

TITLE 15A – DEPARTMENT OF ENVIRONMENTAL QUALITY

Notice is hereby given in accordance with G.S. 150B-21.2 that the Environmental Management Commission intends to adopt the rules cited as 15A NCAC 13B .2001-.2018.

Link to agency website pursuant to G.S. 150B-19.1(c): <http://deq.nc.gov/permits-regulations/rules-regulations/proposed-main>

Proposed Effective Date: *January 1, 2019*

There are two sets of Coal Combustion Residual-related (CCR) rules sharing these public hearing locations and hearing officers. The Division of Energy, Mineral, and Land Resources will be presenting a proposed rule, 15A NCAC 02K .0224 “Additional Requirements for Dams That Impound Coal Combustion Residuals,” that would update the State’s CCR, Dam Safety program to be “at least as protective as” the dam-safety-related federal requirements. The Division of Waste Management (DWM) will be presenting a set of proposed rules relating to the disposal and recycling of coal combustion residuals. The purpose of the DWM proposed rules are to streamline and clarify the State’s regulatory requirements for CCR landfills, impoundment, closure and dust control and transportation plans for recycling of residuals.

Public Hearing:

Date: *September 4, 2018*

Time: *6:00 p.m.*

Location: *Wayne Community College Richard Auditorium, 3000 Wayne Memorial Drive, Goldsboro, NC 27534*

Public Hearing:

Date: *September 20, 2018*

Time: *6:00 p.m.*

Location: *Mitchell Community College Bldg B, MCB 117 Multipurpose Room, 219 N. Academy Street, Mooresville, NC 28115*

Public Hearing:

Date: *September 25, 2018*

Time: *6:00 p.m.*

Location: *Asheville Buncombe Technical Community College – Ferguson Auditorium, 340 Victoria Road, Asheville NC 28801*

Public Hearing:

Date: *September 27, 2018*

Time: *6:00 p.m.*

Location: *Rockingham Community College, Room 100 Auditorium in Advanced Technology Building, 215 Wrenn Memorial Drive Highway 65, Wentworth, NC 27375*

Reason for Proposed Action: *The Division of Waste Management proposes regulations 15A NCAC 13B .2001 through .2018 which are as stringent or more so than the EPA’s rules for the management of coal combustion residuals, as well as existing North Carolina industrial landfill rules and the Coal Ash Management Act. The proposed rule’s purpose is to streamline and clarify the State of North Carolina’s regulatory requirements for coal combustion residual landfills, impoundments closure, and dust control and transportation plans for coal ash and flue gas desulfurization product recycling facilities. This clarity will provide benefit to the public, regulated community and regulators. It will make the rules easier to understand and encourage transparency during the regulatory process; it will provide guidance and clarity to owners and consultants on what are the permitting requirements; and it will allow the public to clearly identify the various requirements of the permitted facilities.*

The establishment of regulations specific to the large volumes of coal combustion residuals, which are being produced in North Carolina, are one of the several facets of coal ash management that the Department of Environmental Quality is responsible to solicit public comment. Other important issues at hand are permits for air controls, discharge points and impoundment closures. Event calendars and information regarding these other aspects of coal ash management in North Carolina can be found at <https://deq.nc.gov/news/hot-topics/coal-ash-nc>.

Comments may be submitted to: *Ellen Lorscheider, Deputy Director DWM, 1646 Mail Service Center, Raleigh, NC 27699-1646, email (PREFERRED) publiccomments@ncdenr.gov - please put "CCR Rule" in the subject line*

Comment period ends: *October 15, 2018*

Procedure for Subjecting a Proposed Rule to Legislative Review: *If an objection is not resolved prior to the adoption of the rule, a person may also submit written objections to the Rules Review Commission after the adoption of the Rule. If the Rules Review Commission receives written and signed objections after the adoption of the Rule in accordance with G.S. 150B-21.3(b2) from 10 or more persons clearly requesting review by the legislature and the Rules Review Commission approves the rule, the rule will become effective as provided in G.S. 150B-21.3(b1). The Commission will receive written objections until 5:00 p.m. on the day following the day the Commission approves the rule. The Commission will receive those objections by mail, delivery service, hand delivery, or*

facsimile transmission. If you have any further questions concerning the submission of objections to the Commission, please call a Commission staff attorney at 919-431-3000.

Fiscal impact (check all that apply).

- State funds affected
- Environmental permitting of DOT affected
Analysis submitted to Board of Transportation
- Local funds affected
- Substantial economic impact (\geq \$1,000,000)
- Approved by OSBM
- No fiscal note required by G.S. 150B-21.4

CHAPTER 13 – SOLID WASTE MANAGEMENT

SUBCHAPTER 13B - SOLID WASTE MANAGEMENT

15A NCAC 13B .2001 PURPOSE, SCOPE, AND APPLICABILITY FOR CCR FACILITIES AND UNITS, AND CCR TO CCP TREATMENT AND PROCESSING FACILITIES

(a) Purpose. The purpose of Rules .2001 through .2017 of this Section is to regulate the permitting siting, design, construction, operation, closure and post-closure of all Coal Combustion Residual (CCR) disposal facilities and units. Rule .2018 of this Section describes the performance standards for Coal Combustion Products (CCP) reuse facilities.

(b) Scope. Rules .2001 through .2017 of this Section describe the performance standards, application requirements, and permitting procedures for new and existing CCR disposal facilities and unit(s). Rule .2018 of this Section describes the performance standards for CCR to CCP treatment and processing facilities. Rules of this Section are intended to:

- (1) establish the State standards for CCR disposal facilities and units and CCR to CCP treatment and processing facilities to provide for effective practices to protect the public health and environment; and
- (2) coordinate other State Rules applicable to disposal or reuse.

(c) Applicability. Owners and operators of CCR disposal facilities and units and CCR to CCP treatment and processing facilities shall conform to the requirements of Rules .2001 through .2018 of this Section.

(d) Owners and operators of CCR disposal facilities and unit(s) or CCR to CCP treatment and processing facilities shall comply with any other applicable Federal, State and Local laws, rules, regulations, or other requirements.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2002 DEFINITIONS

This Rule contains definitions for terms that appear throughout the Rules pertaining to CCR units, Rules .2001 through .2018 of this Section; additional definitions appear in the specific Rules to which they apply.

- (1) "100-year flood" or "One hundred-year flood" means a flood that has a one-percent or greater chance of recurring in any year or a flood of a magnitude equaled or exceeded once in 100 years on average over a significantly long period.
- (2) "Active life" or "in operation" means the period of operation beginning with the initial placement of CCR in the CCR unit and ending at completion of closure activities in accordance with Rule .2013 of this Section.
- (3) "Aquifer" means a geological formation, group of formations, or portion of a formation capable of yielding groundwater.
- (4) "Areas susceptible to mass movement" means those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the CCR unit(s), because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.
- (5) "Base liner system" means the liner system installed on the CCR unit's foundation to control the flow of leachate.
- (6) "Beneficial" and "benefit" means promoting public health and environmental protection, offering equivalent success relative to other alternatives, and preserving natural resources.
- (7) "Boiler slag" means the molten bottom ash collected at the base of slag tap and cyclone type furnaces that is quenched with water. It is made up of hard, black, angular particles that have a smooth, glassy appearance.
- (8) "Bottom ash" means the agglomerated, angular ash particles formed in pulverized coal furnaces that are too large to be carried in the flue gases and collect on the furnace walls or fall through open grates to an ash hopper at the bottom of the furnace.
- (9) "Cap system" means a liner system installed over the CCR unit(s) to minimize infiltration of precipitation and contain the wastes.
- (10) "CCR fugitive dust" means solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney.
- (11) "CCR landfill" or "landfill" means an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this subpart, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.

- (12) "CCR leachate" or "leachate" means any liquid, including any CCR suspended components in liquid, that has percolated through or drained from CCR.
- (13) "CCR pile" or "pile" means any non-containerized accumulation of solid, non-flowing CCR that is placed on the land. CCR that is beneficially used offsite is not a CCR pile.
- (14) "CCR unit" means any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR landfill, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified.
- (15) "Cell" means a subdivision of a phase, which describes modular or partial construction, for purposes of leachate and stormwater management a cell may be subdivided into subcells.
- (16) "Closed" means placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with Rule .2013 of this Section and has initiated post-closure care in accordance with Rule .2013 of this Section.
- (17) "Coal combustion products (CCP)" means fly ash, bottom ash, boiler slag, or flue gas desulfurization materials that are beneficially used, including use for structural fill, as defined in G.S. 130A-309.201(4).
- (18) "Coal combustion residuals (CCR)" means residuals, including fly ash, bottom ash, boiler slag, mill rejects, and flue gas desulfurization residue produced by a coal-fired generating unit destined for disposal, as defined in G.S. 130A-290(2b).
- (19) "Coal combustion residuals surface impoundment" means a topographic depression, excavation, or diked area that is: primarily formed from earthen materials; without a base liner approved for use by Article 9 of Chapter 130A of the General Statutes or rules adopted thereunder for a combustion products landfill or coal combustion residuals landfill, industrial landfill, or municipal solid waste landfill; and designed to hold accumulated coal combustion residuals in the form of liquid wastes, wastes containing free liquids, or sludges, and that is not backfilled or otherwise covered during periods of deposition. "Coal combustion residuals surface impoundment" shall only include impoundments owned by a public utility, as defined in G.S. 62-3. "Coal combustion residuals surface impoundment" includes all of the following: an impoundment that is dry due to the deposited liquid having evaporated, volatilized, or leached; an impoundment that is wet with exposed liquid; lagoons, ponds, aeration pits, settling ponds, tailings ponds, and sludge pits, when these structures are designed to hold accumulated coal combustion residuals; and a coal combustion residuals surface impoundment that has been covered with soil or other material after the final deposition of coal combustion residuals at the impoundment.
- (20) "Compliance boundary" means a boundary around a disposal system at and beyond which groundwater quality standards may not be exceeded and only applies to facilities which have received a permit issued under the authority of G.S. 143-215.1 or G.S. 130A.
- (21) "Contaminate" or "Contamination" means the introduction of foreign materials of such nature, quality, and quantity into the groundwaters as to exceed the groundwater quality standards specified in 15A NCAC 02L (Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina). [Note: 15A NCAC 02L .0202(b)(3) addresses where naturally occurring substances exceed the established standard.]
- (22) "Dike" means an embankment, berm, or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.
- (23) "Displacement" means the relative movement of any two sides of a fault measured in any direction.
- (24) "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste as defined in Section 1004(27) of the Resource Conservation and Recovery Act (RCRA) into or on any land or water so that such solid waste, or constituent thereof, may enter the environment or be emitted into the air or discharged into any waters, including groundwaters. For purposes of this subpart, disposal does not include the storage or the beneficial use of CCR.
- (25) "Encapsulated beneficial use" means a beneficial use of CCR that binds the CCR into a solid matrix that minimizes its mobilization into the surrounding environment.
- (26) "Facility" means all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, disposing, or otherwise conducting solid waste management of CCR. A facility may consist of several treatments, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).
- (27) "Factor of safety" means the ratio of the forces or moments resisting mass movement to the forces or moments tending to produce mass movement.
- (28) "Fault" means a fracture or fracture zone along which there has been displacement of the two sides relative to one another parallel to the fracture.
- (29) "Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, that are inundated by the 100-year flood.
- (30) "Flue gas desulfurization material (FGD)" means the material produced through a process used to reduce sulfur dioxide emissions from the exhaust gas system of a coal-fired boiler. The physical nature of these materials varies from a wet sludge to a dry powdered material, depending on the process, and their composition comprises either sulfites, sulfates, or a mixture thereof.
- (31) "Fly ash" means the very fine, powdery material, composed mostly of silica with nearly all particles spherical in shape, which is a product of burning finely ground coal in a boiler to produce electricity and is removed from the plant exhaust gases by air emission control devices.
- (32) "Free liquids" means liquids that readily separate from the solid portion of a waste under ambient temperature and pressure.

- (33) "Groundwater" means those waters occurring in the subsurface under saturated conditions.
- (34) "Holocene" means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.
- (35) "Hydraulic conductivity" means the rate at which water can move through a permeable medium (i.e., the coefficient of permeability).
- (36) "In operation" means the same as active life.
- (37) "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste.
- (38) "Karst terranes" means areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock.
- (39) "Landfill facility" means all contiguous land and structures, waste management unit(s), other appurtenances, and improvements on the land within the legal description of the site included in or proposed for the Solid Waste Permit.
- (40) "Landfill unit" means a discrete area of land or an excavation that receives a particular type of waste such as industrial or municipal solid waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257.
- (41) "Lateral expansion" means a horizontal expansion of the waste boundaries of an existing CCR unit(s).
- (42) "Leachate" means any liquid, including any suspended components in liquid, that has percolated through or drained from solid waste.
- (43) "Licensed Geologist" means an individual who is licensed to practice geology in accordance with G.S. 89E.
- (44) "Liner system" means an engineered environmental control system which can incorporate filters, drainage layers, compacted soil liners, geomembrane liners, piping systems, and connected structures.
- (45) "Liquefaction factor of safety" means the factor of safety (safety factor) determined using analysis under liquefaction conditions.
- (46) "Liquid waste" means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), S.W. 846.
- (47) "Lithified earth material" means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface.
- (48) "Maximum horizontal acceleration in lithified earth material" means the maximum expected horizontal acceleration at the ground surface as depicted on a seismic hazard map, with a 98% or greater probability that the acceleration will not be exceeded in 50 years, or the maximum expected horizontal acceleration based on a site specific seismic risk assessment.
- (49) "Minerals" means soil, clay, coal, phosphate, metallic ore, and any other solid material or substance of commercial value found in natural deposits on or in the earth.
- (50) "Monitoring well" means any well constructed for the primary purpose of obtaining samples of groundwater or other liquids for examination or testing, or for the observation or measurement of groundwater levels. This definition excludes lysimeters, tensiometers, and other devices used to investigate the characteristics of the unsaturated zone but includes piezometers, a type of monitoring well constructed solely for the purpose of determining groundwater levels.
- (51) "New CCR landfill" means a CCR landfill or lateral expansion of a CCR landfill that first receives CCR or commences construction after October 19, 2015. A new CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun after October 19, 2015. Overfills are also considered new CCR landfills.
- (52) "Open pit mine" means an excavation made at the surface of the ground for the purpose of extracting minerals, inorganic and organic, from their natural deposits, which excavation is open to the surface.
- (53) "Operator" means the person(s) responsible for the overall operation of a CCR unit.
- (54) "Overfill" means a CCR landfill constructed over a closed CCR surface impoundment.
- (55) "Owner" means the person(s) who owns a CCR unit or part of a CCR unit.
- (56) "Phase" means an area constructed that provides five years of operating capacity.
- (57) "Poor foundation conditions" mean those areas where features exist which indicate that a natural or human induced event may result in inadequate foundation support for the structural components of an existing or new CCR unit. For example, failure to maintain static and seismic factors of safety would cause a poor foundation condition.
- (58) "Professional Engineer" means a person who has been duly registered and licensed as a professional engineer in accordance with the requirements of G.S. 89C.
- (59) "Project engineer" means the official representative of the permittee who is licensed to practice engineering in the State of North Carolina, who is responsible for observing, documenting, and certifying that activities related to the quality assurance of the construction of the solid waste management unit conforms to the Division approved plan, the permit to construct and the rules specified in this Section. All certifications shall bear the seal and signature of the professional engineer and the date of certification.

- (60) "Qualified person" means a person or persons trained to recognize specific appearances of structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit by visual observation and, if applicable, to monitor instrumentation.
- (61) "Quality control" means that combination of testing, observation, and monitoring provided during construction to confirm that requirements stated or depicted in the plans and specifications are being achieved.
- (62) "Receptor" means any human, plant, animal, or structure which is, or has the potential to be, affected by the release or migration of contaminants. Any well constructed for the purpose of monitoring groundwater and contaminant concentrations shall not be considered a receptor.
- (63) "Review boundary" means a boundary around a permitted disposal facility, midway between a waste boundary and a compliance boundary at which groundwater monitoring is required.
- (64) "Registered Land Surveyor" means an individual who is licensed to practice surveying in accordance with G.S. 89C.
- (65) "Run-off" or "Runoff" means the portion of precipitation that drains from an area as surface flow.
- (66) "Sand and gravel pit" or "quarry" means an excavation for the extraction of aggregate, minerals or metals. The terms sand and gravel pit or quarry do not include subsurface or surface coal mines.
- (67) "Seasonal High Groundwater Table" means the highest level of the saturated zone in the soil during a year with normal rainfall. Seasonal high groundwater table may be determined in the field through identification of redoximorphic features in the soil profile, monitoring of the water table elevation, or modeling of predicted groundwater elevations.
- (68) "Seismic factor of safety" means the factor of safety (safety factor) determined using analysis under earthquake conditions using the peak ground acceleration for a seismic event with a two percent probability of exceedance in 50 years, equivalent to a return period of approximately 2,500 years, based on the U.S. Geological Survey (USGS) seismic hazard maps for seismic events with this return period for the region where the CCR surface impoundment is located.
- (69) "Seismic impact zone" means an area having a two percent or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 50 years.
- (70) "Solid waste management" or "management" means the systematic administration of the activities which provide for the collection, source separation, storage, transportation, processing, treatment, or disposal of solid waste.
- (71) "Standards" means groundwater quality standards as specified in 15A NCAC 02L .0202.
- (72) "Static factor of safety" means the factor of safety (safety factor) determined using analysis under the long-term, maximum storage pool loading condition, the maximum surcharge pool loading condition, and under the end-of-construction loading condition.
- (73) "Structural components" mean liners, leachate collection and removal systems, final covers, run-on and run-off systems, inflow design flood control systems, and any other component used in the construction and operation of the CCR unit that is necessary to ensure the integrity of the unit and that the contents of the unit are not released into the environment.
- (74) "Structural fill" means an engineered fill with a projected beneficial end use constructed using coal combustion products that are properly placed and compacted. For purposes of this Section, the term includes fill used to reclaim open pit mines and for embankments, greenscapes, foundations, construction foundations, and for bases or sub-bases under a structure or a footprint of a paved road, parking lot, sidewalk, walkway, or similar structure.
- (75) "Unstable area" means a location that is susceptible to natural or human induced events or forces capable of impairing the integrity, including structural components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains.
- (76) "Use" or "reuse" of coal combustion products means the procedure whereby coal combustion products are directly used as either an ingredient in an industrial process to make a product, unless distinct components of the coal combustion products are recovered as separate end products or as an effective substitute for a commercial product or natural resource.
- (77) "Water table" means the upper limit of the portion of the ground wholly saturated with water.
- (78) "Washout" means the carrying away of solid waste by waters of the base flood.
- (79) "Waste boundary" means the perimeter of the permitted waste disposal area.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2003 GENERAL APPLICATION AND PROCESSING REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) Applicability. Owners or operators of a proposed or existing CCR facilities shall submit an application document as detailed in Rule .2005 of this Section in accordance with the criteria and scheduling requirements set forth as follows:

- (1) New facility. Owners or operators proposing to establish a CCR facility or unit in accordance with the following criteria shall submit a Site Study and subsequently an application for a permit to construct as set forth in Rule .2005(a) of this Section. This Rule does not apply to new CCR surface impoundments which are prohibited by G.S. 130A-309.210(a). A new facility permit application is required when:
- (A) The owner or operator proposes to establish a new CCR facility not previously permitted by the Division.
- (B) The owner or operator proposes to expand a CCR facility in order to expand the CCR unit(s) boundary approved in accordance with Rule .2006(a)(1) of this Section.

