

Wisconsin's Groundwater

WELL LOG

A PUBLICATION OF THE WISCONSIN WATER WELL ASSOCIATION

Summer 2019

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LETTER FROM THE PRESIDENT

By Rick Peterson, WWWA President

Greetings everyone,

Now that things are drying up and we can get to the business at hand, I hope that you can find enough hours in the day to accomplish what you need to. I am thoroughly impressed by the work ethic and the professionalism that the people in our industry continue to display on a day to day basis. Long hours put in by people who are dedicated to protecting and providing clean drinking water to the people of our state attest to the care and concern of such a precious resource as our groundwater.



In response to Governor Evers "Year of Clean Water" the WWWA Clean Water Task Force has been working diligently with DNR staff, legislators, industry professionals and the Governor's Clean Water Task Force in an attempt to make sure that the code changes that are coming in 2020 are right for the industry and for the water of the State of Wisconsin. The Board of Directors truly appreciates the responses we received to the questions regarding Mandatory vs. Voluntary Property Transfer Inspections. Having the industry input helps tremendously when interacting with government officials and when working to determine policy.

I want to commend those who continue to be involved in the Wisconsin Water Well Association. Please encourage others in the industry to join and become engaged. It is an especially critical time for how our groundwater is treated, cared for and regulated. We may only have a short window of time to be able to influence the policymakers and we need the measured, informed and well-thought input from our water well industry professionals who can make a difference.

Have a safe and enjoyable summer. •

Enjoy and be safe,

Rick Peterson, Clean Water Testing 920-841-3904, rick@water-right.com



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THE WI DNR INTRODUCES A NEW PRIVATE WATER LICENSING COORDINATOR

By the Wisconsin Department of Natural Resources

The WWWA would like to welcome Robert "Bob" Gundrum. He has joined the WI DNR's Private Water section as their new Private Water Licensing Coordinator.

"I am excited to be joining the WI DNR and look forward to meeting colleagues in the Drinking Water and Groundwater Program as well as folks employed in Wisconsin's drilling and pump installing industry," says Bob, who started his position on March 4, 2019.

Bob has a B.S. in Geological Sciences and Civil Engineering (Water Resources emphasis) from UW-Milwaukee, along with post-graduate training in water treatment, remote sensing, geographic information and "six sigma" process improvement.

Bob has more than 25 years of professional experience, including industrial engineering and quality assurance, water treatment project management, environmental consulting, and home inspections. Bob has also explored opportunities in geospatial data analysis and applied quality control principles to process improvement initiatives in production settings.

As Private Water Licensing Coordinator, Bob will serve as the NR 146 expert and lead for implementing license requirements for well drillers, heat exchange drillers and pump installers. This includes processing driller license



applications, managing license exam content and study guides, implementing continuing education requirements, and providing information and training to the water well industry.

"What I have found most rewarding in my career is developing relationships while addressing inevitable challenges and commitments of the job," says Bob.

He enjoys spending time with his family at the lake, walks in the woods, biking and taking in what Wisconsin has to offer in the great outdoors. He has two sons and he and his wife currently reside in Sheboygan.

EXECUTIVE DIRECTOR MESSAGE: RECHARGE YOUR BATTERIES

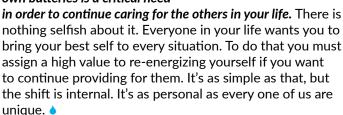
By Jennifer Rzepka, CAE, WWWA Executive Director

One of the greatest things about human beings is that each and every one of us is different. We have our own unique interests, backgrounds, triggers and lifestyles. Still, there's something that rings true for every one of us...we've all got to 'recharge our batteries'.

It doesn't matter where you are, who you are, or how busy you think your life is compared to others – every single person on this planet must take time to re-focus and re-energize in order to keep their lives on track. It doesn't matter if you're an introvert or an extrovert, a leader or a follower, this is an essential human requirement, not a selfish luxury or indulgence.

What is it that makes you smile and breathe deep with contentment? For some it's a quiet day with a rod and reel, tackling a project you've been putting off, a round of golf, catching up on sleep, binging on a TV series all weekend, letting your artistic side take over, watching a documentary that brings tears to your eyes, or just a relaxing day spent in a coffee shop. Chances are you already know what it is for you.

Too often those acts are judged by others as selfish. Plus we harm ourselves by feeling guilty about spending time on those things when we have endless to-do lists and a line of people asking for our time. This is the perception that needs to shift. **Recharging your own batteries is a critical need**



Sincerely,

ginnige Ryepka, CAE

Jennifer Rzepka, CAE Executive Director

Please feel welcome to contact the office with any questions or recommendation on ways to continue this exciting growth and expansion of your great association!

855-947-9837 / info@wisconsinwaterwell.com

WPWS REPORT

By Jeff Beiriger, WPWS Executive Director

WPWS to Launch Website

The WPWS will soon be launching its new website at www.wipumpwellsuppliers.org (and www. wipumpwellsuppliers.com). There you'll be able to find information about WPWS, upcoming events, industry information, and information about our members, including a listing of products and services they provide.

WPWS Announces Fall Golf Outing Dates for 2019

The Wisconsin Pump & Well Suppliers will host its Fall Golf Outing for 2019 at Trappers Turn in Wisconsin Dells on Thursday, September 19. Registration and sponsorship



information will be available soon. Proceeds from the event go to support our well projects in Uganda and around the world.

WPWS Announces Plans for Spring, Fall Events in 2020

On May 14, 2020, the WPWS will be hosting a Sporting Clays event at Triple J Gun Club in Brillion. On September 23, 2020, the WPWS will hold a golf outing at Trappers Turn in Wisconsin Dells. Both events are fundraisers for our well projects in Uganda and around the world. Mark your calendar and plan to join us for these industry events that combine a day of networking and fun with a good cause.

LOBBYIST REPORT: IF YOU'RE NOT AT THE TABLE...

By Jeff Beiriger, WWWA Government Relations Advisor

Anyone who has heard me speak on the topic of government relations knows that I'm fond of the expression, "If you're not at the table, you're probably on the menu." It's a clever way to remind all of us of our right and, some might say, obligation to be active and engaged in the world of politics.

I leave it to you to decide how much or how little you want to dive into the world of political discourse on social media. While it can be rough and tumble, there's no doubt that there's a whole lot more political talk out there than there's been in a very long time (if ever). And while voicing our opinion is one of the many benefits of living in our country, we can't forget that we don't live in a pure democracy, where we simply tally up the people's votes on every issue and do as the majority pleases.

Our version of democracy is based on representatives speaking and voting on our behalf. As one legislator said lately, most legislators are, "...a mile wide and an inch deep." What he means by that is legislators deal with so many issues that they rely on a handful of legislators in their caucus who have expertise or, more likely, they rely on the information they are provided by industry groups (like the WWWA) or their constituents.

His comment reminds all of us that the first part of any advocacy effort – where we would try to change someone's mind – is education. We must first educate our legislators and regulators about our industry and how their decisions affect us. Even if we only get the depth of understanding to two or three inches, that's a big improvement!

And that's where our focus has been the first half of this year and especially in the last few weeks. We've done a lot of educating....

NR 812

We had an opportunity in late May to testify in front of the Natural Resources Board about the proposed changes to NR 812. As an association, we testified in opposition to the rule. We didn't do that because we objected to everything, so we were specific about the areas that we thought needed additional work: casing depths, flowing wells, and PVC wells. After we testified, the NR Board also heard from two members who went into greater depth regarding our concerns. The NR Board listened and asked lots of questions. Agency staff answered some of their questions as did we. In the end, the Board decided to advance the rule, but went on to say that they also wanted to have the Department start working on a new rule to address our concerns.

