

**CanWhite Sands – Silica Sand Extraction Project Environment Act
Proposal – File No. 6119.00
Public Comments Received From**

Tangi Bell

Oleksiy

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Trudy Turchyn

Public registry and elected officials:

Attached are my comments on the proposed silica sand extraction project for review.

I have included elected representatives since my concerns, questions and requests pertain to you as well.

Thank you for this opportunity and look forward to your correspondence.

Sincerely,

Tangi Bell

Attached Comments:

Public Registry 6119.00 Silica Sand Extraction Project - CanWhite Sands Corp

This letter is to record my opposition to the CanWhite Sands Corp Project.

My submissions, sent to the Environmental Approvals Branch(EAB) for the Silica Sand Facility review process, did not receive satisfactory answers from the proponent. They were vague, lacked detail and supporting evidence. I request my submission on the Silica Sand Extraction Project(Project) Environment Act Proposal(EAP) to be reviewed and answered by both the proponent and the Technical Advisory Committee(TAC). This would ensure full participation in the Environmental review process, potentially satisfactory answers and provide the TAC with local understanding of the area and project. Otherwise, it is just another proponent controlled virtual open house.

Elected representatives are addressed in my submission as questions and requests pertain to them as well.

Water quality

February 1, 2021, Springfield residents filed a complaint to the Manitoba Water Branch for discoloured water, sulphur smell, swampy taste, new or increasing iron levels/staining and other issues concerning CanWhite Sands operations and sites. The Water Branch referred to CanWhite for explanation. May 4, 2021, Director of the Water Branch advised citizens to read the pending mining proposal to assist with concerns.

The mining proposal Hydrogeology and Geochemistry Report(Report) indicates that the mining operations where *“simulated to be positive due to reduction of concentrations of iron and manganese when oxygen (air) is introduced into the aquifer or is allowed to mix with water containing lower concentrations of those elements.”...“Although the naturally elevated concentrations of dissolved iron and manganese were simulated to decrease in response to aeration or mixing, they may remain elevated above drinking water quality criteria during and following operations.”*(8.3 Part 1A)

When iron and manganese are exposed to oxygen in the aquifer discoloured drinking water comes out of our taps. The simulation indicates that a permanent and negative change, that does not meet drinking water standards may occur to Water quality. CanWhite/AECOM and presumably the Water Branch are of the opinion that this is a *“positive”* an *“improvement”*. Citizens filed a formal complaint that clearly stated discoloured water, among other things, is unacceptable, not an improvement. As the complaint was never independently investigated by our regulators it is unknown what exactly caused the discolouring and brown waters. It could

also have been turbidity from operations. The handling of Manitoba citizens complaint has destroyed all public trust in our government and system.

- Will an industry led investigation into complaints continue to be the standard going forward?
- Can you guarantee there are no negative effects to Water quality?
- When will a full investigation into Springfield citizens complaint, independent of industry, be completed by our regulators?

Although the injection of oxygenated water may reduce concentrations of iron and manganese in the vicinity of extraction wells, it is not anticipated to induce ML/ARD reactions due to the very low to absent concentrations of minerals prone to oxidation (i.e. pyrite and pyrrhotite). This is supported by the presence of very good water quality in both aquifers today.(8.3 Part 1A)

Geochemical analysis of minerals prone to oxidation were based on well aged, oxygen contaminated samples and on top of that were “*conservatively assessed*”. It is exceptional Water, award winning, world renowned because it is a deep aquifer, and has not been subjected to mining activity and the injection of aerated used mine water. Let us not tamper with it and subject it to a new under-developed, unproven mining method that has no established safe outcome; “*the first four years of sand extraction activities are expected to result in improvements and efficiencies to this proposed new sand extraction method.*” (EAP 1)

- Is the Sandilands Aquifer system a proper choice to experiment mining methods in? When has precious, finite, and exceedingly rare fresh Water considered to be a lab rat?

The Geochemical analysis in the Report is based on contaminated samples; exposure to air, time and weather. Of course contaminated samples would record “*low to absent concentrations*” for heavy metals. Still core samples gave high values for arsenic 30.4 ppm, barium 30 ppm, boron 70 ppm, chromium 58 ppm and selenium 13.1 ppm. Selenium was also found in the Carbonate, shale and sandstone. Acid generating material in the sandstone, shale layers and shale aquitard were found. The amount of oxygen contained in the injection process has not been calculated. That is essential for proper knowledge of geochemical reactions.

Uranium exceeded screening criteria yet no further testing for radium occurred. Concretions and oolite nodules were not tested for the presence of sulphide, selenium and heavy metals. The geochemical analysis is incomplete. It does not provide adequate information to prevent environmental contamination.

“Until the metal leaching behaviour of selenium and other trace elements has been assessed in greater detail, waste derived from the Winnipeg Shale and Red River Carbonate should be managed conservatively in accordance with the Materials Management Plan.”(7.2 Part 1A)

- Of course conservative management of tailings is appropriate. Not running extensive tests to eliminate uncertainty of geochemical reactions is deplorable. The drinking Water for Manitobans is at stake. Will a comprehensive Report on geochemical reactions be provided for the review?

