A Newsletter for Water and Wastewater Treatment Plant Operators!

THE WATERDRUM

October 2020

Inside this issue:

Virtual training is a training method in which a simulated virtual environment is used. In this environment, an instructor is able to explain, show or test certain abilities that can contribute to the learning process.

This doesn't necessarily mean that the training process is done remotely, although it can be. Some Virtual training sessions are done in house (meaning the work place) the same way you would conduct any other type of training sessions. The only difference is that communication is done through the computer.

Another perk of virtual training is the access to top notch trainers who may otherwise be unable to visit your workplace. Vice versa employees who work remotely can also benefit from virtual training for the simple fact that they will never be left behind when it comes to new material they need to be trained on.

As COVID-19 continues to have impacts on our daily and seasonal routines, AWWAO wants to assure you that we are here to support First Nation Operators in achieving their training needs through virtual training.

Sponsored by: Indigenous Services Canada and First Nations Inuit Health Branch

The meaning of the AWWAO logo as described by the artist:

Tree—represents Mother Earth

Sun—brings Life to our Environment

Eagle—watches over the Environment

Sky—ensures the Cycle of Water

ABOUT US

The Aboriginal Water & Wastewater Association of Ontario is an information source for water environment and Operator training and certification issues and technology. AWWAO's members include professionals from Ontario First Nations, Environmental Health Officers, Tribal Councils, Municipal Suppliers and some Government Agencies.

AWWAO is dedicated to the transfer of information and concepts regarding all areas of the water environment. As members of the American Water Works Association (AWWA), the Ontario Water Works Association (OWWA), the Water Environment Federation (WEF) and the Water Environment Association of Ontario (WEAO), we provide an invaluable network for those involved in water and wastewater industry. AWWAO, through a partnering agreement with Keewaytinook Okimakanak and Health Canada co-operates and liaises with the above noted associations, and all provincial and federal government agencies. AWWAO has a volunteer seat on many of the various association's committees.

AWWAO offers its members the opportunity to:

- Be updated and informed about issues that affect the water environment.
- Interact with persons in various fields of water expertise.
- Promote concerns of the membership through a collective voice.
- Exchange information and ideas to other members, the public and Chiefs and Council.

To date, the AWWAO consistently rank the training and certification of Plant Operators as its top priority. The attainment of Certification is widely recognized as essential to performing a good job, at a high level, in the water and wastewater treatment plant operations, and an indicator of a responsible and contributing community member.

MEMBERSHIP

$200.00 Membership Fee for First Nations Water and Wastewater Treatment Plant Operators per operator. This Membership entitles the Operator(s) to the AWWAO Newsletter, monthly bulletin, Annual Report and the Annual General Assembly and Training Conference cost reimbursement, if applicable.

$400.00 Membership Fee for Non-Operator, Public Works Management, Administration and Management of a First Nation or Non-First Nation. This Membership entitles the Member to the AWWAO Newsletter, monthly bulletins, Annual Report and invitation to the Annual General Assembly and Training Conference.

Please Print

Name: _____

Name: _____

Name: _____

Name: _____

First Nation/Business: _____

Address: _____

Phone: _____ Fax: _____

E-mail: _____

VISION

Our Vision is to be the Association that best understands and satisfies the training, education, certification and licensing needs of Operators of Ontario First Nations. Our dedication to supporting Operators touches not only health, but safety, spirit and empowerment … most of all knowledge.

OBJECTIVES

- To act as a voice and forum for First Nation Plant Operators in Ontario, publish a newsletter, promote communications and networking among Plant Operators and other persons interested in AWWAO's objectives;
- Promote the importance of a safe and potable water supply and the highest standard of wastewater operations;
- Promote the development and delivery of continuing education and training programs for Plant Operators and others involved in water and wastewater treatment;
- Promote the importance of technical training in maintaining and upgrading the Operator's knowledge of proper water and wastewater operation and maintenance requirements;
- Promote the importance of involving qualified Operator's in the design, construction or upgrading of water and wastewater treatment plants;
- Promote the importance of proper training, certification and licensing of Operators;
- Promote the importance of enhanced lab testing of potable water and monitoring of wastewater effluents; and
- Promote the importance of establishing an effective Operations & Maintenance Management Plan to ensure proper care is performed for the assets.

MISSION STATEMENT

We are a member oriented, non-profit Association, providing province-wide and year-round high-quality services and an annual forum for the First Nations Water and Wastewater Treatment Plant Operators, allowing for networking opportunities at the same time. We are committed to providing high quality information on the water and wastewater industry through the quarterly newsletter. We are dedicated to promoting, preserving and protecting the water, natural resources and environment through the education, training and networking of the Ontario First Nations Water and Wastewater Treatment Plant Operators.

Aboriginal Water and Wastewater Association of Ontario's newsletter is published quarterly by the AWWAO at Box 20001, RPO, Riverview Postal Outlet
Dryden, ON P8N 0A1
Tel: (807) 216-8085
E-mail: info@awwao.org

Advertising opportunities and/or submission or request of information, please contact the Association Coordinator.

Coronavirus: Conference Cancellations

Due to the current situation of covid-19 we are cancelling all in person conferences and trainings. We are truly sorry for any inconvenience this may cause but your health and safety is our top priority. AWWAO is working hard to ensure a seamless continuation of services which will be offered through virtual training. Please keep an eye out for upcoming virtual training dates!

Date	Description	Location	Notification
November 2-6, 2020	**Northern Exam Prep Conference**	Thunder Bay, ON	CANCELLED
January 25-29, 2021	**Southern Exam Prep Conference**	Rama, ON	CANCELLED
February 22-26, 2021	**26th AGM & Training Conference & Tradeshow**	Sault Ste Marie, ON	CANCELLED

The Covid-19 pandemic has challenged all of us, and has also shown us what we can accomplish if we work together. By physical distancing, we are flattening the curve. Thank you also to those who have supported people in your communities. Through our collective compassion and commitment, we will get through this crisis and be stronger for our efforts.

