ONTARIO MINING Review

e-newsletter

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Pan American Energy Corp. begins fully funded drilling at Big Mack Lithium Project near Kenora

Newmont looks to Canada for multi-decade growth

How drone technology can ensure safe navigation in areas where GPS signals may be obstructed

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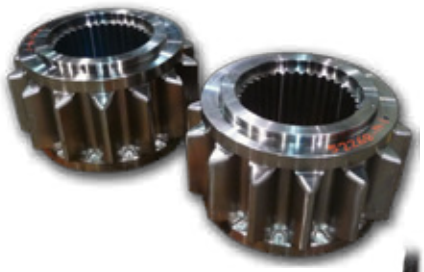

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e-newsletter

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Message from the editor

KELSEY JAMES

Welcome to another issue of the *Ontario Mining Review* e-newsletter

We have lots of exciting mining content to share and we hope you enjoy the final edition of 2023.

On page six, Minister of Mines George Pirie discusses how Ontario's mining landscape has changed since 1883, when a Canadian Pacific Railway employee's rock samples led to the discovery of the world's largest concentration of nickel sulphide ore. One hundred and forty years later, the Ontario government continues to invest in exploration with its recently launched Critical Minerals Strategy, as well as the Critical Minerals Innovation Fund (CMIF) and the Ontario Junior Exploration Program (OJEP), which was started to attract investment and use innovative concepts to develop critical minerals projects in Ontario

On page 16, you will learn about Rock Tech Lithium's recently announced collaboration with Imagine Lithium and their Jackpot Project to group and start a reliable raw material supply chain to support Rock Tech's proposed lithium converter along Lake Superior's North Shore. Rock Tech has also entered a cooperative partnership with the BMI Group and Red Rock Indian Band to assess the former Norampac paper mill site in Red Rock for a spodumene transloading facility.

Women in Mining Canada examines the uses of drones in mining operations and how they can assist in surveying and mapping, monitoring and inspection, and exploration. Nutrien, the largest soft rock miner and potash producer in the world, uses submersible drones to inspect and monitor structures like tanks, pipelines, rake structures, and pond intakes. You can read about this on page2 4.

These stories are just a small preview of what we have in store for you in this edition of *Ontario Mining Review* e-newsletter. We wish to thank all the companies who have contributed a story, including:

- Workplace Safety North
- Mining Industry Human Resources Council
- IFR Workwear
- Timberland Equipment
- SPC Nickel
- Pan American Energy Corp.
- Valard Construction
- Bit Service
- Platinex Inc.
- Newmont
- Wyloo Metals
- Gold Claim for Option

Thank you for reading our e-newsletter. As always, if you have any story ideas, please feel free to email me.

Kelsey James
kelsey@delcommunications.com ⚒

Message from the Ontario Minister of Mines

HONOURABLE GEORGE PIRIE

Ontario's mining landscape has changed significantly since 1883 when a Canadian Pacific Railway employee's rock samples led to the discovery of the world's largest concentration of nickel sulphide ore. This breakthrough put Ontario on the global mining map.

While many things are different now in Ontario mining compared to the 1800s, exploration remains the backbone of our industry and, 140 years later, our province is still considered a top destination globally for mineral exploration and development investment. With Ontario's 2022 mineral production valued at $13.5 billion, the province's industry is once again among the top mining jurisdictions in the world. Last year, Ontario also reclaimed the top spot for exploration spending in Canada with $989 million invested to find the mines of the future.

Our government recognizes the importance of this job-creating sector, and that's why we launched programs to invest in exploration and innovation through our Critical Minerals Strategy. Our strategy is focused on building an integrated supply chain from exploration right through to manufacturing electric vehicles. It simply cannot take 15 years to permit and build a mine if we are going to achieve our vision. Our government addressed this challenge by passing the Building More Mines Act, 2023 to cut red tape and improve timelines so government can operate at the pace of business.

The Critical Minerals Innovation Fund (CMIF) and the Ontario Junior Exploration Program (OJEP) were also launched to attract investment and use innovative concepts to develop critical minerals projects in Ontario. Through OJEP, we have invested $35 million to encourage junior mining companies to explore for the mines of the future. We also invested $5 million through the CMIF to incentivize companies to find innovative solutions to supply chain challenges facing Ontario's critical minerals sector.

Currently in Ontario, there are about 300 active exploration projects. These projects are searching for commodities that include gold, base and rare metals, platinum group elements, iron, and chromite. Several of these projects benefited from the advice of experts and the available geoscience products provided by the Ontario Geological Survey (OGS).

Our OGS applications are world-class and provide key information to the mineral development community through government geological reports and maps.

Applications such as the new and improved version of GeologyOntario, which features geospatial and text search tools that allow clients to access and visualize Ontario geoscience tools and download digital data, information, and publications. The critical minerals focused Ontario Mineral Inventory geospatial product enables clients to search for critical minerals on OGS Earth to determine where these minerals can be found.

The OGS is a leading provider of reliable, credible, and accessible data used to attract and guide investment in minerals and make land-use planning decisions. To build a made-in-Ontario critical minerals supply chain, we will need to leverage the data through the OGS to take advantage of

the exciting opportunities in our mineral industry.

To learn more about how the OGS can help you, I invite you to register for the second Ontario Geological Survey Virtual Showcase, a comprehensive three-day event packed with information about our government's latest geoscience activities and initiatives.

So, mark your calendars for November 28 to 30 because you don't want to miss the opportunity to learn how geoscience information supports mineral sector decision makers. It can also help advance Ontario's position as a global leader and supplier of critical minerals. Visit www.OGS-Virtual-Showcase-2023.eventbrite.ca to register for this free event.

We have exciting times ahead of us as we lead the way in mining innovation and work to cement Ontario's reputation as the number one jurisdiction for mining globally. ⚒

Enhancing safety in Ontario's mining industry: A collaborative approach

New industry research lists top causes of collisions in underground mines

In June 2023, a group of experts from Ontario's underground mining industry gathered to address an important concern: collisions involving mobile equipment, pedestrians, light vehicles, and fixed facilities that put workers at risk.

"This initiative is part of Workplace Safety North's commitment to a risk-based approach to enhance health and safety in the workplace," said Robert Marin, Health and Safety Specialist at Workplace Safety North (WSN). Marin and his colleague, Sam Barbuto, WSN Health and Safety Specialist, facilitated the research workshop with industry.

THE COLLABORATIVE PROCESS

Subject matter experts, representing both labour and management, worked together to identify and analyze root causes and effective controls for decreasing this risk.

"The approach taken during the workshop was characterized by openness, transparency, and collaboration," Marin said. "It ensured that all perspectives and viewpoints were heard and respected. The final list of identified risks was shared with all participants before the workshop concluded, and the results were reviewed and validated to ensure accuracy."

Importantly, the process focused on finding solutions that industry experts could support, rather than seeking a consensus, although results showed a significant degree of convergence. The emphasis was on addressing the most critical risks through a data-driven approach.

IDENTIFYING THE KEY RISK

The outcome of this collaborative effort was the confirmation and development of a comprehensive risk statement as an initial step in the root cause analysis.

The risk statement addressed "collisions or contact between mobile equipment, pedestrians, light vehicles, and/or fixed facilities causing harm to workers." The "Fishbone" diagram approach was used to define the root causes of the problem accurately.

TOP 10 CAUSES OF COLLISIONS IN UNDERGROUND MINES

The workshop participants identified the top 10 root causes of collisions in underground mines, acknowledging that worker injuries could range from severe to fatal.

These root causes were determined through input from workers, supervisors, and employers from the Ontario mining industry, facilitated by Workplace Safety North.

1. Equipment design: Inadequate equipment design was a significant contributing factor.
2. Older mine workings: Older mines didn't always work well with modern equipment.
3. Non-compliance to procedures and standards: Failure to follow safety protocols was a recurring issue.
4. Ineffective traffic management program: Sometimes, the way vehicles moved around in the mine was not safe.

5. Inadequate communication systems: Poor communication made it hard for people to stay safe.
6. Lack of confidence in collision avoidance technology: Some workers didn't trust the technology meant to keep them safe.
7. Pedestrian exposure to mobile equipment: People walking near moving equipment were in danger.
8. Distracted driving: Distractions while operating vehicles were a common problem.
9. Fit for work: Ensuring that workers were fit for their tasks was sometimes overlooked.
10. Ineffective assessment of training competencies: Inadequate evaluation of worker training.

WHAT NEEDS TO HAPPEN NOW?

