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NORTH CAROLINA
Environmental Quality

December 17, 2021

Mr. Dale Froneberger
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

Re: Revised North Carolina Capacity Development Program Strategy

Dear Mr. Froneberger:

Please find attached a copy of North Carolina's revised Capacity Development Program Strategy, dated December 17, 2021. The attached document is intended to replace the state's original Capacity Development Program Strategy, which was submitted on August 23, 2000. As per requirements of the America's Water Infrastructure Act of 2018 and subsequent amendments to Section 1420 (c)(2) of the Safe Drinking Water Act, the revised strategy includes provisions to encourage the development of asset management plans and to support training and technical assistance related to asset management. The revised strategy also includes general updates and minor technical corrections.

If you have any questions or need additional information, please contact me at (919) 707-9088 or via e-mail at Robert.Midgette@ncdenr.gov.

Sincerely,

A handwritten signature in black ink that reads "RW Midgette".

Robert W. Midgette, P.E., Section Chief
Public Water Supply Section
NC Division of Water Resources
NC Department of Environmental Quality

cc: Jay Frick, Technical Services Branch Head
Andrew Jarman, Capacity Development Team Leader



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Capacity Development Program Strategy

Public Water Supply Section

North Carolina Department of Environmental Quality

Created: August 2000
Last Update: December 17, 2021

1.0 Introduction

(Note: This document, which outlines the North Carolina strategy to create a Capacity Development Program, was originally completed in August 2000 per requirements in the 1996 Amendments to the Safe Drinking Water Act. The initial strategy was subsequently reviewed and approved by EPA, and then it was successfully implemented by the state. To accommodate recent requirements of the 2018 America’s Water Infrastructure Act, this document was revised in 2021, specifically to include provisions for a new category of concern to EPA, asset management. The additions specifically associated with asset management can readily be found in these sections:

- 2.0 Interested Persons, see page 5;
- 5.0 Use of Authorities and Resources to Enhance the Technical, Managerial and Financial Capacity; Subsection: Technical Assistance from North Carolina’s Rural Water Association, see page 16;
- 7.0 Encourage and Assist in Development and Implementation of Asset Management Plans, see page 20; and
- 8.0 Summary, see page 23.

The longevity of the state’s original capacity development strategy is an indicator of its relevance, and although minor revisions and technical corrections were necessary during the recent revision, an attempt was made to preserve the original text to the fullest extent possible, thereby maintaining the perspective and context leading to the advent of the state’s Capacity Development Program.)

In 1996, the federal Safe Drinking Water Act (SDWA) was amended to include a new provision called “Capacity Development.” Section 1420 of the Act requires states to establish a capacity development program designed to ensure that the state’s public water systems have the technical, managerial and financial ability to meet federal and state requirements. Each state’s program must contain two elements; (1) states must have the legal authority to ensure that all new public water systems have the technical, managerial, and financial capacity to meet federal and state requirements; and (2) states must establish a capacity development strategy to assist existing public water supply systems in improving their technical, managerial, and financial capacity to meet federal and state requirements.

To establish North Carolina’s capacity development authority to ensure that all new, community and non-transient non-community water systems demonstrate technical, managerial and financial capacity; stakeholders and the Department of Environmental Quality (formerly named the Department of Environment and Natural Resources when this program strategy was first created, and referred to within this document as the “Department”) determined that revisions/additions to the *Rules Governing Public Water Systems* were necessary. Specifically, it was determined that rules concerning the approval of plans, specifications and reports for new system construction must be revised. It was also determined that the regulatory requirements for expanding or altering an existing system should continue to be the same as the requirements for new system

construction. Existing systems planning alterations or expansions may inadvertently threaten their successful operation if changes are not carefully planned and managed. Therefore, North Carolina established rule revisions/additions, effective October 1, 1999, that provided both the authority for new systems and the primary component of the strategy for existing systems.

The purpose of this document is to describe how North Carolina has established and implemented a capacity development strategy program to assist existing public water systems in improving their technical, managerial and financial capacity, as per the 1996 Amendments of the Safe Drinking Water Act. This document was revised in 2021 to accommodate requirements of the America's Water Infrastructure Act of 2018.

2.0 Interested Persons

In accordance with the SDWA and USEPA guidance, this section of North Carolina’s strategy describes:

“An identification of the persons that have an interest in and are involved in the development and implementation of the capacity development strategy.”

In May 1995, the Department established a Viability Task Force to develop an initiative to restrict the proliferation of new nonviable water systems and to enhance the viability of existing systems. The Viability Task Force Report, dated December 16, 1996 provided a basis for the development of the Capacity Development Program.

Using information from the Viability Task Force work, the Department’s Public Water Supply (PWS) Section created a list of potentially interested parties and stakeholders. All people on the mailing list were sent a letter on October 2, 1998 inviting them to participate in the development of the program and to serve on the Capacity Development Advisory Committee (see Attachment 1). To facilitate development of the Capacity Development Program and the rule making process, five Advisory Committee meetings were held between October 1998 and March 1999. At each of the meetings, time was scheduled for informative presentations during whole group sessions. There was also time scheduled for small group discussion. The Advisory Committee reviewed draft proposals and rules prepared by PWS Section staff, and provided input, concerns, corrections and direction on the development of the Capacity Development Program.

All new and/or revised temporary and permanent rules related to the PWS Section’s *Rules Governing Public Water Systems* must be presented to and approved by N.C. Commission for Public Health, which was formerly known as the Commission for Health Services (CHS) when this document was first created. The PWS Section presented North Carolina’s capacity development rules concerning new and existing community and non-transient, non-community public water systems to the CHS on two occasions. On May 19, 1999, the PWS Section presented the proposed temporary rules to the CHS. The rules were approved and became effective October 1, 1999. On November 19, 1999 the PWS Section presented the permanent capacity development rules to the CHS and received approval. At both CHS meetings, the public was given an opportunity to comment on the proposed rules. No comments were made during either of the meetings.

On August 16, 1999, a Notice of Public Hearing was mailed to all community and NTNC water systems and to a list of professional engineers that the PWS Section maintains. The notice informed the parties about a Public Hearing scheduled for September 21, 1999 concerning the proposed rule changes for new and existing water systems. The parties were informed that the PWS Section would receive comments concerning the rules through September 21, 1999. No public comments were made at the Public Hearing or during period for accepting written public comment. The Department did receive three

written comments concerning the temporary rules. The PWS Section reviewed these public comments and revised the proposed permanent rules.

Prior to the proposed permanent rules going to the North Carolina Legislature, the PWS Section was required to submit the proposed rules to the Rules Review Commission. During the December 16, 1999 Rules Review Commission meeting, Commission staff presented the rules. The proposed rules were approved without comment by the members of the Rules Review Commission or by the public. The permanent rules became effective August 1, 2000.

Regarding the current requirement to address asset management, it should be noted that robust asset management activities were already established in the state prior to the AWIA requirements, and these ongoing activities are included as components of the revised capacity development strategy. At their original inception, such activities were subject to various levels of public input and/or public comment. For example, the state provides Asset Inventory and Assessment Grants available from its Drinking Water Reserve Fund. The grants are codified in statute and the program includes a priority rating system that was subject to public comment and subsequent approval by the State Water Infrastructure Authority (SWIA). Additionally, the state DWSRF allows priority points for applicants that have completed asset management planning, and the Public Water Supply Section supports NCRWA circuit riders who provide individual assistance for asset management. Both of these activities are annually included in the state's Intended Use Plan which is subject to public review and comment, and they are also subject to the SWIA review and approval process. The meeting schedule of SWIA is published online, and the NC Division of Water Infrastructure considers any public input or feedback related to SWIA activities.

In response to EPA recommendations to seek stakeholder feedback directly related to the revised strategy document, the Public Water Supply Section will reinitiate contact with potentially interested parties and other stakeholders regarding the incorporation of asset management into the capacity development strategy. Stakeholder correspondence (see Attachment 2) will be sent out on January 14 to a subset of the original Advisory Committee stakeholders (described previously), notifying them of the intended strategy revisions and inviting feedback regarding the state's approach to encourage asset management planning. In addition to selected members of our original Advisory Committee, other potential stakeholders may be identified to include a broader sample of the state's water systems, as well as external training providers related to operator certification. Stakeholders will be provided the revised strategy document via a web link and encouraged to respond with feedback and comments. Follow-up communication, if necessary, may include individual interaction and/or a virtual group setting as deemed appropriate.

3.0 Identification and Prioritization of PWS Systems

In accordance with the SDWA and USEPA guidance, this section of North Carolina’s strategy describes:

“The methods or criteria that the State will use to identify and prioritize the public water systems most in need of improving technical, managerial and financial capacity.”

During the Advisory Committee meetings, the stakeholders agreed it is difficult for the state, or other technical service providers, to affect improvements in the technical, managerial or financial capacity of a PWS system after a problem has been identified. Also, it was suggested that many existing systems begin to experience capacity problems as a result of poorly planned and/or financed expansions. Therefore, North Carolina’s primary method for evaluating the need for improving technical, managerial and financial capacity of existing systems is the implementation of the rule revisions/additions, effective October 1, 1999 concerning the approval of plans, specifications and reports for new and existing system construction. The comprehensive requirements specified by the revised rules for obtaining authorization to alter or expand an existing system include the approval of engineering plans and specifications and the completion of a Water System Management Plan (WSMP). The WSMP is required to contain documentation of the system’s managerial and financial capacity. The requirements of the revised rules are detailed in Section 5.0.

North Carolina’s PWS Section will also identify and prioritize systems in need of improving technical, managerial and financial capacity using the following tools:

- North Carolina’s list of significant non-compliant (SNC) water systems, such as the SNC list and/or the ETT list provided by EPA
- Sanitary Surveys and Technical Assistance
- Administrative Penalties
- Technical Assistance from North Carolina’s Rural Water Association (NCRWA)

4.0 Factors That Impact Capacity Development

In accordance with the SDWA and USEPA guidance, this section of North Carolina’s strategy describes:

“The institutional, regulatory, financial, tax or legal factors at the Federal, State, or local level that encourage or impair capacity development.”

The primary regulations that encourage capacity development in North Carolina are the following rules that were originally revised in the year 2000 to establish a capacity development program for new and existing systems:

North Carolina Administrative Code, Title 15A, Subchapter 18C,

- Section .0300 Submission of Plans: Specifications: and Reports
- Section .0301 Applicability: Prior Notice
- Section .0302 Submittals
- Section .0303 Submissions Required by Engineer and Applicant
- Section .0304 Application for Approval: By Whom Made
- Section .0305 Approvals Necessary Before Contracting or Constructing
- Section .0306 Changes in Engineering Plans or Specifications After Approval
- Section .0307 Engineer’s Report, Water System Management Plan and Other Plans
- Section .0308 Engineering Plans and Specifications
- Section .0309 Final Approval
- Section .1304 Water System Operation and Maintenance

These revised rules (see Attachment 3) are discussed in Section 5.0.

Additional requirements applicable to public water systems in North Carolina that encourage capacity include:

- North Carolina Public Utilities Laws and Regulations
- Local Government Budget and Fiscal Control Act
- Rules Governing Water Treatment Facility Operators

North Carolina Public Utilities Laws and Regulations

The North Carolina Utilities Commission (NCUC) is responsible for implementation of the North Carolina public utilities laws and regulations applicable to public water supply systems. These rules require the NCUC to issue Orders Granting Franchise and Approving Rates and Orders Recognizing Contiguous Extension and Approving Rates. In providing recommendations to the NCUC regarding issuance of these orders, the public staff considers the financial strength of the utility. In addition, the NCUC rules require that utilities furnish a bond to the Commission “in an amount not less than \$10,000, sufficient to provide financial responsibility in a manner acceptable to the Commission.”