- Will a study of all oxygen sources, amounts, types (dissolved, gaseous), distance and direction of travel from Project operations be completed to understand the full geochemical reaction?
- Have tests for sulphide and heavy metals been run on the concretions and oolite nodules? If not, when will a thorough geochemical analysis with samples correctly handled and secured take place?
- Water in the area is high in fluoride, arsenic, and uranium. Will a study to determine if injection of aerated water and mining will increase levels beyond safe drinking water recommendations be undertaken?
- Radon gas is known to be present in the area and result from uranium decay. Tests showed that uranium sample exceeded screening criteria. Will this issue be fully analyzed to ensure that no contamination occurs?
- The geochemical analysis is inconclusive due to corrupted samples. Springfield residents complained of off taste and smell. What will come out of our taps that our senses will not be picking up that can cause disease or poisoning from this project?
- Have Emergency Measures been developed for public protection in the case of poisoned water?
- It is not responsible scientific research to move forward on a Project assessed on corrupted samples. Will regulators stop this experiment and order new properly obtained and handled samples, collected by independent experts for a new high quality geochemical test that will provide true analysis and assessment of the Project?
- Can you guarantee there will be no negative effects to Water quality?

Based on provincial records, this area is known to have elevated levels of uranium, arsenic, fluoride, and barium. As private well owners we are responsible for testing and treating it to safe drinking levels. Since 2012 the town of Virden was unsuccessful in treating its arsenic levels and in 2020 had to find a new water source. We do not have that option nor do we have the funds. Uranium would be another difficult one to treat. This has incredible implications to our municipality, community and well being. <https://www.empireadvance.ca/local-news/new-town-water-source-explored-4295490>

- I ask elected representatives, is this project and its 40 odd jobs worth the destruction of two aquifers and all that they support?

“Should project operations result in a more interconnected aquifer system comprising the Red River Carbonate aquifer and the underlying Winnipeg Sandstone aquifer, groundwater quality would tend to reflect conservative mixing of the two water types (i.e. limited geochemical reactions)”. (8.3 Part 1 A).

- Are the Proposal writers genuinely suggesting that destruction to the protective shale aquitard by the Project and mixing aquifer waters is another improvement and a viable mitigation measure to limit leaching of toxic heavy metals and other elements (i.e. geochemical reactions)?

- To go to this extreme for their client begs the question, Are the Proposal writers being objective?

To grant this project an environment act license would be an agreement to the destruction of two irreplaceable aquifers. This is not stewardship. This is a violation. There is no second chance.

“It is possible that project operations will result in increased hydraulic communication between the Red River Carbonate and the Winnipeg Sandstone within the Project Area due to fractures and borehole annuli that may extend across the Winnipeg Shale aquitard.” (4.3.2. Part A)

Hydraulic communication, is prohibited by The Manitoba Groundwater and Water Well Act; Well Standards Regulation. https://web2.gov.mb.ca/laws/regs/current/_pdf-regs.php?reg=215/2015

The mere possibility that the project, “due to fractures and borehole annuli” (wells) will result in contamination should stop it NOW.

Over the proposed 25 year life of the Project thousands of extraction/injection wells and other unaccounted geological assessment wells will be drilled. The incredible assault that drilling over 500+, 16, 10, and 7 inch boreholes, larger than typical residential wells, in groupings of 7, spanning 50-60, or 60-70 m diameter, spaced 60 m apart, will have on this protective layer is untenable. Including the additional stress put on the aquitard from injection and caverns created by sand removal, hydraulic communication, a violation under Manitoba Legislation, will surely occur. It is disgraceful that this application for an Environment Act License is being considered for a mine method that will create obvious destruction to an aquifer system.

November, 2020, Silica sand extraction well, Vivian, MB. Image, used with permission.



Injection wells

CanWhite extraction wells are also injection wells. CanWhite has been operating since 2017 under temporary authorizations to withdraw and divert groundwater. There is no record of required permitting “to construct or seal an injection well, or do any work in relation to the construction or sealing of an injection well, except as authorized by the Director” (38(1) Groundwater and Water Well Act)

- Have permits been issued for all CanWhite injection wells since 2017?
- If not, what policy, staffing levels, qualifications, will be put in place to prevent this oversight?
- Has sufficient information about the Project been communicated to our regulators to effectively understand the project in order to protect the environment and human health?

The Numerical Groundwater Model simulations fail to examine the actual planned near 100% injection of used mine water into the aquifer system with 7 extraction/injection wells producing simultaneously. The Report does not disclose the actual percentage value of the injected water. A finite-element code FEFLOW v.7.3 method was used to model steady state predictive and transient simulations for only 0% and 50% injection volumes on “one production well”. No near 100% injection model was simulated. To simulate 50% injection the pumping rate or water withdrawal, was reduced by 50%. The modelling report assumes less withdrawal equals less injection.

“ Scenario 1 (0% re-injection): Pumping Rate = 2,998 m³/day (550 US GPM)”

“ Scenario 2 (50% re-injection): Pumping Rate = 1,526 m³/day (280 US GPM)”

Water is never injected in the modelling study, just the withdrawal rate is reduced.

CanWhite has been mining since 2017. The May 4, 2021, Manitoba Water Branch reply to Springfield citizens complaint, confirmed that CanWhite extraction wells had monitors placed in the injection wells.

- Why was this monitoring data, taken during actual extraction operations, withheld from the EAP and the Report?

“The vertical gradients between the two aquifers are downward and near neutral such that the magnitude of any inter-aquifer exchange during and following project operations is likely to be small. (8.3 Part 1A)”

Injection will change these vertical gradients. Injection of aerated mine water into the Sandstone Aquifer will create a localized high water pressure. This pressurized water will seek the lower pressure, Carbonate Aquifer, and increase stress to and further breach the aquitard resulting in “hydraulic communication”. Both aquifers are now subjected to the injection of aerated mine water. No aquifer in the Sandilands system is isolated or impervious to CanWhite mining operations. Groundwater flow patterns will conceivably spread this mixture beyond the specified mining zones and corrupt other known aquifer systems.

