

# Notice of Alteration Form



File No. : 557.10	Environment Act Licence No. : 960 VC
Legal name of the Licensee: Vale Canada Ltd.	
Name of the development: Thompson Complex	
Category and Type of development per Classes of Development Regulation: Mining <input type="button" value="v"/> <SELECT>	
Licensee Contact Person: Lisa Lanteigne Mailing address of the Licensee: PO Box 5000 City: Thompson Province: Manitoba Postal Code: R8N 1P3 Phone Number: (204) 778-2649 Fax: Email: lisa.lanteigne@vale.com	
Name of proponent contact person for purposes of the environmental assessment (e.g. consultant): same as above	
Phone:	Mailing address:
Fax:	
Email address:	
Short Description of Alteration ( <i>max 90 characters</i> ): Treatment of copper residue pond liquid in the Tailings Management Area	
Alteration fee attached: Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>	
If No, please explain: If required, will submit via direct deposit or mail separately	
Date: 2024-07-10	Signature:  Printed name:
<p>A complete Notice of Alteration (<b>NoA</b>) consists of the following components:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Cover letter</b></li> <li><input type="checkbox"/> <b>Notice of Alteration Form</b></li> <li><input type="checkbox"/> <b>1 electronic copy of the NoA detailed report</b> (see "<a href="#">Information Bulletin - Alteration to Developments with Environment Act Licences</a>")</li> <li><input type="checkbox"/> <b>\$500 Application fee, if applicable</b> (Cheque, payable to the Minister of Finance)</li> </ul>	
<p><b>Submit the complete NoA to:</b>                  Director, Environmental Approvals Branch                  Environment and Climate Change                  Box 35, 14 Fultz Blvd                  Winnipeg MB R3Y 0L6  <a href="mailto:EABDirector@gov.mb.ca">EABDirector@gov.mb.ca</a>  <b>For more information:</b>                  Toll-Free: 1-800-282-8069                  Phone: 204-945-8321 Fax: 204-945-5229  <a href="https://www.gov.mb.ca/sd/permits_licenses_approvals/eal/licence/index.html">https://www.gov.mb.ca/sd/permits_licenses_approvals/eal/licence/index.html</a></p>	
<p><b>Note: Per Section 14(3) of the Environment Act, Major Notices of Alteration must be filed through submission of an <a href="#">Environment Act Proposal Form</a> (see "<a href="#">Information Bulletin – Environment Act Proposal Report Guidelines</a>")</b></p>	

July 5, 2024

Agnes Wittmann, Director  
Environmental Approvals Branch  
Box 35, 14 Fultz Boulevard  
Winnipeg, Manitoba R3Y 0L6

Ms. Wittmann,

**Re: Notice of Minor Alteration to Environment Act License 960 V.C**

Vale Canada Ltd. (Vale) proposes to alter the process for treating the liquid component of Copper Residue Ponds #5 and #6 located within the Thompson Tailings Storage Facility (TSF), formerly known as the Tailings Management Area (TMA) (Figure 1).

A description of the facility and its processes was detailed in the Public Registry 557.10 Vale Canada Limited, Manitoba Operations; Appendix 6.1 Comprehensive Report of Vale Canada Limited August 3, 2015, Final, 2.6 Mill.

Vale proposes to treat the pond water directly in the TSF. The proposed change will be permanent, concluding upon completion of the reclamation of the Copper Residue Pond site.

This change is intended to treat the water accumulating in the ponds that cannot be viably treated using the copper recovery and water treatment system that utilizes Magnesium Oxide (as described in the NOA Submission dated March 3<sup>rd</sup>, 2022, File No. 557.10. This system continues to operate seasonally throughout the residue excavation process).

This change will also replace the previously described and no longer functioning "PSN Circuit" for treating pond water in the concentrator for the purpose of managing pond water level which entailed dewatering by vacuum truck and treating with lime inside of a sump which reports to the 48" sewer and flows to Cell B in the TSF.

The proposed alteration includes the deposition of copper pond water directly into the TSF, where this influent to the tailings facility would be modified with the application of Sodium Hydroxide, raising its pH and precipitating metals which are expected to settle out of solution becoming contained within Cell B.

The proposed process for the disposition of the pond water to the tailings facility is via a 600USGPM pump and line on the Northwest side of Copper Pond #6 (Figure 2).



Figure 1 Copper Ponds #5 & 6



Figure 2 Aerial View of Copper Ponds looking Northeast

An appropriate quantity of Sodium Hydroxide would be deposited immediately in advance, upstream at the Southwest corner of the site nearest the emergency shower and eyewash station, and as needed, at the Sodium Hydroxide deposition location downstream of this area.

The quantity of Sodium Hydroxide required to treat the Copper Pond water that is released upstream just ahead of pumping, will be forecasted based on the most current dataset characterizing the acidity and concentration of cations of the pond water, adjusted for the volume that is expected to be released, per event and the background alkalinity of tailings area water.

A sampling campaign characterizing the chemistry of the disposed water from Pond 6 during pumping shall inform the calibration of the treatment dose for each event.

Water chemistry inside the tailings facility is routinely monitored at strategic locations downstream of the proposed treatment area (Figure 3). To ensure planned responses are swiftly initiated upon the detection of anomalous water chemistry results, a Trigger Action Response Plan (TARP) was developed for the facility. The scope of the TARP includes influent from the proposed treatment area.

Chemical addition to the TSF has been used to effectively control pH and concentrations of nickel and other metals for more than 20 years achieving compliance with the legal requirements.

No changes in the quality of water discharged from the Final Discharge Point (FDP) of the TSF, the Area 5 Weir, are expected.

In addition to water quality monitoring, the toxicity of effluent from the Area 5 Weir FDP is tested quarterly to determine its acute lethality to test species, Rainbow Trout and Daphnia Magna. The effluent from the Weir has not been found to be acutely toxic, and this proposed change is not expected to result in a change to the toxicity of effluent.

The Health, Safety and Environmental risks associated with this process are not expected to change significantly. A reduction in risk is anticipated owing to the reduction in chemical transfer steps achieved by the direct release, bypassing the Copper Pond treatment and recovery system.



Figure 3: Tailings Storage Facility Surveillance Points

Workers are already familiar with the related chemical hazard and controls. These workers will also be orientated to the new release location inside the Copper Pond Project site and to the procedures for verifying and utilizing the Emergency Shower and Eyewash Station.

This proposed change in our process would commence upon your notice of approval. Please feel free to contact me for any additional information or clarifications.

Thank you in advance for your consideration. Respectfully,

Lisa Lanteigne



Environment Manager, Canadian Operations

- c. Siobhan Burland Ross (EAB)
- Jennifer Winsor (EAB)