GROUND WATER CANADA

www.groundwatercanada.com

SPRING 2016

What young drillers want

Inside: B.C. show coverage, drilling issues, and more

Pompco

Since 1977

WHEN QUALITY MEETS RELIABILITY

CANADIAN WATER PUMP MANUFACTURER

PISTON • CENTRIFUGAL • SUBMERSIBLE • BOOSTER PUMPS

PROUDLY MADE IN CANADA

- ORDERS **SHIPPED IN 24 HOURS**
- **TRUSTED BY** PUMP **PROFESSIONALS**
- **BUILT BY CANADIANS** FOR CANADIANS
- **5 YEAR WARRANTY**
  ON ALL SUBMERSIBLE & JET PUMPS
- **OTHER MODELS**
  PJC, OC/OCB, SSPC, PL, SH, SL

PSW

MJ

S-275

ALSO AVAILABLE IN **SOLAR POWER**

800-263-1581
WWW.POMPCO.COM

Spring 2016
Vol. 42, No. 2

Annex Publishing & Printing Inc.
P.O. Box 530, Simcoe, Ontario N3Y 4N5
(800) 265-2827 or (519) 429-3966
Fax: (519) 429-3094

Managing Editor | Laura Aiken
laiken@annexweb.com
(416) 522-1595

Editor | Colleen Cross
ccross@annexweb.com
(519) 428-3471

Sales Manager | Ed Cosman
ecosman@annexweb.com
(519) 429-5199, (888) 599-2228, ext 276

Account Coordinator | Barb Comer
bcomer@annexweb.com
(519) 429-5176, (888) 599-2228, ext 235

Media Designer | Emily Sun
esun@annexweb.com

Group Publisher | Martin McAnulty
mmcanulty@annexweb.com

Director of Soul/COO | Sue Fredericks

Publication Mail Agreement #40065710.
RETURN UNDELIVERABLE CANADIAN ADDRESS TO CIRCULATION DEPARTMENT, P.O. BOX 530, SIMCOE, ON N3Y 4N5
e-mail: subscribe@groundwatercanada.com

ISSN 0383-7920

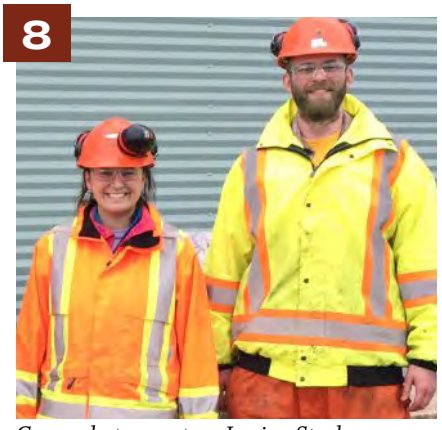
Circulation
e-mail: subscribe@groundwatercanada.com
Tel: 866-790-6070 ext. 208
Fax: 877-624-1940
Mail: P.O. Box 530,
Simcoe, ON N3Y 4N5

Subscription Rates
Canada - 1 Year $42.00
(plus 5% GST - $44.10)
U.S.A. - 1 Year $60.00

Serving the Canadian Ground Water industry for 42 years.

www.groundwatercanada.com

GROUND WATER CANADA



Cover photo courtesy Jessica Steele

Departments

Features

ON THE **WEB:**

U of Calgary receives over $1M in water research funding
University of Calgary geography professors Scott Jasechko and Brent Else will explore ground water movement in the Alberta oil sands, carbon transport via flowing ground water and other areas of research in a project backed by the Canada Foundation for Innovation (CFI) John R. Evans Leaders Fund – a fund designed to help universities attract and retain researchers by providing access to cutting-edge research tools.

Hunting For Good Hires

by Colleen Cross

Many water well drilling businesses say they have trouble attracting quality, long-term employees, a problem faced by other skilled trades and industries across Canada.

Canadians have been lamenting the lack of qualified employees in certain sectors – a skills gap – for several years now. The Canadian Chamber of Commerce identifies skills shortages as one of the top barriers to competitiveness, and the Canadian Apprenticeship Forum has led the way in promoting the rewards of a career in the trades through advertising campaigns, surveys, skills competitions and other programs.

We're not just talking about technical skills such as those required for certification. The Chamber reports that poor literacy, numeracy and digital skills are limiting productivity in segments of Canada's workforce.

Other hard-to-define skills often are taken for granted but much prized by employers. Common sense, good manners, a positive attitude, critical thinking and empathy fall into this category. So do situational awareness and problem solving.

> Actively hunting for star performers may bring home better results

But while it's clear there is a need for workers who are trained as water well drillers and pump installers, it also appears there are trained and talented people out there looking for that ideal boss whose values match their own.

The problem is not just finding qualified workers but also attracting and retaining the stars.

If it's a straightforward case of not finding the employees you need, you may want to try a more aggressive strategy. Human resources trainer and author Eric Chester suggests employers hunt rather than fish for employees. While it may be tempting to simply place an advertisement and reel in the applicants as they come downstream, actively hunting for star performers may bring home better results. Get involved with high schools and colleges through trade shows and by donating equipment, suggest and help sponsor a skills competition through the Canadian Apprenticeship Forum and look within your own ranks for talent. Do you have an employee who possesses the skills or core values you hold dear? Look to your shining examples for inspiration – and for referrals. They may well have like-minded friends with similar values who would be good candidates for an apprenticeship.

If it's a case of finding but not securing good employees, you may need to up your game.

One way to do that is to provide training in the so-called soft skills. In a recent poll of millennials by online training company Mindflash, the skills most sought after were project management, interpersonal communication and problem solving. Providing training in these areas and others is good for workers because it invests in their personal development. It's good for your business because having literate, positive problem-solvers represent you can't help but enhance your reputation as a professional service provider.

You may also want to widen your talent search. For example, if you're not already doing so, consider bringing more women on board. In our cover story, "What young drillers want," Carolyn Camilleri talks with several up-and-coming drillers from Fleming College, including a female student and a recent female graduate now working in the field. Both are skilled, competitive and up to the physical demands of water well drilling.

As added incentive, know that, according to new research by business advisory firm Korn Ferry, women scored higher than men on nearly all emotional intelligence competencies, among them coaching, conflict management, organizational awareness, adaptability and teamwork.

Clearly there are other labour-related issues at play in the industry too complex to explore adequately in this space, some of which boil down to the value of working together as an industry to common standards and goals.

The Canadian Ground Water Conference and Expo is a great place to talk about these issues and to compare notes with fellow contractors. The event, hosted by the Ontario Ground Water Association and set for June 8-11 in Niagara Falls, welcomes ground water professionals from across the country.

Ground Water Canada will be there, and we encourage you to flag us down and tell us what's on your mind!

Colleen

@GroundWaterMag


CHANCE OF IRRIGATION | 100%
FRANKLIN
COMPLETE AGRICULTURE PUMPING SYSTEMS
You can't predict the weather, but you can predict Franklin Electric. Rely on the manufacturer with the complete system solution – pump, motor and controls – and the best field service team in the industry. No more pointing fingers when you face a challenge or have a question. One phone number and one team helps you produce your desired yield.
Our Craftsmanship. Your Craft.
Franklin Electric
franklinwater.com

SAXE NAMED ENVIRONMENTAL COMMISSIONER OF ONTARIO

Dianne Saxe, one of Canada's most respected environmental lawyers, was appointed Ontario's Environmental Commissioner in December. Saxe has 40 years' experience and is a Certified Specialist in environmental law and litigation.

Saxe told *Ground Water Canada* her new role involves two main tasks: to serve as guardian of the Environmental Bill of Rights on what she calls "decisions too important to be left to the few," and to monitor, evaluate and report on government progress. "My job is to hold governments accountable," Saxe said.

As commissioner, she will issue at least three reports each year on matters concerning energy, climate and the environment.

"The challenge is deciding which topics to write about," she said.

