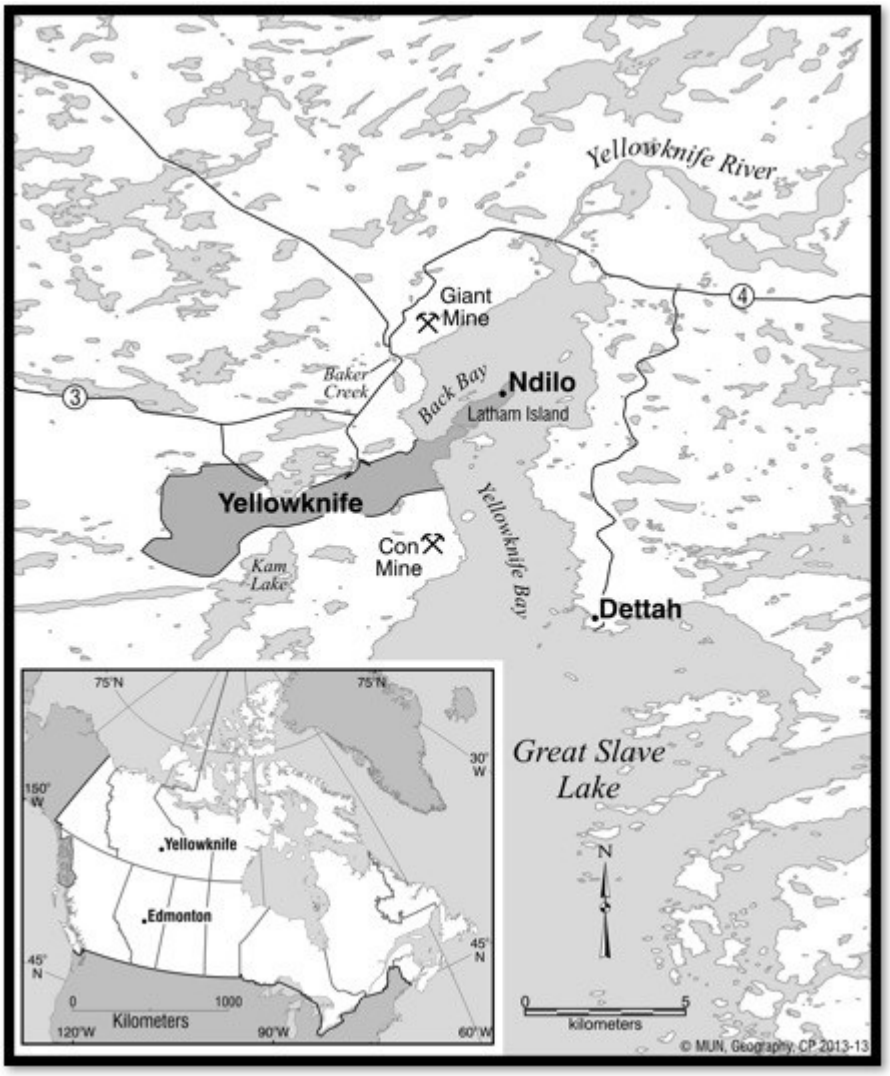
Rethinking Remediation at the Giant Mine, Yellowknife: Who decides what is 'clean enough'?

Editor's Note*: *This is the sixth post in the "Seeds 2: New Research in Environmental History" series co-sponsored by NiCHE and Edge Effects, publicising the work of early-career environmental historians. This series serves to highlight new work being done in the field of environmental history and connect this research to other fields and contemporary issues.

by Caitlynn Beckett



Map of the Yellowknife area (credit: Charlie Conway)

The first time I went to the Giant Mine site, I remember having a slight feeling of apprehension when, as we were driving by the tailings ponds, the director of the Giant Mine Remediation Project rolled down the window of the truck to point out the techniques being used to manage tailings dust. In my head, I knew that nearby air quality monitors consistently show that the air is safe, and yet I still felt uncomfortable. Alongside my concerns about tailings dust on the surface, I questioned how it would be possible to also come to terms with the more than 237,000 tons of toxic arsenic trioxide being stored underneath my feet.

Giant Mine Northwest Tailings Pond, used for water collection and treatment (Photo: Sally Western, May 2016).

For over fifty years, the Giant Mine operations polluted the surrounding landscape and waterways with arsenic trioxide, sulphur dioxide and hydrocarbons. In 2000, when the mine company went bankrupt, responsibility for remediation was left in the hands of the federal government, paid for with taxpayer dollars. Today, the federal remediation project is freezing the underground arsenic trioxide in situ, as final plans for surface remediation, which includes tailings management and soil cleanup, are still being negotiated. Many community members remain divided on how best to cleanup and confront the legacies of mining destruction.

The Giant Mine thermosyphons pictured here use a passive cooling technology to freeze the arsenic

trioxide stored underground (Photo: Sally Western, May 2016)

At first glance, the Giant Mine site is a ‘wasted’ landscape; one that engenders fear and uncertainty for the future, and anger over the past. At the same time, it is also a home to the residents of the Yellowknife area, including animals and plants, and is within the traditional territory of the Yellowknife Dene First Nations (YKDFN). As locals struggle with the idea of caring for this mine site in perpetuity, the operational history of the Giant Mine and the legacy of contamination is at the forefront of the affected communities’ thoughts.**[1]** Too often, however, remediation projects like the Giant Mine Remediation are rendered technical, apolitical, and ahistorical – they are seen as inherently good because they are cleaning-up a bad situation, or making a toxic site ‘better,’ without questioning who defines the parameters of what it means to ‘clean’ a landscape or ‘contain’ contamination.**[2]** Such projects are rarely contextualized within complex histories of colonialism, labour, or cumulative environmental degradation. Instead, project proponents sideline past injustices and portray remediation as a way to move forward towards something better.