Local Government Budget and Fiscal Control Act

The North Carolina Local Government Commission (LGC) was established by the General Assembly in 1931 to assist local governments in refinancing and restructuring existing burdensome debts. The chief responsibilities today include authorizing and selling local government debt and assisting and monitoring the local government fiscal programs. The LGC was given extraordinary enforcement powers, including the power to totally control the financial aspects of a local government when it defaults on a debt service payment or when the Commission thinks it will default on a future debt service payment. However, the LGC has a long history of successfully working with local governments, causing the use of these powers to be seldom used. The LGC has established financial procedures that local governments must follow in order to be approved for a loan for water system expansion projects. To evaluate the feasibility of proposed projects that require a local government to incur debt, the LGC staff consider factors including:

- Purpose of the proposed project and necessity
- Source of water supply for current and future needs
- Connection policy, mandatory or optional, and expected connection percentage
- Assessments, availability fees, impact fees
- Current and proposed rate structure
- Public hearings and market research
- Preliminary engineering report and feasibility study
- Cost estimates and contingency
- Findings from the last annual audit

The LGC will approve the issuance of the loan if they determine:

- The project is necessary and expedient
- The unit of local government's debt management procedures and policies are good
- The sums to fall due under the contract are adequate and not excessive
- An increase in taxes, if necessary to meet the sums to fall due, will not be excessive
- The unit of government is not in default in any of its debt service obligations

Rules Governing Water Treatment Facility Operators

The Rules Governing Water Treatment Facility Operators (North Carolina Administrative Code, Title 15A, Subchapter 18D) were first codified February 1, 1976 and have been amended on several occasions since the inception of this document, with the latest amendment occurring in September of 2018. These rules provide the regulatory framework for the training and certification of public water system operators and for the classification of the water systems. These regulations require an operator in responsible charge for all community and non-transient non-community public water systems and for some transient non-community systems. Properly trained and certified system operators are important for systems to be managed, maintained and operated in compliance with the regulations promulgated under the SDWA.

5.0 Use of Authorities and Resources to Enhance the Technical, Managerial and Financial Capacity

In accordance with the SDWA and USEPA guidance, this section of North Carolina's strategy describes:

“How the state will use the authorities and resources of the SDWA or other means to: assist public water systems in complying with drinking water regulations; encourage development of partnerships between public water systems to enhance the technical, managerial and financial capacity of the systems; and assist public water systems in the training and certification of operators.”

Revised Rules for Submission of Plans, Specifications and Reports for New, Expanding and Altered Systems

To support the Capacity Development Program objective to ensure that all new, altered or expanded community and non-transient non-community water systems demonstrate technical, managerial and financial capacity, the stakeholders determined that revisions/additions to the *Rules Governing Public Water Systems* were necessary. It was also determined that due to North Carolina's rule making procedures, the revisions/additions needed to be established as temporary rules in order to meet the October 1, 1999 deadline from EPA. The permanent rule revisions (see Attachment 3) became effective August 1, 2000. Since that time, the *Rules Governing Public Water Systems* have been amended on several occasions, with the latest amendment occurring in November of 2020.

Title 15A NCAC 18C Section .0300 - Submission of Plans: Specifications: and Reports was amended to include capacity development requirements. The original Section .0300 rules (effective January 1, 1977) required the submittal and approval of engineering plans and specifications as documentation of technical adequacy before the construction alteration or expansion of a public water supply system. For more complex projects an Engineer's Report was required. Section .0307(b) was amended to require the submittal of an Engineer's Report for all projects. Significant information requirements for the Engineer's Reports include:

- A statement regarding the system's maximum daily treated water supply and maximum daily demand
- Consideration of alternative plans for meeting the water supply requirements of the area, including obtaining water service from an existing system
- For existing systems, prioritized list of infrastructure improvements

To address the managerial and financial capacity requirements, an owner of a public water supply system is required to submit a Water System Management Plan (WSMP) in accordance with Rule .0307 (c). Significant information requirements for a WSMP include:

- Description of the system organization and ownership structure
- Description of management qualifications and training plan
- Policies on cross-connection control, customer service, budget and rate structure, response to water quality problems and safety
- System monitoring and record keeping requirements
- Financial Plan

The rules include a second step in the approval process before construction of a new, altered or expanded existing water system. The first step of the approval process is the long-standing requirement for approval of engineering plans and specifications. The second step of the process is the issuance by the Department of an Authorization to Construct letter (see Rule .0305(a) and Attachment 2 of the guidance document). This authorization will be issued to the applicant following completion and submittal of the Engineer's Report and WSMP in addition to approval of engineering plans and specifications.

Rule .0303 requires the submittal of an Engineer's and Applicant's certification after the water system is constructed. The Engineer's certification shall state that the system was constructed in accordance with the approved engineering plans and specifications. The Applicant's certification shall state that an Operation and Maintenance Plan and Emergency Management Plan have been completed in accordance with the rules. These plans must be accessible to the operator at all times and available to the Department upon request. After the Department receives the two certifications, a final approval letter is issued in accordance with Rule .0309.

To determine if a water system meets North Carolina's capacity development requirements for new, altered or expanded water systems the following events must occur:

1. The applicant shall submit an Engineer's Report, engineering plans and specifications and a WSMP.
2. If the Engineer's Report is complete and the engineering plans and specifications meet all requirements, the Department shall approve engineering plans and specifications.

3. If, in addition to having approved plans and specifications, the Department determines that the WSMP is complete, the Department shall issue an Authorization to Construct letter.
4. The applicant shall submit an Engineer's certification and an Applicant's certification.
5. The Department shall issue a final approval letter.
6. The new construction, alteration or expansion project may be placed into service.

The PWS Section developed a guidance document entitled "Public Water System Capacity Development Guidance Document" to assist public water systems in complying with the regulatory requirements as of their codification in August 2000. A copy of this original guidance document has been preserved for historical context and is available on the PWS Section website at:

<https://files.nc.gov/ncdeq/Water%20Quality/capacitydevguide.pdf>.

Online Sampling Status Report

In an effort to provide effective technical assistance the PWS Section prepared and mailed the first annual Monitoring Status & Sampling Schedule reports to each community and non-transient non-community water system in 1999. These hard copy reports provided the dates that the last compliance samples were collected and when the next samples were due. It also provided entry point identification codes and the frequencies that each entry point must be tested. The annual hard copy reports were later replaced with the online Sampling Status Report application, which allows water system staff to run the report on demand and at their convenience. Water systems use this report to aid with scheduling of required monitoring and to verify water system information, reporting any discrepancies to the PWS Section for evaluation and corrections to the database.

Compliance Inspection Report

For years the PWS Section has used its authority and resources to visit public water systems on a regular basis. During these visits technical assistance is provided and violations with respect to the *Rules Governing Public Water Systems* are noted. Historically, only if operational or construction violations were noted, the PWS inspector would send a Notice of Violation letter to the PWS system owner after returning to the Regional Office. Typically, the letter would cite the appropriate rule, describe the violation and required action, and specify a date for compliance. As staff worked with stakeholder groups to develop a Capacity Development strategy, it became evident that this process would be more effective if, a "Compliance Inspection Report" could be issued at the time of the visit. As appropriate, the report would document that the system was in compliance with the *Rules Governing Public Water Systems* or would serve as a

field generated Notice of Violation. The benefits of the field generated Compliance Inspection Report include:

- For well constructed, managed and operated systems, the report can be used to provide owners and/or responsible persons with documentation to indicate that their system was determined to be in compliance with the *Rules Governing Public Water Systems*.
- Owners and/or responsible persons will receive immediate written documentation of a violation. This will reduce the potential for miscommunication and subsequent misunderstandings.
- Immediate written documentation will provide useful evidence in the event of future legal proceedings.
- Fewer man-hours will be required to issue NOVs by reducing the administrative support required to generate formal letters.

A PWS Section work group was formed and worked to develop a multi-copy form that could be used by regional staff to issue Compliance Inspection Reports in the field. The work product was a four-copy form designed for distribution to 1) recipient in the field (i.e., responsible person, operator) 2) system owner 3) PWS Section Regional office file and 4) PWS Section central file.

After successful pilot testing, the Compliance Inspection Report form was provided for regional staff use in July 2000. A copy of the report is provided as Attachment 4.

Technical Assistance to Small Water Systems

The Safe Drinking Water Act has significantly increased the responsibilities and workload of public water system owners/operators. All areas of water system operation have increased in complexity. While the water system owner/operator relies on the state for assistance more heavily than ever before, the PWS Section field staff has increased very little. The result is limited technical assistance available to the water systems. However, some relief is provided by the use of funds from a State Revolving Fund set-aside account to provide continuing funding for three full-time Environmental Technician IV positions. These positions have increased the ratio of field staff to water systems and allow each field staff to devote a greater percentage of time to technical assistance. The detailed specifications for technical assistance tasks are included in the State Revolving Fund Intended Use Plan approved for fiscal year 1999.

Transient Non-Community Water Systems

From the inception of the Safe Drinking Water Act in 1974, the very small transient non-community (TNC) water systems were a concern of Congress, which recognized the need for regulation of these systems to protect public health. For states with large numbers of

transient systems such as North Carolina, the funding was not provided to adequately address the transient problem. For years North Carolina implemented the drinking water program in accordance with the “Priorities Guidance” from EPA which focused the limited program resources available on the most significant issues. The State Revolving Fund set aside for State Program Management now provides North Carolina with the opportunity to initiate enforcement and oversight activities of the transient systems to include:

- Identification of TNC systems not on inventory
- Verification and maintenance of the TNC inventory
- Initial sanitary surveys and follow-up surveys every ten years
- Compliance and enforcement work including automated violation letters
- Follow-up actions to contamination and issuance of boil water notices
- Technical assistance

As stated in the State Revolving Fund Intended Use Plan approved for fiscal year 1999, the funds from the State Program Management set-aside are used to provide continuous funding for ten engineering positions (seven in field offices), one Water Plant Consultant, one Computer Analyst, one Data Entry Specialist and one Processing Assistant.

North Carolina’s Wellhead Protection Program

North Carolina has an established EPA approved Wellhead Protection (WHP) Program. The WHP Program is a voluntary program intended for city and county governments and water supply operators that wish to develop and implement a plan to provide added protection to local ground water supplies.

Local governments and public water supply systems enhance the technical and managerial capacity of their systems by developing a local WHP Plan. The first step in developing a WHP Plan is to establish a local planning team. It is the responsibility of the planning team to determine the appropriate protection strategies for local well systems. This determination is made by first identifying the recharge area which supplies ground water to a well. Once this “Wellhead Protection Area (WHPA)” has been delineated, an inventory of potential contaminant sources (PCSs) is conducted to gather information concerning the nature and the magnitude of the threat posed by the PCSs. This inventory includes conducting windshield surveys, conducting interviews with owners and operators of PCSs, and examining available information contained in database maintained by various local, state and federal agencies. The inventory catalogues all potential sources of ground water contamination occurring within the WHPA. Potential sources of contamination found within a WHPA must then be managed or eliminated. The planning team is responsible for developing management strategies to reduce the potential risk posed by the PCSs to their water supplies.

A local WHP Plan also requires the development of a contingency plan for responding to disruptions of the public water supply caused by contamination. A contingency plan often includes establishing agreements with neighboring water systems for the provision of

water during emergencies and thus encourages the development of partnerships between public water systems.

Once a Wellhead Protection Program is in place, continued administration of the program is necessary in order for it to be successful. Administration includes the establishment of WHPAs for new wells, periodic well and well site inspection, periodic updating of contaminant source inventories, and the review and revision of WHP management strategies.

North Carolina's Source Water Assessment Program (SWAP)

For each public water supply intake in the state, the PWS Section has completed a source water assessment in accordance with the USEPA approved Source Water Assessment Program (SWAP) Plan. The plan details how the state will:

- Delineate source water assessment areas,
- Inventory significant contaminants in these areas, and
- Determine the susceptibility of each public water supply to contamination.

The state provides maps and a written report summarizing the results of the assessments which will include an inherent vulnerability rating, contaminant inventory rating, and susceptibility determination for each system. There will be no financial burden on the PWS systems for this work as the state will complete, update, and maintain the assessments using funds from a State Revolving Fund (SRF) set-aside account.

The results of the source water assessments will continue to enhance the technical, managerial, and financial capacity of PWS systems to meet drinking water standards by:

- Providing PWS systems information on potential contaminant sources in their delineated areas, and
- Providing the basis for planning and implementing source water protection strategies, and
- Providing information required to be included in consumer confidence reports.