As long as the window was still open, since the rule would still need approval from the Governor's office



and the legislature, it seemed to make sense to make as many changes as we could now rather than wait and so the agency and the association met again and we tried very hard to understand each other's interest in our positions. In other words, the focus wasn't on negotiating language, but on coming up with a solution that addressed the concerns of each party. Sometimes, everyone wants to talk. In this case, everyone seemed intent on listening, and we're optimistic that we have found acceptable solutions for two of our three issues. The third, PVC wells, will simply take longer, but as the NR Board requested, there will be a new rule proposed to address that issue and those meetings will begin soon.



If all goes well, we will have agreed-upon language that can be signed off by the agency, industry, NR Board, and legislature. If that happens on the timetable we are hoping for, we would still be on target for the rule to be in effect in early 2020. There's always a chance that things could get bumpy, and if they do, we have a plan, but we're optimistic that we'll get this done.

Speaker's Task Force on Water Quality

On July 24, the WWWA, represented by Rick Peterson, Michael Hanten and me, had a chance to present to the Speaker's Task Force on Water Quality. You might recall us

Lobbyist Report continued on next page



talking about the Task Force previously. It was created earlier this year in response to a report of contaminated wells in Southwest Wisconsin (among other issues). The Task Force consists of members of both the Assembly and Senate and both parties. Members come from every area of the State, but those from water sensitive areas are more heavily represented.

The Task Force has been making its way from the southern part of the State to the northern, conducting hearings with invited guests and public comment periods. We were an invited guest at the July 24 hearing and again, our mission was education. As the Task Force has been meeting, there's been a lot of focus on the nitrate issue and PFOA/PFOS, the chemicals associated with non-stick coatings and fire suppressants that have found their way into the groundwater. Our presentation was quite different in that we talked not about what is going into the groundwater, but what we are able to provide, regardless of what we encounter.

We assured legislators that the industry, working with the DNR, has rolled with other changes and we cautioned that any new legislation or regulation needs to be based on good science, specific to regions in the State, and developed in cooperation with the industry. As we noted, it's all of you – drillers and pump installers – who have to look the customer in the eye and explain why you need to do your work according to the code and how that code affects the customers health and safety.

Again, our testimony generated a fair number of questions, especially on the issue of testing. We talked about the amount of testing done now and how additional testing could help us protect property owners and build a database of information that can be used by the industry. We also talked about the network of businesses – like yours – across the state that are there to provide testing and provide solutions to any problems that testing might indicate.

Meeting with Senator Baldwin's Office

We were thrilled when Senator Baldwin's office contacted us to set up a phone conference to discuss water-related issues in Wisconsin. These types of phone calls are the result of relationships built in Washington, DC, during industry legislative conferences, and back home in the district. Getting a call like this establishes the WWWA as a voice for high-quality information and discussion about an increasingly important issue here and in every state.

We met with a research fellow and a member of the Senator's staff and they asked several questions. The Senator's interest, not surprisingly, has been elevated by the number of phone calls she is receiving about water quality issues. We emphasized that many times, a one-size-fits-all solution doesn't work in our state, given the diversity of our geology, noting that it's unlikely that a single, national policy would work. Instead, we encouraged investment in the Wisconsin DNR and the industry to provide resources that could allow us to make better use of the well viewer and other technologies. We also encouraged funding for meaningful research for our state, using the industry to develop the studies and to advance real-world recommendations from those studies, whether they be on the water quality issues in our state or on emerging techniques and technologies.

It was a good session as we learned more about the Senator's interest in the issue. Other groups will certainly be contacted to get their perspective too, but absent our own discussion, our fate – for better or worse – would be left in the hands of others, some of whom may not have (or want to share) our perspective.

The Road Ahead

Even as these groups continue to do their work, we have been watching the state budget wind its way through the legislative process. All in all, there wasn't a lot in the budget affecting us directly, but there are a few items that we are watching as they are implemented, including staffing increases in the DNR for water quality research.

Similarly, we are watching the legislature now, which will become more active in the wake of the budget deliberations. There won't be much money that legislators can tap into for new initiatives at this point, but there are always bills that can emerge that can alter an industry without costing a dime. Before long, the last-minute rush of bill introductions will begin, many of which will be bills introduced to please a key constituent, but some of which may be the sorts of things one party or the other would like to make an issue going into the 2020 elections. Whatever the reason, we'll be keeping an eye on the horizon and navigate the road ahead for the benefit of the industry, the responsible use of our groundwater resources, and the health and safety of the people of Wisconsin.

If you have ideas about the upcoming legislative session, please share them by contacting Jeff Beiriger, WWWA Government Relations Advisor, at jeff@assocmgmtservices.com or 414/331-2059.



SINCE 194

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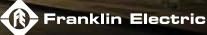












NWGA UPDATE: GROUNDWATER WEEK 2019 IS INSPIRING!

By National Groundwater Association

Come and be inspired by these notable speakers while you interact with thousands of professionals from all sectors of the industry at this year's Groundwater Week.

Jim "The Rookie" Morris

Morris will share the story of his meteoric rise from 35-year-old high school teacher to major league baseball pitcher during the Keynote Presentation on Wednesday. Now working as a motivational speaker, Morris' story has inspired countless individuals interested in



overcoming life's obstacles and living their dreams.

Pat Mulroy

Mulroy will discuss "The Universal Challenge of Water Scarcity" during Tuesday's Summit Opening Session. Formerly with the Las Vegas Valley Water District and Southern Nevada Water Authority, she is currently serving as a nonresident senior fellow for Climate Adaptation



and Environmental Policy for the Brookings Institution and practitioner in residence for the Saltman Center for Conflict Resolution at the UNLV William S. Boyd School of Law.

Gary Hix, RG, CWD/PI

Hix, licensed water well drilling contractor, registered geologist, and entrepreneur, will deliver the farewell presentation of his 2019 McEllhiney Lecture focusing on the current state of the drilling industry.



Doherty, author of PEST, a software package widely used for groundwater model calibration and uncertainty analysis, will deliver the farewell presentation of his 2019 Darcy Lecture focusing on the importance of, and challenges in, groundwater modeling.





In addition to these inspiring speakers, Groundwater Week 2019 offers an unparalleled lineup of workshops, hands-on activities, exhibitors, industry award presentations, networking events, entertainment, and more.

To learn more about Groundwater Week and to register today, visit: https://groundwaterweek.com/.

JOIN THE WISCONSIN WATER WELL ASSOCIATION

The WWWA, a trade association of well drillers, pump installers, manufacturers and suppliers, was established over 60 years ago. Our mission is simple: to provide and protect Wisconsin's most precious resource, groundwater. Our purpose is to increase the industry's knowledge and understanding of proper drilling, pump installation and well filling and sealing techniques.

Members have the opportunity to:

- Appear in the member listing on the website and newsletter
- Apply for exclusive WWWA scholarships for their children and grandchildren
- Advise and assist in the enactment and enforcement of equitable laws and regulations
- Encourage and promote research pertaining to the water well industry
- Cooperate and network with other organizations in related industries

Visit us at www.wisconswaterwell.com to renew online or download an application.

THE OTHER COMPETITOR

By Thad Plumley, Editor of Water Well Journal

The heartbreaking story that unfolded recently near my house can't help but stop you in your tracks.

A model family, the kind you usually only find in a Hollywood script—a father, mother, teenage son and daughter, three dogs—died due to a deadly level of carbon monoxide poisoning the air of their home.

So sad.

And so preventable.

It was discovered days after the tragedy an exhaust pipe on top of a tankless water heater was slightly dislodged, ending the mystery of where the deadly gas entered the home.

It was also discovered the water heater installation was a do-it-yourselfer. The father and a friend installed the system at some point prior to the accident. An installation permit, as required in Ohio, was never filed.

When announcing their discoveries, the police added no carbon monoxide detectors were in the house, meaning a simple device could have literally been the difference between life and death.

