The Driller's Digest

Volume 19, Fall/Winter Issue Nov. 2016

Published by the North Carolina Well Contractors Certification Commission

In This Issue:

This newsletter is published as a service to certified well contractors and others in the groundwater industry. Suggestions for articles for publication in the newsletter are welcome.

The Importance of Proper Well Chlorination

by Andrew Pitner, MRO

Well chlorination is a required step during installation and after many regular maintenance activities for a private drinking water well, such as pump replacement. Effectively, whenever the well seal is broken, the possibility of introducing bacterial contamination exists and proper disinfection prevents water quality problems from bacterial sources.

Disinfection of water supply wells is addressed in Section .0111 of the 2C Well Construction Rules. Steps are spelled out on how to use hypochlorite to disinfect a well with a goal of attaining a chlorine residual concentration of at least 100 parts per million (ppm), which should be effective to address most bacterial contamination. The rule provides an example of using about 3 ounces of hypochlorite containing 65-75% available chlorine per 100 gallons of water in a well.

Since a typical six-inch diameter well contains about 1.5 gallons of water per foot, a well with 200 feet of water would need about 9 ounces of hypochlorite:
1.5 gallons of water/Ft. x 200 Ft. x 3 Oz of hypochlorite/100 gallons of water = 9 Oz of hypochlorite.

The rule allows for use of both granular and solutions of hypochlorite to accomplish the task. In all cases, the chlorinated well water should be circulated through the pump and piping and the casing should be rinsed. Additional hypochlorite may be necessary when factoring in additional water volume in a house such as the hot water heater. Sometimes shock chlorination at 200 ppm is recommended to address demonstrated significant bacterial problems, which also increases the amount of hypochlorite needed.

The chlorinated water in the well and piping should be left to stand for 24 hours before purging. When purging, the chlorinated water should not be directed into septic tanks as it can kill the bacteria that break down wastewaters. Run the purge water from an outside faucet away from plants and animals. Make sure to also avoid nearby streams and storm sewers. Purging should continue until no chlorine odor comes from the water.

Unfortunately, there are many online references that recommend using household bleach to for well chlorination without fully understanding what's behind the process. What those sites often overlook are the calculations of water treatment volumes and the fact that household bleach is dilute in terms of its concentration of sodium hypochlorite. Clorox bleach is typically a 6% solution of sodium hypochlorite combined with water and a range of concentrations exist in the marketplace for similar products. Additionally, bleach solutions like Clorox lose their strength over time and may contain other chemicals such as scents (i.e. lemon fresh or mountain breeze bleach) which may make clothes smell good, but aren't intended for use in drinking water wells. Technically, a fresh, plain bleach solution could be used for well chlorination and the American Groundwater Trust shock chlorination procedure recommends one gallon of bleach (5.5-6% sodium hypochlorite) for 200 gallons of water.

Whenever one handles chemicals such as granular hypochlorite or solutions of

(Continued on page 2)

Summary of Civil Penalty Assessments

Penalties for violations of NCGS Chapter 87, Article 7 & 7A vary depending upon the particular facts and circumstances present in each case. Note: only finalized uncontested cases or cases not seeking remission and at the collection stage are included in this list. Payment of fines and corrections of violations may already have occurred.

Brandee Todd Gwaltney
Wayne County, NC. Allegations of contracting without the benefit of certification, in violation of 15A NCAC 27. Assessed a civil penalty of two thousand dollars ($2,000.00).
Effective Date 8/30/16 Case # WCC 01-16

Brandee Todd Gwaltney
Lenoir County, NC. Allegations of contracting without the benefit of certification, in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars ($1,000.00).
Effective Date 8/30/16 Case # WCC 02-16

WCCC Disciplinary Committee

Joshua Burnette -Effective 6/26/16
The well contractor was given a suspension for violation of NCGS 87-98.8 (1), engaging in fraud or deception in connection with a well contractor activity.

Disinfection Chart

by WCC Staff

In June, the WCC Staff created a quick reference chart for disinfection of wells. This chart is posted on the pump installation page of our website.

A well contractor can use this chart to quickly determine the minimum amount of 65-75% free available chlorine to disinfect a well to 100 parts per million.

WCC staff hopes this will save well contractors time as contractors will no longer have to do calculations on site (which we know you do every time)!

Using this chart, well contractors should be able to save time and money by avoiding gross over-chlorination of a well which can cause problems of its own.

Just remember, when in doubt, get the calculator out!

Pump Wiring and Plumbing

by WCC Staff

Senate Bill 770 became Session Law 2016-113 on July 26, 2016 when the bill was signed by Governor McCrory.

Section 17 (on page 13) of this bill clarifies that certified well contractors can plumb from the well head to the pressure tank and install water pipes and electrical wiring in a single ditch.

The local health department must notify building inspections of the issuance of a well permit as the well permit constitutes authorization for the installation of electrical wiring from the switch to the pump along with installation of water piping from the pressure tank to the well head when installed by a certified well contractor.

The plumbing and electrical installations shall meet all current applicable codes. Well contractors still must call for any electrical and/or plumbing inspections required by the building inspections department.

To sum it up, since July 26, 2016:
1) Local health department must notify building inspections when a well permit is issued.
2) Electrical and/or plumbing permits not required for certified well contractors as the well permit constitutes authorization.
3) Plumbing and/or electrical license not required for certified well contractors working between the well head and pressure tank and/or pump switch.
4) Plumbing and electrical installations must meet applicable codes and inspection requests called in.

