

From: [Kyle Loring](#)
To: [Kevin Cricchio](#)
Cc: [Marlene Finley](#)
Subject: PL16-0056 -- Evergrn Isls response to Watershed Co memo
Date: Friday, March 3, 2023 11:01:25 AM
Attachments: [Evergrn Isls rspnse to TWC response.pdf](#)

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Dear Mr. Cricchio,

I've attached a letter on behalf of Evergreen Islands that addresses the memo that The Watershed Company ("TWC") submitted to Skagit County to respond to Evergreen Islands' November 2022 communication. Attached to that letter is a memo from Dan McShane, the licensed engineering geologist who concludes that, like the earlier Wood consultant report, TWC overlooks that the purpose of the remand from the Board of County Commissioners was to evaluate the proposed mine's potential impacts on the unstable bluffs northwest of the mine site. The TWC document does not mention these bluffs. Instead, it continues to focus on unstable bluffs to the west and southwest of the proposed mine site. Consequently, the applicant hasn't provided a response to Michael Cerbone's March 23, 2021 letter, and that work must yet be completed.

I was surprised that your office didn't notify Evergreen Islands that you had requested, and then received a memo from TWC, and that we had to learn about it through an incidental visit to the County's project website. Since Evergreen Islands is the party that filed the appeal that led to the County's request for a review of the mine's groundwater impacts on bluffs to the northwest, I ask that you keep Evergreen informed of such developments in the future.

Best,
Kyle

Kyle A Loring (*he/him*)
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By Email

March 3, 2023

Kevin Cricchio, Senior Planner
Skagit County Planning and Development Services
1800 Continental Place
Mount Vernon, WA 98273
kcricchio@co.skagit.wa.us

Re: File No. PL16-0056 – The Watershed Company Response to Evergreen Islands communication of 11/18/2022 re: Lake Erie Pit

Dear Mr. Cricchio,

I'm submitting this letter and attached analysis from Dan McShane on behalf of Evergreen Islands ("Evergreen") to respond to a memorandum that you received from The Watershed Company ("Response") in response to Evergreen's November 2022 missive. Before addressing the Response, I should mention that Evergreen was disappointed to have to learn about it through the Skagit County Planning & Development Services ("PDS") website. As the party that successfully appealed the inadequate original groundwater reports for the site, Evergreen has a reasonable expectation that it would be informed when the applicant and the County prepare or receive new reports regarding the site's groundwater characteristics. This is particularly true of documents expressly titled "Response to Evergreen Island [sic] communication." We ask that PDS ensure that it communicates such materials to Evergreen in the future.

With regard to the substance of the Response, we have attached a letter from Dan McShane, a licensed engineering geologist and the expert who diagnosed the flaws in the initial groundwater review for the proposed Lake Erie gravel pit, that explains that the Response also ignores the potential for the mine to increase the risk of landslides for the neighborhood to the northwest. Mr. McShane concludes that "I remain very concerned about the potential impacts to groundwater levels and the stability of the bluffs to the northwest of the mine in the absence of an assessment of the mine's impacts on those areas."

Mr. McShane reached this conclusion after identifying the following flaws in the Response and earlier groundwater reviews:

- The Response does not identify or discuss the springs on the bluffs to the northwest of the proposed mine in its review of the earlier reports. These springs, which have never

been evaluated notwithstanding that they lie downgradient of the mine, were the primary reason that the Skagit Board of Commissioners reversed Hearing Examiner approval of the mine. Mr. McShane notes that if recharge to groundwater that feeds these springs is increased, the frequency and magnitude of groundwater-driven landslides will increase. Nonetheless, the Response makes no reference to them, instead discussing unstable slopes to the west and southwest of the proposed mine.

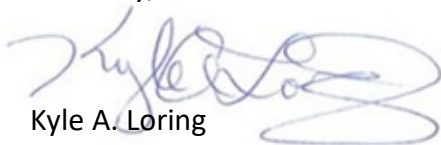
- There are significant discrepancies in the groundwater elevations identified by different applicant reports. While the Response asserts that no significant discrepancies or inaccuracies were found in the data, the water levels measured directly by Northwest Groundwater Consultants were 50 feet and 35 feet lower than those identified on the groundwater contour map produced by Maul Foster Alongi in 2016 and 2017. This large discrepancy casts doubt on the accuracy of the elevations the application presumed for the other wells that were not directly measured.
- The groundwater flow and potential changes to the groundwater flow toward the unstable bluffs has not been evaluated. Ultimately, there are no data regarding groundwater elevations between the proposed mine and the unstable bluffs to the northwest of the mine. The County requested this information nearly two years ago in its March 23, 2021 letter to Bill Wooding, which required an assessment of the following specific site elements:
 - Analysis of the landslide risk arising from the potential for increased groundwater migration to the west/northwest of the mine due to the proposed expansion and attendant removal of soil and vegetation which could alter groundwater behavior in the vicinity of the mine.
 - Analysis of the presence of springs on the coastal bluff to the northwest of the mine that are at an elevation down gradient of the inferred groundwater level.
 - Respond to the testimony of the professional geologist [Dan McShane] who identified that the proposed mine expansion will create an increased landslide risk.

