

WEAO to host largest Canadian technical conference for the wastewater industry

Plans are now in full swing for the 32nd Annual WEAO Conference, March 30 to April 1, 2003 at the Toronto Harbour Castle Westin Hotel and Conference Centre.

Technical Sessions will include presentations concerning:

- Information and Management Systems
- Biological Treatment
- Disinfection
- Odour Control
- Preliminary and Primary Treatment
- New Technologies
- Biosolids and Nutrient Management
- Collection and Stormwater Management
- Advanced Treatment
- Watershed Management

The New Professionals Session will



once again be offered, with a special reduced registration fee for those new to the industry and only wanting to attend that session.

The Ops Challenge should be a real challenge since this year; the operators

will not be able to practise on the event equipment in advance. Consultants and suppliers will be able to test their knowledge by participating in the "Totally Wasted Game Show".

The OPCEA show and exhibition will run Monday afternoon and all day Tuesday, with over 100 exhibits. During the banquet on Tuesday night we will be holding an auction with all of the proceeds going to a local charity.

On behalf of the 2003 Conference Committee, I am looking forward to seeing you in the spring.

Rosanna DiLabio
2003 Conference
Chair



Tempus Fugit!

It seems like only yesterday that we were sitting down to prepare the December 2001 issue of your Newsletter. Who could ever forget the year that was 2001? Now here we are



a year later with some degree of normality restored. But our concept of normality has changed, hasn't it?

Perhaps one could say that your Newsletter is a throwback to the pre-9/11 days. The format and the look have not changed for years. It's comfortable. Well get ready for change in 2003! In recent months, your Communications Committee has been looking at ways of refreshing the format and appearance of your Newsletter. Sort of like the recent changes occurring at *The Toronto Star*. Only we didn't have our 110th birthday as the occasion to do it!

So keep your eyes open for the "new look" Newsletter and let us know what you think. We may even publish some

of your reactions in the Newsletter.

Also, look out for your copy of our e-zine, distributed during the months when the Newsletter is not published. The e-zine will shortly be receiving a new name selected from among the entries to our contest at the last Annual Conference. If you have not been receiving the e-zine, register your e-mail address with the WEAO without delay!

All this and more to look forward to in 2003. Can't wait for the ride. As always, stay up to date on coming events by checking out the WEAO web site. And we can always use your articles.

Peter Takaoka,
R.V. Anderson Associates

Best Wishes for the Holiday Season

- From the Communications Committee

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Science teachers focus on ‘targeting success’

WEAO’s Public Education Committee, for the seventh year, exhibited the numerous Water Environment Federation educational resources at the annual Science Teachers’ Association Conference. This year’s conference was held in Toronto at the Regal Constellation Hotel from November 7-9. Over 1,700 teachers, pre-service teachers and education professionals attended the convention.

The educational resources and workshops presented to those attending offer incredible support and background to assist teaching science, water resources, astronomy and earth sciences among many others topics. This, in turn, enhances the value of our children’s education in science and technology.

The WEF Water SourceBooks were very popular. About 20 Water SourceBooks (Grades K-2, 3-5, 6-8 and 9-12) and Aquaventureur CDs were sold. As well, provided by WEF, hundreds of brochures on biosolids recycling, watersheds, wastewater treatment, non-point source pollution, careers in water quality, and household hazardous waste will now serve as resources to teachers in the classroom. Did you know that water systems are included to some degree at every grade level from Grade 1 on? Special emphasis is placed on ‘Air and Water in the Environment’ in Grade 2, and ‘Water Systems’ in Grade 8. The new high school curriculum also places emphasis on water systems, particularly in Grade 9.

The following Public Education Committee members staffed the exhibit: Ljuba Simovic and Mano Manoharan, MOE, Tricia Kuchta, OCWA, George Bennett, Spaans Babcock, Bob Crane, City of Hamilton, Elaine Gilliland, Region of Peel, and Cindy Toth and Paul Boyce (University of Waterloo Environment and Resource Studies Coop Student), City of St. Catharines. Julie Vincent, WEAO Committee Liaison, assisted with the preparation, delivery and pick-up of resource materials for the conference.

For the volunteers that staff the

exhibit, the Conference provides a much-valued opportunity to look at educational resources first-hand and discuss education with professionals. This, in turn, helps us to help our own children and relatives to better understand the educational system and the need for good resources.

