BRITISH COLUMBIA
OPERATORS DIGEST
A NEWSLETTER FOR WATER AND WASTEWATER OPERATORS

MARCH 2005 • NUMBER 110

EOCP Supports New Standards to Protect Canada's Water

The Environmental Operators Certification Program has been at the forefront of a national initiative to enhance the certification of water and wastewater operators across the country. Water has become a big issue in Canada, particularly since water contamination problems in Walkerton and North Battleford made national headlines. Together, the Federal-Provincial-Territorial Committee on Drinking Water and the Canadian Council of Ministers of the Environment's Water Quality Task Group are working to protect Canada's water supply. In partnership, these two groups have recommended a multi-faceted approach to the problem, including a call for qualified operators in water and wastewater treatment systems.

"A critical component of protecting drinking water from the source to the tap is ensuring that our water and wastewater systems are being operated by qualified, trained, and certified personnel," says Jim Young, Director of Water Resources for the Canadian Council of Ministers of the Environment (CCME).

To help establish safeguards for Canada's water supply, the Canadian Council for Human Resources in the Environment Industry

(CCHREI) undertook to document the National Occupational Standards (NOS) for Water and Wastewater (WWW) operators with support of the CCME, Canadian Water and Wastewater Association (CWWA), EOCP, and Canadian water and wastewater regulatory bodies.

Continued on page 3

What's inside this issue:

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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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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The Environmental Operators Certification Program is a charter member of the Association of Boards of Certification, and is a Registered Society with over 3,000 active members.

2004/2005 BOARD OF DIRECTORS

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2005 Certification Board Elections

This year's Nominating Committee members are Leo Albrecht and Pat Miller.

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

Operators: Don Gare
Mike Gosselin
Government Representative: Joe McGowan
Consultant Representative: Eric Jackson

The Nominating Committee invites further nominations from the membership. Each nomination shall be supported by a minimum of three (3) certified operators and shall be submitted no later that March 21, 2005 by mail to:

EOCP Nominating Committee
201–3833 Henning Drive
Burnaby, BC V5C 6N5
Or by fax to (604) 874-4794

Ballots with instructions will be mailed to operators on April 4, 2005. Returned ballots must be mailed to:

EOCP
201–3833 Henning Drive
Burnaby, BC V5C 6N5

The deadline for the receipt of ballots is April 25, 2005.

OUC AWARDS

The EOCP presented two bursary awards of $500 each to two students entering their second year in the Water Quality Technology Program at Okanagan University College, Kelowna.

Shown in the photo from April 2004, from left to right: Andrew Hay, OUC, Nicholas Sundstrom, Nicole Moggey and EOCP Director, Mike Gosselin.

EOCP SUPPORTS NEW STANDARDS TO PROTECT CANADA'S WATER

Continued from page 1

"I am thrilled with the support and assistance that has been offered to us by respected organizations such as CCHREI in creating minimum standards for operators," says Duncan Ellison, Executive Director of the CWWA.

The WWW NOS are a series of competency statements that define the knowledge and skills required for WWW operators. They are categorized into four functional areas: water treatment, water distribution, wastewater treatment, and wastewater collection. These statements will assist operators by providing them with more clearly defined standards and a benchmarking tool that will make it easier for them to do their jobs.

From coast to coast, the industry has welcomed the additional resources. On September 27, 2004, a national steering committee – made up of representatives from all provinces and territories – met in Toronto to show its support for the process and to confirm the methodology that will be used to complete the next phase of the project – occupational analysis. Two EOCP members participated in this meeting, Bob Smith, representing the CWWA and Bill Hyslop, our Executive Director. During the meeting, there was a clear buy-in from every region of the country to continue with the project.

The occupational analysis phase (to be completed in December 2005) will identify and document which competencies should be required at each level so that operators can be appropriately certified. This will increase the transferability of skills between provinces and territories, provide the foundation for consistent, relevant training, and has the potential to be used as a national certification standard.

Combining these benefits will improve the quality of training and standardize the certification system, based on Canadian experience

"I am thrilled with the support and assistance that has been offered to us by respected organizations such as CCHREI in creating minimum standards for operators,"

—Duncan Ellison, Executive Director of the CWWA

In order to determine which competencies are required and at what level, CCHREI is asking W&WW operators to get involved. If you are interested in contributing to this process, please contact Bill Hyslop through the EOCP office (604) 874-4784 or Sarah MacPherson, WWW Standards Project Coordinator with CCHREI, (403) 233-0748 or smacpherson@cchrei.ca.

Plant Profile:
City of Kelowna Wastewater Treatment Facility

The City of Kelowna is at the forefront of wastewater treatment with its advanced nutrient and carbonaceous removal system. The treatment Facility has evolved from its origins in 1913 to incorporate a biological treatment step based on the bardenpho system, as well as UV disinfection and other technological and environmental advancements.

THE PLANT

- Flow Capacity is 42 million L per day
- Average Flow for 2002 was 28 Million L per day
- Winter Flow Average is 27.5 Million L per day
- Summer Flow Average is 30 Million L per day
- Current population served – 60,000.

	Influent	Effluent	Permit
BOD mg/L	186.0	5.0	10.0
TSS mg/L	350.0	2.0	10.0
Total Phosphorus mg/L	8.50	0.14	0.25
Nitrogen mg/L	36.39	4.03	6.00
Fecal Coliform cfu/100 ml	N/A	0.2	50.0

Reactor

THE TREATMENT PROCESS

Preliminary Treatment:

Raw Sewage is pumped into the head works by 3 VFD pumps running at 75 hp with 500 l/s capacity. Influent then flows through a climbing bar screen and vortex grit removal system. The grit and debris collected is transported to the landfill for disposal.

Equalization Tanks

Primary Treatment:

There are 5 rectangular primary clarifiers designed to separate the larger organic solids from the waste stream by gravity sedimentation. Sludge is removed from the bottom of the tanks by scrappers and pumped to the Fermenter. During Peak flows, a steady flow is maintained by diverting excess flow into one of the 3 equalization basins, 2 of which can be retrofitted as future primary clarifiers.

