



A Newsletter for Water and Wastewater Treatment Plant Operators!

# THE WATERDRUM

July 2018

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## Paul Strohack Operator of the Year, Frederick Dubeau



Frederick Dubeau featured article on page 3-5

AWWAO would like to congratulate **Frederick Dubeau from Chippewas of Nawash** who was awarded with the Paul Strohack Operator of the Year Award. The award was presented by Ian Fortin on Wednesday, February 28, 2018 at the 23rd Annual AGM & Training Conference at the Chelsea Hotel in Toronto, Ontario



## Sponsored by:



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*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: \_\_\_\_\_

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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.

The Aboriginal Water and Wastewater Association of Ontario's newsletter is published quarterly by the AWWAO at 41C Duke Street, Box 340, Dryden, Ontario P8N 2Z1  
Tel: (807) 735-1381 ext. 1660  
E-mail: [info@awwao.org](mailto:info@awwao.org)

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



## Operator of the Year 2018- Frederick Dubeau

I have been in the business of Water Treatment & Distribution for 28 years. I started when I was 19 years of age. I had to quit high school to get a job because I was becoming a young dad. I remember going to Public works at 7am to see if they had any job opportunities. The answer was always 'No', I continued going back every morning at 7am to see if they had any jobs available to allow me to provide for my new family. On the 5<sup>th</sup> consecutive day, the Manager asked me how long I was going to continue to show up at the start of every day. My reply was "Until you have work for me", I started the next day.



I was put on the crew installing water mains and sewer mains. In the first 2 weeks of the job I could have been killed. A water main that was supposed to be empty that we were going to add too was actually filled with air. Myself and another employee were trying to take the cap off the end of the pipe. It popped a little but stayed in place, the Public utilities crew came & when they attempted to take it off the pressure using a high hoe; the water main blew apart and 2 men went flying 20 feet into the air. I was part of the team giving CPR to the 2 men. Many days in the hospital and broken bones but both men thankfully survived.

Being only full time, seasonal; I was laid off in the winter time. I then took advantage of this time to add to my portfolio to continue to better myself. I attained my DZ license, and also attended our local college, as an overage student in Radio Broadcasting. After one year of college, I went back and got my two remaining credits to achieve my grade 12. For 3 summers I continued to work for the City of Trenton. On my 3<sup>rd</sup> year with the city I would always lend a helping hand to the Public Utilities employees when they had to show up on site. The same team of men that required help that tragic day. When the City laid me off for the winter season 1993 Public Utilities Commission wanted to hire me the day after the lay off for water distribution. While working full time, I continued studying for my licensing and achieved a Level 2 in Distribution.

I remember the day I decided to change my course and go into the treatment side of water. I was 5 yrs. of being in distribution, it was minus 30 Celsius (-30) out and we had 3 main breaks in a row. We were a small crew of 4 people for the entire city and had to work over 40 hrs straight. It was so cold. I seen that a treatment job was coming up, due to an employee retiring. I started studying and achieved my OIT's in water and have continued educating myself to the point of where I am currently a Level 3 Treatment with aspirations to achieve my Level 4.



Continued



I worked 27 years with the amalgamated City of Quinte West. I had aspirations of becoming a Manager. I applied for Manager/ Supervisor at Chippewas of Nawash. I was hired in February of 2017. When I started immediately I saw the difference between Provincial Regulations and Federal Regulations. The last Manager had vacated, 2 employees had left and 1 employee was due to begin maternity leave thus leaving

me as the only operator for Chippewas of Nawash. It was quick to note the immediate changes required within the plant for the protection of the community. There were numerous deficiencies at the water plant that had to be corrected. I had to make some drastic changes at the Water plant and fast. I consider myself a trouble shooting specialist and I enjoy trying to figure out how things work and how to optimize the best results.

Some of the challenges that required immediate attention are:

- Change Chemical pumps to flow pace – Chippewas of Nawash would pump the same amount of chemical no matter what flow was leaving the plant. Thus, chlorine and PAC (Poly Aluminum Chloride) were either pumping too much or not enough.
- SCADA – needed to be updated and reports generated to actually mean something. The flows being recorded since SCADA was first installed were all incorrect. Meaning all previous data was useless for looking back in time to compare flows & other data.
- Filter Media – The filter media was way beyond its time in years. Its life expectancy 6-8 years, however Chippewas of Nawash media was in for I believe it was 14 years. This was making the micro-filters break apart every 2 weeks at a cost of \$1200.