On Saturday, November 9, Elaine and Cindy presented an exciting demonstration of a Water SourceBook activity that involves constructing a sewer system using a city play mat, cardboard tubes, straws, spaghetti and assorted boxes. About 20 teachers attended the workshop and received a free Water SourceBook. Many of the teachers’ questions revolved around biosolids, sanitary and storm sewer differences, non-point source pollution and drinking water treatment. Their high level of interest illustrates the need for good, technically-based curriculum resources on the water environment to support good education.

Our teachers are in critical need of good science-based resources. We have these available at the WEAO office. How about passing on the coffee mugs and soaps as presents for your children’s teachers? A Water SourceBook (\$20) would make a much appreciated gift. For more information on purchasing a Water SourceBook contact Cindy Toth at (905) 688-5601, extension 2193.

Cindy Toth, City of St. Catharines



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PWO comes to grips with new government initiatives

*Photo report by
Steve Davey,
Environmental Science
& Engineering
Magazine*



Some 125 people attended the Central Region Professional Wastewater Operators annual fall conference, which was held in Barrie, October 24.

Eileen Smith, of the MOE, outlined details of the government's new *Nutrient Management Act* and how it will affect wastewater plants. She explained that farms and all other biosolids generators will have to file a nutrient management plan with the MOE. Consequently, generators will have to work closely with the haulers and farmers on whose land they want to apply the biosolids.

A small municipality requires 40 to 60 farmers to become part of a biosolids land application program. Several delegates expressed their concern that the MOE will not be able to respond quickly enough to approve Management Plan changes, which will occur frequently due to the day-to-day changes that are a reality of farming and land conditions.

Ms. Smith also pointed out that officials need to be concerned that the new Act calls for the phase out of the land application of untreated septage. Currently only about 40% of the 280 million gallons of untreated septage generated in Ontario annually goes to

sewage treatment plants. Soon, all of it will have to be hauled to a plant for treatment, which may cause a problem for some plants.

Janice Patterson, of OMAFRA, gave a detailed talk on the Province's guidelines for applying biosolids to farmland. She pointed out that, as a fertilizer, Class A biosolids have a financial value of about \$100.00 per acre.

The audience was updated on the government's new operator certification and continuing education policy by Alex Salewski of the MOE. These new procedures are much more arduous than current requirements and "grandparenting exemptions" for experienced operators are to be eliminated. Many in the audience expressed their concern to Mr. Salewski about their employers willingness to provide the support needed for operators to remain in compliance. Further information on the new certification requirements can be obtained from the Ontario Environmental Training Consortium at www.oetc.on.ca

Vince Nazareth, of R.V. Anderson Associates, told delegates that Ontario's wastewater industry can expect similar tough measures to those that the drinking water industry now faces with the Province's new *Safe Drinking Water Act*. This inevitability, he added, is based on the undeniable fact that water source protection must be part of any safe drinking water strategy.

Eldon Wallis, of the City of Orillia

and Bob Crane, of the City of Hamilton, presented the Water Environment Federation's George W. Burke Jr. Award to Steve Lumb, City of Barrie, who was also a co-organizer of this event. This award is given to encourage an active and effective safety program in municipal and industrial wastewater facilities.



Alex Salewski.



Vince Nazareth (left) with PWO conference chair, Eldon Wallis from the City of Orillia.



Left: Eldon Wallis and Bob Crane present a WEF award to Steve Lumb. Centre: Eileen Smith. Right: Janice Patterson and Eldon Wallis.

Biosolids, confined space regulations discussed at PWO seminar

The PWO Southwestern Region held its fall seminar on November 13, 2002 at the Royal Canadian Legion in Chatham. There were 28 attendees and eight supplier booths.

Peter Nicol, from CH2M HILL Canada, started the morning off with a talk on setting up an Environmental Management System for Biosolids. Hamilton, Ottawa and Halton are involved in the pilot project. The need for a study arose when biosolids were going to be shipped away from Toronto. A partnership has been formed with the USEPA. The system can be adapted to any municipality, no matter what the size. Application for ISO 14000 Registration is in the works which will allow for documentation, tracking, etc., to take place.

Tom Alkema, also from CH2M HILL Canada, spoke on digester operations. He explained that, before we can decide on the best treatment for biosolids, we need to know where they will end up. In order for proper anaerobic digestion to take place there are three steps - hydrolysis, fermentation and gas production. Operational needs are good mixture, consistent temperature, pH, retention times and feed rates. Daily and weekly monitoring checks and balances must be followed. Many digester problems can be alleviated by improving the treatment at the headworks of the plant.