Using the results of the source water assessments for developing strategies for voluntary source water protection, the state will encourage all PWS system owners to implement efforts to manage identified sources of contamination. This will enhance the technical, managerial, and financial capacity of PWS systems to meet drinking water standards. The goal is to reduce or eliminate the potential threat to drinking water supplies through locally implemented and supported regulatory or statutory controls or by using voluntary measures supported by an involved local community. These efforts may include expanding the PWS system's control over a larger portion of land identified as the delineated source water assessment area. This expansion of control could include zoning, easements, or land acquisition implemented by the local government.

Revised Penalty Calculation Procedure

In discussions with Capacity Development stakeholder groups, it became evident that the process for determining the appropriate administrative penalty for water system construction violations needed to be revised to create a greater deterrent for non-compliance. Prior to the revision of the rules in Section .0300 – Submission of Plans: Specifications: and Reports, administrative penalties for construction in violation of these rules were generally assessed at \$1,000 for existing systems and \$10,000 for new systems.

A Public Water Supply work group was formed and developed a penalty matrix for calculating administrative penalties for violation of the two primary requirements in Section .0300. Factors in the penalty matrix include cause, potential effect on public health, population affected and previous compliance record. Based on the penalty matrix the administrative penalty amount for failure to obtain an Authorization to Construct can range from \$1,000 to \$8,500. The penalty amount for failure to obtain Final Approval can range from \$1,000 to \$14,500. Therefore, the maximum penalty for constructing and placing an unapproved system in operation for public consumption is currently \$23,000.

Technical Assistance from North Carolina’s Rural Water Association

The North Carolina PWS Section maintains a contract with the North Carolina Rural Water Association (NCRWA) to provide technical assistance to small water systems (<10,000 people) through circuit riders. This contract is funded by a State Revolving Fund (SRF) set-aside account. The objective of the contract with NCRWA is to provide technical assistance to small water systems for the following types of problems:

- Compliance and Treatment-- interpreting SDWA rules, understanding monitoring requirements, understanding treatment requirements and techniques.
- Operation and Maintenance-- periodic training on proper operation and maintenance of treatment equipment, pumps, motors, pipes, valves, fire hydrants, and meters, and on water conservation, including leak detection.
- Management Techniques-- training and assistance in preparing budgets, doing rate studies, adopting water use rules and regulations, and in preparing for long term financial planning to ensure the long term financial needs of the system will be achieved. In preparation of the state’s inclusion of asset management activities, “developing and implementing asset management plans” was included as a category for NCRWA assistance starting in 2021.

For the NCRWA contract, one short-term measurable goal will be returning systems to compliance because they have obtained the knowledge to comply with regulations. Many of the benefits to the systems will be long term. Through the knowledge and improved management and operational skills acquired, they will be able to improve their

compliance with the Safe Drinking Water Act and the quality of water served to their citizens. Additional measures will be the number of systems provided technical assistance, the hours of assistance provided by the circuit rider, and the number of systems where problems are resolved.

Operator Training

As of 2021, the state of North Carolina has approximately 5,700 certified water treatment plant operators. The operator certification program has been mandated by North Carolina general statutes and rules since 1976. Due to the fact that North Carolina does not have a formally designated training center for operations personnel, the training of these operators has been accomplished by the following organizations.

- The North Carolina Waterworks Operators Association
- The North Carolina Rural Water Association
- The North Carolina American Waterworks Association
- The PWS Section

These agencies have worked cooperatively, in a concerned effort to train the water operators of North Carolina. Their collaborative mission is not only to educate, but to encourage and elevate the standards of all waterworks professionals.

The North Carolina Waterworks Operators Association - Founded in 1939, this association as of 2021 has approximately 2,500 members statewide. The five Sections hold quarterly educational meetings for operators and sponsors two operator training schools annually. These schools are mandatory for operators who are trying to become certified or advance in their certification. A daylong seminar is held in conjunction with one of these schools, designed to provide professional development and continuing education for advanced operators.

The North Carolina Rural Water Association - This non-profit association as of 2021 has approximately 940 members in North Carolina and has been in existence for 45 years. Their goals are to provide training and technical assistance to small and rural water systems in the state. They provide organized training activities for operators of small systems through one day seminars on relevant topics throughout the state. This association also holds a two-day annual conference that provides an opportunity for operators to acquire continuing education and professional development.

The North Carolina American Waterworks Association - As of 2021, this non-profit association has over 2,500 members in North Carolina and is 93 years old. This association provides training schools for distribution, meter technicians, and backflow/cross connection personnel as well as specialty seminars on other water treatment related topics. They also provide an annual conference that provides operators an additional 2 days of continuing education and professional development.

The Public Water Supply Section of the Division of Water Resources - This state agency provides oversight of the public water supply program in North Carolina, including the Operators Certification Program. They work cooperatively with the organizations above in an effort to provide training that is consistent with the goals of the division and the needs of the industry. In past years the Section has also sponsor one day seminars and workshops for operators.

In the initial years of the state's Capacity Development Program, a contract with the NC Waterworks Operators Association is funded by a State Revolving Fund (SRF) set-aside account. The objective of the contract is to provide continued funding for a registrar position to work within the above described organizations, to coordinate the training activities, publish a newsletter and training schedule, register operators for the schools and to keep records on the continuing education hours completed by operators.

6.0 Monitoring Improvement in Capacity

In accordance with the SDWA and USEPA guidance, this section of North Carolina’s strategy describes:

“How the State will establish a baseline and measure improvement in capacity with respect to national primary drinking water regulations and State drinking water laws.”

As described above, the primary component of North Carolina’s capacity development program is evaluation of technical, managerial and financial capacity during the planning stages of new construction, expansion or system alteration. Therefore, a key indicator of water system capacity is compliance with the requirements specified in Section .0300 of the *Rules Governing Public Water Systems*. Specifically, the PWS Section plans to use existing databases to track the following information for public water systems:

- Number of PWS systems with approved plans and specifications.
- Number of PWS systems with a complete Water System Management Plan.
- Number of PWS projects with a submitted Engineer’s certification to document that the system is constructed in accordance with approved plans and specifications.
- Number of PWS projects with a submitted owner’s certification to document that the system has an Operation and Maintenance Plan and an Emergency Management Plan.
- Number of PWS systems that have an appropriate certified operator in responsible charge.

The above information, in addition to compliance information will be used to measure improvements in capacity.

Also, the PWS Section will track the number of water supply intakes with complete Wellhead Protection Plans and/or Source Water Assessments as a measure of improved capacity.

7.0 Encourage and Assist in Development and Implementation of Asset Management Plans

In accordance with revisions of the SDWA and USEPA guidance, this section of North Carolina’s strategy was added in 2021 and describes:

“How the state will, as appropriate: encourage development by public water systems of asset management plans that include best practices for asset management; and assist, including through the provision of technical assistance, public water systems in training operators or other relevant and appropriate persons in implementing such asset management plans.”

The 2018 America’s Water Infrastructure Act (AWIA), which amended Section 1420 of the SDWA, requires state drinking water programs to include asset management into their capacity development strategies. As a result, the PWS Section has identified key areas where asset management can be encouraged and assistance can be provided. In promoting and implementing asset management, North Carolina’s Capacity Development Program, in cooperation with partnering agencies, will continue to use an existing asset management framework that was in place prior to AWIA and meets the intent of EPA’s “five-core questions.”

The North Carolina Capacity Development Program will pursue a strategy to introduce voluntary asset management activities. We have already established a cooperative partnership with the Division of Water Infrastructure (DWI), a “sister agency” within our Department of Environmental Quality. The PWS Section has a long-standing history with DWI, and both entities work together on a variety of endeavors that emphasize asset management, including the DWSRF, the Resource Agency Partnership, and providing assistance to implement the Viable Utilities Program. In addition to partnering with the DWI, we will continue to engage our external partners to encourage asset management whenever possible. The following categories provide more detail in the state’s approach to assist efforts related to asset management:

Encouraging Asset Management Activities

Without a regulatory requirement to develop asset management plans, a motivating factor to encourage public drinking water systems to develop and implement an asset management plan is the ability to acquire priority points when applying for federal or state funding. Public drinking water systems that develop and implement a Capital Improvement Plan (CIP) are eligible for two priority points, while public drinking water systems that develop and implement a full asset management plan can earn ten priority points on their DWSRF applications. This incentive is anticipated to encourage asset management plan development. Details of the DWSRF priority points are described in the agency’s guidance document, *Priority Rating System Guidance and Form for Clean Water State Revolving Fund, Drinking Water State Revolving Fund, State Wastewater Reserve, and State Drinking Water Reserve Funding Programs* document, which is available online at <https://deq.nc.gov/about/divisions/water-infrastructure/i-need->

[funding/application-forms-and-additional-resources#priority-points-rating-sheet-and-guidance](https://deq.nc.gov/about/divisions/water-infrastructure/i-need-funding/application-forms-and-additional-resources#priority-points-rating-sheet-and-guidance).

North Carolina will also provide grant money specifically for water systems to create asset inventories and to assess the condition of their assets. Currently, our partnering agency, DWI, is charged with the distribution of grant funding specifically for this purpose. The state's Asset Inventory and Assessment (AIA) grants are available from the Viable Utility Reserve, which as codified in NCGS 159G-34. The grants provide up to \$150,000 for public water systems serving 10,000 customers or less and that intend to initiate asset related projects. Potential projects are evaluated, in part, on EPA guidance materials for asset management that were published prior to AWIA. A summary of this evaluation is provided within the *Asset Inventory and Assessment Grant Priority Rating System Guidance* document, which is available online at <https://deq.nc.gov/about/divisions/water-infrastructure/i-need-funding/application-forms-and-additional-resources#priority-points-rating-sheet-and-guidance>.

Water systems are eligible to receive the asset management grants every three years, with a focus on small water systems. By design, the availability of grant funding to help water systems develop asset management plans is highly encouraging, especially for smaller systems that are less likely to have an asset management plan already in place and with limited resources to begin the process. Additionally, the grant program provides ready metrics (dollars distributed and water systems participating) that can be easily tracked and reported within the state's annual Capacity Development Reports. Evaluation of potential projects

Providing Technical Assistance

To provide technical assistance for asset management, the PWS Section will maintain established contractual agreements with external technical assistance providers. The North Carolina PWS Section has already included asset management assistance into its contract with the North Carolina Rural Water Association (NCRWA), as noted in Section 5.0 of this document. The NCRWA targets small water systems that could most benefit from implementation of an asset management plan, and will provide guidance to develop asset management plans that is consistent with the efforts of the DWI.

Another resource available to public drinking water systems in our state for technical assistance on asset management is the University of North Carolina (UNC) School of Government's Environmental Finance Center (EFC). While no formal contract currently exists between the PWS Section and the UNC EFC, they are available for technical assistance by request, and have developed a number of tools and resources that public drinking water systems can use in their asset management development process.

Providing Training

In order to effectively disseminate information related to asset management planning, training for water system board members, local public officials, and facility operators will

be an ongoing activity that is informally shared by the PWS Section and many of its partnering organizations. For example, the PWS Section has authority to approve continuing education credits for the state's certified operators. We will encourage any external training provider to consider asset management as a topic for new training, and then expedite course approval and promote the training via the operator certification website. Additionally, the DWI provides training on how to apply for funding, such as the AIA grants for asset management. DWI is also in process to develop training specifically targeted to local officials and water utility board members that will include a variety of topics, including concepts in asset management. Other partner organizations, such as the NCRWA and the UNC EFC, provide training that emphasizes the basics and benefits of asset management. The state strategy will be to track progress on asset management training as we continue to work with our partnering agencies and solicit data that can be reported regarding the number of individuals receiving training and the type of training offered.

8.0 Summary

North Carolina began the development of a strategy for enhancing the technical, managerial and financial capacity of PWS systems with the establishment of a Viability Task Force in May 1995. The work of this Viability Task Force provided a foundation from which the capacity development program, required by the 1996 Amendments to the SDWA, was developed. Stakeholders, many of whom were members of the Viability Task Force, provided direction and guidance to the PWS Section staff during the development of the authority to ensure new system capacity and the strategy to enhance existing system capacity. Based on this input, the rules in Section .0300 of the *Rules Governing Public Water Systems* (see Attachment 3) were revised to establish the regulatory authority to ensure new system capacity and to provide the primary components of the strategy to improve the capacity of existing systems.

