Provincial Overview of Exploration and Mining in British Columbia, 2022

BRITISH COLUMBIA
Ministry of Energy, Mines and Low Carbon Innovation

Information Circular 2023-01

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Front Cover:
Drill site at Bergette target, Berg Joint Venture project, Northwest Region. View to the southwest. **Photo by Nate Corcoran.**

Back Cover:
Gething Formation coal seams interlayered with sandstone, siltstone, and shale, dipping west at about 35 degrees. Brule Mine, phase 3 pit, looking north towards Mink Creek. **Photo by Hassan Heidarian.**

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Victoria
British Columbia
Canada

January 2023

Foreword

This volume is the latest in a series of annual reviews that dates back to 1874, when the first Annual Report of the Minister of Mines was published. To prepare the details in the district chapters, the Regional Geologists visit project sites to view outcrops and drill core and to discuss results and progress. A significant amount of information is gleaned from corporate press releases, websites and reports. Exploration expenditures, drilling estimates and other metrics for British Columbia were captured in the British Columbia Mineral and Coal Exploration Survey. The survey is a joint initiative between the Province of British Columbia Ministry of Energy, Mines and Low Carbon Innovation, the Association for Mineral Exploration, and EY LLP.

While Covid continued to cause minor interruptions, 2022 did not have the significant forest fire and flooding disruptions of 2021. Provincial mining production reached a new high due to continued high coal prices. The year started with significant exploration financing in place and exploration expenditures improved for the third year in a row, reaching a new record level. The forecasted value of total provincial mining production reached an all-time high of $18.2 billion, and total exploration expenditures reached a record of $740.4 million.

As used in this volume

- grassroots exploration refers to activities that are typically below Mines Act permit thresholds and commonly include mapping, sampling and prospecting
- early-stage exploration includes activities such as geophysics, geochemistry, trenching, and drilling
- advanced-stage exploration is concerned with resource definition, emphasizing drilling and bulk sampling, and may include baseline environmental studies, economic pre-feasibility work, and secondary target exploration
- mine evaluation begins with a commitment to develop a resource and usually coincides with government applications to open a mine and environmental, social, engineering, and financial assessment activities
- mine lease exploration represents work on a mining property beyond known reserves and commonly has characteristics of early-stage or advanced exploration

Founded in 1895, the British Columbia Geological Survey integrates historical data with active research programs and, drawing on continuously advancing concepts and technologies in the Earth sciences, informs the mineral and coal industries. The British Columbia Geological Survey preserves, archives, and provides free web-based access to more than a century's worth of geoscience information.

British Columbia Geological Survey geoscientists work and live on the traditional lands of many First Nations. The Survey looks forward to enhancing relationships and exchanging knowledge with Indigenous communities.

We appreciate the information and access to project sites provided by industry representatives and thank George Owsiacki of Total Earth Science Services for desktop publishing.

Gordon Clarke
Director, Mineral Development Office
British Columbia Geological Survey
January, 2023

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Exploration and Mining in British Columbia, 2022: A summary

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1. Introduction

Reflecting its complex geological history, British Columbia is endowed with diverse minerals and deposit types (Fig. 1). British Columbia is Canada's largest exporter of metallurgical coal, leading producer of copper, and only producer of molybdenum. Also produced are significant amounts of gold, silver, lead, and zinc, and more than 30 industrial minerals including gypsum, magnesite, limestone, and dimension stone. Numerous quarries produce sand and gravel or crushed aggregate. Flanked by the Pacific Ocean, British Columbia offers easy access to global markets. Mine operations benefit from tax incentives and a well-developed infrastructure, including low-cost electricity, an integrated road and rail network, and large deep-water ports. Exploration benefits from an extensive geoscience database and a web-based mineral tenure system.

The following report summarizes the chapters prepared by the British Columbia Geological Survey Regional Geologists that are presented elsewhere in this volume. The Regional Geologists (Fig. 2; Table 1) represent the provincial government on geological matters at a regional level. Within their communities, they provide information on exploration trends, possible investment opportunities, land use processes, First Nation capacity building, and public outreach.

Noteworthy acquisitions and earn ins were announced in 2022. The most significant was the completed purchase of Pretium Resources Inc. by Newcrest Mining Limited. for approximately $3.5 billion. Skeena Resources acquired Quest Ex Copper & Gold Ltd. for $48.6 million and made a concurrent sale of several Quest Ex properties (Heart Peaks, Castle, Moat, Coyote, and North ROK) to Newmont Corporation for $26 million. Another notable deal was the completed acquisition of Fury Gold Mines Ltd.'s wholly owned subsidiary Homestake Resource Corporation by Dolly Varden Silver Corp. Homestake's adjacent tenure was consolidated with the Dolly Varden project (Dolly Varden Silver Corp.) to form the new **Kitsault Valley** project. Brixton Metals Corporation announced a $13.6 million strategic investment by BHP Group Limited to advance their **Thorn** project, and Conuma Resources Limited recently purchased the closed **Quintette** mine from Teck Resources Limited for $120 million. Conuma will also pay an ongoing 25% net profits royalty, starting once it recovers its investment. Freeport-McMoRan Mineral Properties Canada Inc. continued to earn in at Amarc Resources Ltd.'s **Joy** project by spending approximately $14 million. Amarc also announced an earn-in agreement with Boliden Mineral Canada Ltd., a wholly owned subsidiary of the Boliden Group, on its **Duke** project. Boldien may earn up to 70% by making staged exploration and development investments totalling $90 million.

Two mine development projects were underway. Ascot Resources Ltd. received a Mines Act permit for construction and operation of their **Premier Gold** mine project in 2021. Plant pre-commissioning is on schedule, with a planned start in Q4 2023 and the first gold pour in early 2024. Artemis Gold Inc. announced fulfilling all EA (environmental assessment) conditions to start preparing the plant site for their **Blackwater Gold** project. This work started in 2022 with clearing, bulk earthworks, and erosion control. The first gold pour is planned for Q3 2024.

The Government of Canada determined that the proposed **Sukunka** mine project (Glencore plc and JX Nippon Oil and Energy Corporation) would have significant adverse environmental effects that could not be mitigated and declined to approve the project.

Low-carbon energy technologies demand critical minerals, but the highly globalized supply chain of critical minerals and products is vulnerable to disruption. Furthermore, increased

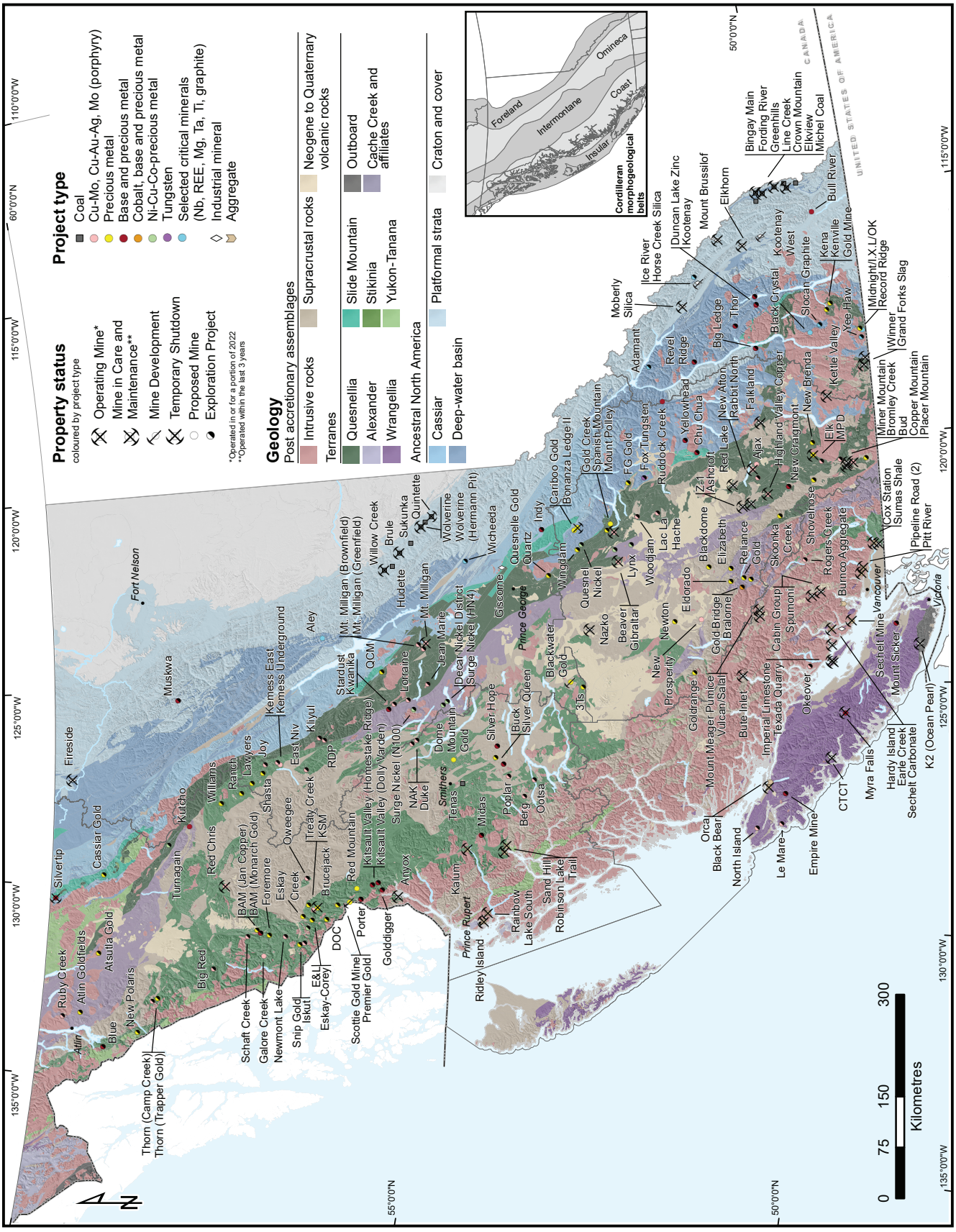

Fig. 1. Mines, mine development, selected proposed mines, and selected exploration projects in British Columbia, 2022. Based on Clarke et al. (2023), British Columbia Geological Survey Open File 2023-01.

Fig. 2. Mineral Development Office regions and Regional Geologist offices.

use of green technologies is increasing the demand for many metals, which could lead to shortages in the next few decades. Based on specific demands and vulnerabilities to supply, different countries have produced different critical minerals lists. Canada's list, released in 2021, includes a suite of 27 elements, two groups of elements (platinum group metals and rare earth elements) and two minerals (fluorspar, potash). The list is considered critical for the continued economic success of Canada as it transitions to a green economy. British Columbia is Canada's largest producer of copper and metallurgical coal and only producer of molybdenum, and also produces zinc and manganese. The four metals are elements on Canada's list, and metallurgical coal is required for high-quality steel. British Columbia has near-term potential to contribute significantly to the production of other critical metals required for a green economy including nickel, rare earth elements, niobium, tantalum, tungsten, and cobalt.

While Covid continued to cause minor interruptions, 2022 did not have the significant forest fire and flooding disruptions of 2021. Provincial mining production reached a new high due to continued high coal prices. The year started with significant exploration financing in place and exploration expenditures improved for the third year in a row, reaching a new record level.

2. Mine production

The Ministry of Energy, Mines and Low Carbon Innovation forecasts the total value of mine production for 2022 at $18.2 billion including coal, copper, gold, industrial minerals, aggregate, zinc, silver, molybdenum, and lead (Fig. 3). This forecast is $4.3 billion higher than the 2021 preliminary estimate of $13.9 billion made by the Ministry using Natural Resources Canada values (Fig. 4) and is due to increased coal prices. Coal started the year over 350 US$/t, peaked at over 670 US$/t in March, and in late December was approximately 280 US$/t.

As in previous years, coal was the highest value mine product (67.0%), followed by copper (17.8%). In 2022, 11 metal mines operated during at least part of the year (Fig. 1; Table 2). Metallurgical coal was produced at four open-pit operations in the southeastern part of the province and three open-pit operations in the northeastern part (Fig. 1; Table 2). About 30

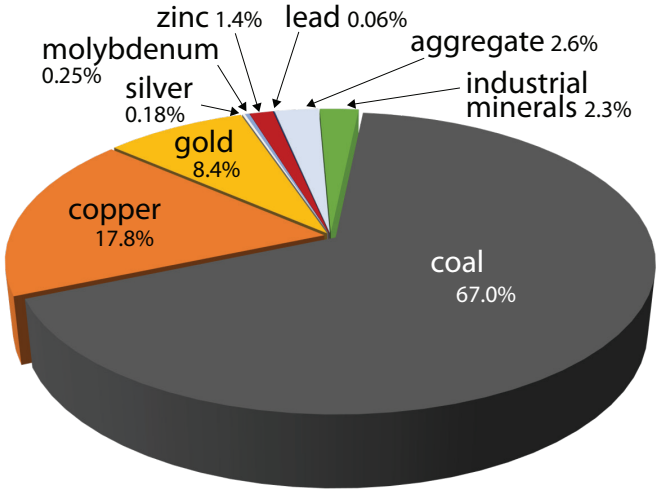

Fig. 3. 2022 forecast value of British Columbia mineral production by commodity; total is $18.2 billion.

Table 1. Mineral Development Office and Regional Geologist contact information.

Region	Community	Regional Geologist	Phone	email
Northwest	Smithers	Nate Corcoran	250-876-6707	Nathan.Corcoran@gov.bc.ca
Northeast and North Central	Prince George	Hassan Heidarian	250-649-2977	Hassan.Heidarian@gov.bc.ca
South Central	Kamloops	Cary Pothorin	250-816-1940	Cary.Pothorin@gov.bc.ca
Southeast	Cranbrook	BCGS	250-952-0372	Geological.Survey@gov.bc.ca
Southwest	Vancouver	Bruce Northcote	604-660-2713	Bruce.Northcote@gov.bc.ca
Mineral Development Office	Vancouver	Gordon Clarke	604-660-2094	Gordon.Clarke@gov.bc.ca

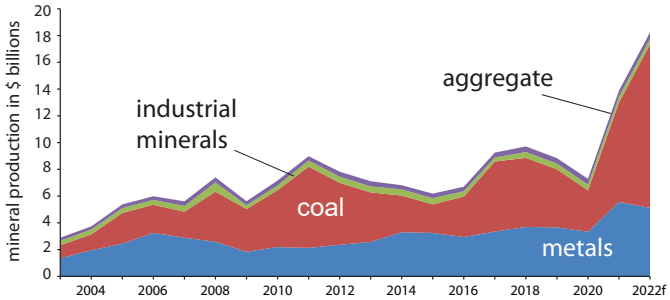

Fig. 4. Value of British Columbia mineral production by year 2002-2022; value for 2022 is forecast.

industrial mineral mines and more than 1000 aggregate mines and quarries were in operation.

3. Mining highlights

3.1. Metal mines

Metal mines accounted for $5.12 billion (forecast) of all mine production in 2022, representing about 28.1% of total output (Fig. 3). Eleven mines produced in 2022 (Fig. 1; Table 2).

Brucejack (Newcrest Mining Limited) and **Red Chris** (Newcrest Mining Ltd. 70% and Imperial Metals Ltd. 30%) were the producing metal mines in the Northwest Region. At the **Brucejack** mine, production for the first three quarters totalled 237,274 oz of Au at a head grade of 7.53 g/t Au and approximately 361,500 oz Ag. The Brucejack ore body incorporates the Valley of the Kings (VOK) and West zones. As of January 1, 2021, Pretium reported Indicated and Measured mineral resources totalling 22.5 Mt grading 10.0 g/t Au and 67.5 g/t Ag. Proven and Probable mineral reserves were reported as 14.4 Mt grading 8.3 g/t Au and 63.8 g/t Ag. Work is in progress to revise ore resources and reserves estimates. Resource drilling expanded the VOK deposit, confirming continuity of high-grade mineralization at depth. Exploration drilling continues to produce good results for the Marmot zone, which was discovered 3.5 km north of the mine in 2021. At the **Red Chris** mine, production to the end of the third quarter of 2022 totalled 49,141 oz Au and 54.5 Mlbs Cu. A new mineral resource estimate was released with 342 Mt of Measured and Indicated grading 0.3 g/t Au, 0.36% Cu, and 16 Mt of Inferred grading 0.23 g/t Au, 0.27% Cu. The Red Chris underground block cave resource is reported as 957 Mt of Measured and Indicated grading 0.46 g/t Au, 0.4% Cu, and 257 Mt of Inferred grading 0.32 g/t Au, 0.30% Cu. Drilling at East Ridge continued to intersect high-grade mineralization confirming continuity and extension of the resource. Results included 222 m grading 0.44 g/t Au and 0.61% Cu, 334 m grading 0.35 g/t Au, and 0.50% Cu, 334 m grading 0.35g/t Au, and 0.50% Cu, including 56 m grading 0.83 g/t Au, and 0.80% Cu, and 22 m grading 1.1g/t Au and 0.93% Cu. Block cave underground mine operation plans are on track.

In the North Central Region, the **Mt. Milligan** open-pit copper-gold mine is in its ninth year. Production to the end of the 3rd quarter totalled 57.0 Mlb of Cu and 136,000 oz Au. Within the mine lease, 26,873 m of drilling in 46 holes was completed. The drilling was split between better defining known resources and expanding resources.

In the South Central Region, operating mines include the two largest copper-molybdenum producers (**Gibraltar** and **Highland Valley Copper**) and two major copper-gold mines (**New Afton** and **Copper Mountain**). A third copper-gold producer, **Mount Polley**, restarted in 2022. The region hosts two small precious metal mines, **Bonanza Ledge II** and **Elk.** Barkerville Gold Mines Ltd. (now under Osisko Development Corp.) restarted the Bonanza Ledge mine in 2017 as an underground long-hole and cemented fill operation below the existing pit. Osisko Development Corp. began a second phase of underground mining **(Bonanza Ledge II)** in 2021 that was suspended in June 2022.

At the **Copper Mountain** mine, production to the end of the third quarter totalled 39.6 Mlbs Cu, 16,980 oz Au, and 181,953 oz Ag. After commissioning a third ball mill, current mill production is 45,000 tpd. Further mill expansion to 65,000 tpd, to be commissioned by 2028, is projected to increase annual production to 138 Mlb Cu. Following a resource expansion drilling program completed in early 2022, reserves increased by 57% to Proven and Probable 702 Mt at average grades of 0.24% Cu, 0.10 g/t Au, and 0.71 g/t Ag. Measured and Indicated mineral resources inclusive of reserves are 1.132 Bt at 0.22% Cu, 0.09 g/t Au, and 0.64 g/t Ag. Projected mine life is now 32 years (up from 21 years), accounting for the planned increase in production.

Gold Mountain Mining Corp. began mining operations at the **Elk** mine in November of 2021. A 2021 updated Preliminary Economic Assessment considers a 70,000 tpy open pit-only operation expanding to 324,000 tpy open pit and underground after three years. As of December 2021, the total property combined pit-constrained and underground resources were estimated at 4.359 Mt Measured + Indicated grading 5.6 g/t Au and 11.0 g/t Ag, and 1.497 Mt Inferred grading 5.3 g/t Au and 14.4 g/t Ag.` The total mine life would be 11 years with 570,388 oz Au produced. Ore is trucked to New Afton for processing under an agreement with New Gold Inc. In the first nine months of 2022, the company reported sales of 3588 oz Au in crushed ore and production of 34,182 t at a grade of 3.62 g/t Au.

At the **Gibraltar** mine, Taseko Mines Limited mined 65.7 million tons in the first 9 months of 2022 and produced concentrate containing 70.3 Mlb Cu and 759,000 lb Mo. Production was affected by lower-than-expected head grades early in the year. Production improved in Q3 as mining progressed deeper into the Gibraltar pit, which is to be the primary source of ore in 2023. Stripping will begin at the new Connector pit. Taseko announced a new Proven and Probable reserve estimate of 706 million tons grading 0.25% Cu. Projected mine life increased to 23 years with an average annual production of 129 million lbs Cu and 2.3 million lbs Mo.

At the **New Afton** mine, New Gold Inc. reported production to the end of the third quarter as 24.1 Mlb Cu and 30,610 oz Au. New Gold received a Mines Act permit amendment allowing

Table 2. Operating metal mines, 2022, forecast mine production, reserves, and resources.

Mine	Region	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Brucejack	Northwest	**Newcrest Mining Limited**	Au, Ag; Epithermal; 104B 193	323,380 oz Au 482,049 oz Ag	P+Pr: 14.4 Mt 8.3 g/t Au, 63.8 g/t Ag	M+I: 22.5 Mt 10.0 g/t Au, 67.5 g/t Ag Inf: 9.4 Mt 10.3 g/t Au, 44.3 g/t Ag (Pretium, 2021)	31,800 m in 74 drill holes in brownfields exploration. Drilling at 1080 HBx zone expanded the VOK deposit. Results include 1.0 m grading 3876 g/t Au within 22 m grading 178 g/t Au, 1.0 m intersection grading 2310 g/t Au within 70.1 m grading 35 g/t Au. Golden Marmot zone results included 1.0 m grading 488 g/t Au within 46.5 m grading 16 g/t Au. Newcrest Mining Limited finalized acquisition of Pretium for $3.5 billion.
Red Chris	Northwest	**Newcrest Mining Limited 70%**, Imperial Metals Corp. 30%	Cu, Au, Ag; Hybrid calcalkalic to alkalic porphyry; 104H 005	72.66 Mlbs Cu 65,524 oz Au 215,705 oz Ag	P+Pr: 75.7 Mt 0.45% Cu, 0.39 g/t Au Red Chris Underground P+Pr: 586 Mt 0.45% Cu, 0.55 g/t Au	M+I: 342 Mt 0.36% Cu, 0.3 g/t Au Inf: 16 Mt 0.27% Cu, 0.23 g/t Au Red Chris Underground M+I: 957 Mt 0.4% Cu, 0.46 g/t Au Inf: 257 Mt 0.30% Cu, 0.32 g/t Au (June 2022)	Drilling at East Ridge continued to intersect high-grade mineralization. Results included 222 m grading 0.44 g/t Au and 0.61% Cu, 334 m grading 0.35 g/t Au, 0.50% Cu, 334 m grading 0.35 g/t Au, 0.50% Cu, including 56 m grading 0.83 g/t Au, 0.80% Cu, and 22 m grading 1.1 g/t Au, 0.93% Cu. Block cave mining development on track.
Mt. Milligan	North Central	**Centerra Gold Inc.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 194, 191	75.9 Mlbs Cu 181,000 oz Au	P+Pr: 246.2 Mt 0.23% Cu, 0.37 g/t Au	M+I: 189 Mt 0.18% Cu, 0.30 g/t Au (additional to reserves)	Concentrator design capacity 60,000 tpd. Mine life extended by over four years. More than 350 employees. Approximately 27,000 m of diamond drilling in 46 holes completed in 2022.

Table 2. Continued.

Bonanza Ledge II	South Central	**Osisko Development Corp.**	Au; Au-quartz veins; 093H 140	7153 oz Au	na	M: 47 t 5.1 g/t Au I: 32 Mt 4.0 g/t Au M+I: 12,000 oz Au	Production at Bonanza Ledge was suspended June 2022.
Copper Mountain	South Central	**Copper Mountain Mining Corporation 75%**, Mitsubishi Materials Corporation 25%	Cu, Au, Ag; Porphyry Cu-Au, Alkalic; 092HSE001	52.8 Mlb Cu 22,600 oz Au 242,600 oz Ag	P+Pr: 702 Mt 0.24% Cu, 0.10 g/t Au, 0.71 g/t Ag	M+I: 1.132 Bt 0.22% Cu, 0.09 g/t Au, 0.64 g/t Ag	Increased resources and reserves. Resources inclusive of reserves.
Elk	South Central	**Gold Mountain Mining Corp.**	Au, Ag; Au quartz veins; 092HNE009, 295, 41, 261	22,164 t 3.68 g/t Au mined in first 6 months of 2022	na	M+I: 4.359 Mt 5.6 g/t Au, 11.0 g/t Ag Inf: 1.497 Mt 5.3 g/t Au, 14.4 g/t Ag	Effort to improve grade control may change production in H2. Exploration is ongoing.
Gibraltar	South Central	**Taseko Mines Limited 75%**, Cariboo Copper Corp. 25%	Cu, Mo; Porphyry Cu±Mo±Au; 093B 012	93.9 Mlb Cu 1.0 Mlb Mo	P+Pr: 706 million short tons 0.25% Cu, 0.008% Mo (sulphide mineral reserves) P+Pr: 17 short tons 0.15% (acid soluble Cu)	M+I: 1.215 million short tons 0.24% Cu, 0.007% Mo (inclusive of reserves)	Trend toward improving production in Q3. Reserves increased over previous year for a 23 year projected mine life.
Highland Valley Copper	South Central	**Teck Resources Limited**	Cu, Mo; Porphyry Cu±Mo±Au; 092ISW012, 45	268.1 Mlb Cu 1.1 Mlb Mo	P+Pr: 338.3 Mt 0.31% Cu, 0.008% Mo	M: 582.8 Mt 0.30% Cu, 0.009% Mo I: 626.7 Mt 0.26% Cu, 0.010% Mo Inf: 232.3 Mt 0.22% Cu, 0.007% Mo	HVC 2040 project, if implemented, would extend mine life from 2028 to 2042.

Table 2. Continued.

Mount Polley	South Central	**Imperial Metals Corporation**	Cu, Au, Ag; Porphyry Cu-Au, Alkalic; 093A 008	>5 Mlb Cu (2.4 Mlb produced during Q3	P+Pr: 53.8 Mt 0.34% Cu, 0.30 g/t Au, 0.90 g/t Ag	M+I open pit: 186.9 Mt 0.27% Cu, 0.28 g/t Au, 0.49 g/t Ag M+I underground: 7.4 Mt 0.29% Cu, 0.29 g/t Au, 6.57 g/t Ag	Reserves and resources estimated in 2016 adjusted for mining to 2020. Q3 production was a ramp-up period. Production expected to increase in Q4.
New Afton	South Central	**New Gold Inc.**	Au, Ag, Cu; Porphyry Cu-Au, Alkalic; 092INE023	32.1 Mlb Cu 40,800 oz Au	P+Pr: 41.3 Mt 0.67 g/t Au, 1.8 g/t Ag, 0.74% Cu	M+I: 64.9 Mt 0.56 g/t Au, 2.0 g/t Ag, 0.70% Cu (exclusive of reserves)	Underground exploration drilling results to be incorporated in 2022 year-end resource estimates.
Myra Falls	Southwest	**Myra Falls Mine Ltd. (Part of Trafigura Mining Group)**	Zn, Cu, Pb, Ag, Au; Kuroko massive sulphide; 092F 330, 71, 72, 73	Not reported. Mill capacity 2000 tpd. Long term target 800,000 tpy of ore	P+Pr: 4.7 Mt 7.11% Zn, 0.78% Pb, 0.92% Cu, 76.55 g/t Ag, 1.78 g/t Au	M+I: 7.64 Mt 6.59% Zn, 0.72% Pb, 0.99% Cu, 72.52 g/t Ag, 1.79 g/t Au	Trafigura indicates the mine has reserves and resources sufficient for 10 years operation. Exploration is ongoing.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

mining of the C-Zone in October (below and extending west of the current mining area). Development of the C-Zone is continuing, with production anticipated in 2023. Electrification is part of the plan at New Afton. An electric scoop has been in operation since 2021 and electric haul trucks were purchased in 2022. The company reported underground exploration drilling at the mine, with underground results to be included in the 2022 year-end mineral resource estimate. Surface exploration drilling at the Cherry Creek trend 3 km west of the mine concluded and there was reconnaissance drilling (5000 m) 8 km southwest of the mine.

The Southwest Region has one operating metal mine, **Myra Falls**. Trafigura Mining Group, part of Trafigura Group Pte. Ltd. acquired the Myra Falls underground Zn-Cu-Pb-Ag-Au mine in 2020 from Nyrstar N.V. Trafigura is a private multinational commodity trading company and is not required to publish compliant production or reserves figures. However, they reported continuing to ramp up to a target throughput of 800,000 tpy of ore and estimate the operation has approximately 10 years of reserves. The mine has a history of replacing reserves through exploration, which continued in 2022. Ability to store tailings may place limitations on mine life before exhaustion of resources.

3.2. Coal mines

Seven coal mines (Fig. 1; Table 3) accounted for a forecast production of $12.2 billion for 2022. This production represents about 67.0% of all total mining output in the province. Coal was produced at four large open-pit operations of Teck Coal Limited (**Elkview**, **Fording River**, **Greenhills**, **Line Creek**) in southeastern British Columbia and three open-pit operations of Conuma Resources Limited (**Brule**, **Willow Creek**, **Wolverine**) in northeastern British Columbia.

3.3. Industrial minerals and aggregates

About 30 industrial mineral mines and more than 1000 aggregate operations are active in British Columbia (selected operations are listed in Table 4). With forecast production figures for industrial minerals of $425 million (2.3% of total mining production) and for aggregates of $481 million (2.6% of total mineral production), these operations are important to the economy of the province.

In the Northwest Region, Tru-Grit Abrasives is recycling slag at the historic **Anyox** site, where slag was created from smelting copper. Numerous aggregate and quarry operations supply sand and gravel and blasted stone for large-scale industrial projects and municipalities throughout the region. Several large aggregate pits operate near Kitimat (**Robinson Lake Trail** and **Sand Hill**) and others operate near Prince Rupert (**Ridley Island** and **Rainbow Lake South**). Owned by the Kitsumkalum First Nation's, **Kalum** is an industrial rock quarry. It is the only pit in the region with a rail spur, and it supplies the Canadian National Railway Company with ballast.

In the Northeast Region, Fireside Minerals Ltd. mines veins

Table 3. Operating coal mines, 2022, forecast mine production, reserves, and resources.

Mine	Region	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Brule	Northeast	**Conuma Resources Limited**	PCI; Bituminous coal; 093P 007	1.9 Mt	P+Pr: 2.3 Mt	na	About 300 employees.
Willow Creek	Northeast	**Conuma Resources Limited**	HCC, PCI; Bituminous coal; 093O 008	1.0 Mt	P+Pr: 8.6 Mt	na	About 300 employees, mine and plant.
Wolverine	Northeast	**Conuma Resources Limited**	HCC; Bituminous coal; 093P 025	1.1 Mt	P+Pr: 2.3 Mt	na	About 300 employees, mine and plant.
Elkview	Southeast	**Teck Coal Limited 95%**, Nippon Steel & Sumitomo Metal Corporation 2.5%, POSCO 2.5%	HCC; Bituminous coal; 082GNE016, 17	5.4 Mt	na	na	Teck estimates a remaining reserve life of approximately 29 years at the current production rate.
Fording River	Southeast	**Teck Coal Limited**	HCC; Bituminous coal; 082JSE012	8.2 Mt	na	na	The focus for development in 2022 was the Fording River Extension project. Proven and Probable reserves sufficient for 27 years mine life; increase to 47 years including the Fording River Extension project.
Greenhills	Southeast	**Teck Coal Limited 80%**, POSCO Canada Limited ('POSCAN') 20%	HCC; Bituminous coal; 082JSE007, 10	6.3 Mt	na	na	Proven and Probable reserves are projected to support another 46 years of mining at planned production rates.
Line Creek	Southeast	**Teck Coal Limited**	HCC, TC; Bituminous coal; 082GNE020	3.4 Mt	na	na	Proven and Probable reserves at Line Creek are projected to support planned production rates for a further 14 years.

HCC = hard coking coal; PCI = pulverized coal injection; TC = thermal coal
P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 4. Selected operating industrial mineral mines and quarries, 2022, forecast mine production, reserves, and resources.

Mine	Region	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Anyox	Northwest	**Tru-Grit Abrasives**	Slag	na	na	na	Slag is mined, cleaned, and barged for roofing and sand for sand blasting.
Kalum	Northwest	**Kalum Quarry Ltd.**	Industrial rock; Crushed rock	na	na	na	Drilling, blasting, crushing, production for CN Railway and others.
Rainbow Lake South	Northwest	**Spring Creek Aggregates Ltd.**	Industrial rock; Crushed rock	na	na	na	Drilling, blasting, crushing, production for CN Railway and LNG projects
Ridley Island	Northwest	**Terus Construction Ltd.**	Industrial rock; Crushed rock	na	na	na	Drilling, blasting, crushing, production for CN Railway and LNG projects.
Robinson Lake Trail	Northwest	**Haisla & Progressive Ventures Construction Ltd.**	Industrial rock; Crushed rock	na	na	na	Drilling, blasting, crushing, production for CN Railway and LNG projects.
Sand Hill	Northwest	**Terus Construction Ltd.**	Industrial rock; Crushed rock	na	na	na	Crushing for CN Railway and LNG projects.
Fireside	Northeast	**Fireside Minerals Ltd.**	Barite; Vein barite; 094M 003, 19	na	na	na	Fireside Minerals produces 4.1 API spec barite for sale into the western Canadian oil and gas markets.
Ashcroft	South Central	**IG Machine and Fibers Ltd. (IKO Industries Ltd.)**	Basalt (roofing granules); 092INW104	300,000 t	na	Approx. 13.3 Mt in 2002	Typically mines 500,000 t with 60% processed into granule products.
Bromley Creek (Zeotech)	South Central	**Progressive Planet Products Inc. (International Zeolite Corp. 77%)**, **Progressive Planet Solutions Inc. 23%**	Zeolite; Open system zeolites; 092HSE243	na	na	M+I (as of 2013-06-30): 50,000 t	Progressive Planet has an agreement to acquire 50%.
Bud	South Central	**Progressive Planet Products Inc.**	Bentonite; 092HSE162	Approx. 20,000 t annually	na	na	Progressive Planet Solutions Inc. acquired in 2022.

Table 4. Continued.

Falkland	South Central	**Lafarge Canada Inc.**	Gypsum; 082LNW001	10,000-20,000 t annually	na	Approx. 1.8 Mt	Found alternate uses since closure of Lafarge's Kamloops cement plant.
Kettle Valley Quarries	South Central	**Kelowna Sand and Gravel Ltd./Kettle Valley Stone Company**	Ashlar, flagstone, thin veneer; 082ENW109, 111, 112	na	na	na	
Nazko	South Central	**CanLava Mining Corporation**	Lava rock; Cinder cone; 093B 060	na	na	Historical: 45 Mt	
Red Lake	South Central	**Progressive Planet Products Inc.**	Diatomaceous earth; Lacustrine diatomite; 092INE081	Approx. 30,000 t annually	na	na	Progressive Planet Solutions Inc. acquired in 2022.
Z-1	South Central	**Progressive Planet Solutions Inc.**	Zeolite; Open system zeolites; 092INW095	na	na	Approx. 800,000 t	Historical resource.
Elkhorn	Southeast	**CertainTeed Gypsum Canada Inc.**	Gypsum; Bedded gypsum; 082JSW021	na	na	na	Elkhorn site nearing end of mine life. Operations will be transferred to the developing Kootenay West site.
Grand Forks Slag	Southeast	**Pacific Abrasives and Supply Inc.**	Slag; Tailings; 082ESE264	na	na	na	Seasonal operation.
Moberly Silica	Southeast	**Vitreo Minerals Ltd.**	Silica; Industrial silica; 082N 001	About 60 kt product on contract for sales through 2022	na	na	About 200 kt of stockpiled material on site from 2019 mining operations. No mining in 2022.
Mount Brussilof	Southeast	**Baymag Inc.**	Magnesite; Sparry magnesite; 082JNW001	230 kt	na	na	Material is coarse crushed on site and trucked to processing facility in Exshaw, AB.
Winner	Southeast	**Rockwool Inc.**	Gabbro/basalt; Crushed rock, for mineral wool; 082ESE265	na	na	na	Seasonal operation.
Bute Inlet	Southwest	**Ironwood Clay Company Inc.**	Clay; Sedimentary kaolin? (or illite)	na	na	na	Intermittent mining as needed.

Table 4. Continued.

Cabin Group	Southwest	**Northwest Landscape and Stone Supply Ltd.**	Landscaping stone	na	na	na	
Cox Station	Southwest	**Mainland Construction Materials ULC**	Aggregate; Crushed rock; 092GSE103	Approx. 3-4 Mty	na	na	River and rail access.
CTCT	Southwest	**Vancouver Island Marble Quarries Ltd.**	Marble; Limestone; 092E 020	Typically, about 400 t annually	na	na	Supplies Matrix Marble and Stone Inc.
Earle Creek	Southwest	**Lafarge Canada Inc.**	Sand and Gravel	Typically, >1 Mty	na	na	Material barged.
Garibaldi Pumice (Vulcan/ Salal)	Southwest	**Garibaldi Pumice Ltd.**	Pumice; Volcanic ash; 092JW 039	Typically, 10,000-20,000 m^3	na	11,396,000 m^3 pumice 4,990,000 m^3 pumicite (fines)	2014 resource. There has been both exploration and production since.
Hardy Island	Southwest	**Hardy Island Granite Quarries Ltd.**	Dimension stone, building stone; Dimension stone-granite; 092F 425	3000-5000 tpy	na	Approx. 100,000 t	
Imperial Limestone	Southwest	**Imperial Limestone Co. Ltd.**	Limestone; Limestone; 092F 394	Approx. 600,000 tpy	na	75 years	250,000 to 275,000 t high purity product + cement feedstock.
K2 (Ocean Pearl)	Southwest	**K2 Stone Quarries Inc.**	Dimension stone, flagstone; Flagstone; 092C 159	15,000-20,000 t annually	na	na	Production number represents material extracted.
Mount Meager Pumice	Southwest	**Great Pacific Pumice Inc.**	Pumice; Volcanic ash; 092JW 039	na	na	na	Production as required.
Orca	Southwest	**Polaris Minerals Corporation** (Vulcan Materials Company and 'Namgis First Nation)	Sand and Gravel	Up to 6 Mty	na	121.6 Mt initial resource (2005)	Recently 3.5 to 5 Mty increase in mine plan. Vulcan Materials Company acquired previous owner US Concrete Inc. The quarry has a freighter loading facility.
Pipeline Road (2)	Southwest	**Lehigh Hanson Materials Ltd., Allard Contractors Ltd.**	Sand and Gravel	na	na	na	Two adjacent operating sites.

Table 4. Continued.

Pitt River	Southwest	**Lafarge Canada Inc.**	Aggregate; Crushed rock; 092GSE007	Typically, >1 Mty	na	na	River access for barging.
Sechelt	Southwest	**Lehigh Hanson Materials Limited**	Sand and Gravel	Typically, 5-6 Mty	na	Several decades	Freighter loading facility.
Spumoni	Southwest	**Northwest Landscape and Stone Supply Ltd.**	Flagstone; Flagstone; 092GNW100	na	na	na	Seasonal quarry.
Sumas Shale	Southwest	**Sumas Shale Ltd.** (Lafarge Canada Inc., Clayburn Industrial Group)	Shale, clay, sandstone; Residual kaolin; 092GSE024	About 500,000 t annually	na	50+ years	Approximately 55% shale, 45% sandstone for cement production.
Texada Quarry	Southwest	**Texada Quarrying Ltd.** (Lafarge Canada Inc.)	Limestone, aggregate; Limestone; 092F 395	Typically, approx. 3.5 to 4.5 Mty	na	100+ years	Mostly produces limestone for cement manufacture. Freighter loading facility.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

of massive white barite from their **Fireside** mine. The barite is crushed and bagged on site and trucked to Fort St. John and Alberta for use in the drilling industry. In the South Central Region, industrial mineral commodities produced include roofing granules (from basalt), limestone, dimension stone, opal, railway ballast, diatomaceous earth, and zeolite. The Southeast Region hosts several industrial mineral mines, the largest of which are in the Rocky Mountain foreland belt. Commodities produced include magnesite, silica, gypsum, mineral wool, and abrasives. In the Southwest Region several operations remained in steady production and continue to be a major employer. Products include landscaping stone, dimension stone, aggregate, sand and gravel, marble and limestone, and pumice.

4. Mine development projects

As used herein, the term 'mine development projects' refers to those where the decision to produce has been made, necessary permits have been acquired, financing has been secured, and on-site construction has started. In 2022, Artemis Gold Inc.'s **Blackwater Gold** project, Sinova Global's **Horse Creek Silica** project, CertainTeed Gypsum Canada Inc.'s **Kootenay West** project and Ascot Resources Ltd.'s **Premier Gold** project (Fig. 1; Table 5) were considered under development. The **Blackwater Gold** project is in the North Central Region. The **Horse Creek** and **Kootenay West** projects are in the Southeast Region and the **Premier Gold** project is in the Northwest Region.

4.1. Blackwater Gold (Artemis Gold Inc.)

Artemis Gold Inc. carried out clearing, bulk earthworks, and erosion control at their **Blackwater Gold** project. The first gold pour is planned for Q3 2024.

4.2. Horse Creek Silica (Sinova Global)

At the **Horse Creek** Silica project, Sinova Global operates a seasonal quarry in Mount Wilson Formation orthoquartzites (Middle to Upper Ordovician). In 2022, the company continued with permit updates, road construction, rail siding development, and mine site preparation. The mine is expected to produce up to 400,000 tpy of >99% SiO_2 with an estimated resource of 1.4 Mt.

4.3. Kootenay West (CertainTeed Gypsum Canada Inc.)

CertainTeed Gypsum continued development work on its **Kootenay West** mine. Most work was on improving road access to the mine site and environmental mitigation. Some pre-strip and pre-production extraction work was done as well. The mine reported a resource of 17 Mt gypsum at a blended quality of 83%, with annual production of 400,000 tpy. The deposit is in evaporites of the Burnais Formation (Devonian) in a section 20-25 m thick grading 75-95% gypsum. Mining operations are scheduled to begin in 2023 and the projected mine life is 43 years.

4.4. Premier Gold (Ascot Resources Ltd.)

In 2022, Ascot Resources Ltd. continued with construction

Table 5. Selected mine development projects.

Mine	Region	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resource	Comments
Premier Gold	Northwest	**Ascot Resources Ltd.**	Au, Ag; Epithermal; 104B 054	P+Pr: 3.63 Mt 5.45 g/t Au, 19.1 g/t Ag	I: 4.14 Mt 8.01 g/t Au, 35.1 g/t Ag Inf: 5.06 Mt 7.25 g/t Au, 28.7 g/t A	13,685 m of exploration drilling in 91 holes. Plant pre-commissioning to start in Q4 2023 and first gold pour expected in early 2024. Highlight drilling results of 7.90 m grading 62.76 g/t Au, 27.36 g/t Ag, including 1.0 m of 488.00 g/t Au, 181.00 g/t Ag. 10.69 m grading 31.92 g/t Au, 22.21 g/t Ag including 1 m of 330.00 g/t Au, 192.00 g/t Ag. 12 m grading 5.09 g/t Au, 6.60 g/t Ag, including 7.5 m of 7.17 g/t Au, 6.70 g/t Ag.
Blackwater Gold	North Central	**Artemis Gold Inc.**	Au, Ag; Epithermal Au-Ag-Cu, intermediate sulphidation; 093F 037	P+Pr: 334.4 Mt 0.75 g/t Au, 5.8 g/t Ag at a 0.20 g/t AuEq cut off containing 8.0 Moz Au, 62.3 Moz Ag	M+I: 597 Mt (including reserves) 0.61 g/t Au, 6.4 g/t Ag at a 0.20 g/t AuEq cut off containing 11.7 Moz Au, 122.4 Moz Ag	The company has fulfilled environmental assessment conditions to start site preparation, which began in 2022. Reserves (August 2020) are reported at 8 million oz Au and 62.3 million oz Ag, with a life-of mine average annual gold production of 339,000 oz.
Horse Creek Silica	Southeast	**Sinova Global**	Silica; Silica sandstone; 082N 043	na	1.4 Mt est.	High purity silica >99.9% SiO_2, permit updates, road and rail construction, mine site preparation. Planned up to 400,000 tpy.
Kootenay West	Southeast	**CertainTeed Gypsum Inc.**	Gypsum; Evaporitic bedded gypsum; 082JSW005, 20	na	North and South quarries: Total 17 Mt (blended quality of 83% gypsum)	Pre-stripping and Pre-production mining, mine road construction, environmental mitigation; planned 400,000 tpy; 43-year mine life.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

and plant pre-commissioning is on schedule with a planned start up of Q4 2023 for their **Premier Gold** project, with a first gold pour expected in early 2024.

5. Selected proposed mine or quarry projects

Projects at the proposed mine or quarry (or mine evaluation) stage have a resource defined or largely defined and are preparing to submit a project description to initiate the environmental assessment process or are waiting on permit amendments. Projects that have permits in place but have yet to obtain financing to begin site construction are also considered to be at the proposed stage. Selected projects (Fig. 1; Table 6) discussed below are grouped by region and commodity types.

5.1. Northwest Region

Proposed metal mines include Blue Lagoon Resources Inc.'s **Dome Mountain Gold** project, Galore Creek Mining Corporation's **Galore Creek** project, Seabridge Gold Inc.'s **KSM** project, Kutcho Copper Corp.'s **Kutcho** project and Ascot Resources Ltd.'s **Red Mountain** project. Telkwa Coal Ltd., a subsidiary of Allegiance Coal Ltd., is proposing to develop the **Tenas** coal mine project.

5.1.1. Proposed metal mines

Blue Lagoon Resources Inc.'s **Dome Mountain Gold** project contains a Measured resource (January 2022) of 136,000 t grading 10.32 g/t Au and 57.31 g/t Ag, an Indicated resource of 662,000 t grading 8.15 g/t Au and 41.19 g/t Ag, and an Inferred resource of 85,000 t grading 6.02 g/t Au and 26.13 g/t Ag (with a cut and fill method at 3.5 g/t Au cut off). Blue Lagoon carried out 19,500 m of drilling in 65 holes including the new Chance structural zone. Highlights from the Chance zone include 0.41 m grading 126 g/t Au and 404 g/t Ag in a 1.73 m interval grading 30.67 g/t Au, and 99.26 g/t Ag, 0.50 m grading 12.2 g/t Au, 100 g/t Ag, in a 7.42 m interval grading 1.98 g/t Au and 15.02 g/t Ag. Boulder vein system results include 0.39 m grading 86.20 g/t Au and 1280 g/t Ag in a 1.09 m interval grading 31.67 g/t Au and 473.0 g/t Ag.

