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Mining Explorers

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ABOUT THE COVER: Copper alteration on limestone at Core Asset's Blue property in Northern British Columbia.

Photo courtesy of Core Assets Corp.

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WELCOME

Canada's North is a vast area rich in critical minerals



End of the road for critical minerals

Rocketing demand calls for pioneering North of 60 supply chains

By SHANE LASLEY

Data Mine North

as the discovery and development of the mines essential to meeting the massive demand for battery metals, copper, rare earths, and other critical minerals reached the end of the road? Not a metaphorical end where the visions of electric vehicles charged with sunshine are dashed - halting the demand for green energy and technology metals. Instead, I am speaking to pioneering critical mineral supply chains beyond the literal end of the limited highways extending into Alaska and Canada's North.

Whether you refer to the critical mineral lists published by the U.S., Canada, European Union, or Japan, the North of 60 Mining News area is incredibly enriched in the minerals and

metals the world wants and needs. In fact, it is exceedingly easier to list the critical minerals Alaska, Northern BC, Yukon, Northwest Territories, and Nunavut are not prospective for than for those they are.

Aluminum – that's the only critical metal that has not been found in economically intriguing quantities in Alaska and Canada's North.

Otherwise, this enormous, remote, and vastly underexplored northern frontier is a trove of virtually every other critical, strategic, technological, industrial, base, and precious metal on the periodic table of elements.

From zinc and germanium recovered at the Red Dog Mine in Alaska, to copper from the Red Chris Mine in British Columbia's Golden Triangle and rare earth elements being shipped from the



Nechalacho Mine in Northwest Territories, North of 60 mining jurisdictions are already feeding critical minerals and metals into North America's supply chains.

And at a time when BMW, Ford, General Motors, Stellantis, Volkswagen, Tesla, and Twitter executives are cutting deals di-

Whether you refer to the critical mineral lists published by the U.S., Canada, European Union, or Japan, the North of 60 Mining News area is incredibly enriched in the minerals and metals the world wants and needs.

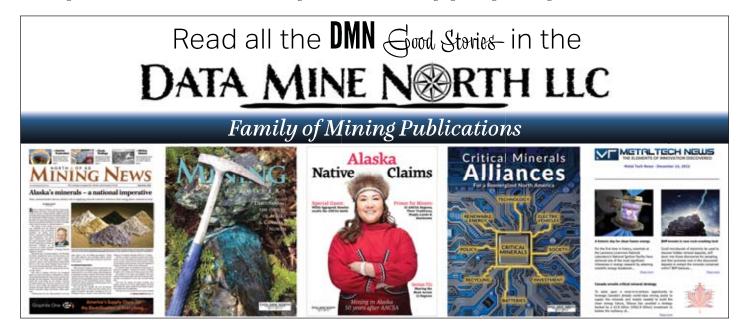
rectly with mining and mineral exploration companies to secure future supplies of the materials needed to build the e-mobility future, it is hard to ignore the rich abundance of critical minerals found in North America's northmost reaches.

For Alaska, Northern BC, Yukon, Northwest Territories, and Nunavut, the transition to more mineral-intensive clean transportation, energy, and digital technologies provides a once-in-acentury opportunity to develop a new economic foundation based on future-leaning minerals and metals – advancing the front end of supply chains deeper into the North during the process.

From the early stages of modern exploration at the Nagvaak cobalt-copper-gold-molybdenum-platinum group metals-silvervanadium-zinc project in Nunavut to advancing toward the development of a mine at the world-class Graphite Creek deposit in western Alaska and building a road toward the Nico cobaltbismuth-copper-gold mine project in Northwest Territories, a figurative and literal critical minerals trail was blazed into the North of 60 Mining area during 2022 and further inroads into realizing the critical minerals potential of this vast and underexplored region is expected to gain momentum in 2023.

Continuing a 14-year tradition of featuring the companies "Discovering the future of Alaska & Canada's North," the Mining Explorers 2022 magazine features more than 55 junior and senior mining firms exploring the rich critical, industrial, and precious metals potential at the northern end of North America's supply chains.

Mining Explorers is part of the Data Mine North family of publications that include North of 60 Mining News, Metal Tech News, and their respective magazines that provide deep insights into mining across the North, North American critical minerals, and emerging mining technologies. ●





North to the critical mineral future

Alaska and Canada's North are rich in clean energy minerals

By SHANE LASLEY Data Mine North

The increasing number of electric vehicles charged with renewable energy, connected to 5G networks, and boasting the computing power of 200 laptops to autonomously traverse global highways is creating a meteoric rise in demand for the minerals and metals critical to clean energy and high-tech.

Benchmark Mineral Intelligence, the foremost authority on lithium battery supply chains, estimates that more than 300 new mines will need to come online by 2035 – just to produce the cobalt, graphite, lithium, and nickel that go into EV batteries.

This does not account for the enormous quantities of copper needed to wire a world that has more energy delivered by powerline and less by pipeline, or rare earths that make EVs and wind power generation more efficient, or the tellurium in American made solar panels, gallium that goes into 5G networks, germanium for long-distance fiber optics, and the list goes on.

From zinc and germanium recovered at the Red Dog Mine in Alaska, to copper from the Red Chris Mine in British Columbia's Golden Triangle, and rare earth elements being shipped from the Nechalacho Mine in Northwest Territories, North America's northern mining jurisdictions are already feeding critical minerals and metals into the supply chains. Alaska, Northern BC, and Northwest Territories are also positioned to deliver bismuth, cobalt, graphite, and tungsten from projects that are in the advanced stages of exploration or early development. These northern mining jurisdictions are also highly prospective for virtually every other mineral and metal deemed critical to Canada and the United States.

Given the global competition for the enormous volumes of mined materials needed to build the envisioned clean energy future, coupled with rising geopolitical considerations surrounding Russia's invasion of Ukraine and America's tenuous relationship with China, Ottawa and Washington, DC, are investing hundreds of billions of dollars to establish secure and reliable critical mineral supply chains in North America.

Alaska, Northern BC, and NWT are positioning themselves to leverage their critical minerals abundance to be important links at the front end of these emerging supply chains.

Alaska's time is now

With the urgency to develop domestic supplies of critical minerals and metals that are abundant in Alaska on the rise, state and federal academic, government, and industry leaders convened in August on the University of Alaska Fairbanks campus for the "Alaska's Minerals – A Strategic National Imperative" summit.

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During her opening address, UAF President Pat Pitney compared the need to develop Alaska's rich critical mineral resources to previous national imperatives such as the Alaska Highway, built to protect America's interest in the Pacific theater during World War II, or the Trans-Alaska Pipeline System, built to stave off oil shortages during the 1970s energy crisis.

"The time is now," she said, setting the tone for the two-day summit.

While America's reliance on mineral imports has long been on the radar of Washington, D.C. policymakers, the rapid transition to low-carbon energy and the heating up of geopolitical tensions related to the Ukraine War and tensions between China and Taiwan have elevated the criticality of securing reliable sources of the mined commodities that go into manufacturing electric vehicles, solar panels, military equipment, and other goods vital to economic and national security.

Over the past five decades, the U.S. has become increasingly reliant on China and other nations for its supply of minerals and metals. According to the U.S. Geological Survey, America is more than 50% import reliant on 47 minerals, including 100% for 17 of them.

This heavy reliance on imports, primarily from China, comes at a time when global governments and automakers are racing to ensure they have the materials to build hundreds of millions of EVs in the coming years.

Critical minerals frontier

How richly endowed in critical minerals is Alaska?

From zinc and germanium already being produced at the Red Dog Mine in Northwest Alaska to cobalt-enriched copper deposits in the Ambler Mining District, the largest graphite deposit in the U.S. found on the Seward Peninsula, rare earths at the Bokan Mountain project on the Southeast Alaska Panhandle, and thousands of deposits and prospects found between, America's 49th State hosts 49 of the 50 minerals and metals deemed critical to the U.S.

Interestingly, aluminum is the only commodity on the U.S. critical minerals list that has not been found in any appreciable quantities in Alaska.

Sen. Lisa Murkowski says that many of her colleagues in Washington, D.C., believe that the talk of Alaska's enormous critical minerals potential is hyperbole.

"Because Alaska is always the biggest, we always have more, we always have the tallest or the deepest, the widest or the bluest, and the fact of the matter is that we do," she said during the opening day of the Alaska's Minerals summit.

Federal geologists, however, agree with the senator's superlatives when it comes to Alaska's mineral endowment, which is why they recently announced a \$6.75 million investment into an expanded critical minerals exploration program there.

"All the way back to the days of the Gold Rush, Alaska has been famous for its mineral wealth. These new projects represent the next steps in understanding the mineral potential for commodities that are critical to our national economy and defense," said U.S. Geological Survey Director David Applegate.

The USGS director told delegates gathered for the Alaska's

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Minerals summit that the new programs being carried out under the USGS Earth Mapping Resources Initiative, or Earth MRI, will provide information vital to narrowing the search for critical minerals across the vast, mineral-rich, and underexplored landscape that is Alaska.

"The Last Frontier remains a frontier for critical mineral resource development," he said.

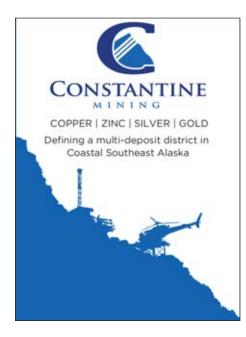
The new Earth MRI programs are investigating three Alaska frontier regions – Kuskokwim River, Seward Peninsula, and Yukon-Tanana Upland – known to host intriguing quantities of antimony, bismuth, graphite, platinum group metals, rare earth elements, tin, tungsten, and other critical minerals.

BC's critical minerals role

Northern BC is enormously enriched with critical minerals, especially the copper needed to wire an electric-centric world and the nickel vital to the lithiumion batteries for EVs and clean energy storage.

This rich endowment of minerals positions BC and its First People to benefit from the rocketing demand for minerals to build a low-carbon future, according to the "Explore our Economy" report published a year ago by the Association for Mineral Exploration BC and iTOTEM Analytics.

"With demand for the minerals and metals we discover soaring to meet the needs of a low-carbon economy, we understand the acute importance of the critical role we play in achieving net-zero goals," said AME President and CEO





Nechalacho mine manager Clarence Pyke explains how ore sorting is being used to upgrade rare earths ore.

Kendra Johnston.

During the opening day of AME's Roundup 2022, BC Minister of Energy, Mines and Low Carbon Innovation Bruce Ralston announced that mineral exploration expenditures in BC are near alltime highs, which is good for the province, its people, and the clean energy future.

"Mineral exploration and mine development are fundamental and essential industries in BC and will continue to play a critical role in the growth of our province and the transition to a low-carbon economy," Ralston said during the AME Roundup 2022 opening ceremonies.

According to the Explore our Economy report, roughly 21% of the mineral exploration investments in BC during 2021 went to First Nations-affiliated vendors.

"This report demonstrates how vital Indigenous-affiliated business and collaborative partnerships are to mineral exploration, and how these relationships can advance reconciliation and economic advancement for Indigenous communities," said Johnston.

With the growing demand for the minerals and metals needed for a low-carbon economy, it is expected that new records for mineral exploration and the consequential investments with First Nations vendors will continue to grow in the coming years.

"Huge volumes of metals including

copper, gold and nickel, together with critical minerals, are required for electric vehicles, renewable energy generation, energy storage and transmission, medical technology and more," AME and iTOTEM inked in a summary of the Explore our Economy report. "These metals occur naturally in BC where we are already exploring for these critical minerals using the highest environmental, social and governance (ESG) standards."

From communities in the remotest corners of the province to the more than 1,100 mineral exploration companies headquartered in the bustling city of Vancouver, the enormous demand for minerals to build a clean energy future is providing an enormous boost for the BC economy.

"Explore our Economy demonstrates how the mineral exploration industry is essential to thousands of businesses and people in all corners of the province, helping to ensure a strong and vibrant provincial economy for generations to come," said Johnston.

BC copper and nickel

While Northern BC is enriched in many of the metals needed for EVs, renewable energy, and new technologies, this mineral-rich region stands to benefit most from the nearly unfathomable volumes of copper that are going to be needed in the coming decades.

GIGA METALS CORF

The World Bank estimates that roughly 1.1 trillion pounds of copper will be needed for the EVs, charging stations, transmission, and generations of low-carbon electricity to replace the fossil fuelbased energy that powered the 20th century.

Copper is so vital to low-carbon energy and transportation that Goldman Sachs has declared this conductor metal to be the new oil.

In September, Goldman Sachs said the price for a pound of copper needs to be at least US\$6.50 to incentivize the development of enough mines to wire the lowcarbon electric future.

This could be a boon for Northern BC, a region with multiple world-class deposits of the red metal.

Five of the largest and most advanced copper-gold projects in Northern BC – Galore Creek, KSM, Red Chris, Schaft Creek, and Tatogga – host nearly 100 billion lb of copper in the inferred and indicated resource categories.

Only Red Chris, which is owned by Newcrest Mining Ltd. (70%) and Imperial Metals Corp. (30%), is currently in production. The other four are near development.

Numerous other earlier staged copper projects are being explored across Northern BC.

While BC's Golden Triangle region is famed for its copper and gold, this area hosts many other metals critical to the energy transition, including nickel and cobalt at Giga Metals Corp.'s Turnagain project.

Aside from the massive demand for both battery metals, one of the intriguing aspects of Turnagain is recent studies that



Boxes of core from drilling at Giga Metals' Turnagain nickel-cobalt project.

indicate that the tailings of a future mine there would capture and sequester nearly as much CO2 as the operation would emit, which could make the nickel and cobalt produced attractive to automakers seeking to lower the carbon footprint of the batteries going into their EVs.

The advantages have drawn the interest of Mitsubishi Corp., which has agreed to pay Giga roughly US\$6.2 million (C\$8 million) to acquire a 15% interest in Hard Creek.

"We are very pleased to welcome Mitsubishi Corporation, a global trading and investment company, as a strategic partner for the development of Turnagain project," said Giga Metals President Martin Vydra.

A new era for NWT

The mining of gold, zinc, and diamonds has provided a foundation for Northwest Territories' economy for more than a century. Now, the northern Canada territory is looking to build upon this legacy by feeding critical minerals and metals into North American supply chains.

"From our beginnings in base metals like zinc, lead, and gold, we progressed to becoming the birthplace of ethically sourced diamonds in the 1990s," Northwest Territories Minister of Industry, Tourism and Investment Caroline Wawzonek said. "The breadth of our mineral potential is expanding even further, thanks to the presence of green economy metals like rare earth minerals, lithium, nickel, and cobalt needed to meet the demand of clean technologies along with many other resources recognized as critical or strategic minerals and metals."

NWT hosts known deposits and occurrences with 23 of 31 minerals that have

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Graphite One's Graphite Creek Project – America's largest-known flake graphite deposit – is located north of Nome, Alaska.

Graphite One ...A tech company that mines graphite

www.graphiteoneinc.com TSX-V:GPH | OTCQX:GPHOF been deemed critical by the Canadian government, and this northern territory that is about twice the size of Texas is as underexplored as it is vast.

Above and beyond being enriched with rare earths and other critical minerals often imported from places like China, the Democratic Republic of Congo (DRC), and Russia, the permitting system in NWT ensures that the mined commodities produced in the territory meet high environmental, social, governance, and indigenous participation standards.

"We are world leaders in these measures, well known for our environmental oversight, Indigenous representation in regulatory processes, and the recognition of traditional knowledge," Wawzonek said. "In fact, the NWT model; the ESG-I, with its unique approach to collaborative and consensus-based legislative development, resource royalty sharing, and socioeconomic and benefit agreements, is anchored by the critical leadership of NWT Indigenous Governments in resource exploration and development in Canada."

The newly developed Nechalacho rare earths mine is an operating example of the advantages NWT has to offer, both in terms of rich critical minerals potential and the strength of the ESG-I model in the territory.

In addition to being the first rare earths mine in all of Canada, Nechalacho boasts environmental advantages and a relationship with local indigenous companies that bolster the ESG-I score of this producer of a group of elements critical to EVs, wind turbines, and a broad array of other modern industrial and consumer products.

Australia-based Vital Metals Ltd., which operates Nechalacho Mine through its Canadian subsidiary Cheetah Resources Corp., is working hard to ensure that as many benefits as possible from mining rare earths at Nechalacho are realized by NWT businesses and people.

This includes Canada First People making up roughly 70% of the workforce at Nechalacho.

The ability to achieve such a high First Nation hire rate has a lot to do with contracting Det'on Cho Nahanni Construction Ltd., a Northwest Territories-based First Nations company, to carry out the mining and earthworks at Nechalacho.

"The Yellowknives Dene First Nation is pleased to be the first Indigenous group in Canada to be responsible for mineral extraction on their traditional territory," said Yellowknives Dene First Nations Chief



This copper-rich rock was discovered in a pit excavated to provide aggregate for road work on Fortune Minerals' Nico cobalt-gold-bismuth-copper project in Canada's Northwest Territories.

Ernest Betsina. "When indigenous people conduct the mining operations, they are better able to control the process, resulting in better safeguarding of the environment."

NWT seeks federal funds

Like the rest of Canada's North and Alaska, NWT is a vast and remote land with limited transportation and energy infrastructure. This often makes the economics of mining even high-grade deposits, especially those that produce a concentrate that must be shipped elsewhere for processing, out of reach.

The territory, which has been working to bridge this gap between its rich mineral resources and the markets that need them, hopes the federal government's C\$3.8 billion (US\$3 billion) budget to support Canada's critical minerals strategy includes funds to continue this effort.

The recently completed 97-kilometer (60 miles) Tlicho Highway to the community of Whati is an example of recent efforts to extend infrastructure closer to the territory's critical mineral potential.

Funded by a partnership between the federal, territorial, and Tlicho First Nations governments, this recently completed project extends road access to within 50 kilometers (30 miles) of Fortune Minerals Ltd.'s NICO cobalt-gold-bismuth-copper project, which will need road access to deliver concentrates to market.

Located about 150 kilometers (95

miles) north of northern NWT rail system terminus at Hay River, NICO is a near-development stage project that includes an intriguing mix of critical and precious metals that makes it an intriguing prospect.

NWT hopes that Ottawa will support further infrastructure development to critical minerals-enriched areas of the territory.

"To transition into the next chapter of our storied mining history with our rich critical mineral potential, we need strong partners at the federal level and continue to make the case for significant infrastructure investment. By doing this, we will be able to capitalize on our true economic potential," said Northwest Territories Premier Caroline Cochrane.

The C\$3.8 billion (US\$3 billion) federal budget to support the development of critical minerals across Canada includes C\$1.5 billion (US\$1.2 billion) specifically designated for infrastructure investments to unlock new mineral projects in critical regions.

"The NWT is a vibrant jurisdiction with opportunities in abundance. We are looking for new partnerships across a variety of ventures and areas of development," said Wawzonek. "We continue to build on our best practices and our strengths, and we are looking to welcome like-minded investors and partners. We are ready to raise our bar once again and are likely one of the best positioned jurisdictions to do that at this moment in time." ●



Graphite One advances US supply strategy

Pushes ahead AK mine, WA plant to meet vast EV battery demand

By SHANE LASLEY

Data Mine North

A sautomakers look to secure the graphite required for lithium-ion batteries that will power the hundreds of millions of electric vehicles expected to traverse global highways over the next three decades, Graphite One Inc. continues to put milestones in its rearview on a journey to develop a mine at its Graphite Creek project in Alaska and advanced graphite processing facility in America's Pacific Northwest.

"Our strategy is to build a complete graphite anode supply chain – from mine to battery – located in the United States," said Graphite One CEO Anthony Huston. "And to complete the circular economy for battery materials, G1 is also adding a battery materials recycling facility to feed recovered materials right back into our manufacturing process."

A prefeasibility study finalized in August provided details of this all-American graphite materials supply chain.

Considering global analysts are forecasting that at least a 500% increase in global mined graphite production will be required by 2030 to keep pace with EV battery demand, nearly 100 new mines and processing facilities similar in size to those being advanced by Graphite One are going to be needed as soon as possible.



The global lithium-ion battery supply chain experts at Benchmark Mineral Intelligence have already flagged a supply-demand imbalance for graphite.

"This is the first year that battery anode demand will overtake demand from the refractory and foundry industries," George Miller, senior price analyst at Benchmark Mineral Intelligence, warned in October. "It is also the first year we expect a structural deficit for the graphite industry in the gigafactory era, with new supply now needed to meet rapidly rising near-term demand."

As the markets tipped toward deficit, Graphite One focused its 2022 fieldwork on collecting the data to surpass the next milestone on its journey to an all-American graphite supply chain – a feasibility study for developing a mine at the largest graphite deposit in the U.S.

Graphite One feasibility

Lying about 50 miles north of the deepwater port facilities in Nome, Alaska, Graphite Creek hosts the largest known graphite deposit in America, according to

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the U.S. Geological Survey.

Based on drilling completed along less than a mile of the 10 miles of known mineralization, Graphite Creek hosts 32.5 million metric tons of measured and indicated resources averaging 5.25% (1.7 million metric tons) graphite, plus 254.7 million metric tons of inferred resource averaging 5.11% (13 million metric tons) graphite.

A 2022 prefeasibility study based on this resource envisions a mine at Graphite Creek that would produce roughly 51,800 metric tons of graphite concentrate per year, which would be shipped to Graphite One's planned processing and recycling facility in Washington, a locale selected for its abundant low-cost and low-carbon hydroelectricity.

The Washington plant will upgrade Graphite Creek concentrates, along with purchased graphite material, into 49,600 metric tons of spherical coated graphite that serves as the anode material in lithium-ion batteries and 25,400 metric tons of other graphite products per year.

With EV battery demand outpacing the ability to permit and build a mine in the U.S., the PFS envisions bringing the Washington processing facility online first.

The capital costs to develop the mine and processing facility detailed in the PFS are estimated to be US\$950 million (C\$1.24 billion), which includes a contingency of US\$130 million (C\$170 million).

With a post-tax internal rate of return (8% discount) of 22% and net present value of US\$1.04 billion (C\$1.36 billion), the mining and processing operations are expected to pay back the capital in 5.1 years.

To gather the data needed for a feasibility study, the final step before permitting and development, the 2022 program at Graphite Creek included 2,092 meters of infill and resource expansion drilling, environmental baseline studies, and significant camp expansion.

"It is anticipated that the 2022 summer drilling program data will be incorporated when the company is in a position to file a feasibility study to advance Graphite Creek during this critical time of undersupply for U.S. strategic materials such as graphite," said Huston.

EVs drive graphite demand

The growing global graphite supply deficit is being driven by a pipeline of more than 300 lithium battery gigafactories in operation, being built, or on the drawing board to meet the needs of the



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burgeoning EV market.

"The central demand driver for the graphite market is now the electric vehicle. It's become the largest end market for flake graphite," said Miller.

S&P Global Platts' forecast that automakers alone will need more than 5 million metric tons of graphite per year by 2030.

This compares to U.S. Geological Survey estimates that only about 1 million metric tons of graphite was mined globally during 2021, none of which was mined in the U.S.

For American automakers seeking a secure and responsible source of the minerals and metals needed for EVs, this situation is further complicated by China's domination of graphite markets.

According to USGS data, China produced 82% of the world's mined graphite and virtually 100% of the battery-grade anode graphite during 2021.

"As I've stated before, we currently get our materials for EVs from China, where environmentally responsible mining and processing is non-existent and has caused significant harm to surrounding areas and populations (yet good enough for us to use in EVs, wind turbines and other renewables)," Christopher Smith, the chief government affairs officer at Ford Motor Company, penned in an August letter to the U.S. Department of Interior.

Graphite One's proposed Alaska mine and Washington processing facility could provide Ford and other American automakers with a domestic alternative with strong ESG credentials.

Incentivizing domestic supply

Graphite One's plans to establish a domestic graphite supply chain got a boost with the passage of the Inflation Reduction Act that was signed into law by President Biden in August.

This new US\$750 billion piece of legislation provides companies that produce lithium-ion battery materials in the U.S. with a tax credit equal to 10% of the production costs. Aimed at bringing new domestic battery material supplies online as quickly as possible, this credit begins to fade by 25% per year starting in 2030.

The Inflation Reduction Act offers a second tax credit equal to 10% of the costs incurred in relation to the production of 99.9% graphite on American soil. This credit does not have a sunset date.

The mine-to-coated spherical graphite anode material supply chain detailed in the Graphite One PFS would qualify for both tax credits.

In addition to the graphite production incentives, Graphite One's plans to provide an all-American supply of graphite will likely be further bolstered by a \$7,500 tax credit offered to EV buyers in the U.S.

To qualify for the tax credit, at least 40% of the materials in the battery of the EV being purchased must be produced in the U.S. or a free trade agreement country. This domestic materials requirement climbs by 10% per year until 2027, at which point it will remain steady at 80%.

Additionally, EVs with battery components or critical minerals supplied by "foreign entities of concern" will not be eligible for the tax credit starting in 2024 and 2025, respectively. This takes companies in China, which produced more than 99% of the global graphite anode material in 2021, off the table.

Streamlined mine permitting

The EV battery materials stipulations in the Inflation Reduction Act could make the Graphite One's proposed mine and pro-



A lens of outcropping graphite at the Graphite Creek project in Alaska.

cessing plant an attractive proposition for General Motors, Ford, Stellantis, Tesla, and other automakers that are already cutting deals directly with mining companies to secure the materials they need for the EV transition.

This has Ford calling on the federal government to streamline the cumbersome mine-permitting process in the U.S.

"Today's lengthy, costly and inefficient permitting process makes it difficult for American businesses to invest in the extraction and processing of critical minerals in the United States," Smith penned in his letter to the Interior Department.

"If we don't have a domestic supply chain, which includes mining and processing, we simply won't have the raw materials required for the 'green revolution'," the Ford executive added.

To help fill the widening shortages of battery materials in the U.S., Graphite One is quickly advancing its proposed graphite battery material supply chain toward permitting.

"With this supply shortage emerging just as U.S. policy is implementing incentives for domestic production – tax incentives and domestic content rules for EV batteries – this is a defining moment for the technologies that will define the 21st century," said Dan McGroarty, president of the American Resources Policy Network and a member of Graphite One's advisory board. "It's time to make the connection between the transition to renewable energy and the tech metals that make it possible."

EXPLORERS AT A GLANCE



Advancing Arctic and the Ambler District

Ambler Metals LLC, a joint venture company equally owned by Trilogy and South32 Ltd., invested roughly US\$28.5 million into a 2022 exploration program that included 10,738 meters of drilling targeting resource upgrades within the Arctic deposit and testing earlier-stage copper-rich prospects across the Upper Kobuk Mineral Projects in Northwest Alaska

Covering 448,217 acres of the famed Ambler Mining District, UKMP hosts the advanced staged Arctic Mine project and more than a dozen similar volcanogenic massive sulfide targets on state

lands, plus the world-class Bornite copper-cobalt deposit and similar carbonate-hosted prospects on land owned by the Northwest Alaska Native regional corporation, NANA Corp.



The 2022 field program at UKMP included infill and geotechnical drilling at the Arctic deposit; testing for similar volcanogenic massive sulfide mineralization near Arctic; and exploration of the copper-rich targets similar to Bornite in the Cosmos

Hills and the Ambler Lowlands.

Nearly 80% of Ambler Metals' 2022 drilling was focused on upgrading the resource and collecting geophysical data at Arctic, the most advanced of the UKMP projects.

A 2020 feasibility study for developing a mine at Arctic details a financially robust operation that would produce 1.9 billion lb of copper, 2.3 billion lb of zinc, 388 million lb of lead, 386,000 oz of gold, and 40.6 million oz of silver over an initial 12-year mine life.

This operation is based on 43 million metric tons of reserves averaging 2.32% copper, 3.24% zinc, 0.57% lead, 0.49 grams per metric ton gold, and 36 g/t silver.

During a 2021 program focused largely on upgrading resources within the Arctic deposit, Ambler Metals cut stacked layers of high-grade volcanogenic massive sulfide mineralization.

The 2022 drill program at Arctic continued to cut multiple layers of VMS mineralization. One such hole, AR22-0192. cut four mineralized intervals, including:

• 9.63 meters averaging 3.58% copper, 5.89% zinc, 1.07% lead, 0.32 g/t gold, and 53.52 g/t silver from a depth of 118.5 meters.

• 7.36 meters averaging 2.38% copper, 2.4% zinc, 0.81% lead, 0.35 g/t gold, and 51.25 g/t silver from a depth of 145.3 meters.

Following up on the 2021 program, Ambler Metals completed another 8,376 meters of infill drilling in 47 holes - 40 focused on upgrading indicated resources to the higher confidence measured category, and seven for geotechnical and hydrogeological study purposes.

In addition to Arctic, the 2022 program at UKMP included 2,363 meters in seven holes targeting copper-rich satellite prospects along the volcanogenic massive sulfide belt that hosts Arctic and the Cosmos Hills area of UKMP, which is related to the Bornite copper-cobalt deposit.

Located about 16 miles (26 kilometers) southwest of Arctic, Bornite hosts 41.7 million metric tons of indicated resource averaging 1.04% (955 million lb) copper; and 144 million metric tons of inferred resource averaging 1.68% (5.33 billion lb) copper.

The deposit also hosts 88 million Ib of cobalt in 184.8 million metric tons of inferred resource averaging 0.021% cobalt.

Outside of Bornite itself, this area has not been systematically explored for similar carbonate-hosted copper mineralization since Kennecott Exploration during the 1990s.

Soil sampling, mapping, relogging historical core, trenching, and two holes drilled in 2021 outlined four areas for 2022 drilling - Bornite West, Pardner Hill, Pardner Hill North, and Ambler Lowlands.

One of the 2021 scout holes encountered low-grade copper in Bornite sequence carbonates about 2,000 meters west of the Bornite deposit and on the projected northeast trend of mineralization at Pardner Hill, a 3,000-meter-long copper soil and rock geochemical anomaly.

During the 2022 season, field crews completed 1,350 meters of trenching



The Bornite Camp on the Upper Kobuk Mineral Projects

at Pardner Hill.

In addition to the drilling and trenching, Ambler Metals 2022 field program included detailed mapping and soil sampling to build on the work performed during the prior year.

PRESIDENT & CEO: Ramzi Fawaz VP, OPERATIONS: Kevin Torpy **EXPLORATION MANAGER:** Andy West

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RAMZI FAWAZ





CHAIR: Karen Wood **CEO:** Graham Kerr CHIEF DEVELOPMENT OFFICER: Simon Collins

MARKET CAPITALIZATION: A\$18.45 billion (Nov. 25, 2022)

North America Office Ste. 1850, 1066 West Hastings St. Vancouver, BC V6E 3X1 Tel: 604-915-5680 www.south32.net

Trilogy Metals Inc.



CHAIR: Janice Stairs PRESIDENT & CEO: Tony Giardini **VP EXPLORATION: Richard Gosse**

CASH AND CASH EQUIVALENTS: US\$3.1 million

(Aug. 31, 2022) WORKING CAPITAL: US\$2.9 million (Aug. 31, 2022) MARKET CAPITALIZATION: US\$84.4 million (Nov. 25, 2022)

1150 - 609 Granville St. Vancouver, BC V7Y 1G5 Tel: 604-638-8088 info@trilogymetals.com www.trilogymetals.com





GRAHAM KERR





TONY GIARDINI

VANA CORP



FGFND GOLD SILVER COPPER ZINC LEAD NICKEL COAL LITHIUM PGM DIAMONDS



Teck has expanded its Project Satellite initiative to its portfolio of world-class zinc development assets, such as the Red Dog Mine District in Alaska.

Teck

ALASKA & BRITISH COLUMBIA

Teck Resources Ltd.

NYSE & TSX: TCK 📶

Teck launches Zinc Satellite Initiative

The global transition to renewable energy is demanding enormous quantities of copper and zinc, two metals that are a specialty of Teck Resources Ltd.

To help leverage its global portfolio to help fill the growing demand for copper, Teck launched Project Satellite in 2017. This initiative focused primarily on five copper assets in the Americas, in-

cluding the Galore Creek and Schaft Creek projects in Northern British Columbia.

According to a 2018 calculation, Galore Creek hosts 1.1 billion metric tons of measured and indicated resources averaging 0.47% (11.3 billion lb) copper, 0.26 grams per metric ton (9.3 million ounces) gold, and 4.2 g/t (150 million oz) silver.

Galore Creek Mining Corp., a joint venture owned equally by Teck and Newmont Corp., is currently completing a prefeasibility as it advances the world-class porphyry copper project toward permitting and development.

Teck's Project Satellite team is also leveraging the value of Schaft Creek, a porphyry copper-gold deposit about 30 kilometers (19 miles) northeast of Galore Creek.

Being advanced under a JV between Teck (75%) and Copper Fox Metals Inc. (25%), Schaft Creek hosts 1.35 billion metric tons of measured and indicated resources averaging 0.26% (7.76 billion pounds) copper, 0.17 grams per metric ton (7 million ounces) gold, 1.25 g/t (54.3 million



JONATHAN PRICE



HARRY CONGER



Teck completed 4,688 meters of metallurgical drilling during the 2022 season at the Schaft Creek porphyry copper project in Northern British Columbia.

oz) silver, and 0.017% (510.6 million lb) molybdenum.

A preliminary economic assessment completed in 2021 outlines plans for a 133,000-metric-ton-per-day mill and open pit mine at Schaft Creek that would produce roughly 5 billion lb of copper, 3.7 million oz of gold, 226 million lb of molybdenum, and 16.4 million oz of silver over 21 years of mining.

Based on the PEA results, the Schaft Creek JV completed a 4,688meter drill program in 2022 focused on collecting metallurgical samples across areas of the deposit that are part of the initial five-year mine plan. "These activities are focused on further defining and confirming valueadd opportunities to inform a decision on initiation of a potential future prefeasibility study," said Copper Fox Metals President and CEO Elmer Stewart.

Red Dog zinc satellites

With global zinc demand outpacing supply and the transition to renewable energy creating even more need for the galvanizing metal, Teck has expanded its Project Satellite initiative to realize value from its portfolio of world-class zinc development assets – most of which are in Alaska and Northern British Columbia.

EXPLORERS AT A GLANCE

The Zinc Satellite initiative, launched in early 2022, will build on the technical and commercial expertise of Teck's Project Satellite team.

"Zinc Satellite will leverage our successful Project Satellite approach of making prudent investments to advance each asset by identifying pragmatic development options and paths to value. Value could ultimately be realized through a standalone investment, a partnership, or other transaction," former Teck Resources CEO Don Lindsay said before his retirement.

This initiative will focus on leveraging the value of five world-class zinc development assets in Alaska, Northern BC, and Australia's Northern Territory.

Three of Teck's five Zinc Satellite assets are deposits near the company's Red Dog Mine in Northwest Alaska.

A world-class asset that produces more than 1.1 billion lb of zinc per year, Red Dog singlehandedly accounts for roughly 4% of the zinc mined on Earth.

Going into 2021, Red Dog had roughly 46 million metric tons of proven and probable reserves averaging 12.9% (10.8 billion lb) zinc and 3.6% (1.8 billion lb) lead. This is enough ore to keep the world-class zinc mine in operation until 2031.

Aktigiruq and Anarraaq, satellite deposits on state land held by Teck, could provide ore for the Red Dog mill deep into the 21st century.

"Looking to the future, Red Dog remains a



A rainbow touches down at Lik, an advanced-stage zinc-lead-silver project in the Red Dog District being explored under a 50-50 partnership between Teck Resources and Solitario Zinc.

premium zinc district with high-quality mine life extension potential at Aktigirug and Anarraag deposits," said Teck Resources Senior Vice President of Exploration Alex Christopher.

Aktigirug, which lies about nine miles north-northwest of the current Red Dog operation, is one of the largest undeveloped zinc deposits on Earth.

While an industry-compliant resource has yet to be published, Teck has previously reported that Aktigiruq hosts 80 to 150 metric tons of material averaging 16 to 18% combined zinc and lead.

This would be enough ore to feed the Red Dog mill for 25 to 50 years at current production rates.

Teck says a scoping study will provide a first



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look at the economic and engineering parameters of a mine at Aktigirug.

Anarraaq, which lies about seven miles north-northwest of Red Dog and just south of Aktigirug, hosts 19.4 million metric tons of in-

ITARIO 2 ferred resource averaging 14.4% zinc and 4.2% lead, according to the most recent calculation published by Teck.

In addition to Anarraaq and Aktigiruq, Teck is exploring the Lik zinc project about 11 miles northwest of Red Dog under a 50-50 partnership with Solitario Zinc Corp.

Lik hosts 17.6 million metric tons of potentially open pit mineable indicated resource averaging 8.1% zinc, 2.7% lead, and 50.1 g/t silver; plus 2.8 million metric tons of inferred resource at 8.6% zinc, 2.7% lead, and 38.9 g/t silver.

Teck was the operator of a jointly funded 2022 program at Lik that included geophysics and drilling focused primarily on resource expansion targets at the north end of the deposit.

Northern BC zinc

ZINC

SOL

Cirque, a Northern BC zinc project Teck is advancing under a 50-50 partnership with Korea Zinc, is another world-class asset under the Zinc Satellite initiative

While Teck has not published a modern resource estimate, according to a 1990s calculation, the Cirque Main deposit hosts 24.7 million metric tons of historical reserves averaging 8.5% zinc, 2.3% lead, and 50.8 g/t silver.

Located close to existing infrastructure, Teck says concentrates from Cirque could easily be delivered to Trail, a Southern BC smelting and refining facility owned by the company that processes concentrates from the Red Dog Mine.

The Teck-Korea Zinc JV also owns a 51% interest in three properties adjacent to Cirque -Pie, Cirque East, and Yuen.

ZincX Resources Corp., which holds the other 49% interest in these projects, has a total of 11 properties that cover a 140-kilometer- (87 miles) long stretch of the Kechika Trough.

Teck's Zinc Satellite initiative also includes Teena, a project in Australia's Northern Territory that hosts 58 million metric tons of inferred resource averaging 11.1% (6.5 million metric tons) zinc, according to a calculation completed prior to Teck's 2016 acquisition of Teena.

CHAIR: Sheila Murray **CEO:** Jonathan Price PRESIDENT & COO: Harry "Red" Conger

CASH AND CASH EQUIVALENTS: C\$2.6 billion (Sept. 30, 2022) WORKING CAPITAL: C\$2.96 billion (Sept. 30, 2022) MARKET CAPITALIZATION: C\$17.12 billion (Nov. 28, 2022)

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COPPER FOX METALS INC.

American Pacific Mining Corp. 🛑 🔵

CSE: USGD.CN 🕋

American Pacific joins Alaska explorers

With the buyout of Constantine Metal Resources Ltd., American Pacific Mining Corp. gained a roughly 45% ownership of the Palmer zinccopper-silver-gold-barite mine project in Southeast Alaska.

ALASKA

Being advanced under a joint venture with Dowa Metals & Mining Alaska Ltd., Palmer hosts two adjacent volcanogenic massive sulfide deposits with a combined 4.68 million metric tons of indicated resource averaging 5.23% (539 million pounds) zinc, 1.49% (154 million lb) copper, 30.8 grams per metric ton (4.6 million ounces) silver, 0.3 g/t (451,000 oz) gold, and 23.9% (1.12 million metric tons) barite; plus 9.59 million metric tons of inferred resource averaging 4.95% (1.05 billion lb) zinc, 0.59% (124 million lb) copper, 69.3 g/t (120.6 million oz) silver, 0.39 g/t (21.4 mil-

lion oz) gold, and 27.7% (2.65 million metric tons) barite.

A preliminary economic assessment that was updated in 2022 outlines plans for a 3,500-metric-tonper-day mill at Palmer that would produce 1.07 billion lb of zinc, 196 million lb of copper, 18 million oz of silver, 91,000 oz of gold, and 2.89 million metric tons of barite over an initial 11-year mine life.



American Pacific acquired Constantine in an allshares transaction that represented a roughly 49% premium for Constantine shareholders.

WARWICK

Upon the November closing of the acquisition, former Constantine shareholders held approximately 33.2% of American Pacific shares, and the expanded junior had more than C\$10 million in cash to fund its share of joint venture mine projects in Alaska and Montana, while continuing to explore its other western U.S. gold, silver, and copper properties.

"This is a transformational step for American Pacific as the Palmer Project gives us an established PEA-stage asset with a tremendous amount of exploration upside," said American Pacific Mining CEO Warwick Smith.

American Pacific joined the Palmer project in the midst of a roughly C\$18 million 2022 program that included a roughly 6,000-meter surface drill program, continued baseline environmental work, and preparation for the development of an exploration ramp.

The underground development will provide a platform for resource upgrade and expansion drilling ahead of prefeasibility studies currently slated for 2025.

"We are very impressed with the quality of technical work completed by Constantine and Dowa to-date and look forward to collaborating with our new partners and stakeholders to expand resources and realize the full potential of this high-grade VMS system while continuing to deliver exposure to progress and new discoveries across our existing portfolio of highly prospective past-producing exploration projects," said Warwick.

This portfolio includes Madison, which hosts a past-producing highgrade copper-gold skarn and porphyry system in Montana. Kennecott Exploration Company, the exploration arm of Rio Tinto, is currently investing US\$30 million to earn a 70% joint venture interest in this project. The Broadway Mine on the Madison property produced 144,000 oz of gold from 1880 to 1950. More recently, the Madison Mine produced 7,570 oz of gold and 3 million lb of copper from 19,803 tons of bulk sample material averaging 0.52 oz/ton gold and 25% copper extracted between 2005 and 2011.

In addition to Madison, American Pacific is exploring the high-grade Gooseberry gold-silver, Tuscarora gold, and South Lida copper-gold projects in Nevada.

CHAIRMAN: Wayne Livingstone CEO: Warwick Smith PRESIDENT: Eric Saderholm VP, EXPLORATION: Joshua Carron



With the acquisition of Constantine, American Pacific gained a 45% interest in Palmer, a VMS project in Alaska enriched with zinc, copper, silver, and gold.

CASH AND CASH EQUIVALENTS: C\$9.1 million (Sept. 30, 2022) WORKING CAPITAL: C\$9.1 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$75.1 million (Nov. 25, 2022)

910–510 Burrard St. Vancouver, BC V6C 3A8 Tel: 604-908-1695 Email: Kristina@americanpacific.ca www.americanpacific.ca

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EXPLORERS AT A GLANCE



Acres of drill core from past operations at Pine Point. Approximately two to three football field lengths across and eight to 10 fields long. This drillcore comes from 25 years of work at this world-class zinc mine.



Osisko explores energy metals potential

With dewatering plans, an updated preliminary economic assessment, and updated mineral resource estimate out of the way, Osisko Metals Inc. has been exploring ways to maximize the potential of this world-class zinc-lead project that could easily rank it within the top ten zinc mines on the planet.

Located just south of the Great Slave Lake, Pine Point was home to a former mine operated by Cominco (now Teck Resources) that produced roughly 14 billion pounds of zinc and 4 billion Ib of lead from around 64 million metric tons of ore during a roughly 24-year span beginning in 1964.



ROBERT WARES

After taking over the site in 2018, Osisko completed a preliminary economic assessment in 2020 for reestablishing a zinc mine at Pine Point, yet quickly found it necessary to update the PEA in 2022 after taking into consideration the turbulent times since then.

The objective of the 2022 PEA update was to integrate updated longterm prices for zinc and lead, of which the former has been seeing a significant increase in demand due to the energy transition; increased mineral resources; cost escalations in capital and expenses; and reduced life-of-mine water management costs that resulted from a completed hydrogeological model.

"In the current inflationary context, I am very pleased that the PEA update still shows a very robust zinc project with viable economic metrics including an after-tax IRR (internal rate of return) of 25% and after-tax NPV (net present value) of C\$602 million, as well as significantly increased resources," said Osisko Metals CEO Robert Wares during the announcement of the updated PEA. "The new proposed mine plan, with 18% increased tonnage to the mill, could again make Pint Point a topten global zinc-lead producer with an annual average production of 329 million Ib of zinc and 141 million Ib over a 12-year mine life."

This updated PEA was based on 15.8 million metric tons of indicated resource averaging 4.17% zinc and 1.53% lead; and 47.2 million metric tons of inferred resource averaging 4.43% zinc and 1.68% lead. Now, Osisko Metals is looking toward advancing feasibility-level studies for Pine Point.

"On a zinc only basis, Pine Point could potentially become a low-cost zinc-lead producer ranking fourth largest in the Americas," said Wares. Although its zinc is promising, an ongoing issue has been putting a damper on the project in the form of water. Nevertheless, Osisko has gone to great lengths to handle this and has done so with diligent care. Constant improvements have been made to reduce the costs of dewatering while maintaining a careful approach to its surroundings. With the



Despite producing roughly 14 billion pounds of zinc and 4 billion lb of lead over a 24-year span from the 1960s, Osisko Metals hopes to breathe new life into this historic world-class zinc-lead project.

"On a zinc only basis, Pine Point could potentially become a low-cost zinc-lead producer ranking fourth largest in the Americas." -Osisko Metals CEO Robert Wares

recent PEA, Osisko added that a Site Wide Numerical Model was generated for Pine Point, a first for the company, which aims to provide insight into further dewatering requirements.

An entirely new approach, announced in November 2021, shows a cluster mining strategy, in conjunction with its forecasted hydrogeological modeling, reduced dewatering estimates by roughly 30% annually. The goal remains to further optimize the life-of-mine plan strategy to pump less water, use less energy, and continue to reduce dewatering costs. This means reduced natural gas-generated power requirements and overall less greenhouse gas emissions for a smaller footprint.

While work continues steadily at Pine Point, perhaps due to the demands for energy metals in both Canada and the United States, in March, Osisko exercised the option to acquire the Gaspé Copper mine from Glencore Canada Corporation.

Located near Murdochville, Québec, Glencore provided a binding term sheet for Osisko to acquire a 100% interest in the past-producing Gaspé Copper Mine for an up-front payment of US\$25 million, to be paid by Osisko Metals by way of convertible note issued to Glencore upon successful closing of the transaction, and a cash payment of US\$20 million, payable upon the start of commercial production.

Apparently not wanting to miss this opportunity, Osisko announced a maiden resource estimate for Gaspé in April. While of the inferred category, the initial estimate came out to a whopping 456 metric tons averaging 0.35% copper or around over 3 billion lb of copper.

With both a world-class zinc project and a potentially world-class copper project now under its belt, Osisko Metals has quickly positioned itself to become a major provider of the energy metals needed for electrification now and well into the future.

CHAIRMAN & CEO: Robert Wares PRESIDENT & COO: Jeff Hussey VP EXPLORATION: Robin Adair

CASH AND CASH EQUIVALENTS: C\$3.7 million (Sept. 30, 2022) WORKING CAPITAL: C\$1.3 million deficit (Sept. 30, 2022) MARKET CAPITALIZATION: C\$49.6 million (Nov. 238, 2022)

1100 Avenue des Canadiens-de-Montreal (Bureau 300) Montreal, Quebec, H3B 2S2 Tel: 514-861-4441 info@osiskometals.com www.osiskometals.com Macmillan Pass lies within the Mackenzie Mountains that form a natural border between the Yukon and Northwest Territories, Canada.

