

REGULATIONS
GOVERNING
CONSTRUCTION, REPAIR, AND ABANDONMENT OF WELLS
IN
ALAMANCE COUNTY, NORTH CAROLINA

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

- I. **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 annually 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 annually during the period from June 1 to June 30 of each year by completing and submitting a notification form provided by the Alamance County Health Department for this purpose and after providing an acceptable surety. Upon submitting a properly completed notification form, surety, and a copy of each well contractor’s certification, the applicant will be issued a notification of meeting this requirement.
- D. Every person, firm or corporation that provides notification of performing well contractor activities in Alamance County shall post a surety in an amount of \$5,000.00 and in a form acceptable to the Health Director. This surety shall be a uniform amount for all well contractors. If a well contractor performs work which is not consistent with these regulations; has improperly performed a well contractor activity and has failed to correct violations upon expiration of a thirty day written notice, the Health Director may call upon the surety in an amount necessary to replace, repair, abandon, correct violations, or pay well repair permit fees.

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.

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. Galvanized steel casing and thermoplastic casing shall not be used conjunctively in a well. The well casing must be either galvanized 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 ½ 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 drilling a well for his/her personal and immediate family use, a waiver may be signed, notarized and recorded with the deed which would allow the well to be drilled less than the required depth. However, such a waiver shall specify and require that the subject well be drilled meeting the depth/yield requirements as specified by the Regulations Governing the Construction, Repair, and Abandonment of Wells in Alamance County, North Carolina in effect at the time ownership of the property changes. 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 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	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
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In addition to the requirements of 15A NCAC 02C .0112, the following shall apply:

- A. 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.
- B. 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.

- C. 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.
- D. 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. Well Contractor Registration Surety
 - 3. 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 June 17, 2008 shall be in full force and effect on and after July 1, 2008.

Chairman, Alamance County Board of Health

Director, Alamance County Health Department

Date