



Our Reference: VA101-1/14-A.01  
Continuity Nbr.: VA07-00362

March 14, 2007

Mr. Ron Martel  
Mount Polley Mining Corp.  
P.O. Box 12  
Likely, B.C. V0L 1N0

Dear Ron,

**Re: Mt. Polley Mine - Upstream Toe Drain Seepage Estimations**

The Tailings Storage Facility (TSF) at Mount Polley Mine includes the Perimeter, Main, and South Embankments. The TSF embankments consist of zoned, earthfill structures that are progressively raised during operations using the modified centreline construction method. Embankment drainage provisions have been incorporated into the design of the TSF to facilitate drainage of the tailings mass, dewater the foundation soils, and to control the phreatic surface within the embankments. The components of the drainage systems consist of foundation drains, chimney drains, longitudinal drains, outlet drains, and upstream toe drains. The TSF currently has two upstream toe drains installed in the TSF embankments; one located in the Main Embankment at elevation 936 m, and one located in the Perimeter Embankment at elevation 945 m. A third toe drain may be installed on the South Embankment during Stage 6 construction program. The purpose of the upstream toe drains is to drain and consolidate the tailings mass near the embankments. The upstream toe drains also remove a certain amount of filtered water from the impoundment that is currently being recycled back into the TSF but may be a potential source of water available for discharge should the water quality objectives be met. The location of the upstream toe drains currently installed along the Main and Perimeter embankments are shown on Figure 1.

The Mount Polley Mine Site is currently operating in a water surplus condition with the excess water being stored in the TSF. Mount Polley Mining Corporation (MPMC) has requested that Knight Piésold review the current flow data from the upstream toe drain at the Main Embankment (the Perimeter Embankment upstream toe drain that was installed during the Stage 5 construction program has not yet started to flow) and provide future flow estimates from the upstream toe drains installed at each of the embankments.

**UPSTREAM TOE DRAIN FLOW RATES**

The upstream toe drain at the Main Embankment flows into the sump at the Main Embankment Seepage Collection Pond where the flows are measured. The flow rates have been measured since July 2000; however the flow rates from the drains were not monitored during the Care and Maintenance Period as the drain outlets were submerged within the sump. This condition was anticipated during the Care and Maintenance Period, as flow monitoring is only possible during operations when the seepage pond level has been pumped down. The seepage pond was pumped down in December 2005 and flow measurements were taken. The monitored flows were consistent with the flows measured in 2000. The flows from the Main Embankment upstream toe drain have increased since 2005, with the current flows ranging from 9 to over 12 l/s. The flow rates for the Main Embankment upstream toe drain are shown on Figure 2.

***Knight Piésold Ltd.***

*Suite 1400  
750 West Pender Street  
Vancouver, British Columbia  
Canada V6C 2T8*

*Telephone: 604.685.0543  
Facsimile: 604.685.0147  
Email: [vancouver@knightpiesold.com](mailto:vancouver@knightpiesold.com)*



The flow rates were also modelled with the finite element computer program SEEP/W. The results of the modelling indicate that the flow rates for the upstream toe drain at the Main Embankment are impacted by the tailings beach profile along the embankment, the distance the supernatant pond is from the embankment, the location of tailings discharge point or points, and the degree of tailings consolidation above the toe drain. The most significant factors contributing to the flow rates in the upstream toe drain are the size of the tailings beach and the distance of the supernatant pond from the embankment. The tailings beach and pond location for October 31, 2006 are shown on Figure 3.

Stage 4 construction of the TSF embankments included using compact tailings sand as construction material in the upstream Zone U shell zone. This was accomplished by developing sand cells upstream of the core zone and discharging tailings into the cells. The coarse tailings settled out into the sand cells with the finer tailings exiting the cells via culverts installed in the upstream confining berms. This proved to be a successful construction technique for building Zone U but the prolonged discharging of tailings at the Perimeter Embankment resulted in the migration of the supernatant pond towards the Main Embankment, with the pond coming into direct contact with the Main Embankment at certain locations. This has resulted in higher flow rates for the upstream toe drain at the Main Embankment.