Saxe intends to draw attention to policy bottlenecks and to raise awareness about climate change and its implications.

As a lawyer, Saxe has dealt with thousands of cases relating to water quantity, quality and pollution.

ONTARIO AND B.C. JOIN NGWA AS AFFILIATES

The British Columbia Ground Water Association (BCGWA) recently became an Affiliated Organization of the U.S. National Ground Water Association (NGWA). The move is intended help establish a better working relationship with the association and facilitate access to its products and resources, including assistance with marketing BCGWA events and access to industry speakers, the BCGWA said. The NGWA passed a bylaw late last year to allow individual Canadian provincial associations to be Affiliate Organizations.

The Ontario Ground Water Association, which is also affiliated with NGWA, will host a Canadian national conference June 8-11 in Niagara Falls, Ont.

B.C. WATER SUSTAINABILITY ACT IN FORCE

British Columbia's much-anticipated Water Sustainability Act (WSA) came into force on Feb. 29 on the eve of the British Columbia Ground Water Association's trade show and conference in Kamloops.

The act and regulations update and replace the province's old Water Act and are designed to help protect water flows for ecosystems and fish, the B.C. government said in a blog post announcing the news. The legislation includes new and improved requirements for ground water use and licensing, well construction and maintenance, dam safety, and compliance. Much of this work was informed by public comment and the province's policy intentions papers released last summer, the post noted.

For the first time, those who use ground water for non-domestic purposes such as irrigation, industrial use, water bottling or municipal water systems will require a water licence and pay fees and annual water rentals just like surface water users. For existing ground water users, the regulations provide a three-year transition period in which to apply for a licence; application fees will be waived during the first year.

"Fees and rentals have been set to only cover the cost of administering the new Water Sustainability Act including, for the first time ever, groundwater regulation. We consulted with key user groups including agriculture, industry, local government and conservation organizations," the B.C. Ministry of Environment said in an email.

For specific direction on how to apply for a ground water licence, visit www.frontcounterbc.gov.bc.ca/. For more information, visit www.gov.bc.ca/water.

NEW BRUNSWICK EMBARKS ON WATER STRATEGY

The government of New Brunswick has invited the public, stakeholders and First Nations to participate in a discussion about how water is managed and protected.

The province has issued a survey, entitled "Working Together to Build a Water Strategy for New Brunswick," that seeks input on such questions as "What are your biggest concerns related to water in New Brunswick?" and "What do you feel should be the water-related priority areas for government?"

Open houses were held in communities across the province from March 14-23 to discuss issues introduced in the survey.

The public comment period was set to close on April 29. Following this date, a "What We Heard" document will be prepared and made available to the public on the Department of Environment and Local Government's website at www.gnb.ca.

The process of drafting a water strategy will then begin.

DOOSAN

Portable Power

WE DO MORE THAN DESIGN EQUIPMENT.

WE POWER YOUR DRILLING SUCCESS.

At Doosan Portable Power, we're known for engineering solutions that make customers more productive. Visit www.DoosanPortablePower.com to find the dealer nearest you and find out how we can help you achieve:

- **Maximum fuel economy**
- **Unparalleled productivity**
- **Region-specific emissions solutions**

600V GENERATORS

HIGH PRESSURE AIR

NEW VERTICAL L20

DoosanPortablePower.com | **800.727.8457**

WHAT YOUNG DRILLERS WANT

Finding new drillers isn't easy

It's a familiar story. When new drillers are needed at J.B. Wilson and Son Well Drilling, a family business in the St. Thomas-Tillsonburg area of southwestern Ontario, management tries several avenues.

by CAROLYN CAMILLERI

"Typically, there's word of mouth that works sometimes, and we put ads in the local papers and online, and we've tried ads in the Ontario Ground Water Association magazine as well," says Matt Wilson, vice-president and a third-generation driller. "We seem to have had just as much luck – or equal lack of luck – getting guys from the college and having it work out as we have through other normal channels, whether it's a neighbour's kid or just a local guy looking for work or somebody who is searching for a construction-type job."

"In general, it's been challenging to find drillers," Wilson says.

And yet, Gordon Bailey, who has been in the industry since 1973 and an instructor in Fleming College's resources drilling and blasting program for more than 30 years, says the number of students has increased dramatically.

"We have women now, where we never used to have that before. We very seldom had an international student; we now have anywhere from two to eight in any given semester, from all over the world. That's a change," Bailey says.

So what's the problem?

"Up until recently, it's been they haven't liked the compensation package we've been offering because they can move out West and make twice as much money," Wilson says.

Craig Stainton, OGWA's executive director, agrees that the westward lure has had an effect.

"There has been a draw on graduates from Fleming to out-of-province positions and, with the problems with oil prices, this has stopped some of the bleeding, but it is early days to anticipate people returning," Stainton says.

This is especially true of graduates going out of country.

"You'll get a student that's 19, 20 years old, and the first year he's out, he's almost making $100,000, depending on what industry he goes into," Bailey says. "He has to work some long hours for that, but the guys that are going to the U.S., they're making $150 an hour. They're making 50 cents on the dollar just by being in the U.S. and sending the money home."

But the lure of big paycheques in other industries such as oil is not the only problem facing the water well drilling industry.

"If a licensed driller decides to take a hiatus over a one-year licence cycle, they lose their licence and must negotiate with the MOECC [Ministry of Environment and Climate Change] as to whether they can renew or must start over," Stainton says. "Bottom line, despite what the graduation figures have been, the actual labour pool of licenced technicians available for 'active duty,' so to speak, is much smaller."

It might help if the program were structured differently.

"Especially our industry, it's more of a hands-on type of application where more of an apprenticeship structure would work better than [a situation where students] go to school for two years and then come out," Wilson says. "But we've been working with the ministry for 25 years trying to get that to happen and every time it gets close, it disappears, so we're not holding our breath."

And there is another problem, one that affects compensation and competition within the province.

Photo courtesy Jessica Steele

Graham Klammer, Jessica Steele and Mike Koburg, students in Fleming College's resources drilling and blasting program, count job security, an unstable economy and long-term health among their concerns.

"Compensation packages are a large part of the problem and that directly, in my mind, relates to the smaller-than-necessary margins drillers are working on because they insist on competing with each other to a point that erodes the value of their services," Stainton says.

"If a septic system for a new home costs $25,000, why does the well to fill it cost less than half of that? There are players in the well-drilling field who do not follow the regulations. Following the regulations properly costs a lot of money," Stainton says. "The renegades, those who we don't want as members, are out there pricing against our members who follow the regulations."

OGWA members that have invested money and pay overhead to work in accordance with regulations either don't get the jobs or work on a much smaller margin, he says.

"The problem really is with the province, the Ministry of Environment and Climate Change," Stainton says. "If they would effectively police the regulation and put those who do not follow the regulation out of business, it would give those who do it right the ability to make a bit more and, surely, up the wages of their staff."

"Well drilling is a hard physical job where the compensation packages today are not typically keeping up in comparison," Stainton says.

Compensation aside, Bailey says, students choosing drilling as a career have other expectations, too – and that isn't a bad thing.

"When we first started, it was: 'I want to get a job. I want to get a job drilling.' Now, they're getting a little more refined with their research: 'I want a job drilling, but I'm looking for benefits. I'm looking for a particular lifestyle,' " he says.

Because students these days are more particular, they are more likely to succeed once they get there, he says, adding

that options are plentiful, among them big companies, small companies, and different lifestyles and living conditions.

Mike Koburg, a student in Fleming's drilling and blasting program, is keen to start working. At 35, he has a variety of work experience and a business degree. He did his research before he signed up.

"If you're willing to get dirty and travel, you'll always have a job, because it is construction, but it's also a niche market, so if you're very good in your niche, you're always going to have a job," says Koburg, who hopes, with time and experience, to be in a supervisory or management role.

Graham Klammer, 21, switched from engineering to drilling when he realized how much he enjoyed the hands-on work and the challenges of water wells.