Through recent SRF funding the PWS Section has been able to develop and implement programs, initiatives and contracts intended to provide services and products to existing systems. These efforts are intended to assist PWS systems in acquiring and maintaining technical, managerial and financial capacity. Also, the North Carolina Utilities Commission and the Local Governments Commission continue implement very effective programs intended to ensure the viability of existing PWS systems.

As of 2021, the PWS Section has included asset management within the overall Capacity Development Program strategy. The key components to pursue asset management include encouragement through financial incentives, providing technical assistance through established external service providers, and promoting training via a variety of established training providers.

The PWS Section recognizes that for the existing system strategy to be successful, it will need to be frequently evaluated and modified as necessary. The PWS Section will periodically engage stakeholder input as necessary to solicit suggestions and guidance for revisions to the capacity development strategy.

Attachment 1

Original Capacity Development Advisory Committee Stakeholders Notification Letter and Participants List

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
PUBLIC WATER SUPPLY SECTION

October 2, 1998



JAMES B. HUNT JR.
GOVERNOR

WAYNE McDEVITT
SECRETARY

LINDA C. SEWALL
DIRECTOR

JESSICA G. MILES
CHIEF

Dear Stakeholder:

The Safe Drinking Water Act (SDWA) Amendments of 1996 require North Carolina to ensure that new community water systems (CWS) and new non-transient non-community water systems (NTNCWS) commencing operations after October 1, 1999 demonstrate adequate technical, financial and managerial capacity. Capacity development is an important component of the SDWA Amendments, focusing on preventing compliance problems in drinking water system. The capacity development provisions offer a framework to ensure that systems acquire and maintain the technical, financial and managerial capacity needed to achieve the public health protection objectives of the SDWA.

CWS are privately or publicly owned public water systems, which serve at least 15 service connections used by year-round residents or regularly serve at least 25 year-round residents. NTNCWS are public water systems that are not community water systems which regularly serve at least 25 of the same persons more than 6 months per year. NTNCWS are generally commercial or institutional establishments having their own water supply. Examples include schools, factories, office and industrial parks and shopping centers.

As a part of 1996 SDWA Amendments, Congress has placed a strong emphasis on public awareness and involvement. One way the Public Water Supply Section plans to involve the public includes the convening of an advisory committee of interested stakeholders. The committee is to comment and advise the Public Water Supply Section as we draft the rules to establish and implement the capacity development provisions of the SDWA Amendments. To avoid a withholding in its Drinking Water State Revolving Fund allotment, each state is required: 1) to ensure that new CWS and new NTNCWS demonstrate adequate capacity, and 2) to develop and implement a strategy to assist existing systems in acquiring and maintaining capacity. We expect to address both new and existing system issues in this rule making process. Draft rules are expected to be available for review by the general public by March 1999.

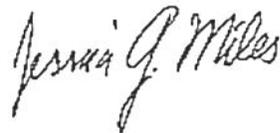
P.O. Box 29536, RALEIGH, NORTH CAROLINA 27626-0536
PHONE 919-733-2321

DEH/COMPLIANCE SERVICES BRANCH FAX 919-715-3242 MAIN FAX 919-715-4374 LAB FORMS FAX 919-715-6637
AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

The Public Water Supply Section is in the process of naming the advisory committee and is searching for nominees who would be willing to assist. You have been identified as an individual or as representing an organization believed to have an interest in how this plan and subsequent regulations are developed in North Carolina, and as such are invited to participate in the planning process. Our first advisory committee meeting will be from 9:00 – 12:00 on October 20, 1998 in room 1A 224 of the Parker Lincoln building. Additional meetings will be scheduled as needed. We anticipate meeting approximately monthly for 4-6 months. Meetings will be half to full day meetings as necessary to meet the required timetable.

We are excited about the opportunity to use this advisory committee process to help draft rules to establish and implement the capacity development provisions of the SDWA. Please use the attached form to indicate your level of interest and ability to assist in the capacity development process. The form should be faxed or mailed to James McGuire by October 16, 1998. If you have any questions, or know of another individual or organization that should participate in the planning process, please contact James McGuire at 919-715-3269 or at E-mail address James_McGuire@mail.enr.state.nc.us.

Sincerely,

A handwritten signature in black ink that reads "Jessica G. Miles". The signature is written in a cursive style with a large initial "J" and "M".

Jessica G. Miles, P.E., Chief
Public Water Supply Section
Division of Environmental Health

JGM:RM:jfm

cc: Bill Holman
Linda Sewall
Bob Midgette

**North Carolina
Capacity Development
Advisory Committee Meeting**

Please indicate your level of interest in the capacity development process by checking the appropriate box(es) below:

- I am interested in serving on the advisory committee.
- If requested, I will attend the first advisory committee meeting on October 20, 1998.
- I am not interested in serving on the advisory committee, but would like to remain on the mailing list to receive information pertaining to the capacity development process.
- The alternate representative from our organization that should participate is shown below.
- Please remove my name from the mailing list.

Please provide the following information:

Name: _____

Organization Affiliation/Representation: _____

Address: _____

Phone Number: _____

Fax Number: _____

E-Mail Address: _____

Please submit this form by **October 16, 1998**

Mail this form to : **James McGuire, Division of Environmental Health, Public Water
Supply Section, P.O. Box 29536, Raleigh, North Carolina 27626-0536**

Or
Fax this form to: **919-715-4374**

**Capacity Development Advisory Committee
Stakeholders List**

<u>NAME</u>	<u>ORGANIZATION</u>
Sammy Boyette	NC Rural Water Association
James Berry	NC Rural Water Association
Ron Brown	NC Utilities Commission
Janice T. Burke	NC Dept. of State Treasurer
Larry Cloninger	Gaston County Mobile Home Park Association
Jeff Coutu	Division of Water Quality
John Cromwell	Apogee Research, Inc.
Willard Dean	US Department of Agriculture - Rural Development
Patrick Davis	Triangle J Council of Governments
Mollie Diggins	NC Sierra Club
Cindy Finan	NC American Water Works Assoc.
Dale Froneberger	EPA - Drinking Water Section
Jeri Gray	Water Resource Research Institute
Robert F. Grimes	Consulting Engineers Council of NC
Robert P. Gruber	NC Utilities Commission
Les Hall	Professional Engineers of NC
Milton Heath	Institute of Government
Bob Hinton	NC Utilities Commission, Public Staff, Economic Research Division
Margaret Holton	League of Women Voters
Preston Howard Director, DWQ	DENR
Cindy Kirby	Community Water System Assoc.
Napoleon Kotey	EPA, Region IV

<u>NAME</u>	<u>ORGANIZATION</u>
Donald T. Lauria	Professor, Water Resource Engineer UNC - Chapel Hill
Andy Lee	NC Utilities Commission, Public Staff, Economic Research Division
Otis Meacham Deputy Commissioner	NC Banking Commission
David H. Moreau, Ph.D.	UNC-Chapel Hill
Kasey Monroe	NC American Water Works Association/Water Environment Association
Dan O'Lone	EPA, Region IV
Ed Regan	NC Assoc. of County Commissioners
Terry Rolan	City of Durham
Phil Singer, Ph.D.	University of North Carolina School of Public Health
Paula Thomas	League of Municipalities
Jerry Tweed	Carolinas Chapter National Assoc. of Water Companies
Paul C. Watson, Jr	Woolpert LLP
Paul Wilms	NC Home Builders Association
Martin Wilson	NC American Water Works Association/Water Operators Association
Tony Young	Division of Water Resources

Attachment 2

**Revised Capacity Development Program Strategy Stakeholder
Notification Letter**



NORTH CAROLINA
Environmental Quality

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

S. DANIEL SMITH

Director

January 14, 2022

Dear Sir or Madam:

You are receiving this correspondence from the North Carolina Public Water Supply Section because you have previously participated as a stakeholder or because you may have professional interest aligned with the drinking water industry in our state. The purpose of this letter is to make you aware of revisions to the Section's Capacity Development Program strategy and to provide a mechanism by which you can submit feedback. Be informed that in the context of the discussion below, "capacity" includes technical, managerial, and financial capacity, as these components are recognized to support the viability and compliance of public drinking water systems.

The state's Capacity Development Program was developed in response to the 1996 Safe Drinking Water Act Amendments. The goals of the program are: (i) to ensure that new community water systems and non-transient non-community water systems demonstrate adequate technical, managerial, and financial capacity, and (ii) assist existing water systems to acquire and maintain capacity. The state's EPA-approved Capacity Development Program strategy was successfully implemented in August 2000, and the strategy has not undergone revisions since its original approval. However, the America's Water Infrastructure Act (AWIA) of 2018 included requirements for all states to revise their capacity development strategies to include provisions that encourage the development of asset management plans, and to support training and technical assistance related to asset management planning.

Since the initiation of the state's Capacity Development Program strategy, the Section, along with its partnering agencies and external service providers, have pursued activities to improve capacity. One such method has been to encourage the development of asset management plans. While there are no regulatory requirements for asset management planning, there are incentives and resources (including grants) for such efforts. Therefore, prior to the AWIA requirements, the state had already established mechanisms to incentivize asset management.

The efforts cited above, coupled with new initiatives to support on-site technical assistance and to fast-track approval for asset management training, readily meet the intent of the AWIA requirements. Therefore, it is appropriate that such provisions be captured in the state's revised Capacity Development Program strategy. As with the original strategy, we value stakeholder feedback regarding the current draft revisions and any other comments you wish to share. The document is available online at <https://deq.nc.gov/revised-north-carolina-capacity-development-program-strategy>, with Section 7.0 as the primary section of interest. Please provide any feedback by February 15, 2022 to Andrew Jarman, at (919) 707-9061 or via email at andrew.jarman@ncdenr.gov. Thank you in advance for helping us improve our program's capacity development strategy.

Sincerely,

A handwritten signature in blue ink that reads "Jay Frick".

Jay Frick
Technical Services Branch Head
Public Water Supply Section



Attachment 3
Revised Rules (Original Edits and Current Language)

Original Edits

15A NCAC 18C .0301 has been amended as published in 14:03 NCR 247-254 as follows:

.0301 APPLICABILITY: PRIOR NOTICE

(a) All persons, including units of local government, intending to construct, alter, or expand a community or non-transient, non-community water system shall give written notice thereof, including submission of applicable Water System Management Plan, engineering reports, and engineering plans plans, and specifications and engineering reports, to the Division of Environmental Health, Department, as required by the rules of this Section. Any construction, alteration, or expansion which affects capacity, hydraulic conditions, operating units, the functioning of water treatment processes or the quality of water to be delivered shall require submission of the documents described in this Paragraph. A non-community water system using surface water or ground water under the direct influence of surface water shall be subject to the provisions of this Rule. An adjacent water system shall not be subject to the provisions of this Rule unless the adjacent water system is constructed, altered or expanded on or after July 31, 1987. Non-transient, non-community water systems shall not be subject to the provisions of this Rule unless constructed, altered, or expanded on or after July 1, 1994.

(b) Water System Management Plan and Engineer's Report shall be submitted to the Department at least 60 days prior to the date upon which action by the Department is desired.

(b) (c) All reports, other than those in Paragraph (b) of this Rule, plans and engineering plans and specifications and other data intended for approval shall be submitted to the Division Department at least 30 days prior to the date upon which action by the Division Department is desired.

(d) If revisions to the Water System Management Plan are necessary, the system applicant will be notified. A revised Water System Management Plan will constitute a resubmittal and additional time will be required for review.

(e) (e) If revisions to the engineering plans or specifications are necessary, the engineer who prepared them will be notified. Revised engineering plans and specifications will constitute a resubmittal and additional time will be required for review.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;

Eff. January 1, 1977;

Readopted Eff. December 5, 1977;

Amended Eff. July 1, 1994; September 1, 1990; March 1, 1989; June 30, 1980; September 1, 1979. 1979;

Temporary Amended Eff. October 1, 1999;

Amended Eff. August 1, 2000.

