

MEMBER PROFILES: THE MOVERS & SHAKERS OF THE YK BUSINESS COMMUNITY

YELLOWKNIFE CHAMBER INSIDER



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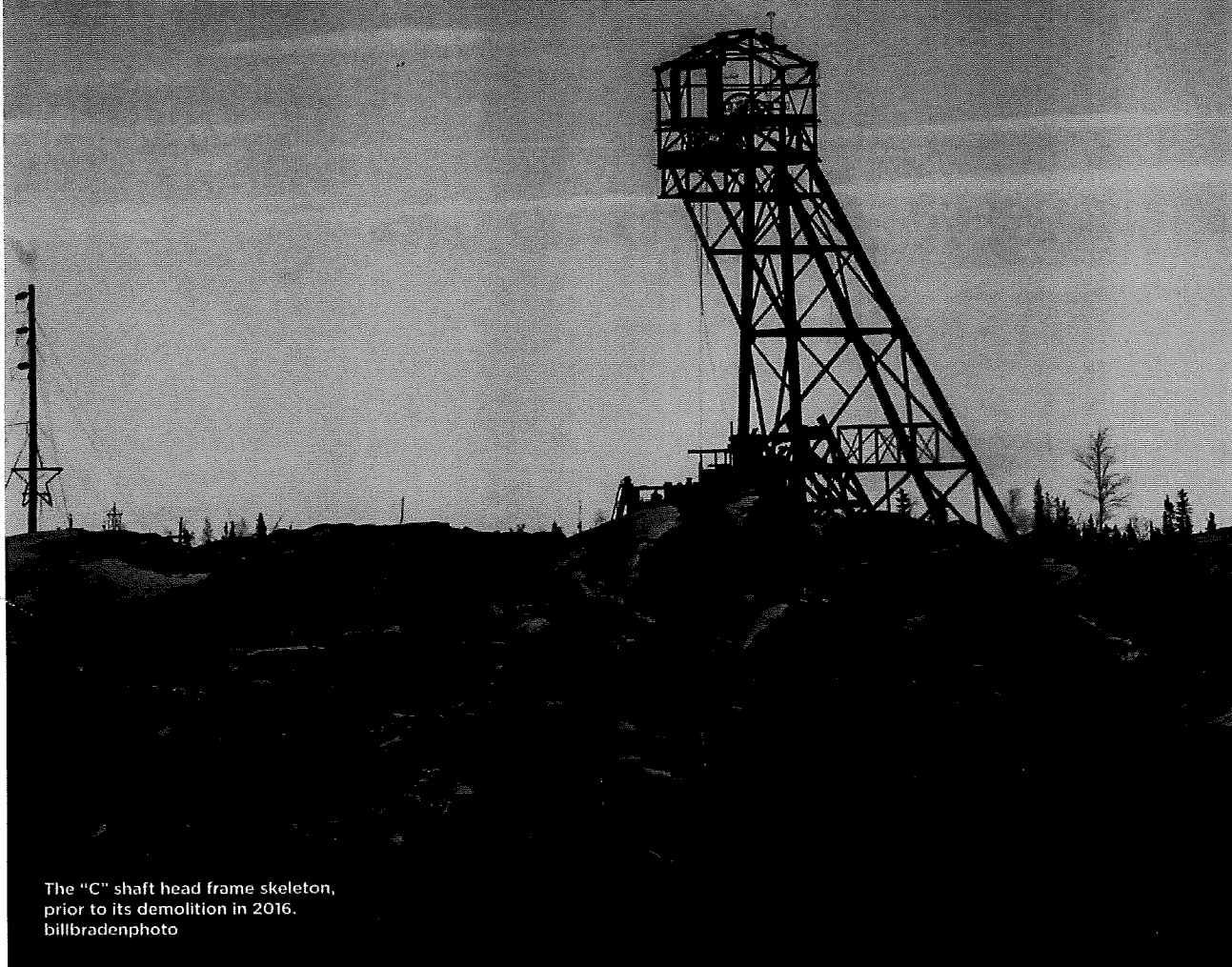
GIANT MINE
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THE LONG-TERM LEGACY OF GIANT MINE



The "C" shaft head frame skeleton,
prior to its demolition in 2016.
billbradenphoto

The Giant Mine's eight million-ounce legacy will keep on giving. The cleanup will transform 55 years of dirty mining and add a boost to Yellowknife's economy for decades to come.