Operator of the Year, Levius Anderson

My name is Levius Anderson, I am a Lead Operator and ORO .I have a Class 3 Water Treatment, Distribution Class 2, Wastewater Treatment Class 1 and Wastewater Collection Class 1. I live and work in the Community of Kasabonika Lake population approximately 1100 people. I am proud to be chosen for Operator of the year but it is a team effort. With support from co-worker Cornelius Anderson and O&M Manager Abraham Wabasse. We run day to day operations 24 hrs. 7 days a week to keep safe drinking water to our Community . Our plants consist of Class II Water Plant, Class I Distribution System and Class I Lagoon and 4 lift Stations. There are no roads into the community and the only access is through Kasabonika Airport and winter road. So doing the logistics for chemicals and supplies and parts can be challenging.

Kasabonika Lake is part of the Shibogama First Nations Council and the Nishnawbe Aski Nation

Kasabonika Lake Systems

Water Treatment and Distribution

The treatment unit is that of conventional design incorporating flocculation, coagulation, sedimentation and filtration (multi media). There is a secondary set of filters utilizing Granular Activated Carbon (GAC).

The water is then pumped to the distribution system by high lift pumps.

A truck fill station is used to supply a portion of the community by that is not connected to the piped distribution system.

Back-up power is provided for the treatment plant by a diesel-powered generator.

This treatment system has a notional classification of Class II by the Ontario Ministry of the Environment and typically is able to meet the minimum requirements for Drinking Water Quality as outlined in the Guidelines for Canadian Drinking Water Quality.

Most of the community's residences (155 of the 175 in total as of January 2016) and all of the institutional/ commercial buildings in the community are connected to an underground, piped distribution network. Other residences are supplied water via truck haul.

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The distribution system consists of 2,469 metres (m.) of 200 millimeter diameter (mm. dia.) pipe and 1,855 m of 150 mm diameter pipe.

The distribution water supply is provided by two high lift pumps. Fire flows are provided by three high flow pumps that operate when excessive pressure drop in the distribution system is detected.

The community has two water trucks to deliver water to the houses that are not connected to the distribution system.

The distribution system has a notional classification of Class I by the Ontario Ministry of the Environment.

Wastewater Collection and Treatment

A newly constructed facultative lagoon was commissioned in Fall 2016. The facility consists of a 15 hectare, 3 cell lagoon, located 2 km south of the community.

The lagoon has been notionally classified as Class I by the Ontario Ministry of the Environment.

Most of the community's residences (155 of the 175 in total as of January 2016) and all of the institutional/ commercial buildings in the community are connected to an underground, piped collection network consisting of 4,240 m of 200 mm. dia. piping and a series of four lift stations. As part of the lagoon construction project, one lift station was upgraded to pump the sewage through 2,671 meters of force main to the lagoon. In addition, there are two sewage vac trucks to dispose wastewater at this main lift station for twelve (12) residences that are not connected to the piped wastewater system.

Back-up power is provided for the main lift station by a diesel-powered generator.

This collection system has been given a notional classification Class I by the Ministry of the Environment Ontario.

Thanks
Levius Anderson ORO Kasabonika Lake

First Nation communities 'especially vulnerable' to COVID-19, Mamakwa

Published: Friday, 19 June 2020 10:00
Written by Ryan Forbes

The NDP's Indigenous Relations and Reconciliation critic and Kiiwetinoong MPP Sol Mamakwa is calling on the Ford government to provide more support to northwestern Ontario First Nation communities, who are fighting against the coronavirus.

The NDP's Indigenous Relations and Reconciliation critic and Kiiwetinoong MPP Sol Mamakwa is calling on the Ford government to provide more support to northwestern Ontario First Nation communities, who are fighting against the coronavirus.

Kiiwetinoong MPP Sol Mamakwa says the Ontario government needs to do more to protect northwestern Ontario First Nation communities from the coronavirus.

"First Nations communities are especially vulnerable to the virus, as many do not have access to safe clean drinking water, and live in over-crowded housing conditions," said the NDP's Indigenous Relations and Reconciliation critic, in a prepared release.

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On June 16, the Sioux Lookout First Nation Health Authority confirmed five new cases of COVID-19 in the area. Two of those cases were in one unnamed community, and three of them were in another. Contact tracing for any potential contacts is in place for both First Nation communities.

"We commend the culturally appropriate work of Sioux Lookout First Nations Health Authority, and call on the Ford government to provide the resources they need to do their urgent work," Mamakwa added.

In March, shortly after Ontario's State of Emergency went into effect, Mamakwa demanded more support for First Nation communities, as they regularly deal with significant social issues as it is – like overcrowding and the lack of clean water - without the threat of the Coronavirus to compound them.

"Infectious diseases are especially devastating for First Nation communities. The government tells people to wash their hands, but it's hard to do without clean running water. The government tells people to self-isolate, but how do you do that when there are 10 or 12 people living in the home?"

The federal government is aware that no drinking water is certainly an issue for those who are fighting against COVID-19. Indigenous Services Canada's COVID-19 information page recommends First Nation community members to:

"If you do not have access to running water, wash your hands in a large bowl and then throw out the water from the handwashing bowl after each individual use."

Since COVID-19 is not known to spread through water, members can use water under a boil water advisory to wash your hands and for personal hygiene. But water under a do not use advisory is not suitable for any use, and hand sanitizer must be used instead.

Across Canada, northwestern Ontario has the highest concentration of long-term drinking water advisories. Of the 62 advisories remaining, 20 of them can be found in the federal Kenora District.

Acting Medical Officer of Health for the Northwestern Health Unit, Dr. Ian Gemmill, explained that health unit staff won't be conducting COVID-19 testing in First Nation communities, as that work will be left for staff with Indigenous Services' First Nations and Inuit Health Branch. Those test results are then sent to the NWHU, to be added to the regional and provincial data.