- (2) Amendment to the permit. For any subsequent phase of landfill development, the owner or operator shall prepare an application to amend the permit to construct in accordance with Rule .2005(b) of this Section.
- (3) Substantial amendment to the permit. A permit issued in accordance with Paragraph (c) of this Rule approves a facility plan for the life of the CCR facility and a set of plans for the initial phase of landfill development. The owner or operator shall prepare an application in accordance with Rule .2005(c) of this Section and submit the application when there is:
 - (A) an increase in waste tonnage per year of greater than 10 percent occurs; or
 - (B) the facility waste boundaries expand from the property in the site suitability approval; or
 - (C) a proposed transfer of ownership of the CCR facility.
- (4) Modifications to the permit. An owner or operator proposing changes to the plans approved in the permit shall request prior approval from the Division in accordance with Rule .2005(d) of this Section.
- (5) Permit for Closure and Post-Closure of a CCR surface impoundment. An existing CCR surface impoundment that closes in accordance with G.S. 130A-309.214(a)(3)(c) shall prepare an application in accordance with Rule .2005(e) of this Section.

(b) Application format guidelines. All applications and plans required by Rules .2001 through .2018 of this Section shall be prepared in accordance with the following guidelines:

- (1) The initial application shall:
 - (A) contain a cover sheet stating the project title and location, permit number, the applicant's name and address, and the engineer's name, address, signature, date of signature and seal; and
 - (B) contain a statement defining the purpose of the submittal signed and dated by the applicant.
- (2) The text of the application shall:
 - (A) contain a table of contents or index outlining the body of the application and the appendices;
 - (B) be paginated consecutively; and
 - (C) identify revised text by noting the date of revision on the page.
- (3) Drawings. The engineering drawings for all CCR facilities and units shall be submitted using the following format:
 - (A) The sheet size with title blocks shall be scalable such that if printed one inch equals 100 foot increments on a plan sized sheet (22 inches by 34 inches).
 - (B) The cover sheet shall include the project title, permit number, applicant's name, sheet index, legend of symbols, and the engineer's name, address, signature, date of signature, and seal.
 - (C) Where the requirements do not explicitly specify a minimum scale, maps and drawings shall be prepared at a scale that adequately illustrates the subject requirement(s).
- (4) Number of copies. An applicant shall submit at a minimum a copy in pdf format or a format acceptable to the Division. The Division shall request additional copies as necessary. The Division shall require submittal of documents in electronic format.

(c) Permitting and Public Information Procedures.

- (1) Purpose and Applicability.
 - (A) Purpose. During the permitting process, the Division shall provide for public review of and comment permit documents containing the applicable design and operating conditions. The Division shall provide for consideration of comments received and notification to the public of the permit design.
 - (B) Applicability. Applications for a Permit to Construct for a new facility, for a substantial amendment to the permit for an existing facility, or for a modification to the permit involving corrective remedy selection required by Rule .2015(e) through (i) of this Section shall be subject to the requirements of Subparagraphs (c)(2) through (c)(9) of this Rule. Applications submitted in accordance with Subparagraphs (a)(2) and (a)(4) of this Rule are not subject to the requirements of this Paragraph.
- (2) Draft Permits.
 - (A) Once an application is complete, the Division shall decide whether the permit should be issued or denied.
 - (B) If the Division decides to deny the permit, the Division shall send a notice to deny to the applicant. Reasons for permit denial shall be in accordance with 15A NCAC 13B .0203(e).
 - (C) If the Division decides the permit should be issued, the Division shall prepare a draft permit.
 - (D) A draft permit shall contain (either expressly or by reference) all applicable terms and conditions for the permit.
 - (E) All draft permits shall be subject to the procedures of Subparagraphs (3) through (9) of this Paragraph, unless otherwise specified in those Subparagraphs.
- (3) Fact Sheet.
 - (A) The Division shall prepare a fact sheet for every draft permit.
 - (B) The fact sheet shall include a brief description of the type of facility, unit or activity which is the subject of the draft permit. It shall also include a description of the area to be served and of the volume and characteristics of the waste stream, and a projection of the useful life of the unit(s). The fact sheet shall contain a brief summary of the basis for the draft permit conditions, including references to applicable statutory or regulatory provisions and appropriate supporting references to the permit application. The fact sheet shall describe the procedures for reaching a decision on the draft permit. It shall include the beginning and ending dates of the comment period under Subparagraph (4) of this Paragraph, the address where comments will be received, the procedures for requesting a public hearing and any other procedures by which the public may participate in the decision. The fact sheet shall contain the name and telephone number of a person to contact for additional information.

- (C) The Division make it available to the public for review or copying on the Division website.
- (4) Public Notice of Permit Actions and Public Hearings.
- (A) The Division shall give public notice of each of the following: a draft or substantial amendment permit has been prepared; a public hearing has been scheduled under Subparagraph (6) of this Paragraph; or a notice of intent to deny a permit has been prepared under Part (2)(B) of this Paragraph.
- (B) The Division shall give written notice of denial to the applicant.
- (C) Public notices may describe more than one permit or permit action.
- (D) Public notice of the preparation of a draft permit or a notice of intent to deny a permit shall allow at least 45 days for public comment.
- (E) The Division shall give public notice of a public hearing at least 15 days before the hearing. Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.
- (F) Public notice of activities described in Part (A) of this Subparagraph shall be given by publication on the Division website, and by any other method deemed necessary or appropriate by the Division to give actual notice of the activities to persons potentially affected.
- (G) General Public Notices. All public notices issued under this Part shall at minimum contain the following: name, address and phone number of the office processing the permit action for which notice is being given; name and address of the owner and operator applying for the permit; a brief description of the business conducted at the facility or activity described in the permit application including the size and location of the facility and type of waste accepted; a brief description of the comment procedures required by Subparagraphs (5) and (6) of this Paragraph, including a statement of procedures to request a public hearing, unless a hearing has already been scheduled, and other procedures by which the public may participate in the permit decision; name, address, and telephone number of a Division staff from whom interested persons may obtain further information; a description of the time frame and procedure for making an approval or disapproval decision of the application; and any additional information considered necessary or proper as required by the Division.
- (H) Public Notices for Public Hearing. In addition to the general public notice described in Part (4)(A) of this Paragraph, the public notice of a public hearing shall contain the date, time, and place of the public hearing; a brief description of the nature and purpose of the public hearing, including the applicable rules and procedures; and a concise statement of the issues raised by the persons requesting the hearing.
- (5) Public Comments and Requests for Public Hearings. During the public comment period any interested person may submit written comments on the draft permit and may request a public hearing if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Division shall consider all comments in making a final permit decision. The Division shall respond to all comments as provided in Subparagraph (9) of this Paragraph.
- (6) Public Hearings.
- (A) The Division shall hold a public hearing on a draft permit(s) when a hearing is requested. The Division may also hold a public hearing at its discretion whenever such a hearing might clarify one or more issues involved in the permit decision. Public hearings held pursuant to this Rule shall be at a location convenient to the nearest population center to the subject facility. Public notice of the hearing shall be given as specified in Subparagraph (4) of this Paragraph.
- (B) Any person may submit oral or written statements and data concerning the draft permit. The public comment period under Subparagraph (4) of this Paragraph is extended to the close of any public hearing conducted under this Subparagraph. The hearing officer may also extend the public comment period by so stating at the hearing, when information is presented at the hearing which indicates the importance of extending the period to receive additional comments, to allow potential commenters to gather more information, to allow time for submission of written versions of oral comments made at the hearing, or to allow time for rebuttals of comments made during the hearing.
- (C) The Division shall make available to the public a recording or written transcript of the hearing for review or copying at the Division of Waste Management - Solid Waste Section website.
- (7) Reopening of the Public Comment Period.
- (A) If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit action, the Division may prepare a new draft permit, appropriately modified, under Subparagraph (2) of this Paragraph; prepare a fact sheet or revised fact sheet under Subparagraph (3) of this Paragraph and reopen the comment period under Subparagraph (4) of this Paragraph; or reopen or extend the comment period under Subparagraph (4) of this Paragraph to give interested persons an opportunity to comment on the information or arguments submitted.
- (B) Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening. The public notice under Subparagraph (4) of this Paragraph shall define the scope of the reopening.
- (C) Public notice of any of the actions of this Subparagraph shall be issued in accordance with Subparagraph (4) of this Paragraph.
- (8) Permit Decision.
- (A) After the close of the public comment period under Subparagraph (4) of this Paragraph on a draft permit or a notice of intent to deny a permit, the Division shall issue a permit decision. The Division shall notify the

applicant and each person who has submitted a written request for notice of the permit decision. For the purposes of this Subparagraph, a permit decision means a decision to issue, deny or modify a permit.

(B) A permit decision shall become effective upon the date of the notification of the decision unless a later date is specified in the decision.

(9) Response to Comments.

(A) At the time that a permit decision is issued under Subparagraph (8) of this Paragraph, the Division shall issue a written response to comments. This response shall specify which provisions, if any, of the draft permit have been changed in the permit decision, and the reasons for the change. The response shall also describe and respond to comments on the draft permit raised during the public comment period, or during any public hearing.

(B) The Division shall make the response to comments available to the public for review or copying at the Division of Waste Management – Solid Waste Section webpage.

(d) Permit approval or denial. The Division shall review all permit applications in accordance with 15A NCAC 13B .0203.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2004 GENERAL REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) Applicability. Permits issued by the Division for CCR facilities and units shall be subject to the general requirements set forth in this Rule.

(b) Terms of the Permit. The Solid Waste Management Permit shall incorporate requirements necessary to comply with this Subchapter and the North Carolina Solid Waste Management Act including the provisions of this Paragraph.

(1) Division Approved Plan. Permits shall incorporate a Division approved plan.

(2) Permit provisions. All CCR facilities and units shall conform to the specific conditions set forth in the permit and the following general provisions:

(A) Duty to Comply. The permittee shall comply with all conditions of the permit, unless otherwise authorized by the Division. Any permit noncompliance, except as otherwise authorized by the Division, constitutes a violation of the Act and is grounds for enforcement action or for permit revocation, modification, or suspension.

(B) Duty to Mitigate. In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent adverse impacts on human health or the environment.

(C) Duty to Provide Information. The permittee shall furnish to the Division any information that the Division may request to determine whether cause exists for modifying, revoking or suspending the permit, or to determine compliance with the permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept under the conditions of the permit.

(D) Recordation Procedures. The permittee shall comply with the requirements of 15A NCAC 13B .0204 "Recordation of Land Disposal Permits" for a new permit to be effective.

(E) Need to Halt or Reduce Activity. It shall not be a defense for a permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

(F) Permit Actions. The permit may be modified, reissued, revoked, suspended or terminated in accordance with G.S. 130A-23. The filing of a request by the permittee for a permit modification, or a notification of planned changes or anticipated noncompliance, does not stay any existing permit condition.

(G) Not Transferable. The permit shall not be transferable.

(H) Construction. If construction is not commenced within 18 months from the issuance date of the permit to construct, or an amendment or substantial amendment to the permit, then the permit shall expire. The applicant may re-apply for the permit, which shall be subject to statutes and rules in effect on the date of the re-application.

(I) Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

(J) Inspection and Entry. The permittee shall allow the Division or an authorized representative to enter the permittee's premises where a regulated unit(s) or activity is located or conducted, or where records are kept under the conditions of the permit. The Division or its authorized representative shall have access in order to copy any records required to be kept under the conditions of the permit. The permittee shall allow the Division or its authorized representative to inspect any facilities, equipment (including monitoring and control equipment), practices or operations regulated by the Division. For the purposes of assuring permit compliance or as otherwise authorized by the Act, the permittee shall allow the Division or its authorized representative to sample or monitor, at any location under the operation or control of the permittee, the following: any materials, substances, parameters, soil, groundwater, surface water, gases or ambient air. The permittee shall

- allow the Division or its authorized representative to take photographs for the purpose of documenting items of compliance or noncompliance at permitted facilities, or where appropriate to protect legitimate proprietary interests, require the permittee to take such photographs for the Division.
- (K) Waste Exclusions. Waste to be excluded from disposal in a CCR landfill is listed in Rule .2012 of this Section. Permit conditions may include additional exclusions as they become necessary in order to protect the public health and the environment or to ensure proper landfill operation.
- (L) Additional Solid Waste Management Activities. Construction and operation of additional solid waste management activities at the facility shall not impede operation or monitoring of the CCR unit(s). Any proposed additional activities shall be submitted to the Division for review, approval, and permitting, as applicable, before construction and operation.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2005 APPLICATION REQUIREMENTS FOR CCR FACILITIES AND UNITS

- (a) Permit for a new CCR facility or unit. The owner and operator of a new CCR facility or unit shall meet the requirements of Rule .2006 of this Section prior to submitting an application for a permit to construct.
- (1) Permit to Construct. The owner and operator of a new facility or unit shall provide a complete application for a permit to construct which shall contain the following:
- (A) a facility plan that describes the comprehensive development of the CCR facility for the life of the site prepared in accordance with Rule .2007 of this Section;
- (B) an engineering plan for the initial phase of landfill development prepared in accordance with Rule .2009 of this Section;
- (C) a construction quality assurance plan prepared in accordance with Rule .2011 of this Section;
- (D) an operation plan prepared in accordance with Rule .2012 of this Section;
- (E) a closure and post-closure plan prepared in accordance with Rule .2013 of this Section; and
- (F) monitoring plans prepared in accordance with Rule .2014(a) of this Section.
- (2) Permit to Operate. The owner and operator shall meet the pre-operative requirements of the permit to construct in order to qualify the constructed CCR unit for a permit to operate. Construction quality assurance documentation shall be submitted in a timely and organized manner in order to facilitate the Division's review.
- (b) Amendment to the permit. A complete application for an amendment to the permit shall contain:
- (1) an updated engineering plan prepared in accordance with Rule .2009 of this Section;
- (2) an updated construction quality assurance plan prepared in accordance with Rule .2011 of this Section;
- (3) an updated operation plan prepared in accordance with Rule .2012 of this Section;
- (4) an updated closure and post-closure plan prepared in accordance with Rule .2013 of this Section; and
- (5) an updated monitoring plan prepared in accordance with Rule .2014 of this Section.
- (c) Substantial amendment to the permit. A complete application for a substantial amendment to the permit shall contain:
- (1) a facility plan that describes the comprehensive development of the CCR facility prepared in accordance with Rule .2007 of this Section; and
- (2) local government approval in accordance with Rule .2006(d) of this Section.
- (d) Modifications to the permit. The owner or operator may propose to modify plans that were prepared and approved in accordance with the requirements set forth in this Section. A complete application shall identify the requirement(s) proposed for modification and provide sufficient information in order to demonstrate compliance with the applicable requirements of this Section.
- (e) A permit for closure and post-closure of a CCR surface impoundment. A complete application for a permit for closure and post-closure of a CCR surface impoundment shall contain:
- (1) an engineering plan prepared in accordance with Rule .2009 of this Section;
- (2) a construction quality assurance plan prepared in accordance with Rule .2011 of this Section;
- (3) an operation plan prepared in accordance with Rule .2012 of this Section and;
- (4) a closure and post-closure care plan prepared in accordance with Rule .2013 of this Section.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2006 SITE STUDY REQUIREMENTS FOR CCR FACILITIES AND UNITS

- (a) Purpose. As required under Rule .2005 of this Section, the owner or operator shall prepare a site study which meets the requirements of this Rule. The Division shall review the site study for a proposed new facility prior to consideration of an application for a permit to construct. Following review of the site study, the Division shall notify the applicant that either:
- (1) the site is deemed suitable and the applicant is authorized to prepare an application for a permit to construct in accordance with Rule .2005 of this Section; or
- (2) the site is deemed unsuitable for establishing a CCR unit(s) and shall specify the reasons that would prevent the CCR unit(s) from being operated in accordance with G.S. 130A Article 9, or 15A NCAC 13B, and any applicable federal laws and regulations.
- (b) Scope. The site is the land which is proposed for the landfill facility. The site study presents a characterization of the land, incorporating various investigations and requirements pertinent to suitability of a CCR facility. The scope of the site study includes criteria associated with the public health and welfare, and the environment. The economic feasibility of a proposed site is not within the

scope of this study. The information in the site study shall accurately represent site characteristics and shall be prepared by qualified person as defined in Rule .2002 of this Section. New CCR unit(s) and lateral expansions shall comply with the siting criteria set forth in Subparagraphs (c)(4) through (c)(10) of this Rule. In order to demonstrate compliance with specific criteria for each of the respective location restrictions, documentation or approval by agencies other than the Division of Waste Management, Solid Waste Section may be required. The scope of demonstrations including design and construction performance shall be addressed in the site study.

(c) The site study prepared for a CCR facility shall include the information required by this Paragraph.

- (1) Characterization study. The site characterization study area includes the CCR facility and a 2000-foot perimeter measured from the proposed boundary of the CCR facility. The study shall include an aerial photograph taken within one year of the original submittal date, a report, and a local map. The map and photograph shall be at a scale of at least one inch equals 400 feet. The study shall identify the following:
 - (A) the entire property proposed for the disposal site and any on-site easements;
 - (B) existing land use and zoning;
 - (C) the location of residential structures and schools;
 - (D) the location of commercial and industrial buildings, and other potential sources of contamination;
 - (E) the location of potable wells and public water supplies;
 - (F) historic sites;
 - (G) state nature and historic preserves;
 - (H) the existing topography and features of the disposal site including: general surface water drainage patterns and watersheds, 100-year floodplains, perennial and intermittent streams, rivers, and lakes; and
 - (I) the classification of the surface water drainage from landfill site in accordance with 15A NCAC 02B .0300.
- (2) Proposed Facility Plan. A conceptual plan for the development of the facility including drawings and a report shall be prepared which includes the drawings and reports described in Rule .2007(d)(1) and (e)(1) through (e)(3) of this Section.
- (3) Site Hydrogeologic Report. The study shall be prepared in accordance with the requirements set forth in Rule .2008(a) of this Section.
- (4) Floodplain Location Restrictions. CCR unit(s) or constructed embankments used to construct a CCR unit shall not be located in floodplains unless the owners or operators demonstrate that the unit will not restrict the flow of the flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.
- (5) Wetlands Location Restriction. New CCR unit(s) and lateral expansions shall not be located in wetlands, unless the owner or operator can make the following demonstrations to the Division:
 - (A) Where applicable under Sections 401 and 404 of the Clean Water Act, the presumption that a practicable alternative to the proposed landfill facility is available which does not involve wetlands is clearly rebutted.
 - (B) The construction and operation of the CCR unit(s) will not cause or contribute to violations of any applicable State water quality standards and will not violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act.
 - (C) The construction and operation of the CCR unit(s) will not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973. The construction and operation of the CCR unit(s) will not violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.
 - (D) The construction and operation of the CCR unit(s) will not cause or contribute to significant degradation of wetlands.
 - (E) The owner or operator shall demonstrate the integrity of the CCR unit(s) and its ability to protect ecological resources by addressing the following factors: erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the CCR unit; erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit; the volume and chemical nature of the waste managed in the CCR unit; impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste; the potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected to the extent required under Sections 401 and 404 of the Clean Water Act.
 - (F) The owner or operator shall demonstrate that steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable in accordance with Parts (c)(5)(A) through (D) of this Rule, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands).
 - (G) The owner or operator shall also demonstrate that sufficient information is available to make a reasonable determination with respect to each of the demonstrations required by this Rule.
 - (H) For purposes of this Rule, wetlands means those areas that are defined in 40 CFR 232.2(r).
- (6) Fault Areas. New CCR unit(s) and lateral expansions shall not be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the Division that an alternative setback distance of less than 200 feet (60 meters) will prevent damage to the structural integrity of the CCR unit and will be protective of human health and the environment.

