

## **Regulatory Impact Analysis**

**Rule Citation Number:** 15A NCAC 02C, Sections .0100 and .0200

**Rule Topic:** Revision of Rules 02C - Well Construction Standards

**DEQ Division:** Division of Water Resources (DWR)

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**Impact Summary:** State government: No  
 Local government: No  
 Private entities: Yes  
 Substantial Impact: No  
 Federal government: No

**Necessity:** N.C. Gen. Stat. §150B-21.3A requires state agencies to review existing rules every 10 years, determine which rules are still necessary, and either re-adopt or repeal each rule as appropriate. The proposed rulemaking satisfies these requirements for a portion of the Department's rules.

### **1. Summary**

The Division of Water Resources ("Division") reviewed the Well Construction Standards rules in accordance with G.S. §150B-21.3A and proposes to re-adopt all the rules. The Divisions identified necessary technical changes in some rules, including:

- Correction of agency names and addresses;
- Correction of cross-references and other regulatory citations;
- Correction of spelling and typographical errors;
- Topographical correction;
- Minor clarifications; and
- Removal or modification of provisions superseded by statutes, including the recent passage of Session Law (S.L.) 2018-65 which requires that the rules adopted by the Environmental Management Commission be substantively identical to subsection 4.(c) of S.L. 2018-65.

As measured from the baseline conditions, the estimated quantifiable impacts to regulated persons is estimated to be around \$12,500 (~\$250 per field kit) in each year from revisions to

Rule 15A NCAC 02C .0107. For the other rule revisions, the Division does not anticipate any net increase in costs to public or private entities, or significant environmental impacts. With the incorporation of S.L. 2018-65 into the readoption of 15A NCAC 02C .0100, the Division believes there could be an overall economic benefit to industry that offsets any additional costs; however, the amount of this benefit could not be quantified.

## **2. Background**

G.S. §150B-21.3A requires the Department to evaluate each of its existing rules and make an initial determination as to whether the rules are:

1. Necessary with substantive public interest – the agency has received public comment on the rule within the past two years or the rule affects the property interest of the regulated public, and the agency knows or suspects that any person may object to the rule.
2. Necessary without substantive public interest – the agency determines that the rule is needed, and the rule has not had public comment in the last two years. This category includes rules that identify information that is readily available to the public, such as an address or telephone number.
3. Unnecessary – the agency determines that the rule is obsolete, redundant or otherwise not needed.

The Department must then determine which rules are still necessary and propose to re-adopt, with or without modifications, or to repeal each rule as appropriate.

The Division categorized all the subject rules as ‘Necessary with substantive public interest.’ The Rules Review Commission reviewed and approved these determinations December 16, 2017, as did the General Assembly’s Joint Legislative of Administrative Procedure Oversight Committee (JLAPO), and the Review Process was completed in January 3, 2017.

The Division prepared draft rules and solicited input on the proposed actions from stakeholders in outreach meetings all day on May 24th, 2017. The meetings gave the stakeholders the opportunity to review the Division’s draft rules and an opportunity to submit comments on the proposed rules. The draft rules were sent to the stakeholders in advance. Stakeholders voiced and submitted comments to the Division on/before and after the meeting.

### 3. Rule Analysis

The following tables briefly describe the proposed rule changes and summarize the anticipated impact of each change.

