

tested positive. For this you will need to refer to your sample siting plan. If the current sample came from the same faucet as the positive sample, check the box for "Same Tap." If the current sample came from a faucet that is between the entry point and the faucet where the positive sample was taken, check the box for "Nearer to the Source." If the current sample came from a faucet that is between the faucet where the positive sample was taken and the end of the distribution system, check the box for "Further from the Source."

(12) If Chlorinated: If continuous chlorination equipment is installed on your well, a "Certified Operator" must perform an analysis and record the chlorine residual concentrations at the time the water sample is collected. If chlorination equipment is not installed on your well, this does not apply to you. The note about recording chlorine residuals on a "water usage report" does not apply to transient, non-community water systems.

It is absolutely necessary that your lab provides complete information on the bottom portion of the Bacteriological Analysis form. If you receive a letter of violation because your lab fails to provide information, you should contact your lab.



For additional information on monitoring requirements under the Safe Drinking Water Act and a list of State certified laboratories, please contact the North Carolina Department of Environment and Natural Resources, Division of Environmental Health, Public Water Supply Section headquarters in Raleigh at (919) 733-2321 or the Regional Office in your area:

Asheville 828/251-6786

Mooresville 704/663-1699

Winston-Salem 336/771-4600

Raleigh 919/571-4700

Fayetteville 910/486-1541

Washington 252/946-6481

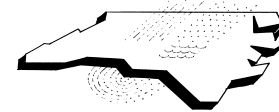
Wilmington 910/395-3900

<http://www.deh.enr.state.nc.us/pws/index.htm>



TO HELP YOU

provide safe water
for your congregation, and
meet the requirements of
the Safe Drinking Water Act



*Water Resources Research Institute
of The University of North Carolina*



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Technical writer/editor: Jeri Gray, WRRRI

Cooperators/reviewers:

Jessica G. Miles, P.E., Chief, N.C. Public Water Supply Section (PWSS)

Tommy Cross, Manager, Transient Noncommunity Systems, N.C. PWSS

Sandy Whitley, Raleigh Regional Office, N.C. PWSS

Bryan Phelps, Raleigh Regional Office, N.C. PWSS

Jim Berry, N. C. Rural Water Association

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*Copies of this publication can be downloaded from website:
<http://www2.ncsu.edu/ncsu/CIL/WRRRI/churchwater.pdf>*

- (1) Water System ID#: Have your sample siting plan in front of you when you fill out the top part of the reporting form, and make sure you copy your system identification number correctly.
- (2) County: Provide the name of the county in which your church is located.
- (3) Name of Water System: Print the name of your church as it appears on your sample siting plan.
- (4) Sample Type: Unless you are a new church with a new system or have had a previous positive sample, then your sample is a "Routine distribution" sample.
- (5) Location Where Collected: Refer to your sample siting plan and use the description of the faucet where the sample was collected.
- (6) Location Code: Refer to your sample siting plan and use the code that identifies the faucet where you took the sample.
- (7) Collected by: Print the name of the person who collected the sample and filled out the form.
- (8) Collection Date: Provide the month, day and year (for example if the date was January 1, 2002, you would enter 01/01/02).
- (9) Collection Time: Provide exact time of day (for instance 10: 30 AM) that the sample was collected. Be sure to specify AM or PM.
- (10) Mail Results to (water system representative): Provide the address to which the certified laboratory is to mail a copy of the results of the bacteriological analysis. The lab must mail the original of the form with the results to the Public Water Supply Section.
- (11) For Repeat Samples: If you have had a positive quarterly coliform sample, you must do repeat sampling. When doing repeat sampling, you must refer to the reporting form for the sample that tested positive. Use this form to identify the faucet where the positive sample was taken (Previous Positive Location Code), and the date the positive sample was taken (Positive Collection Date). You must also say how close the current sample location is to the location of the sample that

continued

■ Why should a church monitor its drinking water?

The simple answer is “To protect the health of its congregation and visitors.”

