

**System Profile:** Union Bay Improvement District

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# BRITISH COLUMBIA ERATORS est



Time is running out to complete your Continuing Education Requirement for the second renewal period.

# **Changes Coming in EOCP Fees**

he Environmental Operator's Certification Program executive has found it necessary to increase a number of the fees we charge to run the certification program for operators in British Columbia. The program has been operating at a deficit for a number of years now and if we continue, all reserves will be depleted within a few years. Hopefully, this will be the last increase in annual dues for a while but there could be another increase next year if there is another substantial deficit as there has been recently. Expenses continue to exceed revenue for the Environmental Operators Certification Program.

Beginning with the 2010 renewal, there will be an increase in the annual Operator's dues to \$60 per year as well as the introduction of an application fee for certification exams of \$25. We have also increased the fees to be paid when an Operator from outside the province asks for reciprocity to become certified in BC as well as the advertising rates for the Operators Digest. We are also looking at reconfiguring the facility classification fees. Collectively these will help to offset the deficit the EOCP has been facing and will hopefully be enough to allow us to continue to provide you with the

service and certification that we do. If these increases do not meet the financial needs of the EOCP, there is a possibility that there will be a further adjustments to allow the EOCP to continue to operate.

## **EOCP Elections**

The EOCP Board elections occurred recently. As EOCP has more than 3700 active operators, a larger turnout was expected for the Board elections. Although there was a mailing glitch and some operators did not receive voting ballots initially, this recent board election has had the lowest response to date. More operators need to get involved in the voting process. The EOCP will be looking at various ways prior to the next election to increase voter turnout.

Constitution changes were made recently and amendments were overwhelmingly approved; 104 members voted in favour and only 22 members voted against. It had been decided that proposed revisions to the Constitution would be voted on by the membership at large by mail-in ballot to allow the maximum number of members to vote. For more information about the constitution changes made; please visit www.eocp.org.

## 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 **eocp@eocp.org** or:

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Business card-sized ads are available for \$75 per issue or \$250 for four issues, GST included. For ads of other sizes, please contact the EOCP 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.

#### 2008/2009 Board of Directors

Mike Gosselin – President

Pat Miller – Treasurer Scott Fry – Secretary Darryl Bjorgaard Steve Benoit Ron Bazuk Bob L. Smith Shawn Sanders Brian Thorburn

#### 2009 Certification Board Election Results

Operators: Mike Gosselin 84 votes Brian Thorburn 83 votes Bob Beaumont 59 votes Chris Brown 33 votes

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### EDITORIAL

## What is an Operator?

When I first started out as an Operator in 1995, salaries and job titles had the same ratings and pay as truck drivers and equipment operators. Nothing against those two professions but as a water and wastewater Operator, a different job description and job title was sought for and eventually gained. Management began to realize the importance of having a certain level of EOCP certified Operator on staff. Through hard work and taking many courses such as the Sacramento State courses, some Operators have been able to acquire higher levels of certification along with higher levels of pay and job advancements. Certified Operators are looked upon more and more as professionals in the water and wastewater field. Many managers these days have worked their way up through the Operator ranks to achieve utility management positions.

Some Operators like myself, have been very fortunate to have had great mentors when they first enter in the water and wastewater field. These mentors and supervisors have been great; showing new Operators how to be great Operators, showing new Operators the right and ethical way to be an Operator and installing a sense of professionalism in them as well.

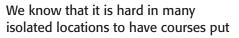
Lately, there have been some incidents that some may question Operator's professionalism. As seen in this newsletter, a certified Operator falsified data that was sent into a regulatory agency. Another certified Operator has been observed using a cell phone to take pictures of a certification exam during an exam session, while another Operator has been observed using a "cheat sheet" during an exam session.

These incidents are not the norm for Operators. We, as Operators, are aware of the legal and ethical way to deal with environmental issues and violations. The majority of Operators know right from wrong and refuse to cheat or violate the integrity of the certification process. If, we as Operators want to continue to be viewed as professionals, then we must continue to act professionally as the majority of us already do.