#### Subchapter 02C Well Construction Standards

#### Section .0100 – Criteria and Standards Applicable to Water Supply and Certain Other Wells

Rule	Proposed Change	Source of Change	Economic Impact	Environment Impact
15A NCAC 02C .0101 GENERAL PROVISIONS	NONE	Staff Review	None	None
15A NCAC 02C .0102 DEFINITIONS	<p>Changed language for clarification, updated reference, reorganization, grammar revision, consistency or superfluous.</p> <p>Added definition for “Lead Free”</p> <p>Clarified definition of “Monitoring Well”</p> <p>Added definition for “Sewer Lateral”</p> <p>Increased timeframe for “Temporary Wells” to be abandoned or converted- Rule change allows more time for well to be temporary.</p> <p>Added definition of “Water Tight”</p>	Staff and Stakeholders review	None	None
15A NCAC 02C .0105 PERMITS	<p>Changed language for clarification, updated reference, reorganization, grammar revision, consistency or superfluous.</p> <p>Clarified Direct-Push Technology or Geoprobe wells need permits</p> <p>Clarified injection wells that need permits</p> <p>Clarified application requirements for water supply wells or systems</p> <p>Required North Carolina certified well contractor to secure a permit when required before drilling</p>	Staff and Stakeholders review	None	None
15A NCAC 02C .0107 STANDARDS OF CONSTRUCTION: WATER SUPPLY WELLS	Changed language for clarification, updated reference, reorganization, grammar revision, consistency or superfluous	Staff and Stakeholders review except as noted below	Yes	With incorporation of S.L. 2018-65 into Rules being readopted, there is an overall negligible

	<p>Clarification of listed potential sources of groundwater contamination</p> <p>Reduced separation distance to a septic tank and drainfield, including the drainfield repair area from 100 feet to 50 feet for all single-family residences (except those with septic tank systems in saprolite). For septic tank systems in saprolite, separation distances remain at 100 feet.</p> <p>Added separation distance to water-tight lateral lines. Rule change allows for more sites to have wells. If anything, it allows for more home construction and well driller activity.</p> <p>Added separation distance to coal ash landfills and impoundments. Rule Change may result in slight reduction in construction activities 200 feet or less from coal ash ponds, but economic impact minimal.</p> <p>Increased source water depth in areas described in Subparagraph (a)(3) of this Rule and designated areas as described in Rule .0117 of this Section from 35 feet to 43 feet but no economic impacts due to source water depth.</p> <p>Required casing material must be lead free. Safe Drinking Water Act already requires materials to be lead-free.</p> <p>Clarified compliance standards for thermoplastic casing.</p> <p>Increased casing depths in areas described in Subparagraph (a)(3) of this Rule and designated areas as described in Rule .0117 of this Section from 35 feet to 43 feet. However, minimum grout depth is</p>	<p>Session Law 2018-65</p> <p>Session Law 2018-65. Subparagraph (a)(3) changed to be consistent with SL 2018-65, Section (4)(c)(4).</p> <p>Session Law 2018-65</p>		<p>impact to environment</p> <p>Negligible impact to environment (casing is extended to 43 feet in designated areas in 15A NCAC 02C .0117)</p>
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	<p>reduced from 35 to 20 feet. Rule change results in minimal costs impact, if any.</p> <p>Clarified requirements for specific grouts listed.</p> <p>Added approval requirements for specialty grouts (adapts current Division policy).</p> <p>Modified grouting requirements for areas designated in Rule .0117 of this Section. Grouting is addressed later in Rule .0117.</p> <p>Additional sampling requirements for wells on the Outer Banks or wells drilled in saline water. Rule change results in minimal costs impact.</p> <p>Additional requirement to protect wells against infiltration from surface water.</p>	Session Law 2018-65		
15A NCAC 02C .0108 STANDARDS OF CONSTRUCTION: WELLS OTHER THAN WATER SUPPLY	<p>Changed language for clarification, updated reference, reorganization, grammar revision, consistency or superfluous</p> <p>New construction requirements for non-water supply wells that encounter shallow groundwater (adapts current Division policy)</p> <p>Clarification when geotechnical borings and soil borings are not considered wells</p>	Staff and Stakeholders review	None	None
15A NCAC 02C .0109 PUMPS AND PUMPING EQUIPMENT	<p>Changed language for clarification, and reorganization</p> <p>Safe Drinking Water Act already requires materials to be lead-free.</p>	Staff and Stakeholders review	None	None
15A NCAC 02C .0110 WELL TESTS FOR YIELD	Changed language for clarification, reorganization, and grammar revision.	Staff and Stakeholders review	None	None
15A NCAC 02C .0111 DISINFECTION OF WATER SUPPLY WELLS	<p>Changed language for clarification, grammar revision, or superfluous</p> <p>Example of chlorination is deleted</p> <p>Requirements added for approval of alternate disinfection methods or materials (adapts current Division policy).</p>	Staff and Stakeholders review	None	None
15A NCAC 02C .0112 WELL MAINTENANCE: REPAIR:	Changed language for clarification, updated reference, reorganization, or grammar revision	Staff and Stakeholders review	None	None

