SUBCHAPTER 02U – RECLAIMED WATER

SECTION .0100 – GENERAL REQUIREMENTS

15A NCAC 02U .0101 is proposed for readoption.

15A NCAC 02U .0101 PURPOSE

(a) The rules in this Subchapter apply to reclaimed water systems. This includes the generation and utilization of ~~tertiary treated~~ wastewater ~~effluent meeting the standards in Rule .0301 of this Subchapter,~~ used in a beneficial manner and for the purpose of conservation of the State's water resources by reducing the use of a water resource (potable water, surface water, groundwater).

(b) The disposal of treated wastewater effluent that does not serve in place of the use of a water resource is covered by Subchapter 02T of this Chapter.

(c) Reclaimed water utilization systems permitted pursuant to this Subchapter do not exempt any discharge to waters of the State from meeting the permitting requirements established by the National Pollutant Discharge Elimination System (NPDES) permitting program pursuant to G.S. 143-215.1 and 15A NCAC 02H .0100.

~~(c)~~(d) Any use of reclaimed water for Aquifer Storage and Recovery shall be in accordance with G.S. 143-214.2.

~~(e) Requirements for closed-loop recycle systems are provided in Section .1000 of Subchapter 02T of this Chapter.~~

(e) The reuse or return of wastewater from a permitted animal waste facility for waste flushing is covered by 15A NCAC 02T .1300

(f) The recycling of wastewater from groundwater remediation systems through an Injection Well or Infiltration Gallery is covered by 15A NCAC 02T .1600

~~(f)~~(g) The rules in this subchapter set forth the requirements and procedures for application and issuance of permits for the following reclaimed water systems:

(1) treatment works;
(2) utilization systems;
(3) bulk distribution programs; and
(4) local program approval.

History Note: *Authority G.S. 143-215.1; 143-215.1(f); 143-215.3(a)(1); 143-355.5;*
Eff. June 18, 2011.

Commented [A1]: Change: Remove redundant language from scope that is more clearly defined in the Effluent Requirements of this rule.

Effect: Simplifies rule.

Commented [A2]: Change: Remove exemption for closed loop recycle systems from this rule, and add closed loop recycle requirement to this subchapter (see additional changes include below).

Effect: More appropriately recognizes closed-loop systems as beneficial reuse, and simplifies rule requirements by locating them in the same subchapter.

Commented [A3]: Change: Add exemption for animal waste closed loop systems previously included in the closed-loop recycle rules (02T .1000).

Effect: None. More appropriately recognizes closed-loop systems as beneficial reuse, and simplifies rule requirements by locating them in the same subchapter.

Commented [A4]: Change: Add exemption for groundwater remediation closed loop systems previously included in the closed-loop recycle rules (02T .1000).

Effect: None. More appropriately recognizes closed-loop systems as beneficial reuse, and simplifies rule requirements by locating them in the same subchapter.

15A NCAC 02U .0102 is proposed for readoption.

15A NCAC 02U .0102 SCOPE

The rules in this Subchapter apply to all persons proposing to construct, alter, extend, or operate any reclaimed water treatment works or utilization system. The rules in this Section are general requirements that apply to all program rules (found in individual sections) in this Subchapter.

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

15A NCAC 02U .0103 is proposed for readoption.

15A NCAC 02U .0103 DEFINITIONS

The terms used in this Subchapter are defined in G.S. 143-212 and 143-213, and 15A NCAC 02T .0103 except as provided in this Rule as follows:

(1) "Beneficial manner" means the use of water as a necessary part of an activity or process to which the water is being added.

(2) "Beneficial Reuse" means the utilization of reclaimed water in a beneficial manner and for the purpose of conservation of the State's water resources by reducing the use of other water resources (potable water, surface water, groundwater).

(3) "Conjunctive system" means a system where the reclaimed water option is in addition to ~~not necessary to meet the wastewater disposal needs of the facility and where~~ other wastewater utilization or disposal methods (e.g., NPDES permit) that are available to the facility at all times, and reclaimed water utilization is not necessary to meet the wastewater disposal needs of the facility.

(4) "Dedicated system" means a system where the reclaimed water utilization is necessary to meet the wastewater disposal needs of the facility and where other wastewater utilization or disposal methods to accommodate the entire wastewater flow generated at the facility are not available.

(5) "Closed-loop recycle facility" means a system in which nondomestic wastewater is repeatedly recycled back through the process in which the waste was generated.

~~(4)~~(6) "Direct contact irrigation" means application methods that result in the direct contact of reclaimed water on the portion of the crop intended for human consumption.

~~(5)~~(7) "Five-day side stream detention pond" means a basin capable of holding five days worth of treatment plant effluent (permitted flow capacity) in the event that the reclaimed water does not meet the required quality standards for the approved use.

~~(6)~~(8) "Indirect contact irrigation" means application methods that will preclude direct contact of reclaimed water on the portion of the crop intended for human consumption.

~~(7)~~(9) "Net environmental benefit" associated with wetlands augmentation sites is documented evidence supporting continued maintenance of natural conditions, and the protection of endangered species as required in Rule .0105(c)(10) of this Section. Wetland augmentation systems shall provide documentation of the protection of existing wetland uses in accordance with 15A NCAC 02B .0201(f) and .0231 and shall not result in net degradation of the wetland.

~~(8)~~(10) "Reclaimed Water" means treated wastewater effluent, meeting effluent standards established pursuant to Rule .0301 of this Subchapter, and used for beneficial reuse.

History Note: *Authority G.S. 143-213; 143-215.3(a)(1);*
Eff. June 18, 2011.

Commented [A5]: Change: Revise definition of Conjunctive system.

Effect: None, improve clarification.

Commented [A6]: Change: Add definition of Dedicated system.

Effect: None, more appropriately define dedicated reclaimed water system (previously known as non-conjunctive system).

Commented [A7]: Change: Add definition of Closed-loop recycle systems previously included in closed loop recycle rules (02T .1000).

Effect: None, simplifies rules.

15A NCAC 02U .0104 is proposed for readoption.

15A NCAC 02U .0104 ACTIVITIES WHICH REQUIRE A PERMIT

~~No person shall do any of the things or carry out any of the activities contained in G.S. 143-215.1(a) until or unless the person has applied for and received a permit from the Division (or if appropriate a local program approved by the Division pursuant to this Subchapter) and has complied with the conditions prescribed in the permit or is deemed permitted by rules in this Subchapter.~~

Activities which require a permit shall be in accordance with G.S. 143-215.1 and 143-215.3(a)(1).

Commented [A8]: Change: Remove unnecessary language which is already covered under G.S. 143-215

Effect: Simplifies rule.

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

15A NCAC 02U .0105 is proposed for readoption.

15A NCAC 02U .0105 GENERAL REQUIREMENTS

General requirements shall be in accordance with 15A NCAC 02T .0105.

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

15A NCAC 02U .0106 is proposed for readoption.

15A NCAC 02U .0106 SUBMISSION OF PERMIT APPLICATIONS

Submission of permit applications shall be in accordance with 15A NCAC 02T .0106.

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

15A NCAC 02U .0107 is proposed for readoption.

15A NCAC 02U .0107 STAFF REVIEW AND PERMIT PREPARATION

Staff review and permit preparation shall be in accordance with 15A NCAC 02T .0107.

History Note: *Authority G.S. 143-215.1(b); 143-215.1(d); 143-215.3(a)(1); 143-215.3(a)(4); Eff. June 18, 2011.*

15A NCAC 02U .0108 is proposed for readoption.

15A NCAC 02U .0108 FINAL ACTION ON PERMIT APPLICATIONS TO THE DIVISION

Final action on permit applications to the Division shall be in accordance with 15A NCAC 02T .0108.

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

15A NCAC 02U .0109 is proposed for readoption.

15A NCAC 02U .0109 PERMIT RENEWALS

Requests for permit renewals shall be submitted to the Director at least 180 days prior to expiration unless the permit has been revoked by the Director in accordance with Rule .0110 of this Section or a request has been made to rescind the permit. Renewal requests shall be made in accordance with Rule .0105 and Rule .0106 of this Section.

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

15A NCAC 02U .0110 is proposed for readoption.

15A NCAC 02U .0110 MODIFICATION AND REVOCATION OF PERMITS

Modification and revocation of permits shall be in accordance with 15A NCAC 02T .0110.

History Note: *Authority G.S. 143-215.1(b)(2.); 143-215.3(a)(1);*
Eff. June 18, 2011.

15A NCAC 02U .0111 is proposed for readoption.

15A NCAC 02U .0111 CONDITIONS FOR ISSUING GENERAL PERMITS

Conditions for issuing general permits are established in 15A NCAC 02T .0111.

History Note: *Authority G.S. 143-215.1; 143-215.3(a)(1); 143-215.10C;*
Eff. June 18, 2011.

15A NCAC 02U .0112 is proposed for readoption.

15A NCAC 02U .0112 DELEGATION OF AUTHORITY

Delegation of authority shall be in accordance with 15A NCAC 02T .0112.

History Note: *Authority G.S. 143-215.3(a)(1); 143-215.3(a)(4);*
Eff. June 18, 2011.

15A NCAC 02U .0113 is proposed for readoption.