## Training Registry

oon, giving and getting training will become much simpler. The EOCP has streamlined the assignment of CEU's for training to enable many more qualified and knowledgeable operators to become trainers for many courses, particularly short, focused sessions in remote locations. The existing list of over five hundred training opportunities will be incorporated in the new system and there will be no changes for those who wish to avail themselves of the existing courses, seminars, and workshops. If you, as an operator, have extensive knowledge about any water or wastewater subject and are prepared to provide a training plan for

a workshop, the EOCP will review that plan and grant CEU's depending on the length of the course and the course content. The EOCP will review the course content and will follow up on the course delivery to ensure that the operators are getting the full intent of the workshop. This will aid the many operators (and others) in BC to become recognized by the EOCP as trainers if they choose to.





on that relate to what the operators want to learn and these course can be sometimes cost prohibitive to many smaller utilities. We feel that once the Training Registry is fully implemented; training and education of Operators will become much more available, standardized and beneficial. Keep checking back on the EOCP website for all updates on the Training Registry program and if you

are interested in providing training, please contact the EOCP or email us as eocp@eocp.org.

## New Wastewater and Water Exams

New wastewater treatment examinations have been developed over the last couple of years and are nearing completion. These new wastewater exams should be ready for the fall and winter examination sessions.

EOCP representatives; John Reynolds, Bill Hyslop, Russ Megas, and Brian Thorburn have been working with the Association of the Boards of Certification to develop new standardized wastewater and water exams for use across North America, Canadian Standardized versions and ultimately by the EOCP. These exams along with new formula sheets are always being reviewed and allow all certification jurisdictions to upgrade their exams as frequently as they wish.

# We want your input!

We have a new look for the digest and website. If you have any comments or suggestions please contact us at the EOCP. As well, we are thinking about starting a Gimmicks and Gadgets contest for operators in BC to share valuable ideas between operators in our province. If you have any Gimmicks and Gadgets that you would like to share, please email us and we will publish your ideas in future newsletters.





# **Union Bay Improvement District**

'Then' and 'Now' – Union Bay, BC

## Then:

EXCERPT FROM 'THE FRIENDLY PORT' BY JANETTE GLOVER GEIDT

nion Bay (Union Wharf), known as the Friendly Port during its mining days, was the processing and shipping community for coal being mined in Cumberland. The water source and system (Langley Lake) was originally developed for the industry.

Everyone went to the community wells for water. It was a great place to catch up on the local news. Water was precious so none was wasted. After heating the



**Canyon Creek trestle span** 



Chinese crew in 1947 laying pipe

water and using it for washing clothes, the water would then be used to wash the floors, and what was leftover was put on the garden. A technique now being revisited in modern day water conservation concepts.

Around the turn of the century, Langley Lake, at 500' elevation was dammed to supply the Washer with water at 200 lb. pressure. An earth-fill dam was built with large timbers facing the toe side. Then a 10" pipe was laid to the Washer, crossing the 200' span at Canyon Creek. It was supported by a 100' high bridge that was only 5' wide. In 1912 the dam burst, flooding Chinatown and the colliery yards. The dam was built stronger and is still in use today.

By the 1930's, the main supply line was in need of

repair, so a pump house was installed behind Chinatown with the water taken directly from the creek. The pump house is still located beside Washer Creek at the Community Hall property

In the early 1940's the main town line was replaced and extended north as far as the weigh station and up McLeod Road to four or five houses above the tracks. Bob and Jim McKay led a large crew of Chinese workers installing 4" wooden staves pipes. Each 16' long pipe was made of wooden staves bound together with galvanized wire. The pipes were joined with wooden sleeves. Galvanized pipes were attached from the main line to each home. After the new road was put through in 1947, the line was similarly extended south to the town limits.

# SYSTEM PROFILE

When the company closed in 1960, it sold the water system to the newly formed Union Bay Water Board for \$1.00. The board also bought Langley Lake for \$1,000, one of the few lakes in BC which is privately owned.

## Now:

oday the community known as Union Bay still uses Langley Lake as its water source: however the wooden stave pipes have been replaced with asbestos and PVC pipes. The system expanded and there were some areas in town that had very low pressure or no water at certain times of the day or vear. The reservoir at the top of McLeod Road was not large enough to support community use during high use times. The water was still being supplied from the pump house at Washer Creek. The Harry Glover Reservoir was constructed at the top of McLeod Road on land leased from the Weldwood Company in 1976 and the use of the pump house was discontinued. Water mains came directly from Langley Lake into the reservoir for distribution.

The water system today provides water from Spindrift Drive in the north to the Buckley Bay Ferry Terminal in the south, and services 640 properties. The extension of the service to the Buckley Bay area took place in the early 1970's and McKay Reservoir was built. The dam was refurbished in the late 70's and a new deep intake to the lake was installed in 1999.

