70 Years

NCGWA

A Letter From The President

Hello Everyone,

Fall has finally fallen into place. It feels good, the air is refreshing. You can definitely tell a change in seasons. With change comes new opportunities. It also gives you an opportunity to reflect back on this year, that started with new hope and planning. Then Spring came with an opportunity to spring into action. With Summer a new opportunity to execute your plan. Now Fall has created an opportunity to see how everything has fallen into place. Fall is a special time, for it is an introduction to a season of thankfulness and giving. Thanksgiving, which prepares you for the season of giving.

Hold that thought and remember you are a groundwater professional. Whether you drill wells, install pumps, water treatment, supply materials, manufacture products, or perform one of the many other tasks in the groundwater industry, you have chosen to be a part of something that is special. In some form or fashion your planning, your actions are part of something that is one of the most important parts of life, Water! This should make you proud that you are a professional. A good friend of mine once said the groundwater industry is one of the most noble professions one could be a part of.

Be careful, don't let this go to your head. Stay humble, be thankful for the opportunities to be a part of something so much bigger than yourself. This season that we have fallen into says it all. Thanksgiving; be thankful but keep on giving.

"Kindness you can never give away, it will always come back to you" Peggy Rodgers

This year your association, the NCGWA has worked hard to provide you with many opportunities. The latest was the fall event back on September 27th in Harmony, NC. It was a big success. If you were there you know why. Thanks for coming. If you could not make it, you missed some good information, good education and some great fun and fellowship. Thank you to everyone that participated in making this a success. A big thanks also to Matthew Brown and Yadkin Well Company for their efforts. Matthew will share more of the details in this newsletter. Maybe you can join us next year.

Speaking of next year, our annual winter show will be in Greensboro at Embassy Suites on January 30th and 31st 2020. Your Board is working on finalizing the event. We have got some good speakers lined up to share some important information. Mark your calendars and plan to join us.

With Respect, Chauncey Leggett

Save the Dates

NCGWA 2020 Conference and Trade Show January 30-31, 2020—Embassy Suites, Greensboro, NC (See page 9 for agenda/speaker info)

NCGWA—Golf Tournament—April 24, 2020, Wilson, NC

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PUBLICATION DATES

Articles and ad deadlines are the first day of

MARCH

JUNE

SEPTEMBER

DECEMBER

Any and all NCGWA members are encouraged to send information on past or coming events or news articles that would be of interest to other well drillers. Please send profiles of well drillers/companies that you feel deserve to be highlighted in our newsletter.

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NCGWA Board Nominations

Do you have interest in serving on the Board of the NCGWA? If so, please email your interest to the NCGWA Office, **elaine@execman.net by January 1.** Information will be compiled and presented to the Nominating Committee.

Subchapter 02C - Well Construction Standards

Subchapter 02C - Well Construction Standards

Section .0100 - Criteria and Standards Applicable to Water Supply And

Section .0200 - Criteria and Standards Applicable to Injection Wells

Effective September 2019

Section .0300 - Permitting and Inspections of Private Drinking Water Wells

Updated July 2019

Please visit the link below for more information:

http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20c/subchapter%20c%20rules.pdf

Fall Field Day and Shotgun Clay/Skeet Tournament

The NCGWA Fall Field Day and Shotgun Clay/Skeet Tournament along along with 3 hours of continuing education was held on September 27, 2019 at the Hunting Creek Preserves in Harmony, NC. I would like to thank everyone for their outstanding support and participation! An update will be given at the winter show as we plan to do it again this fall 2020.

Matthew Brown, Yadkin Well Co.

Congratulations to Our Winners!

1st Place: Blue Ridge Environmental (Cliff Lundgren, Ken Pinienta, Barron Thiessen, Jeff White) Each received \$100 gift card.

2nd Place: Hughes Supply Statesville (Russ McKittrick, Jeff Milsaps, and Bob Wood) Each received \$50 gift card.

3rd Place: Gefco/Yadkin Well (Chip Nelson, David Briner, Matthew Brown, Adam Wilcox) Each received a case of

12 gauge shells.

Highest score: Barron Thiessen with Blue Ridge Environmental - 50 out of 52!

