

**REGULATIONS GOVERNING
PERMITTING, CONSTRUCTION, REPAIR, INSPECTION, SAMPLING
AND ABANDONMENT OF
PRIVATE AND SEMI-PUBLIC WATER SUPPLY WELLS
IN JOHNSTON COUNTY**

**JOHNSTON COUNTY PUBLIC HEALTH DEPARTMENT
SMITHFIELD, NORTH CAROLINA**

FOREWORD

The Johnston County Board of Health first enacted local well rules in the early 1970's. The Johnston County Board of Health was one of the first Boards of Health to enact such rules to protect the health of the citizens. The first well rule had two primary purposes; first to provide a safe private drinking water supply and second was to protect the ground water. The scope of the initial well rules was siting, permitting and inspections of private wells. During the subsequent years the local rule was expanded to include semi-public wells serving up to fourteen service connections but less than twenty-five people, require a compliance bacteriological sample, include irrigation wells and establish certain construction requirements not in the Division of Water Quality construction standards including proper well head assembly. Although state standard for well construction had been established through the Division of Water Quality, there was no active state program from the state public health authorities enforcing the well standards or quality issues for private wells.

Johnston County Health Department was one of the leaders in developing local well rules and had a huge input in the development of the state mandated well rules that become effective on July 1, 2008. The state mandated rules address many issues already in our local rules including site visits, locating proposed well sites, permitting, and certification of well drillers, inspections and sampling. However our current local well rules goes beyond the scope of the state rules by addressing issues such as small semi-public water systems, requiring a negative compliance sample for bacteria before approving the well, more stringent grouting requirements, approval of the use of continual disinfection units and property line setbacks. These enforcement issues have been implemented over the past years and have been a benefit to the public health and points to the need for the more stringent local rules. These rules, as adopted, provide for site visits, permitting, inspections of the well construction process, require the use of materials consistent with state standards and sampling that would help assure that the citizens of Johnston County have a higher standard of protection of their groundwater in the future.

WELL CONSTRUCTION STANDARDS

SECTION I. GENERAL PROVISIONS

- a) **Authorization**-The Johnston County Board of Health is authorized under the provisions of Chapter 130A-39 of the General Statutes of North Carolina to adopt appropriate rules for the protection of the public health.
- b) **Purpose**-Consistent with the responsibility to protect and advance the public health, it is declared to be policy of the Johnston County Board of Health to require that the location, construction, repair and abandonment of water supply wells conform to such reasonable standards and requirements as may be necessary to protect the public health and groundwater resources.
- c) **Scope**-No person shall construct, or abandon, or cause to be constructed, or abandoned any well contrary to the provisions of these regulations and standards.

- 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 groundwater resources shall prevail within the jurisdiction of such agency or municipality over standards established by these regulations.
- e) **Penalties**-Any person, who willfully violates any provision of these regulations, or any order issued pursuant thereto, shall be guilty of a misdemeanor. As provided by G.S. 130A-18, the Health Director may also institute an action in the Johnston County Superior Court for injunctive relief. All other remedies provided by state law shall be available to the Health Director.
- f) **Inspections**-Prior to use, all newly constructed wells, shall be permitted, inspected, tested and found free of coliform bacteria. Repairs to all wells, which necessitates the breaking of the well seal, except for routine maintenance shall be inspected prior to use. The inspection shall be made by the Health Director, as soon as practical, after being notified that such installations or repairs have been made. Emergency repairs that are made outside normal working hours of the Health Director, i.e., nights, weekends and holidays shall be inspected on the next regular working day of the Health Department or as soon as practical.

SECTION II. DEFINITIONS

- a) **Abandon** means to discontinue the use of and to seal the well according to the requirements of Rule .0113, 15-NCAC, Subchapter 2C, North Carolina Division of Environmental Management.
- b) **Abandoned well** means a well whose use or construction has been discontinued, or which is in such a state or disrepair that continued use for obtaining groundwater or other useful purpose is impractical.
 - 1) **Temporarily abandoned well** means any usable well whose use has been temporarily discontinued because of well or pump maintenance problems and newly constructed well not yet put into service.
 - 2) **Permanently abandoned well** means any well removed from or not yet put into service; or whose use is impractical because of faulty construction, location, water quality, insufficient yield, unserviceable casing and screen; or which has been removed from service because it no longer serves its intended use.
- c) **Access port** means an opening in the well casing or well-head installed for the purpose of determining water level in the well, venting and chlorination.
- d) **Addition** means any structure, whether free standing or attached to another (including swimming pools, oil tanks, signs, etc.) which is constructed, altered or placed on property that contains one or more wells. This would not include replacement of existing equipment within the existing footprint of a structure and addresses only those situations for which a building permit is required.
- e) **Agent** means any person who by mutual and legal agreement with a well owner has

authority to act in the owner's behalf in executing applications for permits.

