

Questions Related to Ongoing Issues

1. I have asked repeatedly for a copy of the “Water Treatment Commissioning Report” – most recently in my September 17th letter to Minister Polak. (Attachment 1 in Google Update Folder – Attachment File: <https://drive.google.com/drive/folders/0B7NnLS02oRnYV0RfbVpicTIxbVE>. I never received a reply to this letter.) According to the Permit, water is not to be discharged before a commissioning report has been submitted.

May I please see a copy of the Commissioning Report, if such a report exists? If it does not exist, why is the site allowed to operate?

2. There were many commitments made in the Technical Analysis Report (TAR) that was produced by Active Earth. These were relied on by the Ministry when deciding to grant the Permit, and also by the EAB in their decision. The EAB actually quoted them in their report. Not all commitments ended up being articulated in the Permit wording.

Can the community expect MOE and MEM to ensure that CHH/SIA/SIRM honour these commitments?

3. We have repeatedly raised the issue about the water in the “lake” or “perpetual pond” at the bottom of the pit, next to the settling pond/water treatment area. While the EAB decision deferred to the findings of Active Earth vis-à-vis the water at the bottom of Lot 23, there is mounting evidence that the reports of Dennis Lowen (Attachment 2 in Google Drive Attachment Documents File) and Alan Kohut (Attachment 3), which conclude that there is ground water at the pit bottom, are accurate. Throughout the entire summer, and months into severe drought conditions, water was always present at the pit bottom; with the recent rains the “lake” has now returned.

I expressed concern over this issue to Al Hoffman with MEM in June of this year, and through an FOI request, we have obtained the correspondence between him and Matt Pye over this issue (Attachment 4, page 4). Matt Pye dismisses concerns by arguing there is no aquifer, that water at the pit bottom is rainwater only, and that the water remains over the summer months “because it is deep enough that it is present year around.”

Nowhere is it mentioned that SIA (perhaps with advice from AE) had attempted, without success, to pump the water out of the pond, or that there is a 15-20 foot trench blasted out from this area. The small adjacent hole dug specifically for this purpose had a pump active for months yet there was no effect on water level. (See photos in Google Update Drive – perpetual pond and settling pond photos: <https://drive.google.com/drive/folders/0B7NnLS02oRnYMIJxVVRNMVhBdlk>).

The EAB testimony of Anthony Miller (Attachment 5), the blaster who oversaw the blasting of a “15-20 foot trench” at the bottom of the site, was that a channel was blasted which drained a significant volume of water from the site at the time. A forthcoming report from Thurber Engineering reiterates that water is leaving the site without going through the water containment or treatment systems, and bypassing the “settling pond” altogether.

Why is the Ministry not taking seriously the mounting evidence that there is significant underground flow of water off this site that is bypassing the water treatment system?

4. No cover has been built over the “soil management area”. Since there is no cover on the contaminant area, in the event of a significant snowfall and then quick thaw and deluge of rain there will be a huge run-off of water from the site that appears not to have been calculated.

This type of event is not unusual at least 2-3 times a year. With the elevation of the site, the snowfall amount (and rain) can be significantly higher than at the lake elevation. 12” of snow plus 2” of rain can produce a mess, even in the best of times where there is decent drainage.

Why does the Ministry not insist that the soil management area be covered? Are there any provisions for the additional water that comes from fast melting snow (ie rain that falls after there has been a snow fall)?

Questions Related to Recent Events

1. There was a significant amount of water that was documented leaving the site on Friday, November 13th, then a breach of contact water into the main quarry on Tuesday, November 17th.

Photos and videos in Google Drive Update folder:

<https://drive.google.com/folderview?id=0ByjXcSRz392ZfktSV2dFb2x0c113MGIHa3o4cEtsVTBWQlZxdTNZSzVZcUEzOWhwbXVGZEE&usp=sharing>

This was not reported by the company or the operators (who were aware of it), but by CVRD bylaw staff and myself. The operator’s “Emergency Response Plan” (Attachment manual outlines the procedures to be followed in the case of Water Treatment System Failure/Breach (section 4.7) and Bedrock Fractures/Seepage

Encountered (section 4.8). Clearly these procedures were not followed, and only instituted as a result of third parties reporting what was happening at the site.

Given the threat of contamination to an entire community's drinking water source, why were operations allowed to continue after these breaches had been reported?