- The Report does not provide data on the pressure. What is the pressure amount used for injection? What is the increase of pressure to the aquifer from injection wells?

- What impacts to groundwater flow patterns?
- What impacts to rural well users? Will this result in turbidity, clogging and damage to household water systems, pumps, filtration and pressure tanks?
- Can you guarantee that no negative effects will occur to Water quality?

*“the removal of sand will **permanently** increase the effective porosity and storativity of the Winnipeg Sandstone aquifer within the Project Site through the annual extraction of material and resulting creation of void space” (7.2.1 Part 1A)*

This is permanent, irreversible, an impact of grave consequence and devastation.

- How will these changes impact water flow patterns?
- **How will Project operations effect the nearby saline boundary?**
- Will the “void space” trap oxygen? The Report does not study these impacts from extraction operations; sand removal is the concept of the Project, yet it remains a mystery.

Injection wells can over pressurize resulting in fractures to the limestone. As the limestone is considered a crucial support structure in the prevention of subsidence it is alarming that the Report did not analyze and provide this requisite information.

- What is the safe pressure limit to ensure integrity of the limestone, the shale aquitard, and the integrity of the aquifer system?

Springfield citizens complained of gross changes in the smell and taste of well water. Aerated used mine water injected into the sandstone will pass through a degraded aquitard into the carbonate aquifer. Oxygen will create favourable conditions for the proliferation of iron bacteria and aquatic fungi which cause undesirable tastes and odors. Fungi in drinking water pose serious implications to human health i.e. allergies, infections, rashes, chronic fatigue, brain fog, cancer. In some instances, water treatment is ineffective.

We are told that water injection will pass through a UV Treatment system. The Project extracts a sand/water slurry to a dewatering station that is not described. Concerned citizens indicate it may be an open top sea-can with a slit on the side that turbid water is seen tumbling out into a series of other open top sea-cans, with hoses and a return to the extraction well. UV light needs clear, particulate free water to work effectively. The process obviously creates turbidity. The EAP and the Report do not contain data to confirm effective UV sterilization.

- Has the UV treatment been verified 100% effective? Where is the data?
- Experimental mining commenced in 2017. What treatment was provided for this water and where is that data?
- Can you guarantee there are no negative effects to Water quality?

August, 2021, silica sand extraction in LSL quarry south of Vivian showing slurry pumped into open top container and funnelled into subsequent open containers. Image used with permission.



Slurry /Return water return line

The Proposal is devoid of any substantiating evidence to support a working slurry system. Citizens have observed no attempt since 2017 of a system of “2 m wide...slurry pipe right-of-ways...positioned at ground level...diverted underground at road crossings...using existing culverts where possible...elevated over crossings” at any silica sand extraction site.

*“Slurry and water return line will be inspected on a daily basis, and after extreme weather events, to check for leaks and/or breaks in the line. If leaks or breaks in the line are detected, appropriate spill containment and clean-up measures will be applied **as soon as feasible**” (6.9.2 Part2)*

The “as soon as feasible” response to a leak or break is **offensive**. August 24, 2021, virtual open house, CanWhite mentioned installing pressure transducers to automatically shut down the slurry lines in the event of a leak but again no supportive material for an automatic shut down system has been provided.

- At what pressure will leak/break detection initiate? Will it detect small tears?
- Will containment and clean-up be started immediately?

An accidental release of slurry or return water may also occur if a break or crack occurs in the slurry and/or water return line. Accidental releases, depending on the type and quantity of substances released, have the potential to affect air, surface water, groundwater and soils, with

consequential effects on vegetation, aquatic resources and possibly human health and safety.
(6.9.2 Part 2)

The EAP does not specify what contaminants from mining operations are in the lines. These lines will contain residues of polyacrylamide from the clarifier tank. Polyacrylamide biodegrades into highly toxic acrylamide. A break or leak can contaminate surface water bodies and the underlying Carbonate Aquifer.

- In the event of a breach, How will CanWhite ensure the safety of the environment and public health?
- Can you guarantee there are no negative effects to Water quality?

Silica sand is used as an abrasive for sandblasting. The EAP does not provide any details on the wear and tear that silica, although in a slurry, has on the pipe line.

From what the community has observed on site for a slurry system (nothing) is exactly what the EAP presents on this component of the Project. This Project is not well thought out and must not receive an Environment Act License.

Aug, 24, 2021, typical extent of slurry pipes and lines observed at silica sand extraction sites. Image used with permission.



Noise and light

Example noise sources associated with Project activities include mobilization of extraction well drilling equipment, drilling of wells and operation of pump stations. (6.3.3 EAP 2)

During the virtual open house, CEO and President of CanWhite stated “*concerns like subsidence, noise, traffic, dust to name a few and we have studied these as well and have provided results, put it in our reports and will discuss them here today*”. AECOM stated “*certainly we will abide by any local bylaws associated with noise*”. This summer local citizens were subjected to CanWhite operations 24/7. Rm of Springfield By-Law 19-11 restricts construction/excavation work between 11 pm-7am and weekends 11 pm-10am. CanWhite operations did not respect this law even after complaints were placed to the municipality. Operations have only consisted of 1 well extracting. We do not know what 7 operating simultaneously will sound like because the EAP is entirely lacking a measured decibel noise study on all equipment and operations. It also avoids any significant study on light pollution and impacts to wildlife and humans. Further, a cumulative noise impact study is missing on the entire proposed 24/7/365 project; mining, processing and rail transport. This avoidance to reveal true operation impacts and disregard for the local community is inexcusable, the entire Project should not be granted a License.