A year of explosive growth for Fireweed

Adds critical metal projects and expands into NWT during 2022

By A.J. ROAN Mining News

Whether it is expanding its zinc-lead-silver resources on its flagship Macmillan Pass project in the Yukon, gaining a better understanding of its newly acquired Mactung tungsten project straddling the Yukon-Northwest Territories border, or

carrying out reconnaissance exploration of its newly added Gayna River zinc-lead-galliumgermanium project within NWT, appropriately named Fireweed Metals Corp. decided Fireweed Zinc just would not cut it and changed accordingly.



MACDONALD

Comprised of a road-accessible project adjacent to Yukon's border with NWT, the 544square-kilometer (210 square miles) Macmillan Pass project blankets a roughly 55-kilometer (34 miles) trend of zinc, lead, and silver mineralization.

Two of its more advanced deposits – Tom and Jason – host 11.2 million metric tons of indicated resource averaging 6.59% (1.63 billion pounds) zinc, 2.48% (620 million lb) lead, and 21.33 grams per metric ton (7.7 million ounces) silver; plus 39.5 million metric tons of inferred resource averaging 5.84% (5.08 billion lb)

Fireweed Metals Corp.



FIREWEED

EXECUTIVE CHAIRMAN: John Robins CEO: Brandon Macdonald CHIEF GEOLOGIST: Jack Milton

CASH AND CASH EQUIVALENTS: C\$9.7 (Sept. 30, 2022) WORKING CAPITAL: C\$7.1 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$71.7 million (Nov. 25, 2022)

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zinc, 3.14% (2.73 billion lb) lead, and 38.15 g/t (48.4 million oz) silver.

However, moving into 2021, Fireweed reported exciting news from a third area with the potential to eclipse Tom and Jason – Boundary.

Located roughly 15-road-kilometers (nine miles) west of

Jason, Boundary was the primary focus of the company's 2020 drilling. Upon further exploration drilling, Fireweed could not wait to announce the discovery hole from its newest Boundary West target, which cut 76.7 meters averaging 4.22% zinc, 0.34% lead, and 25.6 g/t silver.

Due to this intercept, Fireweed focused its 2021 goals on expanding this area.

Expanding metals portfolio

Kicking off 2022, while assays began to roll in from the previous year, Fireweed Metals decided to add not one but two new properties to its quickly expanding portfolio.

Approximately 180 kilometers (112 miles) north of Fireweed's Macmillan Pass, Gayna River is located in the Mackenzie Mountains of NWT and within the asserted territory of the Na-Cho Nyäk Dun First Nation.

First discovered in the 1970s, more than 28,000 meters of drilling was carried out by Rio Tinto, which outlined a large target with abundant zinc, lead, and silver mineralization.

Despite this, Rio Tinto allowed the claims to lapse, believing there was low potential for a high-grade deposit at Gayna River.

A recent shift in thinking behind the geological model, however, led Fireweed to believe there is potential for high-grade massive sulfide zones within areas that were not tested by Rio Tinto.

Hence, Fireweed acquired 100% of the Gayna River project at a very low cost by staking an area of 12,875 hectares (31,815 acres), covering all the historic showings and anomalies.

Not even a month later, the company opted to acquire the Mactung tungsten project from the Northwest Territories government for C\$15 million. Lying within the traditional territories of the Kaska Dena and First Nation Na-Cho Nyäk Dun, as well as the Sahtu Dene and Métis land claims settlement area of western NWT, this critical metal property hosts 33 million metric tons of historical indicated resource averaging 0.88% tungsten trioxide, making it one of the largest known undeveloped, high-grade tungsten-skarn deposits in the world.

Despite Mactung's world-class size and grade, along with being advanced well into permitting, the former owner of the project, North American Tungsten, fell into financial difficulties and filed for creditor protection before it could develop the mine that would have produced roughly 6,450 metric tons of tungsten per year.

The government of Northwest Territories acquired Mactung in 2015 and obtained a Class 4 Mining Land Use Approval for the tungsten mine project in 2020.

While it was North American's loss, it became Fireweed's gain, leading it to purchase this property that borders the northeast side of its Macmillan Pass zinc-lead-silver property from the territorial government.

Biggest and best drill program

Like most northern miners, once the thaw has set, outside work can begin. Announcing the start of its drilling mid-June, Fireweed planned for its largest and most ambitious program to date.

"The main objectives of the 2022 field program will be to define and expand the known mineralized zones toward an updated mineral resource study this winter followed by an updated preliminary economic study," said Vice President of Exploration Gilles Dessureau. "We are also excited to use innovative new



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FIREWEED METALS CORF

technologies, such as muon tomography and hyperspectral imaging to guide exploration."

Toward this goal, a 7,000-meter drilling program was planned for Macmillan in 2022.

This included 17 holes in the Boundary Zone, six at Boundary West, eight at Tom West, and one at Tom East.

"The 2022 drill program was not only our biggest, but it was our best," said Fireweed Metals CEO Brandon Macdonald. "Our drilling consistently yielded wide zones of zinc mineralization at Boundary zone, including many potentially very high-grade intervals and new discoveries."

Hitting zinc in nearly every hole, 23 diamond drill holes were collared at Boundary, including six at Boundary West and the balance of 17 at Boundary Main.

Eight infill holes were completed at Tom West, which targeted feeder mineralization to test the validity of the current geological model and improve drilling recovery in areas of historic poor drilling recovery.

All eight holes intersected the mineralized zone close to where it was predicted by the geological model.

"The first results from the 2022 program include the best intersection we have ever had at Boundary zone, or anywhere on the property including our Tom and Jason deposits," said Macdonald.

Already anticipating the results to have high to very high zinc and lead grades, even potentially greater than the grades offered in the block model of the current mineral resource estimate, the second hole drilled proved this may be the case.

Cutting an impressive 124 meters averaging 12.3% zinc, 1.3% lead, and 45.9 g/t silver, including a 60-meter subsection averaging 19% zinc, 1.6% lead, and 64.7 g/t silver, hole NB22-002 was not only impressive but also extended the known mineralization at Boundary West.

The implications of this hole spread far for Fireweed, not just for expanding mineralization, but also, based on geological vectors, suggests a feeder zone may be present in which higher grades and thicknesses may be found.

With an updated MRE in the works to include four seasons of additional drill data, including an inaugural resource for Boundary, Boundary West, End Zone, and the Tom North zones, as well as an updated resource for Tom West, Tom East, Tom Southeast and the Jason and Jason South zones, the table is full with a poten-



Macmillan Pass hosts more than half a dozen highly prospective zinc targets.

"Whether on purpose, or sometimes by accident when targeting other zones, we just can't stop finding zinc." *-Fireweed Metals CEO Brandon Macdonald*

tial estimate that will shoot this Yukon-Northwest Territories miner into a league of its own.

And perhaps the Fireweed CEO put it best for what to expect in the coming resource update, "whether on purpose, or sometimes by accident when targeting other zones, we just can't stop finding zinc."

Jaws of Gayna River

While drilling was being carried out at MacMillan Pass, Fireweed carried out a gravity survey and sampling program at Gayna River.

This included the collection of ten samples across the Jaws anomaly, an area of very high lead-in-soil values in historical soil geochemical data. The 2022 sampling was carried out over an area with the highest historical values.

All ten samples ultimately ran over 4,000 ppm lead, including seven samples over 1% lead, one sample of 27.5% lead and 176 ppm silver, and another at 0.75% zinc, confirming the presence of a very strong soil anomaly and validating the high leadand zinc-in-soil values in the rest of the historical soil geochemical dataset.

In addition to soil sampling, Fireweed

geologists collected rock samples that confirmed the presence of high-grade zinc and lead sulfide mineralization at surface, as well as elevated concentrations of the critical minerals gallium and germanium.

Eight grab samples were analyzed in total, including dolostones, dolostone breccias, limestones, and veins.

All had grades greater than 7% zinc, and the best sample comprised 73.7% lead, 9.2% zinc, and 40.5 ppm silver.

The highest zinc grade was 51.2% in a sample that also contained 42 ppm gallium and 39 ppm germanium, with appreciable grades of gallium and germanium also being present in many of the samples, with up to 42 ppm gallium and 99 ppm germanium in different samples, notably in those with higher zinc grades.

"The results from this year's exploration program at Gayna River demonstrate that there is potential for high-grade massive sulphides here, consistent with our approach in exploring Kipushi-style high-grade targets around the margins of these ancient carbonate reefs," said Macdonald.

As for Mactung, Fireweed had field crews begin a resampling program onsite. Using historical core to measure for bulk density, as well as re-assaying them to provide key data to expound an upcoming resource estimate, Mactung saw little action while awaiting those results.

However, aside from that delay, lidar was flown successfully over the extent of the property, which Fireweed hopes will give additional critical insight into this world-class tungsten deposit. ●



Northwest Territories Exploration 2022

Minerals hunt in NWT turns 'critical'

Explorers shift focus to metals in demand for 'green' technologies

By ROSE RAGSDALE

For Mining Explorers

Mining activity in Northwest Territories held steady in 2022 despite constraints imposed by the ongoing COVID-19 pandemic as a cadre of mainly junior mining companies took up the international challenge to seek out large deposits of critical minerals.

Early in the year, government officials noted that industry interest in diamonds, gold, and especially critical minerals boded well for the NWT economy in the coming year.

"An exciting new chapter is emerging for mining in the NWT," said Caroline Wawzonek, minister of Industry, Tourism, and Investment for Northwest Territories.

"While global competition for investors is fierce, we are well-positioned to not only become a supplier of critical minerals, but to be a leader in how they are resourced in both an environmental and socially responsible way," Wawzonek told a Toronto audience at the Prospectors & Developers Association Conference in June.

More than half of the 31 critical minerals that Canada says are critical to domestic industry, national security and emissions reduction can be found in Northwest Territories. Nearly two-dozen explorers assumed the hunt for precious, base, and critical minerals in 2022, many with funding assistance through Northwest Territories' Mining Incentive Program.

The territorial government, with C\$500,000 from the Canadian Northern Economic Development Agency, awarded C\$1.5 million in grants to explorers and prospectors chasing early- and advanced-stage projects.

The government also reported 68 new claims (57,994.66 hectares) being staked in 2021. No claims were canceled, but 244 claims (151,828.15 hectares) lapsed. There are 20 active prospecting permits covering a total area of 302,369 hectares, or 747,153 acres.

Active mining and drilling took place during the year by Arctic Canadian Diamond Company Ltd.; Rio Tinto plc; De Beers; Gold Terra Resource Corp.; Arctic Star Exploration Corp.; Mountain Province Diamonds Inc.; North Arrow Minerals Inc.; Nighthawk Gold Corp.; Rover Metals Corp., with its joint venture partner Arctic Fox Minerals Corp.; Fireweed Metals Corp.; Golden Pursuit Resources Ltd.; Sixty North Gold Mining Ltd.; Osisko Metals Inc.; NorZinc Ltd.; Vital Metals Ltd.; and Fortune Mineral Ltd.

Natural Resources Canada projected total spending for mineral exploration and deposit appraisals to increase in Northwest Territo-

ries in 2022 to C\$69.4 million, up slightly from a comparable outlay of C\$68.1 million in 2021. NRCAN's estimates are based on explorers' spending intentions.

Improvements in infrastructure helped spur mining activity in 2022. The 97-kilometer (58 miles) Tlicho All Season Road, which stretches from west of Yellowknife to the community of Whati, opened in November 2021, providing improved access to mining projects.

Focus on 'green' minerals

A growing number of companies pursued exploration programs in Northwest Territories in 2022 in areas prospective for critical minerals designated in recent years by the United States and Canada as essential to the development of green technologies.

Leading this pack is Australia-based Vital Metals Ltd.

Vital, Canada's first rare earths producer, continued to pursue development in 2022 of its Nechalacho REE Mine project in Northwest Territories. The Australian company reported progress in every area, from exploration to marketing.

The company celebrated completion of a rare earth elements extraction facility in Saskatoon in September and said it would produce a 2.5 metric ton sample of rare earth carbonate produced from ore shipped from its NWT mine for its offtake partner in the coming months.

Northwest Territories government officials praised Vital Metals for its collaborative approach to mine development.

Mining services at Nechalacho, for example, were subcontracted to Det'on Cho Nahanni Construction Ltd., a local company owned by the Yellowknives Dene First Nation.

Wawzonek said the Nechalacho rare earths mine represents the first time an Indigenous group has been hired to extract minerals on its traditional land in Canada.

"In the North, perhaps more than anywhere, a collaborative model for resource development has emerged," she observed. "We have built, and continue to build, relationships in our territory that result in the support and acceptance of major infrastructure and resource projects. Beyond our incredible resources, it's what sets us apart from global competitors, and what makes the NWT a unique place to invest and do business."

By contrast, Vital recently reported discontinuing its exploration and development efforts on two REE projects in Quebec, primarily due to opposition from a local Indigenous group.

In September, Sixty North Gold Mining Ltd. reported a discovery that could result in the explorer changing direction. The company said it defined a 3,200-by-600-meter alteration zone on its Mon property as an iron oxide copper gold deposit.

Petrographic work on a sample from the coincident large magnetic low and intensely hydrothermally altered rocks at Mon, together with a comprehensive review of the geochemistry of samples collected from the property, characterizes the target. The discovery could potentially change the focus of Sixty North's exploration program, the explorer said.

"This is a virgin, grassroots discovery outlining a very large prospective target that was discovered by our team using standard exploration methodology," said Sixty North President and CEO Dave Webb.

Noting that IOCG systems are among the world's richest and largest mineral deposits, he said more geophysical and geochemical targets remain untested and would be assessed in the fall.

After mapping and prospecting a 1,500-meter-long portion of the zone, Webb said the large hydrothermally altered unit had been incorrectly identified as a gabbro by government and company geolo-



Industry experts confirmed that this 71.26-carat gem discovered at the Ekati Mine is likely the largest fancy vivid yellow diamond recovered in Canada.

gists during the past 80 years.

Rover Metals Corp. signed a letter of intent in 2022 to option 90% ownership interest in the Indian Mountain Lake volcanic massive sulfide project, a district-scale land package covering some 30,000 acres of greenstone belt.

The project, located off the eastern arm of Great Slave Lake about 195 kilometers (117 miles) northeast of Yellowknife, has a historical zinc-lead-silver-copper geological resource and previous exploration dating back to the 1940s.

Focusing on zinc and copper, the junior conducted a C\$200,000 geophysics program to define 2023 drill targets.

Other explorers that received MIP grants to assist with NWT critical minerals projects in 2022-2023 include NICAN Resources (C\$67,879), seeking nickel in the South Slave area; Redbed Resources, (C\$136,800) copper in the Dehcho region; StrategX Elements (C\$120,000) cobalt in the North Slave area.

NWT diamonds sparkle

Mining operations continued throughout 2022 at the territory's three diamond mines, Ekati, Diavik and Gahcho Kué, with Arctic Diamonds reporting progress on its plan to develop an underwater remote mining system to recover diamonds from the flooded

Canada's First Rare Earth Producer

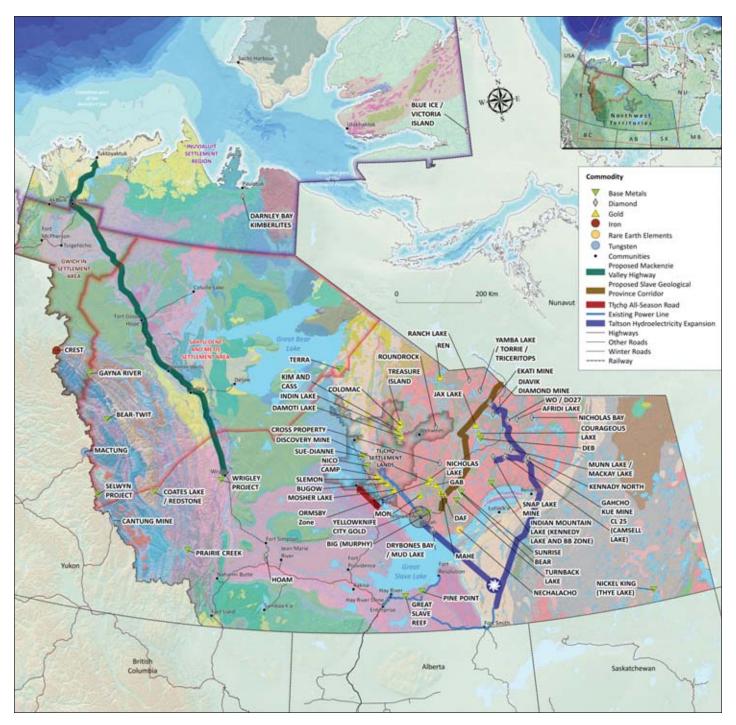


At our NWT Nechalacho Mine and Saskatoon Processing Facility, we're building Canada's Rare Earth Supply Chain and linking our friends and allies for the green and digital economies.



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ASX:VTM OTCQB:VTMXF



depths of Ekati's mined kimberlite pits by 2024.

Exploratory drilling by Arctic Star Exploration Corp. on the Diagras diamond property led to the discovery of five new diamondrich kimberlites in 2021, according to the Northwest Territories Geological Survey.

After further exploration, including an airborne electromagnetic and magnetic survey and testing of the kimberlites in 2022, Arctic Star reported more encouraging results at Diagras, which hosts 13 known kimberlites originally discovered by DeBeers in the 1990s. The project is a joint venture in which Margaret Lake Diamonds holds an 18.5% interest.

Mountain Province Diamonds Inc., 49% owner of the Gahcho Kué diamond mine, reported a ground geophysics survey and surficial sampling in 2021 in ongoing exploration of its Kennady North diamond project, which is adjacent to the mine. The explorer said it had encountered kimberlite in three of the four target areas it drilled by May at Kennady North in 2022.

Mountain Province also reported recovery of a 151-carat exceptional colored diamond at the Gahcho Kué mine, where ongoing exploration of the Hearne kimberlite returned encouraging results. Annual diamond production at Gahcho Kué continues to exceed six million carats.

Rio Tinto became the sole owner of the Diavik Diamond Mine in late 2021 when it acquired, with bankruptcy court approval, the 40 percent interest held formerly by Dominion Diamond Mines. Production at Diavik is expected to end in 2025.

Gold still glitters

Among gold explorers in the territory, Gold Terra Resource

Corp. undertook one of the most active programs in 2022, seeking to boost the 1.2-million-ounce inferred resource of its Yellowknife City Gold Project by drilling up to 40,000 meters, or more than three times the 12,687 meters that it completed in 2021.

The 800-square-kilometer YCG Property is adjacent to the historic Con Mine and is situated immediately north, south, and east of Yellowknife, the capital city of the Northwest Territories.

In mid-2022, Gold Terra reported multiple high-grade gold intersections in winter drilling designed to test the Campbell Shear along strike south of the former producing Con Mine and at depths of about 1,000 meters at 200-meter drill spacing. High grade gold mineralization was intersected in multiple targeted zones, which include new assay results from an initial hole drilled at Yellorex North.

The remaining assay results on the Campbell Shear winter drilling program were designed to test the Campbell Shear along strike south of the former producing Con Mine and at depths of about 1,000 meters at 200-meter drill spacing. High-grade gold mineralization was intersected in multiple targeted zones as per the results below, which include new assay results for hole GTCM22-039, an initial hole drilled at Yellorex North.

Gold Terra also reported encouraging results over more than 8,300 meters in 13 holes of winter drilling on the adjacent Con Mine Property, optioned from Newmont Corp. in late 2021.

"The 2022 winter drilling program results along the southern extension of the Campbell Shear shows multiple mineralized zones, which demonstrate great potential for additional ounces on the Con Option Property," said Gerald Panneton, chairman and CEO of Gold Terra.

Gold Terra released an initial mineral resource estimate for the optioned property in September, including an underground mineral resource of 109,000 gold ounces in the indicated category and 432,000 oz of gold in the inferred category.

"This initial mineral resource estimate confirms the significant high-grade potential of this project as it remains open for further expansion in all directions, and along its six-kilometer-long structure," Panneton observed, adding that the Con Mine produced more than 5 million ounces of high-grade gold (16 g/t Au) from the Campbell Shear structure on two kilometers of strike length alone.

Gold Terra has spent about C\$6.2 million, reflecting a cost of about C\$12 per ounce of gold.

Gold Terra also reported extending gold mineralization in the Mispickel area of the YCG project, adding two new gold zones, MP-Ryan, and Zone 14.

Gold Terra said it would return to the area in the winter with more drilling to infill and extend the three high-grade zones identified so far in the Mispickel area.

Nighthawk Gold Corp. continued to report high-grade results from the 72,325 meters of drilling it completed in 272 holes during 2022 on its 930-square-kilometer Indin Lake gold property about 200 kilometers (120 miles) north of Yellowknife.

The junior is advancing highly prospective exploration targets, including the Colomac Centre and satellite deposits, which have a mineral resource estimate of 58.2 million metric tons grading 1.44 g/t gold for 2.69 million ounces in the indicated category and 19.7 million tons grading 2.10 g/t gold for 1.33 million ounces in the inferred category.

In August, Nighthawk reported completion of its 2022 drill program of 40,085 meters, and assay results in November with exceptionally high grades in near-surface intercepts drilled on the Kim and Cass deposits, potential open-pit deposits located within 15 kilometers (9.3 miles) to the southwest of the Colomac Centre area.

Silver-rich discovery in the Illinois Creek **Mining District**

MINERALS



TSX-V: WAM

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CHEETAH RESOURCES/BILLBRADENPHOTC

These include bonanza grades of 916.8 g/t gold over 0.50 meters within two meters averaging 232.18 g/t gold in hole CM22-22.

The explorer said it will update the project's mineral resource estimate by early 2023.

Several explorers pursued early-stage gold projects in 2022 in NWTs. These include Golden Planet, working in the North Slave area, and Danny Yakeleya, who focused on prospects in the territory's Sahtu region.

Advanced projects progress

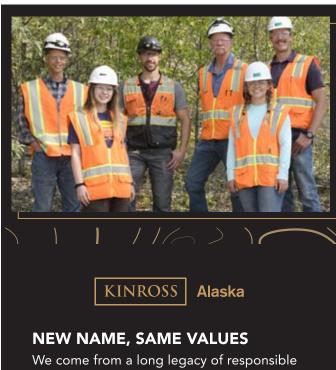
Osisko Metals Inc. filed a positive preliminary economic assessment for its Pine Point lead-zinc mine project near the south shore of Great Slave Lake in July, outlining a C\$602 million venture with a projected 12-year mine life, an after-tax internal rate of return of 25%, and average annual production of 329 million pounds of zinc and 141 million lb of lead.

Pine Point has 15.8 million metric tons of indicated mineral resources grading 4.17% zinc and 1.53% lead, representing about 25% of the declared tonnage in Osisko's updated 2022 mineral resource estimate. The project's inferred mineral resource totals 47.2 million metric tons, grading 4.43% zinc and 1.68% lead.

Osisko expects to complete ongoing infill drilling by the second half of 2023 and is eyeing startup of production at Pine Point in 2028.

In 2021, the explorer completed a 79-hole infill and hydrogeological drilling program, conducted re-logging and re-ssaying of historical drill core, and advanced a hydrogeological study at the project.

At the Prairie Creek zinc-lead-silver mine project in western NWT, NorZinc Ltd. won territorial approvals of its management plans for construction of an access road to the project in 2022.



We come from a long legacy of responsible mining in Alaska's Interior, a legacy we will continue under our new name as Kinross Alaska.



Jeremy Catholique is among the indigenous staff trained to operate the Tomra ore sorter at Vital Metals' Nechalacho rare earths mine in Northwest Territories.

NorZinc released a preliminary economic assessment for Pine Point in 2021 that envisions a 20-year mine based on a throughput rate of 2,400 metric tons per day with average annual payable zincequivalent production of 261 million pounds.

Anticipating startup of production in 2025, NorZinc planned a 5,300-meter surface exploration program during the 2022 summer field season, with a focus on further validating geotechnical structural controls, dilution estimates and metallurgical recoveries in concentrate for project financing. The company secured US\$6 million in financing for the planned work program.

At its Nico cobalt-gold-bismuth-copper project, Fortune Minerals Ltd. evaluated four prospects in 2021 identified in earlier geophysical surveys and a 1997 drill program.

The Nico Project, situated south of Yellowknife, includes a planned open pit and underground mine, mill and concentrator in Northwest Territories, plus a planned hydrometallurgical refinery in Alberta.

Nico hosts 33.1 million metric tons of proven and probable reserves averaging 0.11% (82 million pounds) cobalt, 0.14% (110 million lb) bismuth, 0.04% (27 million lb) copper, and 1.03 grams per metric ton (1.1 million ounces) gold.

Drill results from 13 holes confirmed continuity of cobalt-goldbismuth and local copper mineralization in the Peanut Lake Zone, located 800 meters southeast of the Nico deposit and identified a potential east strike extension of the deposit.

Fireweed Metals Ltd., known for its extensive exploration of the zinc-rich Macmillan Pass in neighboring Yukon Territory, purchased the Mactung Project from the territorial government in 2022 for C\$15 million. The GNWT took ownership of Mactung in 2015 when former owner North American Tungsten Corporation Ltd. went bankrupt after tungsten prices plummeted.

Tungsten is a specialty metal classified by Canada and the United States as one of more than 30 "critical" metals with strategic importance. Mactung hosts one of the world's highest-grade tungsten deposits.

In mid-November, Fireweed also reported encouraging results from eight grab samples collected during its 2022 exploration program on the Gayna River Project in western NWT. The samples confirmed the presence of massive sulfide mineralization with elevated gallium, germanium, zinc, lead and silver values.

Fireweed also collected 10 soil samples that assayed with high lead and silver concentrations, ran a 52.7 line-kilometer ground gravity survey that highlighted multiple potential drill targets, and completed a lidar survey over the entire 128.75 square-kilometer (49.1 square miles) property. ●



Ramping up rare earths mining

Vital Metals takes operations in Nechalacho, Saskatoon to next level

By ROSE RAGSDALE

For Mining Explorers

ess than three years after bringing its ambition to mine rare earth elements to Canada, Vital Metals Ltd. is rapidly establishing its presence on the world stage as one of few miners of rare earth minerals outside of China.

In July 2021, the Australia-based company became the first to extract rare earth-rich material for commercial processing from the ground in Canada – a country known to host vast undeveloped quantities of the coveted resources. Vital Metals is also only the second company to mine rare earth elements in North America.

In September, the company celebrated completion of a multimillion-dollar rare earth processing facility in Saskatoon, Saskatchewan, designed to extract rare earths from mineral-rich material shipped from the Nechalacho Rare Earth Elements Property located at Thor Lake in Northwest Territories.

Observers say Vital Metals has advanced the project very quickly, from exploration to mine construction to production of an intermediate rare earth product.

"Overall, Vital appears well on the way to producing commercial quantities of rare earth concentrate, a first in Canada," observed Alastair Neill, president and director of the Critical Minerals Institute, a new mining industry group focused on metals needed for electric vehicle and energy technologies.

Neill also noted that Vital Metals' operation is currently the most advanced rare earths mining venture in Canada.

Vital Metals Ltd.

ASX: VML.AX



CHAIRMAN: Evan Cranston MANAGING DIRECTOR: John Dorward CHIEF OPERATING OFFICER: Eben Visser

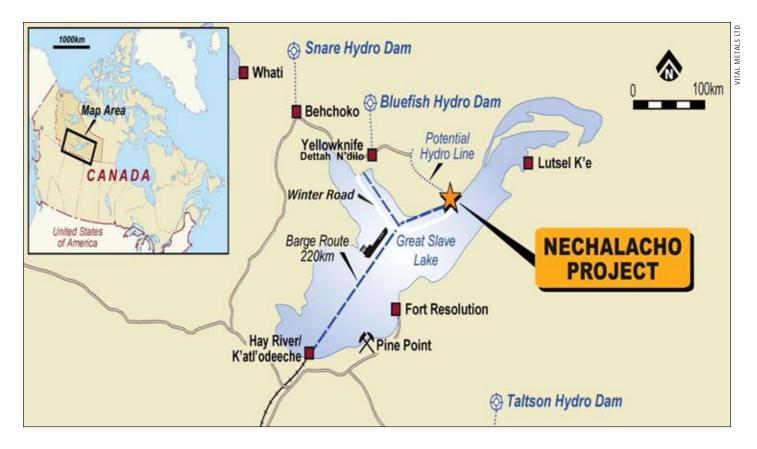
CASH AND CASH EQUIVALENTS: A\$33.3 million (Sept. 30, 2022) MARKET CAPITALIZATION: A\$143.3 million (Nov. 28, 2022)

Kyle House Level 10, 27 Macquarie Place, Sydney, NSW, 2000 Tel: 61-2-8029-0676 vital@vitalmetals.com.au www.vitalmetals.com.au

While Nechalacho has the potential for economic recovery of lithium, zirconium, beryllium, niobium, and tantalum, Vital has focused exclusively on REE.

First staked in 1971, the Nechalacho property hosts a worldclass resource of 94.7 million metric tons averaging 1.46% total rare earth oxides.

The project's North T Zone hosts a high-grade resource of 101,000 metric tons at 9.01% light rare earth oxides (2.2% neodymium-praseodymium), making it one of the highest-grade



rare earth deposits in the world.

Nechalacho's underlying owner, Avalon Advanced Materials Inc., initially focused on exploring the deposit's deeper heavy rare earths-rich Basal Zone. But it is the deposit's high-grade, near-surface light rare earth resource that is enriched with the key magnet minerals, neodymium-praseodymium, and its potential for near-term, small-scale development that drew Vital Metals to the project.

That potential is already being realized, despite the challenges of developing a mine and constraints imposed by the COVID-19 pandemic.

Fast track development

Vital completed its maiden mining campaign at Nechalacho in 2021 with activity centered in the North T Zone, where 408,000 metric tons of a planned 599,000 metric tons of material extracted yielded about 58,000t of ore.

The company aimed to process about 11,000 cubic meters of crushed material, comprising 1,630 cubic meters of high-grade, 4,240 cubic meters of low-grade and 4,770 cubic meters of fines from Nechalacho in 2022 and 2023.

The explorer planned to ship the mine's first concentrates to Saskatoon to commission and operate the extraction plant before the arrival of additional material mined in 2022.

Based on tests run at the Saskatoon rare earth extraction plant, Vital has said it can get a 75% recovery to produce a 43.7% REE concentrate. The deposit would produce 6,825 metric tons of TREO, containing 1,600 metric tons of neodymium and praseodymium.

Vital used X-ray transmission to sort the ore, since it is hosted in quartz, which is white, and the rare earth mineral is red.

"This is a simple way to upgrade the TREO content at site," Neill said.

"Overall, Vital appears well on the way to producing commercial quantities of rare earth concentrate, a first in Canada." -Alastair Neill, president and director,

Critical Minerals Institute

Ramping up operations

Vital Metals began resource definition drilling in early 2022 in the Tardiff Zone at Nechalacho, planning to drill 48 holes to follow up on results from its 29-hole program in 2021.

While lower grade than North T, Tardiff is considered highgrade when compared against most rare earth deposits around the world.

The 2022 drill campaign focused on the Tardiff Zone 1 resource area, which contains 4 million metric tons averaging 1.95% (79,000 metric tons) of total rare earth oxides.

Vital envisions mining at Tardiff 1 as part of a growth plan that would increase overall rare earths production, as well as add heavy rare earths to the mix. Toward this goal, the company aims to upgrade the Tardiff resource to a point that it can be converted to reserves with the completion of feasibility-level studies for mining this larger and more heavy rare earth-enriched deposit.

Highlights from 2022 drilling at Tardiff include 13.7 meters averaging 3.91% TREO from a depth of 10.3 meters; 22.95 meters averaging 2.21% TREO from 28.5 meters; 32 meters averaging 2.11% TREO from 60 meters; and 48.1 meters averaging 2.03% TREO from 13 meters.

The explorer said results from the latest drilling program will be used to define an initial reserve for Vital's ongoing Tardiff operation.

CHEETAH RESOURCES/BILLBRADENPHOTO

The Tardiff deposit is to be developed in a modular fashion, commencing at Tardiff Zone 1, before expanding to Zone 3, with further expansion along open boundaries. The current resource for the three modules (excluding results of recent drilling programs) is 16.3 million metric tons averaging 1.85% TREO.

The modular development plan is designed to allow Vital to apply flexibility to its operations to meet the requirements of customers and increase production as needed.

Vital Metals envisions mining at Tardiff as part of a stage 2 growth plan as it builds a large-scale, long-life rare earths operation at Nechalacho in three stages, with production of heavy rare earth elements in the third stage.

The 2022 drilling could define a reserve to support the first 5-10 years of operation at Tardiff, depending on customer demand, the company said.

Extraction plant opens

In September, Vital unveiled its 3,000-square-meter rare earths extraction plant in Saskatoon, Saskatchewan and began commissioning the facility to produce a "high-purity" mixed rare earths carbonate later in the year.

More than 200 leaders in the global rare earth industry, from India to Estonia and Germany to Australia, gathered in Saskatoon Sept. 22 to celebrate completion of the facility and to celebrate Vital's progress in establishing a "responsibly" sourced supply chain of rare earths.

The commissioning of the dense media separation plant at the Saskatoon extraction facility began last summer. The DMS produced a concentrate averaging 43.7% TREO while recovering 75.2% of the rare earths during the first pass of running 2,300 metric tons of ore from Nechalacho. Adjustments are being made to increase the quantity of rare earths recovered while continuing to produce a concentrate with at least 40% TREO.

To fund its plans to establish the first two links of a rare earths supply chain in Canada, Vital received an A\$45 million (US\$30 million) infusion, which included a A\$30 million (US\$20 million) investment from Lionhead Resources Fund LP.

"Completion of A\$45 million in funding via a targeted share placement, including the A\$30 million cornerstone investment from Lionhead Resources Fund, was an important step in our strategy that will allow us to finalize construction activities and undertake commissioning, ramp-up and operations at the Saskatoon facility," said Russell Bradford, a partner at Lionhead Resources and interim CEO of Vital Metals.

Vital also secured a zero-interest loan of C\$5 million (\$3.7 million) from Canada's Jobs and Growth Fund to provide initial working capital for the Saskatoon processing plant. The terms of the loan require repayment in equal monthly installments over the next five years.

Marketing strides

Vital inked an offtake deal with Norway-based REEtec in 2021 to sell 2,000 metric tons of rare earth carbonate containing 750 metric tons of neodymium/praseodymium every year, beginning in 2023.

In April 2022, REEtec signed a purchase agreement to supply rare metals for magnets used in electric motors to German auto parts supplier Schaeffler AG over five years beginning in 2024.

The agreement is the first reported deal by a European auto sector supplier or automaker to source rare earths within the region as the demand for electric vehicle components continues to grow. It represents a total of 75% of Vital's Stage 1 operation.



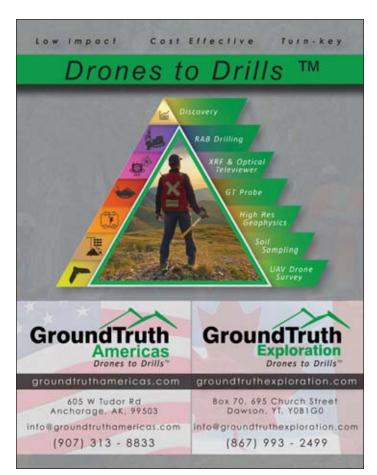
Cheetah began mining the North T rare earths deposit at Nechalacho in 2021.

Vital Metals plans to produce a 2.5-metric-ton REE carbonate sample in the coming months for REEtec as the next step of product qualification.

The REE miner also entered a nonbinding agreement with Ucore Rare Metals to supply rare earth carbonate feedstock containing a minimum of 500 metric tons rare earth oxides (excluding cerium) per year to Ucore, beginning in the first half of 2024.

Ucore is a rare earth processing technology developer that until recently had planned to build a plant in Southeast Alaska to separate heavy and light rare earth elements. Lured away by a package of financial incentives, Ucore now intends to adapt an existing facility in Louisiana to its needs.

This locale change will likely not impact the deal between Ucore and Vital, which would establish a complete rare earths supply chain in North America. ●



EXPLORERS AT A GLANCE



NorZinc has the approvals needed to begin building a winter road to the Prairie Creek zinc-lead-silver mine project in Canada's Northwest Territories.

NORTHWEST TERRITORIES

NorZinc Ltd. 🔵 🔵 🔵

TSX: NCT 🚮

NorZinc blazes road to Prairie Creek Mine

In preparation for a new era of mining at Prairie Creek, NorZinc Ltd. carried out a roughly 5,300-meter drill program in 2022 focused on gathering geological and other data needed for an updated feasibility study for this underground zinc mine project in Northwest Territories.

According to a 2021 calculation, Prairie Creek hosts 9.8 million metric tons of measured and indicated re-

sources averaging 9.7% zinc, 8.8% lead, and 139 grams per metric ton silver; and 6.4 million metric tons of total inferred resources averaging 12.9% zinc, 6.7% lead, and 150 g/t silver.

Based on this resource, NorZinc published a preliminary economic assessment for an underground mine that will feed ore to a 2,400-metric-ton-per-day mill at Prairie Creek that would produce an average of 261 million pounds of zinc-equivalent annually over 20.3 years of mining.

In September, the company was issued all permits needed to develop the mine outlined in the PEA.

The 2022 surface drill program focused on collecting metallurgical and other data for a feasibility study

for the 2,400-metric-ton-per-day operation outlined in the PEA, as well as targeting areas with the potential to upgrade and expand the resource.

At the same time, NorZinc began the construction of a winter road

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ROHAN HAZELTON



SCOTT FULTON

that will allow for overland access to the zinc mine project.

The company reported that it received all territorial and federal approvals needed to construct the winter road to Prairie Creek, the first phase of a planned 170-kilometer (105 miles) all-season road that will allow concentrates from the mine to be delivered to market.

The Prairie Creek Mine is surrounded by Canada's Nahanni National Park Reserve, which encompassed the property when the reserve was expanded in 2009. At the time of the park expansion, however, the federal government provided NorZinc (then Canadian Zinc Corp.) with assurance that it would be granted access to Prairie Creek and the ability to mine there, once permits were granted.

In November, Parks Canada granted the final approval necessary for the road.

NorZinc has also entered into benefits and environmental agreements with the First Nations groups near the mine and along the proposed access road.

"The company remains committed to the responsible development and mining at Prairie Creek to deliver the significant economic and social benefits to the local communities who are our partners in this process," said NorZinc President and CEO Rohan Hazelton.

CHAIRMAN: John Warwick PRESIDENT & CEO: Rohan Hazelton VP, PROJECT DEVELOPMENT: Scott Fulton

CASH AND CASH-EQUIVALENTS: C\$557,000 (Sept. 30, 2022) WORKING CAPITAL: C\$10.7 million deficit (Sept. 30, 2022) MARKET CAPITALIZATION: C\$22.7 million (Nov. 25, 2022)

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NORTHWEST TERRITORIES

Nighthawk Gold Corp.



Nighthawk eyes hub-and-spoke gold mine

Toward its primary goal of expanding near-surface high-grade gold at Indin Lake, Nighthawk Gold Corp. completed 40,085 meters of drilling within the Colomac Centre and higher-grade satellite gold targets across its district-scale gold property in Northwest Territories.

The 359-square-mile (930 square kilometers) Indin Lake property covers the northern end of the West Bay-Indin Lake fault zone, a regional structure that extends 125 miles (200 kilometers) south to the Giant and Con mines on the outskirts of Yellowknife, NWT. Colomac, a historical mine that produced 527,908 ounces of gold, lies at the heart of the Indin Lake property.

According to a calculation completed early in 2021, Indin Lake hosts 46.4 million metric tons of open pit mineable indicated resource averaging 1.38 grams per metric ton (2.06 million oz) gold; and 7.8 million metric tons of open pit mineable inferred resource averaging 1.68 g/t (601,400 oz) gold.

Nighthawk's 2022 program began with more than 25,000 meters of drilling focused on expanding the resource within the Colomac Centre deposits - Colomac Main, Goldcrest, Grizzly Bear, 24 and 27. Highlights include:

 91.75 meters averaging 1.38 g/t gold in hole C22-04 (Colomac Main).

- 40.75 meters averaging 2.52 g/t gold in hole TFS22-08 (24/27).
- 54.35 meters averaging 2.91 g/t gold in hole TFS22-10 (24/7).
- 9.5 meters averaging 7.57 g/t gold in hole C22-17 (Colomac Main).
- 70.57 meters averaging 1.51 g/t gold in hole C22-26 (Colomac Main)

 One meter averaging 271.4 g/t gold in hole C22-27 (Colomac Main)

- 20.25 meters averaging 3.02 g/t gold in hole GB22-31 (Grizzly Bear).
- 92 meters averaging 2.09 g/t gold in hole C22-40 (Colomac Main).
- 34.5 meters averaging 2.72 g/t gold in hole C22-45 (Colomac Main).

"We see a lot more upside along the main deposit at Colomac, along strike and at depth," said Nighthawk Gold President and CEO Keyvan Salehi

The balance of the 2022 drilling tested the Kim and Cass deposits, which lie about 15 kilometers (nine miles) southwest of Colomac Main. Kim hosts 2.2 million metric tons of inferred resource averaging 1.92 g/t (135,800 oz) gold, and Cass hosts 2.3 million metric tons of inferred resource averaging 2.44 g/t (180,500 oz) gold.

Highlights from 2022 drilling at Kim and Cass include:

- 22.1 meters averaging 1.62 g/t gold in hole KM22-03 (Kim).
- 17.7 meters averaging 7.3 g/t gold in hole KM22-04 (Kim).
- 29.8 meters averaging 2.44 g/t gold in hole KM22-06 (Kim)
- 0.5 meters averaging 125.5 g/t gold in hole CM22-07 (Cass).
- Two meters averaging 232.18 g/t gold in hole CM22-22 (Cass).

 33.5 meters averaging 2.67 g/t gold in hole CM22-31 (Cass). Connected to Colomac Centre by an access road, Kim and Cass have

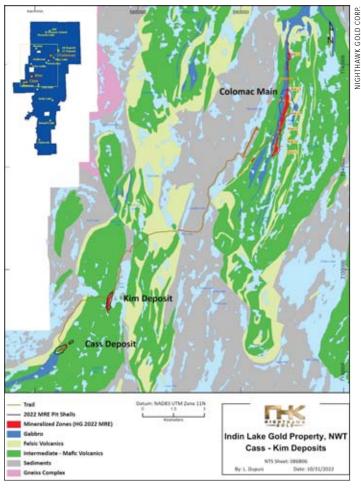
significant potential as satellite deposits that could expand and increase the grade of gold resources being considered for early mining at Indin Lake.

"We believe the Kim and Cass Deposits have the potential to significantly expand the high-grade mineralization of our project," said Salehi. The 2022 drilling is expected to add high-grade, near-surface gold into updated resource estimates as Nighthawk begins to consider a preliminary economic assessment for establishing a hub-and-spoke style of mining operation that can take advantage of the large resource being built at Colomac and the higher-grade satellite gold deposits across the district-scale project in Northwest Territories.

"With the 40 kilometer drill database completed and disclosed for 2022, we have all the information needed to update the 2022 MRE, which we plan to deliver in early 2023," Salehi added.



Nighthawk Gold President and CEO Keyvan Salehi inspecting core from 2022 drilling at the Indin Lake gold project in Northwest Territories.



CHAIRMAN: Morris Prychindy PRESIDENT & CEO: Keyvan Salehi VP. EXPLORATION: John McBride

CASH AND CASH-EQUIVALENTS: C\$23.1 million (Sept. 30, 2022) WORKING CAPITAL: C\$19.4 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$43 million (Nov. 25, 2022)

141 Adelaide St. W., Ste. 301, Toronto, Ontario M5H 3L5 Tel: 647-794-4313 info@nighthawkgold.com www.nighthawkgold.com

EXPLORERS AT A GLANCE

NORTHWEST TERRITORIES

Gold Terra Resource Corp.

TSX-V: YGT 🕋

Gold Terra grows Yellowknife resources

Looking to expand the resources at the Yellowknife City Gold projects, Gold Terra Resource Corp. 2022 exploration included drilling on its Con Option and Northbelt properties, which are part of a 309-squaremile (800 square kilometers) land package that covers roughly 43 miles (70 kilometers) of the Yellowknife greenstone belt in Northwest Territories.

Gold Terra began accumulating this district-scale land package in



2013, with the Northbelt property that extends north from the city of Yellowknife. Over the past decade, the company has completed more than 60,000 meters of drilling within a 3,000-meter radius on Northbelt that includes the Crestaurum, Barney, Sam Otto, and Mispickel gold deposits.

According to a calculation completed in 2021, the four Northbelt deposits host 24.3 million metric tons of inferred resource averaging 1.25 grams per metric ton (1.21 million ounces) of gold.

GERALD PANNETON

Gold Terra kicked off its 2022 exploration with a 6,011-meter winter drill program at MP-Ryan, an expanded zone in the Mispickel area of Northbelt.

Highlights from early 2022 drilling at MP-Ryan include four meters averaging 19 g/t gold in hole GTWL22-002; three meters averaging 9.36 g/t gold in hole GTWL22-004; six meters averaging 4.17 g/t gold in hole GTWL22-008; and three meters averaging 31.89 g/t gold in hole GTWL22-014.

The bulk of Gold Terra's 2022 drilling, however, focused on the Con Mine property optioned from Newmont Canada FN Holdings ULC and Miramar Northern Mining Ltd. – both wholly-owned subsidiaries of Newmont Corp.

During 2021, Gold Terra completed 26 holes totaling 12,687 meters over a strike length of 3,000 meters immediately south of Con, a historic mine on the outskirts of NWT's capital city that produced 6.1 million oz of gold from ore averaging 15 to 20 g/t gold during mining from 1938 until 2003.

Highlights from the 2021 drilling at Yellorex, a primary target south of Con Mine, include 16.5 meters averaging 3.32 g/t gold in hole CTCM21-003; 12.35 meters averaging 5.77 g/t gold in hole CTCM21-005; 17.9 meters averaging 5.22 g/t gold in hole CTCM21-014; and 5.44 meters averaging 19.74 g/t gold in hole CTCM21-022.

Toward the end of 2021, Newmont granted Gold Terra the option to acquire Miramar Northern Mining Ltd., which will provide the company full ownership of all the assets, mineral leases and claims, and surface rights at and around the Con Mine.

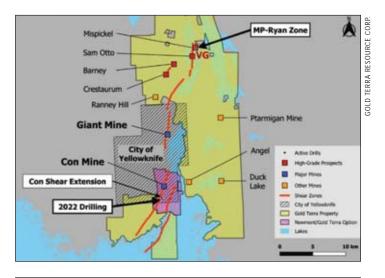
Under the agreement with Newmont, Gold Terra must complete C\$8 million of exploration over four years, publish a prefeasibility study based on at least 1.5 million oz of gold in resources, and make a final cash payment of C\$8 million to Newmont.

In September, Gold Terra published its inaugural resource estimate for the Con Mine property based on 21,019 meters of drilling in 41 holes. According to this initial calculation, the Con option property hosts 821,000 metric tons of underground mineable indicated resource averaging 7.55 g/t (109,000 oz) gold and 1.99 million metric tons of underground inferred resource averaging 6.74 g/t (432,000 oz) gold.

