# Regulations

# Governing

# Construction, Repair, and Abandonment of Wells

# in

# Alamance County, North Carolina

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## Alamance County Health Department

## Burlington, North Carolina

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## Section I. GENERAL PROVISIONS

A. **Authorization.** The Alamance County Board of Health is authorized under the provisions of Chapter 130A-39 Section B, of the General Statutes of North Carolina to adopt appropriate rules and regulations for the protection of the public health. The Alamance County Board of Health is also authorized under provisions of Chapter 87-96 and Chapter 87-97, of the General Statutes of North Carolina to adopt by reference rules adopted by the Environmental Management Commission and more stringent rules for the protection of public health.

B. **Purpose.** The entire geographical area of Alamance County is vulnerable to groundwater pollution from improperly located, constructed, operated, altered or abandoned water supply wells. Consistent with the responsibility to protect and advance the public health, it is declared to be the policy of the Alamance County Board of Health to require that the location, construction, repair and abandonment of wells, including private drinking water wells as defined in Chapter 87-85 of the North Carolina General Statutes, public water systems, irrigation wells, open loop heat pump systems, and "pump and dump" heat pump systems , conform to such reasonable standards and requirements as may be necessary to protect the public welfare, safety, health and ground water resources.

C. **Scope.** No person shall construct, repair, abandon, or cause to be constructed, repaired or abandoned any well, including private drinking water wells as defined in Chapter 87-85 of the North Carolina General Statutes, wells used to supply public water systems, irrigation wells, open loop heat pump systems, and "pump and dump" heat pump systems, contrary to the provisions of these regulations and the provisions of 15A NCAC 02C Section .0100. Wells drilled for water supply systems regulated by the North Carolina Department of Environment and Natural Resources and the North Carolina Department of Health and Human Services shall meet the siting and all other requirements of those Departments. The well owner and the well contractor shall be responsible for complying with any and all provisions of those laws, rules, and regulations in addition to complying with these regulations. Previously adopted procedures and requirements of the Alamance County Health Department are superseded by these regulations and standards. Irrigation wells, open loop heat pump systems, and "pump and dump" heat pump systems shall comply with the well construction standards of Title 15A, Subchapter 02C, Section .0100, of the North Carolina Administrative Code. In addition, wells used to supply public water systems, irrigation wells, open loop heat pump systems, and "pump and dump" heat pump systems shall comply with Title 15A, Subchapter 02C, Rules .0301 through .0307, of the North Carolina Administrative Code. Irrigation wells shall also comply with Title 15A, Subchapter 18A, Rules .3801 through .3803.

D. **Conflict with other Laws and Regulations.** The provisions of any federal, state or municipal law or regulation establishing standards affording greater protection to the public welfare, safety, health and the groundwater resources shall prevail within the jurisdiction of such agency or municipality over standards established by these regulations.

E. **Adoption of State Rules by Reference.** The provisions contained in Title 15A of the North Carolina Administrative Code Subchapter 2C Section .0100 WELL CONSTRUCTION STANDARDS and Section .0300 PERMITTING AND INSPECTION OF PRIVATE DRINKING WATER WELLS and et seq. are adopted as if fully set forth herein, including any subsequent amendments and editions. Each of the Sections in these regulations supplement or modify the state rules as indicated to provide more stringent rules in Alamance County as authorized in G.S. 130A-39 (b) and G.S. 87-96(c).

F. **Penalties.** Any person who willfully fails to perform any acts required by these regulations or who willfully violates any provision of these regulations, or any other issue pursuant thereto, shall be guilty of a misdemeanor punishable by a fine not to exceed five hundred dollars ($500.00) or imprisonment not to exceed thirty days. Willfully and knowingly making a false statement in a

report, record, or certificate that is required by these regulations shall be considered a violation of these regulations. As provided by G.S. 130A-18, the Health Director may also institute an action in the Alamance County Superior Court for injunctive relief. All other remedies provided by state law, including Part 2 of Article 1 of Chapter 130A of the North Carolina Statutes shall be available to the Health Director. Each day the violation continues shall constitute a separate violation and the five hundred dollars ($500.00) per violation fine shall accumulate until the violation is abated.

G. **Inspection.** Before being used to supply water for human consumption, all newly constructed wells shall be inspected and found to comply with the provisions of these regulations. The Health Director shall inspect permanent abandonment of any well or any repairs to a well. The Health Director shall make these inspections as soon as practicable after he/she receives notice that an installation, repair, or abandonment is to be made.

H. **Appeals.** Any appeals shall be made in accordance with G.S. 130A-24.

## Section II. DEFINITIONS

*The definitions in Chapter 87-85 of the General Statutes of North Carolina and the definitions in 15A NCAC 02C .0102, 15A NCAC 02C .0302, and in 15A NCAC 18A .3801 are included as if fully set forth herein. In addition, the following definitions apply throughout these regulations:*

A. **Board of Health** means the Alamance County Board of Health or its official representatives.

B. **Business day** means Monday through Friday, except for Federal or State holidays.

C. **Health Department** means the Alamance County Health Department.

D. **Health Director** means the director of the Alamance County Health Department or his/her authorized representative.

E. **Irrigation well** means any non-private drinking water well or non-public water supply system constructed for the primary purpose of supplying water to land to maintain or increase the yield of vegetation.

F. **Liner sand cement grout** means a mixture of not more than one part sand and two parts cement and not more than 6 gallons of clear potable water per 94-pound bag of Portland cement.

G. **Open loop heat pump system** means any geothermal heating and cooling system that operates by withdrawing water from a well, circulating it through the heating/cooling system, and returning the water to the source well or another well. This system is often used with an existing water supply well and utilize separate wells for water supply and water return or may use a single well for both supply and return.

H. **Public water system** means a water system as defined in 15 NCAC 18C (Rules Governing Public Water Supplies).

I. **"Pump and dump" heat pump system** means any geothermal heating and cooling system that is a heat pump well that withdraws groundwater but does not re-inject the heat pump effluent.

J. **Well** means any excavation that is cored, bored, drilled, jetted, dug or otherwise constructed for the purpose of locating, testing, developing, draining or recharging any groundwater reservoirs or aquifer, or that may control, divert or otherwise cause the movement of water from or into any aquifer more specifically set forth in Chapter 87-85 of the North Carolina General Statutes. Well shall also include any open loop heat pump system or "pump and dump" heat pump system, as defined in the rules of this section, as well as any irrigation well or any well used to supply a public water supply system.

## Section III. WELL CONTRACTOR CERTIFICATION AND NOTIFICATION

*In addition to the requirements of Chapter 87-98 of the General Statutes of North Carolina and of 15A NCAC 27 pertaining to Well Contractor Certification, the following shall apply to all well contractors in Alamance County:*

A. Every person, firm, or corporation that employs persons performing Well Contractor activities in Alamance County shall provide written notification of their intent to perform well contractor activities to the Alamance County Health Department. Each person, firm or corporation shall provide a list of names of all certified well contractors employed by that person, firm or corporation together with the address, telephone and fax numbers, and email addresses, if applicable. Only certified well contractors shall perform well contractor activities. A certified well contractor must be present at all times when well contractor activities are being conducted.

B. Every person, firm, or corporation submitting notification to the Alamance County Health Department must verify that any person performing well contractor activities in Alamance County is certified as a well contractor with the State of North Carolina in accordance with 15A NCAC 27 (North Carolina Well Contractor Certification Commission Rules). A copy of the state Well Contractor Certification must accompany each written notification.

C. Notification shall be accomplished by completing and submitting a notification form provided by the Alamance County Health Department for this purpose. Upon submitting a properly completed notification form and a copy of the well contractor's certification to the Alamance County Health Department, the applicant will be issued a notification of meeting this requirement. It is the responsibility of the well contractor, firm, or corporation to submit any changes in phone numbers, business addresses, email addresses, addition or subtraction of new certified well contractors, and any other pertinent information to the Alamance County Health Department.

## Section IV. PERMITTING AND INSPECTION OF WELLS

*In addition to the requirements of Chapter 87-97 of the General Statutes of North Carolina, 15A NCAC 02C Section .0300, and 15A NCAC 18A Section .3800, the following shall apply:*

A. The fee for a well construction permit shall be established by the Board of Health and approved by the Board of County Commissioners and is payable to the Alamance County Health Department at the time the well construction permit application is submitted. The fee includes the well construction permit, location approval, necessary inspections, and the collection of a coliform bacteria water sample, a nitrate water sample, and an inorganic water sample.

B. The well contractor shall contact the Health Department to schedule a grout inspection or a well abandonment inspection on the same day of the inspection. The well contractor shall contact the Health Department for this scheduling on business days, between the hours of 7:00 AM and 9:00 AM, or during regular office hours as determined in the Health Department's Policies and Procedures Manual.

## Section V. STANDARDS OF CONSTRUCTION

*In addition to the requirements of 15A NCAC 02C .0107, the following shall apply:*

A. Location

1. The minimum horizontal separation between a well, intended for a single-family residence or other non-public water system, and potential sources of groundwater contamination, which exists at the time the well is constructed, shall be as follows unless otherwise specified:

   (A) Property boundaries.....10 ft.

   (B) Cemeteries.....100 ft.

   (C) Any other well.....25 ft.

2. For a well serving a single-family residence where lot size or other fixed conditions preclude the separation distances specified in subparagraph (A)(1) of this rule, the required separation distances shall be the maximum possible but shall in no case be less than the following:

   (A) Property boundaries.....0 ft.

   (B) Cemeteries.....50 ft.

   (C) Any other well.....10 ft.

3. Each new lot proposed on or after the effective date of this regulation shall include a well site, which meets the location requirements of this section, unless:

   a. the lot is served by a public water supply; or

   b. an easement, right-of-way or encroachment agreement is obtained prior to the issuance of a well construction permit. Terms of the easement, right-of-way or encroachment agreement shall provide that the easement, right-of-way, or encroachment agreement:

      1) is appurtenant to specifically described property and runs with the land and is not affected by change of ownership or control;

      2) is valid as long as the water supply system is required for the facility that it is designed to serve;

      3) describes and specifies the uses being granted and shall include ingress and egress, well and pump installation, operation, maintenance, monitoring, and repairs;

      4) specifies by metes and bounds description or attached plat, the area or site required for the water supply system; and

      5) shall be recorded with the register of deeds in the county where the water supply system and facility is located.

4. It shall be the responsibility of the well contractor to comply with the location requirements. When the well contractor encounters variables which will not allow the well to be constructed according to these regulations, the well contractor must contact the Health Director to request a variance prior to constructing the well.

B. Source of Water

1. Shall be at least 40 feet below land surface and at least one foot below the bottom of the casing.

C. Casing

1. Every well shall be cased with the bottom of the casing extending to a minimum depth of at least forty feet below the surrounding land surface.
2. The casing in wells constructed to obtain water from a consolidated rock formation shall be firmly seated and sealed to a depth of at least five feet into consolidated rock.
3. The Health Director may inspect the casing material before it is installed, as the casing is installed in a borehole and/or after the casing is set.
4. Steel casing and thermoplastic casing shall not be used conjunctively in a well. The well casing must be either steel or thermoplastic.
5. If Thermoplastic Casing is used, then:
    a. The well contractor shall request a downhole camera inspection by the Health Department after the pump is installed of all new wells where thermoplastic casing is used. This request shall be made on a form provided by the Health Department and shall be accompanied by the established fee for downhole camera inspections of thermoplastic casings. A well contractor shall be on site during the downhole camera inspection with the Alamance County Health Department and shall provide means to operate the pump for inspection of the casing and provide means for removal of the pump and piping if needed. The well contractor shall request the downhole camera inspection within 10 business days of the pump installation. If the Health Department is unable to provide a downhole camera for this inspection, the well contractor is responsible for providing a downhole camera and meeting with the Health Director to properly complete this inspection within 10 business days of the pump installation. In these situations where the well contractor is responsible for providing a downhole camera because the Health Department is unable to provide one, the normal fee charged for a downhole camera inspection will not be assessed.
    b. The well contractor shall receive the owner's consent prior to using thermoplastic well casing. This consent shall be documented on a form provided by the Health Department.

D. Grouting

1. Bentonite grout shall be placed in the annular space in accordance with the bentonite manufacturer's specifications or in accordance with guidelines from the Department, with precedence being given to the guidelines from the Department.
2. All water in the annular space down to a depth of 20 feet below ground surface shall be removed or the grout shall be placed by either the pumping or pressure methods.

