

BRITISH COLUMBIA OPERATORS DIGEST

A NEWSLETTER FOR WATER
AND WASTEWATER OPERATORS

MARCH 2008 • NUMBER 116

Proposed multi-utility certification to help smaller municipalities and utilities

The Environmental Operators Certification Program is exploring options for developing a certification program for operators who work in small, multi-utility environments. The proposed certificate would recognize skills developed by operators who work in more than one utility at the same time. It is expected to also comply with Ministry of Health and Ministry of Environment requirements for specific certification levels. The new certification will help smaller municipalities and other employers recruit and keep qualified operators for their systems.

The current certification program was initially designed with a view to larger facilities, which usually require full-time workers in single disciplines. Operators who work, instead, in more than one small utility, gain many skills but may take many more years to meet our current work experience criteria in a particular category, since they are required to divide their time across two, three, or even four utilities.



Sun Peaks Utilities Wastewater Treatment Plant

The EOCP is working on a proposal for this program, and will continue over the coming months. Later in 2008, we will present the proposal to operators, health authorities, the Ministries of Health and Environment and other stakeholders, to receive and incorporate suggestions. The proposal will keep the following principles in mind:

1. The current Operator Certification Program is meeting the needs for which it was designed, and will remain unchanged.

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Environmental Operators Certification Program

The BC Operators Digest is the official newsletter of the Environmental Operators Certification Program. Submissions for publication in the Digest are welcome. Changes of address, annual dues, exam applications, as well as general inquiries about the program should be addressed to:

Environmental Operators Certification Program
201-3833 Henning Drive
Burnaby, BC V5C 6N5

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Business card-sized ads are available for \$50 per issue or \$175 for four issues, GST included. For ads of other sizes, please contact the ECOP office.

The Environmental Operators Certification Program is a charter member of the Association of Boards of Certification, and is a registered society with more than 3,700 active members.

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2008 Certification Board Elections

This year's nominating committee members are Don Gare, Mike Gosselin, and Kevin Johnson.

There are five positions on the board to be filled by three operators, one government representative, and one education representative. Each position is for a two-year term. The following candidates have been nominated:

Operators: **Darryl Bjorgaard**
Scott Fry
Pat Miller

Government Representative: **Ron Johnson**

Education Representative: **Bob Smith, Sr.**

The nominating committee invites further nominations from the membership. Each nomination shall be supported by a minimum of three certified operators and shall be submitted no later than April 7, 2008 by mail to:

EOCP Nominating Committee

201 – 3833 Henning Drive
Burnaby, B.C. V5C 6N5

Or by fax to (604) 874-4794

Ballots with instructions will be mailed to operators on April 21, 2008. Returned ballots must be mailed to:

EOCP
201 – 3833 Henning Drive
Burnaby, B.C. V5C 6P3

The deadline for the receipt of ballots is May 9, 2008.

EOCP Constitution Changes

The EOCP Board is proposing changes to the EOCP Bylaws and Constitution. The proposed changes are posted on the website and will be presented to the membership at the EOCP Annual General Meeting in Vancouver on May 12, 2008.

Eric Jackson steps down

Eric Jackson — whose substantial contributions to the EOCP and the water and wastewater industries range from developing program standards to delivering operator training — retired from the EOCP Board in May 2007. Eric served on the board for 26 years, including many years as treasurer. During that time, he oversaw the legal and constitutional requirements for the EOCP, and was instrumental in authoring the standards and procedures under which the program operates. Eric was certified as a wastewater treatment operator in 1978.

Eric has also been involved with BCWWA for more than 20 years and is a former vice-president of that organization. He is a member of the Operator Education Committee and teaches and upgrades SWS and SWWS courses for BCWWA and the Yukon Bulk Water Delivery course. He has also provided operator training in the Northwest Territories. Eric instructs and upgrades SWS and SWWS courses for INAC, with the objective of having a certified operator in all 150 First Nations wastewater systems in BC.

Eric was Director of Water Reclamation for the City of Vernon for 25 years and won the Provincial Environment Minister's award in 2000. He received numerous other awards including the ASTTBC Advanced Technology Award (1998), WEF William Hatfield Award (1990), Bert Caine Award (2001), the BCWWA 5S Award (1995), BCWWA Appreciation Award (1992) and the Association of Professional Engineers Environmental Award – Concept and Assessment (1997).

In his spare time, Eric collects antique cameras — he owns 650 — and has recently taken up woodworking. These days, his passion is his young granddaughter, Janessa. Eric and his wife, Mavis, like to travel and spend their summers at their Okanagan Lake cabin.



EOCP Chair Bob Smith (left) presents Eric Jackson with an appreciation plaque.

