



Alberta Utility Operator

Not Knowing the Fisheries Act for Wastewater Discharge

photo: lagoons along the Battle River
article submitted by:
Town of Ponoka



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On December 2, 2011, the Town of Ponoka was convicted of a single count of violating section 36(3) of the federal *Fisheries Act* for the deposit of a deleterious substance into the Battle River for an incident that occurred on June 1, 2009. From this unfortunate event and the resulting sentence, an opportunity arises (as is so often the case)—the opportunity to use this incident as a means to bring greater public awareness to the current environmental state of the Battle River and to the responsibility we all bear for this river and for its protection.

The Battle River is an important part of the greater ecosystem and was, historically, an important fish habitat. The river runs for approximately 800 km, having its start at Battle Lake, meandering eastward through the province to Saskatchewan where finally it empties its water into the North Saskatchewan River. Unlike major rivers in

Alberta, the Battle River does not receive mountain runoff and is entirely dependant on runoff from the prairies, which in drought years can be almost non-existent. (continued on p. 2)

Over the years, the river's fish population has suffered as a consequence of the many impacts of recreation, development and industry on water quality. Historically the river contained populations of walleye and goldeye, along with 17 other species. Today, in the stretch of river flowing through the Ponoka region, surveys show that the dominant species is white suckers, and of the 19 different species of fish known to have existed in that portion of the river, only five remain detectable.

The Battle River is a prairie stream that is naturally nutrient rich and is vulnerable to the cumulative effects of human activity, including the presence of chemicals from residential and industrial development, loss of stream bank habitat, over-fishing, agricultural activity, wastewater effluent releases, and runoff from livestock and confined feeding operations. Water quantity has also been affected in recent years by water diversions for household, agricultural and industrial purposes and periodic low precipitation levels. Low oxygen levels in the river may occur due to algae blooms sparked by high concentrations of the nutrients upon which the algae thrive. These nutrients flow into the river from adjacent farmland and livestock operations, and from treated wastewater that the Town of Ponoka and the other communities along the river release into it.

Ponoka, as is the case with many municipalities, operates a Wastewater Treatment Facility which includes a series of treatment and storage cells, and which is regulated by Alberta Environment and Water. This system treats sewage and grey water collected in accordance with the Town's Approval issued by the department. As part of the treatment process, wastewater effluent flows first into four anaerobic cells and then through three aeration cells where the effluent may remain for up to 30 days. From the aeration cells, the effluent then flows to three storage cells where it remains for up to six months before, ultimately, the treated effluent is released into the Battle River. With proper design and operation, these systems can efficiently treat sewage to produce non-toxic effluent for discharge.

Under its Approval, the Town is permitted to discharge treated effluent from the storage cells into the Battle River two times per year, between the dates of May 1 and November 30. This discharge may continue for a maximum of three weeks per year. On May 19th, 2009, Ponoka commenced its annual release of treated effluent into the river. As the release commenced, the Town took samples of the treated effluent and submitted them for testing as required by the Approval. This did not include toxicity or ammonia testing. At this time, the river was experiencing low water levels, increasing the vulnerability of fish to pollutants.

On June 1, 2009, Environment Canada received reports from residents downstream of the Town's Wastewater Treatment Facility of a green colouration to the river and the presence of dead fish. Environment Canada conducted an inspection and observed that the Town was releasing wastewater. Environment Canada sampled the effluent. Upon receiving direction from Alberta Environment and Water to stop the release of effluent, the Town immediately did so. (continued on p.11)

The purpose of the Alberta Utility Operator Newsletter is to provide a forum for communication and networking among AWWOA members in the areas of new technologies and research, regulatory concerns and changes, outstanding service and other Association concerns. The editors welcome suggestions for content from the membership.

The Alberta Utility Operator Newsletter is published three times a year by the Alberta Water & Wastewater Operators Association with assistance from Alberta Environment and Water.

Deadlines for submission are in January, April and August.

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Views expressed in The Alberta Utility Operator are those of the writers. Unless otherwise stated, articles should not be interpreted as policy or regulation and do not necessarily reflect organizational or editorial policy.

