

# OPERATOR DIGEST

WINTER 2022 | NUMBER 151



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

## PLANT PROFILE

# LANGDALE WASTEWATER TREATMENT FACILITY



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# 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](mailto:eocp@eocp.ca)

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

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Publications Mail Agreement  
No. 41498030

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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## OPERATOR PROFILE

### Hanna Burton

District of Squamish, CWWP



#### **How did you become an Operator?**

I was originally hired on with the District of Squamish as a Lifeguard. When an internal labourer position opened up, I worked for parks and roads/storm drainage for a while, then transferred to the WWTP. I completed the water distribution, and WWT Sacramento State books, and challenged my OIT. Shortly after, I wrote my Level I wastewater treatment exam.

#### **How long have you been an Operator?**

I have been working as an Operator since August 2018.

#### **What are your core functions?**

In Squamish, we're lucky to have our hands on pretty much everything. We do lab work, preventative maintenance on pumps, various equipment, monitor processes through SCADA, and respond to emergency callouts. Here, if you work in sewer you're expected to be on call for the WWTP and the towns WWC system.

**What is your typical day?** Lab work, data entry, 'rounds' where you physically go and make sure all equipment is running as intended, SCADA monitoring, unclogging pumps, cleaning and sanitizing; you might be greasing a centrifuge,

calibrating a chemical feed pump, doing preventative oil changes, or working with contractors on various jobs that come with upgrades or troubleshooting issues. You could also be called to help out the collections crew if there is a sewer back up or power outage!

**What do you most enjoy about the work?** I really appreciate the variety in my work, and working with an awesome crew.

**What are some challenges you face?** Initially it was a huge learning curve understanding all the different terminology, processes, and lab calculations. Also, not having a 'mechanical background' meant I had to put in some real 'tool time' to gain that experience that's handy during emergency situations.

**Can you speak of any highlight in the past year?** Each year I look at how much I have learned! Working with such a stellar group of people has made the past year fly by. We have faced some unreal storm conditions, equipment failures, major sewer back ups, and despite all these

*'Operator Profile' continued on page 6*

# MESSAGE FROM THE DIRECTORS AND STAFF



Chris Lawrence

Kalpna Solanki

Phew! Wasn't that quite the year? We thought 2020 was the "year like no other", but that ignominious award belongs to 2021.

Reflecting on 2021, a key feature of this issue is an article from the frontlines, from Warren Brown of Lytton First Nation, giving us in in-depth and heart-wrenching view of the time period before, during, and after the fires that razed the area.

What is interesting is that it seems that 2020 was in a way a precursor to 2021 and prepared us for all possibilities. We worked ceaselessly despite the pandemic, fires, and floods:

1. Looking at EOCP by the numbers for 2021:

1. 328 facilities pre/re/classified
2. 429 exam sessions were held
3. 837 exams were written
4. More than 200 jobs posted!

2. The new Operator program at BCIT, the [Associate Certificate in Fundamentals of Water and Wastewater Operations](#) graduated its first cohort of 22 students.

3. The [Building Water Systems](#) certified Operators are now working in the industry, and we hope that this program becomes more widespread across BC.

4. We asked, you responded, we made it happen...We launched the mobile device friendly CRM!

5. Despite the pandemic, we were able to hold elections and welcomed to the board our new and returning directors:

1. Allison O'Neill (returning for a second term)
2. Robert Birtles
3. Tara Macrae

What are our plans for 2022? We have a great deal already under way:

1. We will be placing an increased emphasis on the [Communication Project](#) that was started with the Ministry of Health and Health Authorities in 2018 to ensure more facilities are classified, and more Operators maintain certification.
2. Our transit ads promoting Environmental Operator as a career choice have just started rolling out, and we will have the bulk of them out by the end of Q1.
3. Our Competencies Validation project's next step, an online assessment tool is under development and will be launched by Q2.
4. **SAVE THE DATE:** Last but by no means least, we had tremendous feedback on our conference, #EOCP2021 with 565 delegates. We plan on having a hybrid conference (Vancouver BC and online) this year, with the theme Respond-Recover-Thrive, so please save the date: **12-14 September 2022** – we expect this one to be even better, and bigger! Registration opens on the 1st of May.

We have no idea what 2022 will bring, but we are resilient, we have grit, and we will manage, as we always do.

Chris Lawrence, Board Chair  
Kalpna Solanki, President and CEO

**SAVE THE DATE**  
**EOCP's Conference is on 12-14 September 2022!**



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*Mardell Buryniuk's Fabulous View (Standing Between the Aeration Tank and MBR)*

## PLANT PROFILE

# WHERE DOES IT GO?! IT'S MAGIC!

By Kalpna Solanki CPHI(C) BSc MBA

Many of us travel on the various BC Ferries routes, we go to the washroom, flush toilets, and wash our hands. But where does the water come from, and where does the wastewater go to? It's like magic...well maybe not, but almost!

In the case of the ferries that travel to and from the Langdale terminal on the Sunshine Coast, the vessels pump off

*Sacrificial Anodes (Cathodic Protection System) in Each Tank*



wastewater, which then goes via force main to a lift station and ultimately to a wastewater treatment facility right at the Langdale ferry terminal. Similarly, the terminal washrooms empty into lift stations which pump up to the treatment facility located at the top of the terminal beside the tollbooths.

Something that makes this treatment facility unique is that the vessels on this route have the ability to use saltwater for flushing toilets on board while the terminal washrooms use freshwater. The combination of freshwater and saltwater, high nitrogen concentration, plus the seasonal changes in flows, make for an especially challenging treatment process. A cathodic protection system reduces the damaging impact of the salinity on the process tanks and a sprinkler system controls foaming that can occur when the influent water chemistry variations result in upsetting the biology of the plant.

