

# IGWA ANNOUNCES 2019 ANNUAL CONVENTION KEYNOTE SPEAKER: TOM CHRISTOPHERSON

Where do we go from here? A summary of how to use the information from the Nebraska Grout Task Force Studies 2000-2013

Dear Friends in Idaho,

I'm pleased to share with you that I'm returning to Idaho in January 2019 to share some good news with you. I was able to show you how the State of Nebraska spent 8 years studying the properties of grout materials in 2011. Now I'm coming back to Boise show you where we go from studying grout materials to improving water quality results in existing wells.

Since 2011 a lot has happened to both me and the ground water research projects. After the completion of the grout study, the State commissioned a further study to see how the information gleaned from the grout study could be used for real world applications to the nitrate issue in our ground water. The Annular Seals Research Task Force was formed in 2012 and identified wells that were testing high in nitrates, selenium, arsenic, and uranium. We knew that if the proper grouting material could be placed in the borehole the ground water reservoir could be protected.

Beginning in 2013 and ending in 2017 several methods were studied on existing wells and were perfected that demonstrated existing wells could be augmented with a grout seal. The challenge was to improve the water quality without destroying the well. Every well the task force studied, improvement to the ground water quality were observed. Over a period of 5 years we documented reduced concentrations of nitrates, arsenic, selenium, and uranium. The solution to rising concentrations of nitrates in Nebraska can be addressed by applying the methods developed in the Annular Seal Research Task Force studies for existing wells and previously abandoned wells.

At the end of 2017, I was preparing to come to Idaho to show you this information when I was involved in a traffic accident which resulted in a traumatic brain injury and several broken ribs. I was T-Boned by a cargo van on the driver's side of my pickup. The cargo van was estimated to be traveling at 65-70 MPH. It is only by the grace of God that I survived that wreck. After 6 months of rehabilitation I recovered 100% and was able to return to work.

In April of 2018 the State of Nebraska ended project funding for ground water research and I left the State of Nebraska after working in the water well section for 24 years, 18 of those years in ground water quality research. I have since started my own consultation business Groundwater Solutions Group LLC to share with ground water professionals all the knowledge I learned to help improve water quality.

More **GROUT STUDY** 9



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# MEMBERS' CORNER

**Limited Electrical Licensing:** IGWA is moving forward with a plan to replace the Specialty Plumbing license with a Limited Electrical License. President Legrand Baker has appointed a committee to develop a proposal that will be presented to the Electrical Board. Baker said the proposal will address first, the creation of a Limited Electrical License, and then potential changes to the test itself. At this time the proposal would be limited to domestic pumps of 50 amps/5 horsepower (HP) and single-phase.

**Draft Legislation to Raise Geothermal Temperature:** IGWA also continues to explore options to address the geothermal temperature restrictions for domestic wells. One option would be to increase the temperature from 85 degrees to 95 degrees; another would be to allow the Director of Idaho Water Resources (IDWR) more flexibility to grant exemptions. At present, the Director may issue an exemption when three criteria are met. IGWA is proposing to amend Idaho code so that an exemption can be granted when one of three criteria is met.



# PRESIDENT SIGNS WATER INFRASTRUCTURE LEGISLATION

President Donald Trump signed into law on October 23 the America's Water Infrastructure Act (AWIA), a reauthorization of the Water Resources Development Act (WRDA) combined with legislation building on the Safe Drinking Water Act.

Doing so provides support to several programs including flood control, water storage, and drinking water programs.

National Ground Water Association CEO Terry S. Morse, CIC, hailed the legislation's passage, calling it "a validation of the efforts made by NGWA volunteers to promote the importance of investing in groundwater."

AWIA was passed overwhelmingly by the House of Representatives and Senate in September. Typically, WRDA legislation has a narrow focus on navigation, dams, and levees, but after concerted efforts by NGWA and other organizations, the AWIA legislation includes a significant number of provisions affecting drinking water programs.

NGWA's top priorities in AWIA are:

Drinking Water Infrastructure: Authorizes increased funding for the Drinking Water State Revolving Fund. DWSRF funds can be used for a range of purposes including supporting construction, upgrading, and maintenance of rural infrastructure like wells and well systems.