2. The incoming soil is very wet – during transportation last week in heavy rain, water and sludge was dripping out of the backs of trucks. One truckload appeared to be too heavy to dump, and three staff members were standing in the back of a dump truck appearing to be loosening the soil with shovels.

Does the soil have the moisture content it is supposed to have in order to be put into the containment cell? Was this being tested by the operators before the soil was dumped directly to the containment cell? Do you have records of this?

3. From the EAB Decision:

[75] Incoming soil will be weighed at the existing weigh scale located at the eastern entrance to the Site. The soils will then be deposited and inspected in the soil management area to ensure there are no hazardous waste soils. This area will also include a holding cell designated to temporarily store suspect or rejected soils.

[76] In addition to checking soil chemical quality, incoming soils will also be screened for soil moisture content (an issue when soils are supersaturated and free water is able to drain from the soil)

[77] Soil will be stockpiled in the soil management area. Once soil quality has been confirmed by qualified personnel, the soil may be relocated on the Site to the adjacent soil treatment area or to the permanent encapsulation area, depending on the nature of the contaminants (treatable versus untreatable).

Why is incoming soil being dumped directly off the embankment into the encapsulation cell (see google drive update folder for images)? This is blatantly at odds with the above EAB description and presents many potential problems including hazard to the liner and inadvertent acceptance of soil that should be rejected.

4. It is apparent that the settling ponds are not working as designed. There is supposed to be minimum water level and references are made to baffles in the discharge pipe to limit flow. Yet any water collected by the ponds quickly leaks out through the bottom and very little water (if any) is discharged out of the pipe.

Given the increasing evidence that the settling (or “exfiltration”) pond is not working as designed, why is the site allowed to continue to operate?

5. Trucks have been documented dripping water and soil, and the barge docked at Duke Point was photographed leaching liquid into the ocean.

Why are trucks allowed to transport the soil in unlined containers, and why is the barge not required to provide better protection?

6. The morning of November 26, SIRM staff were seen trying to thaw out pipes with a propane Tiger torch on the water treatment plant. Was cold weather put in planning for the water clarification system? There is a lack of insulation or a building to protect from cold temperatures. (See photo in Google Update Drive, Nov 26.)

Last week we saw trucks come and pump water out of the cisterns that are located at the edge of the containment cell (See photos in Google Update Drive, Nov 20.)

The water treatment system appears to be rife with problems – why won’t the Ministry halt all dumping of contaminated fill until it can be proven that the system is fail-safe?

Has the water that was pumped out been tested? Where has it been relocated to?

7. In your Soil Chemistry Report recently posted on the MoE website, you state “Soil chloride levels measured range between 216-631 mg/kg which exceeded CSR industrial land use standard of 90 mg/kg. Soil zinc slightly exceeded the CSR IL of 150 mg/kg CSR IL standard for one sample.” Then the report states that the soils “appear to meet permit requirements.”

Why are there exceedences noted, then no mention that this does not comply with the Permit?

8. Sulphur levels in both the water samples and soil samples were high, although there are no DWS levels listed and BC Contaminated Sites Regulation has only one restriction on Sulphur. It must be less than 500 mg/kg for Agricultural soil. Levels in the soil were 19700, 19900, and 31500. At the discharge, the water tested had 23.2 mg/L. In Andrew Weaver’s results from the summer, the control sample out of Shawnigan Creek had undetectable levels of sulphur.

<http://www.andrewweavermla.ca/wp-content/uploads/2015/07/ForWeb.xlsx.pdf>

Environment Alberta does have concerns about Sulphur

<http://environment.gov.ab.ca/info/posting.asp?assetid=7417&categoryid=4>

Effects of Sulphur on Soil:

Under aerobic conditions, specific micro-organisms may oxidize the S in wastes, water or soil through the reaction:

$S + 3/2O_2 + H_2O \Rightarrow H_2SO_4$ (induced by bacterial action)

Sulphuric acid increases soil acidity, solubilizes sulphates, mobilizes trace metals from soil, reduces the concentration of basic ions, decreases soil availability of nutrients, and ultimately reduces microbial activity. Acid neutralizing agents such as limestone (a mixture of calcium and magnesium carbonates), hydrated lime (calcium hydroxide), quick lime (calcium oxide) or equivalent alkaline products are suitable to buffer or mitigate these effects and should be used when remediating S-containing soils or landfilling S-wastes.