"Everything, every day – all the challenges are different. Even if you go to the next door neighbour's house, you may have to go another 200 feet deeper just to find the water, so you're always on your toes, figuring it out. It's constantly thinking, predicting, and seeing what you're going to be able to do," says Klammer, who would like to combine drilling with home construction as a side business or as part of a larger company.

Jessica Steele, 22, says the success rate for graduates impressed her, but more than that, getting into this field is a lifestyle decision.

"It's a job where you can be travelling and it's all hands-on and outside, and that's my kind of thing," Steele says. "Definitely, I want to be travelling with my work, so whatever I get into, I want to move around and see the world. The lifestyle: that's key for me."

One of the few women in the program – six out of 100, she says – Steele hasn't had a hard time at Fleming.

"It's very inclusive," she says, adding that she has construction experience as well. "I don't really have any problems here. They're fairly good."

Bailey Holmes, who graduated in spring 2015, says she worried initially about being accepted into the industry.

"Being a female in this industry can be difficult," says Holmes, who started in geology but switched when she discovered her fascination with well drilling. "For me, I found employers who would attend the job fairs at Fleming would doubt me or my capabilities due to my size and the fact that I look very girly when I am out of my work clothes and coveralls."

But that made it more satisfying for Holmes to prove them wrong: the company that hired her had her on controls within just a couple weeks of helping on the DR-24.

"I am naturally a very competitive person and, in this industry, I feel that is what helps me most with being female because I don't want to be treated any different than the guys," she says. "I believe a team is only as strong as its weakest member and that drove me to never be that person."

"I am no longer worried about this because, where I am, everyone is great and I really am treated as an equal," she says.

Asked about their worries, Steele, Koburg, and Klammer discussed job security, economic swings, and, because of warnings from experienced drillers, long-term health. However, of particular concern was the environment, which Gordon Bailey says is common.

"I've seen a greater appreciation for the environment and the role the driller plays in protecting the environment, whether it's the integrity of the environment before they start drilling or ground water as a resource," he says. "That's been embedded in them not only here, but also the water well drillers that are out there in Ontario, because now we have mandatory training and that philosophy is hammered home and now it's second nature."

"We're becoming much more professional and much more knowledgeable and much more in tune with the environment," Bailey says.

Asked how the industry could be more appealing to students, Bailey says it isn't up to the industry.

"The industry is what it is. It's up to the students to accept the industry for the way it is or not, because there's going to be travelling or there isn't going

3 Wire Pumps Now Easier to Install

Known For
Service - Quality - Selection

Control Switch

Combines Pressure Switch and Control Box into One

- Extra heavy-duty pressure switch
- Heavy-duty run capacitor included eliminates relay and start cap
- Works on all brands of motors

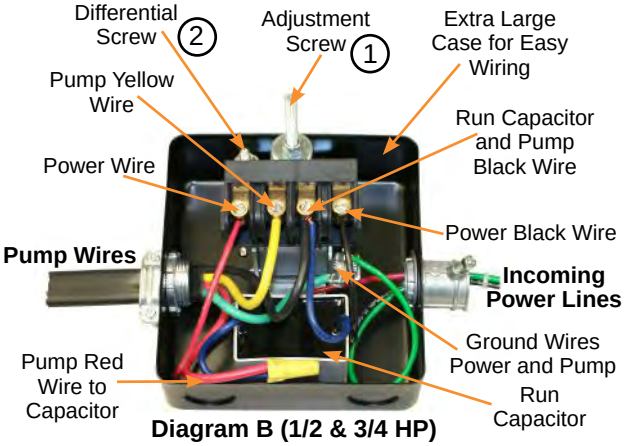


Diagram B (1/2 & 3/4 HP)

ONLY Install Control Switch
(Control Box Eliminated)
Save Time and Save Money
(1/2HP thru 1-1/2HP - 3 Wire Pumps)

Need to Splice Heavy Wire to Pump Cable?

Known For
Service - Quality - Selection

Multi-Size Wire Connector

(#4 or #6) to (#10 or #12)

- Heavy brass nickel plated
- 2 set screws hold wire
- Hex wrenches included
- 2 shrink sleeves for each wire connector

Part No.
MWCO4124

MERRILL™
#1 In The Industry for
Splice Kits and Heat Shrink Sleeves

Storm Lake, Iowa 50588
1-800-831-6962 ● www.merrillmfg.com

to be travelling. It's going to pay this much money, not this kind of money. So it's not the tail wagging the dog, it's really the other way around," he says. "The companies come and they do a presentation, and we try to give the students good insight as to what's going to be expected of them once they leave here so they can make a good decision as to what program or what industry they want to get into."

Holmes suggests companies get involved with the Fleming program, either on the advisory board or by volunteering to do presentations – and, of course, participating at the job fair.

Stainton points to an important distinction between drilling as a job and drilling as a calling.

"My advice is that the drillers must remember that for every employee they find for which well drilling is a 'calling' – and that person will do it no matter what the compensation level – there are those that consider it just a job. As a job, it must stand up to comparison, be it compensation, satisfaction, perks – any and all ways you look at it, it must stack up as a reasonably well-paid job, one where you can hope to earn enough to raise your family."

Holmes hints at that distinction with her advice for students considering a career in drilling.

"Really consider if you are cut out to work early mornings and late nights or in the outdoor elements. Sometimes, you will work 12-hour days or longer in the rain, snow, or whatever Mother Nature decides to throw at you. There'll be days where you can barely even hear the rig running because you'll have so many mosquitoes and black flies in your helmet," she says.

"That being said, I can promise you will see some of the most beautiful sunrises and sunsets of your life. You will always get to witness those pretty rainbows after the storms that pounded on you all day and, even if it's minus 35, it's nothing that a woodstove and a hot bowl of chili can't cure."

That's the kind of attitude Bailey likes to see.

"What puts gas in my tank is the students that are still coming here, they want to work outside. They want to get their hands dirty. They want to work long hours. This is a niche for them, and it's so rewarding to have people still like that," he says.

It used to be work only farm kids could handle, Bailey says, but city people who have been exposed to an outdoor lifestyle are in the program, too.

"It's refreshing to see there's still people that want to go out there and are going to be successful."

Carolyn Camilleri is a Toronto-based writer, editor, and content strategist. She has been writing for consumer and trade magazines, as well as businesses and organizations across the country, for more than 15 years.

FOR MORE ON CAREERS IN DRILLING, VISIT WWW.GROUNDWATERCANADA.COM > BUSINESS > STAFFING

QUALITY. SERVICE. INNOVATION. INTEGRITY.

FIELD TESTED TOUGH

ALL NEW 4" Submersible Motors from Flint & Walling

Years in development.
100% factory tested.
100 % testé en usine

YOUR PEACE OF MIND IS OUR TOP PRIORITY.®

Votre tranquillité d'esprit est notre priorité absolue™

C US
Drinking Water
NSF/ANSI 61

DESIGNED • MACHINED • ASSEMBLED IN THE USA

F&W® FLINT & WALLING

1-877-710-7867 | www.flintandwalling.com

Sustainability
ground water matters

produced and hosted by
Ontario Ground Water Association

Canadian Ground Water CONFERENCE & EXPO 2016

The Canadian Ground Water Conference & Expo 2016 was borne from discussions within the Ontario Ground Water Association (OGWA) on the demise of Canadian Ground Water Association (CGWA). These discussions led to a feeling that, in order to bring the industry together and discuss a successor to the CGWA, a CanWell type of event was required. The OGWA Board of Directors decided to consult the Canadian Provincial Associations and when their feedback was positive, the decision was made to produce and host this event. The title was settled on to avoid issues that might arise around calling this "CanWell". We hope there is a CanWell and more in Canada's future; we'll see how discussions progress in June on an Association of Canadian Associations.

