

## Plant Profile: City of Penticton Advanced Wastewater Treatment Plant

### Brief History

Sewage Treatment started in Penticton in 1948 with a Package Primary/Secondary Plant. The existing plant location has had a Secondary Activated Sludge Treatment Plant since 1960 with a design capacity of 5500m<sup>3</sup>/d. In 1970, the plant capacity was increased to 8200m<sup>3</sup>/d with construction of additional primary and secondary clarifiers plus chemical coagulation facilities for phosphorus removal. In the period 1970-1985, a number of improvements and increases to the plant's treatment capacity were made to cope with increasing wastewater flows and loads. In 1985, the B.C. Waste Management Branch prepared a report, which reviewed the requirements for discharge of municipal effluents to the Okanagan Lake system. Continued surface discharge of treated effluent to the Okanagan Lake, Okanagan River and Skaha Lake would be possible, provided advanced tertiary treatment was implemented to ensure high quality effluent.

The report also recognized that land application schemes would required advanced tertiary treatment. Stanley Associate Engineering Ltd. completed the Wastewater Management Plan for the City in 1987. Stanley was subsequently commissioned by the City to provide design, construction management and plant commissioning engineering services for a new Advanced Wastewater Treatment Plant to serve the City's needs. The new and expanded Advanced Wastewater Treatment Plant, with biological nutrient removal, was constructed and commissioned in the fall of 1990. The B.C. Ministry of Environment paid for 75 percent of the cost of the new facility through the Okanagan Water Quality Control Project.



*The City of Penticton Advanced Wastewater Treatment Plant was constructed in 1990. It is a Class IV plant that presently treats flows of 15,000 m<sup>3</sup> per day. The treatment process includes tertiary treatment, sludge composting, disinfection and effluent irrigation. (Plant profile continued on page 6).*

### Collection System

The wastewater collection system has ten pumping stations. Two of these are larger in size using 50 and 60 horsepower pumps while the remaining are 3 to 5 horsepower. One larger station is located at the south end of the city using two water-cooled submersible pumps with a stand-by power plant. The other larger station located at the north end of the city has three submersible pumps with a stand-by power plant.

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## Environmental Operators Certification Program

The BC Operators Digest is the official newsletter of the Program. Submissions for publication in the Digest are welcome and may be sent to the Editor:

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Business card sized advertisement space is available at \$50.00 per issue or \$175.00 for four issues. GST and PST included. For other sized advertisements, please contact the Editor.

The Environmental Operators Certification Program is a charter member of the Association of Boards of Certification, and is a Registered Society with over 1,500 active members.



Design and Layout by: Olive Design

Printed on Recycled Paper

## Editor's Notes

This issue of the Digest includes business from the most recent Board Meeting and Annual General Meeting, both held in May. New exams are now in use for Industrial Wastewater Treatment operators and Small Systems operators. The Small Systems exams will benefit those operators in small systems who needed years in the field to reach the experience required to qualify for the regular water/wastewater exams. As well, the industrial exams are specific to the treatment methods in industrial settings.

This issue's plant profile is the City of Penticton's Advanced Wastewater Treatment Plant, an interesting Class IV plant. If you would like to see your water or wastewater plant or system profiled, please call the Board Office.

The Certification Program continues with steady growth and now has over 1,500 active operators in the Program. The fall is a busy time for the EOC Board with BCWWA Workshops and operator exam sessions scheduled in various places around the province. It also isn't too early to plan ahead for next year's BCWWA Conference in April and the UBC Workshop in May.

A revised Certification Program Guide will be in your mailbox soon, as well as an Operator and Facility Directory; both which will also be available on the EOC web site.

Once again, information on operators, plant profiles, questions or comments on the Certification Program are welcome.

### 1999/2000 BOARD OF DIRECTORS

**Joe McGowan** - Chairman  
**Bill Hyslop** - Industrial Waste  
**Bernie Taekema** - Facilities Classification  
**Kevin Ramsay** - BCWWA Liaison  
**Leo Albrecht** - CEU Assessment/Exam Coordinator  
**Don Gare** - Digest Editor  
**Eric Jackson** - Treasurer  
**Al Lane** - Secretary  
**Dave McLean** - Education Liaison

# BOARD BUSINESS BRIEFS

*Recent Business from the EOCP Annual General Meeting and EOCP Board Meeting held in Vancouver on May 8, 2000.*



Thirty year pin presentations and lifetime memberships were awarded to the following operators at the UBC Operators Workshop: Al Scott #20, Al East #5, Dick Roth #19, Robert Lauder #14, Robert Wilson #17, Thomas Edwards #26, Larry Tenney #33 and Robert Turriss #35. Pictured above from left to right: Al Scott, Al East and Dick Roth.

## EOCP ANNUAL GENERAL MEETING

- In the Chairman's absence, Bill Hyslop reported that the EOCP currently has 1,483 active members holding 2,346 certificates. The program has 502 classified facilities. There has been significant progress towards the water requirements for certification of municipal workers.
- Eric Jackson introduced Bert Caine who served on the EOCP Board as Secretary/Treasurer for 20 years. He was the editor of the BC Operator Digest for 14 years – publishing 71 issues. Bert retired in 1989 and was presented with an award for long term service. The award was known as the Bert Caine Award and was presented again in 1991 to Bob Wilson. Bill Hyslop was presented the Bert Caine Award personally by Bert Caine for his 24 years of commitment and contribution to the EOCP.
- Eric Jackson submitted the Treasurer's Report as follows, for the period from May 1, 1999 to April 30, 2000:

Revenue:	\$ 146,432.93
Expenditures:	\$ 126,541.28
Bank Balance:	\$ 32,299.10
GIC's Invested:	\$ 52,355.02
Mutual Funds:	\$ 18,703.00
Total Assets:	\$ 103,357.12

