No arsenic trioxide in Giant Mine's springtime dust clouds, new research suggests

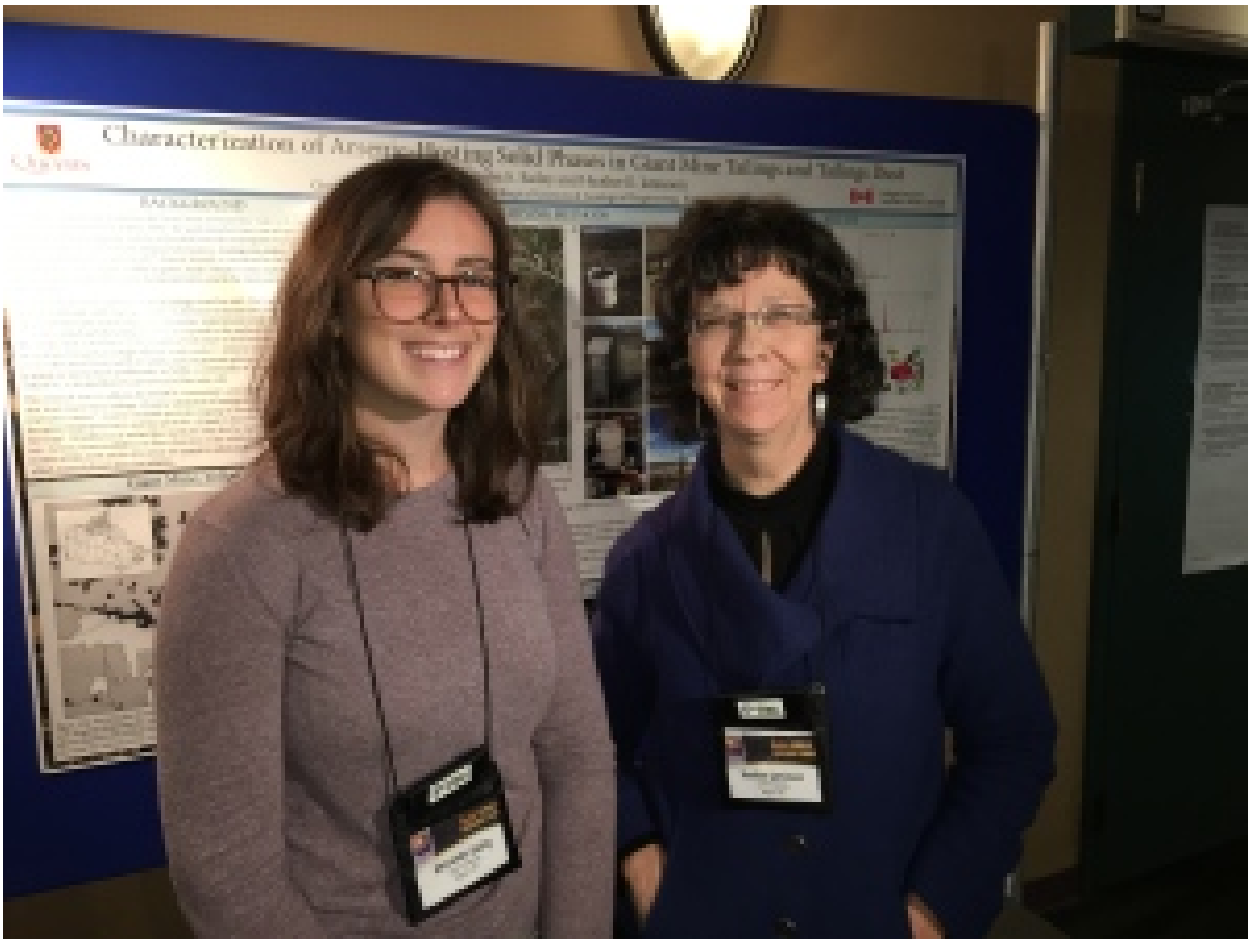
More analysis to be done but lack of toxic arsenic 'good news so far,' says researcher

By Mark Rendell, CBC News Posted: Nov 18, 2016 7:30 AM CT Last Updated: Nov 18, 2016 7:30 AM CT

A video posted on YouTube in 2015 appears to show a cloud of dust hovering above Back Bay, between Giant Mine and the community of Ndilo. (YouTube)

Dust clouds blown from Yellowknife's Giant Mine during remediation may not be as toxic as some have worried.

That's according to new Queen's University research, which has found no trace, so far, of arsenic trioxide in the fine particles of dust that gather on the site's tailings ponds.



Master's degree student Alexandra Bailey and her supervising professor Heather Jaimeson at the 2016 Yellowknife Geoscience Forum.

"I'm looking at the different minerals that host arsenic in the tailings dust, and… I haven't seen any arsenic trioxide in my samples so far," said master's degree student Alexandra Bailey.

"That's been a major concern in the community."

Bailey is in Yellowknife this week presenting her research at the Yellowknife Geoscience Forum, along with her supervisor, geology professor Heather Jaimeson.

Both stressed that the research was preliminary.

"We're less than 20 per cent of the way through the samples and still have the analysis, so we still have quite a bit more work to do before we can substantiate these findings," said Jaimeson.

"But the good news so far is that something that does cause concern — arsenic trioxide — has not been found in the samples we've done so far."

Dust clouds

Every spring when the snow melts, a thin layer of dust is left on the surface of the site's several massive tailings ponds. A good northwesterly wind can whip the fine particles into clouds, and send them whizzing across Back Bay.

An aerial map of Giant Mine's tailings ponds from Bailey's presentation. (Alexandra Bailey)

The Giant Mine remediation team does use a dust suppressant called Soil Sement. But as Bailey pointed out in her presentation material, there's often a span of time when this doesn't happen.

"In May, after the snow has melted and the tailings become re-exposed to the surface, there is a window of time when the temperature is too low… to apply a fresh layer of Soil Sement. This window coincides with an increased frequency of high-velocity wind events."

The dust plumes that can occur around this time have caused alarm, especially in the Yellowknives Dene community of Ndilo, which is directly across the bay from the mine.

- **Cover dusty Giant Mine tailings ponds: N.W.T. chief**
- **Giant Mine's tailings pond dust blows toward Yellowknife again**

Although Bailey's research "aims to address the YKDFN community's concerns," Jaimeson said this research, in itself, does not to determine whether the dust clouds are harmful or not.

"Understanding how worrisome things are is maybe beyond the scope of what Alex's project is doing. She's really characterizing the dust, she's not going to the risk assessment part of it," said Jaimeson.

That said, the fact that no arsenic trioxide has been found so far appears positive, she added.

Bailey will continue analyzing samples taken from the site over the coming year and expects to publish her findings next summer.