GROUNDWATER RESOURCES	Clarification that wells heads must be completed 12 inches above land surface.  Requirements added for approval of methods and materials used for non-continuous chemical treatment (adapts current Division policy).			
15A NCAC 02C .0113 ABANDONMENT OF WELLS	Changed language for clarification, and grammar revision  Casing does not have to be removed. Rule change results in <u>savings</u> for permittees as there is less time spent in abandonment activities (labor costs reduced) and less materials to dispose of.  Alternate well abandonment method added for non-water supply wells in consolidated materials (e.g. bedrock).	Staff and Stakeholders review	Savings due to less time spent on abandonment.	None
15A NCAC 02C .0114 DATA AND RECORDS REQUIRED	Changed language for clarification, updated reference, reorganization, grammar revision, consistency or superfluous  Well cuttings no longer required to be furnished to the Division  Clarification that well construction forms (GW-1s) and abandonment forms (GW-30s) are required for direct push technology (DPT) wells  Multiple DPT wells that have the same construction must submit one GW-1 or GW-30. Possible savings.	Staff and Stakeholders review	None	None
15A NCAC 02C .0116 DESIGNATED AREAS: WATER SUPPLY WELLS CASED TO LESS THAN 20 FEET	Changed language for clarification, and grammar revision	Staff and Stakeholders review	None	None
15A NCAC 02C .0117 DESIGNATED AREAS: WATER SUPPLY WELLS CASED TO MINIMUM DEPTH OF 35 FEET	Increased casing depth from 35 feet to 43 feet but reduced minimum grouting from 35 to 20 feet. Rule change results in minimal costs impact, if any.	Session Law 2018-65	None	Negligible
15A NCAC 02C .0118 VARIANCE	Changed language for clarification, updated reference, grammar revision, and consistency  Variances requested must be on Division form.	Staff and Stakeholders review	None	None
15A NCAC 02C .0119 DELEGATION	Changed language for clarification	Staff and Stakeholders review	None	None

### Section .0200 – Criteria and Standards Applicable to Injection Wells

Rule	Proposed Change	Source of Change	Economic Impact	Environment Impact
15A NCAC 02C .0201 PURPOSE	NONE	Staff Review	None	None
15A NCAC 02C .0202 SCOPE	Grammar revision	Staff and Stakeholders review	None	None
15A NCAC 02C .0203 CONFLICT WITH OTHER LAWS, RULES, AND REGULATIONS	NONE	Staff Review	None	None
15A NCAC 02C .0204 DEFINITIONS	<p>Changed language for clarification, updated reference, grammar revision, consistency or superfluous</p> <p>Deletes definition for “approved,” required, “necessary” and “impose”</p> <p>Deletes the restriction of hydraulic or pneumatic fracturing</p> <p>Adds the definition of “Infiltration Gallery”</p> <p>Adds the definition of “Oversight Agency”</p> <p>Adds the definition of “Water-tight”.</p>	Staff and Stakeholders review	None	None
15A NCAC 02C .0206 CORRECTIVE ACTION	Changed language for clarification, updated reference, grammar revision, consistency or superfluous.	Staff and Stakeholders review	None	None
15A NCAC 02C .0207 MECHANICAL INTEGRITY	Changed language for clarification, updated reference, grammar revision, consistency or superfluous.	Staff and Stakeholders review	None	None
15A NCAC 02C .0208 FINANCIAL RESPONSIBILITY	Grammar Revision	Staff and Stakeholders review	None	None
15A NCAC 02C .0209 CLASSIFICATION OF INJECTION WELLS	NONE	Staff and Stakeholders review	None	None
15A NCAC 02C .0210 REQUIREMENTS: WELLS USED TO INJECT WASTE OR CONTAMINANTS	Grammar Revision	Staff and Stakeholders review	None	None
15A NCAC 02C .0211 GENERAL PERMITTING REQUIREMENTS APPLICABLE TO ALL INJECTION WELL TYPES	Changed language for clarification, grammar revision, consistency or superfluous.	Staff and Stakeholders review	None	None