- (7) Seismic Impact Zones. New CCR unit(s) and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Division that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.
- (8) Unstable Area Location Restrictions. New CCR unit(s) and lateral expansions shall not be located in an unstable area unless the owners and operators of new CCR unit(s) and lateral expansions proposed for location in an unstable area demonstrate that engineering measures have been incorporated in the CCR unit's design to ensure that the integrity of any structural components of the CCR unit will not be disrupted. The owner and operator shall consider the following factors, at a minimum, when determining whether an area is unstable:
 - (A) On-site or local soil conditions that may result in significant differential settling;
 - (B) On-site or local geologic or geomorphologic features; and
 - (C) On-site or local human-made features or events (both surface and subsurface).
- (9) Cultural Resources Location Restrictions. New CCR unit(s) and lateral expansions shall not damage or destroy a property of archaeological or historical significance which has been listed or determined eligible for a listing in the National Register of Historic Places. To aid in making a determination as to whether the property is of archeological or historical significance, the State's Historic Preservation Office in the Department of Natural and Cultural Resources may request the owner and operator to perform a site-specific survey which shall be included in the Site Study.
- (10) State Nature and Historic Preserve Location Restrictions. New CCR unit(s) and lateral expansions shall not have an adverse impact, considering the purposes for designation of the Preserve lands and the location, access, size and operation of the landfill, on any lands included in the State Nature and Historic Preserve.
- (11) Water Supply Watersheds Location Restrictions:
 - (A) New CCR unit(s) and lateral expansions shall not be located in the critical area of a water supply watershed, or in the watershed for a stream segment classified as WS-I, or in watersheds of other water bodies which indicate that no new landfills are allowed in accordance with the rules codified at 15A NCAC 02B .0200 entitled "Classifications and Water Quality Standards Applicable to Surface Waters of North Carolina."
 - (B) New CCR unit(s) and lateral expansions which proposes to discharge leachate to surface waters and shall obtain a National Pollution Discharge Elimination System (NPDES) Permit from the Department of Environmental Quality Division of Water Resources pursuant to Section 402 of the United States Clean Water Act, shall not be located within watersheds classified as WS-II or WS-III, or in watersheds of other water bodies which indicate that no new discharging landfills are allowed, in accordance with the rules codified at 15A NCAC 02B .0200.
- (12) Endangered and Threatened Species Location Restrictions. New CCR unit(s) and lateral expansions shall not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973.
- (13) Local government approvals and zoning letter for CCR unit(s).
- (14) Title VI Impacts. The cumulative impact of the proposed facility, when considered in relation to other similar impacts of facilities located or proposed in the community, would have a disproportionate adverse impact on a minority or low-income community protected by Title VI of the federal Civil Rights Act of 1964.

(d) Notwithstanding Subparagraphs (1) through (5) of this Paragraph, no local government approval or franchise shall be required for a CCR unit used only to dispose of waste generated by a coal-fired generating unit, or generated at its facility or generated at a facility located in North Carolina that is owned by the investor-owned utility, that is owned or operated by an investor-owned utility subject to the requirements of G.S. 143-215.107D.

- (1) If the permit applicant is a unit of local government in which jurisdiction the proposed CCR facility is located, the approval of the governing board shall be required. Approval may be in the form of either a resolution or a vote on a motion. A copy of the resolution or the minutes of the meeting where the vote was taken shall be submitted to the Division as part of the site study.
- (2) A permit applicant other than the unit of local government with jurisdiction over the proposed landfill site shall obtain a franchise in accordance with G.S. 130A-294(b1)(3) from each unit of local government in whose jurisdiction the site is located. A copy of the franchise shall be submitted to the Division as part of the site study.
- (3) Prior to issuance of approval or a franchise, the jurisdictional local government(s) where the landfill is to be located shall hold at least one public meeting to inform the community of the proposed waste management activities as described in the proposed facility plan prepared in accordance with Subparagraph (2) of this Paragraph. The local government where the landfill is to be located shall provide a public notice of the meeting at least 30 days prior to the meeting. For purposes of this Subparagraph, public notice shall include a legal advertisement placed in a newspaper or newspapers serving the county and provision of a news release to at least one newspaper serving the county. Public notice shall include time, place, and purpose of the meetings required by this Subparagraph. The application for a franchise or other documentation as required by the appropriate local government(s), shall be placed at a location that is accessible by the public. This location shall be noted in the public notice. The permit applicant shall notify the property owners of all property that shares a common border with the proposed facility by means of a U.S. Postal Service registered letter, return receipt requested. The notice shall give the date, time and place of the public meeting, and shall describe the facility plan for the landfill, including the areal location and final elevation of all waste disposal units, the type and amount of waste to be disposed at the landfill, any other waste management activities to be conducted at the facility, and the proposed location of the entrance to the facility. Mailings shall be postmarked a minimum of 30 days prior to the public meeting which is being noticed. The applicant shall provide documentation of the content and mailing of the notices in the site study.

(4) Public notice of the meeting shall be documented in the site study. A tape recording or a written transcript of the meeting, all written material submitted representing community concerns, and all other written material distributed or used at the meeting shall be submitted as part of the site study.

(5) A letter from the unit of local government(s) having zoning jurisdiction over the site which states that the proposal meets all the requirements of the local zoning ordinance, or that the site is not zoned, shall be submitted to the Division as part of the site study.

(e) The owner or operator of the CCR unit shall comply with the recordkeeping, notification and the Internet requirements specified in Rule .2017(d) of this Section.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2007 FACILITY REQUIREMENTS FOR CCR LANDFILLS AND UNITS

(a) Purpose. As required under Rule .2005 of this Section, a permit applicant shall prepare a facility plan which meets the requirements of this Rule.

(b) Scope.

(1) The facility plan shall define the comprehensive development of the property proposed for a permit or described in the permit of an existing facility. The plan shall include a set of drawings and a report which present the long-term, general design concepts related to construction, operation, and closure of the CCR unit(s). The scope of the plan shall span the active life of the unit(s). Additional solid waste management activities located at the CCR facility shall be identified in the plan and shall meet the requirements of 15A NCAC 13B. The facility plan shall define the waste stream proposed for management at the CCR facility. If different types of landfill units or non-disposal activities are included in the facility design, the plan shall describe general waste acceptance procedures.

(2) The areal limits of the CCR unit(s), total capacity of the CCR unit(s), and the proposed waste stream shall be consistent with the Division's approval set forth in accordance with Rule .2006(a)(1) of this Section for a new facility.

(c) Use of Terms. The terminology used in describing areas of the CCR unit(s) shall be defined as follows and shall be used consistently throughout a permit application.

(1) A "phase" is an area constructed that provides approximately five years of operating capacity.

(2) A "cell" is a subdivision of a phase, which describes modular or partial construction.

(3) A "subcell" is a subdivision of a cell, which describes leachate and stormwater management, if required, for active or inactive areas of the constructed CCR unit(s).

(d) Facility Drawings. The facility plan shall include the following drawings:

(1) Site Development. The drawings which plot site development shall be prepared on topographic maps representative of existing site conditions; the maps shall locate or delineate the following:

(A) Delineate the areal limits of all landfill units, and incorporate the buffer requirements set forth in Rule .2010(b)(3) of this Section;

(B) Locate all solid waste management facilities and facility infrastructure, including landfill units;

(C) Delineate the areal limits of grading, including borrow and stockpile areas;

(D) Define phases of development for the life of the site. The minimum design time for a phase shall be approximately five-years of capacity.

(E) Delineate proposed final contours for the CCR unit(s) and facility features for closure; and

(F) Delineate physical features including floodplains, wetlands, unstable areas, and cultural resource areas as defined in Rule .2006 of this Section.

(2) Landfill Operation. The following information related to the long-term operation of the CCR unit(s) shall be included in facility drawings:

(A) proposed transitional contours for each phase of development including operational grades for existing phase(s) and construction grading for the new phase; and

(B) stormwater segregation features and details for inactive landfill subcells, if included in the design or required.

(3) Survey. A survey locating all property boundaries for the proposed landfill facility certified by an individual licensed to practice land surveying in the State of North Carolina.

(e) Facility Report. The facility plan shall include the following information:

(1) Waste stream. A discussion of the characteristics of the wastes received at the facility and facility specific management plans shall incorporate:

(A) the types of waste specified for disposal;

(B) average yearly disposal rates in tons and a representative daily rate that is consistent with the local government approval, if required, in accordance with Rule .2006 of this Section;

(C) the area served by the facility;

(D) procedures for segregated management at different on-site facilities; and

(E) equipment requirements for operation of the CCR unit(s).

(2) CCR unit(s) Capacity. An analysis of landfill capacity and soil resources shall be performed.

(A) The data and assumptions used in the analysis shall be included with the facility drawings and disposal rates specified in the facility plan and representative of operational requirements and conditions.

(B) The conclusions shall provide estimates of gross capacity of the CCR unit; gross capacity for each phase of development of the CCR unit; the estimated operating life of all CCR unit(s) in years; and required quantities of soil for landfill construction, operation, and closure; and available soil resources from on-site. Gross

capacity is defined as the volume of the landfill calculated from the elevation of the initial waste placement through the top of the final cover, including any periodic cover.

- (3) Special engineering features.
- (A) Leachate management systems. The performance of and design concepts for the leachate collection system within active areas of the CCR unit(s), chimney drains, and any storm water segregation included in the engineering design shall be described. Normal operating conditions shall be defined. A contingency plan shall be prepared for storm surges or other considerations exceeding design parameters for the storage or treatment facilities.
 - (B) Containment and environmental control systems. A general description of the systems designed for proper landfill operation, system components, and corresponding functions shall be provided.
 - (C) Other device, components, and structures, if proposed by the applicant, shall be described.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2008 GEOLOGIC AND HYDROGEOLOGIC INVESTIGATION REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) Site Hydrogeologic Report. A permit applicant shall conduct a hydrogeologic investigation and prepare a report. An investigation is required to assess the geologic and hydrogeologic characteristics of the proposed site to determine the suitability of the site for solid waste management activities, which areas of the site are most suitable for CCR unit(s), and the general groundwater flow paths and rates for the seasonal high groundwater table. The report shall provide an understanding of the relationship of the site groundwater flow regime to local and regional hydrogeologic features with special emphasis on the relationship of CCR unit(s) to groundwater receptors (especially drinking water wells) and to groundwater discharge features. Additionally, the scope of the investigation shall include the general geologic information necessary to address compliance with the pertinent location restrictions described in Rule .2006 of this Section. The Site Hydrogeologic Report shall provide, at a minimum, the following information:

- (1) A report on local and regional geology and hydrogeology based on research of available literature for the area. This information is to be used in planning the field investigation. For sites located in piedmont or mountain regions, this report shall include an evaluation of structurally controlled features identified on a topographic map of the area.
- (2) A report on field observations of the site that includes information on the following:
 - (A) topographic setting, springs, streams, drainage features, existing or abandoned wells, rock outcrops, (including trends in strike and dip), and other features that may affect site suitability or the ability to effectively monitor the site; and groundwater discharge features;
 - (B) for a proposed site where the owner or operator does not control the property from any landfill unit boundary to the controlling, downgradient, groundwater discharge feature(s), additional borings, geophysics or other hydrogeological investigations may be required to characterize the nature and extent of groundwater flow; and
 - (C) the hydrogeological properties of the bedrock, if the uppermost groundwater flow is predominantly in the bedrock. Bedrock for the purpose of this rule is defined as material below auger refusal.
- (3) Borings for which the numbers, locations, and depths are sufficient to provide an adequate understanding of the subsurface conditions and groundwater flow regime of the uppermost aquifer at the site. The number and depths of borings required will depend on the hydrogeologic characteristics of the site. At a minimum, there shall be an average of one boring for each 10 acres of the proposed landfill area unless otherwise authorized by the Division. All borings intersecting the water table shall be converted to piezometers or monitoring wells in accordance with 15A NCAC 02C .0108.
- (4) A testing program for the borings which describes the frequency, distribution, and type of samples taken and the methods of analysis (ASTM Standards or test methods approved by the Division) used to obtain, at a minimum, the following information:
 - (A) standard penetration - resistance (ASTM D 1586);
 - (B) particle size analysis (ASTM D 422);
 - (C) soil classification: Unified Soil Classification System (USCS)(ASTM D 2487);
 - (D) formation descriptions; and
 - (E) saturated hydraulic conductivity, porosity, effective porosity, and dispersive characteristics for each lithologic unit of the uppermost aquifer including the vadose zone.
- (5) In addition to borings, other techniques may be used to investigate the subsurface conditions at the site, including but not limited to: geophysical well logs, surface geophysical surveys, and tracer studies.
- (6) Stratigraphic cross-sections identifying hydrogeologic and lithologic units, and stabilized water table elevations.
- (7) Water table information, including:
 - (A) tabulations of water table elevations measured at the time of boring, 24 hours, and stabilized readings for all borings (measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow direction and rate);
 - (B) tabulations of stabilized water table elevations over time in order to develop an understanding of seasonal fluctuations in the water table;
 - (C) an estimation of the long-term seasonal high groundwater table based on stabilized water table readings, hydrographs of wells in the area, precipitation and other meteorological data, and streamflow measurements

- from the site frequent enough to demonstrate infiltration and runoff characteristics, and any other information available; and
- (D) a discussion of any natural or man-made activities that have the potential for causing water table fluctuations, including but not limited to, tidal variations, river stage changes, flood pool changes of reservoirs, high volume production wells, and injection wells.
- (8) The horizontal and vertical dimensions of groundwater flow including flow directions, rates, and gradients.
 - (9) Groundwater contour map(s) to show the occurrence and direction of groundwater flow in the uppermost aquifer and any other aquifers identified in the hydrogeologic investigation. The groundwater contours shall be superimposed on a topographic map. The location of all borings and rock cores and the water table elevations or potentiometric data at each location used to generate the groundwater contours shall be shown on the groundwater contour map(s).
 - (10) A topographic map of the site locating soil borings with accurate horizontal and vertical control, which are tied to a permanent onsite benchmark.
 - (11) Information for wells and water intakes within the site characterization study area, in accordance with Rule .2006(c) of this Section including:
 - (A) boring logs, construction records, field logs and notes, for all onsite borings, piezometers and wells;
 - (B) construction records, number and location served by wells, and production rates, for public water wells; and
 - (C) available information for all surface water intakes, including use and production rate.
 - (12) Identification of other geologic and hydrologic considerations including but not limited to: slopes, streams, springs, gullies, trenches, solution features, karst terranes, sinkholes, dikes, sills, faults, mines, groundwater discharge features, and groundwater recharge/discharge areas.
 - (13) A report summarizing the geological and hydrogeological evaluation of the site that includes the following:
 - (A) a description of the relationship between the uppermost aquifer of the site to local and regional geologic and hydrogeologic features,
 - (B) a discussion of the groundwater flow regime of the site focusing on the relationship of CCR unit(s) to groundwater receptors and to groundwater discharge features,
 - (C) a discussion of the overall suitability of the proposed site for solid waste management activities and which areas of the site are most suitable for CCR unit(s), and
 - (D) a discussion of the groundwater flow regime of the uppermost aquifer at the site and the ability to effectively monitor the CCR unit(s) in order to ensure early detection of any release of constituents to the uppermost aquifer.

(b) Design Hydrogeologic Report

- (1) A geological and hydrogeological report shall be submitted in the application for the Permit to Construct. This report shall contain the information required by Subparagraph (2) of this Paragraph. The number and depths of borings required shall be based on the geologic and hydrogeologic characteristics of the landfill facility. At a minimum, there shall be an average of one boring per acre of the investigative area. The area of investigation shall, at a minimum, be the area within the landfill footprint and landfill compliance boundary, unless otherwise authorized by the Division. The scope and purpose of the investigation is as follows:
 - (A) The investigation shall provide adequate information to demonstrate compliance with the vertical separation and foundation standards set forth in Rule .2010(b)(4) of this Section.
 - (B) The report shall include an investigation of the hydrogeologic characteristics of the uppermost aquifer for the proposed phase of CCR development and any leachate management unit(s). The purpose of this investigation is to provide more detailed and localized data on the hydrogeologic regime for this area in order to design an effective water quality monitoring system.
- (2) The Design Hydrogeologic Report shall provide, at a minimum, the following information:
 - (A) the information required in Subparagraphs (a)(4) through (12) of this Rule;
 - (B) the technical information necessary to determine the design of the monitoring system as required by Rule .2014(c) of this Section;
 - (C) the technical information necessary to determine the relevant point of compliance as required by Rule .2014(c)(1)(B) of this Section;
 - (D) rock cores (for sites located in the piedmont or mountain regions) for which the numbers, locations, and depths are adequate to provide an understanding of the fractured bedrock conditions and groundwater flow characteristics of at least the upper 10 feet of the bedrock. Testing of the corings shall provide, at a minimum, rock types, recovery values, rock quality designation (RQD) values, saturated hydraulic conductivity and secondary porosity values, and rock descriptions, including fracturing and jointing patterns, etc.;
 - (E) a groundwater contour map based on the estimated long-term seasonal high water table that is superimposed on a topographic map and includes the location of all borings and rock cores and the water table elevations or potentiometric data at each location used to generate the groundwater contours;
 - (F) a bedrock contour map (for sites located in piedmont or mountain regions) illustrating the contours of the upper surface of the bedrock that is superimposed on a topographic map and includes the location of all borings and rock cores and the top of rock elevations used to generate the upper surface of bedrock contours;
 - (G) a three-dimensional groundwater flow net or several hydrogeologic cross-sections that characterize the vertical groundwater flow regime for this area;
 - (H) a report on the groundwater flow regime for the area including groundwater flow paths for both horizontal and vertical components of groundwater flow, horizontal and vertical gradients, flow rates, groundwater recharge areas and discharge areas;

- (I) a report on the soils in the four feet immediately underlying the waste with relationship to properties of the soil. Soil testing cited in Subparagraph (a)(4) of this Rule shall be used as a basis for this discussion; and
 - (J) a certification by a Licensed Geologist that all borings which intersect the water table at the site have been constructed and maintained as permanent monitoring wells in accordance with 15A NCAC 02C .0108, or that the borings will be properly abandoned in accordance with the procedures for permanent abandonment of wells as delineated in 15A NCAC 02C .0113. All piezometers within the footprint area shall be overdrilled to the full depth of the boring, prior to cement or bentonite grout placement, and the level of the grout within the boring shall not exceed in height the elevation of the proposed basegrade.
- (3) This Rule shall not apply to a permit for closure/post-closure prepared in accordance with Rule .2005(e).

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2009 ENGINEERING REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) Purpose. The engineering plan shall incorporate the detailed plans and specifications relative to the design and performance of the CCR unit(s) containment and environmental control systems. This plan shall set forth the design parameters and construction requirements for the components of the CCR unit(s) and shall establish the responsibilities of the design engineer. The engineered components shall be described in Rule .2010 of this Section. As required under Rule .2005 of this Section, the owner or operator shall submit an engineering plan, which meets the requirements of this Rule.

(b) Responsibilities of the design engineer. The engineering plan shall be prepared by a Professional Engineer licensed to practice engineering in accordance with G.S. 89C and shall meet the requirements of this Rule. The design engineer shall incorporate a statement certifying this fact and bearing his or her seal of registration.