15A NCAC 18C .0302 has been amended "with changes" as published in 14:03 NCR 247-254 as follows:

.0302 PLANS SUBMITTALS

(a) ~~Procedure Applicable to all Projects, Extensions, or Changes.~~ All plans, ~~specifications~~ specifications, reports or other data ~~intended for submission to the Division of Environmental Health~~ shall be submitted in triplicate for review by the Public Water Supply Section, Division of Environmental Health, P.O. Box 29536, Raleigh, North Carolina 27626-0536.

(b) ~~Plans.~~ Engineering plans shall consist of legible prints having black, blue, or brown lines on a white background suitable for microfilming. The engineering plans shall not be more than 36 inches wide and 48 inches ~~long.~~ long and not be less than 11 inches wide and 17 inches long.

(c) An applicant subject to G.S. 143-355(l) shall submit three copies of the adopted Local Water Supply Plan. If information required in the Engineer's Report or the Water System Management Plan is included in an adopted Local Water Supply Plan, a submittal to the Department may incorporate this information by referencing the location in the adopted Local Water Supply Plan.

(d) Existing systems that have previously submitted an Engineer's Report and a Water System Management Plan in accordance with Rule .0307 of this Section shall document any changes either as revised reports and plans or addendums.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;

Eff. January 1, 1977;

Readopted Eff. December 5, 1977;

Amended Eff. July 1, 1994; December 1, 1991; September 1, 1990; June 30, 1980;

September 1, 1979; 1979;

Temporary Amended Eff. October 1, 1999;

Amended Eff. August 1, 2000.

15A NCAC 18C .0303 has been amended "with changes" as published in 14:03 NCR 247-254 as follows:

.0303 SUBMISSIONS REQUIRED BY ENGINEER AND WATER-SUPPLIER-APPLICANT

(a) Detailed Engineer's Reports and engineering plans and specifications shall be prepared by a professional engineer licensed to practice in the State of North Carolina. ~~The plans~~ These documents shall bear an imprint of the registration seal of the engineer. Upon completion of the construction or modification, the ~~water-supplier applicant~~ shall submit a certification statement signed and sealed by a registered professional engineer ~~and affixed with his professional engineering seal~~ stating that construction was completed in accordance with approved engineering plans and specifications specifications, including any provisions stipulated in the Department's plan approval letter or authorization to construct letter, and revised only in accordance with the provisions of Rule .0306 of this Section. The statement shall be based upon observations during and upon completion of construction by the engineer or a representative of the engineer's office who is under the engineer's supervision.

(b) A Water System Management Plan as required in Paragraph (c) of Rule .0307 of this Section shall include a signed certification stating that the information submitted is true, accurate, and complete. This certification shall be in accordance with Paragraph (d) of this Rule.

(c) The applicant shall submit a signed certification, prior to Final Approval, stating that the requirements in Paragraph (d) (Operation and Maintenance Plan) and Paragraph (e) (Emergency Management Plan) of Rule .0307 of this Section have been satisfied, and that the system will have a certified operator as required by Section .1300 of this Subchapter prior to operation. This certification shall be in accordance with Paragraph (d) of this Rule.

(d) The certifications required in Paragraphs (b) and (c) of this Rule shall be provided on a form provided by the Department and shall be signed by the following individual or their his duly authorized representative:

- (1) for a corporation, limited liability company, home owner association or a non-profit organization: a president, vice president, secretary, or treasurer;
- (2) for a partnership or sole proprietorship: by a general partner or the proprietor; or
- (3) for a municipality, State, Federal or other agency: by either a principal executive officer or ranking elected official.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;

Eff. January 1, 1977;

Readopted Eff. December 5, 1977;

Amended Eff. July 1, 1994; December 1, 1987; September 1, 1979. 1979;

Temporary Amended Eff. October 1, 1999;

Amended Eff. August 1, 2000.

15A NCAC 18C .0304 has been amended as published in 14:03 NCR 247-254 as follows:

.0304 APPLICATION FOR APPROVAL: BY WHOM MADE

Applications for approval shall be filed by the ~~proper unit of local government or person for whom the work is to be done,~~ current owner on blanks which will be supplied by the ~~Division-~~ Department. If ownership changes before Final Approval, the new owner shall submit a new Water System Management Plan in accordance with Rule .0307 of this Section. ~~One copy of the plans and specifications, upon approval, will be certified and returned to the person or persons making application for approval.~~

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990; 1990;
Temporary Amended Eff. October 1, 1999;
Amended Eff. August 1, 2000*

15A NCAC 18C .0305 has been amended "with changes" as published in 14:03 NCR 247-254 as follows:

.0305 APPROVAL OF PLANS APPROVALS NECESSARY BEFORE CONTRACTING OR CONSTRUCTING

(a) No construction shall be undertaken, and no contract for construction, alteration, or installation shall be entered into ~~prior to~~ unless the Department determines the system complies with G.S. 130A-317(c) and the Department issues the authorization to construct letter. This authorization will shall be issued following completion and submittal of the Engineer's Report and Water System Management Plan and approval of the engineering plans and specifications by the Department. ~~approval of plans and specifications by the Department.~~ Authorization to construct from the Department shall be valid for twenty-four months from the date of the letter. Authorization to construct may only be extended if the rules governing a public water supply and site conditions have not changed. The authorization to construct and approval letter for engineering plans and specifications from the Department shall be posted at the primary entrance of the job site before construction begins.

(b) Upon request, permission to drill test wells at approved sites in order to establish quality and quantity may be granted by the Department prior to completion and submittal of the Engineer's Report and Water System Management Plan and approval of engineering plans and specifications. All wells abandoned, either temporarily or permanently, shall be abandoned in accordance with 15A NCAC 2C .0113 (Well Construction Standards) and all local ordinances.

~~(b)~~ (c) Units of local government which have an adopted water system extension policy, upon submission to and approval of a copy of their policy by the Department, may be excluded from the requirements of submitting engineering plans and specifications for water main extensions, and that would not have adverse effect upon the existing system supply or pressure, provided the following requirements are met:

- (1) Engineering plans and specifications for all such extensions shall be prepared by or under the direct supervision of an engineer licensed to practice in the State of North Carolina.
- (2) All engineering plans shall be approved by the units of local government engineering department or its consulting engineers prior to the commencement of construction.
- (3) The Department shall have approved the extension policy submitted by the unit of local government prior to construction commencing.
- (4) The extension policy submitted for review and approval by the Department shall provide for establishing ownership, operation and maintenance of water system extensions, and shall constitute prior notice of proposed construction.
- (5) Where design is to be based on a local government's standard specifications in lieu of written separate specifications for each extension project, the standard specifications shall have been previously approved by the Department.
- (6) The local government shall have obtained from the Department a letter stating they have met the

aforementioned requirement and are excluded from the requirement for submitting detailed engineering plans and specifications for each minor extension in keeping with the intent of this Rule.

- (7) Where such minor additions or extensions have been made, an annual up-to-date plan of the entire system shall be submitted for review and approval by the ~~Division~~ Department.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;

Eff. January 1, 1977;

Readopted Eff. December 5, 1977;

Amended Eff. July 1, 1994; September 1, 1990; September 1, 1979; 1979;

Temporary Amended Eff. October 1, 1999;

Amended Eff. August 1, 2000.

15A NCAC 18C .0306 has been amended as published in 14:03 NCR 247-254 as follows:

.0306 CHANGES IN ENGINEERING PLANS OR SPECIFICATIONS AFTER APPROVAL

Deviations from the approved engineering plans and specifications or changes in site conditions affecting capacity, hydraulic conditions, operating units, the functioning of water treatment processes, the quality of water to be delivered, or any provisos stipulated in the Department's original and subsequent letters of approval must be approved by the Department before any construction or installation. Revised engineering plans and specifications shall be submitted in time to permit the review and approval of such plans or specifications before any construction work affected by such deviations is begun. The Secretary may seek injunctive relief under G.S. 130A-18, assess an administrative penalty under G.S. 130A-22(b), or revoke or suspend engineering plan approval under G.S. 130A-23 for any violation of this Rule.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;

Eff. January 1, 1977;

Readopted Eff. December 5, 1977;

Amended Eff. November 1, ~~1987~~ 1987;

Temporary Amended Eff. October 1, 1999;

Amended Eff. August 1, 2000.

15A NCAC 18C .0307 has been amended "with changes" as published in 14:03 NCR 247-254 as follows:

.0307 ENGINEER'S ~~REPORT~~ REPORT, WATER SYSTEM MANAGEMENT PLAN AND OTHER PLANS

~~(a) The owner, when required, shall submit to the Division, an engineering report in duplicate covering the basic factors and principles considered in planning of the project.~~

~~(b) Such engineering reports shall be required for projects involving new water systems, modification of existing water systems, development or modification of surface water sources and other water system projects requiring engineering.~~

(a) The applicant shall submit to the Department an Engineer's Report and Water System Management Plan covering the basic factors and principles considered in planning of the project.

(b) Engineer's Report. The Engineer's Report shall contain a system description for the entire project, including scheduled phase development and the following information, where applicable:

- (1) description of any existing water system related to this project;
- (2) identification of the municipality, community, area, or facility to be served by the proposed water system;
- (3) the name and address of the applicant;
- (4) a description of the nature of the establishments and of the area to be served by the proposed water system;
- (5) a description of the future service areas of the public water system for 5, 10, 15 and 20 years;
- (6) consideration of alternative plans for meeting the water supply requirements of the area, including, for new systems, obtaining water service from an existing system;
- (7) for applicants seeking State loan or grant support for the project, financial considerations, including,
 - (A) any technical alternatives,
 - (B) costs of integral units; and
 - (C) total costs;
- (8) population records and trends, present and anticipated future water demands, present and future yield of source or sources of water supply, including provisions to supply water to other systems;
- (9) character of source or sources of water supply, including:
 - (A) hydrological or hydrogeological data;
 - (B) stream flow rates or well yields;
 - (C) for surface sources, analytical results for chemical, mineral, bacteriological, and physical qualities; and
 - (D) location and nature of sources of pollution;
- (10) proposed water treatment processes, including:
 - (A) criteria and basis of design of units,
 - (B) methods or procedures used in arriving at recommendations, and
 - (C) reasons or justifications for any deviations from conventional or indicated process or method;

- (11) for purchased water, a copy of the agreement with the supplier and the hydraulic analysis showing the supplier's capabilities for supplying the purchased water;
- (12) a description of the design basis of the source, treatment, and distribution system, and the useful life of all sources, treatment, and transmission facilities including pipes, pumping stations, and storage facilities;
- (13) for existing system projects intending to alter or expand a distribution system, provide a statement of maximum daily treated water supply and maximum daily demand. Provide supporting documentation and calculations; and
- (14) for existing systems, a prioritized list of infrastructure improvements.

(c) Water System Management Plan. The Water System Management Plan shall document, where applicable, the ability to finance, operate, and manage the system in accordance with this Subchapter for the current owner and for any entity that assumes ownership of the water system within the first twenty-four months of operation:

(1) Organization:

- (A) description of organizational structure or a chart showing all aspects of water system management and operation;
- (B) identification of positions responsible for policy decisions ensuring compliance with State rules and the day-to-day operation of the system; and
- (C) copies of any contracts for management or operation of the water system by persons or agencies other than the system's owner.

(2) Ownership:

- (A) identify the ownership structure (sole proprietor, partnership, corporation, limited liability company, homeowner association, nonprofit organization, local government unit, state or federal agency, or other legal entity) and disclose if the ownership of the system is expected to change once the system is constructed, and if known, identify the future owners;
- (B) provide mailing address and street address of the owner, and physical location of the water system;
- (C) disclose any encumbrances, trust indentures, bankruptcy decrees, legal orders or proceedings, or other items that may affect or limit the owner's control over the system and describe how compliance with the requirements of this Subchapter will still be maintained; and
- (D) describe the legal authority, such as ownership, leases or recorded easements allowing inspection, repair and maintenance of system components.

(3) Management qualifications:

- (A) describe the qualifications of the owners and managers of the water system, including any training and experience in owning or managing a water system; and
- (B) provide the name and Public Water Supply Identification Number of all public water systems owned within the last five years as well as any systems operated under contract for another owner within the last five years. For systems with administrative penalties assessed, describe how the owner will prevent

similar violations at this system.

