August 12th, 2020

Risk Assessment of CanWhite Sands Project "Dangerous to Eastern Watershed" By "Our Line in the Sand"- a local community group

The CanWhite Sands Corp (CWS) mining project threatens SE Manitoba water quality in many ways. We urge all citizens whose water comes from the Sandstone and Carbonate aquifers to write to the Minister of Conservation and Climate, Honourable Sarah Guillemard - mincc@leg.gov.mb.ca requesting she designate both the extraction phase of silica sand and processing plant phase as one project for Environmental Assessment review, and that it be raised to a Class 3 Development with a public Clean Environment Commission hearing. Ask that there be Intervenor funding to allow for an independent and in-depth analysis of this project, rather than hearing only from one side of the story.

August 25th is the deadline for public comments on the Processing Plant approval only. They are separating the extraction phase of this project from the processing plant phase.

The link to the Vivian Sands Project Environmental Assessment Proposal (EAP) for only the Processing Plant can be found at, https://www.gov.mb.ca/sd/eal/registries/6057canwhite/index.html

Much analysis is missing from this generalized, and vague EAP, so we are identifying some Critical Risk Points that you should be aware of:

Water treatment deficiencies - Despite the EAP stating ground water impacts of the plant will be negligible, we believe close to 8 million cubic meters of water are planned for withdrawal to extract the silica sand. Most of that water (over 6 million cubic meters of water a year) must be discharged. All 17 hectares of their plant site would be ~44 meters deep (~ 14 story building) in the water used yearly. No onsite surface tank could hold this amount of water. No sustainable project would propose to use this amount!

Acid mine drainage - High pressured air forced into the aquifer to suck up the sand and water 200 feet below, will break up the shale, known to be full of heavy metals like arsenic and chromium. The sulphide in the sand and shale will turn to acid when exposed to the air, this acid will mobilize the heavy metals into the water and cause acid leaching into the water.

Neurotoxins - It gets worse. CWS plans to use a flocculent material PAM - in their outdoor clarifier (settling/treatment pond). Polyacrylamide (PAM) is nontoxic but **degrades with sun, acid and iron** into a water-soluble acrylamide monomer, a cancer-causing neurotoxin that deforms fetus' at parts per billion.(see, Polyacrylamide degradation and its implications in environmental systems 2018 Boya Xiong et al; https://www.nature.com/articles/s41545-018-0016-8

Groundwater and surface water contamination - Natural drainage from the site will be to the Brokenhead River, so with the described water volumes and acid production levels, the sand carrying heavy metals, will discharge into the Brokenhead and flow into Lake Winnipeg. The Plant site area soil is very sandy and porous. Some acid, acrylamide and heavy metals will seep into the aquifer just as occurred with a small surface spill of trichlorethylene in the 90's, contaminating all wells within 24 square kms, now called the Rockwood Sensitive area. https://www.gov.mb.ca/sd/pubs/water/drinkingwater/final_factsheet_tce.pdf

Aquifer depletion and surface slumping - Removing the amount of water that 64,000 people would use every year for 24 years is beyond the sustainable limit of the Winnipeg Formation (Sandstone aquifer) as identified by Kennedy& Woodbury's 2005 report: Sustainability of the Bedrock Aquifer Systems in South Central Manitoba: Implications for Large Scale Modelling. Removing large amounts of groundwater water and sand from one area may contribute to collapsing the sandstone aquifer shale that separates both the carbonate and sandstone aquifers, resulting in the mixing and contaminating of both aquifers, surface slumping and collapse and the formation of giant potholes.

Health impacts and degradation to overall quality of life - Freshly mined silica sand is not the same as beach sand that has had the fines removed by wind and surf for millennia. The Plant plans to be processing silica sand 24/7 presenting serious silicosis risks and noise pollution to workers and the residents of the community of Vivian. Property values will likely drop. For an analysis of potential impacts of the frac sand industry on property values in Wisconsin, see D. Parker and D. Phaneuf, The Potential Impact of Frac Sand Transport and Mining on Tourism and Property Values in Lake Pepin Communities (2013) http://www.sandpointtimes.com/pdf/Frac-Sand-Impact-Tourism-Property-Values.pdf

Below is a recent picture of the abandoned sand mine on Black Island near Hecla showing the acid leaching from the sand and the potential damage to the Brokenhead River watershed & bedrock aquifers.

Abandoned Sand Mine, Black Island Manitoba acid leaching August 2020

Courtesy of What the Frack Manitoba

For further information and action, sign a form letter to Minister Guillemard, go to www.organizemanitoba.org **Consider having your well water tested for heavy metals to establish a base line for potential future contamination.**

Word of mouth is important, in person and digitally- please spread the word about these critical risks to our communities to build support, so this process is transparent, and these concerns be addressed fairly.

Distributed by members of Our Line in the Sand - your concerned neighbours in SE Manitoba
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