- Since a continual pressure needs to be maintained at the well heads and slurry lines, how will CanWhite shut down operations to abide by local bylaws?
- Will a significant study on light pollution impacts to wildlife and humans be provided?
- Will a comprehensive noise impact study on the project and on the cumulative impacts from the entire mining, rail way and processing operation be provided?

The following link is to video taken by a concerned citizen of 1 operational well August 24, 2021. It clearly shows mitigation measures do not work.

Video used with photographer’s permission:

<https://1drv.ms/u/s!At1JStwMd4fngRENwwOUrCNC7gpO?e=acw2s5>

GHG emission

Cumulative emissions for the overall proposed CanWhite Project, processing, rail, extraction and all other residential and industrial users on a proposed new gas line extension to the processing facility, have not been calculated. The proposed new line will run from west of Dugald to Vivian. The true calculation of Project emissions may go over 50 kt per year resulting in required notification to Statistics Canada.

Both the CEO/President and the VP Operations/Engineer of CanWhite Sands have stated that the resource could handle a 100 year mine life. This claim is feasible as the Project only assesses one of four CanWhite silica sand claims (BRU) at 25 years. CanWhite Sands website “*technical report, resources and reserve estimates and qualified persons*” has a note, possibly made by the web page designer, that references adding another claim “[*ntd: with[sic] a technical report on DEN property be included in the website?*]”. Plans to meet Canada 2050 reduction targets are requirements under Bill C-12 Canadian Net Zero Emissions Accountability Act.

- Will provincial regulators calculate GHG emissions resulting from all CanWhite operations including probable connections onto the proposed gas main extension?
- As a precaution, will provincial and federal regulators acknowledge the distinct potential for operations to extend beyond 2050 and enforce compliance?

Stantec Reports

August 11, 2021, I sent a request to M. Gifford of AECOM for the 3 Stantec reports referenced in their EAP prepared for CanWhite Sands Corp. My letter remains unanswered.

According to CanWhite's website;

Technical and scientific information relating to the BRU Property included on this website is derived from, and in some instances is an extraction from, the "Preliminary Economic Assessment BRU Property, Manitoba, Canada" dated ,[sic]2020 with an effective date of February 27, 2020[sic] (the "PEA" or "BRU Report"). The authors of this report are Keith Wilson, P. Eng., Greg Gillian, QP, Ivan Minev, P. Geol., and William Turner, P. Geol. Please refer to the PEO,[sic] a copy of which is available on the Company's website, for additional information regarding the BRU Property. Readers are encouraged to read the PEA in its entirety, including all qualifications, assumptions and exclusions that relate to the scientific and technical information set out in this website [sic]

On searching the Stantec website, the referenced report that is encouraged to read could not be located.

August 12, 19 and September 2, 2021, I sent Stantec, requests for the referenced reports.

August 16, 2021, called Stantec, transferred to one of the authors of the report, Keith Wilson, message was left on his voice mail. There has been no response to my emails or phone message.

Since the Stantec reports are part of the EAP they are part of the assessment process and should be made available for verification, not ignored and suppressed.

September 9, 2021, I sent a letter of request to Jennifer Winsor, EAB for the following reports that were referenced in the EAP. There has been no response to date.

Stantec. 2021. Preliminary Economic Assessment BRU Property – Geotechnical and Geological Model Update, Manitoba, Canada. Report submitted to CanWhite Sands Corp. July, 2021.

Stantec Consulting Ltd. (Stantec). 2019. Technical Report Bru Property Manitoba, Canada. Report submitted to CanWhite Sands Corp. May 21, 2019.

Stantec. 2020. DRAFT Preliminary Economic Assessment BRU Property, Manitoba, Canada. Report submitted to CanWhite Sands Corp. March 4, 2020.

- These reports are critical in the review process, When will these reports be made available for the review process?
- Will the review process stop until these reports are acquired to allow the public and TAC to review the reports?
- Does TAC have this critical information available for review and verification?

Groundwater modelling assumes that limestone bridging material will remain intact as depicted in Stantec (2019). (6.3 Part 1A)

Geotechnical or geomechanical effects of removing sand from the aquifer during production are not considered in this analysis. (6.3 Part 1A)

The above reference made to an undisclosed 2019 Stantec technical report cannot be verified. It also contradicts the statement that no geotechnical or geomechanical impacts were studied. The removal of sand is a major component of the Project and must be meticulously studied. CanWhite/AECOM has a responsibility to present a thorough, comprehensive analysis for the review process. To skip over a study that would ascertain the validity and safety of a Project can be considered malfeasance. This Project must be denied a Licence.

Follow-up Plans

"are intended to be 'living documents' that will be updated periodically, as needed, and will be available on-site as reference documents for Project staff and contractors."

- 'Living documents' give far too much unsupervised leeway, lacks transparency and must be eliminated.

Follow-up plans contained in the EAP are contradictory to the text in the EAP or simply envisioned and undeveloped to a proficient level. The materials and procedures in the Progressive Well Abandonment Plan differ significantly to the narrative in the EAP. The Plan makes no mention of using till, mine waste materials, limestone, overs, concretions, shale and drill cuttings or removal of well casings in the abandonment of over 500 wells drilled annually. Certainly mine waste materials etc would not meet Manitoba Well Standard Regulation 7(1) "suitable for potable water" and "clean and free of contamination".