Churches are required to take samples to detect the presence of nitrates, nitrites, and coliform bacteria. Here’s why these contaminants can indicate health risks:

Coliform bacteria. Coliform bacteria are present in the wastes of all mammals, including humans. If they are found in water, it is an indication that the water source could be contaminated by animal or human waste. Animal and human waste also contain many other bacteria, viruses, and other “pathogens” that can cause serious diseases such as gastroenteritis and hepatitis. Wells can be contaminated by wastes when an underground pathway exists from septic tanks or when rain causes contaminants to seep from the ground surface to the underlying groundwater source.

Nitrates/Nitrites: Nitrates and nitrites are chemical compounds that contain nitrogen and oxygen. In the body, nitrates are converted to nitrites, which interfere with the oxygen-carrying ability of blood. Reduction of the blood’s ability to provide oxygen to the body can result in a number of health problems, including shortness of breath and blueness of the skin. Babies and unborn children are most vulnerable to problems from high levels of nitrate. If babies’ formula is prepared using water containing high levels of nitrates, they could become very ill in just a short period of time and could even die. Pregnant women should also be concerned about the effect of high levels of nitrates on their unborn children.

Nitrates can get into well water from nearby fields where fertilizers are used. Almost all fertilizers contain some form of nitrate. Nitrates can also get into well water from nearby septic systems. Human wastewater contains large amounts of nitrogen compounds, which are converted to nitrates in the septic fields. Wastewater applied to septic fields seeps into groundwater below the septic field and can then travel toward nearby wells. Most homes and churches in rural areas use septic systems for wastewater disposal.

- After cleaning the faucet, let water run through the faucet for five minutes before you take the sample. This will get rid of water that may have been standing in the pipe for a long time.
- Use care when handling the sample bottles. Use your fingertips to remove the lid. Don’t lay the lid down or splatter water on the lid. Don’t touch the inside of the lid. Don’t drop the bottle or set it down on a surface where bacteria could be growing (like a toilet lid or a kitchen counter or sink).
- Do not fill the sample bottle completely. Be sure to fill the bottle to above the 100 milliliter (ml) fill line, but leave 1/2 to 3/4 inch of air-space at the top of the bottle.
- Send samples by overnight mail or hand deliver them to the laboratory immediately after you have collected them, such that the samples can be analyzed by the lab in the proper timeframe. If not, you may have to take (and pay for!) replacement samples.

■ How can we make sure our monitoring reports are acceptable so that we don’t receive reporting violation letters?

Filling out reporting forms seems to be the biggest challenge that churches have in complying with the Safe Drinking Water Act rules. However, with some care, you will be able to complete forms accurately and avoid getting violation letters. Here are some guidelines to help you fill out the reporting form for bacteriological sampling. (Bold numbers refer to the facsimile form on the next page)

Be sure to provide all information requested. Do not leave any blanks in the top portion or the address portion of the form. If you are required to do repeat sampling, provide complete information in that block.

continued

■ Can we avoid monitoring and reporting requirements if we use bottled water for drinking?

Using bottled water for drinking does not allow a church that provides water for other normal, everyday uses to avoid monitoring and reporting. Human consumption of water includes more than just drinking the water. It includes contact in rest rooms and may include use of water for cooking.

A church might be allowed to use bottled water to obtain a temporary variance or exemption while it corrects a problem with its water supply system, but it may not rely on bottled water to comply with Safe Drinking Water Act regulations on an on-going basis.