15A NCAC 02U .0113 PERMITTING BY REGULATION ~~(SEE S.L. 2011-48)~~

(a) The following utilizations of reclaimed water and closed-loop recycle activities are deemed to be permitted pursuant to G.S. 143-215.1(b) and it is not necessary for the Division to issue individual permits or coverage under a general permit for construction or operation of the following utilization systems provided the system does not result in any violations of surface water or groundwater standards, there is no unpermitted direct discharge to surface waters, and all criteria required for the specific system is met:

(1) Discharges to the land surface from flushing and hydrostatic testing water associated with utility distribution systems, new sewer extensions or new reclaimed water distribution lines;

(2) Overflow from elevated and covered or enclosed reclaimed water storage facilities where no viable alternative exists and all ~~possible~~ reasonable measures are taken to reduce the risk of overflow;

(3) Any de minimus runoff from reclaimed water used during fire fighting or extinguishing, dust control, soil compaction for construction purposes, street sweeping, overspray on yard inlets, overspray on golf cart paths, or vehicle washing provided the use is approved in a permit issued by the Division;

(4) Incidental discharge to a municipal separate storm sewer system (MS4) that occurs as a result of reclaimed water utilization activities provided ~~the use~~ such activity is approved in a reclaimed water utilization permit issued by the Division, and the discharge does not violate water quality standards. This does not exempt the reclaimed water user from complying with any applicable local ordinances that may prohibit such discharges;

(5) Rehabilitation, repair, or replacement of reclaimed water lines in kind (i.e., size) with the same horizontal and vertical alignment;

(6) In accordance with 15A NCAC 02H .0106(f)(5), flushing (including air release valve discharge) and hydrostatic testing water discharges associated with reclaimed water distribution systems provided that no water quality standards are violated;

(7) Utilization of reclaimed water received from a reclaimed water bulk distribution program permitted under Rule .0601 of this Subchapter;

(8) Irrigation of residential lots or commercial (non-residential) application areas less than ~~one acre~~ two acres in size that are supplied with reclaimed water as part of a conjunctive use reclaimed water system meeting the requirements of Rules .0301, .0401, .0403, .0501, and .0701 of this Subchapter; Chapter 89G of the General Statutes; approved by the local building inspection department; and installed by a North Carolina Licensed Irrigation Contractor pursuant to G.S. 89G. A scaled site map showing the location of the reclaimed water irrigation system and all features necessary to show compliance with applicable setbacks in Rule .0701 of this Subchapter shall be submitted to the reclaimed water provider;

Commented [A9]: Change: Add closed-loop recycle activities.

Effect: None, simplifies rules.

Commented [A10]: Change: Clarify overflow from storage units that are to be deemed permitted.

Effect: None, more appropriately describe the type of storage units.

Commented [A11]: Change: Update language for incidental discharge.

Effect: None, improve clarification.

Commented [A12]: Change: Increase size of residential and commercial lots applicable for coverage by regulation from 1 acre to 2 acres.

Effect: Increase coverage for low risk users.

(9) Irrigation of agricultural crops, including irrigation of ornamental crops by field nurseries and aboveground container nurseries, supplied with reclaimed water as part of a conjunctive use reclaimed water system meeting the requirements of this Subchapter and approved by the reclaimed water provider;

(10) Drip irrigation sites supplied with reclaimed water as part of a conjunctive use reclaimed water system generated from an onsite wastewater treatment facility meeting the criteria of this Subchapter and where the conjunctive system has been approved by the Department and is permitted under 18A .1900;

(11) Toilet and urinal flushing systems supplied by reclaimed water as part of a conjunctive use reclaimed water system meeting the applicable requirements of Rules .0301, .0401, .0403, .0501, and .0701 of this Subchapter; Chapter 89G of the General Statutes; approved by the local building inspection department; and installed by a North Carolina Licensed Plumbing Contractor pursuant to G.S. 89;

(12) Return of wastewater within an industrial or commercial process where there is no anticipated release of wastewater provided the facility develops and maintains a spill control plan in the event of a release, no earthen basins are used, and the system is contained and under roof;

(13) Recycling of rinse water at concrete mixing facilities for concrete mix removal from equipment provided the wastewater is contained within concrete structures, there is sufficient storage capacity to contain the runoff from a 24-hour, 25-year storm event plus one foot freeboard and the facility develops and maintains a spill control plan in the event of a wastewater release. The facility must notify the appropriate Division regional office in writing noting the owner, location, and that the design complies with the above criteria;

(14) Recycling of wash and rinse water at vehicle wash facilities provided the wastewater is contained within concrete, steel or synthetic structures (i.e. not including earthen basins), all vehicle washing is conducted under roof or there are no precipitation inputs (direct or indirect), and the facility develops and maintains a spill control plan in the event of a wastewater release;

(15) The reuse or return of wastewater within the treatment works of a permitted wastewater treatment system;

(16) Recycle systems that are part of a stormwater management systems permitted under 15A NCAC 02H .1000 and the wastewater is recycled back through the process in which the waste was generated; and

(17) Recycling of rinse water for separating gems from gravel, sand, or rock in a flume at commercial gem mine facilities with total system flow of less than 100,000 gpd, provided the wastewater is contained within storage structures (including earthen basins), no biological or chemical additives are used, and the facility develops and maintains a spill control plan in the event of a wastewater release. The facility must notify the appropriate Division regional office in writing noting the owner, location, and that the design complies with the required criteria.

Commented [A13]: **Change:** Include coverage for field nurseries and container nurseries as required by SL 211-48.

Effect: Remove permitting requirements for nurseries.

Commented [A14]: **Change:** Include toilet flushing as an activity permitted by regulation provided standards are met.

Effect: Puts burden on design engineer and plumbing code to ensure safe installation of reclaimed water systems inside of buildings.

Commented [A15]: **Change:** Include low risk closed-loop recycle activities previously permitted in 02T .1000.

Effect: None, activities were previously covered.

Commented [A16]: **Change:** Include closed loop systems at some commercial gem mines as an activity permitted by regulation.

Effect: Reduce permitting burden at low-risk facilities.

(b) Nothing in this Rule shall be deemed to allow the violation of any assigned surface water, groundwater, or air quality standards, and in addition any such violation is a violation of a condition of a permit.

(c) The reclaimed water user shall report any violation of this Rule or discharge to surface waters from the utilization systems listed in Paragraph (a) of this Rule to the Division and in accordance with 15A NCAC 02B .0506.

(d) Utilization systems deemed permitted under this Subchapter shall remain deemed permitted, notwithstanding any violations of surface water or groundwater standards or violations of this Rule or other Permitted By Regulation rules in this Subchapter, until such time as the Director determines that they should not be deemed permitted in accordance with the criteria established in this Rule.

(e) The Director may determine that a utilization system should not be deemed to be permitted in accordance with this Rule and require the utilization system to obtain an individual permit or a certificate of coverage under a general permit. This determination shall be made based on existing or projected environmental impacts, compliance with the provisions of this Rule and the compliance history of the facility owner.

History Note: *Authority G.S. 130A-300; 143-215.1(a)(1); 143-215.1(b)(4)(e); 143-215.3(a),(d);*
Eff. June 18, 2011 (See S.L. 2011-48).

Commented [A17]: **Change:** Clarify reporting requirements for any violation of the rule.

Effect: None, improve clarification.

15A NCAC 02U .0114 is proposed for readoption.

15A NCAC 02U .0114 WASTEWATER DESIGN FLOW RATES

Wastewater design flow rates shall be determined pursuant to 15A NCAC 02T .0114.

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

15A NCAC 02U .0115 is proposed for readoption.

15A NCAC 02U .0115 OPERATIONAL AGREEMENTS

Operational agreements shall be completed pursuant to 15A NCAC 02T .0115.

History Note: *Authority G.S. 143-215.1(d1);*
Eff. June 18, 2011.

15A NCAC 02U .0116 is proposed for readoption.

15A NCAC 02U .0116 CERTIFICATION OF COMPLETION

Certification of completion shall be completed pursuant to 15A NCAC 02T .0116.

History Note: *Authority G.S. 143-215.1;*
Eff. June 18, 2011.

15A NCAC 02U .0117 is proposed for readoption.

15A NCAC 02U .0117 TREATMENT FACILITY OPERATION AND MAINTENANCE

Treatment facility operation and maintenance shall be completed pursuant to 15A NCAC 02T .0117.

History Note: *Authority G.S. 143-215.3;*
Eff. June 18, 2011.

15A NCAC 02U .0118 is proposed for readoption.

15A NCAC 02U .0118 DEMONSTRATION OF FUTURE WASTEWATER TREATMENT CAPACITIES

Demonstration of future wastewater treatment capacities shall be completed pursuant to 15A NCAC 02T .0118.

History Note: Authority G.S. 143-215.3;
Eff. June 18, 2011.

15A NCAC 02U .0119 is proposed for readoption.

15A NCAC 02U .0119 RESERVED FOR FUTURE CODIFICATION

15A NCAC 02U .0120 is proposed for readoption.

15A NCAC 02U .0120 HISTORICAL CONSIDERATION IN PERMIT APPROVAL

Historical consideration in permit approval shall be in accordance with 15A NCAC 02T .0120.

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

SECTION .0200 - APPLICATION REQUIREMENTS

15A NCAC 02U .0201 is proposed for readoption.

15A NCAC 02U .0201 APPLICATION SUBMITTAL ~~– CONJUNCTIVE SYSTEMS~~

(a) The requirements in this Rule apply to all new and expanding ~~conjunctive~~ reclaimed water and closed-loop recycle facilities, as applicable.

(b) A soil evaluation of the utilization site where the reclaimed water is applied to the land surface or otherwise used in a ground absorption manner shall be provided to the Division by the Applicant ~~applicant~~. Evaluations shall include recommended loading rates of liquids, solids, and other constituents. For systems that utilize reclaimed water through irrigation, the evaluation shall also include recommended maximum irrigation precipitation rates. If required by G.S. 89F, a soil scientist shall prepare this evaluation.

[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 under G.S. 89F.]

(c) Engineering design documents. If required by G.S. 89C, a professional engineer shall prepare engineering design documents. The following documents shall be provided to the Division by the Applicant ~~applicant~~:

(1) engineering plans for the entire system, including treatment, storage, application, and utilization facilities and equipment except those previously permitted unless those previously permitted are directly tied into the new units or are critical to the understanding of the complete process;

(2) specifications describing materials to be used, methods of construction, and means for ensuring quality and integrity of the finished product including leakage testing; and

(3) engineering calculations including hydraulic and pollutant loading for each treatment unit, treatment unit sizing criteria, hydraulic profile of the treatment system, total dynamic head and system curve analysis for each pump, buoyancy calculations, and irrigation design.

(4) closed-loop facilities utilizing storage ponds shall provide a water balance calculation documenting all inputs and losses.

[Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via letter dated December 1, 2005, that preparation of engineering design documents pursuant to this Paragraph constitutes practicing engineering under G.S. 89C. In addition, the North Carolina Board of Examiners for Engineers and Surveyors has determined that design of residential reclaimed irrigations systems owned by the property owner does not constitute engineering under G.S. 89C.]