- There were no nominations for the 2000 Board of Directors. The following Directors will continue in their respective positions by acclamation:

Bernie Taekema – Government Representative  
 Kevin Ramsay – Education Liaison  
 Leo Albrecht – Operator  
 Al Lane – Operator  
 Eric Jackson – Operator

- Errol Franson from the Town of Smithers was presented with the Vic Terry Award at the BCWWA Annual Conference in Victoria.
- The Corporate Recognition Award was presented to Ron Driedger of the Ministry of Environment, Lands and Parks at the Conference.
- The following new exams, forms and policies are ready to use:
  - New Industrial Wastewater Treatment Exams, Levels I – IV
  - Small System Criteria
    - the facility serves a maximum population of 500
    - the facility or system can be classified as a Class I or Class II facility
    - the operator must have 6 months hands-on experience (minimum 50 hours)
    - the operator must have grade 10 education and 1.5 CEU's (completed minimum 15 hours of training)
  - New Small Water/Small Wastewater System Classification Forms
  - New Small Water System/Small Wastewater System Exams – mechanical and lagoon.
  - Exam Writing Policy

## EOCP BOARD MEETING

- Director Taekema reported that the facilities annual renewals and five year renewals invoices will be sent to facilities in June. The revised facility classification form is being used for new facilities and is more complicated. Bernie also provided a written summary of his attendance at the ABC 2000 Annual Conference in January in San Diego, CA.
- The Board approved purchasing an additional computer monitor at the Board Office.

# BOARD BUSINESS BRIEFS

*Cont'd from page 3*

- Director Hyslop met with the CRD staff at the new Saanich Peninsula Wastewater Treatment Plant regarding DRC time and how the time is allocated.
- Directors Ramsay and Albrecht are preparing new water distribution and wastewater treatment courses for the BCWWA.
- Director Jackson will draft a "Duties and Responsibilities of Directors Policy" for discussion at the next Board Meeting, as directed by the Board.
- The following Board Resolutions are from the October 4, 1999 Board Meeting.

**BE IT RESOLVED** that when the industrial wastewater treatment exams are in place, all industrial operators holding a valid Level I or II municipal wastewater treatment certificate will be issued a Level I or II industrial wastewater treatment certificate.

**BE IT RESOLVED** that:

The operator must qualify to write the Level III and IV industrial wastewater exams. The exam fees for industrial wastewater treatment exams will be the same as municipal exam fees. Marking of industrial wastewater treatment exams will be done by Board office staff.

- The small system classification fee will be \$100.00. Exams will be marked by Board office staff.
- The new formula sheet for use during exams will be ready soon. Revisions are also being made to the "Operator Program Guide".

- The Board approved the following policy:

**BE IT RESOLVED** that the Board approves a policy to actively participate in ABC activities to improve the examination and certification of operators whenever:

- (a) appropriate individuals are available to participate, and
- (b) resources of the Board are sufficient to cover reasonable costs for such participation.

- The Board approved Bill Hyslop attending an ABC exam Development workshop in June in Denver, CO for the development of water treatment exams.
- DRC Responsibilities at Different Plants – The Board will follow the "Program Guide" and assess each application on an individual basis.
- Qualifications for Eligibility (Contractor/Control Room Operator) – An operator that operates a facility by remote control qualifies as a hands-on operator. A contractor's application will be assessed by the number of hours or percentage of time spent working hands-on in a water or wastewater system.
- Operators Holding IS Certificate Renewals – Director Hyslop will check with the Ministry of Health to find out if IS (Independent Systems) are still operating. If not, operators will be notified that their certification is no longer valid.



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# 2000 BCWWA VICTOR M. TERRY AWARD



*EOCOP Chairman Joe McGowan presenting the Vic Terry Award to Errol Franson at the BCWWA Conference in Victoria.*

The Victor M. Terry Award is a BCWWA award recognizing a water or wastewater operator who is judged to have made an outstanding contribution to his or her utility or to the water and wastewater industry over a number of years. This year's recipient has been selected as a representative of a small community and exemplifies what it means to be an all round water and wastewater operator in a small town.

This year's recipient is Errol Franson from Smithers. Errol began work with the Town of Smithers in 1965 installing and maintaining water and sewer lines. When the town built a new wastewater treatment plant in 1972, he took a correspondence course in wastewater treatment and on completion of construction, was appointed operator of the activated sludge plant. As is typical in small towns with few staff, an operator is seldom assigned to only one task and must be a jack of all trades.

Errol received his certification as a WWT Level I operator in 1973 and his Level II certification in 1976. He went on to gain his WD Level I in 1985 and WWC Level II in 1986. His certification number is 66, one of the original operators in the Certification Program.

He is the senior operator in both the wastewater plant, which is now an aerated lagoon system and the water supply and distribution systems. He demonstrates what is required as the long

full time operator. He has to be versatile and is called upon to diagnose, plan and effect repairs when there is a problem.

Through the years, Errol has helped repair water mains in minus 40 degree weather and unplugged sewer mains in the middle of the night. In reality, he is always on call and is quick to respond. His knowledge and willingness to share that knowledge has gone a long way in training other operators.

Errol has two married children and five grandchildren and has always been involved with community sports groups such as minor hockey, but where you will find him now when he is not working is on the local golf course.

**OOPS!** In the past issue of the Digest, two previous Vic Terry Award recipients were mistakenly omitted – Norm Staff in 1993 and Rod McCabe in 1990. Below is the complete list.

