

2015 Mine Design, Operation and Closure Conference

Mount Polley Tailings Storage Facility Breach and Montana's Response

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Mount Polley Mine Site

July 24, 2014



BC Ministry of Energy and Mines established an Independent Expert Review Panel

- Norbert Morgenstern, Steven Vick and Dirk Van Zyl
- Report issued January 30, 2015









Cause of Breach

- A glaciolacustrine foundation layer under the Perimeter Embankment was mischaracterized as “stiff overconsolidated materials”, and the extent of the layer was not determined.
- The glaciolacustrine was overconsolidated until the perimeter embankment reached nearly 40 meters in height, at which time, the layer became normally consolidated and contractant. Undissipated pore pressures weakened the layer and an undrained failure occurred.

Confounding Factors

- Hand to mouth expansion – a year of construction for a year of storage;
- Lack of adequate water balance – nearly overtopped Perimeter Embankment in May 2014;
- Lack of well developed beach – tailings dam not a water dam;
- Lack of scheduling for mine waste for dam construction;
- Oversteepened dam slopes (1.3:1) – buttressing scheduled for 2015;
- Constructing something different from what had originally been designed;
- Inadequate core designs and construction – only 25% of filter layer samples satisfied design specification;
- Creative interpretation of Canadian Dam Association Guidelines;