- f) **ASTM** means the American Society for Testing and Materials.
- g) **Aquifer** means a geological formation, group of formations, or part of a formation that will yield usable quantities of water to wells.
- h) **Board of Health** means the Johnston County Board of Health or its official representatives.
- i) **Casing** means pipe or tubing constructed of specified materials and having specified dimensions and weights, 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 undesirable water.
- j) **"Certificate of Completion"** means a certification by the Johnston County Health Director that a private drinking water well has been constructed or repaired in compliance with the construction permit or repair permit and compliance sample.
- k) **"Certified laboratory"** means the North Carolina State Laboratory of Public Health certified by the US Environmental Protection Agency or a laboratory certified by the Certification Section of the North Carolina Public Health Laboratory pursuant to 10A NCAC 42D to perform tests to determine the presence of coliform bacteria or the chemical constituents to be tested.
- l) **"Coliform bacteria"** or "total coliform" means aerobic or facultative anaerobic, gram negative, non-spore forming, rod shaped bacteria included in the genera Klebsiella, Enterobacter, Escherichia and Citrobacteria. Coliform bacteria originate in soil, vegetation or the intestinal tract of warm-blooded animals. The presences of coliform bacteria in a water sample indicate the presence of a pathway for bacteria and possibly pathogens to gain entry into a water supply system.
- m) **Consolidated Rock** means rock that is firm and coherent, solidified or cemented and that has not been decomposed by weathering. Examples include but are not limited to granite, gneiss, limestone, slate or sandstone.
- n) **Construction of wells** includes all acts necessary to construct wells for any intended use, including the location and excavation of the well, placement of casings, grouting, screens and fittings development and testing.
- o) **Contamination** means the presence of any foreign substance (organic, inorganic, radiological or biological) in water which tends to degrade its quality so as to constitute a health hazard.
- p) **Domestic use** means use of water for drinking, bathing, or others household purposes.
- q) **Grout** shall mean and include the following:

- 1) **Neat Cement Grout** means 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 Bentonite clay may be used to improve flow and reduce shrinkage.
 - 2) **Sand Cement Grout** means a mixture of not more than two parts sand and not more than six gallons of clear potable water per 94 pound bag of Portland cement.
 - 3) **Concrete Grout** means a mixture of not more than two parts gravel 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 must pass through a one-half inch mesh screen.
 - 4) **Gravel cement grout, sand cement grout or rock cutting cement grout** means a mixture of not more than two parts gravel and sand or rock cuttings to one part cement and not more than six gallons of clear, potable water per 94 pound bag of Portland cement.
 - 5) **Bentonite Grout** means a mixture of no less than 1 ½ pounds of commercial granulated bentonite with sufficient clean potable water to produce a grout mixture weighing no less than 9.4 pounds per gallon of mixture.
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- r) **Health Department** means the Johnston County Health Department, Environmental Health Section.
 - s) **Health Director** means the director of the Johnston County Health Department or his authorized representative.
 - t) **Health Department Representative** means an authorized agent of the Johnston County Health Department, Environmental Health Section.
 - u) **Liner pipe** means pipe that is installed inside a completed and cased well for the purpose of sealing off undesirable water or for repairing ruptured or punctured casing or screens.
 - v) **Non-potable Mineralized Water** means brackish, saline, or other water containing minerals of such quantity or type as to render the water unsafe, harmful, or generally unsuitable for domestic use.
 - w) **Owner** means any person who holds all or any of the ownership or property rights in the well being constructed. For purposes of these regulations, a well's construction on a parcel of land creates a presumption that the owner of the land also owns the well, in the absence of contrary agreement in writing.
 - x) **Permit** means a written permit issued by the Health Director authorizing or allowing the construction or repair of any well as defined in this ordinance.
 - y) **Person** means any individual, firm, partnership, association, public or private institution, municipality or political subdivision, governmental agency, or private or public corporation organized or existing under the laws of this state or any other state or country, or any group or combination of the above.

- z) **Plat** means a property survey prepared by a registered land surveyor, drawn to a scale of one inch equals no more than sixty feet, that includes: the specific location of all structures and proposed structures and appurtenances, including but not limited to 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.
- aa) **Polluted Water** means water containing organic or other contaminants of such type and quantity as to render it unsafe, harmful or unsuitable for human consumption.
- bb) **Private well water supply** means any well water supply furnishing water up to two (2) connections and is not a public water supply.
- cc) **Public Water System or Community Water System** means a system which provides water to the public for human consumption, and has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year.
- dd) **Semi-Public Supply** means a water supply that provides water for the purpose of human consumption, which serves from three to fourteen (3-14) connections and does not meet the definitions for a public water system.
- ee) **Repair** means work involved in deepening or changing depths, reaming, sealing, installing, perforating, screening or cleaning, acidizing or redeveloping a well, excavation, or any other work which results in breaking or opening the well sea, except for routine maintenance.
- ff) **Site** means the place where any facility, activity, or situation is physically located, including adjacent or nearby land used in connection with the facility, activity, or situation.
- gg) **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.
- hh) **Specific Capacity** means the yield of the well expressed in gallons per minute per foot of draw-down of the water level.
- ii) **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.
- jj) **Unconsolidated Rock Formation** means those rock formations that are not solid, e.g.,

sand, clay, shell, saprolite or decaying rock.

kk) **Water Supply** means any source of groundwater.

ll) **Water Supply System** means pump and pipe used in connection with or pertaining to the operation of a water well including pumps distribution service piping, pressure tanks and fittings.

mm) **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.

nn) **Well Capacity** means the maximum quantity of water that a well will yield continuously.

oo) **Well Driller, Driller, or Water-Well Contractor** means any person, firm or corporation engaged in the business of constructing a well.

pp) **Well-Head** means the upper terminal of the well including adaptors, ports, valves, seals, and other attachments.

qq) **Well Seal** means an approved arrangement or device used to cap a well or to establish and maintain a junction between the casing or curbing of a well and the piping or equipment installed therein, the purpose or function of which is to prevent pollutants from entering the well at the upper terminal.

rr) **Compliance Sample** means a sample collected by an authorized representative of the Johnston County Health Department, a Register Sanitarian, a certified well operator, or an authorized representative of a certified laboratory. Certified laboratories must be approved by the Certification Section of the North Carolina Public Health Laboratory for coliform bacteria.

ss) **Irrigation/Agricultural Well** means a well which is used exclusively for irrigation or agricultural purposes and not for human consumption.

tt) **Continuous Disinfection Device** means a device which uses chlorine, ultra-violet light or other agents to remove coliform bacteria from the drinking water supply.

