



Memorandum

Date:	June 14, 2005	Our Ref:	
To:	Ken Brouwer	Cont.#:	
From:	Mark Burke		
Re:	Mount Polley South Embankment Sand Trial, June 2005		

S1

A sand trial was completed at Mount Polley on the tailings storage facility. The trial was located on the south embankment (stage 4 construction) between chainages 6+75 to 8+50. The sand trial used of 3 sets of 3 spigots to discharge tailings in to a panel 175m long by 18m wide (Figure 1). The panel was built using 2 coarse rock. A D7 cat was used in the slurry in order to create the proper gradient so that the fines would separate from the coarse sand in the tailings. One end of the panel a drain was made with 2 24 inch culverts. As the sand accumulated the drains were raised. It took 7.5 hours to get the first foot of sand to settle (Figure 3). The rate of deposition increased after the CBL was covered.

S2 and S3 – Open ending

- This trial consisted of 2 panels side by side. The tailings were open ended in to each panel individually. S2 would run for 4 to 5 hours then dried. S3 would then run for 4 to 5 hours. The panels were prepped and the drains were set in the morning before the valves were opened.
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- Dimensions: 75m x 18m. This has proved to be a good size panel using the D7G cat. The panel size could be increased to 100m to allow for 5 to 6 hours of operating time using the same equipment. The productivity could be increased if the cat was fitted a U blade rather than a straight blade. The Hitachi 270 hoe was used to set the drains.
- In order to run this operation efficiently for night and day shift 8 operators should be trained. Two operators per shift and two cats would be ideal. This would allow one operator to set drains and prepare panels, while the other runs the sandcat.

Problem: One drain was shared for two panels. A sand berm was moved so that each panel could use the drain exclusively.

Solution: This would be acceptable if the valves did not leak. Since the valves do leak each panel needs its own drain. The leaky valves will fill the panel when it is not drained and cause fines to build up reducing the quality of the product.

Problem : Fines collect on the downstream side of the drain.

Solution : Make sure that the drains are at the most downstream point of the panel.

Problem: 2 24 inch pipes were used, which were running at full capacity, this proved to be difficult to install and lift even for an experienced operator (the main line was 24 inch and under pressure). If an

inexperienced operator was to set the pipes at different elevations, there is a potential for a wash out which is a safety concern.

Solution: One 36 inch drain pipe should be used for each panel, ensuring a high quality product. The entrance of the pipe is what is important, it needs to be 36 inch. The

Problem: Variability in the mills tailings.

Solution: The mill must be aware that their waste is being used for a construction material.

Problem: one operator proved successful for operating the day shift, but if productivity is an issue, which it is, two operators are needed in order to operate as efficiently as possible.

Problem: Communication.

Solution: The operator on the cat needs to have a safety procedure in case of a washout, or any other safety incident.

Figure 1: South embankment June 21, 2005



Figure 2: Day 1 of the Trial



Figure 3: 1 foot of sand in 7.5 hours