The **Galore Creek** Cu-Au project is operated by the Galore Creek Mining Corporation and is jointly owned by Teck Resources Limited and Newmont Corporation. The **Galore Creek** project contains a Proven and Probable Reserve of 528 Mt grading 0.59% Cu, 0.32 g/t Au, and 6.02 g/t Ag and a Measured plus Indicated resource (September 2014) of 1.103 Bt grading 0.47% Cu, 0.26 g/t Au, and 4.2 g/t Ag, with an additional Inferred resource of 198 Mt grading 0.27% Cu, 0.21 g/t Au, and 2.7 g/t Ag. Exploration in 2022 consisted of mapping, prospecting, rock sampling, and excavating test pits. The company focussed on engineering work for an ongoing prefeasibility study and environmental studies.

Seabridge Gold Inc.'s **KSM** project consists of four porphyry Cu-Au deposits: Kerr, Sulphurets, Mitchell, and Iron Cap. It is the largest undeveloped gold project in the world by resources: Measured and Indicated resources (August 2022) of 5.357 Bt grading 0.51 g/t Au, 0.16% Cu, 2.4 g/t Ag, and 63 g/t Mo and an Inferred resource of 5.685 Bt grading 0.36 g/t Au, 0.28% Cu, 2.2 g/t Ag, and 33 g/t Mo. The total **KSM** Proven and Probable reserves are 2.292 Bt grading 0.64 g/t Au, 0.14% Cu, 2.2 g/t Ag, and 76 g/t Mo. The company released a prefeasibility study plan with a 33-year mine life. The plan was limited to the Mitchell, East Mitchell, and Sulphurets deposits and considered an open-pit operation only. A Preliminary Economic Assessment was reported with an underground block cave mining operation supplemented with a small open pit. It has a separate plan to operate for 39 years with a peak mill feed production of 170,000 t/d. The Preliminary Economic Assessment and Pre-Feasibility study added substantial resources to Mineral Resource and Reserves compared to previous reports. Geotechnical drilling totalling 6200 m was completed for engineering studies.

The **Kutcho p**roject is accessible by a 100 km-long seasonal gravel road and an airstrip 10 km from the deposit. Kutcho Copper Corp. entered the environmental assessment process late in 2019 and has received a Section 11 Order that defines the scope of the assessment and the Indigenous Nations that the company will engage with. The project is not required to undertake a federal environmental assessment. Reported Proven and Probable mineral reserves (July 2021) are 17.3 Mt grading 1.58% Cu, 2.31% Zn, 27.9 g/t Ag, 0.39 g/t Au. Measured and Indicated mineral resources (inclusive of reserves) are reported as 22.8 Mt grading 1.52% Cu, 2.18% Zn, 28.1 g/t Ag, and 0.39 g/t Au. A Feasibility Study announced favourable economics using US$3.50/lb Cu and US$1.15/lb Zn. The project would have a combined eleven-year open pit and underground mine life.

Ascott Resources Ltd.'s **Red Mountain** project is a proposed underground mine 18 km east-northeast of Stewart. A provincial and federal Environmental Assessment Certificate was received in 2018. The project was purchased by Ascot Resources from IDM Mining in 2019 for $45 million. A Feasibility Study was completed in 2020. **Red Mountain** is estimated to contain Measured and Indicated resources (April 2020) of 3.19 Mt grading 7.63 g/t Au and 21.02 g/t Ag and an additional Inferred resource of 405,000 t grading 5.32 g/t Au and 7.33 g/t Ag (reported at 3.0 g/t Au cut off for long hole stoping). Environmental baseline monitoring continued, but minimal exploration work was done on the project as Ascot concentrated on development and construction at their **Premier Gold** project.

5.1.2. Proposed coal mines

Telkwa Coal Ltd., a subsidiary of Allegiance Coal Ltd., is proposing to develop the **Tenas** project, which is road accessible, approximately 17 km south of Smithers. Itochu Corp. has a 10% interest. The project entered the provincial environmental assessment process in 2018 and the project proposes to produce 775,000-825,000 t of steelmaking coal annually with a mine-life of 22 years. In 2017, Allegiance Coal Ltd. released a reserve estimate of Proven plus Probable reserves of 62.9 Mt of coal. Currently there are four conceptual pits (from south to north:

Table 6. Selected proposed mine projects.

Mine	Region	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resource	Comments
Dome Mountain Gold	Northwest	**Blue Lagoon Resources Inc.**	Au, Ag; Au-quartz veins; 093L 276	na	M:136,000 t 10.32 g/t Au, 57.31 g/t Ag I: 662,000 t 8.15 g/t Au, 41.19 g/t Ag Inf: 85,000 t 6.02 g/t Au, 26.13 g/t Ag (resource based on cut and fill method at 3.5 g/t Au cut off) (January 2022)	19,500 m of drilling in 65 holes. Highlights from the Chance structural zone include 0.41 m grading 126 g/t Au and 404 g/t Ag, within 1.73 m grading 30.67 g/t Au, and 99.26 g/t Ag. 0.50 m 12.2 g/t Au, 100 g/t Ag, within 7.42 m grading 1.98 g/t Au and 15.02 g/t Ag. Boulder vein system results include 1.09 m grading 31.67 g/t Au and 473.0 g/t Ag including 0.39 m grading 86.20 g/t Au and 1280 g/t Ag.
Galore Creek	Northwest	**Galore Creek Mining Corp. (Teck Resources Ltd. 50%, Newmont Corporation 50%)**	Cu, Au, Ag; Alkaline porphyry; 104G 090	P+Pr: 528 Mt 0.59% Cu, 0.32 g/t Au, 6.02 g/t Ag	M+I: 1.103 Bt 0.47% Cu, 0.26 g/t Au, 4.2 g/t Ag Inf: 198 Mt 0.27% Cu, 0.21 g/t Au, 2.7 g/t Ag	Prospecting, mapping, rock sampling; engineering and environmental studies for prefeasibility study.
KSM	Northwest	**Seabridge Gold Inc.**	Cu, Au, Ag, Mo; Porphyry Cu±Mo±Au; 104B 191	P+Pr: 2.292 Bt 0.64 g/t Au, 0.14% Cu, 2.2 g/t Ag, 76 g/t Mo	M+I: 5.357 Bt 0.51 g/t Au, 0.16% Cu, 2.4 g/t Ag, 63 g/t Mo Inf: 5.685 Bt 0.36 g/t Au, 0.28% Cu, 2.2 g/t Ag, 33 g/t Mo (Total for KSM deposits)	PFS plan with an open pit only plan of a 33-year mine life limited to the Mitchell, East Mitchell, and Sulphurets deposits. PEA with an underground block cave mining operation supplemented with a small open pit. Plan to operate for 39 years. Construction at KSM. Installation of the Bell-Irving River Bridge completed. 6200 m of geotechnical drilling.
Kutcho	Northwest	**Kutcho Copper Corp.**	Cu, Pb, Zn; Noranda/ Kuroko VMS; 104I 060	Pr: 17.3 Mt 1.58% Cu, 2.31% Zn, 27.9 g/t Ag, 0.39 g/t Au	M+I: 22.8 Mt 1.52% Cu, 2.18% Zn, 0.39 g/t Au, 28.1 g/t Ag Inf: 12.9 Mt 1.10% Cu, 1.58% Zn, 0.25 g/t Au, 20.0 g/t Ag	Started First Nation and community engagement and consultations, completing economic participation agreements with both the Tahltan and Kaska First Nations.

Table 6. Continued.

Red Mountain	Northwest	**Ascot Resources Ltd.**	Au, Ag; Subvolcanic and precious metal veins; 103P 086	P+Pr: 2.54 Mt 6.52 g/t Au, 20.60 g/t Ag	M+I: 3.19 Mt 7.63 g/t Au, 21.02 g/t Ag Inf: 0.41 Mt 5.32 g/t Au, 7.33 g/t Ag	Environmental baseline monitoring.
Tenas	Northwest	**Allegiance Coal Ltd. 95%**, Itochu Corp. 5%	PCI; Bituminous coal; 093L 156	P+Pr: 62.9 Mt coal	M+I: 124.6 Mt Inf: 1.2 Mt	In the Environmental Assessment application process with baseline studies ongoing. Proposed production 775-825 kt of steelmaking coal annually with a mine-life of 22 years.
Hudette	Northeast	**Conuma Resources Limited**	Coal; Bituminous coal; 093O 060	P+Pr: 15.6 Mt	na	Prefeasibility study completed, EA application started. Continued baseline monitoring.
Sukunka	Northeast	**Glencore Canada Corporation**	Coal; Bituminous coal; 093P 014	na	145.0 Mt coal in situ	The Government of Canada determined the project would have significant adverse environmental effects and declined to approve the project.
Woverine (Herman Pit)	Northeast	**Conuma Resources Limited**	Coal; Bituminous coal; 093I 031	na	M+I: 24.36 Mt	For its Wolverine (Hermann Pit) project, Conuma continued to make progress with Environmental Management Act Permits Amendments.
Aley	North Central	**Taseko Mines Limited**	Nb; Carbonatite-hosted; 094B 027	P+Pr: 83.8 Mt 0.50% Nb_2O_5 (at 0.30% Nb_2O_5 cut off)	M+I: 285.8 Mt 0.37% Nb_2O_5 (at 0.20% Nb_2O_5 cut off)	Proposed open-pit mine with 10,000 tpd ore processing rate and average annual production of 9000 t Nb. Environmental monitoring and product marketing.
Giscome	North Central	**Graymont Western Canada Inc.**	$CaCO_3$; Limestone; 093J 041, 25	na	I: >100 Mt of limestone (>95% calcium carbonate, <5% magnesium carbonate) in situ	Environmental assessment in place. Proposed 600,000 tpy limestone quarry to feed a vertical lime kiln producing 198,000 t of lime annually during a 50+ year mine life.

Table 6. Continued.

Kemess Underground (KUG)	North Central	**Centerra Gold Inc.**	Cu, Au, Ag; Porphyry Cu±Mo±Au; 094E 021	Pr: 107.38 Mt 0.27% Cu, 0.54 g/t Au, 1.99 g/t Ag containing 629.6 Mlbs Cu, 1.87 Moz Au, 6.88 Moz Ag	I: 173.7 Mt (including reserves) 0.182% Cu, 0.3 g/t Au, 1.55 g/t Ag containing 1195 Mlbs Cu, 3.33 Moz Au, 13.87 Moz Ag	Permitted, proposed underground panel cave mine with 24,600 tpd ore processing rate and life-of-mine average annual production of 106,000 oz Au and 47 Mlbs Cu over a 12-year life of mine.
Ajax	South Central	**KGHM Ajax Mining Inc. (KGHM Polska Miedź SA 80%, Abacus Mining and Exploration Corporation 20%)**	Cu, Au; Alkalic porphyry; 092INE012, 13	P+Pr (NSR cut off US$7.10/t): 426 Mt 0.29% Cu, 0.19 g/t Au, 0.39 g/t Ag	M+I (NSR cut off US$7.10/t): 568 Mt 0.26% Cu, 0.18 g/t Au, 0.35 g/t Ag	Environmental certification denied by provincial (2017) and federal ministers (2018). Proponents are investigating a possible resubmission.
Cariboo Gold	South Central	**Osisko Development Corp.**	Au; Au-quartz veins; 093H 140, 139, 19, 6	na	M+I: 27.1 Mt 4.0 g/t Au Inf: 14.4 Mt 3.5 g/t Au (total of multiple zones)	Feasibility study in progress.
New Prosperity	South Central	**Taseko Mines Limited**	Cu, Au; Porphyry; 092O 041	P+Pr (NSR cut off $5.50/t): 831 Mt 0.23% Cu, 0.41 g/t Au containing (recoverable) 3.6 Blb Cu, 7.7 Moz Au	M+I (cut off 0.14% Cu): 1010 Mt 0.24% Cu, 0.41 g/t Au	Granted provincial environmental certificate (expired) but denied federal approval. Taseko and Tŝilhqot'in Nation in discussions.
Ruddock Creek	South Central	**Ruddock Creek Mining Corporation (Imperial Metals 100%)**	Pb, Zn, Ag; Broken Hill-type; 082M 082	na	M+I (cut off 4.0% Pb+Zn): 6.2 Mt 6.50% Zn, 1.33% Pb Inf: 6.678 Mt 6.33% Zn, 1.20% Pb	Project at environmental assessment pre-application stage. Feb. 2013 resource before 2018-19 drilling. Imperial Metals now owns 100%.
Spanish Mountain	South Central	**Spanish Mountain Gold Ltd.**	Au, Ag; Au-quartz veins; 093A 043	P+Pr: 95.9 Mt 0.76 g/t Au, 0.71 g/t Ag	M+I: 294 Mt 0.50 g/t Au, 0.72 g/t Ag Inf: 18 Mt 0.63 g/t Au, 0.76 g/t Ag	Re-entered BC environmental assessment process with a new project description. Feasibility work is continuing.
Bingay Main	Southeast	**Centermount Coal Ltd.**	Coal; Bituminous coal; 082JSE011	na	na	Pre-application stages of EA; letter submitted in 2020 for project to remain in EA. Proposed 1 Mty operation with 12- to 14-year mine life.

Table 6. Continued.

Black Crystal	Southeast	**Eagle Graphite Inc.**	Graphite; Crystalline flake graphite; 082FNW260, 283	na	Regolith + calcsilicate; M + I: 19.23 Mt 1.35% fixed carbon Inf: 23.92 Mt 1.3% fixed carbon (2018)	Active mine lease. No work reported for 2022.
Bull River	Southeast	**Braveheart Resources Inc.**	Cu, Au, Ag; Cu±Ag quartz veins; 082GNW002	na	I: 2.26 Mt 1.80% Cu, 0.42 g/t Au, 15.3 g/t Ag Inf: 1.36 Mt 1.60% Cu, 0.42 g/t Au, 13.6 g/t Ag	Further surface facilities refurbishment. Ground control plan provided to advance mine permit process.
Crown Mountain	Southeast	**NWP Coal Canada Limited** (Jameson Resources Limited 80%, Bathurst Resources Limited 20%)	HCC and PCI; Bituminous coal; 082GNE018	HCC: P: 42.60 Mt Pr: 4.91 Mt PCI: P: 7.13 Mt Pr: 1.19 Mt (2014)	HCC + PCI: M: 68.9 Mt I: 6.0 Mt (2014)	Pre-Application EA stage, 2021 extended FN consultation to 2022. Proposed 2 Mtpy operation (86% HCC and 14% PCI) with 15-year mine life.
Michel Coal	Southeast	**North Coal Limited**	HCC and PCI; Bituminous coal; 082GSE050	na	HCC: M: 44.6 Mt I: 42.5 Mt open-pit and underground (2015)	Entered pre-application of EA in 2015; received AIR requirements in September 2020.
Record Ridge	Southeast	**West High Yield (W.H.Y.) Resources Ltd.**	Mg; Alaskan-type Pt±Os±Rh±Ir; 082FSW398	na	M: 28.4 Mt 24.82% Mg I: 14.6 Mt 24.12% Mg Inf: 1.07 Mt 24.37% Mg	35 m drill hole, pre-feasibility study.
Black Bear and Orca	Southwest	**Polaris Materials Corporation** (Vulcan Materials Company and and ‘Namgis First Nation)	Aggregate; Crushed rock	na	20 years (proposed life)	Orca environmental certificate amendment application withdrawn. Proposed 250,000 tpy near the Orca quarry revised to 3-4 Mtpy. Indicate intention to re-apply under 2018 Act.
BURNCO Aggregate	Southwest	**BURNCO Rock Products Ltd.**	Aggregate; Sand and Gravel	na	Approx. 20 Mt	Has environmental certification, would require Mines Act and other permits.

Table 6. Continued.

Sechelt Carbonate	Southwest	**Ballinteer Management Inc.**	Limestone, dolostone, aggregate; Limestone, dolomite, crushed rock; 093GNW031	na	Carbonate rock: 76.1 Mt Gabbro: >700 Mt	Proponent requests project remain in environmental assessment pre-application stage.

HCC = hard coking coal; PCI = pulverized coal injection; TC = thermal coal
P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Tenas, Goathorn West, Goathorn East, and Telkwa North) on approximately 1050 ha. The current environmental assessment application is only for production of metallurgical coal from the Tenas pit. Proven plus Probable reserves for Tenas are 29.1 Mt. In 2022, Telkwa filed their application for an Environmental Assessment Certificate.

5.2. Northeast Region

Three proposed coal mine projects are in the Northeast Region: Conuma Resources Limited's **Hudette** and **Wolverine** (**Hermann Pit**) projects and Glencore plc's **Sukunka** project.

5.2.1. Proposed coal mines

Conuma Resources Limited completed a prefeasibility study and started working on their environmental assessment application for their **Hudette** project. For its **Wolverine (Hermann Pit)** project, Conuma continued to make progress with Environmental Management Act Permits Amendments. This will be a new pit operation using current Wolverine mine infrastructure. Glencore Canada Corporation and JX Nippon Oil and Energy Corporation's **Sukunka** project has been planned as both an open-pit and underground operation. The British Columbia Environmental Assessment Office completed its assessment of Glencore's application and provided its assessment to the Impact Assessment Agency of Canada. The Government of Canada determined the project would have significant adverse environmental effects that could not be mitigated and declined to approve the project.

5.3. North Central Region

There are three proposed mines in the North Central Region. Two are proposed metal mines: Taseko Mines Limited's **Aley** Niobium project; and Centerra Gold Inc.'s Cu-Au-Ag **Kemess Underground** project. Graymont Western Canada Inc.'s **Giscome** project is a proposed industrial mineral mine (limestone).

5.3.1. Proposed metal mines

Taseko Mines Limited's **Aley** niobium-bearing carbonatite project is near the western extremity of platformal strata. The carbonatite intrusion is oval in map view, measuring about 2.0 by 2.8 km. Reserves are calculated at 84 Mt grading 0.5% Nb_2O_5. The proposed processing plant would have a nominal capacity of 10,000 tpd. Single-stage crushing followed by three stages of grinding and a multi-stage flotation process would produce a Nb_2O_5 concentrate. The concentrate would then be processed in an on-site converter to produce FeNb as a saleable product. Expected process recovery is 63% with annual production averaging 9 million kg of niobium over the mine life. Environmental monitoring and product marketing initiatives continue. A converter pilot test to support the design of the commercial facilities is ongoing. Environmental monitoring and product marketing initiatives continue. A converter pilot test to support the design of the commercial facilities is ongoing.

Centerra Gold Inc.'s **Kemess Underground** (KUG) project is estimated to contain an Indicated resource of of 173.7 Mt grading 0.182% Cu, 0.3 g/t Au, and 1.55 g/t Ag. Within this resource are Probable reserves of 107.4 Mt grading 0.27% Cu, 0.54 g/t Au, and 1.99 g/t Ag. The former Kemess South mine closed in 2011. However, infrastructure remains in place, and both the camp and ore processing plant will be used to service **KUG**, which is about 6.5 km north of the former processing plant. KUG is considered a stand-alone operation, to be mined by panel caving, with crushed ore conveyed underground to the processing plant. Processing rate would be 24,600 tpd with a life of mine average production of 106,000 oz Au and 47 Mlbs Cu over a 12-year mine life. **Kemess East** (KE), about 1 km east of **KUG**, is an underground operation that could be integrated into the KUG project and use facilities developed for **KUG**. **KE** has an Indicated resource of 177.5 Mt grading 0.36% Cu, 0.4 g/t Au, and 1.97 g/t Ag and an Inferred resource of 29.3 Mt grading 0.314% Cu, 0.3 g/t Au, and 2.00 g/t Ag. The **KUG** project has approval for development, but Centerra has not declared a timeline.

5.3.2. Proposed industrial mineral mines or quarries

At their **Giscome** project, Graymont Western Canada proposes to mine high-purity limestone in basaltic rocks of the Antler Formation (Triassic; Slide Mountain Group). Crushed stone would be transported about 5 km by truck to lime kilns at a former stone quarry, owned and operated by CN Rail, in the community of Giscome. An existing CN Rail line would be used for transporting the product. The project has Environmental Assessment approval. Due to weak markets for lime in the region, Graymont has not yet decided to initiate construction.

5.4. South Central Region

Proposed mine projects in the South Central Region include KGHM Ajax Mining Inc.'s **Ajax**, Osisko Development Corp.'s **Cariboo Gold**, Taseko Mines Limited's **New Prosperity**, Ruddock Creek Mining Corporation's **Ruddock Creek** and Spanish Mountain Gold Ltd.'s **Spanish Mountain** projects. All are metal mine projects.

5.4.1. Proposed metal mines

The **Ajax** porphyry copper-gold project, owned by KGHM Ajax Mining Inc., is an 80:20 joint venture between KGHM Polska Miedź S.A. and Abacus Mining and Exploration Corporation. A revised feasibility study released in 2016 modelled Ajax as a 65,000 tpd open-pit mine with a projected 18-year life. In December 2017, the project was denied certification by the British Columbia Ministries of Environment and Climate Change Strategy and Energy, Mines and Petroleum Resources. In June 2018, Natural Resources Canada, Fisheries and Oceans Canada, and the Canadian Coast Guard denied federal certification. Although KGHM Ajax has not announced plans for the site, Abacus issued an update stating that the project remains a priority and that KGHM is continuing to engage with First Nations.

Osisko Development Corp. acquired the **Cariboo Gold** project in 2019 through a purchase of Barkerville Gold Mines. The property consolidates several historic gold mines. The company engaged in the British Columbia environmental assessment process in 2019, and the application is now in the development and review phase with an updated project description. A 2022 Preliminary Economic Assessment incorporates an updated underground resource and changing costs. The study models an initial 2000 tpd mine expanding to 8000 tpd. It would have a 12 year life with average annual production of 236,000 oz Au. Measured and Indicated resources are 27.102 Mt grading 4.0 g/t Au. Initial capital costs are estimated at $121.5 million and the expansion at $716.1 million. On January 3, 2023, a positive feasibility study was announced for the project. Results included a $502 million after-tax net present value at a 5% discount rate and a 20.7% after-tax internal rate of return. The project would have 163,695 oz of annual gold production over a 12-year mine life.

Taseko Mines Limited's **New Prosperity** project was denied a 12-month extension of its provincial environmental certificate for a 70,000 tpd open pit copper-gold mine. New Prosperity received provincial certification in 2010, but in 2014 the Government of Canada refused to authorize the project. Taseko has a standstill agreement with the Tŝilhqot'in Nation pending a dialogue between the parties to arrive at a long-term resolution of differences about the project.

Imperial Metals Corporation has been 100% owner of the **Ruddock Creek** project since 2021 when it purchased the interests held by Japanese partners in Ruddock Creek Mining Corporation. The project remains in the pre-application phase of the British Columbia Environmental Assessment process. A 2014 revised project description referred to a 3000 tpd underground lead-zinc mine with an 8-year life. A mineral resource estimate, released in February 2013, reported 6.246 Mt grading 6.5% Zn and 1.33% Pb (Indicated) and 6.678 Mt grading 6.33% Zn and 1.20% Pb (Inferred), using a 4.0% combined Pb+Zn cut off. This estimate does not incorporate 2018-19 drilling.

5.5. Southeast Region

The Southeast Region has two proposed metal mines (**Bull River**, **Record Ridge**), three proposed coal mines, (**Bingay Main**, **Crown Mountain**, **Michel Coal**), and one proposed graphite mine, **Black Crystal** (Fig. 1; Table 6).

5.5.1. Proposed metal mines

Braveheart Resources Inc. is continuing development of its **Bull River** mine project. Work included further refurbishment of all surface facilities. The company completed a ground management plan to advance the mine permit process. The mine permit and environmental permit process ongoing. The mineral resource is reported (December 2021) as Indicated at 2,261,000 t with 2.13% Cu and 0.44 g/t Au, and Inferred at 1,356,000 t with 1.60% Cu and 0.42 g/t Au.

West High Yield Resources Ltd.'s **Record Ridge** magnesium project is in a variably serpentinized and locally carbonatized ultramafic cumulate body. Reported mineral resources as of 2013 include 28.4 Mt at 24.82% Mg Measured, 14.6 Mt at 24.21% Mg Indicated, and 1.07 Mt at 24.37% Mg Inferred. The company amended its ongoing application for a Mines Act permit and completed a pre-feasibility study for the project.

5.5.2. Proposed coal mines

The **Bingay Main** project proposed by Centerpoint Resources Inc. remains in the Pre-Application process at the Environmental Review Office. The company has proposed a mine with a production capacity of 1 Mt per year and a mine life of 12 to 14 years.

The **Crown Mountain** mine proposed by NWP Coal Canada Ltd. (Jameson Resources Limited (80%), Bathurst Resources Limited (20%)) is in the Pre-Application process. The company was granted an extension to the expiry of the Application Information Requirements (AIR) for the project from October 26, 2021 to April 26, 2022 to accommodate First Nations concerns. The company has proposed a mine with production capacity for 3.7 Mtpy and a mine life of 16 years.

The **Michel Coal** project proposed by North Coal Ltd. a wholly owned subsidiary of CoalMont Pty Ltd., is in the Pre-Application process at the Environmental Review Office. The company has proposed a mine with production capacity of 2.3-4 Mt per year and a mine life of 30 years. In December, the Tobacco Plains Indian Band, Pacific Road Capital and North Coal Limited signed a letter of intent centred around the principles of co-ownership, co-management, and co-governance for the project.

5.5.3. Proposed graphite mine

Eagle Graphite Inc.'s **Black Crystal** project has an active mining lease. No work was reported for the site in 2022.

5.6. Southwest Region

The Southwest Region has no proposed major metal mine or coal mine projects. Proposed industrial mineral mines or quarries and aggregate quarries include the **Black Bear** aggregate project near Port McNeill, the **BURNCO Aggregate** project, and the **Sechelt Carbonate** project.

5.6.1. Proposed quarries

Polaris Materials Corporation included the **Black Bear** project near its Orca sand and gravel quarry in an Environmental Certificate amendment for Orca. If the project proceeds, it will be a source of up to 3-4 Mtpy of crushed basalt, an increase over the 250,000 tpy proposed in a 2017 project description. Mine life would be extended from 10 to 20 years. This application was withdrawn with a request by the proponent to re-apply under the 2018 Environmental Assessment Act.

The **BURNCO Aggregate** project in the McNab Creek Valley received environmental certification in 2018 and may proceed with British Columbia Mines Act and other permitting. Certifications are valid for 5 years. Fisheries and Oceans Canada concluded that the project is unlikely to cause significant environmental harm. The proposed sand and gravel mine would ramp up to a 1.6 Mtpy operation, initially barging product to BURNCO Rock Products Ltd.'s ready-mix concrete plants in South Burnaby and Port Kells. BURNCO submitted revisions to the project in 2014, changing production rate, relocating some facilities, and specifying a mine life of 16 years.

Ballinteer Management Inc. now holds the property comprising the **Sechelt Carbonate** project. They filed engineering, archeological, and baseline environmental studies for assessment in 2016; activity was not reported for 2017-2022. The property contains resources of calcite- and dolomite-bearing carbonate rock and gabbroic rock for potential use as aggregate. The original proposal was for a 4-6 tpy carbonate quarry producing both limestone and dolostone. Product was to be shipped from a barge load out on Sechelt Inlet.

6. Exploration expenditures

In 2022, exploration expenditures, drilling estimates, and other metrics for British Columbia were captured in the British Columbia Mineral and Coal Exploration Survey. The survey is a joint initiative between the Province of British Columbia Ministry of Energy, Mines and Low Carbon Innovation, the Association for Mineral Exploration, and EY LLP. A full report will be available in March. The new survey does not capture exploration expenditures for aggregates.

Total metal, industrial mineral, and coal exploration expenditures are estimated at $740.4 million for 2022, up $80.6 million from the 2021 survey total of $659.8 million. Of this, $12.5 million was from coal projects and $727.9 million was from metal and other projects (Fig. 5). This is the largest recorded expenditure for metal and other projects and the largest overall expenditure.

Exploration expenditures by region (Fig. 6) can be further divided into five categories: grassroots, early stage, advanced stage, mine evaluation, and mine lease (Figs. 7, 8). The provincial combined total for grassroots and early-stage exploration in the 2022 survey is 38.5%, up from the 2021 total of 24.4%. The total reported drilling for the province was 1,149,550 m down 292,750 m from the 2021 total of 1,442,300 m (see Fig. 9 for regional breakdown).

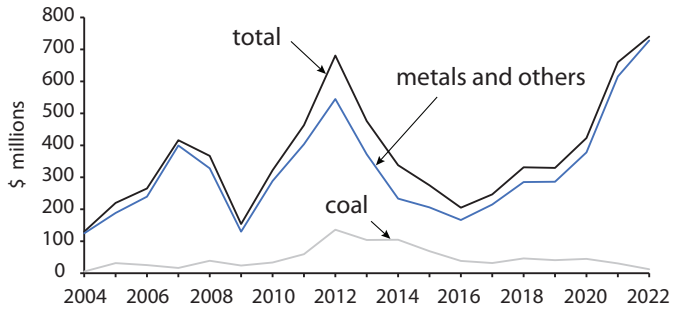

Fig. 5. Exploration expenditures per year, by type.

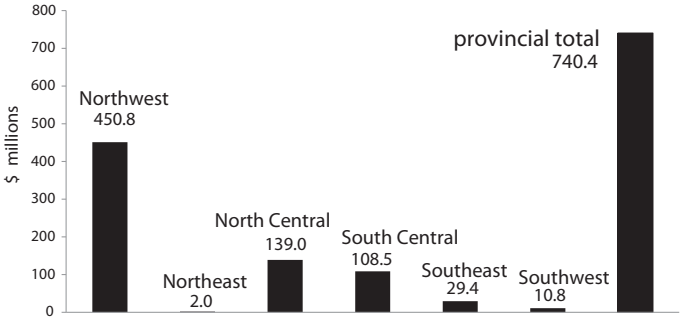

Fig. 6. 2022 exploration expenditures by region.

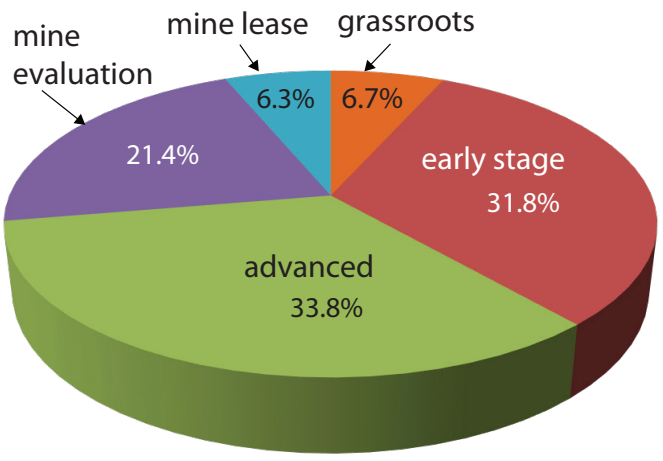

Fig. 7. 2022 exploration expenditures by category.

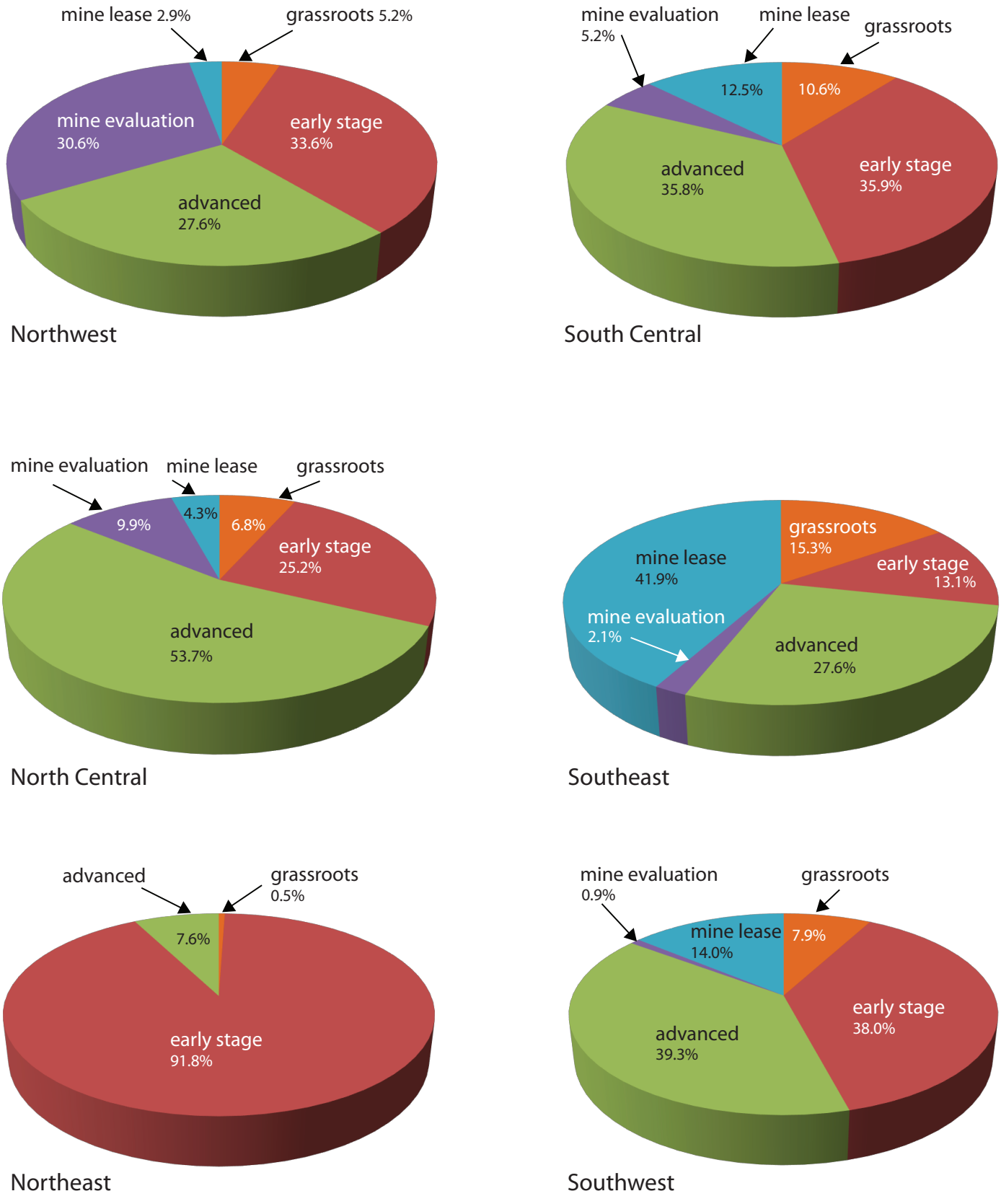

Fig. 8. 2022 exploration expenditures by category for regions.

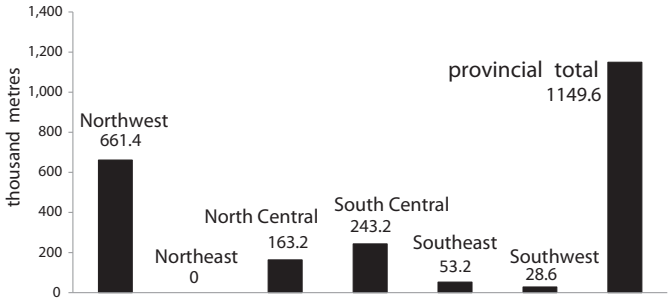

Fig. 9. 2022 exploration drilling by region.

7. Exploration land tenure

Acquisition of new mineral claims in 2022 was down compared to 2021 (Fig. 10). The total for 2022 was 2,301,115 hectares vs. 4,006,440 hectares for the previous year. New coal licenses issued in 2022 totalled 9218 hectares, up from the 2021 total of 3462 hectares (Fig. 11).

8. Selected exploration project highlights

There was a significant increase of $80.6 million in expenditures in 2022 compared to 2021. The total of $740.4 million is a provincial record. Explorationists continued to discover, define, and expand porphyry and porphyry-related copper-gold and copper-molybdenum deposits, gold deposits of various types, and stratiform base-metal, REE, industrial minerals, and coal deposits. Expenditures benefitted early in the year from availability of venture capital spurred by increases in the price of gold, copper, and other commodities in 2021. Data from the British Columbia Mineral and Coal Exploration Survey show an increase in grassroots and early-stage projects (combined). Below, selected exploration projects (Fig. 1; Table 7) are grouped by project type and region; the individual regional sections of this volume provide further details.

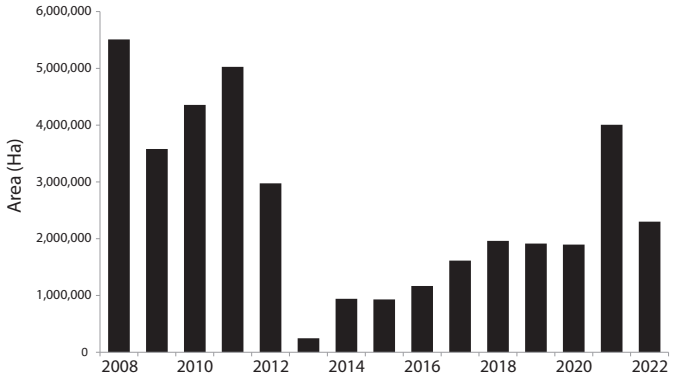

Fig. 10. New mineral claims by year.

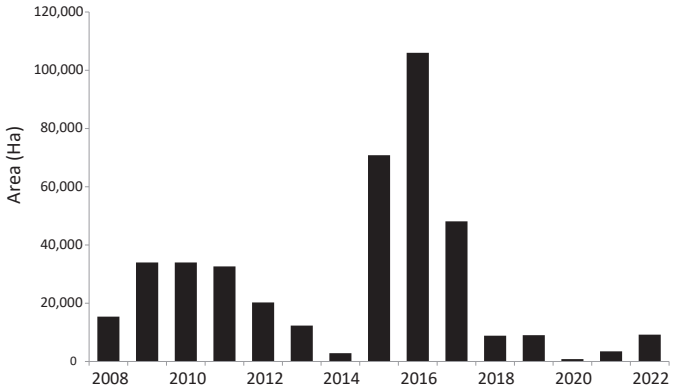

Fig. 11. New coal license issuances by year.

8.1. Selected precious metal projects

8.1.1. Northwest Region

Pacific Bay Minerals Ltd. has entered an option agreement with Brixton Metals Corp. to acquire 100% interest in the **Atlin Goldfields** project near Atlin. Pacific Bay can earn-in by paying Brixton $3,225,000 in cash, issuing to Brixton 10,000,000 Pacific Bay common shares, and incurring $7 million in exploration expenditures in seven years, with Brixton retaining a 2% net smelter return. Diamond drilling totalling 250 m was carried out in two holes. Initial results included 3.05 m grading 9.96 g/t Au in the Yellowjacket main zone.

At Trailbreaker Resources Ltd.'s **Atsutla Gold** project, exploration included geological mapping, prospecting, soil, and rock sampling, which identified a new high-grade mineralized zone referred to as the Snook zone. Rock sample results include 55 g/t Au, 78 g/t Au, and 11.7 g/t Au, 212 g/t Ag, and 0.12% Cu.

P2 Gold Inc. drilled 95 holes totalling 13,967 m at their **BAM** project. Most drilling was on or surrounding the Monarch Gold zone. Results included 7.0 m grading 5.63 g/t Au, 80.0 m grading 1.38 g/t Au, in a 12.2 m interval grading 2.43 g/t Au. Work also included an airborne ZTEM geophysical survey.

Sun Summit Minerals Corp.'s 15,000 ha **Buck** property is accessible by an all-season road 12 km south of Houston. The property is underlain by andesitic to rhyolitic tuffs, flows, and breccias of the Hazelton Group (Upper Triassic to Lower Jurassic). Sulphides occur in veinlets, disseminations, or coarse fracture fillings, mainly in rhyolitic breccias. Sun Summit carried out 7000 m of drilling in 17 holes targeting high-grade and bulk-tonnage gold mineralization. Exploration work included soil sampling, 34 line-km of IP, and a property-wide airborne VTEM survey. The geophysical surveys identified anomalies including a new drill target. Drill results included 1.0 m grading 26.5 g/t Au, and 199 g/t Ag in a 13.2 m interval grading 2.75 g/t Au and 22.99 g/t Ag, 1.9 m grading 3.16 g/t Au and 82.92 g/t Ag in a 10.3 m interval grading 1.11 g/t Au and 25.89 g/t Ag.

Cassiar Gold Corp. completed 23,088 m of diamond drilling in 70 holes at their **Cassiar Gold** project. Results from the Taurus deposit included 72.25 m grading 1.09 g/t Au, 22.2 m grading 1.50 g/t Au, including 0.75 m grading 9.61 g/t Au, 10.5 m grading 4.47 g/t Au, 6.4 m grading 11.1 g/t Au, 3.25 m grading 11.1 g/t Au including 0.5 m of 45.30 g/t Au. Results also included several shorter (<0.5 m) intervals of high-grade gold mineralization.

Hanstone Gold Corp.'s **DOC** project is underlain by deformed and metamorphosed Upper Triassic volcanic rocks of

Table 7. Selected exploration projects.

Project	Region	Operator (partner)	Commodity; Deposit type; MINFILE	Resource (NI 43-101 compliant unless indicated otherwise)	Comments
Atlin Goldfields	Northwest	**Pacific Bay Minerals Ltd.**	Au; Precious metal veins; 104N 043	na	250 m of diamond drilling in 2 holes. Initial results included 9.96 g/t Au across 3.05 m in the Yellowjacket main zone.
Atsutla Gold	Northwest	**Trailbreaker Resources Ltd.**	Au, Ag; Polymetallic veins; 104O 007	na	Exploration included geological mapping, prospecting, and soil and rock sampling. High-grade zones identified. Rock sample results include 53.3 g/t Au, 22.1 g/t Au and 11.7 g/t Au with 212 g/t Ag.
BAM (Jan Copper)	Northwest	**P2 Gold Inc.**	Cu, Au; Epithermal Au-Ag-Cu	na	Results included 22.0 m grading 0.36% Cu including 2.0 m of 2.15% Cu.
BAM (Monarch Gold)	Northwest	**P2 Gold Inc.**	Au; Epithermal Au-Ag-Cu	na	95 holes drilled (13,967 m). Results included 7.0 m grading 5.63 g/t Au, 80.0 m grading 1.38 g/t Au, including 12.2 m grading 2.43 g/t Au. Airborne ZTEM survey.
Berg	Northwest	**Surge Copper Corp.**	Cu, Mo, Ag; Porphyry Cu±Mo±Au; 093E 046	M+I: 610 Mt 0.27% Cu, 0.03% Mo, 3.0 g/t Ag Inf: 28.1 Mt 0.22% Cu, 0.02% Mo, 3.8 g/t Ag	10 holes drilled totalling 4782 m. Prospecting, large IP survey, soil and rock sampling.
Big Red	Northwest	**Libero Copper & Gold Corp.**	Cu, Au; Alkalic porphyry; 104G 208	na	2551 m of drilling in 4 holes at the Terry porphyry target. Results included 8.5 m grading 0.84% Cu, 0.07 g/t Au, and 5.69 g/t Ag within 119.5 m grading 0.25% Cu, 0.02 g/t Au, and 2.26 g/t.
Blue	Northwest	**Core Assets Corporation**	Ag, Pb, Zn, Cu; Skarn carbonate replacement; 104M 022	na	7371 m of drilling (21 holes). Prospecting and geological mapping. Results included 1.2 m grading 215 g/t Ag, 9.9% Zn, 8.9% Pb, and 0.36% Cu within 17.19 m grading 28 g/t Ag, 1.2% Zn, 1.4% Pb, and 0.10% Cu.
Buck	Northwest	**Sun Summit Minerals Corp.**	Au, Ag, Zn, Pb, Cu; Polymetallic veins; 093L 009	na	7000 m of drilling (17 holes). Soil sampling, 34 line-km of IP and a property-wide airborne VTEM survey. Results included 1.0 m grading 26.5 g/t Au, 199 g/t Ag, within 13.2 m grading 2.75 g/t Au, 22.99 g/t Ag. 1.9 m grading 3.16 g/t Au, 82.92 g/t Ag, within 10.3 m grading 1.11 g/t Au, 25.89 g/t Ag.

Table 7. Continued.