Advanced Nutrient Removal:

The BNR (Biological Nutrient Removal) system is a modified bardenpho design consisting of 2 large trains with 14 cells and 2 smaller trains with 7 cells. The wastewater flows through three zones: anoxic, anaerobic, and aerobic which reduce ammonia and nitrate to harmless N2 gas. Fermenter effluent, rich in VFAs (Volatile Fatty Acids) that aid in phosphorus removal, flows into the beginning of each train along with the internal recycle. Each litre that enters the reactor is recycled 4 to 6 times and eventually wasted at a rate of 2 ML/day to the DAF(Dissolved Air Floatation). The effluent from the bioreactor is then sent to the secondary clarifiers to settle the biological flocs for return to the reactor.

Effluent Filter

Outfall

Tertiary Treatment:

The effluent from the secondary clarifiers is pumped to the Filters. There are five dual media gravity fed filters which backwash to the head works with a flow of 2.8 ML per day. The disinfection method used is a low pressure medium intensity UV radiation system.

Sludge Conditioning and Composting:

Sludge from the primary clarifiers is thickened in one of the two circular fermenters. Waste Activated Sludge from the bioreactor is thickened in the three DAF units. The thickened sludges are then pumped separately to the dewatering building where they are blended with polymer and centrifuged into a 20% solids cake. The cake is then trucked to the biosolids composting site where it is mixed with wood waste and composted to create Grade A soil conditioner called Ogogrow.

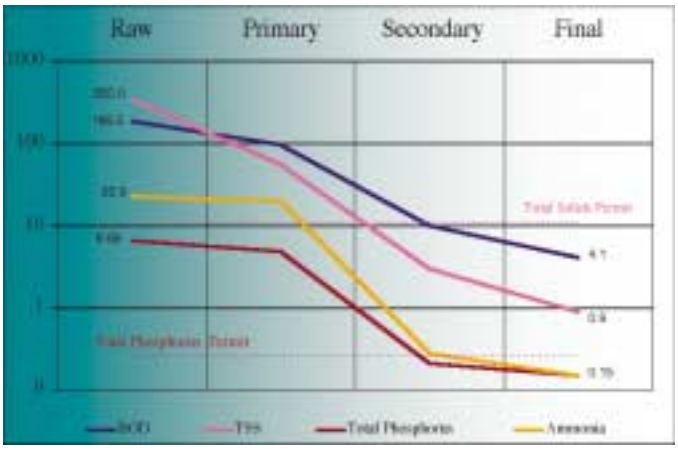
Odour Control Systems:

There are 2 mixed media Bio-filters in use to treat the majority of foul odour as well as a caustic addition column scrubber.

Final Clarifier

Outfall:

Treated effluent is discharged 1 mile off-shore in Okanagan Lake through a diffuser system 65 meters deep.



Effluent Quality:

The quality of effluent leaving the plant is consistently below permit levels. As well, because it has no chlorine added and is very low in phosphorus and nitrogen, it has no negative effects on the aquatic environment of Okanagan Lake.

Plant Staffing:

Consists of 10 wastewater treatment technicians, 2 lab technicians, 2 electrical and instrumentation technicians, 1 millwright, a foreman and a direct Supervisor.

OPERATOR PROFILE – Mike Humes

Mike Humes has been a wastewater treatment plant operator at the City of Kelowna Wastewater Treatment Facility for ten years. He graduated from the Okanagan University College Water Quality Technology Program in 1994. As part of the Water Quality Technology Program, Mike worked at the Whistler Wastewater Treatment Plant as a co-op placement. He is certified as a Level II WWT operator.

Mike's duties for the City of Kelowna include the day to day operations at both of the city's wastewater treatment facilities. He is co-chair of the safety committee and his drive for excellence has led to increased training and safety equipment upgrades at these facilities.

Mike grew up in Peachland and has been married to his wife Tammy for ten years. They have two boys – Spencer and Nathan. His hobbies include baseball, motorbikes, cross country skiing and snowmobiling. Mike's new challenge is coaching his son's football team.

Mike Humes

CERTIFICATION QUIZ ANSWERS: **1. D 2. C 3. D 4. C 5. A 6. B 7. B 8. C 9. D 10. C**

NEW MEMBERS AND UPGRADES

Congratulations to the following new operators and those operators who have upgraded their certification level.
June 16 to October 31, 2004