The police also stressed they could not determine if a human or product error led to the dislodged pipe. But we all know weekend warriors can be dangerous animals.

It's important you learn how to combat DIYers simply wanting to check all of the boxes on their honey-do lists. In fact, it's not too strong an approach to consider homeowners wanting to do any type of work on the family

water system at their home as much of a competitor as that other water well contracting firm near you.

Lead conversations you have with potential customers with the importance of you, a professional water well contractor, providing life-sustaining water to their home. Detail your history in the profession, and if you're at a multigeneration business, proudly highlight the decades in which your family has served countless customers throughout your area.

Hopefully you can add that you are a member of the National Ground Water Association, the leading professional association for your profession, as well as a member of its voluntary certification program.

Add the products you get from the groundwater industry's top manufacturers and suppliers are superior to what they can find in their nearby big-box stores.

Then be blatant. Add it up for them. Superior products installed by a superior-level contractor whose superior skills are recognized by a superior trade association in his or her field is the superior choice. That trumps any cost savings created by having water system work on a honey-do list.

Obviously, DIY jobs don't always end with heartbreaking news stories and police press conferences. But from time to time, needless tragedies remind you of the importance of having jobs well done.

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WWWA MEMBER HIGHLIGHT

Paige Brandenburg is one of 16 students being awarded a scholarship for academic achievement, community service and leadership by the Goulds Water Technology Professional Dealer's Association (GPDA).

She is the daughter of WWWA member Dan and Cindy Brandenburg of Dan's Service Plus, LLC in Wausau, WI. In the Fall, she'll be attending the University of Nebraska-Lincoln for Secondary Education and Business.

"These students represent the future of our industry. Goulds Water Technology values the opportunity to support them as they pursue higher education and build their careers through the GPDA scholarship," said Susan O'Grady, Xylem Director of Marketing, Residential and Agriculture.

GPDA scholarship recipients are family members of GPDA members. GPDA is a network of independent water system professionals, established in 1969, and is the industry's oldest and largest dealers association. Since the scholarship's inception, the GPDA has awarded over \$300,000 to 272 recipients.



ADVERTISE TODAY! WWWA WELL LOG ADVERTISEMENT PRICING

Full Page Advertisement

Entire Year	\$1300
Single Issue	\$475

Half Page Advertisement

Entire Year	\$850
Single Issue	\$250

Quarter Page Advertisement

Entire Year	\$600
Single Issue	\$175

Advertising Graphic Requirements:

All ads must be submitted electronically via email. WWWA Well Log is designed on a Macintosh platform. Accepted software: print quality PDF files (preferred), Adobe Illustrator, Photoshop, and InDesign. Fonts and linked graphics must be included with electronic files. Minimum 300 dpi on graphics and photos. Ads not supplied properly may incur additional charges. Ads not sized properly will be scaled proportionately to fit.

Please contact our office for more information: info@wisconsinwaterwell.com

Ad Sizes	Vertical (W x H)	Horizontal (W x H)
Trim Size	8 ¹ / ₂ " x 11"	
Full page (float)	8" x 10 ¹ / ₂ "	N/A
Full page (bleed)*	8 ¹ / ₂ " x 11"	N/A
Half page	3 ³ / ₄ " x 10"	8" x 4 ³ / ₄ "
Third page	2 ¹ / ₂ " x 10"	8" x 3 ¹ / ₂ "
Quarter page	3 3/4" 4 3/4"	N/A

*Bleed Ads need to allow an additional 1/8" on all sides for trimming.





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SCHOLARSHIP APPLICATION

EDWIN HUNTOON SCHOLARSHIP

Edwin W. Huntoon (1917-2011)

Ed Huntoon served the WWWA as Editor of the newsletter, and was a proponent of the water well industry throughout the world. He started in the industry as a driller in the rock quarries, then for the US Army during WWII and on water supply projects around the



world. Ed was a licensed pump installer, master plumber, and journeyman plumber. He was the recipient of the NGWA Life Member Award in 1991, and the NGWA Oliver Award in 1995 for outstanding contributions to the groundwater industry. He served as the Waupaca County Wellhead Protection Committee Chairman until his passing at the age of 93.

EDWIN HUNTOON ELIGIBILITY

- · 2.6 grade point average or above
- Must be child or grandchild of a current WWWA member
- Must be applying to or enrolled in a post-secondary institute (college), as a full time student

OWEN WILLIAMS SCHOLARSHIP

Owen W. Williams (1922-2014)

Owen Williams served the WWWA as Executive Secretary, and represented the Association at many conferences, meetings, and legislative sessions. He served in the Navy aboard the USS Barb during World War II, and served as State President of the US Submarine Veterans. He devoted



significant time and energy in the formation of the Wisconsin Water Well Guild, creation of continuing education classes, and promotion of Association membership. He encouraged others to "make greater strides to meet the challenge of protecting the environment."

OWEN WILLIAMS ELIGIBILITY

- · 2.6 grade point average or above
- Must be child or grandchild of a current WWWA member
- Must be applying to or enrolled in a technical/trade/ vocational institution, as a full time student

APPLICATION PROCEDURES

- · Applications should be submitted to the Association by December 1, 2019. No exceptions.
- Applications should include written essay and two letters or recommendations.

APPLICATION SELECTION PROCESS

Personal information is removed from each application and is assigned a number. Applications are then sent to a review committee. The committee makes their choices based solely on the information provided by the applicant and the references submitted. The WWWA will notify the scholarship winners prior to January 1, 2020 by email.

Awards are presented at the Annual Wisconsin GroundWater Conference. Current college students will be presented the scholarship at the conference, while high school students will receive the scholarship after the completion of their first semester. Verification of current enrollment is required.

INSTRUCTIONS FOR COMPLETING SCHOLARSHIP APPLICATIONS

- Download the application or complete the form online at: wisconsinwaterwell.com
- Fill out the application, respond to both essay questions, and submit two letters of recommendation from persons who can attest to your character and assess academic ability
- · Submit the form online or send to the WWWA office

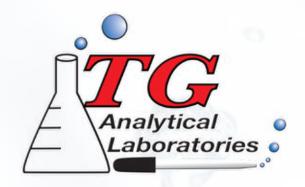
LABORATORY SPOTLIGHT

TG ANALYTICAL LABS

The WWWA appreciates the support of TG Analytical who sponsored a lane at our 2019 Annual Conference Bowling Fundraiser. TG Analytical is a Wisconsin state certified lab that specializes in drinking water testing. We offer a one of a kind customer experience including One Day Turnaround times for Arsenic! Contact us to learn more about our online user portal, competitive pricing, and the latest in our complete service offerings!

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Daniel Schlenz

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MANUFACTURER SPOTLIGHT

BURTON-ANDERSON & ASSOCIATES INC.

The WWWA appreciates Burton-Anderson & Associates' door prize donation at the 2019 Annual Conference. Burton-Anderson & Assoc., Inc. is a manufacturer's representative serving Wisconsin since 1965. Our lines for the water well industry include Little Giant Pump, Simmons Manufacturing, Wellmate composite pressure tanks and Woodford Manufacturing.

For more information: https://www.burton-anderson.com



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THE JOHNSTOWN MORAINE

By Tom Riewe

A topographic feature extends mile upon mile through a considerable portion of the landscape of southern and east-central Wisconsin. Every day thousands of folks drive over or past it or, in some locales, straddle it. Yet, unless they are purposefully looking, they may not notice because, in many locales it does not prominently stand out. This feature is the *Johnstown Moraine*, a ridge that marks the outer southern and western boundary of the Green Bay Glacial Lobe. (Figure 1.) During the latter part of the Wisconsin Stage of Pleistocene Glaciation – 25,000 to 10,000 years ago – this gigantic tongue of ice covered much of the eastern part of the State. Today the Ice Age Trail follows several segments of the long trace of this moraine.



