Risk Assessment of CanWhite Sands Project "Dangerous to Eastern Watershed"
By "Our Line in the Sand"- a local community group
August 11th, 2020

The CanWhite Sands Corp (CWS) mining project threatens SE Manitoba water quality in many ways. We urge all citizens whose water comes from the Sandilands and Carbonate aquifers to write to the Minister of the Environment Act, Honourable Sarah Guillemard mincc@leg.gov.mb.ca requesting she hear both the mining and processing of silica sand as one Environmental Assessment Proposal, that it be raised to Class 3 Development statis with a public Clean Environment Commission hearing. Ask there be Intervenor funding to allow for an independent and in-depth analysis of this project, rather than hearing only from AECOM Engineering, who have been handsomely paid to ensure CWS gets its environmental licenses.

August 25th is the deadline for public comments on the Sand Processing Facility approval only.

Here is the link to the Vivian Sands Project Environmental Assessment Plan (EAP) for the Processing Plant https://www.gov.mb.ca/sd/eal/registries/6057canwhite/index.html . Much is missing from this generalized, vague EAP and so we are identifying some Critical Risk Points it contains in this brief.

Critical Risk Point #1 Despite the EAP stating ground water impacts of the plant will be negligible, over 7.7 million cubic meters of water are planned for withdrawal from the aquifer per year along with the sand. Most of that water (7.5 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!

Critical Risk Point #2 High pressured air forced into the aquifer to bring up the sand and water 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.

Critical Risk Point #3 It gets worse. CWS plans to use a flocculant 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 neuro toxin that deforms fetus' at parts per billion (.1 ppb_Polyacrylamide degradation and its implications in environmental systems 2018_Boya Xiong et al; https://www.nature.com/articles/s41545-018-006-8

Critical Risk Point #4 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/drinking water/final_factsheet_tce.pdf

Critical Risk Point #5 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 as identified by Kennedy& Woodbury's 2005 Sustainability of the Bedrock Aquifer Systems in South Central Manitoba:(Implications for Large Scale Modelling) contributing to collapsing the sandstone aquifer shale that separates both the carbonate and sandstone aquifers, resulting in the mixing and contaminating of both aquifers.

Critical Risk Point #6 Shale and sand are not stable. The yearly amount of sand to be harvested as described in the EAP, equals 5.5 CFL football fields square by 26 stories high. This volume of annual removal would impact far more than just the site, with sink holes forming from the voids and widespread degradation of both aquifers water quality, this risk requires a Class 3 Development CEC review.

Critical Risk Point #7 Freshly mined silica sand is not the same as beach sand that has had the fines removed by wind and surf for millennia. To says so is either willful ignorance or dissembling. The Plant

plans 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 kind of damage likely to the Brokenhead River watershed & SE Aquifers.

Abandoned Sand Mine, Black Island Manitoba acid leaching August 2020

Photo credit Don Sullivan

For further information and action, sign a form letter to Minister Guillemard, go to www.organizemanitoba.ca

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