From: [redacted]
To: Laura Friend
Subject: Re: submission
Date: March 13, 2020 4:28:38 PM

To the NRCB board,

In our response to the condition #10 we stated this question: (KDL.2 e)

"Our question for the NRCB is, if we do our new proposed engineer work, and it shows there is no leakage from the EMS, would that be sufficient to remove condition #10, Or will we need to proceed with even more tests and lawyers to show that our EMS is not at risk?"

On 2019-09-12 we received a proposal from the engineer with proposed engineering work we had asked the engineer to complete. It was to our knowledge, testing that could proof the EMS is not a risk to the environment and is not leaking. But Mr Froese was very specific in what he wanted tested. As a result the engineering work that was done had no proof that the EMS is leaking.

And so without our knowng the only test that was done was for Mr Froese' research.

Which was frustrating.

So our question was and still is: if we go ahead with more engineering work that could proof how the EMS is performing will the NRCB be satisfied with the results if there is no sign of leakage and the EMS is monitored regularly?

If yes we will go ahead.

The engineer informed me she can be here next week on the 19 or 20th of March 2020 and will have the results as soon as they are available.

On the other hand if the NRCB requires us to redo our EMS with a liner, no matter the outcome of the proposed work, the engineer work would be a waste of money! The money would be better spend on a liner.

The only option we had from Mr Froese was to reline the EMS, no matter how much engineering work we do to proof that there is no risk to the environment. Our question now for the board: Is this true, is our only option relining or can we with the proposed engineer work done, and monitoring the wells continue.

We were kindly waiting for a response to this question (not knowing we would not be responded to) before we wanted to proceed with the additional proposed engineer work. Because of this, we forewent the due date of March 12 2020.

Sincerely submitted,

Reinder and Hiltje Kramer

We will have the engineer come out and do the required testing as soon as she is available.

We will do testing every 3 years to proof there is no leakage from the EMS.

If the results of the testing shows there is leakage we will reline the lagoon so there will be absolutely no leakage.

Respectfully submitted,

Reinder and Hiltje Kramer

Kramerdairyltd

On 2020-02-11 12:08, kramerdairyltd@xplornet.ca wrote:

> To the NRCB Board.
>
> KDL 1.
>
> In response to condition #10, where our EMS "does not indicate any risks nor suggest any indication of high risks in the foreseeable future", we are not relying entirely on the ERST score in judging the environmental risk posed by our EMS. We have water well reports from 1993 until 2018 which show no major increase in levels of nitrates. Discussions with farmers, excavation contractors, and environmental engineers have told us that although non-engineered lagoons may leak in the first few years, organics and other debris will build a protective layer. This may have been proven with the initial drilling request.
>
> - *See Envirowest Engineering letter from Emily Low*
>
> KDL 2.
>
> We contacted Emily at Envirowest Engineering to inquire if it was possible to indicate any sign of leakage through testing, and she replied that it was possible. Therefore we hired her to do the work, with the permission of the approval officer Jeff Froese. The initial quote was to investigate at least 4 boreholes with depths of 4.0 to 9.0m. A detailed log of the soil lithology was to be maintained; soil samples, ground water testing, and groundwater samples would be collected. The results of these tests would have given evidence of contamination if there was contamination to be found. However, the testing was revised by the officer and the soil testing was not completed as first initiated.
>
> - *See attached letter of Quotation for Service September 12 2019, number 1 and 2*
> - See attached invoice from Envirowest Engineering 16/10 2019
>
> a) Jeff Froese advised that someone representing the NRCB be present at the drilling when it commenced. The engineer gave advanced notice to the NRCB of the day they would proceed with the testing, the 26th of September 2019, no one seemed to be available.
>
> The Approval officer's advice for us in regard to our EMS was to call others who had previously installed liners in their EMS. Asking them how their experiences with the product went, how much it cost, and their satisfaction or dissatisfaction with the liners. He discussed how we could build up the bottom with dirt that could be screened for packing qualities and porousness. However, no matter the end result of what we did through the

testing and engineer work, the Approval officer implied that the only real option we had is to invest in a fabric EMS liner or hire an excavation contractor to redo the lagoon.

Along with his recommendation in foregoing the tests, the Approval officer advised us to apply for a grant to the CAP program administered by Alberta Agriculture and Forestry which may aid in cushioning the costs of addressing the risk posed by the EMS. After applying for the first grant to assist in covering the cost for engineering, it was declined.

b) The EMS was constructed in 1991. The contractor used an excavator and dug as far and deep as the machine could reach, +12 ft. It was dry clay, and the contractor used it all for building up the barn site. It packed really well he said. The entire lagoon was dug in clay.

Because of the slope of the land (down to the North East), manure would reach the top of the lagoon on that side first when the cow number increased. In 2003 we built up the East and North side of the lagoon with clay from a nearby hill.

c) Currently, we are unable to justify that our EMS does not pose a potential risk to groundwater as this test was not completed. We have a quote from Envirowest Engineering for additional tests to detect any leakage.

- *See Leak Detection Proposal Letter from Envirowest Engineering*

d) From the discussions with the approval officer the only way to have condition #10 removed is to hand in a written plan showing how we will proceed to improve EMS with the end goal of relining or rebuilding the EMS.

e) An alternative that we are aware of, would be to proceed with the original tests proposed, along with any other procedures the engineering team would have found necessary; such as to drill into the bedrock. If proven by the completion of all tests that the groundwater and soil are not contaminated by the EMS, our EMS would be safe, and not a risk factor.

Our question for the NRCB is, if we do the new proposed engineer work, and it shows there is no leakage from our EMS, would that be sufficient to remove condition #10 Or will we need to proceed with even more tests and lawyers to show that our EMS is not at risk?

In so doing we ask for a possible extension of a month as we will not be in the country for the next 2 weeks.

Respectfully submitted,

Reinder and Hiltje Kramer

Kramerdairyltd