The Canyon Environmental Group (“Canyon”) proposal that the applicant had obtained to answer these questions could have done so. The applicant inexplicably chose a different consultant who did not carry out the scope Canyon had proposed, and who declined to conduct the analyses that PDS had requested. The Response likewise omits any analysis of groundwater impacts on the bluffs to the northwest.

Absent this requested information, which is essential for answering whether the mine will increase the likelihood that residents to the northwest will suffer from increased landslides, the project cannot move forward. Evergreen therefore requests that PDS reiterate its request to Lake Erie to investigate groundwater flow between the site and the downgradient springs in the bluffs to the northwest, and, if studies conclude that the mine will increase the groundwater flow to those bluffs, whether the increased flow will increase the instability of those bluffs.

If you have any questions, please do not hesitate to contact me at 360-622-8060 or kyle@loringadvising.com.

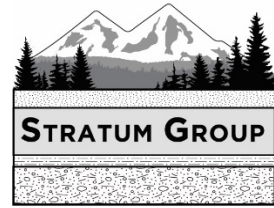
Sincerely,

A handwritten signature in blue ink, appearing to read "Kyle A. Loring". The signature is fluid and cursive, with a large loop at the end.

Kyle A. Loring

Cc: Marlene Finley, Evergreen Islands

Attachment: Stratum Group Response to The Watershed Company Response



PO Box 2546, Bellingham, Washington 98227

March 2, 2023

Re: **Response to:**

The Watershed Company Response to Evergreen Islands communication of 11/18/2022

As a licensed engineering geologist who has been part of the Lake Erie gravel pit review for three years, I am offering feedback on The Watershed Company's review of the original groundwater flow assessment that the Board of Commissioners deemed inadequate. Regrettably, The Watershed Company response letter listed as a 'Geologic-Hazard Site Assessment Third Party Review' on the County website does not support moving forward with project review. The Watershed Company did not identify or discuss the springs on the bluffs to the northwest of the proposed mine in the review of the reports. Furthermore, in the review of the groundwater elevations, The Watershed Company did not identify a very large discrepancy in the groundwater elevations between the groundwater reports prepared by Maul Foster Alongi (2016 and 2017) and Northwest Groundwater Consultants (2019). The review also failed to discuss that the Wood (2022) geology hazard site assessment was not responsive to the County's specific requests to "Analyze the landslide risk arising from the potential for increased groundwater migration to the west/northwest of the mine due to the proposed expansion." These notable omissions prevent the response from being relevant to the necessary review.

Springs northwest of mine

The Commissioners determined that the groundwater flow to the springs located to the northwest of the mine was essential for evaluating project impacts, but it has not been addressed. Maul Foster Alongi provided a Hydrogeologic Site Assessment Report (September 28, 2016). The purpose of that report was to meet the requirements of Skagit County Code 14.16.440(8)(b):

- (b) A report by a qualified geologist, hydrogeologist or licensed engineer characterizing the area's ground water including, but not limited to, the following information:*
 - (i) A description of the geology and hydro-geology of the area including the delineation of aquifer, aquitards, or aquicludes (confining layers), hydrogeologic cross-sections, porosity and horizontal and vertical permeability estimates;*
 - (ii) Determination of the direction and velocity of ground water movement, water table contour and potentiometric surface maps (for confined aquifers), if applicable; and*
 - (iii) A map containing the limits of the mine, buffer zones, location of all ground water wells within 1 mile distance down gradient from the property boundaries,*

location of all perennial streams and springs, and definition or specification of locations of aquifer recharge and discharge areas.

But the Maul Foster Alongi report (2016) did not identify the springs or streams located to the northwest of the property. Subsequent reports by Maul Foster Alongi (2017) and Northwest Groundwater Consultants (2019) also did not identify these springs.

In my comments on the project dated October 12, 2020, I pointed out that groundwater fed springs are located on the slopes to the northwest that were not identified in the Maul Foster Alongi (2016 and 2017) and Northwest Groundwater Consultants (2019) reports. Based on previous work I had done on these slopes, I noted that elevated groundwater levels were a factor in the landslides on these slopes.

Role of groundwater on the stability of the slopes to the northwest

The Wood Geology Hazard Site Assessment (2022) did not identify the springs and made no attempt to assess the groundwater flow to the springs even though this was a specific item requested by Skagit County Planning and Development Services. Wood appears to have been unaware of the groundwater springs. The Wood report used the same groundwater contour map as the Maul Foster Alongi (2017) report. The Wood assessment provided no assessment of the steep bluff areas to the northwest of the mine. The rationale for not assessing the slope was based on the assumption that groundwater does not flow to the bluff. The role of groundwater flow to the bluff remains unevaluated.