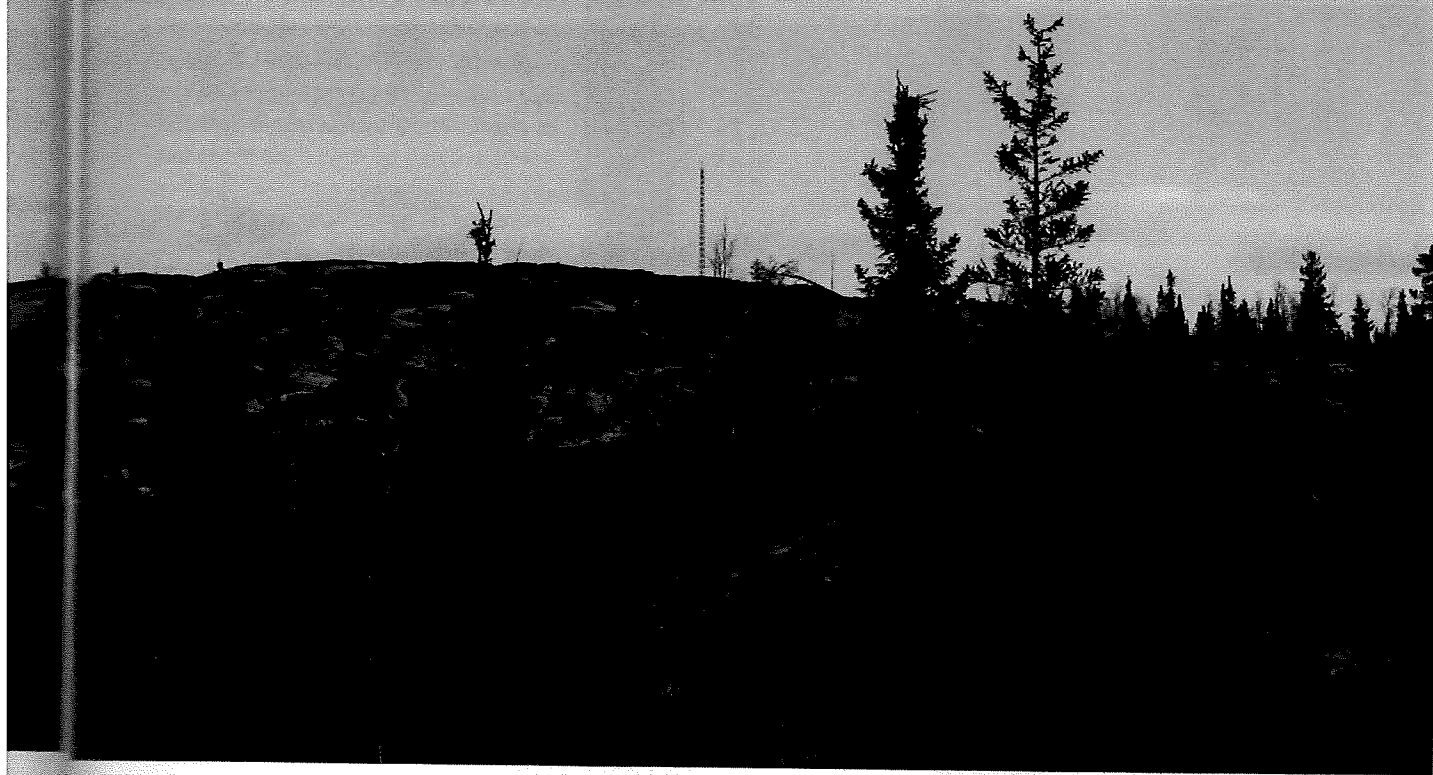
By Bill Braden

Think ahead, not too far out, to around the year 2023.

By then, the old Giant Mine site's 950 hectares will be reshaped as a peak workforce of over 300 toils at cleaning up more than a half-century of really dirty gold mining and refining.

It will take at least five years, to about 2028, to get most of the cleanup work done, and years more to finalize the job. And then, for decades to come, a much smaller workforce will monitor and maintain a complex range of control systems.

In the coming decade, the federal government will spend more than \$600 million on the cleanup - that's on top of more than \$365 million already spent - a staggering amount of cash that may not be nearly enough to satisfy a very long list of project criteria, demands and expectations. High on that list are hopes from Yellowknife's Indigenous and business communities that they will be at the front of the line for jobs and service opportunities worth hundreds of millions.



As one long-time Yellowknifer wryly observed, Giant's eight million-ounce gold legacy, spanning from 1948 to 2004, will just keep on giving. And it's true. Apart from the hundreds of jobs and millions in trade that flow yearly into Yellowknife pockets from the NWT's three diamond mines, it is the biggest certain economic project on the city's near-to-midterm horizon.