Level Management challenges were discussed by Tim Park of Siemens-Milltronics. He covered the options,

benefits, reliability and compatibility of Multiranger Plus, Multiranger 100, and Multiranger 200. If you want cost-effective level alarming, on/off control, alternating pump control, or more advanced relay alarming, pump control functions and volume conversion, then options are available.

Martin Albinger, from the Industrial Accident Prevention Association, explained what the proposed Confined Space Regulations for Ontario might look like. Prescriptive features, definitions, confined space program requirements, entry and control plans,

worker requirements, permit systems, emergency response, were all touched upon. The second Draft should be available soon.

I am sorry to pass along the news that Cec Yanke passed away this past spring. Cec was with the PWO since 1987. Before he retired he was the Superintendent at the Petrolia Sewage Treatment Plant. At any PWO function he would be selling the 50/50 tickets.

*Yours in sewage,
Bill Clark, President
Southwestern Ontario PWO*

PWO Southeastern Region Fall Seminar

Some 84 professionals from municipal, provincial and industrial wastewater treatment facilities attended the recent PWO Southeastern Ontario Region fall seminar. This was held at the Knights of Columbus Hall, in Cornwall, Ontario, on Wednesday, November 20.

The speakers discussed a variety of subjects:

- Mike Newbigging, of Hydromantis Inc., reported on the City of Cornwall Optimization Project.
- Daria Ghaby, of the City of Ottawa, discussed workplace harassment.
- James Arnott, of Environment Canada, covered Proposed Risk Management Strategies, addressing ammonia, inorganic chloramines, NPEs, etc., in municipal effluents.
- Propane safety was the topic

addressed by Clifford Wall, of the City of Ottawa.

There were 15 suppliers on hand with interesting displays of equipment, processes and services. Represented were: Armour Valve Ltd., Ciba Specialty Chemicals, Metcon Sales & Engineering Ltd., Floval Equipment, Cancoppas Ltd., Indachem Inc., Renold Canada Ltd., Claessen Pumps Ltd., H2Flow Equipment Inc., Clow Canada, Mabarex, Peacock Inc., John Meunier/USFilter, Telamode, and USFilter/Wallace & Tiernan Canada.

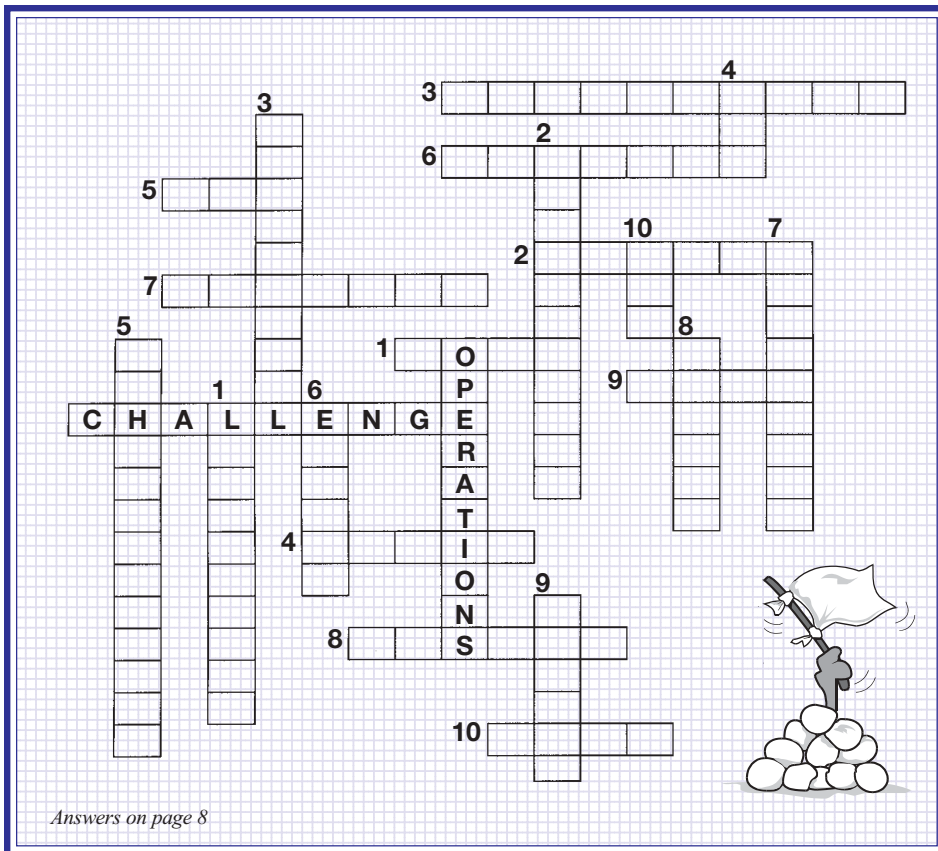
The new PWO Southeastern Region Executive was elected for 2002/2003:
President: Renwick Arbuthnot
Vice-President: Blake Sewell
Secretary-Treasurer: Dennis Graham
Executive Member: Roger Tedford