Gemmill didn't have an estimation on the time lapse between the confirmation of a positive case, the information being sent to Indigenous Affairs and then the health unit, but he hopes it would be as "quick as possible." He notes that these tests are being sent to a centre in Winnipeg for results.

As of June 18, over 8,000 COVID-19 tests have been taken in the Northwestern Health Unit's catchment area. 27 residents were confirmed to have been positive, but 23 of the cases are now considered resolved.

For more information:
Higher COVID-19 risk in northern First Nations, Mamakwa
'Racial inequalities are not acceptable,' Mamakwa

After 3 months without water, the taps are running again in Big Grassy River First Nation

Consistent water service was restored to the northwestern Ontario First Nation on September 10
Logan Turner · CBC News · Posted: Sep 15, 2020 5:00 PM ET | Last Updated: September 15

The residents of Big Grassy River First Nation had been on a "do not consume" notice for more than three months in 2020 as the community awaited water treatment system repairs. (CBC)

Water is flowing through the taps once again in Big Grassy River First Nation after three months without consistent, potable water.

However, the current water is untreated and coming directly from Lake of the Woods as the community waits for repairs to the water filtration system.

The result is that community members have had to go to the beach to collect water for basic sanitation needs, and buildings have been shuttered and the school remains closed to students until a running, drinkable water service is restored.

Lynn Indian, the chief for the northwestern Ontario First Nation, says despite efforts by water operators to keep water running when possible, she's worried about the implications of not having regular water service.

"I was immediately concerned for our vulnerable population. We have newborn babies, our elderly … and I was pretty concerned about how are we going to bring potable water into the community for health and safety."

Water outage caused by electrical storm in July

The water outage was caused at the beginning of July by an unlikely event — a lightning strike directly to the water treatment facility.

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"It basically fried quite a few critical components to the water treatment process. Specifically, we call it the brains of the water treatment plant … even after it was replaced, it still didn't know what to do," said Melvin Major, a water treatment operator for the facility in Big Grassy.

As soon as the lightning strike happened, the First Nation's community control group held a conference call and discussed what needed to be done.

The First Nation then issued a "do not consume" notice, meaning that community members were not allowed to turn on their taps.

According to Tim Archie, the project director for the community's water treatment plant upgrade and expansion, staff worked to "restore the water levels in [its] reservoirs … because [there were] deficiencies in supplying good water pressure."

But while some issues were fixed, new leaks and other problems in the treatment process were found, further delaying the return of regular, potable water service to the community.

The delays forced the community to find new ways to access water.

"Through our emergency preparedness group and advocating for our members, we've been able to pull together and ensure that we have potable water when we have zero water. We were able to go around delivering raw water from the lake for things like toilet flushing," said Indian.

"We were able to force a well down near the community and it's not treated water but it was water that thankfully we were able to use for bathing the kids and personal hygiene. And then we bought potable water for cooking and drinking."

Latest water advisory in Big Grassy lifted in February 2020

This isn't the first time the First Nation has had problems with its water supply.

Its water treatment system was originally constructed in 1997 with a design life of 20 years.

The community went onto its most recent boil water advisory in March 2017, in part because of the existing facility's inability to deal with surface water quality changes experienced through the seasons. That boil water advisory was lifted in April 2019 after maintenance and repairs were completed on the treatment system.

Another short-term drinking water advisory was lifted in February 2020, after being in effect since August 2019.

Work started in May to expand the existing water treatment facility at Big Grassy — an upgrade that is supposed to provide a long-term solution to the First Nations water problems — but it isn't scheduled to be completed until May 2021.

Government of Canada COVID-19 Update for Indigenous Peoples and Communities

From: Indigenous Services Canada

News release

September 11, 2020 — Ottawa, Traditional Algonquin Territory, Ontario — Indigenous Services Canada
As of September 10, Indigenous Services Canada (ISC) is aware of these confirmed cases of COVID-19 for First Nations communities:

- 491confirmed positive cases of COVID-19
- 42 hospitalizations
- 53 active cases
- 429 recovered cases
- 9 deaths

There are a total of 18 confirmed positive cases in Nunavik, Quebec, and all but one has recovered.

There has been a resurgence of positive case numbers among First Nations individuals living on reserve this week, similar to those being observed for the general Canadian population. This trend is moving in the wrong direction, and serves as an important reminder of the importance to remain vigilant as we enter fall. We urge everyone to follow public health measures to keep COVID-19 cases down.

Our country's recovery from the pandemic will take time. We must continue to be careful and listen to the advice of our public health experts, which has helped us flatten the curve over the past months.

With the return to school this fall and the resumption of other seasonal activities that gradually lead indoors, it is important that we limit the number of non-essential gatherings as much as possible; failure to do so can lead to multiple cases in a community.

Individuals can help by:

- avoiding all non-essential trips in the community;
- limiting the size of group gatherings;
- maintaining physical distancing of at least 2 arm-lengths (approximately 2 meters or 6 feet);
- limiting contact with people at higher risk, such as seniors, those in poor health, or with underlying health conditions;
- wearing a non-medical mask when physical distancing is not possible; and
- following the recommended public health guidelines outlined by your province or territory of residence including guidelines on wearing masks in schools.

We are still in a global pandemic. We cannot let down our guard. Continue practicing safe public health measures to reduce the spread. We must all remember to maintain proper hand hygiene and etiquette to prevent spread of illness, as outlined here:

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- Wash your hands often with soap and warm water for at least 20 seconds.
* If soap and water aren't available, use hand sanitizer containing at least 60% alcohol.
- When coughing or sneezing:
* cough or sneeze into a tissue or the bend of your arm, not your hand, and
* dispose of any tissues you've used as soon as possible in a lined waste basket and wash your hands immediately afterwards
- Avoid touching your eyes, nose, or mouth with unwashed hands.