(d) Site plans. If required by G.S. 89C, a professional land surveyor shall provide location information on boundaries and physical features not under the purview of other licensed professions. The Applicant ~~applicant~~ shall provide site plans or maps for treatment and storage facilities and where the reclaimed water is applied to the land surface or otherwise used in a ground absorption manner, except where reclaimed water is utilized for irrigation to single-family residential lots, showing the location, orientation and relationship of facility components including:

(1) a scaled map of the site showing all facility-related structures and fences within 500 feet of the treatment, storage, and utilization areas;

Commented [A1]: Change: Remove differentiation of "conjunctive" systems and establish requirements for all reclaimed water systems. Addition rule change will then establish additional information needed for dedicated systems.

Effect: Simplifies rules.

Commented [A2]: Change: Capitalized Applicant.

Effect: None. Capitalized for consistency.

Commented [A3]: Change: Include application requirement specific to closed loop systems previously located in 02T .1000.

Effect: Simplifies rules.

Commented [A4]: Change: Revise site plans requirements to include range of coverage.

Effect: None, more appropriately cover all required components for site plans.

(2) for land application sites and other ground absorption uses, the site map shall include topography; ~~and~~

(3) to the extent needed to determine compliance with setbacks, the location of all features included in Rule .0701 of this Subchapter.~~;~~ and

(4) setbacks as required by Rule .0701 of this Subchapter and delineation of the review and compliance boundaries.

[Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via letter dated December 1, 2005, that locating boundaries and physical features, not under the purview of other licensed professions, on maps pursuant to this Paragraph constitutes practicing surveying under G.S. 89C.]

(e) The Applicant ~~applicant~~ shall provide property ownership documentation to the Division consisting of:

(1) legal documentation of ownership (e.g., contract, deed or article of incorporation);

(2) written notarized intent to purchase agreement signed by both parties, accompanied by a plat or survey map;

(3) an easement running with the land indicating the intended use of the property and meeting the condition of 15A NCAC 02L .0107(f); or

(4) written notarized lease agreement signed by both parties, indicating the intended use of the property, as well as a plat or survey map. When this Subparagraph is utilized to document property ownership, groundwater standards must be met across the entire site and a compliance boundary need not be provided.

(f) Public utilities shall submit a Certificate of Public Convenience and Necessity or a letter from the NC Utilities Commission to the Division stating that a franchise application has been received.

(g) For reclaimed or recycled water generated from industrial wastewater, the ~~The~~ Applicant ~~applicant~~ shall provide a complete chemical analysis of the typical reclaimed water to be utilized and a listing of any toxic pollutant which the Applicant currently uses or manufactures as an intermediate or final product or byproduct (the Director may waive or modify this requirement for any Applicant if the Applicant demonstrates that it would be unduly burdensome to identify each toxic pollutant and the Director has adequate information to issue the permit)~~for industrial waste~~. The Director may determine that subsequent toxicity testing is required based on the provided information. New facilities may provide chemical analysis of the source water along with predictive calculations for chemical characteristics prior to utilization. The analysis shall include:

(1) Total Organic Carbon;

(2) 5-day Biochemical Oxygen Demand (BOD5);

(3) Chemical Oxygen Demand (COD);

(4) Nitrate Nitrogen (NO3-N);

(5) Ammonia Nitrogen (NH3-N);

(6) Total Kjeldahl Nitrogen (TKN);

(7) pH;

(8) Chloride;

Commented [A5]: Change: Revise site plans requirements to include delineation of setbacks, review boundary and compliance boundary.

Effect: None, more appropriately cover all required components for site plans.

Commented [A6]: Change: Add requirement for industrial facilities to submit a specific toxic pollutant list.

Effect: Eliminate confusion as testing parameters cannot be predetermined prior to application submittal and therefore may be requested by the Division if needed.

Change: Clarify requirements for industrial facilities, and provide flexibility to provided speculative characteristics when it is unreasonable to provide actual sampling results.

Effect: Provide flexibility to meeting application requirements that is currently part of policy.

(9) Total Phosphorus;
(10) Phenol;
(11) Total Volatile Organic Compounds;
(12) Escherichia coli (E.coli) or Fecal Coliform;
(13) Coliphage (Type 2 reclaimed water only);
(14) Clostridium perfringens (Type 2 reclaimed water only);
(15) Calcium;
(16) Sodium;
(17) Magnesium;
(18) Sodium Adsorption Ratio (SAR);
(19) Total Trihalomethanes; and
(20) ~~Toxicity Test Parameters; and~~
~~(21)~~ Total Dissolved Solids.

(h) For irrigation sites, the Applicant ~~applicant~~ shall provide to the Division a project evaluation and a receiver site agronomic management plan and recommendations concerning cover crops and their ability to accept the proposed application rates of liquid, solids, minerals and other constituents of the wastewater.

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

Commented [A7]: Change: Remove requirements to sample for Toxicity Test Parameters.

Effect: Eliminate confusion as testing parameters cannot be predetermined prior to application submittal.

15A NCAC 02U .0202 is proposed for readoption.

15A NCAC 02U .0202 APPLICATION SUBMITTAL FOR ~~NON-CONJUNCTIVE~~ DEDICATED RECLAIMED WATER SYSTEMS

(a) In addition to the Application Submittal Requirements established in Section .0201, the ~~The~~ requirements in this Rule apply to all new and expanding non-conjunctive facilities, as applicable.

(b) Soils Report. A soil evaluation of the utilization site shall be provided to the Division by the Applicant ~~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) Field description of 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) thickness of the horizon;
   (B) texture;
   (C) color and other diagnostic features;
   (D) structure;
   (E) internal drainage;
   (F) depth, thickness, and type of restrictive horizon(s); and
   (G) presence or absence and depth of evidence of any seasonal high water table (SHWT);

   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 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; and

(4) A representative soils analysis (i.e., 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;

Commented [A8]: **Change:** Clarify that "dedicated system" application requirements are in addition to those required as part of 02U .0201.

Effect: Simplifies rules.

(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 under G.S. 89F.]

~~(c) Engineering design documents. If required by G.S. 89C, a professional engineer shall prepare these documents. The applicant shall provide the following documents to the Division:~~

~~(1) engineering plans for the entire system, including treatment, storage, application, and utilization facilities and equipment except those previously permitted unless those previously permitted are directly tied into the new units or are critical to the understanding of the complete process;~~

~~(2) specifications describing materials to be used, methods of construction, and means for ensuring quality and integrity of the finished product including leakage testing; and~~

~~(3) engineering calculations including hydraulic and pollutant loading for each treatment unit, treatment unit sizing criteria, hydraulic profile of the treatment system, total dynamic head and system curve analysis for each pump, buoyancy calculations, and irrigation design.~~

~~[Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via letter dated December 1, 2005, that preparation of engineering design documents pursuant to this Paragraph constitutes practicing engineering under G.S. 89C. In addition, the North Carolina Board of Examiners for Engineers and Surveyors has determined that design of residential reclaimed irrigations systems owned by the property owner does not constitute engineering under G.S. 89C.]~~

Commented [A9]: Change: Remove engineer design documentation already required as part of 02U .0201.

Effect: Simplifies rules.

~~(d) Site plans. If required by G.S. 89C, a professional land surveyor shall provide location information on boundaries and physical features not under the purview of other licensed professions. The applicant shall provide site plans or maps to the Division where the reclaimed water is applied to the land surface or otherwise used in a ground absorption manner depicting the location, orientation and relationship of facility components including:~~

~~(1) a scaled map of the site, with topographic contour intervals not exceeding 10 feet or 25 percent of total site relief and showing all facility related structures and fences within the treatment, storage and utilization areas, soil mapping units shown on all utilization sites;~~

~~(2) the location of all wells (including usage and construction details if available), streams (ephemeral, intermittent, and perennial), springs, lakes, ponds, and other surface drainage features within 500 feet of all waste treatment, storage, and utilization site(s) and delineation of the review and compliance boundaries;~~

~~(3) setbacks as required by Rule .0701 of this Subchapter; and~~

~~(4) site property boundaries within 500 feet of all waste treatment, storage, and utilization site(s).~~

~~[Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via letter dated December 1, 2005, that locating boundaries and physical features, not under the purview of other licensed professions, on maps pursuant to this Paragraph constitutes practicing surveying under G.S. 89C.]~~

Commented [A10]: Change: Remove specific site plan submittal requirements that are part of 02U .0201.

Effect: Simplifies rules.

~~(e)~~(c) A hydrogeologic description prepared by a Licensed Geologist, Licensed Soil Scientist, or Professional Engineer if required by Chapters 89E, 89F, or 89C respectively of the subsurface ~~to a depth of 20 feet or bedrock, whichever is less,~~ shall be provided to the Division by the Applicant ~~applicant~~ for ~~systems treating industrial waste and any system~~ reclaimed water land application sites with a design flow of over 25,000 gallons per day. Industrial facilities generating less than 25,000 gallons per day of wastewater, and can demonstrate that the effluent will be of quality similar to domestic wastewater including effluent requirements established in 15A NCAC 02U .0301(b), may request and receive an exemption from this requirement. ~~A greater depth of investigation is required if the respective depth is used in predictive calculations. This evaluation shall be based on borings for which the numbers, locations, and depths are sufficient to define the components of the hydrogeologic evaluation. In addition to borings, other techniques may be used to investigate the subsurface conditions at the site. These techniques may include geophysical well logs, surface geophysical surveys, and tracer studies.~~ 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 ~~includes~~ the following components:

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

(2) ~~a description, based on~~ field observations of the site, ~~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, ~~contaminant plume and treated wastewater;~~

(3) changes in lithology underlying the site;

(4) depth to bedrock and occurrence of any rock outcrops;

(5) the hydraulic conductivity and transmissivity of the affected aquifer(s);

(6) 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;

(8) ~~a discussion of the~~ groundwater flow regime of the site prior to operation of the proposed facility and post operation of the proposed facility focusing on the relationship of the system to groundwater receptors, groundwater discharge features, and groundwater flow media; and

~~(9) if the SHWT is within six feet of the surface, a mounding analysis to predict the level of the SHWT after wastewater reclaimed water application.~~

[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 under G.S. 89E, soil science under G.S. 89F, or engineering under G.S. 89C.]

~~(f) The applicant shall provide property ownership documentation to the Division consisting of:~~

Commented [A11]: Change: Provide exemption for certain industrial facilities from having to conduct a hydrogeologic evaluation.