Figure 1. Pleistocene Ice Age map showing the location of the Johnstown Moraine. (Note: In some specific areas of central and northeastern Wisconsin the moraine is designated by local names.) (Adapted from Attig and Dott, Jr., 2004)

Topographically the Johnstown Moraine is not nearly as significant as the Niagara Escarpment – a bedrock ridge that runs north-south and overlooks much of the landscape of eastern Wisconsin. However, in a few places, the Johnstown Moraine rises up quite conspicuously even though its relief is not considerable. (Photo 1.)

The full length of this ridge has the shape of an oversized fish hook that extends for some two hundred and twenty miles. (Figure 2.) The point of the hook starts in Walworth County, eight miles south of Whitewater, near the rural community of Richmond. The bend of the hook sweeps westward through northern Rock County, loops northwest



Photo 1. The Johnstown Moraine at the site where it crosses County Highway PB, just southeast of Verona, Dane County. (Photo by author)

around western Dane County and then heads north through Sauk, Adams, Waushara, Portage and Marathon Counties. The eye of the hook terminates way up in northeastern Wisconsin, ten miles northeast of Antigo in Langlade County. Perhaps not surprisingly, this moraine can be seen from space. Using *Google Earth* or any similar geographic application, one can quite readily see the outline of this mostly wooded ridge.

As I described in a previous article on the Baraboo Ranges the Green Bay Lobe was one of a number of gigantic glaciers



Figure 2. The topography of Wisconsin showing the course of the Johnstown Moraine. (David Woodward, University of Wisconsin Cartographic Laboratory)

Johnstown Moraine continued on next page

that – during the Ice Age – slowly advanced southward out of their Canadian sources. Once into Wisconsin this lobe moved down through the Green Bay basin. (Figure 3.) It gouged its way forward like a very slow moving snow plow, dramatically altering the pre-glacial topography as it went. Eventually it migrated all the way into the southern reaches of the State, stopping just north of Janesville.*

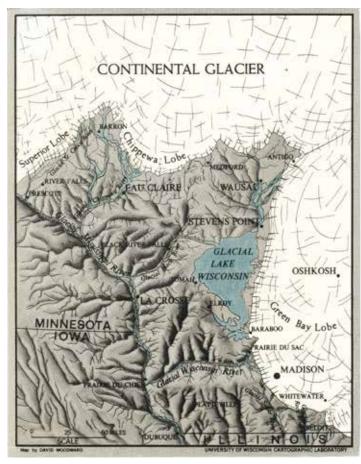


Figure 3. Glacial lobes in Wisconsin during the latter part of Pleistocene Epoch. (David Woodward, University of Wisconsin Cartographic Laboratory)

Tons upon tons of sand, gravel and boulder debris was suspended within the mass of the glacial ice. Many of the boulders consist of crystalline rock, their source being the Precambrian bedrock of the Laurentian Shield of Canada and similar bedrock types of Upper Michigan and northern Wisconsin. Within the ice this debris got slowly tumbled and reworked many times over as the lobe inched and ground its way forward. As the outer edges of the glacier reached a point of temperature equilibrium the ice melted and dropped its debris, much like a conveyor belt. (Photo 2.) Century after century these deposits piled up creating this morainal ridge at the outer margins of the lobe.

Today the topography of the Johnstown Moraine is very rough and hummocky, being made up of the hodge-podge debris the glacier deposited. Composed of clay, silt, sand



Photo 2. Makeup of glacial till inside the Johnstown Moraine, just south of Hancock, Waushara County. (View is to the east) (Photo by author)

and gravel, this glacial *till* is thoroughly imbedded with rounded boulders known as glacial *erratics*. (Photo 3.) As the ice lobe melted and the glacier retreated this debris differentially slumped and formed a ridge that has a very irregular surface. The vast majority of this rough terrain has not been conducive to crop agriculture so it has remained mostly wooded and unused; except that, in major areas of population, housing subdivisions have been developed on some of its landscapes. The fact that it has remained wooded and strewn with boulders helped geologists – more than a hundred years ago – follow and delineate its course. (Figure 4. Johnstown Moraine within Devils Lake State Park)



Photo 3. Glacial erratic boulders on the top of the Johnstown Moraine – just north of the rural community of Johnstown, Rock County. (Photo by author)

As the Ice Age came to an end the glacial lobes slowly retreated back toward their Canadian sources. They did not, however, go smoothly. Instead they receded in fits and starts. From time to time, during periods of climatic cooling, they also made re-advances. At places where they remained for significant periods of time – either in retreat or re-advance – they built up similar ridges called *recessional moraines*. Today these moraines are also left behind, but as shorter arcs, oriented parallel to the outer and longer Johnstown Terminal Moraine. These recessional moraines have also been identified and mapped.

Johnstown Moraine continued on next page

^{*} Geologists first studied this moraine some ten miles northeast of Janesville – just north of the two small rural communities of Johnstown and Johnstown Center, hence the name.

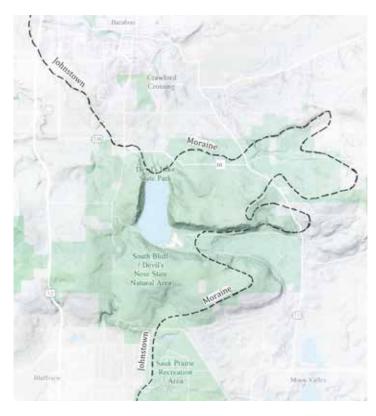


Figure 4. The course of the Johnstown Moraine where the glacier struggled to climb up and over the south limb of the Baraboo Ranges. The dashed line delineates the outer edge of the moraine, where it zig-zags through Devils Lake State Park and skirts the west side of the City of Baraboo. (After Dalziel and Dott, Jr.; Base map from Maps Measure App)

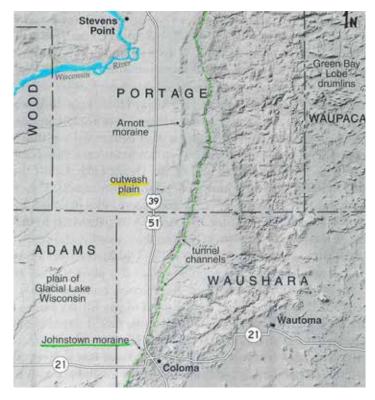


Figure 5. The tract of the Johnstown Moraine in central Wisconsin (green dashed line) showing the location of a couple of its glacial tunnel channels. Also note the outwash Central Sand Plains (After Dott and Attig, 2004)

Knowledge of these moraines can be a benefit for those who work in the well drilling industry. When drilling a well on or near a moraine a driller should expect to encounter unconsolidated surficial formations containing everything from a combination of clay, silt, sand, gravel and cobbles. Imbedded within this conglomeration they will also likely encounter erratic boulders. These can make the drilling process difficult and fraught with problems because, since many of them are crystalline, they are very dense and hard. Attempting to drill through them or drive casing through them can be very challenging. (Years ago cable-tool drillers found it necessary to break up some of these large boulders using sticks of dynamite.) If one knows where these moraines are located the usual problems associated with drilling into glacial till can be anticipated and dealt with proactively.

One of the most fascinating features of the Johnstown Moraine is the many glacial tunnel channels that have been discovered and identified along the course of this ridge. (Figure 5.) Some eighty such channels have been delineated along the total length of this moraine. These channels are oriented perpendicular to the moraine and represent melt water streams that flowed at the base of the glacial ice and discharged at the glacial edge.

The remarkable characteristic of these tunnel channel streams is that they flowed uphill. This was a result of the fact that the depression created by the glacier made the ground surface slope downwards away from the outer margin of the lobe. The glacier was thinnest near its outer margin and thicker and heavier towards its inner core. So, the closer to the middle of the lobe, the greater the 'gouge-depth' the glacier made. The weight of the ice applied pressure to the melt water at the base of the glacier so the water in these tunnel channels got squeezed outward toward the edge of the glacial front.