To make mines safer, the workshop recommended taking these steps right away:

1. Better equipment design: Use proximity detection cameras and work with equipment manufacturers to improve safety.
2. Legislate clearance requirements: Ensure equipment has the necessary clearances from walls and safety bays.
3. Review site-specific equipment commissioning checklists: Make sure equipment is designed to consider blind spots, line-of-sight, mine workings, infrastructure dimensions, speed, braking, and cab ergonomics and illumination.
4. Strong collision avoidance systems: Use reliable collision avoidance systems and follow legal requirements.
5. Provincial guidelines: Create provincial guidelines for choosing and using equipment, with help from the Ontario Mining Association (OMA) and equipment manufacturers.

BEING READY FOR THE FUTURE

"The results of the workshop will be shared with committees in charge of mining safety: the Mining Legislative Review Committee (MLRC) and the Provincial Mining Tripartite Committee (MTC)," Marin said. "They will use these findings to make future health and safety-related initiatives and supports for the mining sector."

The workshop's findings will also help create better safety practices, make sure everyone knows the rules, and train supervisors properly.

A SAFER FUTURE FOR ONTARIO MINES

The collaborative efforts of experts from the Ontario underground mining industry, representing both labour and management, have led to a proactive approach to addressing the critical issue of collisions and contact incidents in underground mines.

By finding the root causes and taking targeted steps, the industry is making big strides toward keeping workers safe. These measures, along with the ongoing support of Workplace Safety North, will contribute to a safer and more secure future for the mining sector in Ontario.

New study and polling shed light on challenges faced by mining-centric post-secondary education programs

By the Mining Industry Human Resources Council (MiHR)

Mining has grown increasingly reliant on workers with specialized skills. As industry has become more technologically advanced, the need for workers with post-secondary education (PSE) has become more important.

As the world begins to shift to low-carbon technology and infrastructure, demand for critical minerals is expected to increase substantially in the coming decades. To support this expansion and avoid ongoing labour shortages, Canada's mining sector will need a robust pipeline of qualified and skilled workers. As such, a well-functioning PSE system is vital for the sustainable growth of the industry.

The Mining Industry Human Resources Council (MiHR) recently released a report titled "From Classroom to Mine Site: A Review of Canada's Post-Secondary Education Pipeline for the Mining Sector", which delves into the PSE system and its capacity to support Canada's mining labour market.

Through in-depth interviews and quantitative data analysis, the report sheds light on the challenges faced by mining-centric PSE programs and offers strategic guidance to address them. These challenges include declining enrolments in mining programs, their geographical concentration, unresponsiveness to labour demand, and struggles with diversity. Three critical occupations in the mining industry – mining engineers, geologists, and mining technicians – were selected as case studies to better understand their specific difficulties.

In 2020, MiHR undertook mining perception polling with 3,000 youth aged 15 to 30 and recently completed a second polling exercise with 1,500 youth to build on the previous results. Mining continues to be viewed less favourably among those polled compared with other sectors, but there has been a slight increase in positive perceptions from 24 per cent in 2020 to 27 per cent today.

Report findings show that negative connotations surrounding the mining industry, shaped throughout people's formative years, discourage PSE entrants from considering mining-related programs. According to MiHR's polls, young Canadians view mining as the least desirable industry in which to work. These negative views are often reinforced by parents, teachers,

Through in-depth interviews and quantitative data analysis, the report sheds light on the challenges faced by mining-centric PSE programs and offers strategic guidance to address them.

academic and community leaders, and the media, who may themselves hold an unfavourable opinion of the industry.

Based on these findings, some of the recommendations include providing youth with mine visits and interactions with professionals to better understand what the mining industry entails; fostering teachers' enthusiasm and knowledge about mining as well as related careers through curriculum changes; arranging speaking opportunities involving diverse industry ambassadors able to engage various groups and showcase the sector; incorporating preliminary courses or exposure to mining in common first-year engineering programs; and providing incentives for industry professionals with practical mining expertise to participate in developing and updating mining program curricula.

To learn more about these challenges and recommended solutions, please visit www.mihr.ca to download the report.

ABOUT MIHR

MiHR is Canada's knowledge centre for mining labour market intelligence. An independent, non-profit organization, MiHR drives collaboration among mining and exploration companies, organized labour, contractors, educational institutions, industry associations, and Indigenous groups to identify opportunities and address the human resource and labour market challenges facing the Canadian minerals and metals sector.

Staying safe with IFR Workwear

IFR Workwear is a leading provider of high-quality flame and arc resistant workwear. Our range of protective clothing includes insulated and unlined coveralls and bib overalls, parkas, fleece, vests, pants, shirts, and accessories. These products are designed for many industries including oil and gas, petrochemical, mining, electrical, construction, railroad, and others.

The majority of our products are manufactured in North America and sold through distribution partners across Canada and parts of the USA. We use fabrics that have been tested and proven to meet industry standards. Most of our garments have 3M™ Scotchlite™ reflective striping that meet or exceed the reflective visibility requirements of the industry. We also offer customizations and adjustments to our products. Our Canadian headquarters include a large sewing department where we can offer our customers with a variety of additional services such as embroidered cresting, garment customizations and alterations to our products, heat seal treatments, sublimation printing, and much more.

For the mining and extraction industry, our ultrasoft hi-vis seven ounce and nine ounce deluxe coveralls are among our most popular and sought after product. However, we do offer a vast range of high visibility flame-resistant workwear designed for all seasons. From summer bomber hi-vis jackets to deluxe segmented striped work shirts, we can outfit any customer with the protective FR apparel that they need on site to get the job done safely.

For cold weather conditions, we have products such as our hi-vis insulated parka and bib pant, the three-in-one parka, and our quilted freezer jacket. We also offer hoods made from parka or fleece FR material for additional protection and warmth. Additionally, our IFR

basewear top and bottom undergarments offer an extra layer of increased protection and comfort with a form-fitting stretch and soft fabric feel.

To help workers combat heat exhaustion and heat stress, we have our FR cooling technology products such as our neckbands, hard hat liners, and hard hat liners with neck shade that can help make a difference for employees who operate in hot working conditions.

In June 2023, IFR Workwear was acquired by Portwest, a leading protective wear company specializing in flame-resistant, high-visibility, workwear, hand and foot protection products, and a full range of personal protective equipment. With 120 years of experience in the retail world, Portwest has continuously proven its dedication to quality while pushing the boundaries in protection technologies. Together with Portwest, we will bring a new reinforced value proposition to customers in Canada with a mix of value for money, excellent service, continuous innovation in the PPE industries, and an expanded range of product offerings. These new products categories will include a much larger selection of PPE gloves, flame resistant workwear, and hi-vis non-FR garments.

We look forward to forging new partnerships and fueling the success for our fellow Canadian companies across all sectors.

To help workers combat heat exhaustion and heat stress, we have our FR cooling technology products such as our neckbands, hard hat liners, and hard hat liners with neck shade that can help make a difference for employees who operate in hot working conditions.

Timberland Equipment: Tackling "it's never been done before"

Timberland Equipment Limited (TEL) is a member of the Timberland group of companies. Timberland Equipment has over 75 years of expertise working around the globe in construction, mining, electrical utilities, offshore oil & gas, and marine industries. We provide safe, effective, innovative, and cost-efficient custom engineered hoisting, winching, tensioning, and lifting solutions for everything from stringing transmission lines to mineshaft construction and mooring offshore platforms around the world. Whether it's on the water, land, or underground, tackling "it's never been done before" is what Timberland Equipment does every day for our customers. Engineering is our core strength; Manufacturing excellence and superior service is what we deliver.

What separates Timberland from other companies is our diversity and being able to manufacture what we design. Working in so many different industries allows Timberland a unique ability to develop solutions for our clients utilizing technologies spanning many different fields. Since our earliest days, we have relied on our vast experience to help guide our products to be safe, efficient, and effective. With a track record of over 10,000 successful projects, our extensive archives serve as a valuable reference to tailor solutions to your project's unique requirements.

Engineering has been the driving force behind Timberland since our earliest days. Our success can be attributed to our wide-ranging development of custom products to meet the unique requirements of TEL's customers. Our commitment

to engineering excellence is reflected at every level of our management and operations, with experienced staff in our engineering and sales departments include (many with their P.Eng./P.E. credentials) while our senior executive team is also led by P.Eng./P.E. professionals. This leadership provides Timberland with a professional focus and culture that sets the pace for every facet of the company. Our staff expertise includes:

- Mechanical design;
- Hydraulic design;
- Electrical design;
- PLC control systems.

