

December 19, 2018

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

Marty & Sherry Waddell
3971 River Road
Fuquay Varina, NC 27546

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

RE: Bacteriological water sample collected at: 838 Bradley Road

Dear Mr. & Mrs. Waddell,

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.
- If you have questions regarding *results (limitations or levels, specific health hazards)* etc. they can be directed to the N. C. State Laboratory of Public Health in Raleigh, N. C., Environmental Sciences, and Microbiology Division at (919) 733-7308.

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.

Feel free to contact me with any further questions, or for a resample. I may be reached 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 Well Instructions



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

Name of System:

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

Marty & Sherry Waddell
 838 Bradley Road
 Fuquay Varina, NC 27526

EIN: 566000306EH

Delivery: NC Courier

Harnett County

StarLiMS ID: **ES181129-0108**

Date Collected: 11/28/2018

Time Collected: 15:15

By: Andrew Currin

Date Received: 11/29/2018

Time Received: 08:41

By: Susan Beasley

Sample Source: New Well

Sampling Point: Well head

Sample Type:

GPS No.

Treatment:

Well Permit No. 18-5-438142

Comment:

Colilert Profile

Method: SM 9223B

Analyte	Test Result	Unit	Conclusion	Date Tested
Total Coliform	Present			11/29/2018
E. coli	Absent			11/29/2018

Report Date: 12/04/2018

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

County: Harris Name: Marty & Sherry Waddell Sample ID Number: ES181129-0108
Location: 838 Bradley Rd. Frying-Kurina NC, 27526 Reviewer Andrew Corbin, NCHS
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.



North Carolina State Laboratory of Public Health
Environmental Sciences
Inorganic Chemistry

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Certificate of Analysis

FINAL REPORT

Report to: ANDREW CURRIN

Name of System:

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

Marty & Sherry Waddell
 838 Bradley Road
 Fuquay Varina, NC 27526

EIN: 566000306EH

Delivery: NC Courier

StarLiMS ID: **ES181129-0021**

Date Collected: 11/28/2018

Time Collected: 15:15

By: A Currin

Date Received: 11/29/2018

Time Received: 07:59

Sample Type: Raw

Sampling Point: Well Head

Well Permit No.

18-5-43814R

Sample Source: New Well

Receipt Temp.: 1.0 °C

GPS No.

Comment:

Profile: New Well I

Analyte	Test Result	Allowable Limit	Unit	Qualifier(s)
Arsenic	<0.005	0.010	mg/L	
Barium	<0.1	2.0	mg/L	
Cadmium	<0.001	0.005	mg/L	
Calcium	11		mg/L	
Chloride	<5	250	mg/L	
Chromium	<0.01	0.10	mg/L	
Copper	<0.05	1.3	mg/L	
Fluoride	<0.2	4	mg/L	
Iron	0.40	0.30	mg/L	
Lead	<0.005	0.015	mg/L	
Magnesium	3		mg/L	
Manganese	0.18	0.05	mg/L	
Mercury	<0.0005	0.002	mg/L	
Nitrate	<1	10.0	mg/L	
Nitrite	<0.1	1.00	mg/L	
pH	7.4		N/A	
Selenium	<0.005	0.05	mg/L	
Silver	<0.05	0.10	mg/L	
Sodium	9.7		mg/L	
Sulfate	6.61	250	mg/L	
Total Alkalinity	53		mg/L	
Total Hardness	38		mg/L	
Zinc	<0.05	5.00	mg/L	

Report Date: 12/11/2018

Reported By: Debbie Moncol



Private Well Information and Use Recommendations

For Inorganic Chemical Contaminants

County:

Name:

838 Bradley Rd. Fuquay-Varina, NC 27526

Sample ID #:

Reviewer:

TEST RESULTS AND USE RECOMMENDATIONS

1. Your well water meets federal drinking water standards *for inorganic chemicals*. Your water can be used for drinking, cooking, washing, cleaning, bathing, and showering based on the *inorganic chemical results only*. You may have other water sampling results that are not taken into account in this report.
2. The following substance(s) exceeded federal drinking water standards or the North Carolina 2L calculated health levels. The North Carolina Division of Public Health recommends that your well water not be used for drinking and cooking, unless you install a water treatment system to remove the circled substance(s). However, it may be used for washing, cleaning, bathing and showering based on the *inorganic chemical results only*.