## VIC TERRY AWARDS

2000	Errol Franson
1999	Dave Sivyer
1998	Norm Gobbi
1997	John Tailford
1996	Dave McLean
1995	Glen Dunville
1994	No Award
1993	Norm Staff
1992	No Award
1991	No Award
1990	Rod McCabe
1989	Norm Burow
1988	Bernie Udala
1987	Leo Albrecht
1986	H. Scott Lee
1985	Ted McDowell
1984	Lloyd Scrimshaw
1983	David Bain
1982	Graeme Faris
1981	Richard Morris
1980	Gerry Stevens
1979	Dale Cannon
1978	Robert Wilson



# Plant Profile: City of Penticton Advanced Wastewater Treatment Plant

## The Plant

The plant is designed to treat 18,200 m<sup>3</sup>/d with a hydraulic capacity of 36,200 m<sup>3</sup>/d. After the plant commissioning, an optimization study was conducted and has shown that a capacity up to 28,000 m<sup>3</sup>/day is available. The daily flow for the summer of 1999 was 15,000 m<sup>3</sup>/day while the winter flows were at 12,000 m<sup>3</sup>/day.

## Treatment Process

**Primary Treatment:** Consists of mechanical bar screen, pista degritter, primary sedimentation, flow equalization basins and sludge fermenters to supplement the phosphorous removal process. The existing digesters from the old activated sludge process are now used for sludge thickening and to supplement alkalinity for process control.

**Secondary and Tertiary Treatment:** Consists of a biological phosphorous and nitrogen nutrient activated sludge process (based on the modified UCT process combined with a primary sludge fermentation system), secondary clarification with activated sludge return and wasting and shallow sand bed filters with automatic backwash.

**Disinfection Method:** Consists of chlorination and dechlorination.

**Sludge Conditioning and Composting:** Consists of the primary sludge being fermented and then treated by anaerobic digesters. The methane gas produced by the digesters is used for plant building and sludge process heating. Wasted bioreactor and secondary activated sludge is gravity thickened, belt sealed, belt press dewatered and then composted on our compost site at the cities landfill site. Composting is by static pile aeration method, which produces a high-grade quality soil conditioner. This conditioner/fertilizing product is recycled to City Parks, landscapers, the public and farmers for agriculture use.

**Effluent Irrigation System:** The treated effluent can be stored in two emergency on-site 36,000 m<sup>3</sup> storage basins for re-use. Irrigating with the effluent is done by an on-site pumping facility direct drawing from the chlorine contact tanks to the local golf course and City Parks over a six month irrigation period.

**River Outfall:** Treated effluent is discharged through an under water diffuser system into the Okanagan River channel adjacent to the plant site.

**Plant Staffing:** Presently the plant is staffed by seven certified operators, a millwright, an electrician and a laboratory technician.

**Odor Control Systems:** The odors are controlled by two types of systems. Odors are removed from the concrete covered fermenters and the fabric covered primary tanks by a positive displacement blower discharging into the



Primary tanks with odor covers & odor line.



Bioreactors.



Fermenters with overhead odor line that runs to primary's.

bioreactor. Two main lift stations, headworks, digest hoppers and the degrit building have odors removed through carbon canisters systems.

**Process Control:** The system is Windows NT software computer controlled through Modicon programmable logic controllers. The plant and lift station alarms are connected by a telephone modem system to the main Fire Hall. The plant has the capability of chemical addition of alum or ferric chloride and sodium acetate if required for phosphorous removal.

**Effluent Quality**

The treated effluent has less than 0.2 mg/l total phosphorous, less than 5 mg/l BOD and TSS, less than 1.0 mg/l ammonia as nitrogen, and less than 2.2 fecal coliforms/100 ml. This quality of effluent is required to protect and preserve both the highly valued trout and kokanee spawning resource and the recreational value of the Okanagan river channel.

**Future Plans**

The future plans are to include a new disinfection method and facility, larger primary clarification and upgrading or replacing the sludge dewatering system. The aeration system is presently being upgraded from a coarse air diffusion system for more efficiency and to reduce power consumption.

*Thanks to Bob Moore, Lead Operator.*



*Chlorine & Sulfur Dioxide tankage with degrit and (headworks) bar screen bldg in the background.*



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# THINK SAFETY!

## 5 Steps to Safety

Many people tend to ignore safety advice until an accident happens to them or someone they know. The Safety Voice, the newsletter of the West Virginia Safety Council, offers these five steps to help you develop a good safety attitude:

- 1. Be Focused.** Concentrate on your present task. If you are tired, bored, or distracted, you may slip up.
- 2. Take Your Time.** Take time and do the job correctly. Take time to put on safety equipment. Manage your time well. Make a list that arranges tasks by priority and do them in order. You'll be less likely to rush if you know you're getting your important work done first.
- 3. Be Strong.** Strength is not always physical; sometimes it's mental or emotional. Don't be pressured to take shortcuts or forget to file an accident report. Be strong enough to resist peer pressure and do the right thing.
- 4. Take Responsibility.** Think of yourself as a team member and take responsibility even if a certain task isn't your job. Even if it's not your responsibility, clean up that broken glass or harmful substance before someone gets hurt.
- 5. Avoid Risk.** Be smart and avoid risks whenever you can. Weigh the risks every time you do a job in a certain way and, even if the risk of injury is small, don't take chances.



*The Safety Competition in progress.*

Chance-taking is usually caused by unsafe attitudes. Life isn't a wheel of chance. You may think you're quicker, smarter, or luckier than others and clever enough to beat the odds. But, real winners are people who refuse to take unnecessary risks.

Your daily emotions can affect your attitudes. Don't let your troubles interfere with your thinking on the job, possibly resulting in injuries to you and others. Emotions cannot be eliminated, and life wouldn't be much fun without them; however, they must be controlled and understood.

We must understand one another if we are to work safely. It's a two-way proposition, attitudes can be shaped through good communications. Safety considerations are necessary in every company.

Safe attitudes are also strengthened by your knowing your job. If you are in doubt, consult your supervisor for job safety follow-through. It's his or her responsibility to help you.

Attitudes can influence behaviour. Unsafe attitudes lead to unsafe acts that cause accidents. Unsafe attitudes can be changed into safe attitudes. By developing safe attitudes, you have everything to gain.