E. Well Yield

1. Well yield shall be reported in whole numbers to the nearest gallon per minute (gpm) for wells with one or more full gallon(s) per minute. Well yield shall be reported to the nearest 1/4 gallon per minute (gpm) for wells with a yield of less than one full gallon per minute (gpm). Well yield shall be reported by the well contractor to the Health Director at the time of the grout inspection. In cases where the well contractor chooses to grout the annular space prior to completion of the well, the well contractor shall report the well yield to the Health Department within one business day of completion of the well.
2. The following scale shall be used to determine minimum well depths approved for specified amounts of yield. In determining compliance with the scale, it shall be confirmed that the static water level is 50 feet or less from the surface of the ground. If the static water level exceeds 50 feet from the surface of the ground and the yield is less than 8 (gpm), the total well depth shall be increased by the amount of static in excess of 50 feet from the surface of the

ground. In cases where an individual property owner is having a well drilled by a well contractor for his/her personal and immediate family use, a waiver may be signed by the owner, notarized and recorded with the deed which would allow the well to be drilled less than the required depth. In cases where the property owner/authorized agent indicates that a well is not producing according to the certified record of completion within one year of completion, a well test for yield shall be performed by the well contractor that drilled the well in the presence of the Health Director. The Health Director shall take appropriate permitting/violations actions upon observing such a well, provided that he deems the well accessible to equipment needed to complete any necessary repairs.

| GPM | Minimum Well Depth |
|---|---|
| 1/2 or less | 440 ft. |
| 1 | 360 ft. |
| 2 | 320 ft. |
| 3 | 280 ft. |
| 4 | 240 ft. |
| 5 | 200 ft. |
| 6 | 180 ft. |
| 7 | 160 ft. |
| 8 | 140 ft. |
| 9 | 120 ft. |
| 10 – 19 | 100 ft. |
| 20 or more | 80 ft. |

F. Well-Head Completion and Equipment

The well-head shall be completely enclosed except on wells with turbine or other type pumps and pumping equipment designed for all weather conditions. The enclosure shall be well drained and constructed to prevent the entrance of surface and rain water, insects and rodents, and to protect the well-head equipment against freezing. The surface of the ground shall be graded to slope away from the well-head enclosure in all directions. If a concrete pad is required, a conduit of sufficient size shall be cast into the floor to provide for installing the pump piping and wiring through the floor. The space between the piping and wiring and the conduit walls shall be sealed.

## Section VI. WELL MAINTENANCE AND REPAIR

*In addition to the requirements of 15A NCAC 02C .0112, the following shall apply:*

A. All construction and materials used in the maintenance, replacement, or repair of any well shall meet the requirements for new installations.

B. The Health Director may inspect the liner and packer materials before they are installed, as they are installed in the casing and bore hole and/or after the liner is set.

C. Liner sand cement grouts shall be allowed.

D. Repairs to any well completed with the well head terminating below ground (buried seal) shall include extending the well casing 12 inches above land surface. The Health Director shall not approve any well having an entry below land surface. The extension shall be made as follows:

1. A tapered sleeve shall be inserted inside of the casing and shall extend at least six inches down into the existing casing. The extension casing shall be welded or bonded to the existing casing around the outside of the joint; or

2. A sleeve shall be heated and forced over the existing casing with at least six inches of overlap.

Grout shall be placed around the casing, extending from land surface to a depth of at least two feet below the sleeve as indicated above.

E. Any repair shall be completed by disinfection of the well and water system in accordance to these regulations. The well contractor responsible for the repair is also responsible for this disinfection.

F. The Alamance County Health Department may inspect any well with a downhole camera before or after repairs are made. The owner and/or well contractor shall be responsible for removing the pump if required by the Health Director and for disinfection of the well after the well is inspected with a downhole camera. The well contractor that constructed the well shall be responsible for well repairs or replacement and well repair permit fee if it is determined by the Health Director that the well contractor did not comply with these regulations.

## Section VII. ABANDONING WELLS

*In addition to the requirements of 15A NCAC 02C .0113, the following shall apply:*

A. Any well that is a health or safety risk to the public shall be permanently abandoned in accordance with these regulations and shall be done within 30 days of receipt of an order from the Health Director.

B. The Health Director shall have the right to enter any property for the purpose of determining whether or not there may be an abandoned well on the property.

C. The well contractor shall give oral notice to the Health Director prior to abandoning a well.

D. The Health Director may inspect the well to be abandoned before any abandonment material is placed in the well and may observe as the material is placed in the well.

## Section VIII. REPORTS, RECORDS, AND DATA

*In addition to the requirements of 15A NCAC 02C .0114, 15A NCAC 02C .0307, Chapter 87-88 and Chapter 87-97 of the General Statutes of North Carolina, the following shall apply:*

A. The following official reports required by these regulations are available and shall be used:

1. Well Contractor Notification form
2. Thermoplastic well casing request form

## Section IX. VARIANCE

*In addition to the requirements of 15A NCAC 02C .0118, the following shall apply:*

The Health Director may grant a variance from any construction standard in Section V of these regulations. As decided by the Health Director, any variance request shall be in writing by the owner of the property or the person responsible for the construction of the well for which the variance is sought. A variance may be granted if the Health Director finds facts to support the following conclusions:

1. That the use of the well will not endanger human health and welfare of the groundwater; and
2. That construction in accordance with these regulations was not technically feasible in such a manner as to afford a reasonable water supply at a reasonable cost.

The Health Director may require the variance applicant to submit such information as he deems necessary to make a decision to grant or deny the variance. The Health Director may impose such conditions on a variance or the use of a well for which a variance is granted as he deems necessary to protect human health and welfare and the groundwater resources. Approval of a variance by the Health Director does not remove the well contractor from liability or requirements of other local, state or federal agencies.

In situations when the Division or the Department issues a variance, the Health Director may use any recommendations that the Division or the Department may include in the variance and impose these recommendations on the well construction permit to protect human health and welfare and the groundwater resources.

## Section X. SEVERABILITY

If any provision or clause of these regulations shall be declared invalid, void or unconstitutional, such declaration shall not invalidate any other provision or clause of said regulations.

## Section XI. IMPLIED GUARANTEE

These rules, or adherence to these rules shall not be taken as a guarantee of producing a safe, potable water supply.

## Section XII. ENFORCEMENT

Enforcement of these regulations shall be in accordance with Chapter 130A-25, Chapter 87-94, and Chapter 87-95 of the General Statutes of North Carolina, and shall be in addition to any other enforcement mechanisms available under law.

## Section XIII. APPEALS

Any appeals of these regulations shall be conducted in accordance with Chapter 130A-24 of the General Statutes of North Carolina.

## Section XIV. INJUNCTION

The Director of Public Health or his designee may apply for injunctive relief in accordance with Chapter 130A-18 of the General Statutes of North Carolina.

## Section XV. EFFECTIVE DATE

These rules and regulations adopted as amended by the Alamance County Board of Health on shall be in full force and effect on and after July 1, 2013.

Chairman, Alamance County Board of Health

Director, Alamance County Health Department

05/03/2013

Date

## SUBCHAPTER 02C - WELL CONSTRUCTION STANDARDS

## SECTION .0100 - CRITERIA AND STANDARDS APPLICABLE TO WATER-SUPPLY AND

### 15A NCAC 02C .0101 GENERAL PROVISIONS

(a) Authorization. The North Carolina Environmental Management Commission is required pursuant to G.S. 87-87 in the North Carolina Well Construction Act to adopt rules governing the location, construction, repair, and abandonment of wells, the operation of water wells or well systems with a designed capacity of 100,000 gallons per day or greater, and the installation and repair of pumps and pumping equipment.

(b) Purpose. Consistent with the duty to safeguard the public welfare, safety, health, and to protect and beneficially develop the groundwater resources of the State, it is declared to be the policy of this State to require that the location, construction, repair, and abandonment of wells, and the installation of pumps and pumping equipment conform to such reasonable standards and requirements as may be necessary to protect the public welfare, safety, health, and ground water resources.

*History Note:* *Authority G.S. 87-87;*
*Eff. February 1, 1976;*
*Amended Eff. December 1, 1992; July 1, 1988;*
*Readopted Eff. September 1, 2019.*

### 15A NCAC 02C .0102 DEFINITIONS

The terms used in this Subchapter shall be as defined in G.S. 87-85 and as follows:

(1) "Abandon" means to discontinue the use of and to seal a well according to the requirements of 15A NCAC 02C .0113 of this Section.

(2) "Access port" means an opening in a well casing or well head installed for the purpose of determining the position of the water level in the well or to facilitate disinfection.

(3) "Agent" means any person who by agreement with a well owner has authority to act on his or her behalf in executing applications for permits. The agent may be either general agent or a limited agent authorized to do one particular act.

(4) "Annular Space" means the space between the casing and the walls of a borehole or outer casing or the space between a liner pipe and well casing.

(5) "Artesian flowing well" means a well in which groundwater flows above the land surface without the use of a pump and, under natural conditions, the static water level or hydraulic head elevation is greater than the land surface elevation.

(6) "ASTM" means the American Society for Testing and Materials.

(7) "Casing" means pipe or tubing constructed of materials and having dimensions and weights as specified in the rules of this Subchapter, that is installed in a borehole during or after completion of the borehole to support the side of the hole and thereby prevent caving, to allow completion of a well, to prevent formation material from entering the well, to prevent the loss of drilling fluids into permeable formations, and to prevent entry of contamination.

(8) "Clay" means a substance comprised of natural, inorganic, fine-grained crystalline mineral fragments that, when mixed with water, forms a pasty, moldable mass that preserves its shape when air dried.

(9) "Commission" means the North Carolina Environmental Management Commission.

(10) "Consolidated rock" means rock that is firm and coherent, solidified or cemented, such as granite, gneiss, limestone, slate or sandstone, that has not been decomposed by weathering.

(11) "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 set forth in 15A NCAC 02L .0200.

(12) "Department" is as defined in G.S. 87-85(5a).

(13) "Designed capacity" means that capacity that is equal to the yield that is specified by the well owner or his or her agent prior to construction of the well.

(14) "Director" means the Director of the Division of Water Resources or the Director's delegate.

(15) "Division" means the Division of Water Resources.

(16) "Domestic use" means water used for drinking, bathing or other household purposes, livestock, or gardens.

(17) "Formation Material" means naturally occurring material generated during the drilling process that is composed of sands, silts, clays or fragments of rock and that is not in a dissolved state.

(18) "GPM" and "GPD" mean gallons per minute and gallons per day, respectively.

(19) "Grout" means a material approved in accordance with Rule .0107(e) of this Section for use in sealing the annular space of a well or liner or for sealing a well during abandonment.

(20) "Lead Free" means materials containing not more than a weighted average of 0.25 percent lead per Section 1417 of the Safe Drinking Water Act amended January 4, 2014.

(21) "Liner pipe" means pipe that is installed inside a completed and cased well for the purpose of preventing the entrance of contamination into the well or for repairing ruptured, corroded or punctured casing or screens.

(22) "Monitoring well" means any well constructed for the primary purpose of obtaining information about the physical, chemical, radiological, or biological characteristics of groundwater or other liquids, 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. This definition includes all monitoring well types, including temporary wells and wells using Geoprobe® or direct-push technology (DPT).

(23) "Owner" means any person who holds the fee or other property rights in the well being constructed.

(24) "Pitless adapters" or "pitless units" are devices manufactured to the standards specified under 15A NCAC 02C .0107(j)(5) for the purpose of allowing a subsurface lateral connection between a well and plumbing appurtenances.

(25) "Public water system" means a water system as defined in 15A NCAC 18C, which is hereby incorporated by reference, including subsequent amendments.

(26) "Recovery well" means any well constructed for the purpose of removing contaminated groundwater or other liquids from the subsurface.

(27) "Saline" means having a chloride concentration of more than 250 milligrams per liter.

(28) "Secretary" means the Secretary of the Department of Environmental Quality or the Secretary's delegate.

(29) "Settleable solids" means the volume of solid particles in a well-mixed one liter sample that will settle out of suspension, in the bottom of an Imhoff Cone, after one hour.

(30) "Sewer Lateral" means the sewer pipe connecting a structure to a wastewater treatment collection system or a municipal or commercial sewer main line.

(31) "Site" means the land or water area where any facility, activity or situation is physically located, including adjacent or other land used in connection with the facility, activity or situation.

(32) "Specific capacity" means the yield of the well expressed in gallons per minute per foot of draw-down of the water level (gpm/ft.-dd).

(33) "Static water level" means the level at which the water stands in the well when the well is not being pumped and is expressed as the distance from a fixed reference point to the water level in the well.

(34) "Suspended solids" means the weight of those solid particles in a sample that are retained by a standard glass microfiber filter, with pore openings of one and one-half microns, when dried at a temperature between 103 and 105 degrees Fahrenheit.

(35) "Temporary well" means a well that is constructed to determine aquifer characteristics and that will be permanently abandoned or converted to a permanent well within 21 days (504 hours) of the completion of drilling of the borehole.

(36) "Turbidity" means the cloudiness in water due to the presence of suspended particles such as clay or silt that may create laboratory analytical difficulties for determining contamination above 15A NCAC 02L.