A grinder pump in the lift station pumps the wastewater through the inclined screw screen at the facility headworks. The wastewater then goes to two equalization tanks, each with a volume of 100 m<sup>3</sup> with a third emergency overflow tank in case of influent screen failure. The oversized equalization tanks hold nearly the same volume as the process tanks because the vessels generate approximately 90% of the total wastewater which is pumped up to the plant during one or two pump ashore procedures per day.

From the equalization tanks, the wastewater is dosed into the treatment process starting with an anoxic tank where denitrification occurs and then free flowing to the aeration tank. The addition of caustic soda maintains pH and adds alkalinity for the biological nitrification process that occurs in the aeration tank. Maintaining an MLSS concentration of 10,000 ppm makes the plant very resilient to process upsets when the influent salinity or flow varies.



The next step in the process is two membrane bioreactor tanks each containing two Toray microfiltration membrane cassettes. Each cassette processes up to 63 m<sup>3</sup>/day and can be run one at a time or all four simultaneously depending on influent flow conditions. The pore size of these membranes are 0.08 microns and this acts as a physical barrier to separate the effluent from the return activated sludge. Unlike a traditional treatment process that relies on flocculation and sedimentation, the physical barrier of a membrane decouples the hydraulic and sludge retention times, which protects the process from washout and keeps the effluent free from particles larger than the pore size.

The final step is to disinfect the membrane filtrate with ultraviolet light. The high quality effluent from this facility may not contain more than 10 ppm TSS or BOD, 1.03 ppm total ammonia nitrogen and 200 CFU of fecal coliforms. The facility is diligently maintained by Mardell Buryniuk MSc CWP CWWP who holds certifications in WT, WWT, SWS, and SWWS, and she very capably ensures that the discharge limits are never exceeded.

The waste activated sludge dewatered through a Pieralisi centrifuge with the addition of a long chain polymer to produce a cake of about 18% solids. The cake is then delivered to Salish Soils for composting.

There is a small lab at the facility for operational measurements of pH, dissolved oxygen, SVI and TSS, but other operational and regulatory samples are sent to external labs for analysis.

This wastewater treatment facility is unique in that it essentially serves a population of zero, or thousands, depending on the interpretation of the regulations. At this time, the facility is considered a small wastewater system and will be re-evaluated against current classification models.

*Ryan Kunce collecting quarterly outfall samples*



▲ Sprinkler System Above Aeration Tank



▲ Process Blowers (Aeration, Equalization, Sludge Holding and Membrane Bio-reactor Tanks)



▲ Hallett UV Manifold Modules

▼ Pieralisi Centrifuge





'Operator Profile' continued from page 2

challenges, succeeded with positive outcomes. It's never a dull moment!

**What do advice do you have on how to have a successful career as an Operator?** Be vulnerable! Ask questions! Admit you need help! Try to retain as much information as you can from people who have worked in the field. This also builds trusting relationships that will serve you down the road. Then, keep records of that information, I've found its overwhelming trying to remember everything. Good notes will save your butt!

**What do you do when you aren't working?** In my spare time you'll find me hiking with my pup, swimming, skiing, cooking/baking, and I recently started dirt biking!

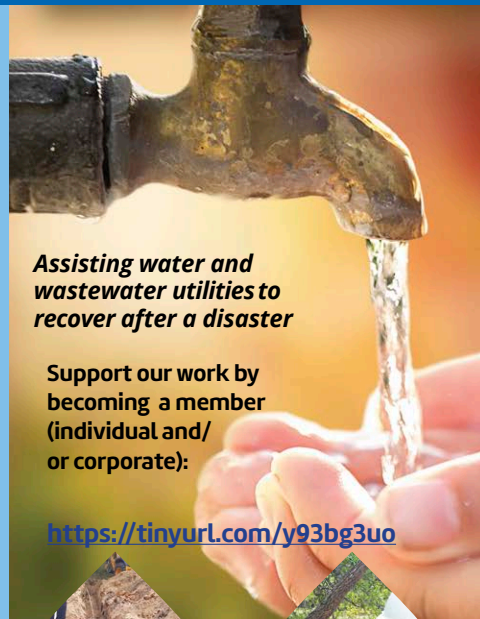
**What else can you tell us about working as an Environmental Operator?**

There is a satisfaction that comes with knowing our work has a crucial impact on the environment we live in.

**Whom would you recognize as a mentor?** My stepfather (Brian Edge who recently retired from the City of Penticton with 30 years as a member of the EOCP) has pushed me since I was in high school to get involved in the field and has played a huge role in leading me to where I am today. However, Scott Macintyre (our former Chief Operator who recently retired) trained me from scratch and I couldn't have asked for a better mentor and friend.



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# LYTTON'S ON FIRE!

A frontline account by Lytton First Nation's Warren Brown, CWP CWWP



**29 June 2021** – It was another searingly hot day, the third of record-breaking heat where Lytton reached the most extreme temperature we had ever seen, 49.6°C. We received word that a fire started on the east end area of the Water Bridge, the one that carries our drinking water over the Fraser River. We were able to mobilize our regular work crew, get equipment ready, and by the time we arrived on the fire, the BC Wildfire Service (BCWS) crew was also just arriving. A few locals had also shown up to help and BCWS commended us for being there with our water trucks, hoses, and personnel. We had two, 1 ton trucks with 225 gallon water tanks, a 3 ton truck with a 1,000 gallon water tank, and with the locals, our crew, and the BCWS crew we had about 20 people on the fire. After it was all over, the BCWS crew told us that if we had not shown up with what we had it would have been a much worse outcome. We were in good spirits as we were successful in extinguishing that fire quickly and the overall feeling was one of accomplishment and camaraderie with excellent teamwork.