It appears that this site is introducing large quantities of Sulphur into the environment and water. Why is the Ministry not addressing this issue in its communications, and why is this acceptable to the Ministry?

Is SIRM following any of the above protocols? If they are, are they doing it in the Soil Management Area, as prescribed by the Permit, and then testing the materials before they are deposited to the containment cell? If they are, as we have seen, mixing cement into the soil that is already in the containment cell, is this a violation of the Permit? (See photos in Google Update Drive – November 19 files.)

9. From the EAB decision:

[112] The initial proposal in the TAR was that discharged water would meet BC Water Quality Guidelines for freshwater Aquatic Life. However, this was later changed as a result of the consultation process. The discharged water is now proposed to meet the most stringent of BC Water Quality Guidelines for Drinking Water use or Aquatic Life. If the water treatment system, as designed, is unable to achieve suitable effluent quality, the system design will be adjusted and, while any such adjustments are underway, effluent may be trucked to a treatment facility on an “as-needed” basis. Alternatively, additional storage tanks could be temporarily brought to the Site.

The water testing results had exceedences in a number of levels – suspended solids, turbidity, iron, manganese. Sulphur, which does not have a DW guideline amount listed, was very elevated.

Why does the Ministry downplay these exceedences and the issues generally with the water that is coming off this site and directly into drinking water sources?

Have you compared these results with any kind of control samples, taken from water before it has contact with the SIA site? Compare, for example, to Dr Andrew Weaver's control sample (Flow) in his samples collected last summer:

<http://www.andrewweavermla.ca/2015/07/16/soils-shawnigan-lake-watershed-questions/>
<http://www.andrewweavermla.ca/wp-content/uploads/2015/07/ForWeb.xlsx.pdf>

These results certainly do not meet the “most stringent BC Water Quality Guidelines”. In downplaying these issues, the Ministry creates increasing distrust and growing anxiety in the community, and contributes to an ever growing sense that the staff are working to ensure uninterrupted operations at the site, rather than to ensure that there is no risk to the environment, and no risk to the health of the people of Shawnigan Lake. The growing levels of cynicism and anxiety are themselves creating profound health effects in the people of this community, who are increasingly feeling driven to try as individuals to prevent further dumping into their watershed.

We are less than a year into the operations at this site, and there is evidence of pollution entering our drinking water systems. It is astonishing to the people of Shawnigan Lake that the Ministry allows ongoing non-compliance and contraventions of this Permit, and that the assurances and promises made to this community are proving to be increasingly hollow.

Questions related to Misrepresentation and Conflict of Interest

Pressing and serious questions arise from the relationship between CHH/SIA and the engineering company acting as the “Qualified Professionals”, Active Earth. It is clear that both MoE and MEM continue to rely on Active Earth for reports from the site, and this is disturbing for many reasons, not least of all that Active Earth engineers are potentially in a position to reap profits from the activities at the site.

Matt Pye has admitted under oath that Active Earth and CHH created a profit-sharing company, as indicated by the signed agreement from February 14, 2013. CHH and Active Earth concealed this agreement from MoE and MEM throughout the permitting process. It is clear that the Permit was granted without knowledge of

the overwhelming conflict of interest affecting the judgement of the Active Earth engineers. This also applies to the EAB decision.

There is a great deal of compelling evidence that the Qualified Professionals have been co-applicants in the Permit process, and potentially co-owners of the Permit now. Why does the Ministry not suspend the Permit until this is sorted out in court?

The EAB decision repeatedly deferred to the Technical Assessment Report of Active Earth, while negating many of the concerns identified by numerous other scientists and engineers. Now those concerns - about the design of the water treatment system (Dr Liyannage's testimony – Attachment 6), issues with Active Earths Assessments (SRA's submissions – Attachment 7), groundwater issues (Lowen and Kohut) and the actual capacity for any operators at this facility to truly capture all contact and non-contact water before it leaved this site.

The implications of the Ministry's decision to not act on this issue are very serious – the message it sends out to all of BC is that this government is fine with companies misrepresenting themselves throughout permitting processes, and that Qualified Professionals can continue to operate as such, even when serious conflicts of interest have been identified.

Why has the Ministry taken this stance, in view of the overwhelming evidence that staff have been consistently given inaccurate information by the Permit holders?

Documents filed related to this case can be found at:

<http://thesra.ca/about-the-sra/water-protection-legal-action/legal-action-archive>