*— American Water Works Association*



*The City of Coquitlam Team is instructed on the problem at the Safety Competition at the BCWWA Conference.*



# 2000 AWARDS

The Bert Caine Award is presented by the EOCP Board in recognition of outstanding long term service by a director to the certification program. The award is named in honour of Mr. B.D. Caine, the first Secretary-Treasurer of the program. The award

was presented to Bert in 1989 and presented again in 1991 to Bob Wilson. At the 2000 UBC Operators Workshop, the award was presented to Bill Hyslop by Bert Caine for Bill's twenty-four years of commitment and contribution to the EOCP.



*Jim Levin and Bill Hyslop - UBC Operators Workshop*



*Bob Jones, BCWWA President, presenting the Personal Recognition Award to Joe McGowan, EOCP Chairman.*



*The EOCP Corporate Recognition Award presented by Bill Hyslop (left) to Ron Driedger, Ministry of Environment, Lands and Parks.*



*Bert Caine - UBC Operators Workshop*

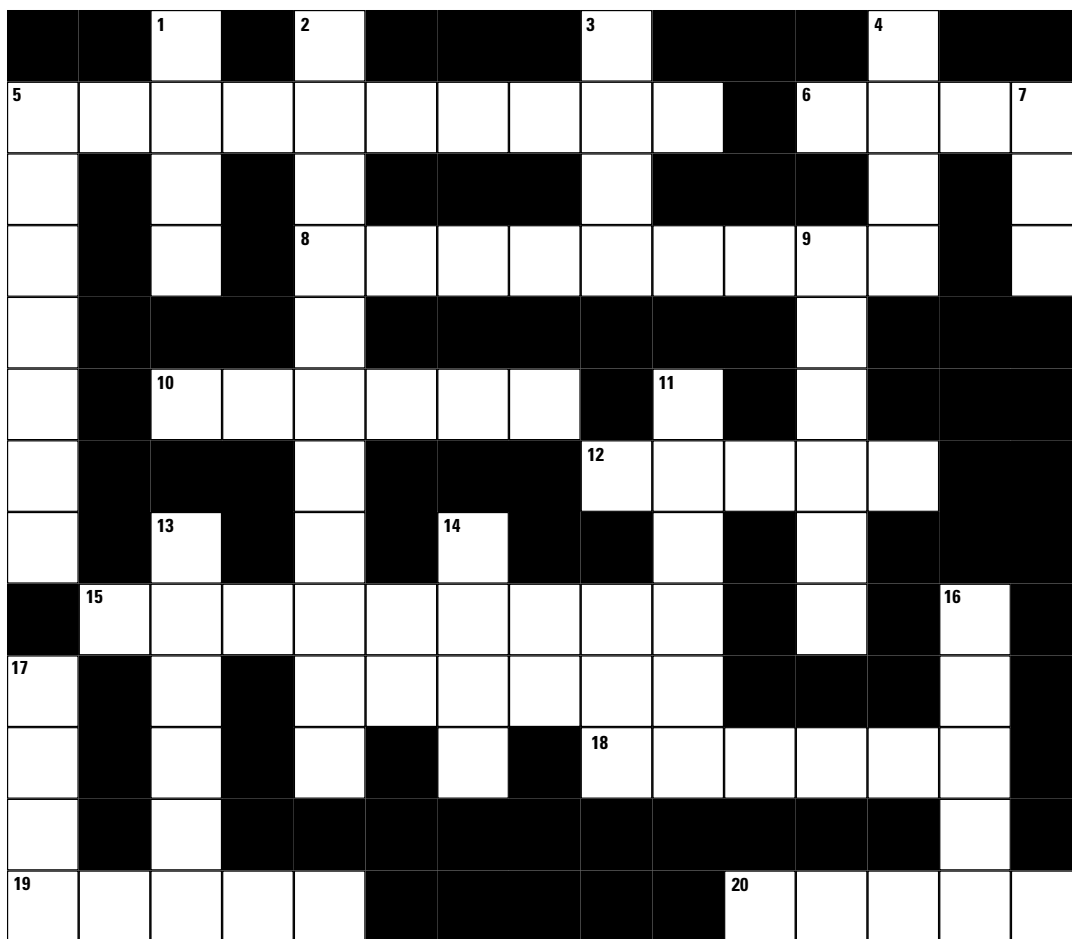


*UBC Operator Workshop Instructors - left to right - Sean Sanders, Erwin Zentner, Erie Johnson*

# Word Games!

Here is another chance to win a cap or mug. The crossword puzzle theme is measurements.

See how you measure up and fax your answers to the Board Office at (604) 874-4794 by December 1, and include your phone number. Three winners will be drawn from the correct replies. Winners will receive an EOCP hat or mug – their choice.



## ACROSS

- 5. 100th of a meter
- 6. unit of electricity
- 8. distance light travels
- 10. dry measure capacity
- 12. basic length measure
- 15. 1000 meters
- 18. measurement of force
- 19. 1/12 of a year
- 20. metric unit of capacity

## DOWN

- 1. measure of length
- 2. 1/1000th of a second
- 3. 12 inches (pl)
- 4. time measure (60 min)
- 5. unit measure of heat
- 7. weight measure
- 9. elec. current measure
- 11. temperature measure
- 13. small amount
- 14. paper measure
- 16. weight measure
- 17. basic metric weight

# Word Game Answers

Winners for the last issue of the Word Games (Water Anagrams) were:

Larry Sundstrom, District of Peachland; Keith Perkins, Surrey; and the District of Sicamous Wastewater Treatment Plant operators.