15A NCAC 02C .0217 PERMITTING BY RULE	Grammar Revision	Staff and Stakeholders review	None	None
15A NCAC 02C .0218 AQUIFER RECHARGE WELLS	Clarification	Staff and Stakeholders review	None	None
15A NCAC 02C .0219 AQUIFER STORAGE AND RECOVERY WELLS	Changed language for clarification, updated reference, grammar revision, consistency or superfluous.  Clarifies that a permit is required for an Aquifer Storage and Recovery Well.  Clarifies timeframe for grout when contacting saline water.	Staff and Stakeholders review	None	None
15A NCAC 02C .0220 AQUIFER TEST WELLS	Changed language for clarification, or grammar revision.	Staff and Stakeholders review	None	None
15A NCAC 02C .0221 EXPERIMENTAL TECHNOLOGY WELLS	Changed language for clarification, grammar revision, consistency or superfluous.	Staff and Stakeholders review	None	None
15A NCAC 02C .0222 GEOHERMAL AQUEOUS CLOSED-LOOP WELLS	Changed language for clarification, updated reference, grammar revision, consistency or superfluous  Clarification of potential sources of groundwater contamination  Adds separation distance to water-tight lateral lines. Rule change allows for more sites to have wells. If anything, it allows for more home construction and well driller activity.  Adds requirement of thermally enhanced bentonite slurry grout. Industry has used this type of grout for years due to effectiveness.  Deletes clarification of how grout is emplaced in a borehole or annular space.  Clarifies timeframe for grout when contacting contaminated or saline water. Typically, well contractors already have on site supplies and equipment needed for grouting. They are now required to grout sooner.	Staff and Stakeholders review	None	Changes are slightly more protective of the well user. Also decreases chances of conduit for contamination.
15A NCAC 02C .0223 GEOHERMAL DIRECT EXPANSION CLOSED-LOOP WELLS	Changed language for clarification, updated reference, grammar revision, consistency or superfluous  Clarification of potential sources of groundwater contamination	Staff and Stakeholders review	None	Changes are slightly more protective because there is a lower risk of groundwater

	<p>Adds separation distance to water-tight lateral lines. Rule change allows for more sites to have wells. If anything, it allows for more home construction and well driller activity.</p> <p>Adds requirement of thermally enhanced bentonite slurry grout. Industry has used this type of grout for years due to effectiveness.</p> <p>Deletes clarification of how grout is emplaced in a borehole or annular space.</p> <p>Clarifies timeframe for grout when contacting contaminated or saline water. Typically, well contractors already have on site supplies and equipment needed for grouting. They are now required to grout sooner.</p>			<p>contamination by requiring pressure or pumping only of bentonite grout the entire length of borehole</p>
<p>15A NCAC 02C .0224 GEOTHERMAL HEATING/COOLING WATER RETURN WELLS</p>	<p>Changed language for clarification, updated reference, grammar revision, consistency or superfluous</p>	<p>Staff and Stakeholders review</p>	<p>None</p>	<p>None</p>
<p>15A NCAC 02C .0225 GROUNDWATER REMEDIATION WELLS</p>	<p>Changed language for clarification, updated reference, grammar revision, consistency or superfluous</p> <p>Adds in-situ thermal systems as deemed permitted by rule; includes criteria. Rule change results in less costs for industry as permitting requirements are reduced, but must still meet same requirements.</p> <p>Systems re-injecting on-site contaminated groundwater (NEW TO THIS RULE, previously permitted under 15A NCAC 2T .1600) has addition requirements that include:</p> <ul style="list-style-type: none"> <li>• Soils evaluation; rule lists requirements</li> <li>• Computer modeling or predictive calculations</li> <li>• Engineering planning documents; rule lists requirements</li> <li>• Application and annual fees; rule lists requirements.</li> </ul>	<p>Staff and Stakeholders review</p>	<p>None</p>	<p>None</p>