But just how and when those impacts will roll out is not certain – yet. Despite almost 20 years of planning, research and studying, the project's complexity makes it difficult to say when the process will roll out.

"It's early in the process as it stands right now," says Paul Gruner, President and CEO of the Yellowknives Dene First

Nation's Det'on Cho Corporation. "But I'm encouraged by what I've seen so far from INAC (Indigenous and Northern Affairs Canada) and from Parsons. I would say I'm more optimistic now than I was a few months ago."

He's referring to Parsons Inc., the American engineering giant which late last year was awarded the contract to manage the Giant Mine Remediation Project (GMRP). Parsons plans to run the project from its Canadian headquarters in Calgary and a satellite office at the mine site just north of Yellowknife.

Det'on Cho has been a contractor on the Giant site for about 15 years, through joint ventures with Nuna Logistics and Nahanni Construction, for site management, security and construction. Gruner says at least half of the 60 or so Det'on Cho workers are Northerners.

"There's definitely a willing desire to engage at a local level ... and to make this a positive socio-economic engagement for the territory," he says. "They've been soliciting our feedback in how to best engage, how to hire locally. We don't know the outcome yet of the most recent RFP... but everything I've seen so far has been very positive."

Kenny Ruptash, vice-president of projects for Yellowknife-based Nahanni Construction, praises the relationship he's had with Parsons as one of its Giant subcontractors over the past six years. He also introduced Parsons to other local suppliers and says they have kept up those channels.

"They've been great to deal with, very respectful of the local community," says Ruptash. "I think Parsons has done a good job about rolling this out and contacting companies to give a heads up about what's coming up."

Both Gruner and Ruptash are bullish on what the Giant cleanup project can do for Yellowknife's economy, and for the future of mining in the North.

"You're going to have a bunch of displaced workers from Diavik (anticipated closure 2025) with transferable skills,"

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says Gruner, estimating there are at least 200 northern workers at that mine. "What a great opportunity, that we reduce the downside of Diavik shutting down and we can port that skilled labour into the remediation plan's 10-years plus program."

Ruptash takes that notion a step further. "If you look at remediation, the cleanup of Giant will transition quite nicely into the cleanup of other diamond mines," he says. "Highly trained individuals can walk into those other situations."

Gruner urges collaboration, and managing the peaks and valleys of where and when the labour force will be needed. "That's where everybody in the Territories, including the Det'on Chos of the world, need to be prepared," he says. "We need to make sure we've got a developed workforce, that we've got businesses in place that can go and execute that work."

When Giant's last owner, Royal Oak Mines Ltd. declared bankruptcy in 1999, it was legally able to walk away from the mess that it and previous owners left behind. Their mining leases reverted to the federal government, under INAC control.

INAC assumed full control of the site in 2004 and assembled a team that now includes eight people in Yellowknife and others in Ottawa and Edmonton, to manage the site and design the massive clean-up. The team has many project layers to coordinate: adhere to the federal Metal Mining Effluent Regulations, the Fisheries Act, and NWT mining and safety laws, to run the Giant site as a functioning mine, maintaining and keeping safe the underground and surface workings. It has an almost overwhelming consultation mandate; it regularly connects with no fewer than five local working groups, including some 14 different agencies.

Between 2006 and 2016, INAC spent about \$356 million on these and others tasks. It threaded its way through a seven-year environmental assessment. It has razed and meticulously disposed of dozens of arsenic and asbestos-contaminated structures. It footed the bill for millions in

engineering and environmental studies to draft an overall surface rehabilitation and underground arsenic containment plan, and financed the \$17.5 million mine site bypass, re-routing the Ingraham Trail around the mine workings and open pits.

INAC is now preparing for its biggest regulatory challenge: filing its application early in 2019 for the all-encompassing

Closure and Reclamation Plan and the related and necessary water license. This process, expected to take 17 months, will be open to public interveners and will set the detailed criteria for the remediation plan and for Parsons to carry out the work.


When Parsons formally assumes the project, it will also take over all subcontracting.

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It has already had boots on the ground at the Giant mine project. From 2013 to 2016, it managed the \$35.7 million demolition of the Giant roaster complex. Parsons has an almost identical role in Yukon, where it won a \$14 million, four-year contract to manage the abandoned Faro lead-zinc mine.

As the Giant project's main construction manager (MCM), Parsons has been awarded two contracts: a \$32 million deal to manage and maintain the site from July of this year to sometime in 2020. That's when the new closure and reclamation plan and water license are expected to be in hand, both of which will guide Parsons' management of the much larger and long-term clean-up. The federal government has booked this effort at \$600 million, plus a 50 percent contingency.