MPMC is currently in the process of procuring the HDPE pipe required to expand the tailings discharge pipeline around the entire facility. Evenly discharging the tailings from around the facility optimizes the development of tailings beaches and keeps the supernatant pond clear of the embankments, thereby increasing seepage paths and reducing seepage rates at the upstream toe drains. Beached tailings, when left to drain and consolidate, form the competent foundation needed for the modified centreline construction of embankment raises. The current flow rates from the Main Embankment upstream toe drain are considered to be elevated based on the proximity of the supernatant pond and will likely decrease, possibly by as much as 50%, with the development of a tailings beach in this area.

The estimated upstream toe drain flow rates for the Main, Perimeter, and South Embankments are shown on Figure 4. The flow estimates for the Perimeter and South Embankment upstream toe drains have been based on extrapolating the current measured flows in the Main Embankment upstream toe drain over the differential length of their drains. The figure also shows the estimated upper and lower flow boundaries (+/- 50%) for all three drains. The lower bound value is the conservative flow value and should be the value used in site water balance calculations. The upper bound value is a conservative flow value for the design of the settling ponds and associated pipe works. The lower bound values for the three upstream toe drains are as follows:

- Main Embankment 6 l/s (500 m<sup>3</sup>/day);
- Perimeter Embankment 7 l/s (640 m<sup>3</sup>/day);
- South Embankment 4 l/s (360 m<sup>3</sup>/day);
- The total lower bound flow rate assuming all drains in operation is estimated to be: 17 l/s (1500 m<sup>3</sup>/day).

The upper bound values for the three upstream toe drains are as follows:

- Main Embankment 17 l/s (1500 m<sup>3</sup>/day);
- Perimeter Embankment 22 l/s (1920 m<sup>3</sup>/day);
- South Embankment 13 l/s (1080 m<sup>3</sup>/day);
- The total upper bound flow rate assuming all drains in operation is estimated to be: 52 l/s (4500 m<sup>3</sup>/day).

The estimated flow rates from the upstream toe drains assume that all three are in operation and working effectively. The time line for the flow rates also assumes that the flows will appear in the Perimeter Embankment drain in April or May 2007 pending pumping of the Cariboo Pit water and that the upstream toe drain planned for the South Embankment during Stage 6 will be producing water in August 2008.

The upstream toe drain flow rates will vary at each embankment depending on the location of the supernatant pond. However, the overall flow rates from the TSF upstream toe drains are likely to remain fairly constant as increased flow rates resulting from the tailings pond having moved closer to one embankment will likely be offset by the reduction in flow rates from the opposite embankment that the tailings pond has subsequently moved away from.

It is important to reiterate that the main purpose of the upstream toe drains is to drain and consolidate the tailings mass near the embankments, not to remove large quantities of water from the TSF. It is therefore very important to continue measuring the flow rates from the upstream toe drains at regular intervals, along with the location of the supernatant pond, to determine whether the flow rates are significant enough or if other sources of water for discharge need to be considered.

We trust that the estimated flow rates from the upstream toe drains meets your current needs for updating the site water balance and sizing the settling ponds and associated pipe works. Please feel free to contact us if you have any questions.