We art -	<b>water</b>	Idiot ran foul -	<b>fluoridation</b>
Limp reel -	<b>impeller</b>	Hurl icy ad -	<b>hydraulic</b>
Rhino cat lion -	<b>chlorination</b>	To roar ably -	<b>laboratory</b>
Pimp gun -	<b>pumping</b>	Sore river -	<b>reservoir</b>
Cool firm -	<b>coliform</b>	Art owned rug -	<b>groundwater</b>
Rub it tidy -	<b>turbidity</b>	Treat more -	<b>rotameter</b>
Hit another male -	<b>trihalomethane</b>	Rye mettle -	<b>telemetry</b>
Per users -	<b>pressure</b>	Birds tuition -	<b>distribution</b>
Lyric end -	<b>cylinder</b>	Used rail -	<b>residual</b>
Lit at zero -	<b>totalizer</b>	No cent coin -	<b>connection</b>

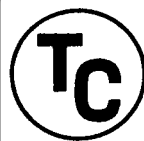
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# NEW MEMBERS AND UPGRADES

CERT. NO.	NAME		CITY	CERT. NO.	NAME		CITY
3160	Abbott, Edward	WD, II	Victoria, BC	3332	Carter, Wade	WD, I	Powell River, BC
3295	Abulail, Samir	WD, I	Vancouver, BC	3234	Cassidy, Bruce	OIT, WD	Cache Creek, BC
3348	Ackerman, Robert	WD, I	Richmond, BC	1973	Castellano, Domenic	WWC, I	Nakusp, BC
1870	Adams, Michael	WD, II	Shawnigan Lake, BC	3342	Cawston, Samuel	WD, I	Port Moody, BC
3096	Allin, Douglas	WWC, I	Garibaldi Highlands, BC	3301	Chartier, Jay	WD, I	Surrey, BC
3296	Antonishka, Peter	WD, I	Aldergrove, BC	3322	Clark, Phillip	WD, I	Maple Ridge, BC
3297	Antonsen, Garry	WD, I	Surrey, BC	3287	Cochran, Kenneth	WD, I	Kamloops, BC
1947	Armstrong, Timothy	WD, II	Nanaimo, BC	1636	Coe, Wayne	WD, II	Victoria, BC
3358	Arvay, Mervin	WD, I	Courtenay, BC	3269	Coleman, Larry	WD, I	Surrey, BC
3298	Ashton, Daniel	WD, I	Abbotsford, BC	1634	Compton, Gary	WD, II	Victoria, BC
3299	Atwood, Paul	WD, I	Surrey, BC	3315	Correia, John	WWC, I	Victoria, BC
3250	Auger, Martin	WD, I	Victoria, BC	2070	Crookes, Andrew	WD, I	Tumbler Ridge, BC
1190	Austrom, Anne	WWC, II	Vancouver, BC	3319	Crowley, Paul	OIT, WWT	Cobble Hill, BC
3094	Bailey, Howard	WWC, I	Prince Rupert, BC	3302	Cruikshank, Michael	WD, I	Ladner, BC
1560	Ballack, Rawle	WWC, II	Vancouver, BC	3285	Curnow, Greg	OIT, WD	Lower Nicola, BC
3320	Baudais, Gordon	WD, I	Comox, BC	1637	Currie, John	WWC, I	Victoria, BC
3339	Bealle, Ed	WD, I	Keremeos, BC	3143	Currie, William	WWC, I	Nanaimo, BC
800	Beatty, Fred	WD, II	Langley, BC	3331	Cyr, Marcel	WD, I	Port Coquitlam, BC
2037	Beckett, Robert	WWC, I	Port Alberni, BC	1016	Davidson, Ian	WWC, I	Vancouver, BC
878	Bell, Robert	CH,	Cow Bay, BC	3273	Davis, Gordon	OIT, WWC	Revelstoke, BC
3283	Bennett, Darrell	WT, I	Kamloops, BC	1972	DeCrane, Kim	IWWT, II	Port Alice, BC
3286	Benson, Bruce	WD, I	Cranbrook, BC	3316	Delli Carri, John	WWC, I	Victoria, BC
