

PROPOSED AMENDMENTS TO THE RULES
OF THE GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
RELATING TO SAFE DRINKING WATER, CHAPTER 391-3-5

The Rules of the Department of the Natural Resources, Chapter 391-3-5, are hereby amended and revised for specific Rules, or such subdivisions thereof as may be indicated.

[Note: Underlined text is proposed to be added. ~~Lined-through~~ text is proposed to be deleted.]

CHAPTER 391-3-5 SAFE DRINKING WATER

Rule 391-3-5-.07 Wells

(1) **Approval.** No person shall construct a well as a source of water supply for a public water system without having first obtained approval from the Division. This requirement may be waived by the Director during emergency situations. Any well that is constructed and does not meet the rules of this Chapter shall not later be used as a drinking water source for a public water system.

(2) **Prohibited Wells.** Dug, bored, or jetted wells are prohibited for all new public water systems.

(3) **Protection from Contamination.** Each well must be protected from contamination by surface waters and other sources of contamination. The location of wells must be in compliance with the latest edition of the Division's "Minimum Standards for Public Water Systems."

(4) **Fill, Plug and Seal.** Whenever a bore hole of any depth is excavated for, but not used as a source of water supply it shall be the supplier's responsibility to fill, plug and seal the hole within thirty (30) days of the excavation in a manner approved by the Division to restore as nearly as possible the natural earth condition existing before the hole was excavated and to protect against contamination of the ground water. This paragraph shall not apply where some other use is made of the ground water from the well hole.

(5) **Well Construction Standards.** All wells must be constructed as hereinafter provided, however, deviations from these rules may be permitted or required by the Division due to the variable conditions of the subsurface and ground water quality in a specific area.

(a) Drilling fluids must be from an uncontaminated source or must be disinfected.

(b) All permanent casing, liners, screens and other manufactured material used in the well installation must be new and adequate to protect the well against entrance of contaminants during the expected life of the well. All casing and liner pipe joints shall be water tight the entire length in drilled wells.

1. Steel pipe well casing shall conform to American Society for Testing and Materials (ASTM) Specification A 53, American Petroleum Institute (API) Specification 5L, or equal standard, and meet the following minimum wall thickness unless otherwise approved by the Division.

Nominal Casing Diameter (inches)	Minimum Wall Thickness (inches)
4*	0.237 0.188
5*	0.258 0.188
6	0.280
8	0.322
10	0.365
12	0.375
14	0.375
16	0.375
18	0.375
20	0.375
24	0.500
26	0.500

* not recommended for use in corrosive or high alkalinity water

2. The use of plastic well casing and screens must be approved by the Division prior to well installation. The well casing and couplings shall meet the requirements of the ASTM Standard F 480 or equal standard and the National Sanitation Foundation for use with potable water. When approved for use by the Division, plastic well casing shall conform to the following minimum wall thickness. However, plastic well casing diameters of 12 inches or greater or deep wells may require greater wall thickness to meet the collapse strength requirements.

Nominal Casing Diameter (inches)	Minimum Wall Thickness (inches)
4	0.265
4.5	0.291
6	0.390
8	0.508
10	0.632
12	0.750

Plastic well casing and screen shall not extend to a depth of greater than 300 feet below the ground surface.

(c) The outer, permanent, protective casing shall extend at least five (5) feet into the first solid, unweathered or impervious subsurface rock strata encountered, and shall have a minimum length of twenty-five (25) feet from the ground surface into a well excavated into water-bearing formations in crystalline rocks and fifty (50) feet in a well excavated into sedimentary water-bearing formations. The outer, permanent, protective casing shall be cement grouted its entire length with a cement slurry consisting of not more than six (6) gallons of water to one cubic foot cement, plus standard additives, when necessary, to facilitate placing or setting and shall be placed under pressure from the bottom of the annular space to be grouted upward until the grout is extruded at the earth's surface. The wall thickness of the cement grout surrounding the outer, permanent, protective casing shall be not less than one and one-half (1-1/2) inches at any point. Subsurface well construction shall cease for at least twenty-four (24) hours after grouting. Other grouting materials for sealing the annular space may be used upon the approval of the Division prior to well construction.