JUNE 8 / WEDNESDAY

The traditional OGWA Golf tournament begins these events at the Whirlpool Golf Course. This is one of Canada's most highly rated and renowned public courses. The course officially opened on July 2nd, 1951, and was designed by famous golf course architect Stanley Thompson; it is located in a spectacular setting against the backdrop of the Niagara River Whirlpool and Gorge. Transportation is provided leaving the Marriott Gateway at 11:15 am with a shotgun start at 1:00 pm. A cocktail reception and dinner follows in the Whirlpool Clubhouse with return transportation to the hotel.

JUNE 9 / THURSDAY

A lunch at the Marriott Gateway Hotel will be followed by an address from Dr. Alfonso Rivera, Chief Hydrogeologist of the Geological Survey of Canada. Dr. Rivera studies aquifer systems in Canada to inventory our ground water resources. Dr. Rivera's first professional book, *Canada's Groundwater Resources*, was published in 2014. This address will launch the National Team Meeting. Delegates from Canadian Provincial Associations and interested parties will discuss the creation of a replacement for the former Canadian Ground Water Association (CGWA). At 7:00 pm, a Welcome Reception will be held on the Expo Floor. This gala reception and ribbon cutting is at the Scotiabank Convention Centre, directly across the street from the hotel.

JUNE 10 / FRIDAY

Enjoy a full day of events with a Keynote speaker luncheon address by William M. Alley, the National Ground Water Association's Science and Technology Director, plus other sessions including "Water Systems Mechanical Installations Best Practices", "Water Education, Beyond the Classroom 20 Years Later", "Providing Sustainable Water Sources in Africa" and others. The Expo Trade Show Floor is open from 10:00 am until 4:00 pm. The day wraps up with the President's Gala Reception & Dinner with OGWA Awards and a Keynote address by David Coletto, Founding Partner & CEO of Abacus Data, who will provide strategic advice for engaging with the Millennial Generation.

JUNE 11 / SATURDAY

The final day begins with the OGWA Divisional Meetings. The Expo Floor opens at 9:00 am and closes following lunch inside the trade show. The 2016 NGWA McEllhiney Lecture follows. Peter S. Cartwright, PE, will discuss ground water contaminants and treatment options. More technical sessions and the OGWA Annual General Meeting follow in the afternoon.

The last event on Saturday is a dinner and tour of the Ravine Vineyard Estate Winery. The Ravine practices biodynamic and organic farming as a philosophy on a family owned and operated 34 acre estate purchased by the family in 1867. Ticket includes transportation to and from the Ravine Vineyard, leaving the hotel at 6:30 pm.

Canadian Ground Water Conference & Expo 2016

June 8 - 11, 2016 | Scotiabank Convention Centre, Niagara Falls, Canada

Join the Canadian ground water industry for insights and networking opportunities. The Canadian Ground Water Conference & Expo includes product and industry sessions on June 10-11. We are pleased to announce that one of our featured presenters is the 2016 NGWA McEllhiney Lecturer, Peter S. Cartwright. He will share his knowledge on "Groundwater Contaminants and Treatment Options." The full conference package includes tickets to the President's Reception & Dinner, Welcome Reception and Keynote Luncheon as well as a pass to the Expo.

Save Today! Register now. **www.mccregistration.ca/ogwa**

Early Bird (Member): **$499.00** **+ HST***

Early Bird (Non-member): **$599.00** + HST*

Save Now! Early Bird available until April 28, 2016

*Includes: (1) Full Conference Access, (1) Ticket to the Welcome Reception, (1) Expo Pass and (1) Ticket to the President's Reception and Dinner.

See all Conference Packages & Pricing as well as all additional Event Ticket pricing on the website!

Sustainability
ground water matters

Platinum Sponsors:

Franklin Electric

Lackner McLennan Insurance Ltd.

GRUNDFOS

Pentair

Produced & Hosted by the Ontario Ground Water Association

The tradition continues!

This year's location, Whirlpool Golf Course, is one of Canada's most highly rated and renowned public golf courses. Located in a spectacular setting against the backdrop of the Niagara River Whirlpool and Gorge, it is sure to be a great day of golf and networking.

WHIRLPOOL GOLF COURSE EST. 1951

Wednesday, June 8th

Individual Player: **$150** **+ HST**

Fees include green fees, shared use of golf cart, return transportation to/from course and prize awards dinner.

Ravine Vineyard Estate Winery Event

June 11, 2016 | Niagara Wine Country

Event Ticket: **$150** **+ HST**

OBSERVATION WELLS 101

Why, where, how and when they should be installed

On occasion water well drillers are asked to install an observation well alongside a pumping well. The reason for this is to obtain water levels in a well that are not influenced by having a pump in the well.

by KEN HUGO

Observation wells can be used through the life of the project, not just at the time of the initial aquifer investigation.

Let's look at just what information we get from observation wells and what they can determine.

BETTER DEFINED AQUIFER PARAMETERS

From a pumping test one can determine three parameters: the available head in the aquifer, the transmissivity of the aquifer and the storativity. The available head is the distance between the static water level and a suitable lowermost pumping level. The transmissivity is related to the permeability of the rock and such water characteristics as viscosity and density. Both of the parameters can more or less be determined using a pumping well alone.

Observation wells can be used through the life of the project, not just at the time of the initial aquifer investigation.

The last parameter, the storativity, is related to the compression of the water and the rock (in a confined aquifer). There is too much turbulence in a pumping well for this parameter to be accurately calculated: for this an observation well is needed.

EFFECTS OF WELL BORE LOSSES

Restrictions around a well bore, either due to inefficient perforations or formation damage during drilling, can lead to additional drawdown of water levels in the well, a situation as shown in Figure 1. Usually a long enough pumping test, or step test, can be done to show the effects of this well bore skin. However, more accurate determination of this feature is much more readily undertaken if observation well data is present.

EXTENT AND INFLUENCES OF BOUNDARIES

Sometimes an aquifer boundary may be present and one wishes to see how this boundary influences the well productivity. A boundary may either be a recharge boundary, such as a river or lake, or an impermeable boundary, such as the end of the aquifer. Placing the observation well between the pumping well and the boundary can help you determine if the boundary has an effect on long-term well yield.

WATER LEVELS IN THE AQUIFER

Frequently concerns are expressed that the aquifer is drying up, or one wishes to know if there is any evidence of aquifer recharge. Water levels in observation wells are well placed to study this because they are not subject to extreme fluctuation in water levels such as are seen in pumping wells.

These observation wells may measure regional aquifer levels or may be placed between one owner's production well and another owner's if one owner expresses concern about pumping from another source.

WATER LEVELS IN OTHER AQUIFERS

Observation wells can be used to show that a well is obtaining water from an isolated aquifer,

or perhaps that the aquifer is connected to other aquifers or surface water.

Changes in water levels in an observation well that records water levels in different aquifers or that measures changes in the water table can be used to establish if the water supply aquifer is connected to other aquifers or the surface.

CASES OF DECLINING WELL PRODUCTIVITY

Wells may lose productivity over time due to bacterial or chemical encrustation and corrosion or a lowering of water levels in the aquifer.

The first is a local issue to be dealt with by the well owner. The second may involve larger considerations.

While these effects can be determined in the pumping well itself (for instance, by shutting in the well and allowing the water level to return to static), operational and logistical considerations – and even legal proof – may be better obtained through data from an observation well.

INVESTIGATIONS IN FRACTURED AQUIFERS

Changes in water levels in a fractured aquifer due to pumping are hard to predict using data from the pumping well only. Drawdown may be observed at long distances within the fractures and only short distances in the rock matrix, at least during a short-term pumping test. Placement of several observation wells may give a more accurate realistic determination of where drawdown is occurring.

INITIAL WARNING OF ADVERSE CHANGES IN AQUIFER QUALITY

Sometimes contamination may not be initially present in an aquifer but a potential for contaminant migration towards a water supply well may exist. Examples would be salt water intrusion in aquifers close to coastal areas, or contamination of aquifers near industrial sources. An observation well, where samples can be collected, may be used to provide warning of future problems with the water supply and allow corrective actions to be taken before contaminated water is pumped into a distribution system.