CERT. NO.	NAME		CITY
4770	Agius, Richard	MWWT I	*Powell River, BC*
3931	Anderson, Michael	WD I	*Nanaimo, BC*
3989	Anthony, Gordon	WT I	*Chase, BC*
3296	Antonishka, Peter	WD II	*Aldergrove, BC*
4809	Aracki, Dino	SWS	*Garibaldi Highlands, BC*
4796	Armstrong, Warren	WD I	*Delta, BC*
4896	Arychuk, Daryl	SWS	*Salmon Arm, BC*
4621	Atkinson, Mike	WD I	*Kelowna, BC*
4819	Baker, Melvin	SWS	*Port Alice, BC*
4478	Balducci, Patrick	WD II	*Langley, BC*
3111	Barrett, Patrick	WD I	*Nanaimo, BC*
4791	Bastiaansen, Richard	WD I	*Chilliwack, BC*
4847	Battersby, Gilbert	WD I	*Nakusp, BC*
3462	Beaton, Wesley	WD I	*Victoria, BC*
4085	Beaubien, Frank	OIT WD	*Telkwa, BC*
3975	Behm, Terry	WD I	*Prince George, BC*
4320	Blair, Karen	WD I	*Burns Lake, BC*
4820	Bolsover, David	SWS	*Port Alice, BC*
4821	Bondue, Doug	SWS	*Port Alice, BC*
2069	Boyd, Glen	SWS	*Port McNeill, BC*
1867	Boyles, Terence	WT I	*Cobble Hill, BC*
4822	Bradshaw, Kenneth	SWS	*Port Alice, BC*
4810	Brandreth, Danny	SWS	*Squamish, BC*
4848	Bronson, Rick	WD I	*Armstrong, BC*
1624	Brooks, John	WD II	*Prince George, BC*
4316	Brown, Michelle	WT I	*Burns Lake, BC*
4849	Brown, Robert	WD I	*Kelowna, BC*
4707	Brown, Steven	WD II	*Surrey, BC*
4841	Bruce, Scott	WWC I	*Kelowna, BC*
4807	Bucknell, Dillon	OIT WWT	*100 Mile House, BC*
3849	Buizer, Travis	WD II	*Coquitlam, BC*
3149	Burkowsky, Curtis	WT I	*Chilliwack, BC*
4782	Burns, Thomas	SWS	*Powell River, BC*
4850	Burtch, Kevin	WD I	*Kelowna, BC*
4897	Campbell, Scott	OIT	*Quesnel, BC*
4122	Cannon, Warren	WD I	*Ucluelet, BC*
4619	Carriere, Kelly	WT II	*Kitimat, BC*
4609	Casavant, Gerry	WD I	*Westbank, BC*
4836	Casey, Shawn	SWS	*Garibaldi Highlands, BC*
3131	Chartrand, Dale	WD II	*Smithers, BC*
4512	Choroszewski,	MWWT II	*Fernie, BC*
4805	Christiansen, Erick	SWS	*Terrace, BC*
4811	Coates, Steve	SWS	*Garibaldi Highlands, BC*
4358	Colonna, Kerry	WD II	*Invermere, BC*
1585	Conrad, Kevin	WD II	*Clinton, BC*
4613	Cook, Gary	WT II	*Kitimat, BC*
4710	Cook, Glenn	WD I	*Nanaimo, BC*
4842	Copes, Eric	WWC I	*Penticton, BC*
4865	Coulman, Daniel	SWS	*North Vancouver, BC*
1372	Craig, Randy	WWC I	*Penticton, BC*
4824	Crouter, Edward	SWS	*Port Alice, BC*
4843	Dalzel, Michael	WWC I	*Kelowna, BC*
3707	Davenport, Leslie	WD I	*Kelowna, BC*
2048	Davidson, Peter	WD III	*Whistler, BC*
4783	DeGrandpre, Ben	SWS	*Van Anda, BC*
4797	deMatos, Steve	WD I	*Delta, BC*
4322	Desjarlais, Corey	WD I	*Williams Lake, BC*
4866	Dewalt, Ronald	SWS	*Powell River, BC*
4711	Dexel, Dennis	WT I	*Kelowna, BC*
4798	Dhaliwal, Manjinder	WD I	*Surrey, BC*
4799	Dhaliwal, Shane	WD I	*Richmond, BC*
3585	Dhami, Randheir	WWC I	*Duncan, BC*
3585	Dhami, Randheir	WD I	*Duncan, BC*
3601	Diachuk, Brad	OIT WD	*Maple Ridge, BC*
4039	Dick, David	SWWS-L	*Ashcroft, BC*
4504	Dodd, Paul	WT II	*Kitimat, BC*
4898	Doroshuk, William	SWS	*Canal Flats, BC*
4823	Douglas, Chow	SWS	*Port Alice, BC*
4867	Dulmage, Derek	SWS	*Prince George, BC*
4851	Dumont, Luma	WD I	*Granisle, BC*
4584	Durnford, Garland	WD I	*Fort St. John, BC*
4777	Dyer, Wayne	OIT WWT	*Agassiz, BC*
4777	Dyer, Wayne	SWS	*Agassiz, BC*
4780	Dykes, Kelly	SWWS-M	*Alert Bay, BC*
4792	Eby, Tawn	WD I	*Courtenay, BC*
4869	Edgcumbe, John	SWS	*Coquitlam, BC*
4913	Edwards, Richard	WWC I	*Nanaimo, BC*
4899	Epp, Peter	SWS	*Williams Lake, BC*
4870	Falk, Joseph	SWS	*Chilliwack, BC*
4107	Finnigan, Darrell	WD I	*Merritt, BC*
4772	Fischer, Shaun	OIT WD	*Abbotsford, BC*
4781	Fleming, Louise	SWS	*Powell River, BC*
4812	Fornari, John	SWS	*Port Moody, BC*
4871	Fortin, Darcy	SWS	*Chilliwack, BC*
4852	Fox, Kerry	WD I	*Enderby, BC*
3146	Freeman, Neale	WWC I	*Duncan, BC*
3012	Fry, Scott	WT I	*Roberts Creek, BC*
4769	Funk, Brian	WD I	*Burnaby, BC*

NEW MEMBERS AND UPGRADES

Congratulations to the following new operators and those operators who have upgraded their certification level.
June 16 to October 31, 2004