Most Consecutive: Dan Woodstead

Lowest Score: Blake Sanford - 6 kills

THANK YOU TO OUR SPONSORS

The NC Ground Water Association would like to thank all of the sponsors that helped make the Fall Field Day and Shotgun Clay/Skeet Tournament a big success. Without you it would not have been possible! The following companies were sponsors of the event by financial donations and/or prizes for the event. Also, thank you to Yadkin Well for providing the equipment and presenting the demonstration.

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The Tolerance Zone

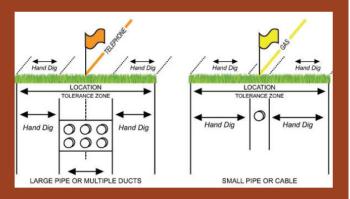
Toolbox Talks

Know the zone.

When you call 811, utilities are notified to mark underground lines in and around your excavation site. When you start your digging project you may come close to these markings and if you do you need to be aware of the tolerance zone around the marked utility.

The tolerance zone is a buffer on either side of a marked utility line. You are required to maintain a clearance of __ inches on each side of the marked utility. (see your states requirements) Within this tolerance zone, if digging must occur, please use extreme caution and dig with a hand shovel. Remember, the above ground markings are an approximation to where the utility may reside underground. So in short, the tolerance zone is the area where you need to use the most caution while digging. When utilities are marked there is no way of knowing the exact depth of that buried facility. Some lines over time can move closer to the surface due to erosion. So even when using hand tools, use extreme cause while working in the tolerance zone.

In the tolerance zone you can not use mechanized equipment until you have visually identified the precise location of the facility. You may use noninvasive equipment specifically designed or intended to protect the integrity of the facility. Also the excavator must take reasonable precautions to avoid any substantial weakening of the facility's structural or lateral support. Take care not to damage in any way the protective coatings on utility lines.



The excavator may use mechanical means, as necessary, for the initial penetration and removal of pavement or other materials requiring use of mechanical means of excavation, but only to the depth of the pavement or other materials. For parallel type excavations within the tolerance zone, the existing facility shall be visually identified at intervals not to exceed 50 feet along the line of excavation to avoid damages. The excavator shall exercise due care at all times to protect the facilities when exposing them.

What is the tolerance zone in my state?

Listed in inches

Alabama 18 Alaska 24 Arizona 24 Arkansas 18 California 24 Colorado 18 **Connecticut 18 Delaware 24** Florida 24 Georgia 18 Hawaii 30 Idaho 24 Illinois 36 Indiana 24 Iowa 18 Kansas 24 Kentucky 18 Louisiana 18 Maine 18 Maryland 18 Massachusetts 18 Michigan 36 Minnesota 24 Mississippi 18 Missouri 24 Montana 18 Nebraska 18 Nevada 24 **New Hampshire 18 New Jersey 18 New Mexico 18** New York 24 North Carolina 24 North Dakota 24 Ohio 18 Oklahoma 24 Oregon 24 Pennsylvania 18 Rhode Island 18 South Carolina 24 South Dakota 18 Tennessee 24 Texas 18 Utah 24 Vermont 18 Virginia 24 Washington 24 West Vriginia 24 Wisconsin 18

Let's Talk Tolerance

Do the Marks Match What You See?

Let's say you arrive at the work site and see marks for communications, but from positive response you learned there should also be marks for electric. Why would this happen?

- The locator could have misunderstood the marking instructions and marked the wrong place within your work site
- A completely different work site was marked.
- It could also mean that the marks were destroyed before you got to the work site.
- · Maybe kids or vandals pulled up the flags.

These are all possibilities and you shouldn't begin until you've done some checking.

When digging in the tolerance zone, use reasonable care and only use nondestructive digging methods:

- Hand digging with a blunt shovel. Never use a pickaxe or pointed spade, and never stomp on a shovel with both feet. That's a sure way to damage a utility line. Instead, use a blunt shovel to loosen soil, working at an angle.
- Vacuum excavation. This method uses suction and water to quickly and safely remove soil. Be mindful of water pressure; use lower pressure and tips with multiple nozzles such as the spinner tip.