DESIGN FEATURES

A number of design features should also be taken into consideration when constructing an observation well. The well should record the water level in one aquifer only. Multiple aquifer completions complicate what the data is telling us and should be avoided.

Frequently the question is asked, "At what distance should an observation well be placed from a producing well?" Unfortunately there is no simple answer to that. The ideal distance depends on the time of the pumping test, and the aquifer transmissivity and storativity. As the point of the pumping test is to determine the last two parameters, it is difficult to determine in advance the ideal placement.

To estimate where an observation well should be placed, the aquifer parameters

MASSENZA
DRILLING RIGS

Web site: www.massenzarigs.it
E-mail: info@massenzarigs.it
Phone: +39 0521 825284

Drilling Experience since 1921

MASSENZA MI28
DRILLING RIG

Automatic rod changing arm
Only One Operator

61,700 lbs Pull Back
14,800 lbf·ft Torque
Speed 120 RPM
1,000 CFM at 365 PSI Air compressor

ON WESTERN STAR TRUCK

WORLD CLASS RIG IN CANADA

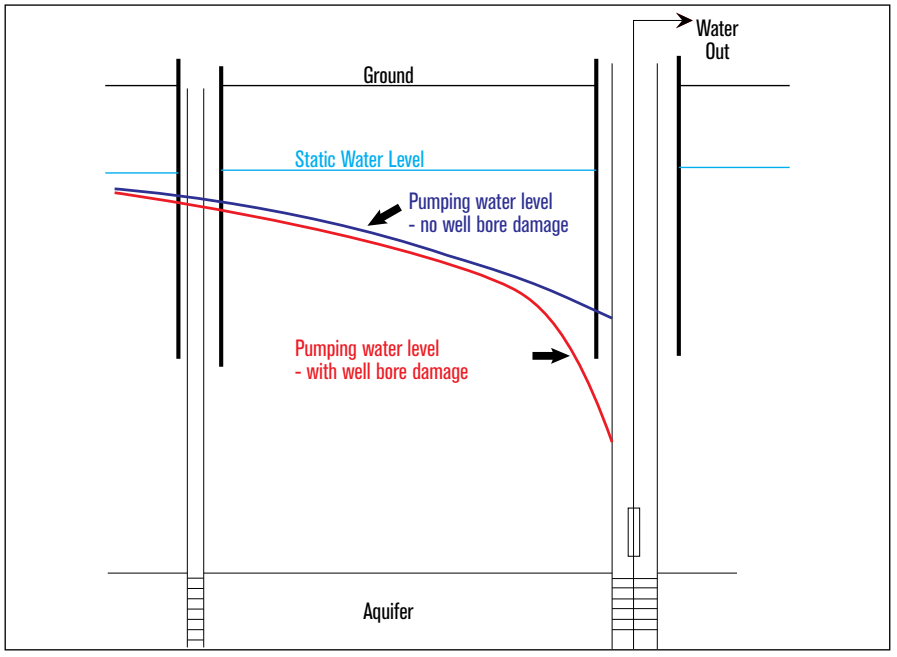
EUROPEAN ENGINEERING

Visit with us at the Ground Water Conference & Expo 2016 on June 10 & 11.

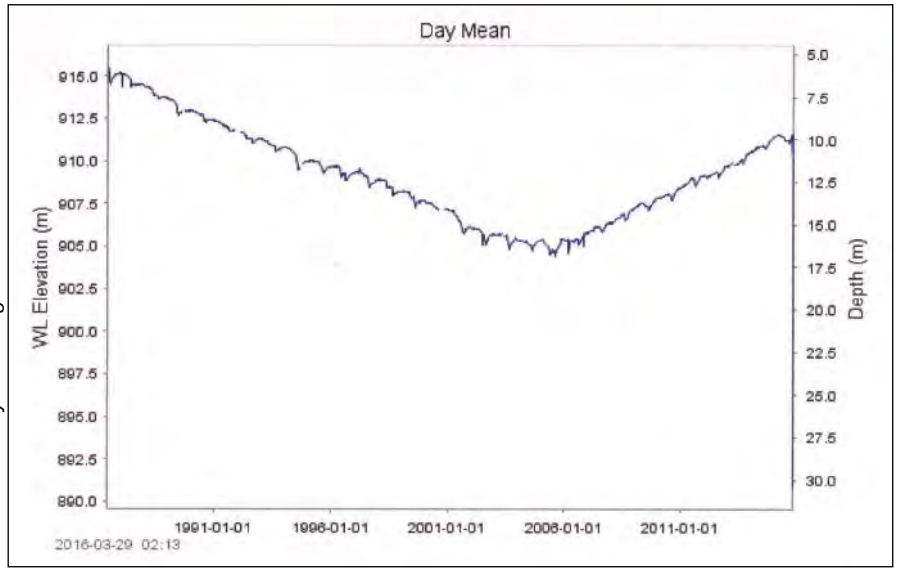
SIMOR Industrial Solutions Ltd.

SALES and SERVICE in CANADA

Web site: www.simorltd.com
E-mail: info@simorltd.com
Phone: +1 855 222 6555 (Toll free)



Observation wells sometimes reveal the effects of well bore losses. Restrictions around a well bore, either due to inefficient perforations or formation damage during drilling can lead to additional drawdown of water levels in the well.



Charts courtesy Ken Hugo

Observation wells can be useful in observing water levels. Pictured is an Alberta Environment observation well near a water supply well for a village in southern Alberta. Water levels were observed to decline until the water supply well was abandoned, then rise again.

may be estimated and rough calculations can be done. The observation well should be placed outside of the zone of damage and non-laminar flow around the pumping well, so a minimum distance of around 5 m should be observed. A recommended maximum distance for a pumping test project would probably be on the order of 100-150 m.

An observation well placed close to a pumping well may be useful in defining aquifer parameters and evaluating the well bore losses but less useful in determining the regional water levels. Observation wells to determine regional aquifer levels should be placed as far as possible from any large supply well.

One should inquire into other reasons to place an observation well such as if a boundary or potential source of contamination is to be investigated or if the observation well should be placed between two supply wells (or as far away as possible from a secondary supply well).

What diameter should observation wells be? With water level meters and modern transducers, an observation well can have a diameter as little as 2.54 cm (one inch). However, if one wishes to obtain a water sample from an observation well, a minimum diameter of 5.08 cm (two inches) is recommended. Due to availability of supplies and drilling methods, observation wells with standard domestic well diameters are often installed, which is fine. An observation well may be used as a back-up supply well, in which case the diameter may be the same as the main supply well.

Observation wells, like other wells, can get plugged by biological or chemical encrustation. An occasional check on an observation well to make sure the screen is not plugged may be advisable to confirm the accuracy of the readings. This can be done by way of a short pumping test.

Lastly, it is sometimes found that when a new supply well is to be installed, an existing unused well is at the site. Frequently the old well is not ideal as an observation well due to the distance to the supply well, because the old well obtains water from a different aquifer or from multiple aquifers, or even because no data is available on the old well construction details.

Nevertheless, with modern transducers the added cost and effort to measure water levels in an unused nearby well is often minimal. Handheld GPS devices are accurate enough to determine distances between two wells quickly and cheaply. Examination of the data from the old well may provide some information that justifies the small additional cost to collect the data.

Ken Hugo is a technical director and hyrdogeologist with Groundwater Information Technologies (GRIT).

FOR MORE ON OBSERVATION WELLS, VISIT WWW.GROUNDWATERCANADA.COM > RESEARCH > WATER QUALITY

NEWS

TORONTO ATMOSPHERIC FUND EXPLORES HEAT PUMP RETROFITS

By Devon Calder, Toronto Atmospheric Fund, and Muktha Tumkur, CSA Group

Ontario has a tremendous opportunity to achieve significant energy savings and reduce greenhouse gas (GHG) emissions with widespread adoption of heat pumps.