"This initial mineral resource estimate on the Con Mine Option Property represents a measuring stick of our progress toward satisfying one of the requirements of the option agreement with Newmont, namely delineating a potential of a minimum of 1.5 million ounces of gold in all categories," said Gold Terra Resource Chairman and CEO, Gerald Panneton. "This initial MRE confirms the significant high-grade potential of this project as it remains open for further expansion in all directions, and along its 6-kilometre-long structure."



Inspecting core from drilling at Gold Terra's Yellowknife City Gold project.



"This initial mineral resource estimate on the Con Mine Option Property represents a measuring stick of our progress toward satisfying one of the requirements of the option agreement with Newmont, namely delineating a potential of a minimum of 1.5 million ounces of gold in all categories."

-Gold Terra Resource Chairman and CEO Gerald Panneton

This is the same Campbell Shear structure that hosts the historical Con Mine, which produced more the five million ounces of gold from ore averaging around 16 g/t gold.

"We look forward to continuing our drilling program on the Campbell Shear with the goal of advancing the project towards an economic study and bringing further value to our shareholders by discovering more multi-million ounces deposits on our projects," Panneton added.

CHAIRMAN & CEO: Gerald Panneton COO: Joseph Campbell DIRECTOR: Louis Dionne

CASH AND CASH EQUIVALENTS: C\$666,000 (Sept. 30, 2022) WORKING CAPITAL: C\$84,500 deficit (Sept. 30, 2022; closed C\$3.8 million financing on Nov. 21, 2022) MARKET CAPITALIZATION: C\$40.6 million (Nov. 25, 2022)

Suite 410 - 325 Howe St., Vancouver, BC V6C 1Z7 Tel: 604-689-1749 gpanneton@goldterracorp.com www.goldterracorp.com LEAD NICKEL COAL LITHIUM PGM 🕘 DIAMONDS 🐨



ZINC

A collection of diamonds from sampling of the Faraday 2 kimberlite on Mountain Province's Kennady North project adjacent to the Gahcho Kué Mine in NWT.

NORTHWEST TERRITORIES

Mountain Province Diamonds Inc. 🐨

GOLD

SILVER

COPPER

TSX & NASDAQ: MPVD (mi)

Surprise Gahcho Kué kimberlite discovery

In its effort to identify and delineate diamond-rich kimberlites that will extend the life of Gahcho Kué Mine in Northwest Territories beyond 2030, Mountain Province Diamonds Inc. is involved with exploration on two fronts.

Located about 280 kilometers (175 miles) northeast of the NWT capital city of Yellowknife, Gahcho Kué is a diamond mine owned and operated by a

joint venture between De Beers Canada Inc. (51%) and Mountain Province (49%). Going into 2022, Gahcho Kué hosted 28.3 million metric tons of probable reserves averaging 1.51

carats per metric ton (42.6 million carats) of diamonds - enough to support mining through 2030. To expand these reserves, exploration carried out by the Gahcho Kué Joint Venture is focused primarily on extending the Hearne, 5034, Tuzo, and Wilson kimberlites currently being mined.



MOUNTAIN

PROVINCE DIAMONDS

MARK WALL

Mountain Province is particularly excited about a recent extension of the Hearne kimberlite, as mining at Hearne in 2021 exposed an extension of this kimberlite on the northwest pit face.

By midyear, the Gahcho Kué JV had defined the Hearne Northwest Extension with 4,284 meters of drilling in 14 holes. These holes, which cut 23 to 114 meters of diamond-bearing kimberlite, show this extension trends in a more northerly direction than geophysics indicated.

"Hearne has been a consistent surprise since mining started at Gahcho Kué," said Mountain Province Diamonds President and CEO Mark Wall. "We look forward to further delineating the Hearne northwest extension with the goal of increasing the Gahcho Kué mine life."

In addition to the joint venture exploration, Mountain Province is carrying out its own investigation of Kennady North, a 107,373-hectare (265,324 acres) property that surrounds the Gahcho Kué property.

Kennady North is a diamond exploration property that hosts three kimberlites with delineated resources - Kelvin, Faraday 1-3, and Faraday 2.

Kelvin hosts 8.5 million metric tons of inferred resource averaging 1.6 carats per ton (13.62 million carats) of diamonds.

Faraday 2 hosts 2.07 million metric tons of inferred resources averaging 2.63 c/t (5.45 million carats) of diamonds.

Faraday 1-3 hosts 1.87 million metric tons of inferred resources averaging 1.04 c/t (1.9 million carats) of diamonds.

Located within 10 kilometers (six miles) of the Gahcho Kué operation, these kimberlites have the potential to extend the life of the mine deeper into the 21st century.

CHAIRMAN: Jonathan Comerford PRESIDENT & CEO: Mark Wall VP, EXPLORATION: Tom McCandless

CASH AND SHORT-TERM DEPOSITS: C\$79.3 million (Sept. 30, 2022) WORKING CAPITAL: C\$181.8 million deficit (Sept. 30, 2022) MARKET CAPITALIZATION: C\$120.2 million (Nov. 25, 2022)

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Nunavut Exploration 2022

Gold, copper lead Nunavut exploration

Seasoned explorers, newcomers hunt for mineral discoveries

By ROSE RAGSDALE

For Mining Explorers

While a small group of dedicated explorers returned in 2022 to advance production and development projects in Nunavut, a growing number of newcomers fanned out across the northern territory in search of a variety of minerals.

Some came seeking gold deposits like those being explored and mined by Agnico Eagle Mines Ltd., while others chased historical occurrences of newly designated critical metals, especially copper and certain base metals, now in high demand for manufacturing electric vehicles, wind turbines and other green technologies.

Representing one-fifth of Canada's land mass, Nunavut has tremendous resource potential and is a place of significant opportunity. In 2021 the effects of the COVID-19 pandemic were still being felt by the mineral industry, but more proponents were able to move ahead with programs, following the Government of Nunavut's restrictions to prevent the spread of the virus in the territory.

In recognition of the challenges posed by the pandemic, Crown-Indigenous and Northern Affairs Canada, in 2021, once again offered relief of reporting requirements to prospecting permit and mineral claim holders under Nunavut's mining regulations.

A total of C\$123.2 million was spent on mineral exploration and deposit appraisal in Nunavut during the year, according to statistics released by Natural Resources Canada.

That's down dramatically from the government's midyear projection of C\$149.2 million, yet the outlay was higher than comparable expenditures in 2020 but compared poorly with the 10-year average in the territory of roughly C\$186.3 million. NRCan's estimates are based on explorers' spending intentions. For 2022, NRCan projected total spending for mineral exploration and deposit appraisals in Nunavut would top C\$143 million.

Agnico Eagle's 'Midas Touch'

Everywhere Agnico Eagle looked in Nunavut in 2022 – the most active mineral explorer in the territory – found gold.

The company also accelerated the pace of exploration and development at its two operating mines – Meliadine near Rankin Inlet and the Meadowbank Complex (including the Amaruq satellite deposit) in the heart of the Kivalliq region.

Reporting more than 774,000 ounces of gold production in 2021 at Meliadine and Meadowbank, Agnico also celebrated hitting the 1-million-ounce gold production milestone in March at Meliadine.

The miner carried out aggressive exploration programs at all three operations it owns outright, focusing on increasing reserves at Meliadine and Meadowbank with definition, infill, and exploratory drilling.

Agnico also undertook a US\$56 million program in 2022 at Hope Bay, its newest gold mine project in Nunavut. The company is holding off on resuming operations at Hope Bay while it develops new exploration drifts and completes drilling at the Doris deposit; and conducts surface exploration drilling at the Madrid deposit and on regional targets along the 80-kilometer (50 miles) Hope Bay greenstone belt.

The explorer said the work at Hope Bay would continue through 2023 while it evaluates larger production scenarios for the project. Positive drill results in early 2022 also prompted Agnico to add another C\$30 million later in the year to its 2022 exploration budget in Nunavut.

In 2021, Agnico completed a diamond drilling program at its Greyhound base metal gold and joint venture project with Gold79 Mines Ltd., formerly Aura Resources Inc.

The exploration focused on three priority target areas, with the objective of identifying gold-bearing structures or veins at two targets and VMS-type mineralization at another target area. The drilling program comprised nine holes for about 1,815 meters.

As of June 30, 2022, Gold79's ownership interest in the Greyhound project totaled 36.6%. Agnico had spent nearly C\$2.92 million on the Greyhound project as of May 31, 2021.

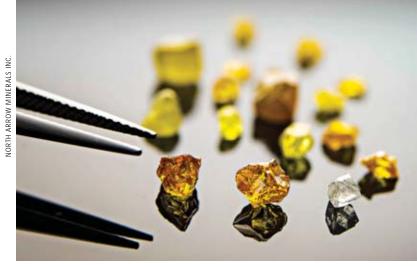
Nunavut's next gold mine

Sabina Gold & Silver Corp., long committed to developing Back River, spent 2022 mainly focused on its proposed Goose Mine on this district-scale gold project in the Kitikmeot region of northwestern Nunavut. Following a formal construction decision in September, Sabina scheduled the start of gold production at Goose for the first quarter of 2025.

Sabina aims to build a 223,000-ounce-per-year surface and underground gold mining operation with a 3,000-metric-ton-perday whole-ore leach process plant, with throughput increasing to 4,000 t/d in the second year.

"Preparations are now underway for construction of the winter ice road, which when complete will enable the transport of critical construction supplies and equipment to Goose early in the spring of 2023," Sabina President and CEO Bruce McLeod said in November.

Open pit mining at Goose would begin two years prior to mill commissioning to generate a stockpile of mill feed. The mill would operate for 15 years, producing doré bullion.



The Q1-4 kimberlite at Naujaat in Nunavut benefits from its yellow diamonds.

An estimated 18.7 million metric tons of ore will be mined at a mill head grade of 6.0 grams per metric ton and a projected gold recovery of 93.4%. A total of 3.35 million oz of gold is projected to be recovered over the life of the mine.

Underground development at Goose advanced in 2022 with about 1,200 meters complete with the first lateral access to the Umwelt zone and preparations for the first ventilation raise commencing.

The company also completed plant, camp, and laydown civil works with pre-stripping at the Echo pit well underway and first ore encountered, and drew US\$31.25 million on a US\$125 million gold stream facility with Wheaton Precious Metals, the proceeds of which will be used to continue development and construction of the Goose Mine.

Sabina also opened a camp in 2022 near its George deposit for



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 $P_{2}^{+} = 4U_{2}^{+} + 2P_{2}^{+} + 2P_{$

Mineral exploration companies with projects in Nunavut are invited to submit applications in the new Discover, Invest, Grow (DIG) Program.

Contact minerals@gov.nu.ca for more information.

Uuktuqlutin hamunga DIG!

Ujaraqhiuqtun havagviingit havaaqhagiaqtun Nunavunmi ilautqujaahi tujuqupluhi uuktuutikhahi talvunga nuutaamik Qiniqhiajunun, Maniliurutikharnik, Angiklijumirutikharnik (DIG) Pinahuarutmun. Titiraqlugit minerals@gov.nu.ca naunaiqyumirutikharnik.

Présentez une demande DIG!

Les entreprises d'exploration minière effectuant des travaux au Nunavut sont invitées à présenter une demande au nouveau programme Découvrir, investir, se développer (DIG) Program. Pour d'autres informations, courriellez minerals@gov.nu.ca.





In 2021, the Mary River mine produced 5.6 million metric tons of iron ore shipped in 73 loads from Milne Inlet, Nunavut.

the first time in a decade and completed a field program in preparation for exploration drilling at George in spring 2023.

More gold targets

Blue Star Gold Corp. identified and advanced several exploration targets across its Ulu, Hood River, and Roma gold properties in Nunavut's Kitikmeot region during 2022. The properties cover more than a 45-kilometer (28 miles) stretch of the High Lake Greenstone Belt about 525 kilometers (326 miles) northeast of Yellowknife, Northwest Territories.

Blue Star completed approximately 3,865 meters of drilling in 28 holes, 3,055 line-kilometers of airborne magnetics surveying, and a regional till sampling program on the Roma Project. This followed the completion of 5,012 meters of drilling in 25 holes in 2021 that covered 11 targets and led to the discovery of a new vein gold system northeast of the Flood Zone.

The Roma project covers high-grade gold showings discovered by previous explorers, notably BHP Minerals, from 1988 to 1994.

The latest targets include three priority ones – Bouncer, Zebra-Dagg, and Gravy.

Blue Star also reviewed, prospected, and mapped 58 of the more than 100 showings in a target pipeline it is developing to rapidly evaluate and prioritize targets for future drill testing.

The site of the future deep-water port at Gray's Bay is 40-100 kilometers (25-62 miles) to the north of Blue Star's properties, and the proposed route corridor for the all-weather Gray's Bay Road passes near the Roma, Ulu, and Hood River projects.

Yellow diamonds at Naujaat

North Arrow Minerals Inc. reported results of processing a

2,000-metric ton bulk sample extracted in 2021 from its Naujaat diamond project on the Melville Peninsula is about halfway complete.

The C\$5.6 million bulk sample program was funded by Australian diamond miner and marketer Burgundy Diamond Mines under an option agreement in which Burgundy may earn a 40% interest in Naujaat by funding the bulk sample program.

Viewed as a world-class diamond project, Naujaat is nine kilometers (5.5 miles) northeast of the hamlet of Naujaat on Nunavut's Melville Peninsula. The property covers 10,742 hectares (26,540 acres) of contiguous mineral leases and claims held by North Arrow.

Fifteen kimberlites and eight kimberlite pipes have been identified on the property, including the Q1-4 kimberlite, the largest and most diamondiferous, and associated kimberlite dykes.

The current resource estimate for the Naujaat project totals 48 million metric tons of material to a depth of 205 meters, containing more than 26 million carats of diamonds.

A specific and rare color, the yellow diamonds at Naujaat have been certified by the Gemological Institute of America and are expected to sell at high premiums to white diamond prices.

Ongoing exploration at iron mine

At the Mary River mine on Baffin Island, Baffinland Iron Mines Ltd. spent C\$8.7 million to complete a 6,024-meter helicopter-supported infill and exploration drill program in 2021 that focused on Baffinland's mining leases. All holes intersected high-grade iron, and the company included the drill results in a revised mineral resource estimate.

Infill drilling totaling 5,460 meters in 19 holes was carried out

on Deposits 1 and 3, and more than 1,000 core samples were taken. A further 564 meters of drilling in two holes were completed as part of an ongoing geotechnical investigation.

In 2022 exploration, Baffinland drilled 1,595 meters in four holes on the North Limb of Deposit 1 to define the northern extent of the mineralized zone and allow for an upgrade of Mary River's resources. Nunavut workers, sent home due to the pandemic, began returning to the mine site in March.

Drilling of up to 1,074 meters in four holes also focused across the Axial Zone to continue characterization of ore types and the down dip extension of the ore zones.

The miner completed up to 3,425 meters in 11 holes of geotechnical drilling in support of a pit slope design study and 6,230 meters in 22 holes of infill drilling across the western portion of Deposit 1 to upgrade inferred resources to the indicated category and deep holes at the west end to test the down-dip extension of the ore zone.

Baffinland also conducted a regional exploration program to develop and maintain value in high-grade iron ore prospects across the Mary River district. This included prospecting, possible channel sampling across the Magnetite Hill claim block in follow-up to a 2021 airborne geophysical survey and completing a ground gravity survey across the Turner River prospect.

The company is seeking permit amendments to double allowed annual ore extraction and transportation at Mary River from the current six million metric tons to 12Mt from the mine to Milne Inlet and the construction of a railway linking the mine site to the port.

To accommodate this proposed increased shipping from the Milne Inlet port, infrastructure at the mine would need to be redesigned and upgraded. In 2021, the Mary River mine produced 5.61Mt of iron ore shipped in 73 loads from Milne Inlet, up slightly from its output of 5.45Mt shipped in 2020.

In November, Baffinland reported that Northern Affairs Minister Dan Vandal determined that the expansion should not proceed at this time.

"Baffinland's Phase 2 expansion plan would have created long-term stability for our business, for the local communities on Baffin Island and for the territory of Nunavut, while lowering the marine and terrestrial effects of our current operations (not increasing them) and increasing the number of jobs from the current level," said Baffinland Iron Mines CEO Brian Penney. "Given the clear benefits to Inuit, Nunavut and Canada as a whole, and the fact that Baffinland high-grade ore is also the greenest path to steel production, the Minister's decision is both surprising and disappointing."

Copper exploration picks up

Though Nunavut hosts 1,113 known copper mineral occurrences, the territory is largely underexplored and undeveloped for this metal critical to the green energy transition, geologists say.

Of the 521 recorded showings averaging more than 0.2% (2,000 parts per million) copper, 50 occurrences have averaged more than 10% copper, according to the Nunavut Mineral Occurrence Database. The database contains more than 2,700 mineral showings, exploration assessment reports and other government reports and publications.

American West Metals Ltd. is one explorer that recognized the territory's prospectivity for copper and acted on that realization. Taking an 80% earn-in option on the Storm Copper project from Aston Bay Holdings Ltd., the Australia-based company com-

"Preparations are now underway for construction of the winter ice road, which when complete will enable the transport of critical construction supplies and equipment to Goose early in the spring of 2023."

> -Bruce McLeod, president and CEO, Sabina Gold & Silver Corp.

pleted a second year of exploration at the project in 2022. The project encompasses both the Storm copper and Seal zinc properties. The exploration focused mainly on the Storm property.

Dave O'Neill, managing director of American West Metals, reported results of a maiden drill program in 2022 at Storm in which the company intersected "extremely" high-grade copper near-surface, likely doubling the volume of mineralization at the project's 2750N Zone and discovered a potential large, new sedimentary copper system below the near-surface mineralization.

"The next drill program at Storm will look to define further resources at the 2750N Zone, and to evaluate the economic potential of other highly prospective near-surface occurrences of high-grade copper such as the 2200N and 4100N zones," O'Neill said.

Another explorer, StrategX Elements Corp., is actively exploring three properties on the Melville Peninsula. Having identified 12 high-priority targets from a high-resolution geophysical dataset, StrategX planned to conduct a first-phase, 2,000-meter diamond drill program on the Nagvaak project in 2022.

The property features a 6,000-meter-long, 400-meter-wide zone with high grades of an unusual combination of elements – vanadium, nickel, copper, cobalt, molybdenum, zinc, silver, platinum group elements and gold.

With about 95,000 hectares (234,750 acres) of claims and permits encompassing not only Nagvaak but also the cobalt-nickelcopper Mel project and the nickel, copper, cobalt, and PGE Tasijuaq project, StrategX said it has a distinct competitive advantage as a first mover in the underexplored region.

The company acquired 13 mineral claims in 2021, seven of which are adjacent to the Mel project owned by North Arrow Minerals Inc.

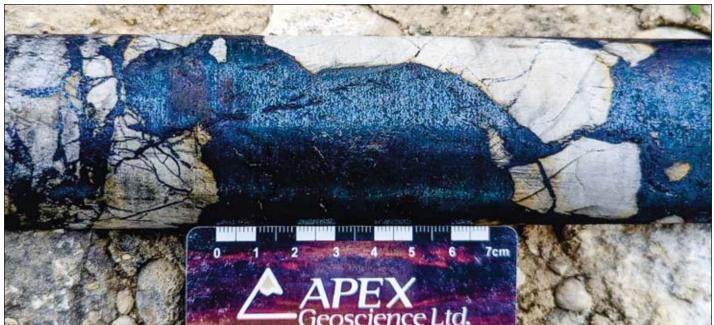
StrategX signed an agreement with North Arrow that gives StrategX non-diamond mineral rights within North Arrow's 56,000-hectare property, as well as a royalty on diamond production.

StrategX is primarily interested in nickel, cobalt, vanadium, copper, and precious metals.

Developing 'Estelle' North America's next major gold trend in Alaska

ASX: NVA OTC: NVAAF FSE: QM3

www.novaminerals.com.au



Massive bornite cut a depth of 50.9 meters in hole ST22-05, part of a five-meter intercept averaging 24.3% copper.

Game-changing Storm copper discoveries

With implications for mining on the remote Nunavut property

By ROSE RAGSDALE

For Mining Explorers

A merican West Metals Ltd. capped its first season of exploration drilling in Nunavut with the discovery of substantial copper mineralization at depth at Storm Copper, a development that the explorer believes will be a "game-changer" for the earlystage project.

Initial assays from drill hole ST22-10 confirm the presence of sediment-hosted copper and zinc sulfide mineralization that indicates the potential for a major mineralized system lying below the very high-grade copper found at surface at Storm.

"The importance of this discovery for the project cannot be overstated, as it has hugely positive implications for the copper endowment within the project area," said American West Metals Managing Director Dave O'Neill, one of two mining industry veterans who heads the Australia-based company.

Located 120 kilometers (72 miles) south of Resolute Bay and 20 kilometers (12.4 miles) from tidewater, Storm has multiple copper and zinc geochemical anomalies along strike.

"Exploration drilling has intersected stratiform copper sulphide mineralization at depth, which supports our geological assumptions that there is a major copper system lying below the high-grade, near-surface mineralization," O'Neill added.

Unlike the near-surface, high-grade copper deposits that American West discovered on Storm in 2021 and early 2022, this deeper sedimentary copper mineralization is a style typically as-







CHAIRMAN: John Prineas MANAGING DIRECTOR: Dave O'Neill PRINCIPAL GEOLOGIST: Mark Pfau

CASH AND CASH EQUIVALENTS: AU\$870,000 (Sept. 30, 2022) MARKET CAPITALIZATION: AU\$26.3 million (Nov. 23, 2022)

American West

Metals Limited

Level 2, 28 Ord Street West Perth WA 6005 Tel: +61 8 6109 6653 • info@aw1group.com www.americanwestmetals.com

sociated with very large deposits, such as those found in the Congo and the Kupferschiefer deposits in Central Europe.

O'Neill said the deeper copper discovery drill hole at Storm is associated with a series of large induced polarization, electromagnetic, and gravity geophysical anomalies that sit below or adjacent to the known high-grade copper prospects and major faults that extend more than five kilometers (three miles).

High-grade copper, zinc

The 302,725-hectare (748,000 acres) Storm property encompasses

both the Storm Copper and Seal Zinc projects.

Storm is best known for the near-surface high-grade copper discovered there. Highlights from drilling at Storm include:

• 110 meters averaging 2.45% copper from surface.

• 56.3 meters averaging 3.07% copper from a depth of 12.2 meters.

• 19 meters averaging 3.41% copper from surface.

• 15 meters averaging 3.88% copper from a depth of 72.4 meters.

• 6.84 meters averaging 8.98% copper from surface. Seal, which lies about 20 kilometers (12.5 miles) northwest of Storm, is a stratabound zinc deposit open in all directions.

Highlights from previous drilling at Seal include:

• 14.4 meters averaging 10.58% zinc and 28.7 grams per metric ton silver from a depth of 51.8 meters.

 \bullet 22.3 meters averaging 23% zinc and 5.1 g/t silver from a depth of 101.5 meters.

Seal hosts an NI 43-101 historic resource of 1 million metric tons averaging 10.24% (227.1 million pounds) zinc and 46.5 grams per metric ton (1.5 million ounces) silver, and outstanding growth potential.

The larger Storm property also hosts many underexplored targets within its mineralized trend, including the Tornado copper prospect, where 10 grab samples yielded up to 32% copper in gossans.

American West took an earn-in option in 2021 to acquire 80% ownership of this large and highly prospective land package from Aston Bay Holdings Ltd.

The company, which went public shortly before entering the deal with Aston Bay, agreed to spend a minimum of C\$10 million on exploration at the Storm property and nearby prospects over a period of up to nine years, including not less than C\$2 million in spending during the first two consecutive field seasons.

American West also paid C\$500,000 in cash to Aston Bay on closing the deal.

Direct shipping ore potential

During its first field season in Nunavut in 2021, American West extracted and tested copper ore from an area of high-grade mineralization at Storm

In April, the company reported encouraging results from the ore sorting tests, including production of a commercial grade direct shipping ore product averaging 53.9% copper.

The DSO material, primarily chalcocite, has no impurities and could potentially form the basis for a low-footprint and low-capital development option, according to the explorer.

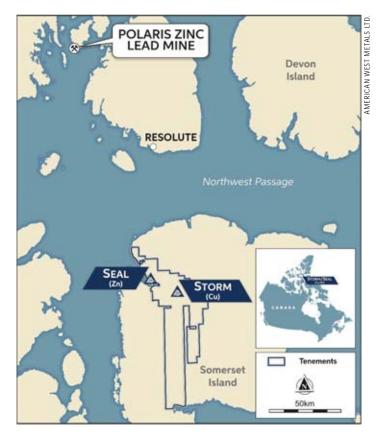
The copper-rich DSO product at Storm is the result of "an uncomplicated and low-cost process that plays to American West's strategy of developing very low footprint operations."

This simple process involves the use of an ore sorter to upgrade the ore.

The company sent a 5.5-kilogram (12 lb) sample of material from previous drilling to Australia to be tested with a Steinert ore sorter.

Using a combination of XRT and 3D laser sensors, the ore sorter produced a commercial-grade direct shipping ore product averaging 53.9% copper.

"The process of generating DSO at Storm is amazingly simple and highlights our company's focus on generating ESG sensitive mining solutions. Storm Copper now stands out as one of the very few, and highest-grade DSO copper projects globally," O'Neill said in early 2022.



More high-grade copper

In November, American West said its 2022 drilling campaign had defined additional near-surface, high-grade copper at Storm, more than doubling the mineralized envelope and substantially enhancing the deposit's resource potential.

The hypogene copper mineralization is present at surface and is identified on the property to a depth of at least 100 meters in the form of chalcocite, bornite, covellite and chalcopyrite.

The new intersections include: 19 meters averaging 2.08% copper from 58 meters downhole, including two meters grading 15.98% copper from a depth of 70 meters.

The exploration also confirmed a high volume of near-surface high-grade copper at the 2750N Zone, with mineralization open to the west along 1,000 meters of prospective strike length.

American West said potential exists to further define near-surface, high-grade copper deposits on Storm with drilling of the extensive 2200N and 4100N zones where multiple intersections of massive copper sulfides were found in historical drilling.

Very limited drilling, so far, at depth and beyond the known 2,500-meter strike of copper mineralization at Storm also suggests excellent potential to establish an increased scale to the project's mineralized footprint, the company added.

Additional copper prospects along strike include the Tornado, Blizzard, and Hurricane targets, which are defined by copper and zinc geochemical anomalies.

Some targets also have been generated by geophysical surveys. Exploration at Storm, so far, has shown a clear geophysical response of copper mineralization in electromagnetic and gravity data.

American West said it will conduct more geophysical surveys to further refine existing targets and to generate new targets for exploration. ●

NUNAVUT

Sabina Gold & Silver Corp.

TSX: SBB 🚮

New mine, exploration strategy for Sabina

Following three generations of exploration spanning four decades, Sabina Gold & Silver Corp. is moving forward with the development of the Goose gold mine on its Back River project in Nunavut, Canada.

"This is a milestone decision for the company," Sabina Gold President and CEO Bruce McLeod said in September.

A feasibility study that was updated in 2021 envisions a mine at the Goose deposit that will average roughly 223,000 oz per year.

Over the entire 15 years of mining contemplated in the study, the Goose Mine is slated to process 18.7 million metric tons of ore from the Goose Mine averaging 6 g/t gold. At a recovery rate of 93.4%, this operation is expected to produce a total of 3.34 million oz of gold.



MCLEOD

With all the requisite permits in hand and a large portion of the predevelopment site work already complete, Sabina expects to pour first gold at the Goose Mine in 2025.

While advancing development of the first mine at Back River, exploration across the district-scale property has entered into its fourth generation - reserve growth.

Sabina has divided the gold growth strategy at Back River into generations - prospector-driven exploration from 1982 until the mid-1990s, geophysics-driven exploration until 2010, and then mine integration-driven exploration over the past decade.

These 40 years of exploration have outlined 33.45 million metric tons of measured and indicated resources at Back River averaging 5.88 g/t (6.32 million oz) gold; plus 13.79 million metric tons of inferred resource averaging 6.44 g/t (2.86 million oz) gold.

One of the primary targets for the next generation of exploration will be to continue tracing the gold mineralization in the four main deposit areas at Goose Mine deeper.

All four of the deposits that come to surface - Llama, Umwelt, Echo, and Goose - remain open at depth.

Umwelt, the largest of these deposits, hosts 13.18 metric tons of measured and indicated resources averaging 6.89 g/t (2.92 million oz) gold and 3 million metric tons of inferred resource averaging 5.99 g/t (575,000 oz) gold.



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As crews advance the Goose gold mine toward production, Sabina has reopened the exploration camp at George, which shows the potential to host the second operation on the Back River property in Nunavut.

Roughly 26% of the measured and indicated resources at Umwelt are in the proposed open pit, with the balance in the underground mineable section of the deposit.

Drilling from surface early in 2022 focused on better defining a corridor of high-grade mineralization down-dip from the bottom of the proposed Umwelt open pit.

Highlights from this drilling include:

- 31.9 meters averaging 13.68 g/t gold (lower Umwelt pit).
- 41.5 meters averaging 11.93 g/t gold (Umwelt underground).
- 45.1 meters averaging 12.59 g/t gold (lower Umwelt pit).
- 15.1 meters averaging 21.87 g/t gold (Umwelt underground).
- 20.4 meters averaging 12.64 g/t gold (lower Umwelt pit).

"These results continue to demonstrate the exceptional gold endowment of the Umwelt deposit and its potential for further optimization and growth of high-grade gold zones both within and outside of the current mine design," said McLeod.

To trace this high-grade gold further down-dip, Sabina has developed a decline that provides a platform for underground exploration at Umwelt. This underground ramp advanced to the first ore access sublevel in September.

As the Goose Mine advances toward production, Sabina is renewing exploration efforts at George, the second most advanced project at Back River

George, which lies about 37 miles (60 kilometers) north of Goose, hosts 7.1 million metric tons of indicated resource averaging 5.34 g/t (1.2 million oz) gold and 5.4 million metric tons of inferred resource averaging 6.12 g/t (1.1 million oz) gold.

The 2022 opening of the 60-person exploration camp at George, for the first time in nearly a decade, marked a significant step in Sabina's pipeline growth strategy at Back River.

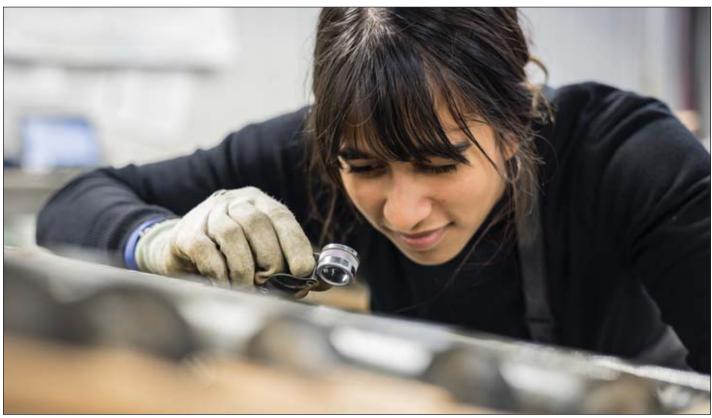
Since the last time George camp was open, Sabina has unraveled the geological signatures and has developed new strategies for exploring the gold-bearing iron formations common to both projects.

"We are eager to apply some of these successful strategies to the prospective geology and existing deposits at George," said McLeod Sabina says George offers significant potential as a satellite mine with a suite of over 25 compelling exploration targets. The 2022 program at George focused on better understanding and prioritizing drill targets for new discovery and resource growth at George and across the district-scale Back River property.

CHAIRMAN: Walter Segsworth PRESIDENT & CEO: Bruce McLeod VP, EXPLORATION: Angus Campbell

CASH AND CASH EQUIVALENTS: C\$58.6 million (Sept. 30, 2022) WORKING CAPITAL: C\$48.7 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$785.3 million (Nov. 28, 2022)

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A geotechnician inspects core from drilling at Agnico Eagle's Meliadine gold mine in Nunavut.



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Agnico invests \$90M in exploring Nunavut

Continuing a tradition of robust investments to unlock the enormous gold potential on its Nunavut properties, Agnico Eagle Mines Ltd. budgeted more than US\$90 million on exploring this politically attractive and stable jurisdiction in Canada's Far North during 2022.

Going into the year, Agnico already had an aggressive US\$60.2 million exploration campaign budgeted for its three gold mine and regional exploration properties in Nunavut. Given the success of this work, by mid-year the company had decided to allocate another US\$30 million to build resources and reserves in the territory.

"With these positive results, we are adding \$30 million dollars to our exploration budget in 2022 as we aim to accelerate the realization of the full potential of existing operations and key projects in the company's pipeline," said Agnico Eagle President and CEO Ammar Al-Joundi.

A new Hope Bay

At US\$56.2 million, which includes US\$24 million of the midyear added exploration spending, Agnico's new Hope Bay gold mine project was by far the largest target of the company's exploration in Nunavut last year.

After gaining ownership of the Hope Bay gold mine through the acquisition of TMAC Resources Inc. in 2021, Agnico decided to not immediately put the operation back into production. Instead, the company opted to invest the time and money needed to investigate larger production scenarios that integrates the results of an expansive exploration campaign.

Going into 2022, Hope Bay hosted 8.78 million metric tons of measured and indicated resources averaging 3.43 grams per metric ton (967,000 oz) gold; plus 10.25 million metric tons of inferred resource averaging 5.09 g/t (1.68 million oz) gold.

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DIAMONDS 💮

By mid-2022, the company had completed 46,658 meters of drilling in 136 holes, primarily focused on upgrading and expanding this resource.

Results from the early 2022 drilling at Doris, the primary mining area during TMAC's operations, confirmed the potential to expand the deposit along strike to the north in the BTD Extension Zone and to the south in the Central and West Valley zones.

The early 2022 drilling also showed the potential for finding additional high-grade structures below the historical zones, including a 32.2meter intercept in the BTD Connector zone averaging 6.9 g/t gold.

The results further demonstrate the potential to significantly grow the Doris mineral resources to support the development of additional underground exploration drifts and platforms to confirm these highgrade mineralized zone extensions ahead of the resumption of mining at Hope Bay.

This work continued into the second half of 2022.

At the Madrid deposit, which lies about nine kilometers (5.5 miles) south of Doris, surface drilling primarily targeted the inflection zone in the Naartok East area and the vertical extension of the Suluk zone. Hole HBM22-040, which was drilled outside the Naartok East inflection zone, cut seven meters averaging 7 g/t gold.

At the Boston deposit, which lies roughly another 50 kilometers (31 miles) south of the Doris processing facility, work is underway to refurbish the various facilities prior to resuming exploration drilling activities in the area this year.

Agnico is compiling and validating a historical exploration database at Boston to develop geological and structural models for the deposit that will help generate new drill targets for a 2023 campaign.

A regional field exploration program carried out at Hope Bay last year focused on the evaluation of more than 50 showings identified by previous explorers near current infrastructure in the northern portion of the Hope Bay property.

Upgrading, expanding Amaruq

At Amaruq – a satellite mine that is part of the Meadowbank Complex – Agnico budgeted US\$19.5 million for a planned 61,800 meters of

exploration and resource conversion drilling during 2022.

Going into 2022, Amaruq hosted 20.56 million metric tons of proven and probable reserves averaging 3.92 g/t (2.59 million oz) gold.

The 2022 exploration drilling included resource definition drilling to evaluate the potential of extending the western end of the Whale Tail Pit toward the Mammoth gold prospect, as well as extending mineral resources at depth; testing a gap between the IVR pit and the underground pit and underground resources; and continue delineation drilling in the underground mine at Whale Tail deposit to confirm the defined stopes that are scheduled for production during the second half of 2022.

Highlights from the first half of 2022 drilling at Amaruq include:

• 20.8 meters averaging 5.5 g/t gold in hole AMQ-320-200-U1 (Whale Tail).

• 27 meters averaging 5.6 g/t gold in hole AMQ-320-200-U1 (Whale Tail).

• 20 meters averaging 6.3 g/t gold in hole AMQ-320-204-F1 (Whale Tail).

 \bullet 21.2 meters averaging 9.3 g/t gold in hole AMQ-320-205-U1A (Whale Tail).

- 9.5 meters averaging 5.4 g/t gold in hole AMQ21-2745 (IVR).
- 5.1 meters averaging 20.3 g/t gold in hole AMQ21-2728A (IVR).
- 5.2 meters averaging 13.5 g/t gold in hole AMQ21-2690A (IVR).

Extending Meliadine Mine

The remaining US\$6 million of Agnico's expanded 2022 Nunavut exploration budget went to Meliadine, bringing the total 2022 exploration spending allotted for this gold property to US\$14.5 million. The 2022 exploration at Meliadine focused on increasing mineral reserves and resources to extend mine life beyond 2032.

Going into 2022, Meliadine hosted 19.16 million metric tons of proven and probable reserves averaging 5.93 g/t (3.65 million oz) gold in seven deposits – six of which are in the current mine plan. With a strike length of roughly 3,000 meters and a known depth of 812 meters, Tiriganiaq is the largest of these deposits.

Exploration at Meliadine and surrounding areas focused on deep exploration and conversion drilling at the Pump deposit; infill drilling of inferred mineral resources at depth in the Wesmeg and Tiriganiaq deposits; and exploration drilling at the F-Zone deposit.

Nearly half the drilling during the first half of 2022 focused on upgrading inferred resources in the north and south zones at Pump. Highlights from this drilling at Pump include:

- Three meters averaging 9.4 g/t gold in hole M22-3360.
- 4.2 meters averaging 11.7 g/t gold in M22-3361.
- 5.4 meters averaging 6.4 g/t gold in M22-3362.



An aerial view of Agnico Eagle's Hope Bay gold mine in Nunavut, Canada.

- 4.2 meters averaging 9.3 g/t gold in M22-3380A.
- Five meters of 7.7 g/t gold in M22-3382A.
- 3.7 meters of 20.4 g/t gold in M22-3384.

These holes are expected to convert inferred mineral resources located between two substantial areas of indicated mineral resources.

Following up on important mineral inventory identified at the limits of the Pump mineral resource in 2021, the 2022 drill program also confirmed the grade, thickness, and continuity of this new mineralized zone.



SEAN BOYD

Hole M223391, which cut 5.3 meters averaging 18.8 g/t gold, is expected to extend the inferred mineral resources down plunge. Hole M22-3401, drilled into inferred mineral resource about 106 meters to the east, cut five meters averaging 10.1 g/t gold.

Elsewhere on the Meliadine property during 2022, resource conversion drilling was completed in Tiriganiaq and Wesmeg deposits from the newly developed exploration drift, along with surface drilling in the F-Zone deposit.

EXECUTIVE CHAIR: Sean Boyd PRESIDENT & CEO: Ammar Al-Joundi EXECUTIVE VP, EXPLORATION: Guy Gosselin

CASH & CASH EQUIVALENTS: US\$821.8 million (Sept. 30, 2022) WORKING CAPITAL: US\$1.3 billion (Sept. 30, 2022) MARKET CAPITALIZATION: US\$23.07 billion (Nov. 25, 2022)

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GOLD

Blue Star Gold Corp.



Elevating Blue Star Gold drill targets

While drills targeted the expansion and upgrade of established gold resources at Ulu, Blue Star Gold Corp.'s geological team focused on elevating other targets across the company's Ulu, Hood River, and Roma properties, which cover a more than 45-kilometer (28 miles) stretch of the High Lake Greenstone Belt in Nunavut to drill-ready status.

According to a 2015 calculation, the Flood and Gnu zones on the Ulu property host 2.5 million metric tons of measured and indicated resources averaging 7.53 grams per metric ton (605,000 ounces) gold; and 1.26 million metric tons of inferred resource grading 5.57 g/t (226,000 oz) gold.

In June, Blue Star launched a 3,690-meter drill program to upgrade and expand these deposits that lie about 600 meters apart, as well as test the Central-C and Axis zones that lie between them.

Highlights from the 25 holes drilled in these zones include:
17.4 meters averaging 6.52 g/t gold from a depth of 4.4 meters in hole DD22-FLO-001 (Flood).

• 17.65 meters averaging 15 g/t gold from a depth of 115.1 meters in hole DD22-FLO-002 (Flood).

• Three meters averaging 2.51 g/t gold from a depth of 137.4 meters in hole DD22-MIQ-002 (Gnu).

• 4.2 meters averaging 8.18 g/t gold from a depth of 94.1 meters in hole DD22-MSK-005 (Gnu).

While drills are turning within the resource area, Blue Star's geological team continued to explore the extensive pipeline of prospective targets.

"An important component of the program was the successful progression of many of the prospective target zones closer to drill ready status," said Blue Star Gold CEO Grant Ewing.

This exploration work includes regional geochemical sampling on the Roma property, which lies on the north end of the High Lake Greenstone Belt about 32 kilometers (20 miles) north of the adjoining Ulu and Hood River properties.

DIAMONDS 💮

This sampling is utilizing detectORE, a new technology that allows for quantitative gold analysis in the field with a portable XRF (X-ray fluorescence) scanner, which immediately began highlighting areas for follow-up. Given the rapid results, the company has expanded its use of this technology.

In addition to the sampling, Blue Star flew magnetometry geophysical surveys over almost the entirety of its High Lake Greenstone Belt landholdings earlier this year. This data is expected to help guide further exploration.

"I am encouraged to see that our regional and prospect level work is generating new targets to drill evaluate in future programs," said Blue Star Gold Vice President of Exploration Darren Lindsay. "Our pipeline has been very bottom heavy and with this work we will see key targets moving up to the drill ready stage."

CHAIRMAN: Robert Metcalfe CHIEF EXECUTIVE OFFICER: Grant Ewing VP, EXPLORATION: Darren Lindsay

CASH AND CASH-EQUIVALENTS: C\$1.2 million (Aug. 31, 2022) WORKING CAPITAL: C\$1.5 million deficit (Aug. 31, 2022; closed C\$1 million financing on Nov. 24) MARKET CAPITALIZATION: C\$18 million (Dec. 29, 2022)

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As drills test the known resource areas at Ulu, the Gold Star exploration team has been generating new drill targets across the company's three properties.

NUNAVUT & NORTHWEST TERRITORIES

North Arrow Minerals Inc. 🐨

TSX-V: NAR.V 🕋

Fancy diamonds support North Arrow mining



With diamond markets rebounding from the COVID-19 downturn, North Arrow Minerals Inc. and partner Burgundy Diamond Mines Ltd. have continued to demonstrate the value of the fancy yellow diamonds in the Q1-4 kimberlite at the Naujaat project in Nunavut.

Lying about nine kilometers (5.6 miles) northeast of the hamlet of Naujaat (formerly Repulse Bay) on Nunavut's Melville Peninsula, Naujaat covers 10,742 hectares (26,54 acres) of contiguous mineral leases and claims held by North Arrow.

To date, fifteen kimberlites and eight kimberlite pipes have been identified on the property, as well as a number of associated kimberlite dykes. Of its numerous targets, the Q1-4 kimberlite is the largest and most diamondiferous of these bodies.

Though North Arrow has drilled to depths of 400 meters in Q1-4, the current resource estimate for the project lies around roughly 48 million metric tons of material down to 205 meters, containing more than 26 million carats of diamonds.

North Arrow has since undertaken extensive exploration and evaluation focused on the potential value of its uniquely colored fancy vivid orange-yellow diamonds found in the Q1-4 kimberlite at Naujaat, which is considered one of the largest undeveloped diamond properties in Canada not controlled by a major mining company.



KEN ARMSTRONG

Naujaat's rare yellow diamonds have been certified by the Gemological Institute of America and are expected to sell at high premiums to white diamond prices, upon which the historical project's economics were mostly based.

Spending the better part of 2022 filtering through its 2021 bulk sample program funded by Burgundy, North Arrow reported recoveries from the first 70% (1,316 dry metric tons) and revealed at least 268 diamonds of greater than 9 DTC (Diamond Trading Company) weighing roughly 117.98 carats.

Three of the largest recovered diamonds were 3.31, 3.07, and 2.76 carats. 48 of the 268 diamonds classified as fancy color, with more than half of that classifying as orange in color – with orange being considered amongst the rarest of colors for natural diamonds.

Later in the season, the company announced the remaining results of its 2,500 bulk sample program. The results, representing the final 30% (498 dmt), were from the same source, the A88 unit of the Q1-4 deposit.

Despite the smaller amount, North Arrow reported 99 diamonds greater than 9 DTC weighing 55.8 carats. The three largest stones were seven, 2.17, and 2.02 carats.

"The 2021 bulk sample has confirmed the presence of an important, potentially high value population of fancy orange and yellow diamonds in both the A28 and A88 units of the Q1-4 diamond deposit," said North Arrow President and CEO Ken Armstrong. "This is highly encouraging, as is the recovery of a seven carat diamond – the largest stone recovered to date from the Q1-4 deposit and, although it classifies as boart – an indication of the potential of Q1-4 to produce larger diamonds."

Of the 99, 10 were classified as fancy color diamonds, with three being labeled as "intense" or "vivid" – the two highest color saturation classes and an important indicator of the potential value in fancy color diamonds. Aside from that evaluation, nine of the fancy diamonds were also categorized as orange.

"The completion of sample processing and diamond recovery from the 2021 bulk sample has further confirmed the presence of a potentially high value, fancy orange and yellow diamond population in the Q1-4 kimberlite," said Burgundy Diamond Mines Managing Director and CEO Peter Ravenscroft.



North Arrow reported the recovery of a seven-carat diamond, the largest found to date at the Q1-4 kimberlite, and an indication of the potential of the project.



An aerial view of the 2,500 bags of bulk sample collected at Naujaat in 2021.

In addition to the successful bulk sampling at Naujaat, North Arrow is advancing seven other properties in Canada in the discovery and target development stages, including six additional diamond projects – three in Nunavut, including the Mel, Luxx, and grassroots CSI projects; two in neighboring Northwest Territories, including a 21 percent interest in the LDG joint venture project; and one in Saskatchewan.

CHAIRMAN: Grenville Thomas PRESIDENT & CEO: Ken Armstrong

CASH AND CASH EQUIVALENT: C\$716,752 (July 31, 2022) WORKING CAPITAL: C\$789,646 deficit (July 31, 2022) MARKET CAPITALIZATION: C\$6 million (Nov. 25, 2022)

Suite 960 – 789 West Pender Street Vancouver, BC, V6C 1H2 Tel: 604-668-8355 nthomas@northarrowminerals.com www.northarrowminerals.com

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Yukon Territory Exploration 2022

Gold, silver lure pack to Yukon in 2022

Mineral exploration continues to rally with old and new players

By ROSE RAGSDALE

For Mining Explorers

Though effects of the COVID-19 pandemic lingered, mineral explorers rushed to the Yukon like moths to a flame during 2022. Mining's most daring sector rallied to generate the busiest field season seen in Canada's westernmost territory in years.

In June, Natural Resources Canada projected mineral exploration and deposit appraisal spending in Yukon during 2022 to total C\$157.9 million, up 14.5% from C\$135.1 million estimated for 2021 and nearly double comparable expenditures of C\$83.6 million in 2020. NRCAN's estimates are based on explorers' spending intentions.