CERT. NO.	NAME		CITY
4197	Galway, Colin	WD II	*Surrey, BC*
4825	Gauthier, Marvin	OIT	*Alert Bay, BC*
3130	Gehrer, Christopher	MWWT III	*Langley, BC*
1817	George, David	WWC I	*Trail, BC*
4760	George, Edgar	SWS	*Kitkatla, BC*
4771	Gibbings, Gordon	WD I	*Nanaimo, BC*
4784	Glass, Allan	SWS	*Powell River, BC*
4034	Gleig, Derek	MWWT II	*New Westminster, BC*
1026	Goff, Gary	WD II	*Maple Ridge, BC*
4361	Gosling, Jason	WD I	*Nanaimo, BC*
3233	Gosse, Gordon	WT I	*Chetwynd, BC*
4853	Graham, Dale	WD I	*Langley, BC*
4826	Graham, Gordon	SWS	*Telegraph Cove, BC*
3964	Grill, Martin	WD I	*Nelson, BC*
3965	Grove-White, Stan	WT I	*Kamloops, BC*
4785	Gullette, Shawn	SWS	*Gillies Bay, BC*
4756	Hackett, Allan	WD I	*Powell River, BC*
1710	Hall, Brent	WT I	*Port Moody, BC*
4872	Hall, Douglas	SWS	*Maple Ridge, BC*
4804	Hamilton, Jeff	WD I	*Maple Ridge, BC*
4854	Harris, Frank	WD I	*Rossland, BC*
3523	Harry, Ernest	SWWS-M	*Powell River, BC*
4873	Hasenuik, Linda	SWS	*Langley, BC*
4900	Hayden, Beverly	SWS	*Terrace, BC*
4855	Hecher, Dan	WD I	*Radium Hot Springs, BC*
4778	Heier, Jeffrey	WD I	*Port Coquitlam, BC*
4827	Henderson, Edwin	SWS	*Port Alice, BC*
4786	Hertz, Anthony	SWS	*Powell River, BC*
4717	Hodgson, David	WD II	*Maple Ridge, BC*
4901	Howe, William	SWS	*Princeton, BC*
4787	Isherwood, Glyn	SWS	*Van Anda, BC*
4846	James, Ken	OIT WWC	*Vernon, BC*
4846	James, Ken	OIT WD	*Vernon, BC*
4763	Johnson, Lars	WD I	*Richmond, BC*
4506	Johnston, Ralph	WT II	*Terrace, BC*
3611	Jorgensen, Bruce	SWWS-M	*Maple Ridge, BC*
4902	Kalsek, Michael	SWS	*Kamloops, BC*
4800	Keegan, Michael	WD I	*Richmond, BC*
4903	Keenan, Steven	SWS	*Sparwood, BC*
4390	Kerman, Christopher	MWWT I	*Nanaimo, BC*
4874	Kitsul, Glenn	SWS	*Abbotsford, BC*
4813	Kormendy, Richard	SWS	*Squamish, BC*
1846	Kuchtyn, Kevin	WD III	*Vancouver, BC*
1846	Kuchtyn, Kevin	OIT WT	*Vancouver, BC*
4875	Lacey, Erik	SWS	*Harrison Mills, BC*
4801	Lade, Robert	WD I	*Richmond, BC*
3963	Lamb, Russell	WD II	*Smithers, BC*
4020	Lancaster, Sheree	SWS	*Fairmont Hot Springs, BC*
4895	Langevin, Pierre	SWS	*Prince George, BC*
1340	Langlois, Terry	WD I	*Enderby, BC*
4904	Lapa, Andrew	SWS	*Chase, BC*
4914	Leftrook, Robin	WD I	*Clinton, BC*
4518	Leon, Lana	SWS	*Anahim Lake, BC*
4893	Lester, Stan	SWS	*Mt. Currie, BC*
4876	Lipinski, Fredo	SWS	*Hope, BC*
4096	Lundstrom, Bryan	WT II	*Kitimat, BC*
4765	MacDonald, Malcolm	SWS	*Nanaimo, BC*
4793	MacInnis, Geordie	WD I	*Coquitlam, BC*
4877	MacInnis, Robert	SWS	*Lindell Beach, BC*
4878	MacLean, Kenneth	SWS	*Port Moody, BC*
4828	MacMillan, Scott	SWS	*Port Alice, BC*
3561	Madeira, Carlos	WWC I	*Fort St. John, BC*
4856	Malakoff, Dan	WD I	*Kelowna, BC*
4076	Marklund, Rodney	WD II	*Merritt, BC*
3453	Marsden, Gary	MWWT III	*Summerland, BC*
1093	Marshall, William	WWC II	*Nanaimo, BC*
4857	Martin, Carl	WD I	*Rossland, BC*
4858	Martin, Gordon	WD I	*Cobble Hill, BC*
1896	Matias, Joe	WD I	*Merritt, BC*
952	McAnerin, Pat	WD II	*Abbotsford, BC*
4844	McCallum, Chris	WWC I	*Kelowna, BC*
4779	McClelland, Robert	SWS	*Mara, BC*
4905	McIntosh, Brian	SWS	*Quesnel, BC*
1490	McLean, Robin	WT I	*Winfield, BC*
3429	McQuillan, Dan	WD II	*Cloverdale, BC*
4838	Meger, Patricia	OIT WD	*Lavington, BC*
4839	Melo, Jamie	OIT WD	*Penticton, BC*
364	Meyer, Glenn	WD III	*Chilliwack, BC*
4762	Michaud, Lawrence	OIT WWT	*Mara, BC*
4829	Mills, Mary	SWS	*Port McNeill, BC*
4879	Mosa, Marji	SWS	*Langley, BC*
4880	Munro, David	SWS	*Rosedale, BC*
4859	Murrell, Michael	WD I	*Kelowna, BC*
4788	Muskee, Paul	SWS	*Powell River, BC*
4585	Nadeau, Brenda	WD I	*Maple Ridge, BC*
4906	New, Laurence	SWS	*Chase, BC*
1930	Nielsen, Douglas	MWWT III	*Port Alice, BC*
4881	Nishihama, Kelly	SWS	*Surrey, BC*

NEW MEMBERS AND UPGRADES

Congratulations to the following new operators and those operators who have upgraded their certification level.
June 16 to October 31, 2004