- (4) Management training. Describe plans to keep management current with regulatory requirements for managing and operating a public water system.
- (5) Policies. At a minimum, the system shall have policies regarding the following procedures:
 - (A) cross-connection control;
 - (B) customer information, complaints, and public education;
 - (C) budget development and rate structure;
 - (D) response and notification if water quality violations occur;
 - (E) customer connection, disconnection, billing, and collection; and
 - (F) safety procedures;
- (6) System monitoring, reporting and record keeping. At a minimum the applicant shall provide:
 - (A) A summary of the applicable system monitoring and reporting requirements; and
 - (B) A description of procedures for keeping and compiling records and reports in accordance with Rule .1526 of this Subchapter.
- (7) Financial Plans. The plan shall contain the following financial information, where applicable:
 - (A) Units of Local Government:
 - (i) For projects that require the unit of local government to incur debt, the unit of local government shall submit a statement from the Local Government Commission stating that debt issue has been approved; or
 - (ii) For projects that do not require the unit of local government to incur debt, the unit of local government shall submit the following:
 - (I) a statement from the unit of local government documenting that they are in compliance with the North Carolina General Statutes, Chapter 159, Article 3, The Local Government Budget and Fiscal Control Act; and
 - (II) estimated revenues, expenditures and rate structure for the construction, operation and maintenance, administration and reasonable expansion of the project. This information shall be provided on a form designated by the Department and shall demonstrate that revenues are greater than expenses.
 - (B) The North Carolina Utilities Commission's financial determination may be used as the financial plan for systems subject to its regulations:
 - (i) submit a copy of the Order Granting Franchise and Approving Rates from the North Carolina Utility Commission, or
 - (ii) submit a copy of the Order Recognizing Continuous Extension and Approving Rates from the North Carolina Utilities Commission.
 - (C) All other community and non-transient non-community water systems shall document the following:

- (i) analysis that compares anticipated revenues with planned expenditures for a five year period that demonstrates a positive cash flow in each year, and a 20-year equipment replacement cost plan documenting the method(s) to finance equipment replacement;
- (ii) the creation and funding of a continuous operating cash reserve greater than or equal to one-eighth of the annual operating, maintenance and administrative expenses for the water system. The reserve shall be fully funded by the end of the first year of operation;
- (iii) the creation and funding of an emergency cash reserve greater than or equal the cost of replacing the largest capacity pump. The reserve shall be fully funded by the end of the fifth year of operation;
- (iv) a description of the budget and expenditure control procedures that assure budget control for the applicant which includes procedures or policies to prevent misuse of funds and a demonstration that the system has adopted generally accepted accounting procedures; and
- (v) in lieu of Sub-Items (ii) and (iii) of this Paragraph, substitute documentation may be accepted in the following instances:
 - (I) an applicant with multiple water systems showing reserves affording greater or equal capabilities, or
 - (II) an applicant showing equivalent financial capacity to comply with requirements of this Section.

(8) One Water System Management Plan may be submitted on behalf of an applicant owning and operating multiple water systems or an applicant pursuing multiple alterations or expansions and may include future projected construction or system acquisitions. The applicant shall submit a new Water System Management Plan for a project not covered under the existing Water System Management Plan or when violations of this Subchapter occur or continue at a system under an applicant's ownership or control.

(d) Operation and Maintenance Plan. The plan does not have to be submitted to the Department but shall be completed prior to submitting the applicant's certification in accordance with Paragraph (c) of Rule .0303 of this Section. This plan shall be accessible to operator on duty at all times and available to the Department upon request. The Operation and Maintenance Plan shall include, at a minimum, a description of the location and routine operation and maintenance procedures for:

- (1) components of the treatment facility;
- (2) pumps, meters, valves, blowoffs, and hydrants;
- (3) backflow devices;
- (4) storage tanks; and
- (5) all other appurtenances requiring routine operation and maintenance.

(e) Emergency Management Plan. The plan does not have to be submitted to the Department, but shall be completed prior to submitting the applicant certification required in Paragraph (c) of Rule .0303 of this Section. The Emergency

Management Plan shall be available to personnel responsible for emergency management and operator on duty at all times and available to the Department upon request. The plan shall contain the following information where applicable:

- (1) For community water systems, a plan with the following elements is required:
 - (A) identification and phone numbers of personnel responsible for emergency management, including system, local, state, and federal emergency contacts;
 - (B) identification of foreseeable natural and human-caused emergency event including water shortages and outages;
 - (C) description of the emergency response plan for each identified event;
 - (D) description of the notification procedures; and
 - (E) identification and evaluation of all facilities and equipment whose failure would result in a water outage or water quality violations.
- (2) For non-transient, non-community water systems, the plan shall contain the positions and phone numbers of responsible persons to contact in the event of an emergency, including system, local, state, and federal emergency contacts.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;

Eff. January 1, 1977;

Readopted Eff. December 5, 1977;

Amended Eff. July 1, 1994; September 1, 1990; June 30, 1980; September 1, 1979; 1979;

Temporary Amended Eff. October 1, 1999;

Amended Eff. August 1, 2000.

15A NCAC 18C .0308 has been amended as published in 14:03 NCR 247-254 as follows:

~~.0308~~ TYPE AND FORM OF EXHIBITS ENGINEERING PLANS AND SPECIFICATIONS

~~(a) Engineer's Report.~~ The engineer's report (including any preliminary plans) shall contain the following information where applicable:

- ~~(1) description of any existing water system related to the project;~~
- ~~(2) identification of the municipality, community, area, or facility to be served by the proposed water system;~~
- ~~(3) the name and address of the owner;~~
- ~~(4) a description of the nature of the establishments and of the area to be served by the proposed water system;~~
- ~~(5) provisions for future extension or expansion of the water system;~~
- ~~(6) a projection of future water demand or requirements for service;~~
- ~~(7) any alternate plans for meeting the water supply requirements of the area;~~
- ~~(8) financial considerations of the project including:
 - ~~(A) any alternate plans;~~
 - ~~(B) costs of integral units;~~
 - ~~(C) total costs;~~
 - ~~(D) operating expenses; and~~
 - ~~(E) methods of financing costs of construction, operation and maintenance;~~~~
- ~~(9) population records and trends, present and anticipated future water demands, present and future yield of source or sources of water supply;~~
- ~~(10) character of source or sources of water supply, including:
 - ~~(A) hydrological data;~~
 - ~~(B) stream flow rates;~~
 - ~~(C) chemical, mineral, bacteriological, and physical qualities; and~~
 - ~~(D) location and nature of sources of pollution; and~~~~
- ~~(11) proposed water treatment processes including:
 - ~~(A) criteria and basis of design of units,~~
 - ~~(B) methods or procedures used in arriving at recommendations, and~~
 - ~~(C) reasons or justifications for any deviations from conventional or indicated process or method.~~~~

~~(b) (a) Engineering Plans.~~ Engineering Plans for water supply systems shall consist of the following:

- (1) title information including the following:
 - (A) name of the city, town, board, commission or other owner for whom the plans were prepared;
 - (B) the locality of the project;

- (C) the general title of the set of drawings and prints;
 - (D) the specific title of each sheet;
 - (E) the date; and
 - (F) the scales used;
- (2) a preliminary plat plan or map showing the location of proposed sources of water supply;
 - (3) a general map of the entire water system showing layout and all pertinent topographic features;
 - (4) detail map of source or sources of water supply;
 - (5) layout and detail plans for intakes, dams, reservoirs, elevated storage tanks, standpipes, pumping stations, treatment plants, transmission pipelines, distribution mains, valves, and appurtenances and their relation to any existing water system, and the location of all known existing structures or installations and natural barriers that might interfere with the proposed construction; and
 - (6) the north point.
- (e) (b) Specifications. Complete detailed specifications for materials, equipment, workmanship, test procedures and specified test results shall accompany the plans. The specifications shall include, where applicable:
- (1) the design and number of chemical feeders, mixing devices, flocculators, pumps, motors, pipes, valves, filter media, filter controls, laboratory facilities and equipment, and water quality control equipment and devices;
 - (2) provision for continuing with minimum interruption the operation of existing water supply facilities during construction of additional facilities;
 - (3) safety devices and equipment; and
 - (4) procedure for disinfection of tanks, basins, filters, wells and ~~pipes~~ pipes; and
 - (5) identification of type, brand name, and model number for all back flow devices.
- ~~(d) A supplier of water which has submitted a local water supply plan in accordance with G.S. 143-355(1) shall also provide a copy to the Division of Environmental Health.~~
- (c) One copy of the engineering plans and specification, upon approval, will be returned to the person or persons making application for approval.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
 Eff. January 1, 1977;
 Readopted Eff. December 5, 1977;
 Amended Eff. July 1, 1994; July 1, ~~1993~~ 1993;
Temporary Amended Eff. October 1, 1999;
Amended Eff. August 1, 2000.*

15A NCAC 18C .0309 has been adopted "with changes" as published in 14:03 NCR 247-254 as follows:

.0309 **FINAL APPROVAL**

(a) No construction, alteration, or expansion of a water system, subject to approval as described in Section .0300 of this Subchapter, shall be placed into final service or made available for human consumption until the applicant has complied fully with Section .0300 of this Subchapter and received Final Approval from the Department.

(b) Temporary approval may be granted by the Department for system alterations required to remedy an imminent hazard as determined by the Department.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;

Temporary Adoption Eff. October 1, 1999;

Adoption Eff. August 1, 2000.

15A NCAC 18C .1304 has been adopted "with changes" as published in 14:03 NCR 247-254 as follows:

.1304 WATER SYSTEM OPERATION AND MAINTENANCE

(a) Water systems shall be operated and maintained in accordance with applicable approved engineering plans and specifications. Water System Management Plan and Operation and Maintenance Plan.

(b) Water systems shall be operated and maintained in accordance with 15A NCAC 18D, Rules Governing Water Treatment Facility Operators, Rule .0206 and G.S. 90A-29.

History Note: Authority G.S. 130A-315; 90A-29; P.L. 93-523;
Temporary Adoption Eff. October 1, 1999;
Adopted Eff. August 1, 2000.

Current Language

15A NCAC 18C .0301 APPLICABILITY: PRIOR NOTICE

(a) All persons, including units of local government, intending to construct, alter, or expand a community or non-transient, non-community water system shall give written notice thereof, including submission of applicable Water System Management Plan, engineering reports, and engineering plans and specifications to the Department, as required by the rules of this Section. Any construction, alteration, or expansion which affects capacity, hydraulic conditions, operating units, the functioning of water treatment processes or the quality of water to be delivered shall require submission of the documents described in this Paragraph. A non-community water system using surface water or ground water under the direct influence of surface water shall be subject to the provisions of this Rule. Non-transient, non-community water systems shall not be subject to the provisions of this Rule unless constructed, altered, or expanded on or after July 1, 1994.

(b) Water System Management Plan and Engineer=s Report shall be submitted to the Department at least 60 days prior to the date upon which action by the Department is desired.

(c) All reports, other than those in Paragraph (b) of this Rule, engineering plans and specifications and other data intended for approval shall be submitted to the Department at least 30 days prior to the date upon which action by the Department is desired.

(d) If revisions to the Water System Management Plan are necessary, the system applicant will be notified. A revised Water System Management Plan will constitute a resubmittal and additional time will be required for review.

