

Aug. 2, 1996

File: 14745-40/MTPO/01

File Note

RE: MT. POLLEY TAILINGS DAM REVIEW

This includes a listing of outstanding technical concerns from early July.

Contingency Filter

Will be included in detailed review of any dam redesign. Shown as an optional filter.

Main Embankment

Foundations Drainage System

Drain Piping:

- "Big O" foundation drain type.
- Additional opening within rock drain.
- Sized for modeled seepage through dam and till foundation soils. Then 10x safety factor.
- Original design had all 4 drains linked to one exit pipe.
- Piezometers used to monitor local drain behavior.
- Lack of cleanout capability.

Modified drains include:

- 4 approx. 150 mm drain holes on 50 m. spacing on dam centerline to bottom of lacustrine and fluvial sands and silts. Good cross formation drainage.
- 3 exit points.
- Monitoring capability for flows.
- Better cleanout capability.

Foundation conditions:

- 3 SPT tested holes for piezometers showed some very weak soils from blow counts. Results later shown to be test method anomalies.
- CPT testing holes clearly showed that foundation soils were not weak and the deep weak soils were strong. However soil samples could liquefy with vibration.
- Soils conditions in main embankment seepage collection pond appear okay. However the potential for piping or "boils" under pond drawdown or during main pond filling must be monitored.

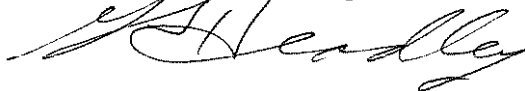
Upper Stage Toe Drains

Proposed System Included:

- Only 3 exit points in abutment foundation soils. Not concrete encased.
- Lateral drains of drain material surrounding piping. Maximum run lengths of 750 to 1350 m. Total length of 6500 m of piping upstream of dam.
- No cleanout capability. (Revision would allow clean out)
- Risers at 50 m. spacing total 60+ and length up to 2000+ m.
- System sensitive to beach consolidation settlements and therefore pipe and joint potential damage.
- System sensitive to locally unlocatable and generally not controllable leakages or blocks.
- Upstream drainage system integral to upstream dam stability.
- Operating and closure sealing of pipes and drain material surrounds was not addressed but would have to be in exit areas through dam.

The system will be under complete review by independent consultant. Redesign will then be reconsidered as required.

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A handwritten signature in black ink, appearing to read "G. S. Headley", written in a cursive style.