Harnett
COUNTY
NORTH CAROLINA

Department of Environmental Health

www.harnett.org

Harnett County Government Complex
307 W. Cornelius Harnett Boulevard
Lillington, NC 27546

ph: 910-893-7547
fax: 910-893-9371

November 13, 2018

Paul E. Fowler
950 US 401 South
Lillington, NC 27546

RE: Bacteriological water sample collected at: 950 US 401 South
EH 1811-0004

Dear Mr. Fowler,

The report of your water sample taken for bacteria, revealed the presence of Total Coli form. A copy of the water sample report is enclosed.

The enclosed pamphlet provides specific directions about how to disinfect the well. If you have any questions regarding disinfection, contact the Fayetteville Regional Office at (910) 433-3300 or contact me at (910) 893-7547.

As soon as the well has been treated, contact the Harnett County Division of Environmental Health so another sample can be taken. No fee will be charged for a second sample if the request is made within thirty (30) days of this letter. After thirty (30) days, the fee for a second sample is $25.00.

If you have any questions, please call me Monday through Friday between 8:00 and 9:00 a.m. at (910) 893-7547.

Sincerely,

Andrew Currin, R.E.H.S.
Environmental Health Specialist
Harnett County Department of Public Health

AC/sgs

Enclosures: *Water Sample Report*
Biological Analysis Report
How to Disinfect Your Water Well

North Carolina State Laboratory of Public Health

Environmental Sciences

Microbiology

Certificate of Analysis

4312 District Drive
MSC 1918
Raleigh, NC 27699-1918

http://slph.ncpublichealth.com
Phone: 919-733-7308
Fax: 919-715-8611

FINAL REPORT

Report to: **ANDREW CURRIN**

HARNETT CO ENVIRONMENTAL HEALTH
307 CORNELIUS HARNETT BLVD
Lillington, NC 27546

Name of System:

Paul E Fowler
950 US 401 S
Lillington, NC 27546

EH 1811-0004

EIN: **566000306EH** **Delivery:** **NC Courier** **Harnett County**

StarLiMS ID: ES181107-0066

Date Collected: 11/06/2018 Time Collected: 10:15 By: Andrew Currin
Date Received: 11/07/2018 Time Received: 08:37 By: Susan Beasley

Sample Source: Well water
Sample Type:
Treatment:

Sampling Point: Rear spigot
GPS No.
Well Permit No.

Comment:

Colilert Profile **Method: SM 9223B**

Analyte	Test Result	Unit	Conclusion	Date Tested
Total Coliform	Present			11/07/2018
E. coli	Absent			11/07/2018

Report Date: 11/08/2018 **Reported By:** **Susan Beasley**

Explanations of Coliform Analysis:

If coliform bacteria are **Absent**, the water is considered safe for drinking purpose. If coliform bacteria are **Present**, the water is considered unsafe for drinking purpose. Presence of *E. coli* (bacteria) generally indicates that the water has been contaminated with fecal material. It must be remembered that a water analysis refers only to the sample received and should not be regarded as a complete report on the water supply.

North Carolina Division of Public Health
Occupational and Environmental Epidemiology Branch, Epidemiology Section
BIOLOGICAL ANALYSIS REPORT

Private well water information and recommendations

ES181107-C066

County: Harnett Name: Paul E. Fowk Sample ID Number: _____
Location: 950 US 401 S. Reviewer Andrea Currin, NELS
Lillington, NC 27546
Initial Sample ✓ Confirmation Sample _____

BIOLOGICAL ANALYSIS RESULTS AND RECOMMENDATIONS FOR USES OF YOUR PRIVATE WELL WATER (These recommendations are based on biological analysis only.)

_____ No coliform bacteria were found in your well water. Your water can be used for all purposes including drinking, cooking, washing dishes, bathing and showering.

✓ Total coliform bacteria were detected in the sample which indicates that harmful bacteria from human or animal waste could enter the well. Do not use the water for drinking or cooking unless it has been boiled for 3 minutes. You may use your water for all other purposes including washing dishes, bathing or showering.

✓ Your well water needs to be re-tested to verify that the result is accurate.

_____Fecal coliform bacteria were detected in the sample. Do not use the water for drinking, cooking, washing dishes, bathing or showering.

If the re-test shows contamination by bacteria contact your local health department for assistance. There may be a problem with the construction of the well, the groundwater source, or operation of the well. The well needs to be inspected by the local health department or a local well contractor to determine the problem with the well and to give guidance on how to correct the problem.