	<p>Clarifies timeframe for grout when contacting contaminated or saline water</p> <p>Deletes subsurface distribution systems; covered throughout the rule</p> <p>Changes reports for sampling results from quarterly to annually. Rule change results in less costs for industry as reporting requirements are reduced, but must still meet same monitoring requirements.</p> <p>Clarifies requirements for reporting groundwater monitoring.</p>			
15A NCAC 02C .0226 SALINITY BARRIER WELLS	Changed language for clarification, updated reference, grammar revision, consistency or superfluous	Staff and Stakeholders review	None	None
15A NCAC 02C .0227 STORMWATER DRAINAGE WELLS	Changed language for clarification, grammar revision, consistency or superfluous	Staff and Stakeholders review	None	None
15A NCAC 02C .0228 SUBSIDENCE CONTROL WELLS	Clarification	Staff and Stakeholders review	None	None
15A NCAC 02C .0229 TRACER WELLS	Clarification	Staff and Stakeholders review	None	None
15A NCAC 02C .0230 OTHER WELLS	Changed language for clarification, grammar revision, consistency or superfluous	Staff and Stakeholders review	None	None
15A NCAC 02C .0240 ABANDONMENT AND CHANGE-OF-STATUS OF WELLS	<p>Changed language for clarification, grammar revision, consistency or superfluous</p> <p>Clarifies whether the well owner or the certified well contractor is responsible for permanent abandonment</p> <p>Adds abandonment requirements for infiltration galleries (previously permitted under 15A NCAC 2T .1600)</p>	Staff and Stakeholders review	None	None
15A NCAC 02C .0241 VARIANCE	Changed language for clarification updated reference, grammar revision, consistency or superfluous	Staff and Stakeholders review	None	None
15A NCAC 02C .0242 DELEGATION	NONE	Staff and Stakeholders review	None	None

## 4.0 Costs

### 4.1 State Government, Local Government, and Federal Government

Changes to these rules represent revised language for clarification, updated names of North Carolina regulatory agencies, grammar revisions, conformance to statutory requirements, reflect advancements in technology since these rules were last readopted, and overall, a less stringent burden on the regulated community. In some cases, there is provided additional flexibility to the regulated community along with a cost savings in compliance. None of these changes will require DEQ or other government agencies to revise their existing procedures or to procure additional staff; as such, there should be no net increases in economic cost to state agencies, local governments or federal governments.

These changes will not affect environmental permitting of NC Department of Transportation (NCDOT); as such, there should be no economic impact to NCDOT.

### 4.2 Private Entities

Well contractors are the regulated entity primarily impacted by these proposed rule changes. One of the proposed changes in Rule 15A NCAC .02C .0107 is that wells on the Outer Banks or wells drilled in potential saline groundwaters must be sampled for chloride concentrations if bentonite grout is used. Bentonite grout may not set and be an effective seal when used in highly saline groundwater. Well Contractors will be required to sample for chloride concentrations with the option of using a field test kit or sending the sample to a private lab. It is anticipated most Well Contractors will use the field kit to avoid well construction delays if using bentonite grout or will use cement grout instead.