Effect: Remove permitting burden for wastewaters shown to be of low risk or a quality where the evaluation is not required.

Change: Simplify hydrogeologic evaluation requirements to limit analysis to a mounding analysis.

Effect: Simplify rules and better recognize low risk to groundwater associated with reclaimed water systems.

(1) legal documentation of ownership (i.e., contract, deed or article of incorporation);

(2) written notarized intent to purchase agreement signed by both parties, accompanied by a plat or survey map;

(3) an easement running with the land specifically indicating the intended use of the property and meeting the condition of 15A NCAC 02L .0107(f); or

(4) written notarized lease agreement signed by both parties, indicating the intended use of the property, as well as a plat or survey map. Groundwater standards shall be met across the entire site, and a compliance boundary shall not be provided.

(g) Public utilities shall submit a Certificate of Public Convenience and Necessity or a letter from the NC Utilities Commission stating that a franchise application has been received.

(h) The applicant shall provide to the Division a complete chemical analysis of the typical reclaimed water to be utilized for industrial waste. The analysis shall include:

(1) Total Organic Carbon;

(2) 5-day Biochemical Oxygen Demand (BOD5);

(3) Chemical Oxygen Demand (COD);

(4) Nitrate Nitrogen (NO3-N);

(5) Ammonia Nitrogen (NH3-N);

(6) Total Kjeldahl Nitrogen (TKN);

(7) pH;

(8) Chloride;

(9) Total Phosphorus;

(10) Phenol;

(11) Total Volatile Organic Compounds;

(12) Escherichia coli (E. coli) or Fecal Coliform;

(13) Coliphage (Type 2 reclaimed water only);

(14) Clostridium perfringens (Type 2 reclaimed water only);

(15) Calcium;

(16) Sodium;

(17) Magnesium;

(18) Sodium Adsorption Ratio (SAR);

(19) Total Trihalomethanes;

(20) Toxicity Test Parameters; and

(21) Total Dissolved Solids.

(i) For irrigation sites, the applicant shall provide to the Division a project evaluation and a receiver site agronomic management plan and recommendations concerning cover crops and their ability to accept the proposed application rates of liquid, solids, minerals and other constituents of the wastewater.

Commented [A12]: **Change:** Remove ownership documentation, documentation of Certificate of Public Convenience and Necessity, and chemical analysis requirements that are part of 02U .0201.

Effect: Simplifies rules.

~~(j)~~(d) The Applicant ~~applicant~~ shall provide to the Division a residuals management plan as required by Rule .0802 (a) of this Subchapter. ~~A written commitment is not required at the time of application; however, it shall be provided prior to operation of the permitted system.~~

~~(k)~~(e) The Applicant ~~applicant~~ shall provide a water balance to the Division that determines required storage based upon the most limiting factor of the hydraulic loading based on either the most restrictive horizon or groundwater mounding analysis; or nutrient management based on either agronomic rates for a specified cover crop or crop management requirements.

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

Commented [A13]: **Change:** Remove requirement that a written commitment to accept residuals be submitted prior to operation of the permitted system.

Effect: Removes contradiction with 02U .0802.

SECTION .0300 - EFFLUENT STANDARDS

15A NCAC 02U .0301 is proposed for readoption.

15A NCAC 02U .0301 RECLAIMED WATER EFFLUENT STANDARDS

(a) Reclaimed water treatment processes classified as Type 2 by the rules in this Subchapter shall produce an effluent quality ~~a tertiary quality effluent (filtered or equivalent)~~ prior to storage, distribution, or utilization that meets the parameter limits listed below:

(1) monthly average BOD_5 of less than or equal to 5 mg/~~l~~L and a daily maximum BOD_5 of less than or equal to 10 mg/~~l~~L;

(2) monthly average TSS of less than or equal to 5 mg/~~l~~L and a daily maximum TSS of less than or equal to 10 mg/~~l~~L;

(3) monthly average NH_3-N of less than or equal to 1 mg/~~l~~L and a daily maximum NH_3-N of less than or equal to 2 mg/~~l~~L;

(4) monthly geometric mean ~~Escherichia coli (E. coli)~~ *Escherichia coli (E. coli)* or fecal coliform level of less than or equal to 3/100 m~~l~~L and a daily maximum ~~E. coli~~ *E. coli* or fecal coliform level of less than or equal to 25/100 m~~l~~L;

(5) monthly geometric mean Coliphage level of less than or equal to 5/100 m~~l~~L and a daily maximum Coliphage level of less than or equal to 25/100 m~~l~~L;

(6) monthly geometric mean ~~Clostridium perfringens~~ *Clostridium perfringens* level of less than or equal to 5/100 m~~l~~L and a daily maximum ~~Clostridium perfringens~~ *Clostridium perfringens* level of less than or equal to 25/100 m~~l~~L; and

(7) maximum Turbidity of 5 Nephelometric Turbidity Units (NTUs).

(b) Reclaimed water treatment processes classified as Type 1 by the rules in this Subchapter shall produce an effluent quality ~~a tertiary quality effluent (filtered or equivalent)~~ prior to storage, distribution, or utilization that meets the parameter limits listed below:

(1) monthly average BOD_5 of less than or equal to 10 mg/~~l~~L and a daily maximum BOD_5 of less than or equal to 15 mg/~~l~~L;

(2) monthly average TSS of less than or equal to 5 mg/~~l~~L and a daily maximum TSS of less than or equal to 10 mg/~~l~~L;

(3) monthly average NH_3-N of less than or equal to 4 mg/~~l~~L and a daily maximum NH_3-N of less than or equal to 6 mg/~~l~~L;

(4) monthly geometric mean ~~E. coli~~ *E. coli* or fecal coliform level of less than or equal to 14/100 m~~l~~L and a daily maximum ~~E. coli~~ *E. coli* or fecal coliform level of less than or equal to 25/100 m~~l~~L; and

(5) maximum Turbidity of 10 NTUs.

Commented [A1]: **Change:** Remove specific level of treatment term "tertiary" from effluent standards.

Effect: None, simplifies rules.

Commented [A2]: **Change:** Use correct ammonia ion terminology.

Effect: None, this is a technical change to use correct language.

Commented [A3]: **Change:** Use italics for bacterium names.

Effect: None, this is a technical change to use correct language.

Commented [A4]: **Change:** Use italics for bacterium names.

Effect: None, this is a technical change to use correct language.

Commented [A5]: **Change:** Remove specific level of treatment term "tertiary" from effluent standards.

Effect: None, simplifies rules.

Commented [A6]: **Change:** Use correct ammonia ion terminology.

Effect: None, this is a technical change to use correct language.

Commented [A7]: **Change:** Use italics for bacterium names.

Effect: None, this is a technical change to use correct language.

(c) Reclaimed water produced by industrial facilities are not required to meet the criteria in this Rule if the reclaimed water is used at the facility in an industrial process and the area of use has no public access and does not result in employee exposure.

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

SECTION ~~.0401~~ .0400 DESIGN STANDARDS

15A NCAC 02U .0401 is proposed for readoption.

15A NCAC 02U .0401 DESIGN CRITERIA FOR RECLAIMED ~~WASTE~~WATER TREATMENT FACILITIES ~~– CONJUNCTIVE SYSTEMS~~

(a) The requirements in this Rule apply to all new and expanding ~~conjunctive~~ reclaimed water treatment facilities, as applicable.

(b) Continuous on-line monitoring and recording for turbidity or particle count and flow shall be provided prior to storage, distribution or utilization.

(c) Effluent from the treatment facility shall not be discharged to the storage, distribution or utilization system if either the turbidity exceeds 10 NTUs or if the permitted pathogen levels cannot be met. The facility shall have the ability to utilize alternate wastewater management options when the effluent quality is not sufficient.

(d) An automatically activated standby power source or other means to prevent improperly treated wastewater from entering the storage, distribution or utilization system shall be provided.

(e) The permit shall require an operator certified by the Water Pollution Control System Operators Certification Commission (WPCSOCC) of a grade equivalent or greater than the facility classification to be on call 24 hours per day.

(f) No storage facilities are required as long as it can be demonstrated that other permitted means of disposal are available if 100 percent of the reclaimed water cannot be utilized. When provided, storage basins shall meet the design requirements in Rule .0402~~(g)~~(f) of this Section.

(g) Reclaimed water irrigation system design shall not exceed the recommended precipitation rates in the soils report prepared pursuant to Rule ~~.0201~~ .0200 of this Subchapter. Single family residential irrigation systems and commercial (non-residential) irrigation systems ~~less than one acre in size that are~~ permitted by regulation under Rule .0113(8) of this Subchapter do not require preparation of a soils report.

(h) All open-atmosphere treatment lagoons/ponds and storage units shall have at least two feet of freeboard.

~~(h)~~(i) Type 2 reclaimed water treatment facilities shall provide dual disinfection systems containing UV disinfection and chlorination or equivalent dual disinfection processes to meet pathogen control requirements.

~~(i)~~(j) Type 2 reclaimed water treatment facilities shall provide documentation that the combined treatment and disinfection processes are capable of the following:

(1) log 6 or greater reduction of ~~E. coli;~~ *E. coli*;

(2) log 5 or greater reduction of Coliphage; and

(3) log 4 or greater reduction of ~~Clostridium perfringens.~~ *Clostridium perfringens*.

(k) Automatically activated irrigation systems shall be connected to a rain / moisture sensor to prevent irrigation during precipitation events, or wet conditions that would cause runoff.

History Note: *Authority G.S. 143-215.1; 143-215.3(a);*

Commented [A1]: Change: Remove differentiation of "conjunctive" systems and establish requirements for all reclaimed water systems. Addition rule change will then establish addition design criteria for "dedicated systems".

Effect: Simplifies rules.

Commented [A2]: Change: Correct rule reference.

Effect: None.

Commented [A3]: Change: Correct rule reference.

Effect: None.

Commented [A4]: Change: Add freeboard requirement for lagoons/open-atmosphere units.

Effect: Provides consistency with other non-discharge systems.

Commented [A5]: Change: Use italics for bacterium names.

Effect: None, this is a technical change to use correct language.