- \$1.174 billion FY2019
- \$1.3 billion FY2020
- \$1.95 billion FY2021

Groundwater Recharge: Reauthorization of the Water Infrastructure Finance and Innovation Act program for two years at \$50 million per year, which finances large projects like managed aquifer recharge projects. The legislation also removes the "pilot" designation of the program.

### WHAT IT MEANS FOR IDAHO

Idaho could receive three benefits.

- Increased funding for drinking water infrastructure.
- Funding will also be potentially available to increase reservoir storage. More surface water storage can be used to meet future growth. One proposal that could be funded, is raising the height of reservoirs at Anderson Ranch in the Treasure Valley, Island Park in eastern Idaho, and at Lake Walcott/Minidoka Dam in the Magic Valley.
- The legislation could also possibly supports groundwater recharge to the benefit of Idaho's aquifer stabilization efforts.

Based on analysis from IGWA

PFAS: Requires water systems serving more than 3300 people to monitor for unregulated contaminants.

Resilience Planning: Provides funds to water systems to develop resilience plans to address extreme weather.

Passage of AWIA highlights the effectiveness of NGWA advocacy as several provisions NGWA advocated for during the NGWA Groundwater Fly-In in 2016, 2017, and 2018 were signed into law on October 23.

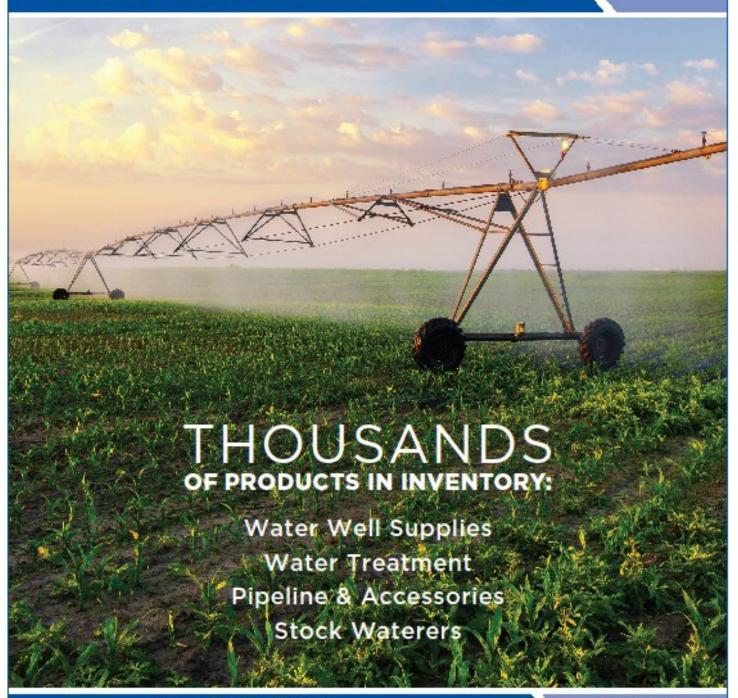
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# **OSHA Announces Top 10 Safety Violations for 2018**

The Occupational Safety and Health Administration announced on October 23 its list of the agency's top 10 violations for fiscal year 2018 at the National Safety Council Congress & Expo in Houston, Texas.

The list was announced by Patrick Kapust, OSHA's deputy director of the directorate of enforcement programs, in a highly attended half-hour session. Kapust gave the list of violations that included the violated regulation and the number of violations based on preliminary data.

The top 10 violations seen by OSHA in fiscal year 2018 are as follows:

Fall protection—general requirements (1926.501) with 7720 violations

Hazard communication (1910.1200) with 4552 violations

Scaffolds—general requirements (1926.451) with 3336 violations

Respiratory protection (1910.134) with 3118 violations

Lockout/tagout (1910.147) with 2944 violations

**Ladders (1926.1053) with 2812 violations** 

Powered industrial trucks (1910.178) with 2294 violations

Fall protection—training requirements (1926.503) with 1982 violations

Machine guarding (1926.212) with 1972 violations

Personal protective and lifesaving equipment—eye and face protection (1926.102) with 1536 violations

The top 10 violations accounted for an estimated 32,266 violations based on preliminary data for 2018. Kapust reminded those in attendance these numbers were only for the federal agency and did not include violations found by state enforcement agencies.