PLC needed rewiring and configured properly to allow proper function

- A low lift/high lift pump was replaced.
- A chlorine analyzer installed at the tower and shown on SCADA so we can see what our distribution chlorine is in the distribution. The previous Supervisor had a company price this with a QMI analyzer. QMI analyzer are not user friendly at all. I believe contractors price was around \$32,000 for the analyzer and install. I purchased a Deplox 3 Analyzer (\$5,000), one of the top of the line. A local electrical company, charged approximately \$1,000 for electrical install & I brought back the 4-20amp signal back to SCADA.
- Installed 2 more Deplox 3 analyzer at the water plant itself. The QMI that was there was very inaccurate and not user friendly. It was constantly failing, which is a violation of the regulations.



## Continued

- Purchased and replaced the turbidity meters. Most of our turbidity meters were failing and would not take proper readings. Not to mention they were obsolete. The RAW turbidity meter was obsolete when it was installed and was not working at all when I was hired.
- The backwash sequence needed revamped, previously the backwash was surging thus causing filter media to not wash or settle properly.
- Installed proper drain lines on the settling tanks, proper flushing needs to be done on the settling tanks every so often. No records on site recording this being done in the past.
- Distribution-8 hydrants were out of service. I purchased 1 hydrant and pieced it out to fix all 8 hydrants that were out of service. All are hydrants are now operational, however this is still a work in progress to enhance their performance.

In June 2017, OCWA came to our Reservation for a meeting to meet with Chief & Council with a report that they had generated in late 2016. The report had outlined what needed changed at the plant in order for it to survive. Jackie Muller from OCWA was surprised and shocked how the report that she had just

given outlining deficiencies had already been taken care of. I ended up hiring some great employee's who are in the process of getting a licence or upgrading. I enjoy training my staff with my 27 years of experience. I have a great Chief & Council, Administrator and an awesome Capital Manager. I could not ask for a better boss then Bill Jones, who always appreciates my hard work and dedication to my position. I am very grateful. Within the first 3 months with help from staff we were able to achieve things that have never been done at Chippewas of Nawash. On my office wall there is a sign that I posted in the first week of being employed as Manager that says "Today, we are going to make the BEST WATER WE CAN!"



I take great pride in trying to achieve the best we can achieve with the resources we have. We are in negotiations right now with INAC to get a New Water Plant and Distribution as our current plant can not meet provincial regulations or growing population demands. Currently we are in the process (funded by INAC) to do a feasibility study on our Water Plant & Distribution.



## Northern Exam Prep Week- Sault Ste Marie



Aboriginal Water and Wastewater Association of Ontario is pleased to announce that we are offering a Northern Exam Prep Week from October 1-5, 2018, held at the Delta Sault Ste. Marie Waterfront Hotel, 2018 St. Mary's River Dr., Sault Ste Marie, ON. Keewaytinook Centre of Excellence (KCE) will be providing the training for the course.



Selected Course (s):

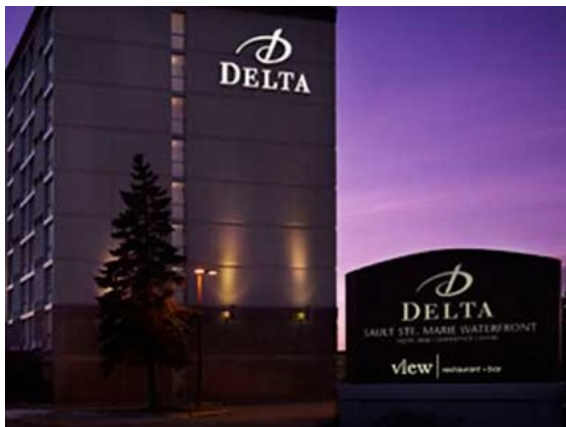
**Title: Exam Preparation OIT**

**Title: Exam Preparation Level I, II & III Water Treatment**

**Course tuition, exam fees, accommodations, luncheons and health breaks will be covered by AWWAO. You must be an AWWAO member to participate in the course.**

Earn CEUs as you increase your skills.