**30 June 2021**– The day started with a discussion of the grassfire and our response to it. After our debriefing meeting I emailed our administration with our

idea for a Band-operated, emergency fire response crew. The last task of the day was to fill our work truck water tanks so that we would be ready should there be another fire. We noted during the meeting that a faster response can make a difference- hop in and go! It was just after 4:00 PM, the crew was allowed to go home early because it was hot, nearly 50°C after multiple days of working in the heat. We did usual end of the day discussions which consisted mostly of plans for our day off, then left.

I passed the grocery store in town on my way home and happened to look at my clock and temperature gauge, it was 49°C at 4:20PM. When I was nearing the CN underpass I looked towards the CN train bridge and noticed some smoke down near the CN trestle bridge. I thought "I hope the local fire department or BCWS get on that before it gets away!" There were awful wind gusts of 60-80 km by then. I carried on my way home up at the top of the hill.

I arrived at home, said hello to my family, and was looking forward to the Mexican meal my daughter had spent all day preparing. I washed and grabbed a drink and was going to sit and watch TV while the finishing touches were done for our dinner. My phone rang, it was my co-worker telling

me that Lytton was on fire, to get my family out, and go grab one of our water trucks. He was already responding to the fire in our 3-ton truck with water tank, pump and hose. I was not immediately panicked by that, I told the girls about the call, as I was getting my shoes on, and grabbed my work keys again. I told them I would update them on what was going on and I left home around 4:42 PM for our office.

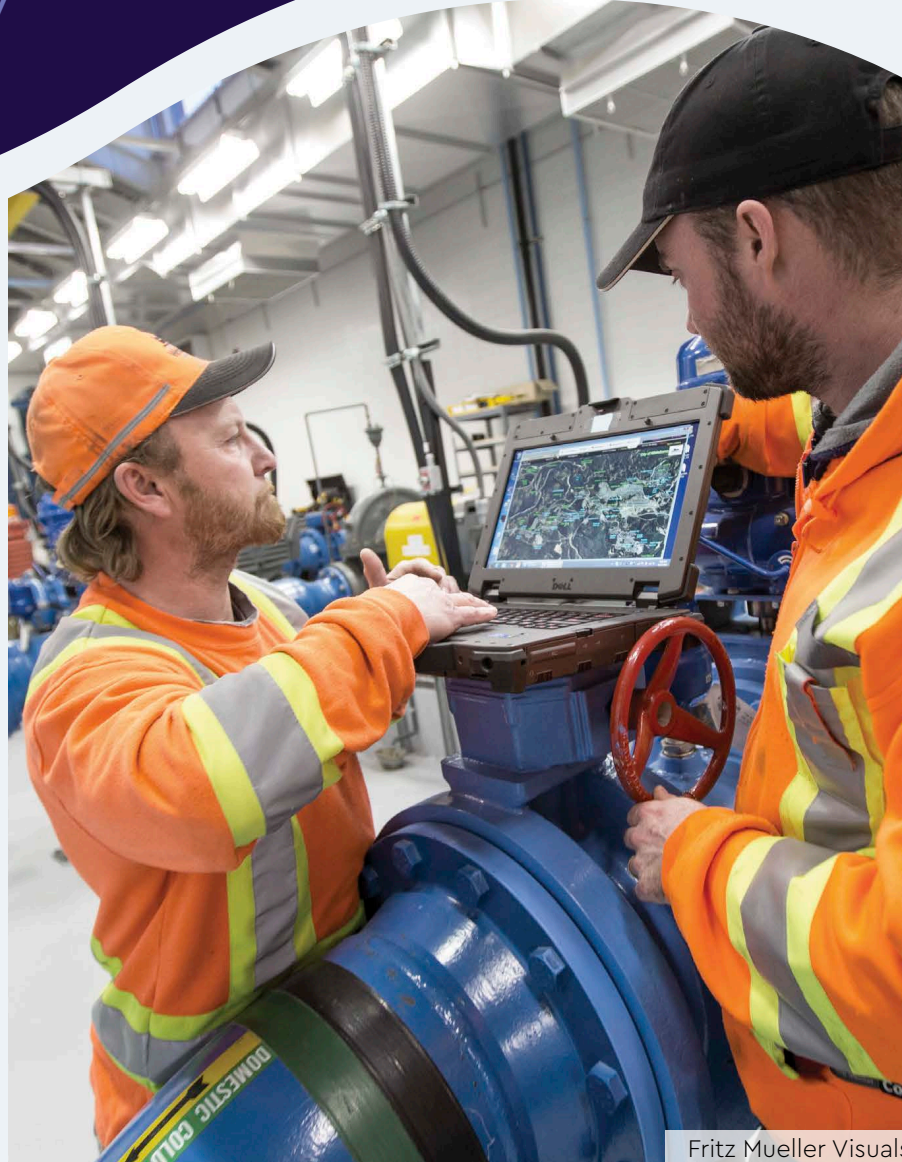
Driving back down the hill to town, I was shocked to see how far and fast that fire had spread from that first small puff of smoke! The flames had come up the hill and had reached the CP rail underpass which was now already thick with heavy smoke. More shocking as I drove through town was that people seemed to be going about their normal lives, not knowing the danger that was quickly approaching. As I arrived back at our office at St. George's Road another co-worker was also just arriving. I went into the office, grabbed the truck keys for our two water trucks, tossed one set to my co-worker and told him to follow me, "Lytton is starting to burn".