Commented [A6]: Change: Add requirement for automated irrigation systems to use precipitation/moisture sensor.

Effect: Prevents automated irrigation during rain events.

Eff. June 18, 2011.

15A NCAC 02U .0402 is proposed for readoption.

15A NCAC 02U .0402 DESIGN CRITERIA FOR DEDICATED RECLAIMED ~~WASTE~~WATER TREATMENT FACILITIES ~~– NON-CONJUNCTIVE SYSTEMS~~

(a) In addition to the Design Criteria established in Section .0401, the ~~The~~ requirements in this Rule apply to all new and expanding ~~non-conjunctive~~ dedicated reclaimed water facilities, ~~as applicable~~ unless specified otherwise.

(b) ~~Aerated f~~Flow equalization ~~facilities~~ shall be provided with a capacity based upon either a representative diurnal hydrograph or at least 25 percent of the daily system design flow, except for those facilities utilizing septic tanks or lagoon treatment.

(c) Dual facilities shall be provided for all essential treatment units.

~~(d) Continuous on-line monitoring and recording for turbidity or particle count and flow shall be provided prior to storage, distribution, or utilization.~~

~~(e)~~(d) Effluent from the treatment facility shall be discharged to a five-day side-stream detention ~~pond~~ unit if either the turbidity exceeds 10 NTUs or if the permitted pathogen levels cannot be met. The facility shall have the ability to return the effluent in the five-day side-stream detention ~~pond~~ unit back to the head of the treatment facility.

~~(f)~~(e) There shall be no public access to the wastewater treatment facility or the five-day side-stream detention ~~pond~~ unit. ~~The five-day side-stream detention pond shall have either a liner of natural material at least one foot in thickness and having a hydraulic conductivity of no greater than 1 x 10^{-6} centimeters per second when compacted, or a synthetic liner of sufficient thickness to exhibit structural integrity and an effective hydraulic conductivity no greater than that required of the natural material liner. Liner requirements of the five-day side-stream detention pond or separation distances between the bottom of the five-day side-stream detention pond and the groundwater table may be reduced if it can be demonstrated by predictive calculations or modeling methods that satisfy the Director, that construction and use of the five-day side-stream detention pond will not result in contravention of assigned groundwater standards at the compliance boundary.~~

~~(g)~~(f) The storage ~~basin~~ and five-day side-stream detention units shall have either a liner of natural material at least one foot in thickness and having a hydraulic conductivity of no greater than 1 x 10^{-6} centimeters per second when compacted, or a synthetic liner of sufficient thickness to exhibit structural integrity and an effective hydraulic conductivity no greater than that required of the natural material liner. Liner requirements of the ~~storage basin~~ unit or separation distances between the bottom of storage basin and the groundwater table may be reduced if it can be demonstrated by predictive calculations or modeling methods that satisfy the Director, that construction and use of the ~~storage basin~~ unit will not result in contravention of assigned groundwater standards at the compliance boundary.

~~(h) Automatically activated standby power supply onsite, capable of powering all essential treatment units under design conditions shall be provided~~.

~~(i) The permit shall require an operator certified by the Water Pollution Control System Operators Certification Commission (WPCSOCC) of a grade equivalent or greater than the facility classification to be on call 24 hours per day.~~

~~(j)~~(g) By-pass and overflow lines are prohibited.

Commented [A7]: Change: Clarify that "non-conjunctive application requirements are in addition to those required as part of 02U .0401.

Effect: Simplifies rules.

Commented [A8]: Change: Add exemption to flow equalization requirement for facilities utilizing septic tank or lagoon treatment.

Effect: Reduce the unnecessary permitting burden.

Commented [A9]: Change: Remove various design requirements that are part of 02U .0201.

Effect: Simplifies rules.

Commented [A10]: Change: Change ponds to units.

Effect: Allows more flexibility.

Commented [A11]: Change: Remove redundancy of liner requirements.

Effect: Simplifies rules.

Commented [A12]: Change: Change ponds to units.

Effect: Allows more flexibility.

Commented [A13]: Change: Remove various design requirements that are part of 02U .0201.

Effect: Simplifies rules.

~~(k)~~(h) Multiple pumps shall be provided ~~if~~ wherever pumps are used.

~~(l)~~(i) A water-tight seal on all treatment/storage units or minimum of two feet protection from 100-year flood shall be provided.

~~(m) Reclaimed water irrigation system design shall not exceed the recommended precipitation rates in the soils report prepared pursuant to Rule .0202 of this Subchapter.~~

~~(n)~~(j) A minimum of 30 days of residual storage shall be provided.

~~(o)~~(k) Utilization areas shall be designed to maintain a one-foot vertical separation between the seasonal high water table and the ground surface.

~~(p)~~(l) Influent pump stations shall meet the sewer minimum design criteria as provided in 15A NCAC 02T .0300.

~~(q) Type 2 reclaimed water treatment facilities shall provide dual disinfection systems containing UV disinfection or equivalent and chlorination or equivalent to provide pathogen control.~~

~~(r) Type 2 reclaimed water treatment facilities shall provide documentation that the combined treatment and disinfection processes are capable of the following:~~

~~(1) log 6 or greater reduction of E. coli;~~

~~(2) log 5 or greater reduction of Coliphage; and~~

~~(3) log 4 or greater reduction of Clostridium perfringens.~~

(m) Domestic, commercial, or industrial dedicated reclaimed water systems, including single-family residence facilities, with flow less than 1,000 gallons per day (gpd), are exempt from meeting parts (c) and (h) of this Rule, provided that repair or replacement of essential treatment units can be completed within five days.

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

Commented [A14]: Change: Replace "if" with "wherever."

Effect: None, clarification.

Commented [A15]: Change: Remove various design requirements that are part of 02U .0201.

Effect: Simplifies rules.

Commented [A16]: Change: Remove various design requirements that are part of 02U .0201.

Effect: Simplifies rules.

Commented [A17]: Change: Add exemption to certain parts of the rule for facilities with flow less than 1,000 gpd.

Effect: Reduce permitting burden for low-risk facilities.

15A NCAC 02U .0403 is proposed for readoption.

15A NCAC 02U .0403 DESIGN CRITERIA FOR DISTRIBUTION LINES ~~(SEE S.L. 2011-218)~~

(a) The requirements in this Rule apply to all new distribution lines.

(b) All reclaimed water valves, storage facilities and outlets shall be tagged or labeled to warn the public or employees that the water is not intended for drinking.

(c) All reclaimed water piping, valves, outlets and other appurtenances shall be color-coded, taped, or otherwise marked to identify the source of the water as being reclaimed water as follows:

(1) All reclaimed water piping and appurtenances shall be either colored purple (Pantone 522 or equivalent) and embossed or integrally stamped or marked "CAUTION: RECLAIMED WATER - DO NOT DRINK" or be installed with a purple (Pantone 522 or equivalent) identification tape or polyethylene vinyl wrap. The warning shall be stamped on opposite sides of the pipe and repeated every three feet or less;

(2) Identification tape shall be at least three inches wide and have white or black lettering on purple (Pantone 522 or equivalent) field stating "CAUTION: RECLAIMED WATER - DO NOT DRINK". Identification tape shall be installed on top of reclaimed water pipelines, fastened at least every 10 feet to each pipe length and run continuously the entire length of the pipe; and

(3) Existing underground distribution systems retrofitted for the purpose of utilizing reclaimed water shall be taped or otherwise identified as in Subparagraphs (1) or (2) of this Paragraph. This identification need not extend the entire length of the distribution system but shall be incorporated within 10 feet of crossing any potable water supply line or sanitary sewer line.

(d) All reclaimed water valves and outlets shall be of a type, or secured in a manner, that permits operation by personnel authorized by the entity that operates the reclaimed water system.

(e) Hose bibs shall be located in locked, below grade vaults that shall be labeled as being of nonpotable quality. As an alternative to the use of locked vaults with standard hose bib services, other locking mechanisms such as hose bibs which can only be operated by a tool may be placed above ground and labeled as nonpotable water.

(f) Cross-Connection Control

(1) There shall be no direct cross-connections between the reclaimed water and potable water systems; unless such connection has been approved by the Department pursuant to 15A NCAC 18C .0406 (Distribution Systems)

~~(2) Where both reclaimed water and potable water are supplied to a reclaimed water use area in residential or commercial (irrigation) applications, a dual check valve device (or a device providing equal or better protection) shall be installed at the potable water service connection to the use area;~~

~~(3) Where both reclaimed water and potable water are supplied to a reclaimed water use area in industrial or commercial (non-irrigation) applications, a reduced pressure principle backflow prevention device or an approved air gap separation pursuant to 15A NCAC 18C shall be installed at the potable water service connection to the use area; and~~

~~(4) Where potable water is used to supplement a reclaimed water system, there shall be an air gap separation, approved and regularly inspected by the potable water supplier, between the potable water and reclaimed water systems.~~

(g) Irrigation system piping shall be considered part of the distribution system for the purposes of this Rule.

(h) Reclaimed water distribution lines shall be located ~~10~~ at least 2 feet horizontally from and 18 inches below any water line where practicable. Where these separation distances cannot be met, the piping and integrity testing procedures shall meet water main standards in accordance with 15A NCAC 18C.

(i) Reclaimed water distribution lines shall not be less than 50 feet from a well unless the piping and integrity testing procedures meet water main standards in accordance with 15A NCAC 18C, but in no case shall they be less than 25 feet from a private well.

(j) Reclaimed water distribution lines shall meet the separation distances to sewer lines in accordance with 15A NCAC 02T .0305.

History Note: *Authority G.S. 143-215.1; 143-215.3(a.);*
Eff. June 18, 2011 (S.L. 2011-218).

Commented [A18]: **Change:** Include cross connection control language as required by SL 211-218.

Effect: Clarify that cross connections are not allowed unless approved by Public Water Supply rules.

Commented [A19]: **Change:** Modify setback to water lines to be more consistent with setbacks established for potable water lines in 15A NCAC 18C .0906.

Effect: Reduced setback requirement.

15A NCAC 02U .0404 is proposed for readoption.

15A NCAC 02U .0404 DESIGN CRITERIA FOR CLOSED-LOOP RECYCLE SYSTEMS

(a) The requirements in this Rule apply to all new and expanding closed-loop recycle facilities, as applicable.