CERT. NO.	NAME		CITY
4802	Nixon, John	WD I	*Richmond, BC*
4761	Nooski, Frank	SWS	*Fort Fraser, BC*
4814	Nuttall, Shaun	SWS	*Sechelt, BC*
4773	O'Donaghey, Linda	SWS	*Seton Portage, BC*
4883	O'Neil, Jamie	SWS	*Langley, BC*
4815	O'Neill, Michael	SWS	*North Vancouver, BC*
4882	O'Reilly, Kevin	SWS	*Abbotsford, BC*
3730	Oscarson, David	MWWT I	*Kimberley, BC*
4840	Palmer, Robert	OIT WD	*Naramata, BC*
4907	Palset, Peter	SWS	*Salmon Arm, BC*
4894	Paul, Joseph	SWS	*D'Arcy, BC*
3522	Pelkey, Albert	SWWS-M	*Saanichton, BC*
4774	Penner, Rudy	SWS	*Shalath, BC*
4776	Perdue, Natai	SWS	*Garibaldi Highlands, BC*
3493	Pickerill, Brent	WD II	*Penticton, BC*
1779	Pistilli, Ben	OIT WD	*Maple Ridge, BC*
4890	Porter, Derek	SWS	*Windermere, BC*
4803	Racine, Sarah	WD I	*Port Coquitlam, BC*
1571	Rasmuson, Gerry	WD II	*Salmon Arm, BC*
1571	Rasmuson, Gerry	WD I	*Salmon Arm, BC*
4884	Reid, Don	SWS	*Belcarra, BC*
4434	Reschke, Edward	WWC I	*Hudson's Hope, BC*
4388	Reutelsterz, Alfred	OIT WD	*Telkwa, BC*
1098	Reynolds, John	MWWT III	*Port Alice, BC*
4908	Richter, Lawrence	OIT	*Christina Lake, BC*
4794	Rickard, Rachel	WD I	*Comox, BC*
4885	Rodrigues, Daniel	SWS	*Surey, BC*
740	Romo, Ignacio	MWWT III	*North Vancouver, BC*
4830	Rose, Gerard	SWS	*Port Alice, BC*
4816	Roy, Adrien	SWS	*Squamish, BC*
4860	Sali, Michael	WD I	*Kelowna, BC*
835	Samis, Kim	WWC I	*West Vancouver, BC*
4728	Santos, Manuel	WD II	*Pitt Meadows, BC*
3933	Santos, Victor	WD I	*Richmond, BC*
4730	Savage, Brian	WD II	*Maple Ridge, BC*
4730	Savage, Brian	WWC I	*Maple Ridge, BC*
4795	Scofield, Robert	WD I	*Sandspit, BC*
4806	Scott, Clifford	WT I	*Kitimat, BC*
4886	Scott, Larry	SWS	*Anmore, BC*
4845	Seabrook, Raymond	WWC I	*Kelowna, BC*
4861	Seneshen, Darren	WD I	*Kelowna, BC*
3852	Senger, Thomas	WWC I	*Kelowna, BC*
3091	Simmons, Jerry	WT I	*Slocan, BC*
4831	Sinclair, Karin	SWS	*Woss, BC*
4832	Sinclair, karl	SWS	*Woss, BC*
3062	Smerychynski, Anthony	WT I	*Vancouver, BC.*
1498	Smith, Gary	WWC I	*Fraser Lake, BC*
4789	Smith, Kevin	SWS	*Van Anda, BC*
3806	Sopow, Trent	WD II	*Summerland, BC*
3475	Spencer, Peter	WD II	*Campbell River, BC*
4775	Spidel, Kenneth	SWS	*Seton Portage, BC*
4909	Stark, Gordon	SWS	*Hudson's Hope, BC*
1961	Startup, Jason	WT I	*Fruitvale, BC*
4764	Stewart, John	OIT WD	*Campbell River, BC*
4910	Stocker, Craig	SWS	*Castlegar, BC*
4767	Stone, Andrew	SWS	*Bowen Island, BC*
4834	Stromquist, Patrick	SWS	*Nanaimo, BC*
4911	Sturgeon, Mike	SWS	*Chase, BC*
1733	Suhan, Barry	WD I	*Nanaimo, BC*
4614	Sullivan, Kevin	WT II	*Terrace, BC*
4817	Swens, John	SWS	*Sechelt, BC*
4148	Tallarico, Giuseppe	WWC I	*Vancouver, BC*
4891	Tayler, Nattalia	SWS	*Salmon Arm, BC*
4790	Taylor, William	SWS	*Powell River, BC*
1182	Thompson, Gary	WWC I	*Westbank, BC*
4835	Thomsen, Darcy	SWS	*Sointula, BC*
4176	Thorndyke, Paul	SWWS-M	*Shawnigan Lake, BC*
4117	Tonnersen, William	WWC I	*Carmacks, Yukon*
4863	Torgerson, Mark	WD I	*Kelowna, BC*
4583	Tricker, Alonzo	WT I	*Chetwynd, BC*
3354	Tuason, Castel	WWC I	*Delta, BC*
4818	Tutt, William	SWS	*Comox, BC*
4365	Typusiak, Robert	MWWT I	*Oliver, BC*
4766	Urrutia, Alberto	OIT WD	*Burnaby, BC*
4887	Vanden-Eykel, Art	SWS	*Mission, BC*
4888	Vandevelde, Henry	SWS	*Hope, BC*
4833	Vesper, Dianne	SWS	*Telegraph Cove, BC*
1233	Wagner, Randy	WD I	*Salmon Arm, BC*
4864	Walker, Glen	WD I	*Kaslo, BC*
4912	Walker, Terry	SWS	*Chase, BC*
4500	Wiebe, Cameron	WT II	*Kitimat, BC*
4837	Williams, Gary	SWS	*North Vancouver, BC*
4808	Woodcock, Warren	MWWT I	*Fort Nelson, BC*
4889	Zandbergen, Ralph	SWS	*Surrey, BC*
1842	Zentner, Gary	WD II	*Okanagan Centre, BC*

NEWLY CLASSIFIED OR UPDATED FACILITIES

Facility No	Facility Name	October 1 to November 30, 2004	Classification / Level	City/Province
918	Fraser Isle Farms Small Water System		SWS	Surrey, BC
881	Agassiz Mini-Mall & Laundromat Small Water System		SWS	Agassiz, BC
891	Akiskinook Resort Small Water System		SWS	Windermere, BC
912	Aldergrove Lake Regional Park Small Water System		SWS	Aldergrove, BC
944	Barriere Community Water Distribution System		WD II	Barriere, BC
909	Belcarra Regional Park Picnic Area Small Water System		SWS	Village of Belcarra, BC
907	Campbell Valley Regional Park 16th Ave. SWS		SWS	Langley, BC
906	Campbell Valley Regional Park 8th Ave. SWS		SWS	Langley, BC
908	Campbell Valley Regional Park Equestrian Centre SWS		SWS	Langley, BC
938	Canada West RV Park Small Water System		SWS	Revelstoke, BC
885	Chilliwack River Estates Small Water System		SWS	Chilliwack, BC
170	City of Nanaimo Water Distribution System		WD IV	Nanaimo, BC
878	City of New Westminster Water Distribution System		WD II	New Westminster, BC
871	City of Rossland Water Distribution System		WD III	Rossland, BC
540	City of Rossland Water Treatment Facility		WT II	Rossland, BC
887	Dennis & Carol Dubois Small Water System		SWS	Chilliwack, BC
905	Dewdney Pub Small Water System		SWS	Dewdney, BC
516	District of Summerland Wastewater Treatment Plant		MWWT IV	Summerland, BC
896	Harrison Village Mall Small Water System		SWS	Harrison Hot Springs, BC
886	Heathcourt Mobile Home Park Small Water System		SWS	Agassiz, BC
921	Kearsley Springs Water Association Small Water System		SWS	Maple Ridge, BC
904	Lakeview Restaurant Small Water System		SWS	Harrison Hot Springs, BC
872	Little Beach Mobile Home Park SWS		SWS	Mission, BC
915	Loon Lake Camp Small Wastewater System		SWWS-L	Maple Ridge, BC
916	Loon Lake Camp Small Water System		SWS	Maple Ridge, BC
911	Lynn Headwaters Regional Park Small Water System		SWS	North Vancouver, BC
917	Malcolm Knapp Research Forest Small Water System		SWS	Maple Ridge, BC
519	Peter Hope Lake Resort Wastewater Treatment		MWWT I	Peter Hope Lake, BC
874	Port Coquitlam & District Hunting &Fishing Club SWS		SWS	Coquitlam, BC
876	Regional Dist. Mt. Waddington-Coal Harbour WTP		WT IV	Coal Harbour, BC
865	Sliammon Water Distribution System		WD I	Powell River, BC
866	Sliammon Water Treatment Plant		WT III	Powell River, BC
883	South West Extension Water Distribution System		WD II	Nanaimo, BC
873	Sunshine Valley Small Water System		SWS	Hope, BC
875	Thousand Trails Small Water System		SWS	Lindell Beach, BC
889	Thunderbird Estates Water Users Community SWS		SWS	Harrison Hot Springs, BC
935	Trinity Western University Water Distribution System		WD II	Langley, BC
902	University Endowment Lands Water Distribution System		WD I	Vancouver, BC
879	Village of Belcarra Small Water System		SWS	Belcarra, BC
404	Village of Telkwa Sewage Treatment Facility		MWWT I	Telkwa, BC
893	Wildboy Winter Drilling Camp SWWS Lagoon		SWWS-L	Fort St. John, BC