Going down the 'Mile Hill' towards town you had a good look at all of Lytton. There was black and gray smoke travelling upriver through town from the south end to the



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north. As we entered town off the bridge, I could see people and vehicles all over the place, running and driving in panic. I got on our truck radio and told my co-worker to try and stay close to me because the smoke was thick in the middle of town. I was barely able to see ten feet past the front of my truck. I told him to watch out for pedestrians and vehicles. Two other co-workers; one who is on the Lytton Volunteer Fire Department; got on the radio saying that they were on Fraser Street trying to protect some homes from the flames. The homes they worked to protect are still standing today! I informed them that we were going to the south end of town. Once there, we parked our trucks at a safe distance upwind from the flames. We both quickly jumped out of our trucks, started unrolling our hoses, installing the nozzles and started our water pumps.

We were spraying water on the first home along with one of the local volunteers of the fire department who was using a garden hose from another home. With the fires spreading so fast, firefighters were spread out as well using whatever they could to battle the blaze. I got within 60 feet of that home, that was it. The heat from that building was crazy! I was trying to motion to the firefighter to back up or move their vehicle back, but with the strong winds and the noise of the fire, it was futile. The combined sound of the wind, crackling brush, helicopters flying overhead, and structure fires sounded like a large waterfall. The heat in the wind was like standing in front of a large hairdryer set on 'HIGH'.

The embers flying up from below where the fire started, were landing on us as we sprayed water, and that, mixed with the heat and wind, was burning our arms. We only had our normal T-shirts and safety vests, no long sleeves, no gear suitable for firefighting. The flames coming off the house were shooting horizontally maybe 20-30 feet out, towards town. We were spraying 30-40 feet upwind from the home to ensure the water hit the house despite the wind. When the power lines fell from the home there were bright white spots of light arcing off the ground, like a group of welders welding all at once.

We sprayed water on that structure and after seeing that it was a lost cause, we diverted to the Village O&M building just down a small hill from where we parked. We could hear cars exploding down towards the CN footbridge where people park their cars to walk across.

I sprayed water the O&M building from about twenty five feet away, and then sprayed a tree from twenty feet away with

little effect. A few explosions from the O&M building blew the roof out on the far end and caused me to back up a few feet. As I was trying to work my hose back, the smoke cleared a bit, and I could see a large, maybe 1,000-gallon fuel tank, in the parking lot next to the O&M building. The flames off the building were reaching towards that tank along with the heat. I dropped my hose and ran back up the hill to the trucks. I told my co-worker about the tank, we dragged the hose up the hill and then moved our trucks about twenty feet further away.

We continued to spray both buildings. The electrical lines of the first home that we sprayed fell to the ground causing sparks to shoot in all directions. I yelled to my co-worker that we had to move our trucks further back again. After the second move I noticed a van trying to come down the hill into town. I ran out waving my arms for them to stop and told them to turn around because of the power lines across the road and did the same for a truck shortly after. Standing next to my co-worker as we tried to spray the Lytton Village O&M building, we looked towards the downtown area that was blocked in with dark shades of black and grey smoke, and saw helicopters dropping water at different locations. I said to him, "Shit! Lytton's gone! I hope everyone makes it out. It looks like our LFN crew is going to lose this fight." My co-worker looked at me and said "Warren, I have to go see if my family is safe!". I said "Ok, after we finish these tanks of water, you can go to your family, I'm going to try for another load and see if I can do anything else!" Just as our tanks emptied, the hydro lines connected to the home fell to the ground, sparking up as the cable wound itself. After that we dropped our hoses, ran to our trucks, disconnected the lines and drove up to the highway because we were not able to drive through town.

About 5:30 PM I radioed our actions in case our co-workers were listening. Our co-workers responded that they were moving the truck to the G'wsep gas station to try and protect it and its fuel tanks.

We reached the top, and turned onto the highway, seeing the crowd of people, their vehicles, some emergency vehicles, and road traffic, on the turn off to Ponderosa. They were all watching the fires and us as we drove by.

We drove past IR #17, which is on the other side of the highway above Lytton. I noticed flames on some of the homes there, the fire had spread so far in little time. I learned that the Village of Lytton ran out of water in the hydrants and the local fire department was spread out.

We got to the north entrance of Lytton, that took us through IR#18 and to the bridge that crosses the Thompson River onto Highway #12. Driving through, we noticed the fires were already halfway through IR#18. People were running and loading vehicles, there was one-way traffic heading out of town. I told my co-worker to park the truck at the top of St. Georges Road and leave the keys in it then go find his family. I was going for another load. I drove up Alkali Road to where the standpipe is that we use for supplying firefighting water from a pond just further up the road. I filled my tank then radioed that I was refilled and heading back. My co-workers who were at the gas station responded that they were leaving the truck at the station, as it was acting up due to all the smoke, and one was leaving, to load his camper and evacuate with his family. All I could say was "OK". Along the way back, I grabbed my cell phone to message my wife that I was okay and to see how they were doing. There was no cell signal or Wi-Fi, we only had our truck radios.

By the time I got back to the gas station, there was a roadblock set up to prevent anyone from entering. I turned around and headed back to Two Mile. There I met up with some locals and let them know that Lytton was on fire and pretty much gone, and the road was blocked. I told them that we should go door to door, and tell everyone to start evacuating all our reserves in the area. I had heard that the evacuation muster location was going to be the Stein Valley Nlakapamux School (SVNS), and that was where I was sending everyone. I drove honking my horn and yelling to everyone to start evacuating. When I went back to St. George's Road again to warn people, I was advised that the evacuation point was now in Lillooet.

I went down St. George's to make sure everyone was leaving. One elderly couple, who looked unsure of what was happening came to me for some direction. I asked what they were doing then said "Pack up and get out! Lytton is on fire and might be coming this way next, fast." They hustled quickly after that. I saw my uncle's family trying to load as much as they could into several vehicles. I yelled that they should get going, that the fire was moving fast, and Lytton is gone, this area could be next.

