November 6, 2014

Ms. Tracey Braun
Environmental Assessment & Licensing Branch
Conservation Department
123 Main Street, Suite 160 Union Station
Winnipeg, Manitoba
R3C 1A5

Ms. Braun,

Re: Manitoba Operations
T-1 Mine, Mill: Potassium Amyl Xanthate System Replacement

At this time Vale Canada Ltd. is requesting the approval of the Director of Environmental Assessment and Licensing to consider the enclosed Notice of Alteration submission as a minor alteration. The alteration is to replace our existing PAX system (aged) with a new one which will also have upgraded ventilation and exhaust system (filter system) to improve air quality.

Please feel free to contact me for any clarification on this submission.

Regards,

Matthew Vanderhyden
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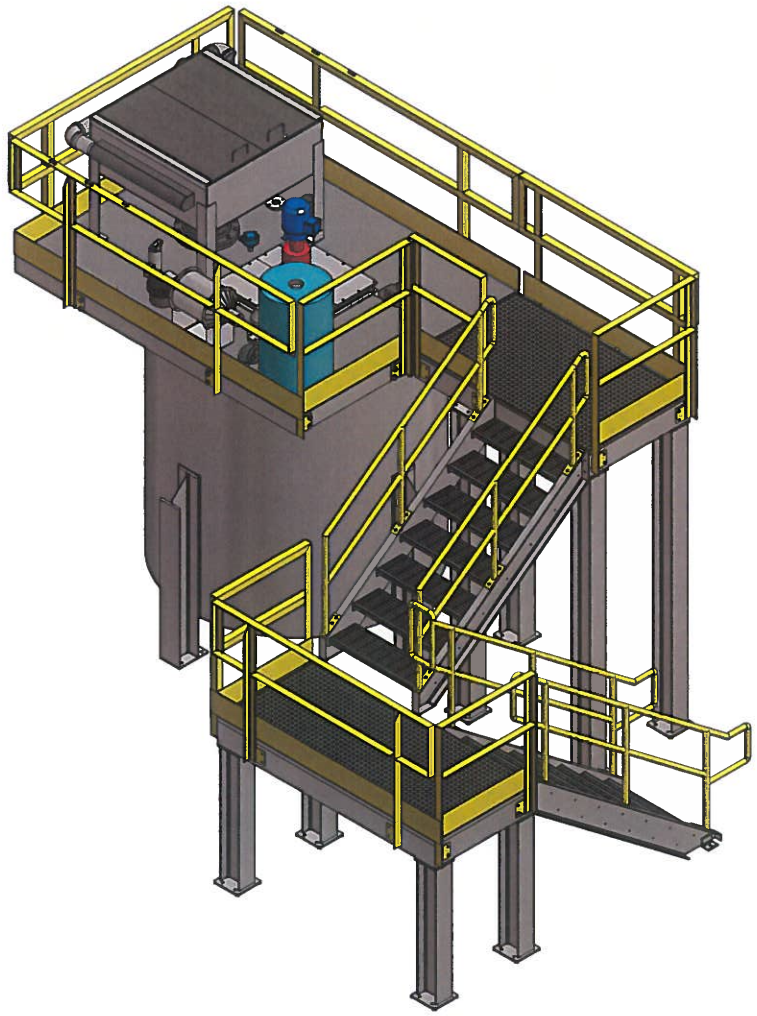
Project Description

Context

Vale's Thompson mine in Manitoba, Canada operates 3 underground mines, mill, smelter and refinery as well as necessary supporting plants. The Mill is tasked with processing between 35,000 – 50,000 tons per week of mine ore through crushing, grinding and flotation circuits delivering a concentrate to the Smelter, sandfill for the mine and tailings. Potassium Amyl Xanthate (PAX) is used primarily in flotation circuit.

Project Summary

This scope of work is for all construction activities to install and connect a new PAX mixing system to the existing system and distribution circuit. It will include a mixing tank, agitator, ventilation and discharge system, and all associated controls. This will replace the existing storage system and allow the Mill to accept PAX is solid pellet form and process to the desired strength. The change is expected improve tank fume emissions through and a new filtration system having a positive impact on Safety, Health and the Environment. It will also reduce costs associated with material supply, denigration, usage and wastage.
Following construction and commissioning, the existing systems needs to be operational until the new system is proven at which point it will be decommissioned and removed.



Health Effect

The new PAX system involves an employee manually attaching a bag of dry pellet form PAX to a crane and operating the crane remotely to place the bag onto a hopper where it is broken. The contents are released into a vented hopper. This is different from the current closed liquid system. The dry pellet form of PAX will mean a small amount of dust may be created when the employee splits the bag open. The vent system is designed to deal with the release of dust.

A Vale Mill work procedure will be developed for this new job which will address safety, health and required personal protective equipment, outlined in the attached MSDS. Ergonomics and the work environment will also be considered in the development of the new work procedure. We have the MSDS for the liquid product we are currently using. We are not sure which supplier will get the contract to supply the new dry pellet form of PAX so we do not have an MSDS for the product. The new dry form will be mixed to form a liquid PAX that will be the same concentration as we currently use. Our MSDS does refer to a dry form as well so the new MSDS should not be much different.

Personnel will be trained in the safe operation of the new PAX system.

All applicable Vale health and safety policies and procedures will apply to contract workers and anyone else working on site.

All work will be assigned to and completed by qualified personnel.

Environmental Effects: Improvement in vented air quality

Terrestrial: No Change

Aquatic: No Change

Atmospheric:

Vented air quality will be improved by directing process air through an air filtration system prior to being discharged to the outside atmosphere. The filter will capture Carbon Disulfide, CS2 (bi-product of the PAX mixing) and misc. organics.

Noise: No Change