(37) "Vent" means a permanent opening in the well casing or well head, installed for the purpose of allowing changes in the water level in a well due to natural atmospheric changes or to pumping. A vent may also serve as an access port.

(38) "Water-tight" means put or fit together so tightly that water cannot enter or pass through. For example, water-tight pipe may be filled with water and tested under pressure between three and five pounds per square inch (psi) for several minutes to detect leaks.

(39) "Well" is as defined in G.S. 87-85(14).

(40) "Well capacity" means the maximum quantity of water that a well will yield continuously as determined by methods outlined in 15A NCAC 02C .0110.
(41) "Well head" means the upper terminal of the well including adapters, ports, valves, seals, and other attachments.
(42) "Well system" means two or more wells connected to the same distribution or collection system or, if not connected to a distribution or collection system, two or more wells serving the same site.
(43) "Yield" means the volume of water or other fluid per time that can be discharged from a well under a given set of circumstances.

*History Note:* *Authority G.S. 87-85; 87-87; 143-215.3;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009; April 1, 2001; December 1, 1992; July 1, 1988; March 1, 1985; September 1, 1984;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0103 REGISTRATION**

*History Note:* *Authority G.S. 87-87; 143-215.3(a)(1a); 143-355(e);*
*Eff. February 1, 1976;*
*Amended Eff. April 1, 2001; December 1, 1992; July 1, 1988; April 20, 1978;*
*Repealed Eff. September 1, 2009.*

**15A NCAC 02C .0104 PUMP INSTALLATION REGISTRATION**

*History Note:* *Authority G.S. 87-87;*
*Eff. February 1, 1976;*
*Repealed Eff. July 1, 1988.*

**15A NCAC 02C .0105 PERMITS**

(a) No person shall locate or construct any of the following wells until a permit has been issued by the Department:
(1) any water-well or well system with a designed capacity to pump 100,000 gallons per day (gpd) or more during one calendar year;
(2) any well added to an existing system if the total designed capacity of such existing well system and added well will equal or exceed 100,000 gpd;
(3) any temporary or permanent monitoring well or monitoring well system, including wells installed using direct-push technology (DPT) or Geoprobe® technology, designed to penetrate an aquifer to obtain groundwater data on property not owned by the well owner;
(4) any recovery well;
(5) any well with a design deviation from the standards specified under the rules of this Subchapter, including wells for which a variance is required.

(b) The Department shall issue permits for wells used for geothermal heating and cooling, aquifer storage and recovery (ASR), or other injection purposes in accordance with 15A NCAC 02C .0200.

(c) The Department shall issue permits for private drinking water wells in accordance with 15A NCAC 02C .0300, including private drinking water wells with a designed capacity greater than 100,000 gallons per day and private drinking water wells for which a variance is required.

(d) An application for any well requiring a permit pursuant to Paragraph (a) of this Rule shall be submitted by the owner or his or her agent. In the event that the permit applicant is not the owner of the property where the well or well system is to be constructed, the permit application shall contain written approval from the property owner and a statement that the applicant assumes total responsibility for ensuring that the well(s) will be located, constructed, maintained and abandoned in accordance with the requirements of this Subchapter.

(e) The application shall be submitted to the Department on forms furnished by the Department, which shall include the following:
(1) the owner's name;
(2) the owner's mailing address and proposed well site address;
(3) description of the well type and activity requiring a permit;
(4) site location (map);

(5) a map of the site, to scale, showing the locations of:
    (A) all property boundaries, at least one of which is referenced to a minimum of two landmarks such as identified roads, intersections, streams or lakes within 500 feet of proposed well or well system;
    (B) all existing wells, identified by type of use, within 500 feet of proposed well or well system;
    (C) the proposed well or well system;
    (D) any test borings within 500 feet of proposed well or well system; and
    (E) all sources of known or potential groundwater contamination, such as septic tank systems; pesticide, chemical or fuel storage areas; animal feedlots, as defined by G.S. 143-215.10B(5); landfills or other waste disposal areas within 500 feet of the proposed well.
(6) the well contractor's name and state certification number, if known; and
(7) a construction diagram of the proposed well(s) including specifications describing all materials to be used and methods of construction.

(f) For water supply wells or well systems with a designed capacity of 100,000 gpd or greater, the application shall include, in addition to the information required in Paragraph (e) of this Rule:
(1) the number, yield and location of existing wells in the system;
(2) the water system's name and reference number if already a public water supply system;
(3) the designed capacity of the proposed well(s);
(4) for wells to be screened in multiple zones or aquifers, representative data on the static water level and pH, specific conductance, and concentrations of sodium, potassium, calcium, magnesium, sulfate, chloride, and carbonates from each aquifer or zone from which water is proposed to be withdrawn. The data submitted shall demonstrate that construction of the proposed well will satisfy the requirements of 15A NCAC 02C .0107(h)(2);
(5) a copy of any water use permit required pursuant to G.S. 143-215.15; and
(6) any other well construction information or site specific information as requested by the Department to ensure compliance with G.S. 87-84.

(g) For those monitoring wells with a design deviation from the specifications of 15A NCAC 02C .0108 of this Section, in addition to the information required in Paragraph (e) of this Rule, the application shall include:
(1) a description of the subsurface conditions to evaluate the site. Data from test borings, wells, and pumping tests may be necessary;
(2) a description of the quantity, character and origin of the contamination;
(3) justification for the necessity of the design deviation; and
(4) any other well construction information or site specific information as requested by the Department to ensure compliance with G.S. 87-84.

(h) For those recovery wells with a design deviation from the specifications in 15A NCAC 02C .0108 of this Section, in addition to the information required in Paragraphs (e) and (g) of this Rule, the application shall describe the disposition of any fluids recovered if the disposal of those fluids will have an impact on any existing wells other than those installed for the purpose of measuring the effectiveness of the recovery well(s).

(i) In the event of an emergency, any well listed in Subparagraph (a)(1) through (a)(4) of this Rule may be constructed after verbal approval is provided by the Department. After-the-fact written applications shall be submitted by the person responsible for drilling or owner within 10 days after construction begins. The application shall include construction details of the well(s) and include the name of the person who gave verbal approval and the time and date that approval was given.

(j) The well owner or his or her agent, and the North Carolina certified well contractor shall see that a permit is secured prior to the beginning of construction of any well for which a permit is required under the rules of this Subchapter.

*History Note:* *Authority G.S. 87-87; 143-215.1;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009; April 1, 2001; December 1, 1992; March 1, 1985; September 1, 1984; April 20, 1978;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0106 WATER USE PERMIT**

*History Note:* *Authority G.S. 143-215.14; 143-215.15;*
*Eff. February 1, 1976;*
*Repealed Eff. April 20, 1978.*

**15A NCAC 02C .0107 STANDARDS OF CONSTRUCTION: WATER SUPPLY WELLS**

(a) Location.

(1) A water supply well shall not be located in any area where surface water or runoff will accumulate around the well due to depressions, drainage ways, and other landscapes that will concentrate water around the well.

(2) The horizontal separation between a water supply well and potential sources of groundwater contamination that exist at the time the well is constructed shall be no less than as follows unless otherwise specified in Subparagraph (a)(3) of this Rule:

(A) Single-family dwelling with septic tank and drainfield, including the drainfield repair area 50 feet

(B) Single-family dwelling with septic tank and drainfield, including the drainfield repair area in saprolite system as described in 15A NCAC 18A .1956 100 feet

(C) All other facilities with septic tank and drainfield, including drainfield repair area 100 feet

(D) Other subsurface ground absorption waste disposal system 100 feet

(E) Industrial or municipal residuals disposal or wastewater-irrigation sites 100 feet

(F) Industrial or municipal sewage or liquid-waste collection or sewer main, constructed to water main standards in the American Water Works Association (AWWA) Standards C600 and/or C900, which can be obtained from AWWA at American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235, at a cost of one hundred and four dollars ($104.00)
50 feet

(G) Water-tight sewer lateral line from a residence or other non-public system to a sewer main or other wastewater disposal system 25 feet

(H) Other sewage and liquid-waste collection or transfer facility 100 feet

(I) Cesspools and privies 100 feet

(J) Animal feedlots, as defined by G.S. 143-215.10B(5), or manure or litter piles 100 feet

(K) Fertilizer, pesticide, herbicide, or other chemical storage areas 100 feet

(L) Non-hazardous waste storage, treatment, or disposal lagoons 100 feet

(M) Sanitary landfills, municipal solid waste landfill facilities, incinerators, construction and demolition (C&D) landfills, and other disposal sites except Land Clearing and Inert Debris landfills
500 feet

(N) Land Clearing and Inert Debris (LCID) landfills 100 feet

(O) Animal barns 100 feet

(P) Building perimeters, including any attached structures that need a building permit, such as garages, patios, or decks, regardless of foundation construction type 25 feet

(Q) Surface water bodies that act as sources of groundwater recharge, such as ponds, lakes, and reservoirs 50 feet

(R) All other surface water bodies, such as brooks, creeks, streams, rivers, sounds, bays, and tidal estuaries 25 feet

(S) Chemical or petroleum fuel underground storage tank systems regulated under 15A NCAC 02N:

(i) with secondary containment 50 feet

(ii) without secondary containment 100 feet

(T) Above ground or underground storage tanks that contain petroleum fuels used for heating equipment, boilers, or furnaces, with the exception of tanks used solely for storage of propane, natural gas, or liquefied petroleum gas 50 feet

(U) All other petroleum or chemical storage tank systems 100 feet

(V) Gravesites 50 feet

(W) Coal ash landfills or impoundments 200 feet

(X) All other potential sources of groundwater contamination 50 feet

(3) For a water supply well as defined in G.S. 87-85(13) on a lot serving a single-family dwelling and intended for domestic use, where lot size or other fixed conditions preclude the separation distances specified in Subparagraph (a)(2) of this Rule, the required horizontal separation distances shall be the maximum possible but shall in no case be less than the following:

(A) Industrial or municipal sewage or liquid-waste collection or sewer main, constructed to water main standards as stated in the AWWA Standards C600 and/or C900 25 feet

(B) Animal barns 50 feet

(4) In addition to the separation distances specified in Subparagraph (a)(2) of this Rule, a well or well system with a designed capacity of 100,000 gallons per day (GPD) or greater shall be located a sufficient distance from known or anticipated sources of groundwater contamination so as to prevent a violation of groundwater quality standards specified in 15A NCAC 02L .0202 resulting from the movement of contaminants in response to the operation of the well or well system at the proposed rate and schedule of pumping.

(5) Wells drilled for public water supply systems regulated by the Public Water Supply Section of the Division of Water Resources shall meet the requirements of 15A NCAC 18C.

(b) Source of water.

(1) The source of water for any water supply well shall not be from a water bearing zone or aquifer that is contaminated;

(2) In designated areas described in 15A NCAC 02C .0117 of this Section, the source shall be greater than 43 feet below land surface;

(3) In designated areas described in 15A NCAC 02C .0116 of this Section, the source may be less than 20 feet below land surface, but in no case less than 10 feet below land surface;

(4) For wells constructed with separation distances less than those specified in Subparagraph (a)(2) of this Rule based on lot size or other fixed conditions as specified in Subparagraph (a)(3) of this Rule, the source shall be greater than 43 feet below land surface except in areas described in Rule .0116 of this Section; and

(5) In all other areas the source shall be at least 20 feet below land surface.

(c) Drilling Fluids. Drilling Fluids shall not contain organic or toxic substances or include water obtained from surface water bodies or water from a non-potable supply and shall be comprised only of:

(1) The formational material encountered during drilling; or

(2) Materials manufactured specifically for the purpose of borehole conditioning or water well construction.

(d) Casing.