Certification Quiz – Small Wastewater Systems – Lagoons

These questions are representative of those found in actual certification exams.

1. **Dissolved oxygen is provided to facultative lagoon systems organisms by:**
   - A. Plug-flow aerators
   - B. Surface aerators
   - C. Sub-surface aerators
   - D. Atmospheric aeration

2. **A facultative waste stabilization lagoon is an example of a:**
   - A. Physical/chemical treatment system
   - B. Primary treatment system
   - C. Secondary treatment system
   - D. Tertiary treatment system

3. **When is it best to add wastewater when starting up a lagoon cell?**
   - A. When all crossover pipes are open
   - B. When the temperature is below 0oC
   - C. When the bottom has been seeded with sodium nitrate
   - D. When the lagoon has at least 300 mm of water in it

4. **What is the result of floating sludge mats on a lagoon surface?**
   - A. Increase of insect habitats
   - B. Increase of odour production
   - C. Reduced sunlight penetration
   - D. Reduced wind action

5. **Vegetation on lagoon dikes and berms should be controlled by:**
   - A. Mowing the vegetation periodically
   - B. Burning the vegetation periodically
   - C. Raising the water level
   - D. Using cattle

6. **Increasing the detention time of a lagoon tends to _____ of the effluent.**
   - A. Increase pathogenic bacteria levels
   - B. Decrease pathogenic bacteria levels
   - C. Increase coliform levels
   - D. Not effect on bacteria levels

7. **What is the colour of a properly operating facultative waste stabilization pond during summer operation?**
   - A. Colourless
   - B. Green
   - C. Blue
   - D. Brown

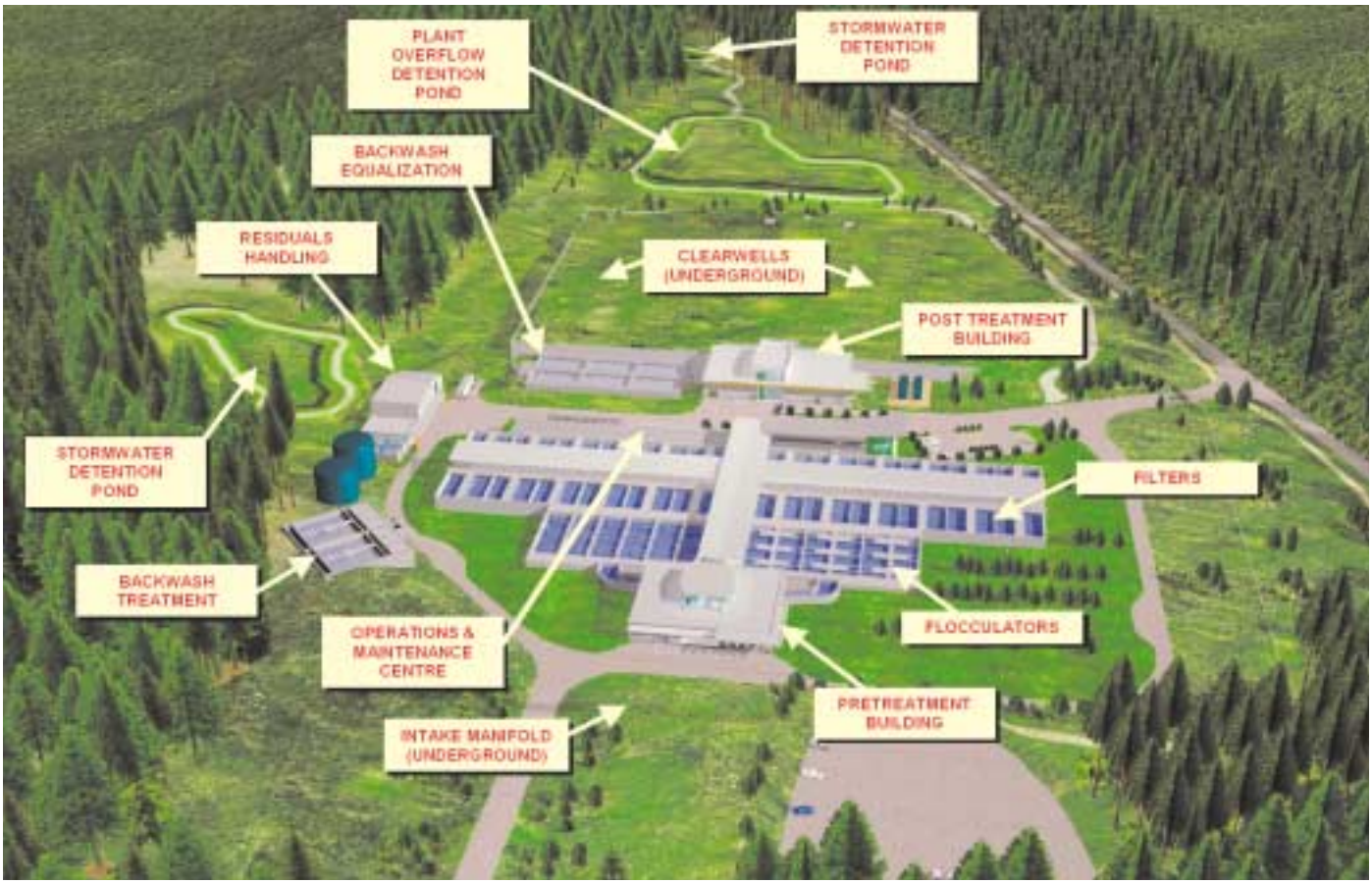
8. **Failure to control vegetation growth below the freeboard of a lagoon perimeter could result in:**
   - A. Reduced sunlight penetration
   - B. Decrease in effluent quality
   - C. Short circuiting
   - D. No effects