3230	Benzer, Scott	WD, I	Kelowna, BC	3288	Derickson, Cain	WD, I	Westbank, BC
1915	Berglund, Mike	WWC, II	Port Coquitlam, BC	3238	Dhaliwal, Terry	WWC, I	Victoria, BC
3195	Bertolone, Nick	WWC, II	Coquitlam, BC	3205	Dineen, Kevin	WD, II	Surrey, BC
3067	Bertrand, Thomas	MWWT, I	Pitt Meadows, BC	3317	Dingwell, Donald	MWWT, I	Victoria, BC
1488	Bigham, Scott	WD, II	North Saanich, BC	2082	Docking, Paul	WWC, I	Nanaimo, BC
699	Bignell, Ron	WWC, I	Trail, BC	3356	Dosenovic, Nada	OIT, WWT	Port Hardy, BC
3318	Biley, David	OIT, WWT	Duncan, BC	3184	Douch, Robert	WD, II	Coquitlam, BC
3071	Blackwell, Darren	WWC, II	Saanichton, BC	3362	Duch, Michael	WD, I	Victoria, BC
3173	Blackwell, Warren	WD, I	Victoria, BC	1543	Duclos, Don	WD, I	Montrose, BC
1725	Blundell, Robert	WWC, II	Coquitlam, BC	78	Dunville, Glenn	CH,	Abbotsford, BC
3175	Bonnar, Steve	WWC, I	Chilliwack, BC	3239	Ekstrom, Ken	WWC, I	Victoria, BC
3163	Bozzer, Denny	WD, II	Kelowna, BC	727	Ellington, David	WT, I	Enderby, BC
1415	Brama, Jergen	WWC, I	Abbotsford, BC	3303	Evans, John	WD, I	Delta, BC
3329	Brandt, Dave	WD, I	Coquitlam, BC	2043	Fairburn, Ron	WWC, II	Qualicum Beach, BC
1270	Brereton, Doug	MWWT, III	Pemberton, BC	3268	Fasciglione, Vito	WD, I	Surrey, BC
390	Brookfield, Peter	WWC, I	Prince George, BC	3229	Faulkner, Daniel	WD, I	Kelowna, BC
3300	Brotherston, Michael	WD, I	Vancouver, BC	370	Fawkes, Brian	WD, II	Sechelt, BC
3300	Brotherston, Michael	WWC, I	Vancouver, BC	1948	Ferguson, Stan	CH,	Parksville, BC
3370	Brown, Douglas	WD, I	Victoria, BC	3267	Fitzpatrick, Ray	WD, I	Coquitlam, BC
1088	Brown, Russell	WD, II	Nanaimo, BC	3228	Flamond, Terry	WD, I	Kelowna, BC
1088	Brown, Russell	CH,	Nanaimo, BC	1956	Ford, Robert	MWWT, I	Logan Lake, BC
3149	Burkowsky, Curtis	MWWT, I	Chilliwack, BC	3341	Francoeur, Daniel	WWC, I	Charlie Lake, BC
3321	Burnip, Terry	WD, I	Comox, BC	3278	Froese, David	MWWT, I	Fernie, BC
3144	Burow, Philip	WD, I	Qualicum Beach, BC	3017	Furlong, Sue	WT, I	Enderby, BC
3251	Cable, Kenneth	WD, I	Victoria, BC	1775	Gagnon, Richard	MWWT, III	Surrey, BC
3271	Cairns, Ian	WD, I	Delta, BC	1563	Galley, Jeffery	WWC, I	Chilliwack, BC
3208	Caldwell, Ronald	WD, II	Maple Ridge, BC	3259	Gardener, Dave	MWWT, I	Salt Spring Island, BC
490	Cale, Charles	WWC, II	Nakusp, BC	3015	Garner, Jeremy	WD, I	Fort St. John, BC
3277	Caminiti, James	MWWT, I	Abbotsford, BC	3130	Gehrer, Christopher	MWWT, I	Surrey, BC
3194	Campbell, Robert	WWC, II	Port Coquitlam, BC	3252	Gibb, David	WD, I	Duncan, BC
3330	Campbell, Ronald	WD, I	Quesnel, BC	3217	Gloriani, Isidro	WWC, I	Richmond, BC
3270	Carnduff, Donald	WD, I	New Westminster, BC	844	Goldsworthy, Gordon	WWC, II	North Vancouver, BC

