


14745-40/MTPO/01

<i>Knight Piésold</i> CONSULTING Knight Piésold Ltd. 1400 - 750 West Pender St. Tel: +1 (604) 685-0543 Vancouver, BC V6C 2T8 Fax: +1 (604) 685-0147 CANADA Fax: +1 (604) 687-2203	DATE: June 5, 2000	FILE NO: 11162/13.01
	TIME:	REF. NO.: 0/1303
	OPERATOR:	PAGES: 1 of 2
	SENDER: Jeremy Kinch	APPROVED: 

MPO0119

TO: MEM	FAX: 1 250 952-0481
ATTN: George Headley c.c. Eric LeNeve/Don Parsons, MPMC	
SUBJECT: Mount Polley Stage 3 TSF	

Dear George,

This fax addresses some questions raised during our phone conversation on June 5.

Core Zone Thickness

The core zones of the Main and Perimeter Embankments have a minimum width of 6 m. The sloping core zone of the Stage 2C Main Embankment results in a minimum thickness of 4.5 m approximately 24 m below the predicted ultimate embankment crest elevation of 962 m.

The hydraulic gradient across the core zone is normally controlled by the upstream toe drain that is located just upstream of the narrowest part of the core. The toe drain is connected to three outlets, providing redundancy in the event a blockage.

A total blockage of the upstream toe drain will allow the phreatic surface to rise and increase the hydraulic gradient across the core zone. The gradient may exceed unity as the ultimate embankment height is reached. A conservatively designed, two-stage filter zone is incorporated into the Main Embankment to alleviate seepage forces that may develop as a result of an elevated phreatic surface. This is consistent with USBR recommendations for cases where the hydraulic gradient across the core zone of an embankment exceeds unity.

The first stage, Zone F, consists of processed filter sand. The second stage, Zone T (transition zone), consists of select shot rock with a maximum particle size of 150 mm. The specified gradations for Zone F and Zone T satisfy the filter relationships with the surrounding materials. Both materials have been produced successfully for previous construction programs.

Cycloned sand incorporated into the downstream shell zone satisfies filter requirements at the Perimeter

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- 2 -

Embankment.

An additional measure of protection is provided by the sandy tailings upstream of the core zone. This material will act as a crack stopper.

QA/OC During Zone F and Zone T Placement

Zones F and T form a two-stage filter/chimney drain, as described above. Each zone is 1 m thick, and may be placed by pushing the dump pile up the existing 2H:1V slope, or by mounding in the vertical section above elevation 940 m. The latter technique was used to construct the vertical chimney drain, also 1 m wide, in Stage 1.

Close supervision will be required during placement of Zone F and Zone T above elevation 938.5 m, particularly while the Contractor is developing the placement technique. The height to which material may be mounded or pushed up the slope will be limited by compaction requirements.

Zone F material is manufactured at the mill and should therefore always meet the gradation specifications. Oversize particles are eliminated and segregation should not occur during placement. Zone T is selectively excavated from the muck pile in the Rock Borrow Area to minimize oversize material, and segregation is controlled by lift thickness (600 mm). Control and Record samples will be collected for particle size analysis to verify that the materials meet the specifications.

The Contractor may elect to place Zone T past the lines shown on the Drawings, as this material also meets the specifications for Zone C. This was the case during construction of the Kemess Stage 1 Tailings Embankment and diversion dams, which also incorporated relatively narrow filter and transition zones.

Please feel free to contact us if you have any other questions or concerns.

Regards,



Jeremy Kinch

Headley, George EM:EX

From: McBride, Brian EM:EX
Sent: , May 30, 2000 4:49 PM
To: Headley, George EM:EX
Cc: Errington, John EM:EX; Price, Bill EM:EX
Subject: Mount Polley Cyclone Sand Dam

Hi George:

I talked with Greg Smyth of Mount Polley and he advised me that the quarry was approved by way of a NoW 22 Oct/96 as a rock borrow to the dam and to be kept open for future lifts of the tailings embankment. File 14675-30/Mt. Polley.

I told Greg, if it becomes substantial, which appears to be from what I saw 10 days ago, the permit should be amended.

Greg said that they were doing the ABA work from the drill holes in the quarry. I advised him not to use the material for construction until they get the lab results back.

My concern with the rock and cyclone sands use in the construction of the dam is that of reclamation. As I recall, reclamation of this material was not discussed in the KP Report on Cyclone Sand Construction of Stage 3 and ongoing Stages. This is quite a productive site, as the old stumps from the 1st growth can hold testament. Mount Polley needs to come up with a prescription for reclamation. I don't have a problem with writing 75 cm+ of soil to cap the structure. MEM should be cautious when allowing the company the opportunity of demonstrating it can achieve equivalent productivity levels and sustain them as at best the mine live is 8 years.

I'm chasing down the KP cyclone sand dam report to have another look at it and will get back to you if there are any concerns.

Brian McBride, P.Ag.
Inspector of Mines - Reclamation
Prince George B.C.
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If it's stupid but works, it's not stupid.