I went back to the top of St. George's Road to start directing everyone who I told SVNS was the evacuation point to start heading to the recreation centre in Lillooet. It was not until one of my aunts stopped and asked me where my family was, that I realized I didn't know! With no



cell or phone service, and being unable to go through Lytton, I didn't know. I looked at her, kept my posture, and said, "I don't know". She said she would try to find out for me when she got to Lillooet. After that, I took a moment, covered my head, and bent over, because my body started to ache from not knowing where my family was, or if they made it out. I realized that my family would have left in opposite directions, as I lived above Lytton, and my daughter and her family lived at 3 Mile. About 20 minutes later, my aunt returned to tell me that they got some cell

signal just a few kilometers up the road towards Lillooet, and she managed to contact my wife, who told her everyone was safe, and my aunt told her the same of me. Relief!

After things settled, I parked my truck at the junction of Highway #12 and St. George's Road along with a few other locals, including our interim Chief. Two volunteer firefighters in the fire truck stopped in as well. A co-worker and I went to the shop to pick up the other water truck to have it with us by the road. We were standing watch to make sure the fire did not jump over Highway #12 to the river side of the road where a number of our evacuated reserves sat. It was around 6:45 PM by that time.

Some BCWS personnel showed up to ask us how we were doing and if we had any updates on the evacuation. One of them asked about our first aid supplies, which was quite basic. He suggested we go and check buildings to start gathering all the first aid supplies we could find in preparation of a possible mass casualty event due to the fire. My hands started to

shake, and I'm sure I had a blank look on my face, knowing that I may have to face what I never wanted to again, today. I am glad it never came to that. By this time, we had noticed there was no power, which was expected.

After returning with the first aid supplies, we saw the BCWS crew helping an elderly gentleman who was found in the middle of the elementary school field. He was very dehydrated, weak, and dirty from the smoke and ash that was floating around him. He got a ride to medical aid with a BC Ambulance Service vehicle. Later we heard on the BCWS radio that they were looking for someone who spoke French to assist with a person who was found by crews walking down from the burning Botany Valley.

Around 8 PM, I asked the firefighters if it would be alright to go to the gas station to grab our large water truck that was abandoned there. The drive down the hill was tough! It was rough to see the Village of Lytton as nothing but glowing embers and small fires. Because of its curves, the CN bridge that crosses the Thompson River



**Aleah Brown**  
Has anyone seen my dad [Warren Brown](#) ??

29w Like Reply



**Jen Brown**  
[Aleah Brown](#) last I saw him was top of stein school road directing traffic. He was worried bout all of you. I told him where you all are.

29w Like Reply



**Aleah Brown**  
[Jen Brown](#) thank you ❤️ we were able to get in touch with him a few hours ago

29w Like Reply



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## COMMENTS FROM THE 2021 CONFERENCE

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"Good information. Well done EOCP team!"

"I liked being able to choose my path."

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was like a long serpent stretching across the river, and it was on fire. We asked the crew nearby if they needed the truck and its water before we left with it.

We went and filled the large truck with water and parked it with us at the top of St. George's Road with our other water trucks and fire truck.

Around 10 PM, a call came in over the fire truck's radio. The Highways Department was asking if someone could go to the ferry and look for a worker who couldn't be reached because there was no, landline or cell service. Lytton was isolated from all three highway entrances into town as the result of the fire. I volunteered to go down and look for him. When I arrived at the ferry, I grabbed a flashlight and yelled about, there was no answer. I checked the workers quarters trailer, then went to the ferry itself. I walked across the boards that had been laid out to allow boarding of workers onto the ferry during high water but found nobody. I looked towards town to see the devastation.

**1 July 2021** – I had no sleep the first night. RCMP had a vehicle at the roadblock, and another was going back and forth doing patrols. At about 3:00 am we heard of a couple that evaded the roadblock and went to their home. Another person came walking out of the dark and across the bridge. The RCMP ended up taking him towards Lillooet in hopes of meeting someone who knew him and could take him to Lillooet.

At 05:00 AM one of the BCWS commanders asked me about some of the back roads and where they led. I asked if he wanted to go for a drive so I could try to inform him of all the back roads in the area. Off we went, at one point we were right in the path of the fire, it was like a massive wall that pushed and cleared its way wherever it pleased. I pointed out the standpipe that we use to fill our tanks with raw water for firefighting. He made note of that. He then asked about our fire hydrants. I told him they were useless as a lot of our members left their homes with sprinklers on to try and save their homes. This depleted our already low reservoirs, and there was no power to run the pumps to refill the reservoirs. We returned to the check point.

At 06:00 AM the BCWS water haulers hadn't arrived so we were asked if we could haul water for them up Botany Road where they have a bladder for crews to feed off while fighting the fire in the area. We took a few loads there, and then were asked to haul water to another bladder at the top of Quinn Road, that was roughly above the Botany Road. The road was too

rough for the large water haulers to drive up, but our 4x4 trucks were perfect for the narrow, single lane road. We filled up with water at the standpipe and drove the loads up that road all day. A few times we came across oncoming BCWS vehicles and had to back up to a wide spot for two vehicles to pass each other. During that time, BCWS was setting up a fire guard to protect all of our reserves along highway #12. It was amazing to see them roll out kilometers of hose with Water Thieves (connections) along the highway, and large bladders in key areas. With all the hoses laid out, they had hoses going to our standpipe which, with the help of a pump, filled all the bladders and hoses along the highway. I had never seen this before, it was truly amazing! This whole time, my co-worker and I had been getting bottled water from random people, along with a few bags of chips and fruit. We would grab a few granola bars and sports drinks from the BCWS crews lunch truck so that we could keep somewhat fed and hydrated in the heat.