Yours truly,

**KNIGHT PIESOLD LTD.**



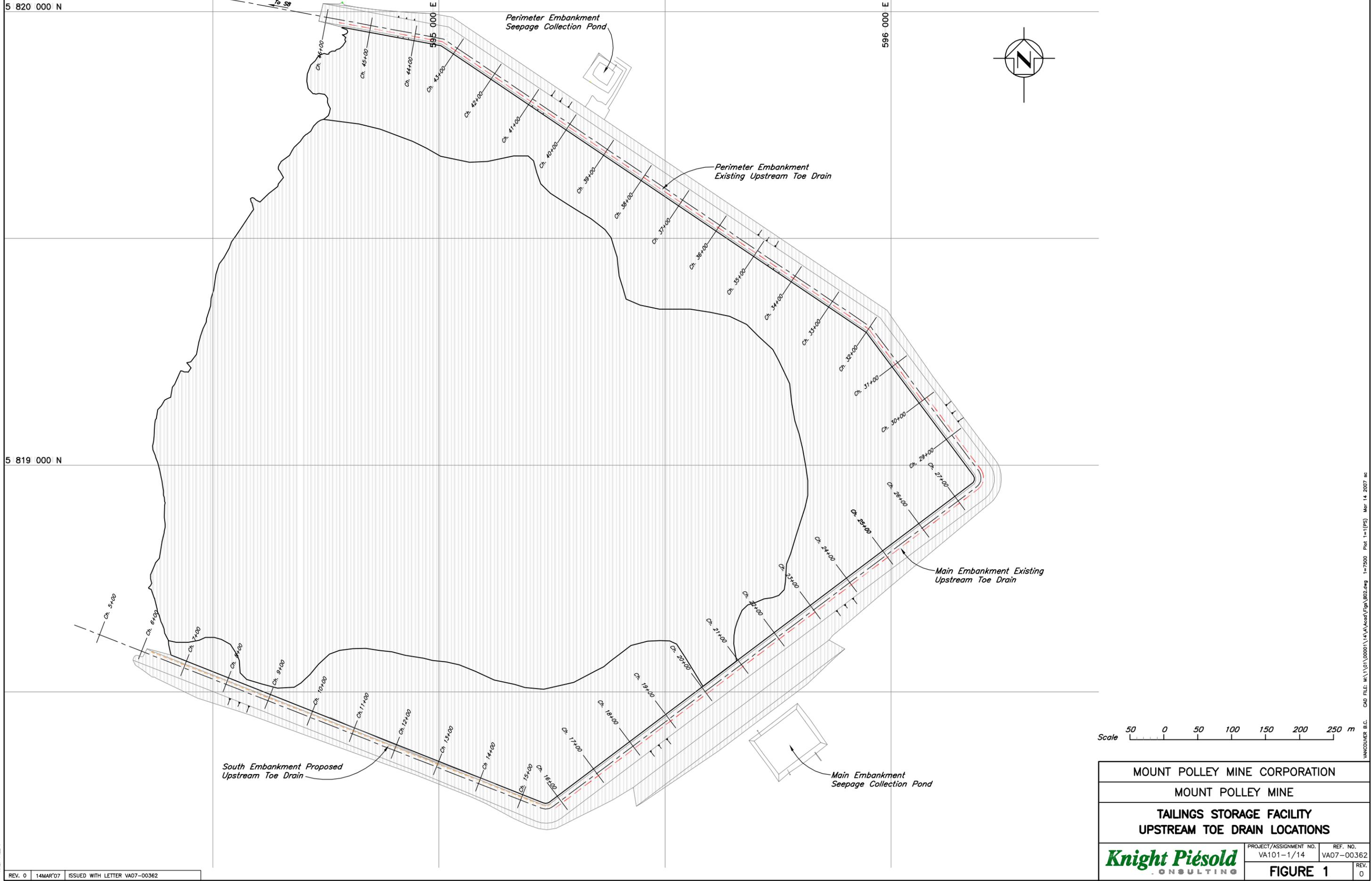
Eric Coffin  
Staff Engineer



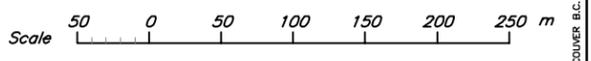
Ken Brouwer, P.Eng.  
Managing Director

Encl:	Figure 1 Rev 0	Upstream Toe Drain Locations
	Figure 2 Rev 0	Main Embankment Upstream Toe Drain Flows
	Figure 3 Rev 0	Tailings Beach Profile
	Figure 4 Rev 0	Long Term Upstream Toe Drain Flow Estimations