Report from the Chair

Garth Carl

Please let me introduce myself as your new AWWOA Chair for the 2012-13 term. Some of you may know me as the Web Master and online training facilitator of the AWWOA website, which I have been looking after since 1996. Others may know me as the Operations Manager of the Henry Kroeger Regional Water Services Commission located in Hanna, a regional water treatment plant I have been looking after for 28 years now. At any rate, it is my pleasure to be serving in this capacity on the AWWOA Executive and I hope that I can fill the shoes of my predecessor, Brian Brost, and the many others before him.



When I got my start, I had no idea I would someday be the Chair of what I consider a great organization. The AWWOA was instrumental in providing me the opportunity to learn my profession while residing and earning a living in rural Alberta. If these training methods didn't exist, I know that I would not be in this profession today – I simply couldn't afford to leave work to attend school for an extended period of time, nor did I want to. The learning tools available worked well and I consider myself a fairly knowledgeable WT-IV/WD-II operator.

Our industries, as well as many others, face serious issues with recruitment, training and retention. It is a problem in every

community, regardless of size, as there simply aren't enough younger people to fill the many positions – and their choices are many, making it difficult to compete with the more glamorous higher-paying career opportunities. The AWWOA is addressing this issue through a number of channels:

- we co-produced a DVD and related templates, which have been delivered to over 1000 school counsellors
- we advertised in the Canadian School Counsellor magazine, marketing our profession
- we conducted a number of surveys and held a Workforce Development Symposium in which 52 participants focused on emerging workforce challenges
- we secured a 2.4 million dollar grant through Alberta Rural Development Fund to support our "Closer to Home" initiative, which will focus on water and wastewater capacity, renewal, attraction, succession planning, training and retention of operators in smaller centres within Alberta. I have a great interest in this particular project as it relates to my situation. In fact, all of my present operators are all "home grown". (continued on p.4)

(continued from p.4)

Curriculum Workshops

I was fortunate to participate in one of the Provincial Needs Assessment (DACUM) Workshops recently and was very impressed with the process. DACUM is short for “Developing a Curriculum” and I am sure any of you that have taken AWWOA training over the last few years are aware that our material is in need of updating and refurbishing. The purpose of these workshops (one for each of the four disciplines) was to extract information we, as operators, utilize to perform our jobs each and every day. Participants were selected from a broad range of operations – from small hamlets to large cities, providing a good cross section of perspectives. We worked together through discussion to determine the main areas of focus in each discipline (the DACUM I participated in was water distribution). Once these were identified, we broke these main areas down further into sub-sections. I believe we identified 32 main areas, and broke these tasks down further into over 200 sub-sections. By the end of the two-day session, we had completely covered one wall of our meeting room with cards which were then organized into a progression of steps to complete any given task. This information will be used to re-develop several foundational AWWOA courses which, in my opinion, will be superior to our existing training material. It was a great networking opportunity and I believe all of the participants came away with some valuable information, although we were all a little burnt out by the end of the second day.

Courses

The AWWOA has been listening to the membership and we are hearing that there is a need for more training and new courses. This especially holds true for older operators looking for CEU’s to maintain their existing certification. This is not an easy task, and we invite you to make any suggestions you may have in the way of new courses that could fill this gap. Remember to check out the training list on the AWWOA website. There are many approved courses listed and it’s updated every six months or so.

The AWWOA offered 50 workshops and courses this season with over 1200 operators participating. We introduced “Water Week” in Red Deer in which eight courses were offered, and we are offering one new course “Water Well Operations and Maintenance” this year.

We will be keeping the Small Centre Training Subsidy available for another year, as part of our Closer to Home initiative further assisting operator training in the future.

Relocation

Our small 528 sq. ft. office space has been outgrown and the AWWOA will be moving from its current location over and down a few blocks to 10806-119 Street during the last week of April. We will gain some much needed office and storage space and you can bet John, Cathie and Laura are looking forward to the transition into the 2300 sq. ft. space which includes four offices, space for workstations, a meeting room, storage and kitchen/washroom space. Additional staff will be required to meet the Closer to Home time lines and assist with the updating and enhancement of training materials. The AWWOA has many irons in the fire, and it will be an interesting year for all of us.