At this time of year, we are also concerned about influenza. We can reduce the spread of the seasonal flu by following the same practices as with COVID-19. We also know that the annual flu vaccine is the most effective way to prevent the flu and flu-related complications.

ISC is committed to supporting First Nation communities on keeping students healthy and safe as they return to school. First Nation communities will continue to make decisions on school re-opening based on what they have determined is the safest option for their students.

The recently announced $112 million national education funding will be allocated directly to First Nations, designated First Nations organizations, self-governing First Nations and Federal schools to help keep First Nation children safe, based on community priorities and needs – be it a safe return to classrooms, a transition to an online education model, or a combination of both. The funds could also support the hiring of additional teachers and support staff or meet technology needs that schools and students may have ISC is in the process of finalizing allocations and will be distributing the funding directly to First Nation communities shortly.

Additionally, last month ISC announced a further $305 million nationally through the Indigenous Community Support Fund (ICSF). This funding will include allocations directly to First Nations, Inuit and Metis, as well as an application-driven, needs-based component, which will be open to all Indigenous communities and organizations. This approach aligns with our commitment to support Indigenous communities' approaches to community wellness while providing the flexibility to respond to emerging needs, required to respond to an outbreak of COVID-19.

Lastly, guidance documents from the Federal Government, Provincial Government and Health Authorities have been shared to support First Nations in their assessments and preparations for safe school re-openings.

Government of Canada

Poor Compliance

Baby wipes continue to be flushed down toilets even though the wipes do not break down when they are disposed of in this way

Wipe manufacturers of baby wipes aren't producing truly flushable products.

BY ROB VILLÉE, BARRY ORR, BROOKE NORTHEY, AND SARA TEASDALE

AN AREA OF CONCERN for both wastewater systems and the environment in general is the manufacturer's lack of transparency with the consumer. This includes the absence of clear and prominent Do Not Flush (DNF) on-package labeling, as well as the totally absent information that almost all baby wipes are made of plastic or synthetic (regenerated cellulose) fibers. While other products like laundry detergent pods have consistent warning labels across the brands, the Association of Nonwoven Fabrics Industry (INDA) and its members have fought against such commonality for their baby wipes. Regarding the fiber composition, clothing labels list the fiber types so that the consumer can make an informed purchasing decision. In baby wipes this information is not available to the consumer on the packaging ingredients label and, at best, takes considerable effort to get that information from the brand owner.

After examining 120 individual packages of wipes, it is clear that manufacturer's compliance with the INDA/EDANA (Association of the Nonwoven Fabrics Industry (INDA) and the European Disposables and Nonwovens Association (EDANA) 2017/2nd Edition Labeling Code of Practice (CoP) (2) could be easily categorized as abysmal. More than two-and-a-half years after the manufacturers agreed to the CoP, and close to a year after it was implemented, only 10 percent can be considered in compliance with the placement, size, and contrast requirements for the DNF Symbol, and almost 40 per cent of the products still do not carry any DNF symbol at all, on either the top or front panel, as required by the CoP. Although the other 60 per cent of the packages showed some sort of compliance with the CoP, typically having

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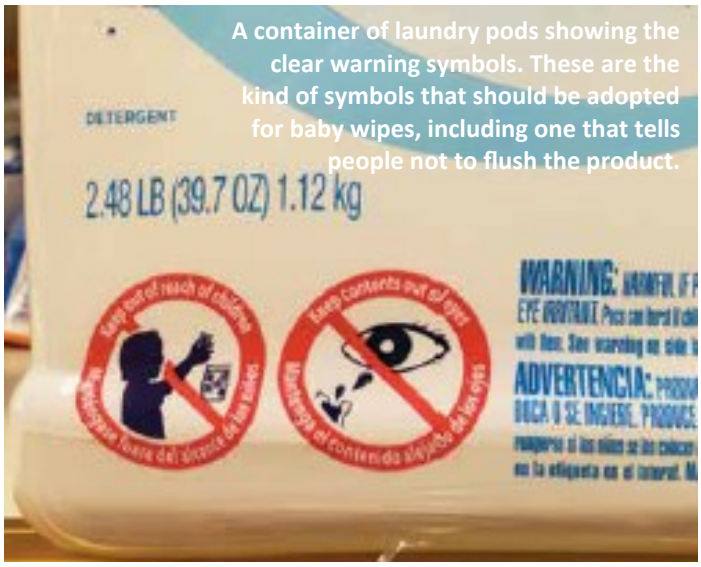
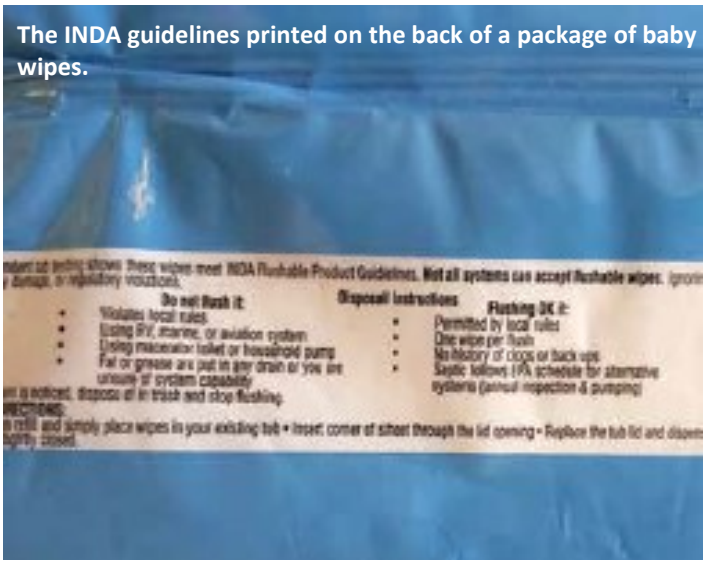
a DNF symbol on the top panel, very few also comply with the CoP requirements regarding DNF symbol size and contrast. And none carry the optional, detailed disposal language allowed by the CoP.