Langley Lake is a spring fed area that was dammed for water supply purposes for the washer for the coal industry. It also has several creeks that fed it in the wet season from the Island Timberlands property that forms the watershed area. It has a strong presence of peat demonstrated by floating islands of peat. Turbidity levels fluctuate depending on the incoming flows into the lake. In addition there is high level of organics and a low pH level to the water. It has a licensed storage capacity of 690,000m3. Millions of gallons of water flow over the spillway for approximately seven months of the year (October to April).

The transformation of the system is not without incident and as more changes are made to the system, some of the past becomes known. The most common problem is when the information on file does not match what is found in the ground. When this happens, someone will remember that "Joe Somebody did that, let's talk to him and see if he remembers." Unfortunately in 2009, this no longer happening as most of this



**Top of Langley Lake Spillway** 

knowledge is no longer available.

Changing the intake in Langley Lake had its challenges. The intake was located in a shallower area of the lake and it was decided after an engineering study that it should be moved to a deeper section of the lake. The engineering study took place in 1994 with the actual work was not being scheduled till 1998. During this time frame some information was overlooked in the planning and installation. This turned a \$160,000 project into a \$330,000 project – a serious impact on the reserves of an improvement district.

Looping of Nelson Street to McLeod Road took place in 2003. This looping improved the much needed fire flows for the properties in the McLeod Road core area. 2003 also marked the 20-year planning update. Future development of the

Union Bay area was being discussed which made water conservation and planning for the future the next priority. The services of an engineering company were contracted to determine current usage practices and the water supply available to increase the number of connections expected for future development. The report finalized in early 2004. indicated that at the current usage rate there may be a possibility of water shortage by the summer of 2007. The Board of Trustees took the proactive approach of having meters installed with the customers responsible for the cost of installation, since improvement districts do not qualify for infrastructure funding. This was met with some resistance. However, during the installation of the meters major leaks in the infrastructure were discovered and corrected. One such

continues on page 6

## SYSTEM PROFILE

leak changed the water pressure in one area by 10 psi. In addition to the water meters a drought management and water conservation plan was put in place in 2005. Increased water storage and water treatment was scheduled for 2006. As well, replacement and expansion of water mains was spread out, setting priority areas over the next 10 years. A review after 5 years was planned to evaluate the progress of the plan.

Today the water usage has changed from 513,000 m<sup>3</sup> in 2003 to 147,000 m<sup>3</sup> in 2008. We now service 640 connections up from 613 in 2003. Customer leaks and main line leaks are easier to find and every billing period seems to reveal another leak that needs repair.

The added benefits derived from metering are better water management practices, more accurate determination of future needs and water conservation education.

Union Bay, similar to many communities on Vancouver Island, is expecting to grow significantly as the island develops. Water and sewer service considerations are the most important factors in ensuring that development can be supported, while continuing to support the existing community.

#### continued from page 5

The major development currently under review has undergone numerous engineering studies of service considerations for water and sewer. The ongoing updating of the Union Bay Improvement District 20-year plan is a necessary factor in determining whether the district is in a position to provide water for development to move forward.

The changing legislation for water purveying has mandated that 4-3-2-1-0 treatment process to be in place in the near future. With the proposal of new development the immediate implementation of treatment may form part of the requirement to purvey water to new subdivisions. In 2005 Union Bay conducted a pilotproject to determine which type of treatment would be appropriate to handle source water high in organics and turbidity and low in pH. The costs were estimated and the schedule set for implementation in 2006. However, this schedule has been delayed until the funds are raised or landowner approval has been granted to borrow the money to cover the costs of installation

The other major maintenance consideration for Langley Lake is the dam. The dam requires regular inspection and the dam

area must be kept clear of debris, and weeds. Weekly inspections are conducted and property maintenance is performed by UBID staff. **Dam Safety Review** inspections are conducted by outside agencies. Once a service provided through the Ministry of Environment, the most recent one was completed by a professional engineering company in June 2009. Langley Lake is currently rated as a low risk dam and considered in very good condition.

Union Bay Improvement District is looking positively to the future growth of the area and the influx of infrastructure support that development brings with it. Improvement Districts continue to depend on funds from the landowners to improve the infrastructure.