At year-end 2021, the Government of Yukon estimated exploration spending in the territory would total C\$184.5 million.

Companies long active in Yukon mineral exploration, along with a flurry of newcomers, fanned out across the territory's mountainous expanse in 2022, searching for everything from aurum to zinc. Some explorers followed up on productive 2021 exploration programs, while others mounted inaugural campaigns based on research and historical activity. The value of hard rock metal production in 2021 climbed to about C\$500 million in Yukon, rallying largely high metal prices and the ongoing ramp-up of production at Victoria Gold's Eagle Gold mine, the tenuous restart of mining at the Keno Hill Silver Mine, and ongoing output at the Minto copper-gold-silver mine.

Yukon placer gold output in 2021 totaled 77,695 crude ounces valued at roughly C\$139 million in production revenue, or C\$2,243/oz, marking the fifth consecutive year in which the territory's placer output exceeded 70,000 oz. Placer mining also expanded to one new and five formerly dormant creeks.

The number of active hard-rock exploration projects decreased more than 16% to 91 in 2021. Of the 91 projects, 26 spent more than C\$1 million, while 44 spent less than C\$500 000.

Mining incentives work

The Yukon government welcomed the two-year upsurge in activity as a sign that its multiyear mining incentives program – designed to bring outside investment to the territory – is working.

"In an attempt to provide a level of certainty and confidence in investment, the Government of Yukon includes mineral

ALIANZA MINERALS LTD

exploration and mining as essential industries and (it) continues to invest in the Yukon Mining Exploration Program," Yukon Geological Survey geologists noted in the 2021 YGS annual exploration overview.

"The 2021–22 YMEP programs made a substantial contribution to the Yukon economy by leveraging an estimated C\$4.3 million in additional investment," the YGS said.

Though the government did not disclose the total amount of financial incentives granted to explorers for 2022-23 projects, more than two-dozen companies won funding for grassroots, target evaluation, and focused regional programs.

YMEP-assisted projects have yielded discoveries that are likely to spur exploration and generate economic benefits well into the future, the government observed.

Examples include Golden Sky Minerals Corp.'s Bull's Eye property, located in the newly emerging Wels gold district, north of Wellesley Lake. It is contiguous to K2 Gold Corp.'s Wels Gold Project.

Golden Sky completed a 384-meter, five-hole target evaluation-supported RC drilling program in 2021 designed to test the Gold Crest zone along a 150-meter strike length and up to 100 meters in depth. Drill results included 25.91 meters averaging 1.88 grams per metric ton gold, with a narrower interval of 12.19 meters averaging 2.54 g/t gold in hole BERC-21-4.

The impact of the incentives program also can be measured by more advanced projects in the exploration-mining cycle. Banyan Gold Corp.'s Aurex-McQuesten Property is one example. The 173-square-kilometer (67 square miles) AurMac Property lies 30 kilometers (18 miles) to the east of Victoria Gold's Eagle Mine and adjacent to Hecla Mining Co.'s high-grade Keno Hill Silver Mine.

After optioning AurMac from Stratagold in 2016, Banyan explored the property in the ensuing years with the help of incentive grants from YMEP. In 2020, the explorer released a NI 43-101-compliant inferred resource estimate for the AurMac Project of nearly 53 million metric tons, grading 0.535 g/t gold for a total of 903,945 contained oz. of gold. After completing one of the largest exploration programs in Yukon in 2021, Banyan updated the resource for AurMac to 4 million oz of gold in May.

On Nov. 5, Banyan reported completing a 50,000-meter drill program in 2022 that included 211 holes designed to expand mineralization around AurMac's Powerline and Aurex Hill deposits.

Gold attracts more hunters

In 2021, explorers staked 3,759 mining claims in Yukon. Claims in good standing in the territory totaled 171,218, down from an all-time high of 252,902 in 2012. Nearly 70% of the claimstaking activity focused on gold in the Mayo district, where the Eagle Gold mine sits on the Dublin Gulch property.

The Eagle mine, owned and operated by Victoria Gold, produced 164,222 oz of gold in 2021, its first full year of output, and during the first nine months of 2022, the mine's output totaled 114,441 oz. The company hopes to ramp up Eagle's annual gold production to 250,000 oz in 2024.

Victoria, meanwhile, is continuing to explore the Eagle claims and other targets at Dublin Gulch with diamond drilling, trenching, soil sampling, prospecting, and mapping.

At the Eagle deposit, the company has focused on key areas for potential mine expansion to the west of the existing pit, drilling 10,342 meters in 23 drill holes in 2021 to average depths of 450 meters, adding roughly 500 meters of mineralized strike length from the current Eagle pit boundary.



This sample is from a 1.1-meter intercept from drilling at Alianza Minerals' Haldane project that averaged 3,010 g/t silver, 6.4% zinc, and 5.4% lead.

"Now that Eagle is operating, our team has turned its attention to the systematic exploration of the numerous targets on the block. We fully expect more discoveries in the future," said Victoria Gold President and CEO John McConnell in early 2022.

The explorer completed 20,000 meters of diamond drilling in 2021 across the claim package, including 8,063 meters in 33 drill holes at the Raven discovery and 2,706 meters in 11 holes at the Lynx target, a newly developed on and near-surface gold target. The 2021 program doubled the strike length of mineralization at Raven to 1.3 kilometers (one mile), particularly to the west.

Victoria followed up in 2022 with another 20,000 meters of drilling over two kilometers (1.24 miles), along with 10 kilometers of surface trenching and related work to "fast-track" Raven's development, McConnell said.

In September, the company released a maiden NI 43-101-compliant resource estimate for Raven of 1.07 million oz. in inferred mineral resources contained in nearly 20 million metric tons of ore, averaging 1.67 g/t gold at a 0.5 g/t cut-off grade.

Victoria's success at Dublin Gulch has attracted other explorers to the area, including Zonte Metals Ltd., a junior that discovered the 2-4 target in 2017 on its MJ Gold Project, which is adjacent to the east side of Dublin Gulch. The Raven deposit appears to be about 2,300 meters on strike from Zonte's claim.

"Importantly, it appears the intrusion hosting the Raven deposit could be a part of a larger intrusive system related to the intrusion on Zonte's property," Zonte Metals President and CEO Terry Christopher said in October.

The MJ project hosts seven untested targets defined by goldin-bedrock and soil anomalies.

Upper Canada Mining Inc. took a 70% earn-in option from Strategic Metals Ltd. on the Mt. Hinton property located near Keno Hill and conducted a program of mapping, sampling, and reverse circulation drilling in 2021.

Though the world-famous silver district hosts more than 35 individual silver mines and is historically Canada's secondlargest primary silver producer, the explorer came to Mount Hinton looking for gold.

Gold is the most significant component in many of the 73 bedrock showings and float occurrences discovered at Mount Hinton to date.

Sitka Gold Corp. is exploring the 376-square-kilometer (145 square miles) RC property in the Clear Creek area 88 kilometers (55 miles) west of Keno.

Sitka Gold said drill programs in 2020 and 2021 produced extensive intercepts of impressive gold grades and visible gold in core.



Minto Metals is focusing on high-priority, untested exploration targets adjacent to the current resource base at its Minto copper-gold-silver mine.

During its 15-hole drill program carried out in 2021, Sitka discovered the Blackjack zone at RC in hole DDRCCC-21-021, which cut 220.1 meters of 1.17 g/t gold from surface, including 50.5 meters of 2.08 g/t gold.

During a 7,700-meter drill program carried out in 2022, the company intersected 349 meters of 0.71 g/t gold drilled from near surface at Blackjack, including 221 meters of 1.01 g/t gold and two meters of 15.15 g/t gold.

Silver hunt intensifies

In 2022, the Keno Hill Silver Project got a new owner. Hecla Mining purchased the property in August from Alexco Resource Corp. in a stock-swap transaction valued at C\$69 million.

Hecla said silver production from Keno Hill added to output from its Greens Creek Mine in Alaska and Lucky Friday Mine in Idaho will put the miner on the path to becoming North America's largest silver producer with an annual output of 17-20 million oz. in the next few years. Hecla is currently the leading silver producer in the United States, with 40% of the nation's output.

Alexco Resource Corp. restarted production at Keno Hill's silver-lead-zinc mine in 2020 after a six-year shutdown. Initially, the company milled ore from its previously producing Bellekeno deposit before shifting in August 2021 to the property's Bermingham deposit. Underground development, meanwhile, continued at the nearby Flame & Moth deposit where Alexco expected ore production by year's end 2021.

Exploration drilling at Bermingham continued at deep targets throughout 2021, with 50 holes drilled covering 19,000 meters, targeting the Northeast Deep zone for infill and extension. Highlights include hole K-21-0785, which intersected the Bermingham Footwall vein, with 2,901 g/t silver over 4.42 meters.

Hecla said it plans to invest in further development, infrastructure, and equipment at Keno Hill, aiming for full and consistent production by year's end 2023.

Other explorers seeking silver include:

Blende Silver Corp., formerly Blind Creek Resources Ltd., completed an updated mineral resource estimate in 2021 for the Blende silver-zinc-lead deposit, located 63 kilometers (39 miles) north of Keno. The company conducted metallurgical and resource expansion drilling on the deposit in 2021, as well as induced polarization geophysical surveying. Exploration focused on advancing the project towards completion of a preliminary economic assessment. Blende hosts a 5,000-meter-long mineralized trend striking northwest to southeast with an indicated resource of 4.5 million oz silver, 187 million lb zinc and 167 lb lead; and an inferred resource of 37.32 million oz silver, 1.71 billion lb zinc and 1.51 billion lb lead, making it one of the largest carbonate-hosted silver-zinc-lead projects in western Canada.

Metallic Minerals Corp. initiated a 2022 exploration program in July with at least 3,000 meters of diamond drilling, focusing on resource definition at multiple advanced-stage targets, including the Formo and Caribou deposits in the West Keno and Central Keno areas; the recently discovered Fox target at East Keno; and step-out drilling at several new discoveries. This followed a multi-rig 10,000-meter diamond and reverse circulation drill program, soil sampling and geophysical surveys in 2021. The explorer also reported the acquisition of five square kilometers (two square miles) of new mineral properties in the Keno Hill silver district in September, bringing the company's district hard-rock land position up to 171 square kilometers (66 square miles).

In 2021, Alianza Minerals Ltd. also explored its 8,579-hectare (21,199 acres) Mt. Haldane property, a high-grade silver vein target located 27 kilometers (16 miles) west of Keno, with six diamond drill holes covering 1,576 meters. The program included one hole that cut 3,267 g/t silver, 5.8% lead and 7.02% zinc at the West Fault target. The intersection falls within a wider zone averaging 1,351 g/t silver, 2.43% lead, and 2.91% zinc over 5.24 meters.

Alianza returned to the property in September with a firstphase program of mapping, prospecting, and trenching of targets in preparation for drill testing.

Minto: Still exploring

Fifteen years after startup at the Minto copper-gold-silver mine north of Carmacks, owner Minto Metals Corp. is focusing on high-priority, untested exploration targets adjacent to the current resource base.

Minto Mine, which began production in 2007, sits within the Minto Copper Belt, a 42-kilometer- (26 miles) long northwesttrending corridor of copper-gold-silver mineralization in central Yukon.

In 2022 the miner followed-up on the successful discovery holes drilled in its 30,000-meter campaign a year earlier.

Minto had drilled 43 holes for 23,311 meters of a budgeted 30,000-meter program by late October. Highlights include intersecting 2.2% copper over 20 meters in drill hole 22EXP042 in a step-out from 2021 drill hole 21EXP003 that cut 1.58% copper over 28 meters.

Initial results from step-out drilling at the Minto North deposit confirmed the existence of a new lens or extension of the known lenses of the Minto North resource. The company awaited additional 2022 drill results, while looking forward to resource delineation drilling in 2023.

Minto Metals also reported the discovery of a new lens in the immediate footwall of the 112 Lens at the Copper Keel South, noting that "it underlines the potential for organic growth near current infrastructure and development at Minto."

In May 2021, the company released a preliminary economic assessment technical report that included an updated mineral resource estimate of 11 million metric tons averaging 1.46% copper, 0.53 g/t gold, and 4.75 g/t silver in the indicated category; and 13 Mt grading 1.29% copper, 0.49 g/t gold, and 4.55 g/t silver in the inferred category. Contained copper (open pit and underground) totaled 727 million pounds.

Others chase minerals

Other explorers, ranging from those with one property to

those with large land packages and multiple projects, chased signs of commercial deposits across the territory in 2021 and 2022. These include White Gold Corp., Triumph Gold Corp., ATAC Resources, Strategic Metals, Cantex Mine Development Corp., Rockhaven Resources, Whitehorse Gold Corp., Klondike Gold Corp., Granite Creek Copper, CAVU Mining Corp., Stratabound Minerals Corp., Seabridge Gold, and CMC Metals.

While none reported a major discovery, most noted substantial progress in advancing their respective projects.

Fireweed Zinc, for example, reported notable exploration success in 2022. In late November, the explorer reported the bestever intersection drilled at its MacMillan Pass zinc-lead-silver. Hole NB22-002, drilled at Boundary West, cut 124 meters averaging 12.3% zinc, 1.3% lead, and 45.9 g/t silver, including 60 meters of 19% zinc, 1.6% lead, and 64.7 g/t silver.

The company completed a large fourrig drill program at MacMillan Pass in 2022.

Newcomer makes splash

A recently listed company, Snowline Gold Corp., chased targets within its seven-project portfolio covering 90,000 hectares (243,900 acres) located in an under-explored area about 200 kilometers (124 miles) east of Keno in 2021 and 2022.

At the Einarson gold property in the Rackla gold belt, Snowline reported two intercepts in 2021 – 2.59 g/t gold over 27.0 meters and 4.02 g/t gold over 10.6 meters in hole J-21-013 at the project's Jupiter Zone. The junior also explored its Rogue property south of Einarson with a fourhole drill program and the nearby Ursa project with an airborne geophysical survey, soil sampling and prospecting.

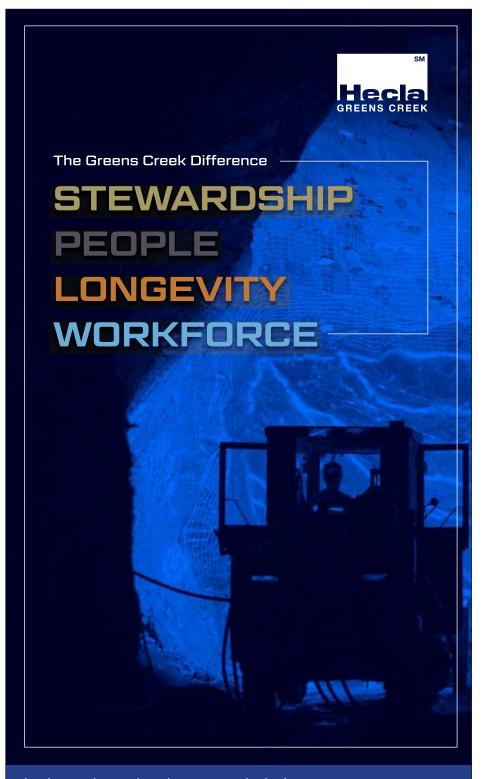
In 2022, Snowline carried out an 8,000meter drill program primarily focused on the Valley Zone at Rogue, where the company has cut phenomenal gold mineralization. One such hole, V-22-010, cut 318.8 meters of 2.55 g/t gold in the Valley Zone.

Other highlights from Valley Zone include 410 meters averaging 1.89 g/t gold from surface in hole V-22-07; and 285.2 meters averaging 1.45 g/t gold from a depth of 2.8 meters in hole V-22-014.

"The continuity of strong grades from Valley's central zone, seen both within holes along hundreds of metres and between holes spaced hundreds of metres apart, demonstrates the presence of a large and robust, unusually rich bulk tonnage gold system," said Snowline Gold CEO and co-founder Scott Berdahl.

Snowline more than doubled its land position to 254,000 hectares (688,340 acres) by staking 37,000 hectares (100,270 acres) in additional claims around recent discoveries and acquiring 127,000 hectares (344,170 acres) in nearby claims from Strikepoint Gold Inc. Snowline said recent discoveries on Rogue prompted the acquisition of Strike-Point's claims.

"We've got multiple projects moving ahead, multiple projects operating and others that are nearing that stage. So, the Yukon is proving to be a place where things can happen," said Berdahl.



hecla.com/operations/greens-creek-alaska -



With its mill running at full capacity, the Keno Hill mine is forecast to produce more than 35.5 million oz of silver over eight years or nearly 4.5 million oz per year.

Hecla shows what makes it top silver producer

Adds Alexco Resource's Keno Hill Silver District to portfolio

By A.J. ROAN Mining News

Keeping stride as the largest silver producer in North America, Hecla Mining Company not only reported its second-largest silver reserves in its 130-year history but also added a highly prospective mine that brings it to the Yukon for the first time.



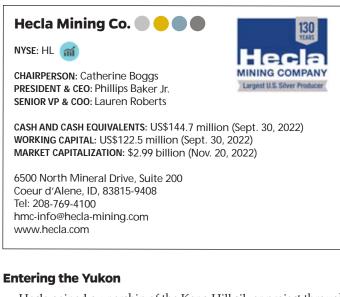
PHILLIPS BAKER JR.

Going into 2022, Hecla's three operating mines

– Greens Creek, Lucky Friday (Idaho), and Casa Berardi (Quebec) – hosted a combined 37.3 million tons of reserves containing 200 million ounces of silver, 2.73 million oz of gold, 1.81 billion pounds of zinc, and 1.47 billion lb of lead.

At roughly 14 million oz of silver during 2022, Hecla alone accounts for approximately 40% of the silver mined in the U.S. and with the recent purchase of the Keno Hill Silver District mine project in the Yukon, the Idaho-based miner is poised to also be the largest silver producer in Canada.

"Our production growth makes Hecla the fastest growing established silver producer, further increasing our leadership as the largest silver producer in the U.S. with the potential to be Canada's largest silver producer as well," said Hecla Mining Company President and CEO Phillips Baker, Jr.



Hecla gained ownership of the Keno Hill silver project through the 2022 acquisition of Alexco Resource Corp., which resumed production at the historic mine project but could benefit from Hecla's financial wherewithal and expertise to fully realize the mine's potential.

"As a much larger business, Hecla has the organizational expertise and financial strength to build Keno Hill to the level and capacity required, while being able to continue to invest in exploration across the district, something that we, as Alexco, independently would likely struggle to achieve," Alexco Resource Chairman and CEO Clynton Nauman said upon the July announcement of the buyout.

The 242-square-kilometer (93 square miles) Keno Hill property covers one of the highest-grade silver districts in the world. Between 1913 and 1989, more than 200 million ounces of silver from ore averaging 44 oz per ton, making this Yukon mining district the second-largest historical silver producer in Canada.

According to the most recent calculation, Alexco's Keno Hill property hosts 1.44 million metric tons of probable reserves averaging 804 grams per metric ton (37.19 million oz) silver, 3.84% (122 million lb) zinc, and 2.64% (84 million lb) lead in four deposits – Bellekeno, Lucky Queen, Flame & Moth, and Bermingham.

"At Hecla, we have followed the Keno Hill project closely for a number of years, as it is one of the very few deposits that fit seamlessly into Hecla's strategy of owning and operating high-grade properties in tier one jurisdictions," said Baker.

At the end of 2020, Alexco began to ramp up to commercial production at Keno Hill, but COVID-related staffing issues slowed the restart of operations in the historic district, and in June of last year, the company announced that it was shutting down the mill in order to focus on underground development and to ensure the availability of ore.

With the September closing of the buyout, Hecla had taken over this work and planned to have the Keno Hill mine ramped up to full and consistent production by the end of 2023.

To complete the acquisition of Alexco and its Keno Hill Silver District mine project, Hecla issued 18 million shares worth C\$69 million to Alexco shareholders, which received 0.116 of a Hecla share for every Alexco share held.

Concurrent with the acquisition, the silver streaming interest Wheaton Precious Metals Corp. held on Alexco's Keno Hill property was terminated in exchange for 34.8 million Hecla shares worth roughly US\$135 million.

As part of the transaction, Hecla also provided Alexco with a US\$30 million se-



An ore car outside a historic mine at Keno Hill is a testament to this silver district's rich mining history.

cured loan facility, of which US\$25 million was drawn when the transaction closed.

With the acquisition of Alexco completed, Hecla has now definitively entered into the territory that is practically synonymous with mining, the Yukon.

"The Keno Hill property is in a premier mining jurisdiction where the First Nation of the Na-Cho Nyak Dun and Yukon governments are supportive of mining," said Baker. "Like our other operations where we have had decades of mining and have become an integral part of the communities, we look forward to doing the same in the Yukon."

Always more metal to find

The biggest silver producer in Hecla's portfolio, however, is Greens Creek.

With a consistent output of more than 9 million oz of silver per year, this Southeast Alaska operation singlehandedly accounts for 30% of all the silver produced in the U.S.

And Hecla is investing in the exploration needed to keep up this pace moving forward.

Greens Creek entered 2022 with 11.08 million tons of proven and probable reserves averaging 11.3 oz per ton (125.2 million oz) silver, 0.09 oz/t (946,000 oz) gold, 6.6% (1.45 billion lb) zinc, and 2.5% (564.5 million lb) lead.

This marks a 12% growth in reserves after replacing the 9.2 million oz produced at the Southeast Alaska mine in 2021. Likewise, the new reserves at this operation contain 14% more gold and 11% more zinc and lead than at the beginning of 2021.

In 2022, drilling continued to focus on

resource expansion and conversion, which yielded positive results.

Three underground core drills targeted resource conversion in the 200 South and East zones and exploration in the East, 5250, 200 South, and Gallagher Fault Block zones.

In addition, two helicopter-supported drills were focused on drilling extensions to the Upper Plate zone near the mine and the Lil'Sore target area approximately three miles northwest of the mine. These positive results confirm and expand mineral zones; significant highlights include:

• 3.2 meters averaging 74.3 oz/t silver, 0.52 oz/t gold, 5.7% zinc, and 2.9% lead (Southwest Bench).

 \bullet 13.6 meters averaging 18.5 oz/t silver, 0.02 oz/t gold, 2.6% zinc, and 1.1% lead (200 South).

• 3.4 meters averaging 51.6 oz/t silver, 0.05 oz/t gold, and 0.1% zinc (East Zone).

• 14.3 meters averaging 37 oz/t silver, 0.26 oz/t gold, 18.3% zinc, and 9.5% lead (West Zone).

These results bode well for continued strong silver production from Greens Creek, and with the addition of Keno Hill, the company is looking for the best silverproducing years in the company's 130-year history.

"With the additional production from Alexco's Keno Hill, and the continued production growth from Greens Creek and Lucky Friday, we expect Hecla to produce 17-20 million ounces per year in the next few years, which is 30 to 55% more than 2021," said Baker.

YUKON TERRITORY

Victoria Gold Corp. 🧲

TSX: VGCX 📷

A difficult year does not stop Victoria

Despite a year riddled with cold weather, equipment malfunction, and even territory fires, Victoria Gold Corp. maintained a steadfast view of the horizon for its Eagle Gold Mine, doing everything it can to hold true to its planned Project 250 strategy, and contributed toward that goal with the company's largest exploration program

to date. One of the first announcements Victoria made at

the start of 2022 was its new strategy to increase production at Eagle to 250,000 ounces during 2023.

While plans to achieve this goal involve additions and changes to operating equipment and procedures, ultimately, it still comes down to having plenty of gold-rich ore, and exploring its 555-square-kilometer (214 square miles) Dublin Gulch property is the tried and true method of expanding a resource.

JOHN McCONNELL

ctor

GOLD CORP

The 2022 program initially aimed at approxi-

mately 20,000 meters of diamond drilling at Dublin; however, the company quickly blew past that mark, resulting in the largest exploration program carried out on the property to date.

[#]In 2022, we have carried out Victoria's largest ever exploration program, with 25,000 meters of drilling planned to expand Raven along strike and at depth, " said Victoria Gold President and CEO John Mc-Connell.

Due to its continued exploration, Victoria announced a significant addition to its resources.

According to a late 2019 calculation, Eagle hosts 148 million metric tons of proven and probable reserves averaging 0.64 grams per metric ton (3.06 million ounces) gold; while the nearby Olive deposit, about 3,000 meters northeast of Eagle, hosts another 7 million tons of reserves averaging 0.95 g/t (200,000 oz) gold.

Because of its efforts to expand Eagle resources and eventually reserves to depth – and now for the sake of meeting its new goal of 250,000 oz annually – Victoria spent the last few years exploring the potential of its highly prospective Raven gold target, roughly 13 kilometers (eight miles) east of the Eagle Mine.

Discovered with soil sampling and trenching in 2018, Raven is a large, near-surface gold target associated with Nugget, the second largest known intrusive body on the Dublin Gulch property – with the Dublin Gulch stock, which hosts the deposit delivering ore on the Eagle Gold Mine heap leach pad, being the current largest.

Trenching in 2018 and 2019 quickly began to reveal Raven's potential to host a large gold deposit that is higher grade than what is currently being mined at Eagle. Highlights from this trenching included 124 meters of 3.51 g/t gold, 50 meters of 4.15 g/t gold, and 12 meters of 7.91 g/t gold.

In September, the company announced a maiden inferred resource for Raven of 19.96 million metric tons of pit-constrained inferred resource averaging 1.67 g/t (1.07 million oz) gold.

At 1 million oz of gold in a resource more than double what is currently being mined, Raven will likely contribute to Eagle Mine reserves in the future.

And Victoria has ample room to continue exploring.

Aside from results from Raven, the company has also been examining the Lynx target. Exploration at Lynx continued to expand on work done in the preceding years, with four holes drilled in 2020, to 11 holes drilled in 2021. While final results remain pending from Lynx at the time of this report, Victoria did report results from early 2022 drilling around the current mining areas at Eagle.

In total, 10,342 meters in 23 holes added approximately 500 meters of mineralized strike length from the current Eagle pit boundary. Highlights from the drilling include:



Victoria Gold Corp.'s Eagle gold mine produces roughly 150,000 to 200,000 oz of gold per year, as it has continued to improve operations since its first pour in 2019.

VICTORIA GOLD CORF



Found in the heart of Canada's Yukon, the 555-square-kilometer Dublin Gulch property is home to Eagle as well as Olive gold deposits.

• 301 meters averaging 0.52 g/t gold from a depth of 102 meters; including 69.5 meters averaging 0.72 g/t gold from 244 meters in hole DG22-1006C.

• 215 meters averaging 0.6 g/t gold from 206.5 meters; including 51 meters averaging 0.88 g/t gold from 355.5 meters in DG22-1013C.

• 72.3 meters averaging 1.14 g/t gold from surface; including 32.7 meters averaging 2.24 g/t gold from 50.3 meters in DG22-1017C.

• 240.3 meters averaging 0.63 g/t gold from 254 meters; including 78 meters averaging 1.29 g/t gold from 284 meters in DG22-1023C.

Drilling from the last two years of Eagle exploration has continued to define Eagle-style mineralization along strike and peripheral to existing Eagle Mine gold resources. Importantly, this includes Eagle West and Eagle Extension zones near the current mining.

"Now that Eagle is operating, our team has turned its attention to the systematic exploration of the numerous targets on the block," said McConnell. "We fully expect more discoveries in the future."

CHAIRMAN: T. Sean Harvey PRESIDENT & CEO: John McConnell VP, EXPLORATION: Helena Kuikka

CASH AND CASH-EQUIVALENTS: C\$36 million (Sept. 30, 2022) WORKING CAPITAL: C\$102.7 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$501.8 million (Nov. 28, 2022)

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56 MINING EXPLORERS





Banyan connects the dots to expand AurMac

Looking to add to the 4 million ounces of gold it has already outlined at AurMac, Banyan Gold Corp.'s 2022 drill program systematically expanded the footprint of the Powerline and Aurex Hill deposits on this road-accessible project in the Yukon.

Located about 40 kilometers (25 miles) south of Victoria Gold Corp.'s Eagle Gold Mine and adjacent to Hecla Mining Company's Keno Hill Silver District, AurMac began 2022 with just under 1 million oz of gold in two deposits – Powerline and Airstrip.

The systematic drilling carried out by Banyan since the 2020 calculation, however, added 3 million oz of gold to the resource.

According to an estimate published in May, Airstrip hosts 42.5 million metric tons of pit-constrained inferred resource averaging 0.64 g/t (874,000 oz) gold; Powerline hosts 152 million metric tons of pit-constrained inferred resource averaging 0.59 g/t (2.9 million oz) gold; and Aurex Hill hosts 12.5 million metric tons of pit-constrained inferred resource averaging 0.53 g/t (215,000 oz) gold.

CHRISTIE

TARA

BanvanGol

"This resource estimate demonstrates the value generated by Banyan with 40,000 metres of drilling adding over 3 million ounces of inferred mineral resources," said Banyan Gold President and CEO Tara Christie during the announcement. "All three deposits are open, with mineralization known to extend beyond the current block model boundaries."

The newest resource now factors in Aurex Hill, which was not a part of its previous estimate.

Toward the goal of pushing the AurMac gold resource to above 6 million oz, Banyan completed more than 50,000 meters of drilling in more than 200 holes targeting the expansion and apparent connection of the Powerline and Aurex Hill deposits, which previously lay roughly 1,200 meters apart.

While at least 80% of the 2022 drilling focused on expansion of the mineralization at Powerline and the connecting Aurex Hill deposit, the remaining 20% tested high-priority regional targets on the AurMac and adjacent Nitra property.

Highlights from the results at Powerline include:

- 175.8 meters averaging 0.57 g/t gold in AX-22-224.
- 177.9 meters averaging 0.47 g/t in hole DDH AX-22-251.
- 114.1 meters averaging 0.52 g/t gold in DDH AX-22-252.
- 31.8 meters averaging 1.8 g/t gold in DDH AX-22-258.
- 28.2 meters averaging 0.89 g/t gold in DDH AX-22-272.
- 145.8 meters averaging 0.52 g/t gold in DDH AX-22-277.



Vivid aurora over Banyan Gold's AurMac project in the Yukon.



Banyan is steadily expanding gold resources at its AurMac project in the Yukon.

"This resource estimate demonstrates the value generated by Banyan with 40,000 metres of drilling adding over 3 million ounces of inferred mineral resources."

-Banyan Gold President and CEO Tara Christie

- 30.9 meters averaging 1.27 g/t gold in DDH AX-22-293.
- 64.4 meters averaging 0.81 g/t gold in DDH AX-22-313.
- 84.4 meters averaging 1.13 g/t gold in DDH AX-22-320.
- 71.5 meters averaging 0.92 g/t gold in DDH AX-22-339.

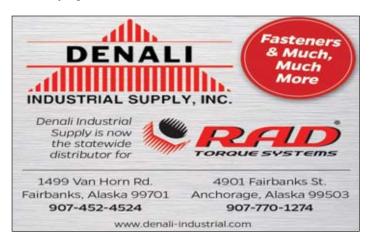
Much like 2021, the extensive and systematic 100-meter step-out method has continued to rapidly expand the gold mineralized footprint at Powerline and Aurex Hill.

"Both deposits remain open, with impressive results from the furthest north-eastern hole drilled in Powerline (AX-22-320) which returned an impressive 1.13 g/t gold over 84.4 meters," Christie said in November. "The 2022 drilling programs have now been completed for the season – with over 50,000 meters of core drilled."

PRESIDENT & CEO: Tara Christie VP, EXPLORATION: Paul Gray

CASH AND CASH EQUIVALENTS: C\$17.9 million (June 30, 2022) WORKING CAPITAL: C\$8.9 million (June 30, 2022; closes C\$12.2 million financing on Dec. 22, 2022) MARKET CAPITALIZATION: C\$100.78 million (Nov. 20, 2022)

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SITKA

YUKON TERRITORY

CNSX: SIG.CN

Sitka Gold hits Blackjack on Yukon belt

Sitka Gold Corp. 🦲

Sitka Gold Corp. has been advancing its RC Gold project within the geologically fertile and highly prospective Tombstone Gold Belt region of Canada's Yukon.

RC is an intrusion-related gold project that stands on the same playing field as other multi-million-ounce deposits within the Tombstone belt – Victoria Gold's Eagle and Olive deposits (a combined 4.7 million ounces), Golden Predators' Brewery Creek deposits (1.5 million oz), and Banyan Gold's AurMac deposits (3.99 million oz).

All that remains is the time and effort to unearth its treasures.

Comprised of the RC Gold, Bee Bop, Mahtin, Clear Creek, and Barney Ridge deposits, the RC Gold project is a district-scale land package of 1,891 claims covering 376 square kilometers (92,900 acres) in the heart of this heavily endowed gold belt.



CORWIN COE

After acquiring the property in 2019, Sitka followed up on its predecessor's (Pacific Ridge Exploration Ltd.) work programs with its own soil sampling and geophysical surveys designed to fill in the previously identified geophysical and geochemical anomalous zones.

In the ensuing years, several high-priority gold targets, where gold values plus the associated pathfinder metals, are typical of mineralization associated with intrusion-related gold deposits.

One of which is a recent zone that has been driving Sitka to explore fervently with its coincidently appropriate name, Blackjack.

The Blackjack discovery hole DDRCCC-21-021 or hole 21, cut 220.1 meters of 1.17 grams per metric ton gold from surface, including 50.5 meters of 2.08 g/t gold. This newly discovered gold zone was found to be open both laterally and at depth with hole 21 being the first hole drilled through this gold mineralized interval.

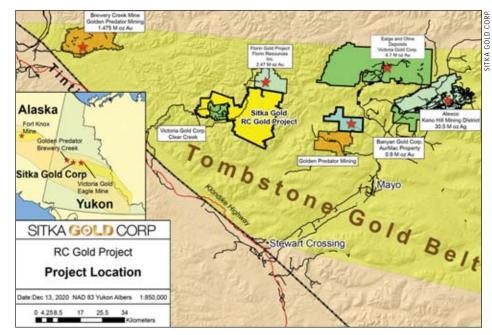
Sitka followed up on its Blackjack discovery with a more than 7,700-meter drill program carried out in 2022.

During the winter portion of this program, which involved 1,243 meters of drilling in four holes, Sitka cut 205.8 meters averaging 1.01 g/t gold from surface in hole DDRCCC-22-023.

"Hole 23 has produced some impressive results with characteristics similar to those seen in our initial Blackjack zone discovery hole and our first follow-up hole and continues to demonstrate that we have found a structurally controlled, high-grade gold corridor within a larger intrusion-related gold system at RC Gold," said Sitka Gold CEO Corwin Coe.



Sitka Gold's phase two 2022 program at RC project in the Yukon primarily followed up on the Blackjack discovery hole, which intercepted 220.1 meters averaging 1.17 g/t gold.



Wrapping up the second phase of drilling ahead of schedule in August, Sitka completed another 20 holes for approximately 6,500 meters.

Primarily designed to focus on stepping out laterally and vertically from the famed discovery hole 21, Sitka reported that all the holes of its summer 2022 drill program intersected mineralization, with visible gold identified in the majority drilled.

Highlights from 2022 Blackjack drilling include:

• 116 meters averaging 0.65 g/t gold in hole DDRCCC-22-029.

• 146.6 meters averaging 0.90 g/t gold in hole DDRCCC-22-030.

• 19 meters averaging 1.03 g/t gold in hole DDRCCC-22-033.

• 132 meters averaging 0.51 g/t gold in hole DDRCCC-22-036.

Furthermore, the company identified a

large 500- by 2,000-meter intrusion-related gold system on RC spanning the Blackjack, Saddle, and Eiger zones, which was the main concentration of Sitka's drill program for the last three years.

CEO: Corwin Coe PRESIDENT: Donald Penner VP, EXPLORATION: Scott Price

CASH AND CASH EQUIVALENTS: C\$2.9 million (Sept. 30, 2022) WORKING CAPITAL: C\$2.8 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$20.5 million (Nov. 28, 2022)

1500 – 409 Granville Street Vancouver, BC, V6C 1T2 Tel: 604-979-0509 ccoe@sitkagoldcorp.com www.sitkagoldcorp.com EGEND GOLD SILVER COPPER ZINC LEAD NICKEL COAL LITHIUM PGM DIAMONDS



As a relatively new junior to the rich fields of the Yukon, Snowline has made it quickly apparent it aims to cement its position as a top Yukon explorer.

YUKON TERRITORY Snowline Gold Corp. —

CNQ: SGD.CN



Snowline shines new light on the Yukon

Just shy of two years after its inception, Snowline Gold Corp., a junior mining company with deep prospecting roots in the Yukon and backed by savvy investment partners, is quickly emerging as one of northern Canada's most active and enticing gold explorers.

As a more recent addition to the North of 60 Mining News coverage area, Snowline has rapidly positioned itself into some of Yukon's most exciting new gold.

"We've really gone out to new parts of the Yukon that haven't been looked at intensively before," said Snowline CEO and co-founder Scott Berdahl.

This includes the Rogue, Einarson, Ursa, Cynthia, and Rainbow in the Selwyn Basin near Yukon's eastern border with Northwest Territories and the Tosh and Cliff projects closer to Yukon's western border with Alaska.

Its cornerstone position in the Selwyn Basin already represents the opportunity as first-movers in developing a new greenfield district-scale gold system, and so immediately sought to expand its holdings by acquiring even more of this prospective region.

Already holding a substantial position within the Selwyn Basin, Snowline nearly doubled its landholding to roughly 254,000 hectares (628,000 acres) with the acquisition of StrikePoint Gold Inc.'s Yukon gold exploration properties.

Given its ongoing exploration success at the Rogue project, Snowline determined to acquire the surrounding claims from StrikePoint, which the company believes to be prospective for a similar style of mineralization.

The properties acquired from StrikePoint included the Golden-Nug-Oly, Can East, Horn, How, MacEast, Nordic, Otter, PPM, TET, and Tintina. In addition to its newest targets, Snowline also significantly expanded its properties through staking. Newly acquired areas were identified by the Snowline team as having an elevated potential to host gold deposits based on geological, geochemical, and geophysical information and based on the company's evolving understanding of rock and mineralization in this area through its surface and drill campaigns.

In March, the company launched a 13,320-meter drill program to expand upon exciting gold zones on its flagship 72,000-hectare (195,120 acres) Einarson and Rogue projects.

This drilling cut thick zones of strong gold mineralization that extend from surface to depths greater than 300 meters.

Highlights from initial assays from 2022 drilling at the Valley zone on the Rogue property include:

- 331.3 meters averaging 1.03 g/t gold in hole V-22-005.
- 288 meters averaging 2.3 g/t gold in hole V-22-007.
- 318.8 meters averaging 2.55 g/t gold in hole V-22-010.
- 258.2 meters averaging 1.45 g/t gold in hole V-22-014.

"The continuity of strong grades from Valley's central zone, seen both within holes along hundreds of metres and between holes spaced hundreds of metres apart, demonstrates the presence of a large and robust, unusually rich bulk tonnage gold system," said Berdahl. "Comparable quartz vein densities –often with numerous instances of trace visible gold – in many holes for which assays have yet to be received have the potential to carry similar grades."

With a plethora of properties, intuitive investors, and a wealth of experience in this rugged northern territory, Snowline has only just begun to shine its light on parts of the Yukon that have never seen extensive exploration before.

"Our competitive advantage was to go out to places and get onto the green areas that are not on the beaten path. We really bring a lot of parts that haven't been seen before. We've really shone a new light on the Yukon. We're happy to be shining light on that potential," finished Berdahl. Assays were pending from 80% of the 2022 assays at the time of this report.

CHAIRMAN: Craig Hart CEO: Scott Berdahl EXPLORATION MANAGER: Thomas Branson

CASH AND CASH EQUIVALENTS: C\$26.3 million (Sept. 30, 2022) WORKING CAPITAL: C\$22.9 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$358.2 million (Nov. 28, 2022)

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YUKON TERRITORY

Rockhaven Resources Ltd.

TSX-V: RK.V 🕋

Clear-cut year of exploration for Rockhaven

Toward the goal of advancing Klaza to the prefeasibility stage, Rockhaven Resources Ltd. completed 12,042 meters of drilling in 2022,

focused primarily on upgrading as much inferred resource to the indicated category.

"We anticipate the completion of the fullyfunded pre-feasibility study by mid-2023," said Rockhaven Resources President and CEO Matthew Turner. "Thanks to the hard work of our crews and contractors, we were able to stay within budget and accommodate an extra 2,000 meters of



MATT TURNER

drilling which should add to the overall project economics. Additionally, we carried out a 10day work program on some of our most compelling regional targets and eagerly await assays."

A 2020 preliminary economic assessment for Klaza outlines plans for a mine that would produce roughly 750,000 ounces of gold and 13.8 million oz of silver over a 12-year mine life.

This scoping level study is based on 4.46 million metric tons of indicated resource averaging 4.8 grams per metric ton (686,000 oz) gold and 98 g/t (14.1 million oz) silver; plus 5.71 million metric tons of inferred resource averaging 2.8 g/t (507,000 oz) gold and 76 g/t (13.9 million oz) silver outlined at the Klaza project so far.

Since this resource was calculated in 2018, Rockhaven has completed significant drilling at Klaza, including a 14,256-meter drill program completed during 2021 that included 11 holes to test resource expansion targets, 30 to evaluate targets outside of the immediate resource area, and 31 focused on upgrading inferred resource.

In preparation for this year's prefeasibility study, Rockhaven's 2022 program included:

• Resource expansion drilling in the eastern portion of Central BRX Zone, which lies immediately adjacent to but outside of the existing mineral resource and the mine plan envisioned in a 2020 PEA.

• Target evaluation drilling to test the potential of the Western BRX Extension Zone, where one hole drilled in 2021 cut 0.54 meters averaging 1,160 g/t gold.

 Geotechnical drilling for open pit designs in the prefeasibility and sonic drilling to map overburden layers at the proposed tailings and mill site areas.

The collection of more than 1,000 kilo-



Rockhaven's 2022 drilling focused on advancing Klaza toward prefeasibility.



The Klaza property is found in the Dawson Range Gold Belt in the Yukon.

grams of core samples for prefeasibility level metallurgical testing, including pre-concentration, flotation, and concentrate optimization.

"The 2022 program was designed to upgrade as many of the remaining inferred mineral resources to the indicated category as possible for their inclusion in the upcoming pre-feasibility study," said Turner. "Additionally, all of the required information from sitebased work was collected, which included geotechnical, ground stability, environmental and metallurgical data.

CHAIRMAN: Bruce Youngman PRESIDENT & CEO: Matthew Turner CHIEF OPERATING OFFICER: Manuel Estrada

CASH AND CASH EQUIVALENTS: C\$3.6 million (Sept. 30, 2022) WORKING CAPITAL: C\$2.98 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$20.7 million (Nov. 20, 2022)

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YUKON & NORTHERN BC

TSX-V: ATC.V 📶

ATAC regrouped, builds strong ensemble

ATAC Resources Ltd. 🔴 🔵 🛑

Following the denial of a tote road to its Rackla Gold project in the Yukon, ATAC Resources Ltd. diversified its portfolio and got back into the Canadian mineral exploration frav.

"The last two years have provided obvious challenges. However, during this time we have been very active advancing our copper-gold projects and conducting numerous comprehensive property evaluations, while preserving our treasury for the opportunities that lie before us

now," ATAC President and CEO Graham Downs penned in a letter to shareholders.

As 2022 got underway, ATAC optioned the Catch copper-gold property from Yukon-based geologist Ryan Burke.

Located in an underexplored part of southcentral Yukon, roughly 56 kilometers (35 miles) southeast of Carmacks, the property is ideally situated near an allseason highway and powerline.

"The addition of the Catch property to our growing copper and gold portfolio presents a rare opportunity to advance a brand new copper-gold discovery located at the underexplored northern end of a very fertile geological terrane," said Downs.

Results from early sampling of this fertile property

included 52.4 grams per metric ton gold with 0.12% copper and 41.7 g/t silver; 4.4 g/t gold with 0.88% copper; 1.3 g/t gold with 1.36% copper; and 1.9 g/t gold with 228 parts per million molybdenum.

Furthermore, seven hand trenches, totaling 40 meters, dug over a 400- by 250-meter area and 140-meter vertical extent averaged 0.27% copper and 0.41 g/t gold.

"Preliminary results from initial exploration at Catch have already delineated a very significant zone of strongly elevated copper and gold," said Downs. "We believe this is evidence of a large mineralized system with potential for a copper-gold porphyry."

The initial phase of exploration at Catch consisted of prospecting, mapping, soil sampling, and geophysical surveys. Due to the promising results, ATAC had crews return to Catch to initiate a second phase that included prospecting, mapping, sampling, as well as maiden reverse circulation drilling.

Shortly after Catch, the company added the PIL copper-gold-silver project in Northern British Columbia to its portfolio.

Located about 15 kilometers (nine miles) east of Benchmark Metals' Lawyers gold-silver project, this road-accessible property optioned from Finlay Minerals Ltd. covers numerous highly prospective copper-gold porphyry and epithermal gold-silver targets within a prolific and highly active part of BC's Golden Horsehoe.

ATAC's 2022 exploration at PIL turned up samples with as much as 18.4% copper and 111 g/t silver at the Spruce target; 3.89% copper and 173 g/t silver at the PIL South Target; and 78.3 g/t gold and 2,830 g/t silver in outcrop at the Atlas target.

"This initial program at PIL has defined a number of priority targets for follow-up work," said Downs. "Sampling at Spruce returned the highest copper grades ever collected on the property."

While much of its 2022 exploration focused on its new copper-gold properties, the company returned to Rackla Gold with the first drill program in more than four years.

The 2022 program at Rackla included 1,551 meters of diamond drilling focused on expanding Osiris, a Carlin-style gold deposit on the Nadaleen property that hosts 5.5 million metric tons of indicated resource averaging 4.12 g/t (732,000 oz) gold; plus 9.4 million metric tons of inferred resource averaging 3.47 g/t (1.04 million oz) gold.

Highlights from the 2022 drilling at Osiris included 33.2 meters averaging 2.63 g/t gold in hole OS-22-283; and 10.8 meters averaging 3.69



Copper-rich samples from a hole dug by ATAC's Catch project in the Yukon.

"The last two years have provided obvious challenges. However, during this time we have been very active advancing our copper-gold projects and conducting numerous comprehensive property evaluations, while preserving our treasury for the opportunities that lie before us now."

-ATAC President and CEO Graham Downs

g/t gold in hole OS-22-285.

While we only conducted a small-scale program this year, these results are a great reminder of the high-grade nature of the Osiris deposit and the potential for significant resource growth through systematic step-outs along strike and at depth," said Downs.

ATAC also completed a maiden reverse circulation drill program to test the porphyry copper potential of this property about 65 kilometers (40 miles) west of Dawson City, Yukon.

CHAIRMAN: Robert Carne PRESIDENT & CEO: Graham Downs VP, EXPLORATION: Adam Coulter

CASH AND CASH EQUIVALENTS: C\$7.3 million (Sept. 30, 2022) WORKING CAPITAL: C\$6.9 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$18.9 million (Nov. 20, 2022)

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GRAHAM

DOWNS

YUKON TERRITORY

TSX-V: MNTO.V 🚮

Copper demand breathes life into Minto

Minto Metals Corp. 🔴 🔵

After being spun out from parent purchaser Pembridge Resources plc, Minto Metals Corp. kicked off the year with its strongest quarter yet with production results from its Minto copper mine in central Yukon.