**Deadline to register is August 29, 2018**



**\*\*\*\*Please note:** Course attendance requests from your First Nation will be honoured. Course attendance will be taken daily and CEUs will be awarded accordingly. 100% participation is mandatory and expected by our funding agencies.



## Southern Exam Prep Week-Toronto



Aboriginal Water and Wastewater Association of Ontario is pleased to announce that we are offering a Southern Exam Prep Week from October 29 to November 2, 2018, will be held at the Delta Hotels by Marriott Toronto Airport & Conference Centre, 655 Dixon Rd, Toronto, ON. World Water Operator Training Company (WWOTC) will be providing the training for the course.



Selected Course (s):

Title: Exam Preparation OIT

Title: Exam Preparation Level I & II Wastewater Treatment

Title: Exam Preparation Level I & II Water Distribution

**Course tuition, exam fees, accommodations, luncheons and health breaks will be covered by AWWAO. You must be an AWWAO member to participate in the course.**

Earn CEUs as you increase your skills.

**Deadline to register is September 21, 2018**



Registration  
**FORMS**

Can be found at  
[www.awwao.org](http://www.awwao.org) or email:  
[info@awwao.org](mailto:info@awwao.org)

**For more information please contact:**

**Sara Campbell**

Tel: 807-216-8085

Fax: 807-223-1222

Email: [info@awwao.org](mailto:info@awwao.org)



## *Gary Wayne Oja 1953-2018*

It is with heavy hearts, we announce the passing of Gary Oja who passed away on April 22. Gary was a certification instructor with Keewaytinook Centre of Excellence for about 6 years.

Gary was known by many of our members, and many of our operators had done training with Gary at some point in the past few years. He was a familiar, friendly face at our past AGM's and training sessions.

He will be greatly missed by many, not only friends and family but also missed in our industry.



### **Obituary for Gary Oja**



Mr. Gary Wayne Oja, age 64 years, passed away unexpectedly at the Thunder Bay Regional Health Sciences Centre on April 22, 2018. Gary was born in Geraldton, Ontario on December 15, 1953 and raised and educated in Thunder Bay. He attended Algonquin Public School, Hammarskjold High School, and obtained a Degree of Bachelor of Science on May 25, 1991 at Lakehead University. He was employed by the Ministry of the Environment/Ontario Clean Water Agency in water and waste water, retiring on August 8, 2007. During his employment he held various positions including Operator, Senior Operator, Assistant Manager, Acting Operations Manager and Acting Manager in the Northwest Hub. He commenced his employment in Atikokan followed by Ear Falls, Red Lake, Sault Ste.

Marie, North Bay and ending in Terrace Bay. Gary was well liked by all co-workers and was always willing to take on new initiatives. After retirement he returned to Thunder Bay. During retirement he worked part-time as a consultant and instructor in water and waste water for Keewaytinook Center of Excellence in Dryden. Gary is survived by his sister Darlene Korman (Pekka) of Atlanta, Georgia, aunt Bertha and brother Ronald. Other relatives in Thunder Bay, Geraldton, Edmonton and Port Alberni, British Columbia also survive. He was predeceased by his parents Laila and John and his brother Brian. Gary was a very private person who made friends throughout his life and was a friend of Bill W. for thirty-four years. Gary enjoyed volunteering that included the Community Income Tax Program and the Air Cadet League of Canada. Gary had a keen passion for vehicles, primarily his 1992 Buick Regal Sport which was stored each winter. Funeral services will be held on Monday, April 30, 2018 at 11:00 a.m. in the Sargent & Son Funeral Chapel, 21 N. Court Street with Pastor Jari Lahtinen presiding. The interment at Riverside Cemetery will follow the reception in the Sargent Family Reception Center. Visitation for friends will be held on Sunday from 2:30-4:00 p.m. in the Sargent & Son Chapel. Should friends so desire memorials to the Suomi Koti of Thunder Bay would be appreciated. On-line condolences may be made at [www.sargentandson.com](http://www.sargentandson.com)





## Ontario: Eabametoong First Nation, design-build

By David Suzuki Foundation One nature.