According to Kapust, 2018 is the first time personal protective and lifesaving equipment—eye and face equipment as well as fall protection—training requirements have appeared in the list of top violations.

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#### GROUT STUDY 1

So, in January 2019 I'm coming back to Idaho to share with you the methods that have been tested and proven to improve ground water quality. I look forward to visiting with you all and hopefully answer some questions that until now looked impossible to answer.

Sincerely,
Tom Christopherson
Consultant/Facilitator
Groundwater Solutions Group
http://groundwatersolutionsgroup.com



This 45-minute presentation will illustrate how the process of "Water Well CSI" can improve adverse ground water quality and preserve the use of the natural resource for years to come. Attendees will learn the techniques needed to evaluate, assess and develop an action plan on how to properly re-grout an existing well and properly decommission an old well to shut off the preferential pathway for ground water contamination by way of the borehole.





# CONSISTENT REGULATORY APPROACH IN THE MERIDIAN AREA OF GROUND WATER CONCERN

Chad Hersley, P.G., Technical Hydrogeologist

In spring of 2015, to protect the deep aquifer from naturally occurring uranium and arsenic and human caused contaminants such as nitrates and pesticides, the City of Meridian petitioned Idaho Department of Water Resources ("IDWR") to create the West Ada Area of Drilling Concern ("WAADC"). In September 2016, after reviewing the data submitted with that petition, and conducting a hearing with interested parties, IDWR issued a Preliminary Order denying the petition to create the WAADC. The Preliminary order became a Final Order on October 14, 2016.

The petition to designate an Area of Drilling Concern ("ADC") was denied because additional evaluation of the hydrogeologic conditions in the area is needed to more accurately establish the boundaries of an ADC. Although there is insufficient data to establish an ADC, there is sufficient data to indicate additional measures are needed to prevent the spread of known ground water contaminants within the proposed area. In addition to denying the petition to create an ADC, the Order also recognized the need for additional ground water protection measures.

IDAPA 37.03.09, "Well Construction Standards Rules", provides for those additional measures to prevent comingling aquifers during well construction or well decommissioning. The Final Order included specific well construction and well decommissioning requirements within the boundaries of the proposed WAADC.

IDWR has begun implementing the requirements of the Meridian Order, and working toward a better understanding of the specific hydrogeologic conditions. Until recently, the Department has worked with drillers on a case by case basis in the designated area. Unfortunately this has led to some inconsistencies relating to well construction and well decommissioning among drillers working in that area.

The new IDWR Western Region Inspector, Patrick Kelly, recognized the inconsistencies and confusion soon after assuming his new responsibilities and requested clarification on the requirements of the Final Order. After discussing the Order's requirements with several drillers working in the area, IDWR staff concluded, with concurrence from those drillers, the best way to avoid confusion and inconsistencies is to apply the specific wording of the requirements as they are written in the Order without additional interpretation. Adhering to the specific language in the Order provides a more level playing field for drillers working in that area.

The specific requirements of the order include:

• Prior to decommissioning wells within the proposed WAADC boundary, a drilling prospectus shall be prepared and signed by the driller and submitted to the Department. The prospectus shall include the details of the decommissioning procedures. The well casing shall be decommissioned using a tremie pipe or pressure grouting procedure to place a high solids bentonitegrout or a neat cement grout, from the bottom of the well to the top. If the casing is to be left in place, the prospectus shall include procedures to assure that bentonite grout or neat cement fills the annular space behind the casing to prevent vertical movement of water.

More **MERIDIAN ADC** 15

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Ingersoll Rand T3W Spec Sheet

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## COLD WEATHER CLOTHES

Hello my friends,

Well, it is fall again and that means that winter is just around the corner. So today I thought that I would talk about cold weather related injuries.