The Toronto Atmospheric Fund (TAF) is exploring how heat pumps might tackle GHGs by targeting multi-unit residential buildings (MURBs). Twenty-four per cent of Ontario's multi-unit residential buildings are electrically heated (EMURBs), so retrofitting these with heat pumps is a great place to start.

ADDRESSING STAKEHOLDER PERCEPTIONS AND NEEDS

Through stakeholder consultation, TAF identified that a lack of technical and financial data from actual retrofit cases remains a key barrier to heat pump uptake. Due to lack of real-world examples, stakeholders are unaware of the steps required to retrofit their properties. The ANSI/CSA C448-2016 standard, "Design and installation of ground source pump systems for commercial and residential buildings," is one means that provides technical guidance for the design and installation of such systems. The standard provides requirements and best practices from material selection, system design through to commissioning and decommissioning under one cover, and therefore provides stakeholders with heat pump technical requirements for retrofits, including EMURBs, and new installations.

FINDINGS* FROM THE MARKET CHARACTERIZATION STUDY AND NEXT STEPS

TAF has also conducted an EMURB market assessment which showed 13 per cent of annual electricity consumption for all multi-unit residential properties in Ontario is just for electric space heating. Therefore, retrofitting every EMURB with heat pumps, even with conservative savings estimates (60 per cent), would achieve 1.2 terra-watt hours (TWh) of annual energy savings, or 17 per cent of Ontario's 2020 conservation target.

Going forward, accelerating heat pump implementation will be possible when stakeholders – including municipal and provincial policy makers, industry trade and professional associations (for example, architects, contractors, engineers), utilities, manufacturers, regulators, researchers/academia, property owners/managers, and organizations like CSA Group and TAF collaborate to truly make a difference.

To find out more about Toronto Atmospheric Fund's "Pumping Energy Savings" project, visit http://taf.ca/projects/pumping-energy-savings/

To find out more about the C448 standard, visit http://shop.csa.ca/en/canada/energy-efficiency/ansicsa-c448-series-16/invt/27014712016

**Estimates*

PENTAIR

Experience the **BERKELEY**

REVOLUTION™

Pentair Canada Inc.
490 Pinebush Road, Unit 4
Cambridge, Ontario N1T 0A5

Phone: 888.363.PUMP (7867)
Fax: 888.606.5484
Email: orders.cacam@pentair.com

WEST COAST NETWORKING

BCGWA members enjoy a lively learning forum

The breathtaking Coast Mountains and the long-awaited coming into force of the Water Sustainability Act and regulations provided a memorable backdrop to the 2016 British Columbia Ground Water Association (BCGWA) conference, trade show and annual general meeting.

by COLLEEN CROSS

"We've had a good turnout," BCGWA general manager Kathy Tixier said of the association's 45th annual conference, which saw 130 water well drillers, pump installers, hydrogeologists, industry suppliers and others with an interest in ground water mingle under one roof at the Coast Kamloops Hotel March 1-3.

Organizers had actively sought ways to attract BCGWA's roughly 300 members to the event, said Tixier, who chaired the annual general meeting and conference for the first time.

It looks as if a full slate of hands-on workshops, trade and technical talks, and a trade show peopled by drilling equipment and pump suppliers, provincial government staff and Global Aid Initiative Network reps did the trick.

British Columbia government staff provided opening day sessions on how to use eWELLS, the province's well-record data entry website, and provided information about the Water Sustainability regulation, including new requirements for ground water licensing. Members welcomed the chance to learn hands-on and ask questions, and these sessions were timely, given that the act and regulations had come into force the previous day.

Albert Kaye of Albert Kaye and Sons on Salt Spring Island came to learn what the new legislation will mean for well drillers and their customers. "The new rental rates don't apply to domestic wells, so that's good to know," he said.

On the show's first full day, Nick Sargent and Jacqueline Foley of engineering firm Golder Associates described the challenging work they did when hired by Natural Resources Canada to help close the Coldstream Ranch Well, near Vernon, B.C. The well has had problems since June 1965 when government geologists accidentally drilled into pressurized ground water.

LEFT: BCGWA general manager Kathy Tixier, Fraser Valley Region board rep Jim Clark and past president Bill Tuytel share a light moment following Tixier and Clark's talk on long-term monitoring of well performance.

RIGHT: Red Williams of Qualicum catches up with Albert Kaye of Salt Spring Island over morning coffee.

Tim Holdaway and Costa Burca of Western Drilling Tools hold down the fort at the trade show, which Wednesday evening saw a bit of silent auction frenzy.

Brenda and Blaine Matuga of Central Interior Pump Installers in Kamloops relax at the banquet after a full day of meetings and seminars. Blaine currently serves as president of the BCGWA while Brenda assisted with conference organization.

The well began spouting at a rate of up to 3,800 litres a minute, forging a crater nearly eight metres in diameter on the private cattle ranch. Over the years, the federal government encountered various problems including a sinkhole that needed filling.

In 2009, the federal government hired the firm which, along with many partners, went to work on the problem to avoid potential contamination of area waterways. Consensus is that the well has finally been closed, in part due to the drilling of a shallow relief well 180 feet deep north of the original well, Foley said. Sargent and Foley told the fascinating story of the life of this well and their remediation project through technical diagrams and compelling photos.

Diana Allen, an internationally known hydrogeologist and professor with Simon Fraser University, spoke to a full room about her extensive research on climate change and its impact on and interconnections with the hydrologic cycle. After a summer of level 3 and 4 drought conditions, there was a consistent decline of snowpack and glacial cover in mountain areas, which Allen said could have a significant effect on hydrologic flow. She has led studies examining precipitation distribution and solar radiation in the Cowichan Valley using MIKE SHE, an integrated hydrological and "very sophisticated" modelling system for building and simulating surface water flow and ground water flow.

By the 2080s, there will be essentially no snowpack left in the Duncan area, with only some of that drawing down due to pumping, Allen said. This will mean increased peak flows and greatly decreased low flows in summer, she said, warning "2015 was bad, but we haven't seen anything yet."

Much is uncertain, she said, and although one study she led suggested the amount of snowpack may provide increasing levels of diffuse recharge in the Grand Forks Valley, with so many variables in climate – including heavy rain events – there is great uncertainty about the coming decades.

Veteran water well driller Jim Clark, of A&H Drilling in the Fraser Valley, and Tixier gave a presentation on monitoring well performance through the 100-year life of a well. Clark shared a working model the two created showing the stages of a well's installation, development and decommissioning. Using overlapping circle diagrams Clark brought into focus the roles of well drillers, pump installers and well owners, noting the points where their work intersects. He stressed that with many water wells outliving the driller, it is important all parties keep detailed well records and share information freely. "Electronic records are the way the industry is going," he added.

Look for more on the life-cycle model in the Summer issue of *Ground Water Canada*.

Peter Koteles and Stephanie McDonald from Global Aid Network (GAiN) told a lunchtime audience about deep capped water wells GAiN's Water for Life volunteers are drilling in West Africa (Benin and Togo) and East Africa (Ethiopia). Villages in these areas apply to have wells installed and volunteer teams drill the wells; the village is responsible for monitoring and maintaining the well through its own bank account, McDonald said. Access to clean water has a profound effect on the lives of villagers, freeing up time that would have been spent gathering water. The projects teach residents and officials a lot about well monitoring, sanitation and maintenance best practices.

Water for Life is always looking for drillers willing to volunteer their time, expertise and equipment, Koteles said, noting Paul Slade accompanied them to Tanzania to help train workers on a 22W rig and Jim Clark recently donated his 22W truck-mounted rig for the worthy cause.