Cassiar Gold	Northwest	**Cassiar Gold Corp.**	Au; Precious metal veins; 104P 012, 19	Inf: 21.83 Mt 1.43 g/t Au (0.7 g/t Au cut off)	23,088 m of drilling (70 holes). Results from Taurus included 72.25 m grading 1.09 g/t Au, 22.2 m grading 1.50 g/t Au, including 0.75 m grading 9.61 g/t Au, 10.5 m grading 4.47 g/t Au, and 6.4 m grading 11.1 g/t Au, 3.25 m of 11.1 g/t Au with 0.5 m of 45.30 g/t Au.
DOC	Northwest	**Hanstone Gold Corp.**	Au, Ag; Intrusion-related, mesothermal; 104B 014	na	Bulk sampling, surface sampling and mapping. Bulk sampling of 18 sample pits including 180 kg from Q17 vein and 130 kg from Q19 vein. Highlight grab sample results 277.9 g/t Au and 935 g/t Ag, 242.7 g/t Au and 1200 g/t Ag, as well as 111.5 g/t Au and 155 g/t Ag.
Duke	Northwest	**Amarc Resources Ltd.**	Cu, Au; Porphyry Cu±Mo±Au	na	A late fall drilling program. Work is funded by Boliden Mineral Canada Ltd. who may earn up to 60% ownership spending $30 million in four years and an additional 10% spending an additional $60 million in six years.
E&L	Northwest	**Garibaldi Resources Corp.**	Ni, Cu, Co, Pt, Pd, Au; Tholeiitic intrusion hosted; 104B 006	na	2200 m of drilling in 4 holes. Drilling intersected nickel-bearing disseminated and semi-massive sulphide mineralization, extending mineralization along strike 205 m.
Eskay-Corey	Northwest	**Eskay Mining Corp. 80%** and Kirkland Lake Gold Ltd. 20%	Au, Ag, Cu, Zn; Noranda/ Kuroko massive sulphide; 104B 385	na	29,500 m drilling focussed on defining the extent of the TV-Jeff trend. Prospecting, geological mapping and rock sampling of the Scarlet Ridge-Tarn Lake trend. Drilling at three targets (Scarlet Ridge, Scarlet Valley and Tarn Lake. Reconnaissance work at six prospects. Reported drilling results include 30.56 m grading 1.14 g/t Au, 30.58 g/t Ag, including 2.0 m grading 3.36 g/t Au, 109.50 g/t Ag, 43.96 m grading 1.06 g/t Au, 2.24 g/t Ag including 1.59 m 15.44 g/t Au, 28.20 g/t Ag. Some drill results also returned base metal mineralization including Zn, Pb, and Cu.
Eskay Creek	Northwest	**Skeena Resources Limited**	Au, Ag, Cu, Pb, Zn; VMS and precious metal veins; 104B 008	M+I: 46.5 Mt 2.6 g/t Au, 63.2 g/t Ag (pit constrained) P+Pr: 29.9 Mt 2.99 g/t Au, 79 g/t Ag	Feasibility study released that highlighted economics with an after-tax internal rate of return of 50.2%. Highlight drill results included 12.12 m grading 47.50 g/t Au, 73.4 g/t Ag and 96.02 m grading 1.13 g/t Au, 6.6 g/t Ag.
Foremore	Northwest	**Sassy Gold Corp.**	Au, Ag, Pb, Cu; Polymetallic veins	na	3740 m DDH drilling (18 holes) at the Westmore Discovery zone.

Table 7. Continued.

Golddigger	Northwest	**Goliath Resources Limited**	Au, Cu, Pb, Zn; Polymetallic veins; 103P 341	na	26,321 m DDH drilling (86 holes) at Surebet zone. Reported results included 1.0 m grading 115.0 g/t Au, and 28.5 g/t Ag, within 5.0 m grading 23.17 g/t Au, and 6.32 g/t Ag along with base metal mineralization.
Iskut	Northwest	**Seabridge Gold Inc.**	Cu, Au; Porphyry; 104B 694	na	10,600 m DDH drilling (10 holes). Drilling discovered breccia pipe mineralization beneath the historical Bronson slope skarn deposit. The breccia pipe is mineralized with gold associated with copper mineralization on its margins.
Kitsault Valley (Dolly Varden)	Northwest	**Dolly Varden Silver Corporation**	Cu, Pb, Zn, Ag, Au; Kuroko VMS with polymetallic veins; 103P 188	I: 3.42 Mt 299.8 g/t Ag Inf: 1.29 Mt 277.0 g/t Ag	Diamond drilling. Highlight results included 1.6 m of 4326 g/t Ag, 4.2% Pb, 1.4% Zn, 1.0 g/t Au, 50.18 m grading 414 g/t Ag, 12.51 m of 442 g/t Ag, 0.26% Pb, and 0.31% Zn including 1.50 m grading 1367 g/t Ag, 0.22% Pb, and 0.17% Zn.
Kitsault Valley (Homestake Ridge)	Northwest	**Dolly Varden Silver Corporation**	Au, Ag, Pb, Zn; Polymetallic veins, Marine volcanic association Cu, Pb, Zn, Au, Ag; 103P 188	Homestake Ridge I: 0.736 Mt 7.02 g/t Au, 74.8 g/t Ag Inf: 5.545 Mt 4.58 g/t Au, 100 g/t Ag	Dolly Varden Silver Corporation acquired the Homestake Ridge project from Fury Gold Mines Ltd. and combined it with Dolly Varden Silver project. Drilling, (37,061 m, 108 holes). Results from Homestake Ridge included 3.08 m grading 18.76 g/t Au, 193 g/t Ag, 0.28% Cu. Highlights from Dolly Varden included 50.18 m grading 414 g/t Ag, 0.18% Pb, 0.19% Zn.
Midas	Northwest	**Juggernaut Exploration Ltd.**	Au, Ag, Cu, Zn; Skarn; 103I 131	na	Rock sampling, prospecting, and geological mapping. A 1 m chip sample with 117 g/t Au, 132 g/t Ag, 1.585% Cu, 1.77% Zn.
NAK	Northwest	**American Eagle Gold Corp.**	Cu, Au; Porphyry Cu±Mo±Au; 093M 010	na	DDH drilling (5600 m, 7 holes). American Eagle Gold Corp. and Orefinders Resources Inc. entered into an option agreement where Orefinders can earn a 20% interest in American Eagle's NAK Copper-Gold Porphyry project. Results included 135 m of 0.96 g/t Au, 0.27% Cu, 1.41 g/t Ag, and 47 ppm Mo within 851 m of 0.22 g/t Au, 0.17% Cu, 0.97 g/t Ag, and 74 ppm Mo. 301 m of 0.5 g/t Au, 0.22% Cu, 1.13 g/t Ag, and 45 ppm Mo within 956 m of 0.19 g/t Au, 0.2% Cu, 1.3 g/t Ag, and 38 ppm Mo.
New Polaris	Northwest	**Canagold Resources Ltd.**	Au; Au-quartz veins; 104K 003	I: 1.69 Mt 10.8 g/t Au Inf: 1.48 Mt 10.2 g/t Au	DDH drilling (8000 m, 25 holes). Results included 25.1 m grading 13.6 g/t Au, 4.3 m grading 22.1 g/t Au, 3.0 m grading 22.9 g/t Au, and 4.7 m grading 7.48 g/t Au.

Table 7. Continued.

Newmont Lake	Northwest	**Enduro Metals Corporation**	Au, Cu, Ag; Intrusion-related Au pyrrhotite veins; 104B 126	na	DDH drilling (10,897 m in 25 holes). Initial results from Burgundy Ridge target included 66.8 m grading 0.16 g/t Au, 0.35% Cu, 0.05% Zn, 5.57 g/t Ag, including 6.08 m grading 0.33 g/t Au 1.41% Cu, 0.18% Zn, 19.61 g/t Ag.
Ootsa	Northwest	**Surge Copper Corp.**	Cu, Au, Ag, Mo; Calc-alkaline porphyry; 093E 105	M+I: 438.6 Mt 0.18% Cu, 0.12 g/t Au, 0.017% Mo, 2.1 g/t Ag Inf: 137.7 Mt 0.15% Cu, 0.1 g/t Au, 0.015% Mo, 2.0 g/t Ag (2022 Resource Estimate update)	An updated mineral resource estimate had a 96% increase in Measured and Indicated resource and additional Inferred resources. DDH drilling (10,518 m, 28 holes) at the Seel Breccia zone and targets surrounding the Seel and Ox deposits. Highlights included 64.6 m grading 0.24% Cu, 0.17 g/t Au, 22.7 g/t Ag, 0.67% Zn and 0.29% Pb, including 18.6 m grading 0.75% Cu, 0.49 g/t Au, 61.2 g/t Ag, 1.17% Zn and 0.58% Pb. Drilling from the Blackjack target intersected 46 m grading 99.4 g/t Ag, including 2.0 m grading 1430.0 g/t Ag, and 2.0 m of 346 g/t Ag. Prospecting, soil and rock sampling.
Oweegee	Northwest	**Sanatana Resources Inc.**	Cu, Au; Subvolcanic Cu-Ag-Au (As-Sb); 104A 165	na	DDH drilling (3679 m, 12 holes). Copper mineralization observed in 8 holes.
Poplar	Northwest	**Universal Copper Ltd.**	Cu, Au, Ag, Mo; Porphyry Cu±Mo±Au	I: 152.3 Mt 0.32% Cu, 0.09 g/t Au, 2.58 g/t Ag, 0.009% Mo Inf: 139.3 Mt 0.29% Cu, 0.07 g/t Au, 4.95 g/t Ag, 0.005% Mo	DDH drilling (1983 m, 5 holes). Results included 214.4 m grading 0.401% Cu, 0.001% Mo, 0.15 g/t Au and 1.27 g/t Ag, 162.8 m grading 0.412% Cu, 0.020% Mo, 0.104 g/t Au, 1.14 g/t Ag and 216 m grading 0.353% Cu, 0.14 g/t Au, and 5.91 g/t Ag including 87 m grading 0.531% Cu, 0.36 g/t Au and 20.67 g/t Ag.
Porter	Northwest	**Strikepoint Gold Inc.**	Au, Ag, Zn, Pb; Polymetallic veins; 103P 089	na	DDH (520 m, 4 holes), prospecting, rock, and channel sampling. Drilling results included 10.97 m grading 245.6 g/t Ag, 0.08 g/t Au including 2.9 m grading 643.2 g/t Ag, 0.17 g/t Au and 0.51 m grading 2980 g/t Ag and 0.74 g/t Au. Channel sampling results included 2980 g/t Ag and 0.74 g/t Au across 0.51 m, 116 g/t Ag and 3.14 g/t Au across 1.0 m, and 108.55 g/t Ag and 1.13 g/t Au across 2.09 m.

Table 7. Continued.

Ranch	Northwest	**Thesis Gold Inc.**	Au, Ag; Epithermal; 094E 267	na	DDH (36,491 m, >125 holes). Soil (4088) and rock (480) sampling; geological mapping. Drilling results included 39.0 m grading 2.56 g/t Au, 11.99 g/t Ag including 32 m grading 2.97 g/t Au, 13.75 g/t Ag. 25.0 m grading 3.22 g/t Au, 28.78 g/t Ag. 91.00 m grading 1.81 g/t Au, 8.41 g/t Ag, including 35 m grading 2.93 g/t Au, 10.36 g/t Ag.
Ruby Creek	Northwest	**Stuhini Exploration Ltd.**	Mo; Porphyry Cu±Mo±Au; 104N 080	M+I: 369.4 Mt 0.053% Mo Inf: 41.9 Mt 0.047% Mo (2022)	Diamond drilling of 2400 m in 8 holes, mapping, and prospecting. Rock sampling. Highlight samples with 16,030 g/t Ag, 3.6% Pb and 13,250 g/t Ag and 5.02 g/t Au. Release of a Mineral Resource estimate.
Schaft Creek	Northwest	**Teck Resources Ltd.75%**, Copper Fox Minerals Inc. 25%	Cu, Mo, Au, Ag; Porphyry Cu±Mo±Au; 104G 015	M+I: 1.346 Bt 0.26% Cu, 0.16 g/t Au, 0.017% Mo, 1.25 g/t Ag Inf: 343.6 Mt 0.17% Cu, 0.11 g/t Au, 0.013% Mo, 0.84 g/t Ag (2021)	Drilling of 4688 m in 11 holes. Environmental baseline data collection was completed.
Scottie Gold Mine	Northwest	**Scottie Resources Corp.**	Au, Ag, Cu; Intrusion-related and polymetallic veins; 104B 034	na	DDH drilling (17,176 m) at the Blueberry zone. Results included 16.15 m grading 9.12 g/t Au, 44 g/t Ag, 8.6 m grading 11.3 g/t Au, and 12.5 m grading 13.3 g/t Au. Drilling increased the zone's known depth of mineralization to 360 m and a strike length of 1.2 km.
Silver Hope	Northwest	**Finlay Minerals Ltd.**	Cu, Ag, Au, Zn, Pb, Mo; Subvolcanic Cu-Ag-Au (As-Sb); 093L 056	na	1671 m of drilling (7 holes) and soil sampling. Expansion of the Silver Hope property by 5785 hectares contiguous to and northwest of the claim block. Drill results released from 2021 fall program highlight 76.57 m grading 0.45% Cu, 14.6 g/t Ag, and 0.14 g/t Au.
Silver Queen	Northwest	**Equity Metals Corporation**	Ag, Pb, Zn, Au; Transitional porphyry epithermal; 093L 002I	I: 3.445 Mt 3.5% Zn, 2.13 g/t Au, 189 g/t Ag, 0.24% Cu, 0.6% Pb Inf: 1.9 Mt 2.0% Zn, 0.82 g/t Au, 167 g/t Ag, 0.23% Cu, 0.5% Pb (resources at NSR cut off of C$100/t)	DDH drilling (5891 m, 16 holes). Highlight results included 1.3 m grading 1998 g/t Ag, 9.3 g/t Au, 0.17% Cu, 2.2% Pb, and 6.8% Zn within a 7.5 m interval grading 539 g/t Ag, 1.8 g/t Au, 0.5% Pb, and 1.8% Zn. Other results included 0.6 m grading 1705 g/t Ag, 2.1 g/t Au, 4.3% Cu, 1.6% Pb, 4.1% Zn, within 1.2 m grading 802 g/t Ag, 1.0 g/t Au, 2.1% Cu, 0.8% Zn, 2.0% Zn. Released an updated Mineral Resource Estimate.

Table 7. Continued.

Silvertip	Northwest	**Coeur Mining Inc.**	Ag, Pb, Zn; Manto carbonate replacement; 104O 038	M+I: 2.817 Mt 321.3 g/t Ag, 5.55% Pb, 10.46% Zn Inf: 2.35 Mt 235.45 g/t Ag, 4.27% Pb, 8.98% Zn	61,000 m of drilling in 330 holes. More manto mineralization was discovered at the Camp Creek west zone. Drilling intersected chimney/feeder structures beneath the Discovery zone manto. Highlight results included 12 m grading 459.6 g/t Ag, 15.1% Zn, and 8.7% Pb, and 6.2 m grading 778.3 g/t Ag, 13.6% Zn, and 14.7% Pb.
Snip Gold	Northwest	**Hochschild Mining PLC**	Au, Ag; Intrusion-related Au pyrrhotite veins; 104B 250	I: 2.50 Mt 10.4 g/t Au Inf: 2.184 Mt 10.3 g/t Au	Announced an updated mineral resource estimate in March. Drilled 10,377 m in 69 holes. Work included metallurgical work, processing plant designs and resource model updates in coordination with the ongoing Pre-feasibility study. Highlight results include 4.6 m grading 35 g/t Au and 11 g/t Ag, 8.0 m grading 20.2 g/t Au and 10 g/t Ag.
Thorn (Camp Creek)	Northwest	**Brixton Metals Corporation**	Cu, Ag, Au; Porphyry Cu±Mo±Au; 104K 174	na	Diamond drilling. Results included 967.2 m grading 0.25% Cu, 0.09 g/t Au, 2.39 g/t Ag, and 186 ppm Mo, with a 365 m interval grading 0.45% Cu, 0.13 g/t Au, 3.81 g/t Ag, and 328 ppm Mo, with another 40 m interval grading 0.67% Cu, 0.20 g/t Au, 5.16 g/t Ag, and 424 ppm Mo.
Thorn (Trapper Gold)	Northwest	**Brixton Metals Corporation**	Au; Epithermal; 104K 175	na	DDH drilling (3924 m). Soil and rock sampling. Results include one hole with 64 m grading 5.74 g/t Au, 9.11 g/t Ag with a 52.0 m interval grading 6.97 g/t Au, 10.83 g/t Ag, and 28.95 m within grading 10.36 g/t Au, 16.21 g/t Ag with 7 m interval grading 19.0 g/t Au, 23.11 g/t Ag.
Treaty Creek	Northwest	**Tudor Gold Corp. 60%**, Teuton Resources Corp. 20%, American Creek Resources Ltd. 20%	Cu, Au; Porphyry; 104A 004	M+I: 815.7 Mt 0.66 g/t Au, 3.6 g/t Ag, 0.06% Cu Inf: 311.7 Mt 0.72 g/t Au, 4.0 g/t Ag, 0.05% Cu (2021 Tudor Gold Technical Report)	DDH (43,318 m, 55 holes). Results included 1497.5 m grading 0.76 g/t Au, 3.70 g/t Ag, and 0.27% Cu, 180 m grading 1.97 g/t Au, 3.72 g/t Ag, and 0.01% Cu including 57 m grading 4.30 g/t Au, 5.91 g/t Ag and 15 m of 7.76 g/t Au, 6.48 g/t Ag.
Turnagain	Northwest	**Giga Metals Corporation**	Ni, Co, Pt, Cu, Mo; Alaskan-type, magmatic; 104I 014	M+I: 1.519 Bt 0.21% Ni, 0.013% Co Inf: 1.222 Bt 0.206% Ni, 0.012% Co	415 m of geotechnical drilling. Geotechnical data collection; engineering and metallurgical studies. Released an updated, increased mineral resource assessment. Giga Metals completed a joint venture transaction with Mitsubishi Corporation to earn 15% equity interest in Turnagain project and form a new company, Hard Creek Nickel Corp.

Table 7. Continued.

Williams	Northwest	**CopAur Minerals Inc.**	Au; Epithermal; 094E 028	na	DDH (1428 m, 4 holes). Results included 50 m grading 2.2 g/t Au, 0.13% Cu and 10.5 m grading 4.16 g/t Au, 0.09% Cu.
Muskwa	Northeast	**Fabled Copper Corp.**	Cu, Ag, Pb, Co; Cu ±Ag quartz veins; 094K 012, 50	na	Applied for five-year land use permit for drilling.
3Ts	North Central	**Independence Gold Corp.**	Au, Ag; Epithermal Au-Ag: low sulphidation; 093F 055	2022 estimate. Tommy and Ted-Mint veins Inf: 4.47 Mt 3.64 g/t Au, 96.26 g/t Ag (at a cut off grade of 0.4 g/t AuEq in-pit, 2.01 g/t AuEq underground)	Drilling, 17 DDH (4185 m) at Ted-Mint, Tommy and Balrog. Highlight results included 30.0 m grading 4.99 g/t Au, 53.3 g/t Ag.
Decar Nickel District	North Central	**FPX Nickel Corp.**	Ni, Fe; Podiform chromite; 093K 116	2022 resource estimate Baptiste deposit I: 1815 Mt 0.129% DTR Ni, 0.211% Total Ni, 0.0035% DTR Co, 2.40% DTR Fe Inf: 339 Mt 0.131% DTR Ni, 0.212% Total Ni, 0.0037% DTR Co, 2.55% DTR Fe	2504 m drilling (10 holes) at Van target. Ni in all holes; assays included 346.3 m grading 0.133% DTR Ni and 334.5 m grading 0.12% DTR Ni. Drilling expanded mineralization 1 km along strike; area of mineralization 2 km along strike and 1 km across. Mineralization is open laterally and at depth.
East Niv	North Central	**NorthWest Copper Corp.**	Cu, Au; Alkalic porphyry Cu-Au	na	Drilling, 8 DDH, 4390 m. 31.1 line-km of ground IP, 1260 line-km of airborne magnetics, 206 surface rock samples, 745 soil samples. Highlight rock sample results included 11 samples grading from 1.08 to 6.55% Cu with Ag grades between 3.7 and 262.0 g/t.
Indy	North Central	**InZinc Mining Ltd.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag; 093H 072	na	Drilling, 17 DDH (2616 m), 1100 line-km airborne geophysics. Highlight results included 3.0 m grading 2.8% Zn, 0.6% Pb, and 3.8 g/t Ag and 3.6 m grading 3.5% Zn, 0.6% Pb, and 6.4 g/t Ag.
Jean Marie	North Central	**Pacific Empire Minerals Corp.**	Cu, Au, Ag, Mo; Porphyry Cu±Mo±Au; 093N 079	na	Drilling, 2 DDH (700 m). Results included: 155 m grading 0.18% Cu, 19 ppm Mo, and 1.0 g/t Ag, and 282 m interval grading 0.21% Cu, 27 ppm Mo, and 1.3 g/t Ag including 76 m grading 0.45% Cu, 71 ppm Mo, and 3.0 g/t Ag.
Joy	North Central	**Amarc Resources Ltd.**	Cu, Au; Porphyry Cu±Mo±Au; 094E 016, 57	Pine deposit I: historic non NI 43-101 compliant: 40 Mt 0.15% Cu, 0.57 g/t Au (Stealth Mining Corporation 1997)	Drilling, 37 DDH (15,427 m) at the Pine deposit and at several district porphyry copper-gold deposit targets. 2648 soil and 313 surface rock sampling.

Table 7. Continued.

Kliyul	North Central	**Pacific Ridge Exploration Ltd.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 094D 023	I: historic non NI 43-101 compliant: 2.3 Mt 1.30 g/t Au, 0.45% Cu, 6.9 g/t Ag	12 DDH (7015 m). Highlight results included 588.0 m grading 0.12% Cu, 0.39 g/t Au, 0.90 g/t Ag, and 527.8 m grading 0.19% Cu, 0.30 g/t Au, 1.35 g/t Ag.
Kwanika	North Central	**NorthWest Copper Corp.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 073	Central zone pit M+I: 104.6 Mt 0.23% Cu, 0.21 g/t Au, 0.78 g/t Ag (at a cut off grade of 0.13% CuEq) Central zone underground M+I: 118.9 Mt 0.30% Cu, 0.29 g/t Au, 0.96 g/t Ag (at a confining shape basis of 0.27% CuEq) South zone pit Inf: 33.3 Mt 0.26% Cu, 0.08 g/t Au, 1.64 g/t Ag, 0.01% Mo	Drilling, 29 DDH (11,871.80 m). Highlights included 304.20 m grading 0.47% Cu, 0.53 g/t Au, 1.7 g/t Ag, and 364.20 m grading 0.17% Cu, 0.17 g/t Au, 0.8 g/t Ag.
Lawyers	North Central	**Benchmark Metals Inc.**	Au, Ag; Epithermal Au-Ag: low sulphidation; 094E 066	Open pit M: 20.3 Mt 2.21 g/t Au, 30.5 g/t Ag I: 45.5 Mt 1.09 g/t Au, 18.2 g/t Ag Inf: 2.3 Mt 0.91 g/t Au, 12.8 g/t Ag Out of Pit I: 1.6 Mt 2.74 g/t Au, 60.6 g/t Ag Inf: 2.6 Mt 3.32 g/t Au, 56.3 g/t Ag	Drilling, 20,276 m. PEA and updated mineral resource assessment. The PEA results included a pre-tax NPV 5% of $939 million, with IRR of 31.4%, and 2-year payback.
Lorraine	North Central	**NorthWest Copper Corp.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 002, 094C 069, 174	Lorraine I: 12.95 Mt 0.55% Cu, 0.16 g/t Au Inf: 45.45 Mt 0.43% Cu, 0.1 g/t Au	Drilling, 7 DDH (2867 m). Filed an updated NI 43-101 mineral resource estimate.
Mount Milligan (Brownfield)	North Central	**Centerra Gold Inc.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 194	na	Drilling, 54 DDH (28,266 m).
Mount Milligan (Greenfield)	North Central	**Centerra Gold Inc.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 194	na	Drilling, 2 DDH (804 m).

Table 7. Continued.

QCM	North Central	**Kestrel Gold Inc.**	Au, Cu; Au-quartz veins; 093N 200	na	Drilling, 14 RCD (1272 m). Highlight results included 2.33 g/t Au along 44.19 m and 2.39 g/t Au along 21.33 m.
Quesnelle Gold Quartz	North Central	**Golden Cariboo Resources Ltd.**	Au, Ag; Quartz ±carbonate veins in greenstone and sedimentary rocks; 093G 015	na	Drilling, 2 DDH (733.9 m). Highlight results included 0.6 m grading 17.5 g/t Au, 61.5 g/t Ag and 0.5 m grading 1.94 g/t Au.
RDP	North Central	**Pacific Ridge Exploration Ltd.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 094D 065	na	Drilling, 6 DDH (1861 m). Highlight results included 497.2 m of 0.37% Cu, 0.40 g/t Au, 1.6 g/t Ag, and 107.2 m of 0.63% Cu, 1.10 g/t Au, 2.91 g/t Ag.
Shasta	North Central	**TDG Gold Corp.**	Au, Ag; Epithermal Au-Ag: low sulphidation; 094E 050, 26	Inf: 22.0 Mt 0.79 g/t Au, 26.7 g/t Ag	5034 m of oriented HQ diamond drilling (21 holes). Filed a NI 43-101 Mineral Resource. Reported results for late 2021 drilling included 34 m grading 7.19 g/t Au, 105 g/t Ag.
Stardust	North Central	**NorthWest Copper Corp.**	Cu, Au, Ag, Zn; Cu skarn; 093N 009	Canyon Creek I:1.96 Mt 1.31% Cu, 1.44 g/t Au, 27.1 g/t Ag Inf: 5.84 Mt 0.86% Cu, 1.17 g/t Au, 20.0 g/t Ag	Drilling, 10 DDH (6698 m). Highlight results of 44.20 m grading 0.84% Cu, 0.51 g/t Au, 13.7 g/t Ag, and 75.95 m grading 0.55% Cu, 0.50 g/t Au, 10.9 g/t Ag.
Surge Nickel (HN4)	North Central	**Surge Battery Metals Inc. 80%**, Nickel Rock Resources 20%	Ni, Fe; Podiform chromite	na	Geological mapping and sampling (600 soil, 190 rock); 300 m DDH drilling completed by early November.
Surge Nickel (N100)	North Central	**Surge Battery Metals Inc. 80%**, Nickel Rock Resources 20%	Ni, Fe; Podiform chromite; 093N 035	na	Geological mapping and sampling (304 rock).
Wicheeda	North Central	**Defense Metals Corp.**	Nb, REE; Carbonatite-hosted deposits; 093J 014	I: 5.0 Mt 2.95% TREO Inf: 29.5 Mt 1.83% TREO Resources at a cut off grade 0.5% TREO Total metal % = sum of Ce+La+Nd+Pr+Sm+Nb percentages	Drilling, 18 DDH (4357 m) and 1153 m geotechnical 2022 drilling. Results included 124 m grading 3.58% total rare earth oxides (TREO).
Beaver-Lynx	South Central	**Inomin Mines Inc.**	Ni, Co; Ultramafic-mafic; 093B 073, 285	na	Released 2021 drill results. Highlights included 252 m grading 20.6% Mg, 0.16% Ni, 0.33% Cr at Beaver. 2022 ground magnetic survey at Lynx.

Table 7. Continued.

Bralorne	South Central	**Talisker Resources Ltd.**	Au; Au-quartz veins; 092JNE001	M+I: 260,000 tons 0.351 oz/ton Au Inf. 317,000 tons 0.231 oz/ton Au	Multi-year drilling campaign continued. New resource estimate in preparation.
Chu Chua	South Central	**Newport Exploration Ltd.**	Cu, Zn, Ag, Au; Cyprus massive sulphide; 092P 140	Inf: 2.29 Mt 2.11% Cu, 0.30% Zn, 9.99 g/t Ag, 0.50 g/t Au	2022 updated resource estimate.
Eldorado	South Central	**Gelum Resources Ltd.**	Au, Cu; Polymetallic veins, Au-quartz veins; 092O 026, 092JNE105, 95, 4	na	Magnetic and VTEM survey (890 line km). Drilling 3 holes, 800 m.
Elizabeth (Elizabeth-Blackdome)	South Central	**Tempus Resources Ltd.**	Au, Ag; Au-quartz veins, Epithermal Au-Ag-Cu low sulphidation; 092O 053, 12	Inf: 522,843 t 12.26 g/t Au	Drilling 40 holes, 9760 m. Initial highlight 2.11 m grading 87.0 g/t Au.
FG Gold and Gold Creek	South Central	**Karus Gold Corp.**	Au, Ag; Au-quartz veins; 093A 061	M: 5,600,000 t 0.812 g/t Au I: 9,570,000 t 0.755 g/t Au Inf: 27,493,000 t 0.718 g/t Au	Announced 2021 results. Highlights included 59.35 m grading 1.13 g/t Au including 17.87 m grading 2.23 g/t Au at FG Gold and 80.65 m grading 0.5 g/t Au including 46.4 m grading 0.74 g/t Au at Gold Creek. Filed technical report. 2015 resource estimate considered historical by Karus.
Fox Tungsten	South Central	**Happy Creek Minerals Ltd.**	W; W skarns; 093A 259, 260, 261, 211	I: 582,000 t 0.826% WO_3 Inf: 565,400 t 1.231% WO_3	Released 2021 drill results. Highlights included 6.7 m grading 0.43% WO_3 with 1.2 m grading 1.83% WO_3 in the Nightcrawler zone. Some 2022 surface work.
Gold Bridge	South Central	**Blackstone Minerals Ltd.**	Cu, Ni, Co, Au; 5 element veins?; 092JNE068, 108	na	Reported results of 2021 drilling. Highlights included 81 m grading 0.21% Ni at the Western Gem prospect and 0.9 m grading 1.45% Cu, 0.56% Ni, and 0.19% Co at the Jewel prospect. Reconnaissance prospecting and geophysical modelling.
Goldrange	South Central	**Kingfisher Metals Corp.**	Au, Ag; Au and Cu±Ag quartz veins; 092N 058, 59, 47, 57, 48	na	Rotary air blast and diamond drilling (10,000 m). Initial results include 40 m grading 2.86 g/t Au.

Table 7. Continued.

Lac La Hache	South Central	**Engold Mines Ltd.**	Cu, Au, Ag, Fe; Alkalic porphyry Cu-Au, Cu skarn; 092P 120, 108, 2, 153	Aurizon Inf: 1.99 Mt 2.32 g/t Au, 0.6% Cu, 5.37 g/t Ag Spout zone open pit I: 6.5 Mt 0.33% Cu, 1.34 g/t Ag, 0.05 g/t Au, 11.62% magnetite Spout zone open pit Inf: 7.66 Mt 0.27% Cu, 0.99 g/t Ag, 0.04 g/t Au, 9.5% magnetite Spout zone underground Inf: 0.39 Mt 1.0% Cu, 2.58 g/t Ag, 0.13 g/t Ag, 10.33% magnetite G1 underground Inf: 1.71 Mt 1.25% Cu, 6.45 g/t Ag, 0.19 g/t Au, 30.94% magnetite	Drilling (more than 3100 m) at Au (Aurizon) and Ann North Cu-Au porphyry targets.
Miner Mountain	South Central	**Sego Resources Inc.**	Cu, Au; Alkalic porphyry Cu-Au; 092HSE203, 78	na	7 holes, 1582 m. Highlight assay 80 m grading 0.95 g/t Au.
MPD	South Central	**Kodiak Copper Corp.**	Cu, Au; Alkalic porphyry Cu-Au; 092HNE243, 55, 191, 244	na	41 holes, 26,103 m drilling, IP, soil surveys, trenching. Southern Gate zone highlights included 735.4 m grading 0.24% Cu, 0.14 g/t Au and 0.71 g/t Ag. Within this was a 117 m interval grading 0.69% Cu, 0.46 g/t Au and 2.22 g/t Ag.
Newton	South Central	**Carlyle Commodities Corp.**	Au, Ag; Epithermal Au-Ag-Cu (high sulphidation)	Inf.: 42,396,600 t 0.63 g/t Au, 3.43 g/t Ag	Updated resource estimate 2022. Preparation for late 2022-early 2023 drilling.
New Brenda	South Central	**Flow Metals Corp.**	Au, Ag, Cu; Au-quartz veins; 092HNE289, 302, 303	na	Geological mapping, sampling, up to 53.5 g/t Au, 32.3 g/t Au.
New Craigmont	South Central	**Nicola Mining Inc.**	Cu, Au; Cu skarn; 092ISE035	18.669 Mt 0.13% Cu. Craigmont waste dumps in Portal Area and Southern Dump 0.06% Cu cut off.	Permitting, ZTEM and soil geochemistry.
Placer Mountain	South Central	**Damara Gold Corp.**	Au, Ag; Au-quartz veins; 092HSE262, 263	na	2021 results released, highlight 3.0 m grading 39.2 g/t Au.
Quesnel Nickel	South Central	**Green River Gold Corp.**	Ni, Co, talc; Mafic-ultramafic; 093A 130, 093H 061, 139	na	Portable drill results include Mg, Ni, Co, Cr values.

Table 7. Continued.

Rabbit North	South Central	**Tower Resources Ltd.**	Cu, Au; Alkalic porphyry Cu-Au; 092INE045, 147	na	Drilling of gold discovery (Lightning zone), another new gold target identified based on trail of gold in till. Initial drill results included 95.0 m grading 1.40 g/t Au including and interval of 19.2 m with 4.21 g/t Au.
Reliance Gold	South Central	**Endurance Gold Corporation**	Au, Ag, Sb; Au-quartz veins, Stibnite veins and disseminations; 092JNE033, 136, 191	na	Drilling of Eagle zone and feeder structures.
Shovelnose	South Central	**Westhaven Gold Corp.**	Au, Ag; Epithermal Au-Ag-Cu low sulphidation; 092HNE309, 308	I: 10,592,000 t 2.32 g/t Au, 11.43 g/t Ag Inf: 9,177,000 t 0.89 g/t Au, 3.47 g/t Ag	Pit-constrained resource at South zone, 0.35 g/t AuEq cut off.
Skoonka Creek	South Central	**Westhaven Gold Corp.**	Au, Ag; Epithermal Au-Ag-Cu low sulphidation; 092ISW104, 129, 105, 126	na	Drilling 16 holes, 3340 m. Initial drill results included 5.66 m grading 6.83 g/t Au and 1.90 m grading 21.15 g/t Au.
Wingdam	South Central	**Omineca Mining and Metals Ltd.**	Au; Au-quartz veins; 093H 012	na	Drilling lode gold targets. Began placer gold recovery.
Woodjam	South Central	**Vizsla Copper Corp.**	Cu, Au; Alkalic porphyry Cu-Au; 093A 269, 78	Southeast zone Inf: 227.5 Mt 0.31% Cu Deerhorn zone Inf: 32.8 Mt 0.49 g/t Au, 0.22% Cu Takom zone Inf: 8.3 Mt 0.26 g/t Au, 0.22% Cu	Vizsla Copper to acquire Consolidated Woodjam Copper.
Yellowhead	South Central	**Taseko Mines Limited**	Cu, Au, Ag; Noranda/ Kuroko; 082M 008, 9	M+I: 1292 Mt 0.25% Cu, 0.028 g/t Au, 1.2 g/t Ag Inf: 109 Mt 0.24% Cu, 0.026 g/t Au, 1.2 g/t Ag, 0.15% Cu cut off	Engineering and community relations.
Adamant	Southeast	**Eagle Plains Resources Ltd.**	REE; Nepheline syenite; 082M 173	na	Silt sampling, geological mapping, channel samples, metallurgical studies.
Big Ledge	Southeast	**Stuhini Exploration Ltd.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag; 082LSE012	Inf: 100 Mt 4% Zn (1980, noncompliant)	Airborne TDEM, magnetic.

Table 7. Continued.

Duncan Lake Zinc	Southeast	**Rokmaster Resources Corp.**	Zn, Pb, Ag; Mississippi Valley-type Pb-Zn; 082KSE023	na	3 DDH 681 m.
Ice River	Southeast	**Eagle Plains Resources Ltd.**	REE; Nepheline syenite; 082N 028	na	Mapping, rock & soil sampling.
Kena	Southeast	**West Mining Corp.**	Au; Alkalic, Porphyry Cu-Au; 082FSW237	na	9 DDH 2400 m; metallurgical testing.
Kenville Gold Mine	Southeast	**Ximen Mining Corp.**	Au; Au-quartz veins; 082FSW086	na	Ongoing mine rehabilitation, material acquisition, rock sampling, dump volume surveys. Samples from dump at former Protection mine returned an average grade of 9.5 g/t Au, 47.5 g/t Ag, 1.13% Pb, and 1.37% Zn; sample from former Wilcox mine dump with 2.39 g/t Au.
Kootenay	Southeast	**Wealth Minerals Ltd.**	Au; Polymetallic veins Ag-Pb-Zn±Au; 082KSW088	na	Prospecting, rock sampling.
Midnight/ I.X.L./OK	Southeast	**West High Yield Resources Ltd.**	Au; Polymetallic veins Ag-Pb-Zn±Au; 082FSW119	na	41 DDH 6202 m. Selected early results: 1.5 m with 15.7 g/t Au and 2.9 g/t Ag, and 1.05 m with 33.7 g/t Au and 3.5 g/t Ag.
Revel Ridge	Southeast	**Rokmaster Resources Corp.**	Pb, Zn, Ag; Irish-type carbonate-hosted Zn-Pb; 082M 003	M+I: 6.7 Mt 50 g/t Ag, 3.69 g/t Au, 1.93% Pb, 3.68% Zn Inf: 6 Mt 37 g/t Ag, 4.7 g/t Au, 1.19% Pb, 2.2% Zn (2021)	14 DDH (10 underground, 4 surface); rock and soil sampling, stream sampling. Selected highlights: Main zone 4.35 m grading 2.57 g/t Au, 17.11 g/t Ag, 0.66% Pb, and 1.94% Zn; Yellowjacket zone 4.45 m grading 0.01 g/t Au, 5.32 g/t Ag, 0.06% Pb, and 0.87% Zn.
Slocan Graphite	Southeast	**Aben Resources Ltd.**	Graphite; Crystalline flake graphite; 082FNW285	na	Mapping; rock and soil sampling.
Thor	Southeast	**Taranis Resources Inc.**	Base metals; Polymetallic manto Ag-Pb-Zn; 082KNW030	na	Mapping, rock and soil sampling, soil geochemistry, aeromagnetic survey, ground VLF survey. Ripper zone channel: 0.33 m grading 12.5 g/t Au, 1100 g/t Ag, 0.03% Cu, 14.9% Pb, and 0.10% Zn.
Yee Haw	Southeast	**Lithium Corporation**	Ti-REE; Lamprophyric dike	na	Prospecting, hand trenching.

Table 7. Continued.

Empire Mine	Southwest	**Coast Copper Corp.**	Au, Ag, Cu, Fe, Co; Fe skarn, Cu skarn; 092L 044, 45, 46	M+I: 960,000 t 2 g/t Au, 5.6 g/t Ag, 0.34% Cu, 0.013% Co Inf: 120,000 t 1.2 g/t Au, 2.8 g/t Ag, 0.13% Cu, 0.008% Co	Drilling 10 holes, 1483.7 m, underground survey, sampling with highlights 3.37 g/t Au, 0.97% Cu and over 1% Co.
Le Mare	Southwest	**Homegold Resources Ltd.**	Cu, Mo, Au, Ag, pyrophyllite; Porphyry Cu±Mo±Au; 92L 381, 328, 385, 378, 380, 329, 382, 379	na	Airborne geophysics, geology.
Mount Sicker	Southwest	**Sasquatch Resources Corp.**	Cu, Au, Ag, Pb, Zn; Kuroko massive sulphide Cu-Pb-Zn; 092B 040, 76, 110, 1	na	Lidar survey, inversion of geophysical data.
North Island	Southwest	**Northisle Copper and Gold Inc.**	Cu, Au, Mo, Re; Porphyry Cu±Mo±Au; 092L 185, 240, 200	I: 527,344,000 t 0.20% Cu, 0.24 g/t Au, 0.008% Mo, 0.31 ppm Re Inf: 417,272,000 t 0.15% Cu, 0.18 g/t Au, 0.006% Mo, 0.29 ppm Re	Resource includes both Hushamu and Red Dog deposits. Work in 2022 included drilling, mapping and geophysics.
Okeover	Southwest	**Alpha Copper Corp.**	Cu, Mo; Porphyry Cu±Mo±Au; 092K 008, 57, 168	Inf: 86.8 Mt 0.31% Cu, 0.014% Mo	Drilling, approx. 2000 m planned.
Rogers Creek	Southwest	**Cascade Copper Corp.**	Cu, Mo, Au, Ag; Porphyry; 092JSE033, 34, 35, 36	na	Lidar survey, rock sampling and mapping.

M = Measured; I = Indicated; Inf = Inferred

the Stuhini Group that are locally cut by coeval intrusions of the Bronson stock. The most significant gold and silver grades are in sulphide-bearing quartz veins. Exploration in 2022 included geological mapping, prospecting, rock sampling, and bulk sampling of 18 sample pits including 180 kg from the Q17 vein and 130 kg from the Q19 vein. Highlight grab sample results reported include 277.9 g/t Au, and 935 g/t Ag, 242.7 g/t Au, and 1200 g/t Ag, as well as 111.5 g/t Au and 155 g/t Ag.

At their **Eskay-Corey** property, Eskay Mining Corp. completed a 29,500 m drill program that started in late summer. Drilling focussed on defining the extent of the corridor between the TV and Jeff showings. Eskay Mining also conducted prospecting, geological mapping, and rock sampling of the Scarlet Ridge-Tarn Lake trend, and conducted drilling at three previously undrilled targets, Scarlet Ridge, Scarlet Valley, and Tarn Lake. Prospecting and reconnaissance level work was conducted at six mineral prospects for future potential drill targets. Drill results south of the TV showing reported 30.56 m grading 1.14 g/t Au, and 30.58 g/t Ag including 2.0 m grading 3.36 g/t Au, and 109.50 g/t Ag. North of the Jeff showing drill results returned 43.96 m grading 1.06 g/t Au, and 2.24 g/t Ag including 1.59 m of 15.44 g/t Au, and 28.20 g/t Ag. Some drill results from the area also returned base metal mineralization including Zn, Pb, and Cu.

Skeena Resources Ltd.'s **Eskay Creek** project has been the focus of considerable exploration since 1932. In 1988, the news of drilling intersecting stratiform stibnite-realgar rich mineralization sparked a staking rush throughout the

region. An underground mine operated from 1994 to 2008 and produced 3.3 Moz of Au and 160 Moz of Ag (average grades of 45 g/t Au and 2224 g/t Ag). A feasibility study was released that highlighted robust economics with an after-tax internal rate of return (IRR) of 50.2% and a 1-year payback period on pre-production capital expenditures. The study reported Proven and Probable open pit Mineral Reserves of 29.9 Mt containing 2.87 Moz Au and 75.5 Moz Ag with an after-tax net present value of C$1.41 billion at a base case of $1700USD gold and $19USD silver. Life of mine production of 2.4 million oz Au and 66.7 million oz Ag at a minimum of 9 years. Highlight drill results included 12.12 m grading 47.50 g/t Au, 73.4 g/t Ag and 96.02 m grading 1.13 g/t Au, 6.6 g/t Ag.

Sassy Gold Corp. carried out 3740 m of diamond drilling in 18 holes at the Westmore Discovery zone of their **Foremore** property. Drilling was mainly designed to target strike and depth extension of the high-grade mineralization at the 4-amigo vein structures.

Canagold Resources Ltd. completed 8000 m of diamond drilling in 25 holes at their **New Polaris** gold project. Drilling was designed to upgrade Inferred resources to Indicated and target gold mineralization down plunge. Results included 25.1 m grading 13.6 g/t Au, 4.3 m grading 22.1 g/t Au, 3.0 m grading 22.9 g/t Au, and 4.7 m grading 7.48 g/t Au. The company announced commencement of a Feasibility Study in October that is expected to take approximately 18 months to complete.

Strikepoint Gold Inc.'s **Porter** project hosts two past-producing silver-rich vein systems about 2 km apart: Silverado and Prosperity/ Porter Idaho. Strikepoint carried out 520 m of diamond drilling in four holes, prospecting, rock, and channel sampling. Drilling focussed on testing extensions to high-grade silver mineralization outlined in historic resource estimates and exploration for intrusive-related gold-silver mineralization. Drilling results included 10.97 m grading 245.6 g/t Ag, and 0.08 g/t Au including 2.9 m grading 643.2 g/t Ag, and 0.17 g/t Au and 0.51 m grading 2980 g/t Ag and 0.74 g/t Au. Channel sampling results included 2980 g/t Ag and 0.74 g/t Au across 0.51 m, 116 g/t Ag and 3.14 g/t Au across 1.0 m, and 108.55 g/t Ag and 1.13 g/t Au across 2.09 m.

Thesis Gold Inc. completed 36,491m of diamond drilling in more than 125 holes at their **Ranch** epithermal Au-Ag project. Other exploration included 4088 soil samples, 480 rock samples, and geological mapping, focussed on new exploration targets: Alberts Hump, Steve, and Patti. Drilling results included 39.0 m grading 2.56 g/t Au and 11.99 g/t Ag, including 32 m grading 2.97 g/t Au and 13.75 g/t Ag, 25.0 m grading 3.22 g/t Au and 28.78 g/t Ag, and 91.00 m grading 1.81 g/t Au and 8.41 g/t Ag, including 35 m grading 2.93 g/t Au and 10.36 g/t Ag.

Stuhini Exploration Ltd. carried out 2400 m of diamond drilling in eight holes, mapping, prospecting, and rock sampling at their **Ruby Creek** project. A new Mineral Resource estimate was released (March 2022) with a combined Measured and Indicated resource of 369.4 Mt grading 0.053% Mo and an Inferred resource of 41.9 Mt grading 0.047% Mo. Highlight rock samples returned assays of 16,030 g/t Ag, 3.6% Pb, and 13,250 g/t Ag, and 5.02 g/t Au.

Scottie Resources Corp.'s **Scottie Gold Mine** project, 35 km north of Stewart, is centred on the past-producing Scottie Gold mine, which operated from 1981 to 1985, producing 95,426 oz of Au at 16.2 g/t Au. The property is cross-cut by north-striking and locally abundant east-striking faults. Stanley and Nelson (2022) recognized Stuhini Group and a Hazelton Group stratigraphy in the area that is comparable to that in the McTagg anticlinorium. Gold occurs in steeply dipping pyrrhotite-pyrite-quartz-calcite veins. Scottie Resources carried out 17,176 m of diamond drilling and geophysical surveys at the Blueberry zone. Results included 16.15 m grading 9.12 g/t Au, 44 g/t Ag, 8.6 m grading 11.3 g/t Au, and 12.5 m grading 13.3 g/t Au. Drill results have increased the Blueberry zone's known depth of mineralization to a total of 360 m and strike length of 1.2 km.

