property owned  
 33 or controlled by the person owning or controlling the system. Necessary legal agreements  
 34 shall be provided in accordance with Rule .0301(c) of this Subchapter; and
- 35 (F) easements for egress, ingress, and regress for maintenance of groundwater lowering  
 36 systems serving two or more lots shall be at least have adequate width, in no case less  
 37 than 20 feet wide plus the width of the groundwater lowering system.

1 (d) Interceptor drains shall be used on sites where a SWC results from laterally flowing groundwater that can be  
2 ~~intercepted and~~ diverted away from the dispersal field.

3 (e) Other artificial drainage systems, including surface water diversions, shall comply with USDA-NRCS guidance  
4 documents.

5

6 *History Note: Authority G.S. 130A-335(e) and (f).*

7 *Eff. December 1, 2018*

1 15A NCAC 18E .0911 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .0911 PRIVIES**

4 (a) An approved privy shall be approved when it consist consists of a pit, floor slab, and seat assembly housed in  
5 a building which that affords privacy and reasonable protection from the weather and shall meet meets the following  
6 criteria:

- 7 (1) the pit shall consist of an excavation with a minimum bottom surface area of three and one half  
8 feet square;
- 9 (2) the maximum depth of the pit shall not exceed 36 inches;
- 10 (3) the pit bottom shall not be located closer than 12 inches to a LC or SWC; LC;
- 11 (4) the pit shall be curbed to prevent caving. In sandy or loose soil, the curb should shall extend the  
12 full depth of the pit. In clay soils, partial curbing may be acceptable if sufficient stability can be  
13 provided; soils have sufficient cohesion to not collapse;
- 14 (5) wood construction of the floor shall be acceptable. The the floor shall be constructed of the  
15 following: of concrete, wood, or other approved materials. The following criteria shall be met, as  
16 applicable:
- 17 (A) for wood construction, rot resistant joists are used covered with tight tongue-and-groove  
18 rot resistant flooring;
- 19 (B) wood floors shall be anchored to the sills. The minimum sill size shall be four-inch by  
20 four-inch; other approved flooring materials to provide strength, durability and prevent  
21 entrance of flies and mosquitoes to the privy pit; and
- 22 (C) floors shall be anchored to the sills. The minimum sill size is four inch by four inch;  
23 when other materials are used the material shall be shown to provide strength, durability  
24 and prevent entrance of flies and mosquitoes to the privy pit;
- 25 (6) the pit shall be vented through approved screened PVC Schedule 40 pipe or approved equal, other  
26 pipe approved in accordance with Rule .0703 of this Subchapter, six inches in diameter, and  
27 extending above the roofline. The vent pipe shall be:
- 28 (A) located on a south side wall of the building;
- 29 (B) covered to prevent rainfall from entering, but still allow gases to escape;
- 30 (C) not have straight without any bends in the pipe; and
- 31 (D) shall be black colored pipe; and
- 32 (7) privies shall not be used for the disposal of water-carried sewage.

33 (b) Any person owning or controlling the property upon which a privy is located shall be responsible for the  
34 following requirements:

- 35 (1) ~~the privy building shall afford a reasonable degree of protection from bad weather conditions;~~  
36 (2)(1) when the pit becomes filled to within 18 inches of the top of the ground, the privy building shall  
37 be moved to a new pit and the old pit completely covered with soil; and

- 1           ~~(3)~~(2) if the pit caves in, a new pit shall be provided.
- 2 (c) The person owning or controlling the system shall be responsible for the following requirements:
- 3           (1) the privy and grounds ~~immediately~~ adjacent shall be kept clean; free of debris and excess
- 4                           vegetation;
- 5           (2) a hinged seat cover and hinged door shall be provided and kept closed when the privy is not in
- 6                           use;
- 7           (3) flies shall always be excluded from the ~~pit;~~ pit by the privy building door fitting in the frame and
- 8                           no unscreened openings in the building;
- 9           (4) garbage and trash shall be kept out of the pit; and
- 10          (5) the privy building shall not be used ~~as a storage building.~~ for storage.
- 11 (d) When a new pit is required, a CA and OP shall be obtained.
- 12

13 *History Note: Authority G.S. 130A-335(e) and (f).*

14 *Eff. December 1, 2018*

1 15A NCAC 18E .1001 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1001 ALTERNATIVE TOILETS**

4 (a) Use of alternative toilets, such as incinerating, ~~incinerating,~~ composting, and mechanical toilets, and vault  
5 privies shall comply with the North Carolina Plumbing Code. Code and this Rule.

6 (b) Use of chemical or portable toilets are is governed by G.S. 130A-335(h).

7 ~~(b)(c)~~ (c) When an alternative toilet or chemical toilet is used, the rest of the all wastewater generated by any other  
8 plumbing fixture in the facility shall be discharged to a wastewater system that is approved under this Subchapter.

9 (d) ~~[Residual removal]~~ Removal of residuals from incinerating toilets, composting toilets, mechanical toilets, vault  
10 privies, chemical toilets, or portable toilets shall be performed only by a person that holds a current NC Septage  
11 Management Firm permit in accordance with Rule 15A NCAC 13B .0832(a)(1). All waste shall be taken to an  
12 approved disposal site per G.S. 130A-291.1(d). ~~[This requirement also applies to removal of wastewater from a~~  
13 temporary domestic wastewater holding tank approved pursuant to G.S. 130A-291.2.]

14

15 *History Note: Authority G.S. 130A-335(e).*

16 *Eff. December 1, 2018*

1 15A NCAC 18E .1002 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1002 RECLAIMED WATER SYSTEMS**

4 (a) ~~A~~ An RCW system shall be one of the following:

- 5 (1) an alternate management option as identified in 15A NCAC 02U .0401(c) for use with a system  
6 permitted in accordance with 15A NCAC 02U;
- 7 (2) a conjunctive wastewater ~~system~~ system, as defined in 15A NCAC 02U .0103(3), permitted under  
8 the rules of this Subchapter that:
- 9 (A) incorporates a beneficial use ~~component;~~ component, such as toilet flushing or landscape  
10 irrigation; and
- 11 (B) the beneficial use component is not necessary to meet the wastewater disposal needs of  
12 the facility; ~~or~~
- 13 ~~(3) a conjunctive wastewater system permitted under the rules of this Subchapter when there is a non-~~  
14 ~~conjunctive use wastewater system permitted and approved in accordance with 15A NCAC 02H~~  
15 ~~or 15A NCAC 02T for the facility; or~~
- 16 ~~(3)(4)~~ a wastewater system designed for the complete recycle or reuse of DSE.

17 (b) ~~The wastewater~~ An RCW system shall be designed to produce ~~an~~ effluent prior to discharge that complies with  
18 the effluent standards for a Type I treatment process in accordance with 15A NCAC 02U .0301(b) ~~and~~ or a TS-II  
19 system in accordance with Table XXIV of Rule ~~.1201~~ .1201(a) of this Subchapter, whichever is more restrictive.  
20 The wastewater system shall be approved in accordance with Section .1700 of this Subchapter or designed by a PE  
21 and approved by the ~~State.~~ State when it has been determined to comply with this Rule.

22 (c) When utilizing a TS-II system, the ~~The~~ dispersal field and repair area shall comply with the siting and sizing  
23 requirements of Section .1200 of this Subchapter for a TS-II system ~~and the following criteria: except as follows:~~

- 24 (1) ~~the LTAR increase and setback reductions for a TS II system in Section .1200 of this Subchapter~~  
25 ~~may be concurrently taken;~~ taken with either of the following:
- 26 (A) ~~LTAR increase;~~ or
- 27 (B) ~~vertical separation reduction;~~
- 28 ~~(2) the depth to LC and vertical separation distance and setback reductions for a TS II system in~~  
29 ~~Section .1200 of this Subchapter may be concurrently taken;~~
- 30 ~~(3)(2)~~ for systems designed to meet a TN standard of 10 mg/L one of the following siting and sizing  
31 criteria may be utilized:
- 32 (A) the property line setback may be reduced to five feet and the SA waters setback may be  
33 reduced to 50 feet for wastewater systems with a DDF less than or equal to 3,000 gpd;
- 34 (B) the property line setback may be reduced to 10 feet, the SA waters setback may be  
35 reduced to 100 feet, and the other surface waters setback may be reduced to 50 feet for  
36 systems with a DDF greater than 3,000 gpd; or

- 1 (C) the vertical separation to a SWC may be reduced to 12 inches for wastewater systems  
 2 with a DDF greater than 3,000 gpd that use pressure dispersal;
- 3 ~~(4)~~(3) the LTAR may be increased up to a factor of four compared to that assigned by the LHD for a  
 4 system using DSE in Group I soils with a wastewater system that uses pressure dispersal when the  
 5 following site conditions are met:
- 6 (A) 48 inches of Group I soils from the naturally occurring soil surface; and  
 7 (B) 30 inches to a SWC below the naturally occurring soil surface; ~~or~~ and
- 8 ~~(5)~~(4) requirements to comply with an effluent TN standard set forth in this paragraph may be waived  
 9 when a site-specific nitrogen migration analysis based on projected or measured effluent nitrogen  
 10 levels demonstrates that the nitrate-nitrogen concentration at the property line will not exceed 10  
 11 mg/L.
- 12 (d) ~~Approved conjunctive~~ Conjunctive uses may include toilet and urinal flushing and landscape irrigation by drip  
 13 dispersal. Wastewater from a system designed for complete recycling of DSE shall be used only for flushing of  
 14 toilets and urinals. RCW shall ~~be~~ not be used for body contact or human consumption. An RCW system that  
 15 includes conjunctive use shall meet the following:
- 16 (1) Toilet and urinal flushing components shall be approved by the local building inspections  
 17 department and be in compliance with the North Carolina Plumbing Code, including pipe marking  
 18 requirements and back-siphon protection provisions for proximate potable water supplies.
- 19 (2) Siting, sizing, setbacks, and installation requirements of this Subchapter may be modified for the  
 20 landscape irrigation component if they comply with the requirements for conjunctive use irrigation  
 21 systems in 15A NCAC 02U, based upon information provided by the licensed professionals, if  
 22 required in G.S. 89C, 89E, or 89F.
- 23 (3) System design, operation, and management requirements shall comply with requirements for  
 24 comparable systems in 15A NCAC 02U, including provisions for continuous on-line monitoring  
 25 and recording for turbidity and a mechanism to prevent effluent utilization if the turbidity exceeds  
 26 10 NTUs ~~or~~ NTUs, if the E. Coli or fecal coliform levels are not being ~~met~~. met, or the  
 27 disinfection unit is not operable.
- 28 (4) Requirements to comply with an effluent TN standard may be waived on a project specific [basis,  
 29 basis when documentation is provided showing that the proposed design will not result in an  
 30 exceedance of the groundwater standards in accordance with 15A NCAC 02L.
- 31 (e) All RCW systems approved in accordance with this rule shall be designed by a PE licensed professional and the  
 32 plans approved by the State prior to LHD permit issuance.
- 33 ~~(f) An RCW system may also be permitted in accordance with Rule .0207 of this Subchapter.~~

34  
 35 *History Note: Authority G.S. 130A-335(e).*  
 36 *Eff. December 1, 2018*

1 15A NCAC 18E .1101 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1101 GENERAL DOSING SYSTEM REQUIREMENTS**

4 (a) Dosing systems with a single pump or siphon shall be required to be used to deliver effluent into laterals when:

- 5 (1) gravity distribution cannot be achieved between the septic tank and dispersal field; total lateral  
6 length exceeds 750 linear feet in a single system; or  
7 (2) the total lateral length exceeds 750 linear feet in a single system; or discharging to a pressure  
8 dosed gravity distribution or pressure dispersal system.  
9 (3) a pressure dosed gravity distribution or pressure dispersal system is used.

10 (b) Dosing systems with multiple alternating or sequencing Alternating pumps or siphons shall be used and to  
11 discharge to separate dispersal fields for the following; when:

- 12 (1) DDF from a single system exceeds 3,000 gpd; or  
13 (2) the total length of trench exceeds 2,000 linear feet in a single system.

14 (c) If alternating pumps or siphons are not required in accordance with Paragraph (b) of this Rule, but used, then the  
15 alternating pumps or siphons may discharge to a single dispersal field.

16 (d) The dose volume to a dispersal field shall be calculated as follows: from pressure dosed gravity distribution  
17 systems shall be designed to fill the installed linear footage of the laterals between 66 and 75 percent at each dosing  
18 event. The lateral capacity for LDP systems and trench products with a PIA Approval is equivalent to the capacity of  
19 a four inch corrugated pipe. Dose volumes for LPP systems shall be calculated in accordance with Rule  
20 .0907(e)(14)(B) of this Subchapter. Dose volumes for drip dispersal systems shall be calculated in accordance with  
21 Rule .1602(f)(3) of this Subchapter.

- 22 (1) 66 to 75 percent of the volume of the installed linear lateral footage for pressure dosed gravity  
23 distribution systems;  
24 (2) 66 to 75 percent of the volume of the installed linear lateral footage for LDP systems and trench  
25 products with a PIA approval based on lateral capacity equivalent to the capacity of a four-inch  
26 corrugated pipe;  
27 (3) LPP systems in accordance with Rule .0907(e)(14)(B) of this Subchapter; and  
28 (4) drip dispersal systems in accordance with Rule .1602(f)(3) of this Subchapter.

29 (e) The pump operating flow rate from a dosing system shall be designed to achieve scour velocity in the supply  
30 line at a minimum, ~~and to distribute effluent in accordance with the [wastewater system design criteria.]~~ dispersal  
31 field design.

32 (f) All dosing systems shall have their performance demonstrated be tested using clean water prior to issuance of an  
33 OP. The test shall be conducted by the installer, LSS, authorized designer, and PE, as applicable, witnessed by the  
34 LHD, and include a demonstration and documentation of the following:

- 35 (1) pump or siphon operating flow rate; rate and dose volume delivered;  
36 (2) float control levels;  
37 (3) high water alarm, including sound;

1           ~~(3)~~(4) operating pressure head, if applicable; and  
2           ~~(4)~~(5) [~~confirmed~~] delivery of water to the dispersal field.

3

4    *History Note:*    *Authority G.S. 130A-335(e), (f), and (f1).*

5                    *Eff. December 1, 2018*

1 15A NCAC 18E .1102 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1102 PUMP DOSING**

4 (a) The effluent pump shall be:

- 5 (1) capable of handling a minimum of ½-inch solids or be a screened, high head pump designed for  
6 effluent;
- 7 (2) designed to meet the pump operating flow rate and total dynamic head specified for ~~of~~ the effluent  
8 distribution system;
- 9 (3) removable without requiring entrance into the tank; and
- 10 (4) listed by a third-party electrical testing and listing agency, such as Underwriter's Laboratory or an  
11 equivalent third party electrical testing and listing agency. Laboratory. A PE may propose a pump  
12 model not listed by a third-party electrical testing and listing agency. The State shall approve the  
13 pump when review of documentation provided by the PE demonstrates that the pump model meets  
14 the performance requirements for the dispersal field design.

15 (b) A vent or anti-siphon ~~holes~~ hole (3/16-inch minimum) of a 3/16-inch minimum diameter shall be used to  
16 prevent air locking of the pump and siphoning from the pump tank when pumping downhill. When a check valve is  
17 provided, the anti-siphon hole or vent shall be located between the pump and the check valve. Additional venting  
18 may be required at the high point in the pump force main to prevent siphoning.

19 (c) Each pump discharge line in a ~~Inside the~~ pump ~~tank, tank~~ shall have a disconnect device, such as a pressure-  
20 rated threaded union, flange, ~~camlock, or camlock,~~ or similar disconnect device shall be provided in each pump  
21 discharge line.

22 (d) Check valves or other type valves shall prevent drainback from the dispersal field or supply line into the pump  
23 tank. A system may be designed and approved for the supply line to drain back to the pump tank based on site  
24 specific considerations, such as freeze protection.

25 (e) An isolation valve shall be provided on the field side of the disconnect device when pumping uphill.

26 (f) The pump discharge piping shall be accessible within the tank or riser from finished grade.

27 (g) Fittings and valves shall be of compatible non-corrodible material. Isolation valves and disconnects shall be  
28 located within 18 inches of the top of the access riser opening.

29 (h) All submersible pumps shall be provided with a non-corrodible rope or chain attached to each pump enabling  
30 pump removal from the ground surface without requiring dewatering or entrance into the tank.

31  
32 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

33 *Eff. December 1, 2018*

1 15A NCAC 18E .1103 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1103 CONTROL PANELS**

4 (a) A control panel shall be provided for all systems which that use a pump. The control panel enclosure shall be  
5 rated NEMA 4X or equivalent. 4X at a minimum. A third-party electrical testing and listing agency, such as  
6 Underwriter's Laboratory or an equivalent third party electrical testing and listing agency Laboratory, shall list the  
7 control panel. The control panel shall include for each pump:

- 8 (1) an independent overload protection (if not integral with the pump motor);
- 9 (2) a circuit breaker(s);
- 10 (3) a motor contactor which that breaks disconnects all the current to the pump or a solid-state relay  
11 which that controls current to the pump;
- 12 (4) a hand-off automatic (H-O-A) switch or alternate method to enable manual or automatic pump  
13 operation and for the pump to be deactivated manually;
- 14 (5) a pump run light;
- 15 (6) an elapsed time meter; and
- 16 (7) an event counter.

17 (b) An automatic pump sequencer shall be provided in systems requiring multiple pumps in accordance with Rule  
18 .1101(b) of this Section and shall remain operable whenever any pump is inoperable.

19 (c) When telemetry is required in accordance with Sections .0800, .1500, .1600, and .1700 of this Subchapter, the  
20 control panel shall be connected to an active phone line, wireless internet router, dedicated cellular line, or any other  
21 another form of telemetry that allows the Management Entity to properly monitor system performance [to, at a  
22 minimum,] to be notified and respond to alarm conditions. The telemetry shall remain active for the life of the  
23 wastewater system.

24 (d) The control panel bottom shall be mounted a minimum of 24 inches and no more than 36 inches above finished  
25 grade, within 50 feet of and in direct view of the pump tank. The control panel shall always be accessible to the  
26 Management Entity and LHD. Entity and LHD.

27 (e) When the control panel is located more than 10 feet from the pump tank access riser, and when one or more  
28 electrical splices are [to be] used, a NEMA 4X junction box shall be installed above grade on or adjacent to the  
29 pump tank access riser. [Under no conditions are electrical] Electrical splices [to be] shall not be used within the  
30 conduit piping.

31 (f) Wiring shall be conveyed to the control panel or outside junction box through waterproof, gasproof, and  
32 corrosion-resistant conduits, with no splices or junction boxes inside the tank. Materials and methods, such as Wire  
33 wire grips, grips or duct seal, or other suitable material or methods, shall be used to seal around wire and wire  
34 conduit openings inside the pump tank and disconnect enclosure.

35 (g) Dual and multiple fields shall be independently dosed by separate pumps which that shall automatically  
36 alternate or sequence. The supply lines shall be "H" connected to permit manual alternation between fields dosed by  
37 each pump. "H" connection valving shall be accessible from the ground surface, either from the pump tank access

1 manhole or in a separate valve chamber outside the pump tank. The State ~~may shall~~ approve other ~~equivalent~~  
2 methods of dosing dual or multiple ~~fields.~~ ~~fields when the authorized designer or PE provides documentation of~~  
3 ~~equivalent performance to this Paragraph.~~

4 (h) ~~Liquid level detection devices, such as floats, Floats or similar State approved devices designed for detecting~~  
5 ~~liquid levels shall be provided in a the~~ pump tank ~~shall be provided~~ to control pump cycles and trigger notification  
6 of alarm ~~conditions;~~ ~~conditions.~~ The liquid level detection device configuration shall meet the following  
7 ~~requirements:~~

- 8 (1) a minimum of 12 inches of effluent shall be maintained in the bottom of the pump tank;
- 9 (2) pump-off level shall be set to keep the pump submerged or in accordance with the manufacturer's  
10 written specifications;
- 11 (3) a separate control float shall be provided to activate the high-water alarm;
- 12 (4) the high-water alarm float shall be set to activate within six inches of the pump-on level or higher,  
13 if applicable, if providing design equalization capacity in a timed dosing system;
- 14 (5) the lag pump float switch, where provided, shall be located at or above the high-water alarm  
15 activation level; and
- 16 (6) floats shall be supported utilizing durable, corrosion resistant material, and designed to be  
17 adjustable, removable, and replaceable from the ground surface without requiring dewatering,  
18 entrance into the tank, or pump removal.

19 (i) The pump tank shall have a high-water alarm that shall:

- 20 (1) be audible and visible to the system users and the Management Entity;
- 21 (2) have a silencer button or device that is located on the outside of the panel enclosure;
- 22 (3) provide for manual ~~testing and shall enable the audible alarm to be silenced by the system user.~~  
23 ~~testing; The alarm shall automatically reset after testing and when an alarm condition has cleared;~~  
24 ~~(4) the alarm shall automatically reset after testing and when an alarm condition has cleared;~~  
25 ~~(4) remain operable whenever the pump is inoperable;~~  
26 (5) ~~have an enclosure that is watertight, corrosion resistant, and rated NEMA 4X or equivalent; and~~  
27 ~~remain operable whenever the pump is inoperable;~~  
28 (6) ~~be mounted outside the facility and always accessible.~~ ~~have an enclosure that is watertight,~~  
29 ~~corrosion resistant, and shall be rated NEMA 4X at a minimum; and~~  
30 (7) ~~be mounted outside the facility and accessible.~~

31 (j) For systems designed by a PE, the PE may propose other panel construction and location criteria that meet these  
32 panel performance criteria, comply with local electrical codes, and are approved by the local electrical inspector.

33  
34 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*  
35 *Eff. December 1, 2018*

1 15A NCAC 18E .1104 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1104 SIPHON DOSING**

4 Siphons and siphon tanks may be used when a minimum of two feet of elevation drop is maintained between the  
5 siphon outlet invert and the inlet invert in the dispersal field distribution system. Siphons and siphon tanks shall  
6 meet the following criteria:

7 (1) ~~slope~~ Slope and size of the siphon discharge line shall be sufficient to handle the peak siphon  
8 discharge by gravity flow without the discharge line flowing full. Vents for the discharge lines  
9 shall be located outside of the siphon tank and shall not serve as an overflow for the ~~tank;~~ tank.

10 (2) ~~all~~ All siphon parts shall be installed in accordance with the manufacturer's specifications. All  
11 materials shall be corrosion-resistant, of cast iron, high-density plastic, fiberglass, stainless steel,  
12 or ~~equal;~~ and equal as approved by the State when documentation is provided which shows the  
13 materials meet the requirements of this Rule.

14 (3) ~~siphon~~ Siphon tanks shall have a functioning trip counter and high-water alarm. The high-water  
15 alarm shall be audible and visible by system users and weatherproof if installed outdoors in a an  
16 enclosure rated as NEMA 4X enclosure or equivalent. at a minimum. The high-water alarm shall  
17 be set to activate within two inches of the siphon trip level.

18

19 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

20 *Eff. December 1, 2018*

1 15A NCAC 18E .1105 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1105 TIMED DOSING**

4 (a) Timed dosing systems shall be used with the following:

- 5 (1) advanced pretreatment or dispersal systems, if required by the manufacturer; when a dosing  
6 system is required in accordance with Rule .1101 of this Section in conjunction with an adjusted  
7 DDF granted in accordance with Rule .0403 of this Subchapter;  
8 (2) when a dosing system is required in accordance with Rule .1101 of this Section in conjunction  
9 with an adjusted DDF granted in accordance with Rule .0403 of this Subchapter; or flow  
10 equalization systems;  
11 (3) advanced pretreatment or dispersal systems, if required by the manufacturer; when specified by  
12 the authorized designer, or  
13 (4) when specified by the authorized designer.

14 ~~(b) Flow equalization systems designed under a PIA Approval shall incorporate timed dosing to control the~~  
15 ~~maximum amount of effluent that shall be delivered to the advanced pretreatment or dispersal field in a specific~~  
16 ~~period.~~

17 ~~(e)(b)~~ The timed dosing system shall be integrated with the pump tank control sensors to ensure that the minimum  
18 dose volume calculated in accordance with Rule .1101(d) of this Section ~~shall be~~ is present prior to the start of any  
19 scheduled dose event and to provide that a full dose is delivered.

20 ~~(d)(c)~~ The float ~~setup for configuration of~~ a flow equalization system using ~~system may~~ shall be  
21 adjusted by the LHD, authorized designer, or PE, from the criteria listed in Rule .1103(h) of this Section to provide  
22 for equalization capacity in the system.

23  
24 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

25 *Eff. December 1, 2018*

1 15A NCAC 18E .1106 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1106 PRESSURE DOSED GRAVITY DISTRIBUTION DEVICES**

4 (a) Pressure manifolds for pressure dosed gravity distribution shall meet the following minimum design and  
5 performance requirements:

- 6 (1) uniform distribution of flow among individual laterals with a minimum of two feet of residual  
7 pressure head;
- 8 (2) a pressure regulating valve incorporated in the supply line just prior to the pressure manifold to  
9 control pressure to the manifold;
- 10 (3) a mechanism or device for measuring residual pressure head in the manifold;
- 11 (4) a mechanism to stop flow to individual laterals;
- 12 (5) a method to visually verify the flow to each individual lateral. Such methods may include ~~but are~~  
13 ~~not limited to~~ observation ports. ~~Observation~~ Observation ports may be located inside or outside  
14 of the pressure manifold ~~box to verify flow to individual laterals;~~ ~~box;~~ and
- 15 (6) the pressure manifold and appurtenances shall be designed and installed to be accessible for  
16 inspection, operation, maintenance, and monitoring.

17 (b) A distribution box or a drop box may be used to dissipate ~~or distribute~~ flow in a pressure dosed gravity dispersal  
18 system for parallel, serial, or sequential ~~distribution, as applicable. distribution.~~ Such devices shall be ~~of sound~~  
19 ~~construction,~~ watertight, ~~not subject to excessive corrosion,~~ ~~corrosion resistant,~~ ~~constructed to withstand active and~~  
20 ~~passive loads,~~ ~~[adequate capacity,~~ and the volume of the device shall be such that when the dose volume is  
21 ~~delivered, the box shall not overflow.~~ ~~[demonstrated to perform as designed,]~~ and approved by the ~~The~~ authorized  
22 ~~agent.~~ agent shall approve the distribution device when it has been determined to be in accordance with Rule  
23 ~~.0901(g)(9) through (11) of this Subchapter.~~

24  
25 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

26 *Eff. December 1, 2018*

1 15A NCAC 18E .1201 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1201 ADVANCED PRETREATMENT SYSTEM STANDARDS**

4 (a) Advanced pretreatment systems with a DDF less than or equal to 3,000 gpd shall meet the following conditions:

- 5 (1) have an RWTS or PIA Approval;
- 6 (2) design that meets be designed to meet the effluent standard specified in the OP and defined in  
7 Table XXIV prior to effluent dispersal ~~of the effluent~~ to the soil;
- 8 (3) compliance comply with the siting and sizing requirements of this Section; and
- 9 (4) compliance comply with Rules ~~.1302(e)~~ .1302(f) and .1710 of this Subchapter.

10

11 **TABLE XXIV.** Effluent standards for advanced pretreatment systems

Constituent	Effluent Standards		
	NSF-40	TS-I	TS-II
CBOD	≤ 25 mg/L	≤ 15 mg/L	≤ 10 mg/L
TSS	≤ 30 mg/L	≤ 15 mg/L	≤10 mg/L
NH <sub>3</sub>		≤ 10 mg/L or 80% removal of NH <sub>3</sub> if influent TKN exceeds 50 mg/L	≤ 10 mg/L
TN			≤ 30 mg/L
Fecal Coliform		≤ 10,000 colonies/100 mL	≤ 1,000 colonies/100 mL

12

13 (b) The effluent applied to advanced pretreatment systems shall not exceed DSE as specified in Table III of Rule  
14 ~~.0402~~ .0402(a) of this Subchapter, unless the system is designed to treat HSE and approved by the State on a product  
15 or project-specific ~~basis~~ basis in accordance with the Rules of this Subchapter and engineering practices.

16 (c) Wastewater systems with a DDF greater than 3,000 gpd, proposed to meet TS-II effluent standards shall meet a  
17 TN standard of less than or equal to 20 mg/L.

18

19 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

20 *Eff. December 1, 2018*

1 15A NCAC 18E .1202 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1202 SITING AND SIZING CRITERIA FOR ADVANCED PRETREATMENT**  
4 **SYSTEMS WITH A DESIGN DAILY FLOW LESS THAN OR EQUAL TO 1,500 GALLONS/DAY**

5 ~~(a) The initial site evaluation shall be conducted and depth to LC or SWC determined in accordance with Section~~  
6 ~~.0500 of this Subchapter. Except as otherwise required in this Rule, the requirements of Rule .0901 of this~~  
7 ~~Subchapter shall apply.~~

8 ~~(b)(a) Wastewater systems utilizing advanced pretreatment with a DDF less than or equal to 1,500 gpd may only~~  
9 ~~use Only~~ one of the following modifications to system siting and sizing ~~criteria may be approved, criteria,~~ unless  
10 otherwise identified in this Rule:

11 (1) reduction ~~in depth to LC or of vertical separation distance to LC or SWC;~~ ~~[LC;]~~ LC in accordance  
12 with Paragraph (b) of this Rule;

13 (2) LTAR ~~increases;~~ increase in accordance with Paragraph (c) of this Rule; or

14 (3) setback ~~reduction.~~ reductions in accordance with Paragraph (d) of this Rule.

15 ~~(e)(b)~~ The minimum required vertical separation ~~distance~~ to a LC ~~or SWC~~ in natural soil may be reduced with the  
16 use of advanced pretreatment in accordance with Table XXV. Table XXVI provides the minimum depths and  
17 vertical separation ~~distances~~ for new and existing fill. A Special Site Evaluation shall be submitted and approved in  
18 accordance with Rule .0510 of this Subchapter when a reduction in vertical separation ~~distance~~ to a LC ~~or SWC~~ is  
19 proposed in accordance with this Rule.

21 **Table XXV. Minimum vertical separation ~~distance~~ to LC ~~or SWC~~ based on effluent standards for wastewater**  
22 **systems with a DDF less than or equal to 1,500 gpd**

Minimum vertical separation <del>distance</del> (inches) from infiltrative surface to LC <del>or SWC</del>					
Soil Group	Distribution Method	Effluent Standard**			
		DSE*	NSF-40	TS-I	TS-II
I	Gravity	18	12	12	12
	LPP	12	12	9	6
	Drip	12	12	9	6
II-IV	Gravity	12	12	9	9
	LPP	12	12	9	6
	Drip	12	12	9	6

23 \*For comparison

24 \*\*12-inch vertical separation shall always be maintained to rock or tidal water

26 **Table XXVI. Minimum depth to LC and vertical separation to SWC in new or existing fill based on effluent**  
27 **standard for wastewater systems with a DDF less than or equal to 1,500 gpd**

<b>Minimum depth (inches) from naturally occurring soil surface to LC <del>or SWC</del></b>
---

Type of Fill	Distribution Method	Effluent Standard			
		DSE**	NSF-40	TS-I	TS-II
New Fill (≤1,500 gpd) (slope ≤ 4%)	Gravity	18 to LC 12 to SWC	18 to LC 12 to SWC	14 to LC 12 to SWC	14 to LC 12 to SWC
	LPP	18 to LC 12 to SWC	18 to LC 12 to SWC	12	12
	Drip	18 to LC 12 to SWC	18 to LC 12 to SWC	12	12
Existing Fill (≤480 gpd)	Gravity	36 of Group I <del>Fill/Soils</del> <del>Fill/Soil</del>			
	LPP	24 of Group I <del>Fill/Soils</del> <del>Fill/Soil</del>			
	Drip	24 of Group I <del>Fill/Soils</del> <del>Fill/Soil</del>			
<b>Minimum vertical separation distance (inches) from infiltrative surface to LC* or SWC</b>					
Type of Fill	Distribution Method	Effluent Standard			
		DSE**	NSF-40	TS-I	TS-II
New Fill (≤1,500 gpd) (slope ≤ 4%)	Gravity	24 to LC 18 to SWC	18 to LC 18 to SWC	18 to LC 14 to SWC	18 to LC 14 to SWC
	LPP	18 to LC 12 to SWC	18 to LC 12 to SWC	12 to LC 9 to SWC	12 to LC 9 to SWC
	Drip	18 to LC 12 to SWC	18 to LC 12 to SWC	12 to LC 9 to SWC	12 to LC 9 to SWC
Existing Fill (≤480 gpd)	Gravity	36	36	36	36
	LPP	18	18	12	12
	Drip	18	18	12	12

1 \*Minimum depth after adjustment for slope correction

2 \*\*For comparison

3  
4 ~~(d)~~(c) The LTAR shall be based on the effluent standard and dispersal field type ~~proposed~~; proposed in accordance  
5 with the following:

6 (1) The LTAR may be increased by the following factors when compared to the rate assigned by the  
7 authorized agent for a new system using DSE:

8 (A) up to 1.33 for NSF-40 effluent standards in soils which are Group I or II with suitable  
9 structure;

10 (B) up to 2.0 for TS-I or TS-II effluent standards when pressure dispersal is utilized; or

11 (C) up to 2.5 for TS-II effluent standards when all the following conditions are met:  
12 minimum of 36 inches of Group I soils from the naturally occurring soil surface;

1 minimum depth to a SWC below the naturally occurring soil surface is 24 inches; space  
 2 shall be available for an equivalently sized dispersal field repair area; and pressure  
 3 dispersal shall be utilized.

- 4 (2) A Special Site ~~Evaluation~~ Evaluation, as if required in accordance with Rule .0510 of this  
 5 ~~Subchapter~~ Subchapter, shall be submitted and approved.
- 6 (3) The LTAR for an aerobic drip system shall be ~~assigned~~ determined in accordance with Rule .1204  
 7 of this Section.
- 8 (4) Trench dispersal products approved for a specific dispersal field reduction in area or trench length  
 9 when receiving DSE in accordance with this Subchapter or a PIA Approval shall not be reduced  
 10 by more than 50 percent when any LTAR adjustments are taken in accordance with this Rule.
- 11 (5) The DDF shall not be increased by the addition of advanced pretreatment to an existing  
 12 wastewater system.

13 ~~(e)~~(d) Advanced pretreatment systems shall meet the following setback requirements:

- 14 (1) minimum setback requirements of Section .0600 of this ~~Subchapter, as applicable, Subchapter~~  
 15 shall be met, except as shown in Table ~~XXVII of this Rule; XXVII~~; and
- 16 (2) when any other siting or sizing modifications are applied (reduced depth to ~~LC or SWC, LC,~~  
 17 vertical ~~separation—distance~~ separation, or increased LTAR) for a TS-I or TS-II system in  
 18 accordance with Paragraphs ~~(e)(b)~~ and ~~(d)(c)~~ of this Rule, no setback reductions shall be taken  
 19 except those to artificial drainage systems described in Table XXVII.

21 **Table XXVII:** Setbacks for wastewater systems meeting NSF-40, ~~TS-I~~ TS-I, or TS-II effluent standards

Feature (structure, water source, etc.)	Setback (feet) according to Effluent Standard			
	DSE*	NSF-40	TS-I	TS-II
Surface waters classified WS-I, from mean high-water mark	100	70	70	50
Waters classified SA, from mean high-water mark	100	70	70	50
Any Class I or Class II reservoir, from normal pool elevation	100	70	70	50
Any other coastal water, canal, marsh, stream, perennial waterbodies, streams, or other surface waters, from mean high-water mark	50	35	35	25
Lake or pond, from flood pool elevation	50	35	35	25
Subsurface groundwater lowering system, ditch, or device, as measured on the ground surface from the edge of the feature	25	25	20	15
Surface water diversion, as measured on the ground surface from the edge of the diversion	15	15	10	10

<u>Interceptor drain - upslope</u>	<u>10</u>	<u>10</u>	<u>7</u>	<u>7</u>
<u>Interceptor drain – sideslope</u>	<u>15</u>	<u>15</u>	<u>10</u>	<u>10</u>
<u>Interceptor drain – downslope</u>	<u>25</u>	<u>25</u>	<u>20</u>	<u>15</u>
Any stormwater conveyance (pipe or open channel) or ephemeral stream	15	15	10	10
Permanent stormwater retention basin or detention basin	50	50	35	25
Any other dispersal <del>field except repair area field, except</del> <u>designated dispersal field repair area for project site</u>	20	20	10	10

1 \*For comparison

2

3 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

4 *Eff. December 1, 2018*

1 15A NCAC 18E .1203 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1203 SITING AND SIZING CRITERIA FOR ADVANCED PRETREATMENT**  
4 **SYSTEMS WITH A DESIGN DAILY FLOW GREATER THAN 1,500 GALLONS/DAY AND LESS THAN**  
5 **OR EQUAL TO 3,000 GALLONS/DAY**

6 (a) ~~No reductions in depth to LC or SWC, [LC,] vertical separation distance or setback requirements shall be taken.~~  
7 ~~Wastewater systems utilizing advanced pretreatment with a DDF greater than 1,500 gpd and less than or equal to~~  
8 ~~3,000 gpd may use utilize the system siting and sizing in this Rule. Except as otherwise required in this Rule, the~~  
9 ~~requirements of Rule .0901 of this Subchapter shall apply.~~

10 (b) The LTAR shall be based on the effluent standard and dispersal field type ~~proposed,~~ proposed in accordance  
11 with the following:

12 (1) The LTAR may be increased by the following factors when compared to the rate assigned by the  
13 authorized agent for a new system using DSE:

14 (A) up to 2.0 for TS-I or TS-II effluent standards;

15 (B) up to 2.5 for TS-II effluent standards when ~~all the following conditions are met: there is a~~  
16 ~~minimum of 48 inches of Group I soils from the naturally occurring soil surface; surface~~  
17 ~~and a~~ minimum of 30 inches to a SWC below the naturally occurring soil surface.

18 (2) The LTAR for an aerobic drip system shall be ~~assigned~~ determined in accordance with Rule .1204  
19 of this Section.

20 (c) When the LTAR for a system is proposed to be increased in accordance with Paragraph (b) of this Rule, the  
21 following conditions shall be met:

22 (1) a Special Site Evaluation required in accordance with Rule .0510 of this Subchapter shall be  
23 submitted and approved;

24 (2) pressure dispersal shall be utilized;

25 (3) space shall be available for an equivalently sized dispersal field repair area; and

26 (4) 25-foot setback shall be maintained to all property lines unless ~~one of the following criteria are~~  
27 ~~met: a~~ site-specific nitrogen migration analysis for a TS-I system indicates that the nitrate-nitrogen  
28 concentration at the property line will not exceed 10 ~~mg/L; mg/L~~ or a TS-II system is used.

29 (d) Trench dispersal products approved for a specific dispersal field reduction in area or trench length when  
30 receiving DSE in accordance with this Subchapter or a PIA Approval shall not be reduced by more than 50 percent  
31 as a result of increased LTAR in accordance with this Rule.

32 (e) The DDF shall not be increased by the addition of advanced pretreatment to an existing wastewater system.

33  
34 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

35 *Eff. December 1, 2018*

1 15A NCAC 18E .1204 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1204 ADVANCED PRETREATMENT DRIP DISPERSAL SYSTEMS**

4 (a) This Rule provides for the permitting of drip dispersal systems receiving advanced pretreatment effluent with a  
5 DDF less than or equal to 3,000 gpd. Drip dispersal systems shall comply with the provisions of this Rule and  
6 Section .1600 of this Subchapter. Drip dispersal systems may utilize the following siting and sizing criteria when  
7 used with advanced pretreatment and a DDF less than or equal to 1,500 gpd. Except as otherwise required in this  
8 Rule, the requirements of Rule .0901 of this Section shall apply. Paragraphs (b) through

9 (b) The soil and site characteristics shall meet the following criteria based on effluent standards: Drip dispersal  
10 systems with a DDF less than or equal to 1,500 gpd shall utilize the siting and sizing criteria in this Paragraph when  
11 used with advanced pretreatment.

12 (1) NSF-40 Systems The soil and site characteristics shall meet the following criteria based on  
13 effluent standards:

14 (A) NSF-40 Systems a minimum of 18 inches of naturally occurring suitable soil above a LC  
15 and 13 inches of naturally occurring suitable soil above a SWC, and the minimum  
16 vertical separation distance to any LC or SWC shall be 12 inches;

17 (i) a minimum of 18 inches of naturally occurring suitable soil above a LC and 13  
18 inches of naturally occurring suitable soil above a SWC, and the minimum  
19 vertical separation to any LC shall be 12 inches;

20 (ii) for new fill, the requirements of Rules .0909(b) and (c) of this Subchapter shall  
21 be met, except there shall be a minimum of 18 inches of naturally occurring  
22 suitable soil above a LC and a minimum of 12 inches of naturally occurring  
23 suitable soil above a SWC, and the minimum vertical separation shall be 18  
24 inches to a LC and 12 inches to a SWC; or

25 (iii) for existing fill, the requirements of Rules .0909(d) and (e) of this Subchapter  
26 shall be met, except that the minimum vertical separation to any LC shall be 18  
27 inches;

28 (B) TS-I Systems for new fill, the requirements of Rules .0909(b) and (c) of this Subchapter  
29 shall be met, except as follows: a minimum of 18 inches of naturally occurring suitable  
30 soil above a LC and a minimum of 12 inches of naturally occurring suitable soil above a  
31 SWC; and the minimum vertical separation distance shall be 18 inches to a LC and 12  
32 inches to a SWC; or

33 (i) a minimum of 15 inches of naturally occurring suitable soil above a LC and a  
34 minimum of 13 inches of naturally occurring suitable soil above a SWC, and the  
35 minimum vertical separation to any LC shall be nine inches;

36 (ii) for new fill, the requirements of Rules .0909(b) and (c) of this Subchapter shall  
37 be met, except there shall be a minimum of 12 inches of naturally occurring

- 1 suitable soil above a LC, a minimum of nine inches vertical separation to a  
2 SWC, and a minimum of 12 inches vertical separation to a LC; or
- 3 (iii) for existing fill, the requirements of Rules .0909(d) and (e) of this Subchapter  
4 shall be met, except that the minimum vertical separation to any LC shall be 12  
5 inches; and
- 6 (C) TS-II Systems for existing fill, the requirements of Rules .0909(d) and (e) of this  
7 Subchapter shall be met, except that the minimum vertical separation distance to any LC  
8 or SWC shall be 18 inches;
- 9 (i) a minimum of 13 inches of naturally occurring suitable soil above a LC and the  
10 minimum vertical separation to any LC shall be six inches;
- 11 (ii) for new fill, the requirements of Part (B)(ii) of this Paragraph shall be met; or  
12 (iii) for existing fill, the requirements of Part (B)(iii) of this Paragraph shall be met.
- 13 (2) TS-I Systems Site modifications for advanced pretreatment drip dispersal systems shall meet the  
14 following criteria based on effluent standards:
- 15 (A) a minimum of 15 inches of naturally occurring suitable soil above a LC and a minimum  
16 of 13 inches of naturally occurring suitable soil above a SWC, and the minimum vertical  
17 separation distance to any LC or SWC shall be nine inches; NSF-40 Systems may utilize  
18 a groundwater lowering system to meet the vertical separation requirements to a SWC  
19 only when Group I or II soils with suitable structure are present within 36 inches of the  
20 naturally occurring soil surface. The minimum vertical separation to the projected  
21 (drained) SWC shall be 12 inches. The addition of fill material shall not be used to meet  
22 this requirement; and
- 23 (B) for new fill, the requirements of Rules .0909(b) and (e) of this Subchapter shall be met,  
24 except as follows: a minimum of 12 inches of naturally occurring suitable soil above a  
25 LC or SWC; [LC;] a minimum of nine inches vertical separation distance to a SWC, and  
26 a minimum of 12 inches vertical separation distance to a LC; or TS-I and TS-II Systems  
27 may utilize a groundwater lowering system to meet the vertical separation requirements  
28 to a SWC. The minimum vertical separation to the projected (drained) SWC shall be 12  
29 inches. The groundwater lowering system may be used with the following: Group III  
30 soils are present at any depth above the invert elevation of the highest point of the  
31 artificial drainage system or within 36 inches of the naturally occurring soil surface,  
32 whichever is deeper; or on new fill sites.
- 33 (C) for existing fill, the requirements of Rules .0909(d) and (e) of this Subchapter shall be  
34 met, except that the minimum vertical separation distance to any LC or SWC shall be 12  
35 inches; and

- (3) TS-II Systems Table XXVIII shall be used to determine the LTAR for advanced pretreatment drip dispersal systems based on Soil Group. Limitations in adjustment allowances for NSF-40, TS-I, and TS-II systems are listed in Subparagraphs (b)(3)(E), (b)(3)(F), and (b)(3)(G) of this Rule.

**TABLE XXVIII. LTAR for advanced pretreatment drip dispersal systems based on Soil Group**

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )		
			NSF-40	TS-I	TS-II
I	Sands	Sand	0.6 - 1.0	0.8 - 1.2	0.8 - 1.5
		Loamy Sand			
II	Coarse Loams	Sandy Loam	0.4 - 0.6	0.5 - 0.8	0.6 - 0.8
		Loam			
III	Fine Loams	Sandy Clay Loam	0.15 - 0.4	0.2 - 0.6	0.2 - 0.6
		Silt Loam			
		Clay Loam			
		Silty Clay Loam			
		Silt			
IV	Clays	Sandy Clay	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2
		Silty Clay			
		Clay			

(A) a minimum of 13 inches of naturally occurring suitable soil above a LC and SWC and the minimum vertical separation distance to any LC shall be six inches; The LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface.

(B) for new fill, the requirements of Part (2)(B) of this Paragraph shall be met; or The DDF shall be divided by the LTAR, determined from Table XXVIII or XXIX, to calculate the minimum dispersal field area required. The minimum dripline length shall be calculated by dividing the required area by the maximum line spacing of two feet. The following equations shall be used to calculate the minimum dispersal field area and dripline length required:

$$MA = DDF \div LTAR$$

$$DL = MA \div LS$$

Where MA = minimum dispersal field area (ft<sup>2</sup>)

DDF = design daily flow (gpd)

LTAR = in gpd/ft<sup>2</sup>

DL = dripline length (feet)

LS = two-foot line spacing

(C) ~~for existing fill, the requirements of Part (2)(C) of this Paragraph shall be met. The minimum dripline length calculated in Subparagraph (b)(3)(B) of this Rule shall not be less than 0.5 x DDF for Group I soils, 0.83 x DDF for Group II soils, 1.25 x DDF for Group III soils, or 3.33 x DDF for Group IV soils. The dripline spacing may be adjusted in accordance with Rule .1602(e)(3) of this Subchapter and the PIA Approval so that the minimum required dispersal field area calculated in Subparagraph (b)(3)(B) of this Rule does not need to be increased.~~

(D) Sections of tubing without emitters (blank tubing) required to meet site-specific conditions shall not count towards the minimum length of dripline needed when laying out the system or when calculating the linear footage of dripline needed.

(E) LTAR adjustment limitations for NSF-40 Systems

(i) the LTAR for new fill shall not exceed 0.6 gpd/ft<sup>2</sup> for Group I soils, 0.4 gpd/ft<sup>2</sup> for Group II soils, 0.15 gpd/ft<sup>2</sup> for Group III soils, or 0.05 gpd/ft<sup>2</sup> for Group IV soils; and

(ii) the LTAR for existing fill shall not exceed 0.8 gpd/ft<sup>2</sup>.

(F) LTAR adjustment limitations for TS-I Systems

(i) the LTAR for new fill shall not exceed 1.0 gpd/ft<sup>2</sup> for Group I soils, 0.5 gpd/ft<sup>2</sup> for Group II soils, 0.2 gpd/ft<sup>2</sup> for Group III soils, or 0.07 gpd/ft<sup>2</sup> for Group IV soils;

(ii) the LTAR for existing fill shall not exceed 1.0 gpd/ft<sup>2</sup>; and

(iii) the LTAR for sites with less than 18 inches of naturally occurring soil to any unsuitable LC shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soils.

(G) LTAR adjustment limitations for TS-II Systems

(i) the LTAR for new fill shall not exceed 1.0 gpd/ft<sup>2</sup> for Group I soils, 0.6 gpd/ft<sup>2</sup> for Group II soils, 0.2 gpd/ft<sup>2</sup> for Group III soils, or 0.07 gpd/ft<sup>2</sup> for Group IV soils;

(ii) the LTAR for existing fill shall not exceed 1.0 gpd/ft<sup>2</sup>; and

(iii) the LTAR for sites with less than 18 inches of naturally occurring soil to any unsuitable LC shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soils.

(4) Table XXIX shall be used in determining the LTAR for advanced pretreatment drip dispersal systems installed in saporlite. The LTAR shall be based on the most limiting, naturally occurring saporlite to a depth of 24 inches below the infiltrative surface.

**TABLE XXIX. LTAR for advanced pretreatment drip dispersal systems based on Saporlite Group**

<b>Saporlite Group</b>	<b>Saporlite</b>	<b>LTAR (area basis)(gpd/ft<sup>2</sup>)</b>
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	<b>Textural Class</b>	<b>NSF-40</b>	<b>TS-I and TS-II</b>
<b>I</b>	<b>Sand</b>	<b>0.4 – 0.5</b>	<b>0.4 – 0.6</b>
	<b>Loamy sand</b>	<b>0.3 – 0.4</b>	<b>0.3 – 0.5</b>
<b>II</b>	<b>Sandy loam</b>	<b>0.25 – 0.35</b>	<b>0.25 – 0.4</b>
	<b>Loam</b>	<b>0.2 – 0.25</b>	<b>0.2 – 0.3</b>
	<b>Silt loam</b>	<b>0.05 – 0.1</b>	<b>0.05 – 0.15</b>
<b>III</b>	<b>Sandy clay loam</b>	<b>0.05 – 0.1</b>	<b>0.05 – 0.15</b>

(5) A Special Site Evaluation shall be required in accordance with Rule .0510 of this Subchapter, as applicable.

(6) Setbacks allowed in Table XXVII of Rule .1202(d) of this Section may be used with advanced pretreatment drip dispersal systems when no reduction in the depth to a LC or vertical separation reduction is proposed compared to the requirements for DSE in Table XXV or Table XXVI of Rule .1202(b) of this Section. A minimum of 18 inches of naturally occurring soil to an unsuitable LC shall be required to take setback reductions. The following LTAR limitations shall be applicable:

(A) for NSF-40 and TS-I systems, with the exception of the setback reductions to artificial drainage systems, when reductions are taken in setbacks, the LTAR shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soil;

(B) for TS-II Systems, with the exception of setback reductions to artificial drainage systems, when reductions are taken in setbacks, the LTAR shall not exceed the mid-range LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soils; and

(C) for NSF-40, TS-I, and TS-II Systems, Table XXVIII may be used to determine the LTAR when no other setback reductions are taken aside of those to artificial drainage systems.