Thanks – and remember, this is your Association. Please get involved!

Garth

find us on the web:

<https://awwoa.ab.ca>

Election Results:

AWWOA Executive 2012 - 2013

Name	Position	Community
Garth Carl	Chair	Henry Kroeger Regional Water
Kim Fath	Executive Vice Chair	Vulcan
Brian Brost	Executive Past Chair	St. Albert
KC Stone	Finance Chair	Lethbridge
Dan Rites	Training Committee Chair	St. Albert
Nancy McAteer	Banff Operators' Seminar Chair	Penhold
Gerry Gusdal	Communications & Publicity Chair	Stoney Tribal Administration
Jim Hepler	Western Canada Water Director	Devon
Dwayne Cikaluk	Director	Fort Saskatchewan
Quentin Syryda	Director	Alberta-Pacific Forest Ind. Inc.
Doug Thorson	Director	Retired
Jennifer Sharp	Director	Calgary
Al Kendrick	Director	Drumheller
Wade Bell	Director	Rocky View County
Darren Demchuk	Director (non-voting)	NAIT Representative
Kathy Abramowski	Director (non-voting) Awards Committee Chair	Alberta Environment Representative

2012 AWWOA Executive



Kim Fath
Vice Chair



Garth Carl
Chair



Brian Brost
Past Chair



Kathy
Abramowski



Wade
Bell



Dwayne
Cikaluk



Darren
Demchuk



Gerry
Gusdal



Jim
Hepler



Allan
Kendrick



Nancy
McAteer



Dan
Rites



Jennifer
Sharp



KC
Stone



Quentin
Syryda



Doug
Thorson

Alberta Environment & Water Suspends Operator's Certification

Submitted by Kathy Abramowski
Drinking Water & Wastewater Operator Certification Program Lead

Alberta Environment and Water, as directed by the Water and Wastewater Operator Certification Advisory Committee (CAC), recently suspended an operator's Certificate of Qualification for a period of one year. The operator in question was found outside a certification exam session questioning operators on the exam as they exited. The operator was not an exam participant and when confronted by government staff refused to provide any information as to the reason for being in attendance. The operator was asked to leave immediately. Alberta Environment and Water took this as a very serious incident and contacted the Environmental Law section of the Government of Alberta for guidance. Alberta Environment and Water lawyers referred the matter to the CAC with a recommendation to suspend the Certification of Qualification, at a length of time to be determined by the CAC.

As a result of this incident, Alberta Environment and Water with approval from the Environmental Law section has developed an Exam Code of Conduct (ECOC) that all operators are required to sign prior to writing certification exams. If an operator refuses to sign, they are not permitted to write. The ECOC was used for the first time at the March 2012 exam session.

Another incident arose recently when an operator submitted an "altered" course completion certificate as part of their renewal application. When certification staff inquired about the date of the completion, the operator was forced to submit a copy of the certificate that included the date. The operator in question was warned that falsifying documents was in fact "uttering a forged" document, which is a criminal offense. The operator was let off with a warning, but this should act as a reminder that all information submitted to the Department on applications for certification, renewal, or codes of conduct are legally binding documents. Falsifying any information submitted to the Department, including but not limited to applications for certification, applications for renewal, daily, monthly or yearly reports, may lead to disciplinary actions including the revoking or suspending of a Certificate of Qualification, non-renewal of a certificate, and possible fines of up to \$50,000. This applies not only to the operator, but to any supervisor who knowingly verifies the information.

Alberta Environment & Water Drafts Certified Operator Code of Conduct

Alberta Environment and Water is drafting a Certified Operator Code of Conduct (OCC) that all operators will be required to sign once they become certified, and again with each renewal. Alberta will be the first province to have such a code. Failure to sign will result in non-issuance or revoking of the operator's Certification of Qualification. Look for the OCC to be in place by this fall.

The Old Operator submitted by Doug Thorson

Is it possible to fail your way to success?

Life is made up of successes and failures. Like a ship on the rolling sea, there are wave crests and valleys, but life often teaches us that in the valleys, we grow. Some folks feel that success is what you learn from, but I assure you that it is in the valleys where you learn the real lessons of life.

