Toxic Legacies: Community perspectives on arsenic pollution at Yellowknife's Giant Mine

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Introduction: a mine's toxic legacy

The "Toxic Legacies" project is a community—university research partnership that aims to address the historical and contemporary legacies of environmental contamination from mining. It focuses on the abandoned Giant Yellowknife Gold Mine in Canada's Northwest Territories (Fig. 1), where mining activity poisoned the local environment and people, and left 237,000 tonnes of arsenic trioxide buried underground. Today, as governments propose controversial solutions to remediate the site, this project seeks to document community perspectives on both the historical experience and contemporary concerns surrounding the remediation and long-term care of this toxic landscape.

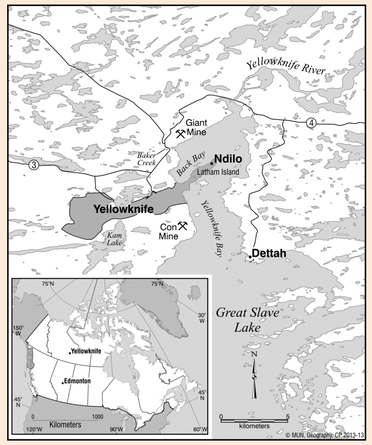

Figure 1: The locations of the historical Yellowknife gold mines and nearby communities. The Yellowknives Dene communities of Ndilo and Dettah, on the outskirts of the town of Yellowknife, were directly in the path of arsenic emissions from Giant Mine. Map by Charlie Conway.

Public interest research in Yellowknife

The "Toxic Legacies" partnership project emerged in part out of the frustration of the Aboriginal community and other northerners with the highly technical proposals and review process surrounding the remediation of Giant Mine. Aboriginal Affairs and Northern Development Canada (the federal department in charge of the remediation) proposed to freeze the arsenic in underground chambers at the mine site, rather than risk mobilizing it for treatment and/or removal. Although this plan underwent environmental assessment in the NWT in 2012, many local people expressed concern that key issues, such as the historical injustice of the mining period or the question of the long-term care of this perpetually hazardous site, were ineffectively addressed.

The research partnership aims to enhance community input into this controversial process through **four major sub-projects** (featured on the right), each bringing together researchers, students, Aboriginal community members, and other local actors.

Project partners

- Goyatiko Language Society, Dettah, NWT
- Alternatives North, Yellowknife, NWT
- Memorial University of Newfoundland
- Lakehead University, Thunder Bay, Ont.

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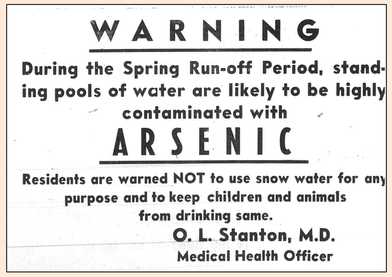
1. Arsenic, toxicity and environmental justice

Oral history and archival research in Yellowknife highlights the experience and perspectives of Yellowknives Dene people, who were disproportionately affected by arsenic pollution at Giant Mine. Dene people lived and worked in the shadow of Yellowknife's gold mines—in the communities of Ndilo (Latham Island), just across Back Bay from Giant, and Dettah, a few kilometers further down Yellowknife Bay (Fig. 1, left).



WARNING

During the Spring Run-off Period, standing pools of water are likely to be highly contaminated with

ARSENIC

Residents are warned NOT to use snow water for any purpose and to keep children and animals from drinking same.

O. L. Stanton, M.D.
Medical Health Officer

Figure 2: Notice printed in* News of the North, *April 6, 1951, pg. 6.

Living near Giant Mine during its operation meant that Aboriginal communities were on the front line of air- and waterborne arsenic exposures (Fig. 2). Although the arsenic represented a danger to the entire Yellowknife population, the toxic fallout from the mine represented a particular threat to Dene people because it was deposited on local berries and vegetables, and in snow that used as a water supply in winter.

Research into the history of exposure at Giant Mine aims to restore to public consciousness these negative experiences, and to counter the often celebratory story of Yellowknife gold promoted by settler governments and historical societies. Our research also suggests how this historical experience may inform remediation debates today.

2. Reconstructing environmental change

An important part of researching the environmental legacy of Giant Mine includes studies of how Yellowknives Dene people used the land before mining. Research will document the pre-mining landscape and local practices, using historical air photos, interviews with elders, and GIS technologies to create dynamic maps of Yellowknives people's traditional land uses. These studies will provide important inputs for discussion on the goals of environmental remediation and restoration at the site, as well as documenting traditional land use for the purposes of community education and information. The maps, along with oral history clips, traditional place names, and photos, will be posted on a project website.

Figure 3: Aerial photo of the pre-mining landscape of Yellowknife—Latham Island and "Old Town" are on the right, across Back Bay from the Giant Mine site. National Air Photo Library photo A5611-068.

3. Communicating with future generations

The arsenic buried at Giant Mine, if left in place, will remain toxic in perpetuity. How do we communicate this hazard to future generations, who will inherit the responsibility for the site?

Existing research on communicating with future generations focuses on the creation of symbolic markers and messages to warn future societies (who are unlikely to share our knowledge or language) about risks.

While considerable research has been done in relation to nuclear sites (see Fig. 4), virtually none of this work considers the insights of indigenous knowledge. Through workshops held with members of the Yellowknives Dene First Nation, this project aims to contribute indigenous perspectives on perpetual care and communication with future generations about arsenic hazards at the former Giant Mine site.

Figure 4: Conceptual model for warning symbols on the landscape, created for the Waste Isolation Pilot Project.

4. Documentary film: "Guardians of Eternity"

Project partner Goyatiko Language Society is working with Sheba Films and Yellowknife filmmaker France Benoit to produce a documentary film about the perpetual care of toxic arsenic at Giant Mine. The film will document the efforts of the Yellowknives Dene and their allies in Yellowknife (including project partner Alternatives North) to inject community and indigenous perspectives into this issue. Technical reports and assessments of the proposal to freeze arsenic underground at Giant have failed to incorporate these perspectives. In addition to chronicling community concerns, this film will be of interest to indigenous and local communities worldwide struggling with the long-term environmental legacies of extractive development, and debates around their remediation.

Figure 5: Project partner and director of the Goyatiko Language Society Mary Rose Sundberg being interviewed at the Giant Mine site for the film,* Guardians of Eternity *(Sheba Films, prod.). Watch the trailer at vimeo.com.