~~(e) Site modifications for advanced pretreatment drip dispersal systems shall meet the following criteria based on effluent standards:~~

~~(1) NSF 40 Systems may utilize a groundwater lowering system to meet the vertical separation distance requirements to a SWC only when Group I or II soils with suitable structure are present within 36 inches of the naturally occurring soil surface. The minimum vertical separation distance to the projected (drained) SWC shall be 12 inches. The addition of fill material shall not be used to meet this requirement; and~~

~~(2) TS I and TS II Systems may utilize a groundwater lowering system to meet the vertical separation distance requirements to a SWC. The minimum vertical separation distance to the projected (drained) SWC shall be 12 inches. The groundwater lowering system may be used with the following:~~

(A) Group III soils are present at any depth above the invert elevation of the highest point of the artificial drainage system or within 36 inches of the naturally occurring soil surface, whichever is deeper; or

(B) on new fill sites.

(d) Table XXVIII shall be used to determine the LTAR for advanced pretreatment drip dispersal systems based on Soil Group. Limitations in adjustment allowances for NSF 40, TS I, and TS II systems are listed in Subparagraphs (d)(5), (d)(6), and (d)(7) of this Rule.

**TABLE XXVIII. LTAR for advanced pretreatment drip dispersal systems based on Soil Group**

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )		
			NSF-40	TS-I	TS-II
I	Sands	Sand	0.6-1.0	0.8-1.2	0.8-1.5
		Loamy Sand			
II	Coarse Loams	Sandy Loam	0.4-0.6	0.5-0.8	0.6-0.8
		Loam			
III	Fine Loams	Sandy Clay Loam	0.15-0.4	0.2-0.6	0.2-0.6
		Silt Loam			
		Clay Loam			
		Silty Clay Loam			
		Silt			
IV	Clays	Sandy Clay	0.05-0.2	0.05-0.2	0.05-0.2
		Silty Clay			
		Clay			

(1) The LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, whichever is greater. [surface.]

(2) The DDF shall be divided by the LTAR, determined from Table XXVIII or XXIX, to determine [calculate] the minimum dispersal field area required. The minimum dripline length shall be determined [calculated] by dividing the required area by the maximum line spacing of two feet. The following equations shall be used to calculate the minimum dispersal field area and dripline length required:

$$MA = DDF \div LTAR$$

$$DL = MA \div LS$$

Where MA = minimum dispersal field area (ft<sup>2</sup>)

DDF = design daily flow (gpd)

LTAR = in gpd/ft<sup>2</sup>

DL = dripline length (feet)

LS = two foot line spacing

(3) The minimum dripline length calculated in Subparagraph (d)(2) of this Rule shall not be less than 0.5 x DDF for Group I soils, 0.83 x DDF for Group II soils, 1.25 x DDF for Group III soils, or 3.33 x DDF for Group IV soils. The dripline spacing may be adjusted in accordance with Rule .1602(e)(3) of this Subchapter and the PIA Approval so that the minimum required dispersal field area calculated in Subparagraph (d)(2) of this Rule does not need to be increased.

(4) Sections of tubing without emitters (blank tubing) required to meet site specific conditions shall not count towards the minimum length of dripline needed when laying out the system or when calculating the linear footage of dripline needed.

(5) LTAR adjustment limitations for NSF 40 Systems

(A) the LTAR for new fill shall not exceed 0.6 gpd/ft<sup>2</sup> for Group I soils, 0.4 gpd/ft<sup>2</sup> for Group II soils, 0.15 gpd/ft<sup>2</sup> for Group III soils, or 0.05 gpd/ft<sup>2</sup> for Group IV soils; and

(B) the LTAR for existing fill shall not exceed 0.8 gpd/ft<sup>2</sup>;

(6) LTAR adjustment limitations for TS I Systems

(A) the LTAR for new fill shall not exceed 1.0 gpd/ft<sup>2</sup> for Group I soils, 0.5 gpd/ft<sup>2</sup> for Group II soils, 0.2 gpd/ft<sup>2</sup> for Group III soils, or 0.07 gpd/ft<sup>2</sup> for Group IV soils;

(B) the LTAR for existing fill shall not exceed 1.0 gpd/ft<sup>2</sup>; and

(C) the LTAR for sites with less than 18 inches of naturally occurring soil to any unsuitable LC or SWC shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soils.

(7) LTAR adjustment limitations for TS II Systems

(A) the LTAR for new fill shall not exceed 1.0 gpd/ft<sup>2</sup> for Group I soils, 0.6 gpd/ft<sup>2</sup> for Group II soils, 0.2 gpd/ft<sup>2</sup> for Group III soils, or 0.07 gpd/ft<sup>2</sup> for Group IV soils;

(B) the LTAR for existing fill shall not exceed 1.0 gpd/ft<sup>2</sup>; and

(C) the LTAR for sites with less than 18 inches of naturally occurring soil to any unsuitable LC or SWC shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soils.

(8) Table XXIX shall be used in determining the LTAR for advanced pretreatment drip dispersal systems installed in saprolite. The LTAR shall be based on the hydraulic conductivity of the most limiting, naturally occurring saprolite to a depth of 24 inches below the infiltrative surface.

TABLE XXIX. LTAR for advanced pretreatment drip dispersal systems based on Saprolite Group

Saprolite Group	Saprolite Textural Class	LTAR (area basis)(gpd/ft <sup>2</sup> )	
		NSF 40	TS I and TS II
I	Sand	0.4—0.5	0.4—0.6
	Loamy sand	0.3—0.4	0.3—0.5

Saprolite Group	Saprolite Textural Class	LTAR (area basis)(gpd/ft <sup>2</sup> )	
		NSF-40	TS-I and TS-II
II	Sandy loam	0.25—0.35	0.25—0.4
	Loam	0.2—0.25	0.2—0.3
	Silt loam	0.05—0.1	0.05—0.15
III	Sandy clay loam	0.05—0.1	0.05—0.15

(e) A Special Site Evaluation shall be required in accordance with Rule .0510 of this Subchapter, as applicable.

(f) ~~Setback reductions allowed in Table XXVII of Rule .1202 of this Section may be used with advanced pretreatment drip dispersal systems when no reduction in the required minimum depth to a LC or SWC or vertical separation distance reduction is proposed compared to the requirements for DSE in Table XXV [or Table XXVI] of Rule .1202 of this Section. A minimum of 18 inches of naturally occurring soil to an unsuitable LC or SWC shall be required to take setback reductions. The following LTAR limitations shall be applicable:~~

- (1) ~~for NSF-40 and TS-I systems, with the exception of the setback reductions to artificial drainage systems, when reductions are taken in setbacks, the LTAR shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soil;~~
- (2) ~~for TS-II Systems, with the exception of setback reductions to artificial drainage systems, when reductions are taken in setbacks, the LTAR shall not exceed the mid-range LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soils; and~~
- (3) ~~for NSF-40, TS-I, and TS-II Systems, Table XXVIII may be used to determine the LTAR when no other setback reductions are taken aside of those to artificial drainage systems.~~

(g) Drip dispersal installation shall be in accordance with Rule .0908(e) of this Subchapter.

~~(h)(c)~~ Drip dispersal systems with a DDF greater than 1,500 gpd and less than or equal to 3,000 gpd used with advanced pretreatment may propose an adjusted LTAR if the following criteria are met:

- (1) no reduction in the depth to a ~~LC or SWC~~; LC, ~~vertical separation distance~~, separation, or setback ~~reductions~~ reduction is proposed;
- (2) proposed LTAR is supported by a Special Site Evaluation in accordance with Rule .0510 of this Subchapter; and
- (3) 25-foot setback shall be maintained to all property lines, unless one of the following criteria is met:
  - (A) site-specific nitrogen migration analysis for a TS-I system indicates that the ~~nitrogen~~ nitrate-nitrogen concentration at the property line will not exceed 10 mg/L; or
  - (B) TS-II system is used.

~~(d) Drip dispersal installation shall be in accordance with Rule .0908(f) of this Subchapter.~~

History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.

Eff. December 1, 2018

1 15A NCAC 18E .1205 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1205 ADVANCED PRETREATMENT SAND LINED TRENCH SYSTEMS**

4 (a) Sand lined trench systems with a DDF less than or equal to 1,500 gpd receiving TS-I or TS-II effluent may be  
5 proposed in accordance with shall meet the requirements of this Rule. Except as otherwise required in this Rule, the  
6 requirements of Rule .0906 of this Section shall apply.

7 (b) The site meets the criteria in Rule ~~.0906(b)~~ .0906(c) of this Subchapter and the receiving permeable horizon may  
8 be deeper than 60 inches below the natural grade.

9 (c) If ~~artificial drainage~~ a groundwater lowering system is proposed used to meet the required minimum vertical  
10 separation ~~distance~~ to a SWC ~~that is not related to lateral water movement~~, SWC, the following conditions shall  
11 apply:

- 12 (1) the site shall comply with the requirements of Rule ~~.0906(e)~~ .0906(d) of this Subchapter; and  
13 (2) the vertical separation ~~distance~~ requirement to a SWC may shall be reduced to nine inches with  
14 pressure dosed gravity distribution or six inches with pressure dispersal.

15 (d) Table XXX shall be used to determine the LTAR for a sand-lined trench system and shall be based on the most  
16 limiting, naturally occurring soils overlying the permeable receiving layer. An equivalent trench width of three feet  
17 shall be used to determine trench length in accordance with Rule .0901(d) of this Section. The LTAR shall be one  
18 of the following:

- 19 (1) the rate set forth in Table XXX; or  
20 (2) 20 percent of the in-situ Ksat of the ~~most hydraulically limiting overlying soil~~ receiving permeable  
21 horizon or the rate set forth in Table XXX, whichever is less.

22  
23 **TABLE XXX.** LTAR for advanced pretreatment sand lined systems based on texture of the most hydraulically  
24 limiting overlying soil horizon  
25

Soil Group	Texture of Most Hydraulically Limiting Overlying Soil Horizon	LTAR (gpd/ft <sup>2</sup> ) *
I	Sand	0.9 – 1.4
II	Coarse Loams	0.7 – 1.0
III	Fine Loams	0.4 – 0.8
IV	Clays	0.2 – 0.4

26 \*There shall be no reduction in trench length compared to a conventional gravel trench when Accepted or  
27 Innovative gravelless trench product is used.

28  
29 (e) A Special Site Evaluation in accordance with Rule .0510 of this Subchapter is shall be required for the following  
30 conditions to field verify the LTAR:

1 (1) when the texture of the receiving permeable horizon is sandy loam or loam, and the system DDF  
2 is greater than 600 gpd; or

3 (2) when the texture of the receiving permeable horizon is silt loam.

4 (f) ~~Setback reductions~~ Setbacks in accordance with Table XXVII of Rule ~~.1202~~ .1202(d) of this Section ~~may shall~~  
5 be applied ~~with to~~ sand lined trench systems.

6 (g) Sand lined trench system installation shall be in accordance with Rule ~~.0906(g)~~ .0906(h) of this ~~Subchapter and~~  
7 ~~pressure dispersal shall be required.~~ Subchapter.

8

9 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

10 *Eff. December 1, 2018*

1 15A NCAC 18E .1206 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1206 ADVANCED PRETREATMENT BED SYSTEMS**

4 (a) ~~Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply. This Rule~~  
5 ~~shall apply to bed systems receiving advanced pretreatment.~~

6 (b) Bed systems receiving NSF-40 effluent, or better, on sites with a DDF ~~not to exceed less than or equal to 600~~  
7 ~~gpd may be approved when the following requirements have been met: shall meet the following requirements:~~

8 (1) the soil and site shall meet the following criteria:

9 (A) the vertical separation ~~distance~~ requirements of Rule ~~.0901(f)(2) .0901(g)(2)~~ of this  
10 ~~Subchapter are met; Subchapter:~~

11 (B) soil texture is Group I, II or III; and

12 (C) ~~design options for the site are sites~~ limited by ~~topography, available space, topography or~~  
13 ~~available space; or other site constraints;~~

14 (2) Table XVI in Rule ~~.0901(e) .0901~~ of this Subchapter ~~is shall be~~ used to determine the LTAR for a  
15 bed system. On sites where the soil texture is Group I or II, the ~~initial~~ LTAR ~~may shall~~ be  
16 increased by a factor of 1.125 with no further reduction in bed size allowed;

17 (3) ~~setback reductions setbacks~~ allowed in Table XXVII of Rule ~~.1202 .1202(d)~~ of this Section ~~may~~  
18 ~~shall~~ be used; and

19 (4) bed system installation shall be in accordance with Rule ~~.0903(d) .0903(e)~~ of this Subchapter.

20 (c) Bed systems receiving TS-I or TS-II effluent on sites with a DDF less than or equal to 1,500 gpd ~~may be~~  
21 ~~approved when the following requirements have been met: shall meet the following requirements:~~

22 (1) The soil and site meet the following criteria:

23 (A) ~~there is~~ a minimum of 30 inches of ~~suitable~~ Group I or II soils below the naturally  
24 occurring soil surface and no SWC within the first 36 inches below the naturally  
25 occurring soil surface or 36 inches of Group I soils below the naturally occurring soil  
26 surface and no SWC exists within the first 12 inches below the naturally occurring soil  
27 surface;

28 (B) the requirement for 30 inches of Group I or II soils or 36 inches of Soil Group I in Part  
29 (c)(1)(A) of this Rule may be reduced to 18 inches when a Special Site Evaluation in  
30 accordance with Rule .0510 of this Subchapter is provided;

31 (C) sites shall have a uniform slope not exceeding two percent, unless a Special Site  
32 Evaluation submitted and approved in accordance with Rule .0510 of this Subchapter is  
33 provided; and

34 (D) the bed system shall be considered to be a fill system if the infiltrative surface is installed  
35 less than six inches below the naturally occurring soil surface. For bed systems in fill, the  
36 requirements of Paragraph (e) of this Rule shall also be met.

- 1 (2) Table XVI in Rule ~~.0901(c)~~ ~~[.0901]~~ of this Subchapter shall be used to determine the initial  
2 LTAR for a bed system and shall be based on the most limiting, naturally occurring soil horizon  
3 within 36 inches of the naturally occurring soil surface or to a depth of 12 inches below the bed  
4 bottom, whichever is deeper. The minimum bed size shall be determined in accordance with the  
5 following:
- 6 (A) the minimum amount of bottom area square feet shall be determined by dividing the DDF  
7 by the LTAR;
  - 8 (B) when the bed is a fill system, the lowest LTAR for the applicable Soil Group shall be  
9 used. The LTAR shall not exceed 1.0 gpd/ft<sup>2</sup>;
  - 10 (C) fill shall not be added to the naturally occurring soil surface in order to increase the  
11 LTAR of a bed system;
  - 12 (D) the minimum bed size ~~may~~ shall be reduced by up to 25 percent when the system is  
13 designed to meet TS-I or TS-II effluent and is not installed in existing fill; and
  - 14 (E) the minimum bed size may be reduced by up to 40 percent when the following criteria are  
15 met: the system is designed to meet TS-II effluent; Group I Soil is present in the first 36  
16 inches of naturally occurring soil; no SWC exists within the first 30 inches below the  
17 naturally occurring soil surface or within 24 inches of the bed bottom; the bed or beds  
18 shall ~~arc~~ not be located ~~directly~~ beneath the advanced pretreatment components, and  
19 pressure dispersal is used; effluent ~~shall be is~~ distributed to the beds by a pump and timer  
20 control system designed to distribute flow evenly over a 24-hour period; and there shall  
21 be is 100 percent dispersal field repair area.
- 22 (3) A Special Site Evaluation shall be submitted and approved in accordance with Rule .0510 of this  
23 Subchapter ~~shall be required~~ when the vertical separation ~~distance~~ to a ~~limiting condition~~ LC is  
24 reduced and on sites with slopes greater than two percent.
- 25 (4) ~~Setback reductions~~ ~~Setbacks~~ ~~allowed as set forth~~ in Table XXVII of Rule ~~.1202~~ ~~.1202(d)~~ of this  
26 Section ~~may be proposed in accordance with the following:~~ shall apply as follows:
- 27 (A) the setbacks shall be measured from the nearest edge of the ~~gravel~~ bed;
  - 28 (B) for bed systems using fill, the setbacks shall be measured from a point five feet from the  
29 nearest edge of the ~~gravel~~ bed sidewall, or from the projected toe of the slope that is  
30 required to meet the soil and site limitations, whichever is greater;
  - 31 (C) the minimum separation between initial and repair dispersal field areas serving a single  
32 system and facility shall be two feet of naturally occurring soil. Ten feet of naturally  
33 occurring soils shall separate the initial and repair dispersal field areas serving separate  
34 facilities when these bed systems are on a common site or tract of land; and
  - 35 (D) whenever the bed size is reduced in accordance with this Rule, only reduced setbacks to  
36 artificial drainage systems in accordance with Table XXVII of Rule ~~.1202~~ ~~.1202(d)~~ of  
37 this Section ~~are shall be~~ allowed. ~~No other setback reductions are allowed.~~

1 (5) Bed system installation shall be in accordance with Rule ~~.0903(d)~~ .0903(c) of this Subchapter and  
2 the following:

3 (A) pressure dispersal shall be used whenever effluent is distributed to a bed not located  
4 ~~directly~~ beneath the advanced pretreatment component; and

5 (B) when new fill is required for the installation of a bed system, suitable Group I fill  
6 material shall be used to meet the vertical separation ~~distance~~ requirements from the bed  
7 bottom to ~~an unsuitable limiting condition~~, a LC, when all of the following conditions are  
8 met: a groundwater lowering system ~~shall~~ is not ~~be~~ used to meet the vertical separation  
9 ~~distance~~ requirements; new fill material ~~shall be~~ is sand or loamy sand, containing not  
10 more than 10 percent by volume fibrous organics, building rubble, or other debris and  
11 ~~shall not~~ does not have discreet layers containing greater than 35 percent of shell  
12 fragments by volume; and the requirements of Rule .0909(c)(8) of this Subchapter, for  
13 the projected side slope of the fill ~~shall be~~ are met, as determined beginning at a point six  
14 inches above the top edge of the ~~gravel~~ bed.

15 (d) Bed systems receiving TS-I or TS-II effluent on sites with a DDF greater than 1,500 gpd and less than or equal  
16 to 3,000 gpd ~~may be permitted on the following sites:~~ shall meet the following requirements:

17 (1) The soil and site shall meet the minimum following criteria:

18 (A) Group I soils are present for 54 inches below the naturally occurring soil surface;

19 (B) no SWC exists within the first 48 inches below the naturally occurring soil surface; and

20 (C) vertical separation ~~distance~~ of 24 inches to any SWC ~~shall be~~ is maintained below the bed  
21 bottom, unless a site-specific groundwater mounding analysis is performed and  
22 demonstrates a 12-inch separation or 18-inch minimum for a fill system in accordance  
23 with Rule .0909(c) of this Subchapter shall be maintained.

24 (2) Table XVI in Rule ~~.0901~~ .0901(c) of this Subchapter shall be used to determine the initial LTAR  
25 for a bed system and shall be based on the most limiting, naturally occurring soil horizon within  
26 36 inches of the naturally occurring soil surface or to a depth of 12 inches below the bed bottom,  
27 whichever is deeper. The minimum bed size shall be determined in accordance with the following:

28 (A) the minimum number of square feet of bed bottom area shall be ~~determined~~ calculated by  
29 dividing the DDF by the LTAR;

30 (B) the minimum bed size ~~may~~ shall be reduced by up to 25 percent when the system is  
31 designed and approved to meet TS-I or TS-II effluent standards and will be installed in  
32 naturally occurring soil; and

33 (C) the minimum bed size may be reduced by up to 40 percent when all of the following  
34 criteria are met: the system is designed and approved to meet TS-II effluent standards; the  
35 hydraulic assessment demonstrates that a 24-inch minimum vertical separation ~~distance~~  
36 to a SWC ~~shall be~~ is maintained after accounting for projected groundwater mounding;  
37 and there ~~shall be~~ is 100 percent dispersal field repair area.

- 1 (3) A Special Site Evaluation shall be submitted and approved in accordance with Rule .0510 of this  
2 Subchapter.
- 3 (4) No setback reductions shall be allowed in accordance with Table XXVII of Rule ~~.1202~~ .1202(d) of  
4 this Section. The following horizontal setbacks shall be met:
- 5 (A) the minimum setback between initial and repair dispersal field areas serving a single  
6 system and facility shall be two feet of naturally occurring soil. Ten feet of naturally  
7 occurring soil shall separate the initial and repair dispersal field areas serving separate  
8 facilities when these bed systems are on a common site or tract of land;
- 9 (B) when two beds are used, the minimum separation between two beds shall be 20 feet.  
10 When three or more beds are used, the minimum separation between beds shall be 10  
11 feet; and
- 12 (C) a 25-foot setback shall be maintained from edge of the bed to the property line unless a  
13 site-specific nitrogen migration analysis indicates that the ~~nitrate~~ nitrate-nitrogen  
14 concentration at the property line will not exceed 10 ~~m/L~~, mg/L or TS-II or better effluent  
15 is produced by the approved system.
- 16 (5) Bed system installation shall be in accordance with Rule ~~.0903(d)~~ .0903(e) of this Subchapter and  
17 the following criteria:
- 18 (A) two or more equally sized beds shall be used and the beds shall not be located directly  
19 beneath the advanced pretreatment components; and
- 20 (B) effluent shall be distributed to the beds by a pressure dispersal system. A timer control  
21 system shall be used to distribute flow evenly to the beds over a 24-hour period.
- 22 (e) Bed systems receiving TS-I or TS-II quality effluent may be proposed for a site with existing fill that meets the  
23 requirements of Rule .0909(d) of this Subchapter under the following conditions:
- 24 (1) no SWC exists within 18 inches of the existing fill surface;
- 25 (2) 18 inches of vertical separation exists to the SWC;
- 26 (3) the DDF ~~shall~~ does not exceed 480 gpd; and
- 27 (4) pressure dispersal is used. The requirement for pressure dispersal shall not be required if the  
28 advanced pretreatment system PIA Approval allows for advanced pretreatment unit(s) to discharge  
29 directly to the underlying bed and for multiple units, where applicable, when the advanced  
30 pretreatment units are spaced at equal intervals across the entire ~~to be uniformly laid out over the~~  
31 bed area.

32  
33 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*  
34 *Eff. December 1, 2018*

1 15A NCAC 18E .1302 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1302 OPERATION AND MAINTENANCE OF ADVANCED PRETREATMENT**  
4 **SYSTEMS**

5 (a) This Rule applies shall apply to all advanced pretreatment systems approved in accordance with Sections .1500  
6 and .1700 of this Subchapter.

7 (b) System management in accordance with Table XXXI of Rule ~~.1304~~ .1301(b) of this Section shall be required for  
8 advanced pretreatment ~~systems.~~ systems and may be modified in accordance with Rule .1301(c). The following  
9 provisions apply to the operation and maintenance contracts for advanced pretreatment systems:

10 (1) ~~—~~ prior to the issuance or re-issuance of an OP for an advanced pretreatment system, the owner shall  
11 provide to the LHD documentation that a contract for operation and maintenance of the system is  
12 in place with a Management Entity. For proprietary advanced pretreatment systems, the contract  
13 shall be with either the manufacturer, manufacturer's representative, or a Management Entity  
14 authorized in writing by the manufacturer or manufacturer's representative to operate the system.  
15 For non-proprietary advanced pretreatment systems, the contract shall be with an operator certified  
16 for the classification indicated on the OP; and

17 (2) ~~—~~ the Management Entity shall notify the LHD and [LHD,] the State [State, and the proprietary  
18 advanced pretreatment manufacturer, as applicable,] when the owner chooses to not renew an  
19 operation and maintenance contract executed in accordance with this Paragraph.

20 (c) Prior to the issuance or re-issuance of an OP for an advanced pretreatment system, the owner shall provide to the  
21 LHD documentation that a contract for operation and maintenance of the system is in place with a Management  
22 Entity. For proprietary advanced pretreatment systems, the contract shall be with either the manufacturer,  
23 manufacturer's representative, or a Management Entity authorized in writing by the manufacturer or manufacturer's  
24 representative to operate the system. For non-proprietary advanced pretreatment systems, the contract shall be with  
25 an operator certified in accordance with Rule .0303(e) of this Subchapter for the classification indicated on the OP.

26 ~~(e)(d)~~ Operation and maintenance for advanced pretreatment shall be in accordance with the following:

- 27 (1) the Management Entity shall evaluate the performance of each system;
- 28 (2) minimum inspection, sampling, and reporting frequency shall be in accordance with this Section,  
29 Rule .1709 of this Subchapter, the RWTS or PIA Approval, and conditions of the OP;
- 30 (3) the Management Entity shall inspect each system during one or more of the required Management  
31 Entity ~~inspection~~ inspections while the system is in operation using a VIP specified by the  
32 manufacturer and included in the RWTS or PIA Approval. The VIP shall include the following:
- 33 (A) a visual inspection and evaluation of all critical treatment components and of the effluent  
34 in the field for solids, clarity, color, and odor. The VIP shall also include field tests of pH,  
35 turbidity, and dissolved oxygen content and, for TS-II systems, alkalinity, and any other  
36 tests proposed by the manufacturer and specified in the RWTS or PIA Approval;

- 1 (B) compliance criteria to determine system compliance status and proposed responses to  
2 conditions observed; and
- 3 (C) for systems serving vacation rentals subject to the North Carolina Vacation Rental Act,  
4 G.S. 42A, this visit shall be scheduled during the seasonal high use period and shall  
5 coincide with a water quality sampling event if required in accordance with Rule .1709 of  
6 this Subchapter;
- 7 (4) the actual flow shall be recorded in accordance with the RWTS or PIA Approval by the  
8 Management Entity prior to the visual inspection of the system in accordance with Subparagraph  
9 ~~(e)(3)~~ (d)(3) of this Rule and prior to any effluent sampling event required in accordance with Rule  
10 .1709 of this Subchapter; and
- 11 (5) sampling and resampling for an approved ~~RWTS, Provisional, and Innovative~~ RWTS or PIA  
12 System shall be undertaken as required in accordance with Rule .1709 of ~~the~~ this Subchapter and  
13 the following:
- 14 (A) all samples shall be collected, preserved, transported, and analyzed in compliance with 40  
15 CFR 136;
- 16 (B) samples shall be taken to a State certified ~~laboratory~~ laboratory, as defined in G.S. 130A-  
17 313(2), for analyzing; analysis;
- 18 (C) complete documented chain of custody ~~from sample collection to analysis~~ for each  
19 sample collected shall be maintained; and
- 20 (D) ~~repeat sampling~~ re-sampling at any site shall be performed as required in the RWTS or  
21 PIA Approval, Rule .1709 of this Subchapter, or as otherwise directed by the LHD or  
22 State as part of an enforcement action. The owner, manufacturer, or manufacturer's  
23 representative may also re-sample a system to verify or refute sample ~~results~~ results. A  
24 new complete data set for re-sampling conducted within 30 days of receipt of a non-  
25 compliant data set may be substituted to demonstrate compliance with the designed  
26 effluent quality standard in accordance with Table XXIV of Rule .1201(a) of this  
27 Subchapter, and substitute out of compliance samples with compliant samples. All  
28 ~~samples~~ sample results collected shall be reported.
- 29 ~~(d)(e)~~ The results of all effluent sampling shall be reported by the Management Entity to the owner, LHD and the  
30 State, LHD, State, and the proprietary advanced pretreatment manufacturer.
- 31 ~~(e)(f)~~ An individual advanced pretreatment system at a single site shall be considered compliant when the following  
32 conditions are met:
- 33 (1) annual VIP specified in the RWTS or PIA Approval indicates that the results of the VIP meet the  
34 requirements specified in the RWTS or PIA Approval; compliant conditions; and
- 35 (2) the arithmetic mean for BOD<sub>5</sub>, TSS, TKN, and TN and the geometric (geometric mean for Fecal  
36 Coliform) Coliform of each constituent across from three or more consecutive sampling dates does  
37 not exceed the designated effluent standard in Table XXIV in Rule ~~.1201~~ .1201(a) of this

1 Subchapter. ~~Non-compliant data may be substituted with a new data set found to meet the~~  
2 ~~designated effluent standard upon re-sampling within 30 days of receipt of the non-compliant data~~  
3 ~~results for purposes of meeting the effluent quality standard.~~ A new complete data set for re-  
4 ~~sampling conducted within 30 days of receipt of a non-compliant data set may be substituted to~~  
5 ~~demonstrate compliance with the designed effluent quality standard in accordance with Table~~  
6 ~~XXIV of Rule .1201(a) of this Subchapter.~~

7 (f)(g) Mass loading for BOD<sub>5</sub>, TSS, or TN may be used to show demonstrate site compliance with Subparagraph  
8 (d)(2) [(e)(2)] (f)(2) of this Rule for TN for a TS-H wastewater system with a DDF less than or equal to 3,000 gpd.  
9 The mass loading to the wastewater system shall be based on site specific water use data and effluent sampling  
10 results. At least one year of water use data shall be used in this calculation. The mass loading to the wastewater  
11 system shall be calculated as follows:

12 EML = Flow x ~~TN~~ EFF (mg/L)  
13 AML = 0.6 x DDF x ~~30~~ TS mg/L (mg/L)  
14 If EML ≤ AML, the site is compliant

15  
16 Where EML = effective mass loading  
17 AML = allowable mass loading  
18 Flow = average daily flow during the peak water use month or the average of the peak  
19 30 consecutive day period during the prior year  
20 TN EFF = average of the most recent effluent sampling results. results for the constituent  
21 [(BOD<sub>5</sub>, TSS, or TN).] (BOD<sub>5</sub>, TSS, or TN) from the two most recent complete  
22 data sets. A minimum of two effluent sampling results shall be required  
23 TS = the effluent limit based on the constituent and effluent standard from Table  
24 XXIV in Rule [1201] .1201(a) of this Subchapter

25 (e)(h) The Management Entity may record daily wastewater flow and may sample influent to the advanced  
26 pretreatment system as needed to determine compliance with this Rule and OP conditions.

27  
28 *History Note: Authority G.S. 130A-335(e) and (f).*  
29 *Eff. December 1, 2018*

1 15A NCAC 18E .1303 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1303 OWNER RESPONSIBILITIES FOR WASTEWATER SYSTEM OPERATION**  
4 **AND MAINTENANCE**

5 (a) Any person owning or controlling the property upon which a wastewater system is installed shall be responsible  
6 for the following items regarding the operation and maintenance of the system:

7 (1) the wastewater system shall be operated and maintained to protect North Carolina ground and  
8 surface water quality standards and to prevent the following conditions:

9 (A) discharge of sewage or effluent to the surface of the ground, surface waters, or directly  
10 into groundwater at any time;

11 (B) back-up of sewage or effluent into the facility, building drains, collection system,  
12 freeboard volume of the tanks, or distribution system; or

13 (C) effluent within three inches of finished grade over one or more trenches based on two or  
14 more observations made not less than 24 hours apart, and greater than 24 hours after a  
15 rainfall event;

16 (2) the system shall be considered to be malfunctioning when it fails to meet one or more of the  
17 conditions of Subparagraph (a)(1) of this Rule, ~~either continuously or intermittently, Rule~~ occur or  
18 if it is necessary to remove the contents of the tank(s) at a frequency greater than once per month  
19 in order to ~~satisfy prevent one or more of the these conditions.~~ conditions of Subparagraph (a)(1).  
20 The owner shall contact the LHD when the wastewater system is ~~malfunctioning.~~ malfunctioning  
21 and implement remedies as directed by the LHD in accordance with Rule .1306 of this Section;  
22 ~~Legal remedies may be pursued after an authorized agent has observed and documented one or~~  
23 ~~more of the malfunctioning conditions and has issued an NOV;~~

24 (3) wastewater systems shall be inspected, and the entire contents of all septic tank compartments  
25 shall be removed ~~to ensure proper operation of the system. The contents shall be pumped~~  
26 whenever the depth of solids level (~~scum~~ both scum and sludge) is found to be more than 1/3 of  
27 the liquid depth in any compartment. The effluent filter shall be rinsed to remove accumulated  
28 solids that can cause the wastewater to back up into the facility or clog the system, or ~~cleaned or~~  
29 replaced as needed;

30 (4) residuals from the wastewater system shall be transported and disposed of in accordance with G.S.  
31 130A, Article 9, and 15A NCAC 13B et seq;

32 (5) grease traps and grease tanks shall be pumped as ~~needed,~~ needed to prevent discharge of FOG  
33 from the trap or tank to the next treatment component, but no less than yearly. ~~The owner shall~~  
34 ~~maintain a contract with a certified pumper.~~ Grease traps and grease tanks shall be maintained in  
35 accordance with Rule .0803(h) of this Subchapter and the owner shall maintain a contract with a  
36 septage management firm. All pumping records shall be maintained ~~onsite;~~ on-site;

1 (6) site-specific vegetation shall be established and maintained over the wastewater system and repair  
2 area to stabilize slope and control erosion; and

3 (7) activities that result in soil disturbance or soil compaction shall not occur over the initial and  
4 repair dispersal field areas.

5 (b) A contract for operation and maintenance of a wastewater system required to be maintained by a Management  
6 Entity, as specified in Table XXXI of Rule .1301(b) of this Section, shall be in effect for as long as the system is in  
7 use. A contract shall be executed between the system owner and a Management Entity prior to the issuance of an  
8 OP for a system required to be maintained by a Management Entity, as specified in Table XXXI of Rule .1301 of the  
9 Section, OP, unless the system owner and Management Entity are the same. The contract shall include:

- 10 (1) specific requirements for operation, maintenance, and associated reporting;
- 11 (2) responsibilities of the owner;
- 12 (3) responsibilities of the system Management Entity;
- 13 (4) provisions that the contract shall be in effect for as long as the system is in use; for notification to  
14 the LHD by the owner and Management Entity upon termination of the contract; and
- 15 (5) other requirements for the continued performance of the system. system, as determined by the  
16 Management Entity, LHD, and State, as applicable.

17  
18 *History Note: Authority G.S. 130A-335(e) and (f).*  
19 *Eff. December 1, 2018*

1 15A NCAC 18E .1304 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1304 MANAGEMENT ENTITY RESPONSIBILITIES FOR WASTEWATER SYSTEM**  
4 **OPERATION AND MAINTENANCE**

5 (a) When a Management Entity is required to be or to employ a certified operator as ~~specific~~ specified in Table  
6 XXXI in Rule ~~.1304~~ .1301(b) of this Section, the operator ~~shall~~ shall, at a ~~minimum~~ minimum, be certified as a  
7 subsurface operator in accordance with G.S. 90A, Article 3, and ~~the rules in~~ 15A NCAC 08G. Operators of systems  
8 classified as Type V or VI in Table XXXI in Rule .1301(b) of this Section may be required to have additional  
9 certifications by the ~~State~~, State in accordance with Rule .1301(e) of this Section and upon consultation with the  
10 ~~commission governing operators of water pollution control facilities~~, Water Pollution Control Systems Operator  
11 Certification Commission, if required by G.S. ~~90A~~, 90A, Article 3.

12 (b) The Management Entity shall inspect the wastewater system at the frequency specified in Table XXXI in Rule  
13 ~~.1304~~ .1301(b) of this Section or in accordance with the RWTS or PIA Approval.

14 (c) The Management Entity shall provide a copy of the inspection ~~report~~ report, including results of the VIP with  
15 respect to compliance criteria as specified in the RWTS or PIA Approval and effluent sampling, to the owner and  
16 LHD within 30 days of the system inspection.

17 (d) When inspections indicate the need for system repairs, the Management Entity shall notify the LHD within 48  
18 ~~hours for the owner to obtain a CA for the repairs~~, hours.

19 (e) The Management Entity shall be responsible for ~~assuring~~ conducting routine maintenance procedures and  
20 monitoring requirements in accordance with the conditions of the OP and the contract.

21 (f) The Management Entity shall notify the LHD and the proprietary advanced pretreatment manufacturer, as  
22 applicable, when the owner or the Management Entity chooses not to renew an operation and maintenance contract  
23 executed in accordance with this Rule.

24 (g) The Management Entity shall submit ~~their~~ the written inspection report to the State centralized data management  
25 system.

26

27 *History Note: Authority G.S. 130A-335(e) and (f).*

28 *Eff. December 1, 2018*

1 15A NCAC 18E .1305 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1305 LOCAL HEALTH DEPARTMENT RESPONSIBILITIES FOR WASTEWATER**  
4 **SYSTEM OPERATION AND MAINTENANCE**

5 (a) No IP, CA, or OP shall be issued for Type IV, V, or VI systems, unless a Management Entity of the type  
6 specified in Table XXXI in Rule ~~.1304~~ **.1301(b)** of this Section is authorized and operational to carry out operation  
7 and maintenance requirements for the wastewater ~~system.~~ **system as set forth in these Rules and the OP.**

8 (b) A LHD may be the Management Entity only for systems classified Type IV, Va, ~~and Vb~~ **Vb, Vc, Vd, Ve, Vf,**  
9 **and Vg** and only when authorized by ~~resolution of~~ the local board of health.

10 (c) An authorized agent shall review the performance and **operation inspection** reports submitted in accordance with  
11 Rule .1304(c) of this Section and perform an on-site compliance inspection of the systems as required in Table  
12 XXXI in Rule ~~.1304~~ **.1301(b)** of this Section. More frequent inspections may be performed by an authorized agent if  
13 requested by the system owner or the Management Entity, or ~~identified~~ **specified** in the PIA approval or OP.

14 (d) The LHD may provide the owner with the option for a private Management Entity to perform the on-site  
15 compliance inspection for Type IIIb and ~~III~~ **IIIh** systems in accordance with Table XXXI in Rule ~~.1304~~ **.1301(b)** of  
16 this Section instead of the LHD. The Management Entity shall provide to the owner and LHD a written compliance  
17 inspection report.

18 (e) The LHD or State ~~may~~ **shall** issue a written notice of non-compliance to the owner when the wastewater system  
19 is non-compliant with the performance standards listed in the CA and ~~OP.~~ **OP or the ATO.**

20 **(f) The LHD shall investigate malfunctions in accordance with Rule .1306 of this Section.**

21

22 *History Note: Authority G.S. 130A-335(e) and (f).*

23 *Eff. December 1, 2018*

1 15A NCAC 18E .1306 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1306 SYSTEM MALFUNCTION AND REPAIR**

4 (a) This Rule identifies the responsibilities of the LHD and the owner when a system is malfunctioning or otherwise  
5 determined to require repair.

6 ~~(a)~~(b) The LHD or State shall issue a written NOV to the wastewater system owner for the following:

- 7 (1) malfunctioning wastewater system determined in accordance with Rule .1303(a)(1) and (2) of this  
8 Section;
- 9 (2) wastewater system that creates or has created a public health hazard or nuisance by effluent  
10 surfacing, or effluent discharging directly into groundwater or surface waters; or
- 11 (3) wastewater system that is partially or totally ~~destroyed.~~ destroyed, such as components that are  
12 crushed, broken, damaged, or otherwise rendered unusable or ineffective so that the component  
13 will not function as designed.

14 ~~(b)~~(c) The wastewater system shall be repaired within 30 days of ~~notification~~ the date on the NOV issued by the  
15 State or LHD unless the NOV specifies a different time frame for the ~~repair.~~ repair based on site specific factors,  
16 such as the severity of the repair, wastewater backing up into a restaurant or discharging into SA waters, or adverse  
17 weather that delays construction of the repair. The following steps shall be followed to remedy a malfunctioning  
18 wastewater system:

- 19 (1) The owner shall apply for a repair in accordance with Section .0200 of this Subchapter, unless  
20 only maintenance is required to bring the wastewater system into compliance.
- 21 (2) After investigating the malfunction, the State or LHD shall require that the wastewater system be  
22 repaired to correct the malfunction and eliminate any public health hazard. The wastewater  
23 system shall be repaired so that it meets G.S. 130A, Article 11 and this Subchapter. When it is  
24 not possible to bring the wastewater system into compliance with G.S. 130A, Article 11 and this  
25 Subchapter, the authorized agent shall use their best professional judgement, based on education  
26 and experience, to require a repair that will enable the wastewater system to function in a manner  
27 that eliminates the public health hazard.
- 28 (3) When necessary to protect the public health, the State or LHD shall require the owner of a  
29 malfunctioning system to pump and haul sewage to an approved wastewater system during the  
30 time needed to repair the wastewater system. This requirement shall be included in the NOV  
31 issued to the owner.

32 ~~(c) The owner shall apply for a repair permit in accordance with Section .0200 of this Subchapter.~~

33 ~~(d) After investigating the malfunction, the State or LHD shall use its best professional judgement in requiring~~  
34 ~~repairs that will enable the system to function.~~

35 ~~(e) When necessary to protect the public health, the State or LHD shall require the owner of a malfunctioning~~  
36 ~~system to pump and haul sewage to an approved wastewater system during the time needed to repair the wastewater~~  
37 ~~system. This requirement shall be included in the NOV issued to the owner.~~

1 ~~(d)~~ If no repair options are available for the wastewater ~~system,~~ system in accordance with Paragraph (c), the  
2 LHD may issue a CA for a permanent pump and haul system. The permanent pump and haul system shall meet the  
3 following conditions:

4 (1) Prior to ~~issuing issuance of the CA,~~ CA by the LHD LHD, the owner shall provide the following  
5 information: shall receive the following information from the owner:

6 (A) confirmation that a contract with a septage management firm permitted in accordance  
7 with G.S. 130A-291.1 is under contract to pump and haul the sewage from the pump and  
8 haul tanks; sewage;

9 (B) documentation of the approved wastewater system that will be accepting the sewage. ~~The~~  
10 ~~wastewater system shall be~~ approved under this Subchapter or approved ~~by the~~  
11 ~~Environmental Management Commission~~ in accordance with 15A NCAC 02H or 15A  
12 NCAC 02T; 02T to accept the sewage; and

13 (C) documentation from the facility receiving the sewage confirming that the facility has the  
14 capacity for the additional sewage. sewage and agrees to accept it; and

15 (D) a contract with a Management Entity for inspection and maintenance of the system.

16 (2) Tanks shall be approved by the LHD for permanent pump and haul if shown to be structurally  
17 sound, watertight, and of a capacity needed based on the DDF and projected pumping frequency.  
18 Existing tanks may be used for permanent pump and haul if the tanks meet the requirements in this  
19 Subparagraph. A non-transferrable OP, valid for a period not to exceed five years, shall be issued  
20 to the pump and haul system owner.

21 (3) A non-transferrable OP, valid for a period not to exceed five years, shall be issued to the pump and  
22 haul system owner.

23 ~~(e)~~ (e) A malfunctioning wastewater system that has been disconnected from the facility for any reason shall be  
24 repaired prior to reuse.

25 ~~(h)~~ (f) If a malfunctioning wastewater system is found to be ~~nonrepairable, or is no longer required,~~ nonrepairable  
26 the dispersal system shall not be used. [Tanks may be approved by the LHD for permanent pump and haul if shown  
27 to be structurally sound and watertight.] The system owner shall be required to abandon the system to protect the  
28 public health and safety as specified in Rule .1307 of this Section.

29 (g) Legal remedies may be pursued, in accordance with G.S. 130A, Part 2, after an authorized agent has observed  
30 and documented one or more malfunctioning conditions and issued an NOV.

31  
32 *History Note: Authority G.S. 130A-291.1; 130A-291.2; 130A-335(e) and (f).*

33 *Eff. December 1, 2018*

1 15A NCAC 18E .1307 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1307 WASTEWATER SYSTEM ABANDONMENT**

4 If a wastewater system is ~~found to be non-repairable or is~~ **no longer** required, ~~required to be used,~~ **abandoned or is**  
5 **otherwise no longer in use,** the tanks ~~shall:~~ **shall have the contents removed by a septage management firm permitted**  
6 **in accordance with G.S. 130A-291.1, the tanks collapsed, backfilled, or otherwise secured, and the aboveground**  
7 **components de-energized and removed as directed by the authorized agent to protect public health and safety.**

8 **(1) have the contents removed by a septage management firm permitted in accordance with G.S.**  
9 **130A-291.1;**

10 **(2) be removed, collapsed, or otherwise rendered unable to retain liquid, and backfilled; and**

11 **(3) have the electrical components de-energized and above ground components removed.**

12

13 *History Note: Authority G.S. 130A-335.*

14 *Eff. December 1, 2018*

1 15A NCAC 18E .1701 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1701 GENERAL**

4 PIA Systems are any wastewater systems, system components, or devices as defined by G.S 130-343(a) that are not  
5 described in other Sections of this Subchapter. This includes Subchapter and systems for which any of the following  
6 are proposed:

- 7 (1) reduced minimum setbacks;
- 8 (2) reduced depth to LC or SWC; LC or vertical separation requirements; or
- 9 ~~(3) reduced vertical separation distance requirements; or~~
- 10 ~~(4)~~(3) increased LTAR.

11 This Section shall provide for the approval and permitting of PIA Systems.

12

13 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

14 *Eff. December 1, 2018*

1 15A NCAC 18E .1702 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1702 APPLICATION**

4 (a) An application shall be submitted in writing to the Department for a PIA System. All applications shall include  
5 the information required by G.S. 130A-343(d), (f), (g), (g1), and (h), and the following, as applicable:

- 6 (1) identification of the type of PIA Approval requested:
- 7 (A) Provisional;
  - 8 (B) Innovative;
  - 9 (C) Functionally Equivalent;
  - 10 (D) Accepted; or
  - 11 (E) a combination of any of the above;
- 12 (2) plans and specifications for the system, including the following:
- 13 (A) description of the system;
  - 14 (B) materials used in construction;
  - 15 (C) proposed use of system;
  - 16 (D) system design criteria;
  - 17 (E) ~~detailed~~ system ~~design/drawings;~~ design and drawings;
  - 18 (F) installation manual;
  - 19 (G) operation and maintenance manual, including a checklist for documentation of inspection  
20 and maintenance activities and the VIP;
  - 21 (H) influent and effluent sampling locations for advanced pretreatment systems while the  
22 system remains in operation;
  - 23 (I) method for automatically measuring and recording daily wastewater flow dispersed to the  
24 dispersal field for advanced pretreatment systems; and
  - 25 (J) start-up requirements and information;
- 26 (3) ~~summary of~~ the following information:
- 27 (A) ~~pertinent~~ product specific literature;
  - 28 (B) published research; and
  - 29 (C) previous experience and performance with the system;
- 30 (4) results of any available testing, research or monitoring of pilot systems or full-scale operational  
31 systems including:
- 32 (A) identification of the third-party research or testing organization that conducted the testing,  
33 research, or monitoring provided;
  - 34 (B) documentation that the protocol or evaluation used in the testing, research, or monitoring  
35 is: established by a nationally recognized certification body; a listed protocol that has  
36 been approved by the Department in accordance with G.S. 130A 343(d); a comparable

1 ~~evaluation protocol used for system approval in other states; or in accordance with an~~  
2 ~~alternative performance evaluation protocol proposed for approval by the manufacturer;~~

3 (i) ~~established by a nationally recognized certification body;~~

4 (ii) ~~a listed protocol that has been approved by the Department in accordance with~~  
5 ~~G.S. 130A-343(d);~~

6 (iii) ~~a comparable evaluation protocol used for system approval in other states. The~~  
7 ~~comparable evaluation protocol shall include information on relevant conditions~~  
8 ~~such as wastewater system design, soil types, climate, and hydrology and be~~  
9 ~~reviewed by the Department; or~~

10 (iv) ~~in accordance with an alternative performance evaluation protocol proposed by~~  
11 ~~the manufacturer for approval;~~

12 (C) documentation that the system is tested, certified, and listed by a nationally recognized  
13 certification body and complies with an ongoing verification program administered by  
14 that certification body, as applicable; and

15 (D) documentation that the system can be sampled in compliance with 40 CFR 136 and that  
16 the method for system sampling ~~accurately~~ monitors system compliance with effluent  
17 standards;

18 (5) verification that the product submitted for PIA Approval is the same as the certified, listed, or  
19 tested product, and if not, identification of any modifications made to the submitted product;

20 (6) notification of any proprietary or trade secret information, system, component, or device. All  
21 documents received are considered Public Records in accordance with G.S. ~~132, 132-1,~~ unless  
22 they meet the criteria for classification as a trade secret as defined in G.S. 66-152(3);

23 (7) draft written PIA Approval that includes criteria for site selection, installation requirements,  
24 operation and maintenance procedures including a ~~VIP, VIP protocol with compliance criteria,~~  
25 system classification, frequency of system inspection and monitoring in accordance with Table  
26 XXXI of Rule ~~.1304 .1301(b)~~ of this Subchapter, ~~and~~ minimum ~~certification/licensing certification~~  
27 ~~or licensing~~ requirements ~~as set forth in applicable certification and licensing rules and statutes~~ for  
28 designers, installers, and Management Entities; and

29 (8) fee payment as required by G.S. 130A-343(k), by corporate check, money order or cashier's check  
30 made payable to: North Carolina On-Site Water Protection System Account or North Carolina  
31 OSWW System Account, and mailed to the State. Fees received are non-refundable.

32 (b) Innovative System applications shall include the information listed in Paragraph (a) of this Rule.

33 ~~(b)(c)~~ Provisional System applications shall include the information listed in Paragraph (a) of this Rule and ~~the~~  
34 ~~following an~~ evaluation ~~proposal protocol~~ containing all information set forth in G.S. 130-343(f), including:

35 (1) identity and qualifications of the proposed third-party evaluator, including documentation of their  
36 third-party status;

- 1 (2) description of the evaluation ~~proposal~~ [proposal,] protocol, including any proposed laboratory and
- 2 field testing;
- 3 (3) number of systems to be installed;
- 4 (4) site selection criteria;
- 5 (5) system monitoring and reporting procedures, and proposed duration of evaluation; and
- 6 (6) any other information needed for the system to be able to achieve Innovative status upon
- 7 successful completion of the Provisional System evaluation proposal, protocol.

8 ~~(e)~~(d) Functionally Equivalent Trench System Innovative applications shall include the information listed in  
9 Paragraph (a) of this Rule and documentation that the manufacturer has petitioned the Commission for Public Health  
10 in accordance with G.S. 130A-343(g1).

11 ~~(d)~~(e) Accepted ~~Wastewater Dispersal~~ System applications shall include the information listed in Paragraph (a) of  
12 this Rule and documentation that the manufacturer has petitioned the Commission for Public Health in accordance  
13 with G.S. 130A-343(h).

14 ~~(e)~~(f) The Department may initiate review of a nonproprietary PIA System in accordance with G.S. 130A-343(i)  
15 without having received an application from a manufacturer. The system may be approved as Provisional or  
16 Innovative or the Department may recommend approval to the Commission as an Accepted System. The system  
17 shall have been shown to meet all applicable approval criteria of this Section.

18  
19 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*  
20 *Eff. December 1, 2018*

1 15A NCAC 18E .1703 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1703 DEPARTMENT AND COMMISSION APPLICATION REVIEW**

4 (a) The Department shall review all applications submitted to determine if the information listed in Rule .1702 of  
5 this Section is included and determine whether additional information is needed to continue the review.

6 (b) Within 30 days of receipt of the initial application, the Department shall notify the manufacturer of any items  
7 necessary to complete the application or notify the manufacturer that the application is complete. This determination  
8 shall not constitute a qualitative review of the information provided, nor the approval or denial of the proposed  
9 system designation. Specified additional information shall be received within 180 days or the application file shall  
10 be closed.

