OPERATOR DIGEST



Quarterly Newsletter of the Environmental Operators Certification Program-BC/Yukon

LIONS GATE WASTEWATER TREATMENT PLANT



BCWWA AWARDS TREVER ANDREW

Trever Andrew, graduate of Thompson Rivers University, and Operator with the Adams Lake Indian Band, is recognized for excellence.



NEW EOCP TECHNICAL EXPERT

Introducing Jenni Green, P.Eng.

P 3



EOCP STUDENT AWARDS

Morgan Grigg and Quinn Smith of Okanagan College are winners. P9

OPERATOR DIGEST

The **Operator Digest** is the official newsletter of the **Environmental Operators Certification Program.**

Submissions for publication in the Digest are welcome. Please email them to the EOCP office at eocp@eocp.ca

Changes of address, annual dues, Continuing Education Requirements, exam applications, as well as general inquiries about the program should be addressed to:

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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 more than 4.500 active members.

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ROLLING-OUT NEW IT, CLASSIFICATIONS, ETC



Rob Fleming, Chair

Kalpna Solanki, CEO

Keeping in time with the changes in our environment, the EOCP has changed and evolved – more so in the past year, than ever before.

We had a very vigorous election process with ten candidates vying for four positions - this was not an easy choice for our membership as every candidate was eminently qualified for the role of EOCP Board Director. Fast on the heels of the Annual General Meeting in June, at the first Board subsequent to the AGM, the Officers of the Board were elected. Page 11 lists the new EOCP Board Executive.

In addition to changes at the Board level, we also now have a Technical Expert on staff. Jenni Green P.Eng. - more information on Jenni is on page 3. Jenni will be facilitating the roll-out of the new Facility Classification models, and will be involved in coordinating the related Direct Responsible Charge (DRC) plans.

"The snake which cannot cast its skin has to die. As well the minds which are prevented from changing their opinions; they cease to be mind."

- Friedrich Nietzsche

Our new Facility Classification models have received very positive feedback when presented to stakeholders, and we are planning a roll-out starting early September. These new models - for Water Treatment, Water Distribution, Wastewater Collection, and Wastewater Treatment - have an audit trail that shows how the final score is attained, allows for consistency in the evaluation process, and the outputs are more defensible than the currently used simple checklists.

In collaboration with Operators and ministry staff, our new Competency Framework has been developed. This is the first of its kind in North America - a competency framework that is for Operators, by Operators. Consultation sessions in late 2017 early 2018 will be held with Operators and employers in five areas of BC to enable finalizing of the framework.

User Acceptance Testing is underway for our new IT system. Once the system goes live later this summer, we will be the only jurisdiction in Canada to have such a comprehensive system – providing a seamless interface between Facility Classification, Operator Certification, and a Career Management System.

Sometimes, in our scramble to adjust to changes, it is helpful to look back to see how far we have come! Our main feature this summer issue looks back at the very first Wastewater Treatment Plant in Metro Vancouver. The Lions Gate Wastewater Treatment Plant began operations in 1961 and has been kept going since then, but the end is drawing near for this facility. Not surprisingly, some long time employees are feeling a tad nostalgic! See page 4 for the article, and 'meet' the crew of Metro Vancouver's first WWT Plant.

We always appreciate hearing from you, so please do keep in touch!

Rob Fleming, Board Chair Kalpna Solanki, Chief Executive Officer



INTRODUCING JENNI GREEN, EOCP'S NEW TECHNICAL EXPERT

Jenni Green is a professional engineer who will be filling the role of water and wastewater technical expert with the EOCP. Jenni joined the EOCP in June of 2017. She holds a Bachelor of Engineering from Dalhousie University and worked as a municipal infrastructure engineer with the District of Squamish for four years before starting a land development consulting company. In Squamish Jenni was instrumental in fostering a positive relationship between the engineering and operations departments.

Jenni is passionate about the water industry and loves working in a hands on environment. She enjoys working to find ways to make operations easier and more efficient. Jenni hopes to bring a effective and collaborative approach to the new facility classification roll out. She looks forward to working with operators across the province on a number of initiatives.

Jenni is an outdoor recreation enthusiast and spends much of her free time adventuring in the mountains. She is currently training for the Bay Challenge, which a 10km ocean swim race from West Vancouver to Kitsilano Beach. She currently lives in Squamish BC.

WHO'S ON THE MOVE

Baldev Pooni

M.Sc. School of Trades and Technology, TRU



Baldev Pooni is the new Dean of Trades and Technology at Thompson Rivers University (TRU), Kamloops, BC. Baldev has over 30 years of experience ranging from Teaching Faculty to Academic Administration in BC and Ontario.