In March, Hochschild Mining PLC released an updated Mineral Resource Estimate with an Indicated resource of 2.50 Mt grading 10.4 g/t Au and an Inferred resource of 2.184 Mt grading 10.3 g/t Au for the **Snip Gold** project. The Snip deposit is a past-producing underground mine with renewed interest. The mine produced at an average grade of 27.5 g/t Au between 1991 and 1999. The deposit is a southwest-dipping vein system in Upper Triassic metasedimentary rocks of the Stuhini Group that are cut by Early Jurassic stocks and plutons. Hochschild Mining is exercising its right to take over as operator for Snip, earning a 60% interest from Skeena Resources Ltd. by spending approximately $100 million during the option period with a yearly minimum of $7.5 million in exploration or development expenditures on Snip. High-grade intersections from drilling included 4.6 m grading 35 g/t Au, 11 g/t Ag, and 8.0 m grading 20.2 g/t Au, 10 g/t Ag.

Brixton Metals Corporation completed 18,090 m of diamond drilling at their **Thorn** project between both the Camp Creek and **Trapper Gold** targets. Soil and rock sampling programs were also carried out. Results at the **Trapper Gold** epithermal target include one drill hole with 64 m grading 5.74 g/t Au, 9.11 g/t Ag, including a 28.95 m interval grading 10.36 g/t Au, 16.21 g/t Ag and a 7 m interval grading 19.0 g/t Au, 23.11 g/t Ag. Another hole assayed 262 m grading 1.04 g/t Au including 75.49 m grading 2.35 g/t Au including 6.93 m grading 7.16 g/t Au.

Tudor Gold Corp.'s **Treaty Creek** project is defined by its bulk tonnage resource in Jurassic volcanic and intrusive rocks that also host the KSM deposits 5 km to the southwest. The project has 815.7 Mt of Measured and Indicated resource (March 2021) grading 0.66 g/t Au, 3.6 g/t Ag, and 0.06% Cu, and 311.7 Mt of Inferred grading 0.72 g/t Au, 4.0 g/t Ag, and 0.05% Cu. For 2022, 43,318 m of diamond drilling in 55 holes was completed. Results included 1497.5 m grading 0.76 g/t Au, 3.70 g/t Ag, and 0.27% Cu, 180 m grading 1.97 g/t Au, 3.72 g/t Ag, and 0.01% Cu with intervals of 57 m grading 4.30 g/t Au and 5.91 g/t Ag and 15 m of 7.76 g/t Au, and 6.48 g/t Ag.

Exploration at CopAur Minerals Inc.'s **Williams** copper-

gold project previously identified the T-Bill Gold zone and the GIC copper gold zone. In 2022, 1428 m of diamond drilling was completed in four holes. Drilling targeted untested soil geochemical and IP chargeability anomalies and discovered a new gold discovery to the west of the GIC porphyry target. Drilling results from this new discovery included 50 m grading 2.2 g/t Au, 0.13% Cu and 10.5 m grading 4.16 g/t Au, 0.09% Cu.

8.1.2. North Central Region

Independence Gold Corp. completed a winter drill program of 4185 m in 17 holes at their **3Ts** project. Ten holes were drilled at the Ted-Mint target, five holes at the Tommy target, and two holes at the new Balrog target. Highlight results included 30.0 m grading 4.99 g/t Au, and 53.3 g/t Ag. The company announced a fall surface mapping and sampling program between the Ted-Mint and Tommy targets. A recent technical report (August 18, 2022) disclosed combined in-pit and underground components of the Tommy and Ted-Mint vein systems containing a total Inferred resource estimate of 4.47 Mt grading 3.64 g/t Au and 96.26 g/t Ag, at a cut off grade of 0.4 g/t AuEq in-pit and 2.0 g/t AuEq underground, containing 522,000 ounces of gold and 13,800,000 ounces of silver.

Benchmark Metals Inc. completed more than 18,829 m of resource and exploration drilling and 1447 m of geotechnical and hydrogeological drilling at their **Lawyers** project. As well, they announced a Preliminary Economic Assessment and an updated mineral resource estimate. The economic assessment results included a pre-tax NPV 5% of $939 million, with IRR of 31.4%, and 2-year payback. The updated resource estimate reported on pit-constrained and out-of-pit resources. Pit-constrained resources at a 0.4 g/t AuEq cut off were reported as Measured 20.3 Mt grading 2.21 g/t Au, 30.5 g/t Ag, Indicated 45.5 Mt grading 1.09 g/t Au, 18.2 g/t Ag, and Inferred 2.3 Mt grading 0.91 g/t Au, 12.8 g/t Ag. Out-of-pit resources at a 1.5 g/t AuEq cut off were reported as Indicated 1.6 Mt grading 2.74 g/t Au, 60.6 g/t Ag, Inferred 2.6 Mt grading 3.32 g/t Au, 56.3 g/t Ag.

Kestrel Gold Inc. continued to explore at their **QCM** project. A total of 1272 m of reverse circulation drilling was completed in 14 holes. Highlight results included 44.19 m grading 2.33 g/t Au and 149.35 m grading 0.59 g/t Au.

Golden Cariboo Resources Ltd. completed two diamond-drill holes totalling 733.9 m at their **Quesnelle Gold Quartz** project. One hole intersected two quartz veins in a 15.2 m interval (true width estimated at 10 m). The widths of the veins were not announced. Reported assays were 0.6 m grading 17.5 g/t Au, and 61.5 g/t Ag, and 0.5 m grading 1.94 g/t Au.

TDG Gold Corp. completed 5034 m of oriented core diamond drilling in 21 drill holes at its **Shasta** project. They also filed an initial NI 43-101 mineral resource estimate based on a combination of historic drilling and 2021 drilling. At a cut off grade of 0.3 g/t AuEq they reported an Inferred resource of 22.01 Mt grading 0.79 g/t Au and 26.7 g/t Ag. Reported results for late 2021 drilling included 34 m grading 7.19 g/t Au and 105 g/t Ag.

8.1.3. South Central Region

Talisker Resources Ltd. drilled 140,476 m in 286 holes at their **Bralorne** project between February 2020 and October 2022. A new resource estimate is planned to replace their 2020 estimate. Drilling has extended from surface to a depth of about 700 m. Most of the resource area is between historic mines. Talisker has reported numerous narrow, high-grade intersections from the current drilling. Highlight intersections include 1.3 m of 42.61 g/t Au within 3.70 m of 15.51 g/t Au. Average vein width is 1.6 m in the resource area.

Gelum Resources Ltd. completed three holes (800 m) of a planned 11-hole (3000 m) program at their **Eldorado** project late in 2022. The company also completed an airborne magnetic and VTEM survey (890 line km). The target is orogenic vein gold.

Tempus Resources Ltd. focussed on their **Elizabeth** property, the southern portion of the linked Blackdome-Elizabeth project, with 40 holes drilled for a total of approximately 9760 m. The Blue Vein, a 2021 discovery, was targeted by 21 holes and the No. 9 vein was targeted by 10 holes. Initial results included 2.11 m of 87.0 g/t Au at the No. 9 vein. The Ella zone, SW vein, and Main/West zone were also drilled. The linked **Blackdome** and **Elizabeth** properties were the subject of a 2010 Preliminary Economic Assessment in which mining would occur at both sites, with processing at an existing mill at **Blackdome**.

Karus Gold Corp. announced results of 2021 drilling at its **FG Gold** and **Gold Creek** projects in 2022. Among the highlights was 59.35 m grading 1.13 g/t Au including 17.87 m grading 2.23 g/t Au at **FG Gold** and 80.65 m grading 0.5 g/t Au including 46.4 m grading 0.74 g/t Au at **Gold Creek**. The company filed a technical report covering both properties. The company also announced signing a non-binding letter of intent to be acquired by Kenadyr Metals Corp., valuing Karus at $19.7 million. Karus' principal assets are its Cariboo district gold properties.

Kingfisher Metals Corp. conducted an induced polarization survey, rotary air blast (RAB) and diamond drilling (total approximately 10,000 m as of October) on its **Goldrange** project in 2022. Results of RAB drilling at the Day Trip zone included 4.6 m of 2.7 g/t Au, 12.2 m of 0.5 g/t Au, 4.6 m of 2.1 g/t Au, and 9.1 m of 0.8 g/t Au. The company reported anomalous portable X-Ray fluorescence analyses at the Langara zone and intervals of vein, breccia, and disseminated sulphide at the Could Drifter trend. Initial diamond drill results at the Cloud Drifter included 40 m grading 2.86 g/t Au, with 9 m grading 5.56 g/t Au, 1 m grading 58.88 g/t Au, 2 m grading 19.54 g/t Au, 1 m grading 10.39 g/t Au, and 2 m grading 9.55 g/t Au. Mineralization at the Cloud Drifter includes a 35 m interval of strongly altered and mineralized quartz diorite.

Sego Resources Inc.'s **Miner Mountain** project is considered

prospective for porphyry-style mineralization, but 2020-21 results attracted the company's focus to porphyry related gold mineralization. Seven holes totalling 1582 m were drilled and results included 80 m grading 0.95 g/t Au.

Carlyle Commodities Corp. updated the resource estimate for their **Newton** project to a pit-optimized Inferred 42.4 Mt 0.63 g/t Au and 3.43 g/t Ag with a 0.25 g/t Au cut off. They have a permit to drill and completed some preparatory work. As of December, a 14-hole infill and step-out program was scheduled to begin.

Flow Metals Corp. followed up 2021 airborne magnetic results with geological mapping and sampling at their **New Brenda** project. Highlight samples returned 53.5 g/t and 32.3 g/t Au, with highly anomalous bismuth and tellurium in a hand-trenched vein carrying visible gold and bismuthinite.

Damara Gold Corp. completed a drilling program at its **Placer Mountain** project in December 2021. Highlight results released in 2022 included 1.40 m grading 34.12 g/t Au and 87.74 g/t Ag, 3.0 m grading 39.2 g/t Au and 80.4 g/t Ag, 1.35 m grading 46.51 g/t Au and 32.2 g/t Ag, and 1.30 m grading 31.80 g/t Au and 47.3 g/t Ag. The company expanded their land holdings in 2022.

Tower Resources Ltd. identified the source of a gold grain anomaly in till and reported an initial drill intersection of 95.0 m grading 1.40 g/t Au including and interval of 19.2 m with 4.21 g/t Au in this new discovery, referred to as the 'Lightning zone' at their **Rabbit North** project. Follow up in 2022 included additional drilling and till sampling that indicated another gold dispersal train, called the Central Train, 400 m west of the Lightning zone. Seventeen new samples yielded between 40 to 452 gold grains per sample leading to a target under young (possibly Miocene) basalts. The **Rabbit North** project also hosts alkalic porphyry Cu-Au targets.

Endurance Gold Corporation reported 38 diamond-drill holes totalling 8274 m and 33 reverse circulation holes totalling 2455 m at their **Reliance Gold** project in 2022. The primary targets were the Eagle zone and structures interpreted as feeders to that shallowly dipping, near-surface target. Highlight feeder zone (Eagle South Feeder) intersections included 11.6 m grading 7.31 g/t Au, 12.1 m grading 4.95 g/t Au, 13.5 m grading 8.06 g/t Au, 11.9 m grading 8.31 g/t Au, and 4.3 m grading 16.66 g/t Au. Highlight intersections from the overlying Eagle zone included 12.0 m grading 7.68 g/t Au, and 30.48 m grading 6.64 g/t Au (Fig. 3). Significant intersections in the Eagle South Feeder zone span about 400 m strike length. Endurance expanded their land holdings in the Gold Bridge area in 2022.

In January, Westhaven Gold Corp. announced an initial pit-constrained mineral resource estimate for the South zone at their **Shovelnose** project of 10.6 Mt grading 2.32 g/t Au and 11.43 g/t Ag Indicated and 9.2 Mt grading 0.89 g/t Au and 3.47 g/t Ag Inferred. Drilling in 2022 (approximately 100 holes, 40,000 m) included peripheral targets off the main mineralized structure, a 4 km trend including the South zone, FMN and Franz targets. The company discovered a gold-bearing zone 1.2 km northeast of the South zone resource area. Highlight results at FMN included 23.03 m grading 37.24 g/t Au and 209.52 g/t Ag, and 14.96 m grading 5.96 g/t Au and 343.57 g/t Ag. Detailed mapping at a 1:100 scale at Franz was carried out to guide surface sampling and complement earlier drilling. Westhaven also drilled 3340 m in 16 holes at their **Skoonka Creek** project, another of their properties in the Spences Bridge belt. The program was designed to step out from previous drilling on an epithermal vein system. Initial results included 5.66 m grading 6.83 g/t Au and 1.90 m grading 21.15 g/t Au.

Omineca Mining and Metals Ltd. resumed lode gold exploration drilling in the late summer and fall. Targets included Skopos, about 900 m south of their placer mine **Wingdam** project and Mary Creek, about 6 km northwest of Wingdam.

8.1.4. Southeast Region

West Mining Corp. continued exploration at their **Kena** project. The project includes three adjacent properties (Kena, Daylight, and Athabasca) that extend along a 20 km trend. The properties cover known mineralized zones and historical mine sites. Mineralization comprises quartz-pyrite stockwork and veinlet zones in bleached and silicified Jurassic plagioclase porphyry of the Silver King intrusion and well-foliated, pyritic intermediate volcanic rocks of the Elise Formation. In 2022, the company had composite drill core samples from the Kena Gold zone and the Gold Mountain zone drilled in 2021 examined for crushing, milling, and recovery characteristics. Results indicate the mineralization is amenable to whole-ore cyanidation and sulphide flotation processes. Additionally, property work comprised drilling of 9 diamond-drill holes for a total of 2400 m at the Gold Mountain zone.

Ximen Mining Corp. continued mine rehabilitation at its **Kenville Gold Mine** project. Site facility structures and portal support materials, plus many ancillary items are being acquired.

Mine permitting is ongoing. The company preformed rock sampling and volume surveying of the dumps at the Protection and Wilcox mines, southeast of Kenville mine. The Wilcox samples yielded 2.39 g/t Au and the Protection dump samples yielded an average grade of 9.5 g/t Au, 47.5 g/t Ag, 1.13% Pb, and 1.37% Zn. A small soil sampling survey was done in an area immediately southeast of the Kenville mine and 36.4 km^2 of lidar surveying was carried out over the historic mine site and surrounding area.

West High Yield Resources Ltd. drilled 41 holes for 6202 m on its **Midnight/I.X.L./OK** property near Rossland. Drilling was divided into two sets of holes. The first set was focussed on near-surface targets (0-200 m depth) southeast and east of the historical high-grade Baker Vein, near a listwanite (quartz-carbonate-serpentine) zone that straddles an east-northeast trending fault juxtaposing an ultramafic intrusion and predominantly Jurassic andesites. The second set was focussed on targets of depths of 200-600 m, below the Baker vein. Multiple high-grade precious metals intersections were made, several with visible gold. Selected assay highlights from early results of typically 1.5 m sample intervals yielded grades of 38.4, 36.1, 22.6 and 20.7 g/t Au. Highlights from a later release

included 1. 5 m grading 15.7 g/t Au, 2.9 g/t Ag and 1.05 m grading 33.7 g/t Au, 3.5 g/t Ag.

8.2. Selected porphyry (Cu-Au, Cu-Mo, Mo) projects

8.2.1. Northwest Region

Surge Copper Corp. has an option to earn a 70% interest in the **Berg** project from Centerra Gold Inc. The Berg deposit has a resource estimate (August 2022) with a Measured and Indicated resource of 610 Mt grading 0.27% Cu, 0.03% Mo, and 3.0 g/t Ag, and an Inferred resource of 28.1 Mt grading 0.22% Cu, 0.02% Mo, and 3.8 g/t Ag. Fall exploration included ten holes totalling 4782 m of diamond drilling, prospecting, a large IP survey, and soil and rock sampling. Surge announced in late fall, commencement of a Preliminary Economic Assessment.

At Libero Copper & Gold Corporation's **Big Red** project, porphyry Cu-Au-Mo, epithermal Au-Ag, and VMS-style mineralization have been recognized. Libero carried out a 2551 m, four-hole drill program. The drilling tested for a hydrothermal source immediately southeast of the Terry porphyry mineralization. Early winter reported results included 8.5 m grading 0.84% Cu, 0.07 g/t Au, and 5.69 g/t Ag within 119.5 m grading 0.25% Cu, 0.02 g/t Au, and 2.26 g/t.

Amarc Resources Ltd.'s **Duke** project straddles the Northwest and North Central regions. Amarc began late fall drilling at the Duke deposit. Work is funded by Boliden Mineral Canada Ltd. who may earn up to 60% ownership of the project by spending $30 million in four years and an additional 10% by spending a further $60 million in six years.

Seabridge Gold Inc.'s **Iskut** project includes the former Johnny Mountain mine and the Bronson Slope copper-gold deposit. This year Seabridge carried out 10,600 m of diamond drilling in ten holes. Drilling discovered breccia pipe mineralization beneath the historical Bronson Slope skarn deposit. The breccia pipe is mineralized with gold associated with copper on its margins.

Previous exploration at the **NAK** project included more than 18,000 m of diamond drilling in 105 holes. American Eagle Gold Corp. carried out diamond drilling and entered into an option agreement with Orefinders Resources Inc. where Orefinders can earn a 20% interest in the NAK project. Results included an interval of 135 m grading 0.96 g/t Au, 0.27% Cu, and 1.41 g/t Ag, and 47 ppm Mo within 851 m grading 0.22 g/t Au, 0.17% Cu, 0.97 g/t Ag, and 74 ppm Mo, 301 m grading 0.5 g/t Au, 0.22% Cu, 1.13 g/t Ag, and 45 ppm Mo within an interval of 956 m grading 0.19 g/t Au, 0.20% Cu, 1.3 g/t Ag, and 38 ppm Mo.

Enduro Metals Corporation discovered new porphyry copper-gold mineralization at their **Newmont Lake** project. A total of 10,897 m of diamond drilling was completed in 25 holes. Drilling was mainly focussed on expanding the footprint of the Burgundy Ridge copper-gold porphyry target with some drilling at the McLymont West target along the McLymont fault.

Initial results from the Burgundy ridge target include 66.8 m grading 0.16 g/t Au, 0.35% Cu, 0.05% Zn, and 5.57 g/t Ag, including 6.08 m grading 0.33 g/t Au 1.41% Cu, 0.18% Zn, and 19.61 g/t Ag.

Surge Copper Corp.'s **Ootsa** project contains three separate deposits: Ox, East Seel, and West Seel. The project is at the edge of a southeast-trending belt of porphyry Cu-Au deposits and prospects which include (from northwest-southeast) the Lucky Ship, Berg, Whiting Creek, Huckleberry, Ox, and Seel deposits. Like other deposits in the region, mineralization at Ootsa is temporally associated with the Bulkley suite intrusive rocks (Cretaceous) with calc-alkaline porphyry-style mineralization. In 2022, an updated mineral resource estimate reported a 96% increase in the Measured and Indicated resource and additional Inferred resources. A total of 10,518 m of diamond drilling was carried out in 28 holes at the Seel breccia zone and targets surrounding the Seel and Ox deposits. Highlights included 64.6 m grading 0.24% Cu, 0.17 g/t Au, 22.7 g/t Ag, 0.67% Zn and 0.29% Pb with an 18.6 m interval of grading 0.75% Cu, 0.49 g/t Au, 61.2 g/t Ag, 1.17% Zn and 0.58% Pb. Drilling from the Blackjack target, approximately 4 km east of the Seel deposit, intersected 46 m of 99.4 g/t Ag, including intervals of 2.0 m with 1430.0 g/t Ag and 2.0 m with 346 g/t Ag. The field program also included prospecting, and soil and rock sampling.

Sanatana Reslources Inc.'s **Oweegee** project is transected by Highway 37 and the NW transmission line. This year, Sanatana carried out 3679 m of diamond drilling in 12 holes; copper was observed in eight. Reported assays included 112.18 m grading 0.17% Cu, 0.22 g/t Au, 1.10 g/t Ag, including 12 m grading 0.40% Cu, 0.35 g/t Au, 2.10 g/t Ag and 12.47 m grading 0.40% Cu, 0.39 g/t Au, 1.34 g/t Ag.

In the spring, Universal Copper Ltd. completed 1983 m of diamond drilling in five holes at their **Poplar** project. The drilling was designed to expand known copper mineralization to depth and expand the limits of higher-grade mineralization within the current mineral resource. Reported results included 214.4 m grading 0.401% Cu, 0.001% Mo, 0.15 g/t Au and 1.27 g/t Ag, 162.8 m grading 0.412% Cu, 0.020% Mo, 0.104 g/t Au, and 1.14 g/t Ag, and 216 m grading 0.353% Cu, 0.14 g/t Au, and 5.91 g/t Ag including 87 m grading 0.531% Cu, 0.36 g/t Au and 20.67 g/t Ag.

The **Schaft Creek** project is an advanced-stage joint venture (Teck Resources Limited 75%, Copper Fox Metals Inc. 25%) with a Measured and Indicated resource (September 2021) of 1.346 Bt grading 0.26% Cu, 0.16 g/t Au, 0.017% Mo, and 1.25 g/t Ag. Inferred resources are 343.6 Mt grading 0.17% Cu, 0.11 g/t Au, 0.013% Mo, and 0.84 g/t Ag. In 2022, 4688 m of drilling was completed in 11 holes to complement previous metallurgical testing. Holes were drilled in the three main mineralized zones (Liard, Paramount, and West Breccia). Environmental baseline data collection was completed. Brixton Metals Corporation continued to drill porphyry copper mineralization at the Camp Creek target of their **Thorn** project. Reported results included 967.2 m grading 0.25% Cu,

0.09 g/t Au, 2.39 g/t Ag, and 186 ppm Mo, with a 365 m interval grading 0.45% Cu, 0.13 g/t Au, 3.81 g/t Ag, and 328 ppm Mo, and with another 40 m interval grading 0.67% Cu, 0.20 g/t Au, 5.16 g/t Ag, and 424 ppm Mo.

8.2.2. North Central Region

NorthWest Copper Corp. continued exploration on their **East Niv** project with 4390 m drilling in eight diamond-drill holes, a 31.1 line-km ground-based induced polarization survey, 1260 line-km of airborne magnetic surveying, rock (206) and soil (745) sampling, and geological mapping. Rock chip samples along a 13 km trend returned copper and silver assays. Highlight results included 11 samples grading from 1.08% Cu to 6.55% Cu with Ag grades between 3.7 g/t and 262.0 g/t.

Pacific Empire Minerals Corp. continued exploration on its **Jean Marie** project. The company completed two diamond-drill holes totalling 700 m. Both holes intersected copper mineralization. One hole intersected 155 m grading 0.18% Cu, 19 ppm Mo, and 1.0 g/t Ag. The other intersected a 282 m interval grading 0.21% Cu, 27 ppm Mo, and 1.3 g/t Ag including 76 m grading 0.45% Cu, 71 ppm Mo, and 3.0 g/t Ag. These results extended known copper mineralization along strike and at depth.

Amarc Resources Ltd. carried out geological mapping, sampling (2648 soil, 313 surface rock), induced polarization ground surveys, and diamond drilling at their **Joy** project. Amarc is the project operator, but Freeport-McMoRan Properties Canada Inc. is funding the exploration under an earn-in agreement. Diamond drilling consisted of 15,427 m in 37 holes at the Pine deposit and at several district porphyry copper-gold targets. More than 56 line-km of IP surveying was completed.

Pacific Ridge Exploration Ltd. completed 7015 m of drilling in 12 drill holes at their **Kliyul** project. Drilling intersected porphyry copper-gold style mineralization, including pyrite, chalcopyrite, and lesser bornite in veins and as disseminations. The Kliyul Main zone (KMZ) was extended to the north, south, and at depth across and area approximately 550 by 200 m and 600 m deep. Highlight results included 588.0 m grading 0.12% Cu, 0.39 g/t Au, and 0.90 g/t Ag, and 527.8 m grading 0.19% Cu, 0.30 g/t Au, and 1.35 g/t Ag.

NorthWest Copper Corp. completed 29 diamond-drill holes totalling 11,871.80 m at their **Kwanika** project. Results expanded the footprint of the deposit and increased the confidence of the mineral resource estimate. High-grade intersections from the core of the deposit included 304.20 m grading 0.47% Cu, 0.53 g/t Au, and 1.7 g/t Ag. Drill results from the northern extension of the deposit included 364.20 m grading 0.17% Cu, 0.17 g/t Au, and 0.8 g/t Ag. Northwest also announced 2867 m of diamond drilling in seven holes at their **Lorraine** project. Other work included induced polarization and electromagnetic surveys. Before the drilling, NorthWest announced an updated mineral resource estimate for the project's mineralized zones (Lower Main, Upper Main, and Bishop). At a cut off grade of 0.2% Cu, total Indicated resources are 12.95 Mt grading 0.55% Cu, 0.16 g/t Au, and total Inferred resources are 45.45 Mt grading 0.43% Cu, 0.1 g/t Au.

Mount Milligan (Brownfield) mine site exploration by Centerra Gold Inc. included more than 28,266 m in 54 holes. The drilling focussed on six target areas up to 1 km west of the 2020 ultimate pit boundary and within the M-236 mine reclamation boundary. Six km south of the mine site, Centerra was active on their **Mount Milligan (Greenfield)** project with 804 m of diamond drilling in two holes at the Fugro-2 target. Exploration continued for new porphyry copper-gold deposits and low-sulphidation epithermal gold-silver deposits in the Mount Milligan tenement package.

Pacific Ridge Exploration Ltd. completed 1861 m of diamond drilling in six holes at their **RDP** project. Pacific Ridge was the operator, but the program was funded by Antofagasta Minerals S.A., a subsidiary of Antofagasta PLC, who can earn a 75% interest in the project by spending $10 million on exploration.

8.2.3. South Central Region

Engold Mines Ltd.'s **Lac La Hache** project includes Cu-Fe skarn, Au vein and breccia, and porphyry Cu targets. Resource estimates exist for several (Table 7). Drilling in 2022 at the Aurizon gold deposit returned an initial highlight of 7.11 m grading 5.7 g/t Au, 0.90% Cu, 0.60 g/t Ag, and 2.5 m grading 8.8 g/t Au, 1.02% Cu, 81.8 g/t Ag. Deep drilling at the Ann North alkalic porphyry target encountered a 655 m interval of low-grade Cu mineralization grading 0.10% Cu, 0.04 g/t Au, 0.03 g/t Ag. Engold Mines reported some 2021 results in 2022 including 34 m grading 0.48% Cu, 0.07 g/t Au, 1.57 g/t Ag from south of the G-1 skarn deposit.

Kodiak Copper Corp. continued to drill at their **MPD** project, with a 41 hole, 26,103 m program, and conducted induced polarization and soil geochemical surveys. Southern Gate zone highlights included 735.4 m grading 0.24% Cu, 0.14 g/t Au and 0.71 g/t Ag. Within this was a 117 m interval grading 0.69% Cu, 0.46 g/t Au and 2.22 g/t Ag. The Gate zone was traced along a 1 km strike length and to a depth of 900 m. Kodiak reported discovering a near-surface Au-Ag target south of the Gate zone and Man zone. Highlights from trenches included 2 m grading 9.11 g/t Au and 24 g/t Ag, 2 m grading 5.29 g/t Au and 27.7 g/t Ag. MPD is a consolidation of the Man, Prime, and Dillard alkalic porphyry Cu-Au targets, which had historically been explored to about 200 m depth. The Gate zone, a 2019 discovery, indicated that significant Cu-Au mineralization extended to greater depths.

Consolidated Woodjam Copper Corp. announced 2021 drill results early in 2022 for their **Woodjam** project, including a highlight of 24.0 m grading 3.12 g/t Au, and 0.18% Cu at Deerhorn. In September, Vizsla Copper Corp. announced an agreement to acquire Consolidated Woodjam Copper Corp. for Vizsla shares. The deal has shareholder and court approval and Consolidated Woodjam will de-list when the transaction closes. Woodjam comprises six zones in a cluster approximately 5 km in diameter. The Deerhorn zone has an Inferred resource of 32.8 Mt grading 0.49 g/t Au and 0.22% Cu.

8.2.4. Southwest Region

Homegold Resources Ltd. reported carrying out an airborne magnetic and radiometric survey and geological work on the **Le Mare** property, where there are several porphyry Cu-Mo targets.

Northisle Copper and Gold Inc. drilled approximately 6390 m in 15 holes at its **North Island** Project, including 9 holes at and near the Hushamu resource area. A highlight included 49.5 m grading 0.345% Cu 0.435 g/t Au, 0.014% Mo, and 0.736 g/t Re. The company also reported another intersection in a step out hole 200 m from the model pit shell, where mineralization had not been recognized, of 100.9 m grading 0.204% Cu, 0.890 g/t Au, 0.014% Mo, and 0.573 g/t Re. Work in 2022 also included mapping, sampling, and surface geophysics at a (re) discovery referred to as 'Downward Dog'. A 2021 Preliminary Economic Assessment was updated and there was some metallurgical testing of Hushamu, Red Dog, and Northwest Expo. Of more than seven Cu-Au-Mo±Re porphyry targets and deposits spanning approximately 40 km west-northwest of the past producing Island Copper mine, two deposits have resource estimates. Hushamu has an Indicated resource of 472.9 Mt grading 0.20% Cu, 0.23 g/t Au, 0.008% Mo, and 0.35 ppm Re plus a large Inferred resource. Red Dog has an Indicated resource of 54.5 Mt grading 0.22% Cu, 0.31 g/t Au, and 0.004% Mo.

Alpha Copper Corp. mobilized to their **Okeover** project in the fall for a planned 2000 m of drilling at the North Lake zone where there is an existing resource. The North Lake zone is at the northern end of a north-northwest trending string of porphyry Cu-Mo targets related to younger intrusions in Cretaceous diorite-granodiorite of the Coast Plutonic complex.

Cascade Copper Corp. acquired the **Rogers Creek** property from Tocvan Ventures Corp. Cascade carried out a lidar survey, rock geochemistry, and geological mapping, including alteration mapping using Terraspec spectrometry.

8.3. Selected polymetallic and precious metal projects

8.3.1. Northwest Region

P2Gold Inc. drilled 95 holes totalling 13,967 m at their **BAM** project. Most holes were drilled at the Monarch Gold zone. Results from the **Jan Copper** zone included 22.0 m grading 0.36% Cu, including 2.0 m of 2.15% Cu.

Core Assets Corporation drilled 7371 m in 17 holes at their **Blue** property. Results included 1.25 m grading 215 g/t Ag, 9.9% Zn, 8.9% Pb, and 0.36% Cu within 17.19 m grading 28 g/t Ag, 1.2% Zn, 1.4% Pb, and 0.10% Cu. Core also carried out prospecting and geological mapping.

Goliath Resources Ltd.'s **Golddigger** property is 7 km west of the Dolly Varden mine access road. At the Surebet and Main zone, stratabound massive sulphide mineralization (galena-sphalerite-pyrite) and silica alteration occur in highly folded Hazelton Group sedimentary rocks along northwest-trending faults. Goliath completed 26,321 m of diamond drilling in 86 holes at the Surebet zone. Reported results included 1.0 m grading 115.0 g/t Au, and 28.5 g/t Ag, within 5.0 m grading 23.17 g/t Au, and 6.32 g/t Ag along with base metal mineralization.

In February, Dolly Varden Silver Corporation acquired the Homestake Ridge project from Fury Gold Mines Ltd. and combined resources with the Dolly Varden Silver project to consolidate into the **Kitsault Valley** project. This combines seven precious metal deposits under one project, switching the Company's 100% silver project to a larger one with equal silver and gold resources measured by value. **Homestake Ridge** contains a total Indicated resource (January 2022) of 0.736 Mt grading 7.02 g/t Au, 74.8 g/t Ag, 0.18% Cu and 0.077% Pb and a total Inferred resource of 5.55 Mt grading 4.58 g/t Au, 100 g/t Ag, 0.13% Cu and 0.142% Pb. The 2022 drilling objective was to infill at Dolly Varden and Homestake Ridge to increase mineral estimates from Indicated and Inferred to Measured and Indicated. This year Dolly Varden completed 37,061 m of drilling in 108 holes. Reported results from Homestake Ridge include 16.06 m grading 4.27 g/t Au and 64 g/t Ag, including 3.08 m grading 18.76 g/t Au, 193 g/t Ag, and 0.28% Cu, 15.0 m grading 5.68 g/t Au and 147 g/t Ag, including 0.39 m grading 54.10 g/t Au, 4890 g/t Ag, and 0.11% Cu. Highlighted results from **Dolly Varden** included 1.6 m grading 4326 g/t Ag, 4.2% Pb, 1.4% Zn, and 1.0 g/t Au, 50.18 m grading 414 g/t Ag, 12.51 m of 442 g/t Ag, 0.26% Pb, and 0.31% Zn including 1.50 m grading 1367 g/t Ag, 0.22% Pb, and 0.17% Zn.

Juggernaut Exploration Ltd. reported discovering new mineralization at their **Midas** project, 24 km southeast of Terrace. Exploration was focussed on delineating the Kokomo showing, which returned elevated gold values in bulk leach extractable gold samples ranging from 0.024 to 0.108 g/t Au. Exploration included rock sampling, prospecting, and geological mapping. Rock chip sample results included 1.0 m grading 117 g/t Au, 132 g/t Ag, 1.585% Cu, and 1.77% Zn.

Finlay Minerals Ltd.'s **Silver Hope** project's mineral tenure surrounds the past-producing Equity Silver mine, which operated from 1980 to 1994, processing 33.8 Mt grading 0.4% Cu, 64.9 g/t Ag, and 0.46 g/t Au. Finlay completed 1671 m of drilling in seven holes, soil sampling, prospecting, and expanded the Silver Hope property by adding 5785 hectares of claims contiguous to and northwest of their previous mineral tenure. Results released from 2021 fall drilling included 76.57 m grading 0.45% Cu, 14.6 g/t Ag, and 0.14 g/t Au.

The **Silver Queen** historic mine is 43 km south of Houston on an all-season road. It has seen more than 500 drill holes and 9 km of underground workings since discovery. In December, Equity Metals Corp. released an updated mineral resource estimate with an Indicated resource of 3.445 Mt grading 3.5% Zn, 2.13 g/t Au, 189 g/t Ag, 0.24% Cu, and 0.6% Pb. An Inferred resource of 1.9 Mt grading 2.0% Zn, 0.82 g/t Au, 167 g/t Ag, 0.23% Cu, 0.5% Pb (resources at NSR cut off of C$100/t). Equity completed 5891 m of diamond drilling in 16 holes. Highlight results included 1.3 m grading 1998 g/t Ag, 9.3 g/t Au, 0.17% Cu, 2.2% Pb, and 6.8% Zn within a 7.5 m interval grading 539 g/t Ag, 1.8 g/t Au, 0.5% Pb, and 1.8% Zn.

Other results included 0.6 m grading 1705 g/t Ag, 2.1 g/t Au, 4.3% Cu, 1.6% Pb, 4.1% Zn, within 1.2 m grading 802 g/t Ag, 1.0 g/t Au, 2.1% Cu, 0.8% Zn, and 2.0% Zn.

Coeur Mining Inc.'s 2022 exploration program at their **Silvertip** mine included 61,000 m of drilling in 330 holes. The focus of drilling was infill and expansion at the Southern silver zone and drilling underneath the Discovery zone. More manto mineralization was found at the newly discovered Camp Creek west zone. Drilling intersected chimney/feeder structures beneath the Discovery zone. Highlight results included 12 m grading 459.6 g/t Ag, 15.1% Zn, and 8.7% Pb, and 6.2 m grading 778.3 g/t Ag, 13.6% Zn, and 14.7% Pb.

8.3.2. Northeast Region

Fabled Copper Corp. carried out prospecting, mapping, sampling, magnetic and VLF ground surveying, unmanned aerial vehicle photogrammetry surveying, and lidar surveying at historic underground workings at their **Muskwa** project. The project consists of the Neil, Toro, and Bronson properties. A surface sample at Bronson assayed 23.10% Cu, 36.50 g/t Au.

Four of five samples from the Brad vein at the Toro project returned values of more than 0.5% Cu. The highest value was 13.85% Cu with 0.15 g/t Au and 7.42 g/t Ag. North of the Brad vein a sample assayed 13.85% Cu. West of the Toro vein; eight of twelve samples assayed over 0.5% Cu; the highest value was 10.55% Cu. A new discovery at Toro (Target 11 vein) assayed 1.52% Cu. Fabled Copper has applied for a five-year land use permit to allow diamond drilling. Fabled Copper also contributed to the Gataga River Basin cleanup project managed by the Northeastern British Columbia Wildlife Fund. Fabled Copper supplied helicopter time and manpower to remove legacy waste in the project area, including 2360 kg of fuel drums and 1896 kg of miscellaneous waste.

8.3.3. North Central Region

At their **Indy** project, InZinc Mining Ltd. completed 2616 m of diamond drilling in 17 holes. Drilling tested three new areas with soil geochemistry anomalies (Fox East, Keel, and Echo central area) and their known B-9 zone. Reported results included 3.0 m grading 2.8% Zn, 0.6% Pb, and 3.8 g/t Ag and 3.6 m grading 3.5% Zn, 0.6% Pb, and 6.4 g/t Ag. InZinc also completed 1100 line-km of airborne geophysics.

NorthWest Copper Corp. was active at its **Stardust** project, a high-grade carbonate replacement deposit 7 km from the Kwanika deposit. NorthWest completed 6698.20 m in ten diamond-drill holes to expand the known resource. Highlight results include 44.20 m grading 0.84% Cu, 0.51 g/t Au, and 13.7 g/t Ag and 75.95 m grading 0.55% Cu, 0.50 g/t Au, and 10.9 g/t Ag.

8.3.4. South Central Region

Newport Exploration Ltd. updated the resource estimate for the **Chu Chua** deposit in December 2021. At a 1% Cu cut off the pit-constrained Inferred resource is 2.289 Mt grading 2.11% Cu, 0.30% Zn, 9.99 g/t Ag, and 0.5 g/t Au. They propose infill and step out drilling. Nicola Mining Inc. conducted a 1029 line-km ZTEM survey and a soil geochemical survey at their **New Craigmont** project. They obtained a permit for drilling up to 190 holes, trenching (up to 12 km), and conducting an induced polarization survey. The Craigmont mine was a copper skarn, but current targets include porphyry copper mineralization.

Yellowhead is a feasibility-stage bulk-tonnage copper project, previously in the environmental assessment process as the Harper Creek project. Taseko Mines Limited is focussing on re-entering the environmental assessment process through engineering work and engagement with local communities, including First Nations. The company is also collecting baseline data and developing models that will be used to support environmental assessment and permitting. Taseko announced results of an updated Feasibility Study in 2020, including a new development plan and resource estimate. Proven and Probable reserves now stand at 817 Mt grading 0.28% Cu at a 0.17% cut off. Although porphyry-like in its bulk tonnage and grade, **Yellowhead** is generally considered a marine volcanogenic and syngenetic deposit. It is hosted by metavolcanic and metasedimentary rocks of the Eagle Bay assemblage (Lower Cambrian to Mississippian).

8.3.5. Southeast Region

Stuhini Exploration Ltd. completed an airborne electromagnetic (TDEM) and magnetic survey over its **Big Ledge** property, covering 51 km^2. Known mineralization consists of sphalerite, pyrite, pyrrhotite, galena, hosted in highly folded marble and quartzite within the Shuswap metamorphic complex of the Monashee Group (Proterozoic). Cominco previously explored the property and released an historical resource of 100 Mt grading 4% Zn in 1980.

Assessment work was completed on Rokmaster Resources Corp.'s **Duncan Lake** property. Three holes were wedged off former Cominco hole 97-12, for a total of 681 m drilled. Hole D22-02 intersected 34.75 m of semi-massive pyrite-sphalerite-galena mineralization that graded 7.03 g/t Ag, 1.56% Pb and 1.76% Zn, including an interval of 3.66 m grading 17.28 g/t Ag, 7.29% Pb and 4.94% Zn. The holes intersected similar intervals of lead-zinc-silver mineralization that were seen in hole 97-12.

Wealth Minerals Ltd., completed a helicopter-borne VTEM and magnetic survey across 5456 hectares (12,014 line-km) of its **Kootenay** project, which comprises the Goldsmith, Lardeau and Ledgend claim blocks. At Goldsmith, gold mineralization is in listwanite-altered ultramafic rocks and the area also has nickel-cobalt mineralization associated with ultramafic bodies.

Ground follow up on targets identified in the geophysical survey led to the discovery of a 6 m-wide zone of massive sulphide mineralization in the Ledgend claim block. Sphalerite, hydrozincite, chalcopyrite, bornite and pyrite were visually identified in outcrop. In addition, two outcrops of sulphide mineralization, containing pyrite-pyrrhotite with minor

chalcopyrite and sphalerite, were located on the Goldsmith block. The showings coincide with geophysical anomalies and previous geochemical soil sampling anomalies.

At Rockmaster Resources Corp.'s **Revel Ridge** project, 14 holes (10 underground and 4 surface) totalling 4803 m were completed, primarily testing extension of mineralization at the Main and Yellowjacket zones. Highlights from the Main zone include 4.35 m grading 2.57 g/t Au, 17.11 g/t Ag, 0.66% Pb, and 1.94% Zn and the Yellowjacket zone 4.45 m grading 0.01 g/t Au, 5.32 g/t Ag, 0.06% Pb, and 0.87% Zn. The company also completed mapping, prospecting, and geochemical sampling across the property. A total of 62 channel samples, 91 rock samples, 562 soil samples, and 70 stream sediment samples were taken. In January 2022, the company released an updated mineral resource estimate that included 2021 drilling results. Current to November 2021 the company reported a Measured and Indicated resource of 6.734 Mt grading 50 g/t Ag, 3.69 g/t Au, 1.93% Pb, and 3.68% Zn, an Inferred resource of 5.996 Mt grading 37 g/t Ag, 4.7 g/t Au, 1.19% Pb, and 2.2% Zn.

8.3.6. Southwest Region

Coast Copper Corp. drilled 10 holes totalling 1483.7 m at their **Empire Mine** project in the spring and contracted geological work and an underground survey of the Kingfisher, a past-producing underground magnetite iron mine. Significant drill intersections included Au, Cu, Ag and Co values. Individual underground samples also returned up to 3.37 g/t Au, 0.97% Cu, and over 1% Co. The deposits are Cu-Fe skarns in Vancouver Group and lower Bonanza Group rocks intruded by diorite to gabbro of the Island Plutonic suite.

Sasquatch Resources Corp. reported a lidar survey and geophysical inversion of airborne time domain electromagnetic data and produced a NI-43-101 technical report for their **Mount Sicker** project. Mount Sicker hosts several past-producing VMS deposits hosted by Sicker Group volcanic rocks (Paleozoic) and Mount Hall gabbro (Triassic).

8.4. Selected tungsten projects

8.4.1. South Central Region

At their **Fox Tungsten** project, Happy Creek Minerals Ltd. carried out prospecting and mapping in 2022 and reported results of 2021 drilling, including 6.7 m grading 0.43% WO_3 with 1.2 m grading 1.83% WO_3 in the Nightcrawler zone. This zone is 5-6 km south of the existing resource area.

8.5. Selected Ni-Cu-Co-precious metal projects

8.5.1. Northwest Region

Garibaldi Resources Corp.'s **E&L** property is one of few known high-grade magmatic Ni-Cu-(PGE) massive sulphide projects in the Canadian Cordillera. The property is in the Eskay rift. The deposit contains pyrrhotite, pentlandite, and chalcopyrite in an olivine gabbro stock that intrudes Lower Jurassic sedimentary and volcanic rocks. Garibaldi completed 2200 m of drilling in four holes. Drilling intersected nickel-bearing disseminated and semi-massive sulphide mineralization, extending mineralization at depth by 205 m.

Giga Metals Corp.'s **Turnagain** nickel-cobalt deposit is an Alaskan- type Pt-(Os-Rh-Ir) ultramafic deposit. The deposit has maximum dimensions of 3 by 8.2 km and displays a dunite core surrounded by peripheral peridotites, pyroxene-rich peridotite, wehrlite, and olivine pyroxene. Sulphide mineralization includes pyrrhotite, pentlandite, chalcopyrite, and trace bornite. Giga Metals completed a joint venture transaction with Mitsubishi Corporation to earn 15% equity interest in Turnagain project and form a new company, Hard Creek Nickel Corp. In 2022, Giga Metals released an updated, increased mineral resource assessment with total Measured and Indicated resources of 1.519 Bt at 0.21% Ni and 0.013% Co, and an Inferred resource of 1.222 Bt at 0.206% Ni and 0.012% Co. Giga Metals carried out 415 m of geotechnical drilling, collected geotechnical data and have ongoing engineering and metallurgical studies to advance the project to the pre-feasibility level.

8.5.2. North Central Region

FPX Nickel Corp. reported an updated mineral resource estimate (MRE) for their **Decar Nickel District** project's Baptiste deposit and carried out diamond drilling at the Van target approximately 6 km north of Baptiste. The updated MRE reported a 6% davis tube recoverable (DTR) nickel increase in the Indicated category and a 15% increase in the Inferred category. The report also included DTR cobalt and DTR iron grades. Indicated resources are now reported as Indicated 1815 Mt grading 0.129% DTR Ni, 0.211% total Ni, 0.0035% DTR Co, and 2.40% DTR Fe, and Inferred 339 Mt grading 0.131% DTR Ni, 0.212% total Ni, 0.0037% DTR Co, and 2.55% DTR Fe. At the Van target, 2504 m of drilling was completed in ten holes. Holes were spaced to test along strike from the initial 2021 discovery area. Nickel mineralization was in all holes, and highlight assays included 346.3 m grading 0.133% DTR Ni and 334.5 m grading 0.12% DTR Ni. Drilling expanded mineralization along strike for 1 km and the area of mineralization is now defined as extending for 2 km along strike and 1 km across. Mineralization is open both laterally and at depth.