Bernie Morris receives BCWWA Victor M. Terry Award

The BC Water and Waste Association Vic Terry Award recognizes an operator who has demonstrated ingenuity and proficiency in plant operation or maintenance. Traditionally, the Environmental Operators Certification Program makes nominations for the award. The 2007 award was presented to Bernie Morris.

Bernie was born and raised in Vancouver and graduated from Killarney High School in 1966. His first job in the water industry was at BC Hydro's Burrard Thermal Plant as a lab technician in 1968. In 1974, he moved to Vancouver Island and two years later graduated from Malaspina College Water and Wastewater Treatment Program. At Malaspina College, Bernie gained his never-ending curiosity for the world of water, including the microbiology and chemistry that complete the whole picture.

In 1977, Bernie moved to Terrace, BC and was an operator at the community's water and wastewater facilities. He and his wife were married in Terrace and their three children were born there. Bernie also worked for three years in Kitimat in the petrochemical industry, earning his 4th and 3rd Class tickets as a stationary engineer, mostly working in the water treatment plant. In 1988, Bernie returned to Vancouver Island and Victoria, where he works as the senior water quality technician for the Capital Regional District Water Services.

Bernie was first certified in 1976, and is certified in water treatment, water distribution and wastewater treatment. He is an active member of the BCWWA, serving on the Operator Education Committee, and is an instructor of BCWWA operator training courses.



EOCP Board Chair Bob Smith (right) presents the Vic Terry Award to Bernie Morris



Powers Creek water treatment plant in Westbank

Plant profile

Powers Creek Water Treatment Plant

The Westbank Irrigation District's Powers Creek Water Treatment Plant marks its first anniversary this spring. The 54-ML-per-day plant, which supplies water to 13,000 domestic and agricultural customers in the community of Westbank on the southwest side of Okanagan Lake, is the first dissolved air flotation (DAF) plant in the Okanagan and the largest in-filter DAF plant in Canada. The water treatment plant is classified as Level IV Water Treatment Facility.

The design saves space and keeps costs down by housing the water clarifying and filtering processes in a single structure. A state-of-the art distributed control system enables key processes to be run automatically.

The plant, which has potential for expansion to 81 ML per day, was designed by Earth Tech Canada Inc. and constructed by Maple Reinders Inc. The project included an

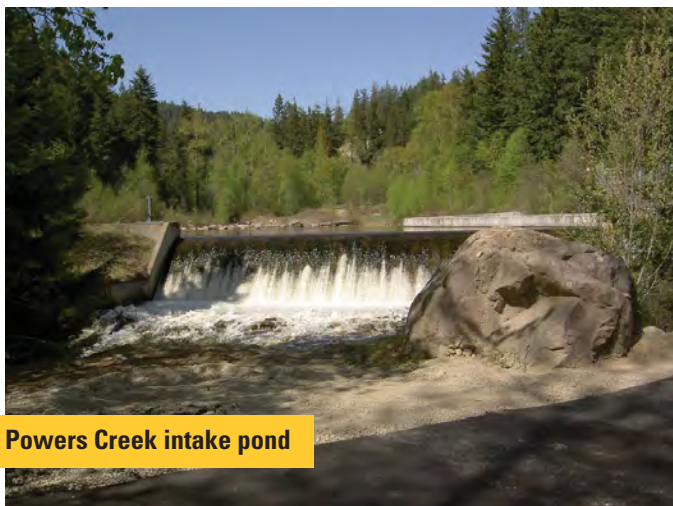
8-ML treated water reservoir and was completed in about 17 months at a cost of \$18 million.

Water source and supply

Water from six upland storage reservoirs is delivered via Powers Creek to an intake just north of the irrigation district boundary. The source water is categorized as seasonally turbid with moderate to high levels of organics. Before the new plant was built, water treatment consisted of screening and chlorination. During spring run-off, turbidity often exceeded 5 NTU and sometimes reached 50 NTU, with color as high as 80 TCU. The new plant is producing water with daily averages of less than 0.05 NTU and color ranging from 0 to 2 TCU. The amount of chlorine being used is about 20 per cent of the previous requirement and total trihalomethanes (THMs) are less than half the recommended maximum in water quality guidelines.



Westbank Irrigation District



Powers Creek intake pond

Plant process

The new plant was built near an existing intake on Powers Creek. At the intake, water is coarsely screened to remove large debris. The water treatment process includes coagulation, mechanical flocculation, clarification through DAF, filtration and disinfection. Treated water is pumped into a reservoir and then into the distribution system.



Early in the construction

Coagulation and flocculation

Raw water enters the plant via a 900 mm water main. The coagulant (poly-aluminum chloride) is rapidly mixed into the water using jet-flash mixing. The coagulant allows fine particles that cause color and turbidity to form floc. A polymer is added to improve coagulation, which is the most critical step in the treatment process. Water then flows to a flocculation tank where it is gently mixed to encourage the floc formed during coagulation to aggregate.