- Why are there such discrepancies?

*Each well is **anticipated** to be 16" diameter through the Quaternary Sediments, 10" diameter through the Red River Carbonate and Winnipeg Shale, and 7" diameter within the Winnipeg Sandstone (production casing).(2.5.1 Part 1A)*

The massive dimensions and the amount of wells to be used will leave a permanent potential source for surface contamination. It is crucial that the highest level of quality, safety and protocol be followed.

- How will CanWhite achieve this with contradictory plans?
- Can you guarantee there are no negative effects to Water quality?
- How will the EAB ensure and enforce that quality protocols are followed? Will government regulators be on site 24/7/365?

Photos used with permission, silica sand extraction wells, September 8, 2019, and May 31, 2020.



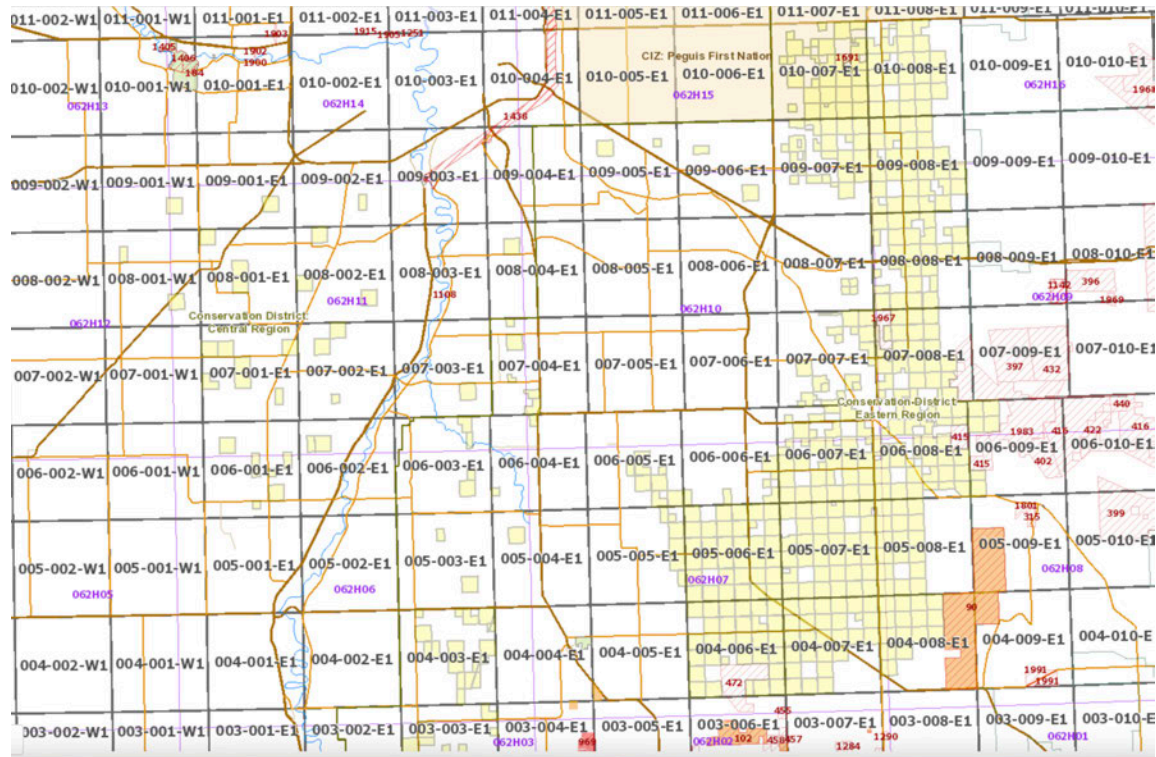
This EAP and Report was to answer long standing questions that arose from the review on the processing facility. It does not. Many details of how the systems work remain unanswered. Those questions can be found in the public registry #6057. 1090 Manitobans wrote concerns and questions on the processing facility and are awaiting satisfactory answers.

Respect Legislation and Principles

*In the predictive scenarios that investigate the outcome of increased vertical communication across the Winnipeg Shale confining unit, the **free movement of groundwater between the Winnipeg Sandstone and Red River Carbonate is permitted.** (6.3 Part 1A)*

- Is permitted? Where did this authority come from?
- Why are regulators not acting on Manitoba Legislation and terminating this Project immediately?
- Ministerial discretion is a part of Manitoba Legislation. Ministers, who have portfolios responsible for the CanWhite Project, will you commit that discretion will only be applied to increase environmental protections?
- The Manitoba Environment Act, Section 13.1(1), Agreements with other Jurisdictions, the Winnipeg Formation extends outside provincial and Canadian boundaries, Will transboundary issues be addressed?
- As the Project has the likelihood of going beyond 25 years, Will the EAB and/or the Impact Assessment Agency of Canada assess all CanWhiteSands Corp/HD Minerals BRU, DEN, ALY, RWM claims for federal jurisdiction?

Map from Manitoba Mines Branch, silica sand claims are marked as yellow blocks.



“Following the precautionary approach, impacts of the Project on water quality have been conservatively assessed, and additional characterization, monitoring and management initiatives are recommended for integration into project operations and post-closure phases.” (7.2 Part 1A)

To conservatively assess impacts on water quality is not a demonstration of precautionary approach or principle it is merely disengaging from a meticulous, extensive, discovery that is demanded now of the Report, not later after an experimental mining method is Licensed and released to the environment for the next 25+ years. The precautionary principle asserts that the burden of proof for potentially harmful actions by industry or government rests on the assurance of safety and that when there are threats of serious damage, scientific uncertainty must be resolved in favour of prevention.