(b) Design criteria related to closed-loop recycle systems in general.

(1) There shall be no public access to the wastewater treatment equipment, wastewater storage structures or to the wastewater within a closed-loop recycle facility.

(2) Where potable water is used to supplement a closed-loop recycle water system, There shall be no direct cross-connections between the closed-loop system and potable water systems, unless such connection has been approved by the Department pursuant to 15A NCAC 18C .0406 (Distribution Systems).

(c) Design criteria related to treatment and storage units utilized in closed-loop recycle systems.

(1) The facility shall have the ability to stop production of effluent, return the effluent back to the treatment facility, store the effluent, or discharge the effluent to another permitted wastewater treatment facility when recycling cannot be conducted.

(2) Essential treatment units shall be provided in duplicate where proper operation of the treatment unit is essential to the operation of the closed-loop recycle system and the operation cannot safely or efficiently be immediately stopped or altered to operate without the closed-loop recycle system.

(3) An automatically activated standby power source, system shutdown, or other means shall be employed to prevent improperly treated wastewater from entering a treated waste water storage structure or from being recycled where loss of power would create an unsafe condition.

(4) Where they are suitable for reuse, residues recovered during the treatment process may be recycled through the processes that generated the wastewater rather than disposed of as a waste.

(5) A water tight seal on all treatment/storage units or a minimum of two feet protection from the 100-year flood shall be provided.

(6) Storage units in a closed-loop recycle system shall be designed to contain the accumulation of water from a 25-year, 24-hour storm event with 1 foot freeboard, unless the system is protected from rainfall and runoff.

(7) The bottoms of earthen impoundments, trenches or other similar excavations shall be at least four feet above the bedrock surface, except that the bottom of excavations which are less than four feet above bedrock shall have a liner with a hydraulic conductivity no greater than 1×10^{-7} centimeters per second. Liner thickness shall be that thickness necessary to achieve a leakage rate consistent with the sensitivity of classified groundwaters. Liner requirements may be reduced if it can be demonstrated by predictive calculations or modeling methods acceptable to the Director that construction and use of these treatment and disposal units will not result in contravention of surface water or groundwater standards.

(8) Treatment works and disposal systems utilizing earthen basins, lagoons, ponds or trenches, excluding holding ponds containing non-industrial treated effluent prior to spray irrigation, for treatment, storage or disposal shall have either a liner of natural material at least one foot in thickness and having a hydraulic conductivity of no greater than 1 x 10^{-6} centimeters per second when compacted, or a synthetic liner of sufficient thickness to exhibit structural integrity and an effective hydraulic conductivity no greater than that of the natural material liner.

History Note: *Authority G.S. 143-215.1; 143-215.3(a);*
Eff. September 1, 2006.

Commented [A20]: **Change:** Include new Section for the design criteria of closed-loop recycle systems previously permitted in 02T .1000.

Effect: None, activities were previously covered.

SECTION .0500 - GENERAL UTILIZATION REQUIREMENTS

15A NCAC 02U .0501 is proposed for readoption.

15A NCAC 02U .0501 RECLAIMED WATER UTILIZATION ~~(SEE S.L. 2011-48)~~

(a) Reclaimed water utilized in a manner that includes application to the land surface shall meet the following criteria:

(1) The reclaimed water shall meet requirements for Type 1 reclaimed water in Rule .0301(b) of this Subchapter;

(2) Notification shall be provided by the Permittee ~~permittee~~ or its representative to inform the public and employees of the use of reclaimed water (Non Potable Water) and that the reclaimed water is not intended for drinking. Notification material shall be provided to employees in a language they understand;

(3) The reclaimed water generator shall develop and maintain a record keeping program for distribution of reclaimed water;

(4) The reclaimed water generator shall develop and maintain an education and approval program for all use of reclaimed water. Educational material shall be provided to employees in a language they understand;

(5) The reclaimed water generator shall develop and maintain a routine review and inspection program for all uses of reclaimed water on property not owned by the generator;

(6) The compliance boundary and the review boundary for groundwater are established at the irrigation area boundaries. No deed restrictions or easements shall be required to be filed on adjacent properties. Land application of effluent shall be on property controlled by the generator unless an easement is provided in accordance with 15A NCAC 02L .0107 except in cases where a compliance boundary is not established; and

(7) Reclaimed water irrigated on designed soil matrix, such as artificial or natural turf athletic fields with subsurface drainage shall meet the following conditions:

(A) Annual hydraulic loading and maximum precipitation rates shall be designed to irrigate a volume not to exceed the design water capacity of the designed soil matrix above the drainage system; and

(B) Outlets of the drainage system shall not be allowed to discharge directly to surface waters (intermittent or perennial) or to storm water conveyance systems that do not allow for infiltration prior to discharging to surface waters.

(b) Reclaimed water used for activities other than land application (such as industrial and commercial uses) shall meet the criteria below:

(1) The reclaimed water shall meet requirements for Type 1 reclaimed water;

(2) Notification shall be provided by the Permittee ~~permittee~~ or its representative to inform the public and employees of the use of reclaimed water (Non Potable Water) and that the reclaimed water is

Commented [A1]: Change: Capitalized Permittee.

Effect: None. Capitalized for consistency.

not intended for drinking, and notification material shall be provided to employees in a language they understand;

(3) The reclaimed water generator shall develop and maintain an education and approval program for all reclaimed water users, and educational material shall be provided to employees in a language they understand;

(4) The reclaimed water generator shall develop and maintain a record keeping program for distribution of reclaimed water;

(5) The reclaimed water generator shall develop and maintain a routine review and inspection program for all reclaimed water users; and

(6) Reclaimed water used for activities other than land application shall not be used in a manner that causes exposure to aerosols.

~~(c) Reclaimed water used in commercial or industrial facilities for the purposes of urinal and toilet flushing or fire protection in sprinkler systems shall be approved by the Director if the applicant can demonstrate to the Division that public health and the environment will be protected.~~

~~(d)~~(c) Reclaimed water shall not be used for swimming pools, hot-tubs, spas or similar uses.

~~(e) Reclaimed water shall not be used for direct reuse as a raw potable water supply.~~

History Note: *Authority G.S. 143-215.1; 143-215.3(a);*
Eff. June 18, 2011 (S.L. 2011-48).

Commented [A2]: Change: Remove restriction for use as toilet flush water and for direct reuse as a raw potable water supply.

Effect: Toilet flush is an acceptable practice in other states and can be done safely provided plumbing code is met.

Commented [A3]: Change: Removal of potable water supply prohibition.

Effect: Use of reclaimed water as a potable water supply should be under the purview of Public water supply rules.

SECTION .0600 - BULK DISTRIBUTION OF RECLAIMED WATER

15A NCAC 02U .0601 is proposed for readoption.

15A NCAC 02U .0601 BULK DISTRIBUTION OF RECLAIMED WATER

(a) Tank trucks and other equipment used to distribute reclaimed water shall be identified with advisory signs.

(b) Tank trucks used to transport reclaimed water shall not be used to transport potable water that is used for drinking or other potable purposes.

(c) Tank trucks used to transport reclaimed water shall not be filled through on-board piping or removable hoses that may subsequently be used to fill potable water tanks.

(d) The reclaimed water generator shall develop and maintain an education and approval program for all reclaimed water users.

(e) The reclaimed water generator shall develop and maintain a record keeping program for bulk distribution of reclaimed water.

(f) The reclaimed water generator shall develop and maintain a routine review and inspection program for reclaimed water users.

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

SECTION .0700 - SETBACKS

15A NCAC 02U .0701 is proposed for readoption.

15A NCAC 02U .0701 SETBACKS

(a) Treatment and storage facilities associated with systems permitted under this Subchapter shall adhere to the setback requirements in 15A NCAC 02T .0500 except as provided in this Rule.

(b) Final effluent storage facilities shall meet all setback requirements for riparian buffer rules pursuant to 15A NCAC 02B as well as the following setbacks:

	feet
Any private or public water supply source	100
Surface waters (streams – intermittent and perennial, perennial waterbodies, and wetlands)	50
Any well with exception of monitoring wells	100
Any property line (facilities constructed on or after June 18, 2011)	50
Any property line (facilities constructed prior to June 18, 2011)	0

Otherwise storage facilities shall meet the provisions of Paragraph (a) of this Rule.

(c) The setbacks for utilization areas where reclaimed water is discharged to the ground shall be as follows:

	feet
Surface waters (streams – intermittent and perennial, perennial waterbodies, and wetlands) not classified SA	25
Surface waters (streams – intermittent and perennial, perennial waterbodies, and wetlands) not classified SA, provided that the reclaimed water to be utilized contains no more than 10 mg/L of Total Nitrogen and no more than 2 mg/L of Total Phosphorus in addition to applicable requirements of Section .0300	0
Surface waters (streams – intermittent and perennial, perennial waterbodies, and wetlands) classified S	100
Any well with exception to monitoring wells	100

(d) No setback between the application area and property lines is required.

(e) Setbacks between reclaimed water storage ponds and property lines or wells under separate ownership may be waived by the adjoining property owner. A copy of the signed waiver shall be provided to the Department.

(f) Setbacks between reclaimed water storage ponds and wells under the same ownership as the reclaimed water storage pond may be waived by the property owner.

(g) Setback waivers other than those allowed in parts (e) and (f) of this Section shall be written, notarized, signed by all parties involved and recorded with the County Register of Deeds. Setback waivers involving the compliance boundary shall be in accordance with 15A NCAC 02L .0107.

Commented [A1]: Change: Provide reduced setbacks between storage ponds and property lines for ponds constructed prior to June 2011, as required by S.L. 2013-413.

Effect: Provides additional flexibility for allowing storage of reclaimed water in ponds currently used for water storage.

Commented [A2]: Change: Include setback provision to surface waters provided specified quality requirements are met, as required by S.L. 2013-413.

Effect: Provides additional flexibility for reclaimed water use as irrigation water.

Commented [A3]: Change: Include setback waiver provision, as required by S.L. 2013-413.

Effect: Provides additional flexibility for reclaimed water use as irrigation water.

(h) Setbacks to property lines as noted in Paragraph (b) are not applicable when the Permittee, or the entity from which the Permittee is leasing, owns both parcels creating said property line.