We had three water trucks and two drivers. We ran the 1 ton mostly, and maybe three hours of loads on the big truck. I was also in contact with Com Com Services, who advised that they had a lead on a generator for our Stein Water system. I arranged with our leadership to get them on the access list for the area so they can get through the roadblocks with the donated generator.

Some time during the day, the local Fire Chief for the Village of Lytton's volunteer fire department arrived in the rescue truck. He gave us updates as to what was happening in the area, where the checkpoints were set up, and the location of the evacuation centers that were set up

by the neighbouring Bands. By 7:00 PM, we told BCWS that we were done. It was time for us to leave and be with our families. We called the volunteer Fire Chief to give us an escort through the roadblocks so we could get on our way.

The next few days/weeks were spent travelling through the fire ravaged Lytton area, the roadblocks, and meeting and talking with people from several agencies in tailgate type meetings in places wherever they caught up to me. The cell signal was out in the general area of Lytton, but out a few kilometres on either highway there was some signal.

Our radios were only programmed to our Band signal, that allowed us to communicate with each other, but no other agency. Several times we were asked if we had the BCWS channels or their radio, and were asked how are we communicating and getting our information. Our answer of "No" seemed to always surprise them.

Information sharing was a nightmare! It seemed every agency or group had their own plans, but did not share them with others, including our own Nation. I would mention to a person of one agency/group about what I had heard from another agency/group and they would go off on how they were not informed, who made that decision, and why that decision was made. Everyone has a plan on how the clean up and rebuild will move forward, but nobody else is informed of the plan. They were all in their own silos and just making them taller. I think most of the information people were looking for was coming from our Water Team group, as I posted updates on the Lytton First Nation and Village of Lytton

*Lytton Burning - Photo Taken from Ferry on the Fraser River*





group Facebook pages. Apparently, a few people waited for my updates as I made them straightforward with information on BCWS's and our progress with the fires, homes, properties, and water. Where there

was misinformation being circulated, I would correct the information.

I would have thought this whole communication thing would have been improved on since the devastation at the

2016 Fort McMurray Fire. Sadly, it has not. Everyone I talked to, whether in or out of the danger zones, only had frustration when talking about getting any news or information about what was going on.

**A great deal of work had to be done over the next few days/weeks to get our four water systems operational again! The outline below shows what needed to be completed to get the systems going.**

## Stein Water System

(Surface Water)

*Stein River has two Slow Sand Filters and three lift stations, with two pumps in each. There are six water storage structures with approximately 160,000 gallons of water storage and 150 residential connections including the Seniors Complex, a Hall, a Health Center, and one School.*

### 1 – 9 July 2021

Plans were already started on July 1st. Com Com Services/Lyttonnet had already been in contact with a company willing to donate a generator, two more generators were rented, and they were all connected to each station. One generator had to be driven around, through Lillooet and back down via the North Spencer Road, then connected to Booster #1 Lift Station. This travel is an estimated 140 km. The initial plan was to pull the breakers on the hydro poles within a certain area

around our Booster #1 and #2 stations.

This would power up the two stations and a few homes within the section of hydro lines. It would have worked, but we chose not to as it could damage the home appliances because of the dirty power of the generator, so we waited for the other two generators.

It was imperative to get water moving in the Stein System. We needed to charge our fire hydrants to help supply water in the event of more fires, there was also concern on how long it would be before the water in the sand filters started to stagnate and affect the properties of the filter media.

With the help of Com Com Services/Lyttonnet and our local electrician, Loring Electric, we managed to get the Stein Water System operating in hand mode, with three generators by July 09, 2021.

Operating the system included a lot of running in between the three systems,

two of which were on the west side, and one on the east side of the Fraser River. We did not have any automatic control, they were all operated in hand mode, and one system at a time. There was a truck available on each side of the Fraser River for travel, and we used the Stein Water Bridge that crosses over the Fraser River, by foot. Between Booster #1 and Booster #3, with Booster #2 in the middle, the distance is an estimated 6 km.

With our set up, the Stein Water system worked as follows:

1. Start generator at B1 (water source, west side)
2. Start pumping water to B2 filter cells (Treatment Plant, west side)
3. Go to B2 to monitor the filling levels of the filter cells using the piezometers
4. When levels are filled to operational levels at B2, run back to B1 to turn off pumps and the generator
5. Go back to B2

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6. Start generator
7. Open the filter valves to allow water to be filtered and treated as it enters the Clear Well. Visually monitor the level. B1 operation may need to be repeated.
8. Start pumping water to B3 (lift station, east side)
9. Go to B3 and visually monitor the level in the reservoir
10. Once it reaches a certain level, start back to B2 to turn off the pumps and generator
11. Go back to B3
12. Start generator
13. Start pumping water to two reservoirs for distribution to the communities
14. Monitor the B3 reservoir level until it reaches the lowest safe operating level
15. Turn off the pumps and generator
16. Go out to each reservoir and do a visual check of the levels and determine how many more cycles will be needed to fill the reservoirs
17. Repeat as needed in a day or two

Regardless of the water treatment, this system was on a Do Not Consume, it was filled to charge the fire hydrants of the communities that were still in danger from the fire. It gave us a chance to defend our remaining Reserves.

## Kitzowit Water System

(Surface Water)

*Sawmill Creek, coarse/fine stainless steel filter screens, gravity fed system, water chlorinated as it enters the 28.6m<sup>3</sup> clear well/reservoir, then distributed to 7 residential connections.*

### 1-3 July 2021

After the access through roadblocks was sorted, we started to gather parts for the Kitzowit water system.