Under Baldev's leadership, TRU is expanding its training facility by 40% with the addition of new programs in Power Engineering, HVAC/Refrigeration, and Instrumentation. Recently, TRU expanded its Water and Wastewater Technology Programs (WTTP) from Certificate to Diploma programs. TRU has an excellent partnership with Kamloops Water Treatment Centre for delivery of programs and research at the Centre.

Baldev has a unique responsibility for leadership for Trades and Technology programs in a research university

> with credentials ranging from certificate, diploma, and degrees. TRU is a leader in offering a Provincially Accredited Bachelors of Technology (Trades and Technology Leadership) Degree, which allows Red Seal Certified trades persons and certified technologists to complete the degree on-line in two years. This works extremely well for working adults.

The School of Trades and Technology is conducting research on Indigenous inclusion and alternate energy with the intent of enhancing curriculum, learning and student success.

WATER & WASTE WATER **OPERATOR TRAINING**



Kwantlen Polytechnic University now offers training in the water & waste water sector.

Courses include:

- Water Treatment & Distribution I-IV
- Waste water Collection & Treatment I-IV
- Elective and Safety courses
- Public Works Management courses

All courses are registered with EOCP (CEU's). Courses & delivery are completely customizable.

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EXPERIENCE. LEARN. CHANGE





LIONS GATE WASTEWATER TREATMENT PLANT

Contributed by Sandy Mackenzie, Superintendent Lions Gate Wastewater Treatment Plant. Metro Vancouver

The Lions Gate Wastewater Treatment Plant is the oldest plant in Metro Vancouver and has certainly been a good old "workhorse". However, as is common with any aging facility, there are many challenges with the process and with the equipment.

We have a great team at this facility and have faced many challenges together in trying to maintain and keep this old plant operational. The operations and maintenance staff at this plant are so very competent, loyal and dependable. I am very fortunate to be their Operations leader and hold them in the highest regard. We have terrific QC and Control Systems support staff whom we rely on regularly.

The Lions Gate Wastewater Treatment Plant as we know it, is soon to be decommissioned and taking with it, a lot of history. We still have a few O&M staff here who have been at this plant for a very long time, such as Peter Scott, Ignacio Romo, Alfredo Lepore, Matt Green, and Dan Lenning, who have been at the plant for over 20 years. They are excited about the start-up of the new secondary plant scheduled for 2020 but somewhat sentimental about the end of this facility. In particular, the name change. The new name will be the North Shore Wastewater Treatment Plant as it will be located 2 km east of the Lionsgate bridge. Our existing name "Lions Gate Wastewater Treatment Plant" will be gone. Along with a lot of good old memories for them.

The new plant is being built because Lions Gate does not provide secondary treatment, required by federal wastewater effluent regulations by the end of 2020.

Back Row L to R: Brent Hall, John Richardson, Mike Thorpe, Sandy Mackenzie, Bruce O'Neill, Dan Lenning, Gary Westhora, Art Niewiero, Zak Bindley, Brent Yager, Alex Marsh, Dena Nesbitt, Cory Scott, Ivo Petrov, Ignacio Romo.

Front Row L to R: Theresa Gregonia, Peter Scott, Alfredo Lepore, Matt Green, Angela Tran, Max Genier, Chris Sham.





NOTES

Location: 101 Bridge Road, West Vancouver.

1961 - Plant goes into service

1965 - First upgrade completed

Numerous building, equipment and process refurbishments occurred between 1975 and present day. Significant upgrades are as follows:

1975 - Additional primary clarifiers, Sludge thickening, Digester 4, **Chlorine Contact Tank**

1992 - Sludge dewatering

1999 - Headworks/screening

2003 - Effluent Disinfection upgrade - Upgraded from Chlorine Gas to Sodium Hypochlorite solution

2012 - Effluent De-Chlorination upgrade - Upgraded from Sulphur Dioxide Gas to Sodium Bisulphite solution

2014 - BOD Reduction - Chemically **Enhanced Primary Treatment**

The plant served a population of more than 190,200 people in 2015 (design population is 204,000).

Treatment capacity - 318 MLD.

In 2015, the annual treatment volume was 29,062 ML, approximately 7% of the total wastewater volume treated by Metro Vancouver.

Staff

7 operators, 1 Utility Trades Helper, 3 Mechanics, 1 Electrician, 1 Instrument Tech, 1 Lab Tech and 4 Admin staff.