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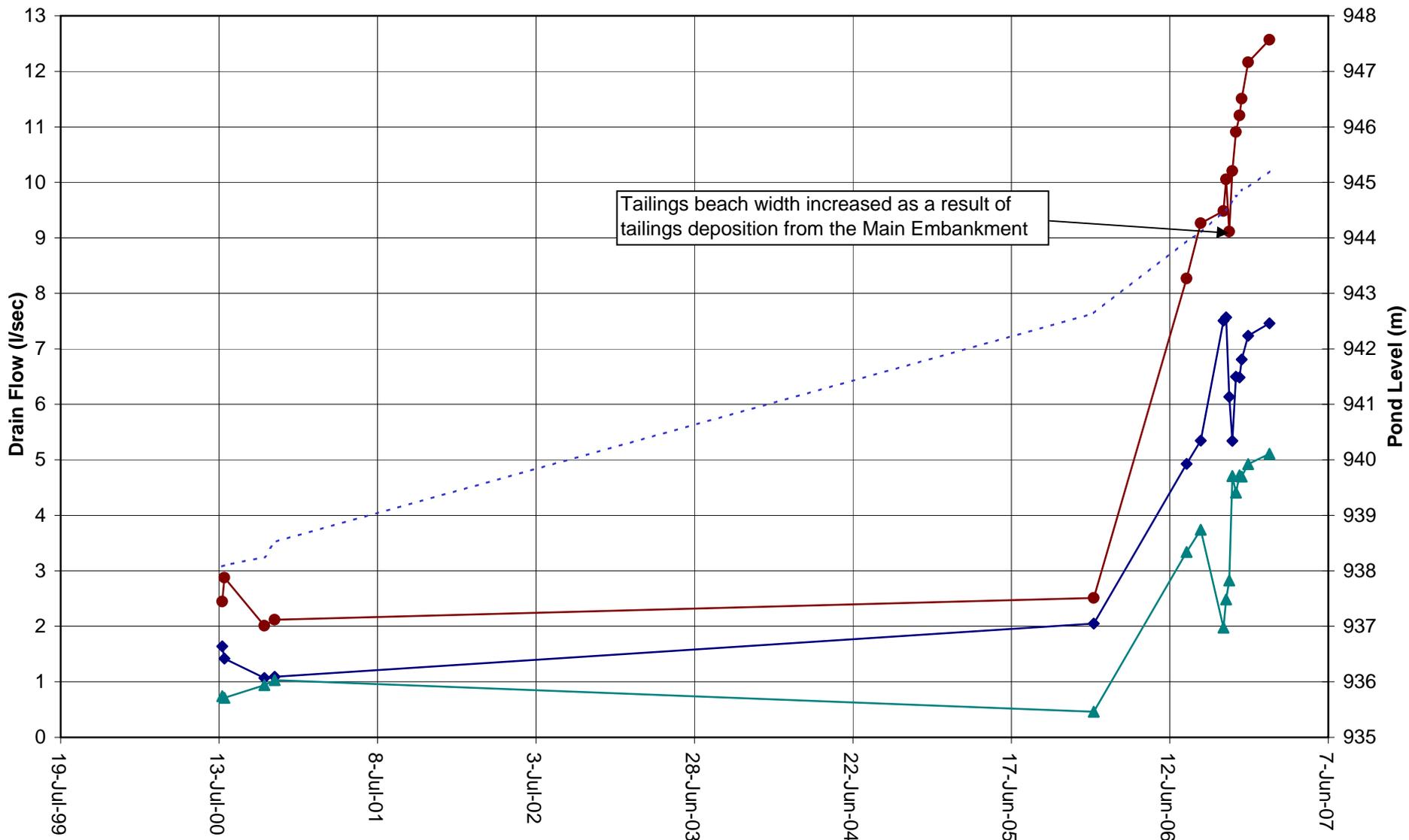


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TAILINGS STORAGE FACILITY UPSTREAM TOE DRAIN LOCATIONS	
	PROJECT/ASSIGNMENT NO. VA101-1/14
	REF. NO. VA07-00362
<b>FIGURE 1</b>	
	REV. 0