One important lesson of life, the earlier learned the better, is how to survive failure. Thomas Edison failed hundreds of times trying to produce a filament for his carbon incandescent light bulb. Edison's attitude was, for every time he failed, he learned another way to not make a filament. Remember: failure is fleeting. Keep trying and remain positive.

Abraham Lincoln tried more than 50 plus times to enter politics but was defeated each time. Exhibiting extreme diligence and perseverance, Lincoln never gave up. Perhaps he knew that every failure would bring him closer to success, because eventually Abraham Lincoln became one of the greatest Presidents of the United States of America.

The great musician, Duke Ellington said, "Instead of being defeated, I simply took that energy it takes to pout and wrote some blues." Today, Ellington is considered the father of the blues. Robert Holden, a well-known writer, failed 71 times before his first book was published. Yet it is in the valleys we learn the perseverance it takes to overtake life's issues. Failure is not bitter if you do not swallow it. Sometimes we just need to put our heads down and push our way through the problem.

Failure can easily undermine us, but sometimes we must travel this difficult road in order to reach the destination of success. Perseverance is the fuel and failure is the fire that forges the metal of our character to succeed.

Here are some ideas for turning failures into successes:

- There are only lessons. Every event in our universe offers us teaching, in everything look for the lessons, and lessons are everywhere if you look for them.
- Failures teach us success. Every failure is a step to success if you take it that way. By understanding how you have not succeeded, you are automatically learning more about how to succeed. Every failure is a lesson in success if you will only accept it as a teaching tool.
- Failures are not bad. Ask any successful person and if they are honest with you they will admit that failure was a building block to their success. Nothing is implicitly good or bad, it is what you do with something that makes it so. Look for the good news in every failure, it is there to find and use.
- Clarity of vision is your telescope to tomorrow. Most new discoveries and solutions come from suddenly seeing things that were always there. Try and look at the problem from another direction, this often yields a different perspective and the answer may be right in front of you.

Every event in our universe offers us teaching, look for the lessons in everything, lessons are everywhere if you look for them.

- Make the failure work for you, not against you. Defeat can stand you back on your feet. The worst trial can set you free.

Failure is falling down only when you stay down, and even then you are only learning another lesson. When failure comes, don't look back in distress, it's what you do next that counts. Make it a lesson learned. That's how I see it, the Old Operator.

37th AWWOA Seminar Highlights



Dwayne Cikaluk receives Operator of the Year Award from Gerald Samuel.



Brian Brost, Executive Chair, addressing the delegates at the 37th Annual Seminar Banquet.



NAIT Academic Achievement Awards presented to Janis Milford (Calgary Program) and Emran Ahmed (Edmonton Program). (in attendance)

Operators'



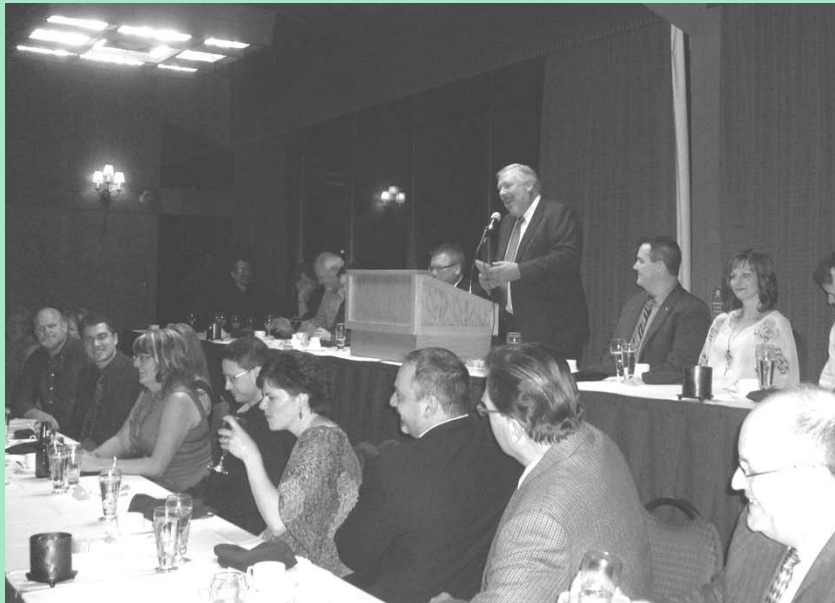
Nancy McAteer receives the Ron Bayne Service Award from Brian Brost.