Where these streams discharged at the glacial margin they deposited the sediment they were carrying. Today many of these tunnel channels are dry. (Photo 4. Coloma Tunnel Channel). Others became a series of small linear-oriented



Photo 4. A dry glacial tunnel channel extending eastward through the Johnstown Moraine just north of Coloma, Waushara County. (Photo by author)

Johnstown Moraine continued on next page

Johnstown Moraine continued from previous page

lakes and ponds, some of which today extend for miles. (Figure 6. – Tunnel channel lakes extending east-southeast of Hancock)

The till debris was carried away from the glacial front by braided streams that formed from melt water flowing away from the glacier. (The main water stream broke into many smaller channels, hence the name braided.) As the sediment dropped out, the boulders and cobbles, being heavier, were deposited close to the glacial margin. Then in turn by weight - the gravel, sand, silt and clay each got deposited farther to the west, away from the glacier. Over time, this sediment slowly built up and formed crescent-shaped deposits called alluvial fans - similar to river deltas. As these fans grew in size many of them coalesced, forming 'aprons' of glacial outwash, consisting mostly of sand.

Some of these outwash fans became very large terraces. Today's Central Sand Plains - that covers much of Adams, Waushara and Portage Counties - is a classic example of one of these. (See Figure 5.) It provides productive sandy soils and flat topography conducive to modern agricultural methods. Groundwater saturates this terrace up to within a short distance of the surface thereby providing a very valuable watertable aquifer. In the last eighty years, due to the advent of the construction and use of high capacity wells and pivot irrigation systems, this area has become one of the most productive agricultural regions of the State.



Figure 6. A submerged glacial tunnel channel consisting of a string of lakes extending through the Johnstown Moraine – southeast of Hancock, Waushara County. (United States Geological Survey topographic map – from Topo Maps by Real Geography)

These articles are also based on the following selected sources:

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Dalziel, I. W. D. and Dott, R. H. Jr., 1970. "Geology of the Baraboo District, Wisconsin", Wisconsin Geological and Natural History Survey Information Circular 14, 164 p.

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Martin, Lawrence, 1965. "The Physical Geography of Wisconsin". Third Edition, The University of Wisconsin Press. 582 p.

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Tom Riewe is a retired DNR Hydrogeologist who spent his entire career in the Private Water Supply Section working with Wisconsin's Licensed Well Drillers and Pump Installers. A native of northeastern Wisconsin, he now spends his time dogsitting, falling off bicycles and slipping & falling on hazardous hiking trails.





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MARKETING MATTERS, AND SO DO SALES!

By Tara Schessler, In Time Creative

Recently I've had the opportunity to do some sales coaching both in my office with new colleagues and outside of my office with a new entrepreneur. It's been an eye-opening experience and I'm truly enjoying the sales process from a whole new perspective.

Now, you may be asking yourself, sales coaching? But Tara, aren't you just a marketing expert? What makes you qualified to coach people in sales? Why, thank you for asking. Let me explain.

Since 2007, I've been in some sort of sales or marketing position with various companies: a developer where I had a crash course in Commercial Real Estate Marketing; a cabinet manufacturer where I helped develop, market and sell a new line of product to a distribution network which I cultivated through strategic prospecting; and now with a TV station where I work with a variety of small businesses to attain revenue growth year over year with successful, strategic marketing campaigns. And I loved every moment of each and every job I had/have!

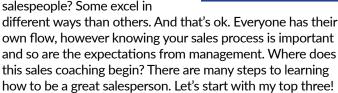
As former Wisconsin Water Well Association President and most recent WWWA Lifetime Member Recipient, Mr. David Haupt, once told me at one of the annual WWWA Meetings a few years back, "Well Tara, you could sell ice to an Eskimo, but we should probably open it up to the membership and vote on it." Thank you, David...I think. No, seriously, I do take that as a compliment.

Here's the thing. I wouldn't sell ice to an Eskimo, unless said Eskimo was really in need of ice and I was passionate about the kind of ice I had and knew that my ice was a perfect fit for this Eskimo and what he was using it for.

That's all sales is. Your passion for your product or service, fitting with someone's needs or wants. It's a relationship. The money made is just an exchange of energy. Two people, two businesses exchanging resources to keep the world going 'round.

If you are reading this right now and have thought, sales... no, I could never do that. I have some news for you. Everyone is in sales! You just don't realize it. Have you ever been super pumped about a product or service you've experienced and told someone you liked about it? Not just someone. I'm not talking about an anonymous review on Amazon. I'm talking true word of mouth. Telling someone you LIKE! Of course you have. And just then, you were selling your experience to them because you felt they could benefit from the product or service in the same way you have. You were selling them on the idea, and you had no idea you were doing it.

So, how do you sell? How does your team sell? Do you have inside salespeople, outside



Here's my 1, 2, 3 for Sales 101.

- 1. Stop selling! Build the relationship first.
- 2. Understand what you're selling and how it benefits the person you're selling it to.
- 3. Shut up!

Stop Selling! Build Relationships First.

How many times have you been having a casual conversation about your business and out pops a sale or referral? It happens more times than you probably think. But, when you are truly going after new prospective business, you can't rely on that random meet and greet. You must actually go out and meet new potential business prospects. When you do, make it count.

First, you'll be greeted by the "Gate Keeper." This is the person who has to listen to about 20 salespeople every week, filter them out based on the company's needs and provide pertinent decision-making contact information to only the ones they LIKE. So how do you get them to like you? Stop Selling! And please, for the love, do not assume they have time for you. You are merely looking to put a face with a name, see if the relationship fits and to help them do business with more efficient results.

And from a woman's standpoint; don't assume the female office manager has no clue what you're talking about and brush her off as the non-decision maker. More than likely, she holds more clout than you'd imagine. Find some common ground, look around, ask about something that catches your eye and be a person, not a salesperson! Build the relationship with whomever you come into contact in the company. People do business with people they like. So be likable and you may just get a meeting with the person you're looking to pitch to.

Understand What You're Selling and How it Benefits the Person You're Selling it to.

Yes, you should know how your product works, how it benefits the person using it and why your product is better

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than your competitor before you try to pitch it to a future client. But in all of that, I'll add, be passionate about it! I don't just sell TV advertising, it's part of my job, yes, however I am in the business of big picture marketing. How does my service and products help you get efficient results? So, Mr. or Mrs. Salesperson, how does your product or service benefit your perfect prospective client or customer? Paint the picture so passionately that they know it would be foolish for them not to learn more.

If your product or service isn't a good fit. Shake a hand, thank them for their time and ask this question, "Say, do you have any friends in business (or just say friends) who you think may be interested in learning more about what I have to offer?" You can even make it more specific. "Do you know of anyone who is currently building and looking to hire a water well professional like me?"

Shut Up!

Kenny Rogers sings, "You gotta know when to fold'em..." I say, "You gotta know when to SHUT UP!" Silence can be your friend. The more you talk; the more objections you are feeding the person you are looking to earn business from. Ever hear this one, "He who speaks first, loses"? It's true!

I have had the pleasure of sitting across the desk from staunch auto dealers who've challenged me in a starring contest, hands folded, leaning back in their massive chair behind their even more massive desk. And guess what, I sat silent. Because inevitably, they will share their true objection, which you can then answer and progress the conversation in a much more positive manner. This works much better than you rambling on about how your widget is the best thing since sliced bread.

True or false- as a business owner you want to know two things: will this save me money? Will it be a reliable product or service for my company? Remember from my last Marketing Matters article, solve the problem.