At the recent PWO Southeastern Region seminar, speakers Clifford Wall (left) and Daria Ghaby (right) are seen with Renwick Arbuthnot, City of Cornwall.

The 2003 Operations Challenge

Join in the Fun!



Across

- The number of CEUs awarded to each team member and coach.
- This is served at the Operations Challenge Breakfast.
- The Event that could leave you all wet.
- Teams do this to prepare for the competition.
- This Technical Session runs on Monday.
- The 2003 Operations Challenge will take place in this city.
- This will be posted instead of the score at the 2003 event.
- The "Totally _____" Game Show.
- The "_____ Maintenance" Event.
- Short for "Water Environment Association of Ontario".

Down

- The Event that could involve "balance".
- The name of the full weight mannequin from the Safety Event.
- The Process Event is similar to this type of exam.
- The number of Divisions in the 2003 Operations Challenge.
- Sunday's tour will take place at this wastewater treatment facility.
- There are five of these in the Operations Challenge competition.
- The "E" in OPCEA or another word for tools.
- Another word for "referees".
- The Divisional winners will represent Ontario here.
- The Operations Challenge is "_____".

To register for the Operations Challenge Event, please contact Janet Haynes at 905-540-6025 or jhaynes@hamilton.ca



Notice of AGM

The Ontario Pollution Control Equipment Association is holding its Annual General Meeting on Tuesday, February 11, 2003, at the Delta Meadowvale, in Mississauga. There will be drinks at 2:30 p.m., before the AGM at 3:00 p.m. Dinner will be served at 6:00 p.m.

Each member company is entitled to send two representatives. Full details will be mailed shortly. For information, contact Kelly Madden, tel: (705) 725-0917, fax: (705) 725-1068.

OPCEA Tradeshow

The Ontario Pollution Control Equipment Association is once again joining with WEAO for its annual tradeshow. It will be held at the Westin Harbour Castle Hotel, Toronto. The tradeshow will be open from 2:00 - 7:00 p.m. on Monday, March 30, 2003, and from 9:00 a.m. - 4:30 p.m. on Tuesday, April 1.

Booths will be allocated on a first come, first served basis, according to date of receipt of exhibitor fees and registration forms. Complete details will be mailed to OPCEA members as soon as possible. Non-members should contact Kelly Madden, tel: (705) 725-0917, fax: (705) 725-1068.

Members on the Move!

H2Flow Equipment Inc. moved on December 20, 2002, to a new facility with 76% more space. They have relocated to: 470 North Rivermede Road, Unit #7, Concord, Ontario, L4K 3R8. The new telephone number is (905) 660-9775; the new fax number is (905) 660-9744.

On December 15, 2002, Indachem Inc. moved to 1040 Martin Grove Road, Toronto, Ontario, M9W 4W4. The phone and fax numbers remain the same, tel: (416) 743-3751, fax: (416) 743-2038.

Biosolids News is a regular update on activities of the WEAO's Biosolids Committee and information of interest related to the beneficial use of biosolids. Contributions from the WEAO membership are always welcome and should be directed to Stephen Nutt (stephen@xgc.com) or Janice Patterson (janice.patterson@omaf.gov.on.ca).

The Quebec Ministry of Environment recently released a literature report entitled *Biosolids and Bioaerosols: the Current Situation*. It was prepared by Francoise Forcier, Engineer, Agronomist, of Solinov Inc.

Some members of the public have expressed serious concern that public health may have been impacted by the release of pathogens and other biological agents through bioaerosols generated during the application of municipal biosolids on agricultural land.