Bought from Capstone Mining Corp. in early 2018, Pembridge managed to complete its first full year of operations in 2020, despite the ongoing challenges of the COVID-19 pandemic.

Toward the end of that year, the company completed the formation of Minto Metals Corp., a TSX Venture Exchange-listed

company that now operates the Minto Mine. The mine itself has been in operation since 2007, with underground mining commencing in 2014. Over the past 15 years, approximately 500 million pounds of copper have been produced from this operation.



MINTO METAL

Even after all that mining, based on an early preliminary economic assessment prepared for Pembridge, Minto is expected to produce 277 million lb of copper, 129,000 ounces of gold, and 930,000 oz of silver over an eight-year mine life.

CHRIS STEWART

The mine outlined in the PEA is based on 11.09

million metric tons of measured and indicated resources averaging 1.46% (356 million lb) copper, 0.53 grams per metric ton (189,000 oz) gold, and 4.75 g/t (1.86 million oz) silver; pus 13.03 million metric tons of inferred resource averaging 1.29% (370 million lb) copper), 0.49 g/t (207,000 oz) gold, and 4.55 g/t (2.09 million oz) silver.

Overall, the mine is forecast to average 38 million lb of copper,





The Minto copper-gold mine is located roughly 240 kilometers (149 miles) from Yukon's capital, Whitehorse. Since 2007, approximately 500 million pounds of copper have been produced from Minto.

"After a challenging start in 2021, the team has shown tremendous perseverance and has now put together five months in a row of strong operating results as we carried our momentum from November and December 2021 into the first quarter of 2022." -Minto Metals President and CEO Chris Stewart

17,600 oz of gold, and 129,000 oz of silver annually over the next five vears

"After a challenging start in 2021, the team has shown tremendous perseverance and has now put together five months in a row of strong operating results as we carried our momentum from November and December 2021 into the first quarter of 2022," said Minto Metals President and CEO Chris Stewart.

With this momentum. Minto Metals produced a record 9.1 million lb of copper during the first quarter of 2022, an increase of 70.7% compared to the 5.3 million Ib produced during the first three months of 2021

With copper output on the rise, Minto carried out a roughly 30,000meter drill program during 2022 focused on adding to the resources at this Yukon copper operation.

Some of the highlights from this drilling include:

• 25.97 meters averaging 1.34% copper in hole 21EXP016 (Minto East 2 extension).

• 2.05 meters averaging 3.83% copper, and 15.1 meters of 0.79% copper in hole 21EXP019 (Minto North).

• 15.99 meters averaging 1.42% copper in hole 21DSME-005 (Minto East 2)

• 29.39 meters averaging 0.46% copper in hole 22EXP023 (new discovery).

• 12.16 meters averaging 2.11% copper in hole 22EXP031 (CU Keel South)

• 4.41 meters averaging 1.3% copper in hole 22EXP034 (Ridgetop).

"This phase of drilling focused on high priority, untested exploration targets adjacent to the current resource base and followed-up on successful discovery holes from the 2021 drill campaign," said Minto Metals Vice President of Exploration David Benson.

CHAIRMAN: R. Greg McKnight PRESIDENT & CEO: Chris Stewart VP, EXPLORATION: David Benson

CASH AND CASH EQUIVALENTS: C\$3 million (Sept. 30, 2022) WORKING CAPITAL: C\$47.2 million deficit (Sept. 30, 2022) MARKET CAPITALIZATION: C\$86 million (Nov. 20, 2022)

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MINING EXPLORERS

YUKON TERRITORY

Western Copper and Gold Corp. 🔴 🌘

NYSE: WRN 📶

Yukon Gateway program will connect Casino

With access road construction underway, Western Copper and Gold Corp. prepped its world-class Casino gold-silver-copper-molybdenum project to be ready for development with exploration and expansion programs to crack open this jackpot discovery.

Located about 300 kilometers (186 miles) northwest of Whitehorse, this highly

prospective project that Western Copper and Gold subsidiary, Casino Mining Corp., has been advancing since acquiring the property in 2008 is found within the traditional territory of the Selkirk First Nation. Historically, two prefeasibility studies and a feasibility study on developing a mine at Casino have been released. Western Copper and Gold, however, has substantially expanded the deposit and, in 2021, published a preliminary economic assessment outlin-



WEST-SELLS

ng an economically robust mine at Casino. The 2021 PEA came on the heels of Rio Tinto

Canada Inc.'s C\$25.6 million (US\$21.2 million) investment to acquire a roughly 8% stake in Western and a foothold in Casino.

With the strategic investment from Rio Tinto, Western finalized a 2022 feasibility study that details plans for an open pit mine with a 120,000-metric-ton-per-day and 25,000 tpd oxide heap leach facility that is expected to average 163 million lb of copper, 211,000 oz of gold, 1.28 million oz of silver, and 15.1 million lb of molybdenum annually over a mine life of 27 years.

With the completion of the feasibility study, Casino hosts 1.22 billion metric tons of proven and probable reserves averaging 0.19% (5.08 billion lb) copper, 0.22 grams per metric ton (8.5 million oz) gold, 1.7 g/t

(64.9 million oz) silver, and 0.021% (572 million lb) molybdenum. The mine detailed in the study would generate an estimated after-tax net present value (5% discount) of C\$5.77 billion and an 18.1% after-tax internal rate of return.

"The results from the feasibility study confirm the project's robustness and ability to withstand inflationary pressures," said Western Copper and Gold President and CEO Paul West-Sells. "This study reaffirms Casino as one of the very few long-life copper-gold projects with robust economics in a top mining district, the Yukon."

In order to maximize this world-class deposit, Western Copper and Gold has been waiting patiently for the finalization of the Yukon Resource Gateway Program, a C\$469 million contract for the Carmacks Bypass Project, the first of eleven projects that comprise the mining road improvement program in the Yukon.

Set to initially connect a road south of Carmacks to join the existing Freegold Road, the road upgrade and extension has been a long time coming and, once in play, will provide Casino with a means of delivering copper concentrates to global markets.

With the positive feasibility study and road access inching closer, Western is preparing to submit permits for developing the Casino Mine.

"We are continuing to collaborate with our strategic investor, Rio Tinto, and continue to engage with First Nations and community stakeholders to advance this project toward the submission of Casino's environmental and socio-economic statement in mid-2023," said West-Sells.

CHAIRMAN: Kenneth Williamson PRESIDENT & CEO: Paul West-Sells CHIEF OPERATING OFFICER: Ken Engquist

CASH AND CASH EQUIVALENTS: US\$4.99 million (Sept. 30, 2022) WORKING CAPITAL: US\$25.3 million (Sept. 30, 2022) MARKET CAPITALIZATION: US\$236.5 million (Nov. 28, 2022)

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WHITE GOLD CORP

EXPLORERS AT A GLANCE



All of the significant grassroot discoveries for White Gold were made with soil sampling, a trend the company will most likely not change.

WHITE GOLD CORP

YUKON TERRITO

TSX-V: WGO.V 🕋

Good old rock picking works for White Gold

Boots on the ground and soil samples in hand, ground truth exploration is a time-tested method that has led to many of White Gold Corp.'s various discoveries across its more than 1 million acres of prospective land in Yukon's prolific White Gold District, and 2022 exploration was no different.

With exploration across more than a dozen properties, targets, zones, or areas, there is a lot of ground to cover, and each program seems to unearth more and more for this Yukon gold miner.

"All of the significant grass roots discoveries in the White Gold District were initially identified through soil sampling," said White Gold CEO David D'Onofrio.

This search for trace elements in dirt that indicates gold in the bedrock below led to the discovery of White Gold's advanced stage Golden Saddle, Arc, and VG deposits – with the former two hosting 15.6 million metric tons of indicated resource averaging 2.28 grams per metric ton (1.14 million ounces) gold and 9 million metric tons of inferred resource averaging 1.39 g/t (402,100 oz) gold; and the latter hosting 5.3 million metric tons of inferred resource averaging 1.62 (267,600 oz) gold.

This same soil sampling led to earlier stage discoveries such as Ryan's Surprise, Ulli's Ridge, and Betty, which had some exciting results during the 2022 exploration season.

Even adding on many new early-stage properties, White Gold has maneuvered itself into an unshakable position with a project that is difficult to ignore.

Setting the tone for the year, White Gold announced a significant high-grade discovery at Ulli's Ridge, an intriguing gold target about 2,000 meters southwest of the Golden Saddle and Arc deposits. As the company first tested Ulli's Ridge with rotary air blast (RAB) drilling early in the 2021 season, White Gold found it prudent to follow up on the success of the results.

Highlights from 2021 drilling at Ulli's Ridge include: 5.13 meters averaging 2.04 g/t gold; eight meters averaging 1.03 g/t gold; 4.1 meters averaging 2.44 g/t gold; 4.49 meters averaging 1.91 g/t gold; 19.5 meters averaging 6.94 g/t gold; and 18.5 meters averaging 1.36 g/t gold in hole WHTULR21D005.

Due in part to these substantial results, White Gold mapped out an extensive C\$6 million program largely supported by strategic partners

Agnico Eagle Mines Ltd. and Kinross Gold Corp.

The 2022 program was slated to include roughly 7,500 meters of drilling, including 5,000 meters of diamond drilling, 1,000 of reverse circulation (RC) drilling, and 1,500 meters of RAB drilling.

Drilling on the White Gold property began by focusing on the Ulli's Ridge and adjacent Ryan's Surprise target areas with the purpose of testing the gap area between the prospects to determine if they are part of the same mineralized zone and to further test the high-grade gold discovery at Ulli's where the 2021 drilling intersected 6.94 g/t gold over 19.5 meters in hole WHTULR21D004.

By July, the drills were shipped over to Betty. Intended to focus primarily on the Betty Ford and Mascot targets, this phase of drilling included roughly 2,200 meters of diamond drilling and 1,650 meters of reverse circulation drilling.

2022 drilling at Betty Ford focused on testing depth and strike extents of the gold mineralized zone identified during the 2021 program – which included 3.46 g/t gold over 50 meters in hole BETFD21D003 and 1.17 g/t gold over 48 meters in hole BETFD21D001.

Hole BETFD22D007, which cut 55.15 meters averaging 1.5 g/t gold, extended Betty Ford mineralization by 40 meters along strike. Highlihgts from 2022 RC drilling at Mascot include 27.43 meters averaging 1.14 g/t gold; 9.14 meters averaging 1.48 g/t gold; 8.6 meters averaging 2.02 g/t gold; 17.35 meters averaging 1.25 g/t gold; and 3.95 meters averaging 2.85 g/t gold.

Although drilling was a large part of the focus for the year, White Gold did not stray from its proven methodologies. A regional earlystage exploration program included 10 properties with the goal of identifying and defining new targets.

Sticking to its roots, surface sampling identified significant copper, gold, and other multi-element soil anomalies within the Hayes and Pilot properties.

"We are encouraged by these results, especially with respect to their proximity to other significant deposits and new discoveries and are eager to follow up," said D'Onofrio.

CEO: David D'Onofrio CHIEF TECHNICAL ADVISOR: Shawn Ryan VP, EXPLORATION: Terry Brace

CASH AND CASH EQUIVALENTS: C\$2.3 million (Sept. 30, 2022) WORKING CAPITAL: C\$2.1 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$38.9 million (Nov. 28, 2022)

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Northern BC Exploration 2022

Northern BC offers ESG mining benefits

Working with First Nations is key to unlocking vast potential

By SHANE LASLEY

Mining News

A world-class copper-gold district that is also enriched with nickel, cobalt, platinum group metals, and other critical minerals, the Golden Triangle region of Northern British Columbia is

poised to be a major supplier of the mined commodities critical to a low-carbon future, cuttingedge technologies, and strong global economies.

"Responsible mineral exploration and development are critical to addressing our global challenges," said Association for Mineral Exploration BC President and CEO Kendra Johnston. "The minerals and metals we discover ignite global supply chains, drive innovation and technology transformation, power new energy solutions, and help achieve a low-carbon future."



CHAD NORMAN DAY

The four largest and most advanced copper projects in Northern BC – Galore Creek, KSM, Red Chris, and Schaft Creek – host 4.5 billion pounds of copper in the measured and indicated categories. Aside from the exploration upside at these world-class copper-gold-silver projects, dozens of mineral exploration and mining companies are advancing other Northern BC projects enriched with cobalt, copper, gold, nickel, PGMs, zinc, and other metals.

And, thanks to the foresight and investment of the provincial government, the 287-kilovolt Northwest Transmission Line delivers hydropower to current and future mines in the Golden Triangle – a major advantage that lowers the carbon footprint and increases the environmental credentials of operations plugged into this clean energy source.

Mineral exploration, development, and production companies working in British Columbia's northern reaches can and must establish the social and governance of their ESG reputations by opening and honestly working alongside the First People that have called this mineral-rich expanse of western Canada home for millennia.

Mining companies that respect First Nations jurisdiction when it comes to land management in Northern BC will find their hosts to be a well-organized, politically savvy, and business-astute people that also happen to be sophisticated miners with generations of experience.

Exploring Tahltan Territory

While Golden Triangle is a fitting and easily marketable moniker, Tahltan Territory is a more apt descriptor for this incredibly mineral-rich region of northwestern BC.

Extending east from the Southeast Alaska Panhandle to the Cassiar Mountain range and north from the Nass and Skeena Rivers into the Yukon, the roughly 96,000square-kilometer (37,000 square miles) Tahltan Territory covers approximately 70% of the Golden Triangle and nearly 25% of Northern BC.

"Tahltan Territory is home to British Columbia's resource rich 'Golden Triangle' and a booming mineral exploration industry," said Chad Norman Day, president of the Tahltan Central Government, the administrative governing body of the Tahltan Nation.

It is estimated that nearly half of the 2022 mineral exploration in BC was carried out in Tahltan Territory.

This flourishing mineral exploration sector has outlined world-class deposits with the potential to be developed into Golden Triangle mining operations that could join the current Red Chris coppergold and Brucejack gold-silver mines – both operated by Newcrest Mining Ltd.

Eskay Creek, a gold-silver mine project being advanced by Skeena Resources Ltd.; KSM, an enormous copper-gold-silver project owned by Seabridge Gold Inc.; Galore Creek, a world-class copper-gold project to be developed under a partnership between Teck Resources Ltd. and Newmont Corp.; and Lawyers, a gold-silver project being advanced by Benchmark Metals Inc., are high on the list of advanced exploration projects positioned to host the next generation of mines within the Tahltan Territory.

The Tahltan Nation is taking an increasingly active role in ensuring that exploring for, building, and operating mines in its homeland offers more benefits to the Tahltan people than potential risks to the cultural and environmental resources found there.

"The Tahltan Central Government has been clear on behalf of all Tahltan people that there will be no world-class mining jurisdiction in Tahltan Territory without robust Tahltan stewardship which must include world-class wildlife and fisheries management, strong environmental mitigation measures and recognition of our 1910 Declaration," said Day.



A technician with core from the 2021 drilling at Giga Metals' Turnagain nickel-cobalt project in BC.

Historic step at Eskay Creek

The Tahltan Nations' role in ensuring environmentally and culturally responsible mines in its territory was cemented by a landmark mine permitting agreement signed in June that reshapes the mine permitting process in Tahltan Territory, the province, and potentially across all of Canada.

Under this historic pact with Skeena, Eskay Creek will be the first proposed mine in BC to have permits authorized by an indigenous government, marking a significant step toward incorporating the principles of the United Nations Declaration on the Rights of Indigenous Peoples, commonly referred to as UNDRIP, into the environmental assessment process.

"Reconciliation is not achieved with just one step. It requires ongoing innovation, collaboration and leaning into discomfort," Day said upon signing the agreement. "For the Tahltan people, strengthening and preserving our culture, values and independence is why we keep pushing forward on this journey."

BC officials say the agreement for con-

sent-based permitting of Eskay Creek honors Tahltan jurisdiction when it comes to land management decisions in its territory.

"This historic step shifts B.C.'s legal decision-making framework to respect First Nations jurisdiction, recognize the inherent rights of the Tahltan and provide a clear, stable and sustainable path for everyone to work together," said British Colombia Premier John Horgan. "By working together, we are delivering on the promise of reconciliation, supporting predictability for business and encouraging responsible investment in B.C."

By taking the lead in First Nations reconciliation and incorporating UNDRIP principles into the permitting process, the provincial government hopes to establish BC as a preferred destination for investors that are increasingly considering ESG as they weigh mine investment decisions.

"We are creating regulatory clarity and greater certainty for investors while protecting our natural environment for the generations to come," said BC Minister of Environment and Climate Change Strategy George Heyman.



Water samples being collected as part of Seabridge Gold's C\$12 million voluntary reclamation of the historical Johnny Mountain Mine site on the company's Iskut project in Tahltan Territory.

This landmark decision also puts a seat at the table for other BC First Nations when it comes to the environmental assessment of mining projects in their territory and opens the door for similar consent-based decision-making processes for resource development projects across Canada.

"Together, the Tahltan Central Government and the province are leading the way toward a new model for advancing free, prior and informed consent," said BC Minister of Indigenous Relations and Reconciliation Murray Rankin.

Tahltan mine partnership

For Skeena, the agreement provides greater certainty and a solid framework for permitting a modern operation at the pastproducing Eskay Creek mine. A feasibility study completed in September details a financially robust mine at Eskay Creek that will produce 2.42 million oz of gold and 66.7 million oz of silver over nine years of open pit mining on a property that previously mined from underground.

"Eskay Creek is a truly unique deposit that provides excellent profit margins due to its existing infrastructure and very high open pit grade," said Skeena Resources CEO Walter Coles Jr.

Over the past five years, Skeena has worked closely with the Tahltan Nation and its people, a key to gaining the First Nation's consent for what is now known as the Eskay Creek Revitalization Project.

"As an already developed mine site with existing road access, waste management facilities, nearby access to green power, and robust economics, gaining consent from the Tahltan Nation on whose unceded land Eskay Creek is located, is a crucial step in an efficient approval process for the project," said Skeena Resources Senior Vice President of External Affairs and Sustainability Justin Himmelright.

Above and beyond respect and consent, Skeena has received financial backing from the Tahltan Nation.

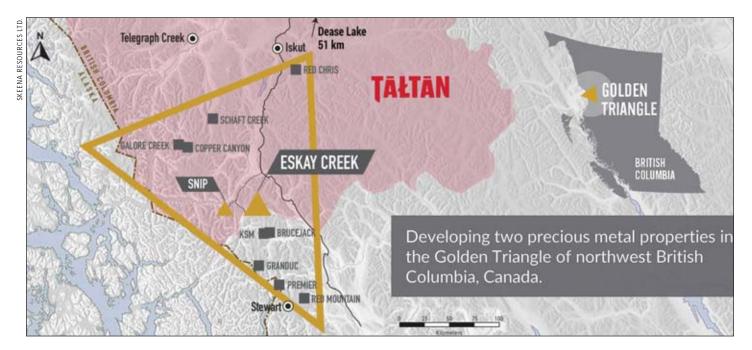
Under the 2021 agreement, the Tahltan Central Government invested C\$5 million to acquire 1.6 million investment rights at C\$3.13 per right. These rights will automatically vest and convert into Skeena shares over a three-year period

"In partnering with Skeena, the Tahltan Nation is evolving and taking significant steps forward by becoming meaningful equity partners in these projects," said Day. "Ownership provides the Tahltan Nation with a strong seat at the table as we continue our pursuit towards capacity building and economic independence for the Tahltan people."

Nisga'a Nation partners with Ascot

The prior and informed consent model spearheaded by the Tahltan is playing out at other advanced exploration projects across Northern BC.

In recent years, the Tahltan Nation has reached comprehensive impact, engagement, and benefit agreements with several companies with advanced staged mineral exploration projects within its territory – including Seabridge, Coeur Mining Inc., Kutcho Copper Corp., and Benchmark Metals Inc.



While the Tahltan are breaking new ground when it comes to Indigenous involvement in mine project decision making in Canada, other Northern BC First Nations are entering into pacts that ensure mining within their regions maximize benefits for their people while minimizing environmental and cultural impacts.

Near the town of Stewart at the southern end of the Golden Triangle, the Nisga'a Nation has forged a strong relationship with Ascot Resources Ltd., which is advancing the development of mines at its Premier and Red Mountain gold-silver projects.

"I am very delighted to represent the Nisga'a Nation in our partnership with Ascot," Nisga'a Lisims Government President Eva Clayton said upon signing a renewed impacts agreement with the mineral exploration and development company in 2021. "Since the beginning, our relationship has been one based on the principle of mutual respect and a commitment to improving the quality of life of Nisga'a citizens."

Under the terms of this comprehensive benefits agreement, Nisga'a Nation will provide ongoing support and continued consultation for the development and future operations of underground gold mines at Premier and Red Mountain, emphasizing respect for the land, protection of the environment, understanding of cultural use and knowledge, as well as health and safety, on and off the worksite.

A feasibility study completed in 2020 envisions a 2,500-metric-ton-per-day operation that is slated to produce roughly 1.1 million ounces of gold and 3 million oz of silver over an initial eight years of mining.

Ascot had previously planned to resume gold production at Premier by around this time but decided to postpone operations by roughly a year due to a lack of adequate financing to complete the tailings dam, new water treatment plant, and other projects that need to be finished during the summer.

"The company has a limited weather window to conduct certain outdoor construction activities and needs to ensure it has sufficient funding to complete these activities and the rest of the project," Ascot Resources President and CEO Derek White said in June.

With the window closing, Ascot decided to focus its 2022 program on continued underground development at Big Missouri, the first deposit to be mined, as well as exploration and resource upgrade drilling across the Premier property.



Crews install a transmission line connecting the Brucejack gold mine a few miles southeast of the KSM copper-gold-silver mine project to BC Hydro's Northwest Transmission Line.

Giga battery metals

While the Golden Triangle is best known for deposits enriched with the copper needed for the low-carbon economy, the gold treasured as hedge against inflation, and silver that lands in both categories, this region of Northern BC also hosts deposits that could help fill the massive demand for nickel and cobalt with a responsibly sourced supply of these battery metals.

The largest and most advanced of these battery metals projects is Turnagain, a large nickel-cobalt deposit being advanced by Giga Metals Corp.

A 2021 preliminary economic assessment outlines plans for a mine at Turnagain that would produce an average of 33,215 metric tons of nickel and 1,962 metric tons of cobalt annually over a 37-year mine life.

In addition to the ESG advantages inherent to developing a mine in BC, Turnagain offers another attractive environmental quality – the tailings from mining the nickel and cobalt at Turnagain would be ideally suited for absorbing carbon dioxide out of the atmosphere.

A team led by University of British Columbia Professor Greg Dipple, who has been studying mineral sequestration of CO2 in mine tailings around the world for more than 15 years, shows the potential for Turnagain to permanently lock up vast amounts of CO2 as carbonate mineral.

Initial testing of Turnagain material showed an average annual absorption rate of 2.7 kilograms of CO2 per square meter.

At this rate, Giga calculates that a mine

at Turnagain could absorb 0.72 metric tons of CO2 per metric ton of nickel produced.

Considering that this operation is estimated to emit 0.75 metric tons of CO2 per metric ton of nickel with an electric haulage fleet charged with BC Hydro power, this baseline absorption would nearly make the mine carbon-neutral without any optimizations.

Dipple's testing, however, indicates that the CO2 absorption rates would increase under actual mining scenarios.

"We now have empirical data that supports our ambition to build the world's first true carbon-neutral nickel mine, meaning a project that achieves carbon neutrality without purchasing carbon credits," said Giga Metals President Martin Vydra.

The testing also showed that only about 10% of the brucite – a magnesium hydroxide mineral at Turnagain responsible for sponging atmospheric CO2 – was consumed during the one-month sequestration test, indicating that Turnagain mine tailings would absorb more of the greenhouse gas with longer exposure to the air.

While much more detailed and longerterm testing will need to be done, a mine at Turnagain with an electrified mining fleet powered by the hydroelectric Northern BC is known for has the potential to be a CO2-negative producer of nickel and cobalt.

"We recognize the growing importance of strong ESG performance from commodity producers," said Vydra. "We are proud that our project is at the forefront of being able to contribute to a carbon-free industry."



An aerial view of Newcrest Mining's high-grade Brucejack gold mine in British Columbia's Golden Triangle.

Newcrest adds bonanza gold to BC assets

Grows Golden Triangle presence with Brucejack Mine acquisition

By SHANE LASLEY Mining News

Gaining ownership of the Brucejack Mine through the US\$2.8 billion buyout of Pretium Resources Inc., Newcrest Mining Ltd. consolidated all the current large-scale gold, silver, and copper production in the Golden Triangle and established Northern British Columbia as a solid foundation for the Australia-based company's growing North American presence.

The high-grade Brucejack Mine immediately adds more than 300,000 ounces per year to Newcrest's annual gold production and created synergies with its 70%-owned Red Chris copper-gold mine in Northern BC that are estimated to be worth around US\$15 million per year.

"Through this acquisition and the continued development of our outstanding organic growth pipeline, Newcrest's base case gold production is expected to remain strong until at least 2030, and we have a range of further upside opportunities being progressed across the portfolio," Newcrest Mining CEO Sandeep Biswas said upon the March closing of the Pretium acquisition.

This growth potential includes several opportunities to maximize the long-term potential and value of Brucejack.



"We will pursue efficiencies to simplify mining and increase productivity through a holistic view of the Brucejack operations and orebody," said Biswas. "In parallel, our exploration team will be progressing an extensive drilling campaign across the Brucejack mineral claims which make up one of the largest epithermal footprints we have ever seen." As Newcrest's exploration team worked to unlock the large and highgrade gold potential at Brucejack, the company continued its two-stage transformation at Red Chris – optimizing the current open-pit mine and then applying the Australian miner's industry-leading block cave mining technology to realize the much larger potential this Northern BC porphyry copper-gold project has to offer.

Upgrading Brucejack

Like kids in a candy store, Newcrest's Brucejack team wasted no time exploring the golden opportunities this high-grade asset has to offer.

Building on a solid foundation established by Pretium, Newcrest launched a three-phase plan to unlock the full potential of its new high-grade underground gold mine and the district-scale property it is located on.

The initial phase of this plan included the implementation of the Australian mining company's NewSafe safety and critical control management programs for highrisk tasks. Despite the introduction of this program, a contractor at Brucejack suffered a fatal accident in October that resulted in a shutdown of the underground mine during the investigation into the incident.

"There is nothing more important than the safety and wellbeing of those who work with us, and our focus is on providing support to all those impacted during this distressing time as we assist with the ongoing investigation," Biwas said.

Several new technologies being introduced by Newcrest are also focused on improving safety, as well as efficiency and productivity at the underground mine, including:

• Improved underground mine dispatch and communication capabilities.

• Semi-autonomous and autonomous mining equipment.

• Asset management and asset health monitoring systems.

Newcrest is also assessing the potential of using ore sorting technology to upgrade the already high-grade ore at Brucejack.

As it onboards these technologies, the Australian miner is assessing the potential to expand the mill throughput to 4,500 to 5,000 metric tons per day, which is a roughly 18% to 32% boost to the current 3,800 t/d processing rate.

Newcrest believes that much of this mill throughput increase can be achieved by simply eliminating bottlenecks in the current process, making this a potentially low-cost, high-reward gold production initiative.

Bonanza gold exploration

Newcrest sees no shortage of highgrade ore to feed an expanded mining operation at Brucejack.

"Brucejack is very early in its mine life and offers significant exploration upside with the land package largely unexplored," said Biswas.

Going into 2021, the Valley of the Kings deposit at Brucejack hosted 11.5 million metric tons of proven and probable reserves averaging 8.7 grams per metric ton (3.2 million oz) gold and 9.8 g/t (3.6 million oz) silver.

An extensive exploration program carried out by Pretium during 2021 identified several intriguing expansion targets immediately surrounding Valley of the Kings and discovered bonanza-grade gold at exploration targets across the larger property.

Newcrest carried out a roughly 89,000meter drill program during 2022 to explore expansion targets around the area currently being mined and the wider potential of a 2.5-mile- (four kilometers) trend of high-grade gold zones that runs

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Bonanza-grade gold in core from a hole drilled at Newcrest Mining's Brucejack Mine in Northern British Columbia. PRETIUM RESOURCES INC.



Core from a highly mineralized intercept encountered during 2021 drilling of the East Ridge discovery on the Red Chris gold-copper project in BC.

across the property.

"At Brucejack, drilling continued to deliver outstanding results in all of our target zones, supporting our views of significant resource growth opportunities beyond the Valley of the Kings deposit," said Biswas.

The Australian mining company encountered bonanza gold in several expansion targets on the south side of Valley of the Kings – 1080 HBx, 1080 Level East, and Bridge Zone:

This includes drilling at 1080 HBx, which has expanded Valley of the Kings and confirmed the continuity of the highergrade mineralization at depth and to the south of the deposit. Highlights include:

 \bullet 70.1 meters averaging 35 g/t gold, including one meter of 2,310 g/t gold (1080 HBx).

• 22 meters averaging 178 g/t gold, including one meter of 3,876 g/t gold (1080 HBx).

• 17 meters averaging 41 g/t gold, including one meter averaging 662 g/t gold (1080 Level East).

• 36 meters averaging 33 g/t gold, including one meter averaging 1,164 g/t gold (Bridge).

Newcrest cut even higher grades on the north side of Valley of the Kings. One such hole drilled in North Block cut 28.5 meters averaging 262 g/t (8.4 ounces per metric ton) gold, including a one-meter bonanza grade subsection averaging 7,400 g/t (237.9 oz/t) gold.

This is similar to Pretium's 2021 drilling at North Block, which included:

• 15 meters averaging 561.5 g/t gold, including one meter averaging 8,400 g/t gold.

• 15 meters averaging 493.2 g/t gold, including one meter averaging 7,360 g/t gold.

At Gossan Hill North, which lies about 750 meters north of North Block, one hole drilled by Newcrest during the first half of 2022 cut 30 meters averaging 28 g/t gold, including one meter averaging 717 g/t (23.1 oz/t) gold.

Newcrest tapped similar high-grade gold at Golden Marmot, an exploration target about 3,500 meters north of Valley of the Kings, including:

 \bullet 20 meters averaging 187 g/t gold, including 0.5 meters averaging 6,700 g/t gold.

• 38.5 meters averaging 27 g/t gold, including 0.5 meters averaging 1,925 g/t gold.

"Golden Marmot remains open to the east, north, and south, with the target displaying many geological features of the nearby Valley of the Kings deposit," said Biswas.

Red Chris block cave

While exploring the golden potential Brucejack has to offer, Newcrest is heading underground at the Red Chris copper-gold mine about 85 miles (140 kilometers) to the north.

Operated under a joint venture with Imperial Metals Corp., which owns the remaining 30%, Red Chris is a large porphyry copper-gold operation that is currently being mined from the surface.

A 2021 prefeasibility study, however, details an underground block cave mining operation forecast to produce 4.9 million oz of gold and 1.5 million metric tons of copper from 406 million metric tons of ore over roughly 31 years of mining.

In preparation for this bulk tonnage underground mine, Newcrest is advancing an exploration decline that will provide a platform for underground drilling, as well as to potentially mine higher grade pods ahead of full-scale block caving.

A Red Chris block cave feasibility study, which includes the option for an electrified mine, remains on track for completion in the first half of 2023.

Inflation and global supply chain interruptions are also being considered as part of the feasibility study, and value engineering continues with the objective of offsetting inflationary cost pressures on the block cave operation.

Synergies with its newly acquired Brucejack Mine is expected to help offset some of the increased costs.

Newcrest foresees that streamlining the supply, logistics, travel, and procurement activities between its two Northern BC mines will result in C\$20 to \$30 million (US\$16 to \$24 million) in savings each year.

Exploring East Ridge

The block cave exploration decline could provide a better vantage for drilling East Ridge, a discovery zone not included in Newcrest's current mineral resource for Red Chris.

As of June 30, the open pit portion of Red Chris hosted 240 million metric tons of measured and indicated resources averaging 0.3 g/t (2.4 million oz) gold and 0.36% (880,000 metric tons) copper; plus 8.5 million metric tons of inferred resource averaging 0.25 g/t (69,000 oz) gold and 0.30% (26,000 metric tons) copper.

The underground portion of Red Chris hosts another 670 million metric tons of measured and indicated resources averaging 0.46 g/t (10 million oz) gold and 0.40% (2.7 million metric tons) copper; plus 180 million metric tons of inferred resource averaging 0.32 g/t (1.8 million oz) gold and 0.3% (540,000 metric tons) copper.

Much of Newcrest's 2022 drilling at Red Chris focuses on East Ridge; highlights include:

• 154 meters averaging 0.46 g/t gold and 0.47% copper.

• 222 meters averaging 0.44 g/t gold and 0.61% copper.

- 334 meters averaging 0.35 g/t gold and 0.5% copper.
- 312 meters averaging 0.49 g/t gold and 0.49% copper.
- 278 meters averaging 0.74 g/t gold and 0.44% copper.

• 284 meters averaging 0.75 g/t gold and 0.63% copper.

"The results of our East Ridge discovery at Red Chris continue to expand the higher-grade footprint," said Biswas.

The East Ridge mineralized corridor is 900 meters long, up to 1,000 meters thick and 125 meters wide, with several smaller pods with higher-grade mineralization

Newcrest has completed more than 300,000 meters of drilling at Red Chris since acquiring a 70% interest in the mine in August 2019. \bullet

NORTHERN BRITISH COLUMBIA

CSE: CC 🕋

Core Assets explores Blue copper in BC

Core Assets Corp.



Leveraging substantial advancements in the understanding of porphyry, skarn, and carbonate replacement type deposits over the past 40 years, Core Assets Corp. is making news discoveries on the long overlooked Blue property in British Columbia's Golden Triangle.

Located along BC's border with Alaska in the Atlin Mining District, Blue is a 275,890-acre (111,650 hectares) land package covering highgrade skarn and carbonate replacement and porphyry prospects enriched with copper, gold, zinc, silver, and lead.

This district-scale property is also transected by the Llewellyn Fault Zone, a major structural feature that seems to play an important role in the mineralization of near-surface metal occurrences across Blue.

Since assembling the district-scale land package and listing on the Canadian Securities Exchange in 2020, Core has been carrying out early exploration in preparation for a 2022 drill program that targeted two primary project areas – Laverdiere and Silver Lime.

Core's inaugural drill program at Blue began near the French Adit area of Laverdiere, a prospect area in the southern part of the property that hosts three areas of outcropping skarn mineralization.

Historical drilling at Laverdiere cut 46 meters averaging 1.76% copper from surface; and 175 meters averaging 0.27% copper from surface. In early June, Core launched a 1,806-meter drill program at Laverdiere targeting a high-grade iron-copper-gold skarn and copper-molybdenum mineralization mapped over 800 meters on surface.

The first hole, LAV22-001, cut 95.05 meters averaging 0.47% copper, 3.24 grams per metric ton silver, and 0.06 g/t gold from a depth of one meter, confirming the presence of high-grade copper and associated gold skarn.

From a depth of 163.5 meters, LAV22-001 also cut 1.51 meters averaging 4.59 g/t gold and 0.38 g/t silver, confirming the presence of highgrade gold hosted within the Llewellyn Fault Zone.

LAV22-002, the deepest hole drilled at Blue to date, cut 210.5 meters averaging 0.11% copper, 0.05 g/t gold, and 1.76 g/t silver from a depth of 15 meters, including two meters averaging 3.01% copper, 0.3 g/t gold, and 18.8 g/t silver from 104 meters.

"The goal of drilling in the French Adit area was to determine the depth extent of historic copper and gold skarn mineralization from surface and to test the porphyry Cu-Mo (copper-molybdenum) potential of the Laverdiere intrusion," said Core Assets President and CEO Nick Rod-way. "These results have confirmed and over exceeded our expectations – especially when considering the shear-hosted gold hit within the LFZ." Core says four additional holes drilled at Laverdiere cut similar high-temperature skarn and porphyry-style mineralization, veining, and alteration over a strike of 850 meters.

Following the completion of drilling at Laverdiere, the rig at Blue was moved to Silver Lime, a carbonate replacement copper-zinc-silver prospect about 10 kilometers (six miles) to the east.

An extensive first-pass exploration program carried out at Silver Lime in 2021 defined a 3,700- by 1,800-meter area of high-grade carbonate replacement and skarn mineralization within a broad 6.6-kilometer (4.1 miles) mineralized corridor of conductive anomalies that appear to be interconnected at depth by vertical conductive features.

The 2022 program at Silver Lime included 5,355 meters of drilling in 15 holes testing the Jackie, Grizzly, and Sulphide City silver-zinc-lead-copper carbonate replacement targets.

Highlights from this drilling include 1.25 meters averaging 215 g/t silver, 9.9% zinc, 8.9% lead, and 0.36% copper in hole SLM22-001 (Jackie); and 1.16 meters averaging 1,145 g/t silver, 23.5% zinc, 23.2% lead, 0.52% copper, 0.37g/t gold (Grizzly).

"The greater than 47% combined base and precious metal content of the Grizzly CRD intercept is the highest-grade result recovered from the Silver Lime Project to-date and puts the Silver Lime Project on the



Copper alteration in limestone at Core Assets' Blue property in Northern BC.

map for high-grade CRD projects globally," said Rodway. "This CRD mineralization fits well into the Porphyry-CRD continuum model that we are revealing through drilling and gives us a much better understanding of the system's plumbing network."

Additional drilling is planned for Silver Lime in 2023.

PRESIDENT & CEO: Nicholas Rodway VP, EXPLORATION: Monica Barrington VP, BUSINESS DEVELOPMENT: Joshua Vann

CASH AND CASH EQUIVALENTS: C\$3.1 million (June 30, 2022) WORKING CAPITAL: C\$2.4 million (June 30, 2022) MARKET CAPITALIZATION: C\$23.4 million (Nov. 25, 2022)

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A drill sets up to test higher grade gold targets at Sulphurets, one of three surfacing deposits considered in the 2022 prefeasibility study for establishing a mine at the KSM gold-copper-silver-molybdenum project in the Golden Triangle region of northwestern British Columbia.

NORTHERN BC, YUKON & NWT

Seabridge Gold Corp. 🔴 🔴 🔵

TSX: SEA / NYSE: SA 🚮

World-class mine plan surfaces at KSM

With open pit mineable reserves that can support a financially robust mine capable of averaging more than 1 million ounces of gold, 3 million oz of silver, 178 million pounds of copper and 4.2 million lb of molybdenum annually for 33 years, Seabridge Gold Inc.'s KSM project in British Columbia's Golden Triangle is world-class by all measures.

This operation, which was de-

tailed in a prefeasibility study completed in June, does not con-

SEABRIDGE GOLD

sider the block cave mining of underground resources that was included in a 2016 PFS. Instead, the 2022 study involves open-pit mining of the Mitchell, East Mitchell and Sulphurets deposits only.

This change in the KSM mine plan is the result of Seabridge's 2020 acquisition of Pretium Resources' Snowfield project, which added East Mitchell to the project. Essentially an extension of the near-surface Mitchell deposit that has long put the "M" in the Kerr-Sulphurets-Mitchell project, East Mitchell has significantly added to the global resources at KSM.



RUDI FRONK

According to an early 2022 calculation for all of the deposits, KSM hosts 5.4 billion metric tons of measured and indicated resources averaging 0.51 grams per metric ton (88.3 million oz) gold, 0.16% 19.4 billion lb) copper, 2.4 g/t (414 million oz) silver, and 63 parts per million (742 million lb) molybdenum; plus 5.7 billion metric tons of inferred resource averaging 0.36 g/t (65.6 million oz) gold, 0.28% (35.1 billion lb) copper, 2.2 g/t (406 million oz) silver, and 33 ppm (415 million lb) molybdenum.

"KSM is really an entire district hosting a nest of potentially eco-

nomic porphyry deposits with different characteristics," said Seabridge Gold Chairman and CEO Rudi Fronk.

New opportunity surfaces

With the addition of East Mitchell, Seabridge decided to reconfigure the prefeasibility study to focus on the precious metals enriched deposits that come to surface at KSM.

Based on the global KSM resource and the mine plan detailed in the PFS, the Mitchell, East Mitchell, and Sulphurets deposits host 2.29 million metric tons of proven and probable reserves averaging 0.64 g/t (47.3 million oz) gold, 0.14% (7.32 billion lb) copper, 2.2 g/t (160 million oz) silver, and 76 ppm (385 million lb) molybdenum.

The 2022 PFS envisions the reserves mined from these surface deposits feeding a 133,000-metric-ton-per-day mill for the first three years of operations, which would be expanded to 195,000 tpd for the remaining 30 years.

The 2022 study also considers autonomous mine equipment, where applicable, and an integrated remote operations center to reduce onsite personnel. The new mine plan also includes the use of an electric haul truck fleet with trolley assist to reduce carbon emissions and energy costs through the replacement of diesel with low-cost and clean hydroelectricity.

"We have redesigned KSM for an inflationary environment. The themes for this PFS are capital and energy efficiency," said Seabridge Gold Chairman and CEO Rudi Fronk.

As a result, the open pit mining outlined in the PFS generates an after-tax net present value (5% discount) of US\$7.9 billion, internal rate of return of 16.1%, and a payback period of 3.7 years.

Block cave kicker

The reserves considered for mining in the 2022 PFS only accounts for about 25% of the resources outlined so far at KSM.

A supplemental preliminary economic assessment completed after the PEA outlines plans for underground block-cave mining that would extend the life of the KSM for 39 years beyond the operation outlined

in the PFS.

_egend

"In our updated PFS we focused on the gold-rich deposits because of their faster payback and the relative simplicity of an open-pit only operation. However, we are very mindful that a deep deficit in mined copper is projected to be on the horizon as the world electrifies and moves towards a net zero carbon future," said Fronk. "We therefore wanted to highlight KSM's potential to contribute to addressing this need more fully than the mine plan contained in our updated Preliminary Feasibility Study."

To accomplish this, the PEA envisions an underground-focused mine that would produce 14.3 million oz of gold, 14.3 billion lb of copper, 68.2 million oz of silver, and 13.8 million lb of molybdenum over 39 years.

When you apply the credits for the gold, silver, and molybdenum produced, the total average cost to produce a pound of copper over the life of the mine is estimated to be US\$1.44.

"We think this opportunity will be attractive to a prospective partner," said Fronk.

Beyond KSM

While seeking a partner with the wherewithal to advance the worldclass KSM project to production, Seabridge continues to explore earlystage projects in its pipeline.

This includes drilling at Iskut, a Northern BC project that is prospective for a world-class copper-gold system similar to the KSM project about 30 kilometers (19 miles) to the east.

"We acquired the large land package at Iskut because of its many characteristics similar to our giant KSM project," Fronk said.

Seabridge's 2022 drilling at Iskut tested the Bronson Slope and Quartz Rise gold-copper targets along a regional trend that seems to be a primary control on the distribution of mineralized intrusive centers on the property.

So far, 187 million metric tons of measured and indicated resource averaging 0.36 g/t gold and 0.12% copper has been outlined by a previous explorer at Bronson Slope, and drilling at Quartz Rise has encountered gold-copper grades below a clear lithocap.

Lithocaps are layers of alteration typically formed above a deeper porphyry system, which is the larger gold-copper deposit Seabridge is seeking at lskut.

As drills tested for KSM-like porphyry deposits, Seabridge was bestowed the 2022 Jake McDonald Annual Mine Reclamation Award for its C\$12 million environmental cleanup and reclamation program at the historical Johnny Mountain Mine at Iskut.

"We undertook this work before the current emphasis on ESG simply because it was the right thing to do and an expression of our corporate values. The Iskut property is stunningly beautiful and it was a privilege to remove the blight of irresponsible historical mining practices," said Fronk.

Seabridge will complete the full reclamation and closure of the Johnny Mountain site in 2025.

In addition to KSM and Iskut, Seabridge's portfolio includes 3 Aces, a high-grade orogenic gold project in southeastern Yukon that the company tested with a late 2022 season drill program; Courageous Lake, a project in Northwest Territories with 7.97 million oz of gold in measured and indicated resources averaging 2.3 g/t gold; and Snowstorm, a Nevada property with the potential to host a large, high-grade gold deposit.

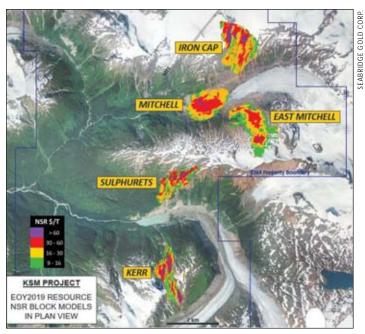
CHAIRMAN & CEO: Rudi Fronk SENIOR VP & COO: Ryan Hoel SENIOR VP, EXPLORATION: William Threlkeld

CASH AND CASH EQUIVALENTS: C\$66.2 million (Sept. 30, 2022) WORKING CAPITAL: C\$154.3 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$1.33 billion (Nov. 28, 2022)

106 Front St. East, Ste. 400 Toronto, ON M5A 1E1 Tel: 416-367-9292 info@seabridgegold.com www.seabridgegold.com



Workers explore the Mitchell deposits on Seabridge's KSM project in BC.



11 billion metric tons of measured, indicated, and inferred resources have been outlined so far in five deposits at the world-class KSM project.



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Benchmark Metals passes golden milestone

Racing past a milestone that marks roughly the midpoint of its planned path to production at Lawyers, Benchmark Metals Inc. completed a preliminary economic assessment in August that outlines an economically robust mine at this Northern British Columbia project that would produce 1.7 million ounces of gold and 26.7 million oz of silver over an initial 12 years of mining.

According to a calculation completed in June, the AGB, Cliff Creek, and Dukes Ridge deposits at Lawyers host 67.38 million metric tons of measured and indicated resources averaging 1.26 grams per metric ton (2.74 million oz) gold and 24.39 g/t (52.9 million oz) silver; plus 4.87 million metric tons of inferred resource averaging 2.39 g/t (378,000 oz) gold and 39.41 g/t (6.2 million oz) silver.

Based on this resource, the PEA envisions ore from open-pit mines at these three deposits feeding a centrally located 10,600-metric-ton-perday processing plant that would produce gold-silver doré on site. At 1.47 g/t gold-equivalent, which accounts for the value of the silver in ore, the operation envisioned in the PEA would produce roughly 144,000 oz of gold per year at an all-in sustaining cost of US\$824/oz, net the value of the 2.2 million oz of silver that would be produced as an annual by-product.

The initial capital to develop this operation is estimated to be C\$493 million (US\$384 million), which includes C\$72.8 million (US\$56.7 million) in contingency, and the life-of-mine capital requirements are estimated at C\$632 million (US\$492 million).

At an average gold price of US\$1,735/oz and silver price of US\$21.75/oz, this operation is estimated to generate an after-tax net present value (5% discount) of C\$577 million (US\$449 million) and an internal rate of return of 23.5%.

The capital payback period is estimated at 2.7 years.

"The PEA clearly demonstrates the low cost and robust return of the Lawyer's gold-silver project even when stress tested with considerable contingency in the base case," said Benchmark Metals CEO John Williamson. Encouraged by the outcome of the PEA, Benchmark is forging ahead with a feasibility study that is slated for completion before the end of the year.