11 (c) Upon receipt of a complete application, the Department shall conduct a qualitative review in accordance with  
12 PIA Approval criteria identified in Rules .1704, .1705, and .1706 of this Section.

13 (d) For systems that are certified and listed by a nationally recognized certification body, the Department shall  
14 complete its review and determine whether to approve or deny Provisional System applications within 90 days of  
15 receipt of a complete application.

16 (e) The Department shall complete its review and determine whether to approve or deny Innovative System  
17 applications within 90 days of publication in the North Carolina Register of the notice of receipt of a complete  
18 application.

19 (f) The Department shall prepare and submit its findings and recommendations for a ~~functionally equivalent trench~~  
20 ~~system~~ Functionally Equivalent Trench System or an Accepted ~~wastewater dispersal system~~ System to the  
21 Commission within 120 days of receipt of a complete application.

22 (g) Upon request by the petitioner, the Commission may modify the 180-day time frame for receipt of additional  
23 information specified by the Department for a ~~functionally equivalent~~ Functionally Equivalent Trench System or  
24 Accepted System petition based on a determination that a petition is incomplete and additional information is  
25 needed. The petitioner may also request Commission review of the Department's determination that a petition is  
26 incomplete or additional information request.

27 ~~(h) The Department may hold meetings to discuss PIA applications with stakeholders.~~

28 ~~(h)~~ (h) The Department shall notify the applicant and LHDs of the approval or denial of a PIA System. The PIA  
29 Approval shall include conditions for permitting, siting, installation, use, monitoring, operation and maintenance,  
30 and number of systems that can be installed. When an application is denied, the Department shall inform the  
31 applicant in writing of the reason for ~~denial and specify appeal rights.~~ denial. The Department shall assign a unique  
32 code to the approved products for tracking purposes.

33 ~~(i)~~ (i) An applicant may reapply in accordance with this Section. When reapplying, a new application shall be  
34 required and the applicant shall make a new fee payment as required by G.S. 130A-343(k).

35  
36 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

37 *Eff. December 1, 2018*

1 15A NCAC 18E .1704 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1704 APPROVAL CRITERIA FOR PROVISIONAL SYSTEMS**

4 (a) ~~Trench and A~~ dispersal systems system shall be approved for use as a Provisional System when the following  
5 criteria have been met:

6 (1) ~~Documentation~~ documentation of one of the ~~following:~~ following is provided:

7 (A) a minimum of 50 installations that ~~are operational and have been~~ in use for a minimum of  
8 12 months, with available information indicating comparable hydraulic performance and  
9 rate of malfunction to a conventional trench system;

10 (B) the system's design ~~and functional similarity is functionally similar~~ to another approved  
11 system described elsewhere in this Subchapter, or to a ~~Provisional, Innovative or~~  
12 ~~Accepted PIA~~ System approved in accordance with this Section. The system's design and  
13 functional similarity shall be equal or superior to the approved comparable system for the  
14 following: material physical properties and chemical durability; field installed permeable  
15 sidewall area and bottom infiltrative area; method and manner of function for conveyance  
16 and application of effluent; structural integrity; and field installed storage volume;

17 (C) the system has been certified and listed by a nationally recognized certification body, as  
18 defined by G.S. 130A-343(a)(6), for a period that exceeds one year; or

19 (D) the system has complied with a comparable evaluation protocol used for system approval  
20 in other ~~states.~~ states. The comparable evaluation protocol shall include information on  
21 relevant conditions such as wastewater system design, soil types, climate, and hydrology  
22 and be reviewed by the Department;

23 (2) ~~Documentation~~ documentation ~~shall be of load testing is~~ provided that ~~all trench and dispersal~~  
24 ~~systems have been subject to and complied with AASHTO Standard H-5 and H-10 load testing~~  
25 ~~that~~ demonstrates the structural integrity to be comparable to a conventional trench ~~system.~~  
26 system, including subjecting the trench system to the following without collapsing, fracturing, or  
27 breaking when installed in a trench with the proposed product configuration and width:

28 (A) an axle load of 16,000 pounds when covered with 12 inches of compacted soil; and

29 (B) an axle load of 4,000 pounds when covered with six inches of compacted soil; and

30 (3) ~~Submittal of~~ a proposed evaluation protocol to be overseen by a third-party ~~evaluator.~~ evaluator is  
31 submitted to the Department for review. The evaluation protocol shall ensure that all information  
32 necessary to satisfy the criteria to achieve Innovative ~~Approval under Approval,~~ as specified in  
33 G.S. 130A-343(f) and Rule .1705 of this ~~Section~~ Section, is collected. The protocol shall include  
34 the following:

35 (A) a minimum of 100 installations operational and in use for a minimum of 12 months; and

36 (B) sufficient information collected to evaluate the system's hydraulic performance, structural  
37 integrity and rate of malfunction compared with a conventional trench system.

1 (b) Advanced pretreatment systems shall be approved for use as a Provisional System when the following criteria  
2 have been met:

3 (1) ~~Documentation~~ documentation of one of the following is provided for designs complying with TS-  
4 I, TS-II, or RCW effluent standards:

5 (A) a minimum of 50 complete third-party field verification data sets from a minimum of 15  
6 sites in operation that have been in use for six months, including all constituents  
7 necessary to verify compliance with the applicable effluent standard. Two to five data  
8 sets may be from the same site if collected a minimum of three months apart, with no  
9 data excluded from the field sampling sites. The data sets shall demonstrate compliance  
10 with TS-I, TS-II, or RCW effluent standards in accordance with ~~Rule .1709 of this~~  
11 ~~Section~~; Rules .1002 and .1709 of this Subchapter, as applicable;

12 (B) the system's design and functional similarity is functionally similar to another approved  
13 system described elsewhere in this Subchapter, or to a Provisional or Innovative System  
14 approved in accordance with this Section. The system's design and functional similarity  
15 shall be equal or superior to the comparable system for all of the following: material  
16 physical properties and chemical durability; structural integrity; biological, chemical, or  
17 physical treatment processes; method and manner of function for conveyance and  
18 application of effluent through the system; and number and size of system compartments;

19 (C) the system has been certified and listed by a nationally recognized certification body, as  
20 defined by G.S. 130A-343(a)(6), for a period that exceeds one year; or

21 (D) the system has complied with a comparable evaluation protocol used for system approval  
22 in other ~~states~~. states. The comparable evaluation protocol shall include information on  
23 relevant conditions such as wastewater system design, soil types, climate, and hydrology  
24 and be reviewed by the Department; and

25 (2) ~~Submittal of~~ a proposed evaluation protocol to be overseen by a third-party ~~evaluator~~. evaluator is  
26 submitted to the Department for review. The evaluation protocol shall ensure that all information  
27 necessary to satisfy the criteria to achieve Innovative ~~Approval under~~ Approval, as specified in  
28 G.S. 130A-343(f) and Rule .1705 of this ~~Section~~ Section, is collected. The protocol shall include  
29 one of the following:

30 (A) for a system that has been certified and listed by a nationally recognized certification  
31 body, as defined by G.S. 130A-343(a)(6) for a period that exceeds two consecutive years,  
32 a minimum of 50 complete third-party field verification data sets from a minimum of 15  
33 sites in operation for a minimum of six months, including all constituents necessary to  
34 verify compliance with the applicable effluent standard. Two to five data sets may be  
35 from the same site if collected a minimum of three months apart, with no data excluded  
36 from the field sampling sites. The data may be collected from systems in-state or out-of-  
37 state. The data sets shall show compliance with TS-I, TS-II, or RCW effluent standards in

1 accordance with ~~Rule .1709 of this Section, Rules .1002 and .1709 of this Subchapter,~~ as  
2 applicable; or

3 (B) a minimum of 150 complete third-party field verification data sets from a minimum of 50  
4 sites in operation for a minimum of six months, including all constituents necessary to  
5 verify compliance with the applicable effluent standard. Two to five data sets may be  
6 from the same site if collected a minimum of three months apart, with no data excluded  
7 from the field sampling sites. The data may be collected from systems in-state or out-of-  
8 state. The data sets shall demonstrate compliance with TS-I, TS-II, or RCW effluent  
9 standards in accordance with Rule .1709 of this Section, as ~~applicable~~ applicable.

10 (c) Manufacturers requesting Provisional Approval as both an advanced pretreatment and dispersal system ~~must~~  
11 shall meet the requirements for advanced pretreatment and dispersal as described in this Rule.

12  
13 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*  
14 *Eff. December 1, 2018*

1 15A NCAC 18E .1705 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1705 APPROVAL CRITERIA FOR INNOVATIVE SYSTEMS**

4 (a) A ~~trench and~~ dispersal system shall be approved for use as an Innovative System when the following criteria  
5 have been met:

6 (1) ~~The the~~ performance requirements for an Innovative System identified in G.S. 130A-343(a)(5) and  
7 (g) have been ~~met. met.~~

8 (2) ~~Materials materials~~ used in construction ~~shall be are~~ equal or superior in physical properties,  
9 chemical durability, and structural integrity compared to materials used for similar proposed  
10 systems described in other Sections of this ~~Subchapter. Subchapter:~~

11 (3) ~~The the~~ system has been demonstrated to perform equal or superior to a system ~~which that~~ is  
12 described in other Sections of this Subchapter or to an Innovative or Accepted System previously  
13 approved in accordance with this Section, based upon controlled pilot-scale research studies or  
14 ~~statistically valid~~ statistically valid monitoring of full-scale operational ~~systems. systems:~~

15 (4) ~~The the~~ system has met one of the following criteria:

16 (A) the system has completed an evaluation protocol as a Provisional System in accordance  
17 with Rule .1704 of this Section;

18 (B) the manufacturer has provided comparable third-party research and testing conducted in  
19 other states, with the data and findings of all evaluations of the system performance, ~~the~~  
20 ~~results of which that~~ support the proposed use of the ~~system; system.~~ The comparable  
21 research shall include information on relevant conditions, such as wastewater system  
22 design, soil types, climate, and hydrology; or

23 (C) the system has been evaluated in accordance with G.S. ~~130A-343(g)(3). 130A-343(g)(3);~~  
24 and

25 (5) ~~The the~~ following documentation is provided:

26 (A) the results of AASHTO Standard H-5 and H-10 load testing that demonstrate structural  
27 integrity comparable to a conventional trench system;

28 (B) a minimum of 100 installations operational and in use for a minimum of one year. The  
29 100 installations sites may include any combination of systems installed in conjunction  
30 with an approved Provisional System evaluation completed in North Carolina and  
31 systems in other states; and

32 (C) system hydraulic performance and rate of malfunction is equal or superior to the  
33 demonstrated performance of a conventional trench system.

34 (b) Advanced pretreatment systems ~~requesting Innovative Approval for designs~~ complying with TS-I, TS-II, or  
35 RCW effluent standards shall be approved for use as an Innovative System when the following information is  
36 provided:

37 (1) information required in Paragraphs (a)(1) through (a)(4) of this Rule; and

1 (2) documentation ~~is provided~~ of one of the following:

2 (A) for a system that has been certified and listed by a nationally recognized certification  
3 body, as defined by G.S. 130A-343(a)(6) for a period that exceeds two consecutive years,  
4 a minimum of 50 complete third-party field verification data sets from a minimum of 15  
5 sites in operation for a minimum of six months, including all constituents necessary to  
6 verify compliance with the applicable effluent standard. Two to five data sets may be  
7 from the same site if collected a minimum of three months apart, with no data excluded  
8 from the field sampling sites. The data may be collected from systems in-state or out-of-  
9 state. The data sets shall demonstrate compliance with TS-I, TS-II, or RCW effluent  
10 standards, as applicable; or

11 (B) a minimum of 150 complete third-party field verification data sets from a minimum of 50  
12 sites in operation for a minimum of six months, including all constituents necessary to  
13 verify compliance with the applicable effluent standard. Two to five data sets may be  
14 from the same site if collected a minimum of three months apart, with no data excluded  
15 from the field sampling sites. The 50 sites may include a combination of sites monitored  
16 in conjunction with an approved Provisional System evaluation completed in North  
17 Carolina and sites in other states. The data sets shall demonstrate compliance with TS-I,  
18 TS-II, or RCW effluent standards, as applicable.

19 (c) Manufacturers requesting Innovative Approval as both an advanced pretreatment and dispersal system shall ~~also~~  
20 meet the requirements for advanced pretreatment and dispersal as described in this Rule.

21  
22 *History Note* Authority G.S. 130A-335(e) and (f); 130A-343.

23 Eff. December 1, 2018

1 15A NCAC 18E .1706 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1706 APPROVAL CRITERIA FOR ACCEPTED SYSTEMS**

4 (a) The Commission shall designate a wastewater dispersal system as an Accepted System when it finds **based on**  
5 **the information provided in accordance with this Rule based on clear, convincing, and cogent evidence** that the  
6 standards set forth by G.S. 130A-343(a)(1) and G.S. 130A-343(h) have been met.

7 (b) The following information shall be provided by the petitioner and reviewed by the Commission prior to granting  
8 Accepted System status:

- 9 (1) documentation of a minimum of 300 systems installed statewide and in use as an approved  
10 Innovative System for more than five years;
- 11 (2) data and findings of all prior evaluations of the system performance as provided by the  
12 manufacturer;
- 13 (3) results of prior performance surveys of Innovative Systems in use in North Carolina for the five-  
14 year period immediately preceding the petition, including any information available to the  
15 manufacturer pertinent to the accuracy and validity of performance surveys not completed under  
16 their control;
- 17 (4) review(s) of records on system use and performance reported by LHDs, authorized designers,  
18 installers, and Management Entities documenting the experiences with performance of the system  
19 in North Carolina, including information collected and reported in accordance with Rules .1711  
20 and .1712 of this Section. Upon request of the manufacturer, the Department and manufacturer  
21 shall meet to discuss the accuracy and validity of performance data and surveys to be considered  
22 for inclusion in the review. LHDs and other stakeholders shall be invited to participate in the  
23 discussion;
- 24 (5) a statistically valid survey of system performance shall be performed, as follows:
  - 25 (A) the manufacturer shall provide a proposed survey plan for Department concurrence prior  
26 to carrying out the survey. This plan shall specify the number of systems to be evaluated,  
27 period of evaluation, method to randomly select systems to be evaluated, methods of field  
28 and data evaluation, and proposed survey team members, including proposed cooperative  
29 arrangements to be made with Department and LHD staff. The Department shall facilitate  
30 LHD participation with any performance review or survey. The Department shall utilize  
31 the Division of Public Health's State Center for Health Statistics for assistance in  
32 evaluating the statistical validity of proposed evaluation protocols; and
  - 33 (B) the survey shall include the field evaluation of a minimum of 250 randomly selected  
34 Innovative Systems compared with a minimum of 250 comparably aged randomly  
35 selected conventional systems, with a minimum of 100 of each type of surveyed system  
36 currently in use and in operation for a minimum of five years. Systems surveyed shall be  
37 distributed throughout the three physiographic regions of the state (Mountain, Piedmont

1 and Coastal Plain) in approximate proportion to the relative usage in the three regions.  
2 The survey shall determine comparative system failure rates, with field evaluations  
3 completed during a typical wet-weather season (February through early April), with  
4 matched Innovative and conventional Systems sampled during similar time periods in  
5 each region. The petitioner shall provide a statistical analysis of the survey results  
6 showing a one-sided test where, if the failure rate in the sample of Innovative Systems is  
7 a minimum of five percentage points higher than the failure rate in the sample of  
8 conventional systems, there is only a five percent chance that a difference this large  
9 would occur by chance (95 percent confidence level). If a statistically significant higher  
10 failure rate in the Innovative System is not detected, the Commission shall find that the  
11 Innovative System performs the same as or better than the conventional system;

12 (6) Other criteria for determining whether the proposed system has been in general use, and other  
13 surveys, including evaluations of different numbers of Innovative and conventional systems,  
14 designed to verify equal or superior performance of the Innovative System compared to the  
15 conventional system under actual field conditions in North Carolina shall be approved by the  
16 Department when they are demonstrated to have comparable statistical validity as described in  
17 Subparagraph (b)(5) of this Rule. The Department's review and approval of proposed alternate  
18 criteria for determining whether the system has been in general use, or of other proposed surveys  
19 are subject to review and concurrence by the Commission.

20 (c) The Commission shall impose any use, design, installation, operation, maintenance, monitoring, and  
21 management conditions in accordance with G.S. 130A-343.

22 ~~(d) Accepted System applications for products that are approved to both treat and disperse wastewater must meet~~  
23 ~~the requirements for treatment and dispersal as described in this Section.~~

24  
25 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

26 *Eff. December 1, 2018*

1 15A NCAC 18E .1707 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1707 DESIGN AND INSTALLATION CRITERIA FOR PROVISIONAL,**  
4 **INNOVATIVE, AND ACCEPTED APPROVALS**

5 All products approved under this Section shall be designed and installed in accordance with the requirements of the  
6 PIA Approval.

7

8 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

9 *Eff. December 1, 2018*

1 15A NCAC 18E .1709 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1709 WASTEWATER SAMPLING REQUIREMENTS FOR ADVANCED**  
4 **PRETREATMENT SYSTEMS, INCLUDING REDUCED SAMPLING REQUIREMENTS SYSTEMS**

5 (a) Wastewater sampling requirements shall vary in accordance with wastewater system classification, designated  
6 effluent standard, system DDF, and system performance history.

7 (1) Provisional Systems shall be grab or composite sampled quarterly for all applicable influent and  
8 effluent constituents listed in Table XXIV of Rule ~~.1201~~ .1201(a) of this Subchapter until the  
9 system receives Innovative ~~Approval~~ Approval. ~~unless adjusted sampling requirements have been~~  
10 ~~requested and approved in accordance with this Rule.~~ [otherwise specified in the Provisional  
11 Approval.]

12 (2) When the DDF is less than or equal to 1,500 gpd, Innovative Systems shall be grab or composite  
13 sampled annually for all applicable influent and effluent ~~constituents, unless adjusted sampling~~  
14 ~~requirements have been requested and approved in accordance with this Rule.~~ constituents from  
15 Table XXIV of Rule .1201(a) of this Subchapter.

16 (3) When the DDF is greater than 1,500 gpd and less than or equal to 3,000 gpd, Innovative Systems  
17 shall be grab or composite sampled twice a year for all applicable influent and effluent  
18 constituents listed in Table XXIV of Rule ~~.1201~~ .1201(a) of this ~~Subchapter, unless adjusted~~  
19 ~~sampling requirements have been requested and approved in accordance with this Rule.~~  
20 Subchapter.

21 ~~(4) Provisional Systems shall be sampled for Fecal Coliforms. A manufacturer with a Provisional~~  
22 ~~Approval may apply for elimination of Fecal Coliform sampling based on a written application~~  
23 ~~and documentation submitted to the Department that includes the following information:~~

24 ~~(A) data from a minimum of five separate North Carolina sites in operation for a minimum of~~  
25 ~~six months;~~

26 ~~(B) a minimum of 25 data sets including results for fecal coliforms. No data sets shall be~~  
27 ~~excluded, including all data sets that do not meet the effluent standards.~~ [excluded.] Data  
28 sets may be from the same site if collected a minimum of three months apart; and

29 ~~(C) analysis indicating compliant system performance in accordance with Rule .1710 of this~~  
30 ~~Section.~~

31 ~~(5) If an effluent sample for a Provisional System that does not have to sample for Fecal Coliforms is~~  
32 ~~determined to be non-compliant, the effluent must be sampled for Fecal Coliforms when re-~~  
33 ~~sampled. If the re-sampled effluent indicates compliance, no further Fecal Coliform sampling is~~  
34 ~~required from that site.~~ [site, until an effluent sample is determined to be non-compliant.]

35 ~~(6) Innovative Systems shall not be sampled for Fecal Coliforms at any site that is found to be~~  
36 ~~compliant with the effluent standards for all other constituents required to be analyzed. If an~~  
37 ~~effluent sample is determined to be non-compliant, the effluent must be sampled for Fecal~~

1 Coliforms when re-sampled. If the re-sampled effluent indicates compliance, no further Fecal  
2 Coliform sampling is required from that site. [site, until an effluent sample is determined to be  
3 non-compliant.]

4 (4) Sampling for Fecal Coliforms shall not be required for Innovative Systems at any site that is found  
5 to be compliant with all other constituents in Table XXIV of Rule .1201(a) of this Subchapter.

6 (7)(5) Innovative Systems serving vacation rentals subject to the North Carolina Vacation Rental Act,  
7 G.S. 42A, shall be sampled during the seasonal high use period.

8 (8)(6) Effluent may be re-sampled within 30 days of receipt of laboratory results indicating non-  
9 compliance with Table XXIV of Rule .1201(a) of this Subchapter if requested  
10 by the owner, manufacturer, or manufacturer's representative, or required in a PIA Approval.  
11 Complete data sets from resampling may be substituted to meet the minimum number of  
12 compliant data sets required for PIA Approval. Data sets from resampling may be used by a  
13 manufacturer as part of a reduced effluent sampling request in accordance with Paragraph (f)  
14 Subparagraph (d)(3) of this Rule.

15 (9)(7) The Management Entity may record daily wastewater flow and sample influent to the advanced  
16 pretreatment system as needed to determine compliance with Rule .1302(f) of this Subchapter.

17 (8) A manufacturer of a Provisional or Innovative System may apply for adjusted sampling  
18 requirements in accordance with this Rule.

19 (b) The manufacturer of a Provisional System may apply to the Department in accordance with Rule .1701 of this  
20 Section to request adjusted effluent sampling requirements for Fecal Coliforms. The Department shall approve the  
21 request when the documentation submitted to the Department includes the following information:

22 (1) data from a minimum of five separate North Carolina sites in operation for a minimum of six  
23 months after the Provisional Approval has been issued;

24 (2) a minimum of 25 data sets, including results for Fecal Coliforms. No data sets shall be excluded.  
25 Data sets may be from the same site if collected a minimum of three months apart; and

26 (3) analysis indicating compliant system performance in accordance with Rule .1710 of this Section.

27 (c) If an effluent sample for a Provisional or Innovative System that is not required to sample for Fecal Coliforms is  
28 determined to be non-compliant with Table XXIV of Rule .1201(a) of this Subchapter, the effluent may be re-  
29 sampled in accordance with Rule .1302(f)(2) of this Subchapter. If re-sampled, the effluent shall also be sampled  
30 for Fecal Coliforms in addition to all other applicable constituents. If re-sampling indicates compliance with Table  
31 XXIV of Rule .1201(a) of this Subchapter, no further Fecal Coliform sampling is required from that site, unless an  
32 effluent sample is again determined to be non-compliant for one or more constituents.

33 (b)(d) The manufacturer of an approved Innovative System may apply to the Department in accordance with Rule  
34 .1701 of this Section to request an adjustment in sampling requirements (constituents or frequency), including  
35 reducing to field parameters only, only, based on a written application submitted to the Department that includes the  
36 following information: The Department shall approve the request when one of the following conditions are met:

- 1 (1) ~~data from a minimum of 25 separate North Carolina sites in operation for a minimum of six~~  
2 ~~months after the Innovative Approval has been issued;~~ documentation submitted to the  
3 Department includes the following information:
- 4 (A) data from a minimum of 25 separate North Carolina sites in operation for a minimum of  
5 six months after the Innovative Approval has been issued;
- 6 (B) written reports summarizing results of the VIP inspections for all North Carolina sites  
7 submitted as part of this Rule;
- 8 (C) a minimum of 50 complete data sets, with no data excluded. Data sets may be from the  
9 same site if collected a minimum of three months apart;
- 10 (D) analysis indicating compliant system performance in accordance with Rule .1710 of this  
11 Section; and
- 12 (E) identification of the constituents for which the manufacturer requests a reduced sampling  
13 frequency;
- 14 (2) written reports summarizing results of the VIP inspections for all North Carolina sites submitted  
15 as part of this Rule;
- 16 ~~(3)(2)~~ a minimum of 50 complete data sets, including all data sets that do not meet the effluent standards.  
17 [with no data excluded.] Data sets may be from the same site if collected a minimum of three  
18 months apart; the proprietary advanced pretreatment system is also certified and listed by a  
19 nationally recognized certification body and is in compliance with the ongoing verification  
20 program of such body, and the manufacturer is requesting a reduction in data set requirements set  
21 forth in Rule .1705 of this Section by up to 50 percent only; or
- 22 ~~(4)(3)~~ analysis indicating compliant system performance in accordance with Rule .1710 of this Section;  
23 and the manufacturer has demonstrated compliant system performance in accordance with Rule  
24 .1710 of this Section and is only requesting to replace the requirement for routine effluent  
25 sampling as set forth in Rule .1705 of this Section for all individual sites with routine field  
26 constituent testing that is included as part of the VIP.
- 27 ~~(5)~~ identification of the constituents for which the manufacturer requests a reduced sampling  
28 frequency.

29 ~~(e)(c)~~ Systems approved for field parameters only shall only be required to sample the field parameters listed in  
30 Table XXXII at the site during a VIP Management Entity inspection, inspection. The PIA Approval may specify  
31 other field parameters or alternative field parameter effluent criteria, or more frequently as specified in the PIA  
32 Approval. The results shall be recorded in the written report. If the field parameters fall outside the approved range,  
33 range specified in the PIA Approval, an effluent sample shall be collected and analyzed for all parameters as  
34 necessary to demonstrate system compliance with the site's applicable effluent standard, standard specified in Table  
35 XXIV of Rule .1201(a) of this Subchapter

36  
37 **TABLE XXXII.** Field parameters advanced pretreatment systems

Field Parameter	Effluent Criteria
pH	6-10 5-9
Turbidity	≤ 10
DO	≤ ≥ 2

1  
2 ~~(d) Manufacturers of proprietary advanced pretreatment systems with Innovative Approval that have previously~~  
3 ~~demonstrated compliant system performance in accordance with Rule .1710 of this Section may submit a written~~  
4 ~~application to the Department requesting field parameters sampling only.~~

5 ~~(e) Manufacturers of proprietary advanced pretreatment systems with Innovative Approval that are also certified~~  
6 ~~and listed by a nationally recognized certification body and are in compliance with the ongoing verification program~~  
7 ~~of such body, may submit a written application with a sampling protocol that reduces the data set requirements by~~  
8 ~~up to 50 percent.~~

9 ~~(f) Manufacturers of proprietary advanced pretreatment systems that comply with Paragraphs (b) or (e) [(d)] of this~~  
10 ~~Rule may apply to the Department to replace the requirement for routine effluent sampling of all individual sites~~  
11 ~~with routine field constituent testing that is included as part of the VIP.~~

12 ~~(g)(f)~~ While routine sampling of individual sites may no longer be required in accordance with Paragraphs (b), (e),  
13 ~~or (d) Paragraph (c)~~ of this Rule, effluent sampling may still be determined to be necessary during the visual  
14 inspection of the system in accordance with Rule .1302(b) [~~.1302(e)~~] .1302(d) of this Subchapter or if required as  
15 part of an enforcement action by the LHD or the Department.

16 ~~(h)(g)~~ Alternative sampling requirements may be proposed by the manufacturer for a Provisional or Innovative  
17 System and approved by the Department when determined to provide an equal or more reliable indication of system  
18 compliance with effluent ~~standards.~~ standards.

19  
20 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*  
21 *Eff. December 1, 2018*

1 15A NCAC 18E .1710 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1710 ~~OMPLIANCE~~ COMPLIANCE CRITERIA FOR ADVANCED PRETREATMENT**  
4 **SYSTEMS**

5 An approved system shall be considered in compliance with the effluent standards of Table XXIV of Rule ~~.1201~~  
6 .1201(a) of this Subchapter when all the following conditions are met:

- 7 (1) the arithmetic mean for BOD<sub>5</sub>, TSS, TKN, and TN and the geometric (geometric mean for Fecal  
8 Coliform) Coliform of for all data collected from all sites does not exceed the designated effluent  
9 standard;
- 10 (2) no more than 20 percent of all data from all sites shall exceed the designated effluent standard for  
11 any applicable constituent. ~~Non-compliant data may be substituted with a new data set meeting the~~  
12 ~~designated effluent standard upon re-sampling within 30 days of receipt of the non-compliant data~~  
13 ~~results;~~ A new complete data set for re-sampling conducted within 30 days of receipt of a non-  
14 compliant data set may be substituted to demonstrate compliance with the designed effluent  
15 quality standard in accordance with Table XXIV of Rule .1201(a) of this Subchapter;
- 16 (3) fifty percent of all complete data sets from all sites shall comply with the designated effluent  
17 standard for all applicable constituents;
- 18 (4) when determining compliance with system effluent standards in Items (1), (2), and (3) of this  
19 Rule, no data sets shall be excluded from individual advanced pretreatment systems except at  
20 single sites found to be out of compliance in accordance with Rule ~~.1302(d)~~ [~~.1302(e)~~] .1302(f) of  
21 this Subchapter and sites that have been otherwise documented to have been subjected to  
22 significant abuse; abuse, such as hydraulic or organic overloading, physical damage to the system,  
23 discharge of deleterious substances; and
- 24 (5) results of influent samples from all sites shall be provided to demonstrate compliance with percent  
25 reduction effluent criteria in accordance with Table XXIV in Rule ~~.1201~~ .1201(a) of this  
26 Subchapter.

27  
28 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

29 *Eff. December 1, 2018*

1 15A NCAC 18E .1711 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1711 PROVISIONAL AND INNOVATIVE APPROVAL RENEWAL**

4 (a) All PIA Approvals shall expire on December 31 of each year. PIA manufacturers or other parties who wish to  
5 continue product approval shall submit annually a ~~proprietary~~ product renewal form provided by the ~~Department~~.  
6 Department no later than November 30 of each year. The renewal form includes the following updated information:  
7 company's name, address, contact information, contact name, model number(s) approved, and a notarized statement  
8 that the product(s) has not changed from the previous year.

9 (b) The renewal form shall include the following updated information:

10 (1) company or organization's name, address, contact information, and contact name;

11 (2) model number(s) approved; and

12 (3) a notarized statement that the product(s) has not changed from the previous year without prior  
13 approval.

14 ~~(b)~~ (c) The Department shall notify the manufacturer of the pending PIA Approval expiration in writing no later  
15 than September 30 of each year. The notification shall include ~~[provide the manufacturer with]~~ information  
16 ~~[describing]~~ on how to request [renewal]. PIA Approval renewal.

17 ~~(b)~~ (e) ~~(d)~~ Manufacturers of proprietary products with Provisional Approvals shall additionally submit with its  
18 renewal form an annual report to the State with the following information:

19 (1) list of all systems ~~currently~~ installed under the Provisional Approval;

20 (2) results of all effluent samples collected, as applicable;

21 (3) copies of all Management Entity inspection reports, as applicable;

22 (4) assessment of system performance in relation to this Subchapter;

23 (5) summary of progress made to complete installations, research, and testing as outlined in the  
24 approved evaluation protocol;

25 (6) any conditions and limitations related to the use of the system; and

26 (7) a list of all authorized designers, installers, and management entities.

27 ~~(e)~~ (d) (e) A PIA Approval shall be deemed to be renewed upon receipt of the completed renewal form and annual  
28 report in accordance with Paragraphs ~~(a) and~~ (b) ~~(e)~~ (d) of this Rule, as applicable.

29 ~~(d)~~ (e) (f) The Department shall review all annual reports for Provisional Approvals for compliance with its PIA  
30 approval conditions, including its approved evaluation protocol, and determine whether any action to modify,  
31 suspend, or revoke the approval is warranted in accordance with Rule .1708 of this Section.

32  
33 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

34 *Eff. December 1, 2018*

1 15A NCAC 18E .1712 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1712 AUTHORIZED DESIGNERS, INSTALLERS, AND MANAGEMENT ENTITIES**

4 (a) Designers, installers, and Management Entities shall be authorized in writing by the manufacturer when required  
5 in the PIA ~~Approval.~~ Approval based on product specific factors, such as wastewater system classification,  
6 designated effluent standard, DDF, wastewater strength, complexity, and operation and maintenance.

7 (b) Manufacturers of proprietary systems approved under this Section shall provide a list of manufacturer's  
8 authorized designers, installers, and Management Entities, as identified specified in the PIA Approval, to the  
9 Department and LHDs, LHDs, and The manufacturers shall update this list annually and submit include it with the  
10 product renewal form required in accordance with Rule .1711(a) of this Section.

11

12 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

13 *Eff. December 1, 2018*

1 15A NCAC 18E .1713 is adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1713 LOCAL HEALTH DEPARTMENT RESPONSIBILITIES**

4 To implement this Section the LHD shall:

- 5 (1) When a Provisional System is proposed, confirm that the designated repair system complies with  
6 the provisions of Rule .0508 of this Subchapter and with individual PIA Approval requirements,  
7 except:
- 8 (a) when an existing wastewater system is available for immediate use, including connection  
9 to a public or community wastewater system; ~~or~~
  - 10 (b) when the Provisional System is used as a repair to an existing malfunctioning system  
11 when there are no other approved Innovative or Accepted repair options; or
  - 12 (c) as provided in G.S. 130A-343(f) for Provisional Systems.
- 13 (2) Notify the Department of all IPs, CAs, and OPs issued for Provisional Systems.
- 14 (3) Notify the Department of all OPs issued for Innovative Systems.
- 15 (4) Permit systems designated as approved Accepted Systems in an equivalent manner to a  
16 conventional system at the owner's request, provided the location of each trench, trench depth, or  
17 effluent distribution method remains unchanged. The type of Accepted System installed shall be  
18 indicated on the OP.
- 19 (5) Grant permit reductions in total trench length less than or equal to 25 percent for Innovative or  
20 Accepted Systems only to dispersal fields receiving DSE or better quality. A facility with a full  
21 kitchen shall not be granted a permit reduction in total trench length.
- 22 (6) Grant facilities generating HSE the 25 percent reduction allowed for Innovative or Accepted  
23 Systems if the system includes an approved advanced pretreatment system designed to ensure  
24 effluent strength equal to or better than DSE.
- 25 (7) Prohibit issuance of an OP for a proprietary system installed by a person not authorized by the  
26 manufacturer, unless the manufacturer of the proprietary system approves the installation in  
27 writing.
- 28 (8) Inform the ~~Department~~ Department, as well as the manufacturer or their authorized representative  
29 representative, of any system determined to be malfunctioning.
- 30 (9) Issue a NOV to the owner when the system is determined to be malfunctioning in accordance with  
31 Rule .1303(a)(1) and (2) of this Subchapter or when an individual advanced pretreatment system  
32 at a single site is out of compliance in accordance with Rule ~~.1302(d)~~ [.1302(e)] .1302(f) of this  
33 Subchapter. The notice shall identify the violations and steps necessary to remedy the problems,  
34 including modification of the system, established time frame to achieve compliance, other follow-  
35 up requirements, and specify further enforcement possibilities if compliance is not achieved.
- 36 (10) Include in its monthly activity report submitted to the Department the following information  
37 identified by unique codes:

- 1 (a) number of new system OPs issued for PIA Systems;
- 2 (b) number of new system OPs issued for Accepted Systems;
- 3 (c) number of CAs issued for Provisional Systems, including system type;
- 4 (d) number of CAs issued for repairs of PIA Systems, including system type being repaired;
- 5 (e) number of CAs issued for repairs of Accepted Systems, including system type being
- 6 repaired; and
- 7 (f) repair system type.

8

9 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

10 *Eff. December 1, 2018*



STATE OF NORTH CAROLINA  
OFFICE OF ADMINISTRATIVE HEARINGS

Mailing address:  
6714 Mail Service Center  
Raleigh, NC 27699-6700

Street address:  
1711 New Hope Church Rd  
Raleigh, NC 27609-6285

September 26, 2018

Chris Hoke, Rulemaking Coordinator  
Commission for Public Health  
**Sent via email only to: [chris.hoke@dhhs.nc.gov](mailto:chris.hoke@dhhs.nc.gov)**

Re: Extension of the Period of Review for Rules 15A NCAC 18A .1934, .1935, .1937, .1938, .1939, .1940, .1941, .1942, .1943, .1944, .1945, .1946, .1947, .1948, .1949, .1950, .1951, .1952, .1953, .1954, .1955, .1956, .1957, .1958, .1959, .1960, .1961, .1962, .1964, .1965, .1966, .1967, .1968, .1969, .1970, .1971; 18E .0101, .0102, .0103, .0104, .0105, .0201, .0202, .0203, .0204, .0205, .0206, .0207, .0301, .0302, .0303, .0304, .0305, .0401, .0402, .0403, .0501, .0502, .0503, .0504, .0505, .0506, .0507, .0509, .0510, .0601, .0602, .0701, .0702, .0703, .0801, .0802, .0803, .0804, .0805, .0901, .0902, .0903, .0904, .0905, .0906, .0907, .0908, .0909, .0910, .0911, .1001, .1002, .1101, .1102, .1103, .1104, .1105, .1106, .1201, .1202, .1203, .1204, .1205, .1206, .1302, .1303, .1304, .1305, .1306, .1307, .1401, .1402, .1403, .1404, .1405, .1406, .1501, .1502, .1503, .1504, .1505, .1601, .1602, .1603, .1701, .1702, .1703, .1704, .1705, .1706, .1707, .1709, .0710, .0711, .0712, .0713

Dear Mr. Hoke:

At its meeting last week, the Rules Review Commission extended the period of review for the above-captioned rules in accordance with G.S. 150B-21.10. They did so in response to a request from the agency to extend the period in order to allow the agency to address requested technical changes.

Pursuant to G.S. 150B-21.13, when the Commission extends the period of review, it is required to approve or object to rules or call a public hearing on the same within 70 days.

Should you have any questions regarding the Commission's actions, please let me know.

Sincerely,

Amber May  
Commission Counsel

Administration  
919/431-3000  
fax: 919/431-3100

Rules Division  
919/431-3000  
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REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0601

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In the first row of the table, are these springs downslope springs? How does this row go with the second row (which speaks to upslope springs.)*

*In the table on page 2, please change "drains which connect to a stormwater conveyance" to "drains **that** connect to a stormwater conveyance"*

*What is the setback required for private drinking water wells or upslope springs? The table says that it is 50 feet, but then I read (b) to say that it is really 100 unless a variance is given. Overall (b) seems to conflict with itself and the table. Please review and clarify.*

*Given the first row of the table, is (c) necessary? They seem to say the same thing.*

*On Page 3, line 17, please correct the formatting of the deletion of the asterisk. It should be "~~features~~\* features"*

*What is the overall intent of (i)? Is it to say that the setback is 10 feet, unless (i)(1) or (2) are met? If so, please consider revising to say something like "The minimum setback from water lines to collection sewers shall be 10 feet, **except as follows:** feet. **If a 10-foot setback is not maintained, the following criteria shall be met:**" As written, it's a bit unclear as to what the actual requirement is.*

*Please add "the" at the beginning of (i)(1), (i)(2), (j)(2)(A), (j)(2)(B), (k)(2), (k)(3), (l)(2), and (l)(3).*

*What is the setback requirement (i)(1) occurs? I'm thinking there isn't one, but please verify.*

*In (j), should "collection sewers" be "collection sewer line"? Elsewhere in this Rule you have used "sewer line." Please be consistent where you can be.*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

*(j) seems to be missing something. Is there an underlying requirement that water lines and collection sewers not cross each other? If so, would it be accurate to say something like “Collection sewers and water lines shall not cross, except as follows: Crossings of collection sewers and a water line may occur with the following”*

*In (j)(1) you have said “passing”, in (j) and (j)(2), you have said “cross” and “crossing.” Please be consistent.*

*Please change “shall be” to “is” in (j)(2)(A) and (j)(2)(B).*

*In (i)(2), what is meant by “the collection sewer shall be located the maximum setback from the water line within the trench”? Is this going to be at the discretion of the installer to put it as far back as possible? I just want to be sure that I understand what’s going on here.*

*In (j)(2), do you mean “and” rather than “or” in “the sewer line or 18 inches clear vertical separation”? (j)(1) allows for the sewer line to pass under the water*

*In (j)(2)(B), please delete the “and” in between “ferrous materials” and “with joints”*

*In (j)(2)(B), I assume that your regulated public is familiar with what “ferrous materials” are?*

*In (j)(2)(B), (k)(2), and (l)(2), what are “water main standards”?*

*(k) seems to be missing something. Is there an underlying requirement that collection sewers not cross storm drains? If so, would it be appropriate to say something like “Collection sewers shall not cross storm drains, except as follows: collection sewers may cross a storm drain if: ?*

*In (k)(1), I assume that the vertical separation must be maintained between the collection sewer line and the storm drain?*

*(l) seems to be missing something. Is there an underlying requirement that collection sewers not cross under streams? If so, would it be appropriate to say something like “Collection sewers shall not cross under streams, except as follows: collection sewers may cross a storm drain if: ?*

*In (l)(1), I assume that your regulated public is familiar with what is meant by “stable cover”?*

*In (n), what is meant by “frequent flooding”? Is the language in the parenthesis intended to define “frequent flooding”? If so, what is meant by “areas inundated at a 10-year or less frequency”?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0601 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3  
4  
5  
6  
7  
8

**15A NCAC 18E .0601 LOCATION OF WASTEWATER SYSTEMS**

(a) Every wastewater system shall be located the minimum setbacks from the site features specified in Table IX. The setback shall be measured from the nearest wastewater system component sidewall or as otherwise specified in a system specific rule or PIA Approval.

**TABLE IX.** Minimum setbacks from all wastewater systems to site features

Site Features	Setback (feet)
Any public water system or private water supply source, including a private drinking water well or spring	100
<u>A private drinking water well or upslope spring serving a single-family dwelling and intended for domestic use</u>	<u>50</u>
Any other well or source not listed in this table, excluding monitoring wells	50
Surface waters classified <del>Water Supply Class I (WS-I), WS-I,</del> from mean high-water mark	100
Waters classified SA, from mean high-water mark	100
Any Class I or Class II reservoir, from normal pool elevation	100
Lake, pond, or stormwater retention pond, from flood pool elevation	50
Stormwater detention (temporary) pond	25
Any other coastal water, canal, marsh, stream, non-water supply spring, perennial waterbodies, intermittent or perennial streams, or other surface waters, from the mean high-water mark	50
Any water line, including fire protection and irrigation water lines	10
Geothermal aqueous closed loop wells	50
Geothermal direct expansion closed loop wells	50
Horizontal closed-loop geothermal system	15
Building foundation with artificial drainage	15
Building or other foundation without artificial drainage, including patio, deck, porch, stoop, lighting fixtures, or signage supporting columns, or posts	5
Any basement, cellar, or in-ground swimming pool	15
Buried storage tank or basin, except stormwater	15
Above ground swimming pool	5
Top of slope of embankment or cuts of two feet or more vertical	15

height	
Subsurface groundwater lowering system, ditch, or device, as measured on the ground surface from the edge of the feature	25
Surface water diversion, <u>except for an upslope swale or berm</u> , as measured on the ground surface from the edge of the diversion	15
<u>Interceptor drain – upslope</u>	<u>10</u>
<u>Interceptor drain – sideslope</u>	<u>15</u>
<u>Interceptor drain – downslope</u>	<u>25</u>
<u>Swale, Upslope swale or berm</u> , as measured on the ground surface from the edge of the swale	5
<u>Ephemeral stream</u>	<u>15</u>
Any stormwater conveyance (pipe or open <del>channel</del> ) <u>channel</u> ), <u>excluding gutter drains which connect to a stormwater conveyance or ephemeral stream</u>	15
Permanent stormwater retention basin or sediment detention basin	50
Bio-retention area, injection well, or infiltration gallery	25
Any other dispersal field, except designated dispersal field repair area for project site	20
Any property line	10
Burial plot or graveyard boundary	15
Above ground storage tank (from dripline or foundation pad, whichever is more limiting)	5
Utility transmission and distribution line poles and towers, including guy wires	15
Utility transformer, ground-surface mounted	10

1  
2 (b) Wastewater systems may be located closer than 100 feet from a private drinking water well or upslope spring for repairs,  
3 space limitations, and other site-planning considerations. The wastewater system shall be located the maximum feasible  
4 distance and never less than 50 feet from the private drinking water ~~well~~. well or upslope spring. The wastewater system may  
5 be located closer than 100 feet ~~under the following conditions:~~ when a variance for a reduced separation has been issued for  
6 the private drinking water well in accordance with Rule 15A NCAC 02C .0118.

- 7 (1) ~~the private drinking water well is on a lot serving a single family dwelling and intended for domestic use;~~  
8 ~~or~~  
9 (2) ~~a variance for a reduced separation has been issued for the private drinking water well in accordance with~~  
10 ~~15A NCAC 02C .0118.~~

11 (c) Wastewater systems shall not be located closer than 100 feet to springs and uncased wells used as a source of drinking  
12 water and located downslope from the dispersal field.

(d) Initial and repair dispersal field systems shall not be located under impervious surfaces or areas subject to vehicular traffic unless approved in accordance with G.S. 130A-343 and Section .1700 of this Subchapter.

(e) If effluent is conveyed under areas subject to vehicular traffic or areas subject to soil disturbance or compaction, one of the following shall be used:

- (1) DIP;
- (2) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) sleeved in DIP;
- (3) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) sleeved in DOT traffic rated culvert pipe;
- (4) a minimum of Schedule 40 pipe (PVC, Polyethylene, or ABS) with 30 inches of compacted cover provided over the crown of the pipe; or
- (5) other pipe materials may be proposed when designed, inspected, and certified by a PE and approved by the LHD.

(f) In addition to the requirements of Paragraph (a) of this Rule, wastewater systems with a proposed DDF greater than 3,000 gpd, as determined in Rule .0401 of this Subchapter, shall be located the minimum setbacks from the site features in Table X.

**TABLE X.** Minimum setbacks from wastewater systems greater than 3,000 gpd to site features\*

Feature	Setback (feet)
Any Class I or II reservoir or any public water system source utilizing a shallow (under 50 feet) groundwater aquifer	500
Any other public water system source, unless a confined aquifer	200
Any private water supply source, unless a confined aquifer	100
Surface water classified WS- I, from mean high-water mark	200
Surface waters classified WS-II, WS-III, B, or SB, from mean high-water mark	100
Waters classified SA, from mean high-water mark	200
Any property line	25

\*Increased setbacks for separate dispersal fields that are part of wastewater systems with a DDF greater than 3,000 gpd shall not apply to one or more field(s) that are designed for less than or equal to 1,500 gpd when a Special Site Evaluation in accordance with Rule .0510 of this Subchapter demonstrates that the wastewater system will comply with the performance requirements in Rule .0510(d) of this Subchapter.

(g) Wastewater systems with a DDF greater than 3,000 gpd that meets the requirements of Rule .0510(d) of this Subchapter may use the setbacks identified in Table IX of this Rule.

~~(g)(h) In addition to the requirements of Paragraph (a) of this Rule, collection~~ Collection sewers shall be located the minimum setbacks to site features shown in Table XI.

**TABLE XI.** Minimum setbacks from collection sewers to site features

Feature	Setback (feet)
Any public water system source, including wells, springs, and Class I or Class II reservoirs	100, unless the collection sewer is constructed of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 50 ft*
Any private water supply source, including wells and springs	50, unless the collection sewer is construction of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 25 ft*
Surface waters classified WS-I, WS-II, WS-III, B, SA, or SB, from flood pool elevation	50, unless the collection sewer is construction of or sleeved in DIP with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 10 ft*
Any other stream, canal, <del>marsh</del> , <u>marsh</u> , coastal water, lakes, <u>ponds</u> , and other impoundments, or other surface waters	10
Geothermal aqueous closed loop wells	25
Geothermal direct expansion closed loop wells	25
Horizontal closed loop geothermal wells	5
Any basement, cellar, or in-ground swimming pool	10
Top of slope of embankment or cuts of two feet or more vertical height	5
Surface water diversion, as measured on the ground surface from the edge of the diversion	5
Any stormwater conveyance (pipe or open channel) or ephemeral stream	10
Permanent stormwater retention basin or sediment detention basin	10
Bio-retention area, injection well, or infiltration gallery	5
Any other dispersal field except designated dispersal field repair area for project site	5
Any property line	5
Burial plot or graveyard boundary	5
Utility transmission and distribution line poles	5

and towers, including guy wires	
Utility transformer, ground-surface mounted	5

\*Pipe materials other than DIP shall be acceptable when the materials conform to materials, testing methods, and acceptability standards meeting water main standards and when the line has been designed, installed, inspected, and certified by a PE and approved by the LHD.

~~(h)~~(i) The minimum setback from water lines to collection sewers shall be 10 feet. If a 10-foot setback is not maintained, the following criteria shall be met:

- (1) water line is laid in a separate trench with the elevation of the bottom of the water line 18 inches above the top of the collection sewer; or
- (2) water line is laid in the same trench as the collection sewer with the water line located on one side of the trench, on a bench of undisturbed earth and with the elevation of the bottom of the water line 18 inches above the top of the collection sewer. The collection sewer shall be located the maximum setback from the water line within the trench.

~~(i)~~(j) Crossings of collection sewers and a water line may occur with the following:

- (1) 18 inches clear vertical separation ~~distance~~ is maintained, with the sewer line passing under the water line; or
- (2) the water line crosses under the sewer line or 18 inches clear vertical separation ~~distance~~ is not maintained and the following criteria are met:
  - (A) collection sewer shall be constructed of DIP with joints equivalent to water main standards and extend 10 feet on each side of the point of crossing, with full sections of pipe centered at the point of crossing; and
  - (B) water line shall be constructed of ferrous materials and with joints equivalent to water main standards and extend a minimum of 10 feet on each side of the point of crossing, with full sections of pipe centered at the point of crossing.

~~(j)~~(k) Collection sewers may cross a storm drain if:

- (1) 12 inches clear vertical separation ~~distance~~ is maintained;
- (2) collection sewer is constructed of DIP with mechanical joints or restrained push-on joints equal to water main standards; or
- (3) collection sewer is encased in concrete or DIP for a minimum of five feet on either side of the crossing.

~~(k)~~(l) Collection sewers may cross ~~over a~~ under a stream if:

- (1) a minimum of 36 inches of stable cover is maintained;
- (2) sewer line is constructed of DIP with mechanical joints or restrained push-on joints equal to water main standards; or
- (3) sewer line is encased in concrete or DIP for a minimum of 10 feet on either side of the crossing and protected against the normal range of high and low water conditions, including the 100-year flood or wave action.

1 ~~(m)~~(m) Collection sewer aerial crossings shall be constructed of DIP with mechanical joints or restrained push-on ~~joints~~. joints  
2 equal to water main standards and freeze protected. Pipe shall be anchored for a minimum of 10 feet on either side of the  
3 crossing.

4 ~~(n)~~(n) Septic tanks, pump tanks, grease tanks, raw sewage lift stations, wastewater treatment plants, sand filters, and other  
5 advanced pretreatment systems shall not be located in areas subject to frequent flooding (areas inundated at a 10-year or less  
6 frequency), unless designed and installed to be watertight and to remain operable during a 10-year storm. Mechanical or  
7 electrical components of treatment systems shall be above the 100-year flood level or otherwise protected against a 100-year  
8 flood.