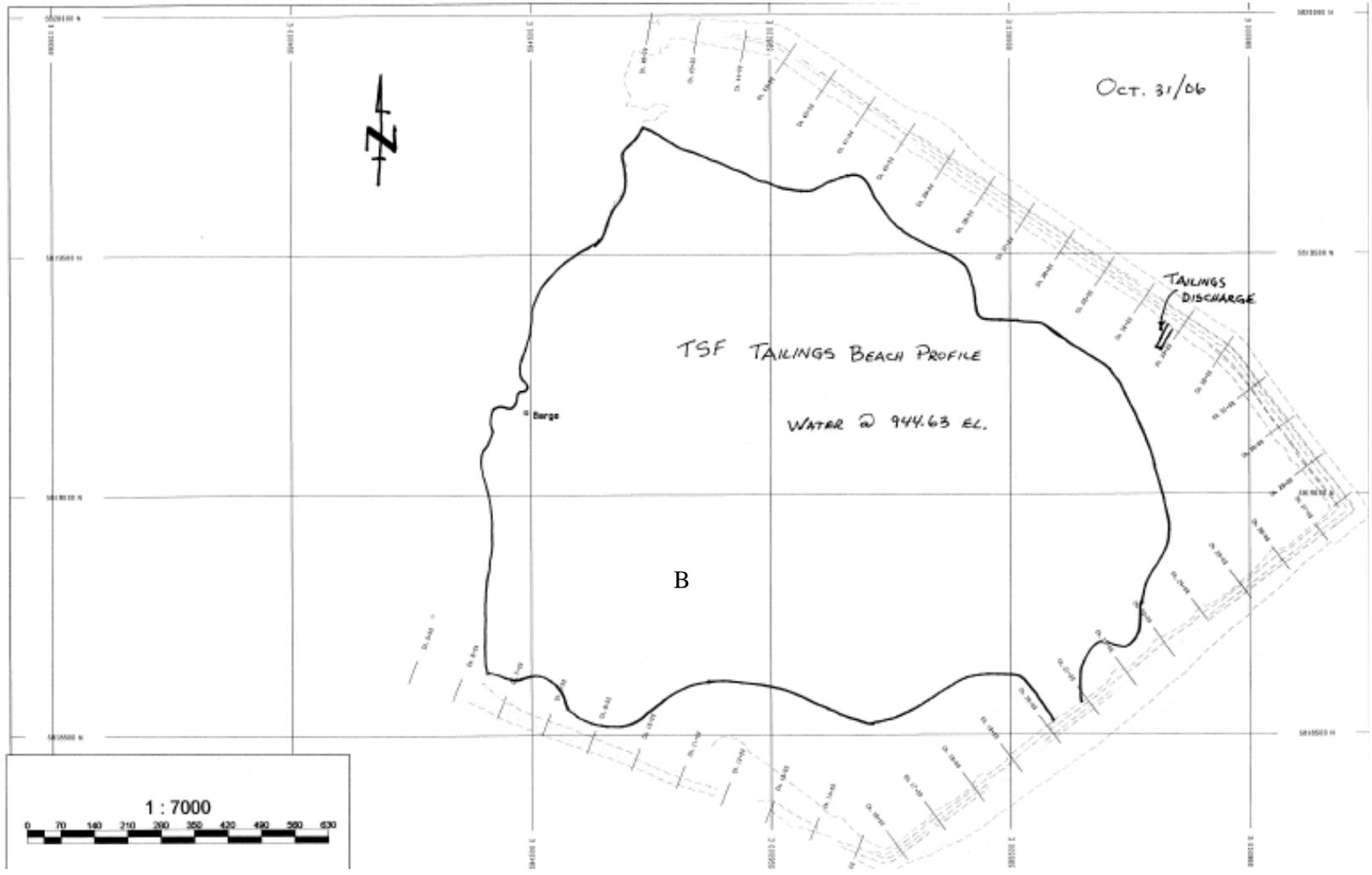
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 VANCOUVER B.C.



Tailings beach width increased as a result of tailings deposition from the Main Embankment