Garth Carl, new Executive Chair, thanks Brian Brost for his year of service.



Gerald Samuel addressing the delegates after receiving a commemorative plaque for his years of service as the Seminar/ Technical Program Coordinator.



Charitable Donations Report

Submitted by Doug Thorson
Charitable Donations Committee Chair

Donations

This year our AWWOA members and suppliers raised approximately \$17,600 through generous donations during the March seminar held at the Banff Park Lodge in Banff, Alberta. The donations will support two organizations: The Water School and Water For People - Canada. Please contact myself or our office if you have any questions about these organizations or the work they do.

The Water School is our primary recipient of funds to support a new primary school with clean, safe drinking water every year. Your donations from the 2012 seminar will complete the solar water disinfection (SODIS) water program at the Chandria Primary School in Nairobi, Kenya.

Our second donation recipient is Water For People - Canada. This organization has adopted Bolivia, South America, and will complete a wide range of projects there. Your donations will fund latrines, wash and shower stations, water wells and water reservoirs, and distributions systems in small hamlets, villages and towns.

Clean water is something we take for granted, and the cornerstone of any community. Clean water saves lives. Latrines are the first form of washroom facilities these people have ever experienced. Something we never give enough credit for is the World Health Organization, United Christian Ministries and other organizations that come in after the water or wastewater program and instruct mothers and daughters about proper health, hygiene and cross contamination. This education is vital in assisting these people on how to use their new resources.

50/50 Winner

If any of our readers know the names of the two people who won the 50 / 50 draws (one Monday and one Tuesday) I would sure appreciate a call to the AWWOA office. This information makes up part of the required reporting to the Alberta Liquor and Gaming Commission.

Thanks

I would like to personally thank all those AWWOA members, suppliers and others that either donated items to our silent auction, and/or actively participated in our fund raising activities. You have made a significant contribution and profoundly changed the lives of children and families in a positive way. You have saved children's lives, improved their health and the health of their families, and improved their opportunities to succeed in life. I really think when we look beyond ourselves and our own problems, we do our best work. A man wrapped up in himself makes a very small package.

Best Regards,

Doug Thorson
Charitable Donations Committee Chair



Doug Thorson, Charitable Donations Chair, informs delegates that the silent auction and 50/50 raffle exceeded \$17,000.

The samples of treated effluent taken by Environment Canada were determined to have a high pH, ammonia and total suspended solid content. Toxicity tests conducted with trout showed the effluent, at 100% concentration, was acutely lethal to fish. Under the *Fisheries Act*, the release of a deleterious substance into water frequented by fish is an offence and, on the basis of these test results and a determination of a lack of due diligence to prevent the offence, the Town was charged with releasing just such a deleterious substance. The factors considered as a lack of diligence were that the Town did not conduct toxicity testing prior to releasing the wastewater and had capacity in its lagoon to hold back the discharge to allow for further treatment if required. A further aggravating factor was that Town representatives had, prior to this release, attended a presentation by another municipality describing its conviction for a similar violation under the *Fisheries Act*.

It is important to note that it was never shown that dead fish observed in the river were killed as a direct consequence of contact with the Town's effluent. More likely, the fish were killed as a consequence of the cumulative effect of the Town's effluent combined with other substances already present in the Battle River. However, this only goes to underscore the precarious environmental condition the river is currently in. Ultimately, the *Fisheries Act* protects not just fish, but their habitat as well.