(c) Scope. An engineering plan shall be prepared for a minimum phase of development that is approximately five years of operating capacity up to a maximum of the life-of-the site consistent with the development phases and design criteria defined in the facility plan. The engineering plan shall contain a report and a set of drawings which consistently represent the engineering design.

(d) An engineering report shall contain:

- (1) A summary of the facility design that includes:
 - (A) a discussion of the analytical methods used to evaluate the design;
 - (B) definition of the critical conditions evaluated and assumptions made;
 - (C) a list of technical references used in the evaluation; and
 - (D) completion of any applicable location restriction demonstrations in accordance with Rule .2006 of this Section.
- (2) A description of the materials and construction practices that conforms to the requirements set forth in Rule .2010 of this Section.
- (3) A copy of the Design Hydrogeologic Report prepared in accordance with Rule .2008(b) of this Section.

(e) Engineering drawings shall illustrate:

- (1) existing conditions: site topography, features, existing disposal areas, roads, and buildings;
- (2) grading plans: proposed limits of excavation, subgrade elevations, intermediate grading for partial construction;
- (3) stormwater segregation system, if required: location and detail of features;
- (4) cap system: base and top elevations, landfill gas devices, infiltration barrier, surface water removal, protective and vegetative cover, and details;
- (5) temporary and permanent sedimentation and erosion control plans;
- (6) vertical separation requirement estimates including:
 - (A) Cross-sections, showing borings, which indicate existing ground surface elevations, base grades, seasonal high groundwater level, estimated long-term seasonal high groundwater level in accordance with Rule .2008(b)(2)(E) of this Section, and bedrock level in accordance with Rule .2008(b)(2)(F) of this Section; and
 - (B) A map showing the existing ground surface elevation and base grades. The map shall include labeled boring locations which indicate seasonal high groundwater level, estimated long term high groundwater level in accordance with Rule .2008(b)(2)(E) of this Section, and bedrock level in accordance with Rule .2008(b)(2)(F) of this Section.

(f) The engineering plan shall also describe and illustrate additional engineering features and details, if proposed by the applicant.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2010 CONSTRUCTION REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) This Rule establishes the performance standards and minimum criteria for designing and constructing CCR unit(s). Additional standards for the cap system are described in Rule .2013 of this Section.

(b) New CCR unit(s) and lateral expansions shall comply with the following design and construction criteria.

- (1) Base liner system description. The base liner system is constructed on the landfill subgrade and shall be designed to efficiently contain, collect and remove leachate generated by the CCR unit. At a minimum, the components of the liner system shall consist of one of the following designs:
 - (A) A composite liner utilizing a compacted clay liner (CCL). The composite liner is one liner that consists of two components; a geomembrane liner installed above and in direct and uniform contact with a compacted clay liner with a minimum thickness of 24 inches (0.61 m) and a permeability of no more than 1.0×10^{-7}

cm/sec. The composite liner shall be designed and constructed in accordance with Subparagraphs (b)(8) and (b)(10) of this Rule.

- (B) A composite liner utilizing a geosynthetic clay liner (GCL). The composite liner is one liner that consists of three components: a geomembrane liner installed above and in uniform contact with a GCL overlying a compacted clay liner with a minimum thickness of 18 inches (0.46 m) and a permeability of no more than 1.0×10^{-5} cm/sec. The composite liner shall be designed and constructed in accordance with Subparagraphs (b)(8) through (10) of this Rule.
 - (C) A composite liner utilizing two geomembrane liners. The composite liner consists of three components: two geomembrane liners each with an overlying leachate drainage system designed to reduce the maximum predicted head acting on the lower membrane liner to less than one inch. The lower membrane liner shall overlie a compacted clay liner with a minimum thickness of 12 inches (0.31 m) and a permeability of no more than 1.0×10^{-5} cm/sec. The composite liner system shall be designed and constructed in accordance with Subparagraphs (b)(8) and (b)(10) of this Rule.
 - (D) A composite liner for a combustion products landfill to be constructed partially or entirely within areas that have been formerly used for the storage or disposal of combustion products will be constructed in accordance with G.S. 130A-295.4(b).
 - (E) A composite liner for a converted CCR impoundment to a CCR landfill will be constructed in accordance with G.S. 130A-309.214(a)(1)(a).
- (2) Leachate collection system (LCS) design and operation.
- (A) The LCS, including all contributing appurtenances such as chimney drains or side slope drains if specified, shall be hydraulically designed to remove leachate from the CCR unit(s) and ensure that the leachate head on the composite liner does not exceed one foot under normal operating conditions. A means of quantitatively assessing the performance of the leachate collection system shall be provided in the engineering plan. The performance analysis shall evaluate the flow capacities of the drainage network necessary to convey leachate to the storage facility or off-site transport location. The engineering evaluation shall incorporate the following criteria:
 - (i) At a minimum, the geometry of the CCR unit(s) and the LCS shall be designed to control and contain the volume of leachate generated by the 24-hour, 25-year storm.
 - (ii) The performance analysis shall evaluate the leachate collection system for the flow capacities during conditions when the maximum impingement rate occurs on the LCS. The LCS flow capacity shall be designed to reduce the head on the liner system generated by the 24-hour, 25-year storm falling on an empty cell to less than one foot within 72 hours after the storm event.
 - (B) The LCS shall be designed to provide a zone of protection at least 24 inches separating the composite liner from activities performed on it, or shall be subject to approval from the division upon a demonstration of equivalent protection for the liner system.
 - (C) The LCS shall be designed to resist clogging and promote leachate collection and removal from the CCR unit(s).
 - (D) The LCS shall be operated to remove leachate from the CCR unit(s) in such a way as to ensure that the leachate head on the composite liner does not exceed one foot under normal operating conditions.
 - (E) Leachate management plan. The owner or operator of a CCR unit(s) designed with a LCS shall establish and maintain a leachate management plan which includes the following: periodic maintenance of the LCS; maintaining records for the amounts of leachate generated; semi-annual leachate quality sampling; approval for final leachate disposal; and a contingency plan for extreme operational conditions.
 - (F) All leachate collection lines shall be designed and constructed to permanently allow cleaning and remote camera inspection. Remote camera inspections of the leachate collection lines shall occur upon completion of the construction and at least once every five years. Cleaning of leachate collection lines found necessary for proper functioning and to address buildup of leachate over the liner shall occur in accordance with G.S. 130A-295.6(h)(3).
 - (G) Any pipes used to transmit leachate shall provide dual containment at road and stream crossings.
 - (H) The bottom liner of a sanitary landfill shall be constructed without pipe penetrations in accordance with G.S. 130A-295.6(h)(4).
 - (I) Leachate storage shall be designed and constructed in accordance with the requirements of 15A NCAC 13B .1680.
 - (J) The following criteria shall be met for all leachate pumping stations:
 - (i) Pump stations shall be designed with multiple pumps such that peak flow can be pumped with the largest pump out of service.
 - (ii) A standby power source or pump is required at pump stations. Controls shall be provided to automatically activate the standby source and signal an alarm condition.
 - (iii) As an alternative to Subpart (J)(ii) of this Subparagraph for pump stations with an average daily design flow of less than 15,000 gallons per day, a portable power source or pumping capability may be utilized. It shall be demonstrated to the Division that the portable source is owned or contracted by the permittee and is compatible with the station. If the portable power source or pump is dedicated to multiple pump stations, an evaluation of all the pump stations storage capacities and the rotation schedule of the portable power source or pump, including travel timeframes, shall be provided in the case of a multiple station power outage.

- (iv) Pump stations shall have a telemetry system to provide remote notification of a problem condition to include power failure and high water alarm, and visual alarm.
- (3) Horizontal separation requirements.
- (A) Property line buffer. New CCR unit(s) at a new facility or lateral expansions of an existing unit shall establish a minimum 300-foot buffer between the CCR unit and all property lines for monitoring purposes.
- (B) Offsite residential structures and wells. All CCR unit(s) at a new facility shall establish a minimum 500-foot buffer between the CCR unit and existing residential structures and wells.
- (C) Surface waters. All CCR unit(s) at new facilities and lateral expansions shall establish a minimum 100-foot buffer between the CCR unit(s) and any stream, river, lake, pond or other waters of the state as defined in G.S. 143-212.
- (D) Existing landfill units. A monitoring zone shall be established between a new CCR unit and any existing landfill units such as municipal solid waste (MSW), Industrial, CCR, or Land Clearing and Inert Debris (LCID), in order to establish a groundwater monitoring system as set forth in Rule .2014 of this Section.
- (4) Vertical separation requirements. CCR unit(s) shall be constructed so that the post-settlement bottom elevation of waste is a minimum of five feet above the seasonal high groundwater table and the bedrock datum plane contours established in the Design Hydrogeological Report prepared in accordance with Rule .2008(b) of this Section.
- (5) Survey control. One permanent benchmark of known elevation measured from a U.S. Geological Survey benchmark shall be established and maintained for each 50 acres of developed landfill, or part thereof, at the landfill facility. This benchmark shall be the reference point for establishing vertical elevation control. Any survey performed pursuant to this Subparagraph shall be performed by a Registered Land Surveyor. Latitude and longitude, expressed in decimal degrees, shall be indicated at the approximate center of the facility.
- (6) Location coordinates. The North Carolina State Plane (NCSP) coordinates shall be established and one of its points shall be the benchmark of known NCSP coordinates.
- (7) CCR unit(s) subgrade. The subgrade is the in-situ or modified soil layer(s), constructed embankments, and select fill providing the foundation for construction of the unit. The subgrade shall be graded in accordance to the plans and specifications prepared in accordance to Rule .2009 of this Section, which are incorporated into the permit to construct in accordance with Rule .2004(b) of this Section as follows:
- (A) The owner or operator of the CCR unit(s) shall have the subgrade inspected by a qualified geologist or engineer when excavation is completed.
- (B) The owner or operator of the CCR unit(s) shall notify the Division's hydrogeologist at least 24 hours before subgrade inspection.
- (C) Compliance with the requirements of Subparagraph (b)(4) of this Rule and shall be in accordance with Rule .2008(b) of this Section or by placement of soil in accordance with this Subparagraph and verified in accordance with Rule .2011 of this Section.
- (8) Compacted clay liners. Compacted clay liners are low permeability barriers designed to control fluid migration in a cap liner system or base liner system.
- (A) Materials required. The soil materials used in constructing a compacted clay liner may consist of on-site or off-site sources, or a combination of sources; sources may possess adequate native properties or may require bentonite conditioning to meet the permeability requirement. The soil material shall be free of particles greater than three inches in any dimension.
- (B) Construction requirements. Construction methods for the compacted clay liner shall be based upon the type and quality of the borrow source and shall be verified in the field by constructing test pad(s). The project engineer shall ensure that the compacted clay liner installation conforms with the Division approved plans including the following minimum requirements:
- (i) A test pad shall be constructed prior to beginning installation of the compacted clay liner and whenever there is a significant change in soil material properties. The area and equipment, liner thickness, and subgrade slope and conditions shall be representative of full scale construction. Acceptance and rejection criteria shall be verified for each lift, a minimum of three test locations shall be established for testing moisture content, density, and a composite sample for recompacted lab permeability. At least one shelby tube sample for lab permeability testing, or another in-situ test that is approved by the Division as equivalent for permeability determination shall be obtained per lift.
- (ii) Soil conditioning, placement, and compaction shall be maintained within the range identified in the moisture-density-permeability relation developed in accordance with Part (A) of this Subparagraph.
- (iii) The final compacted thickness of each lift shall be a maximum of six inches.
- (iv) Prior to placement of successive lifts, the surface of the lift in place shall be scarified or otherwise conditioned to eliminate lift interfaces.
- (v) The final lift shall be protected from environmental degradation.
- (C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of all quality assurance and quality control testing required in this Subparagraph. The testing procedures and protocols shall be submitted in accordance with Rule .2011 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the Division approved plans including the following requirements:

- (i) At a minimum, the quality control testing for accepting materials prior to and during construction of a compacted clay liner shall include: particle size distribution analysis, Atterberg limits, triaxial cell laboratory permeability, moisture content, percent bentonite admixed with soil, and the moisture-density-permeability relation. The project engineer shall certify that the materials used in construction were tested according to the Division approved plans.
 - (ii) At a minimum, the quality assurance testing for evaluating each lift of the compacted clay liner shall include: moisture content and density, and permeability testing. For each location, the moisture content and density shall be compared to the appropriate moisture-density-permeability relation. The project engineer shall certify that the liner was constructed using the methods and acceptance criteria consistent with test pad construction and tested in accordance with the plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section.
 - (iii) Any tests resulting in the penetration of the compacted clay liner shall be repaired using bentonite or as approved by the Division.
- (9) Geosynthetic Clay liners. Geosynthetic clay liners are geosynthetic hydraulic barriers manufactured in sheets and installed by field seaming techniques.
 - (A) Materials required. Geosynthetic clay liners shall consist of natural sodium bentonite clay or equivalent, encapsulated between two geotextiles or adhered to a geomembrane. The liner material and any seaming materials shall have chemical and physical resistance not adversely affected by environmental exposure, waste placement, leachate generation and subgrade moisture composition. Accessory bentonite, used for seaming, repairs and penetration seaming shall be made from the same sodium bentonite as used in the geosynthetic clay liner or as recommended by the manufacturer. The type of geosynthetic clay liner shall be approved by the Division according to the criteria set forth in this Part.
 - (i) Reinforced geosynthetic clay liners shall be used on all slopes greater than 10H:1V.
 - (ii) The geosynthetic clay liner material shall have a demonstrated hydraulic conductivity of not more than 5×10^{-9} cm/sec under the anticipated confining pressure.
 - (B) Design and construction requirements. The design engineer shall ensure that the design of the geosynthetic clay liner installation conforms to the requirements of the manufacturer's recommendations and the Division approved plans. The Division approved plans shall provide for and include the following provisions:
 - (i) The surface of the supporting soil upon which the geosynthetic clay liner will be installed shall be reasonably free of stones, organic matter, protrusions, loose soil, and any abrupt changes in grade that could damage the geosynthetic clay liner;
 - (ii) Materials placed on top of the GCL shall be placed in accordance with the plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section. Equipment used to install additional geosynthetics shall be specified by the design engineer and as recommended by the manufacturer. A minimum of 12 inches of separation between the application equipment and the geosynthetic clay liner shall be provided when applying soil materials;
 - (iii) Materials that become prematurely hydrated shall be removed, repaired, or replaced, as specified by the project engineer and in accordance with the plans incorporated into the permit to construct prepared in accordance with Rule .2004(b) of this Section;
 - (iv) Field seaming preparation and methods, general orientation criteria, and restrictive weather conditions;
 - (v) Anchor trench design;
 - (vi) Critical tensile forces and slope stability, including seismic design;
 - (vii) Protection from environmental damage; and
 - (viii) Physical protection from the materials installed directly above the geosynthetic clay liner.
 - (C) Certification requirements.
 - (i) Before beginning installation of the geosynthetic clay liner, the project engineer shall visually inspect the exposed surface to evaluate the suitability of the subgrade and document that the surface is properly prepared and that the elevations are consistent with the approved engineering plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section.
 - (ii) The project engineer shall ensure that the geosynthetic clay installation conforms to the requirements of the manufacturer's recommendations and the plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section.
 - (iii) The project engineer shall include in the construction quality assurance report, a discussion of quality assurance, and quality control testing to document that material is placed in accordance with plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section.
 - (iv) The project engineer shall include in the construction quality assurance report a discussion of the approved data resulting from the quality assurance and quality control testing required in this Subparagraph.
 - (v) The testing procedures and protocols for field installation shall be submitted in accordance with Rule .2011 of this Section and approved by the Division.
 - (vi) The results of all testing shall be included in the construction quality assurance report, including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and performance documentation of all retesting, in accordance with the plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section.

including the following: quality control testing of the raw materials and manufactured product; field and independent laboratory destructive testing of geosynthetic clay liner samples; and documentation prepared by the project engineer in accordance with Subpart (b)(9)(C)(i) of this Rule.

- (10) Geomembrane liners. Geomembrane liners are geosynthetic hydraulic barriers manufactured in sheets and installed by field seaming techniques.
- (A) Materials required. The liner material and any seaming materials shall have chemical and physical resistance not adversely affected by environmental exposure, waste placement and leachate generation. The type of geomembrane shall be approved by the Division according to the criteria set forth in this Part.
- (i) High density polyethylene geomembrane liners shall have a minimum thickness of 60 mils.
- (ii) The minimum thickness of any geomembrane approved by the Division shall be greater than 30 mils.
- (B) Construction requirements. The project engineer shall ensure that the geomembrane installation conforms to the requirements of the manufacturer's recommendations and the Division approved plans including the following:
- (i) The surface of the supporting soil upon which the geomembrane will be installed shall be reasonably free of stones, organic matter, protrusions, loose soil, and any abrupt changes in grade that could damage the geomembrane;
- (ii) Field seaming preparation and methods, general orientation criteria, and restrictive weather conditions;
- (iii) Anchor trench design;
- (iv) Critical tensile forces and slope stability;
- (v) Protection from environmental damage; and
- (vi) Physical protection from the materials installed directly above the geomembrane.
- (C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the approved data resulting from the quality assurance and quality control testing required in this Subparagraph. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .2011 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section, including the following:
- (i) Quality control testing of the raw materials and manufactured product;
- (ii) At a minimum, test seams shall be made upon each start of work for each seaming crew, upon every four hours of continuous seaming, every time seaming equipment is changed or if significant changes in geomembrane temperature and weather conditions are observed;
- (iii) Nondestructive testing of all seams; and
- (iv) Field and independent laboratory destructive testing of seam samples.
- (11) Leachate collection pipes. A leachate collection pipe network shall be a component of the leachate collection system and shall be hydraulically designed to convey leachate from the CCR unit(s) to an appropriately sized leachate storage or treatment facility or a point of off-site transport. Leachate collection piping shall comply with the following:
- (A) Materials required.
- (i) The leachate collection piping shall have a minimum nominal diameter of six inches. All leachate collection lines shall be designed and constructed to permanently allow cleaning and remote camera inspection.
- (ii) The chemical properties of the pipe and any materials used in installation shall not be adversely affected by waste placement or leachate generated by the landfill.
- (iii) The physical properties of the pipe shall provide adequate structural strength to support the maximum static and dynamic loads and stresses imposed by the overlying materials and any equipment used in construction and operation of the landfill. Specifications for the pipe shall be submitted in the engineering report.
- (B) Construction requirements.
- (i) Leachate collection piping shall be installed according to the plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section.
- (ii) The location and grade of the piping network shall provide access for periodic cleaning.
- (iii) The bedding material for the leachate collection pipe shall consist of a coarse aggregate installed in direct contact with the pipe. The aggregate shall be chemically compatible with the leachate generated and shall be placed to provide adequate support to the pipe. The bedding material for main collector lines shall be extended to and in direct contact with the waste layer or a graded soil or granular filter.
- (C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure that the material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .2011 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting

- performed in accordance with plans incorporated into the permit to construct in accordance with Rule .2004(b) of this Section, including:
- (i) all leachate piping installed to transmit leachate shall provide dual containment outside of the disposal unit; and
 - (ii) bottom liner of a CCR landfill shall be constructed without pipe penetrations.
- (12) Drainage layers. Any soil, granular, or geosynthetic drainage nets used in the leachate collection system shall conform to the following requirements:
- (A) Materials Required.
 - (i) The chemical properties of the drainage layer materials shall not be adversely affected by waste placement or leachate generated by the CCR unit.
 - (ii) The physical and hydraulic properties of the drainage layer materials shall promote lateral drainage of leachate through a zone of relatively high permeability or transmissivity under the predicted loads imposed by overlying materials.
 - (B) Construction Requirements.
 - (i) The drainage layer materials shall be placed in accordance with the approved plans prepared in accordance with Rule .2004(b) of this Section and in a manner that prevents equipment from working directly on the geomembrane.
 - (ii) The drainage layer materials shall be stable on the slopes specified on the engineering drawings.
 - (C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure that the drainage layer material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with of Rule .2011 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the approved plans prepared in accordance with Rule .2004(b) of this Section.
- (13) Filter layer criteria. All filter collection layers used in the leachate collection system shall be designed to prevent the migration of fine soil particles into a courser grained material, and permit water or gases to freely enter a drainage medium (pipe or drainage layer) without clogging.
- (A) Materials required.
 - (i) Graded cohesionless soil filters. The granular soil material used as a filter shall have no more than five percent by weight passing the No. 200 sieve and no soil particles larger than three inches in any dimension.
 - (ii) Geosynthetic filters. Geosynthetic filter materials shall demonstrate adequate permeability and soil particle retention, and chemical and physical resistance which is not adversely affected by waste placement, any overlying material or leachate generated by the landfill.
 - (B) Construction requirements. All filter layers shall be installed in accordance with the engineering plan and specifications incorporated into the permit to construct prepared in accordance with Rule .2004(b) of this Section. Geosynthetic filter materials shall not be wrapped directly around leachate collection piping.
 - (C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure that the filter layer material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .2011 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the approved plans prepared in accordance with Rule .2004(b) of this Section.
- (14) Special engineering structures. Engineering structures, including cap systems or chimney drains, incorporated in the design and necessary to comply with the requirements of this Section shall be specified in the engineering plan. Material, construction, and certification requirements necessary to ensure that the structure is constructed in accordance with the design and acceptable engineering practices shall be included in the plans prepared in accordance with Rule .2009 of this Section.
- (15) Sedimentation and erosion control. Adequate structures and measures shall be designed and maintained to manage the run-on and run-off generated by the 24-hour, 25-year storm event, and conform to the requirements of the Sedimentation Pollution Control Law 15A NCAC 04 and any required NPDES permits.
- (16) Construction quality assurance (CQA) report. A CQA report shall be submitted in accordance with Rule .2011 of this Section.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2011 CONSTRUCTION QUALITY ASSURANCE REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) Purpose of the construction quality control and quality assurance (CQA) plan. The CQA plan shall describe the observations and tests that will be used before, during, and upon completion of construction to ensure that the construction and materials meet the design

specifications and the construction and certification requirements set forth in Rule .2010 of this Section. The CQA plan shall also describe the procedures to ensure that the integrity of the landfill systems will be maintained prior to waste placement.