9

10 *History Note: Authority G.S. 130A-334; 130A-335(e) and (f).*

11 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0602

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Overall, I'm having a difficult time following the requirements of this Rule. Please review to ensure that the dates are still needed here. I understand that these dates may have been helpful when .1951 was first put into effect, but are they still applicable?*

*In (a) and (a)(2), should "or cuts" be "and cuts"?*

*In (a)(1) can it be described in a recorded plat after July 1, 1977, or must the plat meet that date as well? Should the language be "On July 1, 1977, is described in a deed, contract, other instrument conveying fee title, or in a recorded plat"?*

*Please begin (a)(2) with "is of"*

*How are (a)(2) and (3) to be determined?*

*Just so I understand what is going on with (b), the authorized agent can require more, but he or she must at least require the minimum setbacks in Table XII? How are the maximum requirements to be determined?*

*In the intent of (c) and (d)? As written, I don't understand what is going on.*

*Is the intent of (c) to say "For wastewater systems installed in Group I soils on lots or tracts of land that meet the requirements set forth in Paragraph (a) of this Rule, the minimum setback shall be 10 feet? Would this make sense in Table XII?"*

*In (c), what are "group I soils"? Is this set forth elsewhere?*

*In (c), what is meant by "as far as possible"? How and by whom is this determined?*

*Is (d) saying that if the minimum setback of 25 feet (as set forth in Table IX) cannot be met, then the minimum setback shall instead be 10 feet? What is the significance of the 1982 date? Is this necessary?*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

*What is the purpose of (e)? Is this language still necessary? How is your regulated public going to get "rules and regulations" in effect on June 30, 1977? Is this an attempt to incorporate rules that have not been promulgated as such in accordance with the APA?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0602 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0602 APPLICABILITY OF SETBACKS**

4 (a) The minimum setback requirements in Table IX of Rule .0601 of this Section for SA waters, basements, property lines, or  
5 cuts of two feet or more vertical height, shall not apply to the installation of a single wastewater system serving a  
6 single-family residence with a maximum DDF of 480 gpd on a lot or tract of land that meets the following requirements:

7 (1) on July 1, 1977, is described in a deed, contract, or other instrument conveying fee title or that is described  
8 in a recorded plat;

9 (2) insufficient size to satisfy the minimum setback requirements in Table IX of Rule .0601 of this Section for  
10 SA waters, basement, property lines, or cuts of two feet or more vertical height of this Section on July 1,  
11 1977; and

12 (3) cannot be served by a community or public sewerage system on the date system construction is proposed to  
13 begin.

14 (b) For those lots or tracts of land described in Paragraph (a) of this Rule, the maximum feasible setback as determined by an  
15 authorized agent shall be required. The minimum setbacks in Table XII shall be required in all cases.

16

17 **TABLE XII.** Minimum setbacks from wastewater systems to specific site features on lots described in this Rule

<b>Feature</b>	<b>Minimum setback (feet)</b>
SA waters from mean high-water mark	50
Basement	8
Property line	5
Cuts of two feet or more vertical height	5

18

19 (c) For those lots or tracts of land that meet the requirements of Paragraph (a) of this Rule, and the wastewater system will be  
20 installed in Group I soils, the wastewater system shall be located as far as possible, but not less than 10 feet from any other  
21 wastewater system.

22 (d) For those lots or tract of land which, on July 1, 1982, are specifically described in a deed or recorded plat and the  
23 minimum horizontal setbacks in Table IX of Rule .0601 of this Section for groundwater lowering systems cannot be met, the  
24 maximum feasible horizontal distance as determined by the authorized agent shall be required. The minimum setback shall  
25 not be less than 10 feet

26 (e) Any rules and regulations of the Commission for Public Health or any local board of health in effect on June 30, 1977,  
27 which establish greater minimum ~~distance~~ setback requirements than those provided for in this Section, shall remain in effect  
28 and shall apply to a lot or tract of land to which Table IX of Rule .0601 of this Section does not apply.

29

1 *History Note: Authority G.S. 130A-335(e).*  
2 *Eff. October 1, 2018*  
3

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0701

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a)(5), please check the cross-reference to .0601(e).*

*In (a)(6), when would they be subject to traffic-bearing loads? When they are under areas subject to vehicular traffic? If so, please consider saying that.*

*In (a)(7), line 18, please change "manholes are required..." to "manholes shall be required..."*

*In (a)(8), please change "Cleanouts are required..." to "Cleanouts shall be required..."*

*In (a)(9), when will collections sewers require additional ventilation provisions? Please provide some additional information. Also, what is meant by "ventilation provisions"? Do you mean "Air relief valves shall be provided for collection sewers as needed for force mains"? This may not make sense in your terms, but I'm thinking that "air relief valves..." is what is meant by "ventilation provisions" and "as needed for force mains" gives information regarding when they "may" be required. If that's the case, I think that a bit of rewording would make this more clear.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0701 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0701 COLLECTION SEWERS**

4 (a) Collection sewers shall be designed and constructed in accordance with the following criteria:

5 (1) Building drains and building sewers shall be in accordance with the North Carolina Plumbing Code and  
6 approved by the local building inspector.

7 (2) Pipe material shall be specified to comply with the applicable ASTM standards based on pipe material.

8 (3) Gravity sewers shall be designed to maintain minimum scour velocities of two feet per second with the  
9 pipe half full and one-foot per second at the peak projected instantaneous flow rate. Force mains shall be  
10 sized to obtain a minimum two-foot per second scour velocity at the projected pump operating flow rate.

11 (4) Infiltration and exfiltration shall not exceed 100 gpd per inch diameter per mile of gravity sewer pipe or 20  
12 gpd per inch diameter per mile of pressure pipe in force mains and supply lines.

13 (5) Three-foot minimum cover shall be provided for all collection sewers, except as provided for in Rule  
14 .0601(e) of this Subchapter.

15 (6) Ferrous material pipe or other pipe designed and bedded for traffic-bearing loads shall be provided where  
16 collection sewers are subject to traffic-bearing loads.

17 (7) Manholes shall be used for gravity collection sewers at any bends, junctions, and a maximum of every 425  
18 feet along the sewer lines. Drop manholes are required where the inlet to outlet elevation difference  
19 exceeds two and one half feet. Manhole lids shall be watertight if located below the 100-year flood  
20 elevation, within 100 feet of any public water supply system source, or within 50 feet of any private water  
21 system source or any surface waters classified WS-I, WS-II, WS-III, SA, SB, or B.

22 (8) Cleanouts may be used instead of manholes for four-inch and six-inch sewers serving one or two design  
23 units, or as otherwise allowed by the North Carolina Plumbing Code. Cleanouts are required a maximum of  
24 every 100 feet for four or six-inch sewers and at all junctions and bends which exceed 45 degrees, unless  
25 otherwise allowed by the North Carolina Plumbing Code.

26 (9) Collection sewers may require additional ventilation provisions. Air relief valves shall be provided as  
27 needed for force mains.

28 (b) STEP systems may be used as an alternative to gravity collection sewers.

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30 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

31 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0702

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*(a) has inconsistent references to the tables in .0601. Please be consistent.*

(a) Raw sewage lift stations permitted by the LHD shall meet all setbacks for wastewater systems in accordance with Table IX of Rule .0601(a) of this Subchapter. If the raw sewage lift station is a sealed, watertight chamber the setbacks requirements for collection sewers set forth in Table XI of in Rule .0601(g) .0601(h) of this Subchapter shall apply.

*In (b)(3), what is meant by “an equivalent third-party electrical testing and listing agency”? How and who determines whether an agency is equivalent to Underwriter’s laboratories?*

*In (b)(8), please consider deleting “other” and “also” since (b) says that all of these requirements have to be met. This language is superfluous. Please also consider changing “in accordance with” to “as set forth in”*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0702 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .0702 RAW SEWAGE LIFT STATIONS**

(a) Raw sewage lift stations permitted by the LHD shall meet all setbacks for wastewater systems in accordance with Table IX of Rule .0601(a) .0601 of this Subchapter. If the raw sewage lift station is a sealed, watertight chamber the setbacks requirements for collection sewers in Rule ~~.0601(g)~~ .0601(h) of this Subchapter shall apply.

(b) Raw sewage lift stations shall meet the following design and construction standards:

- (1) sealed, watertight chamber shall be a prefabricated unit with a sealed top cover, and preformed inlet and outlet pipe openings connected with solvent welds, O-ring seals, rubber boots, stainless steel straps, or equivalent;
- (2) dual pumps shall be provided for stations serving two or more buildings or for a facility with more than six water closets;
- (3) pumps shall be listed by Underwriter's Laboratories or an equivalent third-party electrical testing and listing agency;
- (4) pumps shall be grinder pumps or solids-handling pumps capable of handling a minimum of three-inch spheres. If the raw sewage lift station serves no more than a single water closet, lavatory, and shower, two-inch solids handling pumps shall be acceptable;
- (5) minimum pump ~~operating flow rate~~ capacity shall be two and one half times the average daily flow;
- (6) raw sewage lift stations serving single buildings shall be designed for pump ~~run times~~ run times between three to 10 minutes at average daily flow;
- (7) pump station emergency storage capacity and total liquid capacity shall be determined in accordance with Rule .0802 of this Subchapter except for a sealed, watertight chamber serving an individual building, in which case a minimum storage capacity of eight hours shall be required; and
- (8) all other applicable requirements for pump tanks and dosing systems in accordance with Rule .0802 and Section .1100 of this Subchapter shall also apply to raw sewage lift stations.

*History Note: Authority G.S. 130A-335(e), (f), and (f1).  
Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0703

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Since (b) sets forth acceptable alternatives and says specifically that these “may be substituted for Schedule 40”, I think that “or alternative pipe material as specified in this Rule” in (a) is both unnecessary and confusing. Please consider deleting this language and adding “or” in between polyethylene, and Schedule 40 ABS.*

*In (b)(1), please delete or define “smooth” Given “uniform grade”, do you need this language?*

*In (b)(5), just so I understand, how is “undisturbed soil” going to be placed in a dam? Wouldn't it be disturbed once moved to the dam?*

*In (d), who is to certify that the tubing complies with ASTM F667? Would it be sufficient to mirror language in (c) and say “conforming to ASTM F667”? This is also on line 22 with regard to ASTM D2729 or F810.*

*Is the language on lines 22-26 (“The corrugated tubing... adjacent corrugations”) summarizing the ASTM requirements? If so, there is no need to repeat this since you all have incorporated the ASTM requirements by reference.*

*In (d), line 27, what is meant by “approved by the State”? What is the process to get this approval? How will it be determined whether the pipe will be approved? I assume that it will be approved if it meets the requirements of this Section (or Rule), but that is not clear. Given Paragraph (f), is this language necessary?*

*In (d), line 27, by “satisfies the requirements of this Section”, do you mean “satisfies the requirements of this Rule”? This Section sets forth requirements for collection sewers and lift stations, this Rule appears to speak specifically to pipe. Please review.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0703 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .0703 PIPE MATERIALS**

(a) The gravity pipe between a septic tank, gravity distribution device, and the dispersal field shall be a minimum of three-inch Schedule 40 PVC, Schedule 40 polyethylene, Schedule 40 ABS, or alternative pipe material as specified in this Rule.

(b) Three-inch or greater non-perforated polyethylene corrugated tubing, PVC SDR 21 and SDR 26 pressure rated at 160 psi or greater and labeled as compliant with ASTM D2241, PVC SDR 35 gravity sewer pipe rated as compliant with ASTM D3034, or alternative non-perforated pipe materials described in Paragraph (d) of this Rule, may be substituted for Schedule 40 between the distribution device and the dispersal field when the following minimum installation criteria are met:

- (1) the pipe is placed on a compacted, smooth surface at a uniform grade, and with an excavation width of one-foot;
- (2) the pipe is placed in the middle of the excavation with three inches of clearance between the pipe and the walls;
- (3) a washed gravel or crushed stone envelope is placed in the excavation on both sides of the pipe and to a point two inches above the top of the pipe;
- (4) six inches of soil cover is placed and compacted over the stone or gravel envelope; and
- (5) earthen dams consisting of two feet of undisturbed or compacted soil are placed at both ends of the excavation separating the trench from the distribution device.

(c) All pipe joints from the septic tank to the dispersal field shall be watertight. Solvent cement-joints shall be made in a two-step process with primer manufactured for thermoplastic piping systems and solvent cement conforming to ASTM D2564.

(d) Pipe used for gravity distribution laterals shall be corrugated plastic tubing certified as complying with ASTM F667 or smooth-wall plastic pipe certified as complying with ASTM ~~D2729~~ D2729 or ASTM F810. The corrugated tubing or smooth-wall pipe shall have three rows of holes, each hole between 1/2-inch and 3/4-inch in diameter, and spaced longitudinally approximately four inches on centers. The rows of holes may be equally spaced 120 degrees on centers around the pipe periphery, or three rows may be located in the lower portion of the tubing, the outside rows being approximately on 120-degree centers. The holes may be located in the same corrugation or staggered in adjacent corrugations. Other types of pipe may be used for laterals provided the pipe satisfies the requirements of this Section and is approved by the State.

(e) Pump discharge piping, including the force main to the next component in the wastewater system, shall be of Schedule 40 PVC or stronger material and pressure rated for water service at a minimum of 160 psi or two times the maximum operating pressure, whichever is greater. The pipe shall meet ASTM D1784, ASTM D1785, and ASTM D2466.

(f) Alternative pipe materials may be proposed when designed and certified by a PE, including any installation and testing procedures. Gravity pipe materials shall be shown to meet the requirements of Paragraphs (a), (b), and (c) of this Rule. Alternative pressure rated pipe materials shall be constructed of PVC, polyethylene, or other pressure rated pipe and comply with applicable ASTM standards for pipe material and methods of joining. The proposed pipe shall be installed per ASTM D2774. Installation testing shall include a hydrostatic pressure test similar to pressure testing required for water mains for any line exceeding 500 feet in length and shall comply with the requirements of Rule ~~.0701(4)~~ .0701(a)(4) of this Section.

- 1 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*
- 2 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0901

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please change "are" to "shall be" in "this Section are based"*

*Please begin Subparagraphs (d)(1) through (5) with lower case letters and end Sub Paragraphs (d)(1) through (4) with semi-colons. Please also add "and" or "or", whichever is correct, at the end of (d)(4).*

*In (g), by "equivalent" do you mean "similar tool"? I just want to be sure that I understand.*

*In (g)(3), delete "Subparagraph" before ~~(f)~~(2).*

*In (g)(6), how is the authorized agent to determine whether to approve the soil cover? Will approval occur so long as the soil cover meets the requirements of (g)(6)?*

*In (g)(7), what is meant by "other State-approved equivalent pipe"? Is there a list somewhere or will this be determined by you all on a case by case basis? If there is an approval, how will it be decided?*

*In (g)(8), what is meant by "sound construction"?*

*In (g)(9), what is meant by "the installer shall demonstrate"? Demonstrate to whom and when? Do you instead mean something like "the installer shall ensure"?*

*In (g)(10), how will it be determined whether a serial and sequential distribution will be approved? Will approval occur so long as it meets the requirements of (g)(10)?*

*In (g)(12), how is the installer to "demonstrate that the drop boxes perform as designed"? To whom and when Do you instead mean something like "the installer shall ensure"?*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0901 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .0901 GENERAL DESIGN AND INSTALLATION CRITERIA FOR SUBSURFACE DISPERSAL SYSTEMS**

(a) Wastewater systems shall be used on sites classified suitable in accordance with Rule .0509 of this Subchapter. The sizing and siting criteria in this Section are based on soil receiving DSE. The site shall meet the following minimum criteria:

- (1) 12 inches of naturally occurring soil between the infiltrative surface and any ~~LC or SWC~~; LC; and
- (2) 18 inches of separation between the infiltrative surface and any SWC if more than six inches of separation consists of Group I soils.

(b) If any part of the trench or bed media extends above the naturally occurring soil surface, the system shall be a fill system and must meet the requirements of Rule .0909 of this Section.

(c) The LTAR shall be determined in accordance with the following:

- (1) Tables XVI and XVII shall be ~~used~~; used, as applicable;
- ~~(2)~~ (3) the LTAR shall be assigned based upon soil textural class or saprolite textural class, as applicable, structure, consistence, SWC, depth, percent coarse rock, landscape position, topography, and system type;
- ~~(2)(3)~~ (3)(4) LTARs determined from Table XVI shall be based on the soil textural class of the most limiting, naturally occurring soil ~~horizons~~ horizon within the trench and to a depth of 12 inches below the infiltrative surface (18 inches to any SWC if more than six inches of the separation consists of Group I soils);
- ~~(3)(4)~~ (4) LTARs determined from Table XVII shall be based on the saprolite textural class of the most limiting, naturally occurring saprolite to a depth of 24 inches (or less if combined with ~~soil~~) soil in accordance with Rule .0506(b) of this Subchapter below the infiltrative surface; and
- ~~(4)~~ (5) ~~the LTAR shall be assigned based upon soil textural class, structure, consistence, SWC, depth, percent coarse rock, landscape position, topography, and system type; and~~ the LTAR shall not exceed the mean rate for the applicable Soil Group for effluent exceeding DSE as specified in Table III of Rule .0402 of this ~~Subchapter~~. Subchapter or for a facility with a full kitchen.

**TABLE XVI.** LTAR for wastewater systems based on Soil Group and texture class

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.8 – 1.2
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.6 – 0.8
		Loam	
III	Fine Loams	Sandy Clay Loam	0.3 – 0.6
		Silt Loam	
		Clay Loam	

		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.1 – 0.4
		Silty Clay	
		Clay	

**TABLE XVII.** LTAR for wastewater systems in saprolite based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.6 – 0.8
		Loamy Sand	0.5 – 0.7
II	Loams	Sandy Loam	0.4 – 0.6
		Loam	0.2 – 0.4
III	Fine Loams	Silt Loam	0.1 – <del>0.2</del> 0.3
		Sand <del>Clay*</del>	0.05 – 0.15
		<u>Clay Loam*</u>	

\* Sandy clay loam saprolite can only be used with advanced pretreatment in accordance with Section .1200 of this Subchapter.

(d) The minimum required infiltrative surface area and trench length shall be calculated in accordance with the following:

(1) The minimum required infiltrative surface area shall be ~~determined~~ calculated by dividing the DDF by the LTAR.

(2) The minimum trench length shall be calculated by dividing the minimum required infiltrative surface area by the equivalent trench width. ~~The authorized agent may approve trench widths between two and three feet.~~ The following equation shall be used to calculate the minimum trench length required:

$$TL = (DDF \div LTAR) \div ETW$$

Where TL = length of trench (feet)

DDF = design daily flow (gpd)

LTAR = in gpd/ft<sup>2</sup>

ETW = equivalent trench width (feet)

(3) The area occupied by step-downs, drop boxes, and supply lines shall not be ~~included~~ as part of the minimum required infiltrative surface area.

(4) The total trench length required for trench products other than conventional gravel shall be as follows:

(A) for trench products identified in Section .0900 of this Subchapter, the minimum line length shall be calculated in accordance with this Section; or

(B) for trench products approved under Section .1700 of this Subchapter, the minimum line length shall be calculated in accordance with the PIA Approval.

1 (5) When HSE is proposed to be discharged to a dispersal field with no advanced ~~pretreatment~~, pretreatment or  
2 has not been reclassified as DSE in accordance with Rule .0402(c) of this Subchapter, a licensed  
3 professional, if required in G.S. 89C, 89E, or 89F, shall calculate the ~~mass loading on the soil~~ adjusted  
4 LTAR in accordance with Rule .0402(b) of this Subchapter.

5 (e) ~~Any dispersal field where cover is required, Systems with less than 30 inches of suitable soil (or 36 inches in Group I~~  
6 ~~soils) shall not be installed on slopes greater than 30 percent, percent and shall be installed in accordance with Paragraph (f)~~  
7 ~~of this Rule and soil cover above the original grade shall be placed over the entire dispersal field and shall extend laterally~~  
8 ~~five feet beyond the trenches, with the dispersal field crowned at one-half percent as measured from the centerline of the~~  
9 ~~dispersal field.~~

10 (f) Soil cover above the original grade shall be placed over the entire dispersal field and shall extend laterally five feet  
11 beyond the trenches. On level sites, the final grade of the dispersal field shall be crowned at one-half percent as measured  
12 from the centerline of the dispersal field.

13 ~~(f)~~(g) Wastewater system installation shall be in accordance with the following criteria:

14 (1) an engineer's level, laser level, or equivalent shall be used for the following:

15 (A) staking (flagging) or marking on the ground surface the location of trenches on site before  
16 installation begins;

17 (B) installation of the trenches; and

18 (C) verification of elevations, excavations, and installation of other system components;

19 (2) trenches shall be installed with 12 inches of naturally occurring suitable soil between the infiltrative surface  
20 and any unsuitable ~~LC or SWC~~, LC. If the vertical separation between the infiltrative surface and any SWC  
21 is less than 18 inches, and if more than six inches of the separation consists of Group I soils, pressure  
22 dispersal system shall be required;

23 (3) the trenches shall follow the ground contour. Trenches may be installed level but off contour if an  
24 authorized agent has determined that there is sufficient vertical separation ~~distance~~ to a LC ~~or SWC~~ along  
25 the entire trench length in accordance with Subparagraph ~~(f)(2)~~ (g)(2) of this ~~Rule~~; Paragraph;

26 (4) the lateral shall be centered horizontally in the trench;

27 (5) final soil cover over the dispersal field shall be a minimum of six inches deep after settling. The finished  
28 grade over the tanks and dispersal field shall be sloped to shed surface water. Surface water runoff,  
29 including stormwater, gutter drains, or downspouts, shall be diverted away from the wastewater ~~system~~;  
30 system. No depressions shall be allowed over the dispersal field area;

31 (6) the type and placement of soil cover shall be approved by the authorized agent. The cover material shall not  
32 have ~~not~~ more than 10 percent by volume of fibrous organics, building rubble, rocks, or other debris and  
33 shall be Soil Groups II or III;

34 (7) Schedule 40 PVC or other State-approved equivalent pipe may be used as needed to connect sections of  
35 trench and overcome site limitations. The trench bottom area ~~of trench~~ where solid piping is installed shall  
36 not be included as part of the minimum ~~area~~ required ~~for~~ infiltrative ~~surfaces~~; surface area;

- 1 (8) gravity effluent distribution components including distribution boxes, drop boxes, and flow diversion  
2 devices shall be of sound construction, watertight, corrosion resistant, and meet the following criteria:  
3 (A) separated by a minimum of two feet of undisturbed soil from the septic tank and trench(es);  
4 (B) placed level on a solid foundation of undisturbed soil, pea gravel, or concrete to prevent  
5 differential settling of the component; and  
6 (C) backfilled by hand to minimize disturbance;
- 7 (9) when parallel distribution is used to distribute effluent to the trenches, the installer shall demonstrate that  
8 the distribution devices perform as designed;
- 9 (10) serial and sequential distribution may be used when approved by the authorized agent. The step-down or  
10 drop box in an individual trench shall be constructed to allow full utilization of the upstream trench prior to  
11 overflowing to the next downslope trench through either a stepdown or drop box in accordance with  
12 Subparagraphs ~~(f)(11)~~ (g)(11) and ~~(f)(12)~~ (g)(12) of this Rule;
- 13 (11) step-downs shall be constructed of a minimum of two feet of undisturbed soil, bedding material, or  
14 concrete and the effluent shall be conveyed over the step-down through Schedule 40 PVC or other  
15 equivalent State-approved pipe in accordance with Rule .0703 of this Subchapter. The installer shall  
16 demonstrate that the step-downs perform as designed;
- 17 (12) drop boxes shall be separated from the trench by a minimum of two feet of undisturbed soil and constructed  
18 so that the invert of the inlet supply pipe is a minimum of one-inch above the invert of the outlet supply  
19 pipe which is connected to the next lower drop box. The installer shall demonstrate that the drop boxes  
20 perform as designed; and
- 21 (13) trench products other than conventional gravel shall be installed as follows:  
22 (A) for trench products identified in Section .0900, the trench products shall be installed in  
23 accordance with this Section; or  
24 (B) for trench products approved under Section .1700 of this Subchapter, the trench products shall be  
25 installed in accordance with their PIA Approval.

26 ~~(g)(h)~~ Alternating dual dispersal fields shall only be used with DSE in Soil Groups III and IV. Alternating dual dispersal  
27 fields shall be approved when designed and installed in accordance with Paragraph ~~(f)~~ (g) of this Rule and the following:

- 28 (1) both initial and repair dispersal fields shall be installed at the same time;
- 29 (2) initial and repair dispersal fields of the same system type are each sized at a minimum of 75 percent of the  
30 total trench length required;
- 31 (3) the initial and repair dispersal fields shall be separated by an effluent flow diversion valve(s);
- 32 (4) diversion valve(s) shall be resistant to 500 pounds crushing strength and ~~resistant to corrosion;~~ corrosion  
33 resistant;
- 34 (5) effluent flow diversion valves shall be installed below finished grade in a valve box and be accessible and  
35 operable from the ground surface;
- 36 (6) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with their  
37 PIA Approval; and

1           (7)    the maximum reduction in trench length is 25 ~~percent,~~ percent as compared to a conventional gravel  
2                   system, unless a greater percentage is ~~specifically~~ identified in a PIA Approval or this Subchapter.

3

4    *History Note:*    *Authority G.S. 130A-335(e), (f), and (f1).*

5                    *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0902

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*What is the difference in a "conventional wastewater system" as used in .0902 and .0906 versus "wastewater system" used elsewhere? I assume that this Rule is specific to a "conventional wastewater system" as defined in 130A-343? If so, please add 130A-343 to your History Note and provide some additional information to show the difference, if possible.*

*In (a), please change "...consists, at a minimum, of an approved..." to "...shall consist of a septic tank and a gravity distribution dispersal field."*

*Is Rule .0901 in its entirety applicable to conventional wastewater systems? If so, why is there a need to cross-reference .0901 in (b) and (e)? Are there any differences between .0901 and this Rule (other than the additional requirements in (e))? IF not, please consider revising "Except as otherwise required in this Rule, the requirements of .0901 of this Section shall apply" to say something like "In addition to the requirements set forth in Rule .0901 of this Section, this Rule shall apply to conventional wastewater systems as defined in 130A-343"*

*I'm not sure what (b), (c), and (d) have to do with conventional wastewater systems. It looks like a bunch of random requirements thrown in. Are these specific to "conventional" wastewater systems? If so, please make that clear (a suggestion would be to address that in (a) as suggested above.*

*In (c), when would trench widths be approved? Is there any additional information that could be provided for purposes of clarity? Is the authorized agent to make this determination in accordance with the local rules? Does this go to (e)(3)? If so, would it be appropriate to say something like "Trenches shall be at least two feet, but no more than three feet"?*

*In (e)(1), what is meant by "or equivalent"?*

*In (e)(4), is "clean, washed gravel" an industry term? If not, please delete or define "clean, washed"*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0902 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0902 CONVENTIONAL WASTEWATER SYSTEMS**

4 (a) A conventional wastewater system consists, at a minimum, of an approved septic tank and a gravity distribution dispersal  
5 field. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply.

6 ~~(b) Conventional wastewater systems shall be used on sites that have been classified suitable in accordance with Rules .0509~~  
7 ~~of this Subchapter. Sites classified suitable as to soil depth may utilize shallow placement of dispersal system~~

8 ~~(c)(b) The LTAR shall be determined in accordance with Rule .0901(c) of this Section. An equivalent trench width of three~~  
9 ~~feet shall be used to determine trench length in accordance with Rule .0901(d) of this Section.~~

10 (c) The authorized agent may approve trench widths between two and three feet.

11 (d) The minimum required infiltrative surface and trench length shall be calculated in accordance with Rule .0901(d) of this  
12 Section.

13 ~~(e)(e)~~ Conventional wastewater system installation shall be in accordance with Rule ~~.0901(e)~~ .0901(g) of this Section and the  
14 following:

15 (1) trenches shall be constructed level in all directions with a plus or minus one-half inch tolerance from side-  
16 to-side and the maximum fall ~~in a~~ in a single trench ~~bottom~~ not to exceed one-fourth inch in 10 feet as  
17 determined by an engineer's level, laser level, or equivalent;

18 (2) trenches shall be located not less than three times the trench width on centers. The minimum spacing for  
19 trenches is six feet on center;

20 (3) trench widths shall not exceed three feet and trench depth shall not exceed 36 inches on the downslope side  
21 of the trench, except as approved by an authorized agent; ~~and~~

22 (4) aggregate used in trenches shall be clean, washed gravel or crushed stone and graded or sized in  
23 accordance with size numbers 4, 5, or 6 of ASTM D448. The aggregate shall be distributed uniformly  
24 across the infiltrative surface and over the pipe and placed 12 inches deep with a minimum of six inches  
25 below the pipe and two inches over the ~~pipe.~~ pipe; and

26 (5) the laterals shall meet the requirements of Rule .0703(d) of this Subchapter.

27

28 *History Note: Authority G.S. 130A-335(e) and (f).*

29 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0903

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please consider revising the first sentence in (a) (This Rule ... receiving DSE) to say something like "This Rule shall apply to bed systems receiving DSE."*

*Also in (a), what is a bed system? I don't have this concern with "conventional wastewater system" since it is defined in statute, but it's unclear to me what the difference is here. I assume that this may be used when the design options are limited on a site, but I think that could be more clear (if that's correct, please see my suggestion in (b)).*

*Please consider making the second sentence of (a) (Bed systems shall be limited to... Approval) its own Paragraph. I don't understand its placement here. Also, I assume additional information regarding this specific approval is set forth somewhere with regard to the PIA approval?*

*Is Rule .0901 in its entirety applicable to bed systems, with the exception of (c)? If so, please consider saying something like "The requirements of Rule .0901 of this Section shall apply to bed systems, except as set forth in Paragraph (c) of this Rule."*

*In (b), practically speaking, when would a bed system be used? Do you mean something like "When design options for a wastewater site are limited by topography or available space, an owner may install a bed system if the soil texture is Group I, II, or III" such that the discretion is with the owner, rather than you all or the LHD? As written, I have concerns with "may be permitted" as there is no additional information as to what will determine whether the permit will be issued.*

*In (c), since you've already said that the requirements of .0901 are applicable to bed systems, it seems unnecessary to say "The LTAR shall be determined in accordance with .0901(c) of this Section."*

*In (d), please consider revising to say "In to the requirements set forth in Rule .0901(d) of this Section, the following shall apply:"*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

*In (d)(4), please correct the cross-reference from .0902(d)(4) to (e)(4).*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0903 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0903 BED SYSTEMS**

4 (a) This Rule provides for the permitting of bed systems receiving DSE. Bed systems shall be limited to 600 gpd DDF unless  
5 ~~specifically~~ approved for a greater DDF in accordance with a PIA Approval. Except as otherwise required in this Rule, the  
6 requirements of Rule .0901 of this Section shall apply.

7 (b) ~~The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~ Beds may be permitted on sites  
8 that meet the following criteria:

9 (1) soil texture is Group I, II, or III; and

10 (2) design options for the site are limited by topography or available space.

11 (c) The LTAR shall be determined in accordance with Rule .0901(c) of this Section. The number of square feet of infiltrative  
12 surface area required shall be increased by 50 percent over that required for a trench system as calculated in accordance with  
13 Rule .0901(d) of this Section.

14 (d) Bed system installation shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section and the following:

15 (1) the bottom of the bed shall be excavated level, plus or minus one-half inch, in all directions;

16 (2) laterals shall be ~~a minimum of~~ one and one-half feet from the side of the bed;

17 (3) laterals shall be placed on three-foot centers;

18 (4) aggregate used shall comply with the lateral design criteria shall meet the requirements of Rule .0902(d)(3)  
19 and (4) .0902(d)(4) of this Section; Section for gravity and pressure dosed gravity distribution systems;

20 (5) products approved under Section .1700 of this Subchapter shall be installed in accordance with their PIA  
21 Approval;

22 (6) the gravel surface shall be covered by an approved geo-textile fabric capable of preventing the downward  
23 movement of soil particles while allowing the movement of liquids and gases; and

24 (7) when pressure dispersal is used, the lateral design criteria shall meet the minimum requirements of Rules  
25 .0907(d) and (e) or .0908(c) and (e) of this Section or in accordance with a PIA Approval when pressure  
26 dispersal is used. Approval.

27

28 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

29 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0904

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please consider making "Except as otherwise provided in this Rule, the requirements of Rule .0901 of this Section shall apply" its own Paragraph and change it to say something like the suggestion in .0903 or "The requirements of Rule .0901 of this Section shall apply to large diameter pipe systems, except as follows:*

- (1) the LTAR determined in accordance with .0901 (c) of this Section shall not exceed .08 gpd/ft<sup>2</sup>; and*
- (2) to calculate the minimum trench length...*

*LDP pipe, wrap, and fittings do not appear to be addressed by .0901. So, I would suggest moving that after (d) and revise (d) to say something like, "In addition to the requirements set forth in .0901(g) of this Section, LDP system installations shall comply with the following:*

*In (c)(5), please add "of this Paragraph" after "Table XVIII"*

*As written (d)(1) is a bit confusing – please consider revising (d)(1) to say something like "trenches for eight-inch LDP trenches shall be a minimum of 10 inches and a maximum of 18 inches wide. Trenches for ten-inch LDP trenches shall be a minimum of 12 inches and a maximum of 24 inches wide;" or perhaps something like: minimum and maximum trench requirements for LDP shall be as follows:*

*(A) for eight-inch LDP, a minimum of 10 inches and a maximum of 18 inches wide; and*

*(B) for ten-inch LDP, a minimum of 12 inches and a maximum of 24 inches.*

*Please add "the" at the beginning of (d)(5).*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0904 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0904 LARGE DIAMETER PIPE SYSTEMS**

4 (a) ~~Large diameter pipe (LDP)~~ LDP systems consist of laterals composed of eight-inch inside diameter (10-inch outside  
5 diameter) or 10-inch ~~(inside diameter)~~ inside diameter (12-inch outside diameter) corrugated, polyethylene tubing encased in a  
6 nylon and polyester blend filter wrap that are installed in trenches in the dispersal field. LDP systems shall only be used with  
7 DSE. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply.

8 ~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

9 ~~(e)(b)~~ The LTAR shall be determined in accordance with Rule .0901(c) of this Section except the LTAR shall not exceed 0.8  
10 gpd/ft<sup>2</sup>. To calculate the minimum trench length in accordance with Rule .0901(d) of this Section, an equivalent trench width  
11 of two feet shall be used for eight-inch LDP and ~~an equivalent trench width of two and one-half feet shall be used for 10-inch~~  
12 LDP.

13 ~~(d)(c)~~ LDP pipe, filter wrap, and fittings shall meet the following criteria:

- 14 (1) pipe and fittings shall comply with the requirements of ASTM F667;
- 15 (2) the corrugated pipe shall have two rows of holes, each hole between three-eighths inch and one-half inch in  
16 diameter, located 120 degrees apart along the bottom half of the pipe (each 60 degrees from the bottom  
17 center line) and staggered so that one hole is present in the valley of each corrugation;
- 18 (3) pipe shall be marked with a visible top location indicator, 120 degrees away from each row of holes;
- 19 (4) corrugated pipe shall be covered with filter wrap at the factory;
- 20 (5) filter wrap shall be spun, bonded, or spunlaced nylon, polyester, or nylon/polyester blend filter wrap  
21 meeting the minimum requirements in Table XVIII; and
- 22 (6) the LDP with filter wrap shall be ~~wrapped~~ encased in a black polyethylene sleeve ~~until immediately~~  
23 installation in the trench to prevent physical damage and ultraviolet radiation deterioration of the filter  
24 wrap.

25

26

**Table XVIII.** Minimum filter wrap requirements for LDP

Property	Value
Unit Weight	1.0 ounce per square yard
Sheet Grab Tensile Strength	Machine Direction: 23 pounds
Trapezoid Tear Strength	Machine Direction: 6.2 pounds Cross Direction: 5.1 pounds
Mullen Burst Strength	40 psi or 276 kilopascals
Frazier Air Permeability	500 cubic feet per minute per square foot at pressure differential of 0.5 inches of water

27

28 ~~(e)(d)~~ LDP system installations shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section and the following:

- 1 (1) eight-inch LDP trenches shall be a minimum of 10 inches and a maximum of 18 inches wide. Ten-inch
- 2 LDP trenches shall be a minimum of 12 inches and a maximum of 24 inches wide;
- 3 (2) the infiltrative surface and pipe shall be level with a maximum fall of one inch in 100 feet;
- 4 (3) backfill material shall have no more than 10 percent by volume of fibrous organics, building rubble, rocks,
- 5 large clods, or other debris and shall be Soil Groups I, II, or III;
- 6 (4) the LDP shall be connected to the collection sewer or a stepdown pipe using an offset adapter to create a
- 7 mechanical joint; and
- 8 (5) minimum on center spacing for eight-inch LDP shall be five feet and 10-inch LDP shall be six feet.
- 9

10 *History Note: Authority G.S. 130A-335(e) and (f).*

11 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0905

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903 or .0904, whichever may be applicable.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0905 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0905 PREFABRICATED PERMEABLE BLOCK PANEL SYSTEMS**

4 (a) PPBPS utilize both horizontal and vertical air chambers in a 16-inch PPBPS and are constructed to promote downline and  
5 horizontal distribution of effluent. PPBPS systems shall only be used with DSE. Except as otherwise required in this Rule, the  
6 requirements of Rule .0901 of this Section shall apply.

7 ~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

8 ~~(b)~~ (b) The LTAR shall be determined in accordance with Rule .0901(c) of this Section except that the LTAR shall not exceed  
9 0.8 gpd/ft<sup>2</sup>. An equivalent trench width of six feet shall be used to determine trench length in accordance with Rule .0901(d)  
10 of this Section.

11 ~~(c)~~ (c) PPBPS installation shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section, the following, and the  
12 manufacturer's specifications:

13 (1) PPBPS trenches shall be located a minimum of eight feet on ~~center;~~ center or three times the trench width,  
14 whichever is greater;

15 (2) trench sidewalls shall be raked in Group IV soils;

16 (3) pressure dosed gravity distribution or pressure dispersal shall be used when the individual trench lengths  
17 are greater than 50 feet and less than or equal to ~~70 or whenever the DDF exceeds 480 gpd;~~ 70 feet; and

18 (4) pressure dispersal shall be used when the individual trench lengths are greater than 70 feet.

19

20 *History Note: Authority G.S. 130A-335(e) and (f).*

21 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0906

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please change "and which" to "that." Please consider revising as follows:*

*(a) Sand lined trench systems may be used on sites originally classified unsuitable due to SWC, soil morphology, restrictive horizon, or soil ~~depth, and which~~ **depth that** may be reclassified suitable in accordance with this Rule **when there is a DDF less than or equal to 1,500 gpd.** ~~Rule. Sand lined trenches can be used with a DDF less than or equal to 1,500 gpd DDF. gpd.~~*

*Please consider breaking lines 6-7 ("Sand lined trench systems... of this Subchapter") into its own Paragraph.*

*In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903, or .0904 whichever may be applicable here.*

*In (b), I think (b) needs some additional language to say when the criteria would apply.*

*Please add "the" before (b)(1), (2), and (3).*

*In (c)(2), what is meant by "suitable" in "suitable outlet"?*

*Please either change "The following conditions apply to the ground water lowering system" to "the groundwater lowering system shall" and delete "shall" in (c)(1) and (2); or add a noun to (c)(1) and (2). As written, it reads a bit awkwardly.*

*In (d), what is meant by "an equivalent trench width of three feet shall be used" Equivalent to what?*

*Please consider deleting "whichever is less" in (d)(2) and changing "shall be based on the following" to "shall be based on the lesser of the following:" As written, I'm afraid that the "whichever is less" could get lost.*

*In (f), please change "is required" to "shall be required"*

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

*Please add “the” before (f)(1) and (2).*

*In (g), does all of .0901 apply or just .0901(g) except as provided here? Are these additional requirements?*

*In (g)(2), please change “is five” to “shall be five”*

*In (g)(5), how is the LHD to determine whether laboratory verification will be necessary in the CA? IS this set forth elsewhere?*

*In (g)(5), please consider deleting “determined to be.” Isn’t the requirement that the material itself be clean, uncoated, etc.?*

*Please consider formatting (g)(9) as follows:*

drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing with ~~emitters:~~ emitters as follows:

(i) a minimum of two runs within a trench between one and one half and two feet wide; and

(ii) a minimum of three runs within a trench between two and three feet wide.

The drip tubing shall be uniformly spaced across the trench with the tubing six inches from the trench sidewalls. Drip tubing shall be covered by a minimum of six inches of sand lined trench media meeting the requirements of Subparagraph (6) of this Paragraph. Drip dispersal systems shall comply with the requirements of Section .1600 of this Subchapter and this Rule;

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0906 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0906 SAND LINED TRENCH SYSTEMS**

4 (a) Sand lined trench systems may be used on sites originally classified unsuitable due to SWC, soil morphology, restrictive  
5 horizon, or soil depth, and which may be reclassified suitable in accordance with this Rule. Sand lined trenches can be used  
6 with a DDF less than or equal to 1,500 ~~gpd-DDF, gpd.~~ Sand lined trench systems with advanced pretreatment shall comply  
7 with Rule ~~1207~~ .1205 of this Subchapter. Except as otherwise required in this Rule, the requirements of Rule .0901 of this  
8 Section shall apply.

9 (b) The soil and site shall meet the following criteria:

- 10 (1) texture of the receiving permeable horizon is sand, loamy sand, sandy loam, loam, or silt loam;
- 11 (2) structure of the receiving permeable horizon is classified suitable;
- 12 (3) moist consistence of the receiving permeable horizon is loose, very friable, friable, or firm;
- 13 (4) if the receiving permeable horizon has zones of heavier textured materials, these zones are discontinuous  
14 with an average thickness not exceeding 1/3 of the required thickness of the receiving permeable horizon;
- 15 (5) the naturally occurring receiving permeable horizon shall be less than or equal to 60 inches below the  
16 naturally occurring soil surface. If the receiving permeable horizon is greater than 60 inches below the  
17 naturally occurring soil surface, advanced pretreatment shall be used in accordance with Rule .1205 of this  
18 Subchapter;
- 19 (6) artificial drainage shall be provided, as needed, to maintain the following minimum vertical separation  
20 ~~distances~~ from the infiltrative surface to a SWC:
  - 21 (A) 18 inches with gravity or pressure dosed gravity distribution; or
  - 22 (B) 12 inches with pressure dispersal; and
- 23 (7) the minimum required thickness of the receiving permeable horizon shall be determined by the texture of  
24 that horizon as follows:
  - 25 (A) sand or loamy sand texture requires a minimum thickness of one-foot;
  - 26 (B) sandy loam or loam texture requires a minimum thickness of two feet; or
  - 27 (C) silt loam texture requires a minimum thickness of three feet.

28 (c) If a groundwater lowering system is required to meet the minimum vertical separation ~~distance~~ in Paragraph (b)(6) of this  
29 Rule to a SWC that is not related to lateral water movement, design plans and specifications shall be prepared by a licensed  
30 professional if required in G.S. 89C, 89E, or 89F. The following conditions apply to the groundwater lowering system:

- 31 (1) shall extend into the receiving permeable horizon;
- 32 (2) shall have a suitable outlet. The outlet location and elevation must be shown on the artificial drainage  
33 system plan with relative water level elevations and wastewater system site elevations labeled; and
- 34 (3) all groundwater lowering system components are integral to the wastewater system and subject to  
35 ownership and control requirements of Rule .0301(b) and (c) of this Subchapter.

(d) The LTAR shall be determined in accordance with Table XIX for all DSE sand-lined trench systems. An equivalent trench width of three feet shall be used to determine trench length in accordance with Rule .0901(d) of this Section. The LTAR shall be based on one of the following:

- (1) LTAR set forth in Table XIX based on the most hydraulically limiting, naturally occurring soils overlying the permeable receiving horizon; or
- (2) 10 percent of the in-situ Ksat of the receiving permeable horizon, whichever is less.

~~(e) There shall be no reduction in trench length compared to a conventional wastewater system when Accepted or Innovative gravelless trench product is used.~~

**TABLE XIX.** LTAR for sand lined trench systems based on the most hydraulically limiting, naturally occurring soils overlying the permeable receiving horizon

Soil Group	Texture of Most Hydraulically Limiting Overlying Soil Horizon	Distribution Type	LTAR (gpd/ft <sup>2</sup> )
I	Sands	Gravity or Pressure Dosed Gravity	0.7 - 0.9
		Pressure Dispersal	0.8 - 1.2
II	Coarse Loams	Gravity or Pressure Dosed Gravity	0.5 - 0.7
		Pressure Dispersal	0.6 - 0.8
III	Fine Loams	Gravity or Pressure Dosed Gravity	0.2 - 0.4
		Pressure Dispersal	0.3 – 0.6
IV	Clays	Gravity or Pressure Dosed Gravity	0.1 – 0.2
		Pressure Dispersal	0.15 – 0.3

~~(e) There shall be no reduction in trench length compared to a conventional wastewater system when Accepted or Innovative gravelless trench product is used.~~

(f) A Special Site Evaluation in accordance with Rule .0510 of this Subchapter is required for the following conditions to field verify the LTAR:

- (1) texture of the receiving permeable horizon is sandy loam or loam and the system DDF is greater than 600 gpd; or
- (2) texture of the receiving permeable horizon is silt loam.

(g) Sand lined trench dispersal field installation shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section and the following:

- (1) gravity trenches shall have a maximum width of three feet and a minimum width of one and a half feet;
- (2) trenches shall be located not less than three times the trench width on centers. The minimum spacing for trenches is five feet on centers;

- 1 ~~(3)~~ drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing with  
2 emitters: a minimum of two runs within a trench between one and one half and two feet wide; and a  
3 minimum of three runs within a trench between two and three feet wide. The drip tubing shall be uniformly  
4 spaced across the trench with the tubing six inches from the trench sidewalls. Drip tubing shall be covered  
5 by a minimum of six inches of sand lined trench media meeting the requirements of Subparagraph (6) of  
6 this Paragraph. Drip dispersal systems shall comply with the requirements of Section .1600 of this  
7 Subchapter and this Rule;
- 8 ~~(4)~~(3) the sand lined trenches shall be constructed to extend into the naturally occurring receiving permeable  
9 horizon;
- 10 ~~(5)~~(4) the infiltrative surface shall be no deeper than 24 inches below finished grade. The top of the trench media  
11 shall be at or below the naturally occurring soil surface. Drip tubing shall be installed a minimum of six  
12 inches below the natural grade;
- 13 ~~(6)~~(5) ~~sand soil~~ used to line the trench shall be sand in texture. If required by the LHD in the CA, the installer  
14 shall provide written laboratory verification of the media textural classification and quality prior to the sand  
15 lined trench being installed. When laboratory analysis is required, the material shall be determined to be  
16 clean, uncoated fine, medium, or coarse sand with a minimum of 90 percent in sizes ranging from 0.1 to 2.0  
17 millimeters, with no more than one percent smaller than 0.074 millimeters (No. 200 Sieve);
- 18 ~~(7)~~(6) pressure dosed gravity distribution or pressure dispersal shall be used when the total dispersal field line  
19 length exceeds 750 linear feet in a single system;
- 20 ~~(8)~~(7) pressure dispersal shall be used when the total dispersal field line length exceeds 1,200 linear feet in a  
21 single system;
- 22 ~~(9)~~(8) ~~if~~ when pressure dispersal is used, the pressure dispersal network shall be designed in accordance with  
23 Rules .0907(e) or .0908(e) of this Section, except that the trench width shall comply with this Paragraph.  
24 The total line length shall be calculated based on infiltrative surface area;
- 25 (9) drip dispersal systems in sand lined trenches shall require multiple runs per trench of drip tubing with  
26 emitters: a minimum of two runs within a trench between one and one half and two feet wide; and a  
27 minimum of three runs within a trench between two and three feet wide. The drip tubing shall be uniformly  
28 spaced across the trench with the tubing six inches from the trench sidewalls. Drip tubing shall be covered  
29 by a minimum of six inches of sand lined trench media meeting the requirements of Subparagraph (6) of  
30 this Paragraph. Drip dispersal systems shall comply with the requirements of Section .1600 of this  
31 Subchapter and this Rule;
- 32 (10) finished grade shall provide for positive surface drainage away from all system components, with the  
33 dispersal field crowned at 1/2 percent as measured from the centerline of the dispersal field. The finished  
34 grade requirements shall be made a condition of the CA; and
- 35 (11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with PIA  
36 Approval.

1 (h) Other sand lined trench systems may be approved on a site-specific basis in accordance with Rule .0509(f) of this  
2 Subchapter.

3

4 *History Note: Authority G.S. 130A-335(e) and (f).*

5 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0907

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903 or .0904, whichever may be applicable.*

*Please consider making lines 6-7 their own Paragraph.*

*In (b)(1), is "as applicable" necessary here? Doesn't the table set forth categories, making this language superfluous?*

*It appears to me that the lower-case and semi-colons of (c)(1) and (2) were correct. If you did this.*

*In (d), does all of .0901 apply or just .0901(g) except as provided in (d)(1) through (15)? Are these additional requirements? Please see my comment above regarding the*

*In (d)(1), what is meant by "other approved media"?*

*In (d)(3), please change "is five" to "shall be five"*

*In (d)(4), what is meant by "approved gravel or other approved media"?*

*In (d)(5)(C), what is meant by "should face down"? Do you mean may or shall face down?*

*In (d)(6)(B), what is meant by "State-approved equivalent tubing"?*

*In (d)(7), please change "are" to "shall be" in "are required"*

*In (d)(7)(A), please change "are" to "shall be" in "are required"*

*In (d)(7)(D), please delete or define "uniformly"*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

*In (d)(7)(D), what is meant by “unless otherwise approved by the State”?*

*In (d)(11)(B), please delete or define “directly”*

*In (d)(13), what is meant by “other approved access device”*

*In (e), what criteria will be used in making this determination?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0907 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .0907 LOW PRESSURE PIPE SYSTEMS**

(a) LPP systems utilize a network of small diameter pipes with three to six-foot pressure head to distribute effluent across the entire dispersal field. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply. Any subsurface dispersal system listed in this Section may incorporate LPP dispersal. LPP systems with advanced pretreatment shall comply with Rules .1202, .1203, .1205, ~~and or~~ .1206 of this Subchapter.

~~(b) The site has been classified suitable in accordance with Rule .0509 of this Subchapter.~~

~~(c)~~(b) The LTAR shall be determined as follows:

- (1) ~~Tables XX and XXI shall be used to determine the LTAR for LPP systems, as applicable;~~
- ~~(1)(2)~~ (2) the LTAR shall be based on the soil textural class of the most limiting, naturally occurring soil horizon ~~from the top of the trench~~ to a depth of 12 inches below the infiltrative surface;
- ~~(3)~~ (3) ~~LTARs determined from Table XXI and in accordance with Rule .0506 of this Subchapter; and~~
- ~~(2)~~ (2) ~~the LTAR shall be assigned based upon soil textural class, structure, consistence, depth, percent rock, landscape position, and topography;~~
- ~~(3)~~ (3) ~~Tables XX and XXI shall be used to determine the LTAR for LPP systems; and~~
- (4) the LTAR shall not exceed the mean rate for the applicable Soil Group for effluent exceeding DSE as specified in Table III of Rule .0402 of this Subchapter.