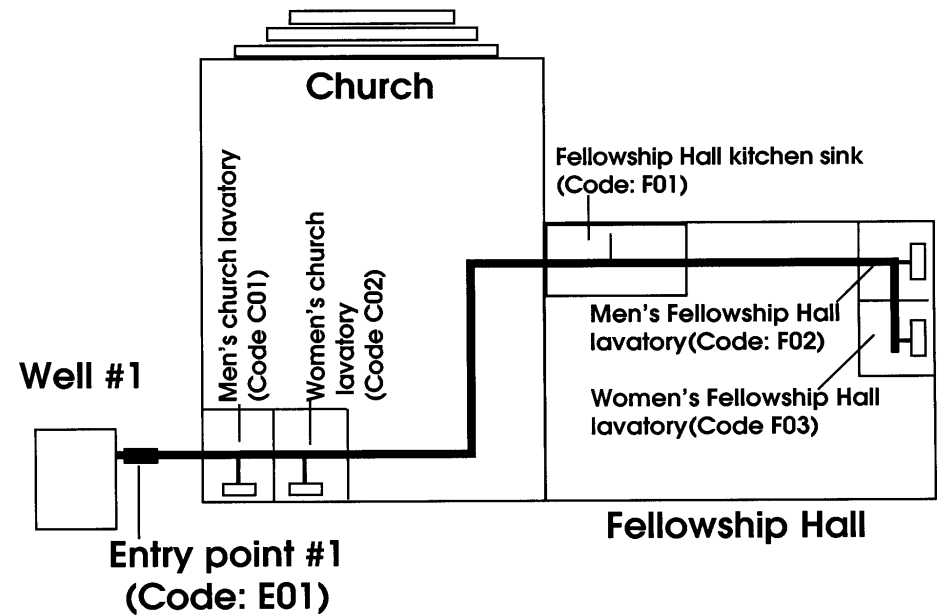
■ What are the drinking water monitoring and reporting requirements for churches?

To discuss monitoring and reporting requirements, we need to refer to what the N.C. Public Water Supply Section—which administers the Safe Drinking Water Act in North Carolina—calls a “sample siting plan.” A sample siting plan is a drawing of a church’s water supply system with sampling locations identified and coded. All churches with water supply systems are required to have a sample siting plan on file with the Public Water Supply Section. A copy of the sample siting plan should be kept in good condition and referred to when filling out reporting forms. On the right is a sample siting plan for a fictional church.

Transient non-community public water supply systems are required to take samples and have them analyzed by a State certified laboratory, which will report the results. The following samples must be taken:

1. Coliform bacteria: Sampling for coliform bacteria must be done quarterly (every three months). The Public Water Supply Section suggests that samples should be taken early in the quarter to avoid missing reporting deadlines because of delays. A good sampling schedule would be January, April, July, and October. A sample must be taken at a faucet inside the

Example Church Public Water Supply System Identification Number: 01-23-456



church, fellowship hall, or other building served by the system (see C01, C02, F01, F02, F03).

If your lab notifies you that a sample has tested positive for coliform bacteria, then within 24 hours, you must take four “repeat” samples. In addition, the month after a positive sample, you must take 5 “routine distribution” samples. There are very specific requirements for follow up sampling after a sample tests positive for coliform, and you should ask the regional office of the Public Water Supply Section for instructions on how to conduct follow up sampling. This publication was prepared primarily to help churches with routine coliform sampling.

2. Nitrite (NO₂): Only a one-time baseline sampling for nitrite is required unless the first sample reveals a high concentration of nitrite. The sample **MUST** be taken at the entry point—that is where treated water from the

well enters the distribution system (See Entry Point One—E01— on drawing). If there is more than one entry point (more than one well), samples must be taken at each. Personnel of the Public Water Supply Section make an on-site determination of the location(s) and code(s) for the entry point(s). If the first sampling reveals high nitrite concentrations, then samples must be taken quarterly (every three months) until four consecutive samples show nitrite concentrations below the maximum contaminant level.

3. Nitrate (NO_3): Sampling for nitrate must be done every year. Samples must be taken at the entry point (E01). If there is more than one entry point (more than one well), samples must be taken at each.

■ How can we make sure the samples we take accurately reflect the quality of the water in our water system?

Sometimes a routine quarterly sample will test positive for coliform bacteria but follow-up sampling will show no problem with the water supply. Positive tests often result because the sample has been contaminated with bacteria from outside the water source. By being very careful when you take samples, you can avoid outside contamination and the inconvenience and expense of follow-up sampling.