A silent auction organized by secretary Debbie Lamont provided laughs as competitive members hovered over popular items in order to scoop them up. Cariboo Water Wells of Prince George won a donor draw prize of admission to the Ontario Ground Water Association national conference and trade show set for June 8-11 in Niagara Falls.

Long-time alumnus Bruce Ingimundson was named an honorary member of the association for his many years of service, most recently as managing director – a post from which he retired in 2015. Ingimundson couldn't be at the conference to accept the honour, but Tixier vowed to celebrate at next year's event, which is to be held at the same venue.

FOR MORE ON ASSOCIATIONS, VISIT GROUNDWATERCANADA.COM > BUSINESS > ASSOCIATIONS

ISSUES IN THE FIELD

Drillers identify concerns and suggest solutions

In today's world where computers reign supreme and office jobs are the norm, earning a living in the physically demanding industry of water well drilling is not a popular choice among young people entering the workforce.

by JULIE FITZ-GERALD

In fact, finding able workers who are up to the challenge is one of the biggest issues drillers are currently facing, with safety training and communication within the industry rounding out the list.

Rob Caho, director of sales and marketing at Diedrich Drill Inc., based in Indiana, says the concern he hears about most when he's out in the field is finding people who are interested in this type of work.

"It's not an easy job to do. It's a very physical job and people are not brought up that way anymore. You used to be able to find them on the farms, but there are just not that many farmhands to be found anymore. A lot of drillers right now have been doing it for a long time and are getting to the age where they're hoping to retire. We're having to find people outside of the industry," Caho explains.

He says attending farm shows, co-ops and visiting colleges that offer trades are good places to start the search. But it's not easy. "It's still a very good occupation for a lot of people, but the computers and the high tech in the world have led us to the wrong side as far as our industry and any industry that involves physical work."

SAFETY REIGNS SUPREME

Safety is a big issue on the job site, says Caho. Awareness, training and measures to protect workers should always be in place, but often in a push to complete jobs they may not be top of mind. Caho says electrocution, repetitive motion injuries and entanglement are the top safety concerns on job sites today. "All accidents out there in the field are preventable," he notes. "The old way of thinking was that stuff happens, but that's just not acceptable anymore. Every accident is preventable if they slow down, take their time and make sure they're doing it correctly and safely. The person who is actually responsible for safety is you. It's nobody else; it's up to you."

For more senior drillers, safety concerns usually revolve around repetitive motions and changing the ergonomics of how they carry out certain tasks to make it easier on their bodies. For junior drillers, safety concerns centre on their inexperience.

"The newer guys don't know what can hurt them. They're always trying to carry too much weight over their heads and they need to slow down and understand that they will get hurt if they don't do the safe practices," Caho says.

While companies are required by regulators to have safety training and maintenance programs in place, such programs are not always adequately implemented and followed up on. "You see guys go to training because they have to be there and then they throw it out the window. It starts from the top down. The CEO of the company or whoever's in charge has to buy into the safety and maintenance programs and they have to follow it all the way through to the finish and implement it in the field, be it through supervisors or whoever that might be, to make sure they're all actually doing those safe practices all the time," he says.

Shawn Hopper, vice-president of Durl

Hopper Ltd., in southwestern Ontario, is a third-generation driller who's been working in the field since 1989. He has noticed the same issues with safety here in Ontario. "In many cases, some of that training takes a bit of a back seat because of the time it consumes in the everyday function of your business. Safety training requirements continue to escalate depending on the level of what you provide and what your range of industry connection is," Hopper explains.

Hopper suggests adopting the necessary systems and protocols to ensure you stay up to speed with the renewal of licences and safety training. "To be a professional in the industry and to show that you have the initiative and the capability to accomplish certain things requires team awareness of everything that's required."

Out in the field, tailgate safety meetings are a crucial tool to ensure everyone is aware of safety protocols and particular concerns that may vary by job site. According to Caho, these gatherings should occur daily.

"A tailgate safety meeting consists of sitting on the tailgate for a safety discussion and getting everybody involved, on a daily basis. You always have that one guy in the corner that doesn't want to be there and doesn't care about it and he's the one who usually ends up getting hurt at the end of the day because he wasn't paying attention. Get that person who's sitting in the corner to run the safety meeting. Give him a topic and help him out to run the discussion. Get him involved; get everybody involved in the tailgate safety meeting," he urges.

COMMUNICATION AMONG COMPETITORS

One could argue that communication doesn't always come easy to well drillers; however, it's an important tool in many facets of the business. For Hopper, a lack of communication among drilling companies is one of the biggest issues he sees out in the field – an unfortunate problem considering the benefits it can bring the business.

"I would say the most common issue is a lack of interpersonal communication within the drilling industry," he says. "Because we're a relatively small industry, I think the competition aspect makes it difficult for a lot of smaller companies to communicate with one another and there are a lot of benefits to doing that. It gives the advantage of having some scope of what's taking place in the industry, what work is being accomplished and how it's being accomplished. When there's greater communication, there tends to be less concern and a little bit less tension."

Always ready to offer a helping hand to fellow drillers, Hopper's business has seen the benefits of good relations first-hand.

"Having a closer, friendly relationship with competitors has really improved things for us because it gives you a better pulse of what's going on in the industry and it also gives you a broader scope of people to talk to if you have concerns and issues or if you need to borrow or rent equipment. There tends to be a real lack of camaraderie that there could potentially be in the industry."

According to Hopper, the best way to open the lines of communication is by simply reaching out to fellow competitors and offering a helping hand when it's needed.

PROFESSIONALISM WITH CLIENTS

Building on a friendlier approach with competitors, the need for greater professionalism with clients is another important issue. Hopper says this is a weak point in the industry due to the fact that many in the field are owner/operators with diverse job descriptions. Multi-tasking as office managers, vice-presidents, accountants, field supervisors and drill operators doesn't leave a lot of time for providing superior client relations, he says. However, it's an important aspect of the business that should not be overlooked.

"I think the one thing we could do and one thing that I could see the respective associations looking at is to potentially provide some training on certain fronts, which could improve the capabilities of some of these individuals, including myself, in being able to handle a multi-tasking environment. It's hard to be a professional and be super proficient at everything that you do. You may be a wonderful driller but maybe you're bad at dealing with clients. Maybe you're wonderful at talking to people but you're horrible at something else. We all have strengths and weaknesses and there are areas where certain types of training might really benefit the industry," Hopper says.

Talking about the issues facing drillers today can raise awareness and lead to ideas for improvements and ultimately a more positive work environment for all involved.

Julie Fitz-Gerald is a freelance writer based in Uxbridge, Ont., and a regular contributor to *Ground Water Canada*.

NEW PRODUCTS

LONE STAR'S LS400T+ ADDS DIESEL ENGINE OPTION

Little Beaver's diesel-powered Lone Star LS400T+ drill rig is designed for water well and geothermal drilling in areas where diesel fuel is more available than gasoline.

The Perkins diesel engine is a new option for the heavy-duty LS400T+ rig, which Little Beaver introduced to the Lone Star drill line in 2014. The heaviest rig in the fleet, it helps drillers more effectively and efficiently power through the toughest soils, including lava and solid rock formations, the company said in a press release.

www.littlebeaver.com

VERSATILE DIPPER-TAG

Heron Instruments has added to its product line the dipper-Tag tag line, a multi-purpose unit designed for use when installing or monitoring wells.

The 316 grade s/s weight that comes with the dipper-Tag can be used for measuring depth to the bottom of a well or depth to the top of a bentonite layer or backfill sand, Heron Instruments said in a press release.

The spring release clip allows the user to exchange the weight to other available accessories such as the company's s/s ploppers for measuring static water levels acoustically or dipperLogs to measure water levels and temperature for short-term analysis. The dipper-Tag can also be used with third-party accessories, for example, bailers for water sampling.

www.heroninstruments.com

GRUNDFOS' SCALA2 BOOSTER PUMP PURSUES CONSTANT PRESSURE

Grundfos' SCALA2 low-noise domestic booster pump is designed to give homeowners "the Holy Grail" of constant water pressure, regardless of municipal inlet pressure and multiple open taps, the company said in a press release.