Two major subcontractors have already been selected: AECOM for environmental support services and general design, and Golder Associates for mining support services and civil design.

"One of the primary roles Parsons has is tendering the contracts on behalf of the federal government," says Rob Turek, manager of the Giant procurement team for Public Works and Procurement Canada (PWPC). "As of July 1 this year, they will assume responsibility for the site and they will tender the work packages related to refreshing care and maintenance and site stabilization work (up to 2020) and the larger remediation stage (beyond 2020)."

Under federal procurement policy, the remediation plan falls under the umbrella of international free trade conventions such as the North American Free Trade Agreement. Canada cannot compel these contracts to go to Canadian firms or even demand conditions on local content. These rules caused no small amount of angst among Northerners, who were expecting hard guarantees for a share of the remediation plan's action.

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Kenny Ruptash, Vice-president,
Projects, Nahanni Construction

After all, hiring local contractors and labour has been a condition of getting approval for any new development here in the NWT. And, claimed by just about every local politician, this is in our backyard – we deserve it! The Yellowknives Dene First Nation (YKDFN) especially, felt it had a right to demand conditions; its people bore the terrible consequences of unchecked arsenic pollution early in the mine's life.

On contracts estimated at over \$100,000, local and northern firms will be up against big competition.

Turek says Parsons is required to tender these internationally, under the trade agreements rules for federal projects. All contracts will be posted on the MERX on-line tendering system listing federal and provincial government projects.

"We include provisions in all contracts to maximize local, regional and indigenous participation, for encouraging indigenous employment, subcontracting and training," says Natalie Plato, deputy director of the Giant project for INAC.

Turek says Parsons will assess capacity within northern and indigenous suppliers, and under federal support policy for northern firms, can award tenders only to those firms. "We want to make this do-able for northern and Indigenous firms so they can compete, and right-size them for the local and regional capacity," says Turek.

Despite the international trade barriers, INAC was keen to find a way to give voice to frustrated locals. In its 2015 Giant project environmental agreement, INAC established the Giant Mine Oversight Board (GMOB) as an independent society to monitor the project. It is governed by a mix of citizen and professional members, appointed by the City, YKDFN, North Slave Métis and the advocacy group Alternatives North, with GNWT and INAC as co-proponents. From its storefront office in downtown Yellowknife, it has the mandate and a budget of \$680,000 to report to the public, and to question and make recommendations to INAC's project team.



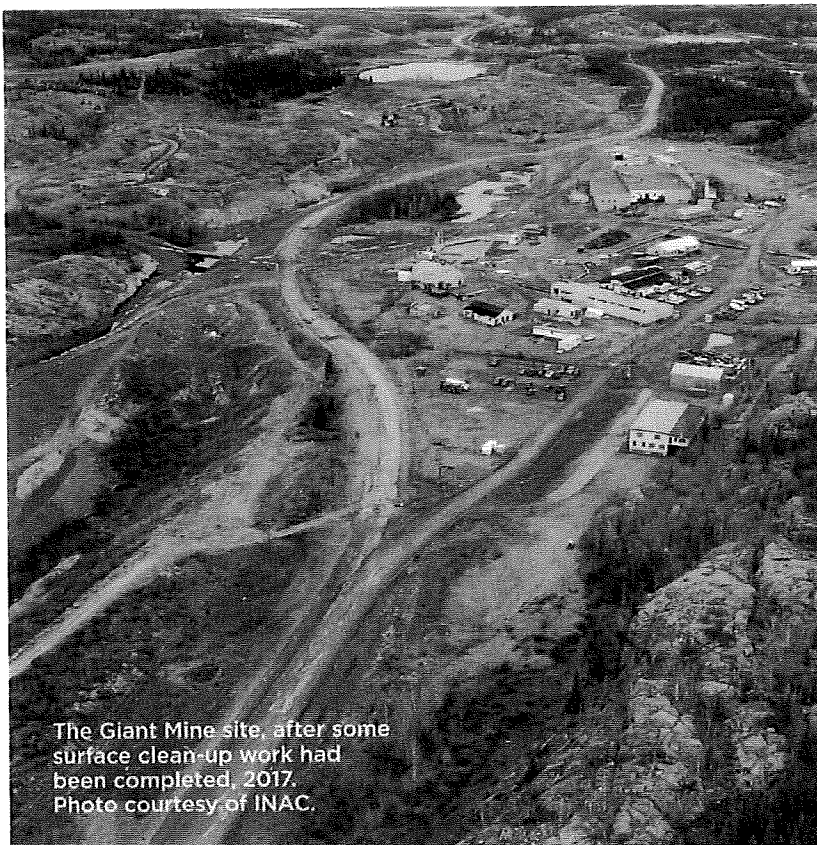
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The Giant Mine site, after some surface clean-up work had been completed, 2017. Photo courtesy of INAC.