(1) If steel casing is used:

(A) The casing shall be new, seamless, or electric-resistance welded galvanized or black steel pipe. Galvanizing shall be done in accordance with requirements of ASTM A53/A53M-07, which is hereby incorporated by reference, including subsequent amendments and editions and can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C 700, West Conshohocken, PA, 19428-2959 at a cost of eighty dollars and forty cents ($80.40);

(B) The casing, threads and couplings shall meet or exceed the specifications of ASTM A53/A53M-07 or A589/589M-06, which is hereby incorporated by reference, including subsequent amendments and editions, and can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C 700, West Conshohocken, PA, 19428-2959 at a cost of eighty dollars and forty cents ($80.40), and fifty-two dollars ($52.00), respectively;

(C) The wall thickness for a given diameter shall equal or exceed that specified in Table 1;

TABLE 1: MINIMUM WALL THICKNESS FOR STEEL CASING:

| Nominal Diameter (inches) | Wall Thickness (inches) |
|---|---|

For 3.5 inch or smaller pipe, Schedule 40 is required

| | |
|---|---|
| 4 | 0.142 |
| 5 | 0.156 |
| 5.5 | 0.164 |
| 6 | 0.185 |
| 8 | 0.250 |
| 10 | 0.279 |
| 12 | 0.330 |
| 14 and larger | 0.375 |

(D) Stainless steel casing, threads, and couplings shall conform in specifications to the general requirements in ASTM A530/A530M-04a, which is hereby incorporated by reference, including subsequent amendments and editions and can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C 700, West Conshohocken, PA, 19428-2959 at a cost of forty-six dollars ($46.00), and also shall conform to the specific requirements in the ASTM standard that best describes the chemical makeup of the stainless steel casing that is intended for use in the construction of the well;

(E) Stainless steel casing shall have a minimum wall thickness that is equivalent to standard Schedule number 10S;

(F) Steel casing shall be equipped with a drive shoe if the casing is driven in a consolidated rock formation. The drive shoe shall be made of forged, high carbon, tempered seamless steel and shall have a beveled, hardened cutting edge; and

(G) Any materials containing lead shall meet NSF 61 standards, which can be obtained from NSF International at a cost of three hundred and twenty-five dollars ($325.00), or NSF 372 standards, which can be obtained at a cost of fifty-five dollars ($55.00). Both standards can be obtained from NSF International, P.O. Box 130140, 789 N. Dixboro Road, Ann Arbor, MI 48105.

(2) If thermoplastic casing is used:

(A) The casing shall be new and manufactured in compliance with standards of ASTM F480-14, which is hereby incorporated by reference including subsequent amendments and editions, and can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C 700, West Conshohocken, PA, 19428-2959 at a cost of sixty-seven dollars ($67.00);

(B) The casing and joints shall meet or exceed all the specifications of ASTM F480-06b, except that the outside diameters shall not be restricted to those listed in ASTM F480-06b, which is hereby incorporated by reference, including subsequent amendments and editions and can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C 700, West Conshohocken, PA, 19428-2959 at a cost of eighty dollars and forty cents ($80.40);

(C) The depth of installation for a given Standard Dimension Ratio (SDR) or Schedule number thickness shall not exceed that listed in Table 2 unless the Department is

provided written documentation from the manufacturer of the casing stating that the casing may safely be used at the depth at which it is to be installed is provided.

TABLE 2: Maximum allowable depths (in feet) of Installation of
Thermoplastic Water Well Casing. Dimensional standards for PVC pipe are specified in ASTM F 480-14.

| Nominal Diameter (inches) | Maximum Depth (in feet) for Schedule 40 | Maximum Depth (in feet) for Schedule 80 |
|---|---|---|
| 2 | 485 | 1460 |
| 3 | 415 | 1170 |
| 3.5 | 315 | 920 |
| 4 | 253 | 755 |
| 5 | 180 | 550 |
| 6 | 130 | 495 |
| 8 | 85 | 340 |
| 10 | 65 | 290 |
| 12 | 65 | 270 |
| 14 | 50 | 265 |
| 16 | 50 | 255 |

| | Maximum Depth (in feet) for SDR 21 | Maximum Depth (in feet) for SDR 17 | Maximum Depth (in feet) for SDR 13.5 |
|---|---|---|---|
| All Diameters | 185 | 355 | 735 |

(D) Thermoplastic casing with wall thickness less than that corresponding to SDR 21 or Schedule 40 shall not be used;

(E) For wells in which the casing will extend into consolidated rock, thermoplastic casing shall be equipped with a coupling or other device approved by the manufacturer of the casing as sufficient to protect the physical integrity of the thermoplastic casing during the processes of seating and grouting the casing and subsequent drilling operations;

(F) Thermoplastic casing shall not be driven by impact, but may be pushed;

(G) PVC well casing joints shall meet the requirements of ASTM F 480-14; and

(H) Screws or similar mechanical fasteners shall not be used for joining PVC well casing.

(3) In constructing any well, all water-bearing zones that contain contaminated, saline, or other non-potable water shall be cased and grouted so that contamination of overlying and underlying groundwater zones will not occur.

(4) Every well shall be cased so that the bottom of the casing extends to the following depths:

(A) Wells located within the area described in Rule .0117 of this Section shall be cased from land surface to a depth of at least 43 feet.

(B) Wells located within the area described in Rule .0116 of this Section shall be cased from land surface to a depth of at least 10 feet.

(C) Wells constructed with separation distances less than those specified in Subparagraph (a)(2) of this Rule based on lot size or other fixed conditions as specified in Subparagraph (a)(3) of this Rule shall be cased from land surface to a depth of at least 43 feet except in areas described in Rule .0116 of this Section.

(D) Wells located in any other area shall be cased from land surface to a depth of at least 20 feet.

(5) The top of the casing shall be terminated at least 12 inches above land surface, regardless of the method of well construction and type of pump to be installed.

(6) The casing in wells constructed to obtain water from a consolidated rock formation shall meet the requirements of Subparagraphs (d)(1) through (d)(5) of this Rule and shall:

(A) prevent any formational material from entering the well in excess of the levels specified in Paragraph (h) of this Rule; and

(B) firmly be seated at least five feet into the rock.

(7) The casing in wells constructed to obtain water from an unconsolidated rock formation (such as gravel, sand, or shells) shall extend at least one foot into the top of the water-bearing formation.

(8) Upon completion of the well, the well shall be sufficiently free of obstacles including formation material as necessary to allow for the installation and proper operation of pumps and associated equipment.

(9) Prior to removing equipment from the site, the top of the casing shall be sealed with a water-tight cap or well seal, as defined in G.S. 87-85(16), to preclude the entrance of contaminants into the well.

(e) Allowable Grouts.

(1) One of the following grouts shall be used wherever grout is required by a rule of this Section. Where a particular type of grout is specified by a rule of this Section, no other type of grout shall be used.

(A) Neat cement grout shall consist of a mixture of not more than six gallons of clear, potable water to one 94 pound bag of Portland cement. Up to five percent, by weight, of untreated Wyoming sodium bentonite may be used to improve flow and reduce shrinkage. The Wyoming sodium bentonite shall be 200 mesh with a yield rating of 90 barrels per ton. If bentonite is used, additional water may be added at a rate not to exceed 0.6 gallons of water for each pound of untreated Wyoming sodium bentonite.

(B) Sand cement grout shall consist of a mixture of not more than two parts sand and one part cement and not more than six gallons of clear, potable water per 94 pound bag of Portland cement.

(C) Concrete grout shall consist of a mixture of not more than two parts gravel or rock cuttings to one part cement and not more than six gallons of clear, potable water per 94 pound bag of Portland cement. One hundred percent of the gravel or rock cuttings must be able to pass through a one-half inch mesh screen.

(D) Bentonite slurry grout shall consist of a mixture of not more than 24 gallons of clear, potable water to one 50 pound bag of commercial granular Wyoming sodium bentonite. Non-organic, non-toxic substances may be added to bentonite slurry grout mixtures to improve particle distribution and pumpability. Bentonite slurry grout may only be used in accordance with the manufacturer's written instructions.

(E) Bentonite chips or pellets shall consist of pre-screened Wyoming sodium bentonite chips or compressed sodium bentonite pellets with largest dimension of at least one-fourth inch but not greater than one-fifth of the width of the annular space into which they are to be placed. Bentonite chips or pellets shall be hydrated in place. Bentonite chips or pellets shall only be used in accordance with the manufacturer's written instructions.

(F) Specialty grout shall consist of a mixture of non-organic, non-toxic materials with characteristics of expansion, chemical-resistance, rate or heat of hydration, viscosity, density, or temperature-sensitivity applicable to specific grouting requirements. Specialty grouts shall not be used without prior approval by the Director. A request for approval of a specialty grout shall be submitted to the Director and shall include the following information:

(i) a demonstration of non-toxicity, such as American National Standard Institute (ANSI) or National Sanitation Foundation, Inc. (NSF) Standard 60 certification, which is hereby incorporated by reference including subsequent amendments and editions, and can be obtained from NSF International, P.O. Box 130140, 789 North Dixboro Road, Ann Arbor, MI 48105 at a cost of three hundred and twenty-five dollars ($325.00);

(ii) the results of an independent laboratory that demonstrate the finished product has a permeability of less that $1x10^{-6}$ centimeters per second and, if the product is used in areas of brackish or saline groundwater, the grout will not degrade over the lifetime of the well;

(iii) a general procedure for mixing and emplacing the grout;

(iv) the types of wells the request would apply to; and

(v) any other additional information the Department needs to ensure compliance with G.S. 87-84 as requested by the Department.

(2) With the exception of bentonite chips or pellets, the liquid and solid components of all grout mixtures shall be blended prior to emplacement below land surface.

(3) No fly ash, other coal combustion byproducts, or other wastes shall be used in any grout.

(f) Grout emplacement.

(1) Casing shall be grouted to a minimum depth of twenty feet below land surface except that in those areas designated in Rule .0116 of this Section, grout shall extend to a depth of two feet above the screen or, for open end wells, to the bottom of the casing, but in no case less than 10 feet.

(2) In addition to the grouting required by Subparagraph (f)(1) of this Rule, the casing shall be grouted as necessary to seal off all aquifers or zones that contain contaminated, saline, or other non-potable water so that contamination of overlying and underlying aquifers or zones shall not occur.

(3) Bentonite slurry grout may be used in that portion of the borehole that is at least three feet below land surface. That portion of the borehole from land surface to at least three feet below land surface shall be filled with a concrete or cement-type grout or bentonite chips or pellets that are hydrated in place.

(4) Grout shall be placed around the casing by one of the following methods:

(A) Pressure. Grout shall be pumped or forced under pressure through the bottom of the casing until it fills the annular space around the casing and overflows at the surface;

(B) Pumping. Grout shall be pumped into place through a hose or pipe extended to the bottom of the annular space that can be raised as the grout is applied. The grout hose or pipe shall remain submerged in grout during the entire application; or

(C) Other. Grout may be emplaced in the annular space by gravity flow to ensure complete filling of the space. Gravity flow shall not be used if water or any visible obstruction is present in the annular space within the applicable minimum grout depth specified in Subparagraph (f)(1) of this Rule at the time of grouting, with the exception that bentonite chips or pellets may be used if water is present and if designed for that purpose.

(5) If a rule of this Section requires grouting of the casing to a depth greater than 20 feet below land surface, the pumping or pressure method shall be used to grout that portion of the borehole deeper than 20 feet below land surface, with the exception of bentonite chips and pellets used in accordance with Part (f)(4)(C) of this Rule.

(6) If an outer casing is installed, it shall be grouted by either the pumping or pressure method.

(7) Bentonite chips or pellets shall be used in compliance with all manufacturer's instructions including pre-screening the material to eliminate fine-grained particles, installation rates, hydration methods, tamping, and other measures to prevent bridging.

(8) Bentonite grout shall not be used to seal zones of water with a chloride concentration of 1,500 milligrams per liter or greater. For wells installed on the barrier island from the Virginia state line south to Ocracoke Inlet, chloride concentrations shall be documented and reported as required by 15A NCAC 02C .0114(1)(E).

(9) The well shall be grouted within seven days after the casing is set. If the well penetrates any water-bearing zone that contains saline water, the well shall be grouted within one day after the casing is set.

(10) No additives that will accelerate the process of hydration shall be used in grout for thermoplastic well casing.

(11) If grouting is required by the provisions of this Section, the grout shall extend outward in all directions from the casing wall to a minimum thickness equal to either one-third of the diameter of the outside dimension of the casing or two inches, whichever is greater.

(12) In no case shall a well be required to have an annular grout seal thickness greater than four inches.

(13) For wells constructed in locations where flowing artesian conditions are encountered the well shall be grouted to protect the artesian aquifer, prevent erosion of overlying material, and confine the flow within the casing.

(g) Well Screens.

(1) The well, if constructed to obtain water from an unconsolidated rock formation, shall be equipped with a screen that will prevent the entrance of formation material into the well after the well has been developed and completed.

(2) The well screen shall be of a design to permit the optimum development of the aquifer with minimum head loss consistent with the intended use of the well. The openings shall be designed to prevent clogging and shall be free of rough edges, irregularities, or other defects that may accelerate or contribute to corrosion or clogging.

(3) Multi-screen wells shall not connect aquifers or zones that have differences in water quality or potentiometric surfaces that would result in contamination of any aquifer or zone.

(h) Gravel and Sand-Packed Wells.

(1) In constructing a gravel-or sand-packed well:

(A) The packing material shall be composed of quartz, granite, or similar mineral or rock material and shall be of uniform size, water-washed, and free from clay, silt, and toxic materials.

(B) The size of the packing material shall be determined from a grain size analysis of the formation material and shall be of a size sufficient to prohibit the entrance of formation material into the well in concentrations above those permitted by Paragraph (i) of this Rule.

(C) The packing material shall be placed in the annular space around the screens and casing by a fluid circulation method to ensure accurate placement and avoid bridging.