Submitted by Brenda Fisher Administrator Union Bay Improvement District

Historical pictures courtesy of the Union Bay Historical Society

Current day pictures courtesy of the Union Bay Improvement District



**Danny McGill** has been an EOCP certified Water Distribution level 2 Operator since 2000. He works for the Union Bay Improvement District on Vancouver Island. His background includes well installation and maintenance in which he started in 1994 for a local well company. He graduated with honours from Waterworks Technology School in 1998 and began work with the Improvement District in 1999. Danny is also certified in chlorine handling, cross connection control, and confined space rescue. He has also completed the level 2 Wastewater Collection Operations program from Sacramento State University. Danny enjoys fishing with his two girls and also plays on a local hockey team year round.

# **Operator Challenge Penticton 2009**

#### Large Pump Tear Down 2ND PLACE: **1ST PLACE: 3RD PLACE: Metro Vancouver City of Team INAC** Jeff Coombs

- Corey Robinson
- Clayton Dreger
- Ivan Kozljan
- Dan Deacon
- **Chilliwack** • Gary Boyes Shawn Pritchard Grant Metcalfe
- Victor Tom Mel Paul

### **Small Pump Tear Down**

2ND PLACE:
CRD Water
• Joe Woolls
<ul> <li>Jeff Giradet</li> </ul>

### **Top Ops Challenge**

Capital City of Team That's	1ST PLACE:
Regional DistrictPentictonWhat She Said• Steven Whipps• Kevin Mcluskey• Tony• Mike Weaver• Joel Mertz• Scmerychynski• Jeff Girardet• Korey Birch• Bill Saunders• Jeff Woolls• Mike Callaway	Regional District • Steven Whipps • Mike Weaver • Jeff Girardet



**Operators answering questions during Top Ops.** 



**Operator performing analysis during competition** 





The Metro Vancouver team is comprised of Bill Saunders, Cory Robinson, Dan Deacon ,Clayton Dreger, Ivan Kozljan, Jonathan Mcluskie and Vince Launder.

## Operator of the Year (The Vic Terry Award)

### **Eric Jackson**

Eric Jackson has been awarded the BCWWA Vic Terry Award on the recommendation of the Environmental Operators Certification Program. The award goes to an operator that has provided exemplary service in water and wastewater operations over an extended period of time. Eric has far exceeded these requirements. Eric has been contributing to the industry and his fellow Operators for over 30 years. Eric was first certified as a wastewater treatment Operator in 1978 and he also has served on the EOCP Board for 26 years, including many years as the treasurer. Eric was instrumental in authoring many of the standards and procedures under which the EOCP program operates.

Eric has been involved with operator education for more than 20 years and is a member of the Operator Education Committee with BCWWA and teaches and



Eric Jackson accepts the award from Mike Gosselin

upgrades numerous courses. Eric also instructs and upgrades SWS and SWWS courses for INAC.

Eric was the Director of Water Reclamation for the City of Vernon for 25 years and has won numerous awards for his dedication. Congratulations Eric and thanks for all your hard work!

## New Online Operator Application Form Coming Soon

perators, keep checking the EOCP website www.eocp.org for updates as well as the release of a new online operator exam application form. Soon operators will be able to apply online for their operator exams. Simply fill in all the data sections with your experience, DRCs, and CEU's to apply for examination approval. This system will further ease the burden on office staff, allowing them to focus on the many important items they address daily. Please review the certification requirements for classifications prior to applying for the desired examination. All requirements for exams can be found on the EOCP website under the tab Program Information and the heading Program Guide. The online payment program for annual dues has proved to be a great success.

## **OPERATORS**

Does the EOCP have your current email address? Please ensure when you renew your EOCP certification to check your email address. If in doubt, please email the EOCP office at eocp@eocp.org.



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## Wastewater operator penalized for environmental violations at wastewater treatment facilities

FORT MCMURRAY — Alberta's Provincial Court has sentenced a certified operator to a 12 month conditional sentence, 11 months of which will be served as house arrest. The operator's company has been penalized its total assets of \$6,000 for non-compliance offences that occurred between September 2005 and January 2007 near Fort McMurray.

The operator will serve his sentence at his British Columbia home. During the 11 month term, he will only be permitted to leave his home for 3 hours per week for the purpose of buying groceries; any other absence must be with permission, including should he attain other employment. The operator has also been prohibited from operating a wastewater treatment facility for four years, the maximum sentence under Alberta legislation. His company has also been prohibited for three years. The clear intention on the court's ruling was to ensure that the opreator and his company are banned from any future wastewater treatment operations.

