

15A NCAC 02U .0202 APPLICATION SUBMITTAL FOR DEDICATED RECLAIMED WATER SYSTEMS

(a) In addition to the application submittal requirements established Rule .0201 of this Section, the requirements in this Rule shall apply to all new and expanding dedicated reclaimed water facilities.

(b) Soils report. A soil evaluation of the utilization site shall be provided to the Division by the applicant. If required by G.S. 89F, a soil scientist shall prepare this evaluation. This evaluation shall be presented in a report that includes the following:

- (1) A field description of the soil profile, based on examinations of excavation pits and auger borings, within seven feet of land surface or to bedrock, describing the following parameters by individual diagnostic horizons:
 - (A) the thickness of the horizon;
 - (B) the texture;
 - (C) the color and other diagnostic features;
 - (D) the structure;
 - (E) the internal drainage;
 - (F) the depth, thickness, and type of restrictive horizons; and
 - (G) the presence or absence and depth of evidence of any seasonal high water table;Applicants shall dig pits when necessary for proper evaluation of the soils at the site;
- (2) Recommendations concerning loading rates of liquids, solids, other wastewater constituents, and amendments. Annual hydraulic loading rates shall be based on in-situ measurement of saturated hydraulic conductivity in the most restrictive horizon for each soil mapping unit. Maximum irrigation precipitation rates shall be provided for each soil mapping unit;
- (3) A field-delineated soil map delineating soil mapping units within each land application site and showing all physical features, location of pits and auger borings, legends, scale, and a north arrow. The legends shall also include dominant soil series name and family or higher taxonomic class for each soil mapping unit; and
- (4) A Standard Soil Fertility Analysis conducted on each land application site. The Standard Soil Fertility Analysis shall include the following parameters:
 - (A) acidity;
 - (B) base saturation (by calculation);
 - (C) calcium;
 - (D) cation exchange capacity;
 - (E) copper;
 - (F) exchangeable sodium percentage (by calculation);
 - (G) magnesium;
 - (H) manganese;
 - (I) percent humic matter;
 - (J) pH;
 - (K) phosphorus;
 - (L) potassium;
 - (M) sodium; and
 - (N) zinc.

[Note: The North Carolina Board for Licensing of Soil Scientists has determined, via letter dated December 1, 2005, that preparation of soils reports pursuant to this Paragraph constitutes practicing soil science pursuant to G.S. 89F.]

(c) Hydrogeologic report. A hydrogeologic description of the subsurface, prepared by a Licensed Geologist, Licensed Soil Scientist, or Professional Engineer if required by Chapters 89E, 89F, or 89C, respectively, shall be provided to the Division by the applicant for reclaimed water land application sites with a design flow over 25,000 gallons per day. Industrial facilities generating less than 25,000 gallons per day of reclaimed water that demonstrate that the effluent will be of quality similar to domestic wastewater, including effluent requirements established in 15A NCAC 02U .0301(b), shall, upon request, be exempted from this requirement. This evaluation shall be presented in a report that includes a mounding analysis to predict the level of the seasonal high water table after reclaimed water application, if the seasonal high water table is within six feet of the surface. The report shall also consider the following components:

- (1) the regional and local geology and hydrogeology based on research of literature for the area;

- (2) field observations of the site, topographic setting, streams, springs and other groundwater discharge features, drainage features, existing and abandoned wells, rock outcrops, and other features that may affect the movement of the reclaimed water;
- (3) changes in the lithology underlying the site;
- (4) the depth to bedrock and the occurrence of any rock outcrops;
- (5) the hydraulic conductivity and transmissivity of the affected aquifer;
- (6) the depth to the seasonal high water table;
- (7) a discussion of the relationship between the affected aquifers of the site to local and regional geologic and hydrogeologic features; and
- (8) a discussion of the groundwater flow regime of the site prior to the operation of the proposed facility and the post operation of the proposed facility focusing on the relationship of the system to groundwater receptors, groundwater discharge features, and groundwater flow media.

[Note: The North Carolina Board for Licensing of Geologists, via letter dated April 6, 2006, North Carolina Board for Licensing of Soil Scientists, via letter dated December 1, 2005, and North Carolina Board of Examiners for Engineers and Surveyors, via letter dated December 1, 2005, have determined that preparation of hydrogeologic description documents pursuant to this Paragraph constitutes practicing geology pursuant to G.S. 89E, soil science pursuant to G.S. 89F, or engineering pursuant to G.S. 89C.]

(d) The applicant shall provide to the Division a Residuals Management Plan as required by Rule .0802(a) of this Subchapter.

(e) The applicant shall provide to the Division a water balance that determines the required effluent storage based on the most limiting factor from the following:

- (1) hydraulic loading based on the most restrictive horizon;
- (2) hydraulic loading based on the groundwater mounding analysis;
- (3) nutrient management based on agronomic rates for the specified cover crop; or
- (4) nutrient management based on crop management.

*History Note: Authority G.S. 143-215.1; 143-215.3(a);
Eff. June 18, 2011;
Readopted Eff. September 1, 2018.*