In response to the growing plastics in the marine environment problem, the European Union (EU) issued a Single Use Plastics Directive in 2018 and confirmed it in 2019. In the directive, personal use disposable wipes, such as baby wipes and flushable wipes, were categorized as single use plastics. He adapted definition of plastics therefore covers polymer- based rubber items and bio-based and biodegradable plastics regardless of whether they are derived from biomass or are intended to biodegrade over time. Since this definition covers "plant-based" or regenerated cellulose fibers, it brings almost all "flushable" wipes and baby wipes under its scope. "Flushable" wipes contain 20-30 per cent regenerated cellulose fibers like rayon, viscose, lyocell, Tencel, etc. and baby wipes are either plastic, regenerated cellulose or a combination of those fibers. As part of the EU recommendations, starting in July 2020, these products are going to be required to be labeled that they contain plastics, and a consumer education program regarding their proper disposal initiated.

The lack of consumer understanding of the Do Not Flush (DNF) instruction stems from various issues with packaging requirements, including the lack of uniformity in the placement, size, and specifically the color of the DNF symbol, along with varying levels of compliance of the INDA/EDANA CoP for DNF labeling by the individual manufactures. Additionally,



A container of laundry pods showing the clear warning symbols. These are the kind of symbols that should be adopted for baby wipes, including one that tells people not to flush the product.


The INDA guidelines printed on the back of a package of baby wipes.

the inability of INDA/EDANA to force, or enforce, compliance form even its members, raises serious proper disposal method for our products is one of the most important things we can do to help ensure that only those products designed and marketed to be disposed of via the toilet are flushed. This is why we created the labeling Code of Practice and the "Do Not Flush" symbol which accompany the Guidelines.

However, based on the study often cited by INDA "Forensic Evaluation of Non-Dispersables New York City Law Department", where baby wipes make up 63.5 per cent of the wipes recovered, this talk is just that: talk but no action. Although this study does not look at the education portion of these promises, it certainly shows that the labeling portion based on the CoP is far from what is promised by INDA, and the results of that non-compliance are showing up as baby wipes in the sewer systems.

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Even more egregiously, "flushable" wipes (which are often made by the same manufacturers that produce baby wipes) contained plenty of flushing instructions, whereas the baby wipes that are not designed to be flushed contained minimal instruction, if any. On baby wipes packaging, the most common disposal instruction was "Do Not Flush" in, at best, two-millimeter-high text. Most commonly this instruction was found on the bottom panel where it is not readily seen. Only nine packages had this instruction on the top panel. By comparison, flushable wipes universally had the instruction: "Only Flush One Wipe at a Time" on the packaging. In fact, many packages go way beyond that and have paragraphs or charts informing the consumer under what condition(s) these products should, or should not, be flushed. This often includes not flushing them in basement or household pumps; which is curious because the Household Pump test is one of the seven tests a flushable-labeled product must pass according to the manufacturer's own guidelines, INDA/EDANA Guidelines for Assessing the Flush ability and Disposable Nonwoven Products 3rd Edition/GD3(4) and 4th Edition/GD4(5).

The international wastewater organizations do not consider the terms "flushable", or "sewer safe" wipe, as a valid confirmation that these products can be safely disposed of via the toilet since the test methodology (GD4) used by the manufacturers was created unilaterally by the manufacturers over the objections of the North American wastewater industry. In October 2019, the UK Advertising Standards Authority, in an action with Kimberly Clark, agreed with the wastewater industry that basing the word 'flushable' solely on the manufacturer created INDA/ EDANA GD4, when there were other accreditations such as the UK Water Industry Standard (WIS) available, was misleading. The inclusion of this flushable wipe language is simply an example that manufacturers can, and do put detailed instructions on their packaging when it is in their own best interest to do so.

The instructions on flushable wipes go far beyond that and essentially indemnify the manufacturer unless this is a brand- new home and you have never washed your dishes (fat or grease are put in any drain…). The absence of any of these instructions, or conditional flush ability instructions, are noticeably absent from toilet paper, which is universally understood to be flushable by the consumer.

During the negotiations for the 2017 CoP, the manufacturers resisted a common DNF symbol citing "brand individuality" as the reason. However, existing commercial products already have the same, across brands, Do-Not-Do-Something labeling that could be used as a model for baby wipes packaging. That product is the Laundry Detergent Pod category. In this category, all the manufacturers have large symbols with bold red lines, and a written instruction that starts with the word "WARNING," This universal red circle with a slash symbol immediately catches the eye of the consumer and is reinforced by the word "WARNING."

The manufacturers could have greatly improved how they convey that baby wipes are not flushable just by complying with the labeling CoP they agreed to in 2017. However, based on this study, they have not. In fact, it could be argued, that many have gone to great lengths to hide that baby wipes are not to be flushed as a method of disposal. Manufacturers should instead convey to consumers that these products are not flushable by agreeing to adopt a warning design similar to the Laundry Detergent Pod category. In addition, manufacturers should adopt a truly transparent ingredient label, similar to the clothing manufacturers, that lists the fiber type(s) contained in the substrate or expand the current European labeling on the Kimberly Clark Huggies wipes to include that it contains plastics in addition to the 65 per cent cellulose/ wood pulp already listed. Another option would be to adopt the European Union Single Use Plastic labeling requirement (Proposed for 2020).

However, if they do not make these changes, it appears that the only effective remedy will be through a regulatory/ legislative process that modifies the INDA Labeling CoP and makes proper labeling mandatory. WC

F.O.G. Clogs

Educating people on how F.O.G.'s should be disposed was an important part of the public education campaign.

Inset: Stu Wardle conducts effluent sampling for the City of Markham in early 2019.