Plant Superintendent is Sandy Mackenzie; Operations Supervisor is Matt Green; Operations Foreman is Brent Hall; Process Program Manager is Theresa Gregonia; Maintenance Supervisor is Dan Lenning; Trades Mechanical Foreman is Bruce O'Neill.

Reason for decommissioning

The existing Lions Gate Wastewater Treatment Plant cannot meet the national standard of secondary treatment of a monthly average of 25 mg/L CBOD and 25 mg/L TSS.

Continued pg. 6

HISTORY: Lions Gate Wastewater Treatment Plant

The Greater Vancouver Sewerage and Drainage District was incorporated on April 1, 1956 by passage of the Greater Vancouver Sewerage and Drainage District Act. The driving force for this Act was the Rawn Report. In the late 1940's the region's sewer system proved inadequate and pollution of local beaches became a concern. A committee was established under the leadership of A.M. Rawn, Chief Engineer of Los Angeles County, to study the problem. The Rawn Report was issued in 1953. The Report recommended the design and construction of the Lions Gate Wastewater Treatment Plant and the outfall from the plant into the First Narrows of Burrard Inlet. The design was completed in November 1959 and the construction contract was awarded. They commenced construction in February 1960 and completed the project in June 1961.

THEN

November 1959

On completion of the design, tenders were invited for the construction of the plant. The contract was awarded to a joint venture of Howden Construction Co. and Tide Co. for the sum of \$1,214,055.



Lights Blink, Wheels Whir At Sewage Plant Ceremony





The Lions Gate Wastewater Treatment Plant was originally designed for a population of 32,000 to accept sewage from West Vancouver only. In 1964, an expansion was approved by the GVS&DD Board to provide capacity for the plant to accept sewage from the North Vancouver City and from the North Vancouver District. It was completed in June 1965.

Sewer Plant Extension Bids Due

Sun Staff Reporter

Sun Staff Reporter
WEST VANCOUVER
Tenders will be called shortly
for extension to the Lions
Gate sewage treatment plant
beneath Lions Gate bridge.
Commissioner Ken Patrick
of the Greater Vancouver Sewarage and Drainage District
has advised municipal officials here that plans and specifications for the proposed
plant extension are complete
and tenders will be called soon
When completed, the Lions
Gate plant will treat sewage

when completed, the Liohs
Gate plant will treat sewage
from the entire North Shore.
The \$1.6 million plant was
opened July 31, 1961, to serve
West Vanouver but it was
designed for expansion to provide treatment for sewage from North Vancouver city and district.



NOTES continued

Transitional authorization

Metro Vancouver was required to apply for a Transitional Authorization until the new North Shore Wastewater Treatment Plant is commissioned in 2020. The Transitional Authorization was issued to Metro Vancouver on September 5, 2014.

Project schedule

Project schedule complies with the Federal Wastewater Systems Effluent Regulations requirement to meet 25/25 TSS/BOD Secondary Effluent by December 31, 2020.

New plant location

The North Shore Wastewater Treatment Plant will be built on a new Metro Vancouver-owned site in the District of North Vancouver, approximately 2 km east of the existing treatment plant. The existing plant will be decommissioned and the lands returned to Squamish Nation in accordance with a Provincial/Federal cut-off lands agreement.

GVRD secondary treatments

Annacis, Lulu and Northwest Langley plants have a Trickling Filter / Solids Contact Tanks Process for secondary treatment.

The North Shore Wastewater Treatment Plant design is for an Activated Sludge Process.

Build schedule

Aggressive Design/Build schedule to have plant constructed, commissioned and producing secondary effluent by the end of 2020.



Performance period

Design/Build Contractor (Acciona) will operate the new plant for up to 1 year during the performance period prior to handover.



In November 1969, Mr. Al Scott received the Operator of the Year award for his performance at the Lions Gate Wastewater Treatment Plant during the 36th annual meeting of the Pacific Northwest Association in Seattle.

The last major upgrade to the Lions Gate Wastewater Treatment Plant occurred in 1975. Since that time, numerous building refurbishments, equipment upgrades and process and optimization initiatives have taken place.

NOW

Treatment Capacity - 318 MLD Design Population - 203,000 Currently Servicing > 190,200 people

Biosolids management

In 2015, produced approximately 2,620 tonnes Class B biosolids at 30% solids.



Control System: CDAC

Computerized Data Acquisition and Control monitors and controls plant processes and utilities

Operations foreman **Brent Hall** (R) is one of the old timers who has also worked at the Lulu Island WWTP and at the Seymour Capilano Filtration Plant.





2020 & BEYOND

North Shore Wastewater Treatment Plant, under construction now, to be finished in 2020.