SECTION III WELL DRILLER REGISTRATION

a) Every person, firm or corporation engaged in the business of using power machinery to drill, bore, core, or construct wells in Johnston County shall register annually with the Health Department.

- b) Registration shall be accomplished during the period from December 1 to December 31 during the year of registration or other such time the Health Department may determine.
- c) Registration shall be accomplished by completing and submitting to the Health Department a registration application form provided by the Health Department for this purpose.
- d) A copy of the well contractor's state certification for each person engaged in management or supervision of on-site activities shall accompany the application for registration. **History note: 15A NCAC 27.**
- e) Upon submitting a properly completed application form the applicant will be issued a certificate of registration.

SECTION IV APPLICATIONS AND PERMITS

- a) A complete application shall be submitted to the Johnston County Health Director by the owner or the owner's authorized agent who intends to construct a water supply well. The following information will be required:
 - 1. Names, mailing address and phone numbers of the proposed well owner and/or the authorized agent:
 - 2. Signature of the owner or agent:
 - 3. Address and parcel number of the property of where the proposed well is to be constructed:
 - 4. A plat or completed site plan as defined in these rules:
 - 5. Proposed use of the water supply well (domestic, irrigation, semi-public, agricultural):
 - 6. Other information as deemed necessary by the Johnston County Health Director to determine the location of the property to properly locate the well site:
 - 7. Any variances regarding well construction or location issued under 15A NCAC O2C.0118.
 - 8. All fees as approved by the Johnston County Board of Health and Board of Commissioners.
- b) It shall be unlawful for any person to construct a well in Johnston County without first obtaining a permit from the Health Director. The permit shall be obtained by the well owner or his authorized agent.
- c) The location of any private well or semi-public water supply in Johnston County shall be approved by the Health Director only after a member of the Environmental Health Division has made a detail site investigation to determine if the conditions of these

regulations can be met. No well construction activity can begin until a well permit has been issued. Any site for a public well water supply shall be approved by an authorized representative of the Division of Environmental Health, Public Water Section.

- d) The well contractor shall not commence any drilling activity until the well permit has been obtained. The driller shall maintain a copy of the permit on the job at all times during the construction of the well. The driller shall be responsible for assuring all required setbacks and separations are met. If the driller has any questions concerning the setting of the well, he shall call the health department prior to beginning construction.
- e) The Health Director is authorized to revoke any permits issued pursuant to these regulations upon the determination that these regulations are not being fully complied with.
- f) Unless otherwise specified in writing by the Johnston County Health Department, permits shall become invalid after sixty (60) months from the date of issuance if the construction has not been completed during that time period. When a permit has become invalid, the installation shall not be commenced or completed until a new permit has been obtained.
- g) The fee for a new well permit shall be established by the Board of Health and approved by the Board of County Commissioners and is payable to the Johnston County Health Department at the time the permit application is submitted.
- h) No residence, place of business or place of public assembly shall be occupied, nor shall any newly constructed well defined in these regulations be placed into use until the Johnston County Health Department has determined by inspection and required testing to demonstrate the absence of coliform bacteria; that the water supply well is in compliance with these regulations and all conditions prescribed by the well permit.

SECTION V **STANDARDS OF CONSTRUCTION**

a) Location

- 1) The well shall not be located in an area generally subject to flooding. Areas which have a propensity for flooding include those with concave slope, alluvial or colluvial soils, gullies, depressions, and drainage ways. The site shall be graded and sloped so that surface water is diverted away from the well.
- 2) The well shall be located at a site that permits access for maintenance, repair, treatment, testing and such other attention as may be necessary.
- 3) The minimum horizontal separation between a well and potential sources of groundwater contamination shall be as follows unless otherwise specified:
 - a. Septic tank, drainfield and designated repair area100 ft.
 - b. Other subsurface ground absorption waste disposal system100 ft.
 - c. Industrial or municipal sludge-spreading or wastewater-irrigation sites

-100 ft.
- d. Water-tight sewage or liquid-waste collection or transfer facility ...50 ft.
- e. Other sewage and liquid-water collection or transfer facility100 ft.
- f. Cesspools and privies100 ft.
- g. Animal feedlots or manure piles100 ft.
- h. Fertilizer, pesticide, herbicide or other chemical storage areas100 ft.
- i. Non-hazardous waste storage treatment or disposal lagoons100 ft.
- j. Sanitary landfills500 ft.
- k. Other non-hazardous solid waste landfills100 ft.
- l. Animal barns100 ft.
- m. Building Foundation50 ft.
- n. Surface water bodies50 ft.
- o. Chemical or petroleum fuel underground storage tanks regulated under 15A NCAC 2N
 - i. With secondary containment50 ft.
 - ii. Without secondary containment100 ft.
- p. Above ground Petroleum fuel tanks50 ft.
- q. All other potential sources of groundwater contamination.....100 ft.
- r. Property boundaries10 ft.
- s. Cemetery or burial plot50 ft.

4) For a well serving a single family dwelling where lot size or other fixed conditions preclude the separation distances specified in subparagraph (a) (3) of this section, the required separation shall be the maximum possible but shall in no case be less than the following:

- a. Septic tank and drainfield50 ft.
- b. Water-tight sewage or liquid-waste collection or transfer facility ...25 ft.
- c. Animal barns50 ft.