The concern was raised, in part due to the release of a paper published in the *Journal of Environmental Quality* (29: page 343 - 348) in 2000, entitled *Ecological Risk Assessment, Bioaerosol Transport Modeling and Risk Assessment in Relation to Biosolids Placement*. Through mathematical modeling, the paper predicted that the probability for viral and bacterial infection could be as high as 100% and 33%, respectively, under the worse scenarios.

However, the paper failed to mention that the model predictions were based on data obtained with high trajectory spray irrigation of liquefied municipal biosolids. Furthermore, the initial concentration of fecal coliforms in the biosolids was almost 2 orders of magnitude higher than the limit allowed by the US EPA for Class B biosolids. Ontario companies stopped using high trajectory spray irrigation methods to apply municipal biosolids many years ago.

The recently released report entitled *Biosolids Applied to Land: Advancing Standards and Practices* concluded that "there is no documented scientific evidence that the Part 503 rule has failed to protect public health". The report was prepared by a panel of

experts in public health, microbiology and environmental chemistry, under the National Research Council in the US.

The literature review report prepared for the Quebec Ministry of Environment made the following salient conclusions:

- The application of municipal biosolids may represent a potential source of airborne biological agents; however,
- the risks for exposed workers, such as farmers, are relatively low and even extremely low for people living in the vicinity of the biosolids application sites;
- the potential health risks due to bioaerosols from municipal biosolids application sites would be lower than those associated with manure management;
- there is no need for limits on applying biosolids that are more restrictive than those already in place for managing pathogens and odours in biosolids in Quebec.

The report also recommended that bioaerosols studies be conducted with land application of paper biosolids and manure, as the majority of the studies was conducted with municipal biosolids.

An English version of the literature review report can be downloaded from the WEAO web site www.weao.org.

Video nearing completion

All shooting for the educational video being prepared by the Biosolids

Committee is complete. The sub-committee is now editing the interview segments and completing the narration. The draft video should be available for review by the WEAO Board of Directors in January 2003, followed by a full review by the sponsoring municipalities in late January. Our goal is to launch the final video at the 2003 WEAO Conference, where it will be presented as part of the Biosolids Session of the Technical Program. This schedule will ensure that the final video is in the sponsoring municipalities' hands for the start of the 2003 land application season.

Sponsoring municipalities will be contacted in the near future with the schedule for their preview of the video. The Biosolids Committee is still interested in receiving financial contributions toward the preparation of the video. For details, please contact the WEAO office, Biosolids Video Subcommittee Chair Vincent Nazareth at vnazareth@rvanderson.com, or any member of the Biosolids Committee.

Coming soon – Biosolids Seminar

The WEAO Biosolids Committee is organizing a biosolids seminar to be held Tuesday January 28, 2003. The location and agenda are yet to be determined, so mark your calendars and watch the WEAO web site for details!

What's new with the WEAO New Professionals?

We are frequently asked the question, "what is a New Professional?" Simply, if you have less than seven years of experience in the water or wastewater industry, then you qualify. You do not have to be an engineer; all that is required is your experience limit and a desire to participate in our events and activities.

Recently, the WEAO New Professionals Committee has been coordinating events with the Ontario Water Works Association (OWWA) Young Professionals (YP) Committee. On Saturday, November 2, both committees visited the Windsor and Tecumseh Water Treatment Plants. The Windsor plant consists of a full-scale

ozone facility, while the Tecumseh plant is comprised of three temporary membrane pilot units. Given the innovative technologies at these plants, there was high interest from both committees, resulting in many participants driving down to Windsor from Toronto for the day. Another tour is in the works for the Guelph Wastewater Treatment Plant and Mannheim Water Treatment Plant at the end of January, 2003. Keep your calendars open.

In an effort to provide skills development in water and wastewater, the NP Committee has introduced workshops given by experts in their fields. The first workshop, held on September 12, 2002, provided the

participants with an introduction into the fundamentals of on-line instrumentation; it was presented by Dean Rudd of Cancoppas. Given the huge success of this event, another workshop on valves is scheduled for January and is open to all who are interested.

Once again this year, the New Professionals Committee is planning great events for the upcoming WEAO

Conference, from March 30 to April 1, 2003. This year, look for our session on Monday afternoon and come join us for a bite to eat afterwards at a local restaurant, where we can unwind and mingle. Under a new format this year, also look for the New Professionals special deal in the Conference Registration package, which will allow you to participate in all the NP activities at a reduced fee.

If you are interested in participating in any of these events or the committee, please contact John Duong at jduong@rvanderson.com, or 416-497-8600.

