

### 15A NCAC 05H .1803 WATER SUPPLY TESTING PROCEDURES

(a) All water supplies located within one-half mile of the proposed wellhead shall be tested prior to initial drilling activities and after production has commenced. All water supplies shall be tested according to the following:

- (1) the initial water supply testing shall be conducted no earlier than 12 months but no later than 30 calendar days prior to the commencement of drilling to establish a baseline;
- (2) when multiple oil or gas wells are permitted and constructed at a well pad, the analytical results for the initial sampling shall serve as the baseline for all future wells drilled on the same well pad; and
- (3) subsequent water supply testing shall be conducted at all initial sample locations:
  - (A) test one: six months after production has commenced;
  - (B) test two: 12 months after production has commenced;
  - (C) test three: 18 months after production has commenced;
  - (D) test four: 24 months after production has commenced; and
  - (E) test five: testing within 30 calendar days after completion of production activities at the well site.

(b) Water supply testing required by G.S. 113-423(f), and in accordance with this Rule, shall be conducted pursuant to the U.S. Environmental Protection Agency (EPA) Region IV Science and Ecosystem Support Division (SESD) "Operating Procedure for Groundwater Sampling," document number SESDPROC-301-R3, "Operating Procedure for Surface Water Sampling," document number SESDPROC-201-R3, and the U.S. Geological Survey (USGS) "National Field Manual for the Collection of Water-Quality Data," Book 9, Handbooks for Water-Resources Investigations, which are incorporated by reference, including subsequent amendments and editions. These documents may be obtained online at no charge at <http://www.epa.gov/region4/sesd/fbqstp/Groundwater-Sampling.pdf>,

<http://www.epa.gov/region4/sesd/fbqstp/Surfacewater-Sampling.pdf>, and <http://water.usgs.gov/owq/FieldManual/>.

(c) If a permittee drills an oil or gas well but does not install production casing and abandons the oil or gas well in accordance with the plugging and abandonment requirements outlined in Rule .1618 of this Subchapter, subsequent testing pursuant to Subparagraph (a)(3) of this Rule is not required.

(d) The Department may require additional testing if the current data collected shows an increase in concentration from the previous data for any water supply within one-half mile, to determine seasonal fluctuations or erroneous testing.

(e) All sample analyses required by this Rule shall be made by a laboratory certified in accordance with 15A NCAC 02H .0800 and pursuant to laboratory analytical procedures that comply with 15A NCAC 02B .0103 and 15A NCAC 02L .0112, which are incorporated by reference, including subsequent amendments and editions.

(f) The initial samples required by Subparagraph (a)(1) of this Rule collected in accordance with this Rule shall be analyzed for:

pH	manganese
specific conductance	selenium
total dissolved solids (TDS)	strontium
turbidity	lithium
alkalinity	lead
calcium	zinc
chloride	uranium
magnesium	isotopic radium (226Ra and 228Ra)
potassium	isotopic strontium (87Sr and 86Sr)
fluoride	trihalomethanes
sodium	benzene
sulfate	toluene
arsenic	ethylbenzene
barium	xylenes
boron	diesel range organics (DRO)
bromide	gasoline range organics (GRO)
chromium	total petroleum hydrocarbons (TPH)
iron	Polycyclic or polynuclear aromatic hydrocarbons (PAH) (including benzo(a)pyrene)
dissolved methane, propane, and ethane	

(g) The test one series of samples collected to satisfy Paragraph (a)(3)(A) shall include all parameters listed in Paragraph (f) of this Rule.

(h) If the results from the test one series did not exceed the permissible concentrations outlined in 15A NCAC 02B .0103 and 15A NCAC 02L .0112, which are incorporated by reference, including subsequent amendments and editions, for the required analytes, then the permittee, at a minimum, shall sample and analyze for pH, specific conductance, TDS, chloride, sodium, divalent cations, and dissolved methane, propane, and ethane to complete the remaining series of sampling and testing in accordance with this Rule.

(i) If there is an increase in the concentration, or the initial occurrence of any analytes set forth in Paragraph (h) of this Rule, the permittee shall test for all analytes set forth in Paragraph (f) of this Rule.

(j) If any analysis conducted pursuant to this Rule reveals a concentration of dissolved methane greater than 1.0 milligram per liter (mg/l), then a gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen –  $^{12}\text{C}$ ,  $^{13}\text{C}$ ,  $^1\text{H}$  and  $^2\text{H}$ ) shall be conducted to determine the gas type. The permittee shall report the results in accordance with Rule .1805 of this Section.

*History Note:* Authority G.S. 113-391(a)(3); 113-391(a)(5)b; 113-423(f);  
Eff. March 17, 2015.