- d. Building foundations25 ft.
 - e. Cesspools and privies50 ft.
- 5) Actual separation distances must conform to the most stringent of applicable federal, state or local requirements.
 - 6) **Special Considerations:** When required horizontal distances cannot be made due to restrictions of space, lot size or other fixed conditions, the Health Director may require extending the casing and grouting to a minimum depth of 50 feet. This requirement will be necessary if the Health Director determines that the restrictions result in a topographical, geological or environmental condition that poses a threat to the groundwater. The installation of a liner and packer may be used in lieu of extending the casing and grouting.
 - 7) Well sites will be located using the best available information as provided by the property owner or his agent. The Health Department will not be responsible for improper location of wells due to erroneous information provided, mis-location by the well contractor, or quality or quantity of the water supply. Compliance with this regulation shall in no way be taken as a guarantee or warranty of the water supply system.
 - 8) After receiving a permit to construct a private drinking water well, the property owner or his agent shall notify the Johnston Health Director prior to well construction if any of the following occur:
 - a. The separation criteria specified in this section cannot be met;
 - b. The residence or other structure is located other than indicated on the permit;
 - c. The use of the structure is changed from the use specified on the permit;
 - d. The septic system needs to be changed from the location indicated on the permit;
 - e. Landscaping changes have been made that may affect the integrity of the well;
 - f. There are current or pending restrictions regarding groundwater use as specified in G.S. 87-88(a);
 - g. The water source for any well intended for domestic use is adjacent to any water-bearing zone suspected or known to be contaminated; or
 - h. Any other changes occur in the information provided in the application for the well permit.

b) Source of Water

1. The source of water for any well intended for domestic use shall **not** be from a water bearing zone or aquifer that is known to be contaminated or that contains non-potable mineralized water.
2. The source shall be at least 20 feet below the natural land surface.

c) Drilling fluids and additives

Drilling fluids and additives shall **not** contain organic or toxic substances and may be comprised only of the formational material encountered during drilling, potable water, or materials manufactured specifically for the purpose of borehole conditioning of water well construction.

d) Casing

Casing materials and construction shall be in accordance with Rule .0107 (d) 15ANCAC subchapter 2C of the North Carolina Division of Environmental Management and shall extend at least 12" above finished grade. In wells constructed to obtain water from consolidated rock, the casing shall be firmly seated at least five feet into the rock.

e) Grouting

1. Casing shall be grouted to a minimum depth of twenty (20) feet below land surface with a slab at least 4" thick at the ground surface extending at least two (2) feet in all directions.
2. For large diameter wells, commonly referred to as "bored" wells, cased with concrete pipe or ceramic tile, the following shall apply:
 - a. If the casing joints are not sealed, the construction shall be as follows:
 - 1) The diameter of the bore hole shall be at least six (6) inches larger than the outside diameter of the casing;
 - 2) The annular space around the casing shall be filled with a cement-type grout to a depth of at least twenty (20) feet;
 - 3) The annular space around the casing below the grout shall be filled with sand or gravel;
 - 4) The gravel-pack material shall be composed of quartz, granite, or similar rock material and shall be clean, rounded, uniform, water-washed and free from clay, silt, or other deleterious material;
 - 5) The gravel shall be adequately disinfected.
 - b. If the casing joints are sealed, the construction shall be as follows:
 - 1) The bore hole shall have a minimum diameter of six inches larger

that the outside diameter of the casing to a depth of at least twenty (20) feet below the land surface;

- 2) The annular space around the casing shall be filled with approved grout to a depth of twenty (20) feet below the land surface
3. Bentonite grout may be used in that portion of the bore hole (annular space) that is at least three feet below land surface. That portion of the bore hole above the bentonite grout shall be filled with concrete grout up to the land surface.
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 area 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 which can be raised as the grout is applied. The grout hose or pipe should remain submerged in grout during the entire operation.

c. **Other**

Grout may be emplaced in the annular space by gravity flow in such a way to ensure complete filling of the space to a minimum depth of 20 feet below land surface.

5. If an outer casing is installed, it shall be grouted by either the pumping or pressure method.
6. All grout mixtures shall be prepared prior to emplacement.
7. The well shall be grouted within five working days after the casing is set.
8. No additives which accelerate the process of hydration shall be used in grout for thermoplastic well casing.
9. Where grouting is required by the provisions of this section, the grout shall extend outward from the casing wall to a minimum thickness equal to either one-third (1/3) of the diameter of the outside dimension of the casing or two (2) inches, whichever is greater; excepting, however, that large diameter bored wells shall meet the requirement of Subparagraph (e) (2) of this rule.

f) **WELL DEVELOPMENT**

All water supply wells shall be properly developed by the well driller. Development shall include the removal of formation materials, mud, drilling fluids and additives.

g) WELL-HEAD COMPLETION

1. Every water supply well shall be equipped with an access port (vent pipe) and shall be installed and maintained in such a manner as to prevent entrance of water or foreign material.
2. Well Contractor Identification Plate.
 - a. An identification plate, showing the drilling contractor and registration number and the information specified in Part (g) (2) (e) of this section shall be installed on the well within 72 hours after completion of the drilling.
 - b. The identification plate shall be permanently attached to the well casing or enclosure floor around the casing where it is readily visible.
 - c. The identification plate shall be permanently attached to the well casing or enclosure floor around the casing where it is readily visible.
 - d. The identification plate shall not be removed from the well casing or enclosure floor by any person.
 - e. The identification plate shall be stamped with a permanent marking to show the:
 - i. total depth of the well;
 - ii. casing depth (ft.) And inside diameter (in.);
 - iii. yield in gallons per minute;
 - iv. static water level and date measured;
 - v. date well completed.
3. Pump Installer Identification Plate
 - a. An identification plate showing the well contractor and his individual certification number shall be installed on the well within seventy-two hours after completion of the pump installation.
 - b. The identification plate shall be constructed of a durable waterproof, rustproof, metal or other material approved as equivalent by the Department of Environment and Natural Resources, Division of Water Quality, Aquifer Protection Section.
 - 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 readily visible, easily readable, and in a manner that does not obscure the information on the identification plate.