The system has a solenoid controlled valve that opens and closes as water is needed. Because there was no power, we started to connect a hose to the raw water bypass line, and attach it to a ladder rung in the reservoir. The plan was to open the bypass and fill the reservoir with raw water, again, just to charge the fire hydrants. As we were clamping down the hose going into the reservoir, power was restored. Power was restored as far as the highways building, about 2 km south from the Village of Lytton. The hose was removed, and the system was set up for normal operation, but it was put on a Do Not Consume as we were not certain of impact on the watershed due to the fire.

August 15, 2021, this system was connected in the same way again, in preparation of filling fire trucks that were protecting the Siska and Skuppah Band communities about 11 km and further

south of the Village of Lytton. Their system was being used to fill the water bladders for BCWS.

## Nickeyeah Water System

(Surface Water)

*Nickeyeah Creek, spin filters, bag filters, cartridge filters, UV, and chlorination. 2x5000 lgal fiberglass reservoir that distributes to 7 residential connections.*

### 1-5 July 2021

This system had no power. To bypass this system, and to get water into the reservoir so the fire hydrants can be charged, we connected a pipe end cap with a 1 ½" female threaded hole in it and held onto the pipe with a restraint, onto the raw water flush out line that drains into a ditch line. We connected a 1 ½" BCWS fire hose connection and gate valve into the cap, and connected a 100 ft fire hose to it. We opened a reservoir lid and dropped the end of the fire hose inside. We opened the drain valve, then opened the gate valve, filling the reservoir with raw water. The gravity pressure was enough for the water to enter the reservoir, but not enough to cause the hose to spray itself out. We tied the line anyway, to ensure it did not fall out. This took about half a day to fill and then overflow into the ditch. The residents that stayed behind were all informed that they were on a boil advisory.

## N-Kaih Water System

(Surface Water)

*Nepuchin Creek, intake leading to wetwell, chlorinated, then pumped to a 10,000 lgal fibreglass reservoir, then distributed to six residential connections.*

### 1-3 July 2021

There was no power to this system either. This system is an estimated ten km up North Spencer Road, from the Lytton Ferry. The fire had jumped the Fraser on the evening of July 3rd. Local members and staff of Com Com Services responded to start fighting the fire. Shortly after, BCWS showed up. With no power to our water plant, and a fair distance between the fire and a water source, the solution was to disconnect the two system pumps from the piping, connect two BCWS fire hose fittings onto the pipe ends, and connect two BCWS wayjax pumps to it. Raw water was pumped to the reservoir using both BCWS pumps, thus charging the fire hydrants for BCWS to feed from. This system was also put on a boil advisory for the remaining members that stayed behind.

After the fire emergency had passed, we continued to use the fire pumps daily to keep the reservoir filled. The pumps were fired up in the morning and late afternoon

for a few hours, and the reservoir monitored visually during the day. This went on until power was restored on July 15th. Due to the pumps coarse screens, minor debris made its way into the lines, and overtime the debris acted like a sandblaster, wearing a hole in a fitting in the distribution line. This was discovered a few days after the power was restored. After a few days of trouble shooting, on July 28, the distribution line was dug up, the cause of the leak found, and it was repaired with a new fitting. The system was back to normal operations.

## Papyum Water System GT

(Ground Water)

*No treatment, 336 ft deep well pumped through distribution lines into the reservoir, a 10,000 lgal steel cylinder tank, then distributed to 10 residential connections.*

### 1-9 July 2021

On July 9th, we managed to hook up our largest portable generator to the papyum well system. Our generator worked at maximum to meet the minimum requirements for the well pump. The breaker had to be reset a few times during the day on the generator as the system ran with visual checks of the reservoir. The system ran every second day. There was no boil advisory put on the system, as we did nothing to it other than connect the generator.

All of these emergency systems ran until July 15, 2021 when power was fully restored to the entire area. The next three days were spent draining and cleaning all the reservoirs, and then flushing the mains. Water samples were taken and tested. After two negative test results of the samples, the boil advisories were removed.

What would I do different if something like this happens again? Nothing. The Water Team worked incredibly well together with Com Com/Lyttonnet and Loring Electric. We did what needed to be done, to get water to the fire hydrants, and have that extra fire protection for the remainder of our reserves.

What I would like to see as we rebuild and move forward, is for all our water systems be outfitted with generators, our own fire response crew, and an emergency alert system or air raid siren to give a loud audible warning to all the surrounding communities around Lytton. A siren system was used in Lytton during the 80's. When it would go off, all the volunteer firefighters would hear it, and respond to the fire hall.

To this day I still get emotional when I talk about how I worked to help fight the fire.



# WHO'S ON THE MOVE

## Guillaume Ferland

Utilities Superintendent, City of Port Moody. CWP

**What was your first job?** My first job was as a maintenance helper in a discount store in my hometown. I was 13 years old, and I worked 6 hours/week spread over three days doing little things like changing lights, vacuuming, and sorting hangers. This provided me with enough money to buy my daily extra-large Dairy Queen Blizzard (they were cheaper back then).

**What was your path to becoming an Operator?** After coming home from extended travel in my mid 20s, I needed a job, so I went and ran heavy equipment in Northern Alberta. Although this was a great experience, it was not something I saw myself doing in the long term. Some close friends had recently finished the Water Engineering Technology (WET) program at Okanagan College and it seemed like a great opportunity. Since then, I've been lucky to work in water treatment, water distribution, wastewater treatment, and wastewater collection.