Educating the community on the proper disposal methods for fats, oils, and greases.' BY DANIELLE THOM

FROM DAMAGE to private property and public infrastructure, to harmful impacts on the environment and human health, sewer backups and surcharging caused by the improper disposal of fats, oils, and grease (F.O.G.) have impacted communities throughout the country. To combat this issue several municipalities have encouraged their residents to put F.O.G. in their green bins and garbage cans instead of down drains.

But how effective have these calls to action been? The hidden nature of residential F.O.G. disposal habits makes it difficult to measure the success of educational campaigns. When used alone, traditional measurements of success such as city-wide resident surveys are not accurate because they do not provide enough quantitative data to make acute changes to educational tactics.

To overcome this barrier, the City of Markham chose to implement a pilot project before the City-wide launch of our F.O.G. Clogs Campaign. This pilot compared the implementation of four educational strategies in seven pilot communities through a unique three-step evaluation method. Using this information, we have created the most efficient, economical campaign possible for our city. The campaign strategies that we have developed since the pilot project for our community will not be effective in all municipalities across the country, but we hope that our evaluation method will be a useful tool for other municipalities as they plan their F.O.G. awareness campaigns.

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The evaluation method

Step 1: Pre-education monitoring

Pre-education monitoring measured residential F.O.G. disposal habits before the implementation of any educational strategies. This created a baseline of both qualitative and quantitative results by using four tools in each pilot community:

1 **Resident Focus Groups:** Discuss knowledge of F.O.G. products, F.O.G. disposal habits, and barriers to proper F.O.G. disposal.
2 **Online Resident Surveys:** Measure household knowledge of F.O.G. products and F.O.G. disposal habits.
3 **Baseline Effluent Sampling:** Test for total oil and grease (T.O.G.) twice, using the average value as the baseline monitoring number.
4 **Baseline Green Bin Waste Audits:** Weigh green bins and green carts in each community, and then subtract the weight of the bin or cart. Use this value as the baseline monitoring number.

Step 2: F.O.G. disposal education administration

Once pre-education monitoring was completed, each pilot community was classified as either a multi-residential community (MR) or a single-detached home neighborhood (SD). This distinction was made so that we could give each group-specific F.O.G. disposal instructions on educational handouts.

Once the two groups were made, we administered one of four education tactics to each community:

1 **Education administration & F.O.G. kit distribution (MR):** Present tenants with an educational handout and distribute a kit containing a F.O.G. collection cup, sink strainer and sponge to each household.
2 **Education administration & F.O.G. collection cup distribution (MR & SD):** Present residents with an educational handout and distribute a F.O.G. collection cup to each household.
3 **Education administration only (MR & SD):** Distribute an educational handout to each household.
4 **No education administration or F.O.G resource distribution (MR & SD):** Control group.

Step 3: Post-education monitoring

After the F.O.G. educational materials were distributed the pilot communities, post-education monitoring was undertaken in the same manner as the pre-education monitoring. Like pre-education monitoring, this involved using a combination of residential surveys, two effluent samples, and one green bin waste audit in each pilot community. These results were then compared to the pre-educational monitoring results. An educational tactic was deemed as successful if:
-Residential surveys showed an increase in general F.O.G. knowledge.
-Effluent samples showed a decrease in T.O.G. levels, and.
-Green bin audits showed an average increase in green bin weight.

Pilot program conclusions

Upon the completion of the pilot program, it was concluded that education i.e.. Option C) was the most efficient method of F.O.G. public outreach for residents living in the City of Markham. This was the only method wherein all three criteria of success were met.
With this knowledge, we chose to create an educational campaign focused on developing diverse avenues of communication rather than purchasing large amounts of campaign materials. Our core messaging was streamlined to three target actions (wiping, scrapping, and pouring F.O.G. into an organics bin), and extra time was spent to create cheeky campaign commercials with an air of local "viral-ness". These core messages and commercials were conveyed through several forms of citywide media including:

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-Weekly city page
-Monthly city page
-Static displays
-Public and staff boards
-Community centre washroom posters
-F.O.G. branded swag (cups, sponges, sink strainers)
-Markham Like Magazine
-Campaign commercials
-Cineplex VIP Markham pre-show campaign commercials
-Portal landing page
-Paid and organic social media
-City of Markham eNews & eBlast
-Digital marquees
-Electronic information boards
-Mayor & Council newsletters and social media content
-F.O.G. photobooth
- Mobile signs
-Education booth at city and community events
-Miller waste truck decals
- On-hold messaging (City Contact Centre)

General conclusions

By carrying out an extensive pilot project, we were able to launch a tailored educational campaign dubbed the "F.O.G. Clogs Campaign" in April 2019. In the year that has followed, we have seen the following benefits in our diverse communities:

-Average 55 per cent decrease in residential sewer backup calls received by the City of Markham Contact Centre.
-Average 15 per cent decrease of F.O.G. found in effluent samples from pilot project communities.
-Average two per cent increase of total organics weight in pilot project communities.
-4,683 F.O.G. cups given to residents;
-160 Get to Know H2O presentations (with F.O.G. being a topic) to +3,900 attendees.
-Over 200,000 commercial views by residents (social media, website, Cineplex).
-Over 14,000 residents at education booth, with F.O.G. being the main focus.
-103,147 visitors to the F.O.G. Clogs Campaign website.
-Regularly contacted by households and condo owners for F.O.G. handouts and kits.
-Contacted by schools to include F.O.G. into presentation material for Get to Know H2O.
-General interest and discussion at our education booth at City and community events;
- Discussions with residents on ways to reduce F.O.G and proper disposal.
-Waterworks Operations and Maintenance section has noticed a decrease in F.O.G. related residential backups.

Moving through 2020 and into 2021, we plan on executing a second wave of F.O.G. educational efforts and re-evaluating the efficiency of our approach using our three-step monitoring system. WC

Lac Seul First Nation celebrates the end of 17-year boil water advisory

The Government of Canada partnered with Lac Seul First Nation in 2017 to build the new water treatment plant

CBC News · Posted: Feb 13, 2020 3:01 PM ET | Last Updated: February 13

Indigenous Services Canada invested $4.7 million in support of the new water treatment plant, while the Small Communities Fund, Infrastructure Canada and Ontario Ministry of Infrastructure provided over $3.6 million for the project. (Penn-co Construction)

Lac Seul First Nation has officially opened the doors on a new water treatment plant, ending a 17-year boil water advisory for the community of 350 people.