Surge Battery Metals Inc.'s Surge Nickel project consists of two claim blocks separated by about 40 km, **Surge Nickel (HN4)** and **Surge Nickel (N100)**. At **HN4** Surge carried out geological mapping and sampling (600 soil, 190 rock). In the fall, the company began a planned 900 m of diamond drilling of which 300 m was completed by early November. At **N100**, Surge carried out geological mapping and collected 304 rock samples.

8.5.3. South Central Region

The **Beaver** and **Lynx** projects are on linked properties in the Cache Creek complex; Mg-Ni-Cr-Co mineralization is targeted at the Beaver and Ni mineralization at the Lynx. Inomin Mines Inc. reported results of 2021 drilling at the Beaver and conducted a ground magnetic survey at the Lynx. They expanded both properties. A highlight of drilling included

252 m grading 20.6% Mg, 0.16% Ni, 0.33% Cr at Beaver. They used a sodium peroxide digestion intended to discriminate between sulphide and silicate Ni.

Blackstone Minerals Limited reported 2021 results from its **Gold Bridge** project. They reported 81 m grading 0.21% Ni at the Western Gem prospect and 0.9 m grading 1.45% Cu, 0.56% Ni, and 0.19% Co at the Jewel prospect. They also reported conducting reconnaissance prospecting and geophysical modelling.

Green River Gold Corp. was active at its **Quesnel Nickel** project with portable drilling and remotely piloted aircraft-based magnetic surveys. They report initial Mg, Ni, and Cr results including 79 m grading 20.1% Mg, 0.177% Ni, 0.138% Cr, and 0.01% Co. Metallurgical analyses were in process.

8.6. Selected Nb, REE, Ta, Ti, and graphite projects

8.6.1. North Central Region

Defense Metals Corp.'s **Wicheeda** project is a deformed carbonatite intrusion that hosts light rare earth elements (LREE) in the Kechika Group. The core of the intrusion is a dolomite carbonatite, which transitions outward to a calcite carbonatite. Hydrothermal veins and plugs in the dolomite carbonatite are mineralized with REE flourocarbonates, ancylite (cerium, lanthanum) and monazite (cerium, lanthanum, neodymium). Minor concentrations of niobium are also present. Defense Metals completed 4357 m of diamond drilling in 18 holes, 1153 m of geotechnical drilling as part of a resource delineation and pit geotechnical program (Fig. 6) and conducted flotation tests. Drilling results consistently demonstrated continuity of mineralization and high-grade results including 124 m grading 3.58% total rare earth oxides (TREO) were reported. The deposit consists of three main rock types, dolomite carbonatite (73%), xenolithic carbonatite (24%), and syenite (3%). Flotation tests on dolomite carbonatite and composite samples produced a high-grade mineral concentrate with more than 40% TREO at a recovery.

8.6.2. Southeast Region

Eagle Plains Resources Ltd. completed silt sampling, geological mapping, channel sampling, and mineralogical studies at their **Adamant** project. REE mineralization at Adamant (previously known as Trident Mountain) is in a nepheline syenite and carbonatite dike system. The Late Devonian dikes intrude psammatic and kyanite-bearing pelitic schists of the Horsethief Creek Group (Neoproterozoic). At their **Ice River** project, Eagle Plains Resources Ltd. completed mapping and rock and soil sampling in both areas of known REE mineralization and at previously identified exploration targets. Limestone of the Ottertail Formation (Cambrian) is cut by nepheline syenite of the Ice River complex (Devonian or Carboniferous).

Aben Resources Ltd. carried out property-wide field reconnaissance, geological mapping, soil and rock sampling program at their **Slocan Graphite** project. Graphite mineralization is hosted primarily in carbonate and calc-silicate rocks in the Passmore dome of the Valhalla metamorphic complex. Based on field observations, the company staked additional claims to expand the property.

Lithium Corporation completed a small program of hand trenching and prospecting at their **Yee Haw** project's titanium-REE showings related to lamprophyric dikes previously examined in 2017. The property appears to be underlain by Eocene rocks of the Coryell intrusion, including syenites, quartz-poor monzonites, and granodiorites.

9. The British Columbia Geological Survey

Headquartered in Victoria, the British Columbia Geological Survey (BCGS) is part of the Ministry of Energy, Mines and Low Carbon Innovation. As the steward of geoscience and mineral resource information in the province, the Survey has role in stimulating mineral exploration, attracting investment, informing decisions with technical information, and providing continuous research based on more than a century of corporate memory. The Survey is the primary repository for provincial geoscience knowledge. Maps, reports, and databases are freely available online and are public resources for First Nations and stakeholder groups including local communities, the minerals industry, public safety agencies, environmental scientists, research organizations, and government agencies (Fig. 12).

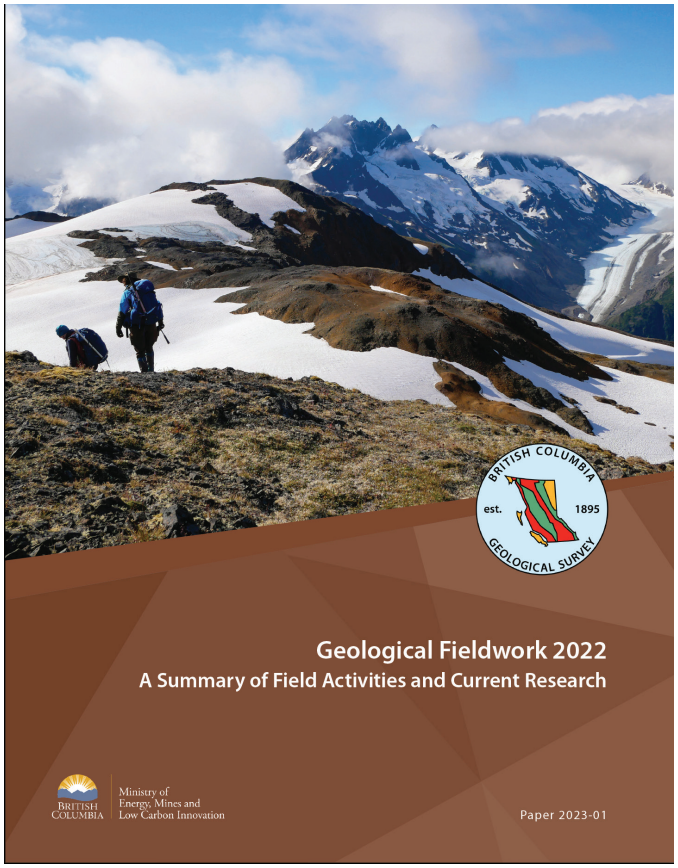

Fig. 12. Geological Fieldwork contains peer-reviewed papers that summarize field activities and current research by the British Columbia Geological Survey.

Current research programs continue to define the geological evolution and natural resources of the province, generating knowledge and data to support land use and resource management decisions that balance economic, environmental, and community interests. A particular focus is providing public geoscience to support the growth of British Columbia as a competitive jurisdiction for mineral exploration, boosted by the recent attention of policy makers and industry to critical minerals. By connecting government with the minerals industry and local communities, the Survey supports the growth of British Columbia as a competitive jurisdiction for mineral exploration.

The Survey enjoyed a more extensive summer field program in 2022 than in the two previous years, thanks to relaxations in pandemic health restrictions and a less dramatic wildfire season. A multi-year program to expand regional bedrock mapping and better understand the stratigraphic, magmatic, structural, metallogenic, and tectonic framework of northern British continued with mapping in the Kitsault River are, near the Galore Creek deposit, and in the Toodoggone region. In the southern part of the province, mapping of the Lardeau Group in the Kaslo area continued, focussed on the age, stratigraphic position, and tectonic significance of the Index Formation, which contains previously unmapped ultramafic layers and pods (now talc and chromian mica schists) with massive sulphide mineralization. Also, a study to investigate the relationships between the Harper Ranch (Devonian-Carboniferous), Slocan Group (Triassic), and Nicola Group (Triassic) and potential affiliations with the Chase Formation (Devonian) started in the Trinity Valley area near past-producing mines. Continuing a project started in 2021, remotely piloted aircraft systems (RPAS, or 'drone') were deployed for geophysical surveys in the Woodjam, Mount Polley, and Highland Valley areas. These surveys demonstrate the practical application of drone-mounted radiometric, aeromagnetic, and lidar instrumentation at a local scale. Data will be used to evaluate geochemical dispersal in glacial tills as an exploration tool to delineate buried deposits in drift-covered areas.

The Government of British Columbia continues to act on climate change. As part of the CleanBC Road Map to 2030, the Survey has been deployed to assess the potential contributions that the province can make supplying critical minerals, the commodities that are essential for diverse modern technologies, electrification, and low-carbon energy. The province is also pursuing a critical mineral strategy that will feature next-generation geoscience directed at better understanding the critical mineral endowment of the province. The Survey has embarked on a multi-year project to assess critical mineral deposits and associated mineral systems across the province and is preparing an inventory of British Columbia's critical minerals, assessing geological settings most favourable to host deposits, and developing exploration techniques that would enhance discovery of new deposits. Modernized mineral potential modelling identifies areas of high prospectivity for key mineral systems. Mineral potential assessment continues as a renewed focus for the Survey, with an emphasis on supporting government, First Nations, and stakeholders in land-use planning and policy development. A pilot study, which produced data-driven mineral potential maps for three mineral systems (VMS, porphyry copper, magmatic nickel), now continues into new areas and will be applied to the Survey's province-wide critical minerals assessment.

The provincial Sample Archive is home to rock, mineral, and geochemical samples collected from across the province by BCGS staff and partner organizations. This collection represents a valuable resource for public geoscience, supporting quality control of published data, re-analysis using modern comprehensive and high-precision analytical methods, and new geoscience initiatives. Following a notice to vacate the historic BCGS storage facility, systematic sorting, rationalizing, and cataloguing of archived samples was undertaken before the move to its newly constructed home in the basement of Survey headquarters at 1810 Blanshard Street in Victoria. Work will continue to make the Archive a modern and reliable resource supporting Cordilleran geoscience with enhanced and accessible digital cataloging.

The Resource Information Section continues to regularly update geoscience databases, including MINFILE, COALFILE, Property File, and the Assessment Reports Indexing System (ARIS). As part of transformation efforts to improve digital capabilities, the Survey is modernizing core information systems to increase efficiency in updating databases and delivering services.

The Survey is an organization in transition. Faced with retirements, positions vacated by staff pursuing other opportunities, and the need to fill newly created positions, the Survey began an aggressive hiring program. Capacity building in areas such as critical minerals, field mapping, digital data delivery, geomatics, and mineral potential modelling will continue in 2023. Similarly, capacity building for enhancing engagement with First Nations before, during, and after future field seasons will remain a priority.

10. Foreign investment initiatives

Opportunities exist for companies to attract foreign investment using government services and staff. The province participates in international investment missions showcasing mineral and coal opportunities. If you are interested in profiling your projects or investment opportunities in upcoming events, connect with the Mineral Development Office in Vancouver for more information.

11. Concluding remarks

The forecasted value of total provincial mining production reached an all-time high of $18.2 billion, and total exploration expenditures reached a record of $740.4 million. High mining production was due to high metallurgical coal prices.

New discoveries, excellent exploration results, and acquisitions and earn ins confirm British Columbia's reputation as a premier jurisdiction for mineral exploration and mine

development opportunities. The province continues to attract investment by large multinational mining companies. In recent years we have seen large investments by Newcrest Mining Limited and Newmont Corporation. This year Freeport-McMoRan Inc., Hochschild Mining PLC, Boliden AB, and Antofagasta PLC have invested in British Columbia projects.

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Exploration and mining in the Northwest Region, British Columbia

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1. Introduction

The Northwest Region has a long history of mining and is prospective for a wide range of commodities including precious metals, base metals, and coal. This region includes about 263,000 km^2 of British Columbia, approximately 25% of the province (Fig. 1). Mineral exploration is concentrated in a loosely defined area in the northern part of the region popularly known as the 'Golden Triangle'; several other projects were underway to the southeast. Increased financing of many projects due to high metal prices in 2021 helped finance 2022 exploration.

Estimates for exploration expenditures, drilling programs, and other metrics were captured in the British Columbia Mineral and Coal Exploration Survey, a joint initiative of the Province of British Columbia Ministry of Energy, Mines and Low Carbon Innovation, the Association for Mineral Exploration in British Columbia, and EY LLP. For the Northwest Region, exploration expenditures were estimated at $450.8 million and exploration drilling was estimated at 661,440 m (Clarke et al., 2023; EY LLP, 2023).

The Northwest Region contains two operating metal mines (**Brucejack** and **Red Chris**). The region also contains five proposed metal mines (**Dome Mountain, Galore Creek, KSM, Kutcho** and **Red Mountain**), and one proposed coal mine (**Tenas**). There is one mine development project (**Premier Gold**). Numerous grass roots, early- to advanced-stage projects were tracked, and selected projects are discussed below. Large industrial projects in the region are driving demand for aggregate, and placer gold mining continues throughout the region. Small-scale jade mining, both in situ and placer, has a long history in the region. However, in 2021 a provincial government Order in Council was announced restricting jade mining until at least May 11, 2023.

Noteworthy acquisitions, earn ins, and proposed mergers were announced in 2022. The most significant was the completed purchase of Pretium Resources Inc. by Newcrest Mining Limited for approximately $3.5 billion. Skeena Resources acquired Quest Ex Copper & Gold Ltd. for $48.6 million and made a concurrent sale of several of the Quest Ex Properties (Heart Peaks, Castle, Moat, Coyote, and North ROK properties) to Newmont Corporation for $26 Million. Another notable deal was the completed acquisition of Fury Gold Mines Ltd.'s wholly owned subsidiary Homestake Resource Corporation by Dolly Varden Silver Corp. Homestakes's adjacent tenure was consolidated with Dolly Varden's, Dolly Varden project to form the new **Kitsault Valley** project.

2. Geological overview

Metallogeny in British Columbia is intimately linked to the tectonic evolution of the Canadian Cordillera. First as an accretionary orogen consisting of allochthonous terranes that were welded to, and deformed with, the western margin of Ancestral North America, primarily in the Jurassic, then as the site of post-accretionary tectonism and magmatism (e.g., Nelson et al., 2013). The Northwest Region provides a transect across the Cordilleran orogen (Fig. 1) with several distinct tectonostratigraphic terranes. From east to west the region is underlain by: 1) autochthonous and parautochthonous carbonate and siliciclastic strata deposited on the flank of Ancestral North America (Laurentia); 2) the Intermontane terranes, including the Slide Mountain terrane (back-arc basin); the Yukon-Tanana terrane (a rifted Devonian pericratonic arc); the Quesnel and Stikine volcanic arc terranes (formed outboard of Ancestral North America starting in the Late Paleozoic and accreted in the Middle Jurassic); and the Cache Creek oceanic terrane, which intervenes between Quesnellia and Stikinia; 3) the Alexander terrane; 4) post-accretionary rocks; and 5) younger cover rocks. The allochthonous terranes initially accreted to each other and to western North America in the Jurassic. Since then, the region has been intruded by post-accretion plutonic suites and covered, in part, by Jurassic and younger syn- and post-accretionary siliciclastic deposits. For details about the geology, metallogeny, and tectonics of the Northwest Region see Nelson et al. (2013) and Colpron and Nelson (2021).

3. Mines and quarries

In 2022, two metal mines operated in the Northwest Region (**Brucejack** and **Red Chris**). One industrial mineral mine and numerous aggregate operations supplied large-scale industrial projects and local townships throughout the region (Fig. 1;

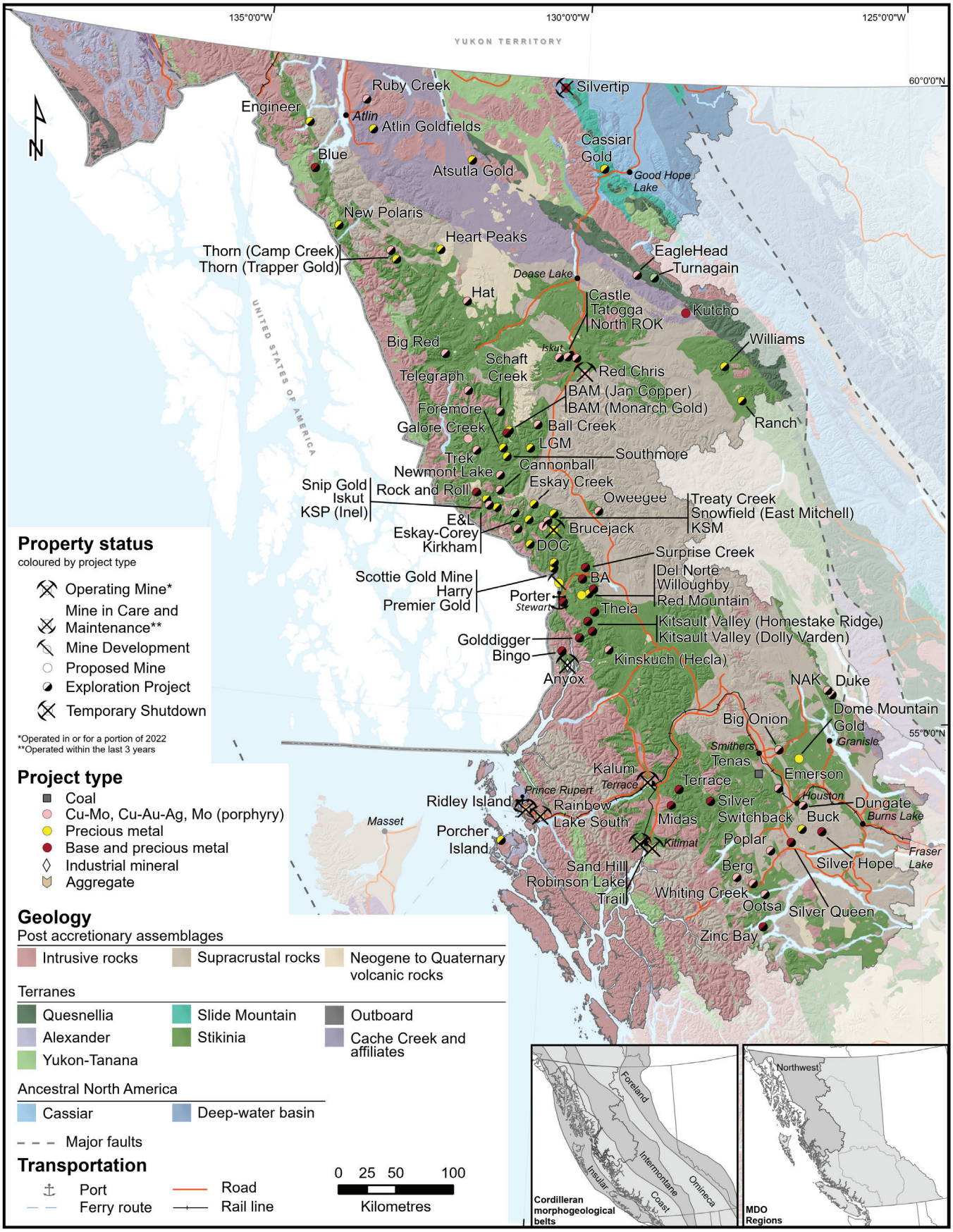

Fig. 1. Mines, proposed mines, and selected exploration projects, Northwest Region, 2022. Terranes after Nelson et al. (2013).

Tables 1, 2). Placer gold mining is ongoing, predominantly in the Atlin and Turnagain areas.

3.1. Metal mines

The **Brucejack** and **Red Chris** mines operated in 2022 (Fig. 1; Table 1).

3.1.1. Brucejack (Newcrest Mining Limited)

The **Brucejack** gold-silver mine operated throughout 2022. Newcrest Mining Limited finalized acquisition of Pretium Resources Inc. for approximately $3.5 billion in March, which included the Brucejack mine. The underground mine is accessed by a 75 km all-season mining road off Highway 37; the last 12 km of road are across the Knipple glacier. A 57 km-long transmission line built specifically for the mine supplies the power. Production for the first three quarters totalled 237,274 oz of Au at a head grade of 7.53 g/t Au and approximately 361,500 oz Ag. Work is in progress to revise ore resources and reserves estimates. As of January 1, 2021, Pretium reported Indicated and Measured mineral resources totalling 22.5 Mt grading 10.0 g/t Au and 67.5 g/t Ag. Proven and Probable mineral reserves were reported as 14.4 Mt grading 8.3 g/t Au and 63.8 g/t Ag.

The Brucejack ore body incorporates the Valley of the Kings (VOK) and West zones. Several other mineralized zones in phyllic-altered rocks extend across an area 5 by 1.5 km (from south to north: Bridge, Waterloo, Shore, SG, Gossan Hill, Golden Marmot, and Hanging Glacier). Interpreted as an intermediate-sulphidation epithermal gold-silver deposit, mineralization is in sheeted veins, breccia veins, and vein stockworks that cut Lower Jurassic metasedimentary and volcanic rocks of the Hazelton Group. Gold and silver at both the VOK and West zones are mainly in electrum and lesser sulphosalts (Fig. 2). Chalcopyrite, galena, and sphalerite are also common. Brownfields exploration at Brucejack totalled 31,800 m in 74 diamond-drill holes. Drilling at the 1080 HBx zone has expanded the VOK deposit, confirming the continuity of high-grade mineralization at depth. Results include 1.0 m grading 3876 g/t Au in a 22 m interval grading 178 g/t Au, and 1.0 m grading 2310 g/t Au in a 70.1 m interval grading 35 g/t Au. Golden Marmot zone results included 1.0 m grading 488 g/t Au in 46.5 m interval grading 16 g/t Au.

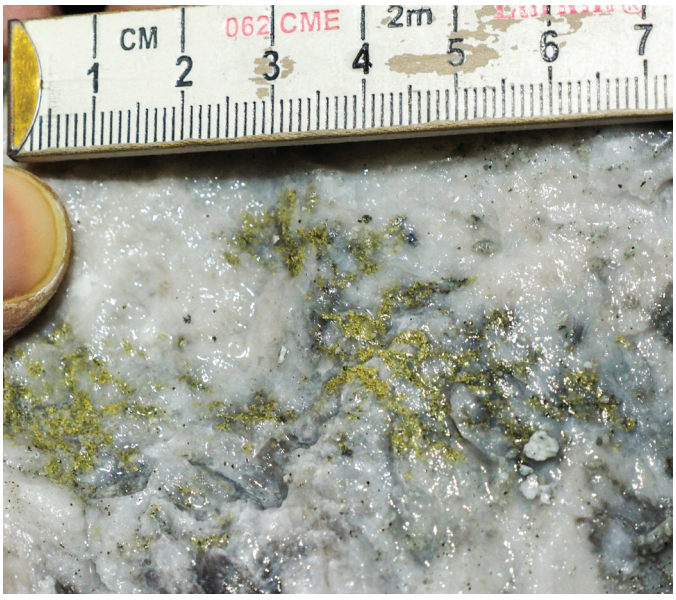

Fig. 2. Electrum mineralization in quartz veins at Brucejack underground mine.

3.1.2. Red Chris (Newcrest Mining Limited 70% and Imperial Metals Ltd. 30%)

The **Red Chris** open-pit copper-gold mine (Fig. 3) is 17 km east-southeast of the community of Iskut and is accessed from Highway 37. The Northwest Transmission Line powers the site. Production to the end of the third quarter of 2022 totalled 49,141 oz Au and 54.5 Mlbs Cu. A new mineral resource estimate was released with 342 Mt of Measured and Indicated, grading 0.3 g/t Au, 0.36% Cu, and 16 Mt of Inferred, grading 0.23 g/t Au, 0.27% Cu. The Red Chris underground block cave resource is reported as 957 Mt of Measured and Indicated, grading 0.46 g/t Au, 0.4% Cu, and 257 Mt of Inferred, grading 0.32 g/t Au, 0.30% Cu.

The deposit is hosted by the Red stock (U-Pb zircon 203.8 Ma; Rees et al., 2015), which intrudes and alters Upper Triassic Stuhini Group rocks, and is faulted against Middle Jurassic rocks of the Bowser Lake Group. Rees et al. (2015) described multiple igneous phases, alteration, and controls on mineralization.

Drilling at East Ridge continued to intersect high-grade mineralization confirming continuity and extension of the resource. Results included 222 m grading 0.44 g/t Au and 0.61% Cu, 334 m grading 0.35 g/t Au, and 0.50% Cu, 334 m grading 0.35 g/t Au, 0.50% Cu, including 56 m grading 0.83 g/t Au, 0.80% Cu, and 22 m grading 1.1 g/t Au and 0.93% Cu. Block cave underground mine operation plans are on track with early works advancing.

Fig. 3. Open pit mine, main zone, Red Chris mine.

3.2. Coal mines

In 2022, no coal mines operated in the Northwest Region; the Tenas project is listed as a proposed mine (Section 6.2.1.).

3.3. Industrial mineral mines and quarries

Tru-Grit Abrasives (Fig. 1; Table 2) is recycling slag at the historic Anyox site, where slag was created from smelting copper. The slag is mined, cleaned, separated, and barged

Table 1. Metal mines, Northwest Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resources	Comments
Brucejack	**Newcrest Mining Limited**	Au, Ag; Epithermal; 104B 193	323,380 oz Au 482,049 oz Ag	P+Pr: 14.4 Mt 8.3 g/t Au, 63.8 g/t Ag	M+I: 22.5 Mt 10.0 g/t Au, 67.5 g/t Ag Inf: 9.4 Mt 10.3 g/t Au, 44.3 g/t Ag (Pretium, 2021)	31,800 m in 74 drill holes in brownfields exploration. Drilling at 1080 HBx zone expanded the VOK deposit. Results include 1.0 m grading 3876 g/t Au within 22 m grading 178 g/t Au, 1.0 m intersection grading 2310 g/t Au within 70.1 m grading 35 g/t Au. Golden Marmot zone results included 1.0 m grading 488 g/t Au within 46.5 m grading 16 g/t Au. Newcrest Mining Limited finalized acquisition of Pretium for $3.5 billion.
Red Chris	**Newcrest Mining Limited 70%**, Imperial Metals Corp. 30%	Cu, Au, Ag; Hybrid calc-alkalic to alkalic porphyry; 104H 005	72.66 Mlbs Cu 65,524 oz Au 215,705 oz Ag	P+Pr: 75.7 Mt 0.45% Cu, 0.39 g/t Au Red Chris Underground P+Pr: 586 Mt 0.45% Cu, 0.55 g/t Au	M+I: 342 Mt 0.36% Cu, 0.3 g/t Au Inf: 16 Mt 0.27% Cu, 0.23 g/t Au Red Chris Underground M+I: 957 Mt 0.4% Cu, 0.46 g/t Au Inf: 257 Mt 0.30% Cu, 0.32 g/t Au (June 2022)	Drilling at East Ridge continued to intersect high-grade mineralization. Results included 222 m grading 0.44 g/t Au and 0.61% Cu, 334 m grading 0.35 g/t Au, 0.50% Cu, 334 m grading 0.35 g/t Au, 0.50% Cu, including 56 m grading 0.83 g/t Au, 0.80% Cu, and 22 m grading 1.1 g/t Au, 0.93% Cu. Block cave mining development on track.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 2. Selected industrial mineral and aggregate mines and quarries, Northwest Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resources	Comments
Anyox	**Tru-Grit Abrasives**	Slag steel	unknown	na	na	Slag is mined, cleaned, and barged for roofing and sand for sand blasting.

Table 2. Continued.

Kalum	**Kalum Quarry Ltd.**	Industrial rock; Crushed rock	unknown	na	na	Drilling, blasting, crushing, production for CN Railway and others.
Rainbow Lake South	**Spring Creek Aggregates Ltd.**	Industrial rock; Crushed rock	unknown	na	na	Drilling, blasting, crushing, production for CN Railway and LNG projects.
Ridley Island	**Terus Construction Ltd.**	Industrial rock; Crushed rock	unknown	na	na	Drilling, blasting, crushing, production for CN Railway and LNG projects.
Robinson Lake Trail	**Haisla & Progressive Ventures Construction Ltd.**	Industrial rock; Crushed rock	unknown	na	na	Drilling, blasting, crushing, production for CN Railway and LNG projects.
Sand Hill	**Terus Construction Ltd.**	Industrial rock; Crushed rock	unknown	na	na	Crushing for CN Railway and LNG projects.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

south for roof shingles and sand blasting; the material is also used to add iron into Portland cement. The operation has been active for more than 30 years and more than 2.5 Mt has been reclaimed from the 4.5 Mt abandoned by smelting operations in the 1930s.

3.4. Aggregate and industrial rock quarries

Numerous aggregate and quarry operations supply sand and gravel and blasted stone for large-scale industrial projects and municipalities throughout the region (Fig. 1; Table 2). Several large aggregate pits operate near Kitimat (**Robinson Lake Trail** and **Sand Hill**) and others operate near Prince Rupert (**Ridley Island** and **Rainbow Lake South**). Owned by the Kitsumkalum First Nation's, **Kalum** is an industrial rock quarry. It is the only pit in the region with a rail spur, and it supplies the Canadian National Railway Company with ballast.

4. Placer operations

Placer gold mining operations have been ongoing for more than a century in the Northwest Region and continue today with a focus in the Atlin and Turnagain areas and, to a lesser extent, north of Dease Lake and near Cassiar. Due to the large number of operations and difficulty in obtaining information, these projects are not tracked.

5. Mine development

When a project acquires the necessary permits including (Mines Act permit from the Ministry of Energy, Mines and Low Carbon Innovation and an Environmental Management Act permit from the Ministry of Environment) and begins mine construction, the mine development stage is reached. The Northwest Region has one mine development project (Fig. 1; Table 3).

5.1. Premier Gold (Ascot Resources Ltd.)

Ascot Resources Ltd. received a Mines Act permit for construction and operation of their **Premier Gold** mine project in 2021. Plant pre-commissioning is on schedule and planned to start in Q4 2023 with first gold pour expected in early 2024.

Ascot carried out 13,685 m of exploration drilling in 91 holes near existing defined resources. Highlight exploration drilling results included 7.90 m grading 62.76 g/t Au, and 27.36 g/t Ag, with a 1.0 m interval grading 488.00 g/t Au, and 181.00 g/t Ag, 10.69 m grading 31.92 g/t Au, and 22.21 g/t Ag with a 1 m interval of 330.00 g/t Au, and 192.00 g/t Ag, 12 m grading 5.09 g/t Au, and 6.60 g/t Ag, with a 7.5 m interval of 7.17 g/t Au, 6.70 g/t Ag.

The Premier underground mine operated between 1918 and 1952 and was one of the largest gold mines in North America, producing 2 Moz Au and 45 Moz Ag. Mineralization is hosted by andesitic tuffs, lapilli tuffs, and andesitic flows of the Unuk River Formation (Hazelton Group) that are cut by early Jurassic calc-alkaline plutons of the Texas Creek suite. The principal gold-bearing mineral is electrum in quartz breccias, veins, and stockworks generally surrounded by an alteration envelope of quartz-sericite-pyrite. Base metal mineralization is also present in quartz veins, as sphalerite and galena associated with argentite and freibergite. The nature of mineralization and metal composition suggest an intermediate-sulphidation epithermal genesis.

Table 3. Mine development projects, Northwest Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resources	Comments
Premier Gold	**Ascot Resources Ltd.**	Au, Ag; Epithermal; 104B 054	P+Pr: 3.63 Mt 5.45 g/t Au, 19.1 g/t Ag	I: 4.14 Mt 8.01 g/t Au, 35.1 g/t Ag Inf: 5.06 Mt 7.25 g/t Au, 28.7 g/t Ag	13,685 m of exploration drilling in 91 holes. Plant pre-commissioning to start in Q4 2023 and first gold pour expected in early 2024. Highlight drilling results of 7.90 m grading 62.76 g/t Au, 27.36 g/t Ag, including 1.0 m of 488.00 g/t Au, 181.00 g/t Ag. 10.69 m grading 31.92 g/t Au, 22.21 g/t Ag including 1 m of 330.00 g/t Au, 192.00 g/t Ag. 12 m grading 5.09 g/t Au, 6.60 g/t Ag, including 7.5 m of 7.17 g/t Au, 6.70 g/t Ag.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

6. Proposed mines or quarries

Proposed mines are feasibility-stage projects for which proponents have begun or completed the environmental certification process (generally for late-stage projects) or have submitted or received approvals for Mines Act permits (for projects below British Columbia Environmental Assessment Act thresholds). The Northwest Region contains five proposed metal mines and one proposed coal mine (Fig. 1; Table 4).

6.1. Proposed metal mines

The Northwest Region contains five proposed metal mines. **Galore Creek**, **KSM** and **Red Mountain** have been granted an Environmental Assessment Certificate and the **Kutcho** project is in the environmental assessment process with the Environmental Assessment Office. The **Dome Mountain Gold** project has both an Environmental Management Act Permit and a Mining Permit, that would allow annual production of up to 75,000 t.

6.1.1. Dome Mountain Gold (Blue Lagoon Resources Inc.)

The **Dome Mountain Gold** project contains a Measured resource (January 2022) of 136,000 t grading 10.32 g/t Au, 57.31 g/t Ag, an Indicated resource of 662,000 t grading 8.15 g/t Au, 41.19 g/t Ag, and an Inferred resource of 85,000 t grading 6.02 g/t Au, 26.13 g/t Ag (with a cut and fill method at 3.5 g/t Au cut off).

Orogenic gold-silver mineralization is mainly in two zones (the Boulder vein and Argillite vein systems) in fragmental volcanic rocks of the Telkwa Formation and basalts and altered volcanic rocks of the Nilkitkwa Formation. In addition to the large vein systems, more than a dozen other mineralized veins occur, mostly striking east-west and northwest-southeast. Veins (0.7 to 4.5 m wide) contain quartz±calcite±ankerite with lesser sulphide mineralization. Alteration is positively correlated with gold and consists of abundant carbonate-sericite-pyrite that envelopes veins. Base metal sulphide mineralization is associated with higher gold and silver grades (Fig. 4).

Blue Lagoon carried out 19,500 m of drilling in 65 holes with drilling in new zones including the Chance structural zone. Highlights from the Chance zone include 0.41 m grading 126 g/t Au and 404 g/t Ag, in 1.73 m interval grading 30.67 g/t Au, and 99.26 g/t Ag, 0.50 m grading 12.2 g/t Au, 100 g/t Ag, in a 7.42 m interval grading 1.98 g/t Au and 15.02 g/t Ag. Boulder vein system results include 0.39 m grading 86.20 g/t Au and 1280 g/t Ag in a 1.09 m interval grading 31.67 g/t Au and 473.0 g/t Ag.

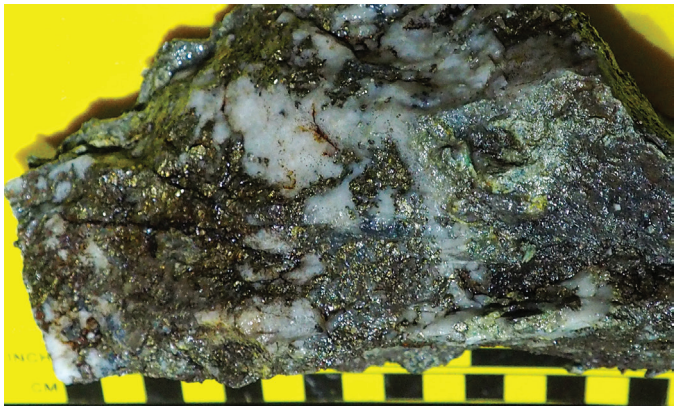

Fig. 4. Semi-massive sulphide mineralization from the Argillite Quartz vein system at Dome Mountain.

6.1.2. Galore Creek (Galore Creek Mining Corporation)

The **Galore Creek** copper-gold project (Fig. 5) is operated by the Galore Creek Mining Corporation and is jointly owned by Teck Resources Limited and Newmont Corporation. The project is 70 km west of the Bob Quinn airstrip adjacent to Highway 37, where a mine access road has been partially constructed.

Table 4. Selected proposed mines, Northwest Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resources	Comments
Dome Mountain	**Blue Lagoon Resources Inc.**	Au, Ag; Au-quartz veins; 093L 276	na	M:136, 000 t 10.32 g/t Au, 57.31 g/t Ag I: 662,000 t 8.15 g/t Au, 41.19 g/t Ag Inf: 85,000 t 6.02 g/t Au, 26.13 g/t Ag (resource based on cut and fill method at 3.5 g/t Au cut off) (January 2022)	19,500 m of drilling in 65 holes. Highlights from the Chance structural zone include 0.41 m grading 126 g/t Au and 404 g/t Ag, within 1.73 m grading 30.67 g/t Au, and 99.26 g/t Ag. 0.50 m 12.2 g/t Au, 100 g/t Ag, within 7.42 m grading 1.98 g/t Au and 15.02 g/t Ag. Boulder vein system results include 1.09 m grading 31.67 g/t Au and 473.0 g/t Ag including 0.39 m grading 86.20 g/t Au and 1280 g/t Ag.
Galore Creek	**Galore Creek Mining Corp. (Teck Resources Ltd. 50%, Newmont Corporation 50%)**	Cu, Au, Ag; Alkaline porphyry; 104G 090	P+Pr: 528 Mt 0.59% Cu, 0.32 g/t Au, 6.02 g/t Ag	M+I: 1.103 Bt 0.47% Cu, 0.26 g/t Au, 4.2 g/t Ag Inf: 198 Mt 0.27% Cu, 0.21 g/t Au, 2.7 g/t Ag	Prospecting, mapping, rock sampling; engineering and environmental studies for prefeasibility study.
KSM	**Seabridge Gold Inc.**	Cu, Au, Ag, Mo; Porphyry Cu±Mo±Au; 104B 191	P+Pr: 2.292 Bt 0.64 g/t Au, 0.14% Cu, 2.2 g/t Ag, 76 g/t Mo	M+I: 5.357 Bt 0.51 g/t Au, 0.16% Cu, 2.4 g/t Ag, 63 g/t Mo Inf: 5.685 Bt 0.36 g/t Au, 0.28% Cu, 2.2 g/t Ag, 33 g/t Mo (Total for KSM deposits)	PFS plan with an open pit only plan of a 33 year mine life limited to the Mitchell, East Mitchell, and Sulphurets deposits. PEA with an underground block cave mining operation supplemented with a small open pit. Plan to operate for 39 years. Construction at KSM. Installation of the Bell-Irving River Bridge completed. 6200 metres of geotechnical drilling.
Kutcho	**Kutcho Copper Corp.**	Cu, Pb, Zn; Noranda/Kuroko VMS; 104I 060	Pr: 17.3 Mt 1.58% Cu, 2.31% Zn, 27.9 g/t Ag, 0.39 g/t Au	M+I: 22.8 Mt 1.52% Cu, 2.18% Zn, 0.39 g/t Au, 28.1 g/t Ag Inf: 12.9 Mt 1.10% Cu, 1.58% Zn, 0.25 g/t Au, 20.0 g/t Ag	Started First Nation and community engagement and consultations, completing economic participation agreements with both the Tahltan and Kaska First Nations.
Red Mountain	**Ascot Resources Ltd.**	Au, Ag; Subvolcanic and precious metal veins; 103P 086	P+Pr: 2.54 Mt 6.52 g/t Au, 20.60 g/t Ag	M+I: 3.19 Mt 7.63 g/t Au, 21.02 g/t Ag Inf: 0.41 Mt 5.32 g/t Au, 7.33 g/t Ag	Environmental baseline monitoring.
Tenas	**Allegiance Coal Ltd. 95%**, Itochu Corp. 5%	PCI; Bituminous coal; 093L 156	P+Pr: 62.9 Mt coal	M+I: 124.6 Mt Inf: 1.2 Mt	In the Environmental Assessment application process with baseline studies ongoing. Proposed production 775-825 kt of steelmaking coal annually with a mine-life of 22 years.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

HCC = hard coking coal; PCI = pulverized coal injection; TC = thermal coal

Fig. 5. The Galore Creek deposit footprint and Uhtlan camp below Mount Scotsimpson; view to the southwest.

The Galore Creek alkalic complex includes multiphase syenite, monzonite, and monzodiorite dikes and stocks that cut volcanic and sedimentary rocks of the Stuhini Group. Mineralization is thought to be at the endmember of the silica-undersaturated porphyry Cu-Au deposit type. At the Central zone (the principal economic resource) initial potassic alteration and gold-copper and sulphide mineralization formed from highly oxidized fluids. Hydrothermal processes during the second period generated calcic alteration and brecciation, followed by potassic alteration and mineralization of bornite and chalcopyrite (Micko et al., 2014).

The Galore Creek project contains a Proven and Probable reserve of 528 Mt grading 0.59% Cu, 0.32 g/t Au, and 6.02 g/t Ag. It has a Measured plus Indicated resource (September 2014) of 1.103 Bt grading 0.47% Cu, 0.26 g/t Au, and 4.2 g/t Ag, with an additional Inferred resource of 198 Mt grading 0.27% Cu, 0.21 g/t Au, and 2.7 g/t Ag. Exploration in 2022 consisted of mapping, prospecting, rock sampling, and excavating test pits. The company focussed on engineering work for an ongoing prefeasibility study and environmental studies.

6.1.3. KSM (Seabridge Gold Inc.)

The **KSM** project consists of five porphyry Cu-Au deposits: Kerr, Sulphurets, Mitchell, East Mitchell (Snowfield) and Iron Cap. It is the largest undeveloped gold project in the world by resources: Measured and Indicated resources (August 2022) of 5.357 Bt grading 0.51 g/t Au, 0.16% Cu, 2.4 g/t Ag, and 63 g/t Mo and an Inferred resource of 5.685 Bt grading 0.36 g/t Au, 0.28% Cu, 2.2 g/t Ag, and 33 g/t Mo. The total KSM Proven and Probable reserves are 2.292 Bt grading 0.64 g/t Au, 0.14% Cu, 2.2 g/t Ag, and 76 g/t Mo.

The company released a prefeasibility study plan with a 33-year mine life. The plan was limited to the Mitchell, East Mitchell, and Sulphurets deposits and considered an open-pit operation only. A Preliminary Economic Assessment was reported with an underground block cave mining operation supplemented with a small open pit. It has a separate plan to operate for 39 years with a peak mill feed production of 170,000 t/d. The Preliminary Economic Assessment and Pre-Feasibility study added substantial resources to Mineral Resource and Reserves compared to previous reports. Geotechnical drilling totalling 6200 m was completed for engineering studies. Seabridge continued its early construction activities at KSM with installation of the Bell-Irving River Bridge. The bridge will provide permanent access to KSM's process plant and tailings facility areas.

KSM is part of the Sulphurets district, which contains abundant porphyry Cu-Au and related systems along a 200 km-long north-northwest trending corridor in northwestern Stikinia (Febbo et al., 2019). Four phases of calc-alkaline porphyry Cu-Au-Mo mineralization at KSM are genetically related to dioritic intrusions of the Sulphurets suite (Febbo et al., 2015), with the deposits distributed along a 12 km-long north-striking linear array. The intrusions cut volcanosedimentary rocks of the Stuhini Group (Upper Triassic) sandstones, conglomerates, and andesitic rocks of the Jack Formation, a basal unit of the Hazelton Group (Upper Triassic to Lower Jurassic). Mineralization is disseminated in sheeted quartz veinlets and clustered quartz-vein stockworks and is open at depth.

6.1.4. Kutcho (Kutcho Copper Corp.)

The **Kutcho** project is accessible by a 100 km-long seasonal gravel road and an airstrip 10 km from the deposit. Kutcho Copper Corp. entered the environmental assessment process late in 2019 and has received a Section 11 Order that defines the scope of the assessment and the Indigenous Nations that the company will engage with. The project is not required to undertake a federal environmental assessment.

The project includes three main zones: Main, Esso, and Sumac. Considered to be a Kuroko-type volcanic massive sulphide deposit, the Cu-Zn-Au-Ag mineralization is in felsic and largely fragmental volcanic rocks in the upper part of the Kutcho Formation, a Permian-Triassic unit of bimodal volcanic rocks. Reported Proven and Probable mineral reserves (July, 2021) are 17.3 Mt grading 1.58% Cu, 2.31% Zn, 27.9 g/t Ag, 0.39 g/t Au. Measured and Indicated mineral resources (inclusive of reserves) are reported as 22.8 Mt grading 1.52% Cu, 2.18% Zn, 28.1 g/t Ag, and 0.39 g/t Au. A Feasibility Study announced favourable economics using US$3.50/lb Cu and US$1.15/lb Zn. The project would have a combined eleven-year open pit and underground mine life.

6.1.5. Red Mountain (Ascot Resources Ltd.)

Red Mountain is a proposed underground mine 18 km east-northeast of Stewart. Discovered in 1989, the project has had extensive exploration since, including 466 diamond-drill holes and more than 2 km of underground development. A provincial and federal Environmental Assessment Certificate was received in 2018. The project was purchased by Ascot Resources from IDM Mining in 2019 for $45 million and a Feasibility Study was completed in 2020. Red Mountain contains Measured and

Indicated resources (April 2020) of 3.19 Mt grading 7.63 g/t Au and 21.02 g/t Ag and an Inferred resource of 405,000 t grading 5.32 g/t Au and 7.33 g/t Ag (reported at 3.0 g/t Au cut off for long hole stoping).

The property is underlain by Upper Triassic-Lower Jurassic metasedimentary and volcanic rocks that were intruded by a multi-phased intermediate intrusive complex. Gold occurs in pyrite-rich brecciated bodies and stockworks along the margins of the intrusive rocks, with low-temperature quartz-sericite-pyrite (phyllic) alteration containing high-grade gold and high-temperature K-feldspar alteration.