*John Duong, R.V.
Anderson Associates
Brian Sahely, KMK
Consultants*



What is the Canadian Water and Wastewater Association?

The CWWA (Canadian Water and Wastewater Association) is a Canadian Association based in Ottawa, whose membership is solely corporate and comprises municipal water and wastewater agencies, supplier companies and federal or provincial or territorial agencies involved in water and wastewater services.

What does CWWA do? CWWA's goal is the provision of clean, safe drinking water and the discharge of safe wastewater effluents back to the environment. Because the American Water Works Association (AWWA) and the Water Environment Federation (WEF) exist and because many Canadian utilities and service providers are members of AWWA or WEF, CWWA's functions are: liaising and lobbying the federal government in Canada, promoting the development of Canada-wide standards of service and achievement, and providing a flow of information on water and wastewater happenings in Canada.

Why do we need a CWWA? Many municipalities think that because their operating licenses and drinking water or wastewater effluent standards are issued by the provincial or territorial governments, that this should be the focus of their concerns.

This view is not correct: the federal government is deeply involved in water and wastewater issues in Canada and has more than 15 Acts and sets of regulations that can apply to municipal water and wastewater operations. These range from the *Canada Post Act* (which sets bulk mail rates for water and sewage bill mailings) to the federal *Fisheries Act* which has the deleterious



substances provisions governing discharges into a fish habitat. The federal government's *Canadian Environmental Protection Act* is particularly of current concern and has a number of regulations affecting municipal operations - NPRI, Environmental Emergency Planning, Prevention of Pollution Planning, etc.

Most research activities that lead to new or revised discharge standards or drinking water guidelines are carried out respectively by Environment Canada or Health Canada. The federal government also has guidelines, best management practices, funding programs, and environmental risk assessment and management requirements that impinge on every aspect of municipal water and wastewater services. CWWA works with these federal agencies to ensure the interest of our utility members is at the forefront when new guidelines or legislation are being considered.

Do CWWA, AWWA and WEF work together? Yes. There are Partnering Agreements between the three organizations. The work of the three organizations is parallel and complementary. CWWA's focus is on federal government policy, program and regulatory initiatives in Canada - what is it that Ottawa proposes to do or is doing that would or does affect municipal water and wastewater services in Canada. AWWA and WEF gov-

ernment affairs' focus is on Washington D.C. and primarily the US EPA.

CWWA is not involved in professional development of operators - that is a function of the AWWA Sections and WEF Member Associations in Canada. CWWA is concerned with encouraging a common standard of service and capability across Canada; AWWA and WEF write national technical and operational standards.

How are the CWWA, AWWA and WEF activities integrated? The Partnering Agreements assist in integrating the activities of the organizations, but integration is primarily achieved through the Canadian AWWA Sections and WEF Member Associations being members of CWWA and appointing representatives to the CWWA Board of Directors. CWWA works with the AWWA Canadian Affairs Committee (CAC) and the WEF Canadian Leaders Forum, and members of these groups are often also on the CWWA Board of Directors.

How does CWWA work with the AWWA Sections and WEF Member Associations? There are seven member Associations of CWWA: ACWWA, RESEAU environnement, OWWA, WEAO, WCWWA, BCWWA and the Northern Territories Water and Wastewater Association (NTWWA). The CWWA Board of Directors includes representatives appointed by the Boards of these member Associations in addition to the Provincial / Territorial Directors elected by the municipal members in those jurisdictions. Information on activities and concerns are exchanged through

this mechanism.

CWWA's Board of Directors' meetings alternate between Ottawa and a location elsewhere in Canada, and, when not in Ottawa, normally take place at a member Association's Annual Conference. Our next Board meeting outside Ottawa is in Penticton, with BCWWA in April, 2003.

CWWA informs member Associations as well as member municipalities on federal initiatives, seeks their views and formulates an Association position or policy on the initiative which is then communicated to the federal agency concerned. CWWA liaises at both the officials level

and at the political level in Ottawa. Non-member municipalities are informed of new federal policies, programs or legislation impacting municipal operations.

CWWA does NOT liaise with provincial or territorial governments on their policy, program or regulatory initiatives but will, if asked by the member Association concerned, provide support to that Association.

Why should Canadian Municipal Utilities belong to AWWA/WEF and CWWA? The focus of these three organizations is distinct yet complementary.