DAF and filtration

Clarification and filtration take place in a single tank. Micro-bubbles are injected into the flocculated water, moving floc to the surface where it forms a layer of sludge. A scraper removes the sludge for further treatment. The clear water flows down to the bottom of the tank where it is filtered first through a coarse layer of anthracite coal and then through a finer layer of sand. This process is designed to consistently produce water with turbidity of less than 0.3 NTU.



DAF sludge removal



continues over

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Disinfection

The clarified and filtered water is pumped through the disinfection process and into a new treated water reservoir. Disinfection is with ultraviolet radiation as well as chlorine. Before the water enters the distribution system, liquid caustic soda is added to adjust the pH and minimize deterioration of distribution pipes.

Residual treatment

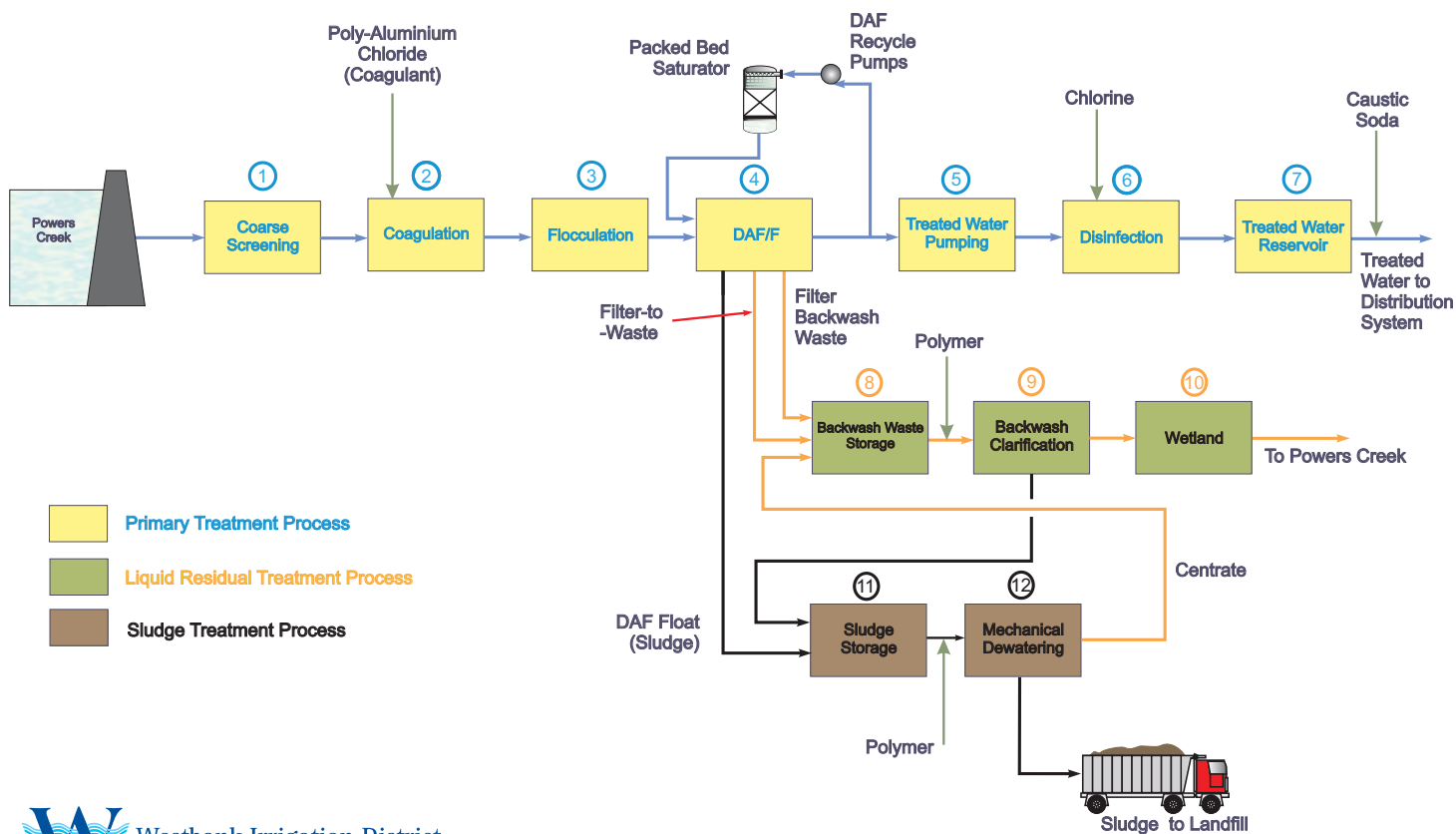
The water treatment plant generates several waste streams. Filter backwash waste contains the solids washed from the filters. Filter waste is produced by the diversion of filtered water for the first 20 to 30 minutes from a newly backwashed filter. These liquid wastes are mixed in a backwash holding tank and then clarified using a residual DAF.