**How did you pivot from your last position to your current one?** I think COVID-19 gave many people time to reflect on their careers. Last year I had a serious health scare and I found myself thinking more seriously about my goals and ambitions. Over the last few years, I had also been completing my Bachelor of Technology degree. Through those courses, I learned a lot about myself and developed stronger skills as a leader. I decided to explore leadership roles and applied for the Utilities Superintendent position at the City of Port Moody. From the start, I knew it was the right opportunity for me. With many new challenges ahead, I am excited to be part of a great team and learn from some amazing humans.

**What advice would you give to someone who is currently an Operator or considering becoming one?** Utilities are such an important part of everyday life! With ever-expanding regulations on the horizon, many more roles will need to be filled in order to continue supplying households and companies with these services. I never thought about how water or wastewater moved around until I started the WET program. I learned so much as an operator and that was mainly because I am not afraid to ask questions. There are so many knowledgeable individuals and teams in this field, so my advice would be to stay curious, have a desire to learn, and be open to new perspectives. Growing as a team and being part of the transfer of knowledge to new team members is a very rewarding part of this industry.

**What are some of your goals in your new position?** I want to create a space where employees feel recognized, empowered, and valued. Everyone is different though, so my main goal is to focus on learning about the needs of my team members so that they can excel in their positions. Positive workplace cultures with effective communication go a long way, so I will do my best to ensure that the team and community I serve have my full dedication in achieving these goals.

**What has the impact of COVID-19 been on your organization?** At first, there was a lot of anxiety and confusion about the best way to move forward, but like most things, with time, people came together and found ways to mitigate the impacts of COVID-19. It continues to be a challenge, but with time and patience, we will move forward as a community.

**What do you do in your spare time?** I am currently enrolled in an MBA program, so much of my spare time is dedicated to



studying. When I can sneak away, I enjoy travelling with my wife around BC and the world (pre-COVID), eating delicious food, and getting beat up during Jiu Jitsu and Muay Thai training.

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# STATISTICS

1st October to 31st December 2021



# EOCP

Environmental Operators  
Certification Program

## EXAM STATISTICS



**322** exams  
taken

**130** exam  
sessions

## FACILITIES



**59** facilities  
re/classified

## CONTINUING EDUCATION UNITS (CEUs)

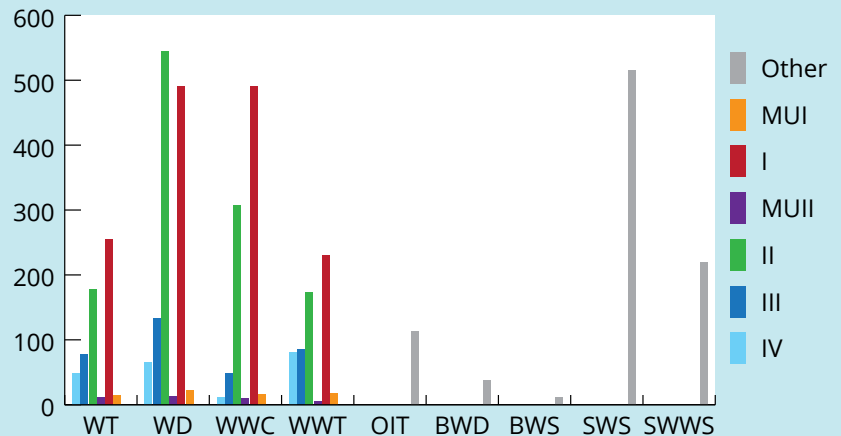
**1,055** Operators  
submitted CEUs

**1,739** CEUs were  
earned

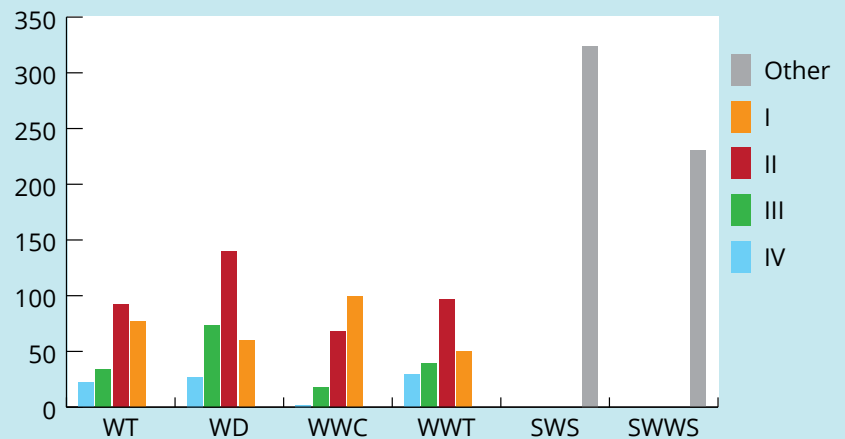
## DEFINITIONS

WT	Water Treatment
WD	Water Distribution
WWC	Wastewater Collection
WWT	Wastewater Treatment
OIT	Operator In Training
BWD	Bulk Water Delivery
BWS	Bulk Water System
SWS	Small Water System
SWWS	Small Wastewater System
MU	Multi Utility

## Operator Certification



## Facility Classification



**1 January 2022 was the start of a new CEU reporting period.** If you haven't submitted your CEUs for the 2020 – 2021 reporting period yet please add them to your profile or email them to [eocp@eocp.ca](mailto:eocp@eocp.ca) as soon as possible.

Check your Operator status by logging into your profile at <https://crm.eocp.ca/> and clicking on **ACCOUNT** to see if your 2022 dues have been paid, and **CEU** under the LEARNING STATUS tab to see if your CEUs have been met.

**If your CEUs have not been met for the 2020 - 2021 reporting period, and/or your dues haven't been paid, your status will be red flagged and you will be listed as not certified.**

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