TEL is able to manufacture the components for the projects we engineer in-house. Our large head office facility located in Woodstock, Ont. is ISO 9001 registered and has dedicated manufacturing facilities that are fully equipped for fabrication and assembly processes. The production facility is located adjacent to Timberland sales, purchasing, engineering, project management, and quality control teams to ensure the simplest, closest possible communications for the people involved in the completing all projects successfully.

Be sure to visit our web site at www.timberland-group.com additional information on Timberland Equipment Limited and the entire Timberland group of companies. ⚒

Rock Tech Lithium:

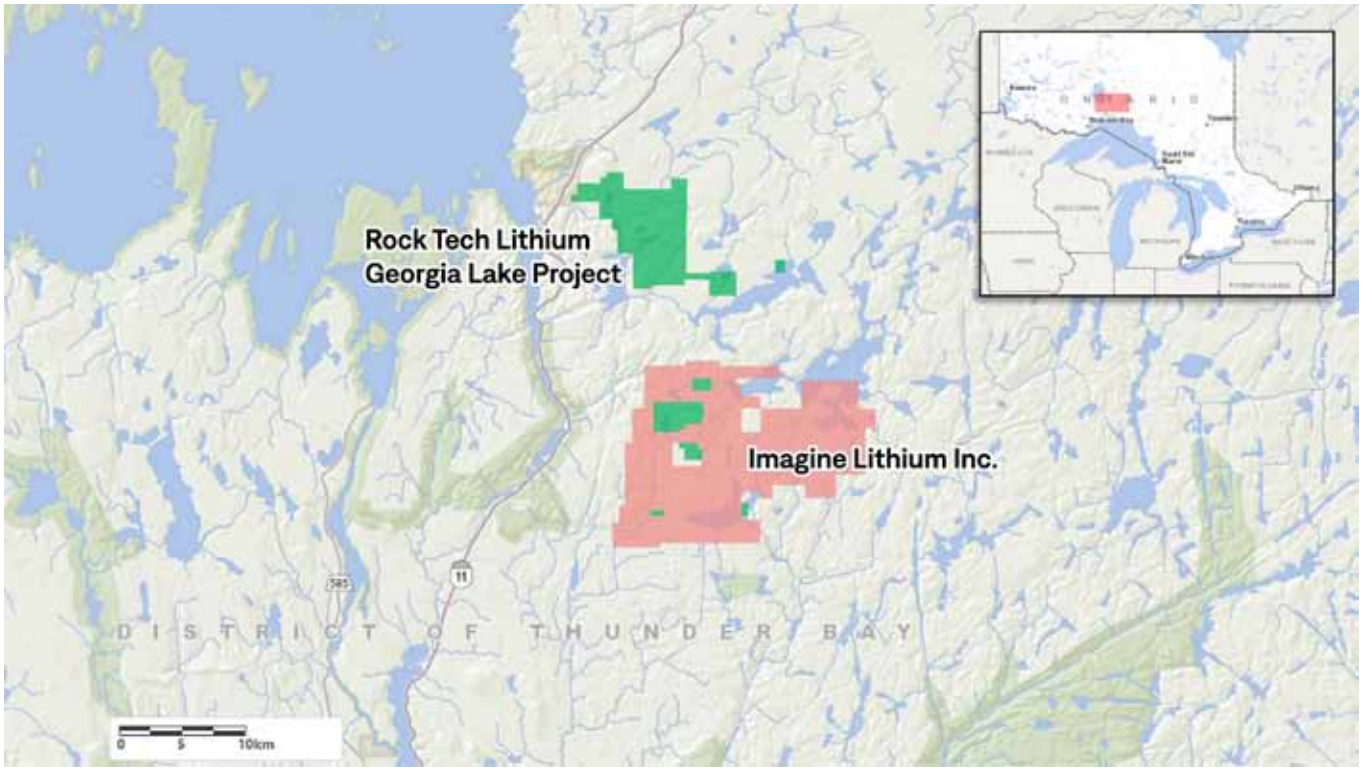
A Canadian mining company to develop integrated lithium supply chain in Northern Ontario

Paul Veldman (Managing Partner, BMI Group), Dirk Harbecke (CEO, Rock Tech Lithium Inc.), Marcus Hardy (Chief Red Rock Indian Band), Darquise Robinson (Mayor, Township of Red Rock), and business partners from BMI and community members from Red Rock.

Paul Veldman, Dirk Harbecke, Chief Marcus Hardy, and Darquise Robinson.

Rock Tech Lithium's strategic vision extends beyond its wholly owned Georgia Lake Spodumene Project as the Canadian company aims to establish a comprehensive lithium supply chain in Northern Ontario. This regional focus aligns with the company's intention of harnessing the spodumene potential of the area, contributing to local economic development, and reinforcing Ontario's position in the EV supply chain.

Recently, the company announced a collaboration with Imagine Lithium and their Jackpot Project to group and start a reliable raw material



supply chain to support Rock Tech's proposed lithium converter along Lake Superior's North Shore. Rock Tech's Georgia Lake property, spanning approximately 5,700 hectares, and Imagine's Jackpot Project, which encompasses nearly 19,000 hectares, share contiguous boundaries between both

companies' respective projects, which are internally connected by the Gorge Creek Road. Further, the Jackpot Project is strategically situated within 15 kilometers of the planned Georgia Lake spodumene concentrator in the Northern Spodumene Pegmatite area.

"The growth potential is enormous if we collaborate with our neighbours in this area. We have already demonstrated that we can derive real economic value from mineral resources in our Northern Spodumene Pegmatite area. Developing accretive synergies in the Southern Spodumene Pegmatite area with our neighbour provides a genuine opportunity to transform the region into a leading lithium hub," said Robert MacDonald, General Manager of Rock Tech.

Further on the downstream, Rock Tech is also very active and has entered into a cooperative partnership with the BMI Group and Red Rock Indian Band to assess the former Norampac paper mill site in Red Rock for a spodumene transloading facility.

"We have the capacity, our people have the capability, and we want to make them shine. We want to give people a good life," said Marcus Hardy, Red Rock Indian Band Chief. "'Refine where you mine' is not just a motto for us; it's an opportunity to create new jobs that contribute to the future of the mining industry. Coupled with the development of the northernmost port on the Great Lakes and its ability to take transport pressure off our Northern highways, you have a win-win opportunity worth investing in."

The development of a lithium supply chain in Northern Ontario and its crucial contribution to a domestic battery industry involves not only lithium mining but also the implementation of concentrator and a proposed lithium conversion plant. This approach ensures that the entire value chain, from mining to the production of battery-grade lithium, is locally integrated. Therefore, Rock Tech has shortlisted a few sites around the Great Lakes Region, including the former Norampac mill site in Red Rock.

Building on the existing expertise and lessons learned, Rock Tech Lithium draws from its experience with 350,000 engineering hours and nearly $60 million already spent for development of its Guben Converter. This converter, located in Germany, has been a crucial asset for the company, providing valuable insights and technological advancements, as well as an established international supply and procurement network to build on in Canada. The engineering design of the Guben Converter will be applied to its Canadian counterpart.

SPC Nickel:
Sudbury's next nickel sensation

When SPC Nickel began drilling at West Graham in March 2023, the company did so in the knowledge that the property contains over 100 million pounds of nickel and 75 million pounds of copper, with an indicated resource of 8.55M tonnes at 0.45 per cent Ni and 0.31 per cent Cu based on a historical 2009 Technical Report. With this historical resource on hand, it was clear to SPC management that, due to the deposit's location very near surface and its promising grades, the project had significant economic potential to eventually operate as a low-cost open pit mine.

The company's exploration plan focused on three priorities, including confirming the extension of the historical West Graham mineral resource across the neighbouring Crean Hill 3 Property (under option from Vale Canada), testing for high-grade zones of mineralization, and connecting the known surface mineralisation with the existing subsurface historical mineral resource. SPC Nickel's ~14,000-meter, 67-hole drill program hit mineralization in all but one hole and 70 per cent of holes drilled returned grades equal to or better than the historical West Graham mineral resource.

Drilling returned thick intervals of "West Graham" style mineralization (characterised as broad zones of blebby Ni-Cu sulphide mineralization) as well as identified new zones of high-grade massive sulphide mineralization. SPC has also determined that, within the larger resource, a distinct zone of higher-grade mineralization grading ~one per cent nickel equivalent is present.

The results speak for themselves as SPC intersected semi-massive and massive sulphides in holes WG-23-026 (7.90 metres @ 2.48 per cent Ni and 0.64 per cent Cu) and WG-23-042 (20.2 metres @ 1.71 per cent Ni, 0.46 per cent Cu), representing the highest-grade intersections so far reported at West Graham.