This includes drilling to expand the resources around the deposits considered in the PEA.

The company has identified several such targets around AGB, which hosts 11.37 million metric tons of pit-constrained measured and indicated resources averaging 1.05 g/t (384,000 oz) gold and 43.9 g/t (16.1 million oz) silver.

During 2022, Benchmark drilled coincident soil geochemistry and geophysical anomalies that had not previously been tested due to a lack of outcrop exposure.

"Multiple target high-grade resource areas have been identified near but outside the pit limits," said Benchmark Metals Vice President of Engineering Ian Harris.

This includes expansion targets immediately surrounding AGB and three soil anomalies about 3,000 meters to the north that lie along the same structural corridor as AGB and have geophysical signatures that are very similar to the deposit

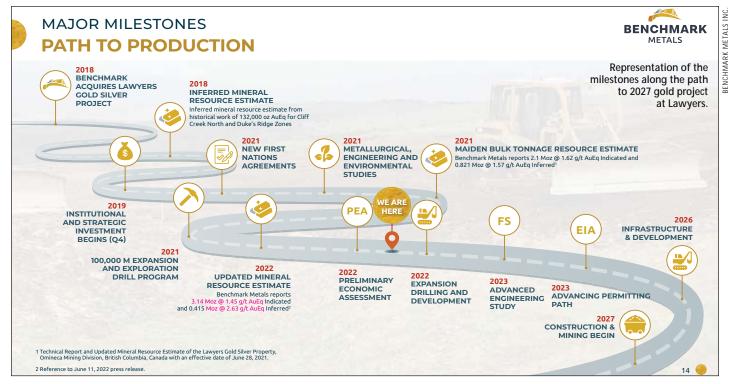
Benchmark's 2022 drilling also tested expansion targets at Cliff Creek and Dukes Ridge, which have merged into a single horseshoe-shaped deposit, and host 54.43 million metric tons of pit-constrained measured and indicated resources averaging 1.26 g/t (2.2 million oz) gold and 19.2 g/t (33.6 million oz) silver.

In addition, the company tested early-stage, gold-silver targets across the 56-square-mile (144 square kilometers) Lawyers property. Due to backlogged assay labs, results from the drilling at these targets remained pending at the time of this report.

CHAIRMAN & CEO: John Williamson PRESIDENT: Jim Greig QUALIFIED PERSON: Michael Dufresne

CASH AND CASH EQUIVALENTS: C\$5.7 million (Aug. 31, 2022) WORKING CAPITAL: C\$13.1 million (Aug. 31, 2022; closed C\$20.6 million financing on Oct.14, 2022) MARKET CAPITALIZATION: C\$07.5 million (Nov. 4, 2022)

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StrikePoint Gold Inc. 🔴



Lush treasury furnishes StrikePoint program

With a little bit of downsizing from the sale of its Yukon gold properties, StrikePoint Gold Inc. is well positioned financially to continue exploration work at its Willoughby and Porter properties near Stewart, British Columbia, in the territory's prolific Golden Triangle.

Strikepoint's 2022 exploration program included roughly 3,000 meters of drilling split about evenly between its two Northern BC properties.

"At Porter, our work will continue to test the limits and source of the historic silver mines; at Willoughby, we will also seek new high-grade gold-silver discoveries in previously unexplored areas," said StrikePoint Gold Executive Chairman Shawn Khunkhun.

Porter is a historically mined silver property on Mount Rainey, which overlooks the Northern BC mining town of Stewart.

Early in the 20th century, the Prosperity and Mount Rainey Mine on Mount Rainey produced roughly 2.2 million ounces of silver from 27,123 metric tons of ore averaging 2,542 grams per metric ton silver

StrikePoint has turned up evidence that the historically mined veins could represent opposite ends of a larger mineralized system that extends for 2,350 meters through the mountain, and recent glacial retreat has exposed more of the ground between these past-

producing mine sites, making it easier to explore for a connection. The company's 2022 exploration at Porter had three primary objectives - test extensions to high-grade silver mineralization; explore for the roots of the silver veins and gold-silver-rich intrusive-related mineralization; and assess the underground access and work for future rehabilitation

MICHAEL ALLEN

Occurring along the eastern margin of the Cambria Icefield, Willoughby is geologically similar to Ascot Resources Ltd.'s advancedstage Red Mountain silver-gold deposit, which lies approximately seven kilometers (four miles) to the west.

Highlights from 2021 drilling at Willoughby include: 9.88 meters averaging 4.95 grams per metric ton gold-equivalent, which accounts for the value of both gold and silver, and 26.5 meters averaging 2.76 g/t gold-equivalent in hole W21-115; three meters averaging 11.26 g/t gold-equivalent, and four meters averaging 2.61 g/t gold-equivalent in hole W21-116; three meters averaging 3.07 g/t gold-equivalent in hole W21-123; and 0.5 meters averaging 37.19 g/t gold-equivalent in hole W21-124.

"The Willoughby projects continue to deliver results through discoveries to the northern end of the property extending the 1,300-meter mineralized trend, which remains open for expansion to the northeast and southwest," StrikePoint Gold Vice President of Exploration Marilyne Lacasse penned in an email to North of 60 Mining News.

Strikepoint's 2022 program had two primary objectives - drill northern and southern extensions to the 600-meter-long trend of mineralized zones along the Willoughby nunatak, where mountain rocks protrude through the ice cap, and discover new mineralization to the west of the Willoughby nunatak trend.

Hole W22-125, drilled at the south end of the Willoughby nunataq, cut 5.32 meters averaging 1.02 g/t gold and 27.15 g/t silver in a new zone of mineralization and alteration lying to the west of known mineralized zones.

Surface sampling discovered to new zones on the nunataq, BOD and FS. One grab sample collected from BOD containted 156 g/t gold and 91.7 g/t silver and one sample fro FS contined 6.48 g/t gold and 52.5 g/t silver.

As drills turned on its Northern BC properties, StrikePoint optioned its substantial land package in the Yukon to Snowline Gold Corp. StrikePoint's Golden Oly and other gold exploration properties in the



Rough terrain and steep cliffs do not put a stopper on StrikePoint geologists.



STRIKEPOINT GOLD INC

Built on a slope, this drill pad overlooks the Willoughby Glacier.

Yukon are south of Snowline's discovery of more than 300-meter-thick zones of strong gold mineralization on its Rogue property.

Under the agreement, Snowline acquired 4,713 mineral claims from StrikePoint in exchange for C\$500,000, as well as the issuance of 500,000 common shares (valued at C\$1.38 million).

"We have now positioned ourselves as shareholders in Snowline Gold, an exciting, Yukon-focused exploration company with a new discovery, while remaining focused on advancing our Golden Triangle properties," said Khunkhun.

EXECUTIVE CHAIRMAN: Shawn Khunkhun PRESIDENT & CEO: Michael Allen **VP EXPLORATION:** Marilyne Lacasse

CASH AND CASH EQUIVALENTS: C\$2.6 million (Sept. 30, 2022) WORKING CAPITAL: C\$2.6 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$18.7 million (Nov. 28, 2022)

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The camp at Eskay Creek, where Skeena Resources continues to find near-surface mineralization that could extend a new era of mining at the Northern BC project.

NORTHERN BRITISH COLUMBIA

Skeena Resources Ltd. 🛑 🔳

TSX/NYSE: SKE 🚮

Skeena tests Eskay Creek Mine extensions

With the September completion of a feasibility study that details a very economically robust gold-silver mine at Eskay Creek, Skeena Resources Ltd. has focused its drilling on near-surface mineralization that

could extend the life of this future mine in British Columbia's Golden Triangle.

Over the nine years of operations considered in the feasibility study, the open pit mine proposed for Eskay Creek would produce 2.42 million ounces of gold and 66.7 million oz of silver from 29.9 million metric tons of proven and probable reserves averaging 2.99 grams per metric ton gold and 79 g/t silver.

At US\$1,700/oz gold and US\$19/oz silver, the open pit mine detailed in the Eskay Creek feasibil 

detailed in the Eskay Creek feasibility study is expected to generate an after-tax net present value (5% discount) of US\$1.1 billion (C\$1.41 billion) and a 50.2% after-tax internal rate of return.

"The feasibility study confirms the robust economics of the worldclass Eskay Creek Project originally shown in the prefeasibility study but with improved definition," said Skeena Resources President Randy Reichert.

As robust as the mine detailed in this study is, Skeena has identified near-surface extensions to the deposit that show promise for both improving the economics and extending the life of the envisioned mine. At about the same time as the feasibility study results were released, Skeena reported initial results from a 55,652-meter drill program focused primarily on testing these growth opportunities surrounding the proposed open pit.

Expanding Eskay Creek

Skeena is particularly excited about the resource expansion potential at 21A West, an extension of the 21A Zone at the southwest end of the pit considered in the feasibility study.

The company discovered 21A West during its 2021 drilling; highlights include:

• 14.5 meters averaging 1.29 g/t gold and 36 g/t silver in hole SK-21-972.

• 11.7 meters averaging 1.77 g/t gold and 200 g/t silver in hole SK-21-983.

• 34 meters averaging 8.78 g/t gold and 13 g/t silver in hole SK-21-997.

The 2022 drilling at 21A West continued to tap high-grade gold at the southwest margins of the future Eskay Creek pit and shows the mineralization continues south.

Highlights from the 2022 drilling at 21A West include:

• 46.77 meters averaging 1.74 g/t gold and 1.7 g/t silver in hole SK-22-1028.

• 12.12 meters averaging 47.5 g/t gold and 73.4 g/t silver in hole SK-22-1093.

• 24 meters averaging 20.43 g/t gold and 175.2 g/t silver in hole SK-22-1122.

Skeena says the high-grade gold encountered in hole SK-22-1093 has

SKEENA RESOURCES LTD

extended the near-surface, rhyolite-hosted mineralization within an area of the intended pit that was previously modeled as waste rock.

"Due to the high precious metal grade required by previous operators, the rhyolite-hosted mineralization was never a focus for our predecessors and hence lacked systematic exploration," said Skeena Resource Senior Vice President of Exploration Paul Geddes.

The upgrade of this material that was considered waste to ore will likely add a boost to Eskay Creek Mine economics in an updated feasibility study due out later this year.

In addition to 21A West, the 2022 program tapped gold in expansion targets on the east flank of the proposed open pit; as well as at the 23 Zone discovery that extends south off the southeast side of the pit. Highlights from 2022 drilling at 23 Zone and East Flank include:

• 31.3 meters averaging 1.66 g/t gold and 1.7 g/t silver in hole SK-22-988 (East Flank).

• 17.66 meters averaging 2.97 g/t gold and 3 g/t silver in hole SK-22-990 (East Flank).

• 21 meters averaging 2.27 g/t gold and 2.3 g/t silver in hole SK-22-1006 (23 Zone).

 \bullet 47.5 meters averaging 1.31 g/t gold and 1.3 g/t silver in hole SK-22-1008 (23 Zone).

• 27.68 meters averaging 1.85 g/t gold and 1.8 g/t silver in hole SK-22-1018 (East Flank).

"These exploration drill results demonstrate the potential for adding new, open pit mineralization in the near-term to Eskay Creek," said Reichert. "A mineral resource update will be completed following the 2022 drill program with the aim of upgrading at least a portion of the mineralization discovered in the 23 and 21A West Zones to the indicated category for use in an updated mine plan."

Hochschild advances Snip

As Skeena focuses on advancing Eskay Creek through permitting and into development, Hochschild Mining is applying its underground gold mining expertise to begin a new era of mining at Snip.

In October 2021, Hochschild agreed to invest roughly C\$100 million on exploration and development to earn a 60% joint venture interest in Skeena's Snip gold mine project.

Operated by Barrick Gold Corp. during the 1990s, the historic underground mine at Snip produced 1.1 million ounces of gold from 1.25 million metric tons of ore averaging 27.5 g/t gold.

Since acquiring Snip from Barrick, Skeena has invested roughly C\$50



Core from drilling into the gold-rich VMS mineralization at Eskay Creek.

million on exploration and other work at the high-grade gold mine project.

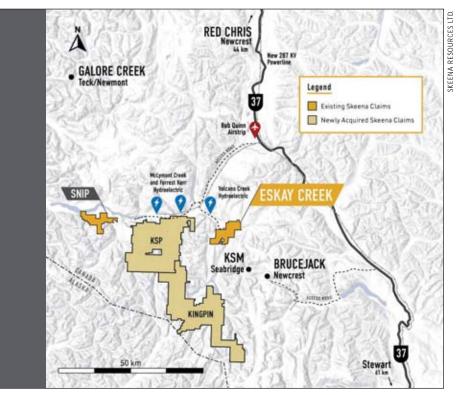
According to a 2020 calculation, Snip hosts 539,000 metric tons of indicated resource averaging 14 g/t (244,000 oz) gold; and 942,000 metric tons of inferred resources averaging 13.3 g/t (402,000 oz) gold.

Hochschild is finalizing a prefeasibility study that will provide a first glimpse of the next era of mining at Snip. The company also said its drilling at this Northern BC gold mine project "has already delivered some encouraging intercepts."

EXECUTIVE CHAIRMAN: Walter Coles Jr. PRESIDENT & CEO: Randy Reichert SENIOR VP, EXPLORATION: Paul Geddes

CASH AND CASH EQUIVALENTS: C\$27.2 million (Sept. 30, 2022) WORKING CAPITAL: C\$30.7 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$548.6 million (Nov. 28, 2022)

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INFRASTRUCTURE

in the Golden Triangle

Excellent Access to Power and Infrastructure:

- Highway 37 paved north from Smithers
- New 287 kV power line
- Forrest Kerr & McLymont Creek Power Station within 17 km of Snip
- Volcano Creek Power Station within 17 km of Eskay Creek
- Over \$2 billion invested in infrastructure

NORTHERN BRITISH COLUMBIA

Ascot Resources Ltd. 🛑 🔵

TSX: AOT 🚮

Ascot preps for 2024 Premier gold mining



With challenging financial markets delaying Ascot Resources Ltd.'s plans to begin a new era of gold-silver production at Premier, the company focused much of its 2022 efforts on further exploration and resource upgrade drilling at the past-producing mine on the outskirts of Stewart, British Columbia.

Last operated in the 1990s, Premier already had much of the major infrastructure in place - mill, crushing and grinding circuits, tailings storage area, and hydroelectric grid power access - to resume operations. A feasibility study completed in 2020 envisions four underground mines - Silver Coin, Big Missouri, Red Mountain, and Premier - providing ore to an updated version of the existing mill at Premier. At 2,500 metric tons per day, this operation is expected to produce roughly 1.1 million ounces of gold and 3 million oz of silver over the first eight years of the mine.

This initial output from a new era of Premier mining is based on 3.63 million metric tons of probable reserves averaging 5.45 grams per metric ton (637,000 oz) gold and 19.1 g/t (2.23 million oz) silver within the Silver Coin, Big Missouri, and Premier deposits; plus 2.55 million metric tons of proven and probable reserves averaging 6.52 g/t (534,000 oz) gold and 20.6 g/t (1.69 million oz) silver at Red Mountain.



DEREK Ascot had previously planned to resume gold pro-WHITE duction at Premier by around this time but decided to

postpone operations by roughly a year due to a lack of adequate financing to complete the tailings dam, new water treatment plant, and other projects that needed to be finished during the summer.

"The company has a limited weather window to conduct certain outdoor construction activities and needs to ensure it has sufficient funding to complete these activities and the rest of the project," Ascot Resources President and CEO Derek White said in June.

Ascot decided to use the funds it had to continue underground development at Big Missouri, the first deposit to be mined, and continue exploration and resource upgrade drilling across the Premier property.

Premier gold extension

The 2022 drilling began at Sebakwe, a new zone that appears to represent an unmined structure immediately north of the Northern Light and Premier zones of the Premier deposit.

Hole P21-2385, completed during the 2021 discovery drilling at Sebakwe, cut one meter averaging 29.6 g/t gold and 5.3 g/t silver from a depth of 328.5 meters, and 7.1 meters averaging 36.17 g/t gold and 20.6 g/t silver from a depth of 368.3 meters.

Ascot had originally planned to follow up on this discovery only about 600 meters away from the mill with roughly 4,000 meters of drilling in 10 holes. Given the visible gold and visual indicators in the core from the first holes drilled, the program was expanded to 6,091 meters in 15 holes.

Early results from the 2022 Sebakwe drilling included hole P22-2393, which cut three zones of strong gold mineralization - one meter averaging 193 g/t gold and 41.8 g/t silver from a depth of 315 meters; 4.5 meters averaging 4.77 g/t gold and 18.2 g/t silver from a depth of 331 meters; and three meters averaging 17.78 g/t gold and 20.1 g/t silver from a depth of 366 meters.

Other highlights from Sebakwe include:

 2.73 meters averaging 11.83 g/t gold and 56.3 g/t silver from a depth of 335.5 meters in hole P22-2394.

• 3.2 meters averaging 6.33 g/t gold and 6.6 g/t silver from a depth of 290.1 meters in hole P22-2396.

"We look forward to the future of the Sebakwe Zone and continuing to demonstrate it as an accretive, near-mine exploration success and



ASCOT

Abundant visible gold from a one-meter intercept in hole P22-2393 averaging 193 g/t gold and 42 g/t silver in the Sebakwe discovery zone at Premier.

potential to grow our resource base for development near planned underground infrastructure," said White.

Improving Big Missouri

In addition to the discovery drilling at Sebakwe, Ascot completed surface drilling at Big Missouri, a deposit about 3.7 miles (six kilometers) north of the Premier mill that hosts 809,000 metric tons of probable reserve averaging 7.15 g/t (186,000 oz) gold and 12.2 g/t (317,000 oz) silver

Highlights from the 2022 surface drilling at Big Missouri include:

• 12 meters averaging 5.09 g/t gold and 6.6 g/t silver from a depth of 37.5 meters in hole P22-2404.

• Two meters averaging 71.28 g/t gold and 23 g/t silver from a depth of 57.7 meters in hole P22-2405.

• 14.65 meters averaging 3.28 g/t gold and 7.4 g/t silver from a depth of 78.3 meters in hole P22-2412.

• Eight meters averaging 15.91 g/t gold and 31.5 g/t silver from a depth of 90.5 meters in hole P22-2420.

• 10.69 meters averaging 31.92 g/t gold and 22.21 g/t silver 10.7 meters from a depth of 90 meters in hole P22-2428, including one meter averaging 330 g/t gold and 192 g/t silver.

"While we are pleased with these high grades, we are even more encouraged that the majority of the intercepts were encountered within or close to existing block model wireframes and in potential extensions of those wireframes, further validating the resource model at the Premier Gold Project," said White.

With a C\$200 million financing package assembled at the end of 2022, Ascot is positioned to begin feeding Big Missouri ore into the Premier Mill by early 2024.

CHAIRMAN: Rick Zimmer PRESIDENT & CEO: Derek White VP, EXPLORATION: Lars Beggerow

CASH AND CASH EQUIVALENTS: C\$24.5 million (Sept. 30, 2022) WORKING CAPITAL: C\$13.8 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$180.9 million (Nov. 25, 2022)

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NORTHERN BRITISH COLUMBIA

Dolly Varden Silver Corp. 🔵 🧲

TSX.V: DV 🚮

Hecla, Sprott back Dolly Varden drilling

With C\$26 million (US\$20 million) in its treasury following the closing of a C\$13 million (US\$10 million) financing backed by Eric Sprott and Hecla Mining Company, Dolly Varden Silver Corp. launched a 37,061meter drill program at its Kitsault Valley silver-gold project in Northern British Columbia.

"With strategic and technical input from our supportive corporate shareholder, Hecla Min-



ing, it is our goal to make new silver and gold discoveries as well as to dramatically grow and upgrade resource at our current deposits, setting the company up to be the next development project in the Golden Triangle," said Dolly Varden Silver President and CEO Shawn Khunkhun.

Located about 40 kilometers (25 miles) southeast of Stewart, BC, the 63-square-mile (163 square kilometers) Kitsault Valley project is an amalgamation of Dolly Varden's namesake project and the adjacent Homestake Ridge gold-silver project the company acquired from Fury Gold Mines Ltd.

Four deposits associated with past producing mines at Dolly Varden-Torbrit, Dolly Varden, Wolf, and North Star – host 3.42 million metric tons of indicated resource averaging 299.8 grams per metric ton (32.93 million oz) silver; plus 1.29 million metric tons of inferred resource averaging 277 g/t (11.45 million oz) silver.

About 5.5 kilometers (3.5 miles) northwest of the Dolly Varden deposits, three deposits at Homestake Ridge host 736,000 metric tons of indicated resource averaging 7.02 g/t (165,993 oz) gold and 74.8 g/t (1.8 million oz) silver; plus 5.55 million metric tons of inferred resource averaging 4.58 g/t (816,719 oz) gold and 100 g/t (17.8 million oz) silver. The company kicked off its 2022 drilling at Torbrit, the largest deposit on the Dolly Varden end of the Kitsault property.

DV22-283, the first hole reported from the 2022 program, cut 50.18 meters (roughly 30 meters true-width) averaging 414 g/t silver at Kitsol, a vein-hosted, high-grade silver system located immediately northwest of the Torbrit resource.

Dolly Varden says hole DV22-283, which is a 25-meter step-out along strike and down dip of a high-grade silver zone, suggests that thickness





Map showing the Kitsault Valley gold-silver trend on Dolly Varden's BC property.



Logging core from the 2022 drilling at Dolly Varden's Kitsault Valley silvergold project in Northern BC.

and grade of the Kitsol Vein is increasing at depth.

Highlights from additional drilling at Kitsol Vein and the Torbrit deposit include:

 \bullet 12.51 meters (8.8 meters true-width) averaging 442 g/t silver in hole DV22-291 at Kitsol.

 \bullet 21.55 meters (10.8 meters true-width) averaging 372 g/t silver in hole DV22-298 at Kitsol.

• 8.34 meters (6.6 meters true-width) averaging 297 g/t silver in hole DV22-308 at Torbrit.

• 3.3 meters (3.3 meters true-width) averaging 585 g/t silver in hole DV22-312 at Torbrit.

Adding to the intrigue, Dolly Varden's 2022 drilling indicates a potential connection between the Torbrit and Wolf deposits, which lie about 1,400 meters apart.

Wolf, the second largest of the Dolly Varden deposits, hosts 402,000 metric tons of indicated resource averaging 296.8 g/t (3.8 million oz) silver; plus 9,500 metric tons of inferred resource averaging 230.6 g/t (70,000 oz) silver.

This 2022 step-out drilling, however, indicates that Wolf could rival Torbrit as the largest deposit.

Hole DV22-300, which tested the down-dip extension of Wolf, cut 19.85 meters (13.9 meters true-width) averaging 584 g/t silver, 0.56% zinc, 0.92% lead, and 0.19 g/t gold. A 1.6-meter (1.12 meters true width) bonanza-grade subsection of this intercept averaged 4,326 g/t silver, 1.36% zinc, 4.21% lead, and 1 g/t gold.

The strength of the Wolf mineralizing system continues to increase at depth.

This higher-grade silver mineralization at Wolf is trending southeast toward Kitsol Vein, a northwest extension of Torbrit, the largest of the four Dolly Varden deposits.

"With an established plunge length of over 500 meters from the historic underground workings, we are continuing to step out along this trend towards the Kitsol Vein, where we recently announced similar, high-grade mineralization over 1,400 meters away," said Khunkhun.

"The increasing gold and base metal content, in addition to the silver, is highly encouraging, as well as the significant widths that are potentially amenable to bulk underground mining techniques."

In addition to drilling, Dolly Varden's 2022 program included ground geophysics along the 5,400-meter exploration area between Wolf and the Homestake Ridge deposit to the north and geological mapping along the entire 15-kilometer prospective corridor encompassed by its consolidated Kitsault Valley silver-gold project.

PRESIDENT & CEO: Shawn Khunkhun VP, EXPLORATION: Robert Van Egmond CHIEF FINANCIAL OFFICER: Ann Fehr

CASH AND CASH-EQUIVALENTS: C\$10.6 million (Sept. 30, 2022) WORKING CAPITAL: C\$9.5 million (Sept. 30, 2022; closed C\$22.6 million financing on Dec. 22, 2022) MARKET CAPITALIZATION: C\$168.3 million (Nov. 25, 2022)

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NORTHERN BRITISH COLUMBIA

Cassiar Gold Corp. 🔴

TSX.V: GLDC 🕋

Taurus East opens Cassiar Gold potential

Following a new resource calculation that defined 1.4 million ounces of gold at Taurus, Cassiar Gold Corp. launched a 20,000-meter drill campaign focused on expanding this de-

posit and exploring the wider potential of its namesake project in British Columbia's northern reaches.

Situated about 55 miles (90 kilometers) southwest of Watson Lake, Yukon, the 145,800-acre (59,000 hectares) Cassiar gold property is divided into two areas – Cassiar North, which hosts the bulk tonnage Taurus gold deposit, and Cassiar South, which hosts multiple high-grade gold targets.

At the onset of the 2022 drill program, which got underway in June, the Taurus deposit hosted 37.9 million metric tons of inferred resource averaging 1.14 grams per metric ton (1.39 million oz) gold. This deposit lies about 600 meters west of the historical Taurus Mine, which produced 35,000 oz of gold from ore averaging 3.5 g/t gold during operation in the 1980s.

Looking to extend the Taurus deposit into the historically mined area, Cassiar drilled six holes along the Decline fault, which runs north-south through the past producing mine, and one hole about halfway between the Taurus mine and resource.

Highlights from Taurus East expansion drilling include:

• 6.75 meters averaging 3.14 g/t gold from a depth of 111.7 meters in hole 22TA-141.

• 22.2 meters averaging 1.5 g/t gold from a depth of 129.8 meters in hole 22TA-142.

• 7.45 meters averaging 2.58 g/t gold from a depth of 38 meters in hole 22TA-143.

• 6.95 meters averaging 1.74 g/t gold from a depth of 85 meters in hole 22TA-143.

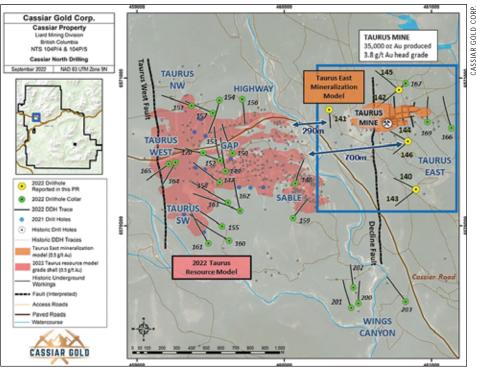
• 7.5 meters averaging 1.68 g/t gold from a depth of 127.1 meters in hole 22TA-144.

• 10.5 meters averaging 4.47 g/t gold from a depth of 12.9 meters in hole 22TA-146.

"Our programs to date coupled with these results provide new insight for our targeting and open up sizeable areas for additional exploration," said Cassiar Gold CEO Marco Roque.

In addition to Taurus East, Cassiar completed drilling to expand the Taurus deposit and to test gaps within the resource: The company also tested Wings Canyon, a target about 1,000 meters south of the Taurus Mine, as well as priority high-grade gold vein prospects at Cassiar South.

CHAIRMAN: Steve Letwin PRESIDENT & CEO: Marco Roque VP, EXPLORATION: Vernon Shein



Map of the 2022 drilling at the Taurus and Taurus east targets on the Cassiar gold project in BC.



A drill tests the Vollaug vein on Table Mountain during the 2022 program at the Cassiar gold project.

CASH AND CASH EQUIVALENTS: C\$10.3 million (June 30, 2022) WORKING CAPITAL: C\$9.4 million (June 30, 2022) MARKET CAPITALIZATION: C\$33.7 million (Nov. 18, 2022) 450-800 West Pender St. Vancouver, BC V6C 2V6 Tel: 236-878-6160 ir@cassiargold.com www.cassiargold.com

The late 2021 pouring of this first gold bar from the Gil Mine set in motion the Kinross Alaska strategy to utilize the mill at Fort Knox to rocess high-grade ore from satellite gold deposits across Alaska.

Alaska Exploration 2022

TETER CELES

Golden potential, critical opportunities

Gold dominates Alaska exploration, but a critical shift arises

By SHANE LASLEY

Mining News

S ince the discovery of gold in what is now the Alaska capital city of Juneau, prospectors, geologists, and fortune seekers have spent more than 140 consecutive summer seasons exploring The Last Frontier's golden potential. With these endeavors turning up rich aurum lodes in every corner of the state, except for the oil-rich North Slope, the nearly century-and-a-half tradition of seeking and discovering world-class gold deposits will likely continue for many decades to come.

While gold continued to be a dominant metal explored for in Alaska during the summer of 2022, there has been a subtle but distinct shift in the focus of geological investigations across the state toward the 50 minerals and metals critical to United States.

This lean toward low-carbon energy and technology minerals includes whispers of geologists investigating the state's potential for tellurium for thin-film solar panels; renewed exploration of deposits enriched in the nickel and cobalt needed for lithium-ion batteries powering electric vehicles; a new discovery of the lithium that is also highly coveted for EV batteries; advancement of a worldclass graphite project toward production; and an expanded U.S. Geological Survey project to better define the known occurrences of antimony, bismuth, platinum group metals, rare earth elements, tin, tungsten, and other critical minerals across America's Last Frontier for critical mineral exploration.

"All the way back to the days of the Gold Rush, Alaska has been famous for its mineral wealth," said USGS Director David Applegate. "These new projects represent the next steps in understanding the mineral potential for commodities that are critical to our national economy and defense."

Exploring world-class gold

The subtle swing toward critical mineral exploration in Alaska is in addition to, not in lieu of, the endeavors to discover, expand upon, and better delineate world-class gold deposits across Alaska.

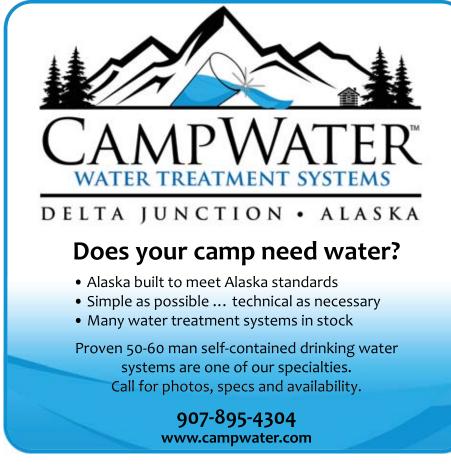
At least 15 mining and mineral exploration companies invested more than US\$150 million on gold-dominant exploration and neardevelopment projects across the state during 2022.

The largest of these programs was a roughly US\$60 million campaign at Donlin Gold, which also happens to be the largest pure gold deposit discovered so far in the Far North State.

A 42,331-meter program carried out by Donlin Gold partners Barrick Gold Corp. and Novagold Resources Inc. during the 2022 summer season focused on infill drilling in preparation of finalizing



A drill expands the large gold deposit at Freegold's Golden Summit project north of Fairbanks, Alaska.



an updated feasibility study and making the final decision to develop a world-class mine at this 39-million-ounce gold deposit in Southwest Alaska.

With intercepts of up to 52.3 meters averaging 14.6 grams per metric ton gold and 42.3 meters of 30.7 g/t gold, the 2022 drill program enhanced the deposit and the developers understanding of it.

"The 2022 drill program has been extremely exciting, not to mention rewarding," said Novagold Resources President and CEO Greg Lang.

Roughly 170 miles southeast of Donlin, Nova Minerals Ltd. is exploring another district-scale property with world-class gold potential.

So far, the Australian exploration company has outlined 9.6 million oz of gold in two deposits at opposite ends of an 18-milelong trend that spans the company's Estelle property – the Korbel deposit at the north end hosts 869 million metric tons of indicated and inferred resources averaging 0.3 g/t (8.1 million oz) gold, and the RPM deposit at the south end hosts another 23.1 million metric tons of inferred resource averaging 2 g/t (1.5 million oz) gold.

Both deposits are expected to be much larger when the results of the 2022 drill program are incorporated in a mineral resource estimate that will form the foundation for prefeasibility studies slated to begin this year.

"We are only getting started as we continue on our path to increase resource size, confidence and towards commercial production," Nova Minerals CEO Christopher Gerteisen said in October.

Busy year around Fairbanks

Since Felix Pedro discovered placer gold in the streams north of Fairbanks in 1902, the district surrounding Alaska's Golden Heart City has been a popular destination for placer and hardrock minerals alike.

Today, the Fairbanks Mining District is anchored by Kinross Gold Corp.'s Fort Knox Mine, an operation that has produced nearly 9 million oz of gold over the past 26 years.

As Kinross moves ahead with a strategy to heap leach bulk tonnage ore mined from the Fort Knox property itself and mill higher-grade ore delivered to the operation from outlying mines, mineral exploration companies are advancing gold projects that could feed ore to the Kinross Alaska mill or support standalone operations.

One such prospect is Freegold Ventures Ltd.'s Golden Summit project about five miles northwest of Fort Knox. While Golden Summit already hosted a 3-million-oz bulk-tonnage deposit similar to the one that has been mined at Fort Knox for the past 26 years, recent drilling has tapped very high-grade gold that may be excellent feedstock for the Kinross Alaska mill.

As Freegold builds upon its multi-million-oz gold resource, which benefits from low-cost heap leachable mineralization with a high-grade kicker that could feed a nearby mill, Felix Gold Corp. carried out a large and systematic drill program to build another gold resource in the Fairbanks District.

Under a strategic alliance with Millrock Resources Inc., Felix pulled together a roughly 151-square-mile land package that includes multiple blocks of mining claims across the Fairbanks District.

During 2022, the Australian company named after the discoverer of gold in the Fairbanks District focused an expansive drill program on the Treasury Creek property about 13 miles west of Fort Knox.

In just its second hole drilled in Alaska, Felix cut 29 meters averaging 1.4 g/t gold from a depth of 24.4 meters at the Northwest Array target at Treasury Creek. This was followed up by 33.5 meters averaging 1.63 g/t gold in hole five; 1.63 g/t gold in hole eight; and 7.6 meters averaging 6.48 g/t gold in hole 36.

By October, the company had traced the near-surface gold mineralization at Northwest Array over a 400- by 750-meter area that remains for further expansion.

"NW Array is quickly building into a significant gold discovery," said Felix Gold Managing Director and CEO Joe Webb. "Critically, NW Array and the broader Treasure Creek Project is surrounded by infrastructure within the world-class Fairbanks Gold Mining District, which has produced over 16Moz in historical gold output. Nearby operations include Kinross Gold's Fort Knox Gold Mine, a large-scale gold processing operation that is openly seeking additional sources of ore supply."

Kinross Alaska economic radius

Kinross' strategy to feed ore from satellite deposits through the mill at Fort Knox has implications for high-grade gold deposits within a 300-mile radius of the Fairbanks District.

This is particularly true for the Manh Choh gold project about 250 miles southeast of Fort Knox.

Upon acquiring a 70% interest in Manh Choh from Contango ORE Inc. in 2020, Kinross began the permitting, field programs,



Donlin Gold Environmental Technician John Ishnook.

and other work required to feed high-grade ore mined from two small pits at Manh Choh through the Kinross Alaska mill.

Upon the completion of a 2022 feasibility study for a mine at Manh Choh, Kinross decided to develop this satellite mine expected to produce roughly 1 million oz of goldequivalent annually over an initial 4.5 years of mining

The first Manh Choh ore is expected to

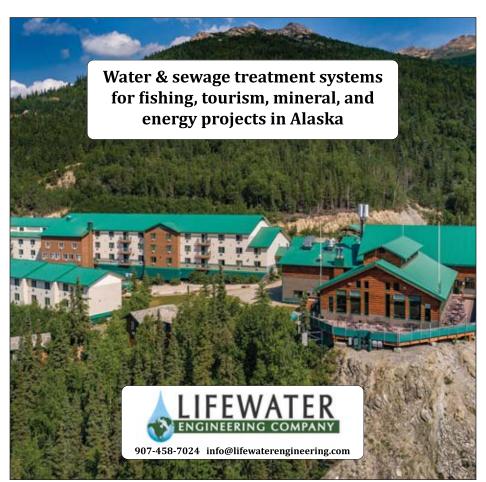
be delivered to the Kinross Alaska mill in 2024.

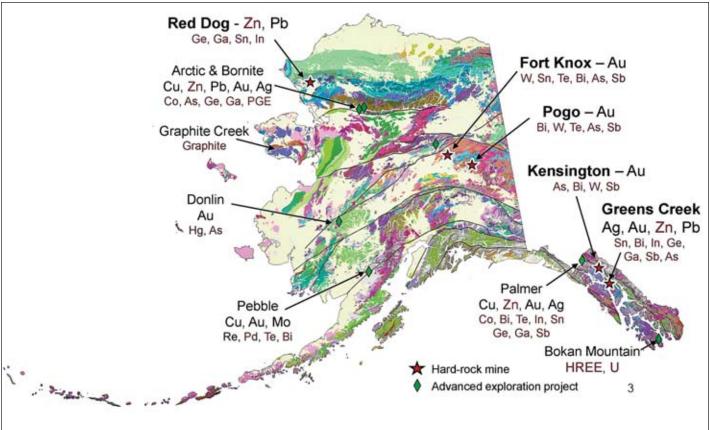
With Kinross taking the lead at Manh Choh, Contango ORE focused its 2022 efforts on advancing exploration and underground development at Lucky Shot, an even higher-grade gold deposit within the Kinross Alaska "economic radius".

Lucky Shot is a road-accessible project about 75 miles north of Anchorage that covers a large portion of the Willow Creek Mining District, including the pre-World War II Lucky Shot and War Baby mines, which produced an estimated 250,000 oz of gold from 169,000 tons of ore, indicating an average head grade of around 1.5 oz of gold per metric ton.

A 2016 calculation outlined 206,500 metric tons of what is now being treated as historical measured and indicated resources averaging 18.3 g/t (121,500 oz) gold and 59 thousand metric tons of inferred resource averaging 18.5 g/t (35,150 oz) gold at Lucky Shot.

With its sights set on updating and expanding this resource to at least 500,000 oz of gold, CORE has rehabilitated and is expanding upon historical tunnels, which serves as platforms for the systematic drilling of the high-grade Lucky Shot vein.





Numerous critical minerals are associated with the operating mines and advanced mineral exploration projects found across Alaska.

"I think this is a pretty easy project for us to move forward and be our second mine in operation in Alaska," Contango ORE President and CEO Rick Van Nieuwenhuyse said during a presentation at the 2022 Precious Metals Summit in Colorado.

The CORE CEO said shipping the ore to the hungry Kinross Alaska mill or processing the free-milling ore at Lucky Shot are potential options for the high-grade underground gold mine.

At the very edge of the Kinross Alaska radius, HighGold Mining Inc. is building high-grade gold resources on its Johnson Tract property.

Located on the west side of Cook Inlet in Southcentral Alaska, the JT deposit at Johnson Tract hosts 3.49 million metric tons of indicated resource averaging 5.33 g/t (598,000 oz) gold, 6 g/t (673,000 oz) silver, 5.21% (400.8 million pounds) zinc, 0.59% (43.1 million lb) copper, and 0.67% (51.5 million lb) lead.

Including the value of all the metals into gold equivalency, this comes to 1.05 million oz of gold-equivalent in the indicated category.

HighGold's 2022 exploration, however, focused primarily on Ellis Zone in the Difficult Creek area about 2.5 miles north of JT deposit.

The 2021 Ellis Zone discovery hole cut 6.4 meters averaging 577.9 g/t (18.58 oz/t) gold, 2,023 g/t (65 oz/t) silver, 2.15% zinc, and 0.3% copper.

While the 2022 drilling did not hit these bonanza grades, they did begin to outline a zone of mineralization that may rival JT in both size and grade. This includes one hole that cut 11.9 meters averaging 21.68 g/t gold, 30 g/t silver, 0.61% copper, and 4.2% zinc.

"While still very early days, it appears we are well on our way to defining a second deposit at Johnson Tract to complement the existing high-grade (plus-1-million-oz) JT Deposit mineral resource that is also open to expansion," said HighGold Mining CEO Darwin Green.

Alaska's silver lining

While gold may be the most sought-after metal in Alaska, it was the bonanza-grade silver being drilled by Western Alaska Minerals Corp. at the Waterpump Creek carbonate replacement deposit on the company's Illinois Creek project that generated the most excitement during 2022.

One hole drilled by Western at the end of the 2021 season cut 10.5 meters averaging 522 g/t silver, 22.5% zinc, and 14.5% lead in the area of a historical resource at Waterpump.

During 2022, Western released a steady stream of assay results from drilling at Waterpump. Some of the highlights include:

 \bullet 11.5 meters averaging 337 g/t silver, 16.7% zinc, and 10% lead in hole WPC22-11.

 \bullet 2.8 meters averaging 1,304 g/t silver, 2.5% zinc, and 37.1% lead in hole WPC22-13.

 \bullet 48.8 meters averaging 144 g/t silver, 9% zinc, and 5.5% lead in hole WPC22-17.

 \bullet 101.7 meters averaging 160 g/t silver, 5.4% zinc, and 5.3% lead in hole WPC22-18.

As a result of the drilling achievements in 2022, coupled with the late-summer closing of a C\$12 million financing, Western is already making plans for a 25,000-meter drill program in 2023.

"We think we've latched onto a major silver-lead-zinc system so the company has purchased three more drill rigs for more aggressive exploration starting next spring," said Western Alaska Minerals CEO Kit Marrs.

Two of Alaska's five large metal mines – Teck Resources Ltd. Red Dog operation in Northwest Alaska and Hecla Mining Company's Greens Creek Mine on the Southeast Alaska Panhandle – produce silver, zinc, and lead.

Teck's exploration at Red Dog, which is a zinc-dominant mine, is focused on satellite projects across the wider district that will provide ore beyond the current 2031 minelife.

At Greens Creek, which is more silver enriched, Hecla's drilling is focused primarily on near-mine resource expansion and upgrade targets to support the roughly 9million-oz-per-year silver output this underground operation has become renowned for.

Roughly 275 miles north of Greens Creek, a joint venture between American Pacific Mining Corp. and Dowa Metals & Mining Alaska Ltd. is advancing exploration and development at Palmer, a volcanogenic massive sulfide deposit enriched with precious, industrial, and critical minerals.

A preliminary economic assessment that was updated in 2022 outlines plans for a 3,500-metric-ton-per-day mill at Palmer that would produce 1.07 billion lb of zinc, 196 million lb of copper, 18 million oz of silver, 91,000 oz of gold, and 2.89 million metric tons of barite over an initial 11-year mine life.

American Pacific gained a 45% ownership of Palmer with the 2022 buyout of Constantine Metal Resources Ltd.

"This is a transformational step for American Pacific as the Palmer Project gives us an established PEA-stage asset with a tremendous amount of exploration upside," said American Pacific Mining CEO Warwick Smith.

World-class copper

While Alaska does not have a large copper producing mine, the Far North State is home to some world-class deposits of this metal in high demand for wiring a world transitioning to electric vehicles charged with low-carbon electricity.

The World Bank estimates that more than 1.1 trillion pounds of copper will be required over the next 25 years to build enough EVS and clean energy infrastructure to meet global climate goals and meet normal demands for the metal, which is roughly equivalent to all the copper mined during the previous 5,000 years combined.

With this much demand on the horizon, it is hard to ignore the world-class Pebble deposit in Southwest Alaska.

According to a 2020 calculation, Pebble hosts 6.5 billion metric tons of measured and indicated resources averaging 0.4% (57 billion lb) copper, 0.34 g/t (71 million oz) gold, 240 parts per million (3.4 billion lb) molybdenum, 1.7 g/t (345 million oz) silver and 0.41 ppm (2.6 million kg) rhenium.

The Southwest Alaska deposit hosts another 25 billion lb of copper in the lower confidence inferred resource category.

The USGS has also noted an "enormous tellurium endowment" at Pebble," but a resource has not been calculated to quantify this critical solar panel metal.

Despite its world-class potential to help supply the world's enormous copper demands, this project has faced stiff opposition due to its relative proximity to the world-class Bristol Bay salmon fishery. While not as large as Pebble, but much higher grade, the Arctic and Bornite deposits in the Ambler Mining District offer another potential near-term Alaska supply of the copper and other metals critical to the U.S.

Combined, the Arctic and Bornite deposits host roughly 8.9 billion lb of copper, 3.6 billion lb of zinc, 626 million lb of lead, 88 million lb of cobalt, 770,000 ounces of gold, and 58.3 million oz of silver in the indicated and inferred resource categories.

Arctic is the most advanced UKMP project and is slated to be the first mine in the Ambler District.

> "I've been collecting rocks since I was a little kid, but I never thought of becoming a geologist. Thanks to ARE, I learned about geology careers and now that's what I plan to do."

> > -Sentha Wright 11th Grade, Service High School

INSPIRING THE NEXT GENERATION OF INDUSTRY LEADERS

Sentha Wright is just one of more than 5,500 Alaska students who participated in Alaska Resource Education programs in 2022. Through hands-on curriculum, field trips and guestspeakers, ARE educates students and teachers about careers in the natural resource industry.

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According to a 2020 feasibility study, a mine at the Arctic deposit would produce 1.9 billion lb of copper, 2.3 billion lb of zinc, 388 million lb of lead, 386,000 oz of gold, and 40.6 million oz of silver over an initial 12-year mine life.

Ambler Metals LLC, a joint venture company equally owned by Trilogy and South32 Ltd., invested roughly US\$28.5 million into a 2022 exploration program that included 10,739 meters of drilling targeting resource upgrades within the Arctic deposit and testing earlier-stage copper-rich prospects across the Upper Kobuk Mineral Projects in Northwest Alaska.

In a September letter to the U.S. Bureau of Land Management, Alaska Congresswoman Mary Peltola, an Alaska Native elected to replace the late Don Young as Alaska's at large representative in the House, said a road to the Ambler District is both needed and wanted in the state.

"The mineral resources in the area, including copper, are of critical importance to the country," she inked in a Sept. 29 letter in support of the Ambler Road. "The minerals are there; the state and private interests in exploring and developing those resources are in place; the support of Alaska Native corporation and tribes is strong. What is missing is access, which the (Ambler Access) Project would provide."

49 critical minerals

In addition to copper, Alaska is exceptionally enriched with critical minerals. Recent analysis by Data Mine North has identified 49 of the 50 minerals deemed critical to the U.S. in deposits and occurrences across the 49th State.

This includes the recent discovery of lithium, a critical battery metal that previously had not been identified in quantifiable quanti-



ties, in the Coal Creek tin-silver-zinc prospect on Discovery Alaska Ltd.'s Chulitna property midway between Anchorage and Fairbanks, Alaska, and about four miles west of the paved Parks Highway.

A 1980s era calculation estimated that Coal Creek contains 4.8 million metric tons of historical resource averaging 0.27% tin along with appreciable quantities of silver and zinc.

Resampling of the historical drill core shows the deposit also contains roughly 0.12% lithium over core lengths greater than 50 meters.

"We look forward to realising the lithium potential and advancing works toward delineating a maiden JORC resource at our Coal Creek prospect, strategically located close to the major Parks Highway and the state-owned Alaska railroad," said Discovery Alaska Director Jerko Zuvela.