- Can you guarantee there are no negative effects to Water quality.

The Manitoba Water Protection Act recognizes “an abundant supply of high quality water is essential to sustain all ecological processes, life-support systems and food production, and is paramount to the environmental, economic and social well-being of Manitoba now and in the future” and “access to sufficient, safe, acceptable, and affordable water for personal and domestic uses is internationally recognized as a fundamental right of citizens”.

- Will the Province of Manitoba recognize and honour the Manitoba Water Protection Act and pass long-overdue regulations designating the Sandilands Aquifer system a Water Quality Management Zone and prohibit silica sand mining? To my elected representative, consider this my request. I look forward to your correspondence.
- To elected officials and regulators, Can you guarantee there are no negative effects to Water quality?

Conclusion

We have enjoyed fresh, raw, safe and dependable Water from the Sandilands Aquifer; just as generations before.

We are seeing unacceptable changes to our well water quality. We can only imagine what health and economic repercussions we will suffer if this experimental mining operation is allowed to further expand on an Environment Act License.

The massive scope of this project increases the odds of a disaster. Anything to do with any level of contamination, degradation, or poisoning of Water is a Disaster. It is unclear from the Environment Act Proposal and the Hydrogeological Report that there is sufficient knowledge, ability, and principles to prevent degradation and destruction to the Aquifers, Environment and Human Health.

Given the vague and contradictory information, the significant and alarming lack of supportive evidence and technical reports, the only suitable review of the CanWhite Sands project is through a full Clean Environment Commission hearing with participant funding where respondents are sworn to truth and liable for cross examination. The magnitude of the project and risk placed on the Sandilands Aquifer system, clearly demands the Commission's participation. This Project uses an undeveloped, unproven mine method and is operating directly in Water, it is bewildering why this government did not convene the Commission immediately.

For an environmental assessment, I request the Provincial government convene a full review of the project by Manitoba Clean Environment Commission, to include public hearings and participant funding.

As an individual, directly impacted by this proposed Project, I request that it be shut down and denied any licensing.

Sincerely,

Tangi Bell

A black rectangular redaction box covering the signature area.

Hi,

As a concerned resident of the area I request a full Clean Environmental Commission hearing for this project

Thanks
Oleksiy

The sand extraction working slurry/water return system: The applicant failed to submit technical drawings, engineered sealed stamp of approval, prior to be allowed to engage in further experimentation and prior Environment Act License is granted.

Thanks
Oleksiy

Firstly, I am against CanWhite Sands pursuing a silica sand extraction project in the province of Manitoba.

The Sandilands Aquifer is the only freshwater source available for SE MB. Water is life. With no water there will be no life! There are so many bodies of water that can be affected and could potentially be contaminated by this drilling operation such as Lake Winnipeg, the Red River, Brokenhead River, Whitemouth River, etc. All are connected.

Canwhite estimates they would be drilling approximately 465 wells per year into our precious aquifer and that this drilling will not affect the stability and contamination of the aquifer which so many communities rely on for their water supply. How can they assure us that the aquifer will not de-stabilize or become contaminated with this unsubstantiated method of drilling?

Water well drillers do not mine out sand for 7 days, leaving thousands of cavities that create possible sources of subsidence and sinkholes over an ever expanding area per year. Well drillers do not send aerated mine water into the aquifer which can mobilize toxic heavy metals. Well drillers do not pass aerated mine water through a UV treatment system that will be ineffective, due to high turbidity, iron and manganese levels, in preventing the introduction of harmful microbes to the aquifer.

The Proposal from CanWhite Sands is empty of any supporting evidence; no technical drawings, no engineered stamp of approval, no physical evidence, and CanWhite Sands is requesting to be allowed to engage in experimentation and an Environment Act License to do so.

I am requesting for a Clean Environment Commission public hearing with intervenor funding as I feel this will be the way we can be assured that our water and the environment will be protected.

Sincerely,

Druanne Naayen

Resident of RM of Brokenhead

Good afternoon,

As a resident of Oakbank, the proposed CanWhiteSilica Sand mining proposal scares me. There seems to be a lot of missing information. They do not appear to be trustworthy...nor caring of our environment. I recently became aware of this project and have found two blatant discrepancies of what they say they will do and what action they have taken. I tried to attend their Q&A which they hosted and were very particular which questions were answered and which were ignored. I have two major concerns.

The first example is their drilling of wells. They indicated that they will abide by noise bylaws, and only during certain hours... the details below were from a Vivian resident who filmed the drilling of one well, which proves they do not do as they say. In their proposal they will be drilling multiple wells over the course of 25 years. (350+) so noise levels will be above what they have indicated. The first example below is from a resident of Vivian who literally went and videotaped their drilling.