Your well water was tested for biological contaminants (total coliform and fecal coliform bacteria). The results were evaluated using the federal drinking water standards.

Drinking water may contain substances that can occur naturally in water or can be introduced into water from man-made sources. Total coliform bacteria are found in soil and fecal coliform bacteria are found in animal and human waste. Total coliform or fecal coliform bacteria in well water indicate that the well may have structural problems or that the well was not properly disinfected.

If you have been drinking the well water and are pregnant, nursing, have a child in the household under 5 years of age, or immunocompromised (such as an individual with AIDS, cancer, hepatitis, dialysis or surgical procedures) inform your physician of these results at your next visit.

If the contamination continues, you should investigate the possibility of drilling a new well or installing a point-of-entry disinfection unit which can use chlorine, ultraviolet light, or ozone.

For further information please contact your county health department or the Occupational and Environmental Epidemiology Branch at 919-707-5900.

CONTACT INFORMATION

If you have any questions about disinfecting your well, please call your regional DENR Aquifer Protection Section for more information.

Asheville Regional Office
2090 U.S. Highway 70
Swannanoa, NC 28778
Phone: (828) 296-4500

Fayetteville Regional Office
225 Green Street, Suite 714
Fayetteville, NC 28301-5094
Phone: (910) 433-3300

Mooresville Regional Office
610 East Center Avenue
Mooresville, NC 28115
Phone: (704) 663-1699

Raleigh Regional Office
3800 Barrett Drive
Raleigh, NC 27609
Phone: (919) 791-4200

Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
Phone: (252) 946-6481

Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
Phone: (910) 796-7215

Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, NC 27107
Phone: (336) 771-5000

North Carolina

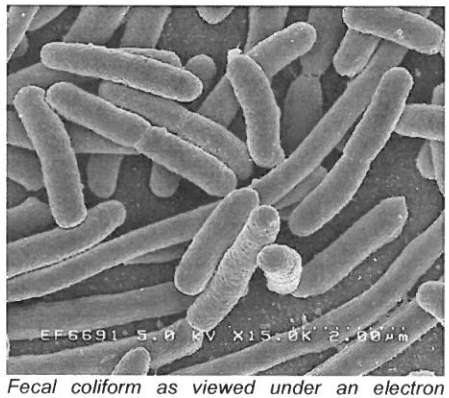
HOW TO DISINFECT YOUR WELL

Presented by:
Division of Water Quality
Aquifer Protection Section

NCDENR

Water Well Disinfection or Chlorination

For many of us, a water supply well represents the sole source of water for our home. Disinfecting your water supply well and piping system is an effective way to ensure that your water is sanitary and safe to drink. Disinfection of a water supply well is necessary if test results indicate bacterial contamination. Chlorination of your well, piping system, and water heater is also necessary if your well is contaminated by flood water. Disinfection may be used to control iron and sulfur bacteria to a limited degree. You may also wish to chlorinate your well as part of an annual well maintenance practice. In addition, all water wells are required to be disinfected upon completion of construction, maintenance, repairs or pump installation and testing.



Fecal coliform as viewed under an electron microscope.

The standard method of disinfection produces a 100 parts per million (or 100 milligrams per liter) chlorine concentration in your water. Another type of chlorination termed "shock chlorination" uses the same methods to introduce chlorine but achieves at least a 200 parts per million residual chlorine or more. Shock chlorination is typically recommended when test results indicate the presence of bacteria.

REMEMBER! The only people allowed to break a well seal are the well owner, plumbers installing or repairing well pumps, and certified well contractors.

How to Chlorinate Your Water Supply Well

To safely chlorinate your well, you should use safety goggles, gloves and appropriate clothing. Follow chlorine product manufacturer's instructions. Concentrated chlorine can produce holes in clothing and skin burns. You can use household bleach or a solution made from high test calcium hypochlorite containing 65% - 75% available chlorine. High-test calcium hypochlorite, including trade names HTH and Chlor-Tabs, is available from home improvement stores, swimming pool product suppliers, and driller supply stores. Do not use stabilized chlorine tablets or any chlorine product that contains fungicides, algaecides or other disinfectants; read the product label carefully. You may wish to ask the well contractor that installed your well if they have these products available.