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

Commented [A4]: **Change:** Exempt the Permittee from complying with setbacks to property lines when the Permittee or the entity leasing the property to the Permittee owns both parcels creating the property line.

Effect: Removes a regulatory and financial burden that requires the Permittee to either combine parcels, or record setback waivers.

SECTION .0800 - OPERATIONAL PLANS

15A NCAC 02U .0801 is proposed for readoption.

15A NCAC 02U .0801 OPERATION AND MAINTENANCE ~~PLAN~~

(a) An Operation and Maintenance Plan shall be maintained by the Permittee ~~permittee~~ for all reclaimed water ~~systems~~ generators and closed-loop recycle systems. The plan shall:

(1) describe the operation of the system in sufficient detail to show what operations are necessary for the system to function and by whom the functions are to be conducted;

(2) include a sampling and monitoring plan to evaluate quality of reclaimed water within the distribution system to provide quality assurance at the time of reuse, and specify actions to be taken in response to unsatisfactory monitoring results;

(3) provide a map of all reclaimed water distribution lines and record drawings of all reclaimed water utilization systems under the Permittee's ~~permittee's~~ control;

(4) describe anticipated maintenance of the system;

(5) include provisions for safety measures including restriction of access to the site and equipment, as required in this Subchapter; and

(6) include spill control provisions including:

(~~a~~A) response to upsets and bypasses including control, containment, and remediation; and

(~~b~~B) contact information for plant personnel, emergency responders, and regulatory agencies.

(b) Irrigation areas shall have a year round vegetative cover.

(c) Irrigation shall not result in ponding or runoff of treated effluent.

(d) Irrigation and metering equipment shall be tested and calibrated annually, or at a lesser frequency as established by permit.

(e) Automobiles and heavy machinery shall not be allowed on the irrigation area, except during installation or maintenance activities.

(f) Water level gauges shall be provided for all open-atmosphere treatment lagoons/ponds and storage units.

(g) Vegetative cover shall be maintained on all earthen embankments.

(h) The Permittee shall keep a log of maintenance activities that occur at the facility.

(i) The Permittee shall perform inspections and maintenance to ensure proper operation of the facility.

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

Commented [A1]: Change: Delete "Plan."

Effect: None. Allows rule section to encompass all operation and maintenance activities at a facility.

Commented [A2]: Change: Changes monitoring plan requirements to only apply to reclaimed water generators.

Effect: Reduces permitting burden for reclaimed water users.

Change: Include coverage for closed loop recycle system.

Effect: Simplifies rules.

Commented [A3]: Change: Add reclaimed water terminology.

Effect: None.

Commented [A4]: Change: Add requirement to maintain vegetative cover on the irrigation area.

Effect: None, current permit requirement. Vegetative cover is critical to the proper operation of a wastewater irrigation system. Provides nutrient removal, stabilizes soil, and helps prevent erosion and runoff.

Commented [A5]: Change: Require no ponding or runoff of effluent.

Effect: None, current permit requirement. These are indications of a failing or failed system.

Commented [A6]: Change: Require irrigation and metering equipment be tested and calibrated.

Effect: None, current permit requirement. Ensures proper application of the effluent, as well as proper metering.

Commented [A7]: Change: Prohibit machinery on the irrigation fields except during installation and maintenance.

Effect: None, current permit requirement. Reduces soil compaction, which inhibits infiltration of the applied effluent.

Commented [A8]: Change: Require water level gauges for open-atmosphere storage structures.

Effect: None, current permit requirement. Used to determine freeboard measurements, and compliance with 15A NCAC 02T .0505(d).

Commented [A9]: Change: Require vegetative cover on earthen embankments.

Effect: None, current permit requirement. Reduces soil erosion, thus helping to preserve the integrity of the earthen structure.

Commented [A10]: Change: Keep a maintenance log.

Effect: None, current permit requirement.

Commented [A11]: Change: Require Permittee to perform inspections and maintenance.

Effect: None, current permit requirement.

15A NCAC 02U .0802 is proposed for readoption.

15A NCAC 02U .0802 RESIDUALS MANAGEMENT ~~PLAN~~

(a) A Residuals Management Plan shall be maintained for all reclaimed water and closed-loop recycle systems that generate residuals. The plan shall include the following:

(1) an explanation as to how the residuals will be collected, handled, processed, stored and disposed;

(2) an evaluation of the residuals storage requirements for the treatment facility based upon the maximum anticipated residuals production rate and ability to remove residuals;

(3) a permit for residuals utilization, a written commitment to the Permittee of a Division approved residuals disposal/utilization program accepting the residuals which demonstrates that the program has adequate capacity to accept the residuals, or that an application for approval has been submitted; and

(4) if oil, grease, grit, or screenings removal and collection is a designed unit process, an explanation as to how the oil/grease will be collected, handled, processed, stored and disposed.

(b) The Permittee shall maintain a record of all residuals removed from the facility.

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

Commented [A12]: Change: Delete "Plan."

Effect: None. Allows rule section to encompass all residuals management activities at a facility.

Commented [A13]: Change: Include coverage for closed loop recycle system.

Effect: Simplifies rules.

Commented [A14]: Change: Maintain records of all residuals removed from the facility.

Effect: None, current permit requirement. Helps track residuals information for permits under 15A NCAC 02T .1100.

SECTION .0900 - LOCAL PROGRAM APPROVAL

15A NCAC 02U .0901 is proposed for readoption.

15A NCAC 02U .0901 LOCAL PROGRAM APPROVAL

(a) Municipalities, counties, local boards or commissions, water and sewer authorities, or groups of municipalities and counties may apply to the Division for approval of programs for permitting construction, modification, and operation of reclaimed water distribution lines and permitting users under their authority, unless prohibited by other rules in this Subchapter. Construction of and modifications to treatment works, including pump stations for reclaimed water distribution, require Division approval. Permits issued by approved local programs shall serve in place of permits issued by the Division. Local program approval shall not be granted for ~~non-conjunctive~~ dedicated reclaimed water system ~~uses~~.

(b) Applications. Applications for approval of local programs shall provide adequate information to assure compliance with the requirements of this Subchapter and the following:

(1) Include two copies of the permit application forms, intended permits including types of uses, minimum design criteria (specifications), flow chart of permitting, inspection and certification procedures, and other relevant documents to be used in administering the local program; and

(2) Certification that the local authority has procedures in place for processing permit applications, setting permit requirements, enforcement, and penalties that are compatible with those for permits issued by the Division.

(c) Any amendments to the requirements of this Subchapter shall be incorporated into the local program within 60 days of the effective date of the amendments.

(d) If required by G.S. 89C, a North Carolina registered Professional Engineer shall be on the staff of the local program or retained as a consultant to review unusual situations or designs and to answer questions that arise in the review of proposed projects. The local program shall also provide staff or retain a consultant to review all other non-engineering related program areas.

(e) Each project permitted by the local program shall be inspected for compliance with the requirements of the local program at least once during construction.

(f) Approval of Local Programs. The Division staff shall acknowledge receipt of an application for a local program ~~in writing~~, review the application, notify the Applicant ~~applicant~~ of additional information that may be required, and make a recommendation to the Commission on the acceptability of the proposed local program.

(g) All permitting actions, ~~bypasses from distribution lines~~, enforcement actions, and monitoring of the distribution system shall be summarized and submitted to the Division at a minimum on an annual basis on forms provided by the Division. The report shall also provide a listing and summary of all enforcement actions taken or pending during the year. The report shall be submitted within 30 days after the end of each year.

(h) ~~A copy of all program documents such as specifications, permit applications, permit shells and shell certification forms shall be submitted to the Division on an annual basis along with a summary of any other~~ A summary of any

Commented [A1]: Change: Replace the term "non-conjunctive" with "dedicated."

Effect: Simplifies rules.

Commented [A2]: Change: Remove distribution line bypasses from annual report.

Effect: Reduces permitting burden for reclaimed Local Programs.

program changes shall be submitted to the Division on an annual basis. Program changes to note include staffing, processing fees, and ordinance revisions.

(i) Modification of a Local Program. After a local program has been approved by the Commission, any modification of the program procedures or requirements specified in this Rule shall be approved by the Director to assure that the procedures and requirements remain at least as stringent as the state-wide requirements in this Subchapter.

(j) Appeal of Local Decisions. Appeal of individual permit denials or issuance with conditions the permit Applicant ~~applicant~~ finds unacceptable shall be made according to the approved local ordinance. The Commission shall not consider individual permit denials or issuance with conditions to which a Permittee ~~permittee~~ objects. This Paragraph does not alter the enforcement authority of the Commission as specified in G.S. 143-215.1(f).

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

Commented [A3]: **Change:** Reduce reporting requirements for Municipalities with reclaimed water local program authority.

Effect: Reduces permitting burden for reclaimed Local Programs.

SECTION .1100 - WETLANDS AUGMENTATION

15A NCAC 02U .1101 is proposed for readoption.

15A NCAC 02U .1101 WETLANDS AUGMENTATION

(a) Wetland augmentation shall be limited as follows:

(1) Wetland augmentation shall be limited to pine flat and hardwood flat wetlands as defined in the most current version of the N.C. Wetland Assessment Method (NC WAM) User Manual developed by the N.C. Wetland Functional Assessment Team (NC WFAT), excluding riparian zones~~. The NC WAM User Manual can be accessed at the following web address: http://portal.ncdenr.org/web/wq/swp/ws/pdu/ncwam~~;

(2) Reclaimed water discharge to Salt Water Wetlands (SWL) or Unique Wet Lands (UWL), as defined in 15A NCAC 02B .0101, is not permitted under the rules in this Subchapter; and

(3) Reclaimed water discharge to wetlands areas shall be limited to times when the depth to groundwater is greater than or equal to one foot.