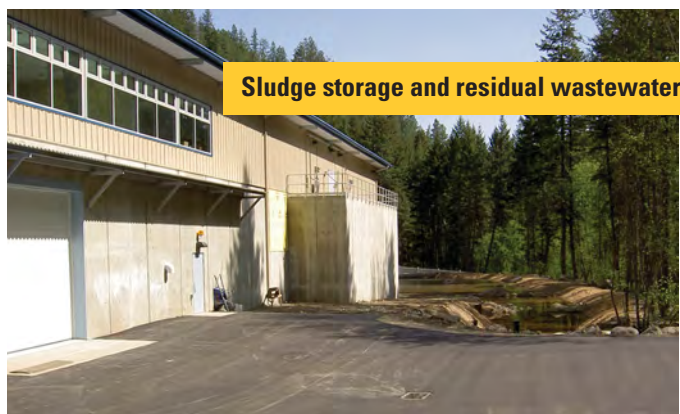


The UV Chamber

The residual DAF process produces both sludge and a clarified stream. The sludge, together with sludge generated

Powers Creek Water Treatment Plant Process Flow Diagram





from the DAF/F, is pumped to a centrifuge for dewatering before being trucked to a local landfill. The clarified stream goes to a wetland for further treatment before being discharged to Powers Creek.

The **PROCESS FLOW DIAGRAM** for the water treatment plant consists of the following items:

1. Traveling coarse screen complete with backwashing facilities.
2. Coagulation, using poly-aluminum chloride, to destabilize colloidal material, and entrap natural colour in the water within a chemical floc. The coagulant is rapidly mixed into the raw water using jet flash mixing.
3. Mechanical flocculation, to gently stir the coagulated water, and encourage the small floc particles formed during coagulation to adhere together and grow larger flocs.
4. Dissolved air flotation (DAF), using micro-bubbles to float the flocs to the surface of the tank, forming a sludge layer which can be scraped from the surface, and separated from the water. Granular media filtration is constructed within the same concrete tank as the DAF process (in combination this process is known as DAF/F). Integral to the DAF/F process are facilities for backwashing and air scouring of the filters, to remove foulants.
5. A treated water pump station, to pump treated water to the new treated water reservoir.
6. Primary disinfection, using ultraviolet radiation (installed 2008) and secondary disinfection with gaseous chlorine.
7. A new 8,000 m cast-in-place concrete treated water reservoir.
8. A storage tank to capture waste generated from the filtration process.
9. A residual thickening DAF for treating the waste generated by the backwashing of the filters.
10. A wetland to further polish and improve the water quality of the liquid residual stream prior to the water being released back to Powers Creek.
11. A storage tank for sludge generated by the DAF/F process and residual DAF thickening processes.
12. A sludge treatment facility based on the use of a centrifuge for mechanical dewatering of the sludge. This allows for most of the water contained in the raw sludge to be removed, rendering the sludge amenable for hauling and disposal off-site.

OPERATOR PROFILE: Mark Maxson



Mark Maxson joined Powers Creek in June 2007 as lead water treatment operator.

Mark Maxson is lead water treatment operator for the Powers Creek Water Treatment Plant. Mark is a Class IV wastewater treatment plant operator. He holds 4th Class power engineer and chlorine handler certification and has just applied for Water Treatment Level I.

Mark was born in Kelowna and attended high school in Westbank. Between 1994 and 1996, as part of his co-op training in the Okanagan University College Water Quality Technology program, he worked at the LuLu Island wastewater treatment plant. After graduation, he spent 11 years with the Greater Vancouver Regional District's Annacis Island wastewater treatment plant. He started work at Powers Creek in June 2007.

Mark and his wife, Colleen, have been married for 27 years and have two daughters, Shannon and Jodie. In his free time, Mark enjoys fishing, camping, diving, and travel, especially to warm-weather destinations such as Florida and Cuba.



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Water Treatment Technology Program

Thompson Rivers University has partnered with the City of Kamloops, British Columbia, and General Electric Water and Process Technologies to form the TRU Water Education and Research Centre. Through this facility, courses, meeting the National Occupational Standards for Canadian Water Operators, have been designed to fulfill the needs of all those in the industry whether just entering the field or already working as an Operator.

Through our Open Learning division, you can take these courses and gain a recognized institutional credential all at a distance. This means you can enrol anywhere, anytime and study at a pace that's right for you. Open Learning also allows you to transfer relevant credits from other institutions and gain credits for past work experience, helping you complete your program more quickly.