(D) The packing material shall be disinfected.

(2) The packing material shall not connect aquifers or zones that have differences in water quality that would result in contamination of any aquifer or zone.

(i) All water supply wells shall be developed by the well contractor. Development shall include removal of formation materials, mud, drilling fluids, and additives, such that the water contains no more than:

(1) Five milliliters per liter of settleable solids; and

(2) Ten NTUs of turbidity as suspended solids.

Development does not require efforts to reduce or eliminate the presence of dissolved constituents that are indigenous to the ground water quality in that area.

(j) Well Head Completion.

(1) Access Port. Every water supply well shall be equipped with a usable access port or air line, except for the following: a multi-pipe deep well with jet pump or adapter mounted on the well casing or well head; and wells with casing two inches or less in diameter if a suction pipe is connected to a suction lift pump. The access port shall be at least one half inch inside the diameter opening so that the position of the water level can be determined. The port shall be installed and maintained in such manner as to prevent entrance of water or foreign material.

(2) Well Contractor Identification Plate.

(A) An identification plate, showing the well contractor and certification number and the information specified in Part (j)(2)(E) of this Rule, shall be installed on the well within 72 hours after completion of the drilling.

(B) The identification plate shall be constructed of a durable weatherproof, rustproof metal or other material approved by the Department as equivalent.

(C) The identification plate shall be permanently attached to either the aboveground portion of the well casing, surface grout pad, or enclosure floor around the casing where it is visible and in a manner that does not obscure the information on the identification plate.

(D) The identification plate shall not be removed.

(E) The identification plate shall be stamped to show the following:
  (i) the total depth of well;
  (ii) the casing depth (feet) and inside diameter (inches);
  (iii) the screened intervals of screened wells;
  (iv) the packing interval of gravel-packed or sand-packed wells;
  (v) the yield, in gallons per minute (gpm) or specific capacity in gallons per minute per foot of drawdown (gpm/ft. of drawdown);
  (vi) the static water level and the date it was measured;
  (vii) the date the well was completed.

(3) Pump Installation Information Plate.
  (A) An information plate, showing the well contractor and certification number of the person installing the pump and the information specified in Part (j)(3)(D) of this Rule, shall be permanently attached to either the aboveground portion of the well casing, the surface grout pad, or the enclosure floor, if present, where it is visible and in a manner that does not obscure the information on the identification plate, within 72 hours after completion of the pump installation;
  (B) The information plate shall be constructed of a durable, waterproof, rustproof metal or other material approved by the Department;
  (C) The information plate shall not be removed; and
  (D) The information plate shall be stamped or engraved to show the following:
    (i) the date the pump was installed;
    (ii) the depth of the pump intake; and
    (iii) the horsepower rating of the pump.

(4) Controlled flow. Every artesian flowing well shall be constructed, equipped, and operated to prevent the uncontrolled discharge of groundwater. Flow discharge control shall be provided to conserve the groundwater resource and prevent or reduce the loss of artesian hydraulic head. Flow control may consist of valved pipe connections, watertight pump connections, receiving tank, flowing well pitless adapter, packer, or other methods approved by the Department to prevent the loss of artesian hydraulic head and stop the flow of water as referenced in G.S. 87-88(d). Well owners shall be responsible for the operation and maintenance of the valve.

(5) Pitless adapters or pitless units shall be allowed as a method of well head completion under the following conditions:
  (A) Design, installation, and performance standards are those specified in PAS-97(04), which is hereby incorporated by reference including subsequent amendments and editions and can be obtained from the Water System Council National Programs Office, 1101 30th Street, N.W., Suite 500, Washington, DC 20007 at no cost;
  (B) The pitless device is compatible with the well casing;
  (C) The top of the pitless unit extends at least 12 inches above land surface;
  (D) The excavation surrounding the casing and pitless device is filled with grout from the top of the casing grout to the land surface; and
  (E) The pitless device has an access port.

(6) All openings for piping, wiring, and vents shall enter into the well at least 12 inches above land surface, except where pitless adapters or pitless units are used, and shall be sealed to preclude the entrance of contaminants into the well. The final land surface grade adjacent to the well head shall be such that surface water is diverted away from the well.

*History Note:* *Authority G.S. 87-87; 87-88; S.L. 2018-65;*
*Eff. February 1, 1976;*
*Amended Eff. May 14, 2001; December 1, 1992; March 1, 1985; September 1, 1984; April 20, 1978;*
*Temporary Amendment Eff. August 3, 2001;*
*Amended Eff. September 1, 2009; August 1, 2002;*
*Readopted Eff. June 15, 2020.*

**15A NCAC 02C .0108 STANDARDS OF CONSTRUCTION: WELLS OTHER THAN WATER SUPPLY**

(a) No well shall be located, constructed, operated, or repaired in any manner that may adversely impact the quality of groundwater.
(b) Injection wells shall conform to the standards set forth in Section .0200 of this Subchapter.
(c) Monitoring wells and recovery wells shall be located, designed, constructed, operated, and abandoned with materials and by methods that are compatible with the chemical and physical properties of the contaminants involved, specific site conditions, and specific subsurface conditions.
(d) Monitoring well and recovery well boreholes shall not penetrate to a depth greater than the depth to be monitored or the depth from which contaminants are to be recovered. Any portion of the borehole that extends to a depth greater than the depth to be monitored or the depth from which contaminants are to be recovered shall be grouted completely to prevent vertical migration of contaminants.
(e) The well shall not hydraulically connect:
(1) separate aquifers; or
(2) those portions of a single aquifer where contamination occurs in separate and definable layers within the aquifer.
(f) The well construction materials used shall be structurally stable, corrosion resistant, and non-reactive based upon the depth of the well and any contaminants to be monitored or recovered.
(g) The well shall be constructed in such a manner that water or contaminants from the land surface cannot migrate along the borehole annulus into any packing material or well screen area.
(h) In non-water supply wells, packing material placed around the screen shall extend one foot or greater above the top of the screen and a one foot or greater thick seal, comprised of chip or pellet bentonite or other material approved by the Department as equivalent, shall be emplaced directly above and in contact with the packing material. If shallow groundwater is observed within five feet or less of land surface during well construction, the packing material and seal shall comply with Paragraph (j) of this Rule.
(i) In non-water supply wells, grout shall be placed in the annular space between the outermost casing and the borehole wall from the land surface to the top of the bentonite seal above any well screen or to the bottom of the casing for open end wells. The grout shall comply with Paragraph (e) of Rule .0107 of this Section.
(j) For non-water supply wells in which the stabilized water table is visible within five feet of land surface during well installation or field investigation activities, well construction shall meet each of the following requirements:
(1) Packing material placed in the annular space around the well screen shall extend six inches or greater above the top of the screen;
(2) A six-inch or greater thick seal comprised of chip or pellet bentonite shall be placed in the annular space above and in direct contact with the packing material;
(3) A one-foot or greater seal of concrete or cement grout shall be installed in the annular space from land surface to the top of the bentonite seal (upper one foot of well horizon); and
(4) Shallow wells of this class shall be equipped with a two-foot or greater concrete pad around the well, flush with the land surface to prevent surface water infiltration.
If a well is installed under this Paragraph, the existence of a shallow water table shall be verified by a NC certified well contractor, licensed professional engineer, geologist, or soil scientist and noted on all documents or reporting forms submitted.
(k) All wells shall be grouted within seven days after the casing is set. If the well penetrates any water-bearing zone that contains contaminated or saline water, the well shall be grouted within one day after the casing is set.
(l) All non-water supply wells, including temporary wells, shall be secured with a locking well cap to ensure against unauthorized access and use.
(m) All non-water supply wells shall be equipped with a steel outer well casing or flush-mount cover, set in concrete, and other measures to protect the well from damage by normal site activities.
(n) Any well that would flow under natural artesian conditions shall be valved so that the flow can be regulated.
(o) In non-water supply wells, the well casing shall be terminated no less than 12 inches above land surface unless all of the following conditions are met:
(1) site-specific conditions directly related to business activities, such as vehicle traffic, would endanger the physical integrity of the well; and
(2) the well head is completed in such a manner so as to preclude surficial contaminants from entering the well.
(p) Each non-water supply well shall have permanently affixed an identification plate. The identification plate shall be constructed of a durable, waterproof, or rustproof material and shall contain the following information:
(1) well contractor's name and certification number;
(2) the date the well was completed;

(3) the total depth of the well;
(4) a warning that the well is not for water supply and that the groundwater may contain hazardous materials;
(5) the depth to the top and bottom of each screen; and
(6) the well identification number or name assigned by the well owner.

(q) Each non-water supply well shall be developed such that the level of turbidity or settleable solids does not preclude accurate chemical analyses of any fluid samples collected or adversely affect the operation of any pumps or pumping equipment.

(r) Wells constructed for the purpose of monitoring or testing for the presence of liquids associated with tanks regulated under 15A NCAC 02N shall be constructed in accordance with 15A NCAC 02N .0504.

(s) Wells constructed for the purpose of monitoring for the presence of vapors associated with tanks regulated under 15A NCAC 02N shall:

(1) be constructed in such a manner as to prevent the entrance of surficial contaminants or water into or alongside the well casing; and
(2) be provided with a locking well cap to ensure against unauthorized access and use.

(t) Temporary wells and all other non-water supply wells shall be constructed in such a manner as to preclude the vertical migration of contaminants within and along the borehole channel.

(u) Geotechnical borings advanced for building activities, such as foundation testing and road bed strength evaluations shall not be considered wells as defined in G.S. 87-85(14) if they are immediately abandoned after use pursuant to Rule .0113(d)(1) of this Section. These borings shall not require submittal of a well construction or abandonment record pursuant to Rule .0114 of this Section.

(v) Soil borings advanced for such activities as collecting soil samples for contamination assessment or characterization soil profiles shall not be considered wells as defined in G.S. 87-85(14) if they are not intended to penetrate the water table and are abandoned after samples are collected pursuant to Rule .0113(d)(1) of this Section. These borings shall not require submittal of a well construction or well abandonment records pursuant to Rule .0114 of this Section.

*History Note:* *Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009, April 1, 2001; December 1, 1992; September 1, 1984; April 20, 1978;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0109 PUMPS AND PUMPING EQUIPMENT**

(a) The pumping capacity of the pump shall be consistent with the intended use and yield characteristics of the well.

(b) The pump and related equipment for the well shall be located to permit easy access and removal for repair and maintenance.

(c) The base plate of a pump placed directly over the well shall be designed to form a watertight seal with the well casing or pump foundation.

(d) In installations where the pump is not located directly over the well, the annular space between the casing and pump intake or discharge piping shall be closed with a watertight seal.

(e) The well head shall be equipped with a screened vent to allow for the pressure changes within the well unless a suction lift pump or single-pipe jet pump is used or artesian flowing well conditions are encountered.

(f) The person installing the pump in any water supply well shall install a threadless sampling tap at the wellhead for obtaining water samples except:

(1) In the case of suction pump or offset jet pump installations the threadless sampling tap shall be installed on the return (pressure) side of the pump piping; and
(2) In the case of pitless adapter installations, the threadless sampling tap shall be located upstream of the water storage tank.

The threadless sampling tap shall be turned downward, located a minimum of 12 inches above land surface, floor, or well pad, and positioned such that a water sample can be obtained without interference from any part of the wellhead. If the wellhead is also equipped with a threaded hose bibb in addition to the threadless sampling tap, the hose bibb shall be fitted with a backflow preventer or vacuum breaker.

(g) A priming tee shall be installed at the well head in conjunction with offset jet pump installations.

(h) Joints of any suction line installed underground between the well and pump shall be tight under system pressure.

(i) The drop piping and electrical wiring used in connection with the pump shall meet all applicable underwriters specifications.
(j) Only potable water shall be used for priming the pump.
(k) Any materials containing lead shall meet NSF 61 standards.

*History Note:* *Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009, December 1, 1992; April 20, 1978;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0110 WELL TESTS FOR YIELD**

(a) Every domestic well shall be tested for capacity by one of the following methods:
- (1) Pump Method
  - (A) select a permanent measuring point, such as the top of the casing;
  - (B) measure and record the static water level below or above the measuring point prior to starting the pump;
  - (C) measure and record the discharge rate at intervals of 10 minutes or less;
  - (D) measure and record water levels using a steel or electric tape at intervals of 10 minutes or less;
  - (E) continue the test for a period of at least one hour; and
  - (F) make measurements within an accuracy of plus or minus one inch.
- (2) Bailer Method
  - (A) select a permanent measuring point, such as the top of the casing;
  - (B) measure and record the static water level below or above the measuring point prior to starting the bailing procedure;
  - (C) bail the water out of the well for a period of one hour or longer;
  - (D) determine and record the bailing rate in gallons per minute at the end of the bailing period; and
  - (E) measure and record the water level after stopping bailing process.
- (3) Air Rotary Drill Method
  - (A) measure and record the amount of water being injected into the well during drilling operations;
  - (B) measure and record the discharge rate in gallons per minute at intervals of one hour or less during drilling operations;
  - (C) after completion of the drilling, continue to blow the water out of the well for 30 minutes or longer and measure and record the discharge rate in gallons per minute at intervals of 10 minutes or less during the period; and
  - (D) measure and record the water level after discharge ceases.
- (4) Air Lift Method. Measurements shall be made through a pipe placed in the well. The pipe shall have an inside diameter of at least five-tenths of an inch or greater and shall extend from top of the well head to a point inside the well that is below the bottom of the air line.
  - (A) Measure and record the static water level prior to starting the air compressor;
  - (B) Measure and record the discharge rate at intervals of 10 minutes or less;
  - (C) Measure and record the pumping level using a steel or electric tape at intervals of 10 minutes or less; and
  - (D) Continue the test for a period of one hour or longer.