The Public Water Supply Section gives the following advice:

- Follow the instructions that come with the sampling bottles provided by your certified laboratory. Sample bottles have been sterilized, but if a bottle has been damaged or the lid is loose, do not use it. Sample bottles may contain a small amount of a dechlorinating agent. If you see a crystalline material or a small amount of liquid in the bottle, do not rinse it out.
- Make sure the faucet where you take the sample is clean. Remove the aerator, screen filter, or any other device on the faucet and disinfect the faucet with either rubbing alcohol or diluted household bleach (or by briefly flaming the tap with a propane torch) before you take the sample.

■ Is a church a public water supply system?

The short answer is yes. Under authority of the Safe Drinking Water Act, passed by the U.S. Congress and signed into law by the president, the U.S. Environmental Protection Agency (EPA) has adopted rules that determine what a public water supply system is. These rules say that any water supply that serves at least 25 people at least 60 days out of the year is a public water supply. The EPA considers churches that have their own water supplies to meet this criterion.

The EPA considers churches to be “non-community” public water supplies. That means there are limited home or business connections to the water supply. Churches that have only weekly services plus occasional prayer meetings, weddings, funerals, fund raisers or other activities are considered “transient non-community” public water supplies. That means that the church water supply doesn’t serve the same 25 people all year round (transient). Churches that have daily services or operate care centers (child or adult) are “non-transient non-community” public water supplies. That means that the church water supply serves the same people all year round. This publication was prepared for churches that are transient, non-community water systems.

■ Do water monitoring requirements for churches violate the constitutional separation of church and state?

Attorneys working for the EPA have issued a legal opinion that health and safety regulations that apply in a general manner—like those issued under the Safe Drinking Water Act—do not violate the Free Exercise Clause of the First Amendment to the U.S. Constitution. Because the regulations are neutral and general, that is, they do not target any person or group, they are constitutional even if they do have an incidental financial effect on a religious organization. This legal opinion is based on several court decisions in cases brought to challenge the government’s authority to impose health and safety regulations on religious organizations (Employment Division, Dept. of Human Resources of Oregon v. Smith 494 U.S. 872, 110 S.Ct. 1595 [1990] and First Assembly of God of Naples v. Collier County 20 F. 3d 419 [11th Cir.1994]).

(Laboratory Letterhead Required)

BACTERIOLOGICAL ANALYSIS

Note: All appropriate information must be supplied for compliance credit.

① WATER SYSTEM ID#: _____ ② County: _____

③ Name of Water System: _____

④ Sample Type: Routine distribution Repeat Plan Review Special/Non-compliance

⑤ Location Where Collected: _____
(Note: Sample must be collected from distribution system for routine compliance, not the well house.)

⑥ Location Code: _____

⑦ Collected by: _____
(Please print)

Collection Date ⑧ _____ Collection Time ⑨ _____
_____/_____/____ : ____:____ M
(MM/DD/YY) (Specify AM or PM)

⑩ Mail Results to (water system representative):

⑪ Also Complete for REPEAT Sample:
Previous Positive Location Code: _____
Positive Collection Date: ____/____/____
Proximity of THIS sample to Previous Positive:
 Same Tap Nearer to the Source Further from the Source

⑫ If Chlorinated:
Total Chlorine Residual: _____ mg/L

Free Chlorine Residual: _____ mg/L

Combined Chlorine Residual: _____ mg/L
(Combined Chlorine = Total Chlorine minus Free Chlorine)

Responsible Person's email: _____@_____
Note: Also record these values on your water usage report.

This section to be completed by certified laboratory

Laboratory should mail results to:

Public Water Supply Section, Attn: Data Entry, 1634 Mail Service Center, Raleigh, NC 27699-1634

Fax: 919.715.6637

This booklet answers questions about drinking water requirements for rural churches.

- Why should a church monitor its drinking water? (See page 1)
- Is a church a public water supply system? (See page 2)
- Do water monitoring requirements for churches violate the constitutional separation of church and state? (See page 2)
- Can we avoid monitoring and reporting requirements if we use bottled water for drinking? (See page 3)
- What are the drinking water monitoring and reporting requirements for churches? (See page 3)
- How can we make sure the samples we take accurately reflect the quality of the water in our water system? (See page 5)
- How can we make sure our monitoring reports are acceptable so that we don't receive reporting violation letters? (See page 6)