While intriguing quantities of the lithium needed for EV batteries is new, Alaska has long been known for its nickel potential.

During 2022, Millrock Resources began revisiting Nikolai, one of the best known and largest nickel discoveries in the state.

Located about 80 miles south of Delta Junction, Alaska, Nikolai (formerly known as Man) covers a roughly 10-mile- (16 kilometers) long zone of prospective nickel-copper-cobalt-platinum group metal mineralization known as Eureka.

One of the best holes drilled at Eureka cut 319.7 meters averaging 0.25% nickel, 0.09% copper, 0.018% cobalt, 54 ppb platinum, 117 ppb palladium, and 13 ppb gold.

Based on historical drilling, Millrock has identified a roughly 1,200-by-400-by-300-meter body of mineralization at Eureka.

"From historical drilling, it is clear that a large volume of mineralized rock is present in the Eureka Zone," said Millrock Resources President and CEO Greg Beischer. "We believe the demand for nickel, cobalt, and other Critical and Strategic Metals will be exceptionally strong in the coming decades, making low-grade mineralization such as at Eureka of interest."

The most advanced critical battery minerals project in Alaska is the Graphite Creek deposit about 50 miles north of the deep-water port facilities in Nome.

The USGS considers Graphite Creek to be the largest known deposit of this critical lithium-ion battery mineral in the U.S.

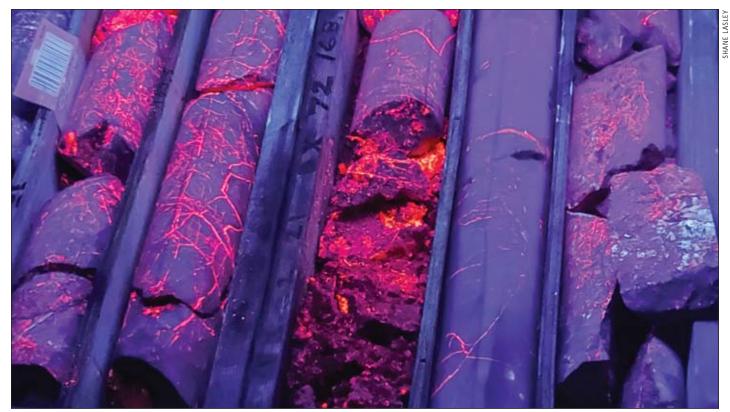
A 2022 prefeasibility study envisions a mine at Graphite Creek that would produce roughly 51,800 metric tons of graphite concentrate per year, which would be shipped to Graphite One's planned processing and recycling facility in Washington, a locale selected for its abundant low-cost and low-carbon hydroelectricity.

The Washington plant will upgrade Graphite Creek concentrates, along with purchased graphite material, into 49,600 metric tons spherical coated graphite that serves as the anode material in lithium-ion batteries and 25,400 metric tons of other graphite products per year.

To gather the data needed for a feasibility study, the final step before permitting and development of this Alaska mine to EV battery supply chain, the 2022 program at Graphite Creek included 2,092 meters of infill and resource expansion drilling, environmental baseline studies, and significant camp expansion.

"Our strategy is to build a complete graphite anode supply chain – from mine to battery – located in the United States," said Graphite One CEO Anthony Huston.

"It is anticipated that the 2022 summer drilling program data will be incorporated when the company is in a position to file a feasibility study to advance Graphite Creek during this critical time of under-supply for U.S. strategic materials such as graphite," he added. ●



Under UV light, the sulfide mineralization at Waterpump Creek glows bright red against the duller purple color of the carbonate host rock.

High-grade silver boosts Western Alaska

Drills tap as much as 1,304 g/t silver over 2.8m at Waterpump

By SHANE LASLEY Mining News

Thanks to the thick zones of high-grade silver-zinc-lead mineralization cut during the 2022 drilling of the Waterpump Creek target at Illinois Creek, Western Alaska Minerals Corp.'s first year as a publicly traded company on the TSX Venture Exchange has been a resounding success.

Listing on the TSX.V at C85 cents per share in November 2021, Western shares were selling for a whopping C\$5.60 each at the company's peak in August 2022. This meteoric rise began before the first assays from the 2022 drilling had even come back from the assay lab – just a look at photos of the metal-rich cores from the drilling was enough to have investors clamoring to own shares of this upcoming explorer.

With intercepts such as 2.8 meters with 1,304 grams per metric ton silver, along with 2.5% zinc and 37.1% lead, the assays that came out in August did not disappoint.

"We are very excited about the near-term potential for drilling out a preliminary bonanza-grade silver resource with base metal credits high enough to cover operating costs," Western Alaska Minerals President and CEO Kit Marrs.



As a geologist on the Anaconda Minerals exploration team that discovered porphyry copper-gold mineralization on the Illinois Creek property in the 1980s, the Western Alaska Minerals founder and CEO is well-versed in the geology and mineral potential of this large property lying alongside the Yukon River about 300 miles west of Fairbanks, Alaska.

One district, five metals

While Waterpump Creek had been known for its silver-rich carbonate replacement deposit-type mineralization for the better part of 40 years, it had previously been considered a secondary or tertiary target at Illinois Creek, a property that covers more than 73,000 acres of mineral-rich land in western Alaska.

The Illinois Creek Mine gold-silver deposit about four miles southwest of Waterpump and the Roundtop porphyry copper-gold target about 10 miles to the northeast are both viable standalone mineral exploration targets.

The Illinois Creek Mine was an open pit and heap leach operation that produced roughly 150,000 oz of gold and 500,000 oz of silver during three years of mining that ended in 2002. The shuttering of this operation had more to do with financial difficulties related to low gold and silver prices of the day than a lack of ore.

According to a 2021 calculation, Illinois Creek hosts 8.7 million metric tons of indicated resource averaging 0.9 grams per metric ton (253,000 oz) gold, 34.4 g/t (9.6 million oz) silver, and 0.21% (40 million pounds) copper; and 3.3 million metric tons of inferred resource averaging 0.99 g/t (104,000 oz) gold, 36.2 g/t (3.8 million oz) silver, and 0.21% (15 million lb) copper.

While a resource has yet to be calculated for Round Top, drilling carried out by Western as a private company has demonstrated the potential of this porphyry copper target.

Highlights from the 40 holes drilled by Western include 64.7 meters of 0.65% copper-equivalent; 166 meters of 0.51% copper-equivalent; 209.7 meters of 0.28% copper-equivalent; and 64 meters of 0.74%



Western Alaska Minerals President and CEO Kit Marrs in the core shack at Illinois Creek.

copper-equivalent.

"One of the many strengths of the Illinois Creek district is the presence and ongoing discovery of a series of deposits with varying metals," Marrs told Mining News.

In 2021, the Western team decided to take a closer look at Waterpump Creek, a modest deposit that hosted 166,000 tons of historical resource averaging 295 g/t silver, 16.1% lead, and 5.5% zinc.

"Exploration at Waterpump Creek in 2021 focused on expanding our understanding of the high-grade manto mineralization first discovered by Anaconda Minerals Co. in the early 1980s," said Marrs.

The last holes of this program, WPC21-



09, cut 10.5 meters averaging 522 g/t silver, 22.5% zinc, and 14.5% lead.

High-grade Waterpump silver

Encouraged by the results of its initial drilling, the company focused its 2022 program on expanding the high-grade mineralization with closely spaced holes to identify the ore controls and trends of the bonanza-grade sulfides encountered in hole WPC21-09.

The first batch of assays from the 2022 drilling encountered multiple zones of the high-grade silver-zinc-lead mineralization Western had hoped for.

Highlights from this first batch of 2022 drill results include:

• 5.1 meters averaging 459 grams (14.8 ounces) per metric ton silver, 12.1% zinc, and 14.8% lead from a depth of 136.4 meters in hole WPC22-07.

• 14.3 meters averaging 54 g/t (1.7 oz/t) silver, 10.3% zinc, and 1.9% lead from a depth of 150.1 meters in hole WPC22-07.

• 10.9 meters averaging 157 g/t (5 oz/t) silver, 9.9% zinc, and 6.4% lead from a depth of 114.6 meters in hole WPC22-08.

• 11.5 meters averaging 337 g/t (10.8 oz/t) silver, 16.7% zinc, and 10% lead from a depth of 139.1 meters in hole WPC22-11.

 \bullet 3.5 meters averaging 151 g/t (4.9 oz/t) silver, 22.3% zinc, and 5.1% lead

from a depth of 152.7 meters in hole WPC22-11.

• 2.8 meters averaging 1,304 g/t (41.9 oz/t) silver, 2.5% zinc, and 37.1% lead from a depth of 150.1 meters in hole WPC22-13. • 2.4 meters averaging 820 g/t (26.4 oz/t) silver, 15% zinc,

and 13% lead from a depth of 158.4 meters in hole WPC22-13. While core from these holes was being analyzed, the drills

had cut 47 meters of massive sulfide mineralization in hole WPC22-17, which was drilled more than 200 meters south of hole WPC21-09, and 101.7 meters of similar massive sulfide mineralization in hole WPC22-18, drilled 50 meters further south.

Both 2022 holes ran similar grades over much wider widths:

• 48.8 meters averaging 144 g/t (4.6 oz/t) silver, 9% zinc, and 5.5% lead in hole WPC22-17, including a 9.8-meter subsection averaging 428 g/t (13.8 oz/t) silver, 15.9% zinc, and 14.1% lead.

• 101.7 meters averaging 160 g/t (5.1 oz/t) silver, 5.4% zinc, and 5.3% lead in hole WPC22-18, including an 18.5-meter subsection averaging 335 g/t (10.8 oz/t) silver, 2.2% zinc, and 13.5% lead.

With three intervals of high-grade lead-silver and silver-leadzinc mineralization, WPC22-18 is by far the thickest and most mineralogically complex hole drilled so far at Waterpump Creek.

"Our 2022 drilling program at Waterpump Creek has now outlined a 400-meter-long trend of high grade silver-lead-zinc mineralization. This is a significant step towards defining an economic CRD deposit," said Marrs. "Mineralization has thickened and become wider as the drilling has moved south along trend."

"[V]ery few CRD systems have only one spoke to their wheel and you can track them back to the intrusive hub, which at Illinois Creek is likely a porphyry copper deposit." -Peter Megaw

Discovering the Waterpump feeder

Western says the abrupt thickening and multi-stage complexity of mineralization strongly indicates hole WPC22-18 cut an important feeder zone at Waterpump Creek.

"It is remarkable to have cut a sulfide feeder zone so early in a CRD exploration program and this opens up a number of very exciting targets along the Illinois Creek Fault," said Peter Megaw, a Western Alaska Minerals technical advisor with more than 30 years of exploration-focused studies of carbonate replacement deposits. "Having WPC22-18 to ground-truth geologic models and geophysical interpretations should greatly facilitate efficient exploration throughout this apparently very large scale CRD system."

The feeder zone encountered in WPC22-18 appears to lie at the intersection of the Waterpump Creek graben (a downdropped block of crust between faults) and the Illinois Creek Fault, which suggests similar intersections identified elsewhere on the property may also host feeders that guided mineralizing fluids into the favorable carbonate host rocks.

"Following progressively thicker and more complex mineralization encountered in WPC22-17 and 18 and then seeing it thin again as we drilled further southward along the WPC graben strongly suggests we hit a feeder chimney located at the intersection with the Illinois Creek Fault," said Western Alaska Minerals Chief Exploration Officer Joe Piekenbrock.



ALASKA MINERALS

Core from WPC22-011, a hole that cut 11.5 meters averaging 337 g/t silver, 16.7% zinc, and 10% lead in the Waterpump Creek target at Illinois Creek.

Latched onto a major system

Hole WPC22-20, which was drilled about 50 meters south of WPC22-18, cut two thick multistage massive sulfide zones that have CRD experts excited about the bigger potential at Illinois Creek.

Hole WPC22-20 cut 11.4 meters averaging 284 g/t (9.1 oz/t)silver, 14.8% zinc, and 10.9% lead from a depth of 166.6 meters; and 20.7 meters averaging 171 g/t (5.5 oz/t) silver, 9.4% zinc, and 5.8% lead from 185.2 meters.

Western says both these intercepts show classic multi-phase CRD-style massive sulfide mineralization with silver-rich lead mineralization stages cutting earlier zinc-rich stages.

"The multi-stage high-silver mineralization cutting across the multi-stage high-zinc mineralization seen in WPC22-20 indicates that a long-lived source pumped one pulse of metal-bearing fluids after another into the system's plumbing," said Peter Megaw, exploration advisor to Western Alaska Minerals. "Once you see that kind of system strength it is time to look around for more because very few CRD systems have only one spoke to their wheel and you can track them back to the intrusive hub, which at Illinois Creek is likely a porphyry copper deposit."

A CSAMT (controlled-source audio-magnetotellurics) geophysics program completed over the roughly five miles (eight kilometers) between the Illinois Creek oxide gold-silver mineralization and the Waterpump Creek target area during the 2022 field season shows a complex interplay of stacked thrusts and high-angle and possibly post-mineral faulting.

To continue to expand upon the deposit traced during 2022, as well as test the wider potential indicated by the drilling and geophysics, Western plans to carry out a 25,000-meter drill program at Illinois Creek this year.

"We think we've latched onto a major silver-lead-zinc system, so the company has purchased three more drill rigs for more aggressive exploration starting next spring," said Marrs.

The new rigs will focus on expanding and upgrading the high-grade Waterpump Creek manto with 15,000 meters of drilling.

The balance of the 2023 drilling, to be carried out with the two rigs already at Illinois Creek, will test for other spokes to the CRD system in areas where north-south structures intersect the Illinois Creek Fault.

The existing camp will be expanded to accommodate crews for the five drill rigs. Camp material, equipment and new fuel storage have been transported to Illinois Creek so that operations will be ready to ramp up in early spring. ●

HIGHGOLD MINING INC

EXPLORERS AT A GLANCE



HighGold Mining CEO Darwin Green at the Johnson Tract gold exploration project in Alaska.

HighGold Mining Inc. 🔴 🔵 🍯

TSX.V: HIGH 🕋

Second Alaska HighGold deposit emerging

After elevating the resource in the JT deposit to above 1 million ounces of gold-equivalent, HighGold Mining Inc. focused its 2022 drilling at its Johnson Tract property in Alaska largely on expanding the high-grade mineralization at the Difficult Creek target area about 2.5 miles (four kilometers) to the northeast.

ALASKA

Located on the west side of Cook Inlet, about 125 miles southwest of Anchorage, Alaska, Johnson Tract is a



20,942-acre property owned by Cook Inlet Regional Inc., an Alaska Native Claims Settlement Act (ANCSA) regional corporation. Since optioning Johnson Tract in 2018, HighGold has been focused on upgrading and expanding the historical JT deposit, and exploring some of the exciting but earlier-stage prospects across the property.

According to a calculation completed in July, the JT deposit hosts 3.49 million metric tons of indicated resource averaging 5.33 grams per metric ton (598,000 ounces) gold, 6 g/t (673,000 oz) silver, 5.21% (400.8 million pounds) zinc, 0.59% (43.1 million lb) copper, and 0.67% (51.5 million lb) lead.

Including the value of all the metals, this comes to 1.05 million oz of indicated resource averaging 9.39 g/t gold-equivalent.

"We are delighted to establish a high-grade indicated resource of more than 1 million ounces gold equivalent at Johnson Tract," said HighGold Mining CEO Darwin Green.

The deposit also hosts 706,000 metric tons of inferred resource averaging 1.36 g/t (31,000 oz) gold, 9.1 g/t (207,000 oz) silver, 4.18% (65.1 million lb) zinc, 0.59% (9.2 million lb) copper, and 0.3% (4.7 million lb) lead.

By the time the resource was calculated, the 2022 drill program at Johnson Tract was in full swing.

The 10,346 meters of drilling completed in 55 holes at Johnson Tract last year primarily targeted the larger Difficult Creek (DC) discovery area, where reconnaissance drilling cut one of the best gold intercepts in the world for 2021.

This hole, DC21-010, cut 6.4 meters averaging 577.9 g/t (18.58 ounces per metric ton) gold, 2,023 g/t (65 oz/t) silver, 2.15% zinc, and 0.3% copper at the Middle DC target. This bonanza-grade intercept included an incredible 1.26-meter subsection averaging 2,860 g/t (91.95 oz/t) gold, 9,990 g/t (321.2 oz/t) silver, 5.04% zinc, and 0.88% copper.

This intercept ranked No. 3 in the world during 2021 when it comes to gold-equivalent grams per metric ton, according to Australia-based Opaxe.

The 2022 drill program began with close-spaced step-out holes to determine the geometry, geological controls, and grade distribution of this exciting new zone named after the late Bill Ellis, a longtime Alaska geologist who played a key role in the initial discovery of Johnson Tract. Highlights from the 2022 drilling at Ellis Zone include:

• 14.7 meters averaging 4 g/t gold, 18 g/t silver, 0.27% copper, and 4.18% zinc, including a 5.6-meter subsection averaging 7.8 g/t gold, 36 g/t silver, 0.49% copper, and 9.17% zinc.

• 42.8 meters averaging 3.4 g/t gold, 23 g/t silver, 0.21% copper, and 2.06% zinc in hole DC22-036, including an 18.4-meter subsection averaging 7.29 g/t gold, 50 g/t silver, 0.44% copper, and 3.92% zinc.

• 11.9 meters averaging 21.68 g/t gold, 30 g/t silver, 0.61% copper, and 4.2% zinc in hole DC22-043, including a 3.9-meter subsection averaging 54.2 g/t gold, 71 g/t silver, 1.26% copper, and 8.29% zinc.

• 35.2 meters averaging 4.2 g/t gold, 6.1 g/t silver, 0.12% copper, 1.4% lead, and 3.19% zinc in hole DC22-045, including 13.3 meters averaging 7.81 g/t gold, 6.4 g/t silver, 0.23% copper, 1.31% lead, and 2.35% zinc.

• 14.8 meters averaging 10.14 g/t gold, 13.8 g/t silver, 0.28% copper,



Lying along the west side of Alaska's Cook Inlet, the Johnson Tract project includes road and port easement rights to support mining.

and 5.97% zinc in hole DC22-045, including 6.8 meters averaging 21.29 g/t gold, 25.1 g/t silver, 0.55% copper, 0.61% lead, and 10.7% zinc

The widespread extent of mineralization exposed by erosion indicates the potential that Ellis Zone mineralization drilled so far is part of a large and partially blind mineralized system linking various DC Prospect zones together over a strike length of 3,000 meters.

"While still very early days, it appears we are well on our way to defining a second deposit at Johnson Tract to complement the existing high-grade +1Moz JT Deposit mineral resource that is also open to expansion," Green said.

In addition to the drilling at Ellis Zone, the company has completed 3,295 meters of drilling in six holes at Milkbone, which is about 1,000 meters southwest of Ellis along the longer DC Prospect trend; one hole at the Kona prospect, which lies about 2,500 meters west of Ellis; and at least four holes testing important resource growth targets at JT Deposit. To improve assay lab turnaround times, HighGold established an onsite sample preparation facility for crushing and pulverizing drill core samples. The quicker return of assays will allow the company to more efficiently follow up on results from this year's drilling.

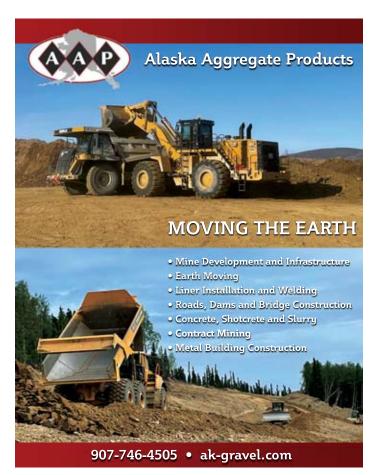
In tandem with drilling, HighGold's 2022 program at Johnson Tract included geological mapping, prospecting, and sampling to expand on the positive results generated from the 2021 program and refine drill targets; drone-magnetic airborne surveying; and preliminary engineering and environmental baseline studies to support project planning.

HighGold also owns four gold exploration properties – King Tut, RGS, Canol, and Stan – just south of Snowline Gold Corp.'s large land package in the Selwyn Basin of eastern Yukon.

"Following the recent and very significant new gold discoveries in Yukon's Selwyn Basin, it was time to pull our portfolio of Yukon gold properties off the back burner," Green said in September. "In our opinion, the King Tut property represents one of the best undrilled intrusiverelated gold-in-soil anomalies not already controlled by Snowline Gold in this emerging new district."

PRESIDENT & CEO: Darwin Green VP, EXPLORATION: Ian Cunningham-Dunlop VP, ALASKA OPERATIONS: Devin den Boer

CASH AND SHORT-TERM DEPOSITS: C\$12.2 million (Sept. 30, 2022) WORKING CAPITAL: C\$11.2 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$52.6 million (Nov. 25, 2022) 405 - 375 Water St. Vancouver, BC, V6B 5C6 Tel: 604-629-1165 information@highgoldmining.com wwwhighgoldmining.com





Valhalla Metals director Curt Freeman and chairman Rick Van Nieuwenhuyse at Sun, a high-grade copper-zinc-gold-silver project in northern Alaska.

ALASKA Valhalla Metals Inc. 🛑 🔵 🔵 🛑

TSX.V: VMXX.V 🕋

Valhalla shines in Alaska's Ambler District

Originally formed as a private company in 2018, Valhalla Metals Inc. launched onto the TSX Venture Exchange in the fall of 2022 with two high-grade volcanogenic massive sulfide projects at either end of Alaska's famed Ambler Mining District that are enriched with copper, zinc, silver, and gold.

"In a time when the United States is working to secure domestic sources of critical minerals, we are happy that we could successfully complete the

transaction to acquire two high-grade copper-zinc and precious metal rich massive sulfide projects, in northwestern Alaska – Sun and Smucker," said Valhalla Metals Chairman Rick Van Nieuwenhuyse.

Sun and Smucker

Sun, which lies alongside the proposed Ambler Road that will provide access to a future mine at the Arctic VMS deposit on Ambler Metals' Upper Kobuk Mineral Projects to the west, is the most advanced of the two initial projects in Valhalla's portfolio.



RICK VAN NIEUWENHUYSE

According to a 2018 calculation, Sun hosts 1.71 million metric tons of indicated resource averaging 4.32% (163 million pounds) zinc, 1.48% (55.8 million lb) copper, 1.11% (42 million lb) lead, 60 grams per metric ton (3.3 million oz) silver, and 0.21 g/t (12,000 oz) gold; plus 9.02 million metric tons of inferred resource averaging 4.18% (831.3 million lb) zinc, 1.21% (239.6 million lb) copper, 1.46% (290.3 million lb) lead, 81.7 g/t (22.7 million oz) silver, and 0.25 g/t (73,000 oz) gold.

"The historic work completed at Sun to date represents a good start with established resources, but we believe we can greatly expand and advance the Sun deposit by drilling down-dip and along strike," said Van Nieuwenhuyse. "A detailed VTEM conductor plate model of the area shows several other newly identified high-quality targets leaving plenty of work to be done."

This conductor plate, which dips southeast from the currently outlined Sun deposit, was lit up by VTEM (versatile time domain electromagnetic) and ZTEM (z-axis tipper electromagnetic) geophysical surveys flown during 2019.

So far, drills have only traced the Sun deposit to a depth of 200 meters; the wider and stronger geophysical target extends 900 meters further down-dip.

If this conductive target turns out to be a continuation of the zincrich VMS mineralization outlined so far, Sun has the potential to rival Ambler Metals' Arctic deposit in terms of size.

Valhalla's Smucker project, which lies about 15 miles northwest of the proposed Arctic Mine, is another promising VMS target with exploration upside.

First discovered by Anaconda in 1975, Smucker hosts more than eight million metric tons of historical resource averaging 0.8% copper, 6.8% zinc, 2.3% lead, and 200 g/t silver.

Valhalla, which staked state mining claims over the Smucker project in 2017, said the extensions of the mineralized horizon remain largely untested and open at depth and laterally.

Van Nieuwenhuyse said Valhalla "will bring the most up-to-date exploration techniques to bear on these exciting, but under-explored VMS deposits with focused exploration programs over the next several years."

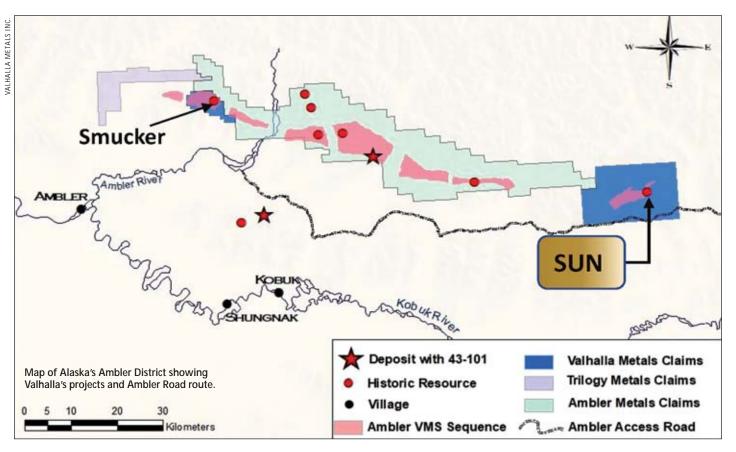
Welcome to Valhalla

To further explore these two Northwest Alaska VMS projects, Valhalla has listed on the TSX Venture Exchange via the reverse takeover of SolidusGold Inc. and closed financing that involved the issuance of 20.46 million shares at C50 cents each for gross proceeds of C\$10.23 million.

"We successfully raised significant funds, which in today's markets is a testament to the experience and expertise of the Valhalla management and board," said Van Nieuwenhuyse.

This team includes former SolidusGold President and CEO Sorin Posescu, a geologist that worked on Novagold's Donlin Creek and Galore

LEGEND



Creek projects over the course of a more than 25-year career and who now serves as CEO of Valhalla; and Joe Piekenbrock, an award-winning Alaska geologist that served as vice president of exploration for both Novagold and Trilogy, who sits on the Valhalla board.

Valhalla's financing was backed by Marubeni Metals & Minerals (Canada) Inc., a Quebec-based subsidiary of Japan-based Marubeni Corp., which made a C\$8.29 strategic investment to acquire 16.58 million of the shares of the Alaska-focused mineral exploration company.

With its treasury full and a team of award-

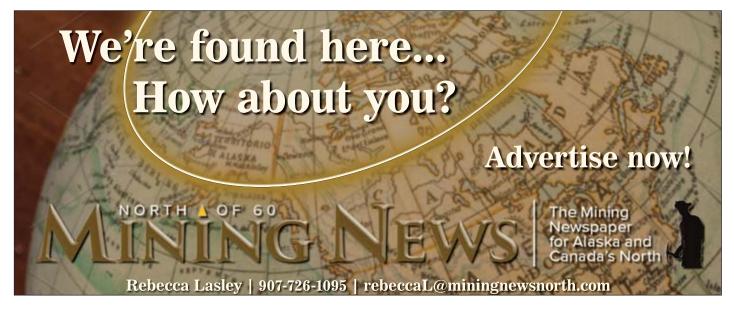
winning Alaska geologists in its boardroom, Valhalla is ready to expand the deposits of precious, base, and critical minerals on its properties in Alaska's Ambler Mining District. This work will begin with a 5,000-meter drill program slated for Sun during the upcoming drill season.

"We are excited to get exploration underway – Welcome to Valhalla!" Van Nieuwenhuyse declared upon the September launch of the newly listed exploration company.

CHAIRMAN: Rick Van Nieuwenhuyse PRESIDENT & CEO: Sorin Posescu DIRECTOR: Joe Piekenbrock

CASH AND CASH EQUIVALENTS: US\$7.5 million (Sept. 30, 2022) WORKING CAPITAL: US\$6.4 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$28.7 million (Nov. 28, 2022)

10th Floor, 595 Howe St. Vancouver BC, V6C 2T5 Tel: 604-662-7307 Email: invest@valhallametals.com www. valhallametals.com





A truck hauling ore from the Gil-Sourdough satellite deposit to the Kinross Alaska processing facilities at the Fort Knox Mine north of Fairbanks...



Kinross' Alaska gold strategy takes shape

With the official decision to move forward with development of the Manh Choh Mine in eastern Alaska, Kinross Gold Corp. has taken a large step forward toward executing its strategy to leverage the underutilized 14-million-metric-ton-per-year mill and tailings storage capacity at its Fort Knox Mine site north of Fairbanks to process

higher-grade ore from projects within a roughly 300-mile radius of the Interior Alaska operation.

"At Manh Choh in Alaska, we completed a feasibility study ahead of schedule, and are proceeding with a project that we expect will add approximately 640,000 lower-cost gold ounces to our production profile over its life of mine in one of the world's best mining jurisdictions," Kinross Gold President J. Paul Rollinson announced in July.

The company's plan to truck high-grade ore mined from Manh Choh roughly 250 miles to Fort Knox for processing is a key component of the "Kinross Alaska" strategy introduced by the global gold miner in 2020.

The basic premise of this initiative is to enhance gold production at Fort Knox by supplementing the primarily heap leach-grade ore mined from the Fort Knox property with higher-grade mill feedstock from satellite deposits within an "economic radius around Fort Knox."

The grades of the deposits that could feed ore into this strategy are largely dependent on how far they are from the Kinross Alaska mill - the 0.8

grams per metric ton gold at Gil satellite deposit on the Fort Knox property is likely at the lower end and the 8 g/t gold being trucked 250 miles from Manh Choh is representative of grades required from deposits near the outer edge of the economic radius.

Breaking ground at the Gil deposit in the fall of 2021 really marked the start of the Kinross Alaska initiative.

Situated about nine miles east of the Kinross Alaska mill, Gil hosts 8 million metric tons of probable reserves averaging 0.8 g/t (205,000 oz) gold.

Ore mined from these reserves is simply blasted, loaded, and trucked to the Kinross Alaska mill for processing.

By November 2021, the first gold bars with Gil gold were poured at Fort Knox.

"Mining the Gil deposit has been a long-time goal for Kinross. Seeing the first ore go into the mill is a very satisfying achievement for the



Crews upgrade an existing road on the Manh Choh property leased from the Alaska Native Village of Tetlin in Eastern Interior Alaska.

Gil team," said Clint Connelly, project superintendent at Fort Knox.

Kinross expects the ore mined from the Gil satellite pits will contribute roughly 160,000 oz to Fort Knox' gold production over a twoyear span that began with that first gold pour.

Eliminating the need for a mill, heap leach facility, tailings ponds, and other infrastructure, Gil Mine could be equated to a guarry.

The shrunken footprint, simpler permitting, and increased economics of Gil underscores the brilliance of the Kinross Alaska strategy and what it could mean for the future of gold mining across a large swath of the state.

This strategy paved the way for Manh Choh, the next satellite project to feed ore into the Kinross Alaska mill.

Being developed under a joint venture between Kinross (70%) and Contango ORE Inc. (30%), the Manh Choh Mine is expected to produce roughly 1 million gold-equivalent oz, which includes the value of both the gold and silver recovered over an initial 4.5 years of mining detailed in a 2022 feasibility study

This operation is based on 3.9 million metric tons of proven and probable reserves averaging 7.88 g/t (998,000 oz) gold and 13.6 g/t (1.7 million oz) silver.

With the supplemental feedstock from Manh Choh, the gold production at Fort Knox is expected to jump to 400,000 oz per year during the currently anticipated 4.5 years of mining at Manh Choh.

The total preproduction capital needed to build the mine is estimated to be approximately \$255 million. This includes the development and infrastructure at Manh Choh; modifications to the Fort Knox mill; a fleet of trucks to deliver the ore; and \$40 million in contingency.

Based on the Manh Choh joint venture agreement, Kinross' share of this expense is expected to be roughly \$190 million. CORE is responsible for the balance of expenditures needed to get to the first gold pour.

Given the positive economics detailed in a 2022 feasibility study, Kinross officially decided to move forward with development and the Peak Gold Joint Venture began the preliminary work, including camp refurbishments, in 2022 in preparation for the start of construction.

The first gold is expected to be poured from Manh Choh ore in the second half of 2024.

CHAIR: Catherine McLeod-Seltzer PRESIDENT & CEO: J. Paul Rollinson CHIEF TECHNICAL OFFICER: Paul Tomory

CASH AND SHORT-TERM DEPOSITS: US\$488.4 million (Sept. 30, 2022) WORKING CAPITAL: US\$1.27 billion (Sept. 30, 2022) MARKET CAPITALIZATION: US\$5.37 billion (Nov. 25, 2022)

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Freegold Ventures Ltd.

TSX: FVL 🕋

Freegold makes Golden Summit connections

The success of Freegold Ventures Ltd.'s 2022 program at Golden Summit was all about connections. Thanks to a paved highway that connects the multi-million-ounce gold project to the nearby city of

AI ASKA

Fairbanks, the mineral exploration company was able to efficiently carry out drilling from February through December, and that expansive drill campaign was able to link the bulk-tonnage Dolphin deposit with the high-grade Cleary Hill Mine area to the east.



According to a 2016 calculation, Dolphin hosts 61.5 million metric tons of indicated resource averaging 0.69 grams per metric ton (1.36 million oz) gold; and 71.5 million metric tons of inferred resource averaging 0.69 g/t (1.58 million oz) gold.

Over the past three years, however, Freegold has significantly expanded the footprint at Dolphin, including tracing the gold mineralization east to the Cleary Hill Vein System, which hosts the historic Cleary Hill Mine that produced 281,000 oz of gold from ore averaging 1.3 oz of gold per ton before the operation was shuttered during World War II.

Hole GS2017, drilled in the Cleary Hill in 2020, cut 1.7 meters averaging 588 grams per metric ton (18.9 oz/t) gold within 219.8 meters of mineralization averaging 1.61 g/t gold.

In addition to this and other similar bonanza-grade gold intercepts, Freegold's 2021 drilling tapped intrusive rocks at depth in the Cleary Hill area, adding credence to the company's interpretation that the Dolphin intrusive that makes up the bulk tonnage deposit may underlie the historically mined area.

Due to the painfully slow turnaround times at assay labs, however, Freegold was still receiving results from its 2021 program at Golden Summit into the latter half of 2022.

Highlights from 2021 assay results reported last year include:

- 10.1 meters averaging 10.7 g/t gold in hole GS2112 (Cleary).
- 54.5 meters averaging 1.46 g/t gold in hole GS2123 (Cleary).
- 249.5 meters averaging 1.05 g/t gold in hole GS2128 (Dolphin).

• 216.4 meters averaging 2.02 g/t gold in hole GS2147 (Dolphin).

• 617.8 meters averaging 0.94 g/t gold in hole GS2151 (Dolphin).

Despite kicking off its 2022 drill program in February, roughly three months before the exploration season in Alaska begins in earnest, assays only began to trickle in around mid-year. The results received by late July, however, had provided enough drill density to connect Dolphin and Cleary.

Highlights from 2022 assay results reported through Nov. 18:

207.2 meters averaging 1.45 g/t gold in hole GS2201 (Dolphin).
190.2 meters averaging 2.52 g/t gold in hole GS2203 (Dolphin-Cleary gap).

• 206.8 meters averaging 1.78 g/t gold in hole GS2207 (Dolphin-Cleary gap).

 420.7 meters averaging 1.36 g/t gold in hole GS2221 (Dolphin). Freegold's drilling, along with the historic shallow underground mining in the Cleary Hill area, has outlined gold mineralization from surface to depths of more than 1,000 meters over a roughly 1,000- by 1,500-meter area that encompasses the Dolphin deposit and the Cleary Hill Mine workings. The gold mineralization in this area is hosted within high-grade quartz veins and silicified zones that occur within a broader lower-grade envelope of guartz stockwork mineralization.

Freegold says drilling continues to successfully delineate these higher-grade veins and the encompassing lower-grade mineralization to depths well below the depths of the previous drilling and well outside of the current pit-constrained gold resource.

Results from the 2020 and 2021 drill programs, as well as several of the holes drilled last year, are to be incorporated into an updated resource estimate that is expected to encompass both Dolphin and



Core from a 2018 hole drilled at Shorty Creek that cut 442.4 meters averaging 0.22% copper, 0.13 g/t gold, 4.03 g/t silver, and 0.02% tungsten.

Cleary Hill.

In addition to Golden Summit, Freegold's portfolio includes Shorty Creek, an earlier-stage exploration project that lies alongside the paved Elliot Highway about 75 miles northwest of Fairbanks with the potential to host large porphyry-style deposits enriched with copper, gold, silver, tungsten, and cobalt.

South32 Ltd., which optioned Shorty Creek in 2018, decided to withdraw from the project last year.

Highlights from 12 holes Freegold previously drilled at Hill 1835, one of the primary targets at Shorty Creek, include: 91 meters of 0.55% copper, 0.14 g/t gold, and 7.02 g/t silver; 360 meters of 0.24% copper, 0.07 g/t gold, 4.04 g/t silver, and 0.03% tungsten; and 442.2 meters of 0.24% copper, 0.09 g/t gold, 4.74 g/t silver, and 0.02% tungsten.

The work funded by South32 primarily focused on targets outside the Hill 1835 area.

Freegold plans to further explore geochemical anomalies at Shorty Creek with coincident magnetic highs, as well as additional follow-up at Hill 1835.

CHAIRMAN: Ron Ewing PRESIDENT & CEO: Kristina Walcott VP, EXPLORATION: Alvin Jackson

CASH AND CASH EQUIVALENTS: US\$4.1 million (Sept. 30, 2022) WORKING CAPITAL: US\$3.2 million (Sept. 30, 2022) MARKET CAPITALIZATION: US\$132.7 million (Nov. 25, 2022)

P.O. Box 10351 888 - 700 West Georgia St. Vancouver, BC V7Y 1G5 Tel: 604-662-7307 Email: ask@freegoldventures.com www.freegoldventures.com

CONTANGO ORE

RICK VAN

NIEUWENHUYSE

ALASKA Contango ORE Inc. 🔴 🔵

NYSE AMERICAN: CTGO (mi)

A pipeline of CORE Alaska gold assets

As an Alaska-based mineral explorer that is listed on the NYSE American stock exchange and involved with advancing two gold mines toward production, Contango ORE Inc., commonly referred to simply as CORE, is unique in the realm of junior mining companies.

Led by president and CEO Rick Van Nieuwenhuyse, CORE has assembled a pipeline of Alaska gold projects along the highway system in Alaska that span the gamut from discovery to mine development.

"I have spent a good part of my career working on remote projects like Donlin and the Ambler District – after 40 years I figured out that I should stick closer to the roads," Van Nieuwenhuyse said during a Contango ORE presentation at the 2022 Precious M

tion at the 2022 Precious Metals Summit in Beaver Creek, Colorado.

CORE's road-accessible portfolio includes the high-grade Manh Choh and Lucky Shot gold mine projects and three earlier staged mineral exploration assets – the Eagle-Hona gold and Triple Z copper-gold projects west and north of Manh Choh, respectively; and the Shamrock gold project in the Richardson Mining District about 70 miles southeast of Fairbanks.

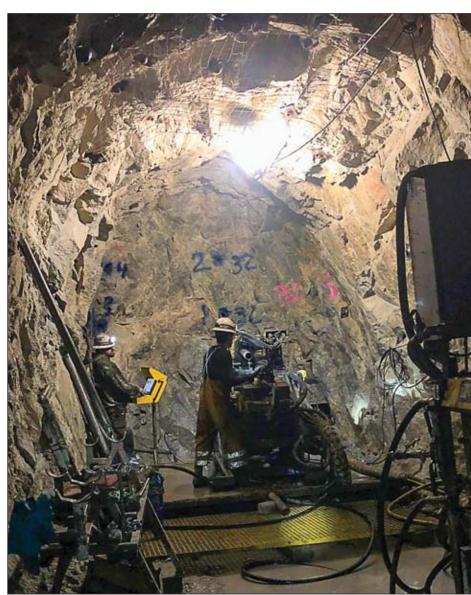
Manh Choh gold in 2024

The most advanced project in CORE's portfolio is Manh Choh, a 1-million-ounce gold mine project being developed under the Peak Gold Joint Venture – a partnership between Kinross Gold Corp. (70%) and CORE (30%).

Upon the July completion of a feasibility study that detailed an economically robust mine at Manh Choh, the Peak Gold JV officially decided to move forward with development of an operation that is expected to produce roughly 1 million gold-equivalent oz, which includes the value of both the gold and silver recovered, annually over an initial 4.5 years.

The study details a plan to truck highgrade ore mined from two pits at Manh Choh roughly 250 miles to Kinross' Fort Knox Mine north of Fairbanks. This ore is to be processed through the existing Kinross Alaska mill and the tailings stored on the Fort Knox property.

With the high-grade feedstock from Manh Choh, which will be roughly 10 times higher



Crews extend underground development at Contango ORE's high-grade Lucky Shot gold project in Alaska.

than ore currently being processed through the Kinross Alaska mill, the gold production at Fort Knox is expected to jump to 400,000 oz per year.

Leveraging the existing facilities at Fort Knox eliminates the need to permit, finance, and build a mill and tailings facilities at Manh Choh. Essentially a rock quarry type of operation also significantly reduces environmental disturbance and lowers the overall greenhouse gas emissions, compared to developing and operating new processing and tailings storage facilities onsite.

Kinross estimates the average all-in sustaining costs per gold-equivalent oz produced from Manh Choh to be approximately \$900, which would result in a margin of over \$800/oz at the current price of gold.

Given the positive economics, Kinross made the official decision to move forward with development, and the Peak Gold Joint Venture approved a 2022 budget of \$39.6 million to begin the mine development work

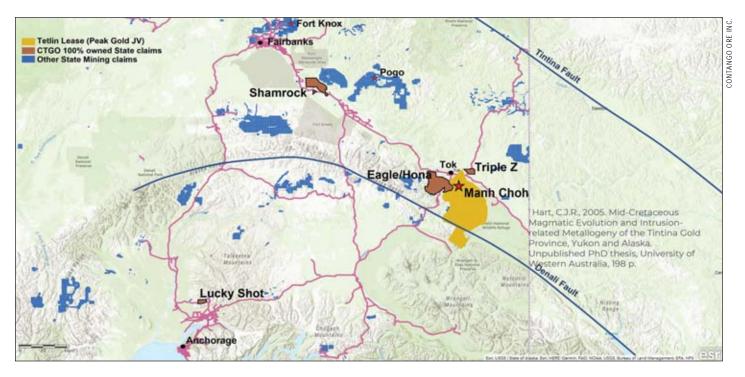
at Manh Choh.

"We are very excited to achieve this important milestone for the company and its shareholders," said Van Nieuwenhuyse. "Board member, Curt Freeman and Board Chairman, Brad Juneau discovered this orebody nearly ten years ago through hard work and by applying solid exploration principles. They worked closely with the Tetlin tribe to develop a strong working relationship which Kinross continues today."

In addition to mine development, the Peak Gold JV budgeted \$3 million for exploration testing targets that could add more high-grade gold to Manh Choh and extend the life of this first Kinross Alaska satellite mine.

High-grade Lucky Shot

As Kinross leads the efforts to put Manh Choh into production by 2024, Contango is advancing the development of a high-grade CONTANGO ORE IN



underground mine at Lucky Shot.

A road-accessible project about 75 miles north of Anchorage, the 8,590-acre Lucky Shot property blankets a large portion of the Willow Creek Mining District, including the pre-World War II Lucky Shot and War Baby mines. It is estimated that from 1918 until being shut down by the federal War Production Board in 1942, these two underground operations produced more than 250,000 oz of gold from 169,000 tons of ore, indicating an average head grade of around 1.5 oz of gold per metric ton.

A 2016 calculation completed for former operators Miranda Gold Corp. and Alaska Gold Torrent Inc. outlined 206,500 metric tons of what is now being treated as historical measured and indicated resources averaging 18.3 grams per metric ton (121,500 oz) gold and 59 thousand metric tons of inferred resource averaging 18.5 g/t (35,150 oz) gold at Lucky Shot.

With its sights set on establishing a large enough resource to support a modern mine at Lucky Shot, CORE has rehabilitated and is expanding the historical Enserch tunnel, which is serving as a platform for underground drilling.

In addition to drilling, CORE is extending the underground workings to intersect the Luck Shot Vein, which will provide bulk sample material, and onward to the Lucky Shot tunnel, which will provide access to the Coleman block that hosts the 2016 resource.

Through this work, the company aims to establish a high-grade resource with at least 500,000 oz of gold.

"I think this is a pretty easy project for us to move forward and be our second mine in operation in Alaska," Van Nieuwenhuyse said during his presentation at the 2022 Precious Metals Summit.

The CORE CEO said shipping the ore to the hungry Kinross Alaska mill or processing the free-milling ore at Lucky Shot are potential options for the high-grade underground gold mine.

Overall, the Lucky Shot vein extends for at least a mile from the Coleman block through the Lucky Shot block, where the Enserch tunnel is located, and onto the War Baby block.

CHAIRMAN: Brad Juneau PRESIDENT & CEO: Rick Van Nieuwenhuyse LUCKY SHOT MINE MANAGER: Chris Kennedy

CASH AND CASH EQUIVALENTS: US\$18 million (Sept. 30, 2022) WORKING CAPITAL: US\$16.2 million (Sept. 30, 2022; closed US\$5.6 million financing on Dec. 23, 2022) MARKET CAPITALIZATION: US\$159.9 million (Nov. 25, 2022) P.O. Box 10351 3700 Buffalo Speedway, Ste 925, Houston, TX 77098

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No matter where you are in the world, chances are we've got your project covered.

🗲 srk.com

Felix Gold Ltd.



ASX: FXG 📷

Felix Gold discovers Treasure in Alaska

With the January completion of an A\$10 million (U\$7.1 million) initial public offering and listing on the Australian Securities Exchange, Felix Gold Ltd. went into 2022 well-positioned to begin drilling the large package of gold exploration properties it had assembled in Alaska's Fairbanks Mining District.

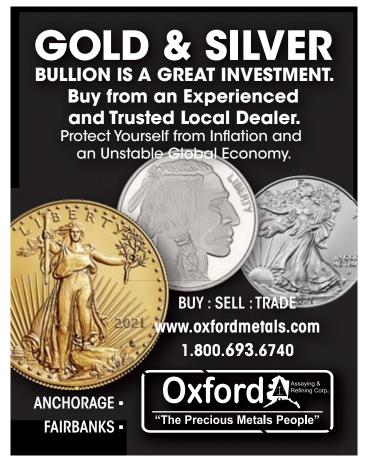
As a private company, Felix entered into a strategic alliance with Millrock Resources Inc. in 2021 on several Interior Alaska gold exploration projects – Treasure Creek and Ester Dome near the city of Fairbanks, plus the Liberty Bell project about 70 miles to the southwest. In exchange for becoming a roughly 6% shareholder of Felix after its early 2022 listing on the Australia Stock Exchange, Millrock assigned the company all rights to the Fairbanks District and Liberty Bell properties.

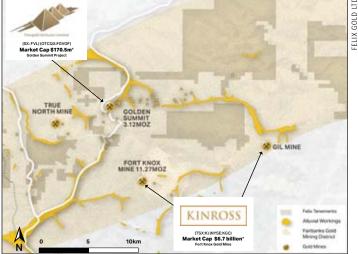
Since its deal with Millrock, Felix has expanded its land position to roughly 151 square miles (392 square kilometers) in the Fairbanks District, which has produced more than 8 million ounces of placer gold since Felix Pedro discovered gold there in 1902.