(b) For construction of each cell, the CQA plan shall include at a minimum:

- (1) Responsibilities and authorities. The plan shall establish responsibilities and authorities for the construction management organization. A pre-construction meeting shall be conducted prior to beginning construction of the initial cell, or as required by the permit. The meeting shall include a discussion of the construction management organization, respective duties during construction, and periodic reporting requirements for test results and construction activities;
- (2) Inspection activities. A description of all field observations, tests and equipment that will be used to ensure that the construction meets or exceeds all design criteria established in accordance with Rules .2009, .2010, and .2013(d) of this Section;
- (3) Sampling strategies. A description of all sampling protocols, sample size and frequency of sampling shall be presented in the CQA plan;
- (4) Documentation. A description of reporting requirements for CQA activities; and
- (5) Progress and troubleshooting meetings. A plan for holding daily and monthly troubleshooting meetings. The proceedings of the meetings shall be documented.

(c) Purpose of the CQA report. The CQA report shall contain the results of all the construction quality assurance and construction quality control testing including documentation of any failed test results, descriptions of procedures used to correct the improperly installed material, and results of all retesting performed. The CQA report shall contain as-built drawings noting any deviation from the approved engineering plans and shall also contain a comprehensive narrative including, but not limited to, daily reports from the project engineer, a series of color photographs of major project features, and documentation of proceedings of all progress and troubleshooting meetings.

(d) For construction of each cell, the CQA report shall be submitted:

- (1) after completion of construction in order to qualify the constructed CCR unit(s) for a permit to operate;
- (2) after completion of construction of the cap system in accordance with the requirements of Rule .2013 of this Section; and
- (3) in accordance with the reporting schedule developed in accordance with Paragraph (b) of this Rule.
- (4) The CQA report shall bear the seal of the project engineer and a certification that construction was completed in accordance with:
 - (A) the CQA plan,
 - (B) the conditions of the permit to construct,
 - (C) the requirements of this Rule, and
 - (D) acceptable engineering practices.

(e) The Division shall review the CQA report within 30 days of a complete submittal to ensure that the report meets the requirements of this Rule.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2012 OPERATING REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) The owner or operator of a CCR unit(s) shall maintain and operate the facility in accordance with the operation plan prepared in accordance with this Rule. The operation plan shall be submitted in accordance with Rule .2005 of this Section. Each phase of operation shall be defined by an area which contains approximately five years of disposal capacity.

(b) Operation Plan. The owner or operator of a CCR unit(s) shall prepare an operation plan for each phase of landfill development. The plan shall include drawings and a report defining the information as identified in this Rule.

- (1) Operation drawings. Drawings shall be prepared for each phase of landfill development. The drawings shall be consistent with the engineering plan and prepared in a format which is useable for the landfill operator. The operation drawings shall illustrate the following:
 - (A) existing conditions including the known limits of existing disposal areas;
 - (B) progression of construction cells for incremental or modular construction;
 - (C) progression of operation including initial waste placement, daily operations, yearly contour transitions, and final contours;
 - (D) Leachate and stormwater controls for active and inactive subcells, if required;
 - (E) special waste handling areas, such as asbestos disposal area, within the CCR unit(s);
 - (F) buffer zones, noting restricted use;
 - (G) stockpile and borrow operations; and
 - (H) other solid waste activities, such as tire disposal or storage, yard waste storage, white goods storage, recycling pads, etc.
- (2) Operation Plan Description. The owner and operator of any CCR unit(s) shall maintain and operate the unit in accordance with the operation plan as described in Paragraphs (c) through (j) of this Rule.
- (3) The operation plan shall include:
 - (A) The requirements of Rules .2012(c) through .2012(i), and .2018(e) of this Section;
 - (B) A Sedimentation and Erosion Control plan which incorporates adequate measures to control surface water run-off and run-on generated from the 24-hour, 25-year storm event;
 - (C) Operation drawings that illustrate annual phases of development which are consistent with the minimum and maximum slope requirements set forth in Rule .2012(b) of this Section.

(c) Waste Acceptance and Disposal Requirements.

- (1) CCR unit(s) shall accept only those solid wastes it is permitted to receive. The unit shall not accept any CCR that has not been properly dewatered. The landfill owner or operator shall notify the Division within 24 hours of attempted disposal of any waste the CCR landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve.
- (2) Asbestos waste shall be managed in accordance with 40 CFR 61, which is hereby incorporated by reference including any subsequent amendments and additions. The regulated asbestos waste shall be covered immediately with soil in a manner that will not cause airborne conditions and shall be disposed of separate and apart from other solid wastes, as shown on Operation drawings:
 - (A) in a defined isolated area within the footprint of the landfill, or
 - (B) in an area not contiguous with other disposal areas. Separate areas shall be designated so that asbestos is not exposed by future land-disturbing activities.

(d) Cover material requirements.

- (1) Except as provided in Subparagraph (3) of this Paragraph, the owners and operators of all CCR unit(s) shall cover the solid waste with six inches of earthen material at a frequency needed to prevent dusting or migration of CCR. Cover shall be placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter, and scavenging. A notation of the date and time of the cover placement shall be recorded in the operating record as specified in Paragraph (n) of this Rule.
- (2) Except as provided in Subparagraph (3) of this Paragraph, areas which will not have additional wastes placed on them for three months or more, but where final termination of disposal operations has not occurred, shall be covered and stabilized with vegetative ground cover or other stabilizing material.
- (3) Alternative materials or an alternative thickness of cover may be approved by the Division if the owner or operator demonstrates that the alternative material or thickness controls disease vectors, fires, odors, blowing litter, scavenging, and dusting or migration of CCR without presenting a threat to human health and the environment. A CCR unit(s) owner or operator may apply for approval of an alternative cover material. If approval is given by the Division, approval would extend to all CCR unit(s) at one specific facility.

(e) Spreading and Compacting requirements.

- (1) CCR unit(s) shall restrict solid waste into the smallest area feasible.
- (2) CCR shall be compacted as densely as practical into cells or as specified by the design engineer.
- (3) Appropriate methods such as fencing and diking shall be provided within the area to confine solid waste which is subject to be blown by the wind. At the conclusion of each operating day, all windblown material resulting from the operation shall be collected and disposed of by the owner and operator.

(f) Disease vector control. Owners and operators of all CCR unit(s) shall prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment. For purposes of this item, "disease vectors" means any rodents, flies, mosquitoes, or other animals or insects, capable of transmitting disease to humans.

(g) Air Criteria.

- (1) The owner or operator of a CCR unit(s) shall adopt measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR unit(s), roads, and other CCR management and material handling activities.
- (2) CCR fugitive dust control plan. The owner or operator of the CCR unit(s) shall prepare and operate in accordance with a CCR fugitive dust control plan as specified in Parts (2)(A) through (D) of this Section. This requirement applies in addition to, not in place of, any applicable standards under the Occupational Safety and Health Act.
 - (A) The CCR fugitive dust control plan shall identify and describe the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the facility. The owner or operator shall select, and include in the CCR fugitive dust control plan, the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions. Examples of control measures that may be appropriate include: Locating CCR inside an enclosure or partial enclosure; operating a water spray or fogging system; reducing fall distances at material drop points; using wind barriers, compaction, or vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and sweeping roads; covering trucks transporting CCR; reducing or halting operations during high wind events; or applying a daily cover.
 - (B) If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill, the CCR fugitive dust control plan shall include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent.
 - (C) The CCR fugitive dust control plan shall include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility.
 - (D) The CCR fugitive dust control plan shall include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan.
- (3) Annual CCR fugitive dust control report. The owner or operator of a CCR unit(s) shall prepare an annual CCR fugitive dust control report that includes a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken. The fugitive dust control plan will be for the state fiscal year, which is July 1 through June 30, and shall be placed in the facility's operating record by August 1 of each year.

- (4) The owner or operator of the CCR unit(s) shall comply with the recordkeeping, notification and the Internet requirements specified in Rule .2017(f) of this Section.
- (5) The CCR landfill shall be adequately secured by means of gates, chains, berms, fences and other security measures approved by the Division to prevent unauthorized entry.
- (6) In accordance with G.S. 130A-309.25, an individual trained in landfill operations shall be on duty at the site while the facility is open for public use and at all times during active waste management operations to ensure compliance with operational requirements.
- (7) The access road to the site and access roads to monitoring locations shall be of all-weather construction and maintained in good condition.
- (8) Signs providing information on disposal procedures the permit number and other pertinent information specified in the permit conditions shall be posted at the site entrance.
- (9) Traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.

(h) Erosion and sedimentation control requirements. All sedimentation and erosion control activities shall be conducted in accordance with the Sedimentation Control Act G.S. 113A-50, et seq., and rules promulgated under 15A NCAC 04. All required sedimentation and erosion control measures shall be installed and operable to mitigate excessive on-site erosion and to prevent silt from leaving the area of the landfill unit during the service life of the facility.

(i) Drainage control and water protection requirements.

- (1) Surface water shall be diverted from the operational area.
- (2) Surface water shall not be impounded over or in waste.
- (3) Solid waste shall not be disposed of in water.
- (4) Leachate management plan. The owner or operator of a CCR unit(s) designed with a leachate collection system shall establish and maintain a leachate management plan in accordance with Rule .2010(b)(2)(E) of this Section.
- (5) CCR unit(s) shall not:
 - (A) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402.
 - (B) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area-wide or State-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.

(j) Stormwater Discharges. All owners or operators of stormwater point source discharges associated with activities categorized as landfills which are permitted by the North Carolina Division of Waste Management under the provisions and requirements of G.S. 130A-2 94, shall conduct all stormwater discharges in compliance with the provisions of G.S. 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission and the Federal Water Pollution Control Act.

(k) Survey for Compliance. Within 60 days of the permittee's receipt of the Division's written request, the permittee shall cause to be conducted a survey of active or closed portions of unit(s) at the facility in order to determine whether operations are being conducted in accordance with the approved design and operational plans. The permittee shall report the results of such survey, including a map produced by the survey, to the Division within 90 days of receipt of the Division's request.

- (1) A survey shall be required by the Division:
 - (A) If there is reason to believe that operations are being conducted in a manner that deviates from the plan listed in the effective permit, or
 - (B) As a verification that operations are being conducted in accordance with the plan listed in the effective permit.
- (2) Any survey performed pursuant to this Paragraph shall be performed by a registered land surveyor duly authorized under North Carolina law to conduct such activities.

(l) All CCR unit(s) shall be examined by a qualified person as follows at intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit; and

(m) Existing and new CCR unit(s) shall be inspected on an annual basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit(s) is consistent with recognized and generally accepted good engineering standards. The owner or operator of the CCR unit(s) shall complete the initial inspection for existing CCR unit(s) no later than 90 days after the effective date of this rule and for a new unit no later than 12 months following the date of initial receipt of CCR in the CCR unit(s). The inspection shall, at a minimum, include:

- (1) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person, and results of previous annual inspections); and
- (2) A visual inspection of the CCR unit(s) to identify signs of distress or malfunction of the CCR unit(s).
- (3) The qualified professional engineer shall prepare a report following each inspection that addresses changes in geometry of the structure since the previous annual inspection; the approximate volume of CCR contained in the unit at the time of the inspection; any appearances of an actual or potential structural weakness of the CCR unit(s), in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit(s); and other change(s) which may have affected the stability or operation of the CCR unit(s) since the previous annual inspection.

(n) If a deficiency or release is identified during an inspection, the owner or operator shall remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

(o) The owner or operator of the CCR unit(s) shall comply with the recordkeeping, notification and the Internet requirements specified in Rule .2017(f) of this Section.

*History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.*

15A NCAC 13B .2013 CLOSURE AND POST-CLOSURE REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) Purpose. This Rule establishes criteria for the closure of all CCR unit(s) and subsequent requirements for post-closure compliance. The owner and operator shall develop specific plans for the closure and post-closure of the CCR unit(s) that comply with these rules, and submit them to the Division for review and approval.

(b) Scope.

(1) Closure. Standards shall be established for the scheduling and documenting of closure of all CCR unit(s) and design of the cap system. Construction requirements for the cap system shall incorporate requirements of Rules .2010 and .2011 of this Section.

(2) Post-closure. Standards shall be established for the monitoring and maintenance of the CCR unit(s) following closure.

(c) Criteria for conducting the closure of CCR unit(s).

(1) Written closure plan

(A) General content of the plan. The owner or operator of a CCR unit(s) shall prepare a written closure plan that describes the steps necessary to close the CCR unit(s) at any point during the active life of the CCR unit(s), consistent with recognized and generally accepted good engineering practices. The written closure plan shall include, at a minimum, the following information:

(i) A narrative description of how the CCR unit(s) will be closed in accordance with this Section.

(ii) If closure of the CCR unit(s) will be accomplished through removal of CCR from the CCR unit(s), a description of the procedures to remove the CCR and decontaminate the CCR unit(s) in accordance with Subparagraph (2) of this Paragraph.

(iii) If closure of the CCR unit(s) will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with Subparagraph (3) of this Paragraph, and the methods and procedures to be used to install the final cover. The closure plan shall also discuss how the final cover system will achieve the performance standards specified in Subparagraph (3) of this Paragraph.

(iv) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit(s).

(v) An estimate of the largest area of the CCR unit(s) ever requiring a final cover as required by Subparagraph (3) of this Paragraph at any time during the CCR unit's active life.

(vi) A schedule for completing all activities necessary to satisfy the closure criteria in this Section, including an estimate of the year in which all closure activities for the CCR unit(s) will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit(s), including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit(s) closure. When preparing the written closure plan, if the owner of a CCR unit(s) estimates that the time required to complete closure will exceed the timeframes specified in Part (6)(A) of this Paragraph, the written closure plan shall include the site-specific information, factors and considerations that would support any time extension sought under Part (6)(B) of this Paragraph.

(B) Timeframes for preparing the initial written closure plan

(i) New CCR landfills, existing surface impoundments and any lateral expansion of a CCR unit(s). No later than the date of the initial receipt of CCR in the CCR unit(s), the owner shall prepare an initial written closure plan consistent with the requirements specified in Part (A) of this Subparagraph.

(ii) The owner has completed the written closure plan when the plan, including the certification required by Part (D) of this Subparagraph, has been placed in the facility's operating record as required by Rule .2017(h)(4) of this Section.

(C) Amendment of a written closure plan.

(i) The owner may amend the initial or any subsequent written closure plan developed pursuant to Part (A) of this Subparagraph at any time.

(ii) The owner shall amend the written closure plan whenever there is a change in the operation of the CCR unit(s) that would substantially affect the written closure plan in effect; or before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

(iii) The owner shall amend the closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit(s), or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR unit(s), the owner shall amend the current closure plan no later than 30 days following the triggering event.

(D) The owner of the CCR unit(s) shall obtain a written certification from a qualified professional engineer that the initial and any amendment of the written closure plan meets the requirements of this Section.

- (2) Closure by removal of CCR. An owner may elect to close a CCR unit(s) by removing and decontaminating all areas affected by releases from the CCR unit(s). CCR removal and decontamination of the CCR unit(s) are complete when constituent concentrations throughout the CCR unit(s) and any areas affected by releases from the CCR unit(s) have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to Rule .2015(b) of this Section assessment monitoring for constituents listed in Rule .2014(c)(1)(D) of this Section and Rule .2015(c)(2) of this section and any site-specific groundwater analytes as required by the permit.
- (3) Closure performance standard when leaving CCR in place
- (A) The owner of a CCR unit(s) shall ensure that, at a minimum, the CCR unit(s) is closed in a manner that will:
- (i) Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated runoff to the ground or surface waters or to the atmosphere;
 - (ii) Preclude the probability of future impoundment of water, sediment, or slurry;
 - (iii) Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period;
 - (iv) Minimize the need for further maintenance of the CCR unit(s); and
 - (v) Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.
- (B) Drainage and stabilization of CCR surface impoundments. The owner of a CCR surface impoundment shall meet the following requirements prior to installing the final cover system required under Part (C) of this Subparagraph.
- (i) Free liquids shall be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues.
 - (ii) Remaining wastes shall be stabilized sufficient to support the final cover system.
- (C) Final cover system. If a CCR unit(s) is closed by leaving CCR in place, the owner shall install a final cover system that is designed to minimize infiltration and erosion, and shall meet the requirements of Subpart (C)(i) of this Subparagraph. The owner may select an alternative final cover system design, provided the alternative final cover system is designed and constructed to meet the criteria specified in Subpart (C)(ii) of this Subparagraph. The design of the final cover system shall be included in the written closure plan required by Subparagraph (1) of this Paragraph.
- (i) Final cover system design and construction. The permeability of the final cover system shall be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less. The infiltration of liquids through the closed CCR unit(s) shall be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material. The erosion of the final cover system shall be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth. The disruption of the integrity of the final cover system shall be minimized through a design that accommodates settling and subsidence.
 - (ii) Alternative final cover system. The design of the alternative final cover system shall include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in Subpart (C)(i) of this Subparagraph. The design of the alternative final cover system shall include an erosion layer that provides equivalent protection from wind or water erosion as the erosion layer specified in Subpart (C)(i) of this Subparagraph. The disruption of the integrity of the alternative final cover system shall be minimized through a design that accommodates settling and subsidence.
 - (iii) The owner of the CCR unit(s) shall obtain a written certification from a qualified professional engineer that the design of the final cover system meets the requirements of this Section.
- (4) Initiation of closure activities. The owner of a CCR unit(s) shall commence closure of the CCR unit(s) no later than the applicable timeframes specified in either Part (A) of this Subparagraph or Part (5)(A) of this Paragraph.
- (A) The owner shall commence closure of the CCR unit(s) no later than 30 days after the date on which the CCR unit(s) either:
- (i) Receives the known final receipt of waste, either CCR or any non-CCR waste stream; or
 - (ii) Removes the known final volume of CCR from the CCR unit(s) for the purpose of beneficial use of CCR.
- (B) For purposes of this Subparagraph, closure of the CCR unit(s) has commenced if the owner has ceased placing waste and completes any of the following actions or activities:
- (i) Taken any steps necessary to implement the written closure plan required by Paragraph (c) of this Rule;
 - (ii) Submitted a completed application for any required state or agency permit or permit modification;
or
 - (iii) Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR unit(s).
- (5) Exceptions for Closure. The owner of a CCR unit(s) shall commence closure of the CCR unit(s) no later than the applicable timeframes specified in either Part (4)(A) of this Paragraph or Part (A) of this Subparagraph.
- (A) Except as provided by Part (B) of this Subparagraph, the owner shall commence closure of a CCR unit(s) that has not received CCR or any non-CCR waste stream or is no longer removing CCR for the purpose of

beneficial use within two years of the last receipt of waste or within two years of the last removal of CCR material for the purpose of beneficial use.