**TABLE XX. LTAR for LPP systems based on Soil Group and texture class**

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.4 – 0.6
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.3 – 0.4
		Loam	
III	Fine Loams	Sandy Clay Loam	0.15 – 0.3
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
IV	Clays	Silt	0.05 – 0.2
		Sandy Clay	
		Silty Clay	
		Clay	

21  
22

**TABLE XXI. LTAR for LPP systems in saprolite based on Saprolite Group and texture class**

Saprolite Group	Saprolite Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.3 – 0.4
		Loamy Sand	0.25 – 0.35
II	Loams	Sandy Loam	0.2 – 0.3
		Loam	0.1 – 0.2
		Silt Loam	0.05 – <del>0.1</del> <u>0.15</u>

1

2

(~~d~~)(c) The minimum required dispersal field area and trench length shall be calculated in accordance with the following:

3

(1) ~~the~~ The minimum required dispersal field area shall be ~~determined~~ calculated by dividing the DDF by the ~~LTAR; and~~ LTAR.

4

5

(2) ~~the~~ The minimum trench length shall be ~~determined~~ calculated by dividing the required dispersal field area by a lateral spacing of five feet. The following equation shall be used to calculate the minimum line length required.

6

7

$$TL = (DDF \div LTAR) \div LS$$

8

Where TL = length of trench (feet)

9

DDF = design daily flow (gpd)

10

LTAR = in gpd/ft<sup>2</sup>

11

LS = five feet

12

13

(3) When HSE is proposed to be discharged to ~~a~~ an LPP dispersal field with no advanced ~~pretreatment,~~ pretreatment or has not been reclassified as DSE in accordance with Rule .0402(c) of this Subchapter, a licensed professional, if required in G.S. 89C, 89E, or 89F, shall calculate the ~~mass loading on the soil~~ adjusted LTAR in accordance with Rule .0402(b) of this Subchapter.

14

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(~~e~~)(d) LPP system design and installation shall be in accordance with Rule ~~.0901(f)~~ .0901(g) of this Section and the following, unless otherwise allowed in a PIA Approval:

18

19

(1) the LPP distribution network shall be constructed of small diameter (one to two inches) pressure rated Schedule 40 PVC laterals placed in gravel that meets the requirements in Rule ~~.0902(d)(4)~~ .0902(e)(4) of this Section or other approved media filled trenches;

20

21

22

(2) the trench width shall be one to two feet;

23

24

(3) trenches shall be located not less than three times the trench width on center. The minimum spacing for trenches is five feet on center:

25

26

(4) trenches shall include a minimum of ~~nine~~ eight inches of approved gravel or other approved media, either from a PIA Approval or subsurface dispersal system listed in Section .0900 of this Subchapter. There shall be a minimum of five inches vertical separation ~~distance~~ from the lateral to the infiltrative surface;

27

28

(5) laterals, manifolds and LPP fields shall comply with the following design criteria:

- 1 (A) the maximum lateral length shall yield no more than a 10 percent difference in orifice delivery  
2 rate between the first and last orifice along the lateral;
- 3 (B) ~~no more than 1/3 of the total number of holes shall be less than 5/32-inch, minimum orifice size~~  
4 ~~shall be 5/32-inch for a minimum of 2/3 of the field lateral lines,~~ with no orifices sized smaller  
5 than 1/8-inch in any lateral line;
- 6 (C) all orifices shall face upwards, except for two orifices, 1/3 of the way from the beginning and end  
7 of each lateral, which should face down; and
- 8 (D) maximum orifice spacing shall be as follows: Soil Group I - five feet; Soil Group II - six feet; Soil  
9 Group III - eight feet; and Soil Group IV - 10 feet;
- 10 (6) the orifices shall be protected by the following:
- 11 (A) lateral sleeved within a three or four-inch perforated corrugated or smooth wall tubing meeting  
12 the requirements of Rule .0703 of this Subchapter;
- 13 (B) State-approved equivalent tubing or pipe; or
- 14 (C) specially designed and approved orifice shields;
- 15 (7) the following additional design provisions are required for sloping sites:
- 16 (A) separately valved manifolds are required for all subfield segments where the elevation difference  
17 between the highest and lowest laterals exceeds three feet;
- 18 (B) the orifice spacing, orifice size or both shall be adjusted to compensate for relative elevation  
19 differences between laterals branching off a common supply manifold and to compensate for the  
20 lines at the lowest elevation receiving more effluent at the beginning and end of a dosing cycle;
- 21 (C) the lateral network shall be designed to achieve a 10 to 30 percent higher steady state (pipe full)  
22 flow rate into the upper lines, relative to the lower lines, depending on the amount of elevation  
23 difference; and
- 24 (D) maximum elevation difference between the highest and lowest laterals in a field shall not exceed  
25 10 feet unless the flow is uniformly divided using multiple pumps or split between subfield  
26 ~~segments, such as with State approved automatically alternating valves,~~ segments without  
27 requiring simultaneous adjustment of multiple pressure regulating valves in separate locations, or  
28 as otherwise approved by the State;
- 29 (8) turn-ups shall be provided at the ends of each lateral, constructed of Schedule 40 PVC pipe or stronger  
30 pressure-rated pipe, and shall terminate at the ground surface and be installed in a valve box or equivalent  
31 that provides access for operation and maintenance;
- 32 (9) the supply manifold shall be constructed of solvent-welded pressure rated Schedule 40 PVC;
- 33 (10) the supply manifold shall be sized large enough based on the size and number of laterals served to prevent  
34 more than a 20 percent variation in pressure head between the first and last laterals due to losses within the  
35 manifold when feeding the manifold from a lower elevation;
- 36 (11) the supply manifold shall comply with the following design criteria:

- 1 (A) the ratio of the supply manifold inside cross-sectional area to the sum of the inside cross-sectional  
2 areas of the laterals served shall exceed 0.7:1;
- 3 (B) the reduction between the manifold and connecting laterals shall be made directly off the  
4 manifold using reducing tees or fittings; and
- 5 (C) cleanouts shall be installed at the distal ends of the supply manifold and shall be enclosed in valve  
6 boxes accessible from the ground surface;
- 7 (12) pressure regulating valves shall be provided for pressure adjustment at the fields;
- 8 (13) valves shall be installed in a valve box or other approved access device and be accessible and operable  
9 from the ground surface. Valves serving contiguous subfields shall be in a common valve box that  
10 facilitates simultaneous adjustment of pressure head;
- 11 (14) the LPP dosing system shall comply with the following design criteria:
- 12 (A) the pump operating flow rate shall be based upon delivering three feet to six feet of residual  
13 pressure head at the distal end of all lateral lines;
- 14 (B) the dose volume shall be between five and 10 times the liquid capacity of the lateral pipe dosed,  
15 plus the liquid capacity of the portions of manifold and supply lines which drain between doses;  
16 and
- 17 (C) when pumping downhill and the supply line volume exceeds 20 percent of the calculated dose  
18 volume, special design considerations shall be followed to prevent more than 20 percent of the  
19 dose volume from draining by gravity to the dispersal field between doses; and
- 20 (15) the trenches shall be covered to a minimum depth of four inches after settling.
- 21 ~~(c)~~ Drip dispersal systems used in LPP trenches and other LPP designs may be approved on a site-specific basis.

22  
23 *History Note: Authority G.S. 130A-335(e) and (f).*  
24 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0908

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903 or .0904, whichever may be applicable. Also, please consider making lines 6-7 its own paragraph.*

*In (b)(2)(B), please change "exists" to "shall exist" Also, by "the initial site requirements", do you mean the requirements set forth in this Subparagraph?*

*In (e)(3), by "may be allowed", do you mean "shall be allowed"? If not, how will this be determined?*

*In (e)(5), where is the requirement for six inches of cover? Should this read something like "there shall be six inches of cover that may be met by the addition..."?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0908 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .0908 DRIP DISPERSAL SYSTEMS**

(a) This Rule provides for the permitting of drip dispersal systems receiving DSE. Drip dispersal systems shall comply with the provisions of Section .1600 of this Subchapter. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply. Drip dispersal systems with advanced pretreatment shall comply with Rule .1204 of this Subchapter.

(b) Drip dispersal systems shall meet the following soil and site criteria:

(1) A minimum of 18 inches of naturally occurring suitable soil above a LC, 13 inches of naturally occurring suitable soil above a SWC, and the minimum vertical separation ~~distance~~ to any ~~unsuitable LC or SWC~~ shall be 12 inches. A groundwater lowering system may be used to meet the vertical separation to a SWC only when Group I or II soils with suitable structure are present within 36 inches of the naturally occurring soil surface.

(2) For new fill, the soil and site shall meet the following criteria:

- (A) Rule .0909(b) and (c) of this Section, except as otherwise specified in this Subparagraph;
- (B) no SWC exists within the first 12 inches below the naturally occurring soil surface. ~~A groundwater lowering system may be used to meet the vertical separation distance to a SWC only when Group I or II soils with suitable structure are present within 36 inches of the naturally occurring soil surface;~~ shall not be used to meet the initial site requirements for a new fill system; and
- (C) minimum vertical separation ~~distance~~ to any unsuitable soil horizon or rock shall be 18 inches and 12 inches for any SWC.

(3) For existing fill, the soil and site shall meet the following criteria:

- (A) Rule .0909(d) and (e) of this Section, except as otherwise specified in this Subparagraph; and
- (B) minimum vertical separation ~~distance~~ to any LC ~~or SWC~~ shall be 24 inches.

(c) Tables XXII and XXIII shall be used to determine the LTAR for all DSE drip dispersal systems:

- (1) Table XXII shall be used for systems utilizing soil. The LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, whichever is deeper;
- (2) Table XXIII shall be used for systems utilizing sapolite. The LTAR shall be based on the most limiting, naturally occurring sapolite to a depth of 24 inches below the infiltrative surface;
- (3) the LTAR for new fill systems shall not exceed 0.5 gpd/ft<sup>2</sup> for Group I, 0.3 for gpd/ft<sup>2</sup> Group II, 0.15 gpd/ft<sup>2</sup> for Group III or 0.05 gpd/ft<sup>2</sup> for Group IV soils, respectively;
- (4) sections of tubing without emitters (blank tubing) shall not count towards the minimum dripline length required; and
- (5) the DDF shall be divided by the LTAR, determined from Table XXII or XXIII, to determine the minimum dispersal field area required. The minimum dripline length shall be determined by dividing the required

1 area by the maximum line spacing of two feet. The designer may recommend additional linear footage as  
 2 soil and site conditions allow. The following equations shall be used to calculate the minimum dispersal  
 3 field area and dripline length required:

4  $MA = DDF \div LTAR$

5  $DL = MA \div LS$

6 Where MA = minimum dispersal field area (ft<sup>2</sup>)

7 DDF = design daily flow (gpd)

8 LTAR = in gpd/ft<sup>2</sup>

9 DL = dripline length (feet)

10 LS = two-foot line spacing

11  
 12 **TABLE XXII.** LTAR for DSE drip dispersal systems based on Soil Group and texture class

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )
I	Sands	Sand	0.4 – 0.6
		Loamy Sand	
II	Coarse Loams	Sandy Loam	0.3 – 0.4
		Loam	
III	Fine Loams	Sandy Clay Loam	0.15 – 0.3
		Silt Loam	
		Clay Loam	
		Silty Clay Loam	
		Silt	
IV	Clays	Sandy Clay	0.05 – 0.2
		Silty Clay	
		Clay	

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 14  
 15 **TABLE XXIII.** LTAR for DSE drip dispersal systems based on Saprolite Group and texture class

Saprolite Group	Saprolite Textural Class	LTAR (gpd/ft <sup>2</sup> )
I	Sand	0.3 – 0.4
	Loamy sand	0.25 – 0.35
II	Sandy loam	0.2 – 0.3
	Loam	0.1 – 0.2
	Silt Loam	0.05 – 0.1

16  
 17 (d) A Special Site Evaluation shall be required in accordance with Rule .0510 of this Subchapter, as applicable.

18 (e) Drip dispersal installation shall be in accordance with the following criteria:

- 1 (1) dripline shall be installed in accordance with the approved design. The design shall specify installation  
2 depth, installation equipment, blanking, drainback prevention, and any other site-specific design  
3 requirements identified by the designer;
- 4 (2) dripline shall be installed a minimum of one-inch into naturally occurring soil, except when installed in a  
5 fill system;
- 6 (3) driplines shall be installed level. A maximum variance of plus or minus two inches may be allowed within  
7 any contiguous section of dripline containing drip emitters;
- 8 (4) a minimum of six inches of cover shall be maintained over the dripline:
- 9 (5) the requirement for six inches of cover may be met by the addition of up to six inches, after settling, of  
10 suitable Group II or III soil over the drip field;
- 11 (6) drip dispersal fields shall be ~~graded~~ sloped to shed surface water;
- 12 (7) if cover material is required and the slope is greater than 30 percent, a slope stabilization plan must be  
13 provided by a licensed ~~professional~~; professional if required in G.S. 89C, 89E, or 89F; and
- 14 (8) the drip dispersal system shall be field tested after installation in accordance with Rule .1603 of this  
15 Subchapter.

16

17 *History Note: Authority G.S. 130A-335(e) and (f).*

18 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0909

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please consider revising "Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply" as suggested in .0902, .0903 or .0904, whichever may be applicable.*

*In (c)(1), please change "which" to "that" in "which requires"*

*In (c)(5), what are the "landscaping requirements"?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0909 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0909 FILL SYSTEMS**

4 (a) A fill system (including new and existing fill) is a system in which all or part of the dispersal field media is installed in fill  
5 material. The system includes both the basal area of dispersal field and the toe slope in all directions.

6 (b) New fill systems may be installed on sites that meet the following requirements:

7 (1) a minimum of the first 18 inches below the naturally occurring soil surface consist of suitable soil with the  
8 exception ~~of that~~ no SWC exists within the first 12 inches below the naturally occurring soil surface and a  
9 groundwater lowering system is not used to meet this requirement;

10 (2) systems shall be installed only on sites with uniform slopes less than four percent;

11 (3) stormwater diversions, subsurface interceptor drains, or swales shall be required as needed upslope of the  
12 system to divert surface runoff or lateral flow from passing over or into the system; and

13 (4) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe slope in  
14 all directions.

15 (c) New fill system design and installation shall be in accordance with the following criteria:

16 (1) trenches shall be installed with a minimum of 24 inches separating the infiltrative surface and any ~~LC, LC~~  
17 for gravity distribution and pressure dosed gravity distribution, except for SWC which requires 18 inches  
18 of separation. If pressure dispersal is used, the minimum separation distance shall be 18 inches ~~with the~~  
19 ~~exception of trenches shall be installed with a minimum of 18 inches separating between~~ the infiltrative  
20 surface and any ~~SWC LC and 12 inches to a SWC.~~ This separation requirement may be met with the use  
21 of a groundwater lowering system only in Soil Groups I and II with suitable ~~structure. If pressure dispersal~~  
22 ~~is used, the minimum separation distance shall be 12 inches; structure;~~

23 (2) fill systems with a DDF greater than 480 gpd shall use pressure dispersal systems;

24 (3) fill material soil texture shall be classified sand or loamy sand (Soil Group I) up to the top of the trenches.  
25 The final six inches of fill used to cover the system shall have a finer texture (such as Group II or III) for  
26 the establishment of a vegetative cover;

27 (4) minimum cover shall be six inches ~~of settled soil;~~ after settling;

28 (5) additional fill may be added to facilitate drainage and accommodate landscaping requirements at the site  
29 provided the infiltrative surface is less than 30 inches below the finished grade;

30 (6) where fill material is added, the fill material and the existing soil shall be mixed to a depth of six inches  
31 below the interface. Vegetative cover or organic litter (O horizon) shall be removed before the additional  
32 fill material is incorporated;

33 (7) the fill system shall be constructed as an elongated berm with the long axis parallel to the ground elevation  
34 contours of the slope;

35 (8) the side slope of the fill system shall not exceed a rise to run ratio of 1:4. If the first 18 inches below the  
36 naturally occurring soil surface is Group I soil, the side slope of the fill shall not exceed a rise to run ratio  
37 of 1:3;

- 1 (9) the outside edge of the trench shall be located a minimum of five feet horizontally from the top of the side
- 2 slope;
- 3 (10) the fill system shall be shaped to shed surface water and shall be stabilized with a vegetative cover;
- 4 (11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with PIA
- 5 Approval; and
- 6 (12) the setback requirements shall be measured from the projected toe of the slope. If this setback cannot be
- 7 met, the setback requirements shall be measured five feet from the nearest edge of the trench if the
- 8 following conditions are met:
  - 9 (A) slope of the site does not exceed two percent;
  - 10 (B) the first 18 inches of soil beneath the naturally occurring soil surface shall consist of Group I
  - 11 soils; and
  - 12 (C) the lot or tract of land was recorded on or before December 31, 1989.

13 (d) An existing pre-July 1, 1977 fill site that does not meet the requirements of Paragraph (b) of this Rule may be utilized for  
 14 a wastewater system if the following requirements are met:

- 15 (1) substantiating data are provided by the lot owner (if not readily available to the LHD) indicating that the
- 16 fill material was placed on the site prior to July 1, 1977;
- 17 (2) the fill material shall have sand or loamy sand (Group I) soil texture for a minimum depth of 24 inches
- 18 below the existing ground surface;
- 19 (3) the fill material shall have no more than 10 percent by volume of fibrous organics, building rubble, or other
- 20 debris, and shall not have discreet layers containing greater than 35 percent of shell fragments;
- 21 (4) if a minimum of 24 inches of Group I fill material is present, additional fill with soil texture classified
- 22 Group I may be added to meet the separation requirements of Subparagraph (e)(5) of this Rule;
- 23 (5) ~~SWC, as determined by Rule .0504 of this Subchapter,~~ SWC is 18 inches or greater below the ground
- 24 surface of the fill. This requirement shall be met without the use of a groundwater lowering system; and
- 25 (6) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe slopes
- 26 in all directions.

27 (e) Existing fill system design and installation shall be in accordance with Paragraph (c) of this Rule and the following  
 28 criteria:

- 29 (1) the DDF shall not exceed 480 gpd;
- 30 (2) pressure dispersal shall be used. LPP systems shall meet the requirements of Rule .0907(c), (d), and (e) of
- 31 this Section. Drip dispersal systems shall meet the requirements of Rule .0908(c) and (e) of this Section;
- 32 (3) the LTAR shall not exceed 0.5 gpd/ft<sup>2</sup>;
- 33 (4) existing fill sites with 48 inches of Group I soils may use conventional trenches with a maximum LTAR of
- 34 1.0 gpd/ft<sup>2</sup> in lieu of a pressure dispersal system;
- 35 (5) the minimum vertical separation ~~distance~~ to any LC or ~~SWC~~ shall be 24 inches for pressure dispersal
- 36 systems and 48 inches for conventional systems. This vertical separation requirement may be met by
- 37 adding additional Group I soil, but shall not be met with the use of a groundwater lowering system;

1 (6) where additional Group I fill is to be added, the side slope of the fill shall not exceed a side slope ratio of  
2 1:3; and

3 (7) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with their  
4 PIA Approval.

5 (f) The LTAR for new and existing fill systems shall be determined in accordance with Rule .0901(c) of this Section and the  
6 following:

7 (1) the LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the  
8 ground surface or to a depth 12 inches below the infiltrative surface, whichever is deeper;

9 (2) the lowest LTAR for the applicable Soil Group shall be used for systems installed in accordance with this  
10 Rule; and

11 (3) for sites with a minimum of 18 inches of Group I soils below the naturally occurring soil surface or to a  
12 depth of 12 inches below the infiltrative surface, whichever is deeper, the LTAR shall not exceed 1.0  
13 gpd/ft<sup>2</sup> for gravity or pressure dosed gravity distribution or 0.5 gpd/ft<sup>2</sup> for pressure dispersal systems.

14 (g) Other fill systems may be approved on a site-specific basis in accordance with a PIA Approval or Rule .0509(f) of this  
15 Subchapter.

16

17 *History Note: Authority G.S. 130A-335(e) and (f).*

18 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0910

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please change "which" to "that" in "as suitable which"*

*(b)(2) doesn't seem to go with (b). Please change "may be used on the following sites" to something like "may be used when the following criteria are met" Then add something like "the site has" at the beginning of (b)(1).*

*In (c)(1)(E), please delete "the following conditions:" and change your semi-colons to commas.*

*In (c)(2)(C), when shall the alarm contact a maintenance service?*

*In (c)(2)(E), what is meant by "except as required by this Rule, the requirements in Section .1100 of this Subchapter are applicable"? Do you mean except as otherwise provided in this Paragraph, the requirements of Section .1100 of this Subchapter shall apply to artificial draining systems using pumps?*

*I don't see (c)(1) and (2) as requiring information – I read them as actually setting forth requirements. What is the intent of here? I think this just needs a bit of different wording.*

*In (c)(3)(C), what is meant by "relevant elevations"?*

*In (c)(3)(F), please delete or define "adequate"? Here, do you mean "easements... lots shall be at least 20 feet plus the width of the groundwater lowering system"*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0910 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0910 ARTIFICIAL DRAINAGE SYSTEMS**

4 (a) Artificial drainage systems are a site modification and may be proposed to reclassify sites as suitable which were  
5 originally classified unsuitable due to a SWC or lateral water movement. Artificial drainage systems include groundwater  
6 lowering systems, interceptor drains, and surface water diversions.

7 (b) Artificial drainage systems may be used on the following sites:

- 8 (1) Group I or II soils with suitable structure and clay mineralogy; and
- 9 (2) the artificial drainage system shall be designed to maintain the required minimum vertical separation  
10 ~~distance~~ to a SWC as specified in Rule ~~.0901(f)(2)~~ .0901(g)(2) of this Section.

11 (c) Plans and specifications for the use of a groundwater lowering system to meet the vertical separation to a SWC shall be  
12 prepared by a licensed professional if required in G.S. 89C, 89E, or 89F in accordance with Rule .0303 of this Subchapter.

- 13 (1) Gravity groundwater lowering systems shall be designed in accordance with the following:
  - 14 (A) substantiating information, calculations and data shall be provided justifying the effectiveness of  
15 the proposed drainage system design;
  - 16 (B) design and devices shall comply with accepted standards of practice as set forth in the USDA-  
17 NRCS National Engineering Handbook, Part 624 - Drainage, Chapter 10 - Water Table Control,  
18 and Part 650 - Engineering Field Handbook, Chapter 14 - Water Management, Drainage;
  - 19 (C) the effectiveness of groundwater lowering systems shall be determined by use of the Ellipse,  
20 Hooghoudt, or equivalent drainage equations for sites with Group I or II soils. Justification for use  
21 of a specific drainage equation shall be provided;
  - 22 (D) drainage equation input parameters shall be based upon field descriptions of soil profiles and in-  
23 situ Ksat measurements. The drainage coefficient used in these equations shall be calculated from  
24 the highest monthly rainfall value with a 30-percent exceedance probability from the closest  
25 available National Weather Service or North Carolina State Climate Office station. A source of  
26 these data is the WETS tables published on the Natural Resource Conservation Service ~~Website:~~  
27 [www.wcc.nrcs.usda.gov/climate/wedlands.html](http://www.wcc.nrcs.usda.gov/climate/wedlands.html). Field Office Technical Guides available online  
28 at: [efotg.sc.egov.usda.gov/efotg\\_locator.aspx](http://efotg.sc.egov.usda.gov/efotg_locator.aspx). This monthly value shall be divided by 14 to give  
29 the drainage coefficient (inches per day). For systems ~~designed for over~~ with a DDF greater than  
30 1,500 gpd, the projected contribution of wastewater application shall be added to the drainage  
31 coefficient used in the equations;
  - 32 (E) DRAINMOD shall be used to determine the groundwater lowering system effectiveness at sites  
33 with the following conditions: three or more effective soil layers; Group III or IV soils within 36  
34 inches of the naturally occurring soil surface; or sites requiring a ~~pump drainage system;~~  
35 groundwater lowering system using pumps; and
  - 36 (F) the modeling procedure set forth in Rule .0504(g) of this Subchapter shall be followed.
- 37 (2) Groundwater lowering systems using pumps shall be designed in accordance with the following:

- 1 (A) plan and profile detail drawings of pump tank, showing all dimensions, pumps, discharge piping,  
2 floats, and float and alarm activation levels;
- 3 (B) calculations and supporting information shall be provided as the basis for sizing the pumps, dose  
4 volume, emergency storage capacity, and overall tank capacity;
- 5 (C) the high-water alarm in the control panel shall automatically contact a 24-hour maintenance  
6 service;
- 7 (D) information on discharge pipe line, line location, materials, and provisions for erosion control at  
8 the discharge point;
- 9 (E) except as required in this Rule, the requirements in Section .1100 of this Subchapter are  
10 applicable to artificial drainage systems using pumps; and
- 11 (F) dual alternating pumps shall be required when serving two or more design units. Each pump shall  
12 be sized at a capacity of two and one half times the projected peak inflow rate to the pump tank.
- 13 (3) Plans and specifications for groundwater lowering systems shall include the following information in  
14 addition to the information in Subparagraphs (c)(1) and (c)(2) of this Rule:
- 15 (A) location of existing and proposed drainage systems in relation to all facilities and wastewater  
16 system components. Plans shall indicate flow direction, slope and drain outlet location;
- 17 (B) profile drawings showing drainage trench dimensions, depth, pipe size, aggregate envelop and  
18 filter fabric detail, cover, and cleanout detail;
- 19 (C) all relevant elevations with reference to an established benchmark;
- 20 (D) specifications for all groundwater lowering system materials and installation procedures;
- 21 (E) the entire groundwater lowering system, including the outlet, shall be on property owned or  
22 controlled by the person owning or controlling the system. Necessary legal agreements shall be  
23 provided in accordance with Rule .0301(c) of this Subchapter; and
- 24 (F) easements for egress, ingress, and regress for maintenance of groundwater lowering systems  
25 serving two or more lots shall have adequate width, in no case less than 20 feet plus the width of  
26 the groundwater lowering system.
- 27 (d) Interceptor drains shall be used on sites where a SWC results from laterally flowing groundwater that can be ~~intercepted~~  
28 ~~and~~ diverted away from the dispersal field.
- 29 (e) Other artificial drainage systems, including surface water diversions, shall comply with USDA-NRCS guidance  
30 documents.

31  
32 *History Note: Authority G.S. 130A-335(e) and (f).*

33 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .0911

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Just so I understand what is a privy and when would it be appropriate to have or use one?*

*In (a), what is meant by "approved" in "an approved privy"?*

*In (a), line 4, please change "which" to "that" in "which affords"*

*In (a), please delete or define "reasonable"*

*In (a)(4), what is meant by "sufficient stability"? Sufficient stability for what?*

*In (a)(5), must it always be constructed of wood unless otherwise approved? If so, say that.*

*In (a)(5), what is meant by "other approved flooring materials"?*

*In (a)(5)(C), please change "is" to "shall be" in "sill size is four..."*

*In (a)(6), what is meant by "approved" in "approved screened PVC Schedule 40 pipe" or "approved equal"... Do you just meant that the pit shall be vented through a pipe that meets the requirements of these Rules?*

*In (b)(1), please delete or define "reasonable." Also, this language is duplicative of language on line 5. Please delete it here or there.*

*In (b)(1), please delete or define "bad" in "bad weather conditions"*

*In (b)(2), please delete or define "completely"*

*In (c)(1), please delete or define "clean" Do you mean something like "free of debris"?*

*In (c)(3), delete "always" Also, how is this to be done?*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

*Please add “the” at the beginning of (c)(5).*

*In (d), when will a new pit be required? When it caves in in accordance with this Rule?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .0911 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .0911 PRIVIES**

4 (a) An approved privy shall consist of a pit, floor slab, and seat assembly housed in a building which affords privacy and  
5 reasonable protection from the weather and shall meet the following criteria:

6 (1) the pit shall consist of an excavation with a minimum bottom surface area of three and one half feet square;

7 (2) the maximum depth of the pit shall not exceed 36 inches;

8 (3) the pit bottom shall not be located closer than 12 inches to a ~~LC or SWC~~; LC;

9 (4) the pit shall be curbed to prevent caving. In sandy or loose soil, the curb should extend the full depth of the  
10 pit. In clay soils, partial curbing may be acceptable if sufficient stability can be provided;

11 (5) wood construction of the floor shall be acceptable. The floor shall be constructed of the following:

12 (A) rot resistant joists covered with tight tongue-and-groove rot resistant flooring;

13 (B) other approved flooring materials to provide strength, durability and prevent entrance of flies and  
14 mosquitoes to the privy pit; and

15 (C) floors shall be anchored to the sills. The minimum sill size is four-inch by four-inch;

16 (6) the pit shall be vented through approved screened PVC Schedule 40 pipe or approved equal, six inches in  
17 diameter, and extending above the roofline. The vent pipe shall be:

18 (A) located on a south side wall of the building;

19 (B) covered to prevent rainfall from entering, but still allow gases to escape;

20 (C) ~~not have~~ straight without any bends in the pipe; and

21 (D) ~~shall be~~ black colored pipe; and

22 (7) privies shall not be used for the disposal of water-carried sewage.

23 (b) Any person owning or controlling the property upon which a privy is located shall be responsible for the following  
24 requirements:

25 (1) the privy building shall afford a reasonable degree of protection from bad weather conditions;

26 (2) when the pit becomes filled to within 18 inches of the top of the ground, the privy building shall be moved  
27 to a new pit and the old pit completely covered with soil; and

28 (3) if the pit caves in, a new pit shall be provided.

29 (c) The person owning or controlling the system shall be responsible for the following requirements:

30 (1) the privy and grounds ~~immediately~~ adjacent shall be kept clean;

31 (2) a hinged seat cover and hinged door shall be provided and kept closed when the privy is not in use;

32 (3) flies shall always be excluded from the pit;

33 (4) garbage and trash shall be kept out of the pit; and

34 (5) privy building shall not be used ~~as a storage building~~. for storage.

35 (d) When a new pit is required, a CA and OP shall be obtained.

36

37 *History Note: Authority G.S. 130A-335(e) and (f).*



REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1001

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Given 130A-335(h), is (b) necessary? Do you need this to provide notice to your regulated public?*

*In (c), what is an "alternative toilet"? Is it incinerating, composting, and mechanical toilets and vault privies? If so, please consider saying that in (a) (something like "alternative toilets include incinerating, composting...") If chemical and portable toilets are also considered alternative toilets, please include them in the definition.*

*In (c), delete "rest of the"*

*In (d), line 11, please change "requirement also applies to removal" to "this requirement shall also apply to the removal"*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1001 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1001 ALTERNATIVE TOILETS**

4 (a) Incinerating, composting, and mechanical toilets, and vault privies shall comply with the North Carolina Plumbing Code.

5 (b) Use of chemical or portable toilets are governed by G.S. 130A-335(h).

6 ~~(b)(c)~~ When an alternative toilet is used, the rest of the wastewater generated by any other plumbing fixture in the facility  
7 shall be discharged to a wastewater system that is approved under this Subchapter.

8 (d) Residual removal from incinerating toilets, composting toilets, mechanical toilets, vault privies, chemical toilets, or  
9 portable toilets shall be performed only by a person that holds a current NC Septage Management Firm permit in accordance  
10 with Rule 15A NCAC 13B .0832(a)(1). All waste shall be taken to an approved disposal site per G.S. 130A-291.1(d). This  
11 requirement also applies to removal of wastewater from a temporary domestic wastewater holding tank approved pursuant to  
12 G.S. 130A-291.2.

13

14 *History Note: Authority G.S. 130A-335(e).*

15 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1002

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a)(2)(A), I assume "beneficial use component" is defined elsewhere in rule or statute?*

*In (b), by "wastewater system", do you mean "a RCW system"?*

*In (b), how will it be determined whether the system will be approved? So long as it complies with the Rules of this Subchapter?*

*Just so I understand what is going on with (c), is the intent that the siting and sizing requirements of Section .1200 must be used, unless an exception is provided in (c)(1) through (4)? If so, please revise (c) to say something like "... TS-II system except as follows:"*

*Please provide some sort of introductory language to (d)(1) through (4).*

*In (d), rather than "approved conjunctive uses include" say "Conjunctive uses may include..."*

*In (d)(4), please provide the factors or criteria that will be used in determining whether to waive the effluent TN standard.*

*In (e), what licensed professional?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1002 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1002 RECLAIMED WATER SYSTEMS**

4 (a) ~~A~~ An RCW system shall be one of the following:

5 (1) an alternate management option as identified in 15A NCAC 02U .0401(c) for use with a system permitted  
6 in accordance with 15A NCAC 02U;

7 (2) a conjunctive wastewater ~~system~~ system, as defined in 15A NCAC 02U .0103(3), permitted under the rules  
8 of this Subchapter that:

9 (A) incorporates a beneficial use component; and

10 (B) the beneficial use component is not necessary to meet the wastewater disposal needs of the  
11 facility; ~~or~~

12 ~~(3) a conjunctive wastewater system permitted under the rules of this Subchapter when there is a non-~~  
13 ~~conjunctive use wastewater system permitted and approved in accordance with 15A NCAC 02H or 15A~~  
14 ~~NCAC 02T for the facility; or~~

15 ~~(3)(4)~~ (4) a wastewater system designed for the complete recycle or reuse of DSE.

16 (b) The wastewater system shall be designed to produce ~~an~~ effluent prior to discharge that complies with the effluent  
17 standards for a Type I treatment process in accordance with 15A NCAC 02U .0301(b) ~~and~~ or a TS-II system in accordance  
18 with Table XXIV of Rule .1201 of this Subchapter, whichever is more restrictive. The wastewater system shall be approved in  
19 accordance with Section .1700 of this Subchapter or designed by a PE and approved by the State.

20 (c) When utilizing a TS-II system, ~~The~~ dispersal field and repair area shall comply with the siting and sizing requirements  
21 of Section .1200 of this Subchapter for a TS-II system and the following criteria:

22 (1) ~~the LTAR increase and setback reductions for a TS-II system in Section .1200 of this Subchapter may be~~  
23 ~~taken;~~ taken with either of the following:

24 (A) LTAR increase; or

25 (B) vertical separation reduction;

26 ~~(2) the depth to LC and vertical separation distance and setback reductions for a TS-II system in Section .1200~~  
27 ~~of this Subchapter may be concurrently taken;~~

28 ~~(3)(2)~~ (2) for systems designed to meet a TN standard of 10 mg/L the following siting and sizing criteria may be  
29 utilized:

30 (A) the property line setback may be reduced to five feet and the SA waters setback may be reduced  
31 to 50 feet for wastewater systems with a DDF less than or equal to 3,000 gpd;

32 (B) the property line setback may be reduced to 10 feet, the SA waters setback may be reduced to 100  
33 feet, and the other surface waters setback may be reduced to 50 feet for systems with a DDF  
34 greater than 3,000 gpd; or

35 (C) the vertical separation to a SWC may be reduced to 12 inches for wastewater systems with a DDF  
36 greater than 3,000 gpd that use pressure dispersal;

1           ~~(4)~~(3) the LTAR may be increased up to a factor of four compared to that assigned by the LHD for a system using  
2 DSE in Group I soils with a wastewater system that uses pressure dispersal when the following site  
3 conditions are met:

4           (A) 48 inches of Group I soils from the naturally occurring soil surface; and

5           (B) 30 inches to a SWC below the naturally occurring soil surface; ~~or~~ and

6           ~~(5)~~(4) requirements to comply with an effluent TN standard set forth in this paragraph may be waived when a  
7 site-specific nitrogen migration analysis based on projected or measured effluent nitrogen levels  
8 demonstrates that the nitrate-nitrogen concentration at the property line will not exceed 10 mg/L.

9 (d) Approved conjunctive uses include toilet and urinal flushing and landscape irrigation by drip dispersal. Wastewater from  
10 a system designed for complete recycling of DSE shall be used only for flushing of toilets and urinals. RCW shall ~~be~~ not be  
11 used for body contact or human consumption.

12           (1) Toilet and urinal flushing components shall be approved by the local building inspections department and  
13 be in compliance with the North Carolina Plumbing Code, including pipe marking requirements and back-  
14 siphon protection provisions for proximate potable water supplies.

15           (2) Siting, sizing, setbacks, and installation requirements of this Subchapter may be modified for the landscape  
16 irrigation component if they comply with the requirements for conjunctive use irrigation systems in 15A  
17 NCAC 02U, based upon information provided by the licensed professionals, if required in G.S. 89C, 89E,  
18 or 89F.

19           (3) System design, operation, and management requirements shall comply with requirements for comparable  
20 systems in 15A NCAC 02U, including provisions for continuous on-line monitoring and recording for  
21 turbidity and a mechanism to prevent effluent utilization if the turbidity exceeds 10 ~~NTUs~~ or NTUs, if the  
22 E. Coli or fecal coliform levels are not being ~~met~~ met, or the disinfection unit is not operable.

23           ~~(4)~~ Requirements to comply with an effluent TN standard may be waived on a project specific basis.

24 (e) All RCW systems approved in accordance with this rule shall be designed by a licensed professional and the plans  
25 approved by the State prior to LHD permit issuance.

26 ~~(f) An RCW system may also be permitted in accordance with Rule .0207 of this Subchapter.~~

27  
28 *History Note:* Authority G.S. 130A-335(e).

29 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1101

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please add "the" at the beginning of (a)(1)*

*(a)(2) seems to be missing a word. Is the intent here when wastewater is discharging? Please review and clarify.*

*What is the difference between (a) and (b)? A single pump or siphon in (a) versus multiple in (b)?*

*In (b), should "and discharge" be "to discharge" or "and discharged"?*

*In (b), please change "for the following:" to "when:"*

*Add "the" before (b)(2).*

*I'm having a hard time following (d), but I think that it could be related to formatting. Would it be appropriate to separate this out a bit further, either into separate paragraphs or into Subparagraphs? Please review and clarify if needed.*

*In (d), please change "is equivalent" to "shall be equivalent"*

*In (e), what are the "wastewater system design criteria"?*

*In (f), since you refer to a test in the second sentence, please consider revising the first sentence to say "All dosing systems shall be tested using clear water prior to issuance of an OP." Also, is this to be done by the LHD during inspection? Again, please be consistent with your terms where possible.*

*In (f), what sort of documentation is necessary for this test? Is this just a report completed by the LHD?*

*In (f)(5), what is meant by "confirmed" in "confirmed delivery"? Please delete or define confirmed.*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1101 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1101 GENERAL DOSING SYSTEM REQUIREMENTS**

4 (a) A pump or siphon shall be used to deliver effluent into laterals when:

- 5 (1) total lateral length exceeds 750 linear feet in a single system; or
- 6 (2) discharging to a pressure dosed gravity distribution or pressure dispersal system.

7 (b) Alternating pumps or siphons shall be used and discharge to separate dispersal fields for the following:

- 8 (1) DDF from a single system exceeds 3,000 gpd; or
- 9 (2) total length of trench exceeds 2,000 linear feet in a single system.

10 (c) If alternating pumps or siphons are not required in accordance with Paragraph (b) of this Rule, but used, then the  
11 alternating pumps or siphons may discharge to a single dispersal field.

12 (d) The dose volume from pressure dosed gravity distribution systems shall be designed to fill the installed linear footage of  
13 the laterals between 66 and 75 percent at each dosing event. The lateral capacity for LDP systems and trench products with a  
14 PIA Approval is equivalent to the capacity of a four-inch corrugated pipe. Dose volumes for LPP systems shall be calculated  
15 in accordance with Rule .0907(e)(14)(B) of this Subchapter. Dose volumes for drip dispersal systems shall be calculated in  
16 accordance with Rule .1602(f)(3) of this Subchapter.

17 (e) The pump operating flow rate from a dosing system shall be designed to achieve scour velocity in the supply line ~~at a~~  
18 ~~minimum~~ and to distribute effluent in accordance with the wastewater system design criteria.

19 (f) All dosing systems shall have their performance demonstrated using clean water prior to issuance of an OP. The test shall  
20 include a demonstration and documentation of the following:

- 21 (1) pump or siphon operating flow rate;
- 22 (2) float control levels;
- 23 (3) high water alarm, including sound;
- 24 ~~(3)~~(4) operating pressure head, if applicable; and
- 25 ~~(4)~~(5) confirmed delivery of water to the dispersal field.

26

27 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

28 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1102

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a)(4), what is meant by “an equivalent third-party electrical testing and listing agency”? How and who determines whether an agency is equivalent to Underwriter’s laboratories? Please consider instead saying something like “a third-party electrical testing and listing agency, such as Underwriter’s Laboratories.”*

*Also in (a)(4), what is meant by “a PE may propose”? Is there an approval process for this? If so, how will it be determined whether a pump model will be acceptable?*

*In (b), please consider changing “anti-siphon holes (3/16-inch minimum)” to something like “anit-siphon holes of a 3/16 inch minimum shall be used...”*

*In (b), line 11, please add “holes” at the end of “the anti-siphon”*

*In (c), how will it be determined what “a similar disconnect device” will be? Please consider revising (b) to say something like “Each pump discharge line in a pump tank shall have a disconnect device, such as a pre-rated threaded union, flange, or camlock.”*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1102 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1102 PUMP DOSING**

4 (a) The effluent pump shall be:

- 5 (1) capable of handling a minimum of ½-inch solids or be a screened, high head pump designed for effluent;
- 6 (2) designed to meet the pump operating flow rate and total dynamic head of the effluent distribution system;
- 7 (3) removable without requiring entrance into the tank; and
- 8 (4) listed by Underwriter's Laboratory or an equivalent third-party electrical testing and listing agency. A PE  
9 may propose a pump model not listed by a third-party electrical testing and listing agency.

10 (b) A vent or anti-siphon holes (3/16-inch minimum) shall be used to prevent air locking of the pump and siphoning from the  
11 pump tank when pumping downhill. When a check valve is provided, the anti-siphon or vent shall be located between the  
12 pump and the check valve. Additional venting may be required at the high point in the pump force main to prevent siphoning.

13 (c) Inside the pump tank, a pressure-rated threaded union, flange, camlock, or similar disconnect device shall be provided in  
14 each pump discharge line.

15 (d) Check valves or other type valves shall prevent drainback from the dispersal field or supply line into the pump tank. A  
16 system may be designed and approved for the supply line to drain back to the pump tank based on site specific considerations,  
17 such as freeze protection.

18 (e) An isolation valve shall be provided on the field side of the disconnect device when pumping uphill.

19 (f) The pump discharge piping shall be accessible within the tank or riser from finished grade.

20 (g) Fittings and valves shall be of compatible non-corrodible material. Isolation valves and disconnects shall be located  
21 within 18 inches of the top of the access riser opening.

22 (h) All submersible pumps shall be provided with a non-corrodible rope or chain attached to each pump enabling pump  
23 removal from the ground surface without requiring dewatering or entrance into the tank.

24

25 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

26 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1103

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please change "which use a pump" to "that use a pump"*

*In (a), how will it be determined whether a control panel is equivalent to NEMA 4X?*

*In (a), what is meant by "an equivalent third-party electrical testing and listing agency"? How and who determines whether an agency is equivalent to Underwriter's laboratories? Please consider instead saying something like "a third-party electrical testing and listing agency, such as Underwriter's Laboratories, shall list the control panel."*

*In (a)(2) please either delete "a" or "(s)"*

*In (a)(3), please change "which breaks" and "which controls" to "that breaks" and "that controls"*

*In (b), when would a system require multiple pumps? In accordance with your rules or the manufacturer's specifications? I want to be sure that your regulated public is familiar.*

*In (c), is "at a minimum" necessary? Please consider deleting this language.*

*In (d), please delete or define "direct" in "direct view." Please also delete or define "always"*

*In (e), please delete "to be" in "to be used"*

*In (e), please change "Under no conditions are electrical splices to be within conduit piping" to "Electrical splices shall not be within conduit piping."*

*In (f), what are "other suitable material or methods"? Please consider changing this to say "Materials or methods, such as wire grips or duct seal, shall be used to seal wire and wire conduit openings inside the pump tank and disconnect enclosure."*

*In (f), line 30, is "around" necessary?*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

*In (g), is “independently” necessary? This language appears to be superfluous given the requirement that they be dosed by separate pumps.*

*In (g), please change “which shall” to “that shall”*

*In (g), please say how the approval will take place and what standards will be used to make that determination.*

*In (h), what is meant by “similar state approved devices”?*

*(h)(1) through (6) needs some sort of introductory language at the end of (h). It’s unclear to me how these go together. Are these the requirements of the float? If so, perhaps something like “and shall meet the following requirements:”*

*In (i)(3), is “and shall enable the audible alarm to be silenced by the system user” necessary given (i)(2)? IF so, would this language be more appropriate in (i)(2)?*

*In (i)(3), should “The alarm shall automatically reset after testing and when an alarm condition has cleared” be its own subparagraph? I think it should.*

*In (i)(5), how will it be determined whether something is NEMA 4x equivalent?*

*In (i)(6), please delete or define “always”*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1103 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1103 CONTROL PANELS**

4 (a) A control panel shall be provided for all systems which use a pump. The control panel enclosure shall be NEMA 4X or  
5 equivalent. Underwriter's Laboratory or an equivalent third-party electrical testing and listing agency shall list the control  
6 panel. The control panel shall include for each pump:

- 7 (1) an independent overload protection (if not integral with the pump motor);
- 8 (2) a circuit breaker(s);
- 9 (3) a motor contactor which breaks all the current to the pump or solid-state relay which controls current to the  
10 pump;
- 11 (4) a hand-off automatic (H-O-A) switch or alternate method to enable manual or automatic pump operation  
12 and for the pump to be deactivated manually;
- 13 (5) a pump run light;
- 14 (6) an elapsed time meter; and
- 15 (7) an event counter.

16 (b) An automatic pump sequencer shall be provided in systems requiring multiple pumps and shall remain operable whenever  
17 any pump is inoperable.

18 (c) When telemetry is required in accordance with Sections .0800, .1500, .1600, and .1700 of this Subchapter, the control  
19 panel shall be connected to an active phone line, wireless internet router, dedicated cellular line, or any other form of  
20 telemetry that allows the Management Entity ~~to properly monitor system performance~~ to, at a minimum, be notified and  
21 respond to alarm conditions. The telemetry shall remain active for the life of the wastewater system.

22 (d) The control panel bottom shall be mounted a minimum of 24 inches ~~and no more than 36 inches~~ above finished grade,  
23 within 50 feet of and in direct view of the pump tank. The control panel shall always be accessible to the Management Entity  
24 ~~and LHD.~~ Entity and LHD.

25 (e) When the control panel is located more than 10 feet from the pump tank access riser, and one or more electrical splices  
26 are to be used, a NEMA 4X junction box shall be installed above grade on or adjacent to the pump tank access riser. Under  
27 no conditions are electrical splices to be within the conduit piping.

28 (f) Wiring shall be conveyed to the control panel or outside junction box through waterproof, gasproof, and  
29 corrosion-resistant conduits, with no splices or junction boxes inside the tank. Wire grips, duct seal, or other suitable material  
30 or methods shall be used to seal around wire and wire conduit openings inside the pump tank and disconnect enclosure.

31 (g) Dual and multiple fields shall be independently dosed by separate pumps which shall automatically alternate or sequence.  
32 The supply lines shall be "H" connected to permit manual alternation between fields dosed by each pump. "H" connection  
33 valving shall be accessible from the ground surface, either from the pump tank access manhole or in a separate valve chamber  
34 outside the pump tank. The State may approve other equivalent methods of dosing dual or multiple fields.

35 (h) Floats or similar State approved devices designed for detecting liquid levels in a pump tank shall be provided to control  
36 pump cycles and trigger notification of alarm conditions;

- 37 (1) a minimum of 12 inches of effluent shall be maintained in the bottom of the pump tank;

- 1 (2) pump-off level shall be set to keep the pump submerged or in accordance with the manufacturer's written
- 2 specifications;
- 3 (3) a separate control float shall be provided to activate the high-water alarm;
- 4 (4) the high-water alarm float shall be set to activate within six inches of the pump-on level or higher, if
- 5 applicable, if providing design equalization capacity in a timed dosing system;
- 6 (5) the lag pump float switch, where provided, shall be located at or above the high-water alarm activation
- 7 level; and
- 8 (6) floats shall be supported utilizing durable, corrosion resistant material, and designed to be adjustable,
- 9 removable, and replaceable from the ground surface without requiring dewatering, entrance into the tank,
- 10 or pump removal.

11 (i) The pump tank shall have a high-water alarm that shall:

- 12 (1) be audible and visible to the system users and the Management Entity;
- 13 (2) have a silencer button or device that is located on the outside of the panel enclosure;
- 14 (3) provide for manual testing and shall enable the audible alarm to be silenced by the system user. The alarm
- 15 shall automatically reset after testing and when an alarm condition has cleared;
- 16 (4) remain operable whenever the pump is inoperable;
- 17 (5) have an enclosure that is watertight, corrosion resistant, and rated NEMA 4X or equivalent; and
- 18 (6) be mounted outside the facility and always accessible.

19 (j) For systems designed by a PE, the PE may propose other panel construction and location criteria that meet these panel

20 performance criteria, comply with local electrical codes, and are approved by the local electrical inspector.

21

22 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

23 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1104

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please end Items (1) through (3) with periods and begin each sentence with a capital letter.*

*In Item (2), what is meant by "or equal"? Is this referring to an equal material? How and by whom will this determination be made?*

*In Item (3), what is meant by "or equivalent"? Is this referring to the enclosure or the alarm itself? Also, how and by whom will this determination be made?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1104 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1104 SIPHON DOSING**

4 Siphons and siphon tanks may be used when a minimum of two feet of elevation drop is maintained between the siphon outlet  
5 invert and the inlet invert in the dispersal field distribution system. Siphons and siphon tanks shall meet the following criteria:

6 (1) slope and size of the siphon discharge line shall be sufficient to handle the peak siphon discharge by  
7 gravity flow without the discharge line flowing full. Vents for the discharge lines shall be located outside  
8 of the siphon tank and shall not serve as an overflow for the tank;

9 (2) all siphon parts shall be installed in accordance with the manufacturer's specifications. All materials shall  
10 be corrosion-resistant, of cast iron, high-density plastic, fiberglass, stainless steel, or equal; and

11 (3) siphon tanks shall have a functioning trip counter and high-water alarm. The high-water alarm shall be  
12 audible and visible by system users and weatherproof if installed outdoors in a NEMA 4X enclosure or  
13 equivalent. The high-water alarm shall be set to activate within two inches of the siphon trip level.

14

15 *History Note:* Authority G.S. 130A-335(e), (f), and (f1).