When attaching the identification plate to the aboveground portion of the well casing, rivets, non-removable fasteners, or permanent type adhesive shall be used. Self-tapping screws shall not be used to attach the identification tag to the well casing.

- d. The identification plate shall not be removed by any person.
- e. The identification plate shall be stamped with a permanent legible marking to show the:
 - i. date the pump was installed
 - ii. the depth of the pump intake, and
 - iii. the horsepower rating of the pump.

SECTION VI WELL TESTS FOR YIELD AND CAPACITY

- a) Every new well constructed for use as a private water supply shall be tested for capacity by a method outlined in Rule .0110, 15A-NCAC, Subchapter 2C, North Carolina Division of Environmental Management.
- b) Well log results must be submitted to the Johnston County Health Department within five (5) days after completion of the test(s). The well log will consist of the following information:
 - 1) Depth of well;
 - 2) Depth of grout;
 - 3) Static water level;
 - 4) Depth of casing;
 - 5) Well diameter;
 - 6) Capacity of well (gallons per minute);
 - 7) Date Completed;
 - 8) Signature of well contractor.

SECTION VII WELL DISINFECTION

a) Chlorination

All wells and water supply systems shall be disinfected upon completion of construction, maintenance, repairs and pump installation.

1. Chlorine shall be placed in the well in sufficient quantities to produce a

chlorine residual of a least 100 mg/1 in the well.

2. The chlorine shall be placed in the well by one of the following methods or its equivalent:
 - a. Chlorine tablets may be dropped in the top of the well and allowed to settle to the bottom.
 - b. Chlorine 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.
 3. Agitate the water in the well to insure thorough dispersion of the chlorine.
 4. The well casing, pump column and any other equipment above the water level in the well shall be thoroughly rinsed with the chlorine solution as a part of the disinfecting process.
 5. The chlorine shall be dispersed throughout the water supply by running each tap or other fixtures until a chlorine odor is evident.
 6. The chlorine shall stand in the well and water supply system for a period of at least 24 hours.
 7. The well shall be pumped until the system is clear of the chlorine before the system is sampled or placed in use.
- b) Other materials and methods of disinfection may be used upon prior approval by the Health Director including the use of a continuous disinfection device.

SECTION VIII INSPECTIONS, WELL MAINTENANCE AND REPAIR

- a) No person shall place a newly constructed or repaired well into service until the Johnston County Health Director has made an inspection to determine compliance with these rules. The Johnston County Health Director will not issue a Certificate of Completion for newly constructed or repaired well until a compliance bacteriological sample has been collected, analyzed and demonstrates the absence of coliform bacteria.
- b) Every well shall be sealed or properly abandoned to prevent the possibility of a health or safety risk.
- c) When repairs are made to a well, the well-head and well seal shall be made to conform to existing standards. All materials used in the maintenance, replacement, or repair of any well shall meet the requirements for new installation.
- d) Broken, punctured or otherwise defective or unserviceable casings, screens, fixtures, seals, or any other parts of well-head shall be repaired or replaced as soon as possible unless the well is permanently abandoned.

- e) Repairs to wells completed with a buried seal (the well-head terminating below ground) 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 wedged over the existing casing with at least six inches of overlap.
 - 3. Cement grout shall be placed around the casing, extending from land surface to depth of at least one foot below the joint formed by the casings. The grout shall have a minimum thickness of one and five-tenths inches.
- f) National Sanitation Foundation (NSF) approved PVC pipe rated at 160 PSI should be used for liner casing. The liner casing shall be installed with centering guides to insure proper centering in the well. The annular space around the liner casing shall be at least five-eighths inches and shall be completely filled with neat-cement grout.

SECTION IX ABANDONMENT OF WELLS

- a) Any well which has been abandoned, either temporarily or permanently, shall be abandoned in accordance with Rule. 0113 15A-NCAC Subchapter 2C North Carolina Division of Environmental Management.
- b) The well driller shall complete the construction or abandonment of the well within thirty (30) days of commencement of the construction.

SECTION X RECORDS REQUIRED

- a) Any person completing or abandoning any well in Johnston County shall submit to the Johnston County Health Department and to the well owner a record of the construction or abandonment which includes the owner's name, the well's location, diameter and depth, casing depth, the method of finishing or abandoning, static water level, yield, capacity, settling and grout depth, plus the date of completion or abandonment.
- b) Any person repairing a well shall submit to the Johnston County Health Department and the well owner a record of the repair to include the owner's name, location of the well, change in construction, materials replaced and date of repair.
- c) The reports required in Section A and B above shall be submitted to the Johnston County Health Department within fifteen (15) days after completing construction, abandonment or repair.
- d) Reports shall be certified by the contractor or other person completing the construction, abandonment or repair.