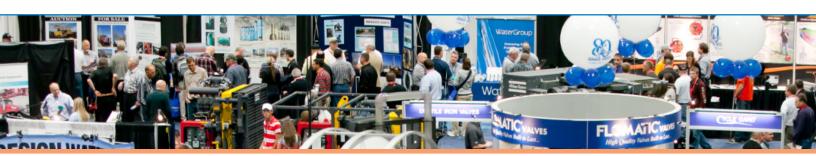
In this edition I'll leave you with these: Be passionate. Build trust. Form a relationship.

Happy Selling! •

Sincerely,

Tara Schessler

Have marketing questions? E-mail me anytime at tschessler@waow.com. My ideas are free!





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HOW TO TALK TO HOMEOWNERS ABOUT NITRATES IN WELL WATER

By Greg Gruett, Water-Right Inc.

Residential water quality continues to make headlines and is top of mind for many homeowners. It's been three years since the water crisis in Flint, Michigan, overall consumer awareness of household water contaminants remains high, and people have questions they want answered.

For homeowners with private wells, a notable water quality issue is the presence of nitrates, especially in the Midwest. Well and pump professionals are poised to be the trusted, local experts for taking precautions to prevent nitrate contamination, testing well water quality and providing people with helpful information.

In most cases, nitrates in drinking water do not seem to present major health risks. The only big concern involves infants. Babies consume large amounts of water relative to their body weight and may develop methemoglobinemia from a high nitrate water, which can be fatal. It's also known as "blue baby syndrome" because it restricts the ability for blood to transport oxygen, causing skin discoloration.

As we age, most adults and older children develop digestive systems that can process nitrates, which are actually found naturally in the vegetables we eat at higher levels than drinking water. According to the EPA, babies are no longer at a higher risk of the effects of nitrates by the age of 6 months. Still, there is also preliminary research indicating a possible link to long-term nitrate exposure and an increased risk of some types cancer. That's one more reason why you may encounter homeowners with concerns about nitrates.

Here are some common questions about nitrates in well water and some advice on discussions you can have with your residential customers.

What are nitrates?

The average person may need to know that nitrates are important nutrients for plants. They may also associate it with its use as a food additive in processed meat. Instead of causing unnecessary alarm and fear, homeowners should realize we consume nitrates in food and water all the time, but higher than normal levels in their water should be addressed.

High levels of nitrate may also be a sign that other contaminants are entering the water supply, including pesticides and herbicides from farm fields, or pharmaceuticals from septic system waste water.

Because manure and septic systems can be a cause, nitrates are sometimes associated with the presence of fecal matter and harmful bacteria. However, Michael Hanten, manager of the state-certified Clean Water Testing laboratory in Appleton, WI says that's not completely accurate.

"I don't like to make that direct correlation simply because the ways bacteria and nitrates end up in drinking water aren't necessarily the same," he says.

Homeowners should know that the land on which their property sits plays a big role in what contaminants make it into the groundwater supply.

Why does the soil matter?

Soil is nature's filter, and the geological makeup of a region greatly impacts what is removed from surface water before it reaches the aquifer below. However, nitrates are able to pass through soil fairly readily if there's a lack of organic matter and plant roots to absorb the nutrient.

"Sand is an excellent material to remove bacteria," Hanten explains. "Regions with sandier soil will see lower instances of bacteria in the aquifer. But, sand can't hold on to nutrients such as nitrate, so you may find higher levels in those areas."

On the other hand, areas where the geological makeup includes thin soils over fractured rock allow much more to flush down into the water table. Since well and pump professionals tend to have a solid understanding of an area's soil quality and geological aspects, you are in the perfect position to help homeowners understand these factors and how it impacts groundwater quality.

Do I have nitrates in my well water?

The only way to know for sure is to test the water. Public awareness and proper testing are two of the most important ways well drillers and pump installers can contribute to conversations around nitrate in the water supply.

The federal standard for nitrate in drinking water is a maximum of 10 milligrams per liter (10 mg/L), which was established in the early 90s as an acceptable level for infants over 6 months old.

While not every state requires nitrate testing, you should test for it when drilling a new well to make sure you're giving customers a well with low nitrate levels. The same testing should be done during pump work.

"If there are nitrate concerns, you may want to do further testing for herbicides, pesticides or pharmaceuticals,"

Nitrates in Well Water continued on next page

Nitrates in Well Water continued from previous page

Hanten says. "Talk to experts at a state-certified lab to see what further testing might be necessary."

Of course, well and pump professionals don't have control over what enters the aquifer over time. You'll need to explain to homeowners that groundwater quality is always changing, and nitrate levels can fluctuate with the seasons. It is good to recommend they continue to have their water tested at least once per year to keep an eye on what is in their well water.

How do nitrates get into groundwater and who is to blame?

"Wherever a nutrient is added to the land surface, there is an increased risk of nitrate ending up in the aquifer, especially if the soil is saturated with nutrients or doesn't have the ability to hold onto them," Hanten says.

That means nitrate could come from fertilization of farm fields, manure spreading and storage, as well as fertilization of golf courses, lawns and gardens. Septic systems are another common cause of nitrate contamination.

"Septic systems are designed to remove bacteria not nutrients like nitrate," Hanten explains. "Waste water goes into a drain zone that's below the root systems of plants and trees that would absorb those nutrients. So, eventually the nitrate makes its way down into the aquifer."

The tendency is to want to point fingers at one particular cause, which often ends up being agricultural practices. But, don't be too quick to blame farms when there are many other potential contributors.

Well drillers can help homeowners by assessing the situation, including the geological makeup and possible sources, so customers can make informed decisions about fixing water quality.

Is a new well required?

Drilling deeper or moving a water well to a new location should certainly be explored as an option for addressing nitrate contamination. "In some areas of the country, there may be high levels of nitrate in a shallow aquifer, and well drillers may be confident that drilling deeper will go beyond a confining area into a different aquifer that is protected from surface water infiltration," says Hanten. "However, that's not going to be possible in every situation."

It may also be that a well has structural issues or isn't up to code and needs to be fixed. Well drillers should avoid any sort of guarantee that they can eliminate nitrate from the water supply.

How can I protect my family?

If a new well isn't an option or won't solve the problem, identifying a water treatment solution is a possibility that will give your customers some peace of mind. The best option is a reverse osmosis (R.O.) system. An R.O. reduces nitrates by as much as 80 percent, and it also greatly reduces levels of pesticides, herbicides and pharmaceuticals that may come along with nitrate.

Well drillers and pump installers who also offer residential water treatment solutions like R.O. installation can diversify their businesses and extend the ways they help homeowners.

Nitrate contamination is not a new problem. The nitrates showing up in well water today may have taken decades to get down into shallow aquifers, but there is evidence the nitrate levels are rising as a whole.

As we construct housing in rural areas, feed our desire for perfectly green lawns and strive to increase production in farm operations, we are increasing the sources of groundwater contamination. The only way to truly curb this problem is proposing land use changes. For now, well and pump professionals can support homeowners by offering short term solutions while raising awareness and encouraging regular testing.

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Webster Well Drilling Minocqua, WI

Daniel Drozdowicz

E&D Water Works Inc Janesville, WI

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D. Duwe's Professional Services LLC Elkhorn, WI

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Kleiman Pump & Well Drilling, Inc.

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Ryan Euclide

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Matt Fletcher Fletcher Pump Distributing,

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Phil Frasier Frasier's Plumbing & Heating, Inc.