THANK-YOU

LIONS GATE WASTEWATER TREATMENT PLANT TEAM



THE TEAM

Sandy Mackenzie Matt Green Dan Lenning Dena Nesbitt **Brent Hall** Bruce O'Neill Mike Thorpe Alex Marsh Max Genier Chris Sham Alfredo Lepore Ivo Petrov Ignacio Romo Peter Scott Cory Scott **Gary Westhora Brent Yager** Art Niewiero John Richardson Zak Bindley Angela Tran

Theresa Gregonia

Superintendent **Operations Supervisor** Maintenance Supervisor Maintenance Clerk **Operations Foreman** Maintenance Foreman MWWTP Operator 3 MWWTP Operator 3 MWWTP Operator 1 MWWTP Operator 2 MWWTP Operator 2 MWWTP Operator 3 **Operations Utility Worker 2** Utility Worker 1 Maintenance Mechanic Maintenance Mechanic Instrument Mechanic Electrician Utility Worker 1 Laboratory Technician

Program Manager

WWT Process Services

Long term employees:

Ignacio Romo 32 years' service, lifetime member EOCP; Matt Green, 27 years' service; Peter Scott 26 years' service; Dan Lenning, 25 years' service; Alfredo Lepore 20 years' service, Brent Hall, 22 years service.

OPERATOR PROFILE

Sandy Mackenzie

Superintendent, Lions Gate Wastewater Treatment Plant, Metro Vancouver Liquid Waste Services

How did you became an Operator?

My father was a research ship Captain for the Institute of Ocean Sciences. His job was to transport and assist environmental researchers and technicians who were tasked with various types of oceanographic work. This included monitoring of industrial dischargers along the BC west coast and throughout the inland waters. It was through his coaching and his advisement that I enrolled in the Malaspina College Wastewater Treatment Course in 1984.

How long have you been an Operator? Since 1986.

What do you most enjoy about the work?

The people and the diversity of the work. I have the deepest respect for those who are skilled, exhibit drive and determination, and who take pride in their work. I was a Union employee for 14 years, and when I became a Manager, I learned very quickly that you are only as good as the people who work for you. Skill levels become very obvious when responding to critical events where response time plays a major factor. Lions Gate is the oldest plant in Metro Vancouver and we have experienced a number of critical events. We are fortunate to have the staff that we do at this facility. Our O&M staff are very diligent at monitoring our process. They are quick to respond, very adept at troubleshooting, improvising, taking

equipment on and off line, and ensuring that we maintain permit compliance at all times. They take ownership of their actions and are skilled professionals. Along with our resident O&M staff, we receive excellent support from our Control Systems and Quality Control groups under all operating circumstances.

What has surprised you most about your job?

How little that the public and the media understand about what we do. Particularly the skill, the level of education, and the expertise required to diligently operate wastewater treatment facilities.

What do you wish other people knew about working as an Environmental Operator?

I wish that people better understood the importance of the service that we provide for the residents of the region and for the protection of the environment. We try to educate people through tours of our facility. On the positive side, we are starting to receive good feedback from some of the groups that have come through our facility.

Can you tell me about any initiatives you have been involved with?

Myself and Matt Green (Operations Supervisor) are members of the O&M technical review team for the new Northshore Secondary WWTP. We also participated in the evaluation process during the contract award phase.

What are some opportunities regarding the field of Environmental Operator?

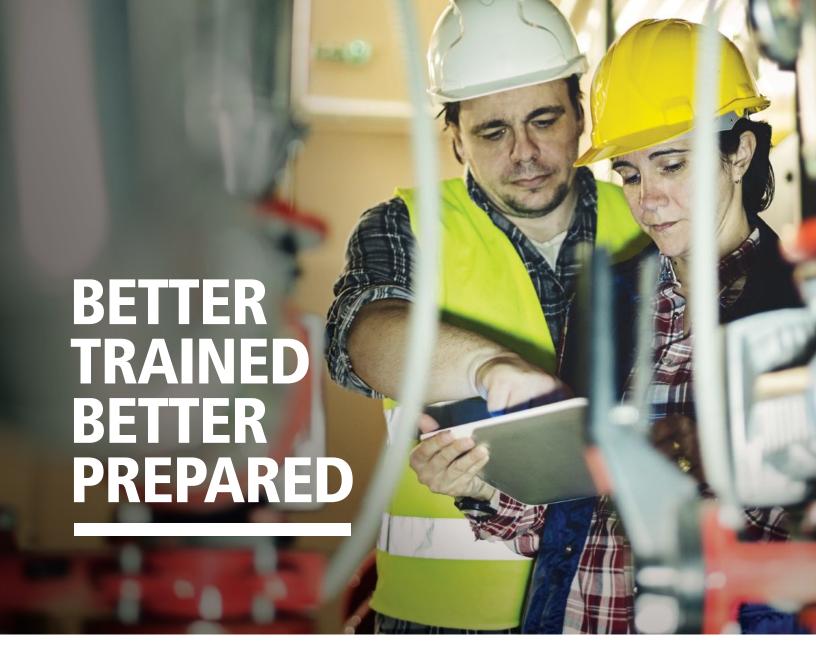
I foresee some very good opportunities within Metro Vancouver, due to the major WWTP projects currently taking place and with others planned for the near future. There are also some significant staff retirements projected within Metro Vancouver and within the region itself.