To determine the amount of chlorine or calcium hypochlorite needed to produce a 100 parts per million residual chlorine solution, you must follow these steps:

1) Determine the thickness of the water column in your well. To accomplish this, you must determine the depth to water from

the ground surface and subtract this number from the total depth of the well. These numbers should be recorded by the well contractor on the well tag located on the well casing. If not, you can contact the well contractor that drilled the well. Example: The total well depth is 150 ft. and the water level is 20 ft. below ground surface. Therefore, the thickness of the water column is 130 ft.

2) Use the following table to determine how much chlorine compound is needed to dose 100 feet of a water-filled well to at least 100mg/l:

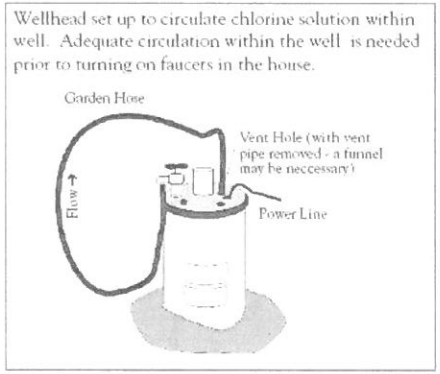
Borehole or Casing Diameter (inches)	Gallons of Water per 100 ft of Water Filled Well	Amount of Calcium Hypochlorite (65%-70% available chlorine)
2	16.3	0.5 oz.
4	65.3	2 oz.
6	146.9	4.4 oz.
8	261.1	7.8 oz.
10	408	12.2 oz.
12	587	1 lb.2 oz.
18	1321	2 lb. 8 oz.
20	1632	3 lbs. 1 oz.
24	2350	4 lbs. 7 oz.
30	3672	6 lbs. 14 oz.
36	5287	9 lbs. 15 oz.

3) Begin by attaching a garden hose to the well's hose bibb or an outside faucet closest to your well. Fill a five gallon bucket about 3/4 full with water. Loosen the well seal at the top of your well. This is typically accomplished with a wrench and it may be necessary to bump the seal with a rubber mallet to loosen it. If you are unable to remove the well seal, you can introduce the chlorine solution through the vent hole using a funnel. The vent pipe is easily unscrewed. However, it is better to pour the chlorine solution directly into the well in order to wash down the sides of the casing with the chlorine solution.

4) Add the calculated amount of calcium hypochlorite to the five gallon bucket of water and mix to dissolve. Pour the chlorine solution into the vent opening using a funnel or in through the top of the well casing after removing the well seal. Special provisions will be required for introducing the chlorine solution into artesian wells (flowing well). Contact the appropriate regional office for more information. Place the end of the garden hose so the discharging water will flow into the well either through the top of the well casing or slowly through the funnel positioned in the vent hole. Turn the hose on and allow the water to run until a strong chlorine odor is noticed coming from the hose. Allow the hose to run water into the well for about an hour or enough time to thoroughly circulate the chlorinated water.

5) Once the chlorine has been placed in the well, turn on each discharge point of the system (faucet etc.) until a strong chlorine odor is noted then turn off the faucet. Let the chlorine solution sit in the system for at least 24 hours. Use chlorine test strips to determine the amount of residual chlorine in the system. Do not use the system during this time as chlorine will be flushed to your septic system. Before resuming use of your water system, you must rid the system of the chlorinated water. To flush the system, run water from an outside faucet until the chorine odor no longer remains. When flushing the system, drain the chlorine water away from plants and animals.

Do not allow the chlorine rich water to enter any surface water body or storm sewer!



After Disinfection

If your well tested positive for bacteria before, it is important to get the water retested after disinfection. You can retest the well for bacteria about seven-to-ten days after disinfection. Remember that you must identify and remedy the source of the bacteria to keep the problem from recurring. The presence or absence of "indicator" bacteria such as total coliform determines if your water supply well is sanitary. Usually a properly constructed well can be effectively disinfected. However, if tests indicate that bacteria remain, you may need to have the well inspected. Foreign matter in the well such as animals, insects or bits of wood will have to be manually removed and the well disinfected again.

If you have questions about disinfection or other well issues, please contact your Department of Environment and Natural Resource (DENR) Aquifer Protection Section regional office.

For more information or a copy of the 15A NCAC 02C .0100 Well Construction Standards Criteria and Standards Applicable to Water Supply and Certain Other Wells, you can visit our webpage

http://portal.ncdenr.org/web/wq/aps/gwpro

or contact us at:

DENR
Aquifer Protection Section
1636 Mail Service Center
Raleigh, North Carolina 27699-1636
Phone: (919) 733-3221
Fax: (919) 715-0588