

From: [Rachelle Angott](#)
To: [Winsor, Jennifer](#)
Subject: RE: Updated NOA Package - Vale 378 Backfill Plant & Tailings Dewatering
Date: June 2, 2025 7:43:58 AM

Good day, Jennifer,

Thank you for the question and the opportunity to provide clarity on quality controls related to the proposed development. I've broken down and paraphrased the question to answer each part.

1. What are the specifications for dewatered tailings?

The new system will control the following parameters to achieve specifications:

- Feed rate = 106m³/hr +/-5%.
- Feed solids concentration = 60wt% +/-2wt%
- Solids specific gravity >=2.7 t/m³ +/- 1%

Tailings fed to the dewatering system outside of the above parameters will result in a lower production rate or filter cake with a moisture content of >16wt%.

2. What test methods will be used to determine if the dewatered tailings meet specifications?

The process for separating tailings relies on the performance of the scavenger and cleaner circuits, where the coarse fraction of the tailings is separated from the fine fraction by cyclone separator cones in the scavenger cleaner (flotation) circuit, resulting in the fine tailings reporting to the 'D2' sump which feeds the tailings pipeline to the tailings pond.

The coarse fraction (classified by relative density 2.6 - 2.7) reports to the 'C2/C4' sump which feeds the sand tank used to supply T1 Mine with tailings sand for backfill operations. The new tailing dewatering system will operate in parallel, pulling coarse tailings from the C2/C4 sump into the filter press.

Particle Size Distribution (PSD) of the flotation column feed is monitored daily using the sieve analysis method where a sample is poured onto a stack of mesh sieves with progressively

smaller openings. The sample is shaken or agitated to allow particles to pass through the sieve and the mass of solids retained on each sieve is weighed, and the percentage of solids passing through each sieve is calculated. Because all streams after tertiary grinding have similar PSD, the PSD of flotation column feed also represents the PSD of the scavenger cleaner circuit. Surveys of all streams are also done annually. The most recent PSD analysis confirmed that the cyclone cone size and configuration of the scavenger tailings cleaning circuit effectively separates the particles to meet specifications.

Moisture content of the filter cake is analyzed using the Oven-Drying Method where a sample is placed in a pre-weighed container and the combined weight (W2) is recorded using a calibrated scale (NIST traceable calibration standard). The sample is then heated in an oven at 100°C for 24 hours, allowed to cool, and the container with the dried sample is weighed again (W3), and the moisture content is calculated using the following formula: Moisture Content = $((W2 - W3) / W3) * 100$

3. How will dewatered tailings that do not meet specifications be managed?

If it was determined that the feed was not suitable for the new dewatering process it would be a matter of simply stopping the new feed pump. Those tailings would be disposed to T1's sand tank, where the other constituents of the cemented product would be adjusted to meet the specifications for backfilling operations, consistent with the current process.

If the particle size distribution did not meet specifications and the dried classified tailings were still sent to the T3 Mine 378 backfill plant, it may result in more cement having to be added to the mix or a longer cure period for the cemented backfill.

I hope this information satisfies the question.

Kindly,

Rachelle

From: Winsor, Jennifer

Sent: March 24, 2025 2:35 PM

To: Allison Merla [REDACTED]

Cc: Amy Byers [REDACTED]; Paige Krentz [REDACTED]

Subject: RE: Updated NOA Package - Vale 378 Backfill Plant & Tailings Dewatering

Good afternoon Allison,

I have some questions regarding the proposed tailings dewatering facility.

Can you please let me know what the approved specifications are for dewatered tailings, what test methods will be used to determine if the dewatered tailings meet specifications, and details regarding how dewatered tailings that do not meet specifications will be managed?

Thank you,

Jennifer Winsor, P.Eng.

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