Only CWWA speaks to the federal

government in Canada - AWWA and WEF speak to the federal government in the USA. The Canadian Sections and WEF Member Associations speak to the provincial and territorial governments.

Municipalities should support all the organizations and their respective Canadian Sections and Member Associations. The Canadian Water and Wastewater Association is the government affairs voice of Canadian water and wastewater utilities in Ottawa.

*Ronald S. Patterson, P. Eng.
Town Engineer, Amherst
President of CWWA*

News from WEF's Technical Practice Committee

The Technical Practice Committee (TPC) of the Water Environment Federation, in conjunction with the American Water Works Association, is developing a new manual of practice titled: *Implementing Geographical Information Systems*. The new manual will cover a wide array of topics, including what is GIS now and what it will be 10 years from now, how can the wastewater/water utility benefit from GIS, and technology and obsolescence management.

The new manual will address the

growing need for professional standards of practice in the development of data, software, and work practices related to spatial information. Defining the universe of activities that should be considered as part of GIS will be an important element of this new publication.

The Committee is updating the 1985 Manual of Practice titled: *Clarifier Design*. The second edition of the manual will provide an update of the existing text, as well as additional chapters outlining primary clarifier, high rate and wet weather clarifier, secondary clarifier, and tertiary clarifier design concepts and considerations.

fier, and tertiary clarifier design concepts and considerations.

The manual will also cover topics such as modeling, field testing, circular and rectangular clarifiers, clarifier performance monitoring and control, non-US approaches, and interlocking with solids handling facilities.

The Committee is also developing a Manual of Practice (MOP) titled: *Control of Odors and Emissions from Wastewater Treatment Plants*. The manual will combine updated information from the 1995 *Odor Control in Wastewater Treatment Plants* (MOP 22), which presented a comprehensive review of available information on a variety of subjects concerning odour control in wastewater conveyance and treatment systems, with *Toxic Air Emissions from Wastewater Treatment Facilities*, a WEF Special Publication also published in 1995, that presented a guide for identifying, quantifying, and controlling potential health effects that result from emissions of toxic and related air pollutants.

This new manual will address the increasing public awareness of odours and other air pollutants from wastewater facilities.

Crossword puzzle answers from page 5.

For more information, visit the WEF web site: www.wef.org, or call: 1-800-666-0206. These three Manuals of Practice are scheduled for publication in early to mid 2003.

A community in rural Ontario is the first in the province to use membrane technology in a sewage treatment plant

The winners of the Canadian Consulting Engineering Awards were announced on October 26.

The awards are run jointly by *Canadian Consulting Engineer* magazine and the Association of Consulting Engineers of Canada.

In the water resources category, an Award of Merit was presented to Marshall Macklin Monaghan Ltd., of Toronto, for the Creemore Membrane Sewage Treatment Plant in Ontario. Peter Sladen and Edmund Salenieks were the main consultants who worked on the project for MMM. The architect was R.H. Carter Architects; Terraprobe completed the soils investigation; and the membrane equipment process design was by Zenon Environmental Systems.

The following is a description of the project. This is reproduced with permission from *Canadian Consulting Engineer* magazine, from their October-November 2002 issue.

After decades of being concerned about their septic systems, cesspools, leaching beds and holding tanks, the people of Creemore in southern Ontario requested a communal sewage treatment system that would protect both the groundwater aquifer and the pristine Mad River.

After the concept of using membrane technology to treat the sewage was introduced during an environmental assessment in 1997, prime consultant Marshall Macklin Monaghan, working with R.H. Carter Architects, and Terraprobe, were asked to design a treatment plant. The plant had to have a "better than a tertiary level" of treatment and be economical. The community also wanted the structure to blend into the quiet countryside.

The result is the barn-shaped Creemore sewage treatment plant, located southeast of the community in

the Mad River flood plain. The plant, with its small footprint, is the first full-scale municipal membrane bioreactor



for sewage in Ontario.

The process consists of an influent pumping station with an automatic fine screening system, a two-basin ZenoGem membrane technology treatment process, UV disinfection, effluent re-aeration chamber and outfall to the Mad River. Phosphorus is removed by adding alum ahead of the aeration tanks. The plant includes a single basin aerobic digester equipped with a ZeeWeed Membrane system for thickening. There are also provisions for sludge storage and hauling.

