To Sustain And Enhance Our Lake For Future Gernerations

Mayor Sandra Masters
City of Regina
2476 Victoria Ave
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November 30, 2021

Dear Mayor Masters:

The Last Mountain Lake Stewardship Group, (LMLSG), is a non-profit organization, formed in 2002, as the result of concerns expressed by cottagers and residents of perceived effluent entering Last Mountain Lake. As you are aware, a large percentage of Regina residents use Last Mountain Lake as their primary recreational site or have cottages alongside this beautiful lake. Due to the widespread concern among residents, LMLSG created a Water Quality Monitoring program and began testing water samples from Last Mountain Lake. We introduced educational programs to lake communities by hosting workshops that increased public awareness regarding lake health issues, and promoted good stewardship practices in and around Last Mountain Lake, as well as a fuel spill recovery program.

In 2018 we partnered with Calling Lakes Eco-Museum (CLEM) to further protect water quality in Last Mountain Lake and our downstream neighbours, by presenting strong opposition to any threat of drainage and any other forms of pollution from entering Last Mountain Lake and beyond. We continue to have a close working relationship with Chief Todd Peigan of the Pasqua First Nation as we both have the common goal of protecting the Qu'Appelle Watershed. We have shared these concerns with him. We're particularly proud that our strong opposition to the Quill Lake Diversion Program help shaped the Government of Saskatchewan's decision to not divert this saline water into our lake.

We are contacting the City of Regina to address their (undated) memo to us outlining the downstream release of 5.24 million liters of untreated storm water and wastewater which occurred during the morning of June 11th 2021.

The main purpose of our letter is to stimulate the creation of some better practices regarding the monitoring of any release of effluent (accidental or deliberate) by the City of Regina. We have already spoken to the Water Security Agency and to Mr. Garret Ruiters, (Manager of Environmental Services, City of Regina) about this. (They both appeared to appreciate our concerns and recognized that an improved sampling protocol may be well warranted).

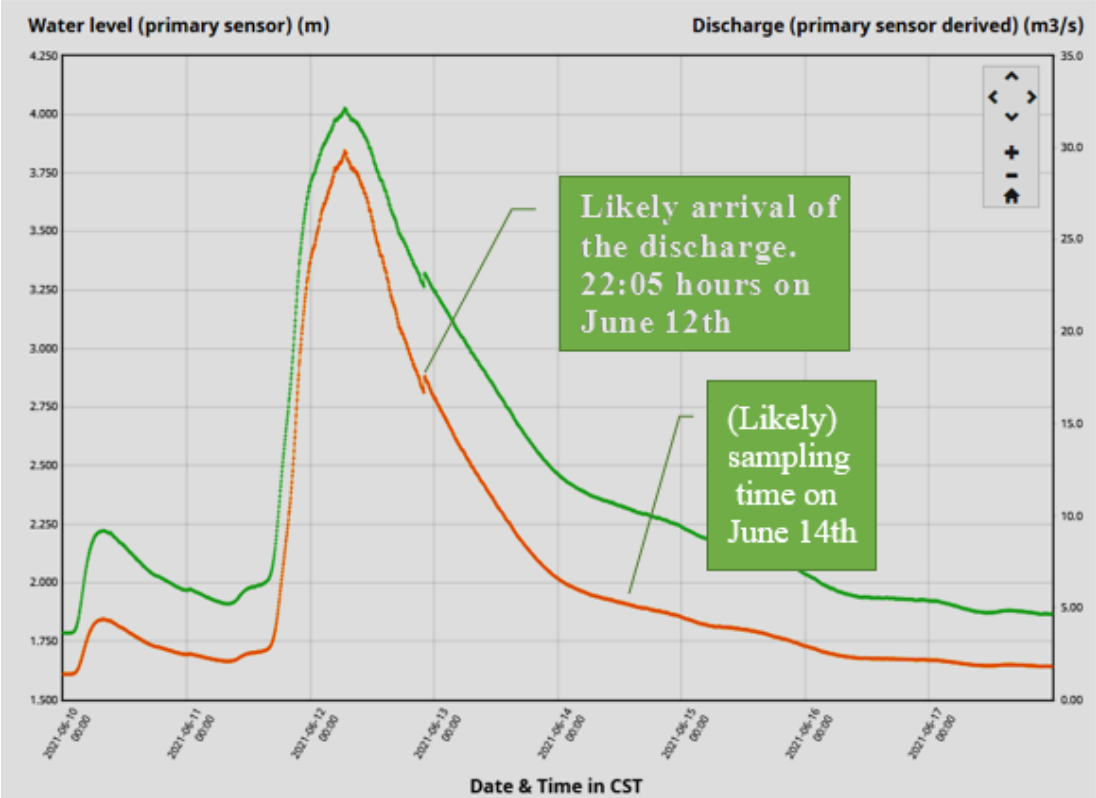
We are also aware that the measurement of Benzo-a-Pyrene levels, from another City of Regina wastewater discharge, may also have been compromised, due to delayed sampling practices. These discharge events have created concerns for the Last Mountain Lake Stewardship Group and we plan to continue to monitor any future incidents very closely.