(b) Public, Industrial, and Irrigation Wells. Every industrial or irrigation well and, if required by rule adopted by the Commission for Public Health, every well serving a public water supply system upon completion shall be tested for capacity by the following or equivalent method:
- (1) The water level in the well to be pumped and in all observation wells shall be measured and recorded prior to starting the test.
- (2) The well shall be tested by a pump of sufficient size and lift capacity to test the yield of the well, consistent with the well diameter and purpose.
- (3) The pump shall be equipped with throttling devices to reduce the discharge rate to approximately 25 percent of the maximum capacity of the pump.

(4) The test shall be conducted for a period of 24 hours or longer without interruption and, except for wells constructed in Coastal Plain aquifers, shall be continued for a period of four hours or longer after the pumping water level stabilizes.

(5) The pump discharge shall be set at a constant rate or rates that can be maintained throughout the testing period. If the well is tested at two or more pumping rates (a step-drawdown test), pumping at each pumping rate shall continue to the point that the pumping water level declines no more than 0.1 feet per hour for a period of four hours or more for each pumping rate, except for wells constructed to Coastal Plain aquifers. In wells constructed in Coastal Plain aquifers, pumping at each pumping rate shall continue for four hours or longer.

(6) The pump discharge rate shall be measured by an orifice meter, flowmeter, weir, or equivalent metering device. The metering device used shall have a calibration accuracy within plus or minus five percent of a known standard.

(7) The discharge rate of the pump and time shall be measured and recorded at intervals of 10 minutes or less during the first two hours of the pumping period for each pumping rate. If the pumping rate is constant after the first two hours of pumping, discharge measurements and recording may be made at longer time intervals not to exceed one hour.

(8) The water level in each well and time shall be measured and recorded at intervals of five minutes or less during the first hour of pumping and at intervals of 10 minutes or less during the second hour of pumping. After the second hour of pumping, the water level in each well shall be measured at such intervals that the lowering of the pumping water level does not exceed three inches between measurements.

(9) A reference point for water level measurements shall be selected and recorded for the pumping well and each observation well to be measured during the test. All water level measurements shall be made from the selected reference points, which shall be permanently marked.

(10) All water level measurements shall be made with a steel or electric tape or equivalent measuring device.

(11) All water level measurements shall be made within an accuracy of plus or minus one inch or to 0.1 foot.

(12) After the completion of the pumping period, measurements of the water level recovery rate in the pumped well shall be made in the same manner as the drawdown for a period of two hours or greater.

*History Note:* *Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009, April 1, 2001; December 1, 1992; September 1, 1984; April 20, 1978;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0111 DISINFECTION OF WATER SUPPLY WELLS**

(a) Any person constructing, repairing, testing, or performing maintenance or installing a pump in a water supply well shall disinfect the well upon completion of construction, repairs, testing, maintenance, or pump installation.

(b) Any person disinfecting a well shall perform disinfection in accordance with the following procedures:

(1) Chlorination.

(A) Hypochlorite shall be placed in the well in sufficient quantities to produce a chlorine residual of at least 100 parts per million (ppm) in the well. Stabilized chlorine tablets or hypochlorite products containing fungicides, algaecides, or other disinfectants shall not be used. Chlorine test strips or other quantitative test methods shall be used to confirm the concentration of the chlorine residual.

(B) The hypochlorite shall be placed in the well by one of the following or equivalent methods:

(i) Granular hypochlorite may be dropped in the top of the well and allowed to settle to the bottom; or

(ii) Hypochlorite solutions shall be placed in the bottom of the well by using a bailer or by pouring the solution through the drill rod, hose, or pipe placed in the bottom of the well. The solution shall be flushed out of the drill rod, hose, or pipe by using water or air.

(C) The water in the well shall be agitated or circulated to ensure thorough dispersion of the chlorine.

(D) The well casing, pump column, and any other equipment above the water level in the well shall be rinsed with the chlorine solution as a part of the disinfecting process.

(E) The chlorine solution shall stand in the well for a period of 24 hours or more.

(F) The well shall be pumped until there is no detectable total chlorine residual in water pumped from the well before the well is placed in use.

(2) Other alternate materials and methods of disinfection, at least as effective as those set forth in Subparagraph (b)(1) of this Rule, may be used upon prior approval by the Department. A written request for approval of alternate disinfection methods or materials shall be submitted to the Director and will be approved or denied on a case-by-case basis following a review of the information submitted in this Subparagraph. The written request shall include the following information:

(A) a demonstration that the method of disinfection will be at least as effective as chlorination as described under in Subparagraph (b)(1) of this Rule;

(B) a demonstration of non-toxicity, such as ANSI or NSF Standard certification or EPA studies;

(C) the general procedures for the disinfection and emplacement, including the amount of product to be used per unit volume of the well;

(D) a demonstration that, after disinfection is completed, the water within the well will meet 15A NCAC 02L groundwater standards; and

(E) any other information requested by the Department to ensure compliance with G.S. 87-84.

*History Note:* *Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009; April 1, 2001; December 1, 1992; July 1, 1988; September 1, 1984;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0112 WELL MAINTENANCE: REPAIR: GROUNDWATER RESOURCES**

(a) A well that is not maintained by the owner to conserve and protect the groundwater resources or that constitutes a source or channel of contamination to the water supply or any aquifer shall be permanently abandoned in accordance with Rule .0113(b) of this Section.

(b) Wells that are used for dewatering shall be permanently abandoned in accordance with Rule .0113(b) of this Section within 30 days of completion of the dewatering activity.

(c) All materials used in the maintenance, replacement, or repair of any well shall be in accordance with Rules .0107 and .0108 of this Section.

(d) Broken, punctured, or otherwise defective or unserviceable casing, screens, fixtures, seals, or any part of the well head shall be repaired or replaced, or the well shall be permanently abandoned in accordance with Rule .0113(b) of this Section.

(e) NSF International approved PVC pipe rated at 160 PSI may be used for liner pipe. The annular space around the liner casing shall be five-eighths inches or greater and shall be completely filled with neat-cement grout or sand cement grout. The well liner shall be completely grouted within 10 working days after collection of water samples or completion of other testing to confirm proper placement of the liner or within 10 working days after the liner has been installed if no sampling or testing is performed.

(f) No well shall be repaired or altered such that the well head is completed less than 12 inches above land surface. Any grout excavated or removed as a result of the well repair shall be replaced in accordance with Rule .0107(f) of this Section.

(g) Well rehabilitation by noncontinuous chemical treatment shall be conducted using methods and materials approved by the Department based on a demonstration that the materials and methods used will not create a violation of groundwater standards in 15A NCAC 02L, including rendering the groundwater unsuitable for its intended best use after completion of the rehabilitation. A written request for approval of a noncontinuous chemical treatment shall be submitted to the Director and shall include the following information:

(1) a demonstration of non-toxicity, such as ANSI or NSF Standard certification or EPA studies;

(2) the general procedures for the rehabilitation, including the amount of product to be used per unit volume of the well;
(3) a demonstration that, after rehabilitation is completed, the water within the well will meet 15A NCAC 02L groundwater standards;
(4) a description of the dosing frequency; and
(5) after submittal of request, any other information necessary for the Department to ensure compliance with G.S. 87-84.

*History Note:* *Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009, August 1, 2002; April 1, 2001; December 1, 1992; September 1, 1984;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0113 ABANDONMENT OF WELLS**

(a) A well that is temporarily removed from service shall be temporarily abandoned in accordance with the following procedures:
(1) The well shall be sealed with a water-tight cap or well seal, as defined in G.S. 87-85(16), compatible with the casing and installed so that it cannot be removed without the use of hand tools or power tools.
(2) The well shall be maintained whereby it is not a source or channel of contamination during temporary abandonment.

(b) Permanent abandonment of water supply wells other than bored or hand dug wells shall be performed in accordance with the following procedures:
(1) All casing and screen materials may be removed prior to initiation of abandonment procedures if such removal will not cause or contribute to contamination of the groundwaters.
(2) The entire depth of the well shall be sounded before it is sealed to ensure freedom from obstructions that may interfere with sealing operations.
(3) Except in the case of temporary wells and monitoring wells, the well shall be disinfected in accordance with Rule .0111(b)(1)(A) through .0111(b)(1)(C) of this Section.
(4) In the case of gravel-packed wells in which the casing and screens have not been removed, neat-cement or bentonite slurry grout shall be injected into the well, completely filling it from the bottom of the casing to the top.
(5) Wells constructed in unconsolidated formations shall be completely filled with grout by introducing it through a pipe extending to the bottom of the well that can be raised as the well is filled.
(6) Wells constructed in consolidated rock formations or that penetrate zones of consolidated rock may be filled with grout, sand, gravel or drill cuttings within the zones of consolidated rock. The top of any sand, gravel or cutting fill shall terminate at least 10 feet below the top of the consolidated rock or five feet below the bottom of casing. Grout shall be placed beginning 10 feet below the top of the consolidated rock or five feet below the bottom of casing in a manner to ensure complete filling of the casing, and extend up to the land surface. For any well in which the depth of casing or the depth of the bedrock is not known or cannot be confirmed, the entire length of the well shall be filled with grout up to the land surface.

(c) For bored wells or hand dug water supply wells constructed into unconsolidated material:
(1) The well shall be disinfected in accordance with Rule .0111(b)(1)(A) through .0111(b)(1)(C) of this Section.
(2) All plumbing or piping in the well and any other obstructions inside the well shall be removed from the well.
(3) The uppermost three feet of well casing shall be removed from the well.
(4) All soil or other subsurface material present down to the top of the remaining well casing shall be removed, including the material extending 12 inches or greater outside of the well casing;
(5) The well shall be filled to the top of the remaining casing with grout, dry clay, or material excavated during construction of the well. If dry clay or material excavated during construction of the well is used, it shall be emplaced in lifts no more than five feet thick, each compacted in place prior to emplacement of the next lift.

(6) A six-inch thick concrete grout plug shall be placed on top of the remaining casing such that it covers the entire excavated area above the top of the casing, including the area extending 12 inches or greater outside the well casing.

(7) The remainder of the well above the concrete plug shall be filled with grout or soil.

(d) All wells other than water supply wells, including temporary wells, monitoring wells, or test borings:

(1) less than 20 feet in depth that do not penetrate the water table shall be abandoned by filling the entire well up to land surface with grout, dry clay, or material excavated during drilling of the well and then compacted in place;

(2) greater than 20 feet in depth or that penetrate the water table shall be abandoned by completely filling with a bentonite or cement - type grout; and

(3) constructed in consolidated rock formations or that penetrate zones of consolidated rock may be filled with grout, sand, gravel, or drill cuttings within the zones of consolidated rock. The top of any sand, gravel or cutting fill shall terminate 10 feet or greater below the top of the consolidated rock or five feet below the bottom of the casing. Grout shall be placed beginning 10 feet below the top of the consolidated rock or five feet below the bottom of the casing in a manner to ensure complete filling of the casing and shall extend up to the land surface. For any well in which the depth of the casing or the depth of the bedrock is not known or cannot be confirmed, the entire length of the well shall be filled with grout up to the land surface.

(e) Any well that acts as a source or channel of contamination shall be repaired or permanently abandoned within 30 days of receipt of notice from the Department.

(f) All wells shall be permanently abandoned in which the casing has not been installed or from which the casing has been removed, prior to removing drilling equipment from the site.

(g) The well owner is responsible for permanent abandonment of a well except that:

(1) the well contractor is responsible for well abandonment if abandonment is required because the well contractor improperly locates, constructs, repairs or completes the well;

(2) the person who installs, repairs or removes the well pump is responsible for well abandonment if that abandonment is required because of improper well pump installation, repair or removal; or

(3) the well contractor (or individual) who conducts a test boring is responsible for its abandonment at the time the test boring is completed.

*History Note:* *Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009; April 1, 2001; December 1, 1992; September 1, 1984; April 20, 1978;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0114 DATA AND RECORDS REQUIRED**

Reports.