9. **What are disease causing bacteria known as?**
   - A. Anaerobic
   - B. Coliform
   - C. Autotrophic
   - D. Pathogenic

10. **In the day light, algae growth in a stabilization lagoon will flourish in the:**
    - A. Influent
    - B. Effluent
    - C. Top 0.45 m of the lagoon surface
    - D. Bottom 0.45 m of the lagoon

(Answers on page 6)

Canada's Largest Direct Filtration Plant



Architectural Rendering of the Site Development

Design Considerations for Canada's Largest Direct Filtration Plant – Greater Vancouver Water District Seymour-Capilano Filtration Plant

by Reno Fiorante, P.Eng., Stantec Consulting and
Doug Neden, P.Eng., Greater Vancouver Water District

The Greater Vancouver Water District is currently undertaking the construction of a massive water supply and treatment project to service the Greater Vancouver area. The Seymour-Capilano Filtration Plant (SCFP) is designed to provide treated water supply to the Greater Vancouver area. The SCFP will have a capacity of 1,800 ML/d. The plant is located in the Lower Seymour Conservation Reserve (LSCR) within the District of North Vancouver.

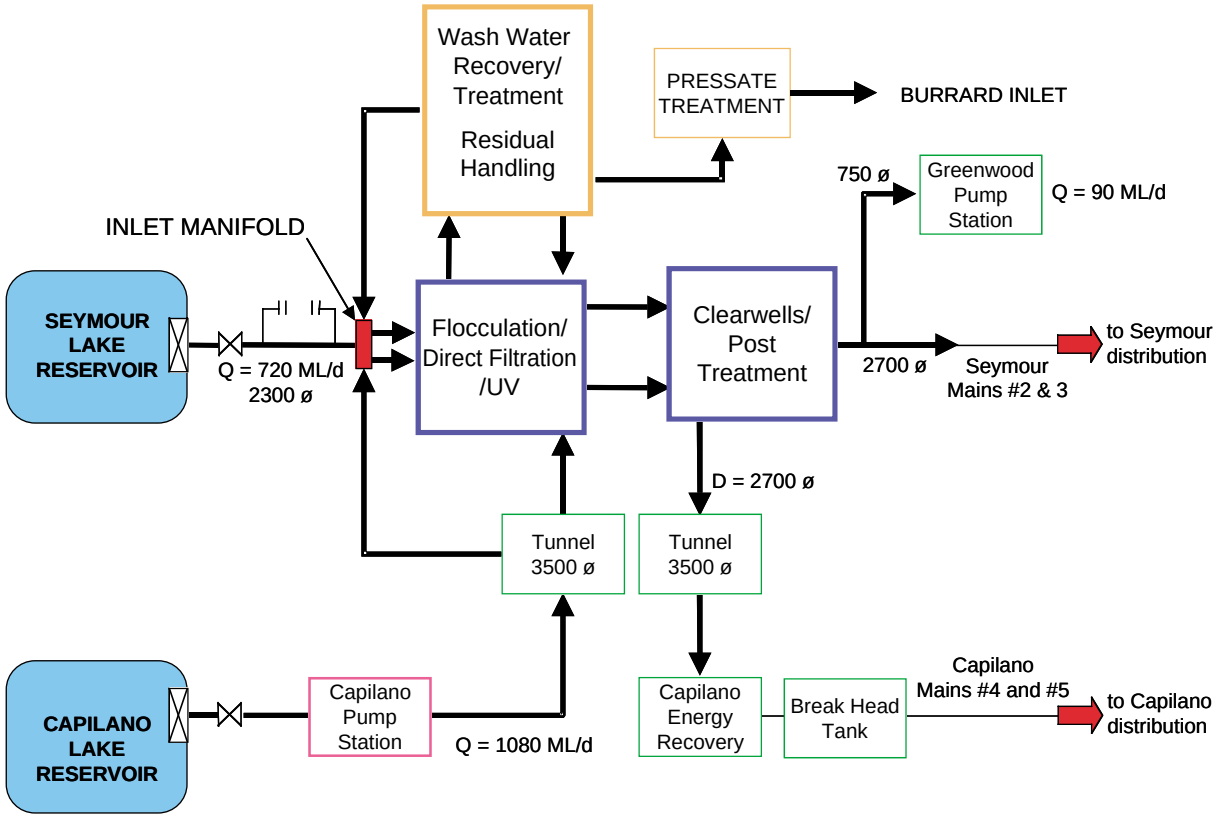
The 1800 Ml/d water supply will be provided from two sources; 1,080 ML/d will be supplied by Capilano Reservoir; and 720 ML/d will be provided by Seymour Reservoir. Raw water from the Seymour source will flow by gravity to the SCFP while the Capilano source will be delivered by eight 2,000 HP pumps through a 7.5 km long - 3 m diameter deep rock tunnel. The treated water will be supplied to Capilano Service area by gravity through a separate 7.5 km return tunnel. Prior to distribution to the Capilano service area, water will flow through an energy recovery turbine and break head tank.