SECTION XI REQUIREMENTS FOR SEMI-PUBLIC WATER SUPPLIES

- A. Semi-public well water supplies having from three (3) to fourteen (14) service

connections that do not meet the definition of a public or community water supply shall comply with the following:

1. No construction of a semi-public well water supply shall be undertaken prior to approval by the Johnston County Health Department of the location, plans and specifications of the proposed water system. Plans and specifications of a semi-public well water supply shall be prepared by a registered professional engineer.
 2. Plans shall contain, but not limited to, the following information:
 - a. Description of the water system related to the project.
 - b. Identification of the area to be served by the proposed water system.
 - c. Name and address of the owner.
 - d. A description of the establishments to be served by the proposed water system.
 - e. Proposed water treatment processes if applicable.
 - f. A preliminary plot plan or map showing the location of the water source and service connection to each user.
- B. Semi-public water supplies shall be capable of meeting the water supply needs of each service connection and will be maintained by a certified water well operator.
- C. All semi-public water supplies constructed after the effective date of these regulations will be sampled by the Johnston County Health Department or an approved private laboratory for bacteriological analysis at least semi-annually and the results submitted to the Environmental Health Section of the Johnston County Health Department.
- D. All water supplies covered under this section that fail to meet the water quality standards shall be treated by an approved chlorination method. If periodic contamination occurs, those water supply systems shall be structurally upgraded to provide adequate protections of the water supply or equipped with mechanical devices to insure adequate disinfection.

SECTION XII SAMPLING

- 1) For all new private or semi-public well water supplies, a compliance sample for coliform bacteria shall be collected not less than 24 hours after the chlorine or other disinfecting agent has been removed from the well and water supply system.
- 2) Compliance samples will not be collected from:

- a. incomplete systems - i.e., wells without a functioning pump or completed well head.
 - b. water supply systems which contain residual chlorine.
 - c. new systems that have not been properly chlorinated.
 - d. irrigation wells/agricultural wells.
- 3) Compliance samples must be analyzed in the State Health Department Laboratory or in a laboratory that has met the minimum requirements for certification as specified by the North Carolina Drinking Water Regulation (10-NCAC 90 .301-.330) and has been approved by the Certification Section of the North Carolina Public Health Laboratory. Compliance samples will be collected only by persons approved by the Health Department and will be limited to representatives of the Johnston County Division of Environmental Health, authorized representative of a certified laboratory, Registered Sanitarians and certified well operators. An unbroken chain of custody will be maintained between the person authorized to collect the compliance sample and the certified laboratory.
 - 4) It is the responsibility of the well owner to provide a source of power for the purpose of collecting the compliance sample.
 - 5) The use of a permanent continuous disinfection device shall be allowed to meet the compliance requirement with the Health Director's approval.

SECTION XIII APPEALS AND VARIANCES

Any person aggrieved by any action of an authorized representative of the Health Department with regard to wells shall first confer with the Environmental Health Director who may affirm or reverse the original decision. If the appellant is dissatisfied with the decision of the

Environmental Health Director, he may request a variance from the Health Director.

The appeal to the Health Director for a variance must be made in writing and within 30 days after the decision by the Environmental Health Director.

The Health Director may grant a variance upon finding that compliance with the provisions of these regulations is impractical because of conditions beyond the control of the well owner, or because compliance would result in unreasonable or unnecessary hardship to the well owner.

A variance may be issued at the discretion of the Health Director, and may be conditioned on the submission of periodic reports. It may be revoked or modified after thirty (30) days notice to the persons affected by the revocation or modification, and it may be extended from one date, certain to another, if circumstances warrant such extension.

Application for renewal, if required, for a variance must be made at least thirty (30) days prior to the expiration of an existing variance. If denied, a request for a variance may be appealed to the Board of Health.

SECTION XIV SEVERABILITY

If any provision or clause of these regulations or the application thereof shall be declared invalid by a court of competent jurisdiction, such declaration shall not invalidate any other provision, clause, or application of these regulations.

SECTION XV PRIOR ORDINANCE, RULES AND REGULATIONS REPEALED

All ordinances, rules and regulations heretofore adopted by the Johnston County Board of Health governing water supplies in Johnston County which are in conflict with the provision of these regulations, are hereby repealed.

SECTION XVI IMPLIED GUARANTEE

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

SECTION XVII EFFECTIVE DATE

These rules have been amended and readopted by the Johnston County Board of Health on June 3, 2008 and shall be in full force and effect from and after July 1, 2008.

Pursuant to North Carolina General Statute 130A-39(f), a local board of health may, in its rules, adopt by reference any code, standard, rule or regulation which has been adopted by any agency of this State, another state, any agency of the United States or by a generally recognized association. Copies of any material adopted by reference shall be filed with the rules. Therefore incorporated by reference:

ENFORCEMENT ADDENDUM I

Title 15A - DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Chapter

Subchapter 2C

Section .0100 - CRITERIA AND STANDARDS APPLICABLE TO WATER-SUPPLY AND CERTAIN OTHER TYPE WELLS

ENFORCEMENT ADDENDUM II

Title 15A - DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Chapter

Subchapter 2C

Section .0300 - PERMITTING AND INSPECTION OF PRIVATE DRINKING WATER WELLS

ENFORCEMENT ADDENDUM III

Title 15A - DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Chapter

Subchapter 18A

Section.3800 - PRIVATE DRINKING WATER WELL SAMPLING

These regulations shall be effective 2008. Linda M. Allen, RN

PERMITTING AND INSPECTION OF PRIVATE DRINKING WATER WELLS

ENFORCEMENT ADDENDUM I

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 are applicable to private drinking water wells. In addition to the provisions in 15A NCAC 02C .0100, the following shall apply:*
 - 1) The well owner shall not place potential sources of groundwater contamination 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 PUMPS AND PUMPING EQUIPMENT, 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 ABANDONMENT OF WELLS, any well which 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. The person abandoning the well shall provide a minimum*

24-hour notice to the local health department prior to commencement of permanent abandonment procedures.

