



Memo

TO: Chair, Public Works, and Environmental Services

FROM: Chief Administrative Officer

DATE: July 21, 2020

SUBJECT: Water Treatment Plant Update

Background

The Town of Lake Cowichan was awarded a \$5 million grant in 2015 under the Gas Tax Strategic Priorities Fund which gave the Town the opportunity to achieve the Drinking Water Treatment Objectives for Surface Water in British Columbia as mandated by the Province. Users of the water purveyed by the Town of Lake Cowichan expect access to good quality drinking water and that boil water advisories become a thing of the past. Increasingly, stringent water quality standards necessitate more advanced treatment technologies. To address these concerns a tender was prepared, issued, and awarded in June 2017. Construction of the new treatment plant was begun soon after. The water treatment plant was substantially completed in February 2019 and has been operational for some time using direct filtration, chlorine disinfection, and ultraviolet disinfection.

Minor deficiencies are being addressed in the meantime. A soda ash (sodium carbonate) delivery system was added to ensure that the pH is maintained at acceptable levels as mandated by the Guidelines for Canadian Drinking Water Quality. The soda ash system installation was completed in March of this year. The main purpose in controlling pH is to produce water that minimizes corrosion and scaling effects within the water distribution system.

The next step is for Public Works to optimize the soda ash (sodium carbonate) dosing to the water as we move forward after the commissioning phase. Adjustments to the system will be required for a period to stabilize the pH levels.

We have been currently operating the water treatment plant under the terms and conditions of the Interim Operating Permit issued by Island Health whereby the Town is authorized to operate the Water Treatment Plant "with a design flowrate of 60L/s and consisting of two UV disinfection units installed in parallel and their sensors, alarms, UV transmittance monitors, bulk salt storage, brine storage tank, an on-site sodium

hypochlorite generator, liquid 0.8% sodium hypochlorite storage tanks, dosing pumps, injection ports, flow meters, pH, temperature and free chlorine analysers, turbidity monitors, air blowers, spilt containment, hydrogen gas monitors and alarms, emergency 12% sodium hypochlorite storage and injection equipment, back-up generator and other related appurtenances located along Indian Road to serve existing and future development of the Town of Lake Cowichan.

The water supply system owner shall provide interim disinfection to achieve a 4-log removal/inactivation of viruses, a 3-log removal/inactivation of Giardia lamblia cysts and Cryptosporidium oocysts and produce a finished water with less than 1 NTU turbidity. The ultraviolet disinfection system shall ensure the following:

- A minimum 3-log reduction (99.9% inactivation) of Giardia lamblia cysts and Cryptosporidium oocysts

The chlorination disinfection system shall ensure the following:

- A minimum 4-log reduction (99.99% inactivation) of viruses.”

We have ensured that we are fully in compliance with directives issued by Island Health and the terms of the Interim Permit. Boil Water advisories have been issued in the past when there was such a requirement. You may be pleased to know that no water quality warnings or advisories are currently in place for our water supply. The following is the Island Health website for up to date advisories or notices pertaining to water systems under its authority.

https://www.healthspace.ca/Clients/VIHA/VIHA_Website.nsf/Water-List-Boil?OpenView&count=100

The following data for the treated water are attached for your information:

- Treated water Volume Produced;
- NTU readings;
- Free Available Chlorine; and
- pH of Raw and Treated Water.

Additional Information that is noteworthy:

A resident had information requested that related to the Water Treatment Plant that ranged from copies of the Interim Permit, sampling reports to communications between council members (and the CAO) and Island Health to calendars of same.

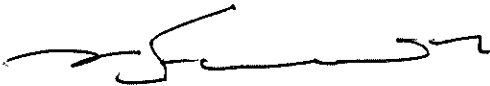
I have notified the resident that I can make copies of records that I have access to. I have identified that cost to be \$8.25 for the copies with no charges for staff time. No attempt has been made to seek these records thus far.

He has come back requesting copies of emails and calendars that I am not privy

to. I have provided him with a cost estimate for undertaking this portion of the work by our IT personnel. He has been advised that the cost would be \$672 which should be paid prior to any work being undertaken in this regard.