Environmental baseline monitoring continued, but minimal exploration work was done on the project as Ascot concentrated on development and construction at the Premier Gold project.

6.2. Proposed coal mines

There is currently one proposed coal mine, Allegiance Coal Limited's **Tenas** project.

6.2.1. Tenas (Allegiance Coal Ltd. 90%, Itochu Corp. 10%)

Telkwa Coal Ltd., a subsidiary of Allegiance Coal Ltd., is proposing to develop the **Tenas** project, which is accessible by road, approximately 17 km south of Smithers. The project entered the provincial environmental assessment process in 2018 and the project proposes to produce approximately 775,000-825,000 t of steelmaking coal annually with a mine-life of 22 years. In 2017, Allegiance Coal Ltd. released a reserve estimate of Proven plus Probable reserves of 62.9 Mt of coal.

At least 14 coal seams have been recognized in the Skeena Group (Lower-Upper Cretaceous) with individual seams up to 7.6 m thick. Currently there are four conceptual pits (from south to north: Tenas, Goathorn West, Goathorn East, and Telkwa North) on approximately 1050 ha. The current environmental assessment application is only for production of metallurgical coal from the Tenas pit. Proven plus Probable reserves for Tenas are 29.1 Mt. In 2022, Telkwa filed their application for an Environmental Assessment Certificate.

7. Selected exploration activities and highlights

Exploration projects are described on a continuum from early to advanced stages. The earliest stages are considered grassroots. Typically, where the collection of rock and soil samples are collected for geochemical analysis, commonly in conjunction with regional geological mapping and geophysical surveys. This preliminary work is used to generate targets to test, usually by drilling. At these early stages, it is a common practice to establish base-line environmental testing and engage with communities and First Nations. As a project progresses, drilling may delineate a mineral resource and establish baseline economics. Later stages of exploration generally coincide with mine evaluation, feasibility, and economic studies, which include environmental, social, engineering, and financial considerations.

7.1. Selected precious metal projects

The Northwest Region has numerous precious metal projects (Fig. 1; Table 5), many of which are in the loosely defined area popularly known as the Golden Triangle.

7.1.1. Atlin Goldfields (Pacific Bay Minerals Ltd.)

Pacific Bay has entered an option agreement with Brixton Metals Corp. to acquire 100% interest in the **Atlin Goldfields** project near Atlin. Pacific Bay can earn-in by paying Brixton $3,225,000 in cash, issuing to Brixton 10,000,000 Pacific Bay common shares, and incurring $7 million in exploration expenditures in seven years, with Brixton retaining a 2% net smelter return. Diamond drilling totalling 250 m was carried out in two holes. Initial results included 3.05 m grading 9.96 g/t Au in the Yellowjacket main zone.

7.1.2. Atsutla Gold (Trailbreaker Resources Ltd.)

At the **Atsutla Gold** project, exploration included geological mapping, prospecting, soil, and rock sampling, which identified a new high-grade mineralized zone referred to as the Snook zone. Rock sample results include 55 g/t Au, 78 g/t Au, and 11.7 g/t Au, 212 g/t Ag, and 0.12% Cu.

7.1.3. BAM (Monarch Gold) (P2 Gold Inc.)

P2 Gold Inc. drilled 95 holes totalling 13,967 m at their BAM project. Most drilling was on or surrounding the Monarch Gold zone. Results included 7.0 m grading 5.63 g/t Au, 80.0 m grading 1.38 g/t Au, with a 12.2 m interval grading 2.43 g/t Au. Work also included an airborne ZTEM geophysical survey.

7.1.4. Buck (Sun Summit Minerals Corp.)

Sun Summit Minerals Corp.'s 15,000 ha **Buck** property is accessible by an all-season road 12 km south of Houston. The property is underlain by andesitic to rhyolitic tuffs, flows, and breccias of the Hazelton Group (Upper Triassic to Lower Jurassic). Sulphides occur in veinlets, disseminations, or coarse fracture fillings, mainly in rhyolitic breccias. Sun Summit carried out 7000 m of drilling in 17 holes targeting high-grade and bulk tonnage gold mineralization. Exploration work included soil sampling, 34 line-km of IP, and a property-wide airborne VTEM survey. The geophysical surveys identified anomalies including a new drill target. Drill results included 1.0 m grading 26.5 g/t Au, and 199 g/t Ag in a 13.2 m interval grading 2.75 g/t Au and 22.99 g/t Ag, 1.9 m grading 3.16 g/t Au and 82.92 g/t Ag in a 10.3 m interval grading 1.11 g/t Au and 25.89 g/t Ag.

7.1.5. Cassiar Gold (Cassiar Gold Corp.)

Cassiar Gold Corp. completed 23,088 m of diamond drilling in 70 holes at their **Cassiar Gold** project. Results from the Taurus deposit included 72.25 m grading 1.09 g/t Au, 22.2 m grading 1.50 g/t Au, including 0.75 m grading 9.61 g/t Au, 10.5 m grading 4.47 g/t Au, 6.4 m grading 11.1 g/t Au, 3.25 m

Table 5. Selected exploration projects, Northwest Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Resources (NI 43-101 compliant unless indicated otherwise)	Comments
Atlin Goldfields	**Pacific Bay Minerals Ltd.**	Au; Precious metal veins; 104N 043	na	250 m of diamond drilling in 2 holes. Initial results included 9.96 g/t Au across 3.05 m in the Yellowjacket main zone.
Atsutla Gold	**Trailbreaker Resources Ltd.**	Au, Ag; Polymetallic veins; 104O 007	na	Exploration included geological mapping, prospecting, and soil and rock sampling. High-grade zones identified. Rock sample results include 53.3 g/t Au, 22.1 g/t Au and 11.7 g/t Au with 212 g/t Ag.
BA	**Mountain Boy Minerals Ltd.**	Ag, Cu, Pb, Zn; Subaqueous hot spring Ag-Au; 104A 180	na	Geological mapping, rock sampling, and SWIR sampling.
Ball Creek	**Orogen Royalties Inc.**	Cu, Mo, Ag; Porphyry Cu±Mo±Au; 104G 072	na	Relogging and sampling of historical drill core, geological mapping, prospecting, and rock sampling (44).
BAM (Jan Copper)	**P2 Gold Inc.**	Cu, Au; Epithermal Au-Ag-Cu	na	Results included 22.0 m grading 0.36% Cu including 2.0 m of 2.15% Cu.
BAM (Monarch Gold)	**P2 Gold Inc.**	Au; Epithermal Au-Ag-Cu	na	95 holes drilled (13,967 m). Results included 7.0 m grading 5.63 g/t Au, 80.0 m grading 1.38 g/t Au, including 12.2 m grading 2.43 g/t Au. Airborne ZTEM survey.
Berg	**Surge Copper Corp.**	Cu, Mo, Ag; Porphyry Cu±Mo±Au; 093E 046	M+I: 610 Mt 0.27% Cu, 0.03% Mo, 3.0 g/t Ag Inf: 28.1 Mt 0.22% Cu, 0.02% Mo, 3.8 g/t Ag	10 holes drilled totalling 4782 m. Prospecting, large IP survey, soil and rock sampling.
Big Onion	**Gama Explorations Inc.**	Cu, Mo, Ag; Porphyry Cu±Mo±Au	na	Geological mapping and soil and rock sampling.
Big Red	**Libero Copper & Gold Corp.**	Cu, Au; Alkalic porphyry; 104G 208	na	2551 m of drilling in 4 holes at the Terry porphyry target. Results included 8.5 m grading 0.84% Cu, 0.07 g/t Au, and 5.69 g/t Ag within 119.5 m grading 0.25% Cu, 0.02 g/t Au, and 2.26 g/t.
Bingo	**Juggernaut Exploration Ltd.**	Au, Cu, Pb, Zn; Polymetallic veins	na	Prospecting, mapping, rock and soil sampling.

Table 5. Continued.

Blue	**Core Assets Corporation**	Ag, Pb, Zn, Cu; Skarn carbonate-replacement; 104M 022	na	7371 m of drilling (21 holes). Prospecting and geological mapping. Results included 1.2 m grading 215 g/t Ag, 9.9% Zn, 8.9% Pb, and 0.36% Cu within 17.19 m grading 28 g/t Ag, 1.2% Zn, 1.4% Pb, and 0.10% Cu.
Buck	**Sun Summit Minerals Corp.**	Au, Ag, Zn, Pb, Cu; Polymetallic veins; 093L 009	na	7000 m of drilling (17 holes). Soil sampling, 34 line-km of IP and a property-wide airborne VTEM survey. Results included 1.0 m grading 26.5 g/t Au, 199 g/t Ag, within 13.2 m grading 2.75 g/t Au, 22.99 g/t Ag. 1.9 m grading 3.16 g/t Au, 82.92 g/t Ag, within 10.3 m grading 1.11 g/t Au, 25.89 g/t Ag.
Cannonball	**Goldrea Resources Corp.**	Cu, Au; Alkalic porphyry; 104B 346	na	Geological mapping, prospecting, and rock sampling.
Cassiar Gold	**Cassiar Gold Corp.**	Au; Precious metal veins; 104P 012, 19	Inf: 21.83 Mt 1.43 g/t Au (0.7 g/t Au cut off)	23,088 m of drilling (70 holes). Results from Taurus included 72.25 m grading 1.09 g/t Au, 22.2 m grading 1.50 g/t Au, including 0.75 m grading 9.61 g/t Au, 10.5 m grading 4.47 g/t Au, and 6.4 m grading 11.1 g/t Au, 3.25 m of 11.1 g/t Au with 0.5 m of 45.30 g/t Au.
Del Norte	**Decade Resources Corp.**	Au, Ag; Polymetallic veins; 103P 301	na	Drill results highlights include 3.6 m grading 5 g/t Au and 660 g/t Ag over and 2.29 m grading 72 g/t Au and 3074 g/t Ag.
DOC	**Hanstone Gold Corp.**	Au, Ag; Intrusion-related, mesothermal; 104B 014	na	Bulk sampling, surface sampling and mapping. Bulk sampling of 18 sample pits including 180 kg from Q17 vein and 130 kg from Q19 vein. Highlight grab sample results 277.9 g/t Au and 935 g/t Ag, 242.7 g/t Au and 1200 g/t Ag, as well as 111.5 g/t Au and 155 g/t Ag.
Duke	**Amarc Resources Ltd.**	Cu, Au; Porphyry Cu±Mo±Au	na	A late fall drilling program. Work is funded by Boliden Mineral Canada Ltd. who may earn up to 60% ownership spending $30 million in four years and an additional 10% spending an additional $60 million in six years

Table 5. Continued.

Dungate	**Edgemont Gold Corp.**	Cu, Au; Porphyry Cu±Mo±Au; 093L 010	na	2046 m of drilling in 5 holes. Results reported included 146 m grading 0.14 g/t Au; including 6 m grading 0.50 g/t Au, and 7 m grading 0.46 g/t Au.
E&L	**Garibaldi Resources Corp.**	Ni, Cu, Co, Pt, Pd, Au; Tholeiitic intrusion hosted; 104B 006	na	2200 m of drilling in 4 holes. Drilling intersected nickel-bearing disseminated and semi-massive sulphide mineralization, extending mineralization along strike 205 m.
Eaglehead	**Northern Fox Copper Inc.**	Cu, Mo, Au; Porphyry Cu±Mo±Au; 104I 008	na	Archeological survey. Sampling of mineralized intervals from historical drill holes to compare with historical metallurgical test work for the Bornite and East mineralized zones. Continued water quality sampling to establish baseline environmental database.
Emerson	**Harvest Gold Corporation**	Cu, Au, Mo; Porphyry Cu±Mo±Au; 093L 032	na	3018 m (7 holes) intersected a feldspar porphyry with quartz stockwork zones that are associated with anomalous Mo and contain quartz-sericite-pyrite-clay alteration.
Engineer	**Engineer Gold Mines Ltd.**	Au, Ag; Epithermal; 104M 014	Inf: 41,000 t 19.0 g/t Au	In permitting process to complete a 10,000 t bulk sample.
Eskay-Corey	**Eskay Mining Corp. 80%** and Kirkland Lake Gold Ltd. 20%	Au, Ag, Cu, Zn; Noranda/Kuroko massive sulphide; 104B 385	na	29,500 m drilling focussed on defining the extent of the TV-Jeff trend. Prospecting, geological mapping and rock sampling of the Scarlet Ridge-Tarn Lake trend. Drilling at three targets (Scarlet Ridge, Scarlet Valley and Tarn Lake. Reconnaissance work at six prospects. Reported drilling results include 30.56 m grading 1.14 g/t Au, 30.58 g/t Ag, including 2.0 m grading 3.36 g/t Au, 109.50 g/t Ag, 43.96 m grading 1.06 g/t Au, 2.24 g/t Ag including 1.59 m 15.44 g/t Au, 28.20 g/t Ag. Some drill results also returned base metal mineralization including Zn, Pb, and Cu.

Table 5. Continued.

Eskay Creek	**Skeena Resources Limited**	Au, Ag, Cu, Pb, Zn; VMS and precious metal veins; 104B 008	M+I: 46.5 Mt 2.6 g/t Au, 63.2 g/t Ag (pit constrained) P+Pr: 29.9 Mt 2.99 g/t Au, 79 g/t Ag	Feasibility study released that highlighted economics with an after-tax internal rate of return of 50.2%. Highlight drill results included 12.12 m grading 47.50 g/t Au, 73.4 g/t Ag and 96.02 m grading 1.13 g/t Au, 6.6 g/t Ag.
Foremore	**Sassy Gold Corp.**	Au, Ag, Pb, Cu; Polymetallic veins	na	3740 m DDH drilling (18 holes) at the Westmore Discovery zone.
Golddigger	**Goliath Resources Limited**	Au, Cu, Pb, Zn; Polymetallic veins; 103P 341	na	26,321 m DDH drilling (86 holes) at Surebet zone. Reported results included 1.0 m grading 115.0 g/t Au, and 28.5 g/t Ag, within 5.0 m grading 23.17 g/t Au, and 6.32 g/t Ag along with base metal mineralization.
Harry	**Teuton Resources Corp.**	Au, Ag; Epithermal; 104B 434	na	IP and magnetic surveys, prospecting, rock sampling, and backpack surface drilling.
Hat	**Doubleview Gold Corp.**	Cu, Au; Alkalic porphyry; 104J 021	na	2200 m of diamond drilling in 5 holes.
Iskut	**Seabridge Gold Inc.**	Cu, Au; Porphyry; 104B 694	na	10,600 m DDH drilling (10 holes). Drilling discovered breccia pipe mineralization beneath the historical Bronson slope skarn deposit. The breccia pipe is mineralized with gold associated with copper mineralization on its margins.
Kitsault Valley (Dolly Varden)	**Dolly Varden Silver Corporation**	Cu, Pb, Zn, Ag, Au; Kuroko VMS with polymetallic veins; 103P 188	I: 3.42 Mt 299.8 g/t Ag Inf: 1.29 Mt 277.0 g/t Ag	Diamond drilling. Highlight results included 1.6 m of 4326 g/t Ag, 4.2% Pb, 1.4% Zn, 1.0 g/t Au, 50.18 m grading 414 g/t Ag, 12.51 m of 442 g/t Ag, 0.26% Pb, and 0.31% Zn including 1.50 m grading 1367 g/t Ag, 0.22% Pb, and 0.17% Zn.

Table 5. Continued.

Kitsault Valley (Homestake Ridge)	**Dolly Varden Silver Corporation**	Au, Ag, Pb, Zn; Polymetallic veins, Marine volcanic association Cu, Pb, Zn, Au, Ag; 103P 188	Dolly Varden I: 3.417 Mt 299.8 g/t Ag Inf: 1.285 Mt 277.0 g/t Ag Homestake Ridge I: 0.736 Mt 7.02 g/t Au, 74.8 g/t Ag Inf: 5.545 Mt 4.58 g/t Au, 100 g/t Ag	Dolly Varden Silver Corporation acquired the Homestake Ridge project from Fury Gold Mines Ltd. and combined it with Dolly Varden Silver project. Drilling, (37,061 m, 108 holes). Results from Homestake Ridge included 3.08 m grading 18.76 g/t Au, 193 g/t Ag, 0.28% Cu. Highlights from Dolly Varden included 50.18 m grading 414 g/t Ag, 0.18% Pb, 0.19% Zn.
Kinskuch (Hecla)	**Hecla Mining Company**	Cu, Ag, Au; Porphyry; 103P 016	na	Geological mapping, prospecting, and rock sampling.
Kirkham	**Metallis Resources Inc.**	Cu, Au; Porphyry; 104B 209	na	DDH drilling (1961 m, 4 holes), intersected chalcopyrite-mineralized porphyry, massive pyrite, and pyrrhotite veins. Highlight results include 205.1 m grading 0.30 g/t Au, 0.084% Cu, including 106.9 m grading 0.34 g/t Au, 0.130% Cu, and 37.7 m grading 0.59 g/t Au, 0.165% Cu.
LGM	**Origen Resources Ltd.**	Au, Ag; Epithermal; 104G 447	na	1583 m of diamond drilling in 5 holes.
Midas	**Juggernaut Exploration Ltd.**	Au, Ag, Cu, Zn; Skarn; 103I 131	na	Rock sampling, prospecting, and geological mapping. A 1 m chip sample with 9.342 g/t Au, 117 g/t Au, 132 g/t Pb, 1.585% Cu, 1.77% Zn.
NAK	**American Eagle Gold Corp.**	Cu, Au; Porphyry Cu±Mo±Au; 093M 010	na	DDH drilling (5600 m, 7 holes). American Eagle Gold Corp. and Orefinders Resources Inc. entered into an option agreement where Orefinders can earn a 20% interest in American Eagle's NAK Copper-Gold Porphyry project. Results included 135 m of 0.96 g/t Au, 0.27% Cu, 1.41 g/t Ag, and 47 ppm Mo within 851 m of 0.22 g/t Au, 0.17% Cu, 0.97 g/t Ag, and 74 ppm Mo. 301 m of 0.5 g/t Au, 0.22% Cu, 1.13 g/t Ag, and 45 ppm Mo within 956 m of 0.19 g/t Au, 0.2% Cu, 1.3 g/t Ag, and 38 ppm Mo.

Table 5. Continued.

New Polaris	**Canagold Resources Ltd.**	Au; Au-quartz veins; 104K 003	I: 1.69 Mt 10.8 g/t Au Inf: 1.48 Mt 10.2 g/t Au	DDH drilling (8000 m, 25 holes). Results included 25.1 m grading 13.6 g/t Au, 4.3 m grading 22.1 g/t Au, 3.0 m grading 22.9 g/t Au, and 4.7 m grading 7.48 g/t Au.
Newmont Lake	**Enduro Metals Corporation**	Au, Cu, Ag; Intrusion-related Au pyrrhotite veins; 104B 126	na	DDH drilling (10,897 m in 25 holes). Initial results from Burgundy Ridge target included 66.8 m grading 0.16 g/t Au, 0.35% Cu, 0.05% Zn, 5.57 g/t Ag, including 6.08 m grading 0.33 g/t Au 1.41% Cu, 0.18% Zn, 19.61 g/t Ag.
Ootsa	**Surge Copper Corp.**	Cu, Au, Ag, Mo; Calc-alkaline porphyry; 093E 105	M+I: 438.6 Mt 0.18% Cu, 0.12 g/t Au, 0.017% Mo, 2.1 g/t Ag Inf: 137.7 Mt 0.15% Cu, 0.1 g/t Au, 0.015% Mo, 2.0 g/t Ag (2022 Resource Estimate update)	An updated mineral resource estimate had a 96% increase in Measured and Indicated resource and additional Inferred resources. DDH drilling (10,518 m, 28 holes) at the Seel Breccia zone and targets surrounding the Seel and Ox deposits. Highlights included 64.6 m grading 0.24% Cu, 0.17 g/t Au, 22.7 g/t Ag, 0.67% Zn and 0.29% Pb, including 18.6 m grading 0.75% Cu, 0.49 g/t Au, 61.2 g/t Ag, 1.17% Zn and 0.58% Pb. Drilling from the Blackjack target intersected 46 m grading 99.4 g/t Ag, including 2.0 m grading 1430.0 g/t Ag, and 2.0 m of 346 g/t Ag. Prospecting, soil and rock sampling.
Oweegee	**Sanatana Resources Inc.**	Cu, Au; Subvolcanic Cu-Ag-Au (As-Sb); 104A 165	na	DDH drilling (3679 m, 12 holes). Copper mineralization observed in 8 holes.
Poplar	**Universal Copper Ltd.**	Cu, Au, Ag, Mo; Porphyry Cu±Mo±Au	I: 152.3 Mt 0.32% Cu, 0.09 g/t Au, 2.58 g/t Ag, 0.009% Mo Inf: 139.3 Mt 0.29% Cu, 0.07 g/t Au, 4.95 g/t Ag, 0.005% Mo	DDH drilling (1983 m, 5 holes). Results included 214.4 m grading 0.401% Cu, 0.001% Mo, 0.15 g/t Au and 1.27 g/t Ag, 162.8 m grading 0.412% Cu, 0.020% Mo, 0.104 g/t Au, 1.14 g/t Ag and 216 m grading 0.353% Cu, 0.14 g/t Au, and 5.91 g/t Ag including 87 m grading 0.531% Cu, 0.36 g/t Au and 20.67 g/t Ag.
Porcher Island	**Imperial Metals Corporation**	Au; Au-quartz veins; 103J 017	na	Soil geochemistry and lidar survey.

Table 5. Continued.

Porter	**Strikepoint Gold Inc.**	Au, Ag, Zn, Pb; Polymetallic veins; 103P 089	na	DDH (520 m, 4 holes), prospecting, rock, and channel sampling. Drilling results included 10.97 m grading 245.6 g/t Ag, 0.08 g/t Au including 2.9 m grading 643.2 g/t Ag, 0.17 g/t Au and 0.51 m grading 2980 g/t Ag and 0.74 g/t Au. Channel sampling results included 2980 g/t Ag and 0.74 g/t Au across 0.51 m, 116 g/t Ag and 3.14 g/t Au across 1.0 m, and 108.55 g/t Ag and 1.13 g/t Au across 2.09 m.
Ranch	**Thesis Gold Inc.**	Au, Ag; Epithermal; 094E 267	na	DDH (36,491 m, >125 holes). Soil (4088) and rock (480) sampling; geological mapping. Drilling results included 39.0 m grading 2.56 g/t Au, 11.99 g/t Ag including 32 m grading 2.97 g/t Au, 13.75 g/t Ag. 25.0 m grading 3.22 g/t Au, 28.78 g/t Ag. 91.00 m grading 1.81 g/t Au, 8.41 g/t Ag, including 35 m grading 2.93 g/t Au, 10.36 g/t Ag.
Rock and Roll	**Etruscus Resources Corp.**	Cu, Zn, Pb, Au; Besshi VMS and intrusion related precious metal veins; 104B 377	Inf: 2.02 Mt 0.71 g/t Au, 87.1 g/t Ag, 0.23% Cu, 0.23% Pb, 0.98% Zn	14.25 line-km IP survey. Geological mapping and sampling (128 soil, 70 rock). Results extended quartz-sericite-pyrite porphyry style alteration 700 m east at the discovery zone. Soil sampling extended the anomalous copper-gold-molybdenum Heather zone by 350 m.
Ruby Creek	**Stuhini Exploration Ltd.**	Mo; Porphyry Cu±Mo±Au; 104N 080	M+I: 369.4 Mt 0.053% Mo Inf: 41.9 Mt 0.047% Mo (2022)	Diamond drilling of 2400 m in 8 holes, mapping, and prospecting. Rock sampling. Highlight samples with 16,030 g/t Ag, 3.6% Pb and 13,250 g/t Ag and 5.02 g/t Au. Release of a Mineral Resource estimate.
Schaft Creek	**Teck Resources Ltd. 75%**, Copper Fox Minerals Inc. 25%	Cu, Mo, Au, Ag; Porphyry Cu±Mo±Au; 104G 015	M+I: 1.346 Bt 0.26% Cu, 0.16 g/t Au, 0.017% Mo, 1.25 g/t Ag Inf: 343.6 Mt 0.17% Cu, 0.11 g/t Au, 0.013% Mo, 0.84 g/t Ag (2021)	Drilling of 4688 m in 11 holes. Environmental baseline data collection was completed.

Table 5. Continued.

Scottie Gold Mine	**Scottie Resources Corp.**	Au, Ag, Cu; Intrusion-related and polymetallic veins; 104B 034	na	DDH drilling (17,176 m) at the Blueberry zone. Results included 16.15 m grading 9.12 g/t Au, 44 g/t Ag. 8.6 m grading 11.3 g/t Au, and 12.5 m grading 13.3 g/t Au. Drilling increased the zone's known depth of mineralization to 360 m and a strike length of 1.2 km.
Silver Hope	**Finlay Minerals Ltd.**	Cu, Ag, Au, Zn, Pb, Mo; Subvolcanic Cu-Ag-Au (As-Sb); 093L 056	na	1671 m of drilling (7 holes) and soil sampling. Expansion of the Silver Hope property by 5785 hectares contiguous to and northwest of the claim block. Drill results released from 2021 fall program highlight 76.57 m grading 0.45% Cu, 14.6g/t Ag, and 0.14g/t Au.
Silver Queen	**Equity Metals Corporation**	Ag, Pb, Zn, Au; Transitional porphyry-epithermal; 093L 002	I: 3.445 Mt 3.5% Zn, 2.13 g/t Au, 189 g/t Ag, 0.24% Cu, 0.6% Pb Inf: 1.9 Mt 2.0% Zn, 0.82 g/t Au, 167 g/t Ag, 0.23% Cu, 0.5% Pb (resources at NSR cut-off of C$100/t)	DDH drilling (5891 m, 16 holes). Highlight results included 1.3 m grading 1998 g/t Ag, 9.3 g/t Au, 0.17% Cu, 2.2% Pb, and 6.8% Zn within a 7.5 m interval grading 539 g/t Ag, 1.8 g/t Au, 0.5% Pb, and 1.8% Zn. Other results included 0.6 m grading 1705 g/t Ag, 2.1 g/t Au, 4.3% Cu, 1.6% Pb, 4.1% Zn, within 1.2 m grading 802 g/t Ag, 1.0 g/t Au, 2.1% Cu, 0.8% Zn, 2.0% Zn. Released an updated Mineral Resource Estimate.
Silver Switchback	**Norseman Silver Inc.**	Cu, Ag; Cu±Ag quartz veins; 093M 195	na	800 m of diamond drilling in 4 holes.
Silvertip	**Coeur Mining Inc.**	Ag, Pb, Zn; Manto carbonate-replacement; 104O 038	M+I: 2.817 Mt 321.3 g/t Ag, 5.55% Pb, 10.46% Zn Inf: 2.35 Mt 235.45 g/t Ag, 4.27% Pb, 8.98% Zn	61,000 m of drilling in 330 holes. More manto mineralization was discovered at the Camp Creek west zone. Drilling intersected chimney/feeder structures beneath the Discovery zone manto. Highlight results included 12 m grading 459.6 g/t Ag, 15.1% Zn, and 8.7% Pb, and 6.2 m grading 778.3 g/t Ag, 13.6% Zn, and 14.7% Pb.

Table 5. Continued.

Snip Gold	**Hochschild Mining PLC**	Au, Ag; Intrusion-related Au pyrrhotite veins; 104B 250	I: 2.50 Mt 10.4 g/t Au Inf: 2.184 Mt 10.3 g/t Au	Announced an updated mineral resource estimate in March. Drilled 10,377 m in 69 holes. Work included metallurgical work, processing plant designs and resource model updates in coordination with the ongoing Pre-feasibility study. Highlight results include 4.6 m grading 35 g/t Au and 11 g/t Ag, 8.0 m grading 20.2 g/t Au and 10 g/t Ag.
Snowfield (East Mitchell)	**Seabridge Gold Inc.**	Cu, Au, Ag, Mo; Porphyry Cu±Mo±Au; 104B 179	M+I: 1.76 Bt 0.55 g/t Au, 1.8 g/t Ag, 0.15% Cu, 85 ppm Mo Inf: 281 Mt 0.37 g/t Au, 2.3 g/t Ag, 0.07% Cu, 61 ppm Mo (2022 Seabridge Technical Report)	Early-stage construction continues for the KSM project (East Mitchell), including new access roads, new year-round camps, a bridge over the Bell-Irving River, a fish habitat offset program.
Southmore	**Mountain Boy Minerals Ltd**	Ag, Pb, Zn; Subaqueous hot spring Ag-Au	na	Ground truthing geophysical anomalies, soil and rock sampling; geological mapping.
Tatogga (Saddle North)	**Newmont Corporation**	Cu, Au, Ag; Porphyry Cu-Au (alkalic); 104G 432	I: 298 Mt 0.28% Cu, 0.36 g/t Au, 0.8 g/t Ag Inf: 543 Mt 0.25% Cu, 0.31 g/t Au, 0.7 g/t Ag	Newmont worked with the Tahltan Heritage Resources Environmental Assessment Team on a Tahltan land use study and with Tahltan Environmental Management to begin environmental studies.
Telegraph	**Mountain Boy Minerals Ltd.**	Cu; Porphyry Cu-Au (alkalic)	na	19.6 km of IP, geological mapping, prospecting, and rock sampling. Rock sample results included 19.7% Cu. New gossanous zone named Strata Gossan returned samples with 7.7% Cu. New ground was staked based on alteration mapping.
Terrace	**Decade Resources Ltd.**	Au, Ag, Pb; Polymetallic veins; 103I 107	na	1000 m of drilling in 4 holes. Rock sampling and prospecting. Drilling reported narrow zones of quartz veins containing chalcopyrite. Molybdenum mineralization was noted in one hole.
Theia	**Mountain Boy Minerals Ltd.**	Ag, Au, Pb, Cu, Zn; Polymetallic veins	na	Prospecting, rock sampling and sampling for geochronology.

Table 5. Continued.

Thorn (Camp Creek)	**Brixton Metals Corporation**	Cu, Ag, Au; Porphyry Cu±Mo±Au; 104K 174	na	Diamond drilling. Results included 967.2 m grading 0.25% Cu, 0.09 g/t Au, 2.39 g/t Ag, and 186 ppm Mo, with a 365 m interval grading 0.45% Cu, 0.13 g/t Au, 3.81 g/t Ag, and 328 ppm Mo, with another 40 m interval grading 0.67% Cu, 0.20 g/t Au, 5.16 g/t Ag, and 424 ppm Mo.
Thorn (Trapper Gold)	**Brixton Metals Corporation**	Au; Epithermal; 104K 175	na	DDH drilling (3924 m). Soil and rock sampling. Results include one hole with 64 m grading 5.74 g/t Au, 9.11 g/t Ag with a 52.0 m interval grading 6.97 g/t Au 10.83 g/t Ag, and 28.95 m within grading 10.36 g/t Au, 16.21 g/t Ag with 7 m interval grading 19.0 g/t Au, 23.11 g/t Ag.
Treaty Creek	**Tudor Gold Corp. 60%**, Teuton Resources Corp. 20%, American Creek Resources Ltd. 20%	Cu, Au; Porphyry; 104A 004	M+I: 815.7 Mt 0.66 g/t Au, 3.6 g/t Ag, 0.06% Cu Inf: 311.7 Mt 0.72 g/t Au, 4.0 g/t Ag, 0.05% Cu (2021 Tudor Gold Technical Report)	DDH (43,318 m, 55 holes). Results included 1497.5 m grading 0.76 g/t Au, 3.70 g/t Ag, and 0.27% Cu, 180 m grading 1.97 g/t Au, 3.72 g/t Ag, and 0.01% Cu including 57 m grading 4.30 g/t Au, 5.91 g/t Ag and 15 m of 7.76 g/t Au, 6.48 g/t Ag.
Trek	**Romios Gold Resources Inc.**	Cu, Au; Porphyry Cu-Au (alkalic); 104G 022	na	Mapping, prospecting, and rock sampling. A new discovery of skarn mineralization with copper and tungsten across an area 275 by 80 m. Several chip and grab samples collected returned tungsten assays from 0.04 to 0.68% WO_3, average 0.24% WO_3, and copper values from 0.05 to 0.98% Cu, average 0.27% Cu.
Turnagain	**Giga Metals Corporation**	Ni, Co, Pt, Cu, Mo; Alaskan-type, magmatic; 104I 014	M+I: 1.519 Bt 0.21% Ni, 0.013% Co Inf: 1.222 Bt 0.206% Ni, 0.012% Co	415 m of geotechnical drilling. Geotechnical data collection; engineering and metallurgical studies. Released an updated, increased mineral resource assessment. Giga Metals completed a joint venture transaction with Mitsubishi Corporation to earn 15% equity interest in Turnagain project and form a new company, Hard Creek Nickel Corp.

Table 5. Continued.

Whiting Creek	**Huckleberry Mines Ltd.**	Cu, Mo, Au; Porphyry Cu±Mo±Au; 093E 050	na	Property-wide mapping and sampling program, airborne ZTEM geophysical survey and a lidar survey.
Williams	**CopAur Minerals Inc.**	Au; Epithermal; 094E 028	na	DDH (1428 m, 4 holes). Results included 50 m grading 2.2 g/t Au, 0.13% Cu and 10.5 m grading 4.16 g/t Au, 0.09% Cu.
Willoughby	**Strikepoint Gold Inc.**	Au, Ag, Zn, Pb; Precious and polymetallic veins; 103P 006	na	1500 m of diamond drilling. Grab sampling, mapping. Drill results included 9.02 m grading 1.11 g/t Au, 20.96 g/t Ag. 4.20 m grading 2.48 g/t Au, 4.00 g/t Ag including 11.45 g/t Au and 13.70 g/t Ag over 0.85 m.
Zinc Bay	**Gardsmen Resources Inc.**	Cu, Au, Ag, Zn; Precious and polymetallic veins; 093E 034	na	IP survey, soil sampling, prospecting, and geological mapping.

M = Measured; I = Indicated; Inf = Inferred

grading 11.1 g/t Au including 0.5 m of 45.30 g/t Au. Results also included several shorter (<0.5 m) intervals of high-grade gold mineralization.

7.1.6. DOC (Hanstone Gold Corp.)

The **DOC** project is underlain by deformed and metamorphosed Upper Triassic volcanic rocks of the Stuhini Group that are locally cut by coeval intrusions of the Bronson stock. The most significant gold and silver grades are in sulphide-bearing quartz veins. Exploration in 2022 included geological mapping, prospecting, rock sampling, and bulk sampling of 18 sample pits including 180 kg from the Q17 vein and 130 kg from the Q19 vein. Highlight grab sample results reported include 277.9 g/t Au, and 935 g/t Ag, 242.7 g/t Au, and 1200 g/t Ag, as well as 111.5 g/t Au and 155 g/t Ag.

7.1.7. Engineer Gold Mine (Engineer Gold Mines Ltd.)

Engineer Gold Mines Ltd.'s **Engineer Gold** Mine project is centered on the historic Engineer Gold mine 32 km southwest of Atlin. Engineer is currently in the application process to complete a 10,000 t bulk sample.

7.1.8. Eskay-Corey (Eskay Mining Corp.)

At their **Eskay-Corey** property, Eskay Mining completed a 29,500 m drill program that started in late summer. Drilling focussed on defining the extent of the corridor between the TV and Jeff showings. Eskay Mining also conducted prospecting, geological mapping and rock sampling of the Scarlet Ridge-Tarn Lake trend, and conducted drilling at three previously undrilled targets, Scarlet Ridge, Scarlet Valley, and Tarn Lake. Prospecting and reconnaissance level work was conducted at six mineral prospects for future potential drill targets. Drill results south of the TV showing reported 30.56 m grading 1.14 g/t Au, 30.58 g/t Ag including 2.0 m grading 3.36 g/t Au, and 109.50 g/t Ag. North of the Jeff showing drill results returned 43.96 m grading 1.06 g/t Au, 2.24 g/t Ag including 1.59 m of 15.44 g/t Au, and 28.20 g/t Ag. Some drill results from the area also returned base metal mineralization including Zn, Pb, and Cu.

7.1.9. Eskay Creek (Skeena Resources Ltd.)

Eskay Creek has been the focus of considerable exploration since 1932. In 1988, the news of drilling intersecting stratiform stibnite-realgar rich mineralization (Roth, 1989) in 21A zone sparked a staking rush throughout the region. An underground mine operated from 1994 to 2008 and produced 3.3 Moz of Au and 160 Moz of Ag (average grades of 45 g/t Au and 2224 g/t Ag).

A feasibility study was released that highlighted robust economics with an after-tax internal rate of return (IRR) of 50.2% and a 1-year payback period on pre-production capital expenditures. The study reported Proven and Probable open-pit Mineral Reserves of 29.9 Mt containing 2.87 Moz Au and 75.5 Moz Ag with an after-tax net present value of C$1.41 billion at a base case of $1700USD gold and $19USD silver. Life of mine production of 2.4 million oz Au and 66.7 million oz Ag at a minimum of 9 years. Highlight drill results included 12.12 m grading 47.50 g/t Au, 73.4 g/t Ag. 96.02 m grading 1.13 g/t Au, 6.6 g/t Ag.

7.1.10. Foremore (Sassy Gold Corp.)

Sassy Gold Corp. carried out 3740 m of diamond drilling in 18 holes at the Westmore Discovery zone of their **Foremore** property. Drilling was mainly designed to target strike and depth extension of the high-grade mineralization at the 4-amigo vein structures.

7.1.11. Harry (Teuton Resources Corp.)

The **Harry** gold-silver project is hosted by sericite altered Lower Jurassic felsic volcanic breccia and andesite tuff, with interbedded siltstone, argillite, and conglomerate of the Unuk River Formation (Hazelton Group). The property lies between the historic Scottie Gold and Premier mines. Arsenopyrite, galena, and sphalerite are in quartz floods and may be epithermal. Exploration at Harry consisted of IP and magnetic surveys, prospecting, rock sampling and backpack surface drilling.

7.1.12. LGM (Origen Resources Ltd.)

Origen's **LGM** property totals 26,771 ha and has multiple target areas. In 2022, 1583 m of diamond drilling was completed in five holes. The focus of drilling was on coincident geochemical, geophysical and alteration anomalies including the Hidden Gold zone.

7.1.13. New Polaris (Canagold Resources Ltd.)

Canagold Resources Ltd. completed 8000 m of diamond drilling in 25 holes at their **New Polaris** gold project. Drilling was designed to upgrade Inferred resources to Indicated and target gold mineralization down plunge. Results included 25.1 m grading 13.6 g/t Au, 4.3 m grading 22.1 g/t Au, 3.0 m grading 22.9 g/t Au, and 4.7 m grading 7.48 g/t Au. The company announced commencement of a Feasibility Study in October that is expected to take approximately 18 months to complete.

7.1.14. Porcher Island (Imperial Metals Corporation.)

Imperial Metals carried out soil sampling and a lidar survey at their **Porcher Island** project.

7.1.15. Porter (Strikepoint Gold Inc.)

Strikepoint Gold's **Porter** project hosts two past-producing silver-rich vein systems about 2 km apart: Silverado and Prosperity/Porter Idaho. Strikepoint carried out 520 m of diamond drilling in four holes, prospecting, rock, and channel sampling. Drilling focussed on testing extensions to high-grade silver mineralization outlined in historic resource estimates and exploration for intrusive-related Au-Ag mineralization. Drilling results included 10.97 m grading 245.6 g/t Ag, and 0.08 g/t Au including 2.9 m grading 643.2 g/t Ag, and 0.17 g/t Au and 0.51 m grading 2980 g/t Ag and 0.74 g/t Au. Channel sampling results included 2980 g/t Ag and 0.74 g/t Au across 0.51 m, 116 g/t Ag and 3.14 g/t Au across 1.0 m, and 108.55 g/t Ag and 1.13 g/t Au across 2.09 m.

7.1.16. Ranch (Thesis Gold Inc.)

Thesis completed 36,491m of diamond drilling in more than 125 holes at their **Ranch** epithermal Au-Ag project. Other exploration included 4088 soil samples, 480 rocks samples, and geological mapping, focussed on new exploration targets: Alberts Hump, Steve, and Patti. Drilling results included 39.0 m grading 2.56 g/t Au and 11.99 g/t Ag, including 32 m grading 2.97 g/t Au and 13.75 g/t Ag, 25.0 m grading 3.22 g/t Au and 28.78 g/t Ag, and 91.00 m grading 1.81 g/t Au and 8.41 g/t Ag, including 35 m grading 2.93 g/t Au and 10.36 g/t Ag.

7.1.17. Ruby Creek (Stuhini Exploration Ltd.)

Stuhini Exploration Ltd. Carried out 2400 m of diamond drilling in eight holes, mapping, prospecting, and rock sampling at their **Ruby Creek** project. A new Mineral Resource estimate was released (March 2022) with a combined Measured and Indicated resource of 369.4 Mt grading 0.053% Mo and an Inferred resource of 41.9 Mt grading 0.047% Mo. Highlight rock samples returned assays of 16,030 g/t Ag, 3.6% Pb, and 13,250 g/t Ag, and 5.02 g/t Au.

7.1.18. Scottie Gold Mine (Scottie Resources Corp.)

The **Scottie Gold** Mine project, 35 km north of Stewart, is centred on the past-producing Scottie Gold mine, which operated from 1981 to 1985, producing 95,426 oz of Au at 16.2 g/t Au. The property is cross-cut by north-striking and locally abundant east-striking faults. Stanley and Nelson (2022) recognized Stuhini Group and a Hazelton Group stratigraphy in the area that is comparable to that in the McTagg anticlinorium. Gold occurs in steeply dipping pyrrhotite-pyrite-quartz-calcite veins. Scottie Resources carried out 17,176 m of diamond drilling and geophysical surveys at the Blueberry zone. Results included 16.15 m grading 9.12 g/t Au, 44 g/t Ag, 8.6 m grading 11.3 g/t Au, and 12.5 m grading 13.3 g/t Au. Drill results have increased the Blueberry zone's known depth of mineralization to a total of 360 m and strike length of 1.2 km.

7.1.19. Silver Hope (Finlay Minerals Ltd.)

The **Silver Hope** project's mineral tenure surrounds the past-producing Equity Silver mine, which operated from 1980 to 1994, processing 33.8 Mt grading 0.4% Cu, 64.9 g/t Ag, and 0.46 g/t Au. Finlay completed 1671 m of drilling in seven holes, soil sampling, prospecting, and expanded the Silver Hope property by adding 5785 hectares of claims contiguous to and northwest of their previous mineral tenure. Results released from 2021 fall drilling included 76.57 m grading 0.45% Cu, 14.6 g/t Ag, and 0.14 g/t Au.

7.1.20. Snip Gold (Hochschild Mining PLC)

The **Snip** deposit is a past-producing underground mine with renewed interest. The mine produced at an average grade of 27.5 g/t Au between 1991 and 1999. The deposit is a southwest-dipping vein system in Upper Triassic metasedimentary rocks of the Stuhini Group that are cut by Early Jurassic stocks and plutons. In March, Hochschild released an updated Mineral

Resource Estimate with an Indicated resource of 2.50 Mt grading 10.4 g/t Au and an Inferred resource of 2.184 Mt grading 10.3 g/t Au. Hochschild Mining is exercising its right to take over as operator for Snip, earning a 60% interest from Skeena Resources Ltd by spending approximately $100 million during the option period with a yearly minimum of $7.5 million in exploration or development expenditures on Snip. High-grade intersections from drilling included 4.6 m grading 35 g/t Au, 11 g/t Ag, and 8.0 m grading 20.2 g/t Au, 10 g/t Ag.

7.1.21. Thorn (Trapper Gold) (Brixton Metals Corporation)

Brixton completed 18,090 m of diamond drilling at their **Thorn** project between both the Camp Creek and **Trapper Gold** targets. Soil and rock sampling programs were also carried out. Results at the Trapper Gold epithermal target include one drill hole with 64 m grading 5.74 g/t Au, 9.11 g/t Ag, including a 28.95 m interval grading 10.36 g/t Au, 16.21 g/t Ag and a 7 m interval grading 19.0 g/t Au, 23.11 g/t Ag. Another hole assayed 262 m grading 1.04 g/t Au including 75.49 m grading 2.35 g/t Au including 6.93 m grading 7.16 g/t Au.

7.1.22. Treaty Creek (Tudor Gold Corp. 60%, Teuton Resources Corp. 20%, American Creek Resources Ltd. 20%)

Tudor Gold Corp.'s **Treaty Creek** project is defined by its bulk tonnage resource in Jurassic volcanic and intrusive rocks that also host the KSM deposits 5 km to the southwest. The project has 815.7 Mt of Measured and Indicated resource (March 2021) grading 0.66 g/t Au, 3.6 g/t Ag, and 0.06% Cu, and 311.7 Mt of Inferred grading 0.72 g/t Au, 4.0 g/t Ag, and 0.05% Cu. For 2022, 43,318 m of diamond drilling in 55 holes was completed. Results included 1497.5 m grading 0.76 g/t Au, 3.70 g/t Ag, and 0.27% Cu, 180 m grading 1.97 g/t Au, 3.72 g/t Ag, and 0.01% Cu with intervals of 57 m grading 4.30 g/t Au and 5.91 g/t Ag and 15 m of 7.76 g/t Au, and 6.48 g/t Ag. Figure 6 shows an example of high-grade core.

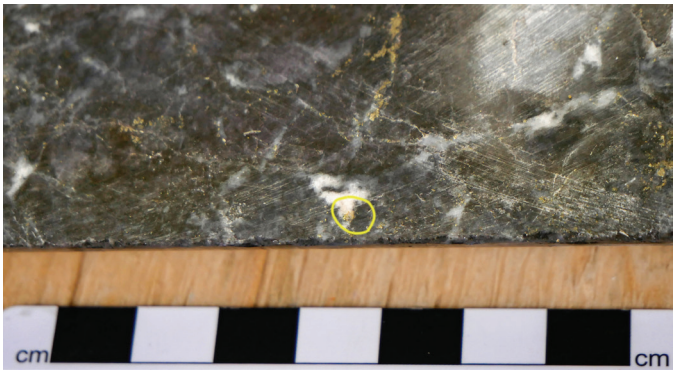

Fig. 6. Visible gold (circled) and chalcopyrite in quartz veinlets, Treaty Creek project.