It also has a daunting research task, and an annual budget of \$180,000, to seek a permanent solution to underground arsenic trioxide that will be frozen in place. Freezing is regarded as only a stopgap measure to contain the 237,000 tonnes of the highly toxic byproduct. In fact, the current design suggests freezing in place can be a manageable 'fix' for only 100 years.

Plato says Parsons will have a small core team – perhaps fewer than 10 – on site to manage the mine and the contracting. Two local residents have already been hired: Louie Azzolini, formerly the director for the Arctic Energy Alliance, is the community economic development manager, and Lisa Colas of Ndilo is community liaison.

"Their main role is to update our local labour study, and work with the communities and local businesses to make sure we package the upcoming work appropriately," says Plato.

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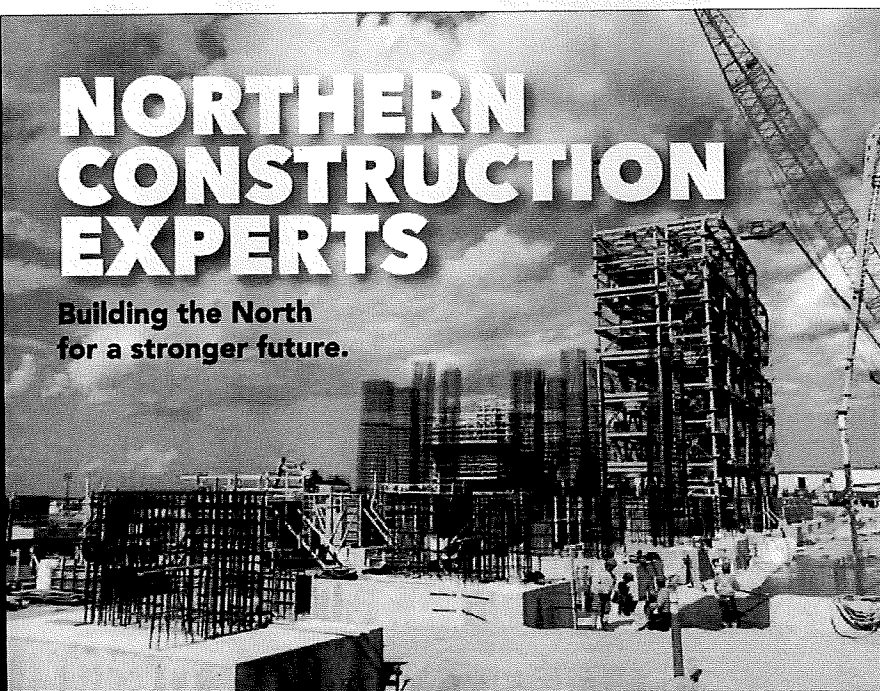
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Paul Gruner,
President and CEO,
Det'On Cho Corporation

"As the MCM (main construction manager), Parsons is reaching out to Indigenous and northern Yellowknife area businesses through direct engagement and via the Parsons MCM website," responded Azzolini in an email. "Once future remediation plans are firmed up and associated contracting opportunities are more firmly defined, a concerted effort will be made to communicate that information to the business community."

The closure of Giant, followed closely by the closure of Con mine, in the early 2000s hit the City's coffers hard. Both mines were within City limits, so Yellowknife lost hundreds of thousands

of dollars in industrial taxes. Grants and payments in lieu of taxes from territorial and federal sources have stopped. A deal to provide minimal emergency services to Giant, valued at \$70,000 a year, expired in 2014. It's an arrangement the City wants to renew.

In a briefing to the City's municipal services committee in February, Kerry Penney, Director of Policy, Communications and Economic Development, advised that the withdrawal of both Giant and Con sites also cut deeply into the City's land quantum. Remediation of some areas to industrial and residential standards could open new



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parcels of land for growth, and Penney said a next step would be to add this long-range potential to the City's community and engagement planning processes.

"We are working with the GNWT and the project team to ensure that maximum benefits are achieved locally," she wrote in an email, adding that, "the City wants to ensure maximum benefit to northern/Yellowknife businesses and one mechanism to achieve this may be a socio-economic agreement."