Arsenic	Barium	Cadmium	Chromium	Copper	Fluoride	Lead	Iron	
Manganese	Mercury	Nitrate/Nitrite	Selenium	Silver	Magnesium	Zinc	pH	

3. a. Sodium levels exceed the U.S. Environmental Protection Agency's (USEPA) Health Advisory level for sodium of 20 mg/l. The North Carolina Division of Public Health recommends that only individuals on no or low sodium restricted diets not use this water for drinking or cooking. It may be used for washing, cleaning, bathing, and showering based on the *inorganic chemical results only*.
 - b. Levels over 30 mg/l may pose aesthetic problems such as bad taste, odor, staining of porcelain, etc.
4. Re-sampling is recommended in _____ months.
5. Re-sample for lead and /or copper. Take a first draw, 5 minute, and 15 minute sample inside the house (preferably the kitchen) and if possible a first draw, 5 minute and a 15 minute sample at the well head to determine the source of the lead and/or copper.
6. The following substance(s) exceeded federal drinking water standards. Your water can be used for drinking, cooking, washing, cleaning, bathing, and showering based on the *inorganic chemical results only*, but aesthetic problems such as bad taste, odor, staining of porcelain, etc. may occur. You may want to install a household water treatment system to address aesthetic problems.

Barium	Cadmium	Chromium	Fluoride	Iron	Magnesium
Manganese	Selenium	Silver	pH	Zinc	

For more information regarding your well water results, please call the North Carolina Division of Public Health at 919-707-5900.

The Environmental Protection Agency (EPA) considers Iron, Manganese as secondary contaminants which means it does NOT have a direct impact on health.

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

Mooreville Regional Office
610 East Center Avenue
Mooreville, 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 Woughtown Street
Winston-Salem, NC 27107
Phone: (336) 771-5000



North Carolina

HOW TO DISINFECT YOUR WELL

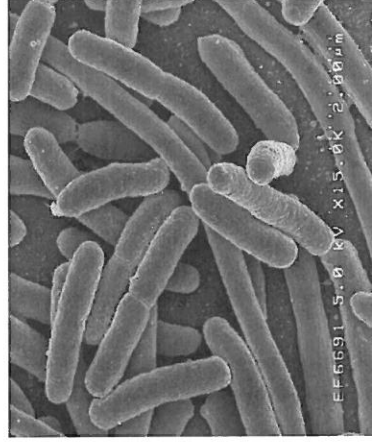


Presented by:
Division of Water Quality
Aquifer Protection Section



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.

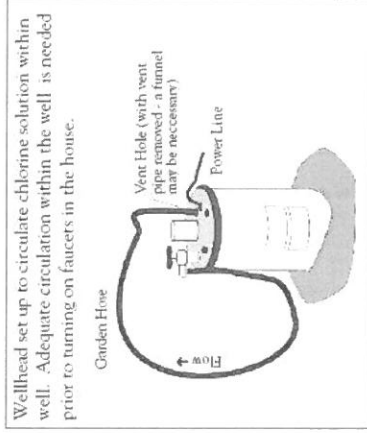
3) Begin by attaching a garden hose to the well's hose bibb or an outside faucet closest to your well. Fill a five gallon bucket about 3/4 full with water. Loosen the well seal at the top of your well. This is typically accomplished with a wrench and it may be necessary to bump the seal with a rubber 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 chlorine 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/wq/aps/gwprto>

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