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

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) "Addition" means any structure that is constructed, altered or placed on property that contains one or more wells. This would not include replacement of existing equipment within the existing footprint of a structure and addresses only those situations for which a building permit is required.*
- 2) "Board of Health" means the County Board of Health or successor entity.*
- 3) "Certificate of Completion" means a certification by the Department that a private drinking water well has been constructed or repaired in compliance with the construction permit or repair permit.*
- 4) "Construction of wells" means all acts necessary to construct wells for any intended purpose or use, including the location and excavation of the well, placement of casings, screens and fittings, development and testing.*
- 5) "Construction permit" means a well construction permit issued by the Department authorizing or allowing the construction of any private drinking water well as defined in the rules of this Section.*
- 6) "Department of Environment and Natural Resources" or "Department" means the North Carolina Department of Environment and Natural Resources. The term also means the authorized representative of the Department. For the purposes of any notices required pursuant to the rules of this Section, notice shall be mailed to "Division of Environmental Health, On-Site Water Protection Section, North Carolina Department of Environment and Natural Resources," 1642 Mail Service Center, Raleigh, NC 27699-1642.*
- 7) "Local Health Department" means the county or district health department or its successor.*
- 8) "Person" means all persons, including individuals, firms, partnerships, associations, public or private institutions, municipalities or political subdivisions, governmental agencies, or private or public corporations organized or existing under the laws of this State or any other state or country.*
- 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 but not limited to 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 any equipment or materials utilized or intended for use in withdrawing or obtaining ground-water including well seals.*
- 11) *"Repair" means work involved in deepening, reaming, sealing, installing or changing casing depths, perforating, screening, or cleaning, acidizing or redevelopment of a well excavation, or any other work which results in breaking or opening the well seal.*
- 12) *"Repair permit" means a well repair permit issued by the 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" means the construction, installation, repair, alteration or abandonment of any well.*
- 16) *"Well Contractor" means any person in trade or business who undertakes to perform a well contractor activity or who undertakes to personally supervise or personally manage the performance of a well contractor activity on the person's own behalf or for any person, firm, or corporation in accordance with the well contractor certification requirements of 15A NCAC 27.*
- 17) *"Well seal" means an approved arrangement or device used to cap a well or to establish and maintain a junction between the casing or curbing of a well and the piping or equipment installed therein, the purpose or function of which is to prevent pollutants from entering the well at the upper terminal.*

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

ENFORCEMENT ADDENDUM II

15A NCAC 02C .0303 APPLICATION FOR CONSTRUCTION PERMIT

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

- 1) Name, address and phone number of the proposed well property owner or owner's agent;*
- 2) Signature of owner or agent;*
- 3) Address and parcel identification number of the property where the proposed well is to be located;*
- 4) A plat or site plan as defined in the rules of this Section;*
- 5) Intended use(s) of the property;*
- 6) Other information deemed necessary by the 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 underground 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;
July 1, 2008.*

15A NCAC 02C .0304 PERMITTING

- a) No person shall construct a private drinking water well without first obtaining a well construction permit from the 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 .0113 is a maintenance activity that does not require a repair permit.*
- b) Before issuing a well construction permit, the 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 on which a private drinking water well is to be located. The 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. Notwithstanding the above, the 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 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) A well construction permit is valid for a period of five years except that the 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 is issued. The validity of a construction permit or a repair permit is not affected by a change in ownership of the site on which a private drinking water well is proposed to be located. Well construction permits issued under local well ordinances prior to the effective date of these Rules remain valid for the term of those permits unless those permits are suspended or revoked. The 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 any 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.*

15A NCAC 02C .0305 GROUT INSPECTION: CERTIFICATION

- a) The well contractor shall contact the local health department to schedule a grout inspection before grouting a private drinking water well. Contact shall include the location, permit number and anticipated time for grouting each private drinking water well and the appointment shall be scheduled 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 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 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 indicating 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 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;
July 1, 2008.*

15A NCAC 02C .0306 WELL COMPLETION AND CERTIFICATION

- a) *After receiving a permit to construct a private drinking water well, the property owner or his 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 or repair 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) *Upon completion of construction of a private drinking water well, the Department shall complete an "as built" drawing of the well location. The well contractor shall submit a copy of Residential Well Construction Record to the local health department. Upon completion of construction or repair of a private drinking water well for which a permit is required, the Department shall inspect the well and issue a Certificate of Completion. Prior to the issuance of a Certificate of Completion, the 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 Department shall inspect the grout around the casing, inspect the well head after the well seal is in place and obtain a well construction record 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;
July 1, 2008.*

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 Quality within 30 days of completion of construction, abandonment or repair. The record shall be on a form provided by the Department.*
- 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;
July 1, 2008.*

15A NCAC 02C .0308 APPEAL PROCEDURE

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

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

ENFORCEMENT ADDENDUM III

section.3800 - Private Drinking Water Well Sampling

15A NCAC 18A .3801 DEFINITIONS

The following definitions shall apply throughout this Section:

- 1) "Certified laboratory" means the North Carolina State Laboratory of Public Health certified by the US Environmental Protection Agency or a laboratory certified by the Certification Section of the North Carolina Public Health Laboratory pursuant to 10A NCAC 42D to perform tests to determine the presence of coliform bacteria or the chemical constituents to be tested.*
- 2) "Coliform bacteria" or "total coliform" means aerobic or facultative anaerobic,*

gram-negative, non-spore forming, rod shaped bacteria included in the genera Klebsiella, Enterobacter, Escherichia and Citrobacteria. Coliform bacteria originate in soil, vegetation or the intestinal tract of warm-blooded animals. The presence of coliform bacteria in a water sample indicates the presence of a pathway for bacteria and possibly pathogens to gain entry into a water supply system.