It's time to do something different

Thompson Rivers University Open Learning Water Treatment Technology Diploma consists of 20 courses, 9 CEUs each for a total of 180 CEUs. Each course can be separated into three smaller modules, allowing you to choose specific parts of the program. Successful graduates of the program will receive advanced standing and be able to ladder into Bachelor and Master Degree programs.

Receive the CEUs required for certification with the following program course structure:

Level One

WTTP 170 Water Sources

- WTTP 001 Water Supply Hydrology
- WTTP 002 Ground and Surface Sources
- WTTP 003 Water Supply Protections

WTTP 171 Water Treatment I

- WTTP 005 Small Water System Operations
- WTTP 006 Basic Principles of Sedimentation and Filtration
- WTTP 007 Basic Principles of Disinfection and Water Storage

WTTP 172 Applied Math and Science

- WTTP 009 Applied Operation Math
- WTTP 010 Basic Hydraulics
- WTTP 011 Basic Water Chemistry

WTTP 173 Mechanical Systems I

- WTTP 013 Pipes, Valves and Fittings
- WTTP 014 Basic Principles of Pumps
- WTTP 015 Cross Connection Control

WTTP 174 Environmental, Safety and Communications

- WTTP 017 Environmental Legislation
- WTTP 018 Occupational Health and Safety
- WTTP 019 Communications

Water Treatment Technology Level 1 Certificate

Level Two

WTTP 180 Electrical Fundamentals I

- WTTP 021 Electrical Principles
- WTTP 022 Testing Electrical Circuits and Safe Electrical Work Practices
- WTTP 023 Basics of Electric Motors and Motor Controls

WTTP 182 Instrumentation I

- WTTP 025 Instrumentation Principles
- WTTP 026 Process Measurement
- WTTP 027 Final Control Elements

WTTP 183 Mechanical Systems II

- WTTP 029 Primary Process Water Equipment
- WTTP 030 Secondary Process Equipment
- WTTP 031 Building Mechanical Systems

WTTP 185 Water Treatment II

- WTTP 033 Coagulation
- WTTP 034 pH Control and Water Softening
- WTTP 035 Oxidation Reactions

WTTP 189 Practicum I

Water Treatment Technology Level 2 Certificate

Level Three

WTTP 270 Electrical Fundamentals II

- WTTP 045 Advanced Motor Control
- WTTP 046 Basic Electronic Devices and Speed Drives
- WTTP 047 Basics of Programmable Logic Controllers

WTTP 271 Water Chemistry

- WTTP 049 Introduction to Water Chemistry
- WTTP 050 Inorganic Species in Water
- WTTP 051 Organic Species in Water

WTTP 272 Advanced Coagulation and Particle Removal

- WTTP 053 Advanced Coagulation and Emerging Technologies
- WTTP 054 Dissolved Air Floatation and Jar Testing Procedures
- WTTP 055 Clarifiers

WTTP 273 Filtration

- WTTP 057 Concepts of Filtration
- WTTP 058 Slow and Rapid Sand Filtration
- WTTP 059 Membrane and Alternative Filtration Techniques

WTTP 274 Disinfection

- WTTP 061 Basic Principles of Disinfection
- WTTP 062 Standard Disinfection Practices
- WTTP 063 Advanced Disinfection and Fluoridation Practices

Water Treatment Technology Level 3 Certificate

Level Four

WTTP 280 Microbiology and Toxicology

- WTTP 069 Introduction to Microbiology and Toxicology
- WTTP 070 Microbiology
- WTTP 071 Toxicology

WTTP 281 Limnology for Water Treatment

- WTTP 073 Physical and Chemical Characteristics of Lakes and Rivers
- WTTP 074 Biology of Lakes and Rivers
- WTTP 075 Natural and Human-Produced Contaminants in Water Ways

WTTP 282 Instrumentation II

- WTTP 077 Computers in Industry
- WTTP 078 Advanced Programmable Logic Controllers
- WTTP 079 Industrial Communications and SCADA Systems

WTTP 283 Management and Leadership Skills

- WTTP 081 People Management
- WTTP 082 Asset and Operations Management
- WTTP 083 Financial Management

WTTP 289 Practicum 2

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Experts Debate Greywater Reuse

Orange County, California, made headlines in January when it commissioned a massive water purification project to supplement drinking water with treated sewer water. The system will purify 70 million gallons per day of highly treated sewer water to near-distilled quality. Half of the water will be injected underground to expand an existing seawater intrusion barrier. The rest will be piped to lakes, and will filter into the groundwater basin.

The Orange Country project, the largest advanced water purification project of its kind in the world, represents water recycling on a grand scale. But with dwindling groundwater reserves and pressure to conserve, governments and regulators in North America and around the world are eyeing water-saving schemes of every size.

One conservation approach that's attracting interest in Canada is the reuse of household greywater. Instead of being flushed directly into the sewer system, greywater from bathroom sinks, bathtubs, showers, and laundry machines (as opposed to black water from kitchen sinks and toilets) can be collected and used a second time to flush toilets or water lawns.