Rhinelander, WI
William Frazier

Frazier Well Services, LLC Muskego, WI

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David Froemel

Froemel Well Haward, WI

Dean Funk

Rhinelander Well Drilling Inc. Rhinelander, WI

Steven Gauger

Steve Gauger Plumbing & Heating Inc. Burlington, WI

Lance Gehring

Lance Gehring Well Drilling Twin Lakes, WI

Joe Grimme

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Kascade Plumbing LLC Omro, WI

Franklin Keller

Groth Water Wells, Inc. Mequon, WI

Robert Kent

Kent Well Drilling Wrenshall, MN

Keith Keuter

Waterfall Pump Service Platteville, WI **David Kind**

Kurt Zentner & Sons Inc. Oshkosh, WI

Kory King

Schoenwalder Plumbing Inc. Waukesha, WI

Travis Kittredge

Luisier Well Drilling Oconto Falls, WI

Erik Kleiman

Kleinman Pump & Well Drilling, Inc Iron Mountain, MI

Carl Klemme

Klemme Bros Pump Service LLC Kewaskum, WI

Michael Kliss

A Wanna Services Inc. Rhinelander, WI

Steve Koeffler

Phc, Inc. Peshtigo, WI

Gary Kowalke

Terrytown Plbg Baraboo, WI

Bryan Kozikowski

Kozikowski Well & Pump Menominee, MI

Jeff Kramer

Wisconsin Water Well Association Oshkosh, WI

Jason Kratz

Five Star Sanitation Services LLC Slinger, WI

Louis Kraus Lang Well Drilling Co Inc. Wausau, WI

Brian Kuhn

S & K Pump & Plumbing Waukesha, WI

Gary Kuhn

S & K Pump & Plumbing Brookfield, WI

Steven Kuhn

Sauk Plains Pbg & Pumps Inc Cross Plains, WI

Robert Laabs

Laabs Well Drilling Inc. Jackson, WI

Roger Lang

Lang Well Drilling Co Inc. Wausau, WI **Paul Langer**

Kleiman Pump & Well Drilling,

Iron Mountain, MI

Daniel Lardo

Dan's Pump Service New Franken, WI

Jerry Leemkuil

Federated Insurance Owatonna, MN

John Libero

Apple River Well & Pump Co. Hanover, IL

Keith Lind

Keith Lind Well Drilling Inc. Maple, WI

Scott Lovelace

Lovelace Pump Company & Well Drilling, Inc. Argyle, WI

William Maas

Quality Water Systems Spooner, WI

1 1 1 4 10

Joseph Maitland Branch River Testing Service LLC Greenleaf, WI

VACUUTA A A STATE OF STATE

William Majeskie Lifetime Member Pewaukee, WI

Terry Marshall Marshall Well Drilling Corp. Wisconsin Dells, WI

Charles Massart Iii Chuck Massart Well And Pump Repair LLC Forestville, WI

Thomas Mcafee Mcafee Well Drlg & Pump Service Inc. La Valle, WI

Tim Mccarthy

Mccarthy Well Company Shakopee, MN

Daniel Mccullough

Mccullough & Sons Well Drilling Forest Lake, MN

David Mccullough

Mccullough & Sons Inc Forest Lake, MN

James Mccullough

Mccullough & Sons Forest Lake, MN

WWWA MEMBER LISTING (CONTINUED)

John Mead

Mccullough And Sons, Inc. Forest Lake, MN

Randall Meidl

Meidl Water Systems Inc. Whitelaw, WI

Tom Meidl

Meidl Water Systems Inc. Whitelaw, WI

Thomas Meyer

All-Around Water & Waste, LLC Blue Mounds, WI

James Meyers

Luisier Well Drilling Inc. Oconto Falls, WI

Richard Milaeger

Municipal Well & Pump Waupun, WI

Michael Milbrath

Sixel & Schwinn Inc Sheboygan, WI Kevin Miller

Miller Soil Testing LLC Columbus, WI

Robert Miller

Big Moose Home Inspections Ashland, WI

Todd Morawetz

Floyd's Plumbing Inc. Waterford, WI

Jaramy Morgan

Butterfield Inc Hayward, WI

Tim Nelesen

Franklin Electric Company, Inc. Fort Wayne, IN

Jayne Nelson

S&K Pump & Plumbing, Inc. Brookfield, WI

Laverne Nelson

Nelson's Plbg & Elec Inc. Tomah, WI **Daryl Neuens**

Kleiman Pump & Well Drilling, Inc.

Iron Mountain, MI

John Nolan Jr.

Nolan Insurance Agency LLC Brandon, WI

Danny Nubbe

Mineral Service Plus LLC Green Isle, MN

Zachary Nubbe

Mineral Service Plus LLC Green Isle. WI

Pat Oconnor

Edgen Murray Duluth, MN

Greg Oettinger

Oettinger Excavating & Septic Rhinelander, WI **Kelly Oium**

Oium Well Drilling & Pump Service Strum, WI

James Olson

Lifetime Member

Kevin Olson

Ken Olson Well Drilling & Pump Eau Claire, WI

Paul Olson

Ken Olson Well Drilling & Pump Eau Claire, WI

Roger Olson

CTW Corporation Lannon, WI

John Orlopp

Maribel Heating & Plumbing LLC Kellnersville, WI **Adam Owsley**

Herr Well Drilling Inc Sullivan, WI

John Pelke

Pelke Plumbing & Well Drilling Inc. Durand, WI

Matthew Peters

Independent Plumbing Services Inc. Peshtigo, WI

Rick Peterson

Water Right/Clean Water Testing, LLC Menasha, WI

H. Michael Phelps

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WWWA MEMBER LISTING (CONTINUED)

Jason Pliska

City Of Stevens Point Public Utilities Stevens Point, WI

James Pueschner

JP Home Inspections Rhinelander, WI

Ronald Raduenz

Rdr Septic & Well Service LLC Watertown, WI

Jeffrey Rasmussen

J. Rasmussen Plumbing Franklin. WI

Edwin Renner

E.H. Renner & Sons, Inc. Elk River. MN

Roger Renner

E.H. Renner & Sons, Inc. Elk River, MN

David Rock

Rock-Well Well & Pump Service Inc Kansasville, WI

Andrew Rogers

Rogers Pump Company Oshkosh, WI

Thomas Roos

Roos Well Drilling Inc. Oxford, WI

Todd Roos

Roos Well Drilling Inc. Oxford, WI

Timothy Roth

Roth Heating Co, Inc Oak Creek, WI

Thomas Ruemenapp

Big Moose Home Inspections, Inc.