After more than 15 years under a boil water advisory, the northern Ojibway community of Eabametoong, also known as Fort Hope First Nation, is anticipated to have a newly expanded water treatment plant by December 31, 2019. The community is approximately 360 kilometres north of Thunder Bay and is accessible only by air and winter road. Most of the First Nations population of 1500 people have spent the better part of two decades buying water or boiling water for at least five minutes before drinking it. Andy Yesno, senior adviser at the Eabametoong band office, explains, “recently, because of the priorities of the government to end boil water advisories, we finally got on the list to address the boil water and call for a new expansion of the water treatment plant.” The community will receive just over \$10 million for an upgrade to the current water treatment plant, which will double its size and update the facility.

The community is one of the first to take part in an expedited “design-build” process, initiated by the federal government, which combines two major steps in water infrastructure delivery. Rather than hiring two separate contractors—one to complete the water treatment plant design and another to build it—one contractor is hired to complete both steps, saving time and resources. The tender for the design–build process has already gone out, and shovels are expected to be in the ground by summer 2018. Because the federal government released funding incrementally in the form of progress payments, the project will occur in phases and will not be complete until December 31, 2019.

The water treatment plant in Eabametoong was built more than 20 years ago and is designed to accommodate a community one-third the size. Due to high demands placed on the water treatment plant by a growing community, chlorine distribution is not uniform across the community. Yesno explains that when you take readings across the First Nation, there is high chlorine in some areas and low chlorine in others, which is the primary cause of the community’s boil water advisory.

Assistant band manager Ronald Misewace explains that, ideally, the community would have liked to build a new water treatment plant instead of expanding the existing one, but the funding allocated they have to work with what they are given. Speaking about his community, Misewace explains, “we want to progress and expand. We don't want roadblocks, We're looking for ways to work with governments or businesses or organizations.”

Although equipment for the project has been pre-ordered, concerns remain about whether there will be a winter ice road this year. Last year, because of unseasonably high temperatures, the ice never became thick enough to build a winter road. With an anticipated 30 to 40 truckloads of supplies needed for water treatment plant construction, flying in necessary supplies in the event of unviable winter roads can add enormous costs to constructions for the First Nation.

Yesno explains that the process for updating water infrastructure in First Nations communities has traditionally been “one of the slowest processes I know of, working with government.” However, since the federal government made the commitment to end all long-term drinking water advisories by 2021, he has noticed changes: “they're fast tracking this one.”



“We have to watch out that this is done right,” Yesno cautions. “If it’s not done right, then we’re back to the same problem we had before.”



Harry O'Kees, assistant water treatment operator



Eabametoong First Nation Water Treatment Plant

## By Water First

# With lots of help, we're increasing access to clean water in First Nations

It's easy to take clean water for granted. We live in Canada, after all.



The reality is 20% of First Nations are under a boil water advisory. In Ontario, it's 40%, twice the national average. And while there are many factors we can't control, we have a solution that is starting to make a difference.



## *Can you spare a moment to help Josephine Mandamin?*

Josephine Mandamin needs your help with “**Canadian Nuclear Safety Commission: Support Saugeen Ojibway Nation's right to consent on a major nuclear project**”. Join Josephine and 12,290 supporters today.

**First Nations have the right to free, prior and informed consent to developments on our lands and waters.** As members of the Saugeen Ojibway Nation (SON), the collective of the Chippewas of Nawash Unceded First Nation and the Chippewas of Saugeen First Nation, we request that the Canadian Nuclear Safety Commission recognize our indigenous nation’s right to Free, Prior and Informed Consent (FPIC) on Bruce Power’s proposed Major Component Replacement (MCR) Project. We look to you, members, leaders and allies to show your support for this cause.

Bruce Power’s proposed multi-billion-dollar MCR Project extends the life of Units 3-8, which means the facility will be able to operate on our Territory for another 30-35 years. They have included this major project in their license renewal application for Crown consideration and approval this spring so that they are able to begin construction in 2020.

**This project will have serious impacts on the water in Lake Huron, on the land, and will produce an immense amount of nuclear waste at the site. Our rights as Indigenous peoples must be respected.**

Our People have been here since time immemorial, governing and caring for our lands and waters in a way that respects our relationships and interconnectedness with all of Creation. We never gave up our right to these relationships within our territory. Our right to govern, care for and benefit from our territory is deeply connected to the survival of our People. The values and actions of our ancestors considered us and we must consider those yet to come. A community-driven free, prior and informed consent-based process will mean that our nation will have the time to carefully consider the impacts and discuss and dialogue with one another on what this project will mean for our people and our territory, now and into the future.