(e) If revisions to the engineering plans or specifications are necessary, the engineer who prepared them will be notified. Revised engineering plans and specifications will constitute a resubmittal and additional time will be required for review.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; March 1, 1989; June 30, 1980; September 1,
1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November
23, 2015.*

15A NCAC 18C .0302 SUBMITTALS

- (a) All plans, specifications, reports, or other data shall be submitted in triplicate for review by the Public Water Supply Section, Division of Water Resources at 512 N Salisbury Street, Room 1304A, Raleigh NC 27604-1170, or 1634 Mail Service Center, Raleigh NC 27699-1634.
- (b) Engineering plans shall consist of legible prints having black, blue, or brown lines on a white background suitable for microfilming. The engineering plans shall not be more than 36 inches wide and 48 inches long and not be less than 11 inches wide and 17 inches long.
- (c) An applicant subject to G.S. 143-355(l) shall submit three copies of the adopted Local Water Supply Plan. If information required in the Engineer's Report or the Water System Management Plan is included in an adopted Local Water Supply Plan, a submittal to the Department may incorporate this information by referencing the location in the adopted Local Water Supply Plan.
- (d) Existing systems that have previously submitted an Engineer's Report and a Water System Management Plan in accordance with Rule .0307 of this Section shall document any changes either as revised reports and plans or addendums.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; December 1, 1991; September 1, 1990; June 30, 1980; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. April 1, 2014; August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.*

15A NCAC 18C .0303 SUBMISSIONS REQUIRED BY ENGINEER AND APPLICANT

(a) Detailed Engineer's Reports and engineering plans and specifications shall be prepared by a professional engineer licensed to practice in the State of North Carolina. These documents shall bear an imprint of the registration seal of the engineer. Upon completion of the construction or modification, the applicant shall submit a certification statement signed and sealed by a registered professional engineer stating that construction was completed in accordance with approved engineering plans and specifications, including any provisions stipulated in the Department's plan approval letter or authorization to construct letter, and revised only in accordance with the provisions of Rule .0306 of this Section. The statement shall be based upon observations during and upon completion of construction by the engineer or a representative of the engineer's office who is under the engineer's supervision.

(b) A Water System Management Plan as required in Paragraph (c) of Rule .0307 of this Section shall include a signed certification stating that the information submitted is true, accurate, and complete. This certification shall be in accordance with Paragraph (d) of this Rule.

(c) The applicant shall submit a signed certification, prior to Final Approval, stating that the requirements in Paragraph (d) (Operation and Maintenance Plan) and Paragraph (e) (Emergency Management Plan) of Rule .0307 of this Section have been satisfied, and that the system will have a certified operator as required by Section .1300 of this Subchapter prior to operation. This certification shall be in accordance with Paragraph (d) of this Rule.

(e) The certifications required in Paragraphs (b) and (c) of this Rule shall be provided on a form provided by the Department and shall be signed by the following individual or his duly authorized representative:

- (1) for a corporation, limited liability company, home owner association or a non-profit organization: a president, vice president, secretary, or treasurer;
- (2) for a partnership or sole proprietorship: by a general partner or the proprietor; or
- (3) for a municipality, State, Federal or other agency: by either a principal executive officer or ranking elected official.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; December 1, 1987; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0304 APPLICATION FOR APPROVAL: BY WHOM MADE

Applications for approval shall be filed by the current owner on blanks which will be supplied by the Department. If ownership changes before Final Approval, the new owner shall submit a new Water System Management Plan in accordance with Rule .0307 of this Section.

History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.

15A NCAC 18C .0305 APPROVALS NECESSARY BEFORE CONTRACTING OR CONSTRUCTING

(a) No construction shall be undertaken, and no contract for construction, alteration, or installation shall be entered into, unless the Department determines the system complies with G.S. 130A-317(c) and the Department issues the authorization to construct letter. This authorization shall be issued following completion and submittal of the Engineer's Report and Water System Management Plan, as specified in Rule .0307(b) and (c) of this Section, and approval of the engineering plans and specifications by the Department. Authorization to construct from the Department shall be valid for 36 months from the date of the letter. Authorization to construct may only be extended if the rules governing a public water supply and site conditions have not changed since the letter was issued. The authorization to construct and the approval for engineering plans and specifications letters from the Department shall be posted at the primary entrance of the job site during construction.

(b) Upon request, permission to drill test wells at approved sites in order to establish the quality and quantity of the ground water shall be granted by the Department prior to completion and submittal of the Engineer's Report and Water System Management Plan and approval of engineering plans and specifications. All wells abandoned, either temporarily or permanently, shall be abandoned in accordance with 15A NCAC 02C .0113 (Well Construction Standards) and all local ordinances.

(c) Units of local government that have an adopted water system extension program pursuant to Section .1800 of this Subchapter, upon submission to and approval of their program by the Department, shall be excluded from the requirements of submitting engineering plans and specifications for water main extensions that would not have adverse effect upon the existing system supply or pressure, provided the following requirements are met:

- (1) Engineering plans and specifications for all such extensions shall be prepared by or under the direct supervision of an engineer licensed to practice in the State of North Carolina.
- (2) All engineering plans shall be approved by the unit of local government's engineering department or its consulting engineers prior to the commencement of construction.
- (3) The Department shall have approved the extension program submitted by the unit of local government prior to construction commencing.
- (4) The extension program submitted for review and approval by the Department shall provide for establishing ownership, operation, and maintenance of water system extensions and shall constitute prior notice of proposed construction.
- (5) Where design is to be based on a local government's standard specifications in lieu of written separate specifications for each extension project, the standard specifications shall have been previously approved by the Department.
- (6) The local government shall have obtained from the Department a letter stating they have met the requirements set forth in Section .1800 of this Subchapter.
- (7) An annual up-to-date plan of the entire public water system shall be maintained by the supplier of water and made available on request by the Department.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Readopted Eff. July 1, 2019.*

15A NCAC 18C .0306 CHANGES IN ENGINEERING PLANS OR SPECIFICATIONS AFTER APPROVAL

Deviations from the approved engineering plans and specifications or changes in site conditions affecting capacity, hydraulic conditions, operating units, the functioning of water treatment processes, the quality of water to be delivered, or any provisos stipulated in the Department's original and subsequent letters of approval must be approved by the Department before any construction or installation. Revised engineering plans and specifications shall be submitted in time to permit the review and approval of such plans or specifications before any construction work affected by such deviations is begun. The Secretary may seek injunctive relief under G.S. 130A-18, assess an administrative penalty under G.S. 130A-22(b), or revoke or suspend engineering plan approval under G.S. 130A-23 for any violation of this Rule.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. November 1, 1987;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.*

15A NCAC 18C .0307 ENGINEER'S REPORT, WATER SYSTEM MANAGEMENT PLAN AND OTHER PLANS

(a) The applicant shall submit to the Department an Engineer's Report and Water System Management Plan.

(b) Engineer's Report. The Engineer's Report shall contain a system description for the entire project, including scheduled phase development and the following information, where applicable:

- (1) description of all existing water systems related to this project;
- (2) identification of the municipality, community, area, or facility to be served by the proposed water system;
- (3) the name and address of the applicant;
- (4) a description of the nature of the establishments and of the area to be served by the proposed water system;
- (5) a description of the future service areas of the public water system for 5, 10, 15 and 20 years;
- (6) consideration of alternative plans for meeting the water supply requirements of the area, including, for new systems, obtaining water service from an existing system;
- (7) for applicants seeking State loan or grant support for the project, financial considerations, including:
 - (A) technical alternatives;
 - (B) the costs of integral units; and
 - (C) the total costs.
- (8) population records and trends, present and anticipated future water demands, and present and future yield of source or sources of water supply, including provisions to supply water to other systems;
- (9) character of source or sources of water supply, including:
 - (A) hydrological or hydrogeological data;
 - (B) stream flow rates or well yields;
 - (C) for surface sources, analytical results for chemical, mineral, bacteriological, and physical qualities; and
 - (D) the location and nature of sources of pollution.
- (10) proposed water treatment processes, including:
 - (A) the criteria and basis of design of units;
 - (B) the methods or procedures used in arriving at recommendations; and
 - (C) the reasons or justifications for any deviations from conventional or indicated process or method.
- (11) for purchased water, a copy of the agreement with the supplier and the hydraulic analysis showing the supplier's capabilities for supplying the purchased water;
- (12) a description of the design basis of the source, treatment, and distribution system, and the useful life of all sources, treatment, and transmission facilities including pipes, pumping stations, and storage facilities;
- (13) for existing system projects intending to alter or expand a distribution system, a statement of maximum daily treated water supply and maximum daily demand, including supporting documentation and calculations; and
- (14) for existing systems, a prioritized list of infrastructure improvements.

(c) Water System Management Plan. The Water System Management Plan shall document the ability to finance, operate, and manage the system in accordance with this Subchapter for the current owner and for any entity that assumes ownership of the water system within the first 24 months of operation. The Water System Management Plan shall include the following information, where applicable:

- (1) Organization:
 - (A) a description of organizational structure or a chart showing all aspects of water system management and operation;
 - (B) an identification of positions responsible for policy decisions ensuring compliance with State rules and the day-to-day operation of the system; and
 - (C) a copy of all contracts for management or operation of the water system by persons or agencies other than the system's owner.
- (2) Ownership:

- (A) identify the ownership structure, such as sole proprietor, partnership, corporation, limited liability company, homeowner association, nonprofit organization, local government unit, state or federal agency, or other legal entity, and disclose if the ownership of the system is expected to change once the system is constructed and, if known, identify the future owners;
 - (B) provide the mailing address and street address of the owner and the physical location of the water system;
 - (C) disclose any encumbrances, trust indentures, bankruptcy decrees, legal orders or proceedings, or other items that may affect or limit the owner's control over the system and describe how compliance with the requirements of this Subchapter will be maintained; and
 - (D) describe the legal authority, such as ownership, leases or recorded easements, allowing inspection, repair, and maintenance of system components.
- (3) Management qualifications:
- (A) describe the qualifications of the owners and managers of the water system, including training and experience in owning or managing a water system; and
 - (B) provide the name and Public Water Supply Identification Number of all public water systems owned within the last five years as well as all systems operated under contract for another owner within the last five years. If any system has been assessed a penalty for violating a requirement set forth in this Subchapter, describe how the owner will prevent similar violations at this system.
- (4) Management training. Describe plans to keep management current with regulatory requirements for managing and operating a public water system.
- (5) Policies. The system shall have policies regarding the following procedures:
- (A) cross-connection control;
 - (B) customer information, complaints, and public education;
 - (C) budget development and rate structure;
 - (D) response and notification if water quality violations occur;
 - (E) customer connection, disconnection, billing, and collection; and
 - (F) safety procedures.
- (6) System monitoring, reporting and record keeping. The applicant shall provide:
- (A) a summary of the applicable system monitoring and reporting requirements; and
 - (B) a description of procedures for keeping and compiling records and reports in accordance with this Subchapter.
- (7) Financial Plans. The plan shall contain the following financial information, where applicable:
- (A) Units of Local Government:
 - (i) For projects that require the unit of local government to incur debt, the unit of local government shall submit a statement from the Local Government Commission stating that debt issue has been approved.
 - (ii) For projects that do not require the unit of local government to incur debt, the unit of local government shall submit the following:
 - (I) a statement from the unit of local government documenting that they are in compliance with G. S. 159, Article 3, The Local Government Budget and Fiscal Control Act; and
 - (II) estimated revenues, expenditures, and rate structure for the construction, operation and maintenance, administration, and reasonable expansion of the project. This information shall be provided on a form designated by the Department and shall demonstrate that revenues are greater than expenses.
 - (B) The North Carolina Utilities Commission's financial determination may be used as the financial plan for systems subject to its regulations:
 - (i) submit a copy of the Order Granting Franchise and Approving Rates from the North Carolina Utility Commission; or
 - (ii) submit a copy of the Order Recognizing Continuous Extension and Approving Rates from the North Carolina Utilities Commission.

- (C) Non-transient non-community water systems. Owners of existing non-transient non-community water system(s) which receive no violation of this Subchapter during the preceding three years shall provide a description of negative impacts the project would have on the financial ability to comply with this Subchapter. The owner of either a proposed new or existing non-transient non-community water system that was in violation of this Subchapter within the prior three years shall follow the requirements in Part (D) of this Subparagraph.
- (D) All other community and non-transient non-community water systems shall document the following:
 - (i) analysis that compares anticipated revenues with planned expenditures for a five-year period that demonstrates a positive cash flow in each year, and a 20-year equipment replacement cost plan documenting the methods to finance equipment replacement;
 - (ii) the creation and funding of a continuous operating cash reserve greater than or equal to one-eighth of the annual operating, maintenance, and administrative expenses for the water system. The operating cash reserve shall be fully funded by the end of the first year of operation;
 - (iii) the creation and funding of an emergency cash reserve greater than or equal the cost of replacing the largest capacity pump. The emergency cash reserve shall be fully funded by the end of the fifth year of operation; and
 - (iv) a description of the budget and expenditure control procedures that assure budget control for the applicant, including procedures or policies to prevent misuse of funds and a demonstration that the system has adopted generally accepted accounting procedures.
 - (v) In lieu of Sub-Items (ii) and (iii) of this Paragraph, substitute documentation shall be accepted in the following instances:
 - (I) an applicant with multiple water systems showing reserves affording greater or equal capabilities; or
 - (II) an applicant showing equivalent financial capacity to comply with requirements of this Section.