The Giant Mine underground freeze testing area. Different methods of freezing were tested on one arsenic chamber in order to determine the best methods for freezing all fifteen underground chambers (Photo: Sally Western, May 2016).

When I began my Masters research on the Giant Mine Remediation Project, I think I took the word ‘remediation’ for granted. At first it seemed obvious that remediation was simply the phrase used to designate a contaminated site clean-up project. However, a deeper analysis of words such as remediation, restoration, and reclamation, and how community members in Yellowknife and the Yellowknife Dene First Nations define the project, have shown that using the term remediation reflects a

specific way of ‘cleaning-up,’ in addition to a way of obscuring responsibility for past environmental injustice and long-term care in the future.

In a technical sense, terms such as remediation, restoration, and reclamation include a wide range of practices aimed at cleaning-up, managing, and returning some kind of value to a contaminated or destroyed environment. Definitions of *environmental remediation* often refer specifically to the material aspects of managing contamination and deals with the removal or mitigation of pollutants in soils and water systems. *Restoration* processes involve attempts to return the environment to a former state, and in doing so, restoration practices make assumptions about past landscapes and human roles in the past.**[3]** Along similar lines, *reclamation* “aims to recover key ecosystem services and biogeochemical functions” and implies a repurposing or revaluing of landscape and land-use.**[4]** All of these approaches to cleaning-up are laden with values of what it means to care for, and live with, polluted landscapes.
My first experience of the messy, complicated nature of defining remediation was when I attended the Giant Mine Remediation Surface Design Workshop in February of 2016. At this point, the Giant Mine Remediation Project had been ongoing for over fifteen years. Despite the length of the project, many community members continually critiqued the lack of meaningful community engagement and argued that the decision-making process was too technically focused. In 2007, a Final Remediation Plan was published by the federal government, but was suspended when a local NGO, Alternatives North, and the YKDFN petitioned the City of Yellowknife to call the Remediation Plan to an Environmental Assessment. The Assessment ended in 2013 and resulted in the signing of an **Environmental Agreement** in 2015, which now

holds the Giant Mine Remediation Project team legally accountable to the concerns and measures outlined throughout the Environmental Assessment. Following this agreement, the Giant Mine Remediation Project was forced to re-evaluate remediation objectives, including a community objectives based approach to surface remediation design.

Giant Mine Surface Design Evaluation Workshop, February 16-18, 2016

Two major themes emerged from the **Giant Mine Remediation Surface Design Workshop**: some wanted to keep the mine site 'grey and ugly' to discourage people from going to or using the site, and some wanted people to be able to use the land.**[5]** Participants agreed that soils, sediments and tailings ponds should be remediated to standards that pose minimal risk under any future land use. But at the same time, there was disagreement about whether or not to allow for future use: people questioned whether tailings ponds and contaminated soils should be re-greened, used as sports fields, or left as rocky, unwelcoming landscape scars.

Many workshop participants saw surface remediation as a way to shape how the site will be remembered and used in the future, rather than simply an arsenic containment system. In this way, participants in the workshop questioned how cleaning up the Giant site would be connected to a broader geography of the cumulative impacts of mining, colonial relations, and environmental destruction. Community definitions of remediation went beyond the containment of arsenic underground and included stories and relationships that could be used to communicate to future generations and frame a perpetual care plan for the site. Community members used their knowledge of historical legacies to confront and question the ways in which remediation was framed as ahistorical and apolitical.

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Mine case illustrates how communities can use remediation projects as an opportunity to negotiate and articulate the morals, values, histories, and physical experiences associated with a contaminated mine site.**[6]** The Giant Mine Remediation Project also presents an opportunity for creative community discussion about relationships with the land, stewardship, perpetual care and future land uses.**[7]** At the Giant Mine, the passionate and dedicated community members of the YKDFN and Yellowknife have redefined remediation, forcing government officials, scientists and consultants to think a little harder about how contaminated sites are defined, cared for, and remembered.

Giant Mine Site. The blue and orange barrels mark the outlines of the underground stopes, which will

one-day be frozen using the thermosiphon technology pictured in Fig.'s 1, 2 and 4 (Photo: Sally Western, May 2016).

Going forward into my PhD, I want to investigate how the technical necessities of remediation can be brought together with the broader needs for community and landscape healing; how can remediation address concerns that are connected to both the material realities of pollution and the socio-environmental injustices of colonial dispossession and environmental destruction? This will include further research on mine sites across Northern Canada such as the Cyprus Anvil mine in Faro, Yukon. Ultimately, I hope that this research will contribute to the development of best practices for the closure of extractive industries, and will help to confront the implications of perpetual care for these sites. By interrogating what it means to 'clean-up' contamination, re-thinking remediation can unearth possibilities for place-based, community-driven remediation projects that are based on an 'ethics of remediation' and decolonization.**[8]**

This article is based on my Master's Thesis: Beckett, Caitlynn.* **Rethinking Remediation: Mine Closure and Community Engagement at the Giant Mine, Yellowknife, Northwest Territories, Canada. *Memorial University (October 2017).*

***Feature Image: Giant Mine Site tour with Caitlynn Beckett and Natalie Plato, Director of the Giant Mine Remediation Project (Photo: Sally Western, May 2016).*

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