- (B) Notwithstanding Part (A) of this Subparagraph, the owner of the CCR unit(s) may secure an additional two years to initiate closure of the idle unit(s) provided the owner provides written documentation that the CCR unit(s) will continue to accept wastes or will start removing CCR for the purpose of beneficial use. The owner may obtain two-year extensions provided the owner continues to be able to demonstrate that there is reasonable likelihood that the CCR unit(s) will accept wastes in the foreseeable future or will remove CCR from the unit(s) for the purpose of beneficial use. The owner shall place each completed demonstration, if more than one-time extension is sought, in the facility's operating record in accordance with Rule .2017(h)(1) of this Section prior to the end of any two-year period. The written documentation shall include information documenting that the CCR unit(s) has remaining storage or disposal capacity or that the CCR unit(s) can have CCR removed for the purpose of beneficial use; and that there is a reasonable likelihood that the CCR unit(s) will resume receiving CCR or non-CCR waste streams in the foreseeable future or that CCR can be removed for the purpose of beneficial use. The narrative shall include a best estimate as to when the CCR unit(s) will resume receiving CCR or non-CCR waste streams. The following are examples of situations that would support a determination that the CCR unit(s) will resume receiving CCR or non-CCR waste streams in the foreseeable future:
- (i) Normal plant operations include periods during which the CCR unit(s) does not receive CCR or non-CCR waste streams, such as the alternating use of two or more CCR unit(s)s whereby at any point in time one CCR unit(s) is receiving CCR while CCR is being removed from a second CCR unit(s) after its dewatering.
 - (ii) The CCR unit(s) is dedicated to a coal-fired boiler unit(s) that is temporarily idled (e.g., CCR is not being generated) and there is a reasonable likelihood that the coal-fired boiler will resume operations in the future.
 - (iii) The CCR unit(s) is dedicated to an operating coal-fired boiler (i.e., CCR is being generated); however, no CCR are being placed in the CCR unit(s) because the CCR are being entirely diverted to beneficial uses, but there is a reasonable likelihood that the CCR unit(s) will again be used in the foreseeable future.
 - (iv) The CCR unit(s) currently receives only non-CCR waste streams and those non-CCR waste streams are not generated for an extended period of time, but there is a reasonable likelihood that the CCR unit(s) will again receive non-CCR waste streams in the future.
- (C) In order to obtain additional time extension(s) to initiate closure of a CCR unit(s) beyond the two years provided by Part (A) of this Subparagraph, the owner of the CCR unit(s) shall include with the demonstration required by Part (B) of this Subparagraph the following statement signed by the owner or an authorized representative: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."
- (D) For purposes of this Subparagraph, closure of the CCR unit(s) has commenced if the owner has ceased placing waste and completes any of the following actions or activities:
- (i) Taken any steps necessary to implement the written closure plan required by Paragraph (c) of this Rule;
 - (ii) Submitted a completed application for any required state or agency permit or permit modification;
or
 - (iii) Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR unit(s).
- (6) Completion of closure activities.
- (A) The owner shall complete closure of the CCR unit(s):
- (i) For all CCR unit(s), within six months of commencing closure activities.
 - (ii) For existing CCR surface impoundments.
 - (iii) The owner or operator shall substantiate the factual circumstances demonstrating the need for extension.
- (B) Extensions of closure timeframes. In order to obtain additional time extension(s) to complete closure of a CCR unit(s) beyond the times provided by Part (A) of this Subparagraph, the owner of the CCR unit(s) shall include with the demonstration required by Subpart (A)(iii) of this Subparagraph the following statement signed by the owner or an authorized representative: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."
- (C) Upon completion, the owner of the CCR unit(s) shall obtain a certification from a qualified professional engineer verifying that closure has been completed in accordance with the closure plan specified in Subparagraph (c)(1) of this Rule and the requirements of this Section.

- (7) No later than the date the owner initiates closure of a CCR unit(s), the owner shall prepare a notification of intent to close a CCR unit(s). The notification shall include the certification by a qualified professional engineer for the design of the final cover system in accordance with Subpart (3)(C)(iii) of this Paragraph, if applicable. The owner has completed the notification when it has been placed in the facility's operating record in accordance with Rule .2017(h)(1) of this Section.
- (8) Within 30 days of completion of closure of the CCR unit(s), the owner shall prepare a notification of closure of a CCR unit(s). The notification shall include the certification by a qualified professional engineer in accordance with Part (6)(C) of this Paragraph. The owner has completed the notification when it has been placed in the facility's operating record as required by Rule .2017(h)(3) of this Section.
- (9) Deed notations.
- (A) Except as provided by Part (D) of this Subparagraph, following closure of a CCR unit(s), the owner shall record a notation on the deed to the property, or some other instrument that is normally examined during title search.
- (B) The notation on the deed shall in perpetuity notify any potential purchaser of the property that:
- (i) The land has been used as a CCR unit(s); and
- (ii) Its use is restricted under the post-closure care requirements as provided by Subpart (d)(4)(A)(iii) of this Rule.
- (C) Within 30 days of recording a notation on the deed to the property, the owner shall prepare a notification stating that the notation has been recorded. The owner has completed the notification when it has been placed in the facility's operating record in accordance with Rule .2017(h)(5) of this Section.
- (D) An owner that closes a CCR unit(s) in accordance with Subparagraph (2) of this Paragraph is not subject to the requirements of Parts (A) through (C) of this Subparagraph.
- (10) The owner of the CCR unit(s) shall comply with the closure recordkeeping, notification and the Internet requirements specified in Rule .2017(h) of this Section.
- (11) The annual progress reports of closure implementation where the owner or operator shall prepare periodic progress reports summarizing the progress of closure implementation, including a description of the actions completed to date, any problems encountered and a description of the actions taken to resolve the problems, and projected closure activities for the upcoming year.

(d) Post-closure care requirements.

- (1) Applicability.
- (A) Except as provided by either Part (c)(1)(B) or Part (c)(1)(C) of this Rule, this Paragraph applies to the owners or operators of CCR landfills, CCR surface impoundments, and lateral expansions of CCR landfills that are subject to the closure criteria under Paragraph (c) of this Rule.
- (B) An owner or operator of a CCR unit(s) that elects to close a CCR unit(s) by removing CCR as provided by Subparagraph (c)(2) of this Rule is not subject to the post-closure care criteria under this Section.
- (2) Post-closure care maintenance requirements. Following closure of the CCR unit(s), the owner or operator shall conduct post-closure care for the CCR unit(s), which shall consist of at least the following:
- (A) Maintaining the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;
- (B) If the CCR unit(s) is subject to the design criteria under Rule .2010 of this Section, maintaining the integrity and effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements of Rule .2010 of this Section; and
- (C) Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of Rule .2014 of this Section.
- (3) Post-closure care period.
- (A) Except as provided by Part (B) of this Subparagraph, the owner or operator of the CCR unit(s) shall conduct post-closure care for 30 years.
- (B) If at the end of the post-closure care period the owner or operator of the CCR unit(s) is operating under assessment monitoring in accordance with Rule .2015 of this Section, the owner or operator shall continue to conduct post-closure care until the owner or operator returns to detection monitoring in accordance with Rule .2014 of this Section.
- (C) Every five years of the post-closure period the CCR unit(s) the owner or operator of a closed CCR unit(s) shall submit to the Division a review of all post closure plan requirements for that period, prepared by a qualified professional engineer. The Division shall review the information provided for compliance with the approved written plan, closure permit conditions, applicable statutes and rules.
- (4) Written post-closure plan.
- (A) Content of the plan. The owner or operator of a CCR unit(s) shall prepare a written post-closure plan that includes, at a minimum, the following information:
- (i) A description of the monitoring and maintenance activities required in Subparagraph (2) of this Paragraph for the CCR unit(s), and the frequency at which these activities will be performed;
- (ii) The name, address, telephone number, and email address of the person or office to contact about the facility during the post- closure care period; and
- (iii) A description of the planned uses of the property during the post- closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of

the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart. The Division may approve disturbance if the owner or operator of the CCR unit(s) demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration shall be certified by a qualified professional engineer, and shall be submitted to the Division for approval. The demonstration and Division approval shall be placed in the facility operating record and on the owners or operator's publicly accessible Internet site.

- (B) Deadline to prepare the initial written post-closure plan.
 - (i) New CCR landfills and any lateral expansion of a CCR landfills. No later than the date of the initial receipt of CCR in the CCR unit(s), the owner or operator shall prepare an initial written post-closure plan consistent with the requirements specified in Part (A) of this Subparagraph.
 - (ii) The owner or operator has completed the written post-closure plan when the plan, including the certification required by Part (D) of this Subparagraph, has been placed in the facility's operating record in accordance with Rule .2017(h)(6) of this Section.
- (C) Amendment of a written post-closure plan.
 - (i) The owner or operator may amend the initial or any subsequent written post-closure plan developed pursuant to Part (A) of this Subparagraph at any time.
 - (ii) The owner or operator shall amend the written closure plan whenever there is a change in the operation of the CCR unit(s) that would substantially affect the written post-closure plan in effect; or after post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.
 - (iii) The owner or operator shall amend the written post-closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit(s), or no later than 60 days after an unanticipated event requires the need to revise an existing written post-closure plan. If a written post-closure plan is revised after post-closure activities have commenced for a CCR unit(s), the owner or operator shall amend the written post- closure plan no later than 30 days following the triggering event.
- (D) The owner or operator of the CCR unit(s) shall obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post- closure plan meets the requirements of this Section.
- (5) Notification of completion of post-closure care period. No later than 60 days following the completion of the post-closure care period, the owner or operator of the CCR unit(s) shall prepare a notification verifying that post- closure care has been completed. The notification shall include the certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with the closure plan specified in Paragraph (d) of this Rule and the requirements of this Section. The owner or operator has completed the notification when it has been placed in the facility's operating record in accordance with Rule .2017(h)(7) of this Section.
- (6) The owner or operator of the CCR unit(s) shall comply with the recordkeeping, notification and the Internet requirements specified in Rule .2017(h) of this Section.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2014 DETECTION MONITORING REQUIREMENTS FOR CCR FACILITIES AND UNITS

(a) Applicability - All CCR unit(s) are subject to the detection monitoring requirements under Rule .2014 of this Section, except that Rule .2014 of this Section does not apply to CCR surface impoundments.

- (1) New CCR landfills and lateral expansions of CCR unit(s). Prior to initial receipt of CCR by the CCR unit(s), the owner or operator shall be in compliance with the groundwater monitoring requirements specified in this Rule. In addition, the owner or operator of the CCR unit(s) shall initiate the detection monitoring program to include obtaining a minimum of eight independent samples for each well, (background and downgradient) during the first year of operation with at least the first sample taken prior to waste placement and subsequent samples taken every 30-45 days.
- (2) Once a groundwater monitoring system and groundwater monitoring program has been established at the CCR unit(s) as required by this Rule, the owner or operator shall conduct groundwater monitoring and, if necessary, corrective action throughout the active life and post-closure care period of the CCR unit(s).
- (3) In the event of a release from a CCR unit(s), the owner or operator shall immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. The owner or operator of the CCR unit(s) shall comply with all applicable requirements in Rule .2015 of this Section if the release impacts groundwater quality.
- (4) Annual groundwater monitoring and corrective action report. For CCR unit(s), the owner or operator shall prepare an annual groundwater monitoring and corrective action report. For new CCR landfills and lateral expansions of CCR unit(s), the owner or operator shall prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit(s) as required by this Rule, and annually thereafter. For the preceding calendar year, the annual report shall document the status of the groundwater monitoring and corrective action program for the CCR unit(s), summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this Section, the owner or operator has prepared the

annual report when the report is placed in the facility's operating record in accordance with Rule .2017(g)(1) of this Section. At a minimum, the annual groundwater monitoring and corrective action report shall contain the following information, to the extent available:

- (A) A map, aerial image, or diagram showing the CCR unit(s) and all background (or up-gradient), downgradient monitoring wells, and surface water monitoring locations to include the well and surface water location identification numbers, that are part of the groundwater monitoring program for the CCR unit(s);
- (B) A USGS topographic map;
- (C) A potentiometric surface map from the most recent sampling;
- (D) Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;
- (E) In addition to all the monitoring data obtained under Rules .2014 and .2015 of this Section, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;
- (F) A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected above the current groundwater quality standards in accordance with 15A NCAC 02L .0202 or Interim Maximum Allowable Concentration (IMAC), and
- (G) Other information required to be included in the annual report as specified in Rules .2014 and .2015 of this Section.

(b) A Monitoring Plan shall be submitted that contains the following information and shall apply to all CCR unit(s). The Monitoring Plan shall be prepared in accordance with this Rule.

(c) Groundwater monitoring plan. A groundwater monitoring plan, including information on the proposed groundwater monitoring system(s), sampling and analysis requirements, and detection monitoring requirements that fulfills the requirements of Subparagraph (1) of this Paragraph, shall be submitted.

(1) A groundwater monitoring system that consists of a sufficient number of wells of at least one background and three downgradient wells, installed at appropriate locations and depths, shall be installed to yield groundwater samples from the aquifer that:

- (A) Represent the quality of the background ground water that has not been affected by leakage from the unit(s). Normally, determination of background water quality will be based on sampling of a well or wells that are hydraulically upgradient of the waste management area. However, the determination of background water quality may include sampling of wells that are not hydraulically upgradient of the waste management area where hydrogeologic conditions do not allow the owner and operator to determine which wells are hydraulically upgradient, or hydrogeologic conditions do not allow the owner and operator to place a well in a hydraulically upgradient location, or sampling at other wells will provide an indication of background groundwater quality that is as representative as that provided by the upgradient well(s); and
- (B) Represent the quality of ground water passing the review boundary and the relevant point of compliance as approved by the Division. A review boundary is established around any disposal system midway between the compliance boundary and the waste boundary as to ensure detection of groundwater contamination in the uppermost aquifer. The relevant point of compliance shall be established no more than 250 feet from a waste boundary, or shall be at least 50 feet within the facility property boundary, whichever point is closer to the waste boundary. In determining the review boundary and the relevant point of compliance, the Division shall consider recommendations made by the owner and operator based upon consideration of at least the hydrogeologic characteristics of the facility and surrounding land; the quantity, quality, and direction of flow of the ground water; the proximity and withdrawal rate of the groundwater users; the existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water, and whether the ground water is currently used or reasonably expected to be used for drinking water; public health, safety, and welfare effects; and practicable capability of the owner and operator.
- (C) The groundwater monitoring plan shall include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells. The plan shall include procedures and techniques for sample collection; sample preservation and shipment; chain-of-custody control; and quality assurance and quality control.
- (D) Detection groundwater monitoring. The monitoring shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure target constituents and other monitoring parameters in groundwater samples. Detection monitoring is required at CCR unit(s) for all groundwater monitoring wells that are part of the detection monitoring system as established in the approved monitoring plan. At a minimum, detection monitoring shall include monitoring for the constituents listed in the approved site-specific Water Quality Monitoring Plan including, but not limited to the following constituents and field parameters: alkalinity, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chloride, chromium, cobalt, copper, fluoride, iron, lead, manganese, mercury, nickel, nitrate, pH (field), selenium, silver, specific conductance (field), sulfate, temperature (field), thallium, turbidity (field), total dissolved solids (TDS), vanadium, and zinc. The monitoring frequency for all detection monitoring constituents shall be at least semiannual during the active life of the facility, and during the closure and post-closure periods. A minimum of one sample from each well (background and downgradient) shall be collected and analyzed for the constituents before waste placement in each cell or phase. At least one sample from each well (background

and downgradient) shall be collected and analyzed during subsequent semiannual sampling events. The Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina 15A NCAC 02L are incorporated by reference, including subsequent amendments and editions. Copies of this material may be inspected or obtained at the Department of Environmental Quality or on the Department website.

- (E) The sampling procedures and frequency shall be protective of human health and the environment.
- (2) Each time groundwater is sampled elevations shall be measured in each well immediately prior to purging. Groundwater elevations in wells which monitor the same waste management area shall be measured within a 24-hour period to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction. To accurately determine groundwater elevations for each monitoring well, the wells shall have been accurately surveyed by a North Carolina Registered Land Surveyor. The survey of the wells shall conform to at least the following levels of accuracy: horizontal location to the nearest 0.1 foot, vertical control for the ground surface elevation to the nearest 0.01 foot, and vertical control for the measuring reference point on the top of the inner well casing to the nearest 0.01 foot. To determine the rate of groundwater flow, the owner or operator shall provide data for hydraulic conductivity and porosity for the formation materials at each of the well locations.
- (3) The owner or operator shall establish existing conditions of groundwater quality in hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in the specific groundwater monitoring program that applies to the CCR unit(s).
- (4) Should the owner or operator choose to perform statistical analysis of groundwater quality data whether for establishing background concentrations or determining if there is an exceedance of the groundwater protection standard, the owner or operator shall select one of the following statistical methods to be used in evaluating groundwater monitoring data for each constituent of concern. The statistical test chosen shall be conducted separately for each constituent of concern in each well. The statistical analysis shall be prepared and include a narrative description of the statistical method selected under the responsible charge of and bear the seal of a Licensed Geologist or Professional Engineer in accordance with G.S. 89E or 89C, respectively.
 - (A) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.
 - (B) A parametric analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.
 - (C) A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.
 - (D) A control chart approach that gives control limits for each constituent.
 - (E) Another statistical test method that meets the performance standards of this Rule. The owner or operator shall submit a justification for an alternative test method to the Division for approval. The justification shall demonstrate that the alternative statistical test method meets the performance standards of this Rule. If approved, the owner or operator shall place a copy of the justification for an alternative test method in the operating record.
- (5) Any statistical method chosen to evaluate groundwater monitoring data shall comply with the following performance standards, as appropriate:
 - (A) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of chemical parameters or constituents of concern. If the distribution of the chemical parameters or constituents of concern is shown by the owner or operator (or the Division) to be inappropriate for a normal theory test, then the data shall be transformed or a distribution-free theory test shall be used. If the distributions for the constituents differ, more than one statistical method shall be considered.
 - (B) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.
 - (C) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.
 - (D) If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval shall contain, shall be protective of human health and the environment. These parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.
 - (E) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantitation limit (PQL) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved

within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

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

(6) Within 120 days of completing a groundwater sampling event, the owner or operator shall submit to the Division a report in electronic format that includes information from the sampling event; including, but not limited to: field observations relating to the condition of the monitoring wells; field data; summary of the laboratory data; field sampling quality assurance and quality control data; information on groundwater flow direction; groundwater flow rate for each well with constituents that exceed groundwater standards over background levels; and any other pertinent information related to the sampling event.