Proceed with Caution

Once you have exposed buried utilities, proceed with extreme caution. Power digging equipment can damage a section of electrical conduit or natural gas pipeline in no time. Even hand digging can compromise buried utilities by removing supporting soil. So whenever you dig in the tolerance zone, take all necessary precautions to protect buried utilities from damage.



Wyoming 24

Evacuation and Resetting Conditions Within the Well

Flushing the well. The basic concept of pumping the well to waste seemingly smacks our conservation and stewardship efforts right in the face. And, in a basic sense, it does. Leaving the well idle or just evacuating the bare minimum does aid in preserving water quantity within the source aquifer, but, at what cost?

In the most basic aspect of its design, a well serves as a transfer pipe. This pipe allows flow of groundwater to the surface for a variety of uses. When a well sits idle, flow into and out of the borehole ceases. In halting this operation, the water quality begins to change. We call this the "concentrating effect" – that is that the water begins to see increases in the amount of dissolved solids, the microbial populations, and the sediment load.

With regards to water chemistry, the changes that occur when a well is idle can be very dramatic. The water can become saturated with respect to mineral forming ions, increasing the potential for scale formation. The water can change from oxidative to reducing, altering the basic characteristics of the water, impacting the microbial community as well as the water quality. The idle state can also impact the corrosion potential of the water, increasing the mobilization of iron and other ions.

Changes in the microbial community during this time can be quite dramatic. It is not uncommon to see a minimum increase of twofold with regards to the total microbial population. With an increase in the population, the potential for biofilm development increases. Additionally, the biodiversity and maturity of the population can be impacted, often manifesting as an increase in the anaerobic population. Increases in anaerobic activity often impact water quality including increases in the presence of sulfate reducing bacteria as well as environmental coliforms. These changes can impact both aesthetic water quality as well as the human health aspect.

Physical sediment, mobilized into and out of the well during active pumping, can become problematic during idle periods. With the halting of flow, the physical material settles in the lower extension of the filter pack and well. While restarting operation of the well can bring about the flushing of this material, a small percentage is often left behind. Accumulating overtime in the lower reaches of the well, the sediments often lead to mechanical fouling as well as begin to impact flow and the geochemical and microbiological environments.

Often, when a well has sat idle, the initial discharge can exhibit discoloration, turbidity, or foul odors, indicators that the aforementioned concentrating is occurring. Flushing the well should aid in reducing these impacts. As the effectiveness of flushing reduces, the need for cleaning, disinfection, or redevelopment, becomes prevalent.

When performing maintenance, disinfection, or more invasive rehabilitation, we are often challenged with the handling of fluids while preserving the water resource. We seek to preserve the resource during restoration efforts, and desire to limit the need for unnecessary pumping. However, the need for fully evacuating the well during these operations is essential, helping to improve treatment efforts while reducing the likelihood of future fouling.

In the very basic sense, anything introduced into the well should be removed. As an industry, we utilize a variety of chemicals and materials for treatment. Chlorine, acid, dispersants, surfactants, and compressed gasses, are placed into the well to target problems downhole. Once the targeted problems have been addressed, the material should be removed to reduce the potential for re-formation of the problem – be in mineral scale, biomass, or sediment. Neutralization through dilution, time, or introduction of a secondary chemistry, should occur at the surface, away from the well environment. Leaving this material downhole, over time, is counterproductive and will serve to further damage the well and aquifer.

Guidelines for monitoring discharge from the well as an indication that evacuation is complete vary widely, depending on the means of treatment used. As water wells are very dynamic entities, we recommended using multiple parameters as a means of guiding your decision.

First, you should have a baseline of a few simple parameters of the water quality before beginning work. Although not a complete list, the minimum parameters you should follow include: pH, total dissolved solids (TDS) or conductivity, and visual turbidity. Collecting a sample in a clear plastic or glass bottle during evacuation can allow you to evacuate

Evacuation and Resetting Conditions Within the Well, Cont.

these parameters and quickly deduce if additional pumping is needed. These three tests can be conducted quickly, alerting you to the need for further evacuation. In deeper completions or well designs with multiple screened zones, it can be important to pump and evaluate multiple levels to insure complete evacuation.