"CanWhite is proposing a 24/7/365 mining and processing operation. CanWhite/AECOM mining Environment Act Proposal(EAP) rates noise levels "as minor to moderate with intermittent duration and short-term frequency." No details are provided describing the frequency or levels. August 24, 2021, CanWhite virtual open house, AECOM's Cliff Samoiloff, B.Sc. (microbiology) EP(CEA)[environmental professional, certified environmental auditor] indicated "there certainly wouldn't be any noise generating activities occurring at midnight to the morning"; "all drilling would be in accordance with local noise bylaws"; "Air quality and noise impacts are quite minimal on this project in fact they are probably negligible." The EAP concludes, minimizing clearing of vegetation, idling, and revving, using mufflers and portable noise barriers and a minimum 100 m setback from a residence, are mitigation measures to "adequately attenuate" noise and "minimize adverse effects on human health both on and off the project site." (EAP 6.3.3. & 6.6.4) Fitting vehicles with mufflers is the law. So are safety back up alarms. Unnecessary idling and revving is gratuitous fill. Vegetation is bare in winter. 55% of the project area lacks forest (EAP 4.4.1). This summer and fall, residents in and around Vivian MB once again experienced CanWhite mining operations taking place around the clock in the LSL quarry just south of Vivian MB. RM Springfield By-Law 19-11 restricts "the sound emanating from excavation or construction work of any nature" between 11 pm – 7 am and weekends 11 pm – 10 am. This law was not respected by CanWhite. Noise complaints regarding CanWhite operations to RM Springfield Councillor Val Ralke did not see enforcement of this law. After weeks of continuous noise and light pollution from the operation, a concerned citizen stood approximately 130 m east of the mine site atop a large 10 m earthen embankment, amongst trees and brush, and recorded the sound produced by CanWhite operations. Note: 2 approx. 15 m (H) x 100 m (L) silica stockpiles were also in close proximity potentially acting as noise barriers along with the embankment. The video demonstrates that CanWhite mitigation measures are ineffective. CanWhite Sands EAP is void of a certified noise study with measured decibels for mine equipment and operations. Without a study everything in the EAP and open house are unsubstantiated. CanWhite/AECOM has a duty to collect data on all noise produced and provide a thorough report. This failure must prohibit licensing of the Project. Video: Concerned

citizens; Recordings are of only 1 extraction well, not the 7 operating simultaneously as described in the EAP."

The other example is the clearing of 37 acres of trees which were under a no clearing ban from April 24-August 15th due to migratory and at-risk species being present.

CanWhite Sands Corp. hired a logging firm to clear the "TERRESTRIAL ENVIRONMENT". MB's Environment Approvals Branch (EAB) allowed this clear cutting to go forward even though an Environment Act License has not been issued and assessment is ongoing for the Vivian Sand Processing Facility.

According to CanWhite Sands Environment Act Proposal (EAP) - "Usable trees/wood will be cut and stacked at the Project Site for local use as firewood for no longer than one year or disposed of in accordance with applicable regulations." AECOM Report 1.dot (gov.mb.ca) Pgs. 67 & 82. Some neighbors were given permission to gather the wood.

CanWhite notified the Environmental Approvals Branch that clearing would occur between April 9 and April 24, 2021. The EAB's soft response; "these activities are at the company's risk as the

proposed facility." https://www.gov.mb.ca/.../6057c.../acknowledgement_email.pdf

Clearing is prohibited between April 24 and August 15 due to migratory and at-risk species being present. Why did the EAB advise NOT to proceed with the clearing?

This would have prevented destruction to the area environment and wildlife and disruption to the community. As it stands this is not in keeping with their "commitment to being a good corporate citizen um you know it's our intent to be a good community citizen here"; (Brent Bullen, COO, CanWhite Sands Corp.)

Road restrictions were in place March 6.

Logging equipment was observed being transported to the site April 12.

When road restrictions were lifted on May 3, 2021, within two weeks felled trees were either mulched or loaded whole onto semi trailers by the same CanWhite contractor. The remaining trees were shredded and the land grubbed to further clear the area.

From CanWhite Sands Environment Act Proposal, "Usable trees/wood will be cut and stacked at the Project Site for local use as firewood for no longer than one year or disposed of in accordance with applicable regulations." AECOM Report 1.dot (gov.mb.ca) pg. 67 & 82.

For neighbours who woke to the sound of the forest being razed within 2 weeks, a forest which had been used for decades for bush crafting, plant gathering, ceremony and recreation, it was distressing. Especially for the migratory birds and other animals who called this area home. Then to see the firewood they were promised to collect for up to a year disappear in a matter of weeks was further betrayal.

CanWhite's claims of "we want to be good neighbours" and "we're not coming in there to be a problem we're coming in there as a good community citizen". This is not behaviour befitting a "good community citizen".

Why were they not fined? arrested?? Why have laws if you don't hold people accountable for their actions??? This whole project is insane to me and I need all government departments to do their due diligence and ensure that the water aquifer is protected for generations to come! Please due diligence and investigate, study their proposals and please do not rush the process.

They should HALT all activities in the interim. Thank you for reading this email and hearing my concerns.

Sincerely,

Sonya May

I am a retired geologist who has worked for over 40 years in the exploration and mining industry (including several Winnipeg Formation sand projects in Manitoba) and I am a current resident of the RM of Springfield.

Over the past several years I have read the public disclosures by CanWhite Sand Corp., pertaining to the Vivian Sand Extraction Project including the recent Environmental Act Proposal dated July 23, 2021 ("the Proposal").

My interest in reading these various documents is to gain an insight into the geology of the Vivian Sand Extraction Project, particularly the shale layers at the top and bottom of the Winnipeg Formation deemed by the proponents of the project to be important aquitards that will safeguard the known aquifers of concern. Also of interest to me is the condition of the underlying Precambrian basement that may also be an aquifer not under current consideration.

It appears that only one diamond drill hole BRU 95-8 was cored and logged for lithology on the project site. Core photographs and a lithology log are said to be contained in Appendix C-1 and Appendix B of the Proposal but are absent.