(7) The owner or operator may demonstrate that a source other than the CCR unit(s) or a natural variation in groundwater quality has caused contamination, or an error in sampling or analysis of data has resulted in false reporting of contamination. A report documenting this demonstration shall be certified by a Licensed Geologist or Professional Engineer and shall be submitted to the Division for review. The Division shall date and stamp the demonstration "approved" if the conditions of this Paragraph are met. A copy of the approved report shall also be placed in the operating record. If after 90 days, a successful demonstration is not made, the owner or operator shall initiate an assessment monitoring program as required in Rule .2015 of this Section.

(8) Monitoring wells shall be designed and constructed in accordance with the applicable North Carolina Well Construction Standards as codified in 15A NCAC 02C.

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

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

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

(A) Aquifer thickness, groundwater flow rate, and groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow; and

(B) Unsaturated and saturated geologic units (including fill materials) overlying and comprising the uppermost aquifer, including thickness, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

(10) The Division may require or allow the use of alternative monitoring systems in addition to groundwater monitoring wells:

(A) at sites where the owner and operator does not control the property from any landfill unit(s) to the groundwater discharge feature(s); or

(B) at sites with hydrogeologic conditions favorable to detection monitoring by alternative methods.

(11) Owners and operators of CCR unit(s) shall comply with the groundwater monitoring, assessment and corrective action requirements under Rules .2014 and .2015 of this Section according to the following schedule:

(A) new CCR unit(s) shall be in compliance with the requirements before waste can be placed in the unit(s); and

(B) lateral expansions to existing CCR unit(s) shall be in compliance with the requirements before waste can be placed in the expansion area.

(12) Groundwater standards established under 15A NCAC 2L shall not be exceeded in the uppermost aquifer at the compliance boundary. A compliance boundary shall be established 250 feet from the waste boundary or 50 feet within the property boundary, whichever point is closer to the source.

(d) Surface water monitoring. The surface water monitoring system shall be as follows:

(1) The Division shall require a CCR facility to provide such surface water monitoring capability as the Division determines to be necessary to detect the effects of the facility on surface water in the area. In making such a determination, the Division shall consider the following factors:

(A) the design of the facility, the nature of the process it will use, and the type of waste it will handle;

(B) liner underdrain systems, commonly known as French drains, discharges;

(C) drainage patterns and other hydrological conditions in the area;

(D) proximity of surface water to the facility;

(E) uses that are being or may be made of any surface water that may be affected by the facility; and

(F) any other factors that reasonably relate to the potential for surface water effects from the facility.

(2) Detection surface water monitoring. The monitoring shall include sampling and analytical methods that are appropriate for surface water sampling and that accurately measure target constituents and other monitoring parameters in surface water samples. The surface water monitoring plan shall include at least one upstream and one downstream sampling location where the water quality is analyzed for constituents listed in Part (c)(1)(D) of this Rule. The monitoring frequency shall be at least semiannual during the active life of the facility, and during the closure and post-closure periods.

(3) Responsibility for sample collection and analysis shall be defined as a part of the monitoring plan.

(4) Any other information that the Division deems pertinent to the development of a surface water monitoring system will be required.

- (5) Surface water standards established under 15A NCAC 2B .0200 shall not be exceeded. If a standard is not established under 15A NCAC 2B .0200, the owner or operator shall obtain a determination from the Division on establishing a surface water standard for each constituent detected in the surface water.
 - (6) A site shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended, or that is in violation of standards promulgated under G.S. 143-214.1 and G.S. 143-215.
 - (7) A site shall not cause a discharge of dredged material or fill material into waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act, as amended, or that is in violation of any state requirements regulating the discharge of dredged or fill material into waters of the state, including wetlands.
 - (8) A site shall not cause non-point source pollution of waters of the state that violates classification of the water, the appropriate standards, and antidegradation policies to support that classification.
- (e) Gas Monitoring. Gas Monitoring shall be required unless otherwise approved by the Division.
- (1) Owners and operators of all CCR unit(s) shall ensure that:
 - (A) the concentration of methane gas or other explosive gases generated by the facility does not exceed 25 percent of the lower explosive limit in on-site facility structures (excluding gas control or recovery system components);
 - (B) the concentration of methane gas or other explosive gases does not exceed the lower explosive limit for methane or other explosive gases at the facility property boundary; and
 - (C) the facility does not release methane gas or other explosive gases in any concentration that can be detected in offsite structures.
 - (2) Owners and operators of all CCR unit(s) shall implement a routine methane monitoring program to ensure that the standards of this Paragraph are met.
 - (A) The type of monitoring shall be determined based on soil conditions, the hydrogeologic conditions under and surrounding the facility, hydraulic conditions on and surrounding the facility, the location of facility structures and property boundaries, and the location of all off-site structures adjacent to property boundaries.
 - (B) The frequency of monitoring shall be quarterly or as approved by the Division.
 - (3) If methane or explosive gas levels exceeding the limits specified in Subparagraph (e)(1) of this Rule are detected, the owner and operator shall:
 - (A) immediately take all steps necessary to ensure protection of human health and notify the Division;
 - (B) within seven days of detection, place in the operating record the methane or explosive gas levels detected and a description of the steps taken to protect human health; and
 - (C) within 60 days of detection, implement a remediation plan for the methane or explosive gas releases, place a copy of the plan in the operating record, and notify the Division that the plan has been implemented. The plan shall describe the nature and extent of the problem and the proposed remedy.
 - (4) Owners or operators shall ensure that
 - (A) The concentration of hydrogen sulfide gas generated by the facility does not exceed 20 parts per million in facility structures (excluding gas control or recovery system components); and
 - (B) The concentration of hydrogen sulfide gas does not exceed 50 parts per million at the facility property boundary.
 - (5) Owners or operators shall ensure that the concentration of oxygen generated by the facility does not exceed assigned threshold of 19.5 percent - 23.5 percent in facility structures (excluding gas control or recovery system components);
 - (6) Based on the need for an extension demonstrated by the operator, the Division may establish alternative schedules for demonstrating compliance with Parts (3)(B) and (C) of this Paragraph.
 - (7) For purposes of this Item, "lower explosive limit" means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25° C and atmospheric pressure.
- (f) Leachate Monitoring. The owner or operator of a CCR landfill designed with a leachate collection system shall:
- (1) conduct semi-annual leachate quality sampling from a Division approved sampling point, and
 - (2) detection monitoring shall include monitoring for the constituents listed in the approved site-specific Water Quality Monitoring Plan.
- (g) A waste acceptability program. Owners and operators of all CCR unit(s) shall implement a program at the facility for detecting and preventing the disposal of industrial, hazardous, liquid, municipal solid waste and excluded wastes in accordance with the Operating Plan or the effective permit. This program shall include, at a minimum:
- (1) random inspections of incoming loads or other comparable procedures;
 - (2) records of any inspections;
 - (3) training of facility personnel to recognize industrial, hazardous, liquid, municipal and excluded waste; and
 - (4) development of a contingency plan to properly manage any identified industrial, hazardous, liquid, municipal or excluded waste. The plan shall address identification, removal, storage and final disposition of the waste.
- (h) The Monitoring Plan shall include any other monitoring plan or program which is necessary according to the Operating Plan or the effective permit.
- (i) Monitoring plans shall be prepared under the responsible charge of and bear the seal of a Licensed Geologist or Professional Engineer in accordance with G.S. 89E or 89C, respectively.
- (j) Monitoring plans shall be certified by a Licensed Geologist or Professional Engineer to be effective in providing early detection of any release of hazardous constituents from any point in a disposal cell or leachate surface impoundment to the uppermost aquifer, air, surface waters, or proximal area, so as to be protective of public health and the environment.

(k) Monitoring plans shall be submitted to the Division for review. The Division shall date and stamp the monitoring plans "approved" if they meet the conditions of this Rule. A copy of the approved monitoring plan shall be placed in the operating record.

(l) Once established at a CCR facility, all monitoring shall be conducted throughout the active life and post-closure care period for all CCR unit(s).

(m) The owner or operator of multiple CCR unit(s) may install a multiunit groundwater monitoring system instead of separate groundwater monitoring systems for each CCR unit(s). The multiunit groundwater monitoring system shall be equally as capable of detecting monitored constituents at the relative point of compliance of the CCR unit(s) as the individual groundwater monitoring system specified in Paragraph (b) of this Rule for each CCR unit(s) based on the following factors:

- (1) Number, spacing, and orientation of each CCR unit(s);
- (2) Hydrogeologic setting;
- (3) Site history; and
- (4) Engineering design of the CCR unit(s).

(n) The owner or operator of the CCR unit(s) shall comply with the recordkeeping, notification and the internet requirements specified in Rule .2017(g) of this Section.

*History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.*

15A NCAC 13B .2015 ASSESSMENT AND CORRECTIVE ACTION REQUIREMENTS FOR CCR LANDFILLS

(a) Applicability - All CCR unit(s) are subject to the assessment and corrective action requirements under this Rule except that this Rule does not apply to CCR surface impoundments.

(b) Assessment Program. Assessment is required if one or more constituents, as listed in Rule .2014(c)(1)(D) of this Section are detected above the current groundwater quality standards in accordance with 15A NCAC 02L .0202 or Interim Maximum Allowable Concentration (IMAC), in any sampling event. The owner and operator shall notify all persons within 14 days who own land or reside on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site or are thought to have migrated off site:

- (1) Within 30 days prepare a notification stating that an assessment monitoring program is to be established.
- (2) Within 90 days of triggering an assessment monitoring program, the owner and operator shall submit an assessment monitoring work plan for Division review. The Division shall date and stamp the assessment monitoring program "approved" if the conditions of this Paragraph are met. The owner and operator shall place the approved program in the operating record, and notify all appropriate local government officials.

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

- (1) Install at least one additional groundwater monitoring well or methane gas monitoring well at the facility boundary or the compliance boundary, as defined in 15A NCAC 02L .0107, in the direction of contaminant migration. The new sampling point shall be installed at the facility boundary or compliance boundary at the location most likely to show impact based on the known geology and hydrogeology. The additional monitoring wells shall characterize the nature and extent of the release by determining the following factors:
 - (A) Lithology of the aquifer and unsaturated zone;
 - (B) Hydraulic conductivity of the aquifer and unsaturated zone;
 - (C) Groundwater flow rates;
 - (D) Minimum distance of travel;
 - (E) Resource value of the aquifer; and
 - (F) Nature, fate, and transport of any detected constituents.
- (2) A minimum of one sample from each monitoring well shall be collected and analyzed for the following constituents during the initial sampling event: antimony, arsenic, barium, beryllium, boron, cadmium, total chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, radium 226 and 228, selenium, thallium, and vanadium. After the initial sampling event, for any constituent detected in the downgradient wells as the result of the analysis of constituents listed in this Subparagraph, a minimum of three additional independent samples from each well (background and downgradient) shall be collected and analyzed to establish a baseline for the new detected constituents. After the initial sampling event, the Division may specify, as provided for in 40 CFR 257, an appropriate subset of wells to be sampled and analyzed for constituents listed in this Subparagraph during assessment monitoring. After the initial sampling event, the Division may delete, as provided for in 40 CFR 257, any of the monitoring parameters listed in this Subparagraph for a CCR unit(s) if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit(s).
- (3) If the new constituents do not have an established 15A NCAC 02L .0202 groundwater quality standard or Interim Maximum Allowable Concentration (IMAC), the owner or operator shall obtain a determination from the Division on establishing a groundwater protection standard for each constituent detected in groundwater. The groundwater protection standard shall be the most protective of the following:
 - (A) For constituents for which a maximum contamination level (MCL) has been promulgated under the Section 1412 of the Safe Drinking Water Act codified under 40 CFR Part 141, the MCL for that constituent;
 - (B) For constituents for which a water quality standard has been established under the North Carolina Rules Governing Public Water Systems, 15A NCAC 18C, the water quality standard for that constituent;
 - (C) For constituents for which a water quality standard has not been established under the North Carolina Groundwater Classifications and Standards, 15A NCAC 02L .0202, an Interim Maximum Allowable Concentration (IMAC) is established;

- (D) For constituents for which MCLs or water quality standards have not been promulgated, the background concentration for the constituent established from wells in accordance with Rule .2014(c)(1)(A) of this Section; or
- (E) For constituents for which the background level is higher than the MCL or water quality standard or health based levels identified under Subparagraph (4) of this Paragraph, the background concentration.
- (4) The Division may establish a stricter than background alternative groundwater protection standard for constituents for which neither an MCL or water quality standard has not been established. These groundwater protection standards shall be appropriate health based levels that satisfy the following criteria:
 - (A) The level is derived in a manner consistent with EPA guidelines for assessing the health risks of environmental pollutants;
 - (B) The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR Part 792) or equivalent;
 - (C) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) of 1×10^{-6} ;
 - (D) For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For the purposes of this Rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.
- (5) In establishing groundwater protection standards under Paragraph (c) of this Rule the Division may consider the following:
 - (A) Multiple contaminants in the ground water;
 - (B) Exposure threats to sensitive environmental receptors; and
 - (C) Other site-specific exposure or potential exposure to ground water.

(d) Assessment Monitoring Report

- (1) After obtaining the results from the initial and subsequent sampling events, the owner or operator shall submit an assessment monitoring report to the Division which shall be certified by a Licensed Geologist or Professional Engineer.
- (2) Within 14 days, submit a report to the Division and place a notice in the operating record identifying the constituents listed in Subparagraph (c)(2) of this Rule that have been detected;
- (3) The Division may approve an appropriate alternate frequency and/or subset of wells for repeated sampling and analysis for constituents listed in Subparagraph (c)(2) of this Rule required during the active life and post-closure care of the unit(s) considering all the following factors:
 - (A) Lithology of the aquifer and unsaturated zone;
 - (B) Hydraulic conductivity of the aquifer and unsaturated zone;
 - (C) Groundwater flow rates;
 - (D) Minimum distance of travel;
 - (E) Resource value of the aquifer; and
 - (F) Nature, fate, and transport of any detected constituents.
- (4) The owner or operator may demonstrate that a source other than a CCR unit(s) caused the contamination. An alternate source demonstration report shall be prepared by a certified Licensed Geologist and submitted for approval by the Division. A copy of the approved report shall also be placed in the operating record. If a successful demonstration is made, the owner or operator may discontinue assessment monitoring, and may return to detection monitoring if the constituents are at or below background values and 15A NCAC 02L .0202 or approval is given by the Division according to Subparagraph (5) of this Paragraph. Until a successful demonstration is made, the owner or operator shall comply with Paragraph (b) of this Rule.
- (5) The Division may give approval to the owner or operator to return to detection monitoring if all the following are met:
 - (A) The concentrations of the constituents are shown to be at or below background values and 15A NCAC 02L .0202 for two consecutive sampling events;
 - (B) The plume is not migrating horizontally or vertically; and
 - (C) The plume has not exceeded the compliance boundary.
- (6) Within 90 days of finding any constituent detected above background or 15A NCAC 02L .0202, or the approved groundwater protection standards, the owner or operator shall initiate Assessment of Corrective Measures.

(e) Assessment of Corrective Measures. Assessment of corrective measures shall be completed within 90. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The assessment of corrective measures shall include an analysis of the effectiveness of potential corrective actions in meeting all of the requirements and objectives of the remedy as described under this Rule.

- (1) The assessment of corrective measures document shall address all the following at a minimum:
 - (A) the performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;
 - (B) the time required to begin and to complete the remedy;
 - (C) the costs of remedy implementation; and
 - (D) the institutional requirements such as State and Local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).
- (2) The owner and operator shall discuss the results of the assessment of corrective measures, prior to the selection of the remedy, in a public meeting with interested and affected parties. The owner and operator shall provide a public notice

of the meeting at least 30 days prior to the meeting. The notice shall include the time, place, date, and purpose of the meeting required by this Paragraph of this Rule. A copy of the public notice shall be forwarded to the Division at least five days prior to publication. The owner and operator shall mail a copy of the public notice to those persons requesting notification. Public notice shall be in accordance with Rule .2003(c)(4) of this Section.

(f) Selection of Remedy. Based on the results of the Assessment of Corrective Measures, the owner and operator shall select a remedy that, at a minimum, meets the standards listed in Subparagraph (2) of this Paragraph as follows:

- (1) Within 30 days of selecting a remedy, the permittee shall submit an application to modify the permit describing the selected remedy to the Division for evaluation and approval. The application shall be subject to the processing requirements set forth in Rule .2003(c) and (d) of this Section. The application shall include the demonstrations necessary to comply with the financial assurance requirements set forth in accordance with Rule .2016 of this Section.
- (2) Remedies shall:
 - (A) be protective of human health and the environment;
 - (B) attain the approved groundwater protection standards;
 - (C) control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of constituents into the environment that may pose a threat to human health or the environment; and
 - (D) comply with standards for management of wastes as specified in Paragraph (l) of this Rule.
- (3) In selecting a remedy that meets the standards of Subparagraph (f)(2) of this Rule, the owner and operator shall consider the following evaluation factors:
 - (A) The long-term and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the magnitude of reduction of existing risks; magnitude of residual risks in terms of likelihood of further releases due to wastes remaining following implementation of a remedy; the type and degree of long-term management required, including monitoring, operation, and maintenance; short-term risks that might be posed to the community, to workers, or to the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal or containment; time until full protection is achieved; potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment; long-term reliability of the engineering and institutional controls; and potential need for replacement of the remedy.
 - (B) The effectiveness of the remedy in controlling the source to reduce further releases, based on consideration of the extent to which containment practices will reduce further releases, and the extent to which treatment technologies may be used.
 - (C) The ease or difficulty of implementing a potential remedy, based on consideration of the degree of difficulty associated with constructing the technology; the expected operational reliability of the technologies; the need to coordinate with and obtain necessary approvals and permits from other agencies; the availability of necessary equipment and specialists; and available capacity and location of needed treatment, storage, and disposal services.
 - (D) The practicable capability of the owner and operator, including a consideration of the technical and economic capability.
- (4) The owner and operator shall specify as part of the selected remedy a schedule for initiating and completing remedial activities included in a corrective action plan. This schedule shall be submitted to the Division for review and approval. Such a schedule shall require the initiation of remedial activities within a reasonable period of time, taking into consideration the factors set forth in this Rule. The owner and operator shall consider the following factors in determining the schedule of remedial activities:
 - (A) nature and extent of contamination;
 - (B) practical capabilities of remedial technologies in achieving compliance with the approved groundwater protection standards and other objectives of the remedy;
 - (C) availability of treatment or disposal capacity for wastes managed during implementation of the remedy;
 - (D) desirability of utilizing technologies that are not currently available, but which may offer advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;
 - (E) potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;
 - (F) resource value of the aquifer, including current and future uses; proximity and withdrawal rate of users; groundwater quantity and quality; the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to contaminants; the hydrogeologic characteristics of the facility and surrounding land; groundwater removal and treatment costs; the costs and availability of alternative water supplies;
 - (G) practical capability of the owner and operator; and
 - (H) other relevant factors.