The first and maybe the most important thing could be the way that we dress. Now, over the years I have used the saying, "Dress for Success". While working in cold weather this still holds true. The proper clothing will make all the difference on how much work is actually done. And at the end of the day, the importance of accomplishing the tasks, and returning home safe, is what matters.

Sometimes I catch myself running to the truck in the same attire that I was wearing while working in the office. And why not? I am just going to be in the truck and then at the store. All these places are nice and warm. No problem. Well, in a perfect world that might be true, however we must keep safety somewhere in our minds. I was sitting with a gentleman one time while he was talking to his kid. This man had a large family and lived on a ranch some distance from town. The oldest boy had just walked in the door shivering. He asked his son what had happened. The son responded that the car had guit about a mile from his destination, and that he had walked the rest of the way. This man then said something that I have used in discussions with my children and workers ever since. He said, "Never leave the house dressed in clothing that you are not willing to walk home in". Now that is great advice for all of us.

We should dress in nice, not ratty, clothes. They should be appropriate for the weather and for the sake of your business, look professional. I know that sometimes it is tempting to wear the most torn - up, thread bare clothing on some of these dirty jobs. We are just going to tear them up anyway, Right? If you have ever tried to unwind a person from around a driveline, you would know the answer to that question. Ratty, loose clothing will reach out and grab moving objects. They are unsafe and makes you look like you run a worn-out shoddy outfit. Dressing safe and professional will do nothing but help your company and its image.



# NEWS FEATURE

THE NGWA SAFETY
SUBCOMMITTEE HAS RECENTLY
UPDATED ITS

NGWA EMPLOYEE SAFETY MANUAL, SECOND EDITION,

AVAILABLE FOR PURCHASE AT
GROUNDWATER WEEK 2018,
DECEMBER 3-6
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AND
NGWA BOOKSTORE
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Working in cold climate has additional hazards. You might not think about it, but dehydration is a big concern in the cold. Breathing cold, dry air robs moisture from your body every time you breathe. And if you are dehydrated you are more susceptible to frost bite and hypothermia. Drink plenty of water; avoid working up a major sweat. Damp or moist clothing will increase your body's heat loss. Dress in layers that can be removed or added upon as needed.

These are just a few things that we can do to protect ourselves from the elements and return home safely each and every day. Well, that's enough for now. Keep safe and dress like your mother would like you to dress.

Till next time, Mike Mike Lewis, a certified EMT for over 25 years, grew up on a dairy farm in southern Idaho and traveled the world before returning to Idaho where he farms with his family

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ALLOY MACHINE WORK



# POLYMERS & ADDITIVES - The power to modify the behavior of dirt

Mario Brunet

Dirt is a small word with bigger definition when it comes to drilling. Reactive, non-reactive, consolidated, non-consolidated, sticky, swelling, bit balling, torque, fluid loss and loss circulation zones, suspension problems, hole collapse, are just some of the characteristics that can fall under the word dirt. Water well drilling contractors routinely have to deal with these ever changing formations and conditions. On a day to day basis most well drillers know their territory and the soil conditions, but there will always be that one job that turns into a nightmare. Fortunately, well drilling contractors today have access to not only bentonite drilling fluid products, but a host of polymers and additives that can help control the above mentioned characteristics and dramatically increase their success.

Since the 1930s drilling fluid companies have been developing additives and polymers to deal with different soil conditions. The use of polymers and additives began with starches as a means of controlling fluid loss. During the 1960s and 1970s, polymers and additives such as polyacrylamides, partially hydrated polyacrylamides, poly anionic cellulose, biodegradable polymers and a multitude of other polymer types, have entered the drilling market. Over the decades, drilling fluid companies recognized this as an important part of the drilling industry and invested heavily in R&D to refine and find solutions for most if not all soil conditions. And this trend continues to this day.

