15A NCAC 05H .0XX1 BASELINE AND SUBSEQUENT TESTING REQUIREMENTS

This Section establishes the general and specific requirements for the pre-drilling testing of water supplies, for the testing of water supplies after production has commenced, and for the reporting of data collected from the testing~~,~~ ~~and for air quality testing~~ where drilling operations are proposed to occur. ~~The provisions of this Rule shall apply to all new oil and gas wells for which a permit is issued on or after the effective date of this Rule and in accordance with § 113-391.~~

Comment [RC1]: Can we remove the reference to air quality in Section .0XX1?

15A NCAC 05H .0XX2 WATER SUPPLY TESTING

(a) A developer or operator shall provide written notice to all surface owners or owners of a water supply, as defined in §113-389, within the presumptive liability distance established pursuant to §113-420(a) and 113-421(a). The written notice shall include the following:

(1) The developer's or operator's intent to perform testing of water supplies prior to drilling an oil or gas well;

(2) The developer or operator may rebut the presumption established pursuant to §113-421(a) if the surface owner or owner of the water supply refuses the developer or operator or a representative of same access to conduct pre-drilling testing of a water supply; and

(3) The name, address, and telephone number of the Department, to which the surface owner or owner of the water supply may respond.

(b) A developer or operator shall provide written notice to the Department when refusal to test a water supply occurs. The written notice must include the following:

(1) The name, address, and telephone number of the developer or operator;

(2) The desire to conduct pre-drilling testing of the water supply;

(3) The name of the person or firm who requested and was refused access to conduct the testing, the date of the request, and a copy of all documentation showing the request for access was denied; and

(4) The name, address, and telephone number of the surface owner or owner of the water supply.

(c) Any surface owner or owner of a water supply who suspects contamination as a result of the drilling, alteration or operation of an oil or gas well may notify the Department and request that an investigation be conducted.

(1) The developer or operator at the request of the Department shall conduct a test of the water supply and provide the analytical results to the Department; and

(2) The Department shall require the developer or operator to replace a water supply pursuant to §113-421(a4) if the investigation and analytical results indicate that the water supply is contaminated due to the activities of the developer or operator.

(d) All water supplies located within the presumptive liability distance, established pursuant to §113-421(a), of the proposed oil or gas well shall be tested prior to initial drilling activities as well as after production has commenced.

Comment [CM2]: See NCGS 113-423(f)

(1) Initial water supply testing shall be conducted no earlier than 12 months but no later than 30 days prior to commencement of drilling activities to establish a baseline;

(2) Subsequent water supply testing shall be conducted at all initial sample locations between 6 and 12 months, and between 18 and 24 months after completion of installation of all permitted oil or gas wells at a well pad;

(3) When multiple wells are permitted and constructed at a well pad, baseline testing shall be completed prior to drilling the initial oil or gas well. The analytical results conducted for the initial well will serve as the baseline for all future wells drilled at the same well pad.

(i) Additional testing shall be completed every two years, in accordance with Paragraph (g) of this Rule, if all oil or gas well construction is not completed within 4 years of the installation of the initial oil or gas well.

(4) Water supply testing required hereunder shall be conducted in accordance with 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 and "Operating Procedure for Surface Water Sampling," document number SESDPROC-201-R3, which are incorporated by reference, including subsequent amendments and editions. These documents, published by the U.S. EPA, may be obtained online at no charge at http://www.epa.gov/region4/sesd/fbqstp/Groundwater-Sampling.pdf and http://www.epa.gov/region4/sesd/fbqstp/Surfacewater-Sampling.pdf or by mail at U.S. EPA, Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street SW, Atlanta, GA 30303.

(5) If a developer or operator drills an oil or gas well but does not install production casing and has abandoned the well in accordance with the plugging and abandonment requirements outlined in 15A NCAC 05H .0XX17, subsequent testing pursuant to Paragraph (g) of this Rule is not required; and

(6) The Department may require additional testing if the most recent data collected show an increase in concentration from the previous data for any water supply within the presumptive liability distance established pursuant to §113-421(a).

(e) To be adequate for use in rebutting the presumption that arises pursuant to §113-421(a) any analytical determinations required hereunder shall be made by a laboratory certified in accordance with 15A NCAC 2H .0800 and pursuant to laboratory analytical procedures that comply with 15A NCAC 02L .0112 and 15A NCAC 02B .0103.