16 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1105

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a)(2), I don't read .1101 to require dosing systems. I read to say that is required for a dosing system. Please review and clarify if needed.*

*In (a)(3), who is the "authorized designer"?*

*Would (b) be appropriate to include in (a) since it says when a timed dosing system would be required?*

*On line 12, please change "shall be" to "is"*

*In (d), is the decision to adjust the float setup at the discretion of the owner or is it at the discretion of the LHD such that an approval is necessary? Please review and clarify.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1105 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1105 TIMED DOSING**

4 (a) Timed dosing systems shall be used with the following:

- 5 (1) advanced pretreatment or dispersal systems, if required by the manufacturer;
- 6 (2) when a dosing system is required in accordance with Rule .1101 of this Section in conjunction with an
- 7 adjusted DDF granted in accordance with Rule .0403 of this Subchapter; or
- 8 (3) when specified by the authorized designer.

9 (b) Flow equalization systems designed under a PIA Approval shall incorporate timed dosing to control the maximum  
10 amount of effluent that shall be delivered to the advanced pretreatment or dispersal field in a specific period.

11 (c) The timed dosing system shall be integrated with the pump tank control sensors to ensure that the minimum dose volume  
12 calculated in accordance with Rule .1101(d) of this Section shall be present prior to the start of any scheduled dose event and  
13 to provide that a full dose is delivered.

14 (d) The float setup for a timed dosing system may be adjusted from the criteria listed in Rule .1103(h) of this Section to  
15 provide for equalization capacity in the system.

16

17 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

18 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1106

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a)(5), please delete "but are not limited to"*

*In (b), is "as applicable" necessary here? It does not appear to be.*

*In (b), please delete or define "sound construction"*

*In (b), please delete or define "excessive"*

*In (b), please delete or define "adequate"*

*In (b), how is it to be "demonstrated to perform as designed"? Will this occur during the inspection?*

*In (b), how is the authorized agent to determine whether to approve the box? Will this be under their own rules?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1106 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1106 PRESSURE DOSED GRAVITY DISTRIBUTION DEVICES**

4 (a) Pressure manifolds for pressure dosed gravity distribution shall meet the following minimum design and performance  
5 requirements:

6 (1) uniform distribution of flow among individual laterals with a minimum of two feet of residual pressure  
7 head;

8 (2) a pressure regulating valve incorporated in the supply line just prior to the pressure manifold to control  
9 pressure to the manifold;

10 (3) a mechanism or device for measuring residual pressure head in the manifold;

11 (4) a mechanism to stop flow to individual laterals;

12 (5) a method to visually verify the flow to each individual lateral. Such methods may include but are not  
13 limited to observation ports. ~~Observation~~ Observation ports may be located inside or outside of the  
14 pressure manifold ~~box to verify flow to individual laterals; box;~~ and

15 (6) the pressure manifold and appurtenances shall be designed and installed to be accessible for inspection,  
16 operation, maintenance, and monitoring.

17 (b) A distribution box or a drop box may be used to dissipate flow in a pressure dosed gravity dispersal system for parallel,  
18 serial, or sequential distribution, as applicable. Such devices shall be of sound construction, watertight, not subject to  
19 excessive corrosion, adequate capacity, demonstrated to perform as designed, and approved by the authorized agent.

20

21 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

22 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1201

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*To match the introductory language of (a), you need a verb in (a)(1) through (4). Perhaps something like "have" or "obtain" in (a)(1) and (2). Perhaps change "compliance" to "comply" in (a)(3) and (4).*

*In (b), how will it be determined whether the project or product will be approved? I understand that it's done on a case by case basis, but what factors will be used in making this determination?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1201 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1201 ADVANCED PRETREATMENT SYSTEM STANDARDS**

4 (a) Advanced pretreatment systems with a DDF less than or equal to 3,000 gpd shall meet the following conditions:

- 5 (1) RWTS or PIA Approval;
- 6 (2) design that meets the effluent standard specified in the OP and defined in Table XXIV prior to effluent
- 7 dispersal ~~of the effluent~~ to the soil;
- 8 (3) compliance with the siting and sizing requirements of this Section; and
- 9 (4) compliance with Rules .1302(e) and .1710 of this Subchapter.

10

11 **TABLE XXIV.** Effluent standards for advanced pretreatment systems

Constituent	Effluent Standards		
	NSF-40	TS-I	TS-II
CBOD	≤ 25 mg/L	≤ 15 mg/L	≤ 10 mg/L
TSS	≤ 30 mg/L	≤ 15 mg/L	≤ 10 mg/L
NH <sub>3</sub>		≤ 10 mg/L or 80% removal of NH <sub>3</sub> if influent TKN exceeds 50 mg/L	≤ 10 mg/L
TN			≤ 30 mg/L
Fecal Coliform		≤ 10,000 colonies/100 mL	≤ 1,000 colonies/100 mL

12

13 (b) The effluent applied to advanced pretreatment systems shall not exceed DSE as specified in Table III of Rule .0402 of this

14 Subchapter, unless the system is designed to treat HSE and approved by the State on a product or project-specific basis.

15 (c) Wastewater systems with a DDF greater than 3,000 gpd, proposed to meet TS-II effluent standards shall meet a TN

16 standard of less than or equal to 20 mg/L.

17

18 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

19 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1202

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*What is the difference in .1202 and .1203? Is one applicable to APS with a DDF less than or equal to 1500 gallons/day and .1203 is applicable to APS with a DDR between 1500 and 3000? Since titles of rules can be changed without going through the rulemaking process, we read rule without titles. As such, please make it clear within the text of the body of the rule what they are applicable to.*

*In (a), what is meant by "except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply"? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.*

*Also, please consider making "Unless otherwise required in this Rule, the requirements of .0901 of this Subchapter shall apply" its own Paragraph. It doesn't seem to go with the rest of the language in (a).*

*In (b), how will it be determined whether the modifications will be approved? I see this Rule as setting the minimum requirements for Advanced Pretreatment Systems, but what factors will be used in determining whether a modification will be allowed? Would it be helpful to move (b) to the end of this Rule and say how it will be determined whether approval for a modification would be granted?*

*Please provide some introduction to (d)(1) through (5) at the end of (d).*

*In (d)(2), please add commas before and after "if required in accordance with Rule .0510 of this Subchapter"*

*In (d)(3), please verify the cross-reference to .1204 regarding the assignment of the drip system. I don't see "assign" in .1204.*

*In (e)(1), is "as applicable" necessary?*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1202 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1202 SITING AND SIZING CRITERIA FOR ADVANCED PRETREATMENT SYSTEMS**  
 4 **WITH A DESIGN DAILY FLOW LESS THAN OR EQUAL TO 1,500 GALLONS/DAY**

5 (a) The initial site evaluation shall be conducted and depth to LC ~~or SWC~~ determined in accordance with Section .0500 of  
 6 this Subchapter. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply.

7 (b) Only one of the following modifications to system siting and sizing criteria may be approved, unless otherwise identified  
 8 in this Rule:

- 9 (1) reduction in depth to LC or of vertical separation ~~distance to LC or SWC~~; LC;
- 10 (2) LTAR increases; or
- 11 (3) setback reduction.

12 (c) The minimum required vertical separation ~~distance~~ to a LC ~~or SWC~~ in natural soil may be reduced with the use of  
 13 advanced pretreatment in accordance with Table XXV. Table XXVI provides the minimum depths and vertical separation  
 14 ~~distances~~ for new and existing fill. A Special Site Evaluation shall be submitted and approved in accordance with Rule .0510  
 15 of this Subchapter when a reduction in vertical separation ~~distance~~ to a LC ~~or SWC~~ is proposed in accordance with this Rule.

16

17 **Table XXV. Minimum vertical separation ~~distance~~ to LC ~~or SWC~~ based on effluent standards**

<b>Minimum vertical separation <del>distance</del> (inches) from infiltrative surface to LC <del>or SWC</del></b>					
<b>Soil Group</b>	<b>Distribution Method</b>	<b>Effluent Standard**</b>			
		<b>DSE*</b>	<b>NSF-40</b>	<b>TS-I</b>	<b>TS-II</b>
I	Gravity	18	12	12	12
	LPP	12	12	9	6
	Drip	12	12	9	6
II-IV	Gravity	12	12	9	9
	LPP	12	12	9	6
	Drip	12	12	9	6

18 \*For comparison

19 \*\*12-inch vertical separation shall always be maintained to rock or tidal water

20

21 **Table XXVI. Minimum depth to LC and vertical separation to SWC in new or existing fill based on effluent standard**

<b>Minimum depth (inches) from naturally occurring soil surface to LC <del>or SWC</del></b>					
<b>Type of Fill</b>	<b>Distribution Method</b>	<b>Effluent Standard</b>			
		<b>DSE* *</b>	<b>NSF-40</b>	<b>TS-I</b>	<b>TS-II</b>
<b>New Fill (≤1,500 gpd)</b>	Gravity	18 to LC	18 to LC	14 to LC	14 to LC
		12 to SWC	12 to SWC	12 to SWC	12 to SWC
	LPP	18 to LC	18 to LC	12	12

<b>(slope ≤ 4%)</b>		12 to SWC	12 to SWC		
	Drip	18 to LC 12 to SWC	18 to LC 12 to SWC	12	12
<b>Existing Fill (≤480 gpd)</b>	Gravity	36 of Group I Fill/Soils			
	LPP	24 of Group I Fill/Soils			
	Drip	24 of Group I Fill/Soils			
<b>Minimum vertical separation distance (inches) from infiltrative surface to LC* or SWC</b>					
<b>Type of Fill</b>	<b>Distribution Method</b>	<b>Effluent Standard</b>			
		<b>DSE**</b>	<b>NSF-40</b>	<b>TS-I</b>	<b>TS-II</b>
<b>New Fill (≤1,500 gpd) (slope ≤ 4%)</b>	Gravity	24 to LC	18 to LC	18 to LC	18 to LC
		18 to SWC	18 to SWC	14 to SWC	14 to SWC
	LPP	18 to LC	18 to LC	12 to LC	12 to LC
		12 to SWC	12 to SWC	9 to SWC	9 to SWC
Drip	18 to LC	18 to LC	12 to LC	12 to LC	
	12 to SWC	12 to SWC	9 to SWC	9 to SWC	
<b>Existing Fill (≤480 gpd)</b>	Gravity	36	36	36	36
	LPP	18	18	12	12
	Drip	18	18	12	12

1 \*Minimum depth after adjustment for slope correction

2 \*\*For comparison

3  
4 (d) The LTAR shall be based on the effluent standard and dispersal field type proposed.

5 (1) The LTAR may be increased by the following factors when compared to the rate assigned by the  
6 authorized agent for a new system using DSE:

7 (A) up to 1.33 for NSF-40 effluent standards in soils which are Group I or II with suitable structure;

8 (B) up to 2.0 for TS-I or TS-II effluent standards when pressure dispersal is utilized; or

9 (C) up to 2.5 for TS-II effluent standards when all the following conditions are met: minimum of 36  
10 inches of Group I soils from the naturally occurring soil surface; minimum depth to a SWC below  
11 the naturally occurring soil surface is 24 inches; space shall be available for an equivalently sized  
12 dispersal field repair area; and pressure dispersal shall be utilized.

13 (2) A Special Site Evaluation as if required in accordance with Rule .0510 of this Subchapter shall be  
14 submitted and approved.

15 (3) The LTAR for an aerobic drip system shall be assigned in accordance with Rule .1204 of this Section.

- 1 (4) Trench dispersal products approved for a specific dispersal field reduction in area or trench length when  
 2 receiving DSE in accordance with this Subchapter or a PIA Approval shall not be reduced by more than 50  
 3 percent when any LTAR adjustments are taken in accordance with this Rule.
- 4 (5) The DDF shall not be increased by the addition of advanced pretreatment to an existing wastewater system.
- 5 (e) Advanced pretreatment systems shall meet the following setback requirements:
- 6 (1) minimum setback requirements of Section .0600 of this Subchapter, as applicable, shall be met, except as  
 7 shown in Table XXVII of this Rule; and
- 8 (2) when any other siting or sizing modifications are applied (reduced depth to ~~LC or SWC~~, LC, vertical  
 9 ~~separation distance~~ separation, or increased LTAR) for a TS-I or TS-II system in accordance with  
 10 Paragraphs (c) and (d) of this Rule, no setback reductions shall be taken except those to artificial drainage  
 11 systems described in Table XXVII.
- 12
- 13

**Table XXVII:** Setbacks for wastewater systems meeting NSF-40, TS-1 or TS-II effluent standards

Feature (structure, water source, etc.)	Setback (feet) according to Effluent Standard			
	DSE*	NSF-40	TS-I	TS-II
Surface waters classified WS-I, from mean high-water mark	100	70	70	50
Waters classified SA, from mean high-water mark	100	70	70	50
Any Class I or Class II reservoir, from normal pool elevation	100	70	70	50
Any other coastal water, canal, marsh, stream, perennial waterbodies, streams, or other surface waters, from mean high-water mark	50	35	35	25
Lake or pond, from flood pool elevation	50	35	35	25
Subsurface groundwater lowering system, ditch, or device, as measured on the ground surface from the edge of the feature	25	25	20	15
Surface water diversion, as measured on the ground surface from the edge of the diversion	15	15	10	10
<u>Interceptor drain - upslope</u>	<u>10</u>	<u>10</u>	<u>7</u>	<u>7</u>
<u>Interceptor drain – sideslope</u>	<u>15</u>	<u>15</u>	<u>10</u>	<u>10</u>
<u>Interceptor drain – downslope</u>	<u>25</u>	<u>25</u>	<u>20</u>	<u>15</u>
Any stormwater conveyance (pipe or open channel) or ephemeral stream	15	15	10	10
Permanent stormwater retention basin or detention basin	50	50	35	25
Any other dispersal field <del>except repair area</del> <u>field, except designated dispersal field repair area for project site</u>	20	20	10	10

1 \*For comparison

2

3 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

4 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1203

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*What is the difference in .1202 and .1203? Is one applicable to APS with a DDF less than or equal to 1500 gallons/day and .1203 is applicable to APS with a DDR between 1500 and 3000? Since titles of rules can be changed without going through the rulemaking process, we read rule without titles. As such, please make it clear within the text of the body of the rule what they are applicable to.*

*In (a), what is meant by "except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply"? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.*

*Also, please consider making "Unless otherwise required in this Rule, the requirements of .0901 of this Subchapter shall apply" its own Paragraph. It doesn't seem to go with the rest of the language in (a).*

*Please provide some introduction to (b)(1) through (2) at the end of (b).*

*In (b)(2), please verify the cross-reference to .1204 regarding the assignment of the drip system. I don't see "assign" in .1204.*

*Please consider revising (b)(1)(B) to say "up to 2.5 for TS-II effluent standards when ~~there is a~~ all the following conditions are met: minimum of 48 inches of Group I soils from the naturally occurring soil ~~surface~~ surface; and minimum of 30 inches to a SWC below the naturally occurring soil surface.*

*Please consider revising (c)(4) to say: 25-foot setback shall be maintained to all property lines unless one ~~of the following criteria are met:~~ a site-specific nitrogen migration analysis for a TS-I system indicates that the nitrate-nitrogen concentration at the property line will not exceed 10 ~~mg/L;~~ mg/L or a TS-II system is used.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel

Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1203 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1203 SITING AND SIZING CRITERIA FOR ADVANCED PRETREATMENT SYSTEMS**  
4 **WITH A DESIGN DAILY FLOW GREATER THAN 1,500 GALLONS/DAY AND LESS THAN OR EQUAL TO**  
5 **3,000 GALLONS/DAY**

6 (a) No reductions in depth to ~~LC or SWC~~, LC, vertical separation ~~distance~~ or setback requirements shall be taken. Except as  
7 otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply.

8 (b) The LTAR shall be based on the effluent standard and dispersal field type proposed.

9 (1) The LTAR may be increased by the following factors when compared to the rate assigned by the  
10 authorized agent for a new system using DSE:

11 (A) up to 2.0 for TS-I or TS-II effluent standards;

12 (B) up to 2.5 for TS-II effluent standards when all the following conditions are met: minimum of 48  
13 inches of Group I soils from the naturally occurring soil surface; and minimum of 30 inches to a  
14 SWC below the naturally occurring soil surface.

15 (2) The LTAR for an aerobic drip system shall be assigned in accordance with Rule .1204 of this Section.

16 (c) When the LTAR for a system is proposed to be increased in accordance with Paragraph (b) of this Rule, the following  
17 conditions shall be met:

18 (1) a Special Site Evaluation required in accordance with Rule .0510 of this Subchapter shall be submitted and  
19 approved;

20 (2) pressure dispersal shall be utilized;

21 (3) space shall be available for an equivalently sized dispersal field repair area; and

22 (4) 25-foot setback shall be maintained to all property lines unless one of the following criteria are met: site-  
23 specific nitrogen migration analysis for a TS-I system indicates that the nitrate-nitrogen concentration at the  
24 property line will not exceed 10 mg/L; or a TS-II system is used.

25 (d) Trench dispersal products approved for a specific dispersal field reduction in area or trench length when receiving DSE in  
26 accordance with this Subchapter or a PIA Approval shall not be reduced by more than 50 percent as a result of increased  
27 LTAR in accordance with this Rule.

28 (e) The DDF shall not be increased by the addition of advanced pretreatment to an existing wastewater system.

29

30 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

31 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1204

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Just to make sure that I understand, are (a) through (g) applicable to those systems using advanced pretreatment with a DDF less than or equal to 1,500 gpd, and (h) is applicable only to those with a DDF greater than 1,500 and less than or equal to 3,000 gpd?*

*In (a), do you mean drip dispersal systems “may” or “shall” use the siting and sizing criteria in this Rule?*

*In (a), please change “the following siting and sizing criteria” to “the siting and sizing criteria in this Rule”*

*In (a), what is meant by “except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply”? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.*

*Please change “Section” to “Subchapter”*

*In (b)(1)(B), delete “as follows”, add “there shall be” before “a minimum of 18 inches”, and delete the semi-colon after SWC.*

*In (b)(2)(B), delete “as follows:”, add “there shall be” before “a minimum of 12 inches”, and change the semi-colon after “LC” to a comma.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1204 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1204   ADVANCED PRETREATMENT DRIP DISPERSAL SYSTEMS**

4 (a) Drip dispersal systems may utilize the following siting and sizing criteria when used with advanced pretreatment and a  
5 DDF less than or equal to 1,500 gpd. Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section  
6 shall apply.

7 (b) The soil and site characteristics shall meet the following criteria based on effluent standards:

8       (1)   NSF-40 Systems

9           (A)   a minimum of 18 inches of naturally occurring suitable soil above a LC and 13 inches of naturally  
10               occurring suitable soil above a SWC, and the minimum vertical separation ~~distance~~ to any LC ~~or~~  
11               SWC shall be 12 inches;

12           (B)   for new fill, the requirements of Rules .0909(b) and (c) of this Subchapter shall be met, except as  
13               follows: a minimum of 18 inches of naturally occurring suitable soil above a LC and a minimum  
14               of 12 inches of naturally occurring suitable soil above a SWC; and the minimum vertical  
15               separation ~~distance~~ shall be 18 inches to a LC and 12 inches to a SWC; or

16           (C)   for existing fill, the requirements of Rules .0909(d) and (e) of this Subchapter shall be met, except  
17               that the minimum vertical separation ~~distance~~ to any LC ~~or~~ SWC shall be 18 inches;

18       (2)   TS-I Systems

19           (A)   a minimum of 15 inches of naturally occurring suitable soil above a LC and a minimum of 13  
20               inches of naturally occurring suitable soil above a SWC, and the minimum vertical separation  
21               ~~distance~~ to any LC ~~or~~ SWC shall be nine inches;

22           (B)   for new fill, the requirements of Rules .0909(b) and (c) of this Subchapter shall be met, except as  
23               follows: a minimum of 12 inches of naturally occurring suitable soil above a ~~LC or SWC~~; LC; a  
24               minimum of nine inches vertical separation ~~distance~~ to a SWC, and a minimum of 12 inches  
25               vertical separation ~~distance~~ to a LC; or

26           (C)   for existing fill, the requirements of Rules .0909(d) and (e) of this Subchapter shall be met, except  
27               that the minimum vertical separation ~~distance~~ to any LC ~~or~~ SWC shall be 12 inches; and

28       (3)   TS-II Systems

29           (A)   a minimum of 13 inches of naturally occurring suitable soil above a LC ~~and~~ SWC and the  
30               minimum vertical separation ~~distance~~ to any LC shall be six inches;

31           (B)   for new fill, the requirements of Part (2)(B) of this Paragraph shall be met; or

32           (C)   for existing fill, the requirements of Part (2)(C) of this Paragraph shall be met.

33 (c) Site modifications for advanced pretreatment drip dispersal systems shall meet the following criteria based on effluent  
34 standards:

35       (1)   NSF-40 Systems may utilize a groundwater lowering system to meet the vertical separation ~~distance~~  
36               requirements to a SWC only when Group I or II soils with suitable structure are present within 36 inches of

- 1 the naturally occurring soil surface. The minimum vertical separation distance to the projected (drained)  
 2 SWC shall be 12 inches. The addition of fill material shall not be used to meet this requirement; and  
 3 (2) TS-I and TS-II Systems may utilize a groundwater lowering system to meet the vertical separation distance  
 4 requirements to a SWC. The minimum vertical separation distance to the projected (drained) SWC shall be  
 5 12 inches. The groundwater lowering system may be used with the following:  
 6 (A) Group III soils are present at any depth above the invert elevation of the highest point of the  
 7 artificial drainage system or within 36 inches of the naturally occurring soil surface, whichever is  
 8 deeper; or  
 9 (B) on new fill sites.  
 10 (d) Table XXVIII shall be used to determine the LTAR for advanced pretreatment drip dispersal systems based on Soil  
 11 Group. Limitations in adjustment allowances for NSF-40, TS-I, and TS-II systems are listed in Subparagraphs (d)(5), (d)(6),  
 12 and (d)(7) of this Rule.

13  
 14 **TABLE XXVIII. LTAR for advanced pretreatment drip dispersal systems based on Soil Group**

Soil Group	USDA Soil Textural Class		LTAR (gpd/ft <sup>2</sup> )		
			NSF-40	TS-I	TS-II
I	Sands	Sand	0.6 – 1.0	0.8 – 1.2	0.8 – 1.5
		Loamy Sand			
II	Coarse Loams	Sandy Loam	0.4 – 0.6	0.5 – 0.8	0.6 – 0.8
		Loam			
III	Fine Loams	Sandy Clay Loam	0.15 – 0.4	0.2 – 0.6	0.2 – 0.6
		Silt Loam			
		Clay Loam			
		Silty Clay Loam			
		Silt			
IV	Clays	Sandy Clay	0.05 – 0.2	0.05 – 0.2	0.05 – 0.2
		Silty Clay			
		Clay			

- 15  
 16 (1) The LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the  
 17 naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, ~~whichever is~~  
 18 ~~greater.~~ surface.  
 19 (2) The DDF shall be divided by the LTAR, determined from Table XXVIII or XXIX, to ~~determine~~ calculate  
 20 the minimum dispersal field area required. The minimum dripline length shall be ~~determined~~ calculated by  
 21 dividing the required area by the maximum line spacing of two feet. The following equations shall be used  
 22 to calculate the minimum dispersal field area and dripline length required:

23 
$$MA = DDF \div LTAR$$

1 DL = MA ÷ LS  
 2 Where MA = minimum dispersal field area (ft<sup>2</sup>)  
 3 DDF = design daily flow (gpd)  
 4 LTAR = in gpd/ft<sup>2</sup>  
 5 DL = dripline length (feet)  
 6 LS = two-foot line spacing

- 7 (3) The minimum dripline length calculated in Subparagraph (d)(2) of this Rule shall not be less than 0.5 x  
 8 DDF for Group I soils, 0.83 x DDF for Group II soils, 1.25 x DDF for Group III soils, or 3.33 x DDF for  
 9 Group IV soils. The dripline spacing may be adjusted in accordance with Rule .1602(e)(3) of this  
 10 Subchapter and the PIA Approval so that the minimum required dispersal field area calculated in  
 11 Subparagraph (d)(2) of this Rule does not need to be increased.
- 12 (4) Sections of tubing without emitters (blank tubing) required to meet site-specific conditions shall not count  
 13 towards the minimum length of dripline needed when laying out the system or when calculating the linear  
 14 footage of dripline needed.
- 15 (5) LTAR adjustment limitations for NSF-40 Systems
- 16 (A) the LTAR for new fill shall not exceed 0.6 gpd/ft<sup>2</sup> for Group I soils, 0.4 gpd/ft<sup>2</sup> for Group II soils,  
 17 0.15 gpd/ft<sup>2</sup> for Group III soils, or 0.05 gpd/ft<sup>2</sup> for Group IV soils; and
- 18 (B) the LTAR for existing fill shall not exceed 0.8 gpd/ft<sup>2</sup>.
- 19 (6) LTAR adjustment limitations for TS-I Systems
- 20 (A) the LTAR for new fill shall not exceed 1.0 gpd/ft<sup>2</sup> for Group I soils, 0.5 gpd/ft<sup>2</sup> for Group II soils,  
 21 0.2 gpd/ft<sup>2</sup> for Group III soils, or 0.07 gpd/ft<sup>2</sup> for Group IV soils;
- 22 (B) the LTAR for existing fill shall not exceed 1.0 gpd/ft<sup>2</sup>; and
- 23 (C) the LTAR for sites with less than 18 inches of naturally occurring soil to any unsuitable LC or  
 24 ~~SWC~~ shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group  
 25 IV soils.
- 26 (7) LTAR adjustment limitations for TS-II Systems
- 27 (A) the LTAR for new fill shall not exceed 1.0 gpd/ft<sup>2</sup> for Group I soils, 0.6 gpd/ft<sup>2</sup> for Group II soils,  
 28 0.2 gpd/ft<sup>2</sup> for Group III soils, or 0.07 gpd/ft<sup>2</sup> for Group IV soils;
- 29 (B) the LTAR for existing fill shall not exceed 1.0 gpd/ft<sup>2</sup>; and
- 30 (C) the LTAR for sites with less than 18 inches of naturally occurring soil to any unsuitable LC or  
 31 ~~SWC~~ shall not exceed the lowest LTAR for Soil Groups I, II, and III, and 0.1 gpd/ft<sup>2</sup> for Group  
 32 IV soils.
- 33 (8) Table XXIX shall be used in determining the LTAR for advanced pretreatment drip dispersal systems  
 34 installed in sapolite. The LTAR shall be based on the hydraulic conductivity of the most limiting, naturally  
 35 occurring sapolite to a depth of 24 inches below the infiltrative surface.

36  
 37 **TABLE XXIX.** LTAR for advanced pretreatment drip dispersal systems based on Sapolite Group

Saprolite Group	Saprolite Textural Class	LTAR (area basis)(gpd/ft <sup>2</sup> )	
		NSF-40	TS-I and TS-II
I	Sand	0.4 – 0.5	0.4 – 0.6
	Loamy sand	0.3 – 0.4	0.3 – 0.5
II	Sandy loam	0.25 – 0.35	0.25 – 0.4
	Loam	0.2 – 0.25	0.2 – 0.3
	Silt loam	0.05 – 0.1	0.05 – 0.15
III	Sandy clay loam	0.05 – 0.1	0.05 – 0.15

- 1
- 2 (e) A Special Site Evaluation shall be required in accordance with Rule .0510 of this Subchapter, as applicable.
- 3 (f) Setback reductions allowed in Table XXVII of Rule .1202 of this Section may be used with advanced pretreatment drip  
4 dispersal systems when no reduction in the required minimum depth to a LC or SWC or vertical separation distance reduction  
5 is proposed compared to the requirements for DSE in Table XXV or Table XXVI of Rule .1202 of this Section. A minimum  
6 of 18 inches of naturally occurring soil to an unsuitable LC or SWC shall be required to take setback reductions. The  
7 following LTAR limitations shall be applicable:
- 8 (1) for NSF-40 and TS-I systems, with the exception of the setback reductions to artificial drainage systems,  
9 when reductions are taken in setbacks, the LTAR shall not exceed the lowest LTAR for Soil Groups I, II,  
10 and III, and 0.1 gpd/ft<sup>2</sup> for Group IV soil;
- 11 (2) for TS-II Systems, with the exception of setback reductions to artificial drainage systems, when reductions  
12 are taken in setbacks, the LTAR shall not exceed the mid-range LTAR for Soil Groups I, II, and III, and  
13 0.1 gpd/ft<sup>2</sup> for Group IV soils; and
- 14 (3) for NSF-40, TS-I, and TS-II Systems, Table XXVIII may be used to determine the LTAR when no other  
15 setback reductions are taken aside of those to artificial drainage systems.
- 16 (g) Drip dispersal installation shall be in accordance with Rule .0908(e) of this Subchapter.
- 17 (h) Drip dispersal systems with a DDF greater than 1,500 gpd and less than or equal to 3,000 gpd used with advanced  
18 pretreatment may propose an adjusted LTAR if the following criteria are met:
- 19 (1) no reduction in the depth to a ~~LC or SWC~~, LC, vertical ~~separation distance~~, separation, or setback  
20 reductions is proposed;
- 21 (2) proposed LTAR is supported by a Special Site Evaluation in accordance with Rule .0510 of this  
22 Subchapter; and
- 23 (3) 25-foot setback shall be maintained to all property lines, unless one of the following criteria is met:
- 24 (A) site-specific nitrogen migration analysis for a TS-I system indicates that the ~~nitrogen~~ nitrate-  
25 nitrogen concentration at the property line will not exceed 10 mg/L; or
- 26 (B) TS-II system is used.
- 27

28 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*  
29 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1205

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), rather than "Sand lined trench systems receiving TS-I or TS-II effluent may be proposed in accordance", say "Sand lined trench systems receiving TS-I or TS-II effluent shall meet the requirements of this Rule" or something like "This Rule shall apply to sand lined trench systems receiving TS-I or TS-II effluent."*

*In (a), what is meant by "except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply"? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.*

*What is the overall intent of (b)? It seems to be missing some language.*

*In (c), please change "is proposed" to "is used" Also, what is the "required minimum vertical separation"*

*Please add "the" at the beginning of (c)(1) and (2).*

*In (c)(2), who has the discretion as to whether a SWC can be reduced? Is it the engineer, designer, or the installer or is it the Department? If it is the Department and an approval is necessary, please provide the factors as to how the decision will be made.*

*In (e), please change "is required" to "shall be required"*

*Please begin (e)(1) and (2) with "when the"*

*In (f), is it at the discretion of the designer, engineer, or installer (whomever is appropriate here)?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1205 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .1205 ADVANCED PRETREATMENT SAND LINED TRENCH SYSTEMS**

- (a) Sand lined trench systems receiving TS-I or TS-II effluent may be proposed in accordance with the requirements of this Rule. Except as otherwise required in this Rule, the requirements of Rule .0906 of this Section shall apply.
- (b) The site meets the criteria in Rule .0906(b) of this Subchapter and the receiving permeable horizon may be deeper than 60 inches below the natural grade.
- (c) If ~~artificial drainage~~ a groundwater lowering system is proposed to meet the required minimum vertical separation ~~distance~~ to a SWC ~~that is not related to lateral water movement~~, SWC, the following conditions shall apply:
  - (1) site shall comply with the requirements of Rule .0906(c) of this Subchapter; and
  - (2) vertical separation ~~distance~~ requirement to a SWC may be reduced to nine inches with pressure dosed gravity distribution or six inches with pressure dispersal.
- (d) Table XXX shall be used to determine the LTAR for a sand-lined trench system and shall be based on the most limiting, naturally occurring soils overlying the permeable receiving layer. The LTAR shall be one of the following:
  - (1) the rate set forth in Table XXX; or
  - (2) 20 percent of the in-situ Ksat of the ~~most hydraulically limiting overlying soil~~ receiving permeable horizon or the rate set forth in Table XXX, whichever is less.

**TABLE XXX.** LTAR for advanced pretreatment sand lined systems based on texture of the most hydraulically limiting overlying soil horizon

<b>Soil Group</b>	<b>Texture of Most Hydraulically Limiting Overlying Soil Horizon</b>	<b>LTAR (gpd/ft<sup>2</sup>) *</b>
I	Sand	0.9 – 1.4
II	Coarse Loams	0.7 – 1.0
III	Fine Loams	0.4 – 0.8
IV	Clays	0.2 – 0.4

\*There shall be no reduction in trench length compared to a conventional gravel trench when Accepted or Innovative gravelless trench product is used.

- (e) A Special Site Evaluation in accordance with Rule .0510 of this Subchapter is required for the following conditions to field verify the LTAR:
  - (1) texture of the receiving permeable horizon is sandy loam or loam, and the system DDF is greater than 600 gpd; or
  - (2) texture of the receiving permeable horizon is silt loam.
- (f) Setback reductions in accordance with Table XXVII of Rule .1202 of this Section may be applied with sand lined trench systems.

1 (g) Sand lined trench system installation shall be in accordance with Rule .0906(g) of this Subchapter and pressure dispersal  
2 shall be required.

3

4 *History Note: Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.*

5 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1206

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), what is meant by “except otherwise required in this Rule, the requirements of Rule .0901 of this Subchapter shall apply”? Are there duplicate, but competing requirements with .0901? I think that perhaps some different language here could help clarify this.*

*In (b), by “may be approved”, do you mean “shall be approved”? Alternatively, by “bed systems... may be approved”, do you mean “Bed systems... shall meet the following requirements.” Please review and clarify.*

*In (a)(1)(A), delete “are met”*

*In (b)(1)(C), what is meant by “sites limited”?*

*In (b)(2) and (3), is the “may” at the discretion of the designer or installer (whomever is appropriate), or at the discretion of the LHD or State?*

*In (c), by “may be approved”, do you mean “shall be approved”?*

*Please add “there is” at the beginning of (c)(1)(A).*

*In (c)(2)(B), where is the table regarding the lowest LTAR for the applicable soil group. Please provide the cross-reference to this table.*

*In (c)(2)(D), is the discretion whether and how much to reduce the minimum bed size at the discretion of the installer or PE?*

*In (c)(2)(E), please change “shall not” on line 10 to “are”, “shall be” on line 11 to “is” and “shall be” on line 11 to “is.”*

*In (c)(2)(E), please delete or define “directly*

*In (c)(3), please delete “shall be required” on line 16 after “Subchapter”*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

*In (c)(4), what is meant by “may be proposed”, do you mean simply that “Setback reductions as set forth in Table XXVII of Rule .1202 shall apply as follows:”?*

*In (c)(4)(D), please change “are” to “shall be” in “are allowed” and delete “No other setback reductions are allowed” as it appears to be superfluous.*

*In (c)(5)(A), please delete or define “directly”*

*In (c)(5)(B), please change “shall not be” on line 36 to “is”, change “shall be” on line 37 to “is”, “shall not have” on line 1 to “does not” and “shall be” on line 3 to “are” for purposes of consistency.*

*In (d)(1)(c), please change “shall be maintained” to “is maintained”*

*In (d)(2)(B), is the reduction and amount at the discretion of the installer or engineer?*

*In (d)(2)(C), please change “shall be” on lines 25 and 26 to “are” for purposes of consistency.*

*In (d)(5)(A), please delete or define “directly”*

*In (e), I assume that the proposal will be approved so long as it meets these requirements?*

*In (e)(3), please change “shall not” to “does not” for purposes of consistency with the rest of (e).*

*In (e)(4), what is meant by “uniformly”*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1206 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1206 ADVANCED PRETREATMENT BED SYSTEMS**

4 (a) Except as otherwise required in this Rule, the requirements of Rule .0901 of this Section shall apply.

5 (b) Bed systems receiving NSF-40 effluent, or better, on sites with a DDF not to exceed 600 gpd may be approved when the  
6 following requirements have been met:

7 (1) the soil and site shall meet the following criteria:

8 (A) the vertical separation ~~distance~~ requirements of Rule ~~.0901(f)(2)~~ .0901(g)(2) of this Subchapter  
9 are met;

10 (B) soil texture is Group I, II or III; and

11 (C) sites limited by topography, available space, or other site constraints;

12 (2) Table XVI in Rule ~~.0901(e)~~ .0901 of this Subchapter is used to determine the LTAR for a bed system. On  
13 sites where the soil texture is Group I or II, the LTAR may be increased by a factor of 1.125 with no further  
14 reduction in bed size allowed;

15 (3) setback reductions allowed in Table XXVII of Rule .1202 of this Section may be used; and

16 (4) bed system installation shall be in accordance with Rule .0903(d) of this Subchapter.

17 (c) Bed systems receiving TS-I or TS-II effluent on sites with a DDF less than or equal to 1,500 gpd may be approved when  
18 the following requirements have been met:

19 (1) The soil and site meet the following criteria:

20 (A) a minimum of 30 inches of suitable Group I or II soils below the naturally occurring soil surface  
21 and no SWC within the first 36 inches below the naturally occurring soil surface or 36 inches of  
22 Group I soils below the naturally occurring soil surface and no SWC exists within the first 12  
23 inches below the naturally occurring soil surface;

24 (B) the requirement for 30 inches of Group I or II soils or 36 inches of Soil Group I in Part (c)(1)(A)  
25 of this Rule may be reduced to 18 inches when a Special Site Evaluation in accordance with Rule  
26 .0510 of this Subchapter is provided;

27 (C) sites shall have a uniform slope not exceeding two percent, unless a Special Site Evaluation  
28 submitted and approved in accordance with Rule .0510 of this Subchapter is provided; and

29 (D) the bed system shall be considered to be a fill system if the infiltrative surface is installed less  
30 than six inches below the naturally occurring soil surface. For bed systems in fill, the  
31 requirements of Paragraph (e) of this Rule shall also be met.

32 (2) Table XVI in Rule ~~.0901(e)~~ .0901 of this Subchapter shall be used to determine the initial LTAR for a bed  
33 system and shall be based on the most limiting, naturally occurring soil horizon within 36 inches of the  
34 naturally occurring soil surface or to a depth of 12 inches below the bed bottom, whichever is deeper. The  
35 minimum bed size shall be determined in accordance with the following:

36 (A) the minimum amount of bottom area square feet shall be determined by dividing the DDF by the  
37 LTAR;

- 1 (B) when the bed is a fill system, the lowest LTAR for the applicable Soil Group shall be used. The  
 2 LTAR shall not exceed 1.0 gpd/ft<sup>2</sup>;
- 3 (C) fill shall not be added to the naturally occurring soil surface in order to increase the LTAR of a  
 4 bed system;
- 5 (D) the minimum bed size may be reduced by up to 25 percent when the system is designed to meet  
 6 TS-I or TS-II effluent and is not installed in existing fill; and
- 7 (E) the minimum bed size may be reduced by up to 40 percent when the following criteria are met:  
 8 the system is designed to meet TS-II effluent; Group I Soil is present in the first 36 inches of  
 9 naturally occurring soil; no SWC exists within the first 30 inches below the naturally occurring  
 10 soil surface or within 24 inches of the bed bottom; the bed or beds shall not be located directly  
 11 beneath the advanced pretreatment components, and pressure dispersal is used; effluent shall be  
 12 distributed to the beds by a pump and timer control system designed to distribute flow evenly over  
 13 a 24-hour period; and there shall be 100 percent dispersal field repair area.
- 14 (3) A Special Site Evaluation shall be submitted and approved in accordance with Rule .0510 of this  
 15 Subchapter shall be required when the vertical separation ~~distance~~ to a ~~limiting condition~~ LC is reduced  
 16 and on sites with slopes greater than two percent.
- 17 (4) Setback reductions allowed in Table XXVII of Rule .1202 of this Section may be proposed in accordance  
 18 with the following:
- 19 (A) the setbacks shall be measured from the nearest edge of the ~~gravel~~ bed;
- 20 (B) for bed systems using fill, the setbacks shall be measured from a point five feet from the nearest  
 21 edge of the ~~gravel~~ bed sidewall, or from the projected toe of the slope that is required to meet the  
 22 soil and site limitations, whichever is greater;
- 23 (C) the minimum separation between initial and repair dispersal field areas serving a single system  
 24 and facility shall be two feet of naturally occurring soil. Ten feet of naturally occurring soils shall  
 25 separate the initial and repair dispersal field areas serving separate facilities when these bed  
 26 systems are on a common site or tract of land; and
- 27 (D) whenever the bed size is reduced in accordance with this Rule, only reduced setbacks to artificial  
 28 drainage systems in accordance with Table XXVII of Rule .1202 of this Section are allowed. No  
 29 other setback reductions are allowed.
- 30 (5) Bed system installation shall be in accordance with Rule .0903(d) of this Subchapter and the following:
- 31 (A) pressure dispersal shall be used whenever effluent is distributed to a bed not located directly  
 32 beneath the advanced pretreatment component; and
- 33 (B) when new fill is required for the installation of a bed system, suitable Group I fill material shall be  
 34 used to meet the vertical separation ~~distance~~ requirements from the bed bottom to an ~~unsuitable~~  
 35 ~~limiting condition~~, a LC, when all of the following conditions are met: a groundwater lowering  
 36 system shall not be used to meet the vertical separation ~~distance~~ requirements; new fill material  
 37 shall be sand or loamy sand, containing not more than 10 percent by volume fibrous organics,

1 building rubble, or other debris and shall not have discreet layers containing greater than 35  
2 percent of shell fragments by volume; and the requirements of Rule .0909(c)(8) of this  
3 Subchapter, for the projected side slope of the fill shall be met, as determined beginning at a point  
4 six inches above the top edge of the ~~gravel~~ bed.

5 (d) Bed systems receiving TS-I or TS-II effluent on sites with a DDF greater than 1,500 gpd and less than or equal to 3,000  
6 gpd may be permitted on the following sites:

- 7 (1) The soil and site shall meet the minimum following criteria:
- 8 (A) Group I soils are present for 54 inches below the naturally occurring soil surface;
  - 9 (B) no SWC exists within the first 48 inches below the naturally occurring soil surface; and
  - 10 (C) vertical separation ~~distance~~ of 24 inches to any SWC shall be maintained below the bed bottom,  
11 unless a site-specific groundwater mounding analysis is performed and demonstrates a 12-inch  
12 separation or 18-inch minimum for a fill system in accordance with Rule .0909(c) of this  
13 Subchapter shall be maintained.
- 14 (2) Table XVI in Rule .0901 of this Subchapter shall be used to determine the initial LTAR for a bed system  
15 and shall be based on the most limiting, naturally occurring soil horizon within 36 inches of the naturally  
16 occurring soil surface or to a depth of 12 inches below the bed bottom, whichever is deeper. The minimum  
17 bed size shall be determined in accordance with the following:
- 18 (A) the minimum number of square feet of bed bottom area shall be ~~determined~~ calculated by dividing  
19 the DDF by the LTAR;
  - 20 (B) the minimum bed size may be reduced by up to 25 percent when the system is designed and  
21 approved to meet TS-I or TS-II effluent standards and will be installed in naturally occurring soil;  
22 and
  - 23 (C) the minimum bed size may be reduced by up to 40 percent when all of the following criteria are  
24 met: the system is designed and approved to meet TS-II effluent standards; the hydraulic  
25 assessment demonstrates that a 24-inch minimum vertical separation ~~distance~~ to a SWC shall be  
26 maintained after accounting for projected groundwater mounding; and there shall be 100 percent  
27 dispersal field repair area.
- 28 (3) A Special Site Evaluation shall be submitted and approved in accordance with Rule .0510 of this  
29 Subchapter.
- 30 (4) No setback reductions shall be allowed in accordance with Table XXVII of Rule .1202 of this Section. The  
31 following horizontal setbacks shall be met:
- 32 (A) the minimum setback between initial and repair dispersal field areas serving a single system and  
33 facility shall be two feet of naturally occurring soil. Ten feet of naturally occurring soil shall  
34 separate the initial and repair dispersal field areas serving separate facilities when these bed  
35 systems are on a common site or tract of land;
  - 36 (B) when two beds are used, the minimum separation between two beds shall be 20 feet. When three  
37 or more beds are used, the minimum separation between beds shall be 10 feet; and

1 (C) a 25-foot setback shall be maintained from edge of the bed to the property line unless a site-  
2 specific nitrogen migration analysis indicates that the ~~nitrate~~ nitrate-nitrogen concentration at the  
3 property line will not exceed 10 ~~m/L~~, mg/L or TS-II or better effluent is produced by the approved  
4 system.

5 (5) Bed system installation shall be in accordance with Rule .0903(d) of this Subchapter and the following  
6 criteria:

7 (A) two or more equally sized beds shall be used and the beds shall not be located directly beneath the  
8 advanced pretreatment components; and

9 (B) effluent shall be distributed to the beds by a pressure dispersal system. A timer control system  
10 shall be used to distribute flow evenly to the beds over a 24-hour period.

11 (e) Bed systems receiving TS-I or TS-II quality effluent may be proposed for a site with existing fill that meets the  
12 requirements of Rule .0909(d) of this Subchapter under the following conditions:

13 (1) no SWC exists within 18 inches of the existing fill surface;

14 (2) 18 inches of vertical separation exists to the SWC;

15 (3) the DDF shall not exceed 480 gpd; and

16 (4) pressure dispersal is used. The requirement for pressure dispersal shall not be required if the advanced  
17 pretreatment system PIA Approval allows for advanced pretreatment unit(s) to discharge directly to the  
18 underlying bed and for multiple units, where applicable, to be uniformly laid out over the bed area.

19  
20 *History Note:* Authority G.S. 130A-334; 130A-335; 130A-342; 130A-343.

21 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1302

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please change "this Rule applies" to "this Rule shall apply"*

*In (b), please consider changing "the following provisions apply" to "the following applies"*

*In (b)(1), I understand that different systems may require different operator classifications and that will be set forth in the OP: however, how will the decision be made as to what classification will be appropriate? Is this set forth elsewhere in rule or statute?*

*In (b)(2), just so I understand the use of "as applicable" here, are there going to be times that it will not be necessary to notify the LHD, the State, and the manufacturer? Also, how is this requirement different than that in .1304(f)? This appears to be a duplicative requirement.*

*In (c)(5), page 2, line 2, please change "the Subchapter" to "this Subchapter"*

*In (c)(5)(B), what is meant by "State certified laboratory"? Do you mean certified by CPH?*

*In (c)(5)(C), what is meant by "complete chain of custody"*

*IN (e)(1), what is meant by "compliant conditions"*

*In Item (1), rather than "the arithmetic mean (geometric mean for Fecal Coliform)" please consider saying "the geometric mean for Fecal Coliform" and delete "the arithmetic mean"?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1302 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1302 OPERATION AND MAINTENANCE OF ADVANCED PRETREATMENT SYSTEMS**

4 (a) This Rule applies to all advanced pretreatment systems approved in accordance with Sections .1500 and .1700 of this  
5 Subchapter.

6 (b) System management in accordance with Table XXXI of Rule .1301 of this Section shall be required for advanced  
7 pretreatment systems. The following provisions apply to the operation and maintenance contracts for advanced pretreatment  
8 systems:

9 (1) prior to the issuance or re-issuance of an OP for an advanced pretreatment system, the owner shall provide  
10 to the LHD documentation that a contract for operation and maintenance of the system is in place with a  
11 Management Entity. For proprietary advanced pretreatment systems, the contract shall be with either the  
12 manufacturer, manufacturer's representative, or a Management Entity authorized in writing by the  
13 manufacturer or manufacturer's representative to operate the system. For non-proprietary advanced  
14 pretreatment systems, the contract shall be with an operator certified for the classification indicated on the  
15 OP; and

16 (2) the Management Entity shall notify the ~~LHD and LHD~~, the ~~State State~~, and the proprietary advanced  
17 pretreatment manufacturer, as applicable, when the owner chooses to not renew an operation and  
18 maintenance contract executed in accordance with this Paragraph.

19 (c) Operation and maintenance for advanced pretreatment shall be in accordance with the following:

20 (1) the Management Entity shall evaluate the performance of each system;

21 (2) minimum inspection, sampling, and reporting frequency shall be in accordance with this Section, Rule  
22 .1709 of this Subchapter, the RWTS or PIA Approval, and conditions of the OP;

23 (3) the Management Entity shall inspect each system during one or more of the required Management Entity  
24 ~~inspection~~ inspections while the system is in operation using a VIP specified by the manufacturer and  
25 included in the RWTS or PIA Approval. The VIP shall include the following:

26 (A) a visual inspection and evaluation of all critical treatment components and of the effluent in the  
27 field for solids, clarity, color, and odor. The VIP shall also include field tests of pH, turbidity, and  
28 dissolved oxygen content and, for TS-II systems, alkalinity, and any other tests proposed by the  
29 manufacturer and specified in the RWTS or PIA Approval;

30 (B) criteria to determine system compliance status and proposed responses to conditions observed;  
31 and

32 (C) for systems serving vacation rentals subject to the North Carolina Vacation Rental Act, G.S. 42A,  
33 this visit shall be scheduled during the seasonal high use period and shall coincide with a water  
34 quality sampling event if required in accordance with Rule .1709 of this Subchapter;

35 (4) the actual flow shall be recorded in accordance with the RWTS or PIA Approval by the Management  
36 Entity prior to the visual inspection of the system in accordance with Subparagraph (c)(3) of this Rule and  
37 prior to any effluent sampling event required in accordance with Rule .1709 of this Subchapter; and

(5) sampling and resampling for an approved ~~RWTS, Provisional, and Innovative~~ RWTS or PIA System shall be undertaken as required in accordance with Rule .1709 of the Subchapter and the following:

(A) all samples shall be collected, preserved, transported, and analyzed in compliance with 40 CFR 136;

(B) samples shall be taken to a State certified laboratory for analyzing;

(C) complete chain of custody from sample collection to analysis for each sample collected shall be maintained; and

(D) repeat sampling at any site shall be performed as required in the RWTS or PIA Approval, Rule .1709 of this Subchapter, or as otherwise directed by the LHD or State as part of an enforcement action. The owner, manufacturer, or manufacturer's representative may also re-sample a system to verify or refute sample results and substitute out of compliance samples with compliant samples. All samples results collected shall be reported.

(d) The results of all effluent sampling shall be reported by the Management Entity to the owner, LHD and the State. LHD, State, and the proprietary advanced pretreatment manufacturer.

(e) An individual advanced pretreatment system at a single site shall be considered compliant when the following conditions are met:

(1) annual VIP specified in the RWTS or PIA Approval indicates compliant conditions; and

(2) arithmetic mean (geometric mean for Fecal Coliform) of each constituent across three or more consecutive sampling dates does not exceed the designated effluent standard in Table XXIV in Rule .1201 of this Subchapter. Non-compliant data may be substituted with a new data set found to meet the designated effluent standard upon re-sampling within 30 days of receipt of the non-compliant data results for purposes of meeting the effluent quality standard.

