



Mount Polley report: Two dams expected to fail every 10 years

Southeast Alaskans say report validated concerns • Company responsible for mine with failed dam opens new mine in Stikine River watershed

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An independent review and panel established by British Columbia's government through the Ministry of Energy and Mines, along with the T'exelc and Xat'sull First Nations, found that design flaws were to blame for British Columbia's Mount Polley Mine tailings dam breach on Aug. 4 of last year. Design flaws, however, weren't the only problem — "multiple failure modes (were) in progress" when the dam broke, the report said.

The dam breach released billions of gallons of water and tailings into the Fraser River watershed, which is an important salmon river flowing past Vancouver.

The dam failure at Mount Polley, and the problems to which the panel review points, seems to validate the concerns of many Southeast Alaskan tribal organizations, fishermen, tourism operators and environmental groups. The report also says that the odds of a tailings dam breach in British Columbia are unacceptably high, and that "the Panel firmly rejects any notion that business as usual can continue."

British Columbia is pushing heavy development of its natural resources, many of which lie in watersheds that flow into Southeast Alaska — and the Red Chris, a mine operated by Imperial Metals, the company behind Mount Polley, opened in the Stikine River watershed on Tuesday.

FAILURE

The Mount Polley panel's report, released Jan. 30, said the design of the dam "did not take into account the complexity of the sub-glacial and pre-glacial geological environment" and, as a result, did not recognize an area vulnerable to breach under stress.

A lack of consideration for the dam's environment wasn't the only problem, however.

"While the Mount Polley Tailings Dam failed because of an undetected weakness in the foundation, it could have failed by overtopping, which it almost did in May 2014. Or it could have failed by internal erosion, for which some evidence was discovered. Clearly, multiple failure modes were in progress, and they differed mainly in how far they had progressed down their respective failure pathways," the report said.

The review didn't find any fault with regulators, emphasizing that "the Regulator is not the designer." It called it "disconcerting" that "notwithstanding the large number of experienced geotechnical engineers associated with the Mount Polley TSF (tailings storage facility), the overall adequacy of the site investigation and characterization of ground conditions beneath the Perimeter Embankment went unquestioned," adding that "this may reflect a regional issue, or possibly one of wider extent."

The report found there are 123 active tailings dams containing both tailings materials and water in British Columbia. Since 1969, when B.C. began requiring tailings dam permits, "there was a total of 4,095 years of active operation and 7 failures, where failure is considered to be the breach of the dam resulting in release of tailings and/or water."

There's a one in 600 chance of a tailings dam failure in British Columbia in any given year, the report said.

Put another way, every ten years, at least two dams in British Columbia are expected to fail. Every thirty years, six are.

"In the face of these prospects, the Panel firmly rejects any notion that business as usual can continue," the report states.

KSM, the mine about which many Southeast Alaskans have been most vocally concerned, will hold an estimated 2 billion tons of tailings in the Nass River watershed, which empties just south of Southeast Alaska's border (the mine itself is in the Unuk River watershed, which empties into Southeast Alaska). The dam is projected to hold for at least 200 years, but would need to remain intact "in perpetuity," a claim many Southeast Alaskans have questioned, saying that nothing lasts "in perpetuity." The report expresses this as well: "engineering and life share the undeniable fact that nothing can be forever," it said. It continued to say that dams are "unforgiving systems ... their reliability is contingent on consistently flawless execution in planning, in subsurface investigation, in analysis and design, in construction quality, in

operational diligence, in monitoring, in regulatory actions, and in risk management at every level.”

That’s why it’s necessary for B.C.’s mines to change their tailings facilities so that water and tailings are maintained separately, with water kept in a conventional water dam, the report says, adding “Simply put, dam failures are reduced by reducing the number of dams that can fail.”

COST

The reason those steps haven’t yet been taken isn’t because the technology isn’t there. In fact, the solution the panel recommends is the technology that Hecla Mining Company uses at Greens Creek; it’s commonly called filtered tailings technology or “dry stack” tailings.

B.C.’s 123 tailings facilities don’t use that technology because of its cost, a reason the report says can no longer suffice, especially given the massive size of some mines under construction.

“While economic factors cannot be neglected, neither can they continue to pre-empt best technology,” the report states.

Some Southeast Alaskans, according to a release issued after the report’s announcement, are concerned that “such fundamental changes in B.C. mining practices won’t be adopted due to time and expense” and that even if adopted, they don’t guarantee long-term safety for salmon and their waterways.

SOUTHEAST CONCERNS

Support for International Joint Commission involvement in transboundary mine development in British Columbia has been steadily increasing over the past year, with national tribal organizations, Southeast municipalities, and many others adopting resolutions in support of the matter. Lawmakers including Sen. Lisa Murkowski, Rep. Don Young and former Sen. Mark Begich have sent letters to Secretary of State John Kerry; Begich, before he lost the election, was planning to hold a congressional hearing on the matter inviting parties from both sides of the border; 13 of Southeast Alaska’s tribes have formed a transboundary working group that aims, in part, to get the IJC involved.

The IJC is a bilateral commission that, under the 1909 Boundary Waters Treaty, resolves disputes on international waterways, making it the most likely source of reconciliation.

In the press release, supporters including fishermen, tribal representatives and the mayors of Petersburg and Sitka called the mines “a threat to multi-billion dollar fisheries and a way of life for thousands of Alaskans.”

“Today’s report underscores that, when it comes to the safety of large-scale mines, B.C.’s track record speaks for itself. The Mount Polley disaster is a stark example of B.C.’s stewardship of a project that the government and the developer claimed was safe. We can’t let a similar accident taint the rivers of the transboundary region along the border between northwest B.C. and Southeast Alaska,” said Mark Jensen, mayor of Petersburg Borough, in the release.

The groups, calling the tailings dams “environmental time bombs,” said the report “does not address shortcomings in Canada’s mining regulations.”

Tuesday, the Juneau Assembly became the most recent municipal body to join the effort to get the IJC involved approving a resolution “in support of the International Joint Commission’s Involvement in the Alaska and British Columbia Transboundary Region.”

Meanwhile, Imperial Metals, the company behind Mount Polley, Tuesday opened the Red Chris, a mine in the Stikine River watershed. Its tailings facility, as planned, will hold 300 million tons of tailings and will not follow the Mount Polley review panel’s recommendations. It’s been granted an interim permit until May, when it expects to be operating at full capacity, according to the Canadian newspaper The Globe and Mail.

KSM, which was approved in late December, is on the Unuk River; Chieftain Metals Corp. is trying to reopen the Tulsequah Chief, on the Taku River just south of Juneau, which has been leaching acid mine drainage into the river for decades.

“It’s clear that B.C. is pursuing large-scale mining at all costs, regardless of the enormous risks to Alaska’s downstream communities, fisheries and tourism. Today’s news that the B.C. government allowed Red Chris to begin operating before the ink was even dry on the Mount Polley report, and without even the courtesy of letting Alaskans know, is appalling. The public needs to send a message loud and clear that Alaskans will not stand by and allow its waters to be threatened in such a disrespectful manner,” the group Salmon Beyond Borders stated in a press release about the opening.

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<http://juneauempire.com/outdoors/2015-02-05/mount-polley-report-two-dams-expected-fail-every-10-years>