The official grand opening of the new facility took place on Thursday, February 13 in the community of Kejick Bay.

In a written statement, officials from Lac Seul First Nation said that the new facility is a good example of the government's effort to work in partnership with First Nations to access clean, safe drinking water.

The new facility comes after an existing water system no longer met provincial and federal drinking water regulations back in 2003.

The Government of Canada partnered with Lac Seul First Nation in 2017 to build the new water treatment plant.

Indigenous Services Canada invested $4.7 million in support of the project, while the Small Communities Fund, Infrastructure Canada and Ontario Ministry of Infrastructure provided over $3.6 million.

According the Penn-Co Construction, the Kejick Bay Water Treatment Plant is a 4200 square foot facility and is designed to have the potential for future expansion.

The new plant was completed in 2019, and the long-term boil water advisory was lifted on January 7, 2020.

Lac Seul First Nation is located 40 km northwest of Sioux Lookout, and is comprised of three communities, including Frenchman's Head, Whitefish Bay, and Kejick Bay.

Science-Based Health Benefits of Drinking Enough Water

Healthline
Jul. 12, 2020 10:29AM EST Health + Wellness
By Joe Leech

The human body comprises around 60% water.

It's commonly recommended that you drink eight 8-ounce (237-mL) glasses of water per day (the 8×8 rule).

Although there's little science behind this specific rule, staying hydrated is important.

Here are 7 evidence-based health benefits of drinking plenty of water.

1. Helps Maximize Physical Performance

If you don't stay hydrated, your physical performance can suffer.

This is particularly important during intense exercise or high heat.

Dehydration can have a noticeable effect if you lose as little as 2% of your body's water content. However, it isn't uncommon for athletes to lose as much as 6–10% of their water weight via sweat.

This can lead to altered body temperature control, reduced motivation, and increased fatigue. It can also make exercise feel much more difficult, both physically and mentally.

Optimal hydration has been shown to prevent this from happening, and it may even reduce the oxidative stress that occurs during high intensity exercise. This isn't surprising when you consider that muscle is about 80% water.

If you exercise intensely and tend to sweat, staying hydrated can help you perform at your absolute best.

Summary

Losing as little as 2% of your body's water content can significantly impair your physical performance.

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2. Significantly Affects Energy Levels and Brain Function

Your brain is strongly influenced by your hydration status.

Studies show that even mild dehydration, such as the loss of 1–3% of body weight, can impair many aspects of brain function.

In a study in young women, researchers found that fluid loss of 1.4% after exercise impaired both mood and concentration. It also increased the frequency of headaches.

Many members of this same research team conducted a similar study in young men. They found that fluid loss of 1.6% was detrimental to working memory and increased feelings of anxiety and fatigue.

A fluid loss of 1–3% equals about 1.5–4.5 pounds (0.5–2 kg) of body weight loss for a person weighing 150 pounds (68 kg). This can easily occur through normal daily activities, let alone during exercise or high heat.

Many other studies, with subjects ranging from children to older adults, have shown that mild dehydration can impair mood, memory, and brain performance.

Summary

Mild dehydration (fluid loss of 1–3%) can impair energy levels, impair mood, and lead to major reductions in memory and brain performance.

3. May Help Prevent and Treat Headaches

Dehydration can trigger headaches and migraine in some individuals.

Research has shown that a headache is one of the most common symptoms of dehydration. For example, a study in 393 people found that 40% of the participants experienced a headache as a result of dehydration.

What's more, some studies have shown that drinking water can help relieve headaches in those who experience frequent headaches.

A study in 102 men found that drinking an additional 50.7 ounces (1.5 liters) of water per day resulted in significant improvements on the Migraine-Specific Quality of Life scale, a scoring system for migraine symptoms.

Plus, 47% of the men who drank more water reported headache improvement, while only 25% of the men in the control group reported this effect.

However, not all studies agree, and researchers have concluded that because of the lack of high quality studies, more research is needed to confirm how increasing hydration may help improve headache symptoms and decrease headache frequency.

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Summary

Drinking water may help reduce headaches and headache symptoms. However, more high quality research is needed to confirm this potential benefit.

4. May Help Relieve Constipation

Constipation is a common problem that's characterized by infrequent bowel movements and difficulty passing stool.

Increasing fluid intake is often recommended as a part of the treatment protocol, and there's some evidence to back this up.

Low water consumption appears to be a risk factor for constipation in both younger and older individuals.

Increasing hydration may help decrease constipation.

Mineral water may be a particularly beneficial beverage for those with constipation.

Studies have shown that mineral water that's rich in magnesium and sodium improves bowel movement frequency and consistency in people with constipation.

Summary

Drinking plenty of water may help prevent and relieve constipation, especially in people who generally don't drink enough water.

5. May Help Treat Kidney Stones

Urinary stones are painful clumps of mineral crystal that form in the urinary system.

The most common form is kidney stones, which form in the kidneys.

There's limited evidence that water intake can help prevent recurrence in people who have previously gotten kidney stones.

Higher fluid intake increases the volume of urine passing through the kidneys. This dilutes the concentration of minerals, so they're less likely to crystallize and form clumps.

Water may also help prevent the initial formation of stones, but studies are required to confirm this.

Summary

Increased water intake appears to decrease the risk of kidney stone formation.

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6. Helps Prevent Hangovers

A hangover refers to the unpleasant symptoms experienced after drinking alcohol.

Alcohol is a diuretic, so it makes you lose more water than you take in. This can lead to dehydration.

Although dehydration isn't the main cause of hangovers, it can cause symptoms like thirst, fatigue, headache, and dry mouth.