However, we recognize that the City of Regina is currently taking proactive measures to address such planned and unplanned discharges and that funding will be increased to reduce the risk of future wastewater discharge into our lakes and rivers. We greatly applaud such actions.

Concern #1 - Inappropriate Sampling Times:

The LMLSG has considerable concerns about the sampling timelines and by default, the accuracy regarding the health and environmental consequences of the report generated by the City of Regina after the June 11th discharge. This water release occurred sometime on Friday June 11th 2021. The water sampling was conducted 3-4 days later, on either June 14th and 15th. The specific dates and times of these individual water samples aren't included anywhere within the documentation released by the City of Regina. In our opinion, all sampling times and discharge times need to be included within any report to illustrate whether or not they were taken within the appropriate timelines. We also fully expect (and request) that all samples are taken in accordance to the established CCME sampling protocols.

Using two different sources of empirical streamflow data, it is clear that the City of Regina completely missed the opportunity to sample this released wastewater. One study indicates that it would take approximately 30 hours for water to arrive at the confluence of Wascana Creek and the Qu'Appelle River at a flow of 10 m3/s. Water Survey of Canada data showed the discharge likely arrived 36 hours after the storm/release. See the below graph from Water Survey of Canada hydrometric station # 05JF005 located on Wascana Creek near Lumsden.



Assuming the sampling on Wascana Creek was conducted midday on Monday June 14th, the samplers missed sampling the actual discharge volume by a day and a half (or longer), dependent upon the time when they actually took their samples. (At best, they might have sampled the last remaining remnants of this release). Their sampling unfortunately occurred when the streamflow was almost back to the pre-event levels.

Recommendations:

a) Work with EPCOR and the Water Security Agency to develop strategies (and graphs) to predetermine when various discharge amounts will actually reach various downstream sampling locations to ensure sampling takes place during the actual discharge event, and not prior to or well past the time when the discharge will arrive.
b) Ensure protocols, equipment and funding is in place to allow for such emergency sampling to occur during the evening hours or during weekends/holidays, etc. (Sampling may be required during the middle of the night).
c) Immediate notification of any downstream stakeholders as well as Saskatchewan Health of any untreated wastewater release.

Concern #2 - Not sampling Last Mountain Lake.

The memo sent out by the City of Regina stated that 98% of the discharge is expected to proceed towards the Qu'Appelle River and Last Mountain Lake. We agree that Last Mountain Lake (LML) would have received the majority of this discharge (pollutants).

Supporting this assertion:

I. Wascana Creek and the Qu'Appelle River (at Lumsden) both had a significant increase in water volume flowing past their locations from the storm (and to a lesser extent, from the wastewater release), both which quickly returned to their original levels. This increased volume of water was never released though the Craven hydraulic structure as can be noted by the constant and minimal discharge rate of 1 m3/s through this structure during this time period. (Basically, this dam was mostly shut down). Therefore, this huge increase in flow could have only flowed into LML.
II. LML had a significant and rapid elevation increase recorded on June 16th. (This elevation increase cannot be associated with any secondary rainfall event as only dry weather ensued).