During disinfection, typically an oxidative chemical such as chlorine or peroxide is utilized. With chlorine, you can monitor the concentration with test strips, hand held meters, or color scale tests, as well as the odor.

With heavily impacted wells, the differences during evacuation can be quite dramatic. In wells lightly experiencing fouling or undergoing pump maintenance, the variations can be subtle, yet remain important. Regardless, the need to fully evacuate the disrupted material and introduced chemicals is very important and should be a key aspect of any treatment operation.

Michael Schnieders, PG, PH-GW, is a hydrogeologist with Water Systems Engineering, Inc., in Ottawa, Kansas. WSE's work involves evaluation of fouling mechanisms, disinfection, and corrosion concerns in well systems, distribution networks, and in water treatment.

INTERNATIONAL FUEL TAX AGREEMENT COMPLIANCE MANUAL

I. INTRODUCTION

The International Fuel Tax Agreement (IFTA) is a base jurisdiction fuel tax agreement. Upon application, the carrier's base jurisdiction will issue credentials (license and decals) which allow the IFTA licensee to travel in all IFTA member jurisdictions. The current IFTA membership consists of 48 contiguous states and the following Canadian provinces: Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward Island, Quebec, and Saskatchewan.

North Carolina is your base jurisdiction for IFTA licensing and reporting if:

- 1. You have a qualified motor vehicle registered with the North Carolina Division of Motor Vehicles;
- 2. You maintain the operational control and records for your qualified motor vehicles in North Carolina or can make those records available in North Carolina;
- 3. You have qualified motor vehicles which actually travel on North Carolina highways; AND
- 4. You operate in at least one other IFTA jurisdiction.

The IFTA license offers several benefits to the inter-jurisdictional motor carrier. These benefits include one application, one set of decals for each qualified vehicle, one quarterly tax return which reflects the net tax or refund due, and one audit in most circumstances. The advantages lead to cost and time savings for the inter-jurisdictional carrier.

IFTA carriers that operate in non-IFTA jurisdictions must continue to follow the procedures and file the returns required by the statutes and regulations of those non-IFTA jurisdictions.

Carriers should contact the Motor Carrier Registration Unit in each jurisdiction traveled to ensure compliance with specific requirements that are in addition to the IFTA agreement. Examples of requirements that are not specified in the IFTA agreement include apportioned license plates, oversize/overweight permits, unified carrier registration plan, and weight distance taxes.

This manual will explain in further detail the application for credentials, licensing, reporting, record keeping requirements, and audit procedures, with regard to IFTA. The information provided in this booklet is intended to be a guide on basic compliance requirements for motor carriers. All motor carriers are responsible for complying with all applicable laws, rules, and regulations, including Article 36B of Chapter 105 of the North Carolina General Statutes, Chapter 12 of Title 17 of the North Carolina Administrative Code, and the IFTA governing documents, which include the Articles of Agreement, Procedures Manual, and Audit Manual.

For a complete copy of this manual please go to: https://www.ncdor.gov/documents/2020-ifta-compliance-manual

The National Ground Water Association Reports over 126,000 Household Wells in Flooded Texas Counties Potentially Affected by Tropical Storm Imelda

Exposure to E. coli and Coliform Possible in Flooded Locations

(WESTERVILLE, OH — September 23, 2019) According to the National Ground Water Association (NGWA), wells supplying water to 126,000 households may potentially have been flooded in 13 counties of Texas during Tropical Storm Imelda, per Census Bureau data.*

Wells having wellheads that are cracked or faulty or that have been damaged by flood debris may allow contaminated floodwater into the well.

The flooding of water well systems can lead to permanent system damage and the possibility of water contamination. Exposure to *E. coli*, coliform, and other pathogenic microbes from human and animal fecal matter have occurred following major flooding events.

Thirteen southeast Texas counties were declared disaster areas by Texas Governor Greg Abbott because of the heavy rainfall from the tropical storm, in some places in excess of 40 inches. These counties have broad flat coastal topography that contributes to more widespread flooding.