Despite complete compliance with its provincial Approval, it was evident to the Town that it did, indeed, contravene the federal *Fisheries Act*. For this reason the Town elected to plead guilty to the charge and to negotiate, in cooperation with the federal prosecutor and Environment Canada, a sentence that would be more than simply a financial penalty. It was critical to the Town

that the sentence imposed also benefit the Battle River and serve to educate the public. As the Town and Environment Canada shared this goal, it was agreed that, of the \$70,000.00 fine imposed, \$66,250.00 would be earmarked under the Environmental Damages Fund to the promotion of the conservation and protection of fisheries and fish habitat in the Battle River and its tributaries. In addition, the Town will engage in a series of educational projects, including this article, intended to increase awareness of the condition of the Battle River and of the requirements of the *Fisheries Act*.

The Town of Ponoka considers itself a steward of the environment and, as a consequence of the unfortunate event in 2009, has amended its wastewater treatment practices to require greater monitoring of effluent, including toxicity testing before it is released in the river. By ensuring that the effluent is harmless to fish even before it is released, the Town is doing its part to ensure that its impact on the Battle River is reduced. But this is only a start. We all have a responsibility to do our part, as residents of the Battle River watershed and as stewards of the environment. Awareness of the river's environmental state is important, but each of us must ask ourselves, "What impact do I have on the river, and what can I do to reduce that impact?" Thankfully, there are a number of excellent resources available to help each of us answer that question including the Battle River Watershed Alliance (www.battleriverwatershed.ca), the Alberta Environmental Farm Plan (www.albertaefp.com), Cows and Fish (www.cowsandfish.org) and Alberta Environment and Water's, Water for Life website (www.waterforlife.alberta.ca).

Visit the internet at https://awwoa.ab.ca/home/content/pdfs/Dschrge_WW_Eff.pdf for additional information on this topic.

Call For Papers

38th Annual Operators' Seminar

The Alberta Water & Wastewater Operators Association 38th Annual Seminar will be held March 11 - 15, 2013 in Banff, Alberta.

Proposals for papers are now being accepted. All proposals that are of a technical nature and of interest to water and wastewater plant or system operations personnel will be considered. Speakers must provide a 250 – 350 word abstract in order to be considered. The abstracts for all papers presented at the Seminar will be posted on the AWWOA web page. Operations personnel are encouraged to submit proposals as 'Operations' topics prove to be of the greatest interest to Seminar delegates. Submission deadline is December 01, 2012.

Proposal forms may be obtained from the AWWOA web site at <https://awwoa.ab.ca/> under Seminar, or by contacting the AWWOA Office (contact information below).

NOTE: Operators who present a paper will be awarded 1.0 CEU, plus the additional CEUs obtained for attending the entire Seminar. This can be used toward the certification renewal requirement. A \$100 honourarium is also available to operators who present a paper, in addition to a reduced full Seminar registration fee.

Proposals for **pre-seminar** workshops are also being solicited. The 3.5 hour workshops will be held Monday, March 11, and Tuesday, March 12, 2013.

Further information can be obtained from:

AWWOA Office

Phone: 780-454-7745, 1-877-454-7745, Fax: 780-454-7748

e-mail: awwoa@telus.net

Nancy McAteer, Annual Operators Seminar Chair

Phone: 403-886-4265

e-mail: nancymcateer@shaw.ca

MATH
CORNER
by David
Noack

Issue 16 had the following problem:
Given the information below, calculate the filter media volume in m³ and the number of bags required if the sand media is delivered in 1 ft³ bags? The sand filter is 3 m long by 3.5 m wide and the depth of the media is to be 1.8 m.

Answer:

$$\text{Volume} = L \times W \times H = 3\text{m} \times 3.5\text{m} \times 1.8\text{m} = 18.9 \text{ m}^3$$

$$1 \text{ m}^3 = 35.3 \text{ ft}^3$$

$$18.9 \text{ m}^3 \times 35.3 \text{ ft}^3/\text{m}^3 = 667.17 \text{ ft}^3 \text{ or } 668 \text{ bags}$$

Here is the new problem for Spring 2012:
Summer students are coming to beautify the town! Calculate the paint required to paint the 4 meter high exterior walls of a circular water reservoir that has a 4 m radius.
One gallon of the paint chosen will cover 8 m².
Also, how long will it take for the worker to finish the job if they paint 4 m² per hour.

Answers will be printed in the next newsletter.
Send any questions or submissions for Math Corner to awwoa1@telus.net

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