Field test kits are normally about \$250.00 per kit. This cost impact is minimal in relation to the total cost of the well. It is estimated in the counties that are susceptible to saline groundwaters that approximately 50 wells are drilled each year; bringing the total estimate to \$12,500 per year. Results will be recorded on the well construction record, which is already required to be submitted to the state, so no additional costs are anticipated for reporting.

Session Law 2018-65 requires increased casing depth from 35 feet to 43 feet but reduced minimum grouting from 35 to 20 feet. After discussions with well contractors concerning the incorporation of the recent Session Law, there was a consensus that requiring more casing but less grout essentially offsets any potential increase in costs. Specifically, if PVC casing is being used in the construction of the well, the cost would be a little less than the cost of the grout. Additionally, the reduced amount of labor costs of placing grout to 20 feet instead of 35 feet would result in lower costs as well. When steel casing is used in the construction, the casing will cost more, but the costs would be minimal, considering the reduced amount of grout needed.

### 4.3 Environment

Overall, there will be little or no cost to the environment. With incorporation of S.L. 2018-65, separation distances are reduced in most single-family residences to septic tanks and drainfields. However, the risk is minimal as grout is minimum of 20 feet below land surface (except for designated areas in 02C .0116) and casing is extended to 43 feet in designated areas in 02C .0117.

## 5.0 Benefits

### 5.1 State Government, Local Government and Federal Government

The administrative changes are mainly for the purpose of providing clarity to the regulated community thereby making the rule easier to understand. This should translate into less time spent by the development community on the permit application process as well as less time spent by regulatory staff reviewing applications, performing inspections and providing technical assistance. The amount of time saved will be negligible and will not provide a significant financial benefit; however, it is noted here for completeness.

### 5.2 Private Entities

The proposed change in Rule 15A NCAC .02C .0107 for wells on the Outer Banks area or wells drilled in potential saline groundwaters is anticipated to assist the state in knowing what is naturally occurring in the area. Currently the state Groundwater Standards, 15A NCAC 2L .0200, state that if the groundwaters contain 250 mg/l or less of chlorides, they are Class GA; groundwaters that contain greater than 250 mg/l of chlorides are Class GSA. This distinction assists the state in determining whether groundwaters are suitable for drinking water supplies or not. It also assists the state in defining what levels responsible parties that cause groundwater contamination must clean up to. Either scenario promotes the preservation of the quality of the natural groundwaters.

Session Law 2018-65 requires reduced separation distance to a septic tank and drainfield, including the drainfield repair area, from 100 feet to 50 feet for all single-family residences (except those with septic tank systems in saprolite). Conversations with members of the well drilling community suggests this will be an overall economic benefit to industry since there will be more opportunity for well installation and development. Further, the economic benefit of the reduced separation distance is expected to offset any slight cost increases due to other rule revisions.

### 5.3 Environment

Overall, there will be little or no benefit to the environment. With changes proposed in re-adoption of certain rules, there is more protection to the well user for various reasons including a reduced risk of closed-loop geothermal wells being a conduit for groundwater contamination by requiring pressure or pumping only of bentonite the entire length of borehole and testing of chlorides for more competent grouting of wells in the Outer Banks area.

## 6.0 Total Economic Impact

As measured from baseline conditions, the Division expects a total yearly cost around \$12,500 (~\$250 per field kit) to Private Entities from rule revision 15A NCAC 02C .0107. This cost would be limited mainly to those working in the Outer Banks area. For the other proposed rules, no new economic costs are anticipated. With the incorporation of S.L. 2018-65 (Section 4.(c)), the Division believes there would be an economic benefit to industry that offsets these costs and potentially a net benefit to some industry; however, the amount of this benefit could not be quantified. The proposed rulemaking will not meet or exceed the \$1,000,000 threshold for substantial economic impact as defined in G.S. 150B-21.4.

The subject rules are attached.