"Results from West Graham continue to demonstrate continuity in both the grade and thickness of the West Graham mineralized zone and continue to exceed our expectations," said SPC Nickel chief executive officer, Grant Mourre. "Our expectation remains that West Graham, combined with the Crean Hill 3 deposit, has the potential to become a low-cost, large tonnage, open-pit resource."

The West Graham Project is in the heart of the prolific Sudbury Mining District where nine mines are currently in operation and two more are in the development phase. The region benefits from its proximity

to well-developed transportation infrastructure including roads, railways, and electrical grid. In addition, West Graham is situated close to processing, smelting, and refining assets which include two mills, two smelters, and one nickel refinery. Local operators include global mining corporations Vale, Glencore, and KGHM.

The next stage of West Graham's development will be the release of a maiden Mineral Resource for the project, a key milestone and potentially transformational development for SPC Nickel. This outcome will be the product of not only SPC Nickel's successful exploration program at West Graham but also the negotiation of its milestone Cooperation Agreement with Vale, which tied in the latter's Crean Hill 3 Property to West Graham to create a contiguous land package of impressive significance. Against this collegial backdrop, overseas supply challenges, a mining-friendly local jurisdiction, and the promise of a low-cost path to production, SPC Nickel is well positioned for future growth.

Pan American Energy Corp.

begins fully funded drilling the Big Mack Lithium Project in the Separation Rapids region near Kenora, Ont.

The Separation Rapids area in northern Ontario has a history of base and precious metals exploration and has recently been the focus of industry, academia, and government for its critical mineral supply chain potential. Extensive research and mapping initiated in 1992 by the Ontario government had increased interest in the rare-metal pegmatite potential of the area and, more recently, companies in the area have been ramping up exploration with state-of-the-art exploration techniques.

In recent months, Pan American Energy Corp's ("Pan American") neighbouring property owner, Avalon Advanced Materials Inc ("Avalon"), recently entered a strategic partnership with SCR-Sibelco NV ("Sibelco") that includes $63 million of new investment. Avalon has also announced a lithium resource deposit of 10.08 million tonnes (Mt) averaging 1.35 per cent of measured and indicated lithium oxide. This type of external investment, along with high quality resource on Pan American's project doorstep, is highly encouraging. The company is in the right place at the right time to provide made-in-Ontario critical mineral and battery metals to the burgeoning industry across the province.

The Big Mack Lithium Project ("Big Mack" or "Project") is located two kilometres east of all-weather Snook Lake Road, about 80 kilometres north of Kenora, Ont. The property lies within the traditional land use area of

the Wabaseemoong Independent Nations of Whitedog, Ont.: an Indigenous community located approximately 35 kilometres southwest of the property. The Project was last drilled in the late 90s and early 2000s by Emerald Field Resources and Pacific Iron Ore, with the highest historical drill core-sample result of 2.74 per cent Li2O. Pan American is positioned to be the first company to drill the property in over 20-plus years. The company engaged in a thorough permitting process with priority and focus on environment and Indigenous input. Special considerations were made to meet and exceed government requirements with regards to minimum water set-back, evaluation of woodland Caribou range and habitat (the project is outside of any identified range), fluid containment, and off-site camp accommodations. Pan American is actively working with indigenous-owned and operated businesses in the area to advance the project, including Moncrief Construction which has indigenous joint ventures and partnerships.

"Ontario is one of the best jurisdictions in the world for mining," said Pan American chief executive officer Jason Latkowcer. "We have a shared vision with the province to transform Ontario into a leading producer of critical minerals in North America. In order to do that, projects like the Big Mack need to be explored, quantified, and developed to satisfy the growing demand in the province. This inaugural drilling program is the culmination of months of hard work and positions the company well amongst peers in the region. We have some incredible targets with untapped potential."

The project has a number of highlights, including:

- Over 20-plus pegmatites identified across the property with three priority targets: Big Mack, Eleven Zone, and Sprinkler/6059.
- Completed magnetic survey, LiDAR, and prospecting program with multiple high priority drilling targets identified.
- Surface samples graded up to 3.21 per cent Li2O, with sample values above 1.00 per cent Li2O from the Eleven, Big Mack, and 6059 zones all with visible petalite on surface.
- Road accessible property approximately 80 kilometres north of Kenora, Ont.
- Fully funded drilling program of approximately 5,000 meters scheduled for November 2023.

To learn more about Pan American Energy Corp. or to register for updates, please visit www.panam-energy.com.

ABOUT PAN AMERICAN ENERGY CORP.

Pan American Energy Corp. (CSE: PNRG)(OTC PINK: PAANF)(FSE: SS60) is an exploration stage company engaged principally in the acquisition, exploration and development of mineral properties containing battery metals in North America.

Drones in mining

By Lovely Es Amuan

Hovermap pilot training.

As the world's population grows, the demand for products and services increases accordingly. Businesses constantly seek ways to enhance operations and improve production efficiency to meet demands. In today's market, many companies are turning to technology to achieve this goal, and one such technology that is gaining popularity is drones.

Drones, also known as unmanned aerial vehicles (UAVs), were primarily built for military use but have become increasingly prevalent across various industries. Drones come in multiple sizes, ranging from the size of an aircraft to the size of a palm. Drones have proven valuable in mining operations, serving various purposes such as surveying and mapping, monitoring and inspection, and exploration.

Mining operators have traditionally used expensive and inefficient surveying and mapping methods. To overcome these limitations, corporations like Nutrien, a globally renowned potash producer, have purchased the DJI Matrice 300 RTK drone, which is equipped with AI technology and Emesent Hovermap leverages simultaneous location and mapping (SLAM) technology and Light Detection and Ranging (LiDAR) to ensure safe navigation in areas where GPS signals may be obstructed above the surface.

It is also essential to prioritize the safety of workers in the mining industry given the inherent hazards present, including rock falls, gas leaks, dust explosions, and high humidity. Regular monitoring and inspections of the environment are critical in achieving this goal. Nutrien successfully addressed these challenges by incorporating innovative drone technology, leading to more frequent and comprehensive safety checks.

Nutrien uses submersible drones to inspect and monitor structures like tanks, pipelines, rake structures, and pond intakes. To perform underwater work, Nutrien chose a Deep Trekker remotely operated

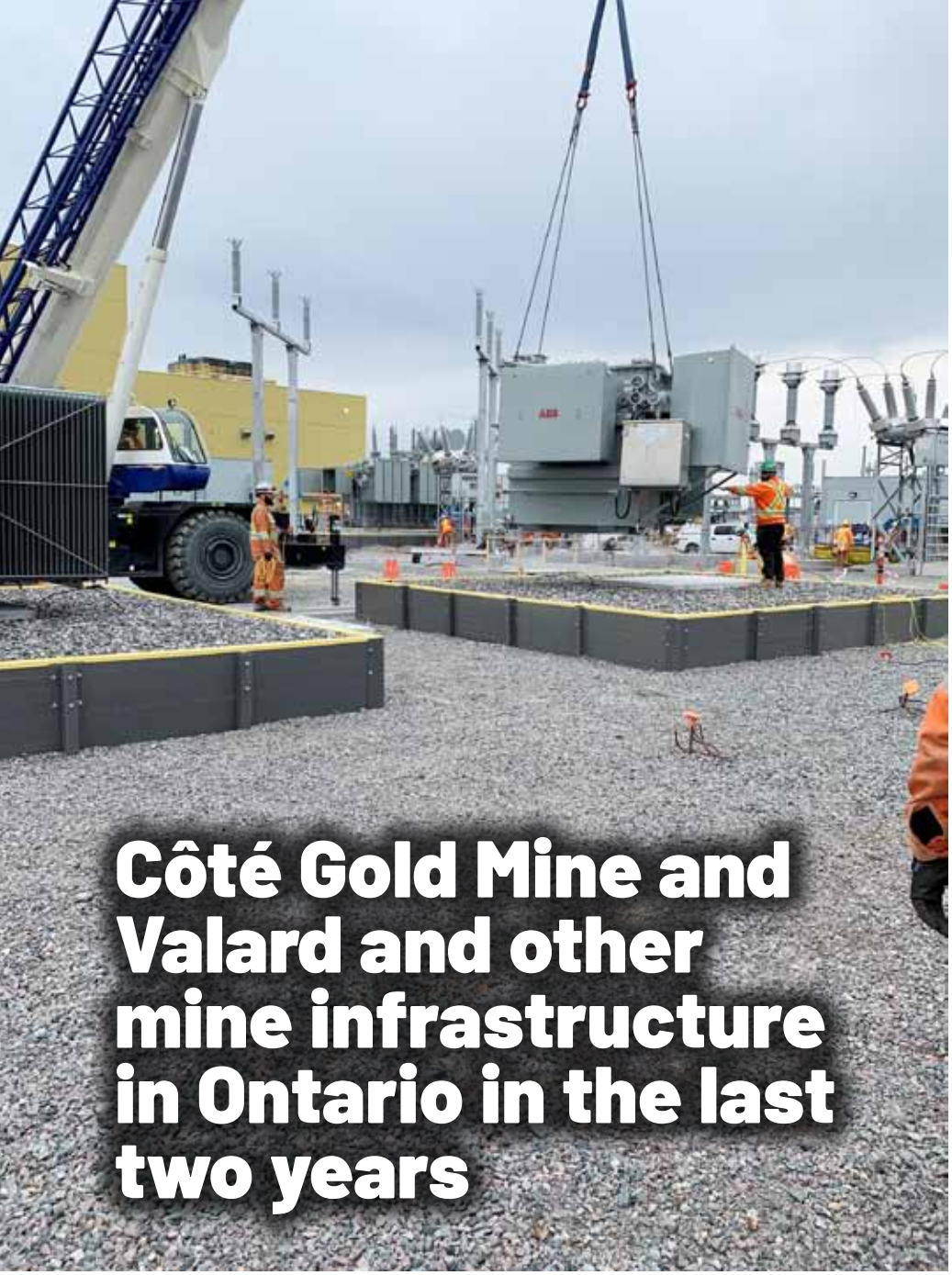
Vanscoy Potash Mine.