An exact number of wells actually flooded** is difficult to determine without extensive field observation over large areas.*** The well location relative to surface water bodies, topography of the ground surface, geology associated with the wells, duration and amount of rainfall contributing to flooding, and soil moisture conditions prior to flooding will also affect the number of wells impacted.

NGWA's <u>huricane/flooding resource site</u> provides crucial information to water well owners on best practices to protect their systems after flooding. Utilizing the knowledge of the industry's top professionals, the site offers step-by-step instructions on maintenance procedures and a database of <u>certified NGWA contractors</u> for testing and repairs.

"Even if wells are not totally underwater, flooding around them can contribute to their contamination if they have not been regularly inspected and maintained," said Chuck Job, NGWA regulatory affairs manager who compiled this data. "If contamination is suspected in any case, it is important to get the well tested."

NGWA urges all well owners who are seeking more information on water well safety and maintenance to visit **WellOwner.org** for more details on how to **Test, Tend & Treat** your water well system.

For additional comment or to receive a graphic visualizing the data outlined in this release please contact **bfrech@ngwa.org** or call (614) 898-7791, ext. 1570.

Sources: Online federal and state hazardous weather and flood reports; federal and state disaster declarations; and online local news reports.

- * Based on last census with representative results for household water sources outside metropolitan areas nationwide: U.S. Census Bureau, 1990 American Housing Survey.
- ** In some cases, a domestic well may supply more than one household.
- *** National Ground Water Association. 2002. Field Evaluation of Emergency Well Disinfection for Contamination

Events; Final Project Report for U.S. Federal Emergency Management Agency, Washington, D.C.

The National Ground Water Association is a not-for-profit professional society and trade association for the global groundwater industry. Our members around the world include leading public and private sector groundwater scientists, engineers, water well system professionals, manufacturers, and suppliers of groundwater-related products and services. The Association's vision is to be the leading groundwater association advocating for responsible development, management, and use of water.

NCGWA - Continuing Education – January 31 Topics and Speaker Information (Registration Form Coming Soon)

Our continuing education, membership meeting and trade show is being held on January 30-31, 2020 at the Embassy Suites, Greensboro, NC

Below is a tentative agenda – Mark your calendar – A lot of information will be provided to help you in your business operation and day to day activities.

Friday, January 31, 2020

8:00 AM - 9:00 AM - Electrical Update - William "Al" Parris,

NC Board of Examiners of Electrical Contractors

Continuing Education, Examination & Enforcement Coordinator

9:00 AM - 10:00 AM - Time with Vendors

10:00 AM - 11:00 AM - Record Keeping Requirements (NC DOR) & Motor Carrier Enforcement (NC DOR)

Record Keeping Requirements (NC DOR)

The presentation will cover the following topics:

Required Documentation

Mileage Records

IFTA, IRP, IN, and User

Fuel Records

Purchases

Withdrawals

Decal Records

Presenter: **Jo Lisa Ellis**, Motor Fuels Audit Supervisor, has a B.S. in Finance. She has worked with the Department of Revenue as an Auditor and currently as District Audit Supervisor in the Motor Fuels Section for 20 years.

Motor Carrier Enforcement (NC DOR)

The presentation will cover the following topics:

Roadside & Site Enforcement

Fuel Decals

Tax-paid and Non-tax paid Diesel Fuel

Presenter: **Brandon McDowell**, Investigator, has a B.S. in Criminal Justice. He has been with the Department of Revenue for 3 years as a Motor Fuels Investigator and has over 12 years' experience in law enforcement.

10:00 AM - 11:00 AM - Emerging Contaminants - PFOA/S - Brad Walsh, Water Rights

This course will provide an overview on PFOA/S to include what we currently know about these contaminants and how to treat them in drinking water.

11:00 AM - 12:00 Noon - Time with Vendors

12:00 Noon – 1:00 PM - 2 C Rules Review and Updates - Wilson Mize, R.E.H.S.

Regional Environmental Health Specialist

Division of Public Health, On-site Water Protection

North Carolina Department of Health and Human Services

1:00 PM - Lunch, Auction, Raffle in Vendor Hall



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