

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

(a) No well shall be located, constructed, operated, or repaired in any manner that may adversely impact the quality of groundwater.

(b) Injection wells shall conform to the standards set forth in Section .0200 of this Subchapter.

(c) Monitoring wells and recovery wells shall be located, designed, constructed, operated, and abandoned with materials and by methods that are compatible with the chemical and physical properties of the contaminants involved, specific site conditions, and specific subsurface conditions.

(d) Monitoring well and recovery well boreholes shall not penetrate to a depth greater than the depth to be monitored or the depth from which contaminants are to be recovered. Any portion of the borehole that extends to a depth greater than the depth to be monitored or the depth from which contaminants are to be recovered shall be grouted completely to prevent vertical migration of contaminants.

(e) The well shall not hydraulically connect:

- (1) separate aquifers; or
- (2) those portions of a single aquifer where contamination occurs in separate and definable layers within the aquifer.

(f) The well construction materials used shall be structurally stable, corrosion resistant, and non-reactive based upon the depth of the well and any contaminants to be monitored or recovered.

(g) The well shall be constructed in such a manner that water or contaminants from the land surface cannot migrate along the borehole annulus into any packing material or well screen area.

(h) In non-water supply wells, packing material placed around the screen shall extend one foot or greater above the top of the screen and a one foot or greater thick seal, comprised of chip or pellet bentonite or other material approved by the Department as equivalent, shall be emplaced directly above and in contact with the packing material. If shallow groundwater is observed within five feet or less of land surface during well construction, the packing material and seal shall comply with Paragraph (j) of this Rule.

(i) In non-water supply wells, grout shall be placed in the annular space between the outermost casing and the borehole wall from the land surface to the top of the bentonite seal above any well screen or to the bottom of the casing for open end wells. The grout shall comply with Paragraph (e) of Rule .0107 of this Section.

(j) For non-water supply wells in which the stabilized water table is visible within five feet of land surface during well installation or field investigation activities, well construction shall meet each of the following requirements:

- (1) Packing material placed in the annular space around the well screen shall extend six inches or greater above the top of the screen;
- (2) A six-inch or greater thick seal comprised of chip or pellet bentonite shall be placed in the annular space above and in direct contact with the packing material;
- (3) A one-foot or greater seal of concrete or cement grout shall be installed in the annular space from land surface to the top of the bentonite seal (upper one foot of well horizon); and
- (4) Shallow wells of this class shall be equipped with a two-foot or greater concrete pad around the well, flush with the land surface to prevent surface water infiltration.

If a well is installed under this Paragraph, the existence of a shallow water table shall be verified by a NC certified well contractor, licensed professional engineer, geologist, or soil scientist and noted on all documents or reporting forms submitted.

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

(l) All non-water supply wells, including temporary wells, shall be secured with a locking well cap to ensure against unauthorized access and use.

(m) All non-water supply wells shall be equipped with a steel outer well casing or flush-mount cover, set in concrete, and other measures to protect the well from damage by normal site activities.

(n) Any well that would flow under natural artesian conditions shall be valved so that the flow can be regulated.

(o) In non-water supply wells, the well casing shall be terminated no less than 12 inches above land surface unless all of the following conditions are met:

- (1) site-specific conditions directly related to business activities, such as vehicle traffic, would endanger the physical integrity of the well; and
- (2) the well head is completed in such a manner so as to preclude surficial contaminants from entering the well.

(p) Each non-water supply well shall have permanently affixed an identification plate. The identification plate shall be constructed of a durable, waterproof, or rustproof material and shall contain the following information:

- (1) well contractor's name and certification number;

- (2) the date the well was completed;
 - (3) the total depth of the well;
 - (4) a warning that the well is not for water supply and that the groundwater may contain hazardous materials;
 - (5) the depth to the top and bottom of each screen; and
 - (6) the well identification number or name assigned by the well owner.
- (q) Each non-water supply well shall be developed such that the level of turbidity or settleable solids does not preclude accurate chemical analyses of any fluid samples collected or adversely affect the operation of any pumps or pumping equipment.
- (r) Wells constructed for the purpose of monitoring or testing for the presence of liquids associated with tanks regulated under 15A NCAC 02N shall be constructed in accordance with 15A NCAC 02N .0504.
- (s) Wells constructed for the purpose of monitoring for the presence of vapors associated with tanks regulated under 15A NCAC 02N shall:
- (1) be constructed in such a manner as to prevent the entrance of surficial contaminants or water into or alongside the well casing; and
 - (2) be provided with a locking well cap to ensure against unauthorized access and use.
- (t) Temporary wells and all other non-water supply wells shall be constructed in such a manner as to preclude the vertical migration of contaminants within and along the borehole channel.
- (u) Geotechnical borings advanced for building activities, such as foundation testing and road bed strength evaluations shall not be considered wells as defined in G.S. 87-85(14) if they are immediately abandoned after use pursuant to Rule .0113(d)(1) of this Section. These borings shall not require submittal of a well construction or abandonment record pursuant to Rule .0114 of this Section.
- (v) Soil borings advanced for such activities as collecting soil samples for contamination assessment or characterization soil profiles shall not be considered wells as defined in G.S. 87-85(14) if they are not intended to penetrate the water table and are abandoned after samples are collected pursuant to Rule .0113(d)(1) of this Section. These borings shall not require submittal of a well construction or well abandonment records pursuant to Rule .0114 of this Section.

History Note: Authority G.S. 87-87; 87-88;
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