(f) Mass loading for BOD<sub>5</sub>, TSS, or TN may be used to show site compliance with Subparagraph ~~(d)(2)~~ (e)(2) of this Rule for ~~TN for a TS-II wastewater~~ system with a DDF less than or equal to 3,000 gpd. The mass loading to the wastewater system shall be based on site specific water use data and effluent sampling results. At least one year of water use data shall be used in this calculation. The mass loading to the wastewater system shall be calculated as follows:

$$\text{EML} = \text{Flow} \times \text{TN EFF (mg/L)}$$

$$\text{AML} = 0.6 \times \text{DDF} \times 30 \text{ TS mg/L (mg/L)}$$

If  $\text{EML} \leq \text{AML}$ , the site is compliant

Where EML = effective mass loading

AML = allowable mass loading

Flow = average daily flow during the peak water use month or the average of the peak 30 consecutive day period during the prior year

~~TN~~ EFF = average of the most recent effluent sampling ~~results.~~ results for the constituent (BOD<sub>5</sub>, TSS, or TN). A minimum of two effluent sampling results shall be required



REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1303

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Just so I understand, in (a)(2), when would it be necessary to remove the contents of a tank? Is this to prevent (a)(1)(A) through (C)*

*In (a)(1)(A), please delete or define "directly"*

*IN (a)(2), what is meant by "Legal remedies may be pursued after an authorized agent has observed and documented one or more of the malfunctioning conditions and has issued an NOV"? What is your specific authority for this?*

*In (a)(3), what is meant by "proper operation"?*

*In (a)(3), when is cleaning or replacement needed?*

*In (a)(5), when is pumping needed?*

*In (b)(5), are these to be determined by the owner and the Management Entity?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1303 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1303 OWNER RESPONSIBILITIES FOR WASTEWATER SYSTEM OPERATION AND**  
4 **MAINTENANCE**

5 (a) Any person owning or controlling the property upon which a wastewater system is installed shall be responsible for the  
6 following items regarding the operation and maintenance of the system:

7 (1) the wastewater system shall be operated and maintained to protect North Carolina ground and surface water  
8 quality standards and to prevent the following conditions:

9 (A) discharge of sewage or effluent to the surface of the ground, surface waters, or directly into  
10 groundwater at any time;

11 (B) back-up of sewage or effluent into the facility, building drains, collection system, freeboard  
12 volume of the tanks, or distribution system; or

13 (C) effluent within three inches of finished grade over one or more trenches based on two or more  
14 observations made not less than 24 hours apart, and greater than 24 hours after a rainfall event;

15 (2) the system shall be considered to be malfunctioning when it fails to meet one or more of the conditions of  
16 Subparagraph (a)(1) of this ~~Rule, either continuously or intermittently, Rule~~ or if it is necessary to remove  
17 the contents of the tank(s) at a frequency greater than once per month in order to satisfy these conditions.  
18 The owner shall contact the LHD when the wastewater system is malfunctioning. Legal remedies may be  
19 pursued after an authorized agent has observed and documented one or more of the malfunctioning  
20 conditions and has issued an NOV;

21 (3) wastewater systems shall be inspected, and the entire contents of all septic tank compartments shall be  
22 removed to ensure proper operation of the system. The contents shall be pumped whenever the solids level  
23 (scum and sludge) is found to be more than 1/3 of the liquid depth in any compartment. The effluent filter  
24 shall be cleaned or replaced as needed;

25 (4) residuals from the wastewater system shall be transported and disposed of in accordance with G.S. 130A,  
26 Article 9, and 15A NCAC 13B et seq;

27 (5) grease traps and grease tanks shall be pumped as needed, but no less than yearly. ~~The owner shall maintain~~  
28 ~~a contract with a certified pumpier. Grease traps and grease tanks shall be maintained in accordance with~~  
29 Rule .0803(h) of this Subchapter and the owner shall maintain a contract with a septage management firm.  
30 All pumping records shall be maintained onsite;

31 (6) site-specific vegetation shall be established and maintained over the wastewater system and repair area to  
32 stabilize slope and control erosion; and

33 (7) activities that result in soil disturbance or soil compaction shall not occur over the initial and repair  
34 dispersal field areas.

35 (b) A contract shall be executed between the system owner and a Management Entity prior to the issuance of an OP for a  
36 system required to be maintained by a Management Entity, as specified in Table XXXI of Rule .1301 of the Section, unless  
37 the system owner and Management Entity are the same. The contract shall include:

- 1 (1) specific requirements for operation, maintenance, and associated reporting;
- 2 (2) responsibilities of the owner;
- 3 (3) responsibilities of the system Management Entity;
- 4 (4) provisions that the contract shall be in effect for as long as the system is in use; and
- 5 (5) other requirements for the continued performance of the system.

6

7 *History Note: Authority G.S. 130A-335(e) and (f).*

8 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1304

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please add commas before and after "at a minimum"*

*In (a), how will it be determined whether additional certifications will be necessary?  
Please provide some factors.*

*In (a), what is meant by "with the commission governing operators of water pollution control facilities"? Do you mean the Water Treatment Facility Operators Board of Certification"? Also, what is meant by "if required by G.S. 90A"? Do you mean the on-site wastewater contractors and inspectors certification board in Article 5 of G.S. 90A?*

*How is (f) different than .1302(b)(2)? These appear to be duplicate requirements.*

*In (g), what written report? Is there a cross-reference available?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1304 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1304 MANAGEMENT ENTITY RESPONSIBILITIES FOR WASTEWATER SYSTEM**  
4 **OPERATION AND MAINTENANCE**

5 (a) When a Management Entity is required to be or to employ a certified operator as ~~specific~~ specified in Table XXXI in Rule  
6 .1301 of this Section, the operator shall at a minimum be certified as a subsurface operator in accordance with G.S. 90A,  
7 Article 3, and the rules in 15A NCAC 08G. Operators of systems classified as Type V or VI in Table XXXI may be required  
8 to have additional certifications by the State, upon consultation with the commission governing operators of water pollution  
9 control facilities, if required by G.S. 90A.

10 (b) The Management Entity shall inspect the wastewater system at the frequency specified in Table XXXI in Rule .1301 of  
11 this Section or in accordance with the RWTS or PIA Approval.

12 (c) The Management Entity shall provide a copy of the inspection ~~report~~ report, including results of the VIP and effluent  
13 sampling, to the owner and LHD within 30 days of the system inspection.

14 (d) When inspections indicate the need for system repairs, the Management Entity shall notify the LHD within 48 hours for  
15 the owner to obtain a CA for the repairs.

16 (e) The Management Entity shall be responsible for assuring routine maintenance procedures and monitoring requirements in  
17 accordance with the conditions of the OP and the contract.

18 (f) The Management Entity shall notify the LHD when the owner or the Management Entity chooses not to renew an  
19 operation and maintenance contract executed in accordance with this Rule.

20 (g) The Management Entity shall submit their written report to the State centralized data management system.

21

22 *History Note: Authority G.S. 130A-335(e) and (f).*

23 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1305

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), what are the "operation and maintenance requirements"? Those set forth in these Rules?*

*In (b), please delete "resolution of"*

*In (e), by "may" do you mean "shall"? If you mean "may", how will it be determined whether a notice of non-compliance will be issued?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1305 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1305 LOCAL HEALTH DEPARTMENT RESPONSIBILITIES FOR WASTEWATER SYSTEM**  
4 **OPERATION AND MAINTENANCE**

5 (a) No IP, CA, or OP shall be issued for Type IV, V, or VI systems, unless a Management Entity of the type specified in  
6 Table XXXI in Rule .1301 of this Section is authorized and operational to carry out operation and maintenance requirements  
7 for the wastewater system.

8 (b) A LHD may be the Management Entity only for systems classified Type IV, Va, ~~and Vb~~ Vb, Vc, Vd, Ve, Vf, and Vg and  
9 only when authorized by resolution of the local board of health.

10 (c) An authorized agent shall review the performance and operation reports submitted in accordance with Rule .1304(c) of  
11 this Section and perform an on-site compliance inspection of the systems as required in Table XXXI in Rule .1301 of this  
12 Section. More frequent inspections may be performed by an authorized agent if requested by the system owner or the  
13 Management Entity, or identified in the PIA approval or OP.

14 (d) The LHD may provide the owner with the option for a private Management Entity to perform the on-site compliance  
15 inspection for Type IIIb and ~~IIIh~~ IIIh systems in accordance with Table XXXI in Rule .1301 of this Section instead of the  
16 LHD. The Management Entity shall provide to the owner and LHD a written compliance inspection report.

17 (e) The LHD or State may issue a written notice of non-compliance to the owner when the wastewater system is non-  
18 compliant with the performance standards listed in the CA and OP.

19

20 *History Note: Authority G.S. 130A-335(e) and (f).*

21 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1306

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*I'm a bit confused regarding the overall process of this Rule. For example, how do (c) and (f) go together? How about (d)? Does requirement only apply when there is a malfunction in accordance with Rule .1303 or whenever something in (a) occurs? Please review this Rule as a whole and clarify the process where needed.*

*In (a)(2), please delete "directly"*

*In (a)(3), what is meant by "destroyed"?*

*In (b), when will a time frame other than 30 days be required? How will this determination be made?*

*In (c), when must the owner apply for a repair permit? Also, what is a "repair permit"? Do you mean a CA? "repair permit" is not used elsewhere in these Rules.*

*In (d), what is meant by "its best professional judgment"? Wouldn't the owner just need to fix what is broken such that you could say something like "The owner shall make any necessary repairs that will enable the system to function in accordance with the manufacturer's specifications"?*

*Please end (f) with something like "subject to the following" to provide some introduction to (f)(1) and (2).*

*In (f)(1), is the responsibility on the LHD to obtain the information or on the owner to provide the information? If it's on the owner, please say something like "Prior to issuance of the CA by the LHD, the Owner shall provide the following information:"*

*In (h), by "may be approved", do you mean "shall be approved"? If you mean "may", please say how this determination will be made.*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1306 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .1306 SYSTEM MALFUNCTION AND REPAIR**

- (a) The LHD or State shall issue a written NOV to the wastewater system owner for the following:
  - (1) malfunctioning wastewater system determined in accordance with Rule .1303(a)(1) and (2) of this Section;
  - (2) wastewater system that creates or has created a public health hazard or nuisance by effluent surfacing, or effluent discharging directly into groundwater or surface waters; or
  - (3) wastewater system that is partially or totally destroyed.
- (b) The wastewater system shall be repaired within 30 days of ~~notification~~ the date on the NOV issued by the State or LHD unless the NOV specifies a different time frame for the repair.
- (c) The owner shall apply for a repair permit in accordance with Section .0200 of this Subchapter.
- (d) After investigating the malfunction, the State or LHD shall use its best professional judgement in requiring repairs that will enable the system to function.
- (e) When necessary to protect the public health, the State or LHD shall require the owner of a malfunctioning system to pump and haul sewage to an approved wastewater system during the time needed to repair the wastewater system. This requirement shall be included in the NOV issued to the owner.
- (f) If no repair options are available for the wastewater system, the LHD may issue a CA for a permanent pump and haul system.
  - (1) Prior to issuing the CA, the LHD shall receive the following information from the owner:
    - (A) confirmation that a septage management firm permitted in accordance with G.S. 130A-291.1 is under contract to pump and haul the sewage from the pump and haul tanks;
    - (B) documentation of the approved wastewater system that will be accepting the sewage. The wastewater system shall be approved under this Subchapter or approved ~~by the Environmental Management Commission~~ in accordance with 15A NCAC 02H or 15A NCAC 02T; and
    - (C) documentation from the facility receiving the sewage confirming that the facility has the capacity for the additional sewage.
  - (2) A non-transferrable OP, valid for a period not to exceed five years, shall be issued to the pump and haul system owner.
- (g) A malfunctioning wastewater system that has been disconnected from the facility for any reason shall be repaired prior to reuse.
- (h) If a malfunctioning wastewater system is found to be ~~nonrepairable, or is no longer required,~~ nonrepairable the dispersal system shall not be used. Tanks may be approved by the LHD for permanent pump and haul if shown to be structurally sound and watertight. The system owner shall be required to abandon the system to protect the public health and safety as specified in Rule .1307 of this Section.

*History Note: Authority G.S. 130A-291.1; 130A-291.2; 130A-335(e) and (f).  
Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1307

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please consider breaking the requirements of the system into a list.*

*On line 4, is the wording of "if a wastewater system is no longer required to be used" accurate? This is a bit awkward, would it be correct to say something like "if a wastewater system is abandoned or is otherwise no longer in use, the tanks shall*

- (1) have the contents removed by a septage management firm permitted in accordance with G.S. 130A-291.1;*
- (2) be collapsed, backfilled, or otherwise secured; and*
- (3) have the aboveground components de-energized and removed.*

*On line 6, what is meant by "otherwise secured"? I think some additional information would be helpful here.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1307 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1307 WASTEWATER SYSTEM ABANDONMENT**

4 If a wastewater system is ~~found to be non-repairable or is no longer required,~~ required to be used, the tanks shall have the  
5 contents removed by a septage management firm permitted in accordance with G.S. 130A-291.1, the tanks collapsed,  
6 backfilled, or otherwise secured, and the aboveground components de-energized and removed as directed by the authorized  
7 agent to protect public health and safety.

8

9 *History Note: Authority G.S. 130A-335.*

10 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1401

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Overall, I'm having a difficult time understanding what is going on in this Section – is .1401 supposed to be an overview of what is required for each approval (or preapproval as stated in .1404) and then each Rule is intended to address a specific product? Or is (a) specific to prefabricated tanks and the other rules are specific to other products? I think it's the latter, but either way, please make it clear in the body of the text of the Rule to what the rule is applying.*

*In (a), how will be it determined whether these are approved? Are the standards or factors in determining approval set forth elsewhere? If so, please provide a cross-reference. I see in (e) what they are required to give you, but I don't see how you're going to decide to approve one over another. Also, is the process for this approval that they submit an application (which this Rule does not speak to, so I may be assuming incorrectly) and also the plans and specifications with the information provided in (c)? I think this could be much more clear.*

*Would it make sense to make the second sentence in (a) its own Paragraph?*

*(b) seems to have some extra language. For example, "tank or appurtenance (tank approval...) Is the first tank referring to the same as the second tank? Please review and clarify if needed.*

*In (b), I don't understand the use of "subsequent changes or modifications" here. Is the intent that each time they make a change or modification to an approved tank or appurtenance, they need to get another approval? If so, say that. If you all decide to keep this language here (which I don't know is totally clear,) please put commas before and after "including subsequent changes or modifications" I would suggest putting this language with the second sentence in (a) as its own paragraph and say something like "All tanks, risers, effluent filters, and pipe penetrations approved by the State shall maintain the materials, designs, and construction specified in the approved plans and shall comply with all rule of this Section." Any subsequent changes or modifications shall be approved by the State in accordance with this Rule." Again, assuming that this I the intent.*

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

*In (c), please consider changing “show the design in detail, including the following:” to “shall include the following:” If you choose not to do this, please delete or define “in detail”*

*In (c), please delete or define “pertinent.” By pertinent, do you mean those dimensions in (c)(1)? If so, “pertinent” appears to be superfluous. Also, dimensions of what? The product?*

*In (c)(2), what is meant by “as applicable” here? Do all products not have reinforcement material? If not, I think this is fine, but I wanted to be sure.*

*In (c)(4), is the pipe penetration boot going to be approved in accordance with a different set of rules or this Rule?*

*In (c)(6), please delete “detailed”*

*In (c)(7), should “recommend” be “recommended”? Also, recommend by whom?*

*In (c)(7), since you’ve said “including”, “as applicable” is not needed.*

*In (d), please delete “in detail”*

*In (e), what is meant by “The information shall indicate the tank shall perform in the same manner and to the same standard as those designed in accordance with the rules of this Section”? Do you simply mean that in order to be approved, the tank must perform in accordance with the Rules of this Section? If so, say that. Also, do you mean Section or do you mean Rule? The other Rules of this Section appear to pertain to other things.*

*In (f), when will an inspection take place? At random?*

*In (f), please remove the comma after “system”*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1401 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1401 PLANS FOR PREFABRICATED TANKS**

4 (a) All tanks, risers, effluent filters, ~~or~~ and pipe penetrations proposed for use in a wastewater system shall be approved by  
5 the State. All tanks, risers, effluent filters, and pipe penetrations approved by the State shall maintain the materials, design,  
6 and construction specified in the approved plans and shall comply with all rules of this Section.

7 (b) Three separate sets of plans and specifications for the initial design of each tank or appurtenance (tank approval, riser  
8 approval, effluent filter approval, or pipe penetration approval) including subsequent changes or modifications shall be  
9 submitted to and approved by the State prior to being offered for sale or use in North Carolina.

10 (c) Plans and specifications for tanks with a total liquid capacity less than or equal to 4,000 gallons shall show the design in  
11 detail, including the following:

- 12 (1) all pertinent dimensions in inches, including:
  - 13 (A) top, bottom, and sidewall thickness and variations;
  - 14 (B) minimum and maximum dimensions on tanks with tapered or ribbed walls;
  - 15 (C) baffle wall minimum and maximum thickness and variations;
  - 16 (D) location and dimension of all openings in baffle wall for gas and liquid movement; and
  - 17 (E) dimensions of all compartments;
- 18 (2) material type and strength, including reinforcement material and location, as applicable, specified by the  
19 manufacturer;
- 20 (3) liquid depth and operating capacity in gallons;
- 21 (4) pipe penetration locations and State approved pipe penetration boot;
- 22 (5) methods and material for sealing sections and forming water tight joints in tanks with multiple sections;
- 23 (6) detailed drawings showing access openings, tank lids, access manhole risers, and other proposed  
24 appurtenances to the tank; and
- 25 (7) tank manufacturer and PE requirements for installation, including ~~bedding and bedding~~, recommend  
26 methods for additional sealing, as ~~applicable~~. applicable, and leak testing procedures.

27 (d) Plans and specifications for tanks with a total liquid capacity greater than 4,000 gallons and all tanks designed for traffic  
28 loads shall be designed by a PE in accordance with ASTM C890. Plans shall show the design in detail, including all the  
29 information listed in Paragraph ~~(d)~~ (c) of this Rule and engineering calculations showing the minimum and maximum soil  
30 cover, water table, and traffic load the tank is designed to support.

31 (e) Plans for prefabricated tanks other than those approved for general use and issued an identification number under this  
32 Section shall be considered for tank approval on an individual basis based on the information provided by the tank  
33 manufacturer or designer to the State. The information shall indicate the tank shall perform in the same manner and to the  
34 same standard as those designed in accordance with the rules of this Section.

35 (f) The State or LHD may inspect approved tanks at the place of manufacture, the inventoried sites of the distributors, or at  
36 the installation of the tank in a wastewater system, for compliance with the approved plans and specifications.

1 (g) Tanks found to be out of compliance shall be brought back into compliance by the tank manufacturer or the installer as  
2 directed by the State or LHD. Tanks that are not or cannot brought into compliance shall not be used in a wastewater system.  
3 The ~~imprint detailed~~ imprints identified in Rule ~~1402~~ 1402(d)(10) or (e)(8) of this Section shall be permanently marked over  
4 by the authorized agent.

5

6 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

7 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1402

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), please delete or define "excessive"*

*In (b), how will it be determined whether filters and access devices will be approved? Here, do you mean that they must meet the requirements set forth in these Rules?*

*In (c), please change "will be" to "are" in "will be deeper"*

*In (c), please delete or define "visibly"*

*Please add "a" at the beginning of (d)(1) and (2)*

*Please add "the" at the beginning of (d)(3) and (4).*

*In (d)(5), please add "there shall be"*

*In (d)(6), please delete or define "resilient" and "flexible." Alternatively, given the ASTM standard, do you need "resilient, watertight, sealed, non-corrodible, and flexible? Wouldn't they be all these things if they met the ASTM standard?"*

*In (d)(6), how will it be determined whether the tank will be approved by the State? Do you mean that it must meet the requirements of these Rules?*

*Please change (d)(8) to read "there shall be no openings below the septic tank operating liquid level"*

*In (d)(9), what is meant by "approved effluent filter"? Do you mean a filter meeting the requirements set forth in these Rules?*

*Please add "the" at the beginning of (d)(10).*

*What is the intent of (d)(11)? I don't understand its placement here. Should it go with (d)(9) as an alternative option?*

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

*In (d)(12)(G), will other methods be approved if they show identical performance? If so, please say something like “other methods for designing partitions shall be approved by the state on a case-by-case basis upon a showing that the performance is identical to those designed in accordance with this Rule.”*

*In (d)(13), please change “having” to “have”*

*In (d)(13), what is meant by “nominal”? Is this an industry term”?*

*In (d)(15), please delete or define “secured”? What is the difference in “locked” and ase add “shla*

*In (g), s“secured”?*

*In (e)(2), what is meant by “nominal clear” Is this different than “nominal”?*

*In (e)(3), when will two or more pumps be required? Also, what is meant by “larger or multiple access risers”? How is this to be determined?*

*In (g), is “the following modifications” accurate? Would it be appropriate to say something like “Siphon tanks shall meet the design requirements of Paragraph (e) of this Rule and shall:”*

*In (g)(1), please add “be” at the beginning. Also, what is meant by “the minimum dose and construction requirements of this Rule”? Is this something other than Paragraph (e)?*

*Please add “have” at the beginning of (g)(2).*

*Please add “the” at the beginning of (g)(3).*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1402 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1402 TANK DESIGN AND CONSTRUCTION**

4 (a) Tanks shall be watertight, structurally sound, and not subject to excessive corrosion or decay.

5 (b) Septic tanks and grease tanks shall have State approved effluent filters and access devices. An effluent filter and support  
6 case shall be installed level in the outlet end of the septic tank or grease tank and shall meet the following criteria:

- 7 (1) solvent welded to a minimum of three-inch PVC Schedule 40 outlet pipe;
- 8 (2) installed in accordance with filter manufacturer's specifications and effluent filter approval; and
- 9 (3) accessible and removable without entering the septic tank or grease tank.

10 (c) Septic tanks installed where the access openings on the top of the tank will be deeper than six inches below finished grade  
11 shall have an access riser over each compartment with cover, extending to within six inches of the finished grade. The  
12 opening shall be adequate to accommodate the removal of the septic tank lid. When the top of the septic tank or access riser is  
13 below the finished grade, the location of the tank shall be visibly marked at finished grade. Risers shall be installed in  
14 accordance with the rules of this Subchapter, the manufacturer's specifications, and a product specific approval.

15 (d) Septic tanks shall meet the following minimum design standards:

- 16 (1) minimum liquid depth of 36 inches;
- 17 (2) minimum of nine inches freeboard, measured as the air space between the top of the liquid and the bottom  
18 of the tank top. Venting of the tank shall be provided to prevent the buildup of gases;
- 19 (3) approved septic tank capacity shall be determined as the liquid volume below the outlet invert to the  
20 bottom of the tank;
- 21 (4) length of the tank shall be a minimum of twice as long as the width, as measured by the longest axis and  
22 widest axis based on the internal tank dimensions;
- 23 (5) three inlet openings in the tank, one on the tank end and one on each sidewall of the inlet end of the tank;
- 24 (6) outlet openings shall have a cast or manufactured penetration point and include resilient, watertight, sealed,  
25 non-corrodible, and flexible connective sleeve. The connective sleeve shall meet ASTM C1644 for precast  
26 concrete tanks or ASTM C1644, C923, or C564 for thermoplastic or glass-fiber-reinforced polyester tanks  
27 and be approved by the State;
- 28 (7) inlet penetrations shall be greater than or equal to four inches in diameter and outlet penetrations shall be  
29 greater than or equal to three inches in diameter;
- 30 (8) ~~no pipe penetration points or~~ openings shall be permitted below the septic tank operating liquid level;
- 31 (9) the outlet shall be through an approved effluent filter secured in place in an effluent filter support case. The  
32 effluent filter case inlet shall extend down to between 25 and 50 percent of the liquid depth measured from  
33 the top of the liquid level;
- 34 (10) invert of the outlet shall be a minimum of two inches lower in elevation than the invert of the inlet;
- 35 (11) other methods of supporting the effluent filter case and for making pipe penetrations shall meet all the  
36 requirements of this Rule and shall be reviewed on a case by case basis by the State;

1 (12) all septic tanks shall be designed with a partition so that the tank contains two compartments. The  
2 following conditions shall be met:

3 (A) the partition shall be located at a point not less than two-thirds or more than three-fourths the  
4 length of the tank from the inlet end;

5 (B) the partition shall be designed, manufactured, installed, and maintained to remain in position  
6 when subjected to a liquid capacity in one ~~compartment~~; compartment that corresponds with the  
7 lowermost elevation of the water passage slot or holes;

8 (C) the partition shall be designed to create a gas passage, not less than the area of the inlet pipe, and  
9 the passage shall not extend lower than seven inches from the bottom side of the tank top;

10 (D) the top and bottom sections of the partition shall be designed to create a water passage slot four  
11 inches high for the full interior width of the tank;

12 (E) a minimum of two four or five-inch openings, or one four or five-inch opening per 30 horizontal  
13 linear inches of baffle wall, whichever is greater, may be designed into the partition instead of the  
14 four-inch slot;

15 (F) the entire liquid passage in the partition wall shall be located between 25 and 50 percent of the  
16 liquid depth of the tank, as measured from the top of the liquid level; and

17 ~~(G) there shall be no other openings in the partition wall below the water passage slot or openings;~~  
18 ~~and~~

19 ~~(H)~~(G) other methods for designing partition showing performance identical to those designed in  
20 accordance with this Paragraph shall be considered for approval by the State on an individual  
21 basis;

22 (13) access openings shall be provided in the top of the tank, located over each compartment, and having a  
23 minimum nominal opening of 15 inches by 15 inches or 17 inches in diameter. The opening shall allow for  
24 maintenance and removal of internal devices of the septic tank;

25 (14) access risers and covers shall be designed and maintained to prevent surface water infiltration;

26 (15) tank lids and riser covers shall be locked, secured, or weigh a minimum of 40 pounds, but no more than 80  
27 pounds; and

28 (16) all septic tanks shall bear an imprint identifying the manufacturer, the septic tank serial number assigned to  
29 the manufacturer's plans and specifications approved by the State, and the liquid or working capacity of the  
30 tanks. The imprint shall be located to the right of the blockout made for the outlet pipe on the top or end of  
31 outlet end of the tank.

32 (e) Pump tanks shall meet the design requirements of Paragraph (d) of this Rule with the following modifications:

33 (1) a watertight access riser with removable cover shall be located over the pump. The access riser shall extend  
34 to a minimum of six inches above finished grade, and be designed and maintained to prevent surface water  
35 infiltration;

36 (2) the access opening over the pump shall have a nominal clear opening of 24 inches in diameter or other  
37 equidimensional opening;

- 1 (3) larger or multiple access risers shall be provided when two or more pumps are required;
- 2 (4) tanks may be designed with a single compartment. If a partition is provided, the partition shall be designed
- 3 to contain a minimum of two four-inch diameter circular openings, or equivalent, located no more than 12
- 4 inches above the tank bottom;
- 5 (5) there shall be no requirement as to tank length, width, or shape, provided the tank satisfies all other
- 6 requirements of this Section;
- 7 (6) the invert of the inlet openings shall be located within 12 inches of the tank top. No freeboard shall be
- 8 required in the pump tank;
- 9 (7) tanks shall be vented if located more than 50 feet from the facility, and accessible for routine maintenance;
- 10 (8) all pump tanks shall bear an imprint identifying the manufacturer, the pump tank serial number assigned to
- 11 the ~~manufacturer~~ manufacturer's plans and specifications by the State, and the liquid or working capacity
- 12 of the tank. The imprint shall be located to the left of the blockout made for the outlet pipe on the top or
- 13 end of outlet end of the tank; and
- 14 (9) the pump tank working capacity shall be the entire internal tank volume.

15 (f) Grease tanks shall be septic tanks approved in accordance with Paragraph (d) of this Rule with the following  
16 modifications:

- 17 (1) the liquid passage between chambers shall be located between 40 and 60 percent of the operating liquid
- 18 depth measured from the top of the liquid level. The liquid passage between chambers may be made using
- 19 a sanitary tee extending down between 40 and 60 percent of the liquid depth measured from the top of the
- 20 liquid level;
- 21 (2) when sanitary tees are used as the liquid passage through an interior compartment partition, an access
- 22 opening and riser to grade over the tees shall be provided for servicing and routine ~~maintenance.~~
- 23 maintenance;
- 24 (3) when two or more tanks are ~~used,~~ used in series a sanitary tee shall be provided in the outlet end of each
- 25 interconnected tank extending down between 40 and 60 percent of the liquid depth;
- 26 (4) the final chamber shall contain an effluent filter and case extending down between 40 and 60 percent of the
- 27 liquid depth. The effluent filter shall be approved by the State for use in grease tanks. The grease rated
- 28 effluent filter shall be sized for the DDF and have opening of 1/32-inch or less; and
- 29 (5) access risers shall extend to finished grade and be capped with cast iron manhole rings and covers.
- 30 Lockable aluminum hatches may be substituted for cast iron manhole rings and covers in non-traffic areas.
- 31 Aluminum hatches or manhole rings and covers shall be designed and maintained to prevent surface water
- 32 infiltration. Locks shall be the responsibility of the person owning or controlling the system.

33 (g) Siphon tanks shall meet the design requirements of Paragraph (e) of this Rule with the following modifications:

- 34 (1) designed in accordance with the minimum dose and construction requirements of this Rule;
- 35 (2) provide three inches of freeboard;
- 36 (3) inlet pipe shall be three inches above the siphon trip level; and



REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1403

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), what is meant by “capable of resisting corrosion from sewage and sewage gases and active and passive loads on tank walls”? Do you mean that they must be made of reinforced precast concrete, thermoplastic, glass-fiber reinforced polyester, or cast or manufactured in place? If so, I think it would be much more clear if you just said that.*

*In (b)(5), how will the State determine whether it will approve the design?*

*In (b)(6), when may a tank be subject to testing? As part of the approval process of .1401?*

*In (b)(7), what is meant by “state approved equivalent”? Is there a list somewhere or will this be determined by you all on a case by case basis? If there is an approval, how will it be decided? Must it meet the ASTM C990, be waterproof, corrosion-resistant and approved for use? If so, do you need the “State approved” language?*

*In (b)(7), line 25, approved for use with concrete tanks by whom? The manufacturer?*

*In (e), what are the approval standards for tanks cast or manufactured in place?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1403 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1403 TANK MATERIAL REQUIREMENTS**

4 (a) Tanks designed to hold sewage shall be structurally sound and constructed with materials capable of resisting corrosion  
5 from sewage and sewage gases, and the active and passive loads on tank walls.

6 (b) Reinforced precast concrete tanks shall meet the following minimum material and construction requirements:

7 (1) the ends and sides of the tank shall have a minimum thickness of two and one-half inches. The top and  
8 bottom of the tanks shall be a minimum of three inches thick;

9 (2) the top, bottom, end and sides of the concrete tank and tank lid shall be reinforced by using a minimum  
10 reinforcing of six-inch by six-inch No. 10 gage welded steel reinforcing wire. Reinforcement shall be  
11 placed to maximize the structural integrity of the tank;

12 (3) alternative reinforcement designs may be used when shown to be equal to or greater than the reinforcement  
13 design in Subparagraph (2) of this Paragraph;

14 (4) when the concrete tank, tank lid, riser, or riser cover are subjected to vehicular traffic, the tank shall be  
15 designed by a PE to handle the traffic load in accordance with ASTM C890;

16 (5) any tank installed deeper than three feet shall be designed by a PE for the proposed tank burial depth. The  
17 tank design shall be submitted to the State for review and tank approval;

18 (6) the concrete shall achieve a minimum 28-day compressive strength of 3,500 psi. The concrete shall meet  
19 the compressive strength of 3,500 psi prior to removal of the tank from the place of manufacture. It shall be  
20 the responsibility of the manufacturer to certify that this condition has been met prior to shipment. A tank  
21 may be subject to testing to ascertain the strength of the concrete prior to its being approved for  
22 installation. Testing shall be performed using a ~~properly~~ calibrated Schmidt Rebound Hammer or approved  
23 equal;

24 (7) tanks manufactured in multiple sections shall be joined and sealed at the joint by using butyl rubber or  
25 other pliable sealant meeting ASTM C990 or State approved equivalent that is waterproof,  
26 corrosion-resistant, and approved for use with concrete tanks; and

27 (8) tank lids and riser covers shall have a durable handle made of ~~rot-resistant~~ corrosion-resistant materials and  
28 capable of pull capacity for the weight of the lid or cover.

29 (c) Thermoplastic tanks shall either be IAPMO/ANSI Z1000 or CSA B66 certified and enrolled in a third-party quality  
30 assurance and quality control program, which includes material testing and unannounced annual audits.

31 (d) Glass-fiber-reinforced polyester tanks shall meet the following requirements:

32 (1) top, bottom, ends, and sides of the tank shall have a minimum thickness of 1/5-inches. The baffle wall shall  
33 be a minimum of 3/16-inch thick;

34 (2) material and laminate requirements specified in ~~IAMPO/ANSI~~ IAPMO/ANSI Z1000 for glass-fiber-  
35 reinforced polyester tanks; and

36 (3) enrolled in a third-party quality assurance and quality control program, which include material testing and  
37 unannounced annual audits.

1 (e) Cast or manufactured in place tanks shall be designed by a PE, if required by G.S. 89C, and approved by the State.

2

3 *History Note: Authority G.S. 130A-335(e), (f), and (f1).*

4 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1404

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*How does this go with .1401(a) which also speaks to risers, effluent filters and pipe penetrations? Does it? Should this reference be in .1401?*

*(f) seems to indicate that this Rule is for preapproval of risers and riser lids, but that is not clear in this Rule. Please review and clarify. Perhaps it would be helpful to add a Paragraph at the beginning outlining when and to what this Rule is applicable (remember that Rules are read without their titles)*

*Please correct the spacing in (b)(1)-(7) and (c)(1).*

*In (b), please delete or define "in detail" A suggestion would be to change "shall show the design of the riser in detail, including" to "shall show the design of the riser and include the following information:"*

*In (b)(4), a third party what? I'm assuming that you don't mean any third party.*

*Are (b)(5) and (6) requirements of the riser or are you asking for documentation for the submission for approval? Please review and clarify as needed. Also, what is meant by "state approved"?*

*In (b)(5), delete "additional"*

*Please consider revising (b)(4) as follows: documentation **from a third-party showing** that the riser **meets can meet** the load **required requirements** specified in Paragraph (a) of this **Rule; Rule shall be provided by a third-party;***

*In (c) and (d), please change "in detail, including" to "and include the following information:"*

*In (f), what is meant by "The information shall indicate the riser, effluent filter, or pipe penetration shall perform in the same manner and to the same standard as those designed in accordance with the provisions of this Section"? Do you simply mean that in*

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

*order to be approved, the tank must perform in accordance with the Rules of this Section? If so, say that. Also, do you mean Section or do you mean Rule? Please change "provision" to "rule" or whatever is meant.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1404 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1404 PLANS AND SPECIFICATIONS FOR RISERS, EFFLUENT FILTERS, AND PIPE**  
4 **PENETRATIONS**

5 (a) Risers and riser lids shall be able to withstand a uniform live loading of 150 pounds per square foot in addition to all loads  
6 to which a riser is normally subjected, such as dead weight of the material and soil cover and active soil pressure on riser  
7 walls.

8 (b) Riser plans and specifications submitted for review and approval shall show the design of the riser in detail, including:

- 9 (1) manufacturer's name, address, phone, and fax numbers;
- 10 (2) physical dimensions of the riser and riser cover, such as wall thickness, internal  
11 diameter, proposed casting or installation details and methods, and pipe penetrations;
- 12 (3) material type and strength including reinforcement material and location as  
13 required;
- 14 (4) documentation that the riser can meet the load required specified in Paragraph  
15 (a) of this Rule shall be provided by a third-party;
- 16 (5) for septic tank risers, a secondary lid, concrete plug, or other State approved  
17 safety device to be provided inside the riser for additional security and to prevent accidental entry;
- 18 (6) for pump tank risers, primary and secondary safety mechanisms shall be  
19 provided. The primary safety mechanism shall be a locking riser lid, ring and lock, or other State approved  
20 riser lid locking mechanism. The secondary safety mechanism shall be a secondary lid, concrete plug, or  
21 other State approved safety device to be provided inside the pump tank riser; and
- 22 (7) specifications for application, installation, operation, and maintenance for both  
23 new and retrofit applications for single and multiple riser sections.

24 (c) Effluent filter plans and specifications submitted for review and approval shall show the design of the effluent filter in  
25 detail, including:

- 26 (1) manufacturer's name, address, phone, and fax numbers;
- 27 (2) documentation and a written certification that the effluent filter is designed, constructed, and performs in  
28 compliance with G.S. 130A-335.1(a);
- 29 (3) capacity and wastewater strength for all models of proposed filters to be approved; and
- 30 (4) specifications for application, installation, operation, and maintenance.

31 (d) Pipe penetration plans and specifications submitted for review and approval shall show the design of the pipe penetration  
32 in detail, including:

- 33 (1) manufacturer's name, address, phone and fax numbers;
- 34 (2) design specifications and materials used in the manufacture of pipe penetration components;
- 35 (3) applicable testing results from third-party verification showing pull and flexibility testing;
- 36 (4) testing for watertight seal around piping including any component or device included to ensure the seal,  
37 such as non-corrodible adjustable bands;

1 (5) documentation that the pipe penetration meets the requirements of ASTM C1644 for precast concrete tanks  
2 or ASTM C1644, C923, or C564 for thermoplastic or glass-fiber-reinforced polyester tanks; and

3 (6) specifications for application, installation, operation, and maintenance.

4 (e) Plans for risers, effluent filters, and pipe penetrations shall be reviewed and approved by the State and ~~assigned an~~  
5 ~~Identification Number~~ an approval letter issued when the design is found to comply with this Section.

6 (f) Plans for prefabricated risers, effluent filters, and pipe penetrations other than those pre-approved under this Rule shall be  
7 considered for approval on an individual basis based on the information provided by the manufacturer or designer to the State.  
8 The information shall indicate the riser, effluent filter, or pipe penetration shall perform to the same standard as those  
9 designed in accordance with the provisions of this Section.

10

11 *History Note: Authority G.S. 130A-335(e), (f), and (f1); 130A-335.1.*

12 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1405

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please consider breaking (a) up into two paragraphs with lines 11-13 ("All riser, effluent filter... of each year" as (a) and lines 13-15 (The renewal form shall include...) as (b). Please also consider breaking the requirements on lines 14-15 into list form.*

*In (b), by "information describing how to request renewal" do you mean submitted the form in accordance with this Rule? If so, it's fine as written, but I want to be sure that there are no additional requirements outside of your rules.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1405 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1405 RISERS, EFFLUENT FILTERS, AND PIPE PENETRATION APPROVAL RENEWAL**

4 ~~(e) The State may re issue a riser, effluent filter, or pipe penetration approval for a new five year period when the~~  
5 ~~manufacturer's re approval request provided in accordance with Paragraph (b) of this Rule shows continued product~~  
6 ~~compliance. All riser, effluent filter, and pipe penetration approvals shall expire on December 31 of each year. Riser, effluent~~  
7 ~~filter, and pipe penetration manufacturers who wish to continue product approval shall submit annually a proprietary product~~  
8 ~~renewal form provided by the State. State no later than November 30 of each year. The renewal form shall include the~~  
9 ~~following updated information: company's name, address, contact information, contact name, model number(s) approved, and~~  
10 ~~a notarized statement that the product(s) has not changed from the previous year.~~

11 (a) All riser, effluent filter, and pipe penetration approvals shall expire on December 31 of each year. Riser, effluent filter,  
12 and pipe penetration manufacturers who wish to continue product approval shall submit annually a proprietary product  
13 renewal form provided by the State. State no later than November 30 of each year. The renewal form shall include the  
14 following updated information: company's name, address, contact information, contact name, model number(s) approved, and  
15 a notarized statement that the product(s) has not changed from the previous year.

16 (b) The Department shall notify the manufacturer of the pending PIA Approval expiration in writing no later than September  
17 30 of each year. The notification shall provide the manufacturer with information describing how to request renewal.

18 (c) The riser, effluent filter, and pipe penetration approval shall be deemed to be renewed upon receipt of a completed  
19 renewal form in accordance with this Rule.

20

21 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

22 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1406

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In Item (3), what are the "performance standards"? Are these set by the manufacturer?*

*In Item (4), what is meant by "applicable laws and rules"? The struck through language seems to provide the necessary information.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1406 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1406 MODIFICATION, SUSPENSION, AND REVOCATION OF APPROVALS**

4 The State shall modify, suspend, or revoke the approval for tanks, risers, effluent filters, or pipe penetrations upon a finding  
5 that:

6 (1) approval is determined to be based on false, incomplete, or misleading ~~information or the tank or tank~~  
7 ~~components have been subsequently altered;~~ information;

8 (2) the product has been altered;

9 ~~(2) — experience with the product or component results in altered conclusions about system performance,~~  
10 ~~reliability, safety, or design;~~

11 (3) the product or component fails to perform in compliance with performance standards established for the  
12 ~~product or component;~~ product; or

13 (4) the product ~~product, component, or the applicant~~ fails to meet conditions of its approval or comply with  
14 ~~G.S. 130A, Article 11, Rule .1405 of this Section, this Subchapter, or conditions of the approval.~~ applicable  
15 laws and rules.

16

17 *History Note:* Authority G.S. 130A-335(e), (f), and (f1).

18 Eff. October 1, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1501 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1501 GENERAL**

4 (a) RWTS that comply with NSF International Standard 40 for Class I residential wastewater treatment systems shall be  
5 designed, constructed, and installed in accordance with this Section to serve facilities with a DDF less than or equal to 1,500  
6 gpd.

7 (b) RWTS shall only be used with ~~domestic strength wastewater.~~ DSE.

8 (c) RWTS shall bear one of the following to certify that the product is in accordance with NSF Standard 40:

9 (1) the NSF mark and the NSF listed model number; or

10 (2) the certification mark and listed model number of a third-party certification program accredited by ANSI to  
11 certify RWTS in accordance with NSF Standard 40.

12 (d) For approval of an RWTS as a ~~Provisional or Innovative~~ PIA System, a manufacturer shall apply in accordance with  
13 Section .1700 of this Subchapter.

14

15 *History Note: Authority G.S. 130A-342.*

16 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1502

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In Item (4), please delete or define "legible"*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1502 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1502 APPLICATION**

4 An application shall be submitted for RWTS approval in writing to the State and shall include the following:

- 5 (1) manufacturer's name, address, phone number, plant location(s), and contact information for distributors;
- 6 (2) verification of NSF Standard 40 Class I system approval and listing by NSF International or other ANSI-  
7 accredited third-party certification program;
- 8 (3) manufacturer's identifying name or logo, listed model number(s) and treatment capacity in gpd to be  
9 imprinted on unit;
- 10 (4) three legible copies of plans and specifications, including information required to evaluate any tanks as  
11 required in accordance with Rule .1401 of this Subchapter; and
- 12 (5) fee payment as required by G.S. 130A-343(k)(6), by corporate check, money order or cashier's check made  
13 payable to: North Carolina On-Site Water Protection Account or North Carolina OSWW System Account,  
14 and mailed to the State.

15

16 *History Note: Authority G.S. 130A-342.*

17 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1503

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please consider revising (2)(e) to say "repairing and maintaining any system components."*

*In Item (6), when will this demonstration be conducted?*

*In Item (11), please delete or define "specially" and "specific"*

*Also in Item (11), what is meant by "approved prefabricated septic tank" and "approved by the State as part of the plans for RWTS"? Is additional information regarding these approvals set forth elsewhere in rule or statute?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1503 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1503 DESIGN AND CONSTRUCTION STANDARDS**

4 RWTS shall meet the following design and construction standards:

- 5 (1) No blockouts or openings shall be permitted below the liquid level of the RWTS.
- 6 (2) RWTS shall be watertight, corrosion resistant structures, with all components requiring maintenance  
7 accessible to the Management Entity. Access openings shall be provided in the RWTS top. Access shall be  
8 provided for:
  - 9 (a) cleaning or rodding out the inlet pipe;
  - 10 (b) cleaning or clearing the air or gas passage space above any partition;
  - 11 (c) pumping of each compartment required to be pumped;
  - 12 (d) sampling the effluent; and
  - 13 (e) repairing any system components or maintaining system components requiring repair or  
14 maintenance.
- 15 (3) Tanks used in RWTS designed to hold sewage or effluent shall comply with all tank requirements in  
16 accordance with Section .1400 of this Subchapter.
- 17 (4) RWTS shall bear an imprint identifying the manufacturer, the RWTS serial number assigned to the  
18 manufacturer's model approved by the State, and the liquid or working capacity of the unit. The imprint  
19 shall be located on the outlet end of the tank within 24 inches of the top of the tank.
- 20 (5) The design, construction, and operation of RWTS shall prevent bypass of wastewater.
- 21 (6) The manufacturer shall demonstrate that the system can be sampled in compliance with 40 CFR 136 and  
22 shall specify the recommended method for effluent sampling.
- 23 (7) Control panels provided by the manufacturer shall comply with the requirements for control panels in  
24 accordance with Rule .1103 of this Subchapter.
- 25 (8) The RWTS shall have an alarm device or devices to warn the user or Management Entity of a unit  
26 malfunction or a high-water condition in accordance with Rule .1103 of this Subchapter.
- 27 (9) The control panel shall include a method to automatically measure and record daily wastewater flow  
28 dispersed to the dispersal field in accordance with Rule .1702(a)(2)(I) of this Subchapter.
- 29 (10) The blower location shall be shown on the plans and detail proposed corrosion-resistant blower enclosures,  
30 if applicable.
- 31 (11) A settling tank shall be required prior to or as an integral part of the design of the RWTS. The liquid  
32 capacity of the settling tank shall be a minimum of half of the DDF of the RWTS, or as otherwise specified  
33 by the manufacturer, whichever is larger. The settling tank may either be an integral chamber of the RWTS  
34 tank, an approved prefabricated septic tank, or another tank specially designed for a specific individual  
35 system and approved by the State as a part of the plans for the RWTS.

36

37 *History Note: Authority G.S. 130A-342.*



**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1504 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1504 SAMPLING REQUIREMENTS FOR RESIDENTIAL WASTEWATER TREATMENT**  
4 **SYSTEMS**

5 Effluent from an approved RWTS shall be grab or 24-hour composite sampled annually for all effluent standards listed in  
6 Table XXIV of Rule .1201 of this Subchapter for NSF-40 systems, unless adjusted sampling requirements have been  
7 requested and granted in accordance with Rules .1302 and .1709 of this Subchapter.

8

9 *History Note: Authority G.S. 130A-342.*

10 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1505

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please change "includes" to "shall include" on line 6. Please also consider breaking (a) up as follows:*

(a) All RWTS Approvals shall expire on December 31 of each year. RWTS manufacturers who wish to continue product approval shall submit annually a proprietary product renewal form provided by the ~~State~~. State no later than November 30 of each year.

**(b)** The renewal form shall include ~~includes~~ the following updated information:

(1) company's name, address, contact information, and contact name, name;

(2) model number(s) approved, and approved;

(3) a notarized statement that the product(s) product has not changed from the previous year, year; and

(4) The renewal request shall include verification of the manufacturer's continued certification and listing by a nationally recognized certification body, including compliance with NSF Standard 40.

*Also, on line 7, what is meant by "model number(s) approved"? In accordance with a different rule?*

*In (d), how will it be determined that the system is failing to perform in compliance with the effluent standards?*

*Also, in (d), what are "established effluent standards"? Do you mean the Rules in this Subchapter?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1505 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1505 RESIDENTIAL WASTEWATER TREATMENT SYSTEM APPROVAL RENEWAL**

4 (a) All RWTS Approvals shall expire on December 31 of each year. RWTS manufacturers who wish to continue product  
5 approval shall submit annually a proprietary product renewal form provided by the ~~State~~. State no later than November 30 of  
6 each year. The renewal form includes the following updated information: company's name, address, contact information,  
7 contact name, model number(s) approved, and a notarized statement that the product(s) has not changed from the previous  
8 year. The renewal request shall include verification of the manufacturer's continued certification and listing by a nationally  
9 recognized certification body, including compliance with NSF Standard 40.

10 (b) The Department shall notify the manufacturer of the pending RWTS Approval expiration in writing no later than  
11 September 30 of each year. The notification shall provide the manufacturer with information describing how to request  
12 renewal.

13 (c) The RWTS approval shall be deemed renewed upon receipt of the completed renewal form and verification of  
14 certification in accordance with this Rule.

15 ~~(b)(d)~~ (d) The State may suspend or revoke a system approval upon a finding that the system fails to perform in compliance with  
16 established effluent ~~standards~~. standards or as provided for in Rule .1708(b) of this Subchapter.

17

18 *History Note: Authority G.S. 130A-342.*

19 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1601

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (f), just to make sure that I understand, "as applicable" is used here because a drip dispersal system may not always have to comply with .0908, .1204, and Section .1300?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1601 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .1601 GENERAL**

(a) Drip dispersal systems for DDF less than or equal to 3,000 gpd shall be configured as a package and approved as a ~~Provisional, Innovative, or Accepted PIA~~ System in accordance with Section .1700 of this Subchapter.

(b) The integrated system package shall be provided from a single source manufacturer or system integrator, comprised of catalogued standardized design components that have been coordinated and tested by the manufacturer or integrator.

Components shall include:

- (1) dispersal field pump(s) and floats;
- (2) headworks assemblies;
- (3) dispersal field piping network, drip tubing, and appurtenances; and
- (4) system controls that provide for automatic filter cleaning, timed field dosing, field flushing, alarm notification, and recording of system operation.

(c) All components shall be integrated and designed to work together for the operation of the drip dispersal system. The system manufacturer or integrator shall provide system design information including:

- (1) head loss charts, tables, or formulas for various drip tubing lateral lengths during a dosing and flushing cycle;
- (2) minimum and maximum zone size and design;
- (3) design plans and specifications for all components;
- (4) installation specifications; and
- (5) operation and maintenance manuals.

(d) The system manufacturer shall provide support to train and authorize designers, installers, Management Entities, regulators, and users.

(e) Drip dispersal system performance, siting, sizing, installation, operation, monitoring, maintenance and reporting requirements shall comply with Rules .0908, .1204, and Section .1300 of this Subchapter, as applicable, and this Section.

(f) Drip dispersal systems that are not pre-engineered packages approved in accordance with Section .1700 of this Subchapter shall be designed on a project specific basis by a PE. The drip dispersal system design shall comply with Rules .0908, .1204, Section .1300 of this Subchapter, and this Section, as applicable.

(g) Drip dispersal systems for DDF greater than 3,000 gpd shall comply with the design and performance requirements of this Section and shall be designed on a project specific basis by a PE. The system design shall be reviewed and approved by the State in accordance with Rule .0302 of this Subchapter, unless the system is permitted in accordance with Rule .0207 of this Subchapter.

*History Note: Authority G.S. 130A-343.  
Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1602

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), should "and Table XXIV" or "or"? I think it should be "or", since it's "one of the following:" on line 4.*

*Please add "have" at the beginning of (b)(1) and (2).*

*(c)(1) through (3) and (5) and (6) appear to be missing a word. Please add a corresponding verb to go with the introduction in (c).*

*Please remove the comma after "septic tank" in (d)(4).*

*In (e)(1) and (e)(3), please delete or define "uniformly"*

*In (e)(5), what are "unfavorable site conditions"? Can you provide some examples?*

*In (e)(5), what is meant by "differently colored"? Different from what?*

*Please add "the" at the beginning of (e)(6).*

*In (f)(1), what is meant by "regular intervals"? Please delete or define or provide some examples.*

*In (f)(2), what is meant by "varying operating conditions"?*

*In (g), I understand that these will be approved on a case-by-case basis, but what criteria will be used for the approval?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1602 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1602 DESIGN AND CONSTRUCTION STANDARDS**

4 (a) Drip dispersal systems shall be preceded by pretreatment designed to meet one of the following effluent standards: DSE,  
5 NSF-40, TS-I, TS-II, or RCW as specified in Table III of Rule .0402, Rule .1002, and Table XXIV of Rule .1201 of this  
6 ~~Subchapter.~~ Subchapter, as applicable.