Therefore, our question to the City of Regina is why would there not be any water sampling done on Last Mountain Lake, considering that all this wastewater discharge ended up there? Additionally, lake reservoirs are much more prone to retain pollutants than streams/rivers are, creating accumulation concerns.

Recommendations:

a) That a water quality baseline be established by the City of Regina on LML at both the Valeport Marsh area (entrance to the lake) and at Lumsden Beach (the nearest public beach).
b) That (time appropriate) water samples are always obtained from the above two locations following any discharges by the City of Regina.
c) That the City of Regina partner with the LMLSG and share with our stewardship group, the analytical results of any baseline and discharge samples taken on LML.

Concern #3 – Time Line of Pasqua Lake Sampling We've established that during this particular event, virtually none of the contaminants proceeded downstream past Craven. One must wonder why resources would be used to sample numerous locations downstream towards Pasqua Lake in this particular instance? While we fully acknowledge that sampling is required to be conducted if there was any discharge heading downstream towards Pasqua Lake, this is not always the situation. Surely these resources could be better utilized whenever the Craven dam is closed. Using such results would skew any subsequent data-averaging. (We understand that the City of Regina does not have any control over the flows leaving this structure, but these flow volumes are readily available to the City).

The second observation here is that if there were any contaminants flowing downstream beyond Craven, the sampling the City of Regina conducted (likely on the 15th of June) would have completely missed identifying the presence of any such contaminants. This would result in pollutants flowing into Pasqua Lake undetected.

Once the discharge reached Lumsden it would have taken approximately 15 hours (at the flow rate 10 m3/s) to reach the Craven dam. Then, at the flow rate of 1 m3/s it would take an additional 50 hours to reach the Highway #6 sampling point and 80 hours more to reach the mid-way sampling point on grid road 640. Flows to Pasqua Lake would take another 80 hours beyond that. Assuming that the discharge reached the Qu'Appelle River sometime on the 14th of June, the contaminated discharges would not have reached the first sampling point (downstream of Craven) until June 17th, not have reached the mid-point sampling location until June 18th and not have reached Pasqua Lake until June 24th. Sampling these three locations for contaminants on the 15th of June was not beneficial.

Recommendations:

a) Prior to utilizing resources to conduct water sampling downstream of Craven, ensure there is actual flow proceeding past this point. Perhaps a benchmark discharge rate could be established as to when such sampling needs to occur?

b) Once sampling is deemed necessary downstream of Craven, ensure appropriate sampling time lines (dictated by the flow rates) are implemented in order to detect contaminants and maximize the effectiveness of the sampling program.

The Last Mountain Stewardship group has considerable misgivings over the implementation of "data averaging" to determine whether any water quality concerns exist. Comparing the current testing data to the recent "averages" from the nine sampling points is not the most accurate or preferred method to determine the impact of any wastewater release. This technique should not be used for a number of reasons. "Averaging" can easily skew the results, making the conditions appear much better or much worse than they actually are.

It was noted that five different Enterococci counts upstream of Craven were each in excess of 350 enterococci/110 ml. These numbers are extremely high. I believe the Geometric Mean Concentration for recreational waters is ≤ 35 Enterococci/100 ml. and the single sample maximum concentration should be ≤ 70 Enterococci/100 mL. The sample results significantly surpass those limits. Would not values this high pose a possible health risk to swimmers once it entered Last Mountain Lake?

The memo contained the statement "*Several other parameters were above the limit set out by the Surface Water Quality Objectives and are typical of historic sampling averages between 2018 and 2020. This is indicative of normal conditions in the waterway*". This statement appears to imply that one should be satisfied with simply maintaining the (exceedingly poor) status quo of these downstream waterways, even if their parameters are above the current water quality objectives. Everyone's aim should be trying to meet or surpass the aforementioned Surface Water Quality Objectives.

We are pleased to learn that the City has developed an immediate reporting system whereby wastewater reports will be available to downstream users, in the event of any future discharges. I understand that we have recently been added to this contact list.

We look forward towards working with the City of Regina in their efforts to minimize the effects their community creates for downstream communities and waterways. (EPCOR did not respond to our contact request). Please keep us appraised on any changes you make to your downstream sampling protocols.

Yours sincerely,

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www.lmlsg.ca