I submitted my original comments (October 12, 2020) because I have been on the slopes to the northwest and recognized that groundwater levels from a mid slope area of springs have been and are a major driver of slope instability along the slope area to the northwest of the mine (pictures attached). Groundwater impacts to the stability of the slope to the northwest of the mine is why the headwall of the landslide scarp along the bluff northwest of the mine has recessed approximately 300 feet into the upland area (attached lidar image). The potential change to groundwater flow towards these springs by the removal of the glacial till cover within the proposed mine expansion has still not been evaluated. These springs were not identified in the groundwater assessment, the geology hazard site assessment or the response document.

If recharge to groundwater that feeds these springs is increased, the frequency and magnitude of groundwater driven landslides will increase on these slopes.

Discrepancy in water elevations

While the letter by The Watershed Company stated that they found “no significant discrepancies or inaccuracies in the data”, the letter did not discuss the very large groundwater elevation discrepancy reported between the Maul Foster Alongi (2016 and 2017) reports and the water directly measured at two wells by Northwest Groundwater Consultants (2019). The water levels

measured directly by Northwest Groundwater Consultants were 50 feet and 35 feet lower than the groundwater contour map produced in 2016 and 2017. This large discrepancy strongly suggests that the groundwater elevations of the all of the other wells that were not directly measured are inaccurate and therefore the groundwater contour map is not an accurate portrayal of the groundwater elevations.

The significant difference in groundwater elevations between the 2016/2017 report and the measured elevations in the 2019 report, as well as the lack of recognition of the groundwater discharge locations on the slopes to the northwest, should have been noted in The Watershed Company review, particularly given that the County may be considering the review as a third party review.

Groundwater flow and potential changes of groundwater flow towards the bluffs has not been evaluated

There are no data regarding the groundwater elevations between the proposed mine expansion and the bluffs to the northwest of the mine.

The areas of springs on the slopes to the northwest of the mine have still not been analyzed despite the specific request by Skagit County Planning and Development Services. The proposed scope of work prepared by Canyon Environmental Group and submitted to the County as part of the application process by the applicant has not been completed.

I remained very concerned about the potential impacts to groundwater levels and the stability of the bluffs to the northwest of the mine in the absence of an assessment of the mine's impacts on those areas.

Sincerely yours,
Stratum Group



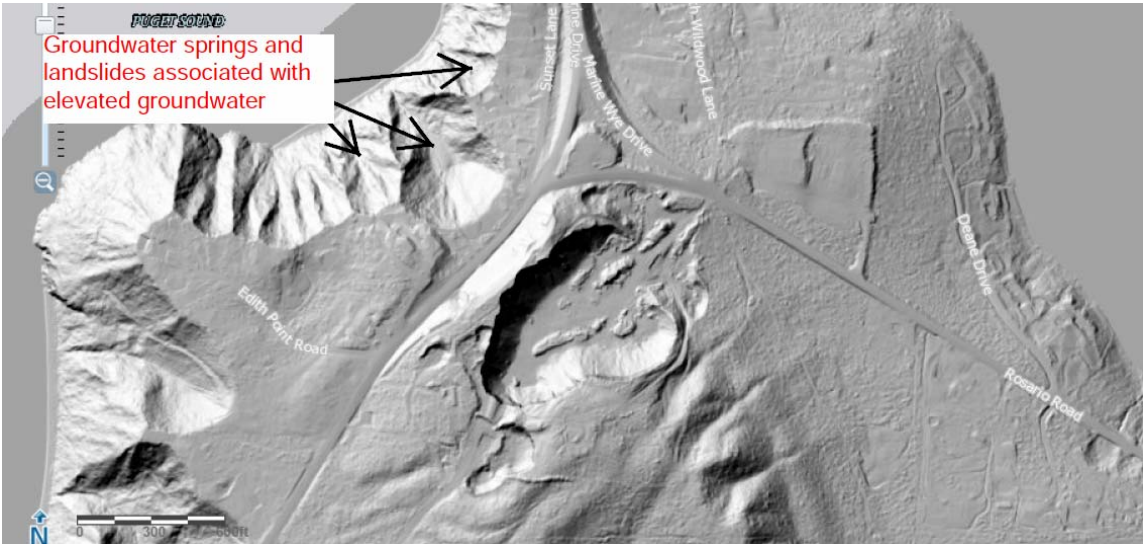
Dan McShane, L.E.G., M.Sc.
Licensed Engineering Geologist



DANIEL McSHANE



Site of recent sand blowout from perched groundwater just above the silt clay layer at bluff northwest of the mine.



Lidar image of groundwater induced slide areas and mine area