vehicle (ROV) for its excellent quality, availability, and service. Initially, Nutrien purchased the Pivot ROV base model but upgraded it in 2022 with ultrasonic thickness measurement capabilities, a sediment blaster, a grabber claw, and sonar to enhance navigation in cloudy or murky conditions. This inspection and safety strategy has proven to be a cost-effective and efficient solution.

Nutrien has also acquired Mavic 2 Enterprise and Elios 2 drones to capture high-quality 4K images and videos and inspect hard-to-reach areas. For instance, during the 2020 fire incident at the Vanscoy mine site in Saskatchewan, the Mavic 2 Enterprise was deployed for outdoor structural assessment, while the Elios 2 was flown indoors to assess the damage and perform an initial evaluation before allowing workers into the building. The Elios 2, upgraded to Elios 3, has also been used for underground inspections requiring more specific and confined space assessment.

Lastly, exploration is crucial for mining companies to locate minerals before extraction. Therefore, drones have become an indispensable tool to cover extensive land areas in an efficient amount of time. By analyzing the data obtained from these drones, mining companies can quickly determine areas suitable for extraction and those that require further exploration. Drones also play a critical role in ensuring the safety of mining sites by detecting gas leaks and other potential hazards on the surface and subsurface. Miners can be alerted using advanced sensors, such as infrared cameras, giving them the necessary time to take prompt action and prevent potential incidents.

Unmanned aerial vehicles, commonly known as drones, have many uses, such as surveying, mapping, inspection, and exploration. Drones play a crucial role in providing valuable insights and data, which helps improve productivity and efficiency. Nutrien, a leading Potash producer, has successfully integrated drones into its mining operations, a testament to the technology's effectiveness. As the demand for drone technology increases, we look forward to witnessing further innovative applications in the industry. ⚒



Côté Gold Mine and Valard and other mine infrastructure in Ontario in the last two years

Valard Construction has a history of well over 40 years with expertise in utility infrastructure. We have built well over 11,000 kilometres of Transmission line in numerous provinces across Canada. As anyone in the infrastructure business knows, unforeseen issues and challenges can arise at any moment, and Valard is no exception. However, when Valard was awarded the Côté Gold Mine Transmission line near Gogoma, Ont. in 2020, it faced a challenge no one was prepared for.

COVID-19 was something the world was ill-prepared for, and the infrastructure business took a hit. Meeting deadlines looked nearly impossible with government restrictions, site restrictions, shutdowns, illness, lack of workforce, and supplier issues. To this day, there is a lasting impact on the supply chain, which means projects face lasting impacts on material procurement. The Côté Transmission line was 302 wood poles with 477 Hawk Conductor and hardware in rough terrain with nearly no access. During the project, we also experienced a standdown due to a forest fire, losing seven structures and associated hardware.

After we remobilized from the fire and rebuilt the seven structures, we faced another uncontrollable environmental challenge. A milder-than-usual winter caused more access issues. Despite all the problems, we finished the Transmission line on time and within budget. That helped us secure the substation and 13.8kv Distribution scopes within Côté Gold Mine and continue our relationship with IAMGold.

The 13.8kv Distribution line work began in late 2021, with Valard responsible for designing and constructing the numerous pole lines just as we did with the Transmission line. Valard will be completing the extra 13.8kv scopes awarded over the last few months at the end of November 2023, having successfully built 370 wood poles, installing and connecting 13 pad mount transformers, nine reclosers, seven loadbreak switches, 266, 366 & 1/0 ASCR and numerous pole

mount transformers. Well over half the poles required rock bores, and some required underground /overhead road crossing installation utilizing 500 and 1000 mcm, design, and priority changes. The substation is currently in the commissioning phase, with Valard signing on to assist. The ongoing 13.8kv work was under the direction of Valard's Ontario North Distribution Business Unit, with the substation under the direction of Valard's Substation Business Unit, and the Transmission Line by the Major Project Business Unit.

During the ongoing work at the Côté Gold Mine, Ontario North Distribution was awarded three more projects in the town of Dubreuilville: Alamos Gold Mine, Argonaut Gold at Magino, and Magino Gold Mine for Auseco. Using the Distribution crew's knowledge learnt at Côté on mine sites, including mine safety rules, LV rules, and infrastructure required, they completed the original scope of work within roughly six to nine months. The Substation group was also awarded the substation for Alamos Mine. Ontario North Distribution now has crews working on completing extra scopes in Côté, Alamos, and Magino.

We look forward to new opportunities to collaborate in other mining projects in Ontario.

Belt scraper innovation

On the important topic of reliability, we want to address the maintenance and protection of the conveyor belt system. When optimized, conveyor belts are the standard for moving bulk material around and out of a mine, through the processing plants, and out the loadout. However, when not optimized, they are subject to sticky material adhesion issues, material spillage at transfer points, and generate dust underground.

For years, these troubling conveyor issues were observed by our personnel when underground and visiting sites, and in many cases the mines had just evolved to deal with it in creative ways. In an effort to improve and even solve these conveyor maintenance issues, we came to meet and partner with STARCLEAN® as we were amazed by the technological advances the company had made in the areas of conveyor tending equipment.

Most impressive in STARCLEAN®'s innovative collection are its clever versions of belt scrapers and cleaners. Finding these were fortunate, as the biggest issue maintenance planners and engineers had reported to us was that the mine site did not employ belt scrapers for removing adhered material. There were legitimate reasons for not doing so, such as existing damage to belt coverings of the use of mechanical belt splices. In either case, the predicament remained: These workers had tried a scraper in the past, and the aggressive nature of the scraper would compromise the splice or peeled belt cover, risking tearing the belt.

This is exactly why we were so impressed with the unique design of the STARCLEAN® belt scraper. Not only does the scraper employ a variable tensioning system to keep the scraper blades on the belt, but the individual scraper segments on each scraper blade provide their own tension and articulation. This allows for the required flexibility

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to both remove adhered material from the belt, as well as articulate over and avoid damaged areas and splices. A feature loved by maintenance staff is that the worn scraper blade segments do not require any tools when replacing, which reduces the time for the job, and increasing safety.

A recent and further innovation on the belt scraper from STARCLEAN® is the Smart Scraper. This unique system with electric drive, in combination with their smart cloud dashboard, enables early detection of damage to the conveyor belt and predictive repair of the segments through automatic wear detection. Thanks to the digital innovation, the scraper has the ability of self-regulating wear behaviour, and at the same time, enables an optimized pre-tensioning force, completely automatically.