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

(h) Implementation of the Corrective Action Program. Based on the approved schedule for initiation, and completion of remedial activities, in 90 days after approval of the selected remedy or as approved by the Division, the owner and operator shall:

- (1) Establish and implement a corrective action groundwater monitoring program that:
 - (A) at a minimum, meets the requirements of an assessment monitoring program under Paragraphs (b), (c), and (d) of this Rule;
 - (B) demonstrates the effectiveness of the corrective action remedy; and
 - (C) demonstrates compliance with groundwater protection standards or Interim Maximum Allowable Concentration (IMAC), pursuant to Paragraph (k) of this Rule.
- (2) Implement the approved corrective action remedy; and
- (3) Take any interim measures necessary to ensure the protection of human health and the environment. Interim measures shall be consistent with the objectives of and contribute to the performance of any remedy that may be required. The following factors shall be considered by an owner and operator in determining whether interim measures are necessary:
 - (A) time required to develop and implement a final remedy;
 - (B) actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;
 - (C) actual or potential contamination of drinking water supplies or sensitive ecosystems;
 - (D) further degradation of the ground water that may occur if remedial action is not initiated expeditiously;
 - (E) weather conditions that may cause constituents to migrate or be released;
 - (F) risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and
 - (G) other situations that may pose threats to human health or the environment.
 - (i) A Corrective Action Evaluation Report (CAER) shall be submitted at least once every five calendar years.
- (j) The owner or operator or the Division may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of Subparagraph (f)(2) of this Rule are not being achieved through the remedy selected. In such cases, the owner and operator shall implement other methods or techniques, as approved by the Division that could practicably achieve compliance with the requirements, unless the owner or operator makes the determination under Paragraph (g) of this Rule.
- (k) If the owner or operator determines that compliance with requirements of Subparagraph (f)(2) of this Rule cannot be practically achieved with any currently available methods, the owner and operator shall:
 - (1) obtain certification of a Licensed Geologist or Professional Engineer and approval from the Division that compliance with the requirements under Subparagraph (f)(2) of this Rule cannot be practically achieved with any currently available methods;
 - (2) implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment;
 - (3) implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:
 - (A) technically practicable and
 - (B) consistent with the overall objective of the remedy; and
 - (4) submit a report justifying the alternative measures to the Division for review. The Division shall date and stamp the report "approved" if the conditions of this Paragraph are satisfied. The approved report shall be placed in the operating record prior to implementing the alternative measures.
- (l) All solid wastes that are managed pursuant to a remedy required under Paragraph (f) of this Rule, or an interim measure required under Paragraph (f) of this Rule, shall be managed in a manner:
 - (1) that is protective of human health and the environment, and
 - (2) that complies with applicable state and federal requirements.
- (m) Remedies selected pursuant to Paragraph (f) of this Rule shall be considered complete when:
 - (1) the owner and operator complies with the groundwater protection standards at all points within the plume of contamination that lie beyond the relevant point of compliance;
 - (2) compliance with the groundwater protection standards has been achieved by demonstrating that concentrations of constituents have not exceeded these standards for a period of three consecutive years, consistent with performance standards in Subparagraph (f)(2) of this Rule; and
 - (3) all actions required to complete the remedy have been satisfied.
- (n) Upon completion of the remedy, the owner and operator shall submit a report to the Division documenting that the remedy has been completed in compliance with Paragraph (n) of this Rule. As required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare and sign these documents. Upon approval by the Division, this report shall be placed in the operating record.
- (o) When, upon completion of the certification, the Division determines that the corrective action remedy has been completed in accordance with Paragraph (n) of this Rule, the owner and operator shall be released from the requirements for financial assurance for corrective action under Rule .2016 of this Section.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2016 FINANCIAL ASSURANCE REQUIREMENTS FOR CCR FACILITIES AND UNITS

- (a) Owners and operators of CCR facilities and units shall provide proof of financial assurance in accordance with the financial responsibility for landfills adopted pursuant to G.S. 130A-294(b) and G.S. 130A-309.27.
- (b) Owners and operators of CCR facilities and units permitted under these Rules shall provide proof of financial assurance to ensure closure of the site in accordance with these Rules and to cover closure, post-closure, and corrective action of the CCR unit(s). Financial

assurance may be demonstrated through financial instruments including but not limited to surety bonds, insurance, letters of credit, a funded trust, local government financial test, or corporate financial test. Documentation of financial assurance shall be kept current, and updated annually as required by changes in these Rules, changes in operation of the site, and inflation.

(c) Owners and operators of CCR facilities and unit(s) shall demonstrate the following minimum amounts of financial assurance for closure and post-closure care:

- (1) Closure Cost Estimate. The owner and operator shall have a written estimate, in current dollars, of the cost of hiring a third party to close the entire area of all CCR unit(s), which have received permits to operate, at any time during the active life in accordance with the closure plan required under Rule .2013 of this Section. A copy of the closure cost estimate shall be placed in the operating record.

 - (A) The cost estimate shall equal the cost of closing the entire area of all CCR unit(s), which have received permits to operate, at any time during the active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan as set forth in Rule .2013 of this Section.
 - (B) During the active life of the CCR unit(s), the owner and operator shall annually adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s). For owners and operators using the local government financial test, the closure cost estimate shall be updated for inflation within 30 days after the close of the local government's fiscal year and before submission of updated information to the Division.
 - (C) The owner and operator shall increase the closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes to the closure plan or CCR unit(s) conditions increase the maximum cost of closure at any time during the remaining active life.
 - (D) The owner or operator may reduce the closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the CCR unit(s). Prior to any reduction of the closure cost estimate or the amount of financial assurance by the owner or operator, a written justification for the reduction shall be submitted to the Division for review. The Division shall date and stamp the justification "approved" if the conditions of this Paragraph are met. The reduction justification and the Division approval shall be placed in the CCR's operating record. No reduction of the closure cost estimate or the amount of financial assurance shall be allowed without Division approval.
- (2) Financial Assurance for Closure. The owner and operator of each CCR unit(s) shall establish financial assurance for closure of the CCR unit(s) in compliance with Paragraph (a) of this Rule. The owner and operator shall provide continuous coverage for closure until released from financial assurance requirements by demonstrating compliance with Rule .2013 of this Section for final closure certification.
- (3) Post-Closure Cost Estimate. The owner and operator shall have a written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the CCR unit(s) in compliance with the post-closure plan developed under Rule .2013 of this Section. The post-closure cost estimate used to demonstrate financial assurance in Subparagraph (2) of this Paragraph shall account for the total costs of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The post-closure cost estimate shall be placed in the operating record.

 - (A) The cost estimate for post-closure care shall be based on the most expensive costs of post-closure care during the post-closure care period.
 - (B) During the active life of the CCR unit(s) and during the post-closure care period, the owner and operator shall annually adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s). For owners and operators using the local government financial test, the post-closure cost estimate shall be updated for inflation within 30 days after the close of the local government's fiscal year and before submission of updated information to the Division.
 - (C) The owner and operator shall increase the post-closure care cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes in the post-closure plan or CCR unit(s) conditions increase the maximum costs of post-closure care.
 - (D) The owner or operator may reduce the post-closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period. Prior to any reduction of the post-closure cost estimate by the owner or operator, a written justification for the reduction shall be submitted to the Division for review. The Division shall date and stamp the justification "approved" if the conditions of this paragraph are met. The written justification and the Division approval shall be placed in the CCR operating record. No reduction of the post-closure cost estimate shall be allowed without Division approval.
- (4) Financial Assurance for Post-Closure. The owner and operator of each CCR unit(s) shall establish, in a manner in accordance with Paragraph (a) of this Rule, financial assurance for the costs of post-closure care as required under Rule .2013 of this Section. The owner and operator shall provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care by demonstrating compliance with Rule .2013 of this Section. Maintenance of financial assurance in the required amounts in Subparagraphs (c)(1) and (c)(2) of this Rule does not in any way limit the responsibility of owners and operators for the full costs of site closure and clean-up, the expenses of any on-site or off-site environmental restoration necessitated by activities at the site, and liability for all damages to third parties or private or public properties caused by the establishment and operation of the site.
- (5) Corrective Action Cost Estimate. An owner and operator of a CCR unit(s) required to undertake a corrective action program under Rule .2015 of this Section shall have a written estimate, in current dollars, of the cost of hiring a third

party to perform the corrective action. The corrective action cost estimate shall account for the total costs of corrective action activities as described in the corrective action program for the entire corrective action period. The corrective action cost estimate shall be placed in the operating record.

- (A) The owner and operator shall annually adjust the estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) until the corrective action program is completed in accordance with Rule .2015(l) of this Section. For owners and operators using the local government financial test, the corrective action cost estimate shall be updated for inflation within 30 days after the close of the local government's fiscal year and before submission of updated information to the Division.
- (B) The owner and operator shall increase the corrective action cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes in the corrective action program or CCR unit(s) conditions increase the maximum costs of corrective action.
- (C) The owner or operator may reduce the corrective action cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum remaining costs of corrective action. Prior to any reduction of the corrective action cost estimate by the owner or operator, a written justification for the reduction shall be submitted to the Division for review. The Division shall date and stamp the justification "approved" if the conditions of this Paragraph are met. The reduction justification and the Division approval shall be placed in the CCR's operating record. No reduction of the corrective action cost estimate shall be allowed without Division approval.
- (6) Financial Assurance for Corrective Action. The owner and operator of each CCR unit(s) required to undertake a corrective action program under Rule .2015 of this Section shall establish, in a manner in accordance with Paragraph (a) of this Rule, financial assurance for the most recent corrective action program. The owner or operator shall provide continuous coverage for corrective action until released from financial assurance requirements for corrective action by demonstrating compliance with Rule .2015(l) of this Section.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2017 RECORDKEEPING, NOTIFICATION, AND PUBLICLY ACCESSIBLE INTERNET SITE REQUIREMENTS

(a) Record Keeping.

- (1) Each owner or operator of a CCR unit(s) shall maintain files of all information required by this Section in a written operating record at their facility.
- (2) Unless specified otherwise, each file shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record, or study.
- (3) An owner or operator of more than one CCR unit(s) may comply with the requirements of this Section in one recordkeeping system provided the system identifies each file by the name of each CCR unit(s). The files may be maintained on microfilm, on a computer, on computer disks, on a storage system accessible by a computer, on magnetic tape disks, or on microfiche.
- (4) The owner or operator of a CCR unit(s) shall submit to the Division any demonstration or documentation required by this Section, if requested, when such information is not otherwise available on the owner or operator's publicly accessible Internet site.

(b) Notifications

- (1) The notifications required under Paragraphs (d) through (i) of this Rule shall be sent to the Division before the close of business on the day the notification is required to be completed. For purposes of this Section, before the close of business means the notification shall be postmarked or sent by electronic mail (email). If a notification deadline falls on a weekend or federal holiday, the notification deadline is automatically extended to the next business day.
- (2) Notifications may be combined as long as the deadline requirement for each notification is met.
- (3) Unless otherwise required in this Section, the notifications specified in this Section shall be sent to the Division within 30 days of placing in the operating record the information required by this Rule.

(c) Public Accessible Internet Site

- (1) Each owner or operator of a CCR unit(s) shall maintain a publicly accessible Internet site (CCR website) containing the information specified in this Section. The owner or operator's website shall be titled "CCR Rule Compliance Data and Information."
- (2) An owner or operator of more than one CCR unit(s) may comply with the requirements of this Rule by using the same Internet site for multiple CCR unit(s) provided the CCR website clearly delineates information by the name or identification number of each unit(s).
- (3) Unless otherwise required in this Rule, the information required to be posted to the CCR website shall be made available to the public for at least five years following the date on which the information was first posted to the CCR website.
- (4) Unless otherwise required by this Rule, the information shall be posted to the CCR website within 30 days of placing the pertinent information required by this Rule in the operating record.

(d) Location restrictions. The owner or operator of a CCR unit(s) shall place the demonstrations documenting whether the CCR unit(s) is in compliance with the requirements in Rule .2006 of this Section as it becomes available, in the facility's operating record, on the publicly accessible internet site and submit proper notification.

(e) Design criteria. The owner or operator of a CCR unit(s) shall place the following information, as it becomes available, in the facility's operating record, on the publicly accessible internet site and submit proper notification. The design and construction certifications by a professional engineer in accordance with Rule .2013 of this Section. Within 60 days of commencing construction of a new CCR unit(s) or lateral expansion of an existing unit(s), provide notification of the design certification and place the design certification on the CCR website. If the owner or operator of the CCR unit(s) elects to install an alternative composite liner, the owner or operator shall also submit to the Division a copy of the alternative composite liner design.

(f) Operating criteria. The owner or operator of a CCR unit(s) shall place the following information, as it becomes available, in the facility's operating record, on the publicly accessible internet site and submit proper notification:

- (1) The CCR fugitive dust control plan, and any subsequent amendment of the plan in accordance with Rule .2012(g)(2) of this Section except that only the most recent control plan shall be maintained in the facility's operating record.
- (2) The annual CCR fugitive dust control report in accordance with Rule .2012(g)(3) of this Section.
- (3) The initial and periodic control system plans in accordance with Rule .2012(h) through (j) of this Section.
- (4) Documentation recording the results of the weekly inspection in accordance with Rule .2012(l) of this Section.
- (5) Documentation recording the results of the annual inspection in accordance with Rule .2012(m) of this Section.

(g) Groundwater monitoring and corrective action. The owner or operator of a CCR unit(s) shall place the following information, as it becomes available, in the facility's operating record, on the publicly accessible internet site and submit proper notification:

- (1) The annual groundwater monitoring and corrective action report in accordance with Rule .2014(a)(4) of this Section.
- (2) Documentation of the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices in accordance with Rule .2014(c)(8) of this Section.
- (3) The groundwater monitoring system certification in accordance with Rule .2014(j) of this Section.
- (4) The selection of a statistical method certification in accordance with Rule .2014(c)(4) of this Section.
- (5) Within 30 days of establishing an assessment monitoring program, the owner or operator of a CCR unit(s) shall prepare a notification stating that an assessment monitoring program has been established in accordance with Rule .2015(b)(2) of this Section.
- (6) The analytical results of initial sampling and subsequent semi-annual sampling events in accordance with Rule .2014(c)(1)(D) of this Section.
- (7) Within 30 days of returning to a detection monitoring program, the notification as required in Rule .2015(d)(5) of this Section.
- (8) Within 30 days of detecting one or more constituents, as listed in Rule .2014(c)(1)(D) of this Section above the current groundwater quality standards in accordance with 15A NCAC 02L .0202, the notifications in accordance with Rule .2015(b) of this Section.
- (9) Within 30 days of initiating the assessment of corrective measures requirements, the notification as required in Rule .2015(e) of this Section.
- (10) The completed assessment of corrective measures in accordance with Rule .2015(e) of this Section.
- (11) Documentation prepared by the owner or operator recording the public meeting for the corrective measures assessment in accordance with Rule .2015(e)(2) of this Section.
- (12) The semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report in accordance with Rule .2015(f) of this Section, except that the selection of remedy report shall be maintained until the remedy has been completed.
- (13) Within 30 days of completing the remedy, notification shall be made in accordance with Rule .2015(n) of this Section.

(h) Closure and post-closure care. The owner or operator of a CCR unit(s) shall place the following information, as it becomes available, in the facility's operating record, on the publicly accessible internet site and submit proper notification:

- (1) The notification and certification of intent to initiate closure of the CCR unit(s) in accordance with Rule .2013(c)(7) of this Section.
- (2) The annual progress reports of closure implementation of the CCR unit(s) in accordance with Rule .2013(c)(11) of this Section.
- (3) The notification and certification of closure completion in accordance with Rule .2013(c)(8) of this Section.
- (4) The written closure plan, and any amendment of the plan, in accordance with Rule .2013(c)(1) of this Section, except that only the most recent closure plan shall be maintained in the facility's operating record irrespective of the time requirement specified in Subparagraph (a)(2) of this Rule.
- (5) The notification recording a notation on the deed in accordance with Rule .2013(c)(9) of this Section.
- (6) The written post-closure plan, and any amendment of the plan, in accordance with Rule .2013(d)(4) of this Section, except that only the most recent closure plan shall be maintained in the facility's operating record irrespective of the time requirement specified in Subparagraph (a)(2) of this Rule.
- (7) The notification of completion of post-closure care period in accordance with Rule .2013(d)(5) of this Section.

History Note: Authority G.S. 130-294; 130A-309.207;
Eff. January 1, 2019.

15A NCAC 13B .2018 CCR TO CCP TREATMENT AND PROCESSING FACILITIES AND TRANSPORTATION REQUIREMENTS

(a) Applicability. CCR removed from a CCR facility or unit(s) for use as CCP and the transportation of CCR is subject to this Rule.

(b) A CCR to CCP treatment and processing facility is defined as any facility that by either treatment or processing changes a CCR removed from a CCR facility or unit(s) to a CCP. Each CCR to CCP treatment and processing facility shall be permitted as a treatment

and processing facility in accordance with the requirements of 15A NCAC 13B .0200 - Permits for Solid Waste Management Facilities and 15A NCAC 13B .0300 - Treatment and Processing Facilities.

(c) By definition, CCR does not have a beneficial use. In order for a CCR to be considered a CCP, the CCR shall meet the following criteria:

- (1) The CCR shall provide a functional benefit;
- (2) The CCR shall substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction; the use of the CCR shall meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and
- (3) The user shall demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

(d) Each CCR to CCP treatment and processing facility shall implement a dust control plan in accordance with Rule .2012(g).

(e) Each CCR to CCP treatment and processing facility shall provide a written plan for management of CCR treatment and processing to CCP. The plan shall provide measures and procedures to prevent uncontrolled exposure from the extended, repeated, or indefinite placement of large amounts of CCR directly on land outside of designated CCR storage sites. The plan shall address designated CCR storage sites, the use of impervious surfaces, leachate collection, and walls or wind barriers.

(f) Transportation of CCR.

- (1) Transportation Plan. The owner or operator of a CCR unit from which CCR is to be excavated or CCR removed from a designated CCR storage site, shall provide a written plan ensuring the safe transport of the CCR outside of the CCR unit being excavated or the designated CCR storage site. The plan shall include the transport of CCR outside of the excavated CCR unit or designated CCR site, whether on or off the CCR facility. The plan shall provide a location and description of the CCR unit being excavated or the designated CCR storage site, the excavation process for the CCR unit or designated CCR storage site, the route(s) to be utilized in the transportation of the CCR, transport destination of the CCR, the types of equipment to be utilized in the transportation of the CCR, measures to be implemented in order to prevent loss of the CCR in transit, actions that will be taken should the CCR be lost in transit, a list of emergency contacts, incident reporting requirements, and contingency plan.
- (2) Incident Reporting Requirement. The loss of CCR during transport outside of the CCR unit being excavated or other designated CCR storage site shall be reported to the Division within 24 hours of the incident and a written report shall be submitted to the Division within 15 working days of the incident. The report shall include the incident location, incident date and time, actions that led to the incident, and the measures taken to remove the CCR from the site of the incident.
- (3) Annual Reporting. CCR transported to another state, shall be reported to the Division annually. The report shall include the origin of the CCR, quantity of CCR, in either cubic yards or tons, and the name and location of the CCR destination.

History Note: Authority G.S. 130-294; 130A-309.226;
Eff. January 1, 2019.