(f) The baseline samples collected in accordance with 15A NCAC 05H .0XX2(d)(1) shall be analyzed for pH, specific conductance, total dissolved solids (TDS), turbidity, alkalinity, calcium, chloride, magnesium, potassium, fluoride, sodium, sulfate, arsenic, barium, boron, bromide, chromium, iron, manganese, selenium, strontium, lithium, lead, zinc, uranium, isotopic radium (^{226}Ra and ^{228}Ra), isotopic strontium (^{87}Sr and ^{86}Sr), trihalomethanes, benzene, toluene, ethyl benzene, xylenes (BTEX), diesel range organics (DRO), gasoline range organics (GRO), total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH) (including benzo(a)pyrene), and dissolved methane, propane, and ethane.

(g) The first series of subsequent samples collected in accordance with 15A NCAC 05H .0XX2(d)(2) shall include all parameters listed in paragraph (f) of this section.

(h) If the results from the first series of subsequent sampling and testing, listed in paragraph (f) of this section, did not exceed the permissible concentrations outlined in 15A NCAC 02L .0202 and 15A NCAC 02B .0200 then the developer or operator may sample and test for pH, specific conductance, TDS, chloride, sodium, divalent cations, and dissolved methane, propane, ethane to complete the second series of subsequent sampling and testing in accordance with 15A NCAC 05H .0XX2(d)(2).

(i) If there is an increase in the concentration or the occurrence of any analytes set forth in Paragraph (h) the well operator shall test for those analytes set forth in Paragraph (g) of this Rule.

(j) If testing conducted hereunder 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}C, ^{13}C, ^{1}H and ^{2}H) to determine the gas type shall be conducted, the results of which shall be reported in accordance with 15A NCAC 05H .0XX4.

(k) If the developer or operator uses a technology that the Department has approved as effective in tracing hydraulic fracturing fluid back to the oil or gas well where the fluid was injected, testing for the tracer may substitute for the subsequent testing required under paragraph (h) except that the subsequent testing shall also include testing for dissolved methane, ethane, and propane. If the subsequent testing detects the presence of the tracer substance in the water supply, the developer or operator shall conduct tests for all of the parameters listed in paragraph (f) of this section and shall carry out subsequent testing as provided in paragraphs (h) and (i). Tracer technology may be approved only if the technology is effective in tracing hydraulic fracturing fluid back to the well where the fluid was injected and can be used without chemical or radiological impacts to groundwater supplies or other adverse impacts to human health or the environment.

15A NCAC 05H .0XX4 REPORTING OF TEST RESULTS

(a) To be eligible to rebut the presumption that arises pursuant to §113-421(a) by relying upon the option set forth in §113-421(a)(1)a, an oil or gas developer shall provide a report related to the testing of the water supply to the Department, local health department, surface owner(s), and owner(s) of the water supply within 30 business days of receipt of analytical determinations required hereunder. The report shall be sealed by either a Licensed Geologist or Professional Engineer and shall include the following information:

(1) The surveyed location of the water supply as well as name, address, and telephone number of the surface owner or owner of the water supply.

(2) Identification of the certified laboratory at which analyses required hereunder are conducted; the date(s) on which the analyses were conducted, and identification of the technical personnel who conducted such analyses.

(3) A description of where and how the sample was collected and the name of the person who collected the sample.

(4) Field observations to include odor, water color, sediment, bubbles, and effervescence.

(5) A description of the type and age, if known, of the water supply, and water supply treatment, if any.

(6) The name of the well operator, name and number of the oil or gas well, and API number of the oil or gas well.

(7) The complete results of the analyses required hereunder, in hard copy as well as in pdf, which shall clearly indicate any exceedences of applicable Maximum Contaminant Levels ("MCLs") for public drinking water, as set forth in 15A NCAC 18C.

Comment [CM3]: Treatment that occurs before or after the point of sample collection?
Ryan Channell - *As outlined in the referenced standard operating procedures from the EPA, sample collection must be before any type of water system treatment system. The Department would like to know if a treatment system is in use at the water supply to manage potential water quality issues and investigations.*

15A NCAC 05H .0XX5 RECORD KEEPING AND REPORTING

(a) The Department shall maintain baseline and subsequent analytical data and reports required hereunder, which will be available to the public through the Department's website.