The new plumbing clarification and permit exemption has been added to the electrical exemption which originally took effect September 18, 2014 as part of Session Law 2014-120 (Senate Bill 734)

If you wish to read or print these bills, visit www.ncleg.net

The Importance of Proper Well Chlorination
(Continued from page 1)

it, proper safety should be taken into account by wearing rubber gloves and safety glasses. Any spills can be rinsed off skin with fresh water though your clothes may not be so lucky if the solution gets splashed on them. The well can be sampled for bacteria about a week after chlorination when there is no detectable residual chlorine.

Septic System O & M

by Trish Angoil, PE, and WCC Staff

As many well contractors live in the country and rely on septic systems for wastewater treatment and disposal, here are a few reminders about operation and maintenance of septic systems.

1) Have both sides of the septic tank completely pumped out every 3-5 years, or as needed. The septic system works 365 days a year and just like other equipment you use on a regular basis, the septic system needs routine maintenance.
2) Maintain the drainfield area. Having a mowed lawn over the drainfield will help with evapotranspiration and limit the amount of tree root intrusion into the drainfield. Some trees, such as maples, have been known to completely clog a system with roots causing septic system failure.
3) Drive around, not over the drainfield. Traversing the drainfield with wheeled vehicles can damage component and will cause compaction of the soil. When soil is compacted pore space between soil particles is lost reducing spaces for wastewater to leave the trench and receive treatment.
4) Hose off the pump. Systems that use a pump to deliver wastewater to the drainfield should have the pump rinsed off at least once a year. The electromagnetic field created by the motor causes particles in the wastewater to adhere to the pump shell creating an insulating blanket. This blanket causes the liquid cooled motor to run hotter, shortening motor life.
5) Keep the operation contract renewed. If you have a post July 1, 1992 system that requires a certified operator make sure to maintain the operator's contract. The certified operator performs necessary maintenance to the system and adjusts valves accordingly for optimal performance as the system ages.
6) When is doubt, contact your local health department. Not sure where your system is, or what type of system you own and operate? Maybe you have a question about your repair area. Give your friendly environmental health specialist a call and request a site visit.

Hopefully this article will get you thinking about that underground, out of sight, out of mind septic system. Equipment that you own and operate requires preventative maintenance. The septic system is no different. A little preventive maintenance up front will keep it working for you longer with fewer headaches and probably save some money to boot.

North Carolina Well Contractors Certification Commission

1653 Mail Service Center / Raleigh, North Carolina 27699-1653
Telephone: (919) 707-5881 Fax: (919) 845-3973

Commission Members

Daniel Ortiz, REHS **Chairman** -Autryville
Jonathan Dills Vice Chairman -Winston-Salem
Justin Barefoot, NCWC **-**Newton Grove
David Brown, NCWC -Hamptonville
Douglas McVey, REHS, MS –Hot Springs
Thomas Whitehead, NCWC -Wilmington
William "Billy" Yow, NCWC -Greensboro

WCC Staff

Drew Morgan, REHS (919) 707-5882 (enforcement, apps)
Andrew.Morgan@dhhs.nc.gov

Joanne Rutkofske (919) 707-5881 (CE, website, exams)
Joanne.Rutkofske@dhhs.nc.gov

www.wellcontractors.nc.gov

Certification Today

Total number certified……..1052
Total number of applicants for certification……...53
Certifications currently suspended……..…..0

NC Department of Environmental Quality (DEQ)

Division of Water Resources
Water Quality Regional Operations Section

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

Asheville	828-296-4500
Fayetteville	910-433-3300
Mooresville	704-663-1699
Raleigh	919-791-4200
Washington	252-946-6481
Wilmington	910-796-7215
Winston-Salem	336-776-9800

NC Department of Health and Human Services (DHHS)

Division of Public Health
Environmental Health Section

http://www.deh.enr.state.nc.us

N.C. DHHS is an equal opportunity employer and provider.

1200 copies of this document were printed at a cost of $772.00 or $0.643 each. Print date 11/16.

PUBLISHED BY THE NORTH CAROLINA WELL CONTRACTORS CERTIFICATION COMMISSION

1653 Mail Service Center
Raleigh, NC 27699-1653

ADDRESS CORRECTION REQUESTED

Online at **www.wellcontractors.nc.gov**

NC Well Contractor Truck Decals

by WCC Staff

Previously distributed only to Level A well contractors, the NC well contractor truck decal helps to get the word out about well contractor certification.

Starting with the 2017 renewal this decal will be distributed to all certification levels upon renewal.

New Commission Member Justin Barefoot, NCWC

By WCC Staff

Please join us in welcoming the newest member of the NC Well Contractors Certification Commission Mr. Justin Barefoot, NCWC.

Commissioner Barefoot fills the vacancy created when Commissioner Boyette's appointment expired. Commissioner Barefoot owns and operates Barefoot Well Drilling in Newton Grove NC.

Welcome aboard Commissioner Barefoot!

Free Well Owners Guide

by WCC Staff

The Well Owners Guide is now available at no charge for well contractors and county environmental health personnel to distribute to well owners. The Guide is an informative 2-pocket folder with room for two business cards that helps a well owner keep all their well-related information together.You may request 10-100 copies of the Well Owners Guide. Photos of the guide are posted on www.wellcontractors.nc.gov on the "Publications" page.

To request copies email staff at:
Joanne.Rutkofske@dhhs.nc.gov or call 919-707-5881
Andrew.Morgan@dhhs.nc.gov or call 919-707-5882

If you have ideas for future Drillers Digest articles please contact staff at: Joanne.Rutkofske@dhhs.nc.gov

Report Uncertified Well Contractors to the local health department or call (919) 707-5882