Sewage is collected and pumped upstairs in the plant to the screen room, which contains two pumps (one is a standby). Each pump can move 35 litres of sewage per second. In the screen room 3-mm fine mesh screens protect the treatment membranes. A rotating screw screen is located in the main concrete channel. The screen removes the large particles from the sewage then washes them to break up and return the organic component to the treatment system. There is also a bypass channel with a manually cleaned bar screen. Ventilation, with an air monitoring and alarm system, protects the operators.

At the heart of the process are the

aeration basins and digester. The incoming screened sewage is split evenly by two v-notch weirs. The sewage is mixed with air for 6 to 10 hours in two aeration tanks, during which time micro-organisms consume the organic matter.

Clear effluent is drawn from the tanks through vertical tube shaped membranes hung in cassettes at one end of the tank. Unlike most sewage treatment plants, the levels in the tanks are allowed to rise and fall up to 2.4 metres to equalize the incoming flow. To maintain the system's efficiency, some micro-organisms are periodically removed from the aeration basins, stabilized in the digester tank and then stored

in the blue glass-lined steel tank located behind the plant. The stabilized biosolids are removed during the summer and spread on approved agricultural sites.

Although the tanks are hidden by the barn structure, walls on one side and one end of the building are left open to provide natural ventilation. The feature avoids the very high cost of ventilating indoor tanks.

A 300-kW diesel generator set is sized to operate the essential components of the plant in case of a power outage. "Tectum" wall board and acoustically dampened ventilation ducts deaden the noise of equipment in the blower and diesel rooms.

The plant is designed to treat 860 cubic metres of sewage per day, serving the residents of Creemore, the area's commercial core, and the Creemore Springs Brewery. With the simple replacement of pump impellers and addition of membrane cassettes, the plant's capacity could increase to 1,400 cubic metres per day.

Completed in November 2000 and officially opened in August last year, the plant and sewage collection system cost \$7.41 million.

Safe Drinking Water Act will impact many WEAO members

On October 29, 2002, the *Safe Drinking Water Act* was unveiled by the Hon. Chris Stockwell (Minister of the Environment), on behalf of the Ontario government. Bill 195 2002 is an Act respecting safe drinking water. Its purpose is twofold:

1. To recognize that the people of Ontario are entitled to expect their drinking water to be safe.
2. To provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and drinking water testing.

Many members of WEAO will be directly affected by this legislation when it is proclaimed. It received second reading on November 7 and has been referred to the Standing Committee on General Government. A report in *The Globe & Mail* on October 30, by Richard Mackie, notes that Mr. Stockwell said that before year-end, the government would hire 51 more water treatment plant inspectors, 10 supervisors and five new laboratory inspectors.

Under the pending legislation, plant operators would require certificates, and in some municipalities must have an accredited operating authority. Operator training and certification is mandatory and 'grandfathered' operators will be required to obtain a license within two years, once the regulations are made. Operational plans are required and ownership of the plans has to be defined. Officials have a duty to meet water quality standards and report adverse test results.

A statutory standard of care for accredited operating authorities is to be clearly defined. Accreditation bodies must be identified and government-approved, and would be subject to frequent audits. Accredited operating authorities would not be agents of the Crown.

Municipal drinking water systems would have to be licenced and financial plans filed. When drinking water works permits are issued, they must be followed by certificates of compliance

upon completion of the works. There are separate regulations for non-municipal drinking water systems.

Drinking water testing would require licensing and laboratories would need to be accredited for drinking water testing. Testing labs would be subject to frequent audits.

Regulations on inspections are extensive. They include the right to stop vehicles and vessels and to seize property through other statutes. Searches may also be carried out without warrants. Offenses are defined for giving false information and refusal to furnish information. Obstruction to acquiring information is prohibited and penalties are defined for certain offenses.

It is important for members to... let clients and colleagues know how our industry has always strived to provide safe supplies of drinking water.

One of the greatest criticisms of the pending legislation is that it does not protect the sources of drinking water. Subsequently, many environmental groups and citizens are calling for ways and means to protect water sources. The MOE announced on November 15, 2002, that a 17-member Advisory Committee on Watershed-Based Source Protection Planning is being convened to develop a provincial framework for drinking water source protection.

This legislation has great implications for plant operators, directors, consulting engineers and owners and staff of drinking water systems and testing laboratories. Many WEAO members have already implemented policies and procedures and introduced new technology to meet the requirements that would be included in the new Act. It is important for members to keep abreast of the pending regulations and let clients and colleagues know how our industry has always strived to provide safe supplies of drinking water, and now best practices to secure these supplies.

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