Bessemer, ${\sf MI}$

Jon Rush

Rush Well Drilling LLC Black River Falls, WI

Paul Sandry

Paul Sandry Plbg & Htg Inc Tomahawk, WI

Steven Sandry

Paul Sandry Plbg & Htg Inc Tomahawk, WI

Michael Santas

Sam's Well Drilling Pardeeville, WI

Kenneth Schaefer

Nicor Investments LLC Slinger, WI **David Schiebe**

Mineral Service Plus LLC Green Isle, MN

Matt Schlueter

Cedar Rapids Win Pump Cedar Rapids, IA

Eric Schmidt

Advantage Plumbing & Heating Inc. Nekoosa, WI

Michael Schmitt

Josh Huemann & Sons Ringwood, IL

John Schoblacher

Luisier Well Drilling Inc. Oconto Falls, WI

Brian Schramm

Headwater Wholesale Verona. WI

Patrick Schreiner

Schreiners Plumbing & Heating Marshfield, WI

Christopher Schultz

Mineral Service Plus LLC Green Isle. MN

Nicholas Schultz

Mineral Service Plus LLC Green Isle, MN

Daniel Schwandt

Mccoy Construction & Forestry Chippewa Falls, WI

Joe Seep

Joe Seep Plbg & Elec Inc. Reedsburg, WI

Ivan Semingson

Semingson Aberle Plumbing LLC Pigeon Falls, WI

Robert Serre

Cliff Bergin & Associates Mequon, WI

Peter Sharpe

Neumann Plumbing & Heating, Inc. Sheboygan, WI

Thomas Shepard

Webster Well Drilling Inc Harshaw, WI

Bruce Sinotte

S&K Pump & Plumbing, Inc. Brookfield, WI

Steven Slager

Central Well Drlg & Pump Service Inc. Brandon, WI **Randol Smart**

Smart Plbg & Htg Inc Butternut, WI

Allen Smith

Bloyer Well & Pump, Inc. Rockford, IL

Christopher Smith

Bloyer Well & Pump, Inc. South Beloit, IL

Zachariah Smoot

Ken Olson Well Inc Eau Claire, WI

Steven Solofra

Solofra Plumbing Burlington, WI

Paul Sorenson

Aahr Well & Septic Inspections New Berlin, WI

Ryan Spatchek

Ryan Spatchek Reedsville, WI

Jeffrey Speth

Judd Pumps & Plumbing LLC Montfort, WI

Daniel Stachowiak

Daniel Stachowiak Daniel Stachowiak Arlington, WI

Eric Stahl Grundfos Rochester, MN

Steven Stahl

Stahl Plumbing & Heating, Inc. Green Lake, WI

Kyle Stair

Wisconsin Well And Septic LLC Waukesha, WI

Brian Stangret

Midwest Elevator & Drilling Waconia, MN

Michael Steffl

Steffl Drilling & Pump Inc. Willmar, MN

Todd Sticha

Nds Drilling Supply Company Inc. Elko New Market, MN

EIRO INEW IVIAIREL, IVII

Steven Styczynski

Kramer Well Service Inc. Weyerhaeuser, WI

Kenneth Sweeney

Ken Sweeney Well Drilling & Pumps Franklin, WI Russell Tallman

Joseph H. Huemann & Sons Ringwood, IL

Eric Thiel

Eric Thiel Plumbing LLC Hilbert, WI

Adam Thompson

A&M Plbg & Pump Serv New Lisbon, WI

Jeffrey Thron

Mantyla Well Drilling, Inc. Lakeland, MN

Richard Thron

Mantyla Well Drilling, Inc. Lakeland, MN

John Treutel

Stratford Plumbing & Heating Straford, WI

Trov Van De Yacht

Leo Van De Yacht Well Drilling Green Bay, WI

William Vande Voort Bill's Plumbing Service

Greenleaf, WI

Jim Vander Galien Sam's Well Drilling

Randolph, WI

Yvonne Vandesand S And K Pump Brookfield, WI

Tom Vandeyacht

Ground Source Inc.

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Ralph Volkman Ralph's Water Conditioning

LLC Black Creek, WI

Vern Wagner

Wagner Plumbing Wautoma, WI

Bruce Walker

Wisconsin Well & Water Systems LLC Grand Marsh, WI

Mark Weber

Weber Well Drilling, Inc. Chilton, WI

Bradley Webster

Brad Webster & Sons Drilling Inc. Poynette, WI Daniel Wehster

Brad Webster & Sons Drilling Inc.

Poynette, WI

Ronald Webster

Brad Webster & Sons Drilling Inc.

Pardeeville, WI

Michael Weidman

Big Moose Home Inspections, Inc.

Winter, WI

Glen Weigel

Gw Plumbing Service Inc Boulder Junction, WI

Steffen Wellstein

Wells, Inc. Rising Sun, OH

Alan Wepking Wepking Pump Serv

Lancaster, WI

David Werner Werner Pump Service

Jefferson, WI

Anthony Weslow Weslow Water Systems Green Bay, WI

Donal M.C. alambana

Brad Wiedenbauer A Wanna Services Inc. Eagle River, WI

Jerome Wojkiewicz Aqua Service Rice Lake, WI

David Woyak 4-D Water Well And Pump Service LLC

Hartland, WI

Lloyd Wurzer Cahoy Pump Service Sumner, IA

Raymond Young Jr.

Chicken Young's Well Drilling Gillett, WI

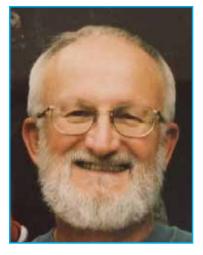
Eugene Ziegler

Frasier's Plbg & Htg Inc Three Lakes, WI

Brian Zink

Marshfield Plbg & Htg LLC Marshfield, WI

IN MEMORIAM



MICHAEL FURSTENBERG

Michael Dillon Furstenberg, age 75, peacefully went to his Heavenly home on June 12th, 2019. He was born August 16, 1943 in St. Louis, Missouri to the late Geraldine (Dillon) Shannon and Dr. Robert Furstenberg. After graduating

from Appleton West High School, Michael attended UW-Madison and UW-Oshkosh. Being an Eagle Scout, Michael enjoyed a position as Director of the Boy Scouts of America (Upper Michigan). He also became a Naturalist for the Wisconsin State Parks. Having a passion for clean drinking water, he founded Clean Water Testing & Well Inspections, which employed his son and daughter for a time, and many other employees, until he sold the business in his retirement.

Michael's interests were anything related to God's creation, especially bird-watching. Much of this was done at their dearly-loved cabin in northern Wisconsin. Michael was an avid Bible-prophecy student and fountain pen collector. Grampy loved his grandchildren and was so very proud of them.

Michael is survived by his wife, Dianne (McClone) Furstenberg; son, Rayne Furstenberg; daughter, Kimbre (Tim) Kiley; grandchildren, Cana Kiley, Cooper Kiley, Letty Kiley, and Cecilee Kiley; and siblings, David (Susan) Furstenberg and Noel (Joel) Grunwaldt.

A Memorial Service was held for Michael at 2 PM on Friday, June 21, 2019 at the Wichmann Funeral Home, 537 N. Superior St., Appleton, WI 54911 by Pastor Joel Smith. Inurnment will be in Highland Memorial Park.

Michael's family would like to extend their heart-felt appreciation to the Theda-Care Hospice staff for their sincere care and his good friends for the friendship, prayers, and support they offered.

To leave a special message or condolences for Michael's family, please visit wichmannfuneralhomes.com.



TRAVIS MULDER

Travis Mulder, 30, of Waupun, passed away at home with family by his side Monday, July 22, 2019.

Travis was born September 8, 1988 in Waupun, the son of Steven and Marilyn Alsum Mulder. Travis graduated from CWC in 2007, and then

Dordt College in 2011. After graduation he worked for Sam's Well Drilling in sales. On April 27, 2018 he married Jessica Eisenga at Edgewood Community Church in Waupun. Travis loved his wife and spending time with family. He enjoyed his work, fishing, hunting, and hanging out with his friends.

Travis is survived by his wife, Jessica; his mother, Marilyn Mulder of Waupun; brothers and sisters: Brad (Lyn) Mulder of Chicago, Carrie (Jeff) Stiemsma of Waupun, Jeremy (Sara) Mulder of Waupun, and Eric (Erica) Mulder of Waupun; fatherin-law and mother-in-law, Steven (Tami) Eisenga of Fox Lake; a sister-in-law, Jennifer (Brent) Weiland of Wautoma; a brotherin-law, Wesley (Chelsea) Eisenga of Markesan; and several aunts, uncles, cousins, nieces and nephews.

Travis was preceded in death by his father, Steven J. Mulder; grandparents: Willis (Ramona) Mulder and Newton (Theresa) Alsum.



Providing & Protecting Wisconsin's Groundwater

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WWWA CALENDAR OF EVENTS

SEPTEMBER 19, 2019

WPWS Fall Golf Outing Trapper's Turn Golf Club Wisconsin Dells, WI

SEPTEMBER 23-24, 2019

2019 NGWA Conference on Fractured Rock and Groundwater Burlington, VT

NOVEMBER 7, 2019

Rothschild Continuing Education Central WI Convention + Expo Center 10101 Market Street Rothschild, WI 54474

DECEMBER 3-5, 2019

2019 NGWA Groundwater Week Las Vegas, Nevada

JANUARY 8-10, 2020

2020 Wisconsin Groundwater Conference Kalahari Resorts & Conventions Wisconsin Dells, WI

MAY 14, 2020

WPWS Sporting Clays Event Triple J Wing & Clay Brillion, WI