

## 40-million-cubic-metre Pemberton avalanche second only to Hope Slide

Swelling lake created potential for catastrophe: Debris rocketed down mountain at 30-metres-per-second, left 'moonscape' in its wake

BY TODD COYNE, VANCOUVER SUN AUGUST 9, 2010



Massive Pemberton slide beaten only by Hope Slide as Canada's largest.

**Photograph by:** Bonny Makarewicz, For PNG

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Picture 40 million cubic metres — or roughly 15 BC Place stadiums full — of rock, sand and debris pouring down a mountainside at 30 metres per second.

It thunders down one side of a mountain valley and rolls 150 metres up the other side. In between is a rushing river, where the debris creates a lake behind a massively unstable dam.

That rapidly swelling lake was where the real potential for disaster lay in Friday's Mount Meager slide, said Rick Guthrie, a geomorphologist with the Ministry of Environment.

"Everything in its path was absolutely obliterated," Guthrie said of the initial slide. "It's just a moonscape."

The second-largest slide in Canadian history, only the 46-million-cubic-metre Hope slide of 1965 was larger, the slide was unusual only for its sheer volume, Guthrie said.

"Mount Meager fails on repeated occasions. We had a fairly substantial landslide there last year and we had one a couple years back," he said.

"Slides measured in millions of cubic metres or half-millions of cubic metres have been the norm here for the last little while."

This latest slide, which Guthrie more specifically classifies as a "rock avalanche" due to its composition, was triggered at the peak of Mount Meager beneath its Capricorn Glacier, where deep tension cracks in the rock are common, he said.

"We actually have water coming out of the bedrock in the face of the mountain itself and now you can see it in several locations," he said.

Water posed major risks at the bottom of Mount Meager too as the 10-kilometre slide eventually settled into a dam across Meager Creek and the Lillooet River, quickly forming a lake.

That lake, Guthrie and a group of geotechnical experts estimated, contained 1.5 million to three million cubic metres of water which, if the dam collapsed suddenly, would have catastrophically flooded the Lillooet Valley downstream as far as Pemberton, 60 kilometres to the southeast.

"It would have come down as a big wave but luckily because the dam had a wide base and was fairly erodible material, we saw that it was going to come over the top and then cut into the dam in a breach between 25 and 50 metres wide.

"And that's roughly what happened," he said.

That breach in the dam at about 3 a.m. Saturday, he said, meant a release of water far slower than the 1,000-cubic-metre-per-second flow initially anticipated, and one that dikes downstream along the Lillooet River could easily withstand.

Reaching Pemberton some six hours later, the rushing water was "more of a surge than a tidal wave," said Guthrie.

To be determined is whether anything will be done with the remaining dam walls. Guthrie said they are too unstable to support people, let alone earthmoving machinery.

*tcoyne@vacouversun.com*

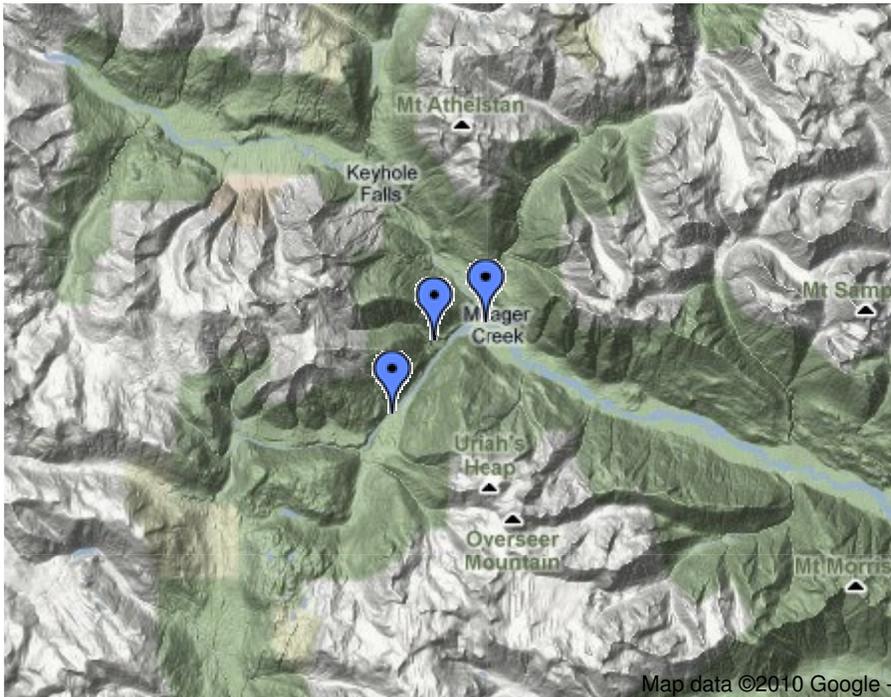
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- **Where:** [Mount Meager, 65 kilometres north of Pemberton, 150 kilometres north of Vancouver](#)
- **When:** 5:30 a.m. Frida, August 6, 2010
- **Volume:** 40 million cubic metres of rock, sand and debris
- **Size:** 300 metres wide and two kilometres long
- **Speed:** 30 metres per second

- **Impact:** The slide initially formed a dam across Meager Creek and Lillooet River, creating a lake. Fears of the dam collapsing and flooding the Lillooet Valley subsided Saturday after a breach in the dam slowly released the water. An evacuation alert was rescinded and residents have returned to their homes. No one was injured.

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View [Meager Creek mudslide, August 6, 2010](#) in a larger map

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