



Jeff Fountain
Superintendent - Environment
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April 11, 2022

Mr. James Capotosto, Director
Environmental Approvals Branch
Manitoba Conservation and Climate
1007 Century St.
Winnipeg, MB R3H 0W4

Dear Mr. Capotosto,

Re: Notice of Alteration to Environment Act Licence 960VC – File No. 557.10
Vale Manitoba Operations – CO2 Injection System

Please accept the results from the third CO2 injection trial as part of our submission for a Notice of Alteration for the installation of a temporary CO2 injection system to be set up at the Weir final discharge point, downstream of the Tailings Management Area (TMA). A CO2 injection system is needed to allow Vale more control over effluent quality, particularly pH at the weir final discharge point.

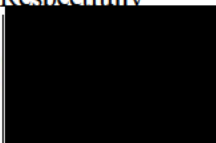
The third trial consisted of minimum hourly sampling over the course of six hours for 5 consecutive days. Samples were taken for metals, nutrients, hardness, conductivity, Dissolved Oxygen, Carbon and pH. Please see the consolidated results, laboratory COAs, field notes and calibration records attached.

A quick look at the results shows a clear and effective lowering of pH when carbon dioxide is injected into the effluent. It also demonstrates that injection has little or no effect on metals, nutrients or any of the other parameters tested during the trial.

The carbon dioxide system as proposed by Vale has a long history of use and is a standard practice for pH control within Vale and other mining operations across Canada. These systems are proven to have minimal environmental impacts and no impact is expected in this case. The environmental effects of the CO2 injection, if any, are expected to be minimal and Vale is of the opinion that the results from the trials demonstrate this conclusively.

Please see attached the results and supplemental information attached. If you have any questions, please contact Jeff Fountain – Environmental Superintendent at 204-778-2649.

Respectfully



Jeff Fountain
Superintendent – Environment
Vale Manitoba Operations

- c. J. Windsor (EAB)
- S. Burland Ross (EAB)