- (8) One Water System Management Plan may be submitted on behalf of an applicant owning and operating multiple water systems or an applicant pursuing multiple alterations or expansions and may include future projected construction or system acquisitions. The applicant shall submit a new Water System Management Plan for a project not covered under the existing Water System Management Plan or if violations of this Subchapter occur or continue at a system under an applicant's ownership or control.

(d) Operation and Maintenance Plan. The plan shall be completed prior to submitting the applicant's certification in accordance with Rule .0303(c) of this Section. This plan shall be accessible to the operator on duty at all times and available to the Department upon request. The Operation and Maintenance Plan shall include, at a minimum, a description of the location and routine operation and maintenance procedures for:

- (1) components of the treatment facility;
- (2) pumps, meters, valves, blowoffs, and hydrants;
- (3) backflow devices;
- (4) storage tanks; and
- (5) all other appurtenances requiring routine operation and maintenance.

(e) Emergency Management Plan. The Emergency Management Plan shall be completed prior to submitting the applicant certification required in Rule .0303(c) of this Section. The Emergency Management Plan shall be available to personnel responsible for emergency management and operator on duty at all times and available to the Department upon request. The supplier of water shall consider using the principles, practices, forms, nomenclature, structure, and definitions found in the National Incident Management System and shall contain the following information where applicable:

- (1) For community water systems, a plan with the following elements shall be required:
 - (A) an identification and phone numbers of personnel responsible for emergency management, including public water system, local, State, and federal emergency contacts;

- (B) an identification of foreseeable natural and human-caused emergency events, including water shortages and outages;
 - (C) a description of the emergency response plan for each identified event;
 - (D) a description of the notification procedures; and
 - (E) an identification and evaluation of all facilities and equipment whose failure would result in a water outage or water quality violations.
- (2) For a supplier of water that treats and furnishes water from a surface water source, completion of the Source Water Protection Plan in accordance with Rule .1305 of this Subchapter shall fulfill the Emergency Management Plan requirement.
- (3) For non-transient, non-community water systems, the plan shall contain the positions and phone numbers of responsible persons to contact in the event of an emergency, including public water system, local, State and federal emergency contacts.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; September 1, 1990; June 30, 1980; September 1, 1979;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Readopted Eff. July 1, 2019.*

15A NCAC 18C .0308 ENGINEERING PLANS AND SPECIFICATIONS

(a) Engineering Plans. Engineering Plans for water supply systems shall consist of the following:

- (1) title information including the following:
 - (A) name of the city, town, board, commission or other owner for whom the plans were prepared;
 - (B) the locality of the project;
 - (C) the general title of the set of drawings and prints;
 - (D) the specific title of each sheet;
 - (E) the date; and
 - (F) the scales used;
- (2) a preliminary plat plan or map showing the location of proposed sources of water supply;
- (3) a general map of the entire water system showing layout and all pertinent topographic features;
- (4) detail map of source or sources of water supply;
- (5) layout and detail plans for intakes, dams, reservoirs, elevated storage tanks, standpipes, pumping stations, treatment plants, transmission pipelines, distribution mains, valves, and appurtenances and their relation to any existing water system, and the location of all known existing structures or installations and natural barriers that might interfere with the proposed construction; and
- (6) the north point.

(b) Specifications. Complete detailed specifications for materials, equipment, workmanship, test procedures and specified test results shall accompany the plans. The specifications shall include, where applicable:

- (1) the design and number of chemical feeders, mixing devices, flocculators, pumps, motors, pipes, valves, filter media, filter controls, laboratory facilities and equipment, and water quality control equipment and devices;
- (2) provision for continuing with minimum interruption the operation of existing water supply facilities during construction of additional facilities;
- (3) safety devices and equipment;
- (4) procedure for disinfection of tanks, basins, filters, wells and pipes; and
- (5) identification of type, brand name, and model number for all back flow devices.

(c) One copy of the engineering plans and specification, upon approval, will be returned to the person or persons making application for approval.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Eff. January 1, 1977;
Readopted Eff. December 5, 1977;
Amended Eff. July 1, 1994; July 1, 1993;
Temporary Amendment Eff. October 1, 1999;
Amended Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.*

15A NCAC 18C .0309 FINAL APPROVAL

(a) No construction, alteration, or expansion of a water system, subject to approval as described in Section .0300 of this Subchapter, shall be placed into final service or made available for human consumption until the applicant has complied fully with Section .0300 of this Subchapter and received Final Approval from the Department.

(b) Temporary approval may be granted by the Department for system alterations required to remedy an imminent hazard as determined by the Department.

*History Note: Authority G.S. 130A-315; 130A-317; P.L. 93-523;
Temporary Adoption Eff. October 1, 1999;
Eff. August 1, 2000;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.*

15A NCAC 18C .1304 WATER SYSTEM OPERATION AND MAINTENANCE

(a) Water systems shall be operated and maintained in accordance with applicable approved engineering plans and specifications, Water System Management Plan and Operation and Maintenance Plan.

(b) Water systems shall be operated and maintained in accordance with 15A NCAC 18D, Rules Governing Water Treatment Facility Operators, Rule .0206 and G.S. 90A-29.

*History Note: Authority G.S. 90A-29; 130A-315; P.L. 93-523;
Temporary Adoption Eff. October 1, 1999;
Eff. August 1, 2000;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. November 23, 2015.*

Attachment 4
Compliance Inspection Report



NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

Public Water Supply Section COMPLIANCE INSPECTION REPORT

System Name:

PWS ID#:

Owner:

of Connections:

Address/Phone #:

Population:

Source: Surface Ground Purchase

Type of System: Community Non-Transient, Non-Community
 Transient Adjacent

Responsible Person:

Address/Phone #:

DEFICIENCIES / VIOLATIONS:

Each item below is a deficiency / violation of the NCAC Title 15A Subchapter 18C, Rules Governing Public Water Systems.

<u>Rule</u>	<u>Specifics</u>

ACTION REQUIRED:

You are required to take all necessary steps to comply with applicable laws and regulations. The following corrective actions must be taken within the time frame listed below:

A written response must be filed with the Regional Office once these violations are corrected.

NOTICE is given that this and any further violations may result in enforcement actions, including civil penalties.

RECOMMENDATIONS/COMMENTS:

Name and Signature of System Representative:		Date:	Time:
Name of inspector:	Agency/Office Region:	EVALUATION SUMMARY: <input type="checkbox"/> Significant Deficiency(ies) <input type="checkbox"/> Minor Deficiency(ies) <input type="checkbox"/> Recommendation(s) Made <input type="checkbox"/> No Deficiencies/Recomendations	
	Telephone:		
On-site action taken:			

Regional Files (white/original copy) Central Files (yellow copy) Owner (pink copy) Recipient (goldenrod copy)



NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

Public Water Supply Section

COMPLIANCE INSPECTION REPORT-continued-Page ___ of ___

System Name:

PWS ID#:

Owner:

Date:

DEFICIENCIES / VIOLATIONS : (continued)

Each item below is a deficiency / violation of the NCAC Title 15A Subchapter 18C, Rules Governing Public Water Systems.

Rule	Specifics

ACTION REQUIRED: (continued)

You are required to take all necessary steps to comply with applicable laws and regulations. The following corrective actions must be taken within the time frame listed below:

A written response must be filed with the Regional Office once these violations are corrected. NOTICE is given that this and any further violations may result in enforcement actions, including civil penalties.

RECOMMENDATIONS/COMMENTS: (continued)

MEMORANDUM

TO: _____
System Name

System Phone #

Water System #

FROM: _____
Name

Public Water Supply Section Regional Office

Date

Responsible Person/Person Contacted

Mailing Address

City State Zip Code

Regional Office Phone #

**RE: Monitoring Requirements & General Information
Transient Non-Community Water Systems**

The North Carolina Department of Environmental Quality has determined that your water system is a *transient non-community* (TNC) public water system. Transient non-community public water systems are legally defined as a water system which serves at least 25 people (not necessarily the same people) for sixty or more days each year. It is not necessary that the water system furnish water for drinking, only that the water system is available for drinking, bathing, cooking, dishwashing or oral hygiene. Examples of TNC public water systems include churches, convenience stores, and restaurants. The items listed below were discussed with the above-listed Person Contacted.

[] **Testing requirements for TNC systems: what tests, how often and where they should be collected.**

- **Coliform Bacteria:** Collected quarterly from faucets such as a kitchen or bathroom sink.
- **Nitrate:** Collected annually from the Entry Point identified below.
- **Nitrite:** Collected one time from the Entry Point identified below.

SAMPLING SITE LOCATION AND CODE

<u>Test:</u>	<u>Sample Location Code:</u>	<u>Location:</u>
Nitrate/Nitrite	E 0 1 (Entry Point)	_____
Coliform	— — —	_____
_____	— — —	_____
_____	— — —	_____
_____	— — —	_____

SAMPLE SITING PLAN

COMMENTS:

If you have further questions, please contact the Regional Office at the phone number listed above.

TRANSIENT, NON-COMMUNITY WATER SYSTEM REFERENCE SHEET

CERTIFIED LABORATORIES AND SAMPLE REPORTING:

It will be necessary for you to contract with one of the North Carolina State certified laboratories on this website, <https://slphreporting.ncpublichealth.com/Certification/CertifiedLaboratory.asp>, to perform the required analyses. The selected laboratory will send you a sample collection bottle (sample kit) and a form, which you must complete each time a sample is taken. The **water system** number (either printed on the reverse side of this memorandum or it will be furnished later), **type** of sample, **date** collected and **time** collected must be included on the laboratory report form. Additionally, the **sample location** and **location code** (from the **SAMPLING SITE LOCATION AND CODE** section on the reverse side of this memorandum) must be included on the form as well. Contaminated samples will require additional testing. Your laboratory will send results of water sample analyses to the state and to you for your permanent records. Records of bacteriological analyses must be kept on-site for at least 5 years while Nitrate/Nitrite test results must be kept on-site for at least 10 years.

Questions concerning testing procedures, contracts or forms should be directed to your laboratory.

SAMPLING TIPS:

- Follow the instructions provided by your laboratory and only use sample containers they provide.
- Collect samples only from designated sampling sites. Sample taps should be clean and in good working order.
- Remove strainers, aerators, vacuum breakers or hoses from the sample spigot prior to sample collection.

Bacteriological Samples

- Disinfection of the sample spigot with chlorine and/or alcohol is recommended.
- Open cold-water valve and allow water to run freely for 5 minutes. Then adjust the flow until there is a slow, gentle and steady stream.
- Handle the sample container and lid with care. Never touch the inside of the bottle or lid and do not allow water to splatter or splash into either.
- **Do not rinse out the container.** Slowly fill the container to or slightly above the 100-milliliter mark and carefully replace the cap.
- Sample analysis must begin at the laboratory within 30 hours.

Nitrate/Nitrite Samples

- Open sample spigot and allow water to run freely for 5 minutes. Then adjust the flow until there is a slow, gentle and steady stream.
- Fill sample container and immediately store on ice.
- Nitrite samples must be processed by the laboratory within 48 hours. Nitrate samples must be processed by the laboratory within 48 hours, or within 14 days for chlorinated water systems.

WELL HEAD DETAIL:

1. Sanitary well Seal (required)
2. Insect-proof Casing Vent (downward opening & screened)
3. Check Valve
4. Sample spigot (with vacuum breaker if threaded)**
5. Concrete slab extending 3 feet in all directions from well casing **

** These items are required for systems that were installed After July 1, 1993 and are inspected by your local Health Department for food grade or lodging purposes.

Note: Detail is for a submersible pump setup and your well pump setup may be different. Your local Health Department may have additional requirements.