The treatment process at SCFP is direct filtration with 3 stage flocculation and high rate deep bed dual media filtration. Primary disinfection is provided with UV light. Residuals are thickened and dewatered using belt filter presses.

One of the unique aspects of this assignment is the use of Sustainable design for the entire plant the LEED Gold certification of the Operations and Maintenance Centre. Sustainable design features include geothermal heating, on site production of ECOSMART concrete and energy management.

This project is currently under construction. Once completed, the SCFP will become the largest direct filtration plant in Canada, and among the largest water treatment plants in North America.

SEYMOUR CAPILANO FILTRATION PLANT PROCESS SCHEMATICS



TREATMENT PROCESSES

The SCFP Project consists of a series of complex interrelated projects that include the Capilano pumping station, raw water supply tunnel, inlet blending, filtration plant (direct filtration with flocculant addition), disinfection (UV as primary and post chlorination as secondary), treated water clearwell and return tunnel, energy recovery facility and break head tank, corrosion control, and on-site residual management. A treatment process schematic is illustrated above.

SUMMARY

The Seymour-Capilano Filtration Plant (SCFP) is a major infrastructure project of the Greater Vancouver Water District (GVWD) to provide safe water supply for near 2 million people in the Greater Vancouver area. The SCFP is designed to treat water from the both Seymour and Capilano sources with an ultimate design capacity of 1,800 ML/d at one location. The plant will become one of the largest direct filtration plants in North America following commissioning.

The major treatment processes consist of chemical flocculation, direct filtration, and UV (primary disinfection) followed by chlorination (secondary disinfection) as multiple barrier protection. The SCFP project also features complex interrelated facilities which include inlet works (Capilano raw water pumping station, deep rock raw water supply tunnel, and blending), return tunnel energy recovery facility and break head tank, corrosion control, on-site residual management, and geothermal heat recovery.

Sustainable design approaches are embraced throughout the project design and construction delivery to set a precedent for major infrastructure projects in North America.

ACKNOWLEDGMENTS

The project is currently under construction and is expected to be commissioned in late 2005. SSBV appreciates the valuable input from members of the GVWD engineering and operations staff, EPCOR Water Services as Operations Advisor, and Pacific Liaicon & Associates as Program Managers.

OPERATOR CHALLENGE

BCWWA's 33rd Annual Conference will be held from April 16th - 20th in Penticton this year. As part of the program there will be two days of operator challenge events including a "top ops" and a specialty pumping system challenge.

TOP OPS OR "I'LL TAKE THE WATER CATEGORY FOR 500, ALEX"

Three member teams (you may enter a full team from same utility or enter individually and teams will be formed) compete in a fast paced skill testing question and answer format. Operators with water and wastewater experience will test their knowledge in a "friendly competition" against their peers on rapid-fire questions posed by a moderator. A three-member judging committee will validate responses.

This year, there will be two divisions of Top Ops:

1. **Municipal Operators.** The format for this competition will be similar to last year and is described above.
2. **Small Water System Operators**. A new category is being launched strictly for small water systems. Only small water system operators will be allowed to compete against one another in this category that is geared to their level. There will be a series of questions and answers that relate specifically to small systems. Operators will be judged on their knowledge of their operations. Separate trophies will be awarded for this category of operators.

Teams will compete for trophies and awards to be presented on Tuesday, April 19.

The 2004 Top Ops 1st Place winners was the team from Chilliwack, including Barry Kennedy, Sandy Hamilton and Gordon Campbell. In the rear is Bill Hyslop, moderator for the Top Ops competition.

SPECIALTY PUMPING SYSTEM CHALLENGE

Three operators (same utility or enter individually) test their team's maintenance skill, dexterity and knowledge pertaining to a Flygt dry pit submersible pumping system.

With emphasis on safety, skill and time related efficiency, each three member team will be required to properly isolate all energy sources, perform maintenance functions including removal, installation and rebuilding or upgrading of various parts. An O&M manual, including specifications, and data on wet well size, run times, cycles, and inlet elevation will be provided in order to properly perform designated tasks along with completion of a work sheet.

ITT Flygt has graciously agreed to provide their model 3102 pump as the prototype for teams to use in this competition. Contact Al Racine at 604-941-6664 or al.racine@itt.com

Judging criteria

- Working safely on the job
- Getting sequence of teardown and re-installation of the pump correctly performed.
- Showing the judges that the team correctly understands the proper order of components assembly.

Speed will not necessarily be the determining factor; accuracy and safety will be paramount in the eyes of the judges. Bring and wear your personal protective equipment as you will also be judged on this.

BCWWA encourages you to attend and participate in the 2005 Operator Challenge. For information on how to register for this event, please visit the BCWWA web site at www.bcwwa.org or contact either Diana Dempsey at ddempsey@bcwwa.org or David Icharia at dicharia@bcwwa.org

UPCOMING EVENTS

TRAINING OPPORTUNITIES

EVENT / COURSE	DATE	LOCATION
BCWWA Annual Conference	April 17 – 20	Penticton
EOCP Annual General Meeting	May 2	Langara College
Courses		
Water Treatment II	April 4 – 8	Kamloops
Cross Connection Control	April 4 – 8	Kamloops
Chlorine Handling	April 4 – 8	Kamloops
Small Water Systems	April 4 – 5	Kamloops
Water Distribution I	May 2 – 6	Langara College
Water Distribution II	May 2 – 6	Langara College
Water Distribution III	May 2 – 6	Langara College
Wastewater Treatment I	May 2 – 6	Langara College
Wastewater Treatment II/III	May 2 – 6	Langara College
Water Treatment I	May 2 – 6	Langara College
Water Treatment II	May 2 – 6	Langara College
Cross Connection Control	May 2 – 6	Langara College
Chlorine Handling	May 2 – 6	Langara College
Wastewater Collection I	May 2 – 6	Langara College
Wastewater Collection II	May 2 – 6	Langara College
Wastewater Collection III	May 2 – 6	Langara College
Small Water Systems	May 2 – 3	Langara College
Confined Space	May 4 – 5	Langara College

Please phone BCWWA at 604 433 4389 for information on the above courses or check their website at www.bcwwa.org

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