**Our nation was never consulted when the nuclear facility, now known as Bruce Power, was built in our territory.** It is time to correct this wrong-doing. The MCR Project will have harmful impacts that we have yet to fully understand.

We have not been given the time, space and resources as required to do the work we need to. **The Canadian Nuclear Safety Commission and the Government of Canada must recognize that the MCR Project cannot happen without the Free, Prior and Informed Consent of our nation.**

The United Nations Declaration on the Rights of Indigenous Peoples to which Canada is now signatory, provides that the State shall, “obtain [Indigenous] free, prior and informed consent prior to the approval of any project affecting [Indigenous] lands or territories and other resources”. Our rights as Indigenous peoples cannot be overlooked as we try to find a path toward Indigenous-Crown reconciliation.

**Join us in asking our nation’s right to FPIC be respected on this major project, that will impact our people, lands and waters for generations to come.**



## *What is a water footprint?*

Everything we use, wear, buy, sell and eat takes water to make.

The water footprint measures the amount of water used to produce each of the goods and services we use. It can be measured for a single process, such as growing rice, for a product, such as a pair of jeans, for the fuel we put in our car, or for an entire multi-national company. The water footprint can also tell us how much water is being consumed by a particular country – or globally – in a specific river basin or from an aquifer.

**The water footprint is a measure of humanity's appropriation of fresh water in volumes of water consumed and/or polluted.**

The water footprint allows us to answer a broad range of questions for companies, governments and individuals. For example:

- ◆ where is the water dependence in my company's operations or supply chain?
- ◆ how well are regulations protecting our water resources?
- ◆ how secure are our food or energy supplies?
- ◆ can I do something to reduce my own water footprint and help us manage water for both people and nature?

Depending on the question you are asking, the water footprint can be measured in cubic metres per tonne of production, per hectare of cropland, per unit of currency and in other functional units. The water footprint helps us understand for what purposes our limited freshwater resources are being consumed and polluted. The impact it has depends on where the water is taken from and when. If it comes from a place where water is already scarce, the consequences can be significant and require action.

The water footprint has three components: green, blue and grey. Together, these components provide a comprehensive picture of water use by delineating the source of water consumed, either as rainfall/soil moisture or surface/groundwater, and the volume of fresh water required for assimilation of pollutants.

### [Direct and indirect water use](#)

The water footprint looks at both direct and indirect water use of a process, product, company or sector and includes water consumption and pollution throughout the full production cycle from the supply chain to the end-user.

It is also possible to use the water footprint to measure the amount of water required to produce all the goods and services consumed by the individual or community, a nation or all of humanity. This also includes the direct water footprint, which is the water used directly by the individual(s) and the indirect water footprint – the summation of the water footprints of all the products consumed.



## What is a water footprint?



### The three water footprints:

**Green water footprint** is water from precipitation that is stored in the root zone of the soil and evaporated, transpired or incorporated by plants. It is particularly relevant for agricultural, horticultural and forestry products.

**Blue water footprint** is water that has been sourced from surface or groundwater resources and is either evaporated, incorporated into a product or taken from one body of water and returned to another, or returned at a different time. Irrigated agriculture, industry and domestic water use can each have a blue water footprint.

**Grey water footprint** is the amount of fresh water required to assimilate pollutants to meet specific water quality standards. The grey water footprint considers point-source pollution discharged to a freshwater resource directly through a pipe or indirectly through runoff or leaching from the soil, impervious surfaces, or other diffuse sources.



### The relation between consumption and water use

“The interest in the water footprint is rooted in the recognition that human impacts on freshwater systems can ultimately be linked to human consumption, and that issues like water shortages and pollution can be better understood and addressed by considering production and supply chains as a whole,” says Professor Arjen Y. Hoekstra, creator of the water footprint concept.

“Water problems are often closely tied to the structure of the global economy. Many countries have significantly externalized their water footprint, importing water-intensive goods from elsewhere. This puts pressure on the water resources in the exporting regions, where too often mechanisms for wise water governance and conservation are lacking. Not only governments, but also consumers, businesses and civil society communities can play a role in achieving a better management of water resources.”