The Giant project team, in a 2018 brochure, stresses that it "strives to

ensure the cleanup leaves a positive legacy from one of Canada's largest contaminated sites." It says it will direct contractors to deliver socio-economic benefits that meet local capacity and needs.

In all, the Giant mine project does indeed have the mandate, the money and all the good intentions to turn one of the country's worst industrial messes into a cleaner, maybe even reusable place. Most agree, though, that's too early to gauge whether, and how, the final chapter of Giant's legacy will meet the expectations of the communities it helped, yet hurt, so much. **YKCI**

Giant leaves a forever legacy

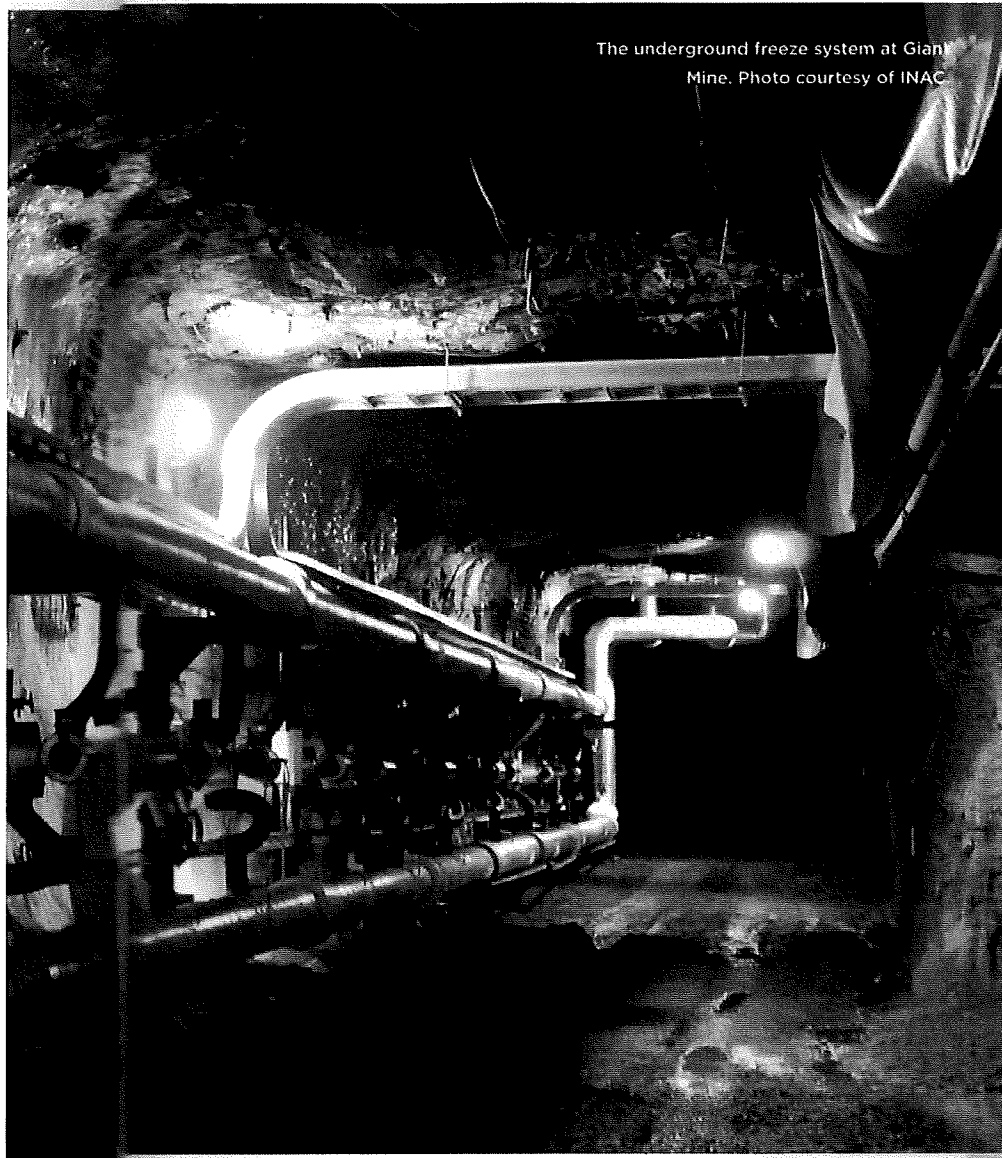
Johnny Baker found gold at the site that became the Giant mine in 1935, but commercial ore was not proven until 1944. His exclamation that a rich surface vein was "two hands wide and goes on forever!" became the name of the Yellowknife musical *Two Hands and Forever*, staged in the 1980s. Indeed, the mine fostered a thriving company camp that was a cornerstone of Yellowknife culture into the 1980s.