To date, greywater reuse hasn't been widely embraced in this country. Health Canada is developing national guidelines for household reclaimed water as a first step to a more comprehensive regulatory framework.

A research report for the province of BC, which is revising its building code, suggests that greywater reuse, together with rainwater harvesting, could supply most of the landscape irrigation needs of a household in a semi-arid region. Greywater reuse also reduces demand on water and water treatment systems.

Health concerns about greywater relate to the presence of microorganisms and other contaminants in the water and the potential for accidental cross-connection of a reclaimed water system with a drinking water system. The treatment

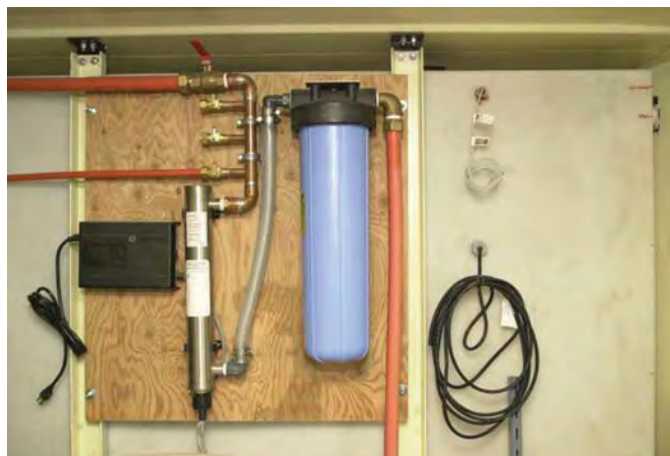


Photo courtesy CMHC

required before greywater can be reused depends on the source of the water being collected, whether it needs to be stored, and the intended end use. But the BC report suggests that water from bathroom sinks, tubs, and showers can generally be used for irrigation and toilet flushing with fairly simple treatment. The use of greywater for plant irrigation calls for more monitoring, since the water can affect soil pH.

Carolyn Stewart, program coordinator for water conservation and cross connection control with the City of Penticton, says greywater recycling may be more economical and practical for commercial buildings or facilities that have the staff to operate and maintain the systems. But she isn't a strong proponent of the practice at the household level. "We're hesitant about it because of the health concerns," she says. And for BC homeowners, Stewart says water savings aren't significant enough to justify installing greywater systems. "Buying a dual-flow toilet will give a better return on investment."

Stewart says many communities are interested in water reuse at the municipal level, where wastewater has already been treated. The cities of Penticton and Vernon, for

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instance, use treated wastewater from their sewage treatment plants to irrigate golf courses and parks. "Many municipalities are more open to that concept."

Canadian Mortgage and Housing Corporation has funded several domestic greywater reuse demonstration projects, including one at Quayside Village, a 20-unit apartment cohousing development in West Vancouver, where the use of greywater for toilet flushing is expected to cut water demand by 40 per cent.

In the US, California pioneered the legal use of greywater in 1992, and other states have since put regulations in place.



Photo courtesy CMHC

In Arizona, for example, homeowners can reuse water from clothes washers, bathtubs, showers, and sinks for household gardening, composting, and landscape irrigation without a special permit, as long as they follow specific guidelines developed to protect public health and water quality. And in Australia, which has been coping with drought in many parts of the country, some housing developments recycle, treat, and reuse greywater on a community-wide scale.

Conservation-conscious developers in Vancouver, on the other hand, are focusing more on rainwater harvesting, says Chris Twemlow, the city's cross connection program manager. Rainwater systems collect run-off from roofs and patios and treat it for other uses. "We've got it coming from the sky, it's free, and the treatment costs are less than what you would need for greywater."

New developments in Vancouver with systems to harvest rainwater include an elementary school and buildings to house athletes for the 2010 Olympic Games. "It's new to us," Twemlow says, "and we're trying to develop principles along the way."

Have you met the CEU requirements?

The date for Continuing Education Unit (CEU) requirements for EOCP certified operators has passed. Any operators who did not complete the required CEUs by January 1, 2008 will receive notice by letter in April 2008 that their certificate(s) will be classed as 'Not in Good Standing' (NIGS) status unless the CEU requirements are met. Once a certificate is classed as NIGS, the operator is required to complete the CEUs needed. It is not the EOCP's responsibility to notify employees or regulators when an operator's certification lapses or the status becomes NIGS. It will be up to the operator to notify his or her employer.

To check whether or not you have met the CEU requirements, visit the EOCP Web site at www.eocp.org. Click on the EOCP "Database Search" button, select "Search Operators," and enter your last name.

For further information, including details on the allocated number of CEUs for specific courses, and which certification category the CEUs can be applied to, please check the EOCP website or contact the EOCP office.