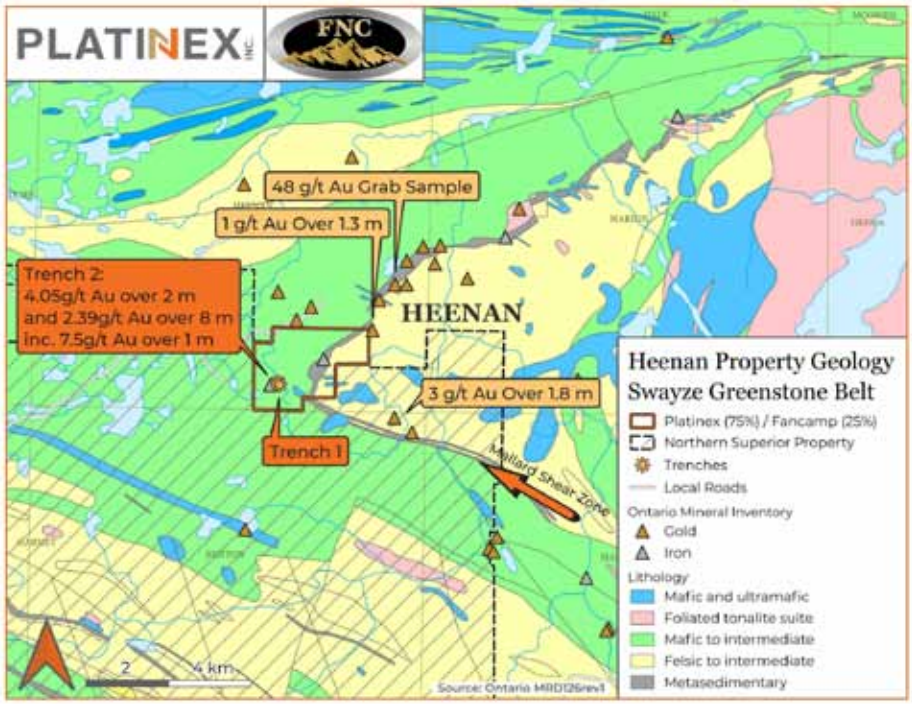
What this means to the mine's maintenance program is that it provides continuous monitoring of the conveyor belt. The information collected can classify any discovered damage to the belt in terms of severity, detect the position of the belt damage, and initiate user-determined functions based on alarm level. The collected data of damaged belts, wear status, and other information will share via cloud services, accessible from any browser via log-in.

This represents the next level in belt monitoring, and with it, empowers the site operators to predict conveyor belt issues before they cause extensive downtime from a failure.

At Bit Service, we are excited to bring innovations like these to the mining sector, and are eager to discuss how we can help apply this innovative technology to your material handling system. Contact our technical representatives to see how we can apply this to begin providing advanced protection to your existing and upcoming conveyor systems.

Platinex makes greenfield gold discovery at its Heenan Project in the southwest Abitibi

Figure 1.



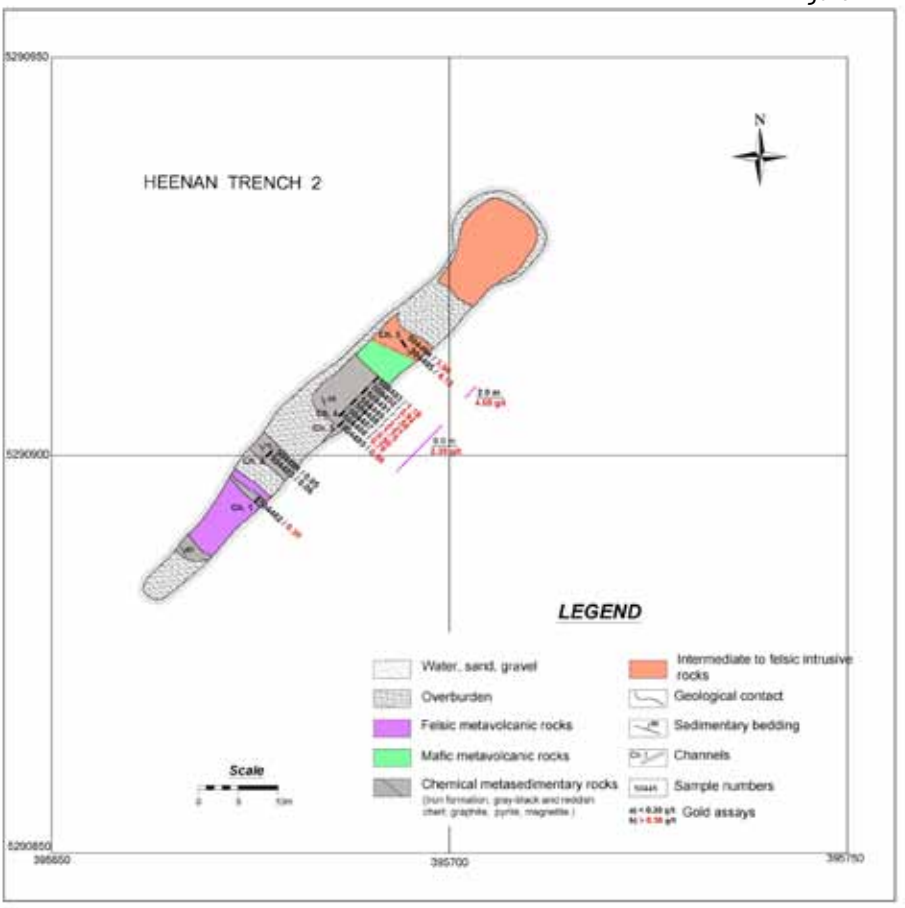
Platinex Inc. is a Canadian-focused junior resource company that creates shareholder value through the opportunistic acquisition and advancement of high-quality projects in prolific mining camps. The company's assets include a 100 per cent ownership interest in the W2 Copper-Nickel-PGE Project near the "Ring of Fire" in northern Ontario and a 75 per cent interest in the South Timmins Mining joint venture with Fancamp Exploration, which is focused on gold exploration along the Ridout-Tyrrell Deformation Zone near IAMGOLD's Côté Gold operation in the southwest Abitibi. Platinex also holds majority ownership in Green Canada Corporation, which holds uranium assets in Saskatchewan, Ontario, and Quebec, as well as an option to earn as a 100 per cent ownership interest in the Muskrat Dam Critical Minerals Project in northwestern Ontario.

Platinex recently announced a new gold discovery at its Heenan Property, which is part of the South Timmins Mining joint venture. The Heenan Property is in Heenan and Benton Townships in northeastern Ontario and lies within the Swayze area of the Abitibi Greenstone Belt (Figure 1). The Property is located on the fold nose of the Woman River magnetic high indicating a structural target favourable for gold, which formed the basis for the exploration program. Heenan is immediately adjacent to Northern Superior Resources' "October Gold" Property (recently optioned by Evolution Mining Ltd.) and along the northwest border of IAMGOLD's soon-to-be-producing Côté Gold Project.

This exciting greenfield discovery was generated through B-horizon soil geochemical surveys, prospecting, and channel sampling. Highlights from the recently completed mechanized stripping program include 13 channel samples > 0.5 g/t Au with a high of 7.50 g/t Au, included in two channel samples that returned composite weighted averages of 4.05 g/t Au over 2.00 m and 2.39 g/t over 8.00 m in Trench 2 (Figure 2). Gold mineralization in Trench 2 is associated with narrow concordant felsic to intermediate intrusive dykes within the iron-formation and metavolcanic sequence.

Joerg Kleinboeck, P.Geo., South Timmins JV's Exploration Manager, states: "This is an exciting development for the South Timmins

Figure 2.