The mine poured its first gold in 1948 under Falconbridge, was later sold to Pamour (1986-90) then to Royal Oak Mines (1990-99). In 1993, during a bitterly-fought strike, an underground bomb set by a striking miner killed nine replacement workers, shattering the community. By 1999 Royal Oak was bankrupt, mining stopped and the lease briefly reverted to the federal government.

Miramar Mining Corp., which was closing down the neighbouring Con Mine, made a deal with INAC and re-started mining at Giant. Miramar recovered Giant's remaining ore, and from 1999 to 2004, trucked it from Giant to the Con mine for processing, ending 55 years and 8 million ounces of gold production at Giant. The lease, and with it, the second worst industrial mess in Canada's history, once again reverted to the federal government.

Giant left behind an ugly swath: eight open pits, four tailings ponds, 325,000 cubic meters of contaminated soil and an estimated 85 buildings laced with arsenic and asbestos. By far the greatest hazard is 237,000 tonnes of arsenic trioxide, a byproduct from processing the gold, which was pumped back into 11 underground stopes. To stop it from seeping through the rock into Great Slave Lake, it will be frozen in place.

The underground freeze system at Giant Mine. Photo courtesy of INAC



GIANT MINE REMEDICATION PROJECT LABOUR STUDY

The Giant Mine Remediation Project Labour Resource Study 2017, released in March 2018, by Stratos Inc., gives Yellowknifers the best scenario to date of just how big the Giant Mine cleanup will be, and how long it could take, to remedy a half-century of very dirty gold mining and refining.

The 141-page study says there are another three years of detailed planning and design ahead, by the federal planning

team and its principal contractor, Parsons Inc., before rehabilitation begins in earnest. A major permitting threshold also lies ahead - getting a renewed water license from the Mackenzie Valley Land and Water Board. This intensely detailed process could take up to 18 months and, because an equally detailed reclamation and closure plan must be submitted as part of regulatory process, will reveal a lot more about how the work will roll out.

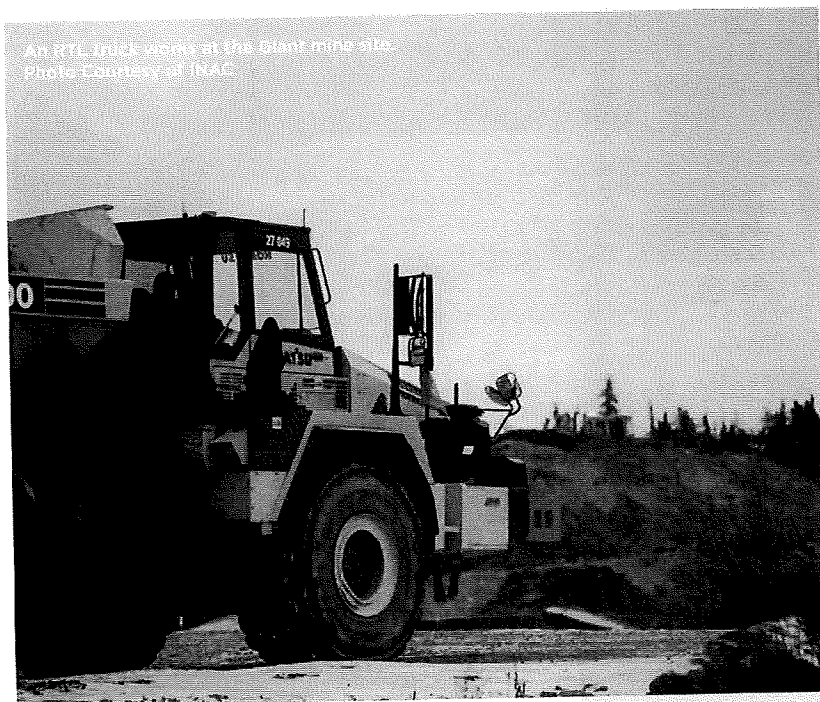
If the water license is approved and issued, the remediation process will gear up by 2021. The workforce will increase from about 30 to over 300 by 2023, and is expected to spool back to less than 200 by 2026, and by 2030, to fewer than 50. During this intensive nine-year period, the bulk of the demolition, materials disposal, water management and freeze-block systems will be completed. About 30 workers will then be needed for many years to maintain the sprawling site to the standards set in the approved plan. Stratos qualifies that any forecasts for labour or project timelines are subject to INAC and Parsons finalizing the overall plan, subject to the terms of the water license.