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Joe McGowan presented with Bert Caine Award

The EOCP presents the Bert Caine Award to individuals who have served the program over many years and in an exceptional capacity. Bert Caine was one of the founders of the operators' certification program in BC, and acted as the program's secretary for 20 years. When Bert retired almost 20 years ago, the program decided to recognize his service to operator certification with an award named in his honor.

In May 2007, the Bert Caine Award was presented to Joe McGowan. (Only four other individuals have received this award since its establishment.) Joe retired from the EOCP Board this spring after serving as a director for 17 years — the past 15 years as chairman.

The EOCP has grown dramatically under Joe's leadership, including gaining legislative requirements for wastewater treatment operators in 1993 and water operators in 2003. In 1990 when Joe was elected to the board, the program depended on volunteer work and had fewer than 700 certified operators. The program had little money

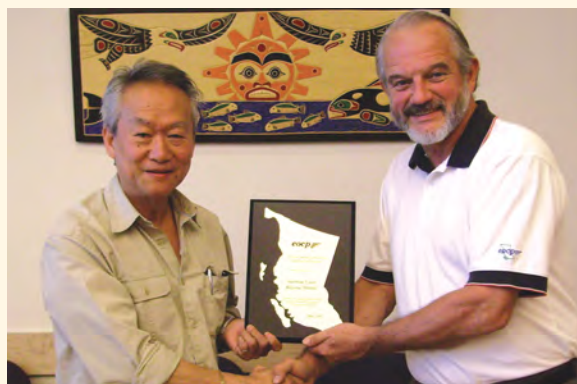


Joe McGowan, left, receives the Bert Caine Award from EOCP Board Chair Bob Smith

and few assets. Today, the EOCP has more than 3500 certified operators and four paid staff. The program is the only water and wastewater operator certification program in Canada not operated by a provincial government ministry, and is one of the foremost certification programs in the country.

SCRD receives EOCP Recognition Award for 2007

The Sunshine Coast Regional District (SCRD) received the EOCP Corporate Recognition Award for 2007. The award is presented by the EOCP to a local government, provincial government agency or other organization that has demonstrated exceptional support of the EOCP. Steve Lee, General Manager of Infrastructure Services (retired), received the award for the SCRd.



EOCP Executive Director Bill Hyslop (right) presenting Steve Lee with the EOCP Corporate Recognition Award

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Proposed multi-utility certification to help smaller municipalities and utilities

continued from page 1

2. The Multi-Utility Certification Program will have an upgrade path defined for operators who subsequently move to individual Utilities.
3. The program must enable compliance with the health authorities, Ministries of Health and Environment requirements, and promote an environment where all operators are recognized for the proven skills and knowledge they bring to the job.

A new category of facility classification and operator certification was created about eight years ago to address the specific issues with respect to water and wastewater systems serving less than 500 people. The challenge we are addressing with this initiative is that most water and wastewater systems that service between 500 and 5,000 customers do not require full-time operators either because of the simplicity of the systems (simple gravity water distribution system, etc.) or the complexity/ automation of the systems (package plants with full SCADA, UV treatment, etc). These systems require an operator to perform system checks and be available to respond at any

time (main breaks, chlorine injection pump failure, process changes, etc.).

These systems can require an operator to have Level II or higher certification to operate the systems based on the Ministries of Health or Environment's requirements and the current EOCP's Facility Classification Rating System. Operators who work in these smaller systems generally have the responsibility to operate and maintain two or more systems. Under the current system of certification, these operators may take many years to become certified to the required level for each system. As more and more small utilities upgrade their systems, there is a very significant risk that these utilities will not be able to find operators to meet requirements of their systems.

Over the coming year, the EOCP will address this issue by developing a multi-utility certification program. We have good precedents on which to begin our work, as Alberta and Ontario both have adjusted their programs to address this issue. With this foundation, and stakeholder input, we can develop an expanded program that meets the needs of our industry, regulators, employers, and operators.

Information on this project is posted on the EOCP website – Certification page (<http://www.eocp.org/certpg.html>). Any questions or comments are appreciated. Your feedback can be emailed to Pat Miller, EOCP Director at eocp@eocp.org.

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Annual Conference & Trade Show

April 26-30, 2008

OPERATORS PROGRAM

JOIN US FOR FOUR DAYS OF ACTION PACKED EVENTS!

The BCWWA's 2008 Annual Conference & Trade Show in Whistler, BC offers opportunities for Operators to make contacts throughout the industry, learn about the latest technological developments, and put their skills to the test.

♦ **NETWORK** Get to know your fellow operators and the BCWWA and EOCP Directors! Join us on the afternoon of Sunday April 27th for a Meet & Greet session.