Matching drilling fluids to soil conditions begins with soil identification. Coarse non-reactive soils range from sand, gravel and rock. Problems that one encounters in coarse soil conditions include fluid loss and heavy drill cuttings that need to be suspended and carried out of the hole. Modified natural polymers (poly anionic cellulose or PAC polymers) can dramatically reduce fluid loss and increase borehole stability with a minimal increase in viscosity, and are very compatible with drilling fluids recycling systems, Xanthan gum, a natural biodegradable polymer, can dramatically increase the gel strength of a drilling fluid with a minimal increase in viscosity. While this product is not commonly used in water well applications, this product can be helpful in situations where coarse gravel or cobble is encountered and annular ascending velocities are not adequate for lifting the removal of these heavy drill cuttings. Synthetic polymers will encapsulate reactive clays and control torque and bit balling as well as preventing swelling clays from restricting annular flow. New low viscosity short chain polymers can help control reactive clays while not blinding off the shaker screens on drilling fluids recycling systems.

I have been with Cetco for 18 months but prior to joining the team I had worked with the Cetoc products in the HDD industry for almost 5 years. Although I won't pretend to know everything about the water well industry the last 18 months have really opened my eyes on this industry and continuously working with contractors has given me an appreciation of the work involved to drill a water well. Join me in January at the IGWA and listen in to my talk as I delve a little deeper into polymers and additives to modify the behavior of dirt. Looking forward to meeting everyone next January in Boise.

Mario Brunet, Technical Sales Manager - Cetco Drilling Products, Canada, MT, WY & WA

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#### Meridian ADC 10

- A long form application for drilling permit and a drilling prospectus will be submitted for all newly constructed wells.
- All wells, whether drilled deeper or shallower than 200 feet below ground surface, shall be completed with PVC or stainless steel screen to control sand production. Screened intervals shall be limited to 20 feet, unless it can be shown that additional screened intervals are necessary and are within the same aquifer.
- Wells deeper than 200 feet below land surface shall have full length annular seals installed from the production zone to the ground surface with pumped grout annular Seals from the bottom up.

IDWR recognizes there will be a few scenarios that will need to be dealt with on a case by case basis. However, adherence to the specific language in the Order will lead to less confusion and better consistency. The more consistent approach will provide a more level playing field for bidding drilling projects in the Meridian Area.



# COMMUNITY MILESTONES

# IGWA 2019 Annual Convention & Trade Show January 23 & 24 Boise, ID Early Bird Registration opens December 3

# IGWA CRISIS FUND AUCTION

Wednesday, January 23



By now most are familiar with the convention's annual auction to support IGWA's Crisis Fund. On the off chance that you are not, here's what it's all about. Every year at annual convention IGWA members set aside time to raise money for drillers and their families who may have suffered a loss — death in the family, accident, illness, or disease.

**HOW CAN YOU HELP?** Members and vendors alike are welcome to donate an auction item.

Your auction item can be purchased or hand-made.

**ANYONE CAN DONATE!** No item is too big or too small. In the past we have auctioned off a shot gun, Traeger Grill,

Red Books, and hand-made items ranging from wood work, a fly pole, to quilts— a lot of talent out there and some very generous spirits.

## NO TALENT? NO TIME?

Bring your wallet. Join in the auction or buy a ticket in the 50-50.

With the generous support from our members and vendors has helped, IGWA has raised and donated thousands of dollars. This is IGWA!

**IGWA Names 2019 NGWA Delegates:** David Baker, Tom Richardson, Dave Adamson, Dan Denning, John Bishop, and Charlie Fox.

**IGWA & IDWR Approve Change in CEU Requirements:** IDWR has approved IGWA's CEC proposal to reduce the number of CEUs required in a two-year licensing cycle from 14 to 12. The change is effective April 1, 2018. Two credits of Idaho Rules & Regulations will still be required.

**North Idaho Regional CEC workshop a success:** IGWA would like to express its appreciation to all the speakers and participants who contributed to another successful CEC workshop in Coeur d'Alene on November 16. In all, over 60 participants and speakers attended.

**CONDOLENCES:** Please join IGWA in extending thoughts and prayers to Louie and Olivia Hanner, whose son, Matthew John Hanner, 35, died on October 24th. Louie Hanner drills for Carl Pitts & Sons Drilling, in Oldtown, Idaho.

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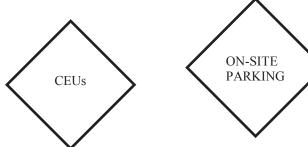


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