The self-priming pump is designed to boost water pressure from city watermains, shallow wells and storage tanks serving residential buildings with up to three floors and eight taps.

An intelligent pump control sensor compares measured and desired water pressures, adjusting pump speed accordingly and ensuring a perfect water pressure through the system, the company said. Its user-friendly control panel allows for manual pressure adjustments.

While water-boosting pumps can often be large and noisy, the compact, all-in-one SCALA2 weighs only 22 pounds and has a "super-silent" water-cooled motor that results in a sound level that is roughly as loud as a modern dishwasher.

"With the new SCALA2 water booster pump, homeowners will have perfect, steady water pressure – even if the shower is on, the kitchen faucet is running and the car is being washed outside," said Kirk Vigil, director of national accounts for Grundfos' Domestic Building Services.

www.grundfos.com

MERRILL RELEASES VERSATILE WIRE CONNECTOR

Merrill Manufacturing recently introduced its Multi-Size Wire Connector, which is designed to connect wire sizes #4 or #6 to #10 or #12 with the goal of making the heavy wire down to your pump easy to splice to the pump's lead wires.

For more information, contact your distributor or Merrill at 1-800-831-6962.

www.merrillmfg.com

GOULDS LAUNCHES 'ULTRA-DURABLE' CAST-IRON SUMP PUMP

Goulds Water Technology, a Xylem brand, has launched the GSP0311 Cast Iron Sump Pump, a durable sump pump designed to provide a longer overall product life.

When a sump pump fails, it is generally due to a switch

AD INDEX

This issue of *Ground Water Canada* magazine has been brought to you by the following:

failure. The pump features a new long-life switch that has undergone multiple, rigorous tests well beyond industry standards, the company said in a press release. The switch is easily replaced, further extending the life of the pump.

The GSP0311 is designed with a silicon-carbide seal that can handle half-inch solids, making it tough enough to handle both effluent and sump applications, the company said.

Built with high-quality materials, including a tough cast-iron upper body, a solid plastic underbody and a non-clogging vortex impeller design, the pump is easy to maintain, reliable and long-lasting.

Features include: a rugged, oil-cooled motor that provides continuous bearing lubrication and maximizes heat dissipation to extend the life of the pump; a built-in anti-airlock hole that helps reduce run time and eliminates additional labour; and a non-clogging vortex impeller design to help keep debris from damaging the pump.

To prevent motor damage, an automatic thermal overload protection turns off the pump if it gets too hot and automatically turns the pump on again after it cools down.

http://residential.goulds.com

FLOMATIC HAS NEW CHECK VALVE AND STRAINER SIZES

Flomatic Corporation introduces new sizes to its Model 816 Ward Check valves and Model 16 Ward Strainer lineup in ASTM 316 stainless steel or other materials like WCB Steel, Alloy 20, Monel or Hastelloy C, Flomatic said in a press release.

The Model 816, 816FL check valves, Model 16, and 16FL strainer are now available in quarter-inch to two-inch threaded one- to two-inch ANSI 150 Class Flanged. The Ward valve is widely specified and used by beverage, food, water, heating and chemical processing industries, the company said.

These valves feature the Flomatic's patented sealing system. The sealing plunger features an angled elastomer disk totally encapsulated in Teflon, which protects the seal from the conveyed medium. The valves feature an angle-seat design that keeps fluids flowing and a long service life.

www.flomatic.com

AG SERIES COVERS POPULAR HYDRAULIC PERFORMANCE RANGES

Franklin Electric has expanded its AG series of cast-iron centrifugal pumps. The pumps are designed to perform in challenging water-transfer applications that demand high performance and efficiency in industrial, commercial and agricultural markets, the company said in a press release.

Each AG Series pump is equipped with either a NEMA standard JM or JP motor for mechanical seal or packing gland configurations, both of which include a 416 stainless steel shaft sleeve for durability and ease of service.

The pumps' updated hydraulic design simulation provide improved energy efficiency, greater durability

and extended operating life in such water applications as irrigation, turf and landscape maintenance, crop and livestock watering, pressure boosting and water circulation. Its standardized mounting dimensions and plumbing connections provide a quick and easy retrofit, reducing downtime, and the product's "back pull-out" design makes repairs fast and simple.

www.franklinwater.com

VORTEX BACKHEAD IMPROVES PERFORMANCE, REDUCES WEAR

Numa, a designer and manufacturer of down-hole hammers and bits, has released a Vortex Backhead design meant to improve both drilling performance and hammer and bit life. It is designed for Numa's 12-inch hammer line when drilling conditions require a significant amount of water injection.

The design prevents a drop-off of drilling performance by ejecting water out the top of the backhead before it can go through internal hammer components, Numa said in a release. Company engineers achieved this by creating a spinning process (vortex) in the backhead that leverages the density difference between water and air, Numa said. Fluids entering the top end of the hammer are spun, pushing heavy material (water) to the outside to be ejected out the top of the backhead.

Benefits of using the system include improved drilling performance through higher-impact energy and limited wet-bottom conditions, and reduced wear from a reduction in non-productive exhaust flow up the outside of hammer and bit.

www.numahammers.com

WATER LEVEL, TEMPERATURE AND CONDUCTIVITY DATALOGGING

The Solinst Levelogger Edge Series is designed to provide reliable water level and temperature datalogging. The LTC Levelogger Junior has the added advantage of conductivity measurement, the company said in a press release. It combines a durable Hastelloy pressure sensor, temperature sensor, memory for 16,000 sets of readings, and a five-year battery in a 7/8-inch by 7.5-inch (22-millimetre by 190-millimetre) waterproof, stainless steel housing. The conductivity sensor is simple to calibrate, providing two per cent accuracy of readings from 500 to 50,000 microseconds per centimetre.

A Junior model is SDI-12 compatible, can integrate into a Solinst STS Telemetry System, and is ideal for monitoring salinity and saltwater intrusion studies; monitoring road salt, agricultural and stormwater run-off; conducting tracer tests, and providing a general indication of water quality.

www.solinst.com

FOR MORE ON NEW PRODUCTS, VISIT GROUNDWATERCANADA.COM > NEW PRODUCTS & EQUIPMENT

WELLMASTER Pipe & Supply Inc.

1494 Bell Mill Road, P.O. Box 456, Tillsonburg, ON, Canada, N4G 4J1
P.O. Box 2663, Buffalo, NY, USA, 14240-2663
Phone: 519.688.0500 ◆ Toll Free: 800.387.9355
Fax: 519.688.0563 ◆ Email: wells@wellmaster.ca ◆ Online: www.wellmaster.ca

Available in:
- Cable Tool
- Rotary
- Threaded
- Weld On
- Sizes 2” to 36”

SMART THREADED CASING

Available in:
- 4 1/2” ◆ 5 1/2” ◆ 6 5/8”
- .188 Wall ◆ .219 Wall

Products that Make a Difference!

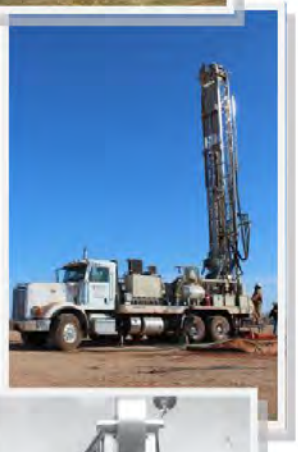
Also specializing in:
- Protector Vaults
- Above Ground Locking Protectors
- Submersible Pumps
- Delivery














We've Been In Business 85 Years, We Understand

GEFCO

An Astec Industries Co.

GEFCO, INC. an Astec Industries Company

2215 SOUTH VAN BUREN · ENID, OKLAHOMA, USA 73703 · PHONE 580.234.4141 · domsales@gefco.com · intsales@gefco.com · www.gefco.com