♦ **DEVELOP** BCWWA believes in providing opportunities to enhance the skills and increase the effectiveness of operations and maintenance personnel throughout the water and wastewater industry. On April 28th and 29th you can catch two full days of Technical Papers. In addition, this year we have five Technical Transfer Sessions to choose from on April 30th. Earn some CEUs!

♦ **COMPETE** In addition to the Technical Program, practical competitions will take place Sunday and Monday. The competitions test speed, knowledge, skills, safety and teamwork. The following competitions will be held in 2008:

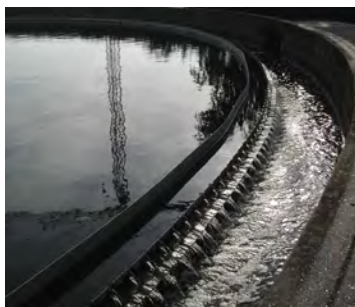
- ♦ Specialty Pumping System Challenge
 - Large Water Pump Tear Down
 - Small Pump Tear Down
- ♦ Top Ops Knowledge Contest



The Large Pump will be available for training. The pump comes with a training CD that will allow teams to view the tear down sequence. Interested teams should contact Brian Corder at John Brooks Company Limited (604.942.7622 or bcorder@johnbrooks.ca).

To register for the Pump Competitions or Top Ops contact Rob Mellander, BCWWA Operators Program Chair (rmellander@shaw.ca).

For general information on the BCWWA Annual Conference & Trade Show, visit www.bcwwa.org or contact Sarah Vaughan at the BCWWA office (604-630-0011 or svaughan@bcwwa.org).



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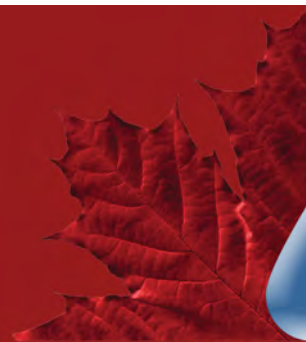


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Upcoming Events

TRAINING OPPORTUNITIES

| EVENT/COURSE | DATE | LOCATION |
|--|---------------------|----------------|
| Wastewater Collection I | April 14-18 | Qualicum Beach |
| Water Distribution I | April 14-18 | Qualicum Beach |
| Chlorine Handling | April 14-18 | Qualicum Beach |
| Small Water Systems | April 14,15 | Qualicum Beach |
| Small Wastewater Systems | April 16,17 | Qualicum Beach |
| Supervisory and Leadership Skills | April 16,17 | Qualicum Beach |
| Unidirectional Flushing | April 18 | Qualicum Beach |
| Small Water Systems | April 14,15 | Cranbrook |
| Water Quality for Distribution Operators | April 21-23 | Kelowna |
| Wastewater Collection I | April 21-25 | Richmond |
| Dam Inspection & Maintenance | April 22 | Kamloops |
| Water Distribution I | May 12-16 | Vancouver |
| Water Distribution II | May 12-16 | Vancouver |
| Water Distribution III | May 12-16 | Vancouver |
| Water Treatment I | May 12-16 | Vancouver |
| Water Treatment II | May 12-16 | Vancouver |
| Wastewater Collection I | May 12-16 | Vancouver |
| Wastewater Collection II | May 12-16 | Vancouver |
| Wastewater Collection III | May 12-16 | Vancouver |
| Wastewater Treatment I | May 12-16 | Vancouver |
| Wastewater Treatment II | May 12-16 | Vancouver |
| Wastewater Treatment III/IV | May 12-16 | Vancouver |
| Chlorine Handling | May 12-16 | Vancouver |
| Small Water Systems | May 12,13 | Vancouver |
| Small Wastewater Systems | May 14,15 | Vancouver |
| Confined Spaces | May-12 | Vancouver |
| Shoring & Utility Location Awareness | May-13 | Vancouver |
| Leak Detection | May-14 | Vancouver |
| Unidirectional Flushing | May-16 | Vancouver |
| Supervisory and Leadership Skills | June 2,3 | Kelowna |
| NEW Water & Wastewater Operations | June 9-13 | Kelowna |
| Please phone the BCWWA at 604 433 4389 for information on the above courses or check their website at www.bcwwa.org . | | |
| EOCP Annual General Meeting | May 12, 2008 | Vancouver |
| BCWWA Annual Conference | April 26 - 30, 2008 | Whistler |

EOCP CERTIFICATION EXAMINATIONS

Operators wishing to write certification exams must apply to the EOCP by written application complete with job description no later than two weeks prior to the exam session. Exam fees are payable to the EOCP office before the time of writing and may be paid by Visa or Mastercard. Exam application forms can be downloaded from the EOCP web site at www.eocp.org.

EOCP Office: Phone: 604 874 4784 Fax: 604 874 4794 Toll Free: 1 866 552 3627.

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