# NEW MEMBERS AND UPGRADES

CERT. NO.	NAME		CITY	CERT. NO.	NAME		CITY
3233	Gosse, Gordon	OIT, WD	Chetwynd, BC	3237	Laboucane, Victor	WT, I	Queen Charlotte, BC
3284	Gottfriedson, Daniel	WT, I	Kamloops, BC	3237	Laboucane, Victor	WD, I	Queen Charlotte, BC
452	Grande, Louie	WWC, I	Kamloops, BC	3237	Laboucane, Victor	WWC, I	Queen Charlotte, BC
1858	Grant, Richard	WWC, I	Mission, BC	3237	Laboucane, Victor	MWWT, I	Queen Charlotte, BC
3364	Gravelle, Gaetan	WD, I	Victoria, BC	3290	Landry, Nelson	WD, I	Williams Lake, BC
3266	Gray, Ronald	WD, I	Coquitlam, BC	1597	Lannan, Robert	MWWT, II	Saltspring Island, BC
3352	Grunlund, Darin	WWC, I	Delta, BC	1971	Larsen, Davin	MWWT, II	Nanaimo, BC
1897	Gustafson, Darrell	WWC, I	Fort Nelson, BC	1518	Latosky, Read	MWWT, I	Salmon Arm, BC
1638	Hamstra, Maynard	WD, II	Victoria, BC	1299	Lawrence, Alex	WD, I	Surrey, BC
2049	Haney, Rick	WWC, I	Elkford, BC	3026	Laycock, Lyle	WD, I	Delta, BC
3227	Hardy, James	WD, I	West Bank, BC	1658	Lefebvre, Sean	WD, II	Port Hardy, BC
483	Harmon, Rod	WT, IV	Dawson Creek, BC	3207	Legault, Susan	WD, II	Coquitlam, BC
483	Harmon, Rod	MWWT, III	Dawson Creek, BC	3224	Levere, Randolph	WD, I	Winfield, BC
3333	Harper, Jason	WD, I	Port Moody, BC	3242	Little, Dan	WWC, I	Victoria, BC
3166	Harvey, David	WWC, I	Kamloops, BC	730	Livingstone, William	MWWT, III	Port Coquitlam, BC
3274	Heathfield, Richard	WWC, I	Cranbrook, BC	3061	Loker, Rudolf	MWWT, II	Vancouver, BC
3265	Henderson, Wayne	WD, I	Whitehorse, YT	3139	Longworth, Michael	WWC, II	North Burnaby, BC
3037	Hiebert, Timothy	MWWT, I	Osoyoos, BC	1450	Lotay, Pyara	MWWT, I	Kamloops, BC
3289	Hildebrand, Danny	WD, I	Lower Nicola, BC	3367	Lovelace, Jim	WD, I	Brentwood Bay, BC
3280	Hill, Brian	OIT, WT	Enderby, BC	3215	Lupul, Troy	MWWT, III	Saanichton, BC
3279	Hill, Ian	MWWT, I	Revelstoke, BC	3305	Lyon, William	WD, I	North Delta, BC
2044	Hillman, Douglas	WD, I	Hope, BC	1797	MacDonald, Don	WWC, I	Victoria, BC
3304	Hinde, Warren	WD, I	Surrey, B.C	882	Mah, Marshall	WWC, II	Delta, BC
3204	Hoffman, Donald	WD, II	Port Moody, BC	3349	Mah, Roger	WD, I	Richmond, BC
3038	Hogan, Bob	MWWT, I	Crescent Valley, BC	3345	Marietta, Helen	MWWT, I	Kelowna, BC
1759	Horin, Jerry	WWC, I	Sardis, BC	3291	Markel, Marvin	WD, I	Vernon, BC
682	Houghton, Robert	WD, II	Surrey, BC	2095	Marteinson, David	WD, II	Vancouver, BC
917	Hutchison, John	WD, I	Delta, BC	1213	Massier, Larry	WWC, I	Abbotsford, BC
3264	Hyslop, Ronald	WD, I	North Vancouver, BC	1896	Matias, Joe	MWWT, II	Penticton, BC
3013	Iluk, David	MWWT, II	Nanaimo, BC	3236	Maude, David	MWWT, I	Sidney, BC
3323	Ingram, Donald	WD, I	Sidney, BC	3190	Maximuk, Gregory	WWC, II	Port Coquitlam, BC
1723	Jacques, Joseph	WWC, II	Pitt Meadows, BC	1706	Maxson, Mark	MWWT, III	Kelowna, BC
3324	James, Jennifer	CH,	Whistler, BC	3262	McFarlane, Ron	WD, I	Burnaby, BC
3324	James, Jennifer	WD, I	Whistler, BC	3254	McGill, Robert	WD, I	Fanny Bay, BC
918	James, Robert	MWWT, I	Duncan, BC	3254	McGill, Robert	WD, II	Fanny Bay, BC
918	James, Robert	WD, I	Duncan, BC	3357	McGinnis, Louis	MWWT, I	Quesnel, BC
3338	Jefferies, Andrew	WD, I	Sooke, BC	3255	McIlraith, Gil	WD, I	Kelowna, BC
1300	Jensen, David	WD, II	Delta, BC	3243	McInnes, Ron	WWC, I	Victoria, BC
122	Jensen, Mike	WD, II	Port Coquitlam, BC	3334	McKerr, Jim	WD, I	Comox, BC
3039	Johnson, Ian	WT, I	Fernie, BC	1985	McKinnon, Ian	IWWT, II	Port Alice, BC
3240	Jones, Terry	WWC, I	Victoria, BC	1944	McLellan, Sean	MWWT, II	North Vancouver, BC
3275	Kalinczuk, John	OIT, WWT	Sicamous, BC	2086	McMillan, William	MWWT, I	Kelowna, BC
3164	Keiver, Kenneth	WD, II	Cranbrook, BC	1470	McNeil, Jason	WD, I	Salmo, BC
3253	Kemp, Norman	WD, I	Victoria, BC	3335	Meyer, Todd	WD, I	Port Coquitlam, BC
3241	Kendall, Edward	WWC, I	Port Alberni, BC	3350	Miller, Chad	WD, I	Richmond, BC
1874	Kersche, Josef	MWWT, I	Pender Island, BC	3202	Miller, Douglas	WD, II	Burnaby, BC
3340	Kimber, Michael	WWC, I	Sidney, BC	3201	Mills, Arthur	WD, II	New Westminster, BC
2058	Klassen, Kenneth	WWC, I	Ashcroft, BC	3256	Mills, Dana	WD, I	Nanaimo, BC
3226	Krause, Brian	WD, I	Kelowna, BC	3306	Morell, Domingo	WD, I	Delta, BC
3025	Kucera, Kris	WWC, II	Vancouver, BC	3336	Morris, Duane	WD, I	Port Coquitlam, BC
3225	Kunstar, Aaron	WD, I	Kelowna, BC	3272	Morrison, Daryl	WD, I	Delta, BC
3263	Kuzyk, Randy	WD, I	Burnaby, BC	1133	Morton, Gary	WD, II	New Westminster, BC
3216	Kylmala, Senja	MWWT, I	Richmond, BC	3346	Moser, Charles	OIT, WWT	Castlegar, BC