It's a stark comparison: the Giant Mine operated for 51 years. The charts and tables in this report show that it will take at least 35 years to plan and carry out its rehabilitation.

Over the project's peak five years, from 2012-25, the labour requirements alone are roughly equivalent to adding the entire payroll of the City of Yellowknife's 270 staff to the Yellowknife economy. As Yellowknife prospector and mine history advocate Walt Humphries said, in a 2014 article in *The Economist*, "That mine is still making money... and it will make money for years to come."

Stratos speculates that the gradual slowing of NWT's mining sector over the next few years may benefit the project, as affected workers seek their next paycheck. In a sense, it could mirror the bust-to-boom cycle the city lived through 20 years ago. When both two gold mines closed, a pall of gloom was replaced with the euphoria of the diamond economy.

Adding to that optimism, the report says that, especially among indigenous communities, there is a potential labour source emerging which, given training opportunities, could satisfy needs on all sides. "The findings demonstrate that there is Northern and Northern Aboriginal capacity for GMRP entry-level and semiskilled occupational needs, as well as some skilled and professional occupational needs," says the study.



An RTL truck views at the Giant mine site.
Photo Courtesy of INAC.

MAJOR PROJECTS IN THE NWT AND PROJECTED LABOUR DEMAND

PROJECTED LABOUR DEMAND	Ekati (+ Jay pipe)	Diavik + A21 ¹	Snap Lake ²	Gahcho Kue	Cantung ³	Inuvik-Tuk Hwy ⁴	Whati Hwy ⁵	GMRP	TOTAL (Excluding GMRP)
2017	1889	1134	55	380	254	49		30	3761
2018	1889	1134	35	380		49	150	30	3637
2019	1889	1134		380			150	30	3553
2020	1889	1134		380			150	30	3553
2021	1889	1134		380			150	204	3553
2022	1889	1134		380			10	312	3413
2023	1038	1134		380			10	254	2562
2024	1038			380			10	251	1428
2025	1038			380			10	202	1428
2026	1038			380			10	162	1428
2027	1038			380			10	162	1428
2028	1038			380			10	162	1428
2029	1038						10	162	1048
2030	1038						10	36	1048
2031	1038						10	30	1048
2032	1038						10	30	1048
2033	1038						10	30	1048
2034	282						10	30	292

¹ A21 will allow Diavik to maintain current production rates

² It is unclear whether care and maintenance will continue beyond 2018

³ This mine site is located near the Yukon border, a long distance from the GMRP Site and Yellowknife community

⁴ This project indicates an additional 40 long-term jobs are expected following the completion of the project, but it is unclear whether this will be direct or indirect employment

⁵ The labour numbers are preliminary, taken from a public announcement by the NWT DM of Transportation

Still, there are the unknowns.

The Stratos team makes it clear they were hampered in some of their work by stale, inconsistent, or incomplete data. For instance, the GNWT's 2014 NWT-wide labour survey won't be updated until 2019. They also flagged that Canadian and world market conditions could easily skew their assumptions over time. For example, Dominion Diamond's recent suspension of its massive Jay Pipe expansion at Ekati, announced just weeks after the report's release, signals another shift in the NWT's labour dynamics.

The study shows there is only one other significant project on the horizon: the Tlicho all-season road which will connect the community of Whati with Highway 3, the main road to Yellowknife, will likely mostly completed

by the time GMRP begins to ramp up. There are other proposed projects, such as the NICO, Prairie Creek and Pine Point mines that could be rivals for available labour. None are advanced enough to consider at this time.

Like all big projects North of 60, this one can't be entirely staffed by northerners, says Stratos. Much of the talent needed, such as entry-level labourers, semi- and skilled trades like heavy equipment operators, drillers, blasters, welders or electricians, is available in the NWT. But there will be range of skilled technical and professional roles that will have to come from elsewhere.

"Overall, local labour supply can partially fulfill GMRP labour needs, although the local labour market may not have the interest or skills needed.... and may

require additional training or education. Stratos adds that the local Aboriginal workforce may be larger than presumed, as more indigenous people join the workforce and achieve higher education."

The study includes charts and tables for about 60 specific skillsets and breaks them down into 15 "work centres" such as underground, landfill and open pits. Each chart includes a timeline of what years a specific job skill will be needed: for instance, a total 59 drillers and 62 driller helpers jobs will be needed on surface from 2021 to 2030. More will be needed underground.

The Stratos report was commissioned by Indigenous and Northern Affairs Canada. For more information about the Giant Mine Remediation Project, go to the website at www.giant.gc.ca. YKCI