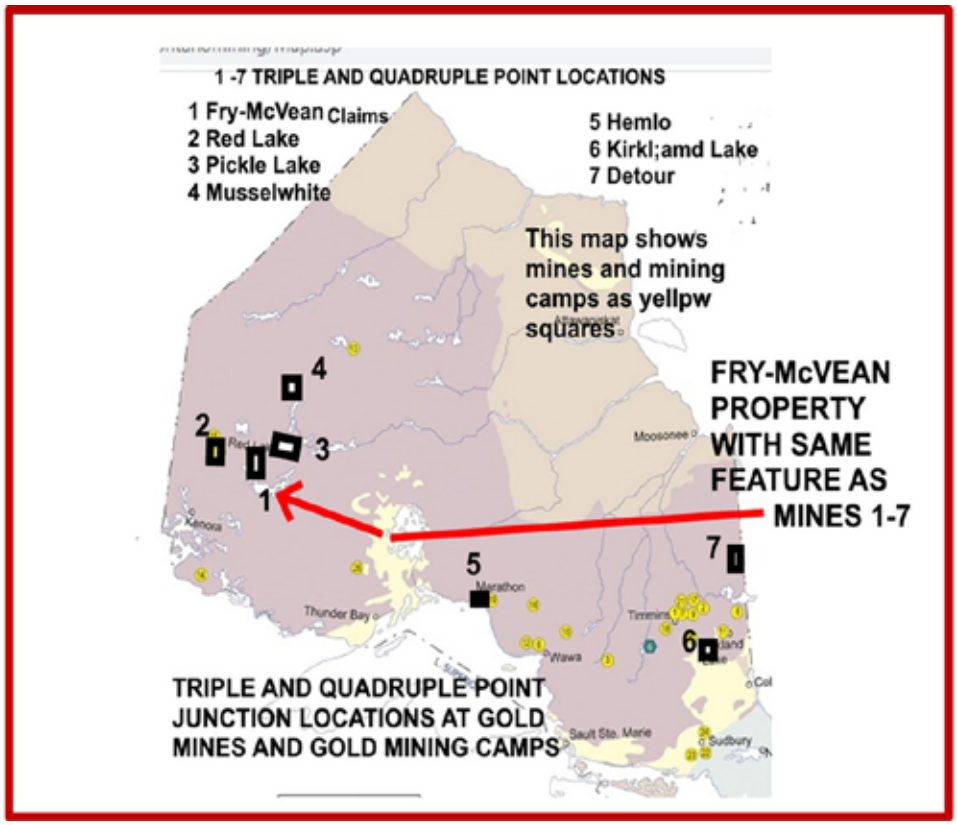
JV. The stripping program is part of a systematic approach taken where initial geochemical and prospecting programs identified an area of interest that was targeted with the recent channel sampling program. This approach has led to a greenfield discovery in the emerging Swayze camp."

The mechanized stripping program focused on areas of highly anomalous geochemical and follow-up prospecting results. A total of 618 m2 were mechanically stripped and washed in two areas. A total of 41 selective channel samples were collected and submitted for analysis. Channels were cut at one metre lengths and, except for Channel 5 on trench 2, were cut perpendicular to geological contacts and were occasionally offset due to overburden or water. Results ranged from <5 ppb to 7,500 ppb Au (7.50 g/t Au), with 13 samples returning > 0.5 g/t Au. Gold mineralization is associated with narrow concordant felsic to intermediate intrusive dykes within the iron-formation and metavolcanic sequence.

The company is currently planning a Phase 1 drill program to follow up on these results. Additional information about Platinex can be found on the company's website at www.platinex.com.

Fry McVean World Class Gold Claims for Option, drill ready and untested

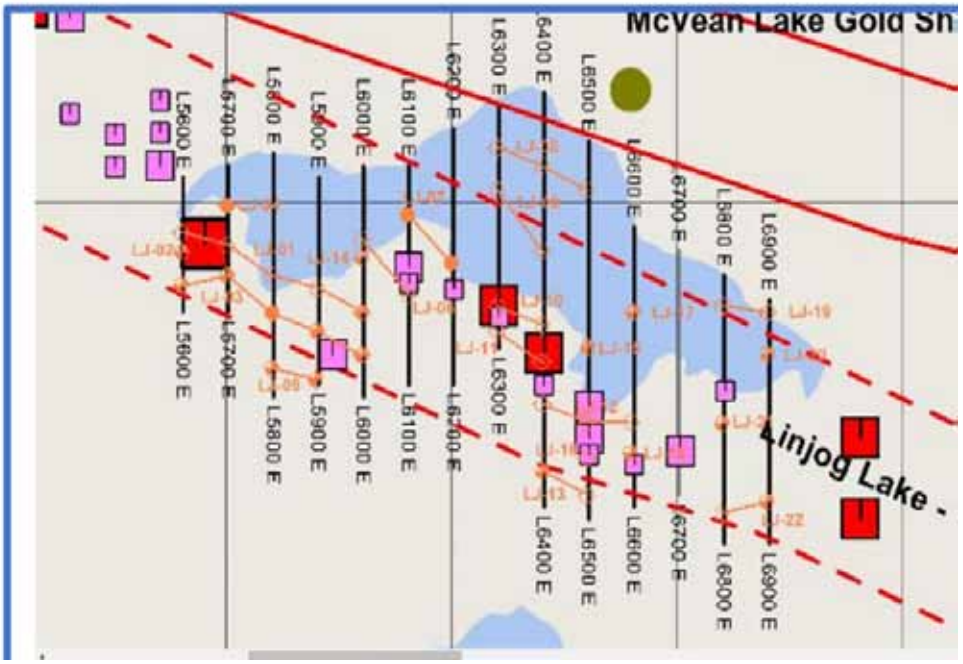
By Donald Brown, M.Sc., Ph.D., Geologist



The Fry-McVean Claims are in the prolific Uchi Sub-Province 45 miles southwest of the Pickle Lake gold mining camp. The Claims cover 12.1 square miles with 198 units. The two mile long by 500-meter-wide anomalous Riedel shear zone is an un-tested, drill-ready target with 312 geochemical gold indicator anomalies. The shear zone is called the Linjog Lake – Unnamed Lake Shear Zone (LL-ULSZ). The 312 anomalies include 58 gold anomalies.

The LL-ULSZ as a Riedel shear zone was selected for the 1,087-sample humus soil survey in 2011 because Riedel shears are known to be highly dilational structures that host Major and World Class gold deposits. The humus soil survey showed that the two-mile (3,200 meter) length of the LL-ULSZ is highly anomalous with six "Hemlo-type" gold indicator elements. Actlab's 2011 analyses of 1,087 humus soil samples revealed 312 "Hemlo-Type" gold indicator elements, namely: Au 58 gold (Au), 64 molybdenum (Mo), 35 antimony (Sb), 90 iron (Fe), 47 bromine (Br), and 20 arsenic (As) on the two mile LL-ULSZ target. The anomalies extend across strike on sample lines over distances of 33 meters to198 meters on 28 humus soil sample lines.

The 312 "Hemlo-Type" gold indicator elements on the two-mile-long gold target are comprised of the same six anomalous elements that were identified over the 22.5 million-ounce Hemlo gold deposit in humus soil by Fortescue, Gleeson, and Sheehan. In 2020, Abitibi Geophysics' 17-line VLF-EM ground survey revealed 28 Karous-Hjelt Current Density (CD) anomalies that showed close spatial congruence with the gold-in-humus anomalies and a related geologic origin. The Abitibi Geophysics' VLF-EM survey data indicates possible gold and sulphide-mineral-bearing dilational shear zones with large Current Density (CD) anomalies that are 50 to 100 meters wide in a sub panel array that extends



across the 500 metre wider of the Riedel LL-ULSZ. The 28 CD anomalies are the proposed prospective drill targets. CD anomalies correspond closely to the location of the gold indicator humus anomalies as shown in the image. The gold-in0humus anomalies are shown as red and pink squares. The VLF-EM Fraser Filter conductors are shown as orange lines that contains small orange circles that are Karous Hjelt CD anomalies.

The Fry McVean 2-mile drill anomalous drill target has all four possible features of a World Class gold deposit that suggests a possible major resource potential. The deposits are hosted in dilational Riedel shear zones, can be bordered by proximal hydrothermal iron carbonate alteration zones, the Riedel shear zone can be part of a Pull-Apart structure or basin, the deposits can be surrounded by three or four felsic plutons (granite stocks) either as a Triple Point Junction (TPJ) or a Quadruple Point Junction (QPJ). The Hemlo mine and the Campbell-Red Lake World Class deposits are also on QPJ's and on Riedel shear zones in northwest Ontario for 52.5 million ounces.

The two-mile-long gold target on the LL-ULSZ has the two geometric structural features that are associated with World-Class and giant gold deposits. The two features are: 1) the two-mile target is on a Riedel shear zone, and 2) the two-mile target is on a Quadruple Point Junction. The two World Class features have major implications for exploration of the Fry McVean gold target.