- 3) *"Department of Environment and Natural Resources" or "Department" means the North Carolina Department of Environment and Natural Resources. The term also means the authorized representative of the Department.*
- 4) *"Fecal coliform bacteria" or "fecal coliform" means a sub-group of coliform bacteria that are present in the intestinal tract and feces of warm-blooded animals. The presence of fecal coliform bacteria in a water sample indicate fecal contamination and the presumed presence of pathogens in the water supply*
- 5) *"Local Health Department" means the county or district health department or its successor.*
- 6) *"Private drinking water well" means a private drinking water well as defined in G.S. 87-85 (10a).*

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

15A NCAC 18A .3802 SAMPLE COLLECTION

- a) *Within 30 days after it issues a certificate of completion for a newly constructed private drinking water well, the local health department shall obtain water samples and submit them to a certified laboratory for analyses or ensure that the water obtained from the well has been sampled and tested by a certified laboratory, in accordance with the rules of this Section.*
- b) *Samples collected from private drinking water wells pursuant to the rules of this Section shall be collected by an employee of a local health department, or a certified laboratory. The sample collector shall use aseptic sampling techniques for collection of coliform bacteria and sampling techniques and containers for chemical constituents following methods described in 40 Code of Federal Regulations 141.23 Inorganic Chemical Sampling and Analytical Requirements and 40 Code of Federal Regulations 143.4 Monitoring, which are incorporated by reference including any subsequent amendments, additions or editions. A copy may be obtained from the National Archives and Records Administration through their website at <http://www.gpoaccess.gov/cfr/index.html>.*
- c) *Sample collectors shall be trained in accordance with guidance developed by the Department.*
- d) *Water samples shall be collected from the sample tap at the well or the closest accessible collection point to the water source with a tap capable of being disinfected, provided the*

sampling point shall precede any water treatment devices.

- e) *It is the responsibility of the well owner to provide access and a source of power for the purpose of collecting the required water sample.*
- f) *For all new private drinking water wells, samples for total coliform and fecal coliform bacteria shall be collected after the disinfectant agent has been flushed from the well and water supply system. The water shall be determined to be free of disinfectant before collection of samples for bacteria. Required water samples shall not be collected ~~from~~: from wells that are not constructed and located in accordance with the rules of 15A NCAC 02C .0100 and .0300.*
- g) *Samples shall be transported to the laboratory following the procedures for sample preservation and within holding times required in 40 Code of Federal Regulations 141.21(f) Analytical Methodology, 141.23 Inorganic Chemical Sampling and Analytical Requirements, and 143.4 Monitoring, which are hereby incorporated by reference including any subsequent amendments, additions or editions. Copies may be obtained from the National Archives and Records Administration through their website at <http://www.gpoaccess.gov/cfr/index.html>.*
- h) *Additional or retest samples may be collected if:*
 - 1) *during the permitting, construction and sampling process, information indicates the potential for other contaminants to be present in the groundwater source; or*
 - 2) *if necessary to confirm initial testing results.*

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

15A NCAC 18A .3803 SAMPLE ANALYSIS

- a) *Water samples shall be analyzed in the North Carolina State Laboratory of Public Health or a certified laboratory.*
- b) *A water sample shall be tested for total coliform bacteria and if present, further ~~tested~~ analyzed for the presence of fecal coliform bacteria or *E. coli*.*
- c) *A water sample shall be analyzed for Arsenic, Barium, Cadmium, Chromium, Copper, Fluoride, Lead, Iron, Magnesium, Manganese, Mercury, Nitrate, Nitrite, Selenium, Silver, Sodium, Zinc and pH.*
- d) *Testing protocols shall follow EPA methods as published in the applicable sections of the most recent 40 CFR 141 and 143, Federal Register updates and the North Carolina Drinking Water Laboratory Certification rules of Section 10A NCAC 42D. Copies may be obtained from the National Archives and Records Administration through their website at <http://www.gpoaccess.gov/cfr/index.html>.*

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

15A NCAC 18A .3804 REPORTING

- a) Laboratories shall report results of chemical and bacteriological water sample analyses for each new private drinking water well to:
 - 1) *the local health department;*
 - 2) *the DENR Private Water Supply Protection Branch; and*
 - 3) *the DHHS Division of Public Health, Epidemiology Section, Occupational and Environmental Epidemiology Branch.*
- b) *Certified laboratories reporting results of sampling required by the rules of this Section shall use the reporting format developed by the North Carolina State Laboratory of Public Health for reporting private well-water sample results and shall include well identification information and a guide for interpreting sample results.*
- c) For the purposes of any notices required pursuant to the rules of this Section, notice shall be mailed to “Division of Environmental Health, On-Site Water Protection Section, North Carolina Department of Environment and Natural Resources,” 1642 Mail Service Center, Raleigh, NC 27699-1642.

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

15A NCAC 18A .3805 DATA REVIEW

For all private well sampling data where chemical or biological contaminants are detected exceeding the Maximum Contaminant Levels (MCLs) for public drinking water, as defined in 15A NCAC 18C, the North Carolina Occupational and Environmental Epidemiology Branch (OEEB) shall provide the following to the local health department from which the sample was collected:

- 1) *information about the contaminant(s) exceeding public drinking water MCLs;*
- 2) *recommendations for water use limitations or treatment options to reduce exposure to a level comparable to meeting public drinking water MCLs; and*
- 3) *recommendations about the need for and the frequency of repeat sampling.*

The local health department shall provide information to the well owner or respective lease holder concerning chemical and biological contaminants exceeding public drinking water MCLs and the need for exposure limitation, remediation, and/or future sampling.

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