(1) A person completing or abandoning a well, including wells installed using direct push technology (DPT)(e.g., Geoprobe®), shall submit to the Division a record of the construction, on form GW-1, or abandonment, on form GW-30. For water supply wells, a copy of each completion or abandonment record shall also be submitted to the health department responsible for the county in which the well is located. The record shall be on forms provided by the Division and shall include:

(A) a certification that construction or abandonment was completed as required by this Section;

(B) the owner's name and address;

(C) the latitude and longitude of the well with a position accuracy of 100 feet or less;

(D) the diameter, depth, and yield of the well;

(E) the chloride concentration for wells installed in the area delineated in Rule .0107(f)(8) of this Section; and

(F) after submittal of form, any other information necessary as requested by the Department to ensure compliance with G.S. 87-84.

(2) The certified record of completion or abandonment shall be submitted within a period of thirty days after completion or abandonment. For multiple DPT/Geoprobe® wells having the same construction, only one GW-1 or GW-30 is required to be submitted if the total number of wells is indicated on the form.

(3) Furnishing of records to any person or agency other than the Division shall not constitute compliance with the reporting requirement and shall not relieve the well contractor of his or her reporting requirement to the Division.

*History Note:* *Authority G.S. 87-87; 87-88;*
*Eff. February 1, 1976;*
*Amended Eff. September 1, 2009; April 1, 2001; December 1, 1992; September 1, 1984; April 20, 1978;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0115 DIAGRAMS AND FORMS**

*History Note:* *Authority G.S. 87-87;*
*Eff. February 1, 1976;*
*Amended Eff. April 20, 1978;*
*Repealed Eff. September 1, 1984.*

**15A NCAC 02C .0116 DESIGNATED AREAS: WATER SUPPLY WELLS CASED TO LESS THAN 20 FEET**

(a) If the best or only source of potable water exists between 10 and 20 feet below the surface of the land, water supply wells may be cased to a depth less than 20 feet in the following areas:

(1) in Currituck County in an area between the sound and a line beginning at the end of SR 1130 near Currituck Sound, thence north to the end of SR 1133, thence north to the end of NC 136 at the intersection with the sound;
(2) on the barrier island from the Virginia state line, south to Ocracoke Inlet;
(3) all areas lying between the Intracoastal Waterway and the ocean from New River Inlet south to New Topsail Inlet; and
(4) all areas lying between the Intracoastal Waterway and the ocean from the Cape Fear River south to the South Carolina line.

(b) Pursuant to Rule .0118 of this Section, water supply wells may be cased to a depth less than 20 feet, if:

(1) the only or best source of drinking water in the area exists between a depth of 10 and 20 feet below the surface of the land; and
(2) using this source of water in the area is in the best interest of the public.

(c) In all other areas, the source of water shall be at least 20 feet below land surface. However, when adequate quantities of potable water cannot be obtained below a depth of 20 feet, the source of water may be obtained from unconsolidated rock formations at depths less than 20 feet provided that:

(1) adequate quantities of water of acceptable quality for the intended use is not available to a minimum depth of 50 feet can be shown to exist;
(2) the proposed source of water is the maximum feasible depth above 20 feet, but in no case less than 10 feet; and
(3) the regional office of the Department is notified prior to the construction of a well obtaining water from a depth between 10 and 20 feet below land surface.

*History Note:* *Authority G.S. 87-87;*
*Eff. April 20, 1978;*
*Amended Eff. September 1, 2009; December 1, 1992; July 1, 1988; September 1, 1984;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0117 DESIGNATED AREAS: WATER SUPPLY WELLS CASED TO MINIMUM DEPTH OF 43 FEET**

Water supply wells constructed in the following areas or within 400 feet of the following areas shall be cased to a minimum depth of 43 feet and grouted to a depth of 20 feet:

(1) Anson County generally west of a line beginning at the intersection of the runs of the Pee Dee River and Buffalo Creek, thence generally northeast to SR 1627, thence generally south along SR 1627 to the intersection with SR 1632, thence generally west along SR 1632 to the intersection with US 52, thence generally south along US 52 to the intersection with SR 1418, thence generally

southwest along SR 1418 to the intersection of NC 218, thence south along NC 218 to the intersection with US 74, thence generally west along US 74 to the intersection of SR 1251, thence generally southwest along SR 1251 to the intersection with SR 1240, thence generally southeast along SR 1240 to the intersection with SR 1252, thence generally south along SR 1252 to the intersection with SR 1003, thence generally west along SR 1003 to the Union County line;

(2) Cabarrus County generally east of a line beginning at the intersection of SR 1113 and the Union County line, thence generally northeast along SR 1113 to the intersection with SR 1114, thence generally east along SR 1114 to the Stanly County line, thence generally northeast along the county line to the intersection with SR 1100, thence generally northeast along SR 1100 to the intersection of with SR 2622, thence generally southeast along SR 2622 to the intersection with SR 2617, thence generally northeast along SR 2617 to the intersection with SR 2611, thence generally north along SR 2611 to the intersection with NC 73, thence generally east along NC 73 to the intersection with SR 2453, thence generally northeast along SR 2453 to the intersection with SR 2444, thence generally northeast along SR 2444 to the Rowan County line;

(3) Davidson County generally east of a line starting at the intersection of the runs of Abbotts Creek and the Yadkin River in High Rock Lake, thence generally north along Abbotts Creek to NC 8 bridge, thence generally north along NC 8 to the intersection with Interstate 85, thence generally northeast along Interstate 85 to the intersection with US 64, thence generally southeast along US 64 to the Randolph County line;

(4) Montgomery County generally west of a line beginning at the intersection of SR 1134 with the Randolph County line, thence generally south along SR 1134 to the intersection with SR 1303, thence generally south along SR 1303 to the intersection with NC 109, thence generally southeast along NC 109 to the intersection with SR 1150, thence generally south along SR 1150 to the intersection with NC 73, thence generally southeast along NC 73 to the intersection with SR 1227, thence generally east along SR 1227 to the intersection with SR 1130, thence generally northeast along SR 1130 to the intersection with SR 1132, thence generally southeast along SR 1132 to the intersection with SR 1174, thence generally east along SR 1174 to the intersection with NC 109, thence generally north along NC 109 to the intersection with SR 1546, generally southeast along SR 1546 to the intersection of SR 1543, thence generally south along SR 1543 to the intersection with NC 731, thence generally west along NC 731 to the intersection with SR 1118, thence generally southwest along SR 1118 to the intersection with SR 1116, thence generally west along SR 1116 to the intersection with NC 109, thence generally south along NC 109 to the intersection with the Richmond County line;

(5) Randolph County generally west of a line beginning at the intersection of US 64 with the Davidson County line, thence generally east along US 64 to the intersection with NC 49, thence generally southwest along NC 49 to the intersection with SR 1107, thence generally south along SR 1107 to the intersection with SR 1105, thence southeast along SR 1105 to the intersection with the Montgomery County line;

(6) Rowan County generally east of a line beginning at the intersection of SR 2352 with the Cabarrus County line, thence generally northeast along SR 2352 to the intersection with SR 2353, thence generally north along SR 2353 to the intersection with SR 2259, thence generally northeast along SR 2259 to the intersection with SR 2142, thence north along SR 2142 to the intersection with SR 2162, thence generally northeast along SR 2162 to the intersection with the run of the Yadkin River in High Rock Lake;

(7) Union County generally east of a line beginning at the intersection of SR 1117 with the South Carolina-North Carolina State line, thence generally north along SR 1117 to the intersection with SR 1111, thence generally northwest along SR 1111 to the intersection with NC 75, thence generally northwest along NC 75 to the intersection with NC 16, thence generally north along NC 16 to the intersection with SR 1008, thence generally northeast along SR 1008 to the intersection with SR 1520, thence generally northeast along SR 1520 to the intersection with NC 218, thence generally east along NC 218 to the intersection with US 601, thence generally north along US 601 to the intersection with SR 1600, thence generally northeast along SR 1600 to the intersection with the Cabarrus County line; and

(8) Stanly County -- all.

*History Note:* *Authority G.S. 87-87; S.L. 2018-65*

*Eff. April 20, 1978;*
*Amended Eff. September 1, 2009, April 1, 2001;*
*Readopted Eff. June 15, 2020.*

**15A NCAC 02C .0118 VARIANCE**

(a) The Secretary may grant a variance from any construction standard under the rules of this Section, as set forth in Rule .0119 of this Section. Any variance request shall be submitted using the official form approved the Division as set forth in Paragraph (b) of this Rule and may be granted by the Secretary to the person responsible for the construction of the well for which the variance is sought, if:

(1) the use of the well will not endanger human health and welfare or the groundwaters; and
(2) construction in accordance with the standards is not technically feasible in such a manner as to afford a reasonable water supply at a reasonable cost.

(b) The variance request application form shall be submitted to the Division and shall include the following:

(1) the owner's name, mailing address, and Email address;
(2) the owner's telephone number(s);
(3) the physical location of the well site;
(4) the well contractor's name and State certification number;
(5) the well contractor's mailing address and Email address;
(6) the well contractor's telephone number(s);
(7) a map of the site, to scale, showing the locations of all existing and proposed well(s) in relation to:
    (A) road names and property boundaries;
    (B) buildings and structures;
    (C) other wells;
    (D) surface water bodies; and
    (E) known sources of contamination;
(8) the reason for the variance request;
(9) a construction diagram of the proposed well(s) including specifications describing all atypical materials or methods to be used and means for assuring the integrity and quality of the finished well(s);
(10) a copy of the local well application and permit, if applicable;
(11) the signatures of the well contractor and well owner(s); and
(12) after submittal of form, any other information necessary as requested by the Department to ensure compliance with G.S. 87-84.

(c) The Secretary may impose such conditions on a variance or the use of a well for which a variance is granted and is necessary to ensure compliance with G.S. 87-84. The facts supporting any variance under this Rule shall be in writing and made part of the variance.

(d) The Secretary shall respond in writing to a request for a variance within 30 days after the receipt of the variance request.

(e) A variance applicant who is dissatisfied with the decision of the Secretary may commence a contested case by filing a petition under G.S. 150B-23 within 60 days after receipt of the decision.

*History Note:* *Authority G.S. 87-84; 87-87; 87-88; 143-215.3(a)(4);*
*Eff. April 20, 1978;*
*Amended Eff. September 1, 2009; April 1, 2001; December 1, 1992; September 1, 1988; September 1, 1984;*
*Readopted Eff. September 1, 2019.*

**15A NCAC 02C .0119 DELEGATION**

(a) The Secretary is delegated the authority to grant permission for well construction under G.S. 87-87.

(b) The Secretary is delegated the authority to give notices and sign orders for violations under G.S. 87-91.

(c) The Secretary may grant a variance from any construction standard, or the approval of alternate construction methods or materials, specified under Rule .0118 of this Section.

*History Note:* *Authority G.S. 143-215.3(a)(4);*
*Eff. March 1, 1985;*
*Amended Eff. October 1, 2009; December 1, 1992;*
*Readopted Eff. September 1, 2019.*

## SECTION .0300 - PERMITTING AND INSPECTION OF PRIVATE DRINKING WATER WELLS

### 15A NCAC 02C .0301 SCOPE AND PURPOSE

(a) The purpose of the rules of this Section is to set out standards for permitting and inspection of private drinking water wells as defined in G.S 87-85 by local health departments pursuant to G.S. 87-97.

(b) The rules of 15A NCAC 02C .0100 apply to private drinking water wells, as well as the following:

(1) Potential sources of groundwater contamination shall not be located closer to the well than the separation distances specified in 15A NCAC 02C .0107(a)(2) or .0107(a)(3), as applicable;

(2) In addition to the provisions in 15A NCAC 02C .0109, the builder, well contractor, pump installer, or homeowner, as applicable, shall provide assistance when necessary to gain access for inspection of the well, pumps, and pumping equipment; and

(3) In addition to the requirements of 15A NCAC 02C .0113, any well that acts as a source or channel of contamination shall be repaired or permanently abandoned within 30 days of receipt of notice from the local health department.

*History Note:* *Authority G.S. 87-87; 87-97;*
*Eff. July 1, 2008;*
*Readopted Eff. July 1, 2019.*

### 15A NCAC 02C .0302 DEFINITIONS

The definitions in G.S. 87-85 and 15A NCAC 02C .0102 apply throughout this Section. In addition, the following definitions apply throughout this Section:

(1) "Abandonment Permit" means a well abandonment permit issued by the local health department authorizing or allowing the permanent abandonment of any private drinking water well as defined in the rules of this Section.

(2) "Certificate of Completion" means a certification by the local health department that a private drinking water well has been constructed or repaired in compliance with the construction permit or repair permit.

(3) "Construction of wells" means the term as defined in G.S. 87-85.