# NEW MEMBERS AND UPGRADES

CERT. NO.	NAME	CITY	CERT. NO.	NAME	CITY
3307	Mossop, Scott	WD, I Delta, BC	1667	Skidmore, Dan	WD, I 100 Mile House, BC
1718	Murphy, Michael	MWWT, III Pitt Meadows, BC	3276	Skidmore, Richard	OIT, WWT Kamloops, BC
3223	Nadasde, Wayne	WD, I Winfield, BC	424	Smethurst, David	WWC, I Sidney, BC
3121	Nitschke, Bruce	WWC, II North Delta, BC	3258	Smith, Patrick	WWC, I Victoria, BC
3140	Oakey, Steven	WD, I North Vancouver, BC	3258	Smith, Patrick	WD, I Victoria, BC
3098	O'Neill, Conor	MWWT, II Richmond, BC	3092	Smith, Rankin	WWC, I Whistler, BC
3347	Oud, Wayne	OIT, WD Smithers, BC	1440	Smithies, Joe	WD, I Elkford, BC
1794	Pacheco, Antonio	WD, II Victoria, BC	3119	Smyth, Errol	OIT, WT Mara, BC
1175	Paice, Reginald	MWWT, I Prince George, BC	1367	Soros, Alf	WT, I Vernon, BC
1252	Palmer, Timothy	WWC, I Trail, BC	3247	Spears, Mark	WWC, I Tofino, BC
3114	Parker, David	WWC, I Duncan, BC.	979	St. Croix, Alain	WWC, II Prince George, BC
3114	Parker, David	CH, Duncan, BC.	859	Starchuk, Gordon	WD, I Richmond, BC
3368	Parker, Robert	WD, I Sidney, BC	1881	Swindells, Robert	WWC, I Victoria, BC
3325	Pedersen, Erik	WD, I Taylor, BC	3293	Sykes, Blair	WD, I Fort Nelson, BC
1042	Peebles, Robert	WD, IV Whistler, BC	3312	Taylor, Richard	WD, I New Westminster, BC
1042	Peebles, Robert	WWC, IV Whistler, BC	1970	Temple, Doug	WWC, I Fernie, BC
3052	Peel, Robert	WT, I Enderby, BC	1054	Thomas, Brian	CH, Nanaimo, BC
3308	Phillips, Blair	WD, I Ladner, BC	3219	Thomas, Michael	WD, I Osoyoos, BC
3355	Pinaud, Martin	WD, I West Vancouver, BC	1617	Thorburn, Brian	WD, I Port Hardy, BC
3337	Popp, Gary	WD, I Sechelt, BC	3281	Tindall, Scott	OIT, WT Mara, BC
3200	Price, Evan	WD, II Chilliwack, BC	1078	Tome, Mario	WWC, I Telkwa, BC
3222	Primus, Frank	WD, I Winfield, BC	3199	Torresani, Remo	WD, II Surrey, BC
1541	Reddecopp, Vernon	WD, II Abbotsford, BC	3354	Tuason, Castel	WD, I Delta, BC
1936	Reid, Andrew	OIT, WWC Summerland, BC	3198	van den Boogaard, Ray	WD, II Langley, BC
1452	Richards, David	WWC, I Richmond, BC	3294	Van Iterson, Ron	WD, I Kamloops, BC
3221	Richens, Frederick	WD, I Chase, BC	3112	Venturas, Byron	CH, Vancouver, BC
3309	Rock, Dwayne	WD, I Aldergrove, BC	1656	Villa, Roy	MWWT, I Victoria, BC
3220	Rojem, Kenneth	WD, I Kelowna, BC	3235	Volpatti, Eric	WWC, I Montrose, BC
3369	Roy, Raymond	WD, I Shawnigan Lake, BC	3232	Waldie, Ryan	OIT, WD Nepean, Ontario
3344	Ruckaber, Brian	MWWT, I Surrey, BC	3248	Webb, Paul	WWC, I Victoria, BC
3260	Ruf, Mark	WD, I Port Coquitlam, BC	1147	White, Rob	WD, II Sooke, BC
3326	Russell, Brian	WD, I Comox, BC	3209	Whiting, Alan	WD, II Burnaby, BC
2063	Sallis, Frank	WD, I Ladner, BC	1898	Whitworth, Stewart	WWC, I Parksville, BC
3327	Sanders, Shawn	WD, I Vernon, BC	3282	Wightman, Ronald	OIT, WT Enderby, BC
3244	Sandhu, Harry	WWC, I Victoria, BC	1673	Wilkie, Treve	WD, I Lantzville, BC
3261	Santorelli, Gino	WD, I Vancouver, BC	3249	Willden, Eric	WWC, I Victoria, V8Z 2T5
1974	Sayewich, Douglas	WD, I Heffley Creek, BC	1243	Williams, Peter	WWC, I Prince George, BC
1752	Schade, Arnold	WWC, I Nanaimo, BC	3313	Wilson, Michael	WD, I Surrey, BC
3310	Schellenberg, John	WD, I Delta, BC	3314	Winkelmann, Kevin	WD, I Surrey, BC
1730	Schimek, Peter	CH, Pemberton, BC	3211	Wirsz, Dale	WD, II Surrey, BC
3231	Schori, Martin	OIT, WD Oliver, BC	944	Wood, William	WWC, II Mission, BC
3292	Schultz, Jerry	WD, I Lister, BC	1780	Woods, Robert	WWC, I Fruitvale, BC
3245	Schuman, Jonathan	WWC, I Nanaimo, BC	1313	Zabolotniuk, Bryan	WD, I Surrey, BC
1949	Scott, James	WWC, II Duncan, BC	1437	Zarowny, Sharon	WD, I Surrey, BC
2046	Scriven, Richard	CH, Taylor, BC	3353	Zenzen, Daniel	WWC, I Abbotsford, BC
3311	Selig, Todd	WD, I Delta, BC	3328	Ziefflie, Brent	WD, I Mission, BC
3351	Shepherd, Bryan	WD, I Delta, BC			
3343	Silva, Ethige	MWWT, I Chilliwack, BC			
3343	Silva, Ethige	WD, I Chilliwack, BC			
3218	Silverton, Ward	WD, I North Vancouver, BC			
3246	Simpson, Wayne	WWC, I Victoria, BC			
3257	Sinclair, Kevin	WD, I Cobble Hill, BC			
1667	Skidmore, Dan	WWC, II 100 Mile House, BC			

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# UPCOMING EVENTS

## OPERATOR EDUCATION FALL 2000 PROGRAM

### Night School Courses

Sept. 19 - Nov. 21	Water Distribution I, Surrey Works Yard	\$ 490.00
Sept. 19 - Nov. 21	Pump Maintenance , Vancouver Works Yard	\$ 490.00
Sept. 20 - Nov. 22	Waterwater Collection I, Vancouver Works Yard	\$ 490.00
Sept. 21 - Nov. 23	Waterwater Collection I, Surrey Works Yard	\$ 490.00

### 5 Day Courses

Nov. 6 - 10	Water Distribution II, N. Cedar Fire Hall	\$ 490.00
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### Vernon Symposium

Nov. 6 - 10	Wastewater Collection I, Prestige Inn	\$ 490.00
Nov. 6 - 10	Water Distribution I, Prestige Inn	\$ 490.00
Nov. 6 - 10	Water Treatment I, Prestige Inn	\$ 490.00
Nov. 6 - 10	Chlorine Handling, Prestige Inn	\$ 490.00
Nov. 6 - 10	Wastewater Treatment II, Prestige Inn	\$ 490.00

**PLEASE NOTE: Applications to write exams shall be submitted to the Operator Certification Office no later than two weeks prior to the exam session.**