The operator and his company plead guilty on two counts on each of the following charges under section 227 of the Environmental Protection and Enhancement Act:

• providing false or misleading information in Suncor's annual reports;

· failure to report approval exceedances;

• failure to comply with approval limits for Total Suspended Solids and Biological Oxygen Demand at both plants.

Alberta Environment launched an investigation in March 2006 in response to reports of non-compliance at domestic wastewater treatment facilities at the two camps. The investigation uncovered a number of instances where data had knowingly been falsified and submitted in an effort to meet reporting requirements. Subsequently, the investigation identified a number of violations of monthly limits and a failure to properly report those violations.

As a result of the offences, an unknown amount of partially-treated wastewater was released into the Athabasca River. Further investigation and monitoring determined no discernable environmental impact and no risk to public health.

Courtesy Government of Alberta News Release



#### Our wastewater treatment plant was in violation of our operating permit twice in the last month, should I report the violation or should I just record a different reading on the lab report?

Although operators typically do not have to sign a code of ethics, they need to understand the ramifications of falsifying any data. Operators who have falsified data and provided false or misleading information, have been found guilty by the courts and have lost their operating licenses and have had fines and/or house arrests. Any violation, no matter how small should be reported to the appropriate agencies. When operators are upfront about a violation, typically, there can be minimal operator penalties except in a case of gross negligence.

In 1996, 16% of Canada's urban population did not have any form of sewage treatment!



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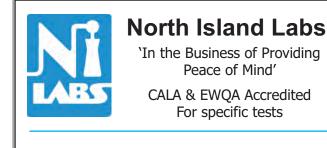
## **Operator Certification Sample Questions:**

- 1. At what depth must shoring be installed in a trench?
  - a. 0.3 m
  - b. 0.6 m
  - c. 1.2 m
  - d. 1.5 m
- 2. Heavy organic material and grit will start to settle out in wastewater's grit channel at a velocity of:
  - a. 0.4 m/s
  - b. 0.8 m/s
  - c. 1.2 m/s
  - d. 1.6 m/s
- 3. The manganese content of a raw water is 0.35 mg/L. What is the percent removal if the finished water contains 0.02 mg/L of manganese?
  - a. 67%
  - b. 88%
  - c. 94%
  - d. 95%
- 4. Reservoirs are typically disinfected with a free chlorine residual of?
  - a. 0.2 mg/L
  - b. 10 mg/L
  - c. 20 mg/L
  - d. 50 mg/L

- 5. 1 mg/L of Alum will consume how much alkalinity during coagulation?
  - a. 0.1 mg/L
  - b. 0.2 mg/L
  - c. 0.5 mg/l
  - d. 1.0 mg/L
- 6. The difference between the chlorine dosage and the chlorine demand is?
  - a. Chlorine decay
  - b. Chlorine residual
  - c. Chlorine drop
  - d. Chlorine concentration
- 7. The layer on top of a slow sand filter is commonly referred to as:
  - a. Smudge Tech
  - b. Schmutzdecke
  - c. Anthracite
  - d. Colloids
- 8. After a 30 minutes settling test in a 1000 ml graduated cylinder, the MLSS settles out to 350 ml. If the sludge has a concentration of 2400 mg/L, what is the SVI?

a.	69
b.	146
c.	686
d.	1460

- Correct answers
- d.8 d.7 d.8 s.2 b.4 s.2 s.1



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As many as 25% of all toilets leak. A toilet the runs on after flushing can leak at a rate of 20 to 40 litres per hour – that's 200,000 to 400,000 litres per year.



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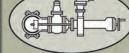
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#### **Anagrams Return** A German Ran Rust

Below are some common terms found in the water and wastewater field. Email or fax your answers into the EOCP office for your chance to win a prize from EOCP. A draw will be held for the Operators who answer the most correctly.

a relic fir	<u>Clarifier</u>	a cola gin out	
trifle		ax idiot no	
a italy link		boar ice	
a bear coin		infect urge	
a friction in it		insect id info	
dry shy soil		gap itch one	
a pencil root		air nasty	
a craft stun		tray tire	
treat it		buy dirt it	
a lie volt		a warmth mere	
rice ten		peer mill	
oodles in		a cube toil turn	





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