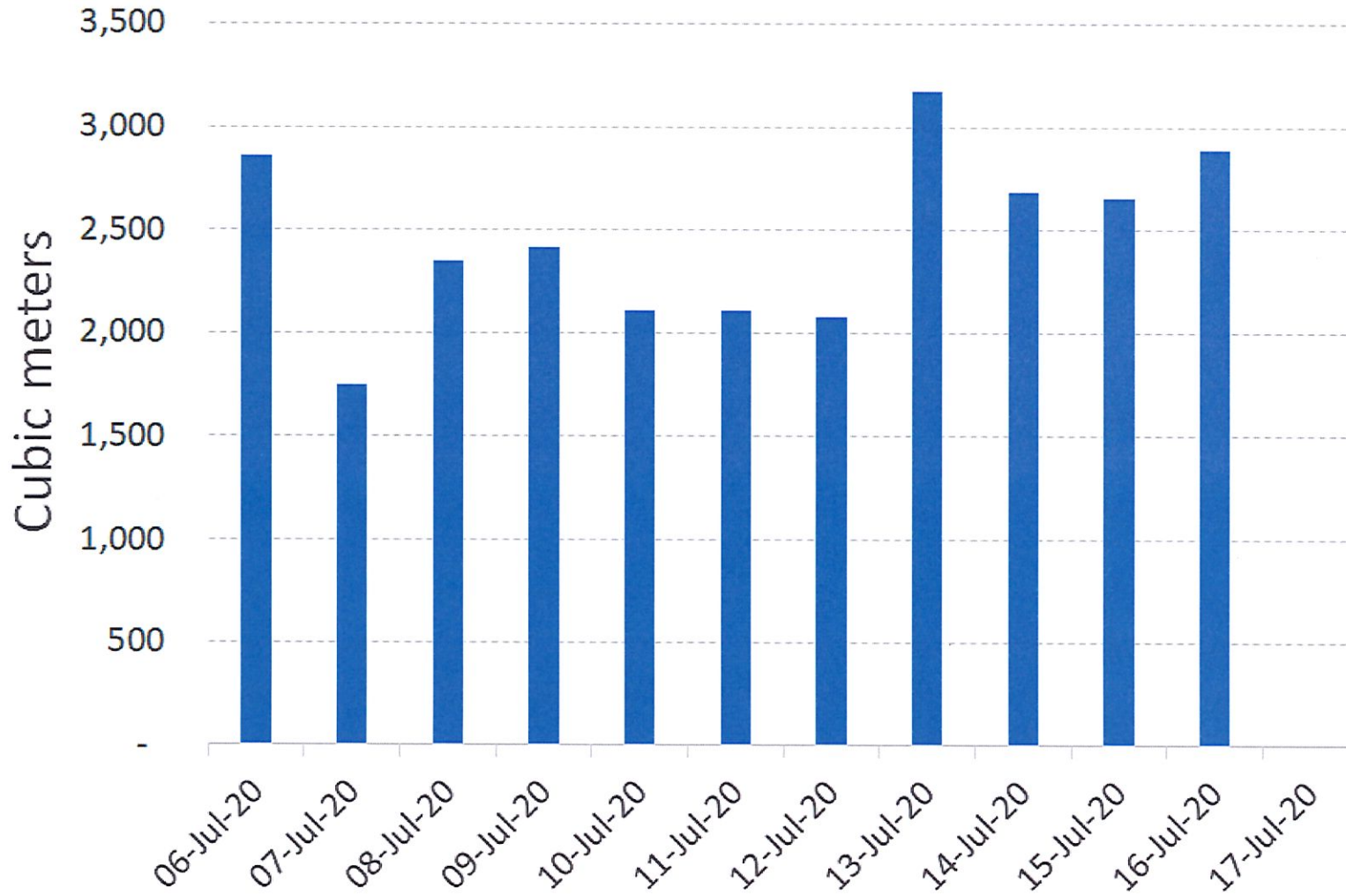
Conclusion

The Commissioning of the Water Treatment Plant is in progress. Murray Sexton, P. Eng. Public Health Engineer with Island Health was present on site on Friday, July 17th, 2020. We are now awaiting the lab results.