Good ways to reduce hangovers are to drink a glass of water between drinks and have at least one big glass of water before going to bed.

Summary

Hangovers are partly caused by dehydration, and drinking water can help reduce some of the main symptoms of hangovers.

7. Can Aid Weight Loss

Drinking plenty of water can help you lose weight.

This is because water can increase satiety and boost your metabolic rate.

Some evidence suggests that increasing water intake can promote weight loss by slightly increasing your metabolism, which can increase the number of calories you burn on a daily basis.

A 2013 study in 50 young women with overweight demonstrated that drinking an additional 16.9 ounces (500 mL) of water 3 times per day before meals for 8 weeks led to significant reductions in body weight and body fat compared with their pre-study measurements.

The timing is important too. Drinking water half an hour before meals is the most effective. It can make you feel more full so that you eat fewer calories.

In one study, dieters who drank 16.9 ounces (0.5 liters) of water before meals lost 44% more weight over a period of 12 weeks than dieters who didn't drink water before meals.

The Bottom Line

Even mild dehydration can affect you mentally and physically.

Make sure that you get enough water each day, whether your personal goal is 64 ounces (1.9 liters) or a different amount. It's one of the best things you can do for your overall health.

AWWAO survey results 2020 based on 108 participants

#	Question	Yes	No
1	**Would you be comfortable taking in-person training (following current COVID-19 policies and procedures?**	79	29
2	**If you are NOT comfortable attending in-person training, would you prefer attending "virtual online" training?**	54	46
3	**If you were to attend "virtual/online" training do you have access to a computer and internet to partake in the course?**	91	15
4	**If you are comfortable taking in-person training, are you comfortable travelling (plane/vehicle) to the location of the course if it is not provided in your current location?**	71	34
5	**What is your preferred transportation?** Air-3 Land –74 Either– 28		
6	**Do you prefer correspondence training versus online training?** Yes-25 No-29 Either-54		
7	**Would you prefer localized training?**	83	23
8	**What courses would you like to see offered?** • Aeration technology (nano-aeration) scada or computer data acquisition report making (using trends on excel) • Blue/Green Algae courses SCADA courses • Chainsaw, and fuel handling, spill containment. and basic PPE use • Class 1-4 water treatment • Confined space, entry procedures • Fire hydrant course • CT calculation training, working safely on chemical pumps, Lift stations pumps, floats etc, LOG BOOKS • Disinfection • Environmental audits, site assessments of landfills • Hydrant repairs, correlator leak detection with pvc pipe, calibration of instruments • Jar testing • Lagoon, uv • Leak detection, filters, OIT and Math. • Mandatory courses • O&M Reports how to fill out. Scheduling of yearly maintenance plan who to clean/replace chlorine pumps • Pumps and motors, general maintenance on distribution system and the distribution process • Record keeping • Safety courses & new technologies • Scada operations, distribution assembly, blue brute installation and practices. • Servicing pumps of all kinds • Wastewater Treatment level 1, 2,3 & 4 • Water correlators (PVC, Metal, Concrete) pipes, Calibrations of hand held and wall mount applications, Fire Hydrant maintenance (take apart from puck to valve and reinstall). • Water Distribution Courses • Water sampling • Wqa federal funding for wtp		

OWWCO Exam Schedule

Exams are resuming and new dates are now available on the exam schedule. To protect the health and safety of exam participants, new health and safety measures have been implemented.

OWWCO is committed to ensuring the health and safety of exam participants and proctors. Should unprecedented issues arise that could put exam participants and proctors at risk, we may need to cancel exams on short notice. If this must happen, we will contact participants as early as possible and re-schedule exams.

Full Exam Schedule

City	Test Date	Test Site	Deadline for applications
GTA West	Nov/03/2020	Best Western Plus Toronto Airport	Oct/05/2020
GTA West	Nov/04/2020	Best Western Plus Toronto Airport	Oct/05/2020
Kingston	Nov/05/2020	Ambassador Hotel and Conference Centre	Oct/05/2020
Blenheim	Nov/11/2020	Blenheim Arena	Oct/12/2020
GTA East	Nov/11/2020	Evolving Space	Oct/12/2020
Hamilton	Nov/11/2020	Hamilton Sheraton	Oct/12/2020
Sudbury	Nov/12/2020	Quality Inn Sudbury	Oct/12/2020
Kitchener	Nov/12/2020	Walper Hotel	Oct/12/2020
St. Catharine's	Nov/18/2020	Grantham Lions Club	Oct/19/2020
London	Nov/19/2020	Days Inn London	Oct/19/2020
GTA West	Nov/19/2020	Best Western Plus Toronto Airport	Oct/19/2020
Peterborough	Nov/20/2020	Lions Community Centre	Oct/20/2020
Orillia	Nov/25/2020	ODAS Park	Oct/26/2020
Dryden	Nov/27/2020	Keewaytinook Centre of Excellence	Oct/27/2020
GTA West	Dec/02/2020	Best Western Plus Toronto Airport	Nov/02/2020
GTA West	Dec/03/2020	Best Western Plus Toronto Airport	Nov/03/2020
GTA East	Dec/08/2020	Evolving Space	Nov/09/2020
Ottawa	Dec/09/2020	Holiday Inn and Suites Kanata	Nov/09/2020
Sudbury	Dec/10/2020	Quality Inn Sudbury	Nov/10/2020
Peterborough	Dec/11/2020	Peterborough Lions Community Centre	Nov/11/2020
Kitchener	Dec/15/2020	Walper Hotel	Nov/16/2020
GTA West	Dec/16/2020	Best Western Plus Toronto Airport	Nov/16/2020
Hamilton	Dec/17/2020	Hamilton Sheraton	Nov/17/2020
Dryden	Dec/18/2020	Keewaytinook Centre of Excellence	Nov/18/2020

Ontario Water Wastewater Certification Office
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