(4) "Construction permit" means a well construction permit issued by the local health department authorizing or allowing the construction of any private drinking water well as defined in the rules of this Section.

(5) "Known source of release of contamination" means a location where any of the following activities, facilities, or conditions have been documented by the Department of Environmental Quality or a local health department:

(a) Groundwater contamination incidents arising from agricultural operations, including application of agricultural chemicals pursuant to 15A NCAC 02L;

(b) Groundwater contamination associated with the construction or operation of injection, monitoring, and other wells subject to permitting under the Well Construction Act and this Subchapter;

(c) Groundwater contamination associated with the operation of non- discharge, discharge (NPDES) facilities, land application of animal waste, and other activities subject to permitting under G.S. 143-215.1;

(d) Releases of hazardous waste or constituents that currently exceed the Groundwater Quality Standards listed in 15A NCAC 02L at facilities governed under G.S. 130A-294;

(e) Dry-Cleaning Solvent Cleanup sites regulated under G.S. 143-215.104(A);

(f) Pre-regulatory landfills and Inactive hazardous substance or waste disposal sites governed under the Inactive Hazardous Sites Act of 1987, G.S. 130A-310;

(g) Solid waste facilities subject to 15A NCAC 13B that have monitoring wells with exceedances of the Groundwater Protection Standards as defined in 15A NCAC 13B .1634(g) and (h);

(h) Releases of petroleum and hazardous substances subject to G.S. 143-215.75 through 215.98;
(i) Sites that fall within the authority of the Brownfields Property Reuse Act as defined by G.S. 130A, Article 9 Part 5;
(j) Contamination associated with pollution sources in soils or other sites known or suspected to have exceeded the Groundwater Quality Standards listed in 15A NCAC 02L; or
(k) Contamination known to the local health department through experience with the property, surrounding properties, or information provided by the applicant.

(7) "Local Health Department" means the authorized agent of the county or district health department or its successor.
(8) "Person" means the term as defined in G.S. 87-85.
(9) "Plat" means a property survey prepared by a registered land surveyor, drawn to a scale of one inch equals no more than 60 feet, that includes: the specific location of all structures and proposed structures and appurtenances, including decks, porches, pools, driveways, out buildings, existing and proposed wastewater systems, existing and proposed wells, springs, water lines, surface waters or designated wetlands, easements, including utility easements, and existing or proposed chemical or petroleum storage tanks above or below ground. "Plat" also means, for subdivision lots approved by the local planning authority and recorded with the county register of deeds, a copy of the recorded subdivisions plat that is accompanied by a site plan that is drawn to scale.
(10) "Pumps" and "pumping equipment" means the terms as defined in G.S. 87-85.
(11) "Repair" means the term as defined in G.S. 87-85.
(12) "Repair permit" means a well repair permit issued by the local health department authorizing or allowing the repair of any private drinking water well as defined in the rules of this Section.
(13) "Site plan" means a drawing not necessarily drawn to scale that shows the existing and proposed property lines with dimensions, and the specific location of all structures and proposed structures and appurtenances, including decks, porches, pools, driveways, out buildings, existing and proposed wastewater systems, existing and proposed wells, springs, water lines, surface waters or designated wetlands, easements, including utility easements, and existing or proposed chemical or petroleum storage tanks above or below ground.
(14) "Water supply system" means pump and pipe used in connection with or pertaining to the operation of a private drinking water well including pumps, distribution service piping, pressure tanks, and fittings.
(15) "Well contractor activity" has the same meaning as in G.S. 87-98.2(6).
(16) "Well seal" means the term as defined in G.S. 87-85.

*History Note:* *Authority G.S. 87-87; 87-97;*
*Eff. July 1, 2008;*
*Readopted Eff. July 1, 2019.*

**15A NCAC 02C .0303 APPLICATION FOR PERMIT**

A property owner or the property owner's agent shall submit an application for a permit to construct, repair, or abandon a private drinking water well to the local health department for the county where the well is located or will be located. The application shall include:

(1) The name, the address, and the phone number of the proposed well property owner or agent;
(2) The signature of owner or agent;
(3) The address and the parcel identification number of the property where the proposed well is to be located;
(4) A plat or site plan;
(5) The intended use(s) of the property;
(6) Other information deemed necessary by the local health department to determine the location of the property and any site characteristics, such as existing or permitted sewage disposal systems, easements or rights of way, existing wells or springs, surface water or designated wetlands, chemical or petroleum storage tanks, landfills, waste storage, known source of release of contamination, and any other characteristics or activities on the property or adjacent properties that could impact groundwater quality or suitability of the site for well construction;

(7) Any current or pending restrictions regarding groundwater use as specified in G.S. 87-88(a); and
(8) Any variances regarding well construction or location issued under 15A NCAC 02C .0118.

*History Note:* *Authority G.S. 87-87; 87-97;*
*Eff. July 1, 2008;*
*Readopted Eff. July 1, 2019.*

**15A NCAC 02C .0304 PERMITTING**

(a) No person shall construct a private drinking water well without first obtaining a well construction permit from the local health department. No person shall repair a private drinking water well without first obtaining a well repair permit, except a well repair permit is not required for maintenance or pump repair or replacement. Disinfection in accordance with 15A NCAC 02C .0111 is a maintenance activity that does not require a repair permit. No person shall permanently abandon a private drinking water well without first obtaining a well abandonment permit from the local health department.

(b) Before issuing a well construction permit, the local health department shall conduct a field investigation to evaluate the topography, landscape position, available space, and potential sources of groundwater contamination on or around the site where a private drinking water well is to be located. Furthermore, the Department shall conduct a search of DEQ's published inventories to determine whether the proposed well site is located within 1,000 feet of a known source of release of contamination. The local health department shall issue a private water well construction permit after determining the site can be permitted for a well meeting the rules of this Section. The local health department shall not issue a construction permit for a well in violation of restrictions regarding groundwater use established pursuant to G.S. 87-88(a). The construction permit shall include a site plan showing the location of potential sources of contamination and area(s) suitable for well construction. The construction permit shall reference documentation from DEQ's published inventories of known releases of contamination within 1,000 feet of the proposed well site, and any known risk of constructing the well related to those findings. The local health department shall issue a written notice of denial of a construction permit if it determines a private drinking water well cannot be constructed in compliance with the rules of this Section. The notice of denial shall include reference to specific laws or rules that cannot be met and shall be provided to the applicant.

(c) Any well permit shall be valid for a period of five years; however, the local health department may revoke a permit at any time if it determines that there has been a material change in any fact or circumstance upon which the permit shall not be issued. The validity of a well construction permit or a well repair permit is not affected by a change in ownership of the site where a private drinking water well is proposed to be located if the proposed well can still be constructed or repaired in the permitted area and in accordance with this Section and 15A NCAC 02C .0100. The local health department may suspend or revoke any permits issued upon a determination that the rules of this Section have been violated.

(d) If there is an improperly abandoned well(s) on the site, the construction permit shall be conditioned upon repair or abandonment of those improperly abandoned well(s) in accordance with the rules of 15A NCAC 02C .0100.

*History Note:* *Authority G.S. 87-87; 87-97;*
*Eff. July 1, 2008;*
*Readopted Eff. July 1, 2019.*

**15A NCAC 02C .0305 GROUT INSPECTION AND CERTIFICATION**

(a) The well contractor shall contact the local health department to schedule a grout inspection before grouting a private drinking water well and include the location, permit number, and anticipated time for grouting each private drinking water well. The local health department shall schedule the appointment by the end of the business day before the grouting is to occur except where the local health department has made provisions for scheduling inspections at night or on the same day of the inspection.

(b) Upon completion of a grout inspection, the local health department shall provide a written certification on the well permit that a grout inspection was completed and that the grouting is in compliance with the rules of 15A NCAC 02C .0100. When a local health department is unable to conduct a grout inspection within one hour of the scheduled time, the well contractor may grout a well without a grout inspection by the local health department. The well contractor shall provide a written certification to the local health department that the well has been grouted in compliance with the rules of 15A NCAC 02C .0100. A completed Well Construction Record form GW-1 stating the well was grouted in compliance with the rules of this Section shall serve as the well contractor's grout certification.

For purposes of issuing a Certificate of Completion, the well contractor's grout certification shall be accepted by the local health department as evidence the grout complies with the rules of this Section if the local health department:

(1) was contacted by the well contractor to schedule a grout inspection;
(2) was unable to inspect the grouting of the well within one hour following the scheduled time; and
(3) upon final inspection, finds no evidence to indicate the well grout does not comply with the rules of this Section.

*History Note:* *Authority G.S. 87-87; 87-97;*
*Eff. July 1, 2008;*
*Readopted Eff. July 1, 2019.*

**15A NCAC 02C .0306 WELL COMPLETION AND CERTIFICATION**

(a) After receiving a permit to construct a private drinking water well, the property owner or agent shall notify the health department prior to well construction if any of the following occur:

(1) The separation criteria specified in 15A NCAC 02C .0107 cannot be met;
(2) The residence or other structure is located other than indicated on the permit;
(3) The use of the structure is changed from the use specified on the permit;
(4) The septic system needs to be changed from the location indicated on the permit;
(5) Landscaping changes have been made that may affect the integrity of the well;
(6) There are current or pending restrictions regarding groundwater use as specified in G.S. 87-88(a);
(7) The water source for any well intended for domestic use is adjacent to any water-bearing zone suspected or known to be contaminated; or
(8) Any other changes occur in the information provided in the application for the well permit.

(b) The well contractor shall maintain a copy of the well construction permit, repair permit, or abandonment permit on the job site at all times during the construction, repair, or abandonment of the well. The well contractor shall meet all the conditions of the permit.

(c) The well contractor shall submit a copy of Well Construction Record (GW-1) to the local health department. Upon completion of construction or repair of a private drinking water well for which a permit is required, the local health department shall inspect the well and issue a Certificate of Completion that includes an "as built" drawing. Prior to the issuance of a Certificate of Completion, the local health department shall verify that the well was constructed in the designated area and according to the well construction permit and the rules of this Subchapter. The local health department shall inspect the grout around the casing for any settling, inspect the well head after the well seal is in place, and verify that a Well Construction Record has been received from the certified well contractor. No person shall place a private drinking water well into service without first having obtained a Certificate of Completion.

*History Note:* *Authority G.S. 87-87; 87-97;*
*Eff. July 1, 2008;*
*Readopted Eff. July 1, 2019.*

**15A NCAC 02C .0307 WELL DATA AND RECORDS**

(a) Any person completing, abandoning, or repairing any well shall submit a record of the construction, abandonment, or repair to the local health department and the Division of Water Resources within 30 days of completion of construction, abandonment, or repair. The record shall be on a form provided by the Department of Environmental Quality.

(b) The local health department shall maintain a registry of all permitted private drinking water wells, specifying the well location and the water quality test results until the well is permanently abandoned in accordance with this Subchapter.

*History Note:* *Authority G.S. 87-87; 87-97;*
*Eff. July 1, 2008;*
*Readopted Eff. July 1, 2019.*

**15A NCAC 02C .0308 APPEAL PROCEDURE**

Appeals concerning permit decisions or actions by the local health department to enforce the rules of this Section shall be conducted according to the procedures established in G.S. 150B, the Administrative Procedure Act.

*History Note:* *Authority G.S. 87-87;*
*Eff. July 1, 2008;*
*Readopted Eff. July 1, 2019.*

**15A NCAC 02C .0309 WELL ABANDONMENT AND CERTIFICATION**

(a) The applicant or well contractor shall contact the local health department to provide notification of intent to permanently abandon a private drinking water well, and include the location, permit number, and anticipated time for abandonment of each private drinking water well. If it is conducting an inspection, the local health department shall schedule the appointment by the end of the business day before the abandonment is to occur except where the local health department has made provisions for scheduling inspections at night or on the same day as the inspection.

(b) Upon notification from the well contractor, the local health department may opt to inspect the well abandonment process. The local health department shall inform the well contractor of its availability and intention to inspect the well abandonment after notification pursuant to Paragraph (a) of this Rule. When a local health department is unable to conduct the abandonment inspection within one hour of the scheduled time, the well contractor may abandon the well without an inspection by the local health department.

(c) Upon completion of a permanent well abandonment, the local health department shall provide a written certification on the well abandonment permit, or other local health department form, that a well abandonment inspection was completed and that the abandonment is in compliance with the rules of 15A NCAC 02C .0100. When the local health department opts to not inspect the permanent abandonment process, the well contractor shall provide written certification to the local health department that the well has been abandoned in compliance with the rules of 15A NCAC 02C .0100. A completed Well Abandonment Record form GW-30 stating the well was abandoned in compliance with the rules of this Section shall serve as the well contractor's abandonment certification.

*History Note:* *Authority G.S. 87-87;*
*Eff. July 1, 2019.*