(d) Any ground water of unacceptable quality encountered during the well construction must be sealed off.

(e) The gravel for gravel-packed wells must be washed, free of organic matter, and composed of well rounded particles.

(6) **Stoppage During Construction.** During the periods of stoppage of the well construction and when the site is unattended, the drilling contractor must have the well opening securely covered to prevent tampering and possible contamination.

(7) **Sanitary Conditions.** During the well construction, the premises, construction material, tools and equipment must be maintained in a sanitary manner to prevent contamination of the well by the person excavating the well.

(8) **Proper Well Development.** Every well must be properly developed, disinfected, and pump tested by the drilling contractor. The well must be test pumped at not less than the desired yield for a period of at least twenty-four (24) hours and shall continue for at least four (4) hours after the pumping level has stabilized. The static water level, drawdown and pumping water level must be measured.

(9) **Disinfection of the Well.**

(a) The well must be disinfected prior to the pumping test by the introduction of a chlorine solution into the well under sufficient pressure to overcome the natural flow pressures of all developed water-bearing zones, and in sufficient quantity to produce a minimum chlorine residual of fifty (50) parts per million in six (6) hours after such application.

(b) After disinfection, the well must be pumped until no trace of chlorine remains in the water, and water samples taken for microbiological analysis. No water may be furnished for human consumption until samples of water are collected by the supplier, and submitted to the Division for microbiological examination, and the quality of the water approved by the Division. If the water samples submitted are found to be unsatisfactory, the disinfection procedure must be repeated as required by the Division.

(c) The permanent pump and pumping equipment shall be disinfected with a chlorine solution prior to being placed into service.

(d) Well disinfection shall be conducted in accordance with American Water Works Association (AWWA) Standard C654.

(10) **Licensed Water Well Contractor.** The person constructing the well shall be a licensed water well contractor in the State of Georgia in accordance with the provisions of the Water Well Standards Act of 1985 (O.C.G.A. § 12-5-120, et. seq.). The contractor must maintain accurate driller logs, material setting and grouting data, complete results of the pump test, including water level measurements, and must furnish a signed copy of the results to the owner and to the Division on forms provided by the Division.

(11) **Installation Standards.** A well used as a source of water supply must include the following:

(a) A concrete slab with a minimum thickness of six (6) inches shall be constructed around the well casing and shall extend at least two (2) feet in all directions, and slope away, from the casing.

(b) The well casing shall extend at least twelve (12) inches above the concrete slab of the floor.

(c) For submersible pump installations, the well casing shall be provided with a sealed cover plate and, when required by the Division, vented by a screened riser pipe so that the screened opening terminated downward at least twelve (12) inches above the top of the casing or ground level.

(d) For turbine pump installations, a concrete block to support the pump motor shall be constructed around the outer well casing and shall extend at least twelve (12) inches above the concrete slab, and:

1. the outer casing shall extend at least one (1) inch above the pump motor block;
2. the well head and pump base shall be sealed to prevent seepage and the casing shall be vented by a screened riser pipe so that the screen opening terminates downward and above any point of back flow of contaminants into the well; and
3. oil lubricated vertical turbine pumps shall be lubricated with an acceptable turbine oil as prescribed by the pump manufacturer.

(e) A raw water sampling tap shall be installed prior to the well discharge pipe check valve.

(f) An access port of not less than five-eighths (5/8) inch in diameter, with screw cap, for water level measurements; a deep well air line and gage may also be used in conjunction with the access port.

(12) **Deepening Existing Wells.** Existing wells that are deepened shall be regarded by the Division as a development of a new ground water source and must meet the requirements for approval.

(13) **Rehabilitating Existing Wells.** When an existing well is rehabilitated or reworked, the well shall be disinfected according to procedures described in this Rule.

(14) **Infrastructure Security.** The pumping and water treatment equipment shall be protected from unauthorized entry and use by an enclosed shelter or enclosed by a fence. In addition, the water treatment equipment shall be enclosed in a weather proof shelter.

Authority: Ga. L. 1977, p. 351, *et seq.*, O.C.G.A. Sec. 12-5-170 *et seq.*, as amended.