What do you do when you aren't working?

I try to get away from cell phones and from traffic.

What else can you tell us about working as an Environmental Operator?

As an Environmental Operator, you are providing an essential service to the people of your region and to the environment. That always made me feel proud of the career path that I chose. There is an abundance of opportunities in this field and the people that you work with come from all sorts of different disciplines. The learning can be endless.



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We're now offering regional schools in the Spring and Fall to ensure you have consistent access to operator certification and skills development. This is also a great opportunity to network with your industry peers. Nanaimo, Kelowna, Prince George and the Fraser Valley are scheduled for Fall.

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⚠ BCWWA



VICTOR M TERRY OPERATOR AWARD

Trever Andrew

Water Treatment level 1 operator, Adams Lake Indian Band

Trever Andrew is a water treatment level 1 operator for the Adams Lake Indian Band and a former graduate from Thompson Rivers University with a diploma in Water and Wastewater Technology.

In May 2017, BCWWA recognized Trever for excellence in the Water and Wastewater Industry with Victor M Terry Operator Award. Trever is the founder and developer of the Sewllkue Tracking Solutions with its Water Tracking App which can track, graph and document a variety of water treatment data.

Trever recognizes the importance of preserving water as a resource for future generations and believes in transparency as he communicates the issues around providing safe drinking water to his community.



On April 4, Okanagan College Water Engineering Technology students Morgan Grigg and Quinn Smith received the **Environmental Operators Certification Program Society** Award, valued at \$500 each. The EOCP established the awards with the Okanagan College Foundation in 2005. Congratulations Morgan and Quinn!







NEWLY ELECTED OFFICERS OF THE BOARD







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Mike Firlotte Treasurer



Maurice Valcourt Secretary



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WATER & WASTEWATER TRAINING

As a water and wastewater operator, I bring hands-on expertise and industry knowledge to the classroom. Contact me for information on EOCP - approved courses and customized, onsite training.

Scott Jameson, AScT

Jameson Water Services Inc, Est 2007



STATISTICS

April 1, 2017 – July 1, 2017



Exams

- 230 Operators wrote exams during this period.
- 149 were web based exams and 81 were paper based exams.

Facilities

 12 facilities were added or upgraded during this time.

Continuing Education Units (CEUs)

 2874 Operators have submitted CEUs between April 1, 2017 and June 30, 2017, with a total of 5,447 CEUs earned during this period. This means that Operators spent 54,470 hours taking training!

Definitions

WD	Water Distribution
WT	Water Treatment
WWC	Wastewater Collection
MWWT	Municipal Wastewater Treatment
IWWT	Industrial Wastewater Treatment
BWD	Bulk Water Delivery
SWS	Small Water System
SWWS	Small Wastewater System
SWWS	Small Wastewater System

FACILITY CLASSIFICATION to July 1, 2017										
Classification	IV	Ш	П	1	Other	Total				
WD	33	55	175	164		427				
WT	19	43	129	46		237				
WWC	14	20	79	97		211				
MWWT	25	37	133	99		294				
IWWT	2	2	6			10				
SWS					858	858				
SWWS					233	233				
Total						2.270				

OI LIVAL	Of LIVATOR CERTIFICATION to July 1, 2017										
Classification	IV	Ш	Ш	MUII	ı	MUI	OIT	Total			
WD	89	227	988	10	1,082	24	97	2,517			
WT	49	80	240	9	429	13	79	899			
WWC	13	78	580	8	856	21	59	1,615			
MWWT	131	162	277	9	392	22	77	1,070			
IWWT		4	19		26			49			
Total	282	551	2,104	36	2,785	80	312	6,150			
BWD								67			
SWS								1,267			
SWWS								418			
Total								7,902			

OPERATOR CERTIFICATION to July 1, 2017