The nine World Class mines referred to above represent an average of 29 million ounces of gold. The Fry McVean two-mile drill target has features that suggest a similar possible resource potential of 14 million to 29.8 million ounces of gold. This resource potential is based on the Hemlo gold deposit model that has analogous features as the Fry McVean gold target. ⚒

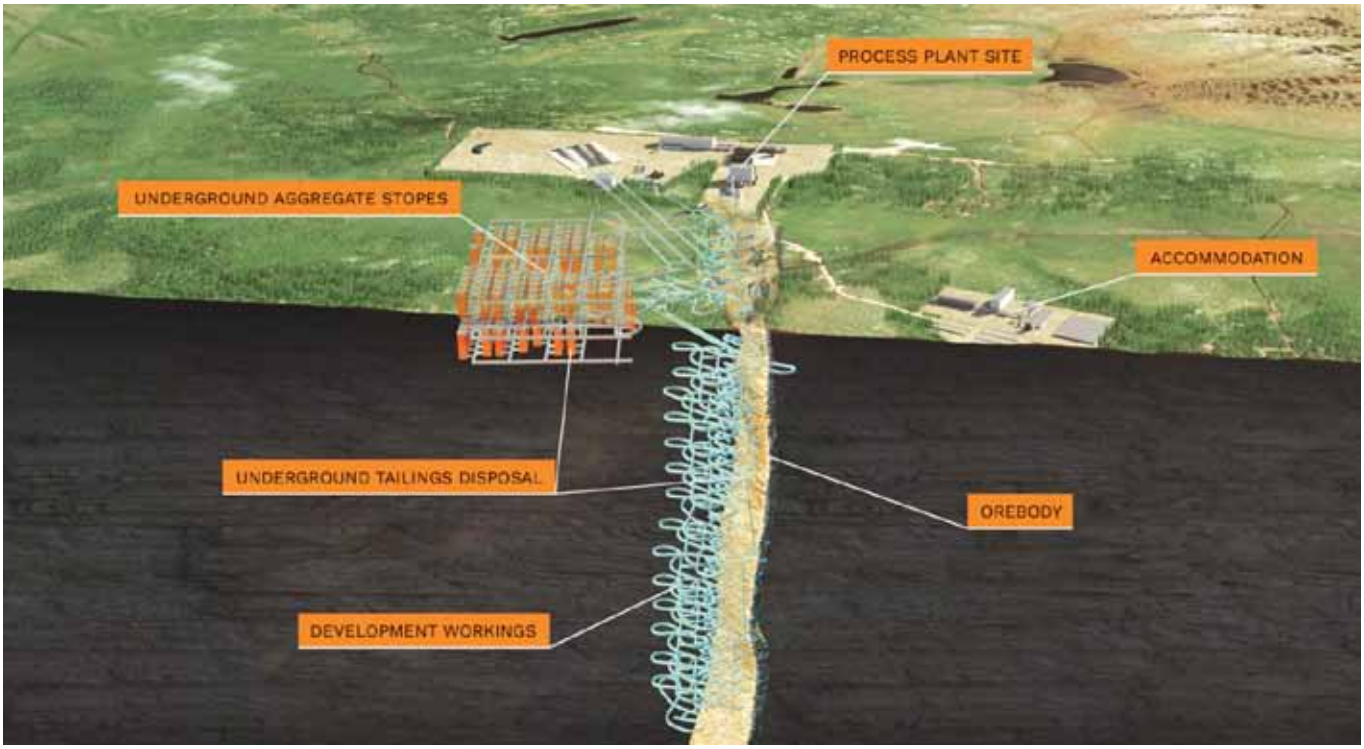
A new benchmark for sustainable mining

Wyloo is a globally integrated nickel company that invests in and delivers the critical minerals and materials needed to decarbonize the world. Our portfolio of producing assets and projects are in two of the world's most prolific nickel belts in Kambalda, Western Australia, and the Ring of Fire region in Northern Ontario. We are committed to enabling a safe supply of high-grade clean critical minerals from extraction to processing, using the highest standards of environment and social sustainability that make our operations the benchmark for mines of the future.

Wyloo's flagship project in the Ring of Fire region is the Eagle's Nest Project, one of the most significant, undeveloped, high-grade nickel, copper, and platinum group element (PGE) deposits in the world. With sustainability at the heart of its design, we are implementing industry-leading technologies and processes that will support responsible development as we aim to be a net-zero carbon emissions mine.

Importantly, we are building the Eagle's Nest Project through a co-management approach with First Nations communities by forming genuine partnerships and mutual collaboration, ensuring our success means progress for everyone. We believe development in this region represents a real opportunity for Northern Ontario's Indigenous communities to achieve economic empowerment in the next decade and our commitment is to provide training and employment, as well as awarding at least $100 million in contracts to Indigenous-led businesses as we move forward with development in the region.

The current mine design for Eagle's Nest is planning for a small development footprint of approximately one square kilometre, utilizing underground mining methods to extract the ore. The mine will also be the first of its kind to store 100 per cent of its tailings underground. This innovative and sustainable design translates into no surface tailings, no surface quarry, no open pits, and no surface waste rockpiles, ensuring minimal disruption to the surrounding environment.

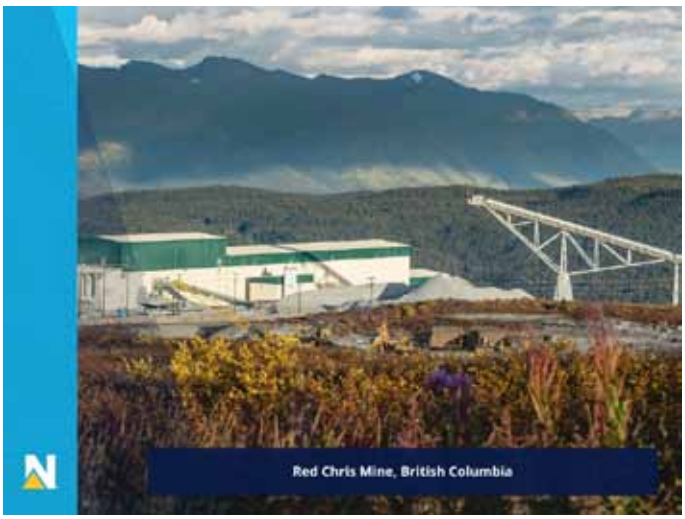


A LOCAL OPPORTUNITY TODAY FOR A CLEANER AND GREENER TOMORROW

The global push for energy efficiency and decarbonization commitments has significantly increased the demand for renewable energy technologies. Specifically, as a key element in electric vehicle batteries, nickel is critical in the scaling up of clean energy and a more sustainable future. However, where Canada once dominated in the global output of nickel, production continues to decline without new supply.

Our Eagle's Nest Project represents the best opportunity for responsible critical mineral development in the country. Over the course of its mine-life, the potential 20-year supply of nickel can produce batteries for up to 500,000 electric vehicles annually, providing an integral, onshoring source of critical metals for the emerging battery market in Canada.

The deposit also represents a cornerstone for developing additional downstream processing opportunities. With plans underway to develop Australia's first downstream nickel processing facility, Wyloo is committing $25 million toward feasibility studies into building a similar facility in Ontario, leveraging our experience in Australia to build Canada's first integrated battery materials facility. This will create a secure, critical material supply chain and retain the maximum portion of Canada's critical minerals value within the country.



With Newcrest acquisition complete, Newmont looks to Canada for multi-decade growth

On November 6, Newmont announced the competition of its acquisition of Newcrest Mining Limited, strengthening its position as the industry leader in sustainable gold production while increasing its production of copper, a critical mineral for the new energy economy.

With the transaction now complete, Newmont is looking to Canada for multi-decade growth and focusing on the safe integration of the Newcrest operations.

"With our combined strengths and expertise, we are well-positioned to set the standard for safe and responsible gold and copper mining and deliver on our purpose: to create value and improve lives," said Newmont president and chief executive officer, Tom Palmer.

The move is expected to further enhance Newmont's environmental and social initiatives, including community investments and its world-class risk and impact management approach.

Drawing on more than a century of mining experience, Newmont recognizes Canada as a low-risk jurisdiction with the potential to support decades of safe and sustainable mining. With the acquisition of Goldcorp in 2019, the company began a powerful transformation aimed at creating the strongest portfolio of operations, projects, and exploration opportunities in the industry – adding the Musselwhite and Porcupine mines in Ontario and the Éléonore mine in Québec to its North America business unit. With the addition of the Newcrest Red Chris and Brucejack mines in the prospective Golden Triangle region of British Columbia, Newmont reaffirms its long-term focus on Canada.

Although a lot has happened in the past four years, the lessons that Newmont learned from the Goldcorp acquisition are still fresh and have been integrated into the business, including through its continuous improvement program Full Potential, designed to boost productivity and reduce costs through the rapid replication and deployment of leading practices and technologies across its global operations.

At present, Newmont is working to safely integrate the Newcrest operations and ensure a seamless transition for employees. The two companies have a shared history – with Newmont helping to create Newcrest some 30 years ago – and a strong alignment in values and culture, particularly around safe and respectful workplaces.

"Our attention now turns to safely, efficiently, and responsibly integrating Newcrest's assets and people into Newmont's operating model, so we accelerate the delivery of our value-focused strategy," said Palmer.