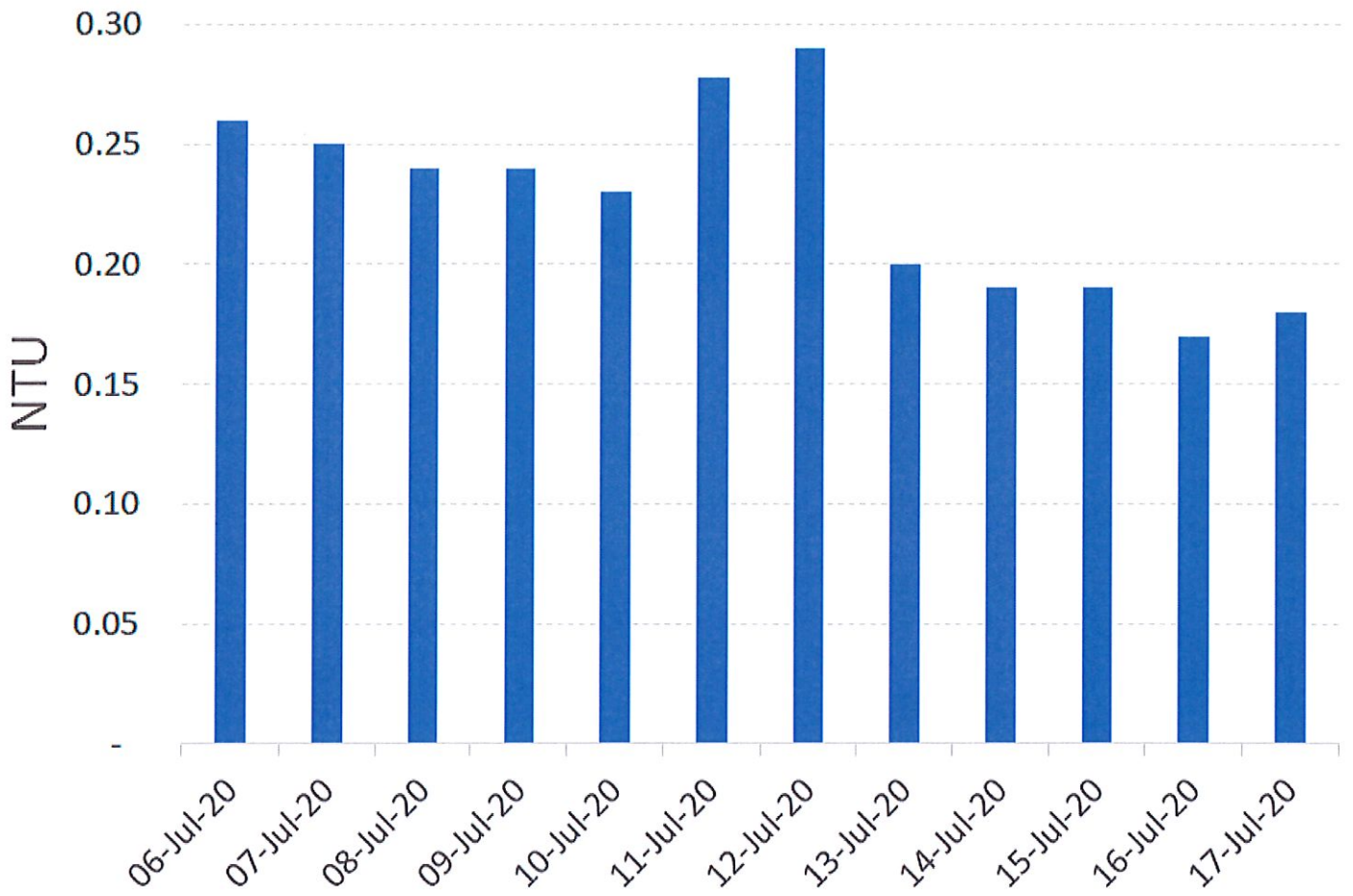


Joseph A. Fernandez

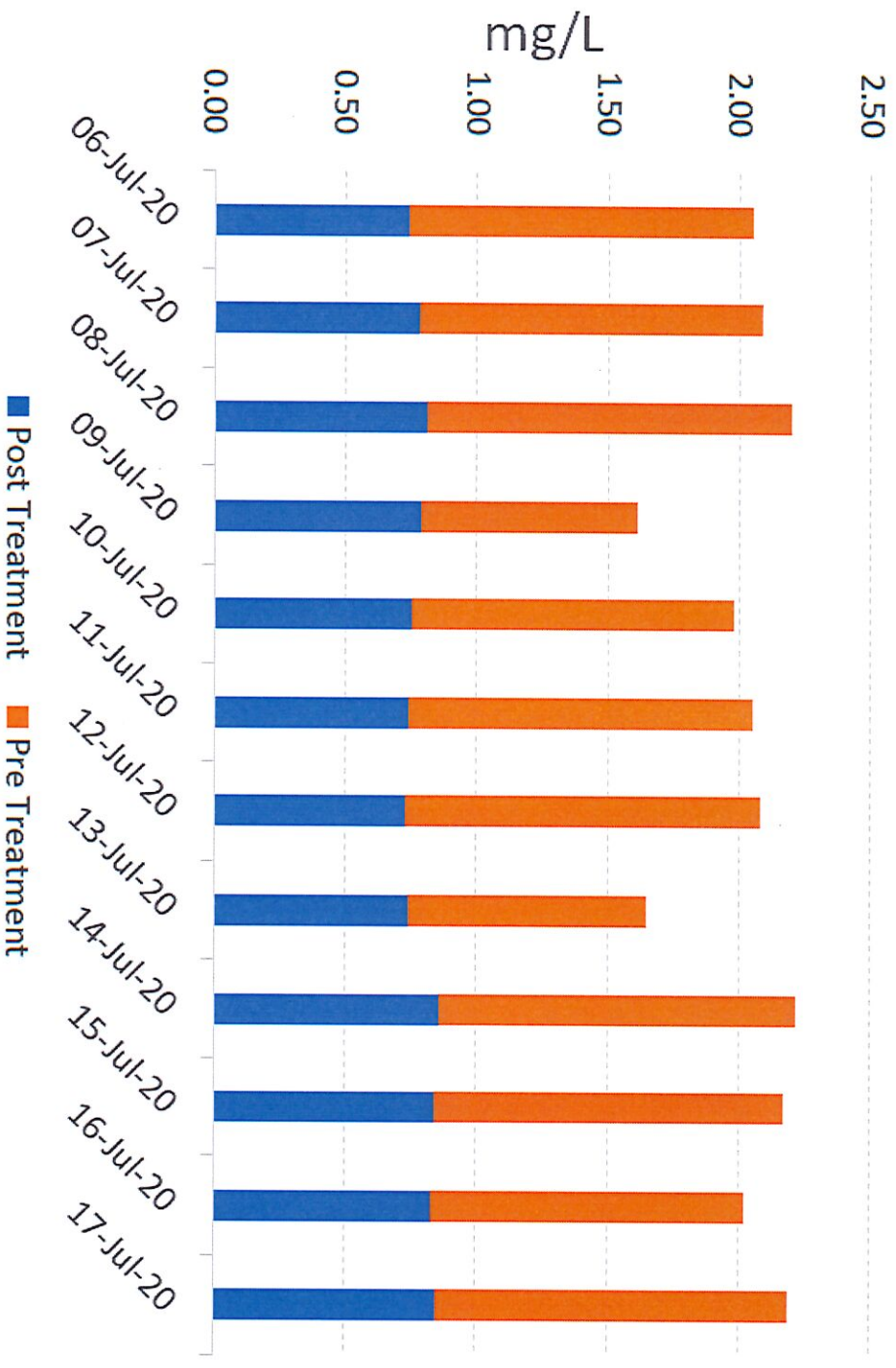
Treated Water Volume Produced



Filter#1 Turbidity



Post Treatment Free Available Chlorine



pH of Raw (Pre) and Treated (Post)