7.1.23. Williams (CopAur Minerals Inc.)

Exploration at CopAur's **Williams** copper-gold project previously identified the T-Bill Gold zone and the GIC copper gold zone. In 2022, 1428 m of diamond drilling was completed in four holes. Drilling targeted untested soil geochemical and IP chargeability anomalies and discovered a new gold discovery to the west of the GIC porphyry target. Drilling results from this new discovery included 50 m grading 2.2 g/t Au, 0.13% Cu and 10.5 m grading 4.16 g/t Au, 0.09% Cu.

7.1.24. Willoughby (Strikepoint Gold Inc.)

The **Willoughby** project is 25 km northeast of Stewart. Between 1989 and 1996, more than 12,000 m of drilling was completed, and 110 m of underground workings excavated. Strikepoint completed 1500 m of diamond drilling. Grab sampling, and geological mapping. Drill results included 9.02 m grading 1.11 g/t Au and 20.96 g/t Ag and 4.20 m grading 2.48 g/t Au and 4.00 g/t Ag including a 0.85 m interval grading 11.45 g/t Au and 13.70 g/t Ag.

7.2. Selected porphyry projects

The Northwest Region hosts many porphyry deposits (Fig. 1; Table 5) and is highly prospective for Au-Cu-Mo bulk-tonnage mineralization related to Triassic-Jurassic island arc assembly and post-accretionary intrusive complexes.

7.2.1. Ball Creek (Orogen Royalties Inc.)

The **Ball Creek** property contains seven porphyry gold-copper targets and four epithermal gold-silver targets. The Ball Creek Main zone is a 1200 by 400 m porphyry system that has returned drill intersections including 455 m grading 0.28 g/t Au and 0.11% Cu, and 231 m grading 0.54g/t Au and 0.21% Cu. Exploration for 2022 consisted of relogging and sampling historical drill core from the Main, Mess, and More zones, geological mapping, prospecting, and rock sampling.

7.2.2. Berg (Surge Copper Corp.)

Surge has an option to earn a 70% interest in the **Berg** project from Centerra Gold Inc. The Berg deposit has a resource estimate (August 2022) with a Measured and Indicated resource of 610 Mt grading 0.27% Cu, 0.03% Mo, and 3.0 g/t Ag, and an Inferred resource of 28.1 Mt grading 0.22% Cu, 0.02% Mo, and 3.8 g/t Ag. Fall exploration included ten holes totalling 4782 m of diamond drilling, prospecting, a large IP survey, and soil and rock sampling. Figure 7 illustrates a high-grade intersection

Fig. 7. Drill core showing chalcopyrite, pyrite, and molybdenum in veinlets within a porphyry unit, Bergette target. Photo courtesy of Surge Copper.

at Berg. Surge announced in late fall commencement of a Preliminary Economic Assessment on the Berg deposit.

7.2.3. Big Onion (Gama Explorations Inc.)

The **Big Onion** project is a porphyry Cu-Mo target area 16 km east of Smithers. Exploration included soil and rock sampling, and geological mapping.

7.2.4. Big Red (Libero Copper & Gold Corporation)

At the **Big Red** project, porphyry Cu-Au-Mo, epithermal Au-Ag, and VMS-style mineralization have been recognized. Libero carried out a 2551 m, four-hole drill program. The drilling tested for a hydrothermal source immediately southeast of the Terry porphyry mineralization. Early winter reported results included 8.5 m grading 0.84% Cu, 0.07 g/t Au, and 5.69 g/t Ag within 119.5 m grading 0.25% Cu, 0.02 g/t Au, and 2.26 g/t.

7.2.5. Cannonball (Goldrea Resources Corp.)

Goldrea carried out geological mapping, prospecting, rock sampling and expanded the mineral tenure at the **Cannonball** project for 2022. The company acquired an additional 70.9 hectares of tenure on the west side of the property.

7.2.6. Duke (Amarc Resources Ltd.)

Amarc Resources Ltd.'s **Duke** project straddles the Northwest and North Central regions. Amarc began late fall drilling at the Duke deposit. Work is funded by Boliden Mineral Canada Ltd. who may earn up to 60% ownership of the project by spending $30 million in four years and an additional 10% by spending a further $60 million in six years.

7.2.7. Dungate (Edgemont Gold Corp.)

Edgemont Gold carried out 2046 m of drilling in five holes at the **Dungate** project. Edgemont reported 146 m grading 0.14 g/t Au, including intervals of 6 m grading 0.50 g/t Au and 7 m grading 0.46 g/t Au.

7.2.8. Eaglehead (Northern Fox Copper Inc.)

Northern Fox's **Eaglehead** project includes a calc-alkalic copper porphyry deposit in Jurassic rocks of Quesnel terrane. Northern Fox carried out archeological surveying and sampled mineralized intervals from historical drill holes to complement historical metallurgical test work at the Bornite and East mineralized zones. The company also continued with water quality sampling to establish environmental baseline values.

7.2.9. Emerson (Harvest Gold Corporation)

In the spring of 2022, Harvest Gold Corporation completed 3018 m of diamond drilling in seven holes at their **Emerson** project. The feldspar porphyry drilled was reported to host quartz stockwork zones with anomalous Mo and quartz-sericite-pyrite-clay alteration.

7.2.10. Hat (Doubleview Gold Corp.)

Doubleview reported their **Hat** project as a gold-rich copper porphyry with additional critical metals including cobalt, silver, palladium, and scandium. This year, 2200 m were drilled in five holes. Drilling results included 907.8 m grading 0.31 g/t Ag, 0.12 g/t Au, 4.74 g/t Co, 0.15% Cu, 0.03 g/t Pd, and 28.64 g/t Sc.

7.2.11. Iskut (Seabridge Gold Inc.)

The **Iskut** project includes the former Johnny Mountain mine and the Bronson Slope copper-gold deposit. This year Seabridge carried out 10,600 m of diamond drilling in ten holes. Drilling discovered breccia pipe mineralization beneath the historical Bronson Slope skarn deposit. The breccia pipe is mineralized with gold associated with copper on its margins.

7.2.12. Kinskuch (Hecla) (Hecla Mining Company)

At their **Kinskuch** project, Hecla did geological mapping, prospecting, and rock sampling.

7.2.13. Kirkham (Metallis Resources Inc.)

The **Kirkham** property is on the western margin and adjacent to the Eskay rift. Metallis acquired the project in 2013 and has since conducted regional mapping and sampling, geophysics (IP, EM, magnetics, radiometric, VTEM), and more than 15,000 m of drilling. Metallis completed 1961 m of diamond drilling in four holes reported to have intersected chalcopyrite-mineralized porphyry, massive pyrite, and pyrrhotite veining. Highlight results include 205.1 m grading 0.30 g/t Au, and 0.084% Cu, including intervals of 106.9 m grading 0.34 g/t Au, and 0.130% Cu and 37.7 m grading 0.59 g/t Au, and 0.165% Cu.

7.2.14. NAK (American Eagle Gold Corp.)

Previous exploration at the **NAK** project included more than 18,000 m of diamond drilling in 105 holes. American Eagle Gold Corp. carried out diamond drilling and entered into an option agreement with Orefinders Resources Inc. where Orefinders can earn a 20% interest in the NAK project. Results included an interval of 135 m grading 0.96 g/t Au, 0.27% Cu, and 1.41 g/t Ag, and 47 ppm Mo within 851 m grading 0.22 g/t Au, 0.17% Cu, 0.97 g/t Ag, and 74 ppm Mo, 301 m grading 0.5 g/t Au, 0.22% Cu, 1.13 g/t Ag, and 45 ppm Mo within an interval of 956 m grading 0.19 g/t Au, 0.20% Cu, 1.3 g/t Ag, and 38 ppm Mo.

7.2.15. Newmont Lake (Enduro Metals Corporation)

Enduro Metals Corporation discovered new porphyry copper-gold mineralization at their **Newmont Lake** project. A total of 10,897 m of diamond drilling was completed in 25 holes. Drilling was mainly focussed on expanding the footprint of the Burgundy Ridge copper-gold porphyry target with some drilling at the McLymont West target along the McLymont fault. Initial results from the Burgundy ridge target include 66.8 m

grading 0.16 g/t Au, 0.35% Cu, 0.05% Zn, and 5.57 g/t Ag, including 6.08 m grading 0.33 g/t Au 1.41% Cu, 0.18% Zn, and 19.61 g/t Ag.

7.2.16. Ootsa (Surge Copper Corp.)

The **Ootsa** project contains three separate deposits: Ox, East Seel, and West Seel. The project is at the edge of a southeast-trending belt of porphyry Cu-Au deposits and prospects which include (from northwest-southeast) the Lucky Ship, Berg, Whiting Creek, Huckleberry, Ox, and Seel deposits. Like other deposits in the region, mineralization at Ootsa is temporally associated with the Bulkley suite intrusive rocks (Cretaceous) with calc-alkaline porphyry style mineralization. In 2022, an updated mineral resource estimate reported a 96% increase in the Measured and Indicated resource and additional Inferred resources. A total of 10,518 m of diamond drilling was carried out in 28 holes at the Seel breccia zone (Fig. 8) and targets surrounding the Seel and Ox deposits. Highlights included 64.6 m grading 0.24% Cu, 0.17 g/t Au, 22.7 g/t Ag, 0.67% Zn and 0.29% Pb with an 18.6 m interval of grading 0.75% Cu, 0.49 g/t Au, 61.2 g/t Ag, 1.17% Zn and 0.58% Pb. Drilling from the Blackjack target, approximately 4 km east of the Seel deposit, intersected 46 m of 99.4 g/t Ag, including intervals of 2.0 m with 1430.0 g/t Ag and 2.0 m with 346 g/t Ag. The field program also included prospecting, and soil and rock sampling.

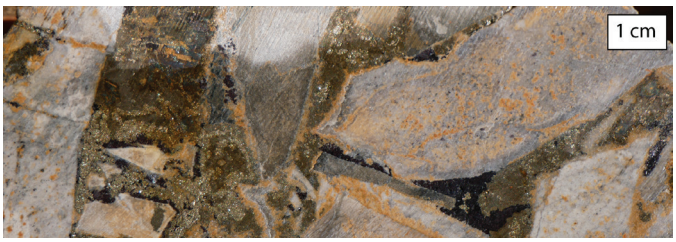

Fig. 8. Core from the Seel breccia zone with sphalerite, pyrite, and chalcopyrite, Oosta project.

7.2.17. Oweegee (Sanatana Resources Inc.)

Sanatana's **Oweegee** project is transected by Highway 37 and the NW transmission line. This year, Sanatana carried out 3679 m of diamond drilling in 12 holes; copper was observed in eight. Reported assays included 112.18 m grading 0.17% Cu, 0.22 g/t Au, 1.10 g/t Ag, including 12 m grading 0.40% Cu, 0.35 g/t Au, 2.10 g/t Ag and 12.47 m grading 0.40% Cu, 0.39 g/t Au, 1.34 g/t Ag.

7.2.18. Poplar (Universal Copper Ltd.)

In the spring, Universal Copper Ltd. completed 1983 m of diamond drilling in five holes at their **Poplar** project. The drilling was designed to expand known copper mineralization to depth and expand the limits of higher grade mineralization within the current mineral resource. Reported results included 214.4 m grading 0.401% Cu, 0.001% Mo, 0.15 g/t Au and 1.27 g/t Ag, 162.8 m grading 0.412% Cu, 0.020% Mo, 0.104 g/t Au, and 1.14 g/t Ag, and 216 m grading 0.353% Cu, 0.14 g/t Au, and 5.91 g/t Ag including 87 m grading 0.531% Cu, 0.36 g/t Au and 20.67 g/t Ag.

7.2.19. Schaft Creek (Teck Resources Limited 75%, Copper Fox Metals Inc. 25%)

The **Schaft Creek** porphyry deposit is an advanced-stage joint venture with a Measured and Indicated resource (September 2021) of 1.346 Bt grading 0.26% Cu, 0.16 g/t Au, 0.017% Mo, and 1.25 g/t Ag. Inferred resources are 343.6 Mt grading 0.17% Cu, 0.11 g/t Au, 0.013% Mo, and 0.84 g/t Ag. In 2022, 4688 m of drilling was completed in 11 holes to complement previous metallurgical testing. Holes were drilled in the three main mineralized zones (Liard, Paramount, and West Breccia). Environmental baseline data collection was completed.

7.2.20. Tatogga (Newmont Corporation)

Newmont Corporation's **Tatogga** project includes the Saddle North deposit. The deposit has an Indicated resource (August 2020) of 298 Mt grading 0.28% Cu, 0.36 g/t Au, and 0.8 g/t Ag and an Inferred Resource of 543 Mt grading 0.25% Cu, 0.31 g/t Au, and 0.7 g/t Ag. Newmont worked with the Tahltan Heritage Resources Environmental Assessment Team on a Tahltan land use study and Tahltan Environmental Management is to begin environmental studies.

7.2.21. Telegraph (Mountain Boy Minerals Ltd.)

Mountain Boy's **Telegraph** project consists of multiple properties. Mountain Boy has a 60% option on the DOK property, 100% interest in the DOKX-Yeti property, and 100% interest in ground that they staked. Mountain Boy carried out 19.6 line-km of IP, geological mapping, prospecting, and rock sampling. Rock sample results included 19.7% Cu. A new gossanous zone referred to as Strata gossan was discovered and returned samples with up to 7.7% Cu. New ground next to current mineral tenure was staked based on alteration mapping.

7.2.22. Thorn (Camp Creek) (Brixton Metals Corporation)

Brixton continued to drill porphyry copper mineralization at the **Camp Creek** target of their **Thorn** project. Reported results included 967.2 m grading 0.25% Cu, 0.09 g/t Au, 2.39 g/t Ag, and 186 ppm Mo, with a 365 m interval grading 0.45% Cu, 0.13 g/t Au, 3.81 g/t Ag, and 328 ppm Mo, and with another 40 m interval grading 0.67% Cu, 0.20 g/t Au, 5.16 g/t Ag, and 424 ppm Mo.

7.2.23. Trek (Romios Gold Resources Inc.)

Romios's **Trek** project consists of ten contiguous claims approximately 10 km from the Galore Creek deposit. Romios carried out IP and magnetotelluric geophysical surveys, geological mapping, prospecting, and rock sampling at the Trek South area. Exploration work reported a new discovery of copper and tungsten skarn mineralization across an area 275 by 80 m. Several chip and grab samples returned tungsten assays from 0.04 to 0.68% WO_3, averaging 0.24% WO_3, and Cu values from 0.05 to 0.98% Cu, averaging 0.27% Cu.

7.2.24. Whiting Creek (Huckleberry Mines Ltd.)

The **Whiting Creek** property is 8 km north of the

Huckleberry mine that is currently on care and maintenance status. Mineralization is in stocks of the Bulkley plutonic suite (Late Cretaceous) that cut Hazelton Group volcanic rock (Lower Jurassic). Chalcopyrite, molybdenite, and pyrite mineralization occurs as veinlets and disseminations. The best grades of mineralization are in zones of potassic alteration. In 2022, exploration consisted of property-wide mapping and sampling to complement airborne lidar and ZTEM geophysical surveys. Samples were analyzed with a handheld XRF unit, then sent for assay and hyperspectral analysis. The program focussed on collecting data to correlate geophysical anomalies for guiding future exploration.

7.3. Selected polymetallic base and precious metal projects

Many polymetallic base and precious metal projects are active throughout the Northwest Region (Fig. 1; Table 5). Base metals are explored for primarily as polymetallic vein, VMS and, to lesser extent, SEDEX and manto replacement deposits.

7.3.1. BA (Mountain Boy Minerals Ltd.)

Mountain Boy's **BA** project is 18 km northeast of Stewart. Highway 37A and the Northwest transmission line run through the property allowing easy access and infrastructure. This year, exploration included geological mapping, rock sampling, and SWIR sampling.

7.3.2. BAM (Jan Copper) (P2 Gold Inc.)

P2 Gold drilled 95 holes totaling 13,967 m at their **BAM** project. Most holes were drilled at the Monarch Gold zone. Results from the Jan Copper zone included 22.0 m grading 0.36% Cu, including 2.0 m of 2.15% Cu.

7.3.3. Blue (Core Assets Corporation)

Core Assets drilled 7371 m in 17 holes at their **Blue** property. Results included 1.25 m grading 215 g/t Ag, 9.9% Zn, 8.9% Pb, and 0.36% Cu within 17.19 m grading 28 g/t Ag, 1.2% Zn, 1.4% Pb, and 0.10% Cu. Core also carried out prospecting and geological mapping.

7.3.4. Bingo (Juggernaut Exploration Ltd.)

In January, Juggernaut Exploration optioned the **Bingo** property in the Eskay rift. Exploration included prospecting, mapping, and rock and soil sampling.

7.3.5. Del Norte (Decade Resources Ltd.)

Decade has an option to earn up to a 55% interest in the **Del Norte** property and can earn an additional 20% interest by carrying the property to commercial production. Drill results from 2021 released early in 2022 included 3.6 m grading 5 g/t Au, 660 g/t Ag and 2.29 m grading 72 g/t Au and 3074 g/t Ag.

7.3.6. Golddigger (Goliath Resources Ltd.)

The **Golddigger** property is 7 km west of the Dolly Varden mine access road. At the Surebet and Main zone, stratabound massive sulphide mineralization (galena-sphalerite-pyrite) and silica alteration occur in highly folded Hazelton Group sedimentary rocks along northwest-trending faults. Goliath completed 26,321 m of diamond drilling in 86 holes at the Surebet zone. Reported results included 1.0 m grading 115.0 g/t Au, and 28.5 g/t Ag, within 5.0 m grading 23.17 g/t Au, and 6.32 g/t Ag along with base metal mineralization.

7.3.7. Kitsault Valley (Dolly Varden Silver Corporation)

In February, Dolly Varden Silver Corporation acquired the Homestake Ridge project from Fury Gold Mines Ltd. and combined resources with the Dolly Varden Silver project to consolidate into the **Kitsault Valley** project. This combines seven precious metal deposits under one project, switching the Company's 100% silver project to a larger one with equal silver and gold resources measured by value. **Homestake Ridge** contains a total Indicated resource (January 2022) of 0.736 Mt grading 7.02 g/t Au, 74.8 g/t Ag, 0.18% Cu and 0.077% Pb and a total Inferred resource of 5.55 Mt grading 4.58 g/t Au, 100 g/t Ag, 0.13% Cu and 0.142% Pb.

The 2022 drilling objective was to infill at **Dolly Varden** and **Homestake Ridge** to increase mineral estimates from Indicated and Inferred to Measured and Indicated. This year Dolly Varden completed 37,061 m of drilling in 108 holes. Reported results from **Homestake Ridge** include 16.06 m grading 4.27 g/t Au and 64 g/t Ag, including 3.08 m grading 18.76 g/t Au, 193 g/t Ag, and 0.28% Cu, 15.0 m grading 5.68 g/t Au and 147 g/t Ag, including 0.39 m grading 54.10 g/t Au, 4890 g/t Ag, and 0.11% Cu. Highlighted results from **Dolly Varden** included 1.6 m grading 4326 g/t Ag, 4.2% Pb, 1.4% Zn, and 1.0 g/t Au, 50.18 m grading 414 g/t Ag, 12.51 m of 442 g/t Ag, 0.26% Pb, and 0.31% Zn including 1.50 m grading 1367 g/t Ag, 0.22% Pb, and 0.17% Zn.

The immediate area of the Dolly Varden property has a long history of mining. Between 1910 and 1959, the Dolly Varden mine produced more than 20 Moz of silver. The property is underlain by Hazelton Group volcanic and volcaniclastic rocks. Historic and recent exploration suggest the potential for epithermal base and precious metal and volcanogenic massive sulphide deposits.

7.3.8. Midas (Juggernaut Exploration Ltd.)

Juggernaut reported discovering new mineralization at their **Midas** project, 24 km southeast of Terrace. Exploration was focussed on delineating the Kokomo showing, which returned elevated gold values in bulk leach extractable gold samples ranging from 0.024 g/t to 0.108 g/t Au. Exploration included rock sampling, prospecting, and geological mapping. Rock chip sample results included 1.0 m grading 117 g/t Au, 132 g/t Pb, 1.585% Cu, and 1.77% Zn.

7.3.9. Rock and Roll (Etruscus Resources Corp.)

The **Rock and Roll** property is 7 km northwest of the past-producing Snip mine. The property includes the Black Dog VMS deposit and the SRV zone. Etruscus carried out 14.25 line-

km of IP, geological mapping, and sampling (128 soil, 70 rock). Results extended quartz-sericite-pyrite porphyry style alteration 700 m east of the discovery zone. Soil sampling extended the anomalous copper-gold-molybdenum Heather zone by 350 m, where a newly identified polymetallic quartz-carbonate vein zone was reported to contain chalcopyrite, sphalerite, and galena.

7.3.10. Silver Queen (Equity Metals Corp.)

The **Silver Queen** historic mine is 43 km south of Houston on an all-season road. It has seen more than 500 drill holes and 9 km of underground workings since discovery. In December, Equity released an updated mineral resource estimate with an Indicated resource of 3.445 Mt grading 3.5% Zn, 2.13 g/t Au, 189 g/t Ag, 0.24% Cu, and 0.6% Pb. An Inferred resource of 1.9 Mt 2.0% Zn, 0.82 g/t Au, 167 g/t Ag, 0.23% Cu, 0.5% Pb (resources at NSR cut off of C$100/t). Equity completed 5891 m of diamond drilling in 16 holes. Highlight results included 1.3 m grading 1998 g/t Ag, 9.3 g/t Au, 0.17% Cu, 2.2% Pb, and 6.8% Zn within a 7.5 m interval grading 539 g/t Ag, 1.8 g/t Au, 0.5% Pb, and 1.8% Zn. Other results included 0.6 m grading 1705 g/t Ag, 2.1 g/t Au, 4.3% Cu, 1.6% Pb, 4.1% Zn, within 1.2 m grading 802 g/t Ag, 1.0 g/t Au, 2.1% Cu, 0.8% Zn, and 2.0% Zn.

7.3.11. Silver Switchback (Norseman Silver Inc.)

Norseman completed 800 m of diamond drilling in four holes at their **Silver Switchback** property. Norseman has an option agreement with Cloudbreak Discovery Corp. to acquire 100 percent interest in the claims. Part of the option agreement is to spend $475,000 in exploration expenditures on the property within three years.

7.3.12. Silvertip (Coeur Mining Inc.)

Coeur's 2022 exploration program included 61,000 m of drilling in 330 holes at the historic **Silvertip** mine. The focus of drilling was infill and expansion at the Southern silver zone and drilling underneath the Discovery zone. More manto mineralization was found at the newly discovered Camp Creek west zone. Drilling intersected chimney/feeder structures beneath the Discovery zone. Highlight results included 12 m grading 459.6 g/t Ag, 15.1% Zn, and 8.7% Pb, and 6.2 m grading 778.3 g/t Ag, 13.6% Zn, and 14.7% Pb.

7.3.13. Southmore (Mountain Boy Minerals Ltd.)

At their **Southmore** project, Mountain Boy carried out geological mapping, ground truthing geophysical anomalies, and soil and rock sampling.

7.3.14. Terrace (Decade Resources Ltd.)

The **Terrace** project consists of three main properties: Terrace gold, Treasure Mountain, and Dardanelle approximately 20 km east of Terrace. The project consists of 48 contiguous claims totalling 17,470 hectares. Decade carried out 1000 m of diamond drilling in four holes, rock sampling, and prospecting, mostly at the Terrace gold property. Drilling tested the Excelsior and Croesus showings for porphyry copper potential. The company reported narrow zones of quartz veining containing chalcopyrite, with one hole displaying molybdenum mineralization on fracture faces and in quartz veinlets.

7.3.15. Theia (Mountain Boy Minerals Ltd.)

Exploration for 2022 at Mountain Boy's **Theia** polymetallic vein project consisted of prospecting, rock sampling, and sampling for geochronology. The company plans to calculate lead isotope age dates for mineralization from galena.

7.3.16. Zinc Bay (Guardsmen Resources Inc.)

Precious metal-bearing, base-metal sulphide veins at the **Zinc Bay** property are in shear zones or narrow brittle structures. Exploration by Guardsmen in 2022 consisted of an IP survey, soil sampling, prospecting, and geological mapping.

7.4. Selected mafic- and ultramafic-hosted projects

The Northwest Region contains a few active mafic- and ultramafic-hosted projects (Fig. 1; Table 5).

7.4.1. E&L (Garibaldi Resources Corp.)

The **E&L** property is one of few known high-grade magmatic Ni-Cu-(PGE) massive sulphide projects in the Canadian Cordillera. The property is in the Eskay rift. The deposit contains pyrrhotite, pentlandite, and chalcopyrite in an olivine gabbro stock that intrudes Lower Jurassic sedimentary and volcanic rocks. Garibaldi completed 2200 m of drilling in 4 holes. Drilling intersected nickel-bearing disseminated and semi-massive sulphide mineralization (Fig. 9), extending mineralization at depth by 205 m.

Fig. 9. Semi-massive sulphide mineralization (pyrite, chalcopyrite, pyrrhotite, pentlandite) in gabbro, E&L project.

7.4.2. Turnagain (Giga Metals Corp.)

The **Turnagain** nickel-cobalt deposit is an Alaskan-type Pt-(Os-Rh-Ir) ultramafic. The deposit has maximum dimensions of 3 by 8.2 km and displays a dunite core surrounded by peripheral peridotites, pyroxene-rich peridotite, wehrlite, and olivine pyroxene. Sulphide mineralization includes

pyrrhotite, pentlandite, chalcopyrite, and trace bornite. Giga Metals completed a joint venture transaction with Mitsubishi Corporation to earn 15% equity interest in Turnagain project and form a new company, Hard Creek Nickel Corp. In 2022, Giga Metals released an updated, increased mineral resource assessment with total Measured and Indicated resources of 1.519 Bt at 0.21% Ni and 0.013% Co, and an Inferred resource of 1.222 Bt at 0.206% Ni and 0.012% Co. Giga carried out 415 m of geotechnical drilling, collected geotechnical data and have ongoing engineering and metallurgical studies to advance project to the pre-feasibility level.

8. Geologic research

Nelson et al. (2022) continued long-term investigations into the evolution of Stikinia and adjacent terranes in northwestern British Columbia, presenting U-Pb detrital zircon data from the Stuhini and Hazelton groups to reconstruct the uppermost Triassic and Lower Jurassic pre-accretionary arc and early syn-accretionary back arc paleogeography and paleotectonics of the region. Nelson et al. (2022) also examined the relationships between Stikinia, Yukon-Tanana terrane, the Whitehorse trough, Quesnellia, and Cache Creek terrane. With a Yukon perspective, Colpron et al. (2022) also examined the uppermost Triassic to Jurassic transition from arc to syn-collisional magmatism and tectonics in Stikinia and Yukon-Tanana terrane, the development of the Whitehorse trough, and enclosure of Cache Creek terrane between Stikinia and Quesnellia. Kellett and Zagorevski (2022) combined geochronological and thermochronological data and clast compositions of detrital zircon and apatite from Lower to Middle Jurassic siliciclastic rocks of the Laberge Group in the Whitehorse trough. The study evaluated the unroofing history and dissection of source terranes, possible depocentre migration, and potential structural controls on the thermal history of the basin. Parsons et al. (2022) used U-Pb detrital zircon data from south-central Yukon to consider the crustal structure of Yukon-Tanana terrane and the timing of collision between it and North America. Focussing on the Canadian tungsten belt in Yukon, Elongo et al. (2022) used Nd isotopic data to interpret that large Cordilleran tungsten deposits were originally sourced from Mesoarchean to Paleoproterozoic mantle and that they record scavenging of material from Neoproterozoic to Devonian sedimentary successions deposited along the western margin of ancestral North America during emplacement of mid-Cretaceous peraluminous intrusions.

New bedrock geology maps were published for the western Skeena arch region (Angen et al., 2022), the Turtle Lake area (Mihalynuk et al., 2022) and the Dease Lake region (van Straaten et al. 2022a). Hunter et al. (2022) presented geochronologic data from the Kitsault area as part of a project that is being continued by Miller et al. (2023). Johnston et al. (2023) conducted a structural study in the western part of the Galore Creek area, and van Straaten et al. (2023) examined the stratigraphy and depositional setting of units in the Stuhini Group and provided initial geochronologic data. van Straaten et al. (2022b) released igneous geochemical data from across the Northwest Region and, using modern high-precision techniques, Van der Vlugt, et al. (2022) reanalyzed almost 1000 archived igneous samples. Lett et al. (2022) provided historical heavy mineral and geochemical data from stream-sediment, stream-water, and moss-mat sampling. At the Red Chris mine, Day and Eduardo Marquez (2022) examined the leachable selenium content of gossanous and weathered rock and concluded that higher concentrations and higher ratios of selenium to sulfur relative to deeper bedrock record the remnant of a Paleogene oxidized weathering profile partially eroded in the Quaternary.

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Exploration and mining in the North Central and Northeast regions, British Columbia

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1. Introduction

A northeast to southwest transect through the Northeast and the North Central regions provides a cross section from undeformed rocks deposited on Precambrian basement to allocthonous terranes accreted to Ancestral North America (Fig. 1). In the Northeast Region, platformal sedimentary rocks transition westward to deep-water basin strata at the eastern limit of Cordilleran deformation, close to the border of the North Central Region. The North Central Region displays a history of ocean opening and closing, island arc volcanism, and terrane accretion onto the western margin of Ancestral North America. Terrane emplacement was followed by continued orogeny, magmatism, and sedimentation. Both regions were extensively glaciated.

The Northeast Region is prospective for coal and industrial minerals and has three producing coal mines: Conuma Resources Limited's **Brule, Wolverine,** and **Willow Creek** operations. Conuma Resources Limited recently purchased the closed **Quintette** mine from Teck Resources for $120 million. Conuma Resources Limited will also pay an ongoing 25% net profits royalty, starting once it recovers its investment. In the far north of the region, Fireside Minerals Ltd. produces barite from its **Fireside** mine to supply the oil and gas drilling industry. The North Central Region is prospective for copper, gold, silver, zinc, lead, niobium, and rare earth elements. These minerals occur mainly in porphyry, epithermal or vein and stockwork, SEDEX, and carbonatite settings. The North Central Region has one producing mine, the **Mount Milligan** copper-gold operation (Centerra Gold Inc.). Both regions had active exploration projects (Fig. 1). Significant work and results included those reported for NorthWest Copper Corporation's **Kwanika** and **Stardust** projects, Pacific Ridge Exploration Ltd.'s **Kliyul** and **RPD** projects, Skeena Resources's **Sofia** project, TDG Gold Corp.'s **Shasta** project, Amarc Resources Ltd.'s **Joy** project, and Defense Metals Corp.'s **Wicheeda** project.

Artemis Gold Inc. announced fulfilling all EA (environmental assessment) conditions to start preparing the plant site for their **Blackwater Gold** project, and this work started in 2022 with clearing, bulk earthworks, and erosion control.

Estimates for exploration expenditures, drilling programs, and other metrics were captured in the British Columbia Mineral and Coal Exploration Survey, a joint initiative of the Province of British Columbia Ministry of Energy, Mines and Low Carbon Innovation, the Association for Mineral Exploration in British Columbia, and EY LLP. For the North Central Region, exploration expenditures were estimated at $139.0 million and exploration drilling was estimated at approximately 163,220 m. For the Northeast Region, exploration expenditures were estimated at $1.9 million and no exploration drilling was reported (Clarke et al., 2023; EY LLP, 2023).

2. Geological overview

The Canadian Cordillera records a history of supercontinent rifting followed by collisions between the westward-driven North American continental plate and a succession of island arc volcanosedimentary and intrusive assemblages (terranes) developed outboard of Ancestral North America and accreted to each other and to the continental margin (e.g., Nelson et al., 2013). Terrane evolution continues today as the Juan de Fuca plate slides beneath Vancouver Island. In the Northeast and Central regions, the most easterly rocks are platformal sedimentary units that thicken westward and transition to deep-water basin strata. These rocks are deformed mainly by eastward-vergent thrust faults and folds along northwest-southeast trends. The Rocky Mountain trench marks the site of about 800 km of post-accretion dextral strike slip along the Tintina fault system. Deformed deep-water basin sedimentary rocks immediately west of the Rocky Mountain trench are referred to as the Cassiar terrane (Fig. 1). Outboard of the Cassiar terrane is a group of volcanic assemblages referred to (roughly from east to west) as the Slide Mountain terrane, the Quesnel and Stikine terranes (Quesnellia and Stikinia), and the Cache Creek terrane. The Cache Creek terrane is separated from Quesnellia by the Pinchi fault, another major crustal break, which locally exposes areas of ultramafic rocks. These terranes are intruded by intermediate to felsic plutonic and volcanic rocks that are overlain by younger sedimentary and volcanic rocks. Mineral deposit types and distributions are intimately related to the geologic evolution of the terranes

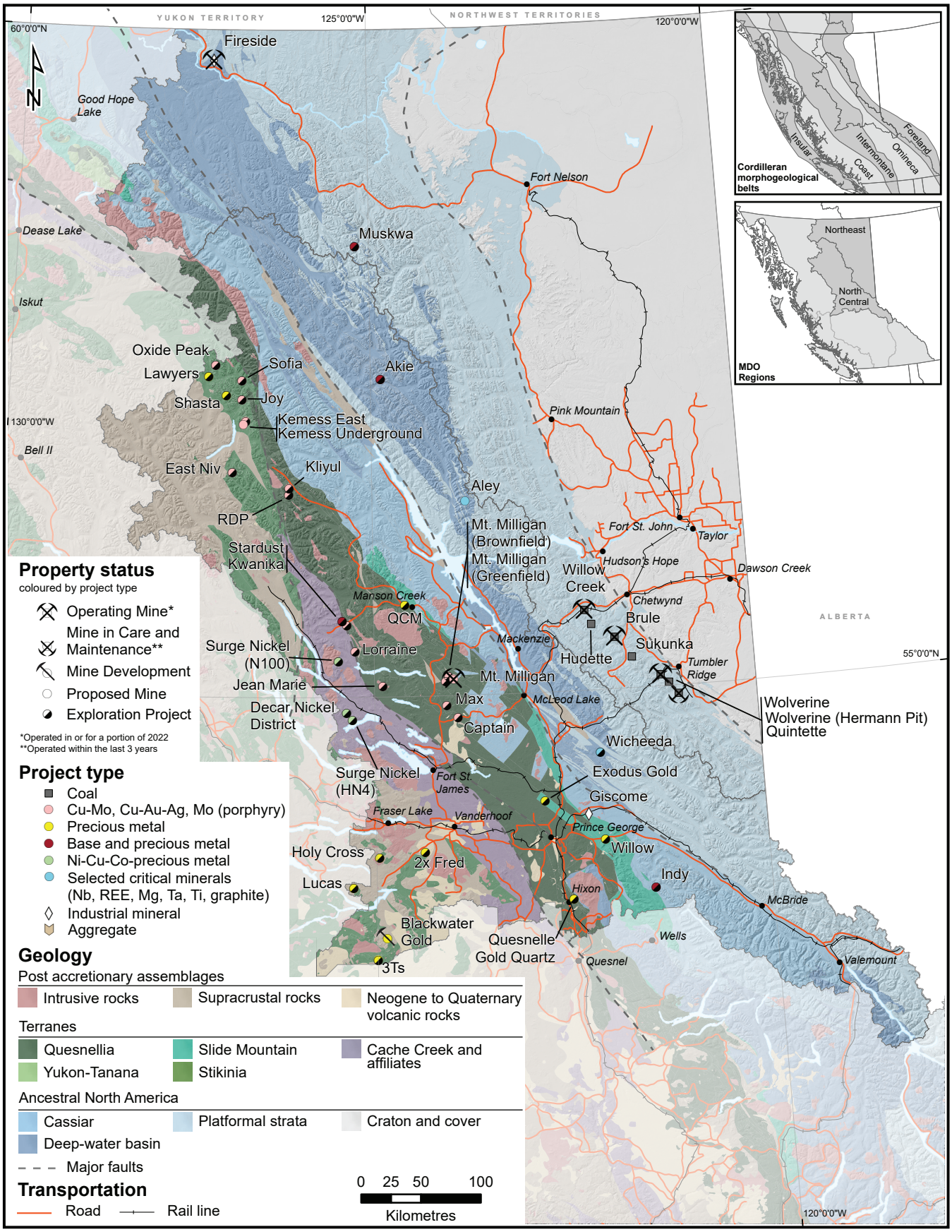

Fig. 1. Mines and selected projects, North Central and Northeast regions, 2022. Terranes after Nelson et al. (2013).

(e.g., Nelson et al., 2013). Thus, platformal rocks deposited above Ancestral North America host coal and potash deposits, and post-accretionary sedimentary rocks overlying the Stikine terrane host coal deposits. Deep-water basin strata host SEDEX and Mississippi Valley-type lead-zinc deposits and are intruded by carbonatite bodies hosting niobium and rare earth elements (REE). The island arc assemblages of Quesnellia and Stikinia host large polymetallic porphyry, epithermal, and orogenic precious metal deposits.

3. Mines and quarries

In 2022, one metal mine operated in the North Central Region; three coal mines and one industrial mineral mine operated in the Northeast Region (Fig. 1; Tables 1-3).

3.1. Metal mines

The one producing metal mine in the North Central Region is **Mount Milligan** (copper-gold) wholly owned by Centerra Gold Inc. (Fig. 1; Table 1).

3.1.1. Mount Milligan (Centerra Gold Inc.)

The **Mount Milligan** mine, in the Quesnel terrane (Fig. 1), is hosted by mafic to intermediate volcanic and pyroclastic rocks of the Takla Group (Triassic to Lower Jurassic) that are intruded by Lower Jurassic monzonite porphyry stocks. The ore body is a silica-saturated alkalic porphyry deposit in which copper and gold (with accessory silver) mineralization is in sulphides across an area of 2500 by 1500 m. The deposit has two principal zones. At the Main zone, mineralization is mostly in volcanic rocks; at the Southern Star zone, mineralization is in a monzonite stock and in volcanic rocks.

The planned mine life is just over 11 years (2022-2033). As of December 31, 2021, the mine has Proven and Probable reserve of 246.2 Mt, grading 0.37 g/t gold and 0.23% copper, with a combined Measured and Indicated resource of 189 Mt at 0.18% Cu and 0.30 g/t Au containing 742 million pounds (lbs) of copper and 1.8 million ounces (oz) of gold, and an Inferred Mineral resource of 4.6 Mt at 0.07% Cu and 0.47 g/t Au. The pit has been planned as a series of seven discrete pushbacks. Within the mine lease 26,873 m of drilling in 46 holes was completed. The drilling was split between better defining known resources and expanding resources.

3.2. Coal mines

Conuma Resources Limited is currently producing from the **Brule, Willow Creek,** and **Wolverine** mines (Fig. 2; Table 2). All coal is shipped by rail to the Trigon Terminal, Prince Rupert. Coal from the three mines can be blended at port to create different quality mixtures for customer needs.

3.2.1. Brule Mine (Conuma Resources Limited)

Forecast production for the **Brule** mine was 1.9 Mt of pulverized coal injection (PCI) coal. The coal is in folded and thrust-faulted rocks of the Gething Formation. The direct-ship coal product is transported by truck to the Willow Creek mine site then sent by rail to the Trigon Terminal.

3.2.2. Willow Creek Mine (Conuma Resources Limited)

The **Willow Creek** mine forecasted production was 1.0 Mt of hard coking coal (HCC) and pulverized coal injection (PCI) product. Coal is mined from several seams in the Gething Formation (Fig. 3). The coal is processed on site then transported by rail to the Trigon Terminal.

3.2.3. Wolverine Mine (Conuma Resources Limited)

Forecast production for the **Wolverine** mine was 1.1 Mt of hard coking coal (HCC). Coal from the mine is processed on site and loaded for rail transport to the Trigon Terminal. Coal is mined from the Gates Formation at the Perry Creek pit, which is nearing the end of its resources. Conuma Resources Limited has an Environmental Assessment in progress for an amendment that would allow mining from the Wolverine Hermann Pit and use the existing Wolverine processing plant and loadout facilities. The proposed Wolverine Hermann Pit is approximately 16 km from the Wolverine mine Perry Creek pit and coal processing plant.

3.3. Industrial mineral mines and quarries

In 2022, the **Fireside** barite mine was in operation in the Northeast Region (Fig. 1; Table 3). No industrial mineral mines

Table 1. Metal mines, North Central Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Mt. Milligan	**Centerra Gold Inc.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 194, 191	75.9 Mlbs Cu 181,000 oz Au	P+Pr: 246.2 Mt 0.23% Cu 0.37 g/t Au	M+I: 189 Mt 0.18% Cu 0.30 g/t Au (additional to reserves)	Concentrator design capacity 60,000 tpd. Mine life extended by over four years. More than 350 employees. Approximately 27,000 m of diamond drilling in 46 holes completed in 2022.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 2. Coal mines, North Central and Northeast regions.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Brule	**Conuma Resources Limited**	PCI; Bituminous coal; 093P 007	1.9 Mt	P+Pr: 2.3 Mt	na	About 300 employees.
Willow Creek	**Conuma Resources Limited**	HCC, PCI; Bituminous coal; 093O 008	1.0 Mt	P+Pr: 8.6 Mt	na	About 300 employees, mine and plant.
Wolverine	**Conuma Resources Limited**	HCC; Bituminous coal; 093P 025	1.1 Mt	P+Pr: 2.3 Mt	na	About 300 employees, mine and plant.

HCC = hard coking coal; PCI = pulverized coal injection; TC = thermal coal
P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 3. Selected industrial mineral mines and quarries, North Central and Northeast regions.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Fireside (Northeast Region)	**Fireside Minerals Ltd.**	Barite; Vein barite; 094M 003, 19	na	na	na	Fireside Minerals produces 4.1 API spec barite for sale into the western Canadian oil and gas markets.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

or quarries operations were reported for the North Central Region.

3.3.1. Fireside (Fireside Minerals Ltd.)

At the **Fireside** mine, Fireside Minerals Ltd. quarries massive white barite from veins cutting Paleozoic sedimentary rocks of the Kechika Group near the Yukon border. The barite veins are steeply dipping, trend north to northeast, and have a combined true thickness of 6.5 m. Barite concentrations in the veins range from 96.0 to 99.4% $BaSO_4$.

4. Placer operations

Placer exploration is a widespread activity in parts of British Columbia, and permits are required only when surface disturbance is proposed. In the North Central Region, operations are distributed primarily in the Manson Creek, Fort St. James to Mackenzie, and Hixon areas. Larger scale operations are generally sited on abandoned stream channels and benches, and use backhoes and hydraulic excavators to extract gravel, which is then processed through a wash plant, either on site or at a remote location. Due to the number of operations and because production is not reported, these operations are not tracked. The lack of metal prospects in the Northeast Region means there is currently minimal interest in placer operations.

5. Mine or quarry development

Artemis Gold Inc.'s **Blackwater Gold** Au-Ag project in the North Central Region is at the mine development stage (Table 4).

5.1. Blackwater Gold (Artemis Gold Inc.)

The **Blackwater** deposit is hosted by a sequence of intermediate to felsic volcanic rocks in the Kasalka Group (Upper Cretaceous; Stikine terrane). In this intermediate sulphidation, epithermal system, the host rocks are pervasively fractured and sericitized. Sulphides include pyrite, sphalerite, marcasite, and pyrrhotite as disseminations and pore fillings that are strongly controlled by a set of northeast- and northwest-trending faults. Reserves are reported at 8 million oz Au and 62.3 million oz Ag, with a life-of-mine average annual gold production of 339,000 oz (August 2020). The company has fulfilled all EA (environmental assessment) conditions to start site preparation, which began in 2022 (Fig. 4).