## What is a water footprint?

### Some facts and figures


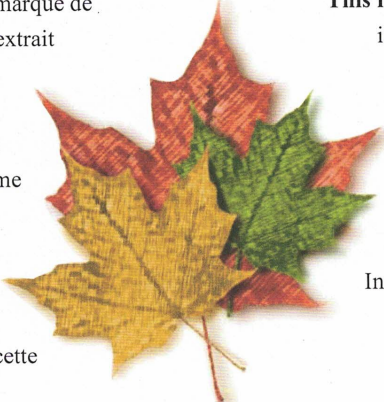
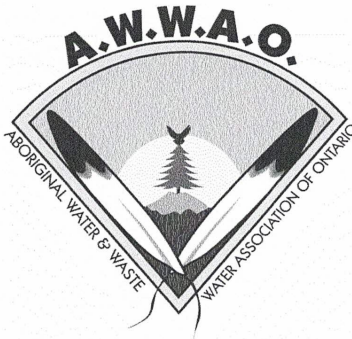
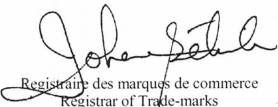
- ◆ The production of one kilogram of beef requires approximately 15 thousand litres of water (93% green, 4% blue, 3% grey water footprint). There is a huge variation around this global average. The precise footprint of a piece of beef depends on factors such as the type of production system and the composition and origin of the feed of the cow.
- ◆ The water footprint of a 150-gramme soy burger produced in the Netherlands is about 160 litres. A beef burger from the same country costs on average about 1000 litres.
- ◆ The water footprint of Chinese consumption is about 1070 cubic metres per year per capita. About 10% of the Chinese water footprint falls outside China.
- ◆ Japan with a footprint of 1380 cubic metres per year per capita, has about 77% of its total water footprint outside the borders of the country.
- ◆ The water footprint of US citizens is 2840 cubic meter per year per capita. About 20% of this water footprint is external. The largest external water footprint of US consumption lies in the Yangtze River Basin, China.
- ◆ The global water footprint of humanity in the period 1996-2005 was 9087 billions of cubic meters per year (74% green, 11% blue, 15% grey). Agricultural production contributes 92% to this total footprint.
- ◆ Water scarcity affects over 2.7 billion people for at least one month each year.

Has your email address recently changed (e.g. john@company.com to johnsmith@company.com)? Not a problem! Please [send us a note](#) requesting that we update your email address, and we'd be happy to take care of it.



## Certificate of Registration

Aboriginal Water and Wastewater applied for a trademark application in November 2016 with the Business development office. After the Trademark office received the application, it assigned us a filing date. The application was then reviewed by the Canadian Intellectual Property Office. After a lengthy process, AWWAO proudly received the Trade-marks Certificate of Registration dated June 6, 2018.

	Innovation, Sciences et Développement économique Canada Office de la propriété intellectuelle du Canada	Innovation, Science and Economic Development Canada Canadian Intellectual Property Office	
<i>Marques de commerce</i> <i>Certificat d'enregistrement</i>		<i>Trade-marks</i> <i>Certificate of Registration</i>	
<p><b>La présente atteste</b> que la marque de commerce identifiée dans l'extrait ci-joint, tiré du registre des marques de commerce, a été enregistrée et que ledit extrait est une copie conforme de l'inscription de son enregistrement. Conformément aux dispositions de la <i>Loi sur les marques de commerce</i>, cette marque de commerce est renouvelable tous les quinze ans à compter de la date d'enregistrement.</p>		<p><b>This is to certify</b> that the trade-mark, identified in the attached extract from the register of trade-marks, has been registered and that the said extract is a true copy of the record of its registration.</p> <p>In accordance with the provisions of the <i>Trade-marks Act</i>, this trade-mark is subject to renewal every 15 years from the registration date.</p>	
			
			
Número d'enregistrement Registration Number	<b>TMA998,221</b>	Date d'enregistrement Registration Date	<b>6 juin/Jun 2018</b>
Número de dossier File Number	<b>1808548</b>	 Registraire des marques de commerce Registrar of Trade-marks	
(CIPO 198) 05-16			