(b) In addition to the requirements established in Rule .0201 or Rule .0202 of this Subchapter as applicable, all new and expanding wetlands augmentation facilities, as applicable, shall:

(1) Identify the classification of the existing wetlands according to the most current version of the N.C. Wetlands Assessment Method (NC WAM) User Manual and information provided by the North Carolina Natural Heritage Program (NC NHP);

(2) Identify the existing beneficial uses of the reclaimed water to the wetlands in accordance with 15A NCAC 02B .0231, and support any demonstration of net environmental benefit;

(3) Determine the hydrologic regime of the wetlands, including depth and duration of inundation, and average monthly water level fluctuations. An estimated monthly water budget shall be provided by the Applicant ~~applicant~~ and compared to actual conditions during operation;

(4) Identify class of reclaimed water to be discharged, associated parameter concentrations, and annual loading rates to the wetlands;

(5) Determine whether the wetland occurs in a ground water recharge or discharge area;

(6) Provide baseline monitoring information for wetlands sufficient to allow determination of reference conditions, to be performed for at least one representative year prior to initiation of discharge;

(7) Provide a project evaluation and receiver site agronomic plan that includes a hydraulic loading recommendation based on the soils report, hydrogeologic description, agronomic investigation, wetland type, local topography, aquatic life, wildlife, and all other investigative results to support that there will be no negative effects on the uses of the wetlands including the biological criteria and net environmental benefits will be gained. Hydraulic loading recommendations shall reflect seasonal changes to wetlands including restrictions during times of high water table levels;

(8) For ~~non-conjunctive~~ dedicated wetlands augmentation systems, provide 200 percent of the land requirements based on the recommended hydraulic loading rate. After five years of operation the Permittee may request and receive a reduction in the additional land requirement provided that operational data supports that sufficient utilization capacity exists for the reclaimed water generator;

(9) 10 percent of the land requirements shall remain in a natural state to be used as a basis of comparison to the wetlands receiving reclaimed water;

(10) For application of reclaimed water exhibiting parameter concentrations greater than 100 percent of the groundwater standards, provide a site-specific hydrogeologic investigation (i.e., evaluation of wetlands/groundwater interaction, groundwater recharge/discharge, gradient, project proximity to water supply wells) to show that hydrogeologic conditions are adequate to prevent degradation of groundwater quality and demonstrate through hydrogeological modeling that groundwater standards will not be exceeded at the compliance boundary; and

(11) Provide documentation that any applicable NPDES program requirements have been met, pursuant to 15A NCAC 02H .0100.

(c) All renewal applications for wetlands augmentation facilities, shall submit documentation that the project continues to function as designed and that the net environmental benefit aspects remain applicable.

(d) Reclaimed water utilized for wetlands augmentation shall meet the following reclaimed water effluent standards:

(1) Reclaimed water discharged to natural wetlands shall be treated to Type 1 reclaimed water standards;

(2) In addition to water quality requirements associated with Type 1 reclaimed water, reclaimed water discharged to wetlands shall not exceed the following concentrations, unless net environmental benefits are provided:

(A) Total Nitrogen (as Nitrogen) of 4.0 mg/~~l~~L; and

(B) Total Phosphorus (as Phosphorus) of 1 mg/~~l~~L;

(3) Metal concentrations in reclaimed water discharged to wetlands shall not exceed North Carolina surface water quality standards, unless acute whole effluent toxicity testing demonstrates absence of toxicity.

(e) Reclaimed water facilities utilizing wetlands augmentation, shall meet the criteria below:

(1) Notification shall be provided by the Permittee ~~permittee~~ or its representative to inform the public of the use of reclaimed water (Non Potable Water) and that the reclaimed water is not intended for drinking;

(2) The reclaimed water generator shall develop and maintain a wetlands monitoring program. This monitoring will be conducted during the first five growing seasons after initiation of the application of reclaimed water, after which the Applicant ~~applicant~~ may apply for and receive reduced monitoring. The monitoring requirements must include the following items:

(A) vegetation, macroinvertebrates, amphibians, fish, birds, and threatened or endangered species surveys;

Commented [A1]: Change: Replace the term "non-conjunctive" with "dedicated."

Effect: Simplifies rules.

(B) water chemistry;

(C) surface water and ground water depth readings; and

(D) groundwater monitoring plan except for those projects receiving reclaimed water characterized by average annual parameter concentrations less than or equal to 50 percent of ground water quality criteria, and less than 50 percent of required surface water discharge concentrations;

(3) The reclaimed water generator shall develop and maintain an education program for all users of reclaimed water on property not owned by the generator;

(4) The reclaimed water generator shall develop and maintain a routine review and inspection program for the wetlands augmentation system; and

(5) The compliance boundary and the review boundary for groundwater shall be established at the property line. No deed restrictions or easements are required to be filed on adjacent properties. Land application of reclaimed water shall be on property controlled by the generator unless a contractual agreement is provided in accordance with 15A NCAC 02L .0107 except in cases where a compliance boundary is not established.

(f) Permitting of wetlands augmentation uses shall not be delegated to local programs.

History Note: *Authority G.S. 143-215.1; 143-215.3(a); S.L. 2006-250;*
Eff. June 18, 2011.

SECTION .1400 - IRRIGATION TO FOOD CHAIN CROPS

15A NCAC 02U .1401 is proposed for readoption.

15A NCAC 02U .1401 IRRIGATION TO FOOD CHAIN CROPS

(a) Irrigation to food chain crops shall be limited as follows:

(1) Reclaimed water utilized for direct or indirect contact irrigation of food chain crops that will be peeled, skinned, cooked or thermally processed before consumption shall be treated to Type 1 reclaimed water standards;

(2) For the purposes of this Rule, tobacco is not considered a food chain crop;

(3) Reclaimed water shall not be utilized for direct contact irrigation of food chain crops that will not be peeled, skinned, cooked or thermally processed before consumption except as approved in Subparagraph (5) of this Paragraph;

(4) Reclaimed water utilized for indirect contact irrigation of food chain crops that will not be peeled, skinned, cooked or thermally processed before consumption shall be treated to Type 2 reclaimed water standards; and

(5) If requested, the Department shall authorize demonstration projects to collect and present data related to the direct application of reclaimed water on crops that are not peeled, skinned, cooked, or thermally processed before consumption. Crops produced during such demonstration projects may be used as animal feed or may be thermally processed, cooked, or otherwise prepared for human consumption in a manner approved by the North Carolina Department of Agriculture and Consumer Services. If the Applicant ~~applicant~~, based on the data collected, demonstrates to the Department that public health will be protected if their reclaimed water is directly applied to crops which are not peeled, skinned, cooked, or thermally processed, the Department shall waive the prohibition described in Subparagraph (3) of this Paragraph for that project. When considering such demonstration projects, the Department shall seek the advice of the North Carolina Department of Agriculture and Consumer Services.

(b) In addition to the requirements established in Rule .0201 or Rule .0202 of this Subchapter as applicable, all new and expanding irrigation to food chain crops systems shall submit a representative soil analysis for standard soil fertility for each field to be irrigated. A Standard Soil Fertility Analysis shall include the following parameters:

(1) Acidity;

(2) Base Saturation (by calculation);

(3) Calcium;

(4) Cation Exchange Capacity;

(5) Copper;

(6) Exchangeable Sodium Percentage (by calculation);

(7) Magnesium;

(8) Manganese;
(9) Percent Humic Matter;
(10) pH;
(11) Phosphorus;
(12) Potassium;
(13) Sodium; and
(14) Zinc.

(c) When a water balance is required by Rule .0202(k) of this Subchapter the water balance shall include seasonal water requirements for the crops.

(d) For irrigation sites not owned by the Permittee ~~permittee~~, a ~~notarized~~ land owner agreement shall be provided to the Division. The land owner agreement shall include the following:

(1) a description of the approved uses and conditions for use of the reclaimed water consistent with the requirements of this Rule;
(2) a condition requiring the reclaimed water supplier shall provide the landowner with the results of sampling performed to document compliance with the reclaimed water effluent standards; and
(3) a condition requiring the landowner to report to the Permittee ~~permittee~~ any use of the reclaimed water inconsistent with the uses in the agreement.

(e) All renewal Applicants ~~applicants~~ for dedicated irrigation to food chain crop systems shall submit:

(1) A representative soil analysis for standard soil fertility for each field to be irrigated. A 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;
(2) The inventory of commercial agricultural operations using reclaimed water to irrigate food chain crops required in Subparagraph (d)(7) of this Rule; and

Commented [A1]: **Change:** Reduce renewal application requirements for conjunctive reclaimed water systems irrigating to food chain crops.

Effect: Reduces permitting burden.

Commented [A2]: **Change:** Replace the term "non-conjunctive" with "dedicated."

Effect: Simplifies rules.

(3) For irrigation sites not owned by the Permittee ~~permittee~~, a ~~notarized~~ land owner agreement pursuant to Paragraph (d) of this Rule.

(f) Reclaimed water facilities providing reclaimed water for the irrigation of food chain crops shall meet the criteria below:

(1) Crops irrigated by direct contact with reclaimed water shall not be harvested within 24 hours of irrigation with reclaimed water;

(2) Notification at the utilization site shall be provided by the Permittee ~~permittee~~ or its representative to inform the public of the use of reclaimed water (Non Potable Water) and that the reclaimed water is not intended for drinking;

(3) The reclaimed water generator shall develop and maintain a record keeping program for distribution of reclaimed water;

(4) The Permittee ~~permittee~~ shall develop and maintain an education program for users of reclaimed water for irrigation to food chain crops;

(5) The reclaimed water generator shall provide all landowners receiving reclaimed water for irrigation of food chain crops a summary of all reclaimed water system performance as required in G.S. 143-215.1C;

(6) The reclaimed water generator shall develop and maintain a routine review and inspection program for all irrigation to food chain crop systems; and

(7) The Permittee ~~permittee~~ shall maintain an inventory of commercial agricultural operations using reclaimed water to irrigate food chain crops for each year of operation. The inventory shall be maintained for five years. The inventory of food chain crop irrigation shall include the following:

(A) name of the agricultural operation;

(B) name and telephone number of the owner or operator of the agricultural operation;

(C) address of the agricultural operation;

(D) food chain crops irrigated with reclaimed water;

(E) type of application (e.g., irrigation) method used; and

(F) approximate area under irrigation on which food chain crops are grown.

History Note: *Authority G.S. 143-215.1; 143-215.3(a); S.L. 2006-250;*
Eff. June 18, 2011.

Commented [A3]: **Change:** Reduce renewal application requirements for conjunctive reclaimed water systems irrigating to food chain crops.

Effect: Reduces permitting burden.