CanWhite Sands Corp., has not provided to the public a description of all the geological work done with respect to:

- Type, amount and location of drilling done on the property proposed for mining.
- Thickness (or absence) and condition of the shale layers encountered in each hole.
- The nature of the underlying Precambrian basement rocks and their condition (are they highly weathered and/or fractured ?)

Perhaps the necessary geological work has been done on the property, as appears to be referenced in a report authored by Stantec Consulting Ltd, 2019, titled "Technical

Report BRU Property Manitoba, Canada, Prepared for CanWhite Sands Corp. Calgary, Alberta", but this report is not in the public domain.

Regards

Paul James Chornoby

[REDACTED]

Hello,

I live in the RM of Springfield near the town of Dugald. I depend on well water for my family, livestock, garden, and orchard. I am concerned about the possibility that the CanWhite Silica Sand project could affect the quality of the water in this area's very large aquifer. With a resource as important as water, I believe we should be careful. I am not convinced by CanWhite's assessment that their project is completely safe. The company itself paid for the assessment to be done - a serious conflict of interest.

The province should do a thorough and independent environmental assessment of this project before it is allowed to proceed any further.

Thanks,

Trevor Kirczenow

[REDACTED]

Hi,

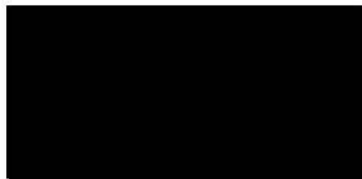
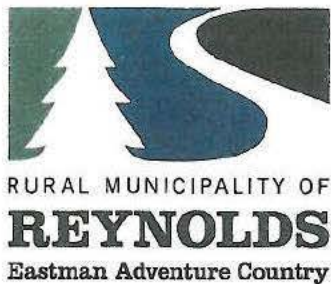
I see no reason why carefully deliberated provincial requirements have been circumvented for this particular project. Why isn't the province requiring a Clean Environment Commission hearing? Regardless of the answer to that question, the intensive promotional activities of this company, including their in-house environmental recommendation, are not compelling.

I know we've all seen Erin Brokovich and we know how badly this could go. Please conduct proper reviews for this immense project.

Sincerely,

Ken MacDonald

[REDACTED]



October 7, 2021

Dear Sirs/Madams:

Re: Public Registry 6119.00 – Silica Sand Extraction Project – CanWhite Sands Corp.

On behalf of Council for the RM of Reynolds, I am herein submitting the following concerns and questions regarding the CanWhite Sands' Silica Sand Extraction Project:

1. The room and pillar technique will be used to extract sand with water to be returned via the borehole from which the water was withdrawn – What will stabilize the sand pillars?
It is a known fact that when mixing sand and water, the sand structure will quickly collapse and, add to that, gravitational pressure, voids will be created which will compromise the floor of the Winnipeg Formation Sandstone.
2. Can the production casing be **securely** grouted, up to 200' below ground level, to prevent mixing of aquifers under the Manitoba Water Rights Act?
3. Hydrogeological and geochemical software assessments, short term test drilling and 12 hours of an air lift process have been conducted, resulting in 80% recovery of neighbouring wells within 2 days. Will expanding the operation to 24/7, eight months a year for 4 years and then another 21 years of drilling result in the same recovery rate in neighbouring wells? Are the assessments and test drill results a reasonable representation of the fully operational extraction process?
4. Is the data collected from the test drilling input into computer software to obtain results or have physical models with atmospheric conditions created?
5. Is the small sampling of area test wells a good representation of the results of almost 400 extraction wells created each year for 25 years?
6. The reports predicted solution to resolve drawdown is to lower the pump. Is it even possible that any wells were installed with the pump just below the water level to obtain minimum water supply rather than near the bottom of the well to obtain maximum water supply?
7. Why were the following plans not included in the EAP and how will the plans be reviewed by the Public and Government since they have not yet been created:
Waste Characterization and Management Plan
Water Management Plan
Progressive Groundwater Monitoring and Impact Mitigation Plan
Decommissioning Plan
8. The report predicts the aquifer water quality will be similar or slightly better upon introduction of oxygenated water. Is the short length of the testing period a good reflection of the water quality after 4, 10, 15, 20, 25 years of extraction?

9. Studies, cited in the CanWhite proposal, represent 50 years of studies which define the quality, quantity and source of water in the aquifer. These studies do not address the consequences of long term industrial mining.
10. The CanWhite proposal states that there are potentially 10,900 existing wells consisting of single household; municipal; industrial uses, all of which may be adversely affected by an untested sand extraction process. Will the Province of Manitoba require a significant bond be obtained by CanWhite Sands and future owners of this project, to provide compensation to any wells affected by this process or will Manitoba taxpayers be paying for rehabilitation/replacement of wells once water quality/quantity issues arise?

The CanWhite Sands submission is comprehensive but we feel there is important information that has not been fully addressed by CanWhite Sands or AECOM. We cannot accept the belief by these entities that the aquifer will be the same, if not better once extraction operations start.

The quality and quantity of water in our aquifer is the envy of many municipalities in southern and western Manitoba, some of which have tried to source water from the Sandilands Aquifer, in the past. Is this the right location for an untested sand extraction operation which will create minimal jobs? Since the Province of Manitoba halted the sharing of water for basic needs of other municipalities in about 2015, we trust the Province will diligently examine the CanWhite Sands proposal with a microscope.

Once this precious, life sustaining resource is contaminated, it will be too late to undo the harm caused by an untested sand extraction process.

We herewith request that the Province of Manitoba not entertain this sand extraction proposal until the results of an independent Clean Environment Commission review is completed.



Reeve Trudy Turchyn