7 (b) The drip dispersal system pump tank shall meet the following conditions:

- 8 (1) a separate pump tank sized in accordance with Rule .0802 of this Subchapter; or
- 9 (2) a pump tank or compartment that is part of an advanced pretreatment system approved in accordance with  
10 Section .1700 of this Subchapter. Pump tank operating levels shall not result in effluent backing up into a  
11 part of any pretreatment component designed for free gravity flow drainage. All pump submergence, dose  
12 volume, flow equalization, and emergency storage capacity requirements for the dosing system shall be met  
13 without interfering in the performance of the pretreatment components.

14 (c) Pumps shall meet the following conditions:

- 15 (1) sufficient capacity to accommodate projected flow and total dynamic head conditions;
- 16 (2) delivery of ~~40~~ 15 to 60 psi of pressure during dosing events;
- 17 (3) minimum flow and pressure as required to backwash or forward flush headworks filter;
- 18 (4) manufacturer requirements shall be followed to protect the pump intake from solids materials that may  
19 accumulate in the pump tank and for pump cooling during operation;
- 20 (5) maintenance of velocities of two feet per second at the distal end of each drip lateral line during automatic  
21 field flushing for DSE; and
- 22 (6) maintenance of velocities of one-foot per second at the distal end of each drip lateral line during automatic  
23 field flushing for advanced pretreatment effluent. Valving shall be provided to achieve flushing velocities  
24 of two feet per second at the distal end of each dripline with manual flushing.

25 (d) Headworks assemblies shall contain filtration, totalizing flow meter, ~~mechanism~~ provisions for filter cleaning, and field  
26 flushing valves. Zone and isolation valves may be located in the headworks assembly or in the drip dispersal field. The  
27 headworks assemblies shall meet the following conditions:

- 28 (1) filters shall remove particles greater than 115 microns at the peak ~~DDF~~, operating flow rate, ~~typically~~  
29 during network forward flushing. Filter number and size shall operate during both dosing and flushing  
30 conditions at a pump operating flow rate within the filter manufacturer's specified acceptable operating  
31 range;
- 32 (2) filters for drip dispersal systems receiving DSE shall be configured with two independently backwashed  
33 disk filters;
- 34 (3) for drip dispersal systems receiving advanced pretreatment effluent, single or multiple screens or disc  
35 filters may be used, designed to be cleaned by either backwashing or forward washing;
- 36 (4) filter cleaning and field flushing residuals shall be returned to the head of the ~~pretreatment unit~~, septic tank,  
37 or settling tank prior to being returned to the pretreatment unit;

1 (5) a totalizing flow meter shall be used to record total flow through the system. The meter shall also be used  
2 to monitor pump operating flow rates during dosing and flushing events; and

3 (6) the headworks and associated components shall be in a separate enclosure that is freeze protected, UV and  
4 corrosion resistant, and accessible for routine operation, maintenance, monitoring and servicing. Design  
5 shall facilitate access to all internal components.

6 (e) The drip dispersal field shall consist of one or more separately dosed zones comprised of a supply and return manifold,  
7 manifold to lateral connections, laterals containing drip tubing with emitters, blank sections of tubing, and associated field  
8 appurtenances. Drip emitter and associated field appurtenances design shall meet the following:

9 (1) drip emitters shall be designed and demonstrated to uniformly distribute wastewater effluent at a pre-  
10 determined rate when operated in accordance with manufacturer's specified pressure range for emitter  
11 operation. Emitter design coefficient of variation (Cv) shall be five percent or less. Emitters shall be  
12 designed to be self-cleaning and to resist root intrusion. Hydraulic design of a drip dispersal zone shall be  
13 based upon achieving no more than a 10 percent variation in flow from any emitter over the entire zone,  
14 regardless of emitter elevation or position along the lateral including any effluent redistribution due to  
15 drainback;

16 (2) drip emitters shall be pressure compensating unless the manufacturer and designer provide documentation  
17 and calculations that a maximum 10 percent flow variance allowance can otherwise be achieved with non-  
18 pressure compensating emitters in a PIA Approval or on a project-specific basis. Drip tubing shall be  
19 marked to identify the emitter type and flow rate;

20 (3) drip emitters shall be uniformly spaced along the tubing on 24-inch centers or less, and drip tubing with  
21 emitters shall be spaced an average of 24 inches on centers or less, in accordance with the proposed system  
22 design. Spacing shall be chosen as needed to ensure a sufficient number and density of emitters are present  
23 to achieve uniform distribution and instantaneous emitter loading rates that do not exceed the hydraulic  
24 capacity of the receiving infiltrative surfaces;

25 (4) connections between supply and return manifolds, and between runs or drip lateral sections installed at  
26 varying elevations or locations shall be made with solvent welded solid Schedule 40 PVC or flexible PVC;

27 (5) blanking sections of tubing without drip emitters may be used where unfavorable site conditions are  
28 encountered along a drip run. Blanking tubing shall be differently colored or marked tubing of the same  
29 material, specifications and diameter as the connecting dripline, or flexible PVC;

30 (6) manufacturer shall specify methods for drainback prevention; and

31 (7) field appurtenances shall include the following:

32 (A) air or vacuum relief valve at the highest elevation of each zone;

33 (B) cleanout at both ends of the supply and return manifolds;

34 (C) pressure monitoring fittings at the zone inlet and outlet points;

35 (D) pressure regulating valve where needed;

1 (E) for two or more zones: solenoid valves for each zone in the headworks or at the field, with an  
2 isolation valve on the supply line side; and a check valve with an isolation valve for each zone  
3 between the return manifold and the common return line; and

4 (F) valves, vents, cleanouts, and pressure monitoring fittings shall be provided with protective vaults  
5 or boxes that are decay resistant, ultraviolet rated, and accessible to the Management Entity from  
6 the ground surface.

7 (f) An integrated controller shall be provided to manage the multifunction processes of drip dispersal systems and meet the  
8 following conditions:

9 (1) enable each drip dispersal field or zone to be time-dosed at regular intervals throughout the day, at a  
10 projected average flow and to accommodate the DDF. The controller shall allow for adjustable and variable  
11 dose volumes between or among zones;

12 (2) adjust pump dosing and resting cycles to meet system design and varying operating conditions;

13 (3) provide a minimum dose volume per zone that is a minimum of five times the liquid capacity of the drip  
14 laterals or so that 80 percent of each dose is delivered when the minimum pressure in the field network is  
15 10 psi;

16 (4) provide for automatic cleaning of headworks filter(s) at designer and manufacturer-specified frequency and  
17 duration;

18 (5) provide for routine automatic forward flushing of the drip laterals (field flushing) with filtered effluent, at  
19 designer and manufacturer-specified frequency and duration. Automatic forward flushing frequency and  
20 duration shall be adjustable;

21 (6) monitor pump cycles and run times;

22 (7) telemetry, in accordance with Rule .1103(c) of this Subchapter, shall be provided for systems with a DDF  
23 greater than 1,500 gpd or as required in conjunction with an advanced pretreatment system ~~shall include~~  
24 ~~telemetry in accordance with Rule .1103(e) of this Subchapter; system;~~

25 (8) for systems with a DDF greater than 3,000 gpd the controller shall monitor flow volume to each zone and  
26 provide a flow variance indication when flow is plus or minus 20 percent of design. The telemetry system  
27 and alarm shall include an automatically rechargeable battery back-up power supply or be otherwise  
28 designed to be functional during power outages;

29 (9) for multi-zone systems, the system controller shall provide for a zone to be rested or taken out of service  
30 manually. The controller shall have the capability to bypass the zones that have been taken out of service  
31 and dose the next available zone with the normal dosing sequence continuing; and

32 (10) controls and floats in the pump tank are to be configured to ensure the minimum dose is available prior to  
33 initiating a dosing cycle to the dispersal field or zone and to provide that a full dose is delivered.

34 (g) Alternatives to the design criteria in this Rule may be proposed by the manufacturer during the PIA approval process or  
35 by a PE on a project-specific basis. These alternatives shall be reviewed by the State on a case-by-case basis.

36  
37 *History Note: Authority G.S. 130A-343.*



REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1603

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*(a)(2)(C) and (D) seems to be missing a word. Should there be a "shall" in there like you have with (a)(2)(A), (B), and (E)?*

*In (b), when will they be demonstrated and to whom? As part of the approval process? I'm not sure that a change is needed here, so long as it is clear somewhere.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1603 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1603 DRIP DISPERSAL SYSTEM TESTING**

4 (a) The drip dispersal system field testing shall include the following items and any other requirements included by the  
5 system designer:

6 (1) all leaks in the pipe network or from emitters exhibiting excessive emission rates, as evidenced by wet  
7 spots during dosing cycles comparable to normal operating conditions, shall be repaired; and

8 (2) after the system is pressurized, dosing and flushing flow rates and pressures for each zone shall be  
9 measured and confirmed to be in accordance with the drip system design parameters as follows:

10 (A) dosing pressure shall be measured at the lowest point in the supply manifold and highest point in  
11 the return manifold;

12 (B) minimum and maximum emitter pressure shall be verified to be within emitter design parameters;

13 (C) flushing pressures at the ends of each supply and return manifold within each zone;

14 (D) dosing and flushing flow rates measured with the flow meter after the system is pressurized; and

15 (E) all dosing and flushing flow rates and pressures shall be recorded.

16 (b) All mechanical components, pumps, pump cycling, filters, valves, vents, flushing, high-water alarm, and telemetry  
17 systems shall be demonstrated to be operable and in accordance with their design.

18

19 *History Note: Authority G.S. 130A-343.*

20 *Eff. October 1, 2018*

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1701 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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3 **15A NCAC 18E .1701 GENERAL**

4 PIA Systems are any wastewater systems, system components, or devices as defined by G.S 130-343(a) that are not described  
5 in other Sections of this Subchapter. This includes systems for which any of the following are proposed:

- 6 (1) reduced minimum setbacks;
- 7 (2) reduced depth to ~~LC or SWC~~; LC or vertical separation requirements; or
- 8 ~~(3) reduced vertical separation distance requirements; or~~
- 9 ~~(4)~~(3) increased LTAR.

10 This Section shall provide for the approval and permitting of PIA Systems.

11

12 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

13 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1702

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a)(2)(E), please delete or define "detailed." Also, please change "design/drawing" to either "design and drawing" or "design or drawing", whatever is meant.*

*In (a)(3)(A), please delete or define "pertinent"*

*In (a)(4)(B), please consider breaking lines 34-line 2 on page 2 into a list with i, ii, iii. This will require a waiver of OAH's Rule, but I think that it makes the most sense.*

*In (a)(4)(B), what is meant by "comparable"? By whom and how will this determination be made?*

*In (a)(4)(C), what is meant by "as applicable"? Is this not always required (based on other language of this Rule (such as (a)(5), it appears as though it is)?*

*In (a)(6), do you mean "G.S. 132-1"?*

*What is meant by (a)(7)? Specifically, what is meant by "minimum certification/licensing requirements for designers, installers, and Management Entities"? Do you mean requirements as set forth in the applicable certification and licensing statutes and rules? I assume that you aren't trying to create a new set of standards for these folks. Also, please change "certification/licensing" to "certification or licensing"*

*In (a)(7), please add "and" before "minimum"*

*In (b)(6), please delete or define "successful"*

*In (f), when "may" the Department initial review of a nonproprietary PIA system? Given that it recites 130A-343(i), is this necessary?*

*In (f), if this language is necessary, should "if" be before "the system" so that the sentence reads "The system may be approved as Provisional or Innovative or the Department may recommend approval to the Commission as an Accepted System if it*

Amber May

Commission Counsel

Date submitted to agency: September 6, 2018

*has been shown to meet all applicable approval criteria of this Section.” Also, here, by “may” do you mean “shall”? How will it be determined whether it will be classified as provisional, innovative, or accepted?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1702 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

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**15A NCAC 18E .1702 APPLICATION**

(a) An application shall be submitted in writing to the Department for a PIA System. All applications shall include the information required by G.S. 130A-343(d), (f), (g), (g1), and (h), and the following, as applicable:

- (1) identification of the type of PIA Approval requested:
  - (A) Provisional;
  - (B) Innovative;
  - (C) Functionally Equivalent;
  - (D) Accepted; or
  - (E) a combination of any of the above;
- (2) plans and specifications for the system, including the following:
  - (A) description of the system;
  - (B) materials used in construction;
  - (C) proposed use of system;
  - (D) system design criteria;
  - (E) detailed system design/drawings;
  - (F) installation manual;
  - (G) operation and maintenance manual, including a checklist for documentation of inspection and maintenance activities and the VIP;
  - (H) influent and effluent sampling locations for advanced pretreatment systems while the system remains in operation;
  - (I) method for automatically measuring and recording daily wastewater flow dispersed to the dispersal field for advanced pretreatment systems; and
  - (J) start-up requirements and information;
- (3) summary of the following information:
  - (A) pertinent literature;
  - (B) published research; and
  - (C) previous experience and performance with the system;
- (4) results of any available testing, research or monitoring of pilot systems or full-scale operational systems including:
  - (A) identification of the third-party research or testing organization that conducted the testing, research, or monitoring provided;
  - (B) documentation that the protocol or evaluation used in the testing, research, or monitoring is: established by a nationally recognized certification body; a listed protocol that has been approved by the Department in accordance with G.S. 130A-343(d); a comparable evaluation protocol used

1 for system approval in other states; or in accordance with an alternative performance evaluation  
2 protocol proposed for approval by the manufacturer;

3 (C) documentation that the system is tested, certified, and listed by a nationally recognized  
4 certification body and complies with an ongoing verification program administered by that  
5 certification body, as applicable; and

6 (D) documentation that the system can be sampled in compliance with 40 CFR 136 and that the  
7 method for system sampling ~~accurately~~ monitors system compliance with effluent standards;

8 (5) verification that the product submitted for PIA Approval is the same as the certified, listed, or tested  
9 product, and if not, identification of any modifications made to the submitted product;

10 (6) notification of any proprietary or trade secret information, system, component, or device. All documents  
11 received are considered Public Records in accordance with G.S. 132, unless they meet the criteria for  
12 classification as a trade secret as defined in G.S. 66-152(3);

13 (7) draft written PIA Approval that includes criteria for site selection, installation requirements, operation and  
14 maintenance procedures including a VIP, system classification, frequency of system inspection and  
15 monitoring in accordance with Table XXXI of Rule .1301 of this Subchapter, minimum  
16 certification/licensing requirements for designers, installers, and Management Entities; and

17 (8) fee payment as required by G.S. 130A-343(k), by corporate check, money order or cashier's check made  
18 payable to: North Carolina On-Site Water Protection System Account or North Carolina OSWW System  
19 Account, and mailed to the State. Fees received are non-refundable.

20 (b) Innovative System applications shall include the information listed in Paragraph (a) of this Rule.

21 ~~(b)(c)~~ Provisional System applications shall include the information listed in Paragraph (a) of this Rule and ~~the following an~~  
22 evaluation proposal containing all information set forth in G.S. 130-343(f), including:

23 (1) identity and qualifications of the proposed third-party evaluator, including documentation of their third-  
24 party status;

25 (2) description of the evaluation ~~proposal~~ proposal, including any proposed laboratory and field testing;

26 (3) number of systems to be installed;

27 (4) site selection criteria;

28 (5) system monitoring and reporting procedures, and proposed duration of evaluation; and

29 (6) any other information needed for the system to be able to achieve Innovative status upon successful  
30 completion of the Provisional System evaluation proposal.

31 ~~(e)(d)~~ Functionally Equivalent Trench System Innovative applications shall include the information listed in Paragraph (a) of  
32 this Rule and documentation that the manufacturer has petitioned the Commission for Public Health in accordance with G.S.  
33 130A-343(g1).

34 ~~(d)(e)~~ Accepted Wastewater Dispersal System applications shall include the information listed in Paragraph (a) of this Rule  
35 and documentation that the manufacturer has petitioned the Commission for Public Health in accordance with G.S. 130A-  
36 343(h).

1 ~~(e)~~(f) The Department may initiate review of a nonproprietary PIA System in accordance with G.S. 130A-343(i) without  
2 having received an application from a manufacturer. The system may be approved as Provisional or Innovative or the  
3 Department may recommend approval to the Commission as an Accepted System. The system shall have been shown to meet  
4 all applicable approval criteria of this Section.

5

6 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

7 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1703

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Is (h) necessary? If so, how will it be determined whether the Department will hold these meetings?*

*In (i), what are the appeal rights? Are these set forth elsewhere in rule or statute such that they can be cross-referenced?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1703 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1703 DEPARTMENT AND COMMISSION APPLICATION REVIEW**

4 (a) The Department shall review all applications submitted to determine if the information listed in Rule .1702 of this Section  
5 is included and determine whether additional information is needed to continue the review.

6 (b) Within 30 days of receipt of the initial application, the Department shall notify the manufacturer of any items necessary to  
7 complete the application or notify the manufacturer that the application is complete. This determination shall not constitute a  
8 qualitative review of the information provided, nor the approval or denial of the proposed system designation. Specified  
9 additional information shall be received within 180 days or the application file shall be closed.

10 (c) Upon receipt of a complete application, the Department shall conduct a qualitative review in accordance with PIA  
11 Approval criteria identified in Rules .1704, .1705, and .1706 of this Section.

12 (d) For systems that are certified and listed by a nationally recognized certification body, the Department shall complete its  
13 review and determine whether to approve or deny Provisional System applications within 90 days of receipt of a complete  
14 application.

15 (e) The Department shall complete its review and determine whether to approve or deny Innovative System applications  
16 within 90 days of publication in the North Carolina Register of the notice of receipt of a complete application.

17 (f) The Department shall prepare and submit its findings and recommendations for a ~~functionally equivalent trench system~~  
18 Functionally Equivalent Trench System or an Accepted ~~wastewater dispersal system~~ System to the Commission within 120  
19 days of receipt of a complete application.

20 (g) Upon request by the petitioner, the Commission may modify the 180-day time frame for receipt of additional information  
21 specified by the Department for a functionally equivalent or Accepted System petition based on a determination that a petition  
22 is incomplete and additional information is needed. The petitioner may also request Commission review of the Department's  
23 determination that a petition is incomplete or additional information request.

24 (h) The Department may hold meetings to discuss PIA applications with stakeholders.

25 (i) The Department shall notify the applicant and LHDs of the approval or denial of a PIA System. The PIA Approval shall  
26 include conditions for permitting, siting, installation, use, monitoring, operation and maintenance, and number of systems that  
27 can be installed. When an application is denied, the Department shall inform the applicant in writing of the reason for denial  
28 and specify appeal rights. The Department shall assign a unique code to the approved products for tracking purposes.

29 (j) An applicant may reapply in accordance with this Section. When reapplying, a new application shall be required and the  
30 applicant shall make a new fee payment as required by G.S. 130A-343(k).

31

32 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

33 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1704

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In order to match the introduction provided in (a), please make the following changes:*

- *begin (a)(1), (2), and (3) with lower-case letters.*
- *change (a)(1) to read "Documentation of one of the following is provided:*
- *(a)(1)(A) seems to be missing a word. Would it be appropriate to say something like "the systems have been operational and in use for a minimum of 50 installations and 12 months"*
- *(a)(1)(B) seems to be missing a word. I think the first sentence needs a verb. Perhaps something like "the system's design is functionally similar to another approved..."*
- *change (a)(2) to read "Documentation is provided..."*
- *end (a)(1)(D) with a semi-colon*
- *end (a)(2) with a semi-colon and "or" (assuming that you mean or, rather than and.)*
- *change (a)(3) to read "a proposed evaluation protocol to be overseen by a third-party evaluator is submitted"*

*In (a)(1)(D), what is meant by "comparable"? By whom and how will this determination be made?*

*In (a)(2), I assume that the underlying requirement that trench and dispersal systems comply with AASHTO Standard H-5 and H-10 is set forth elsewhere in rule or statute?*

*In (a)(3), is the requirement here that they actually submit the protocol to someone or that they simply provide documentation of the submission? To whom is the protocol to be submitted? To the Department or to the evaluator?*

*In order to match the introduction provided in (b), please make the following changes:*

- *begin (a)(1), (2), and (3) with lower-case letters.*

Amber May  
Commission Counsel

Date submitted to agency: September 6, 2018

- *change (b)(1) to read “Documentation of one of the following is provided for designs...”*
- *(b)(1)(B) seems to be missing a word. I think the first sentence needs verb. Perhaps something like “the system’s design is functionally similar to another approved...”*

*In (b)(1)(D), what is meant by “comparable”? By whom and how will this determination be made?*

*In (b)(2), is the requirement here that they actually submit the protocol to someone or that they simply provide documentation of the submission? To whom is the protocol to be submitted? To the Department or to the evaluator?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1704 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1704 APPROVAL CRITERIA FOR PROVISIONAL SYSTEMS**

4 (a) Trench and dispersal systems shall be approved for use as a Provisional System when the following criteria have been  
5 met:

- 6 (1) Documentation of one of the following:
  - 7 (A) a minimum of 50 installations operational and in use for a minimum of 12 months, with available  
8 information indicating comparable hydraulic performance and rate of malfunction to a  
9 conventional trench system;
  - 10 (B) the system's design and functional similarity to another approved system described elsewhere in  
11 this Subchapter, or to a ~~Provisional, Innovative or Accepted~~ PIA System approved in accordance  
12 with this Section. The system's design and functional similarity shall be equal or superior to the  
13 comparable system for the following: material physical properties and chemical durability; field  
14 installed permeable sidewall area and bottom infiltrative area; method and manner of function for  
15 conveyance and application of effluent; structural integrity; and field installed storage volume;
  - 16 (C) the system has been certified and listed by a nationally recognized certification body, as defined  
17 by G.S. 130A-343(a)(6), for a period that exceeds one year; or
  - 18 (D) the system has complied with a comparable evaluation protocol used for system approval in other  
19 states.
- 20 (2) Documentation shall be provided that all trench and dispersal systems have been subject to and complied  
21 with AASHTO Standard H-5 and H-10 load testing that demonstrates the structural integrity to be  
22 comparable to a conventional trench system.
- 23 (3) Submittal of a proposed evaluation protocol to be overseen by a third-party evaluator. The evaluation  
24 protocol shall ensure that all information necessary to satisfy the criteria to achieve ~~Innovative Approval~~  
25 under Approval, as specified in G.S. 130A-343(f) and Rule .1705 of this Section ~~Section~~, is collected. The  
26 protocol shall include the following:
  - 27 (A) a minimum of 100 installations operational and in use for a minimum of 12 months; and
  - 28 (B) sufficient information collected to evaluate the system's hydraulic performance, structural  
29 integrity and rate of malfunction compared with a conventional trench system.

30 (b) Advanced pretreatment systems shall be approved for use as a Provisional System when the following criteria have been  
31 met:

- 32 (1) Documentation of one of the following for designs complying with TS-I, TS-II, or RCW effluent standards:
  - 33 (A) a minimum of 50 complete third-party field verification data sets from a minimum of 15 sites in  
34 operation for six months, including all constituents necessary to verify compliance with the  
35 applicable effluent standard. Two to five data sets may be from the same site if collected a  
36 minimum of three months apart, with no data excluded from the field sampling sites. The data sets

1 shall demonstrate compliance with TS-I, TS-II, or RCW effluent standards in accordance with  
2 ~~Rule .1709 of this Section;~~ Rules .1002 and .1709 of this Subchapter, as applicable;

3 (B) the system's design and functional similarity to another approved system described elsewhere in  
4 this Subchapter, or to a Provisional or Innovative System approved in accordance with this  
5 Section. The system's design and functional similarity shall be equal or superior to the comparable  
6 system for all of the following: material physical properties and chemical durability; structural  
7 integrity; biological, chemical, or physical treatment processes; method and manner of function  
8 for conveyance and application of effluent through the system; and number and size of system  
9 compartments;

10 (C) the system has been certified and listed by a nationally recognized certification body, as defined  
11 by G.S. 130A-343(a)(6), for a period that exceeds one year; or

12 (D) the system has complied with a comparable evaluation protocol used for system approval in other  
13 states.

14 (2) Submittal of a proposed evaluation protocol to be overseen by a third-party evaluator. The evaluation  
15 protocol shall ensure that all information necessary to satisfy the criteria to achieve Innovative Approval  
16 ~~under Approval, as specified in~~ G.S. 130A-343(f) and Rule .1705 of this Section is collected. The  
17 protocol shall include one of the following:

18 (A) for a system that has been certified and listed by a nationally recognized certification body, as  
19 defined by G.S. 130A-343(a)(6) for a period that exceeds two consecutive years, a minimum of  
20 50 complete third-party field verification data sets from a minimum of 15 sites in operation for a  
21 minimum of six months, including all constituents necessary to verify compliance with the  
22 applicable effluent standard. Two to five data sets may be from the same site if collected a  
23 minimum of three months apart, with no data excluded from the field sampling sites. The data  
24 may be collected from systems in-state or out-of-state. The data sets shall show compliance with  
25 TS-I, TS-II, or RCW effluent standards in accordance with ~~Rule .1709 of this Section;~~ Rules  
26 .1002 and .1709 of this Subchapter, as applicable; or

27 (B) a minimum of 150 complete third-party field verification data sets from a minimum of 50 sites in  
28 operation for a minimum of six months, including all constituents necessary to verify compliance  
29 with the applicable effluent standard. Two to five data sets may be from the same site if collected  
30 a minimum of three months apart, with no data excluded from the field sampling sites. The data  
31 may be collected from systems in-state or out-of-state. The data sets shall demonstrate compliance  
32 with TS-I, TS-II, or RCW effluent standards in accordance with Rule .1709 of this Section, as  
33 applicable

34 (c) Manufacturers requesting Provisional Approval as both an advanced pretreatment and dispersal system ~~must~~ shall meet  
35 the requirements for advanced pretreatment and dispersal as described in this Rule.

36  
37 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*



REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1705

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In order to match the introductory language in (a), please begin (a)(1) through (5) with lower-case letters, end (a)(1) through (4) with semi-colons, and end (a)(4) with "and" (assuming that's what you mean.)*

*In (a)(2), please change "shall be equal" to "are equal" (again to match (a))*

*In (a)(3), please change "which" to "that"*

*In (a)(4)(B), please delete or define "comparable"? Does this mean research of this system in other states or comparable systems in other states?*

*In (a)(4)(B), please change "the results of which" to "that"*

*Please review (b), it appears to be missing a word. Do you mean "Advanced pretreatment systems for designs complying with TS-I, TS-II, or RCW effluent standards shall be approved for use as an Innovative System when the following information is provided:"?*

*Please delete "is provided" in (b)(2) since you have said "is provided" at the end of (b).*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1705 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1705 APPROVAL CRITERIA FOR INNOVATIVE SYSTEMS**

4 (a) A trench and dispersal system shall be approved for use as an Innovative System when the following criteria have been  
5 met:

- 6 (1) The performance requirements for an Innovative System identified in G.S. 130A-343(a)(5) and (g) have  
7 been met.
- 8 (2) Materials used in construction shall be equal or superior in physical properties, chemical durability, and  
9 structural integrity compared to materials used for similar proposed systems described in other Sections of  
10 this Subchapter.
- 11 (3) The system has been demonstrated to perform equal or superior to a system which is described in other  
12 Sections of this Subchapter or to an Innovative or Accepted System previously approved in accordance  
13 with this Section, based upon controlled pilot-scale research studies or ~~statistically valid~~ statistically valid  
14 monitoring of full-scale operational systems.
- 15 (4) The system has met one of the following criteria:
  - 16 (A) the system has completed an evaluation protocol as a Provisional System in accordance with Rule  
17 .1704 of this Section;
  - 18 (B) the manufacturer has provided comparable third-party research and testing conducted in other  
19 states, with the data and findings of all evaluations of the system performance, the results of  
20 which support the proposed use of the system; or
  - 21 (C) the system has been evaluated in accordance with G.S. 130A-343(g)(3).
- 22 (5) The following documentation is provided:
  - 23 (A) the results of AASHTO Standard H-5 and H-10 load testing that demonstrate structural integrity  
24 comparable to a conventional trench system;
  - 25 (B) a minimum of 100 installations operational and in use for a minimum of one year. The 100  
26 installations sites may include any combination of systems installed in conjunction with an  
27 approved Provisional System evaluation completed in North Carolina and systems in other states;  
28 and
  - 29 (C) system hydraulic performance and rate of malfunction is equal or superior to the demonstrated  
30 performance of a conventional trench system.

31 (b) Advanced pretreatment systems requesting Innovative Approval for designs complying with TS-I, TS-II, or RCW effluent  
32 standards the following information is provided:

- 33 (1) information required in Paragraphs (a)(1) through (a)(4) of this Rule; and
- 34 (2) documentation is provided of one of the following:
  - 35 (A) for a system that has been certified and listed by a nationally recognized certification body, as  
36 defined by G.S. 130A-343(a)(6) for a period that exceeds two consecutive years, a minimum of  
37 50 complete third-party field verification data sets from a minimum of 15 sites in operation for a

1 minimum of six months, including all constituents necessary to verify compliance with the  
2 applicable effluent standard. Two to five data sets may be from the same site if collected a  
3 minimum of three months apart, with no data excluded from the field sampling sites. The data  
4 may be collected from systems in-state or out-of-state. The data sets shall demonstrate compliance  
5 with TS-I, TS-II, or RCW effluent standards, as applicable; or

6 (B) a minimum of 150 complete third-party field verification data sets from a minimum of 50 sites in  
7 operation for a minimum of six months, including all constituents necessary to verify compliance  
8 with the applicable effluent standard. Two to five data sets may be from the same site if collected  
9 a minimum of three months apart, with no data excluded from the field sampling sites. The 50  
10 sites may include a combination of sites monitored in conjunction with an approved Provisional  
11 System evaluation completed in North Carolina and sites in other states. The data sets shall  
12 demonstrate compliance with TS-I, TS-II, or RCW effluent standards, as applicable.

13 (c) Manufacturers requesting Innovative Approval as both an advanced pretreatment and dispersal system shall ~~also~~ meet the  
14 requirements for advanced pretreatment and dispersal as described in this Rule.

15  
16 *History Note Authority G.S. 130A-335(e) and (f); 130A-343.*

17 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1706

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please delete or define "clear, convincing, and cogent evidence"*

*In (a), should there also be a reference to this Rule? Perhaps something like "based on the information provided in accordance with this Rule"? It appears to me that this Rule gives you all the information needed to make the determination whether it meets the standards set forth in 130a-343.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1706 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1706 APPROVAL CRITERIA FOR ACCEPTED SYSTEMS**

4 (a) The Commission shall designate a wastewater dispersal system as an Accepted System when it finds based on clear,  
5 convincing, and cogent evidence that the standards set forth by G.S. 130A-343(a)(1) and G.S. 130A-343(h) have been met.

6 (b) The following information shall be provided by the petitioner and reviewed by the Commission prior to granting  
7 Accepted System status:

8 (1) documentation of a minimum of 300 systems installed statewide and in use as an approved Innovative  
9 System for more than five years;

10 (2) data and findings of all prior evaluations of the system performance as provided by the manufacturer;

11 (3) results of prior performance surveys of Innovative Systems in use in North Carolina for the five-year period  
12 immediately preceding the petition, including any information available to the manufacturer pertinent to the  
13 accuracy and validity of performance surveys not completed under their control;

14 (4) review(s) of records on system use and performance reported by LHDs, authorized designers, installers,  
15 and Management Entities documenting the experiences with performance of the system in North Carolina,  
16 including information collected and reported in accordance with Rules .1711 and .1712 of this Section.  
17 Upon request of the manufacturer, the Department and manufacturer shall meet to discuss the accuracy and  
18 validity of performance data and surveys to be considered for inclusion in the review. LHDs and other  
19 stakeholders shall be invited to participate in the discussion;

20 (5) a statistically valid survey of system performance shall be performed, as follows:

21 (A) the manufacturer shall provide a proposed survey plan for Department concurrence prior to  
22 carrying out the survey. This plan shall specify the number of systems to be evaluated, period of  
23 evaluation, method to randomly select systems to be evaluated, methods of field and data  
24 evaluation, and proposed survey team members, including proposed cooperative arrangements to  
25 be made with Department and LHD staff. The Department shall facilitate LHD participation with  
26 any performance review or survey. The Department shall utilize the Division of Public Health's  
27 State Center for Health Statistics for assistance in evaluating the statistical validity of proposed  
28 evaluation protocols; and

29 (B) the survey shall include the field evaluation of a minimum of 250 randomly selected Innovative  
30 Systems compared with a minimum of 250 comparably aged randomly selected conventional  
31 systems, with a minimum of 100 of each type of surveyed system currently in use and in  
32 operation for a minimum of five years. Systems surveyed shall be distributed throughout the three  
33 physiographic regions of the state (Mountain, Piedmont and Coastal Plain) in approximate  
34 proportion to the relative usage in the three regions. The survey shall determine comparative  
35 system failure rates, with field evaluations completed during a typical wet-weather season  
36 (February through early April), with matched Innovative and conventional Systems sampled  
37 during similar time periods in each region. The petitioner shall provide a statistical analysis of the

1 survey results showing a one-sided test where, if the failure rate in the sample of Innovative  
2 Systems is a minimum of five percentage points higher than the failure rate in the sample of  
3 conventional systems, there is only a five percent chance that a difference this large would occur  
4 by chance (95 percent confidence level). If a statistically significant higher failure rate in the  
5 Innovative System is not detected, the Commission shall find that the Innovative System performs  
6 the same as or better than the conventional system;

7 (6) Other criteria for determining whether the proposed system has been in general use, and other surveys,  
8 including evaluations of different numbers of Innovative and conventional systems, designed to verify  
9 equal or superior performance of the Innovative System compared to the conventional system under actual  
10 field conditions in North Carolina shall be approved by the Department when they are demonstrated to  
11 have comparable statistical validity as described in Subparagraph (b)(5) of this Rule. The Department's  
12 review and approval of proposed alternate criteria for determining whether the system has been in general  
13 use, or of other proposed surveys are subject to review and concurrence by the Commission.

14 (c) The Commission shall impose any use, design, installation, operation, maintenance, monitoring, and management  
15 conditions in accordance with G.S. 130A-343.

16 ~~(d) Accepted System applications for products that are approved to both treat and disperse wastewater must meet the~~  
17 ~~requirements for treatment and dispersal as described in this Section.~~

18  
19 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

20 *Eff. October 1, 2018*

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1707 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1707 DESIGN AND INSTALLATION CRITERIA FOR PROVISIONAL, INNOVATIVE, AND**  
4 **ACCEPTED APPROVALS**

5 All products approved under this Section shall be designed and installed in accordance with the requirements of the PIA  
6 Approval.

7

8 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

9 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1709

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a)(5), what is meant by “determined to be non-compliant”? Does this simply mean that they don’t meet the requirements of this Rule? I just want to be sure.*

*In (a)(5), what is meant by “the effluent must be sampled for Fecal Coliforms when re-sampled”? Is there a separate underlying requirement that a resample occur? Also, what is meant by “until an effluent sample is determined to be non-compliant”? Overall, I’m a bit confused of the intent here. Same question for (e)(6). Is this referring to the resampling in (e)(8)?*

*In (a)(8), by “may”, do you mean “shall” be re-sampled?*

*In (e), what are the application requirements and approval standards? Same question for (f).*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1709 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2  
3 **15A NCAC 18E .1709 WASTEWATER SAMPLING REQUIREMENTS FOR ADVANCED PRETREATMENT**  
4 **~~SYSTEMS, INCLUDING REDUCED SAMPLING REQUIREMENTS~~ SYSTEMS**

5 (a) Wastewater sampling requirements shall vary in accordance with system classification, designated effluent standard,  
6 system DDF, and system performance history.

7 (1) Provisional Systems shall be grab or composite sampled quarterly for all applicable influent and effluent  
8 constituents listed in Table XXIV of Rule .1201 of this Subchapter until the system receives Innovative  
9 Approval, unless ~~adjusted sampling requirements have been requested and approved in accordance with~~  
10 ~~this Rule.~~ otherwise specified in the Provisional Approval.

11 (2) When the DDF is less than or equal to 1,500 gpd, Innovative Systems shall be grab or composite sampled  
12 annually for all applicable influent and effluent constituents, unless adjusted sampling requirements have  
13 been requested and approved in accordance with this Rule.

14 (3) When the DDF is greater than 1,500 gpd and less than or equal to 3,000 gpd, Innovative Systems shall be  
15 grab or composite sampled twice a year for all applicable influent and effluent constituents listed in Table  
16 XXIV of Rule .1201 of this Subchapter, unless adjusted sampling requirements have been requested and  
17 approved in accordance with this Rule.

18 (4) Provisional Systems shall be sampled for Fecal Coliforms. A manufacturer with a Provisional Approval  
19 may apply for elimination of Fecal Coliform sampling based on a written application and documentation  
20 submitted to the Department that includes the following information:

21 (A) data from a minimum of five separate North Carolina sites in operation for a minimum of six  
22 months;

23 (B) a minimum of 25 data sets including results for fecal coliforms. No data sets shall be ~~excluded,~~  
24 ~~including all data sets that do not meet the effluent standards.~~ excluded. Data sets may be from the  
25 same site if collected a minimum of three months apart; and

26 (C) analysis indicating compliant system performance in accordance with Rule .1710 of this Section.

27 (5) If an effluent sample for a Provisional System that does not have to sample for Fecal Coliforms is  
28 determined to be non-compliant, the effluent must be sampled for Fecal Coliforms when re-sampled. If the  
29 re-sampled effluent indicates compliance, no further Fecal Coliform sampling is required from that ~~site.~~  
30 site, until an effluent sample is determined to be non-compliant.

31 (6) Innovative Systems shall not be sampled for Fecal Coliforms at any site that is found to be compliant with  
32 the effluent standards for all other constituents required to be analyzed. If an effluent sample is determined  
33 to be non-compliant, the effluent must be sampled for Fecal Coliforms when re-sampled. If the re-sampled  
34 effluent indicates compliance, no further Fecal Coliform sampling is required from that ~~site.~~ site, until an  
35 effluent sample is determined to be non-compliant.

36 (7) Innovative Systems serving vacation rentals subject to the North Carolina Vacation Rental Act, G.S. 42A,  
37 shall be sampled during the seasonal high use period.

1 (8) Effluent may be re-sampled within 30 days of receipt of laboratory results indicating non-compliance with  
2 Table XXIV of Rule .1201 of this Subchapter. Complete data sets from resampling may be substituted to  
3 meet the minimum number of compliant data sets required for PIA Approval. Data sets from resampling  
4 may be used by a manufacturer as part of a reduced effluent sampling request in accordance with Paragraph  
5 (f) of this Rule.

6 (9) The Management Entity may record daily wastewater flow and sample influent to the advanced  
7 pretreatment system as needed to determine compliance with Rule .1302(f) of this Subchapter.

8 (b) The manufacturer of an approved Innovative System may request an adjustment in sampling requirements (constituents or  
9 frequency), including reducing to field parameters only, based on a written application submitted to the Department that  
10 includes the following information:

11 (1) data from a minimum of 25 separate North Carolina sites in operation for a minimum of six months after  
12 the Innovative Approval has been issued;

13 (2) written reports summarizing results of the VIP inspections for all North Carolina sites submitted as part of  
14 this Rule;

15 (3) a minimum of 50 complete data sets, ~~including all data sets that do not meet the effluent standards.~~ with no  
16 data excluded. Data sets may be from the same site if collected a minimum of three months apart;

17 (4) analysis indicating compliant system performance in accordance with Rule .1710 of this Section; and

18 (5) identification of the constituents for which the manufacturer requests a reduced sampling frequency.

19 (c) Systems approved for field parameters ~~only~~ shall only be required to sample the field parameters listed in Table XXXII at  
20 the site during a VIP Management Entity inspection, or ~~more frequently~~ as specified in the PIA Approval. The results shall be  
21 recorded in the written report. If the field parameters fall outside the approved range, an effluent sample shall be collected and  
22 analyzed for all parameters as necessary to demonstrate system compliance with the site's applicable effluent standard.

23  
24 **TABLE XXXII.** Field parameters advanced pretreatment systems

Field Parameter	Effluent Criteria
pH	<del>6-10</del> <u>5-9</u>
Turbidity	≤ 10
DO	≤ ≥ 2

25  
26 (d) Manufacturers of proprietary advanced pretreatment systems with Innovative Approval that have ~~previously~~ demonstrated  
27 compliant system performance in accordance with Rule .1710 of this Section may submit a written application to the  
28 Department requesting field parameters sampling only.

29 (e) Manufacturers of proprietary advanced pretreatment systems with Innovative Approval that are also certified and listed by  
30 a nationally recognized certification body and are in compliance with the ongoing verification program of such body, may  
31 submit a written application with a sampling protocol that reduces the data set requirements by up to 50 percent.

1 (f) Manufacturers of proprietary advanced pretreatment systems that comply with Paragraphs (b) or ~~(e)~~ (d) of this Rule may  
2 apply to the Department to replace the requirement for routine effluent sampling of all individual sites with routine field  
3 constituent testing that is included as part of the VIP.

4 (g) While routine sampling of individual sites may no longer be required in accordance with Paragraphs (b), (c), or (d) of this  
5 Rule, effluent sampling may still be determined to be necessary during the visual inspection of the system in accordance with  
6 Rule ~~1302(b)~~ 1302(c) of this Subchapter or if required as part of an enforcement action by the LHD or the Department.

7 (h) Alternative sampling requirements may be proposed by the manufacturer for a Provisional or Innovative System and  
8 approved by the Department when determined to provide an equal or more reliable indication of system compliance with  
9 effluent ~~standards~~ standards.

10

11 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

12 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1710

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In Item (1), rather than “the arithmetic mean (geometric mean for Fecal Coliform)” please consider saying “the geometric mean for Fecal Coliform” and delete “the arithmetic mean”?*

*In Item (4), what is meant by “subjected to significant abuse”? Please delete or define “significant.” Also, what is meant by “abuse”? In this context, I have no idea.*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1710 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1710 ~~OMPLIANCE~~ COMPLIANCE CRITERIA FOR ADVANCED PRETREATMENT**  
4 **SYSTEMS**

5 An approved system shall be considered in compliance with the effluent standards of Table XXIV of Rule .1201 of this  
6 Subchapter when all the following conditions are met:

7 (1) the arithmetic mean (geometric mean for Fecal Coliform) of all data collected from all sites does not  
8 exceed the designated effluent standard;

9 (2) no more than 20 percent of all data from all sites shall exceed the designated effluent standard for any  
10 applicable constituent. Non-compliant data may be substituted with a new data set meeting the designated  
11 effluent standard upon re-sampling within 30 days of receipt of the non-compliant data results;

12 (3) fifty percent of all complete data sets from all sites shall comply with the designated effluent standard for  
13 all applicable constituents;

14 (4) when determining compliance with system effluent standards in Items (1), (2), and (3) of this Rule, no data  
15 sets shall be excluded from individual advanced pretreatment systems except at single sites found to be out  
16 of compliance in accordance with Rule ~~.1302(d)~~ .1302(e) of this Subchapter and sites that have been  
17 otherwise documented to have been subjected to significant abuse; and

18 (5) results of influent samples from all sites shall be provided to demonstrate compliance with percent  
19 reduction effluent criteria in accordance with Table XXIV in Rule .1201 of this Subchapter.

20

21 *History Note:* Authority G.S. 130A-335(e) and (f); 130A-343.

22 Eff. October 1, 2018

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1711

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), line 6, please change "the renewal form includes" to "the renewal form shall include the following:" and put lines 6-8 in list form.*

*Just as a curiosity question in (a), what happens if the product has changed? I assume that you would not want this statement?*

*In (b), what is meant by "with information describing how to request renewal"? Do you mean in accordance with this Rule?*

*In (c)(2), just so I understand the use of "as applicable" here, are there times when a system with a PA would not have an effluent sample collected? If so, I think it's fine to use "as applicable" here. If not, please delete it. Same question for (c)(3).*

*In (e), by "its approval conditions", do you mean the approval conditions of the PA?*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1711 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1711 PROVISIONAL AND INNOVATIVE APPROVAL RENEWAL**

4 (a) All PIA Approvals shall expire on December 31 of each year. PIA manufacturers or other parties who wish to continue  
5 product approval shall submit annually a ~~proprietary~~ product renewal form provided by the ~~Department~~. Department no later  
6 than November 30 of each year. The renewal form includes the following updated information: ~~company's~~ company or  
7 organization's name, address, contact information, contact name, model number(s) approved, and a notarized statement that  
8 the product(s) has not changed from the previous year.

9 (b) The Department shall notify the manufacturer of the pending PIA Approval expiration in writing no later than September  
10 30 of each year. The notification shall provide the manufacturer with information describing how to request renewal.

11 ~~(b)(c)~~ Manufacturers of proprietary products with Provisional Approvals shall additionally submit with its renewal form an  
12 annual report to the State with the following information:

- 13 (1) list of all systems ~~currently~~ installed under the Provisional Approval;
- 14 (2) results of all effluent samples collected, as applicable;
- 15 (3) copies of all Management Entity inspection reports, as applicable;
- 16 (4) assessment of system performance in relation to this Subchapter;
- 17 (5) summary of progress made to complete installations, research, and testing as outlined in the approved  
18 evaluation protocol;
- 19 (6) any conditions and limitations related to the use of the system; and
- 20 (7) a list of all authorized designers, installers, and management entities.

21 ~~(e)(d)~~ A PIA Approval shall be deemed to be renewed upon receipt of the completed renewal form and annual report in  
22 accordance with Paragraphs (a) and ~~(b)~~ (c) of this Rule, as applicable.

23 ~~(d)(e)~~ The Department shall review all annual reports for Provisional Approvals for compliance with its approval conditions,  
24 including its approved evaluation protocol, and determine whether any action to modify, suspend, or revoke the approval is  
25 warranted in accordance with Rule .1708 of this Section.

26

27 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

28 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1712

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*In (a), when will it be required in the PIA approval? I understand that the approval will potentially set different terms for different systems, but how is this determination going to be made by the Department? Please provide some factors.*

*Please break (b) up into at least two separate sentences. Perhaps something like "Manufacturers of proprietary systems... as identified in the PIA Approval to the Department and LHDs. The manufacturers shall update this list annually and include it with the product renewal form required in accordance with Rule .1711 of this Section."*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1712 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1712 AUTHORIZED DESIGNERS, INSTALLERS, AND MANAGEMENT ENTITIES**

4 (a) Designers, installers, and Management Entities shall be authorized in writing by the manufacturer when required in the  
5 PIA Approval.

6 (b) Manufacturers of proprietary systems approved under this Section shall provide a list of manufacturer's authorized  
7 designers, installers, and Management Entities, as identified in the PIA Approval, to the Department and LHDs, and update  
8 this list annually and submit with the product renewal form required in accordance with Rule .1711(a) of this Section.

9

10 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

11 *Eff. October 1, 2018*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Commission for Public Health

RULE CITATION: 15A NCAC 18E .1713

**DEADLINE FOR RECEIPT: Friday, September 14, 2018**

***PLEASE NOTE: This request may extend to several pages. Please be sure you have reached the end of the document.***

The Rules Review Commission staff has completed its review of this Rule prior to the Commission's next meeting. The Commission has not yet reviewed this Rule and therefore there has not been a determination as to whether the Rule will be approved. You may call our office to inquire concerning the staff recommendation.

In reviewing this Rule, the staff recommends the following technical changes be made:

*Please delete the "or" at the end of (1)(a).*

*In Item (8), please add commas before and after "as well as the manufacturer or their authorized representative"*

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amber May  
Commission Counsel  
Date submitted to agency: September 6, 2018

**Permanent Adoption with Changes for Publication in the NCAC**

1 15A NCAC 18E .1713 adopted with changes as published in 32:21 NCR 2171-2272 as follows:

2

3 **15A NCAC 18E .1713 LOCAL HEALTH DEPARTMENT RESPONSIBILITIES**

4 To implement this Section the LHD shall:

5 (1) When a Provisional System is proposed, confirm that the designated repair system complies with the  
6 provisions of Rule .0508 of this Subchapter and with individual PIA Approval requirements, except:

7 (a) when an existing wastewater system is available for immediate use, including connection to a  
8 public or community wastewater system; or

9 (b) when the Provisional System is used as a repair to an existing malfunctioning system when there  
10 are no other approved Innovative or Accepted repair options; or

11 (c) as provided in G.S. 130A-343(f) for Provisional Systems.

12 (2) Notify the Department of all IPs, CAs, and OPs issued for Provisional Systems.

13 (3) Notify the Department of all OPs issued for Innovative Systems.

14 (4) Permit systems designated as approved Accepted Systems in an equivalent manner to a conventional  
15 system at the owner's request, provided the location of each trench, trench depth, or effluent distribution  
16 method remains unchanged. The type of Accepted System installed shall be indicated on the OP.

17 (5) Grant permit reductions in total trench length less than or equal to 25 percent for Innovative or Accepted  
18 Systems only to dispersal fields receiving DSE or better quality. A facility with a full kitchen shall not be  
19 granted a permit reduction in total trench length.

20 (6) Grant facilities generating HSE the 25 percent reduction allowed for Innovative or Accepted Systems if the  
21 system includes an approved advanced pretreatment system designed to ensure effluent strength equal to or  
22 better than DSE.

23 (7) Prohibit issuance of an OP for a proprietary system installed by a person not authorized by the  
24 manufacturer, unless the manufacturer of the proprietary system approves the installation in writing.

25 (8) Inform the Department as well as the manufacturer or their authorized representative of any system  
26 determined to be malfunctioning.

27 (9) Issue a NOV to the owner when the system is determined to be malfunctioning in accordance with Rule  
28 .1303(a)(1) and (2) of this Subchapter or when an individual advanced pretreatment system at a single site  
29 is out of compliance in accordance with Rule ~~.1302(d)~~ .1302(e) of this Subchapter. The notice shall identify  
30 the violations and steps necessary to remedy the problems, including modification of the system,  
31 established time frame to achieve compliance, other follow-up requirements, and specify further  
32 enforcement possibilities if compliance is not achieved.

33 (10) Include in its monthly activity report submitted to the Department the following information identified by  
34 unique codes:

35 (a) number of new system OPs issued for PIA Systems;

36 (b) number of new system OPs issued for Accepted Systems;

37 (c) number of CAs issued for Provisional Systems, including system type;

- 1 (d) number of CAs issued for repairs of PIA Systems, including system type being repaired;
- 2 (e) number of CAs issued for repairs of Accepted Systems, including system type being repaired; and
- 3 (f) repair system type.

4

5 *History Note: Authority G.S. 130A-335(e) and (f); 130A-343.*

6 *Eff. October 1, 2018*