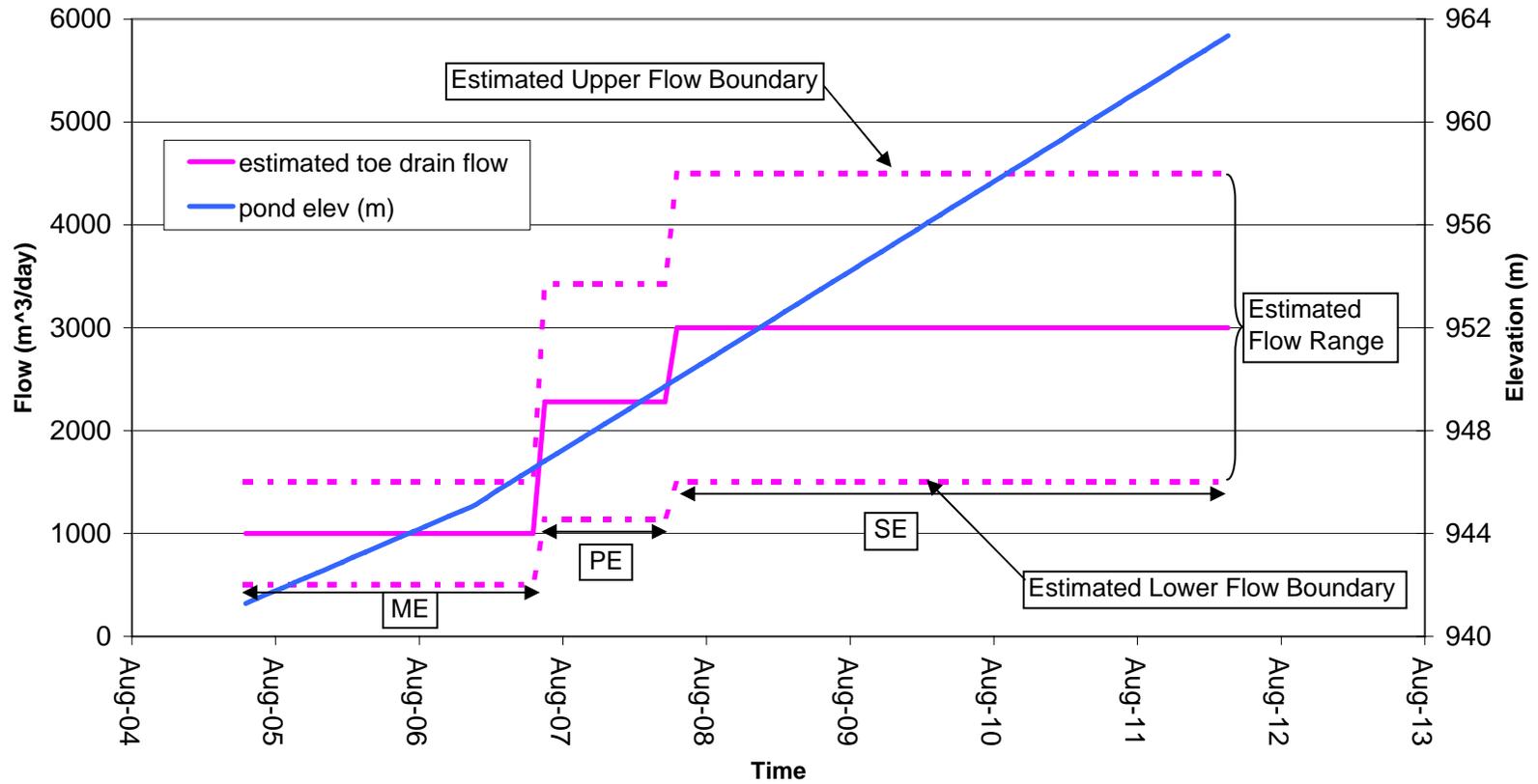
MOUNT POLLEY MINING CORPORATION		
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TAILINGS STORAGE FACILITY		
MAIN EMBANKMENT UPSTREAM TOE DRAIN FLOWS		
	PROJECT / ASSIGNMENT NO. VA01-00001/14-A	REF NO. VA07-00362
	<b>FIGURE 2</b>	
		REV. 0



**Notes:**

1) Beach distances determined using a range finder.

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<b>TAILINGS STORAGE FACILITY TAILINGS BEACH PROFILE</b>		
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	<b>FIGURE 3</b>	
		REV. 0



**Notes:**

- 1) Estimated upper flow assumes a 50% increase from the estimated flow
- 2) Estimated lower flow assumes a 50% decrease from the estimated flow

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MOUNT POLLEY MINE		
TAILINGS STORAGE FACILITY		
LONG TERM UPSTREAM TOE DRAIN FLOW ESTIMATES		
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	<b>FIGURE 4</b>	
		REV. 0