"The Felix team undertook the largest consolidation of tenure in the history of the Fairbanks Gold Mining District," said Felix Gold Managing Director and CEO Joe Webb.

With its treasury full, Felix launched its 2022 exploration with a more than 17,000-meter drill program at Treasure Creek, a property about 13 miles west of Kinross Gold Corp.'s Fort Knox Mine that hosts numerous prospects with interesting drill intersections reported by prior workers.

Roughly 2,000 soil samples collected by Felix and Millrock geolo-





Map of Treasure Creek and neighboring gold projects near Fairbanks, Alaska.

gists during 2021 identified two key targets for this drilling – Northwest Array and Eastgate.

Felix' inaugural drill program started with shallow reverse circulation holes at Northwest Array.

The Australian explorer hit gold right away. Highlights from drilling at Northwest Array include:

• 29 meters averaging 1.4 grams per metric ton gold from a depth of 24.4 meters in hole 22TCRC002.

 \bullet 33.5 meters averaging 1.63 g/t gold from a depth of 1.5 meters in hole 22TCRC005.

• 29 meters averaging 0.69 g/t gold from a depth of 1.5 meters in hole 22TCRC006.

• 89.9 meters averaging 1.2 g/t gold from a depth of 32 meters in hole 22TCRC008.

"Felix's ambition was to build multi-million-ounce gold resources and recent results are a significant step towards realizing our vision," said Felix Gold Chairman Ronnie Beevor.

In October, the Australian explorer reported that assays from additional holes from Northwest Array had further expanded this emerging gold zone. Highlights from the batch of drilling included:

• 41.1 meters averaging 1.72 g/t gold from a depth of 59.4 meters in hole 22TCRC078.

• 24.4 meters averaging 1.08 g/t gold from a depth of 51.8 meters in hole 22TCRC083.

With this batch of results, drilling had outlined 400 meters by 750 meters of gold mineralization at Northwest array that remains open to the north, south, and east.

"NW Array is quickly building into a significant gold discovery," said Webb. "Critically, NW Array and the broader Treasure Creek Project is surrounded by infrastructure within the world-class Fairbanks Gold Mining District, which has produced over 16Moz in historical gold output. Nearby operations include Kinross Gold's Fort Knox Gold Mine, a large-scale gold processing operation that is openly seeking additional sources of ore supply."

Treasure Creek and the other properties that make up Felix Gold's enormous Fairbanks District land package could potentially provide the Kinross Alaska mill at Fort Knox with a nearby source of ore.

CHAIRMAN: Ronnie Beevor MANAGING DIRECTOR: Joseph Webb VP, EXPLORATION: Dave Larimer

CASH AND CASH EQUIVALENTS: A\$3.2 million (Sept. 30, 2022) MARKET CAPITALIZATION: A\$19.7 million (Nov. 25, 2022)

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GOLD SILVER COPPER ZINC LEAD NICKEL COAL ITHIUM PGM DIAMONDS

GREG BEISCHER

PHIL ST.

GEORGE

Millrock Resources Inc.

TSX-V: MRO 🕋

Millrock generates Alaska project interest

As a project-generating exploration company, Millrock Resources Inc. identifies and secures grassroots mineral projects and brings on partners to fund the high-risk early stages of exploration. During 2022, two Australian companies had drills turning on large gold properties Millrock assembled in Alaska's Fairbanks and Goodpaster mining districts.

The largest of these programs was carried out by Felix Gold Corp. on the Treasure Creek property in the Fairbanks District, a region that has produced more than 8 million ounces of placer gold and is home to Kingge Cold Corp. (5 Fort Know Mine, which has

to Kinross Gold Corp.'s Fort Knox Mine, which has produced nearly 9 million oz of hardrock gold.

As a private company, Felix entered into a strategic alliance with Millrock Resources Inc. in 2021 on several Interior Alaska gold exploration projects – Treasure Creek and Ester Dome near the city of Fairbanks, plus the Liberty Bell project about 70 miles to the southwest.

Millrock transferred these properties to Felix in exchange for nearly 10 million shares of the exploration company that listed on the Australian Stock Exchange early in 2022.

Since its deal with Millrock, Felix has expanded its land position to roughly 151 square miles (392 square kilometers) in the Fairbanks District.

During the 2022 season, Felix carried out more than 17,000 meters of reverse circulation drilling that cut broad sections of near-surface gold mineralization at Treasure Creek in preparation for a diamond drilling program slated for 2023.

"Felix Gold executed an excellent drilling program this year and we look forward to seeing the

results," said Millrock Resources President and CEO Gregory Beischer. "We think the potential of the Fairbanks District has not been fully recognized, but that it soon will be."

In addition to owning roughly 6% of Felix Gold's shares, Millrock holds 1% to 2% net smelter return royalties on all Fairbanks District claims held by the Australian exploration company.

In the Goodpaster District, Resolution Minerals Ltd. carried out a five-hole drill program at the Tourmaline Ridge prospect on the West Pogo Block of the roughly 106,250-acre 64North gold project.

While its Australian partners were drilling in the Fairbanks and Goodpaster districts, Millrock carried out its own investigation of the Nikolai nickel-copper-cobalt-platinum group metal project about 80 miles south of Delta Junction, Alaska.

Discovered by INCO in the 1990s and explored by Pure Nickel Inc. from 2007 through 2014, Nikolai covers the roughly 10-mile- (16 kilometers) long Eureka Zone.

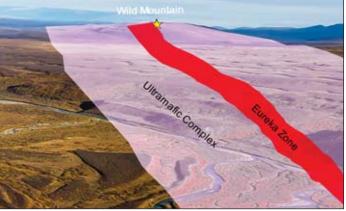
Early in 2022, Millrock staked 104 state mining claims covering Eureka Zone and entered into an option agreement for Canwell, a block of 42 state mining claims about 11 miles (18 kilometers) to the northeast, where historical surface rock sampling and drilling has identified higher-grade nickel, copper, and PGEs.

One of the best holes drilled by Pure Nickel cut 319.7 meters averaging 0.25% nickel, 0.09% copper, 0.018% cobalt, 54 ppb platinum, 117 ppb palladium, and 13 ppb gold.

Based on historical drill results, Millrock has identified a roughly 1,200-by-400-by-300-meter body of mineralization at Eureka that contains low-grade but potentially economic concentrations of nickel, copper, cobalt, platinum, palladium, and gold.

The previous drilling identified two layers of mineralization – Core Eureka Zone (CEZ) and Upper Eureka Zone (UEZ).

Upon further review of historical core stored at the Geologic Mate-



Millrock has identified a roughly 1,200-by-400-by-300-meter zone of nickelcopper-cobalt-PGM mineralization in the Eureka zone at Nikolia.



Map shows Millrock's Alaska gold, nickel, copper, and platinum projects.

rials Center in Anchorage, Alaska, Millrock geologists noticed incomplete and discontinuous sampling of core from below CEZ in FL-003, a hole drilled by INCO in 1997.

Millrock's sampling of this core returned 135.6 meters averaging 0.2% nickel, 0.05% copper, 0.016% cobalt, 0.062 ppm palladium, 0.026 ppm platinum, and 0.014 ppm gold.

Based on the newly received results, along with historical assays, Millrock now interprets there is a Lower Eureka Zone below the previously identified CEZ.

The three zones cut by FL-003 total 346 meters (roughly 275 meters true thickness) of mineralization.

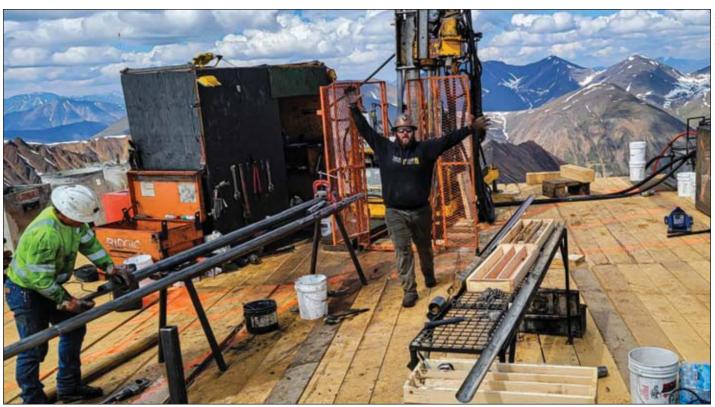
"From historical drilling, it is clear that a large volume of mineralized rock is present in the Eureka Zone," said Beischer. "We believe the demand for nickel, cobalt, and other Critical and Strategic Metals will be exceptionally strong in the coming decades, making low-grade mineralization such as at Eureka of interest."

Millrock's Alaska portfolio also includes Chisna, a gold-copper-silver project about 75 miles southeast of the Goodpaster Mining District; and Apex, which covers the historical Apex and El Nido gold mines about 70 miles southwest of Juneau.

PRESIDENT & CEO: Gregory Beischer CHIEF EXPLORATION OFFICER: Philip St. George

CASH AND CASH EQUIVALENTS: C\$3.1 million (Sept. 30, 2022) WORKING CAPITAL: C\$3 million (Sept. 30, 2022) MARKET CAPITALIZATION: C\$5.4 million (Nov. 25, 2022)

5631 Silverado Way, F-200 Anchorage, AK 99518 Tel: 907-677-7479 mhenderson@millrockresources.com www.millrockresources.com



The 2022 drilling at RPM North cut long sections of gold mineralization at this higher-grade deposit on Nova Minerals' Estelle property in Alaska.

ALASKA

Nova Minerals Ltd.

ASX: NVA 🕋

9.6M oz of gold and just getting started

By the time the calendar flipped to 2022, Nova Minerals Ltd. had outlined 9.6 million ounces of gold in the inferred and indicated resource categories at its Estelle project. And with the drills cutting intercepts such as 258 meters averaging 5.1 grams per metric ton gold, the Australia-based company was quickly adding gold to the resources on this 125square-mile property about 100 miles northwest of Anchorage, Alaska.

In February, Nova published a "snapshot in time"

CHRISTOPHER

Nova Minerals

LIMITED

scoping study that outlined a mine at the Korbel deposit at the north end of the Estell property that would produce 2 million oz of gold over 15 years.

The open pit operation outlined in this study would mine 195 million metric tons of ore from the Korbel Main deposit averaging 0.41 grams per metric ton, which would be upgraded to 0.7 g/t gold with an ore sorter before being fed into the mill.

This first look at mining at Estelle was based on a 2021 resource calculation that outlined 286 million metric tons of indicated resource averaging 0.3 g/t (3 million oz) gold; plus 583 million metric tons of inferred resource averaging 0.3 g/t (5.1 million oz) gold in the Korbel Main deposit.

RPM North, a new deposit about 16 miles (25 kilometers) south of Korbel, hosts an additional 23.1 million metric tons of inferred resource averaging two grams per metric ton (1.5 million oz) gold.

This first scoping study, however, did not consider mining RPM, a higher-grade deposit about 16 miles south of Korbel that hosted 23 million metric tons of inferred resource averaging 2 g/t (1.5 million oz)



As the first snows of the 2022 season arrived at Estelle, drillers continued to test the Cathedral gold discovery on the district-scale property in Alaska.

"We are only getting started as we continue on our path to increase resource size, confidence and towards commercial production."

-Nova Minerals CEO Christopher Gerteisen

gold at the time.

With only six holes drilled into RPM North at the time of the resource calculation, Nova had barely scratched the surface of RPM going into 2022.

To build resources at RPM, Nova launched a 31-hole drill program at this early staged deposit in June that included 23 holes at RPM North, which hosted the initial resource, and eight at RPM South, an adjacent target with no previous drilling.

Nova began its 2022 RPM drilling near RPM-005, a 2021 hole that

cut an incredible 132 meters averaging 10.5 g/t gold, and then stepped out to the west.

Early results from this drilling indicate that this deposit could be larger than previously imagined. Highlights from the 2022 drilling at RPM North include:

• 140 meters averaging 6.5 g/t gold from a depth of 44 meters in RPM-008, including 56 meters averaging 10.1 g/t gold and two meters averag-

ing 53.4 g/t gold. • 155 meters averaging 2.4 g/t gold from a depth of 16 meters in hole RPM-010, including 30 meters averaging 10 g/t gold and three meters averaging 56.4 g/t gold.

• 258 meters averaging 5.1 g/t gold from surface in hole RPM-015, including 161 meters averaging 8.1 g/t gold, and 14 meters averaging 51.2 g/t gold.

• 67 meters averaging 10.4 g/t gold from a depth of 112 meters in hole RPM-022, including 34 meters of 19.4 g/t gold.

Nova also completed inaugural drilling at RPM South. The discovery hole at this target cut 101 meters averaging 0.7 g/t gold and provided evidence of a geological link to RPM North.

In addition to RPM, Nova continued to carry out drilling in the Korbel project area. This includes the first-ever drilling at Cathedral, an exploration target about 1,000 meters southwest of the 8.1-million-oz Korbel Main gold deposit.

Sampling of outcropping quartz-arsenopyrite veining at Cathedral in 2020 returned grades as high as 114, 98.3, 37.1, 24.5, 19.6, and 11.1 g/t gold.

Nova says the correlation between gold and arsenopyrite at Cathedral indicates that this target could host the feeder system for the large gold system at Korbel Main.

Assays from Cathedral were still pending as of the writing of this report.

The results from the 2022 drill program at Estelle are being incorporated into an updated resource that is serving as the basis for both a second scoping study and a prefeasibility study that is investigating the engineering and economic parameters of mining at both Korbel and RPM.

Due to slow assay lab turnaround times delaying the ability to update the resource estimate, Nova has opted to advance these studies in parallel.

"In light of this, PFS level trade off studies have now commenced in tandem which aims to optimize the project with a view to increasing the gold production schedule and NPV (net present value) significantly across the Estelle Gold Trend," said Nova Minerals CEO Christopher Gerteisen.

While the Estelle project is entering the PFS stage of assessment, the district-scale property still hosts an enormous amount of exploration upside that Nova is looking forward to testing.

"With this, and no shortage of further targets, including the recently discovered mineralization at our Train-Shoeshine and Stoney prospects, there is no doubt that our global resource inventory will continue to grow for many years to come as we continue to unlock Estelle's potential as a world-class trend," said Gerteisen.

"We are only getting started as we continue on our path to increase resource size, confidence and towards commercial production," he added.

CHAIR: Anna Ladd-Kruger CEO: Christopher Gerteisen EXECUTIVE DIRECTOR: Louie Simens



CASH AND CASH EQUIVALENTS: A\$10.1 million (Sept. 30, 2022) MARKET CAPITALIZATION: A\$145.6 million (Nov. 28, 2022)

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Tectonic Metals Inc.

TSX-V: TECT

Tectonic expands Doyon gold partnership

Toward its foundational goal of being an ESG-focused gold exploration company that is a catalyst for economic development and improved social well-being in the areas where it works, Tectonic Metals Ltd. has built a strong partnership with Doyon Ltd., the Alaska Native corporation for the region of Alaska it is exploring for gold.

The Doyon region blankets a mineral-rich swath of Alaska's Interior that is nearly the size of Texas. The Alaska Native corporation owns 12.5 million acres of land within this vast region, making it the largest private landholder in Alaska and one of the largest in North America.

Following the passage of the Alaska Native Claims Settlement Act (ANCSA) in 1971, Doyon selected much of its lands for their mineral potential.

Since its formation in 2018, Tectonic has signed discovery-to-production lease agreements for several Doyon properties – Seventymile, Carrie Creek, Maple Leaf, Mount Harper, and the Flat gold exploration properties.



In addition to the land agreements, Doyon has invested more than US\$2.3 million into Tectonic financings and currently holds a 14% equity interest in the explorer.

AARON SCHUTT

"2022 marks the 50th anniversary of the Alaska Native Claims Settlement Act and the formation of Doyon, Ltd. Since that day, our mission has been clear: continually enhance our position as a financially strong Native corporation in order to promote the economic and social well-being of our shareholders and future shareholders, to strengthen our Native way of life, and to protect and enhance our land and resources," said Doyon President and CEO Aaron Schutt. "Our investment in Tectonic is our mission in action."

Drilling Seventymile

Tectonic began its 2022 season with drilling at Seventymile, an underexplored Doyon property that covers a 25-mile-long greenstone belt about 37 miles east of Eagle, Alaska.

Last year's program tested four gold targets – Flanders, Flume, Bonanza, and Alder – along a roughly five-mile-long trend toward the northwest end of the belt.

Limited historical drilling along this Flume trend demonstrated the presence of high gold grades and significant strike potential at these targets.

Since leasing Seventymile in 2018, Tectonic has validated the historical work. Including rotary air blast drilling in 2020 that cut 19.8 meters averaging 1.37 grams per metric ton gold at Bonanza and 6.1 meters averaging 4.38 g/t gold at Flanders.

Highlights from six reverse circulation holes drilled at Flanders and one in each of the other targets during the 2022 program include:

• 1.53 meters averaging 59.4 g/t gold in hole SMRC22-002 (Flanders).

• 15.24 meters averaging 1.6 g/t gold in hole SMRC22-005 (Flanders).

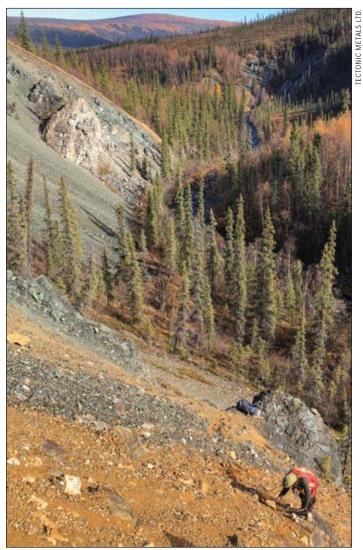
• 4.57 meters averaging 1.39 g/t gold in hole SMRC22-007 (Alder).

• 10.67 meters averaging 1.98 g/t gold in hole SMRC22-009 (Flume).

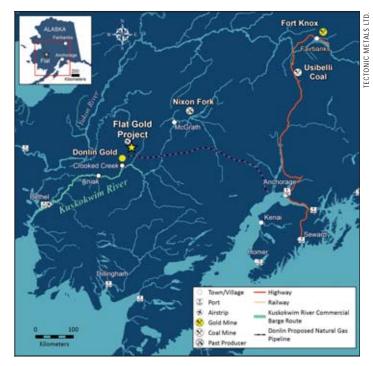
Derisking Flat gold

Tectonic's 2022 program also included an initial investigation of Flat, a Southwest Alaska gold property leased from Doyon in 2021. Located in the Kuskokwim Mineral Belt about 25 miles north of the 39-million-ounce Donlin Gold project, the 92,160-acre Flat property covers the likely lode source of more than 1.3 million oz of placer gold recovered from the streams there.

Historical exploration, including roughly 11,000 meters of drilling, has outlined a nearly 4,000-meter-long gold-in-soil anomaly formed by



A Tectonic geologist collects samples along the Flume trend at Seventymile.



ECTONIC METALS LTD

intrusion-hosted mineralization that begins at surface and remains open along strike and at depth.

With ample geological evidence that Flat hosts a substantial gold system, Tectonic decided to begin its work there with metallurgical testing.

"At Flat, we are blessed with historical work, including soil sampling, trenching, and drilling, that suggests the presence of a large mineralizing gold system," said Tectonic Metals President and CEO Tony Reda.

"With that box ticked and given our business model, it only makes sense that we de-risk Flat as quickly as possible with metallurgical testing to add value guickly and provide a tremendous amount of insight into the processing amenability of the Flat gold mineralization, which in return will shape how we target and explore Flat going forward."

Pogo-like Tibbs

In addition to Seventymile and Flat, the Doyon properties in Tectonic's portfolio include Carrie Creek, Maple Leaf, and Mount Harper, which are all associated with Tectonic's Tibbs gold property about 22 miles southeast of Northern Star Resources Ltd.'s Pogo gold mine.



During 2021, Tectonic made a significant discovery at Tibbs – low-angle veins similar to those that provide the bulk of the high-grade gold ore at Pogo.

"After multiple explorers and years of trying, the TONY REDA elusive low-angle quartz veins carrying Pogo-style

gold mineralization have now been discovered at Tibbs," said Reda. Hole TBDD21-012, drilled by Tectonic in 2021, cut four low-angle quartz veins, including 0.75 meters averaging 9.95 g/t and 0.6 meters averaging 7.64 g/t gold.

"Our drill discovery of multiple stacked intervals of high-grade, low-angle veining represents an excellent exploration opportunity to delineate the extent of the Tibbs' Gray Lead system and test for areas



A drill tests the Michigan zone on Tectonic's Tibbs gold property in Alaska.

of increased grade and thickness," he added.

CHAIR: Allison Rippin Armstrong PRESIDENT & CEO: Tony Reda VP, EXPLORATION: Peter Kleespies

CASH AND CASH EQUIVALENTS: C\$483,284 (Sept. 30, 2022) WORKING CAPITAL: C\$121,723 (Sept. 30, 2022; closes C\$3.1 million financing on Nov. 18, 2022) MARKET CAPITALIZATION: C\$28.8 million (Nov. 28, 2022)

312-744 West Hastings St. Vancouver, BC V6C 1A5 Tel: 888-685-8558 info@tectonicmetals.com · www.tectonicmetals.com



Existing roads could lower the need for helicopter-supported drilling in certain areas of the Flat gold project in Alaska.

AI ASKA

Northern Star Resources Ltd.

ASX: NST 🕋

More gold for a larger mill at Pogo Mine

Northern Star Resources Ltd. has increased both the capacity of its mill and the quantity of high-grade gold reserves to feed into the upgraded and expanded recovery circuit at the Australia-based miner's underground operation in Alaska.

Going into 2022, the mill at Pogo had the capacity to process 1.3 million metric tons of ore per year, a 30% expansion from the 1-million-metric-ton-per-year capacity that Northern Star inherited with the 2019 purchase of the mine.

With the mill able to handle more ore, Pogo crews accelerated underground development to access more ore to support Northern Star's growth vision for the mine.

As a result, gold production increased, and production costs fell over the course of 2022.

Northern Star expects Pogo will produce 260,000 to 290,000 ounces of gold during the Aussie miner's fiscal year 2023, which began on July 1.

Early in 2022, Northern Star reported that Pogo hosts 6.59 million metric tons of proven and probable reserves averaging 8.5 grams per metric ton (1.8 million oz) gold. In addition to replacing the ore mined over the previous year, this represents a 20% boost to reserves at a higher grade than the previous reserve estimate.

The company also reported a maiden resource of 1.1 million oz of gold for the Goodpaster discovery, which lies about 2,000 meters north of the area currently being mined.

"The 20% increase in ore reserves and the addition of high-grade mineral resources at the Goodpaster is exciting. It underpins the substantial growth potential at Pogo," said Jim Coxon, vice president of operations, North America at Northern Star Resources.

Northern Star attributes this substantial boost in gold reserves to underground predevelopment drilling, particularly in the high-grade Liese lode system.

What may be even more significant for the future of mining at Pogo is the inaugural resource estimate for Goodpaster, a discovery north of the active mine uncovered shortly before Northern Star's 2018 acquisition of the Alaska mine property. Highlights from drilling at Goodpaster from 2018 through 2021 include:

- 2.2 meters of 28.1 g/t gold in hole 18-052.
- 6.8 meters averaging 18.4 g/t gold in hole 21-022.
- 1.3 meters averaging 55 g/t gold in hole 21-033.
- 2.3 meters averaging 23.3 g/t gold in hole 21-079.
- One meter averaging 214 g/t gold in hole 21-084.
- 6.9 meters averaging 22.8 g/t gold in hole 21-094.

The drilling at Goodpaster confirmed the geological model of shallow to moderately dipping shear zones containing stacked quartz vein arrays combined with several strike-extensive zones of sub-vertical quartz veining. The company says this structural style and characteristic gold-bismuth-telluride mineralization is comparable to the existing northern mining areas at Pogo, such as the Fun Zone.

Based on 214 holes drilled, Goodpaster hosts 3.2 million metric tons of inferred resource averaging 10.3 g/t (1.1 million oz) gold.

Overall, the immediate Pogo mine area and Goodpaster deposit host 9.57 million metric tons of indicated resource averaging 11 g/t (3.4 million oz) gold and 12.27 million metric tons of inferred resource averaging 9.7 g/t (3.8 million oz) gold.

The Australia-based miner has a multi-year roadmap for expanding these resources and upgrading them to reserves that is built upon three axioms:

• "Gold comes from the Drill Bit."

• "More often than not, the next discovery or opportunity is already in the drill results data."

• "People are the centre of our success."

This is why Northern Star has a geology team of 54 crewmembers supporting up to 13 underground drill rigs at Pogo.

The company's "geology first" roadmap includes continued expansion of the Liese veins currently being mined, the Goodpaster deposit to the north, and the near-surface Hill 4021 target to the south.

CHAIRMAN: Michael Chaney MANAGING DIRECTOR & CEO: Stuart Tonkin VP, NORTH AMERICA OPERATIONS: Jim Coxon

CASH AND CASH EQUIVALENTS: A\$473 million (Sept. 30, 2022) MARKET CAPITALIZATION: A\$12.3 billion (Nov. 26, 2022)

Level 1, 388 Hay St., Subiaco WA 6008, Australia Tel: 61-8-6188-2100 Email: info@nsrltd.com • www.nsrltd.com



Northern Star Resources expects to pour up to 290,000 oz of gold at its Pogo Mine in Alaska during 2023.



BLACKWOLF COPPER AND GOLD LTD.



Blackwolf Copper & Gold Ltd. 🛑 🛑

TSX-V: BWCG 📶

New territory expands **Blackwolf hunting**



While its Niblack copper-gold-silver-zinc project continues to be a mainstay for Blackwolf Copper

and Gold Ltd., several newcomers to its holdings throughout the year have greatly expanded the potential of this Alaska miner.

Located at the end of the Alaskan Panhandle, on Prince of Wales Island, the historic Niblack Mine is found over 1,000 meters north of the current NI-43-101 mineral resources in the Lookout and Trio zones of the property.

Copper production occurred at the old Niblack mine between the

years 1902 and 1908, supplying roughly 20,000 tons with average grades of 4.9% copper, 2.2 grams per

metric ton gold, and 30 g/t silver. Modern exploration has shown this mine was tapping into a much larger volcanogenic massive sulfide belt that ribbons its way across the property

According to a 2011 calculation, the Trio and

Lookout deposits along this VMS horizon host 5.64

million metric tons of indicated resource averaging 0.95% (118.1 million pounds) copper, 1.74 grams per

metric ton (317,220 ounces) gold, 29.5 g/t (53.5 mil-

lion oz) silver, and 1.73% (215 million lb) zinc; plus 3.39 million metric tons of inferred resource at



ROBERT MCLEOD

0.81% (60.7 million lb) copper, 1.33 g/t (144,710 oz) gold, 20.1 g/t (2.19 million oz) silver and 1.29% (96.3 million lb) zinc.

While awaiting permits for a multi-phased exploration program that included resource upgrade and expansion drilling at Niblack, Blackwolf continued to expand its land holdings on the Alaskan side of the Golden Triangle, near Hyder, Alaska.

After picking up the Cantoo, Casey and Texas Creek projects in 2021, Blackwolf expanded its portfolio with the inclusion of the Mineral Hill and Rooster properties.

As the fourth claim group the company acquired on the Alaskan side of the Golden Triangle, Mineral Hill was reported as hosting multiple gold, silver, and polymetallic prospects that had only been historically explored by trenching and underground drifting.

Like its other properties in the area, this recent addition is located near the towns of Stewart, British Columbia, and Hyder, Alaska.

Even with significant exploration activity in Canada, virtually no modern exploration had been performed in the Cantoo-Mineral Hill area on the Alaska side of the Golden Triangle since the 1930s. Further still, bridge washouts in the early 1960s limited road access to the properties, adding to the difficulty of exploring this region for many decades.

"With the staking of Mineral Hill, Blackwolf now has a five-kilometer-long (3.1 miles) trend of high-grade gold-silver prospects located adjacent to a mine currently in development, that have never been drilled or explored with modern methods and deposit models," said Blackwolf Copper and Gold President and CEO Rob McLeod. Less than two months later, Blackwolf announced the addition of Rooster.

"The Rooster property, our first in BC, is located immediately north of our Solo prospect on the Texas Creek property in Alaska, where miners in the 1930's tunneled through glacial ice looking for the source of 'Brucejack Style' gold-silver veins," said McLeod during the announcement.

Covering more than 11,590 acres (4,690 hectares), Rooster lies immediately across the U.S.-Canada border from Texas Creek. Named after legendary local Rooster Olsen, who had passed shortly before claiming the property, Rooster became the fifth claim group in the Golden Triangle area and is reported as continguous with the high-grade Texas Creek property.



Inside a more recent adit at the historic Niblack Mine that produced roughly 20,000 tons of ore averaging 4.9% copper, 2.2 g/t gold, and 30 g/t silver.



With the 2022 additions of Mineral Hill and Rooster, Blackwolf now holds five properties near the border towns of Hyder, Alaska, and Stewart, British Columbia.

With both of these highly prospective claims, covering any potential gaps in the previous properties' possible mineralization, Blackwolf has positioned itself to practically guarantee paydirt in Southeast Alaska.

Finally, with permitting granting surface exploration at Niblack and exploration drilling at Cantoo, the company rounded off the year with a clean end to its sizable growth.

PRESIDENT & CEO: Robert McLeod VP, EXPLORATION: Jodie Gibson

CASH AND CASH EQUIVALENTS: C\$1.7 million (July 31, 2022) WORKING CAPITAL: C\$1 million (July 31, 2022) MARKET CAPITALIZATION: C\$8.7 million (Nov. 28, 2022)

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The aurora borealis lights above Coeur's Kensington gold mine in Alaska.

ALASKA & NORTHERN BRITISH COLUMBIA

NYSE: CDE 🚮

Steadfast exploration strategy for Coeur

Coeur Mining Inc. is highly encouraged by the results from the 2022 drilling at its Silvertip silver-zinc-lead mine project in Northern British Columbia and Kensington gold mine in Southeast Alaska early in 2022.

In fact, early 2022 results at these two northern assets, along with

the Palmarejo silver-gold mine in Mexico, prompted the Chicago-based mining company to boost its exploration budget to more than US\$50 million last year.

"During a period of underinvestment within our industry, we have remained steadfast in our strategy of investing in expansions and near-mine exploration to position the company to deliver high-return, sector-leading growth in production and free cash flow from operations containing expanded reserve and resource bases and located in miningfriendly jurisdictions," said Coeur Mining President and CEO Mitchell Krebs.



MITCHELL

Readying for Silvertip restart

At Silvertip, Coeur is building resources that it can upgrade to reserves to support plans for a higher throughput operation at the highgrade silver mine.

Going into 2022, Silvertip hosted 2.82 million tons of measured and indicated resources averaging 9.35 ounces per metric ton (26.3 million oz) silver, 10.46% (389.4 million lb) zinc, and 5.55% (312.6 million lb) lead; plus 2.35 million tons of inferred resource averaging 7.57 oz/t (17.8 million oz) silver, 8.98% (422.3 million lb) zinc, and 4.27% (200.7 million lb) lead.

Coeur had up to four drills turning at Silvertip during 2022 – two underground core rigs focused on infill drilling within the Discovery and Southern Silver zones and two surface rigs carrying out resource expansion and exploration drilling.

The company also logged and shipped core samples from late 2021 drilling to labs for assaying.

This includes a hole drilled west of the Camp Creek zone that returned one of the highest grade-thickness intervals ever encountered at Silvertip.

Highlights from the drilling at the Camp Creek West discovery include: 12 meters averaging 459.6 grams per metric ton (13.4 ounces per ton) silver, 15.1% zinc, and 8.7% lead in hole CCF21-PAD03-015; and 6.2 meters averaging 778.3 g/t (22.7 oz/t) silver, 13.6% zinc, and 14.7% lead in hole CCF21-PAD05-026.

"Recent assays from the newly discovered Camp Creek West zone

of Silvertip are among the best results ever returned at the property and underscore the potential of what we believe is a truly world-class deposit," said Krebs. "In addition to the impressive grade and thickness of the Camp Creek West discovery, its location across a fault zone not previously known to contain ore-grade material has the potential to significantly expand the extent of this deposit."

It had previously been assumed the rock that typically hosts highgrade silver had eroded away on the west side of the Camp Creek fault, so no drilling had ever been carried out in this area before. CCF21-PAD03-015, however, encountered a new chimney, or pipe-like, system carrying high-grade silver in this underexplored area of the Silvertip property.

The company says modeling of data from a SkyTEM geophysical flown last year suggests that the new Camp Creek discovery may extend more than a mile (two kilometers) from current drilling. Going into the second half of the year, Coeur had underground rigs carrying out infill drilling at the Southern Silver zone, as well as rigs exploring Discovery and Camp Creek from the surface.

High-grade Kensington gold

Coeur's 2022 drilling at Kensington, which lies about 180 miles southwest of Silvertip, focused on infill drilling of the Elmira, Eureka, Kensington Zone 30, and Jualin deposits from underground, while a surface rig targeted expansion drilling at Kensington main and Jennifer, along with scout drilling of new prospects.

Infill drilling at Kensington Zone 30 tapped strong gold mineralization in the upper reaches of the main Kensington orebody.

Hole K21-2050-216-X01A, drilled in the uppermost area of Kensington Zone 30, cut 2.5 meters averaging 85.8 g/t (2.5 oz/t) gold and 5.2 meters averaging 21.6 g/t gold.

Coeur says these grades are similar to the higher-grade Jualin deposit but are the tellurium-type ore typically encountered in the Kensington deposit, which provides the bulk of Kensington's gold production.

The company also reported that drills tapped strong gold mineralization at Elmira, a zone associated with the Kensington deposit that has recently been added to the mine plan.

EL21-0850-156-X22, an Elmira expansion hole, cut three meters averaging 25.7 g/t gold and 2.6 meters averaging 6.2 g/t gold.

Going into 2022, Kensington hosted 1.35 million metric tons of proven and probable reserves averaging 0.194 oz/t (261,000 oz) gold.

CHAIRMAN: Robert Mellor PRESIDENT & CEO: Mitchell Krebs SENIOR VP, EXPLORATION: Aoife McGrath

CASH AND CASH EQUIVALENTS: US\$75.4 million (Sept. 30, 2022) WORKING CAPITAL: US\$188.3 million (Sept. 30, 2022) MARKET CAPITALIZATION: US\$1.05 billion (Dec. 29, 2022)

104 S. Michigan Ave. Suite 900, Chicago, Illinois 60603 312-489-5800 • www.coeur.com

SOUTHEAST ALASKA

Grande Portage Resources Ltd.

TSX-V: GPG.V 🚮

Drilling keeps delivering for Grande Portage

Looking to build upon a high-grade gold resource that already tops 1 million ounces, Grande Portage Resources Ltd. drew up a more than 10,000-meter drill program that tested multiple targets at its Herbert Gold project in Southeast Alaska.

According to a 2021 calculation, Herbert Gold hosts 3.64 million metric tons of indicated resource averaging 10.23 grams per metric ton (1.2 million ounces) gold, and 5.87 g/t (686,700 oz) silver; plus 1.14 million metric tons of inferred resource averaging 8.91 g/t (325,900 oz) gold, and 4.63 g/t (169,300 oz) silver.

This increased the indicated category by 97%, while the lower confidence inferred category increased by 29%.

Furthermore, this marked the first resource that calculated silver at Herbert Gold.

Given the significant post-COVID backlog at assay labs, results from the 2021 program at Herbert began to roll in around the end of February 2022, with the final results finally coming in around the first of April.

Highlights from the final results included: 2.13 meters averaging 15.42 g/t gold in hole 21Q-4 at

Sleeping Giant; 0.92 meters averaging 20.9 g/t gold in hole 21Q-4 on the Main vein; and 1.07 meters averaging 85.74 g/t gold in hole 21Q-6.

In May, the company announced it had received regulatory approval for its planned 2022 program; however, drilling would not commence until sometime around July.

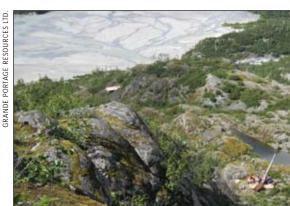
"Our 2022 program began late due to unforeseen contractor and supply chain delays. This, coupled with unseasonably poor and foggy weather, further interrupted the company's original drill plan," said Grande Portage President and CEO Ian Klassen.

The program, though, tested multiple targets, in particular, the main mineralized structures at depths beyond 500 meters, while at the same time, penetrating additional structures.

In addition to drilling the deeper portions of the Goat, Main, and Deep Trench veins, one of the company's planned drill sites tested the eastern extension of the Deep Trench, the Floyd and the Elusive Structure, which remained virtually unexplored to date.

"Our geological team has certainly gained more knowledge into the resource at the Herbert property," Klassen added. "Grande Portage is funded for next year's program and management looks forward to adding 2021 and 2022 drill results to the Herbert Gold database.

Grande Portage also reported the staking of 10 unpatented mining



2022 saw a 10,000-meter drill program that continued to expand the more than 1 million oz resource at the Herbert Gold project in Southeast Alaska.



With the resource growing to a size to support a commercial mine, Grande Portage has engaged numerous contractors to assist and oversee the collection of necessary data that a developer would need for a future Herbert Gold mine.

claims for Herbert.

The new claims were staked to cover the northeastern extension to ensure a continuation of the prospective ground held by the company and its drilling efforts to expand upon its resource.

According to the company, the vein structures and mineralization show no signs of diminishing with depth, further detailing that the host rock unit containing the mineralized veins dip to the northeast between two major bounding faults.

CFO: Michele Pillon • PRESIDENT & CEO: Ian Klassen DIRECTOR OF EXPLORATION: Carl Hale

CASH AND CASH EQUIVALENTS: C\$4 million (July 31, 2022) WORKING CAPITAL: C\$3.8 million (July 31, 2022) MARKET CAPITALIZATION: C\$22.7 million (Nov. 21, 2022)

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tsx-v: KLD 🚮

Kenorland draws Antofagasta to Alaska

With a propensity to attract major mining companies to the mineral exploration projects it generates, Kenorland Minerals Ltd. cut a deal in 2022 to option its Tanacross project in eastern Alaska to Chilean copper miner Antofagasta PLC.

Lying alongside the Alaska-Yukon border, the 113,400-acre Tanacross property hosts world-class porphyry copper-gold deposit potential.

Since the discovery of the East Taurus deposit in 1971, 17,076 meters of drilling in 67 holes have been completed at Tanacross.

Highlights from historical drilling include:

• 175 meters averaging 0.31% copper, 0.1 grams per metric ton gold, and 0.032% molybdenum in hole 96DDH030.

• 208.5 meters averaging 0.23% copper, 0.14 g/t gold, and 0.32% molybdenum in hole 96DDH032.

• 232.6 meters averaging 0.31% copper, 0.25 g/t gold, and 0.036% molybdenum in hole 08DDH040.

• 285 meters averaging 0.23% copper, 0.16 g/t gold, 1.08 g/t silver, and 0.036% molybdenum in hole 19ETD050.

• 412.4 meters averaging 0.11% copper, 0.12 g/t gold, 1.17 g/t silver, and 0.015% molybdenum in hole 19ETD051.

In 2021, Kenorland completed detailed soil sampling and mapping over the East Taurus, West Taurus, South Taurus, and Big Creek target areas of the property. High-resolution drone magnetic surveys were flown over the same area, and a Titan high-powered induced polarization and magnetotelluric survey was completed at South Taurus.

The culmination of this work has drawn the interest of Antofagasta.

To earn a 70% joint venture interest in Tanacross, Antofagasta Minerals S.A, a subsidiary of Antofagasta, has agreed to pay Kenorland an initial US\$1 million cash payment and spend US\$30 million on exploration over eight years, including a minimum of US\$1 million in the first year. Upon completion of its work commitment and delivering a PEA that outlines the economic and engineering parameters of developing a mine at Tanacross, the Chilean copper miner will pay Kenorland an additional US\$4 million.

During the option period, Antofagasta will fund all exploration and Kenorland will be the initial operator.

This work began with a US\$2 million field program carried out last year that included various geophysical, geological, and geochemical surveys covering the East Taurus, McCord Creek, West Taurus, and South Taurus target areas.

Kenorland says these detailed surveys carried out in 2022, combined with historical datasets, will provide fundamental information for drill targeting across multiple areas.

"This comprehensive exploration program will create a strong foundation for future drill targeting," said Kenorland Minerals CEO Zach Flood.

Healy gold project

Kenorland cut a deal with Newmont Corp. in 2018 to earn up to a 70% joint venture interest in Healy by completing at least US\$4 million of exploration on the property by the end of 2022.

Mapping, soil sampling, geophysical surveys, and reverse circulation drilling carried out during the 2018 through 2020 field seasons identified three primary drill targets – Bronk, Thor, and Spike.

The company tested these targets with a 14-hole diamond drill program carried out in 2021.

Highlights from this drilling include:

• 11.9 meters averaging 1.29 g/t gold in hole 21HDD017 (Thor).

13.38 meters averaging 1.22 g/t gold in hole 21HDD019 (Thor).
 Drilling also cut multiple intervals of lower-grade gold at Bronk.

Kenorland says the broadly disseminated and vein-hosted low-level



Kenorland Vice President of Operations Janek Wozniewski collects soil samples from the Tanacross copper-gold project along the Alaska-Yukon border.

"This comprehensive exploration program will create a strong foundation for future drill targeting." *-Kenorland Minerals CEO Zach Flood*

gold mineralization encountered confirms the presence of a large gold system.

Induced polarization and magnetotelluric geophysical surveys completed towards the end of the 2021 drill program revealed significant untested geophysical anomalies associated with mineralization, controlled by structural and lithological traps.

"While there are many indications that Healy represents a significant greenfields gold discovery within Alaska's prolific Goodpaster Mining District, it will require additional drill testing to fully evaluate the economic potential," said Flood. "We will provide an update on our exploration plans going forward after we have completed a detailed review of the results and targets with Newmont Corporation, who currently holds a 30% participating interest in Healy."

Kenorland's portfolio also includes the Frotet gold property in Quebec, being explored under a JV with Sumitomo Metal Mining Company Ltd.; Chicobi gold project in Quebec, optioned to Sumitomo Metal Mining; the Chebistuan gold project in Quebec, optioned to Newmont; Hunter gold project in Quebec, optioned to Centerra Gold Inc.; O'Sullivan gold project in Quebec: South Uchi gold project in Ontario, optioned to Barrick Gold Corp.; South Thompson nickel project in Manitoba; Oisk nickel project in Manitoba; and Wheatcroft gold project in Manitoba.

PRESIDENT & CEO: Zach Flood VP, EXPLORATION: Scott Smits VP, OPERATIONS: Janek Wozniewski

CASH AND CASH EQUIVALENTS: C\$19.8 million (Dec. 14, 2022) WORKING CAPITAL: C\$20 million (Dec. 12, 2022) MARKET CAPITALIZATION: C\$45.5 million (Nov. 25, 2022)

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Barrick Gold Chief Executive Mark Bristow (left) and Novagold Resources CEO Greg Lang at the Donlin Gold project in Southwest Alaska.

ALASKA

Donlin Gold, the gift that keeps on giving

With drills tapping up to 42.3 meters of 30.68 grams per metric ton gold, the 2022 exploration season at the world-class Donlin Gold mine project in Southwest Alaska has been exciting and rewarding, but expected, for partners Novagold Resources Inc. and Barrick Gold Corp.

Being advanced toward a production decision by Donlin Gold LLC – a joint venture owned equally by Novagold and Barrick – this enormous project hosts 541.3 million metric tons of measured and indicated resources averaging 2.24 grams per metric ton (39 million oz) gold.

A feasibility study completed in 2011 detailed plans for a mine at Donlin that would produce more than 1 million oz of gold annually over an initial 25 years of mining.

Toward the goal of updating this decade-old feasibility study ahead of a mine development decision for Donlin, the project partners invested roughly \$64 million into a 2022 program that included 42,334 meters of drilling that cut the extraordinary gold intercepts that have come to be expected at the project.

Highlights from the 2022 infill drilling in the ACMA and Lewis pit areas of the Donlin Gold deposit include:

• 18.65 meters averaging 10.78 g/t gold from a depth of 197.6 meters in hole DC22-2040.

• 52.27 meters averaging 14.63 g/t gold from a depth of 232.95 meters in hole DC22-2040.

• 73.98 meters averaging 4.21 g/t gold from a depth of 99.82 meters in hole DC22-2056.

• 19.74 meters averaging 34.17 g/t gold from a depth of 162.2 meters in hole DC22-2063.

• 60.96 meters averaging 12.35 g/t gold from a depth of 236.2 meters in hole DC22-2063.

• 42.28 meters averaging 30.68 g/t gold from a depth of 117.5 meters in hole DC22-2068.

• 48.96 meters averaging 20.61 g/t gold from a depth of 150.1 meters in hole DC22-2077.

"We refer to Donlin as 'the gift that keeps on giving,'" said No-

ALASKA Novagold Resources Inc. – NOVAGOLD



CHAIRMAN: Thomas Kaplan PRESIDENT AND CEO: Gregory Lang VP, ENGINEERING & DEVELOPMENT: Richard Williams

CASH AND TERM DEPOSITS: US\$131.9 million (Aug. 31, 2022) WORKING CAPITAL: US\$153.7 million (Aug. 31, 2022) MARKET CAPITALIZATION: US\$1.92 billion (Nov. 25, 2022)

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161 Bay St., St. 3700 Toronto, ON M5J 2S1 Tel: 416-861-9911 Email: lois.wark@barrick.com www.barrick.com

vagold Resources President and CEO Greg Lang. "Unsurprisingly, therefore, we continue to be most encouraged by the outstanding drill results of the ACMA and Lewis pits."

Given the outstanding results from the first 34,000 meters of drilling in a program that was running ahead of schedule, the Donlin Gold board approved an extra 8,331 meters of drilling in 43 infill holes that will provide added information as the project partners finalize an updated feasibility study ahead of a development decision for the world-class gold mine project.

"As expected, the drill program for 2022 continues to enhance our understanding of the ore bodies that make up the Donlin project," said Barrick Gold President and Chief Executive Mark Bristow. "Also encouraging is that this year's drilling campaign is ahead of schedule and results so far support the most recent modelling concepts as we focus on moving the project toward a feasibility study decision."

The 150 employees, contractors, and student interns at the Donlin site – a majority of which are local hires representing 24 Yukon-Kuskokwim communities in Southwest Alaska – are working on a twoweek rotation schedule and continue to advance the project activities rapidly and safely.

"Donlin Gold's top priorities continue to be the health and safety of our people following the best practices in environmental stewardship for the benefit of the people of Alaska," said Donlin Gold General Manager Dan Graham. "We could not be more pleased with the work of our 2022 Donlin Gold site crew. While exceeding productivity rates and running ahead of schedule, the overall morale of employees has been high and our safety record has remained strong."

In addition to drilling, the 2022 Donlin fieldwork includes the collection of additional data for Alaska Dam Safety Certifications and environmental studies.

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