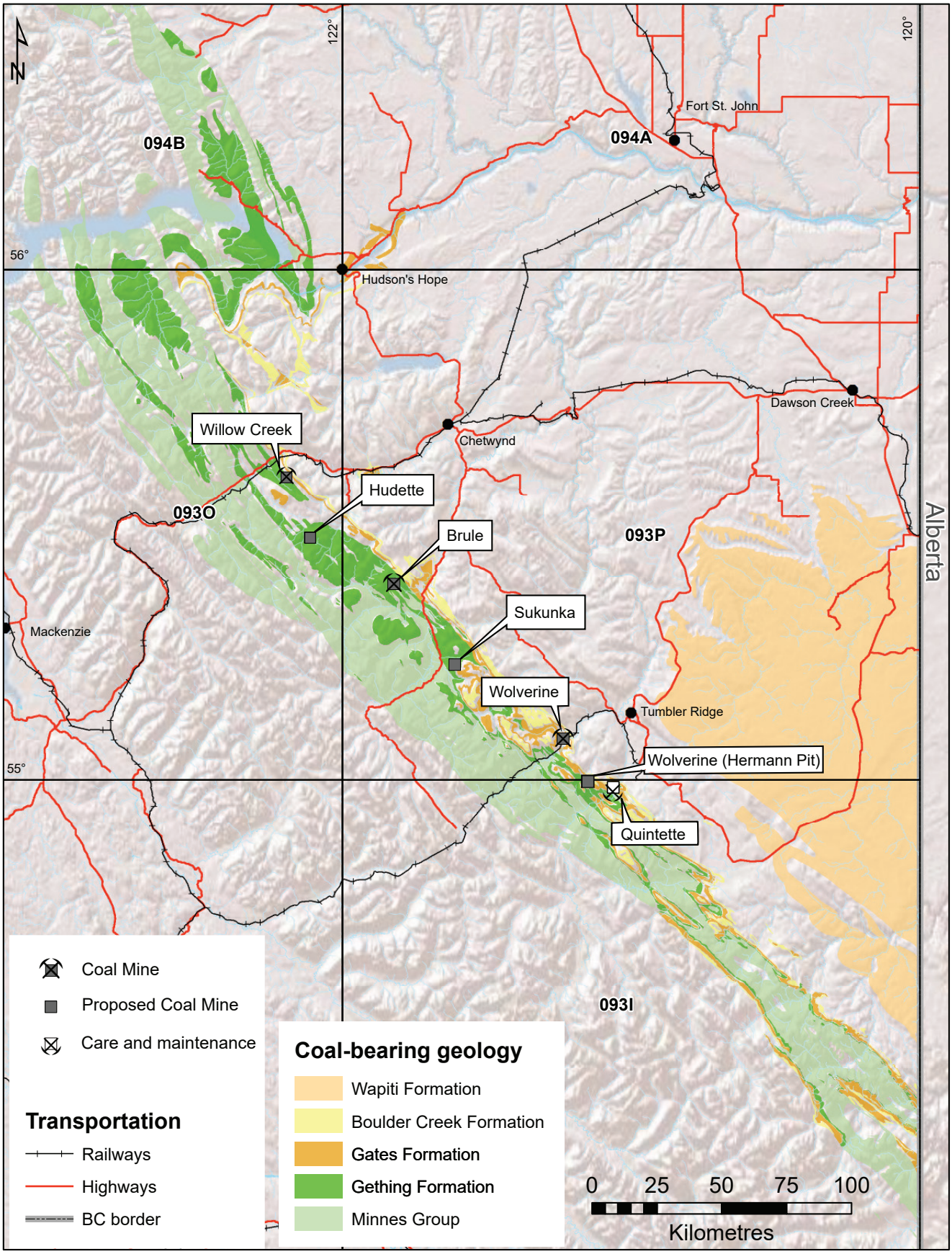

Fig. 2. Coal mines, proposed coal mines, and coal exploration projects, northeastern British Columbia, 2022.

Fig. 3. East-dipping thrusted and folded Gething Formation strata, Willow Creek Mine, 4N2 pit (Conuma Resources Limited).

Fig. 4. Construction activities at the Blackwater Gold project site (Artemis Gold Inc.).

6. Selected proposed mines or quarries

Projects at the proposed mine stage (Fig. 1; Table 5) in the North Central Region include two proposed metal mines, Taseko Mines Limited's **Aley** project, and Centerra Gold Inc.'s **Kemess Underground** project. Also in the North Central Region, Greymont Western Canada Inc.'s **Giscome** project is a proposed industrial mineral mine (limestone). There are three proposed mines in the Northeast Region (Figs. 1, 2; Table 5): Glencore plc's **Sukunka** coal project and Conuma Resources Limited's **Wolverine Hermann Pit**, and **Hudette** projects.

6.1. Proposed metal mines

The two proposed metal mines in the North Central Region are Taseko Mines Limited's **Aley** Niobium project, and Centerra Gold Inc.'s **Kemess Underground** project.

6.1.1. Aley (Taseko Mines Limited)

Taseko Mines Limited's wholly-owned **Aley** niobium-bearing carbonatite project is near the western extremity of platformal strata. The carbonatite intrusion is oval in map view, measuring about 2.0 by 2.8 km. Reserves are calculated at 84 Mt grading 0.5% Nb_2O_5. The proposed processing plant would have a nominal capacity of 10,000 tpd. Single-stage crushing followed by three stages of grinding and a multi-stage flotation process would produce a Nb_2O_5 concentrate. The concentrate would then be processed in an on-site converter to produce FeNb as a saleable product. Expected process recovery is 63% with annual production averaging 9 million kg of niobium over the mine life. Environmental monitoring and product marketing initiatives continue. A converter pilot test to support the design of the commercial facilities is ongoing.

6.1.2. Kemess Underground (Centerra Gold Inc.)

Centerra Gold Inc.'s **Kemess Underground** (KUG) project is estimated to contain an Indicated resource of 173.7 Mt grading 0.182% Cu, 0.3 g/t Au, and 1.55 g/t Ag. Within this resource are Probable reserves of 107.4 Mt grading 0.27% Cu, 0.54 g/t Au, and 1.99 g/t Ag. Although the former Kemess South mine closed in 2011, infrastructure remains in place and both the camp and ore processing plant will be used to service KUG. KUG is considered a stand-alone operation, to be mined by panel caving, with crushed ore conveyed underground to

Table 4. Mine development projects, North Central Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resource	Comments
Blackwater (North Central Region)	**Artemis Gold Inc.**	Au, Ag; Epithermal Au-Ag-Cu, intermediate sulphidation; 093F 037	P+Pr: 334.4 Mt 0.75 g/t Au 5.8 g/t Ag at a 0.20 g/t AuEq cut off containing 8.0 Moz Au 62.3 Moz Ag	M+I: 597 Mt (including reserves) 0.61 g/t Au 6.4 g/t Ag at a 0.20 g/t AuEq cut off containing 11.7 Moz Au 122.4 Moz Ag	The company has fulfilled environmental assessment conditions to start site preparation, which began in 2022. Reserves (August 2020) are reported at 8 million oz Au and 62.3 million oz Ag, with a life-of-mine average annual gold production of 339,000 oz.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 5. Selected proposed mines and quarries, North Central and Northeast regions.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resource	Comments
Aley (North Central Region)	**Taseko Mines Limited**	Nb; Carbonatite-hosted; 094B 027	P+Pr: 83.8 Mt 0.50% Nb_2O_5 (at 0.30% Nb_2O_5 cut off)	M+I: 285.8 Mt 0.37% Nb_2O_5 (at 0.20% Nb_2O_5 cut off)	Proposed open-pit mine with 10,000 tpd ore processing rate and average annual production of 9000 t Nb. Environmental monitoring and product marketing.
Giscome (North Central Region)	**Graymont Western Canada Inc.**	$CaCO_3$; Limestone; 093J 041, 25	na	I: >100 Mt of limestone (>95% calcium carbonate, <5% magnesium carbonate) in situ	Environmental assessmentin place. Proposed 600,000 tpy limestone quarry to feed a vertical lime kiln producing 198,000 t of lime annually during a 50+ year mine life.
Hudette (Northeast Region)	**Conuma Resources Limited**	Coal; Bituminous coal; 093O 060	P+Pr: 15.6 Mt	na	Prefeasibility study completed, EA application started. Continued baseline monitoring.
Kemess Underground (KUG) (North Central Region)	**Centerra Gold Inc.**	Cu, Au, Ag; Porphyry Cu±Mo±Au; 094E 021	Pr: 107.38 Mt 0.27% Cu 0.54 g/t Au 1.99 g/t Ag containing 629.6 Mlbs Cu 1.87 Moz Au 6.88 Moz Ag	I: 173.7 Mt (including reserves) 0.182% Cu 0.3 g/t Au 1.55 g/t Ag containing 1195 Mlbs Cu 3.33 Moz Au 13.87 Moz Ag	Permitted, proposed underground panel cave mine with 24,600 tpd ore processing rate and life-of-mine average annual production of 106,000 oz Au and 47 Mlbs Cu over a 12-year life of mine.
Sukunka (Northeast Region)	**Glencore Canada Corporation**	Coal; Bituminous coal; 093P 014	na	145.0 Mt coal in situ	The Government of Canada determined the project would have significant adverse environmental effects and declined to approve the project.
Wolverine (Hermann Pit) (Northeast Region)	**Conuma Resources Limited**	Coal; Bituminous coal; 093I 031	na	M+I: 24.36 Mt	Environmental Management Act Permits Amendments; continued baseline monitoring.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

the processing plant. Processing rate would be 24,600 tpd with an average production of 106,000 oz gold and 47 Mlbs copper during a 12-year mine life. Kemess East (KE), about 1 km east of KUG, is an underground operation that could be integrated into the KUG project. KE has an Indicated resource of 177.5 Mt grading 0.36% Cu, 0.4 g/t Au, and 1.97 g/t Ag and an Inferred resource of 29.3 Mt grading 0.314% Cu, 0.3 g/t Au, and 2.00 g/t Ag. The KUG project has approval for development, but Centerra has not declared a timeline.

6.2. Selected proposed coal mines

Conuma Resources Limited is continuing to work towards receiving a Mines Act Permit Amendment for their **Wolverine Hermann Pit** project and started the Environmental Assessment process for their **Hudette** project. Glencore plc's **Sukunka** project is listed as 'in the referral stage' by the British Columbia Environmental Assessment Office.

6.2.1. Wolverine Hermann Pit (Conuma Resources Limited)

For its **Wolverine (Hermann Pit)** project, Conuma continued to make progress with Environmental Management Act Permits Amendments. This will be a new pit operation using current Wolverine mine infrastructure. The company continued baseline environmental monitoring. The project contains 24.36 Mt Measured and Indicated resources of coal in the Gates Formation. Coal seams are mostly in folds with moderate to steep (40-70°) dips of the Gates Formation (Fort St. John Group; Lower Cretaceous).

6.2.2. Hudette (Conuma Resources Limited)

Conuma Resources Limited competed a prefeasibility study and started working on their environmental assessment application for their **Hudette** project.

6.2.3. Sukunka (Glencore plc and JX Nippon Oil and Energy Corporation)

The **Sukunka** project has been planned as both an open-pit and underground operation, extracting steel-making coal from the Gething Formation. The expected mine life is up to 20 years. The British Columbia Environmental Assessment Office completed its assessment of Glencore's application and provided its assessment to the Impact Assessment Agency of Canada. The Government of Canada determined the project would have significant adverse environmental effects that could not be mitigated and declined to approve the project.

6.3. Selected proposed industrial mineral mines or quarries

Proposed industrial mineral mines or quarries include Graymont Western Canada Inc.'s **Giscome** project in the North Central Region.

6.3.1. Giscome (Graymont Western Canada Inc.)

At the **Giscome** project, Graymont Western Canada proposes to mine high-purity limestone in basaltic rocks of the Antler Formation (Triassic; Slide Mountain Group). Crushed stone would be transported about 5 km by truck to lime kilns at a former stone quarry, owned and operated by CN Rail, in the community of Giscome. An existing CN Rail line would be used for transporting the product. The project has Environmental Assessment approval. Due to weak markets for lime in the region, Graymont has not yet decided to initiate construction.

7. Selected exploration activities and highlights

Exploration activity and expenditures were down in the Northeast Region but increased in the North Central Region (Fig. 1; Tables 6, 7) compared to 2021. Large programs included drilling at the **Kwanika** and **Stardust** (NorthWest Copper Corporation), **Kliyul** and **RDP** (Pacific Ridge Exploration Ltd.), **Lawyers** (Benchmark Metals Inc.), **Mount Milligan Brownfield** (Centerra Gold Inc.), **Sofia** (Skeena Resources), **Shasta** (TDG Gold Corp.), **Joy** (Amarc Resources Ltd.), and **Wicheeda** (Defense Metals Corp.) projects.

7.1. Selected precious metal projects

In 2022, the North Central Region saw numerous precious metal projects (Fig. 1; Table 6) including **2X Fred** (Centerra Gold Inc.), **3Ts** (Independence Gold Corp.), **Shasta** (TDG Gold Corp.), **Exodus Gold** (Exodus Mineral Exploration Ltd.), **Holy Cross** (Evergold Corp.), **Lawyers** (Benchmark Metals Inc.), **QCM** (Kestrel Gold Inc.), **Quesnelle Gold Quartz** (Golden Cariboo Resources Ltd.), and **Willow** (Exodus Mineral Exploration Ltd.).

7.1.1. 2X Fred (Centerra Gold Inc.)

Centerra Gold Inc. carried out diamond drilling at their **2X Fred** project with 1533 m of diamond drilling in five holes and 965 m RC drilling in six holes. **2X Fred** is an epithermal target with fine-grained layered pyrite and other sulphides in quartz veins.

7.1.2. 3Ts (Independence Gold Corp.)

Independence Gold Corp. completed a winter drill program of 4185 m in 17 holes at their **3Ts** project. Ten holes were drilled at the Ted-Mint target, five holes at the Tommy target, and two holes at the new Balrog target. Highlight results included 30.0 m grading 4.99 g/t Au, and 53.3 g/t Ag. The company announced a fall surface mapping and sampling program between the Ted-Mint and Tommy targets. A recent technical report (August 18, 2022) disclosed combined in-pit and underground components of the Tommy and Ted-Mint vein systems containing a total Inferred resource estimate of 4.47 Mt grading 3.64 g/t Au and 96.26 g/t Ag, at a cut off grade of 0.4 g/t AuEq in-pit and 2.0 g/t AuEq underground, containing 522,000 ounces of gold and 13,800,000 ounces of silver.

7.1.3. Exodus Gold (Exodus Mineral Exploration Ltd.)

At their **Exodus Gold** project, Exodus Mineral Exploration Ltd. conducted rock sampling, prospecting, geological mapping, and reclamation work in 2022. Rock sampling of mineralized veins returned values including 39.8 g/t Au and 27.9 g/t Au.

7.1.4. Holy Cross (Evergold Corp.)

In the fall, Evergold Corp. completed an inaugural 1556 m diamond drilling program in four holes on its **Holy Cross** project. Drilling intersected intervals of sulphide-mineralized rhyolite breccia and quartz stockwork veining.

7.1.5. Lawyers (Benchmark Metals Inc.)

Benchmark Metals Inc. completed more than 18,829 m of resource and exploration drilling and 1447 m of geotechnical and hydrogeological drilling at their **Lawyers** project. As well, they announced a Preliminary Economic Assessment and an updated mineral resource estimate. The economic assessment results included a pre-tax NPV 5% of $939 million, with IRR of 31.4%, and 2-year payback. The updated resource estimate reported on pit-constrained and out-of-pit resources. Pit-constrained resources at a 0.4 g/t AuEq cut off were reported as Measured 20.3 Mt grading 2.21 g/t Au, 30.5 g/t Ag, Indicated 45.5 Mt grading 1.09 g/t Au, 18.2 g/t Ag, and Inferred 2.3 Mt grading 0.91 g/t Au, 12.8 g/t Ag. Out-of-pit resources at a 1.5 g/t AuEq cut off were reported as Indicated 1.6 Mt grading 2.74 g/t Au, 60.6 g/t Ag, Inferred 2.6 Mt grading 3.32 g/t Au, 56.3 g/t Ag.

7.1.6. Lucas (Centerra Gold Inc.)

Centerra Gold Inc. is using a low sulphidation epithermal gold deposit model to guide their exploration at their **Lucas** project. The target is largely masked by glacial till. Mineralization is in the hanging wall of the Natalkuz Fault and the predominant host rock is Ootsa Lake Group (Eocene) flow-banded rhyolite. The company drilled 1065 m in 5 holes.

7.1.7. QCM (Kestrel Gold Inc.)

Kestrel Gold Inc. continued to explore at their **QCM** project.

Table 6. Selected exploration projects, North Central Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Resource	Comments
2X Fred	**Centerra Gold Inc.**	Au, Ag; Epithermal Au-Ag: low sulphidation; 093F 089	na	Drilling, 5 DDH (1533 m), 6 RC (965 m).
3Ts	**Independence Gold Corp.**	Au, Ag; Epithermal Au-Ag: low sulphidation; 093F 055	2022 estimate. Tommy and Ted-Mint veins Inf: 4.47 Mt 3.64 g/t Au, 96.26 g/t Ag (at a cut off grade of 0.4 g/t AuEq in-pit, 2.01 g/t AuEq underground)	Drilling, 17 DDH (4185 m) at Ted-Mint, Tommy and Balrog. Highlight results included 30.0 m grading 4.99 g/t Au, 53.3 g/t Ag.
Akie	**ZincX Resources Corp.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag; 094F 031	I: 22.7 Mt 8.32% Zn, 1.81% Pb, 14.1 g/t Ag Inf: 7.5 Mt 7.04% Zn, 1.24% Pb, 12.0 g/t Ag (at 5% Zn cut off)	The company completed high-resolution lidar over Akie and Mt. Alcock properties.
Captain	**Orestone MiningCorp.**	Cu, Au; Alkalic porphyry Cu-Au; 093J 026, 094C 180	na	1 DDH, 774 m. Airborne MT survey.
Decar Nickel District	**FPX Nickel Corp.**	Ni, Fe; Podiform chromite; 093K 116	2022 resource estimate Baptiste deposit I: 1815 Mt 0.129% DTR Ni, 0.211% Total Ni, 0.0035% DTR Co, 2.40% DTR Fe Inf: 339 Mt 0.131% DTR Ni, 0.212% Total Ni, 0.0037% DTR Co, 2.55% DTR Fe	2504 m drilling (10 holes) at Van target. Ni in all holes; assays included 346.3 m grading 0.133% DTR Ni and 334.5 m grading 0.12% DTR Ni. Drilling expanded mineralization 1 km along strike; area of mineralization 2 km along strike and 1 km across. Mineralization is open laterally and at depth.
East Niv	**NorthWest Copper Corp.**	Cu, Au; Alkalic porphyry Cu-Au	na	Drilling, 8 DDH, 4390 m. 31.1 line-km of ground IP, 1260 line-km of airborne magnetics, 206 surface rock samples, 745 soil samples. Highlight rock sample results included 11 samples grading from 1.08 to 6.55% Cu with Ag grades between 3.7 g/t and 262.0 g/t.
Exodus Gold	**Exodus Mineral Exploration Ltd.**	Au; Au-quartz veins, Epithermal Au, Ag, Cu, Pb, Zn; 093J 043	na	Rock sampling of high-grade gold veins returned values including 39.8 g/t Au and 27.9 g/t Au.
Holy Cross	**Evergold Corp.**	Au, Ag, Cu; Rhyolite breccia and quartz stockwork veining; 093F 029	na	Drilling, 4 DDH, 1556 m. Drilling intersected intervals of sulphide-mineralized rhyolite breccia and quartz stockwork veining.

Table 6. Continued.

Indy	**InZinc Mining Ltd.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag; 093H 072	na	Drilling, 17 DDH (2616 m), 1100 line-km airborne geophysics. Highlight results included 3.0 m grading 2.8% Zn, 0.6% Pb, and 3.8 g/t Ag and 3.6 m grading 3.5% Zn, 0.6% Pb, and 6.4 g/t Ag.
Jean Marie	**Pacific Empire Minerals Corp.**	Cu, Au, Ag, Mo; Porphyry Cu±Mo±Au; 093N 079	na	Drilling, 2 DDH (700 m). Results included: 155 m grading 0.18% Cu, 19 ppm Mo, and 1.0 g/t Ag, and 282 m interval grading 0.21% Cu, 27 ppm Mo, and 1.3 g/t Ag including 76 m grading 0.45% Cu, 71 ppm Mo, and 3.0 g/t Ag.
Joy	**Amarc Resources Ltd.**	Cu, Au; Porphyry Cu±Mo±Au; 094E 016, 57	Pine deposit I: historic non NI 43-101compliant: 40 Mt 0.15% Cu, 0.57 g/t Au (Stealth Mining Corporation1997)	Drilling, 37 DDH (15,427 m) at the Pine deposit and at several district porphyry copper-gold deposit targets. 2648 soil and 313 surface rock sampling.
Kliyul	**Pacific Ridge Exploration Ltd.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 094D 023	I: historic non NI 43-101 compliant: 2.3 Mt 1.30 g/t Au, 0.45% Cu, 6.9 g/t Ag	12 DDH (7015 m). Highlight results included 588.0 m grading 0.12% Cu, 0.39 g/t Au, 0.90 g/t Ag, and 527.8 m grading 0.19% Cu, 0.30 g/t Au, 1.35 g/t Ag.
Kwanika	**NorthWest Copper Corp.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 073	Central zone pit M+I: 104.6 Mt 0.23% Cu, 0.21 g/t Au, 0.78 g/t Ag (at a cut off grade of 0.13% CuEq) Central zone underground M+I: 118.9 Mt 0.30% Cu, 0.29 g/t Au, 0.96 g/t Ag (at a confining shape basis of 0.27% CuEq) South zone pit Inf: 33.3 Mt 0.26% Cu, 0.08 g/t Au, 1.64 g/t Ag, 0.01% Mo	Drilling, 29 DDH (11,871.80 m). Highlights included 304.20 m grading 0.47% Cu, 0.53 g/t Au, 1.7 g/t Ag, and 364.20 m grading 0.17% Cu, 0.17 g/t Au, 0.8 g/t Ag.
Lawyers	**Benchmark Metals Inc.**	Au, Ag; Epithermal Au-Ag: low sulphidation; 094E 066	Open pit M: 20.3 Mt 2.21 g/t Au, 30.5 g/t Ag I: 45.5 Mt 1.09 g/t Au, 18.2 g/t Ag Inf: 2.3 Mt 0.91 g/t Au, 12.8 g/t Ag Out of Pit I: 1.6 Mt 2.74 g/t Au, 60.6 g/t Ag Inf: 2.6 Mt 3.32 g/t Au, 56.3 g/t Ag	Drilling, 20,276 m. PEA and updated mineral resource assessment. The PEA results included a pre-tax NPV 5% of $939 million, with IRR of 31.4%, and 2-year payback.

Table 6. Continued.

Lorraine	**NorthWest Copper Corp.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 002, 094C 069, 174	Lorraine I: 12.95 Mt 0.55% Cu, 0.16 g/t Au Inf: 45.45 Mt 0.43% Cu, 0.1 g/t Au	Drilling, 7 DDH (2867 m). Filed an updated NI 43-101 mineral resource estimate.
Lucas	**Centerra Gold Inc.**	Au, Ag; LS Epithermal gold; 093F 121	na	Drilling, 5 DDH (1068 m).
Max	**Centerra Gold Inc.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093K 020	na	Drilling, 7 DDH (2511 m).
Mount Milligan Brownfield	**Centerra Gold Inc.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 194	na	Drilling, 54 DDH (28,266 m).
Mount Milligan Greenfields	**Centerra Gold Inc.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093N 194	na	Drilling, 2 DDH (804 m).
Oxide Peak	**TDG Gold Corp.**	Cu, Au, Ag; Porphyry Cu±Mo±Au, Epithermal Au-Ag-Cu: low sulphidation; 094E 181	na	Drilling, 2 DDH (1021 m).
QCM	**Kestrel Gold Inc.**	Au, Cu; Au-quartz veins; 093N 200	na	Drilling, 14 RCD (1272 m). Highlight results included 2.33 g/t Au along 44.19 m and 2.39 g/t Au along 21.33 m.
Quesnelle Gold Quartz	**Golden Cariboo Resources Ltd.**	Au, Ag; Quartz ±carbonate veins in greenstone and sedimentary rocks; 093G 015	na	Drilling, 2 DDH (733.9 m). Highlight results included 0.6 m grading 17.5 g/t Au, 61.5 g/t Ag and 0.5 m grading 1.94 g/t Au.
RDP	**Pacific Ridge Exploration Ltd.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 094D 065	na	Drilling, 6 DDH (1861 m). Highlight results included 497.2 m of 0.37% Cu, 0.40 g/t Au, 1.6 g/t Ag, and 107.2 m of 0.63% Cu, 1.10 g/t Au, 2.91 g/t Ag.
Shasta	**TDG Gold Corp.**	Au, Ag; Epithermal Au-Ag: low sulphidation; 094E 050, 26	Inf: 22.0 Mt 0.79 g/t Au, 26.7 g/t Ag	5034 m of oriented HQ diamond drilling (21 holes). Filed a NI 43-101 Mineral Resource. Reported results for late 2021 drilling included 34 m grading 7.19 g/t Au, 105 g/t Ag.

Table 6. Continued.

Sofia	**Skeena Resources Limited**	Cu, Au, Ag; Porphyry Cu±Mo±Au, Epithermal Au-Ag-Cu: low sulphidation; 094E 208	na	Drilling, 11 DDH, 4397.90 m.
Stardust	**NorthWest Copper Corp.**	Cu, Au, Ag, Zn; Cu skarn; 093N 009	Canyon Creek I:1.96 Mt 1.31% Cu, 1.44 g/t Au, 27.1 g/t Ag Inf: 5.84 Mt 0.86% Cu, 1.17 g/t Au, 20.0 g/t Ag	Drilling, 10 DDH (6698 m). Highlight results of 44.20 m grading 0.84% Cu, 0.51 g/t Au, 13.7 g/t Ag, and 75.95 m grading 0.55% Cu, 0.50 g/t Au, 10.9 g/t Ag.
Surge Nickel	**Surge Battery Metals Inc. (80%);** Nickel Rock Resources (20%)	Ni, Fe; Podiform chromite; 093N 035		At HN4, geological mapping and sampling (600 soil, 190 rock); 300 m DDH drilling completed by early November. At N100, geological mapping and sampling (304 rock).
Wicheeda	**Defense Metals Corp.**	Nb, REE; Carbonatite-hosted deposits; 093J 014	I: 5.0 Mt 2.95% TREO Inf: 29.5 Mt 1.83% TREO Resources at a cut off grade 0.5% TREO Total metal % = sum of Ce+La+Nd+Pr+Sm+Nb percentages	Drilling, 18 DDH (4357 m) and 1153 m geotechnical 2022 drilling. Results included 124 m grading 3.58% total rare earth oxides (TREO).
Willow	**Exodus Mineral Exploration Ltd.**	Au, Ag; Gold- and silver-bearing quartz veins with anomalous copper	na	Grab samples included 1.56 g/t Au, 535 ppm Sb; 0.226 g/t Au, 219 ppm Sb; 0.112 g/t Au, 11.6 g/t Ag, and 786 ppm Cu.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 7. Selected exploration projects, Northeast region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Resource (NI 43-101 compliant unless indicated otherwise)	Comments
Muskwa	**Fabled Copper Corp.**	Cu, Ag, Pb, Co; Cu ±Ag quartz veins; 094K 012, 50	na	Applied for five-year land use permit for drilling.

M = Measured; I = Indicated; Inf = Inferred

A total of 1272 m of reverse circulation drilling was completed in 14 holes. Highlight results included 44.19 m grading 2.33 g/t Au and 21.33 m grading 2.39 g/t Au.

7.1.8. Quesnelle Gold Quartz (Golden Cariboo Resources Ltd.)

Golden Cariboo Resources Ltd. completed two diamond-drill holes totalling 733.9 m at their **Quesnelle Gold Quartz** project. One hole intersected two quartz veins in a 15.2 m interval (true width estimated at 10 m). The widths of the veins were not announced. Reported assays were 0.6 m grading 17.5 g/t Au, and 61.5 g/t Ag, and 0.5 m grading 1.94 g/t Au.

7.1.9. Shasta (TDG Gold Corp.)

TDG Gold Corp. completed 5034 m of oriented core diamond drilling in 21 drill holes at its **Shasta** project. They

also filed an initial NI 43-101 mineral resource estimate based on a combination of historic drilling and 2021 drilling. At a cut off grade of 0.3 g/t AuEq they reported an Inferred resource of 22.01 Mt grading 0.79 g/t Au and 26.7 g/t Ag. Reported results for late 2021 drilling included 34 m grading 7.19 g/t Au and 105 g/t Ag.

7.1.10. Willow (Exodus Mineral Exploration Ltd.)

At their **Willow** project, Exodus Mineral Exploration Ltd. discovered gold- and silver-bearing quartz veins with anomalous copper, arsenic, and antimony. Sample highlights from selected grab samples included 1.56 g/t Au, 9350 ppm As, and 535 ppm Sb; 0.226 g/t Au, 5050 ppm As, and 219 ppm Sb; and 0.112 g/t Au, 11.6 g/t Ag, and 786 ppm Cu.

7.2. Selected porphyry projects

Porphyry projects continued to be an important focus of mineral exploration in the Quesnel and Stikine terranes of the North Central Region (Fig. 1; Table 6). Selected projects include Orestone Mining Corp.'s **Captain** project, NorthWest Copper Corp.'s. **Kwanika, Lorraine,** and **East Niv** projects, Pacific Empire Minerals Corp.'s **Jean Marie** project, Amarc Resources Ltd.'s **Joy** project, Pacific Ridge Exploration Ltd.'s **Kliyul** and **RDP** projects, Centerra Gold Inc.'s **Max** and **Mount Milligan Brownfields** projects, TDG Gold Corp.'s **Oxide Peak** project, and Skeena Resources Limited's **Sofia** property.

7.2.1. Captain (Orestone Mining Corp.)

Orestone Mining Corp. completed a 774 m diamond-drill hole at its **Captain** project and failed to intersect significant mineralization. Orestone also completed an airborne MobileMT survey over a 40 km^2 area and reported that results better defined their T1 porphyry target.

7.2.2. East Niv (NorthWest Copper Corp.)

NorthWest Copper Corp. continued exploration on their **East Niv** project with 4390 m drilling in eight diamond-drill holes, a 31.1 line-km ground-based induced polarization survey, 1260 line-km of airborne magnetic surveying, rock (206) and soil (745) sampling, and geological mapping. Rock chip samples along a 13 km trend returned copper and silver assays. Highlight results included 11 samples grading from 1.08% Cu to 6.55% Cu with Ag grades between 3.7 g/t and 262.0 g/t.

7.2.3. Jean Marie (Pacific Empire Minerals Corp.)

Pacific Empire Minerals Corp. continued exploration on its **Jean Marie** project. The company completed two diamond-drill holes totalling 700 m. Both holes intersected copper mineralization. One hole intersected 155 m grading 0.18% Cu, 19 ppm Mo, and 1.0 g/t Ag. The other intersected a 282 m interval grading 0.21% Cu, 27 ppm Mo, and 1.3 g/t Ag including 76 m grading 0.45% Cu, 71 ppm Mo, and 3.0 g/t Ag. These results extended known copper mineralization along strike and at depth.

7.2.4. Joy (Amarc Resources Ltd.)

Amarc Resources Ltd. carried out geological mapping, sampling (2648 soil, 313 surface rock), induced polarization ground surveys, and diamond drilling at their **Joy** project. Amarc is the project operator, but Freeport-McMoRan Properties Canada Inc. is funding the exploration under an earn-in agreement. Diamond drilling consisted of 15,427 m in 37 holes at the Pine deposit and at several district porphyry copper-gold targets. More than 56 line-km of IP surveying was completed.

7.2.5. Kliyul (Pacific Ridge Exploration Ltd.)

Pacific Ridge Exploration Ltd. completed 7015 m of drilling in 12 drill holes at their **Kliyul** project. Drilling intersected porphyry copper-gold style mineralization, including pyrite, chalcopyrite, and lesser bornite in veins and as disseminations. The Kliyul Main zone (KMZ) was extended to the north, south, and at depth across and area approximately 550 by 200 m and 600 m deep. Highlight results included 588.0 m grading 0.12% Cu, 0.39 g/t Au, and 0.90 g/t Ag, and 527.8 m grading 0.19% Cu, 0.30 g/t Au, and 1.35 g/t Ag.

7.2.6. Kwanika (NorthWest Copper Corp.)

NorthWest Copper Corp. completed 29 diamond-drill holes totalling 11,871.80 m at their **Kwanika** project. Results expanded the footprint of the deposit and increased the confidence of the mineral resource estimate. High-grade intersections from the core of the deposit included 304.20 m grading 0.47% Cu, 0.53 g/t Au, and 1.7 g/t Ag. Drill results from the northern extension of the deposit included 364.20 m grading 0.17% Cu, 0.17 g/t Au, and 0.8 g/t Ag.

7.2.7. Lorraine (NorthWest Copper Corp.)

Northwest Copper Corp. announced 2867 m of diamond drilling in seven holes at their **Lorraine** project. Other work included induced polarization and electromagnetic surveys. Before the drilling, NorthWest announced an updated mineral resource estimate for the project's mineralized zones (Lower Main, Upper Main, and Bishop). At a cut off grade of 0.2% Cu, total Indicated resources are 12.95 Mt grading 0.55% Cu, 0.16 g/t Au, and total Inferred resources are 45.45 Mt grading 0.43% Cu, 0.1 g/t Au.

7.2.8. Max (Centerra Gold Inc.)

Centerra Gold Inc. drilled 2511 m in 7 holes at their **Max** project to test three target areas 22 km south of the Mount Milligan mine facilities.

7.2.9. Mount Milligan Brownfield (Centerra Gold Inc.)

Brownfield exploration at the **Mount Milligan** mine site included more than 28,266 m in 54 holes. The drilling focussed on six target areas up to 1 km west of the 2020 ultimate pit boundary and within the M-236 mine reclamation boundary.

7.2.10. Mount Milligan Greenfield (Centerra Gold Inc.)

Centerra Gold Inc. was active on their **Mount Milligan Greenfield** project with 804 m of diamond drilling in two holes at the Fugro-2 target 6 km south of the Mount Milligan mine. Exploration continued for new porphyry copper-gold deposits and low-sulphidation epithermal gold-silver deposits in the Mount Milligan tenement package.

7.2.11. Oxide Peak (TDG Gold Corp.)

TDG Gold Corp. completed 1021 m of drilling in two drill holes at their **Oxide Peak** project. Both drill holes intersected strongly broken, altered volcanic rocks with pyrite and chalcocite. Magnetite was reported in the top 120 m of both holes.

7.2.12. RDP (Pacific Ridge Exploration Ltd.)

Pacific Ridge Exploration Ltd. completed 1861 m of diamond drilling in six holes at their **RDP** project. Pacific Ridge was the operator, but the program was funded by Antofagasta Minerals S.A., a subsidiary of Antofagasta PLC, who can earn a 75% interest in the project by spending $10,000,000 on exploration over eight years and delivering a Preliminary Economic Assessment report. Starting near surface one hole returned 497.2 m grading 0.37% Cu, 0.40 g/t Au, and 1.60 g/t Ag including an interval of 107.2 m grading 0.63% Cu, 1.10 g/t Au, and 2.91 g/t Ag.

7.2.13. Sofia (Skeena Resources Limited)

Skeena Resources Limited was active at its **Sofia** property, acquired from QuestEx Gold & Copper Ltd. in 2022. Skeena drilled 4397.90 m in 11 holes. Previous work focussed on epithermal targets, but Skeena was targeting a potential porphyry system. Additional work included locating and relogging historic core, outcrop mapping, and collecting rock samples.

7.3. Selected polymetallic base and precious metal projects

In the North Central Region active projects included ZincX Resources Corp.'s **Akie**, NorthWest Copper Corp.'s **Stardust** and InZinc Mining Ltd.'s **Indy**. In the Northeast Region, Fabled Copper Corp. was active at their **Muskwa** project (Fig. 1: Tables 6, 7).

7.3.1. Akie (ZincX Resources Corp.)

ZincX Resources Corp. completed high-resolution lidar surveys over their **Akie** project area. The data were processed to produce a high-resolution (0.5 m) digital elevation model, a digital surface model, a bare earth point dataset, and a fully detailed topographic dataset. The data will be used to assist further exploration and for engineering design.

7.3.2. Indy (InZinc Mining Ltd.)

At their **Indy** project, InZinc Mining Ltd. completed 2616 m of diamond drilling in 17 holes. Drilling tested three new areas with soil geochemistry anomalies (Fox East, Keel, and Echo central area) and their known B-9 zone. Reported results included 3.0 m grading 2.8% Zn, 0.6% Pb, and 3.8 g/t Ag and 3.6 m grading 3.5% Zn, 0.6% Pb, and 6.4 g/t Ag. InZinc also completed 1100 line-km of airborne geophysics.

7.3.3. Muskwa (Fabled Copper Corp.)

Fabled Copper Corp. carried out prospecting, mapping, sampling, magnetic and VLF ground surveying, unmanned aerial vehicle photogrammetry surveying, and lidar surveying at historic underground workings at their **Muskwa** project. The project consists of the Neil, Toro, and Bronson properties. A surface sample at Bronson assayed 23.10% Cu, 36.50 g/t Au. Four of five samples from the Brad vein at the Toro project returned values of more than 0.5% Cu. The highest value was 13.85% Cu with 0.15 g/t Au and 7.42 g/t Ag. North of the Brad vein a sample assayed 13.85% Cu. West of the Toro vein; eight of twelve samples assayed over 0.5% Cu; the highest value was 10.55% Cu. A new discovery at Toro (Target 11 vein) assayed 1.52% Cu. Fabled Copper has applied for a five-year land use permit to allow diamond drilling. Fabled Copper also contributed to the Gataga River Basin cleanup project managed by the Northeastern British Columbia Wildlife Fund. Fabled Copper supplied helicopter time and manpower to remove legacy waste in the project area, including 2360 kg of fuel drums and 1896 kg of miscellaneous waste.

7.3.4. Stardust (NorthWest Copper Corp.)

NorthWest Copper Corp. was active at its **Stardust** project (Fig. 5), a high-grade carbonate replacement deposit 7 km from the Kwanika deposit. NorthWest completed 6698.20 m in ten diamond-drill holes to expand the known resource. Highlight results include 44.20 m grading 0.84% Cu, 0.51 g/t Au, and 13.7 g/t Ag and 75.95 m grading 0.55% Cu, 0.50 g/t Au, and 10.9 g/t Ag.

Fig. 5. Logging core at the Stardust project (NorthWest Copper Corp.).

7.4. Selected Ni-Cu-Co-precious metal projects

FPX Nickel Corp.'s **Decar Nickel District** project and the **Surge Nickel** project (Surge Battery Metals Inc. 80%; Nickel

Rock Resources 20%) are in the North Central Region (Fig. 1; Table 6). These projects contain ultramafic rocks mineralized with a nickel-iron alloy, awaruite.

7.4.1. Decar Nickel District (FPX Nickel Corp.)

FPX Nickel Corp. reported an updated mineral resource estimate (MRE) for their **Decar Nickel District** project's Baptiste deposit and carried out diamond drilling at the Van target approximately 6 km north of Baptiste. The updated MRE reported a 6% davis tube recoverable (DTR) nickel increase in the Indicated category and a 15% increase in the Inferred category. The report also included DTR cobalt and DTR iron grades. Indicated resources are now reported as Indicated 1815 Mt grading 0.129% DTR Ni, 0.211% total Ni, 0.0035% DTR Co, and 2.40% DTR Fe, and Inferred 339 Mt grading 0.131% DTR Ni, 0.212% total Ni, 0.0037% DTR Co, and 2.55% DTR Fe. At the Van target, 2504 m of drilling was completed in ten holes. Holes were spaced to test along strike from the initial 2021 discovery area. Nickel mineralization was in all holes, and highlight assays included 346.3 m grading 0.133% DTR Ni and 334.5 m grading 0.12% DTR Ni. Drilling expanded mineralization along strike for 1 km and the area of mineralization is now defined as extending for 2 km along strike and 1 km across. Mineralization is open both laterally and at depth.

7.4.2. Surge Nickel (Surge Battery Metals Inc. 80%; Nickel Rock Resources Inc. 20%)

Surge Battery Metals Inc.'s **Surge Nickel** project consists of two claim blocks separated by about 40 km, **Surge Nickel (HN4)** and **Surge Nickel (N100)**. At **HN4** Surge carried out geological mapping and sampling (600 soil, 190 rock). In the fall, the company began a planned 900 m of diamond drilling of which 300 m was completed by early November. At **N100**, Surge carried out geological mapping and collected 304 rock samples.

7.5. Selected REE and niobium projects

Deep-water basin strata east of the Rocky Mountain Trench host Taseko Mine Ltd.'s **Aley** niobium-bearing carbonatite proposed mine (see section 6.1.1.) and Defense Metals Corporation's **Wicheeda** rare earth element project (Fig. 1; Table 6).

7.5.1. Wicheeda (Defense Metals Corp.)

The **Wicheeda** carbonatite is a deformed intrusion that hosts light rare earth elements (LREE) in the Kechika Group. The core of the intrusion is a dolomite carbonatite, which transitions outward to a calcite carbonatite. Hydrothermal veins and plugs in the dolomite carbonatite are mineralized with REE flourocarbonates, ancylite (cerium, lanthanum) and monazite (cerium, lanthanum, neodymium). Minor concentrations of niobium are also present. Defense Metals completed 4357 m of diamond drilling in 18 holes, 1153 m of geotechnical drilling as part of a resource delineation and pit geotechnical program (Fig. 6) and conducted flotation tests. Drilling results consistently demonstrated continuity of mineralization and high-grade results including 124 m grading 3.58% total rare earth oxides (TREO) were reported. The deposit consists of three main rock types, dolomite carbonatite (73%), xenolithic carbonatite (24%), and syenite (3%). Flotation tests on dolomite carbonatite and composite samples produced a high-grade mineral concentrate with more than 40% TREO at a recovery rate greater than 80% xenolithic carbonatite material produced a 38% TREO concentrate at approximately 70% recovery and the syenitic material produced a 14.6% TREO concentrate at approximately a 79% recovery rate.

Fig. 6. Transferring core boxes at the Wicheeda project (Defense Metals Corp.).

7.6. Selected coal projects

In 2022, no significant coal exploration was carried out. Conuma Resources Limited concentrated on better defining known resources and permitting for new proposed pit operations. The two main coal-bearing units in the Northeast Region (Gething and Gates formations) consist of interbedded shale, sandstone, siltstone, conglomerate, and coal.

7.7. Selected industrial mineral projects

Apart from the proposed Giscome limestone quarry (see section 6.3.1.), no significant industrial mineral exploration projects were tracked.

8. Geological research

Jones et al. (2002) continued generating results from the British Columbia Geological Survey northern Hogem batholith project, releasing in situ zircon U-Pb, Lu-Hf, $\delta^{18}O$, and trace-element data from intrusive units, and Ootes et al. (2022) presented igneous and detrital zircon U-Pb, Lu-Hf, and trace-element data and the first radiolarian ages from the Asitka Group (basement to eastern Stikinia). This work showed that, although an enigmatic older crustal fragment may have been nearby, eastern Stikinia formed on an ocean floor during the Carboniferous to early Permian from entirely

juvenile magmatic sources. Ootes (2023) examined regional stratigraphic relationships in the eastern part of central Stikinia to identify a major synclinorium-anticlinorium pair that extends along strike for more than 100 km into the northern Toodoggone region where the hinge zone of the anticlinorium coincides with the Black Lake intrusion (Early Jurassic). Epithermal mineralization (e.g., Baker, Lawyers, Shasta deposits) is distributed along the axial trace of the anticlinorium, which is apparently unique to this part of Stikinia, leading to the hypothesis of a causal relationship between folding, intrusion, and Au-Ag±Cu epithermal mineralization. Also working in the northern Toodoggone region, Voegeli and Lecumberri-Sanchez (2022) examined clay alteration assemblages at the Silver Pond prospects and concluded that they likely formed in a high-sulphidation epithermal setting. Working with material from the Baptiste deposit, Seiler et al. (2022a) tested the possibility of separating awaruite, a native nickel-iron alloy (Ni_3Fe), from gangue minerals in serpentinite ores using flotation with a xanthate collector, and Seiler et al. (2020b) examined the chemical composition, crystallographic structure, and magnetic properties of the awaruite to determine a flow sheet for large-scale processing. Based on detailed stratigraphic and sedimentologic work in the Northeast Region, Bergen et al. (2022) established flow mechanisms and resultant geometries of deep-water channel and levee deposits in turbidites of the Isaac Formation (Windermere Supergroup, Neoproterozoic). Also working in the Northeast Region, Brookfield et al. (2022) examined rocks that record the great extinction across the Permian-Triassic boundary, concluding that environmental changes were driven by global changes in atmospheric and oceanic chemistry rather than by physical changes like sea-level fluctuations. Sacco et al. (2022) reported on a long-term project to evaluate the use of tills to detect mineralization buried beneath drift cover in the Interior Plateau, with surficial geology maps (including till sampling suitability and drift thickness), and re-analysis of archived till samples.

9. Summary

The North Central and Northeast regions are highly prospective for discovering mineral deposits. The North Central Region has three proposed metal mine projects and one proposed industrial mineral mine project. The Northeast Region has several proposed coal mine projects and one proposed industrial mineral mine project. The North Central Region has several active mineral exploration projects whereas in the Northeast Region the predominant commodity explored for is coal.

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Exploration and mining in the South Central Region, British Columbia

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1. Introduction

With five major mines in operation, including the re-started **Mount Polley** mine, the South Central Region is currently the most productive copper mining district in Canada. The region's varied geology, well-established infrastructure, and access to markets also make it an important industrial minerals centre. The Cariboo area is the province's largest placer gold camp, with active permits numbering in the hundreds. Thermal coal resources in Cenozoic basins were last mined in 2013. The region has five major proposed metal mines. About 100 exploration projects were tracked in 2022, although this represents a minimum because not all exploration work is recorded.

Estimates for exploration expenditures, drilling programs, and other metrics were captured in the British Columbia Mineral and Coal Exploration Survey, a joint initiative of the Province of British Columbia Ministry of Energy, Mines and Low Carbon Innovation, the Association for Mineral Exploration in British Columbia, and EY LLP. For the South Central Region, exploration expenditures were estimated at $108.5 million and exploration drilling at 243,180 m (Clarke et al., 2023; EY LLP, 2023). These values are lower than those for 2021, which saw $147.6 million in expenditures and 462,500 m of drilling (Clarke et al., 2022; EY LLP, 2022). The decreases are due to a shift in some advanced projects from exploration to feasibility and resource estimation and also reflect difficulties raising exploration capital.

The largest exploration programs focussed on orogenic and epithermal gold veins, but porphyry copper-gold exploration near mine sites and at some advanced exploration projects were also significant contributors to the totals.

2. Geological overview

The tectonic and metallogenic evolution of the Canadian Cordillera are intimately linked (Fig. 1, e.g., Nelson et al., 2013). The South Central Region straddles three of British Columbia's five morphogeological belts (from west to east: Coast; Intermontane; Omineca). The mid-Mesozoic and older geological framework is represented by cratonic and pericratonic rocks in the east, and a series of Late Paleozoic through mid-Mesozoic arc and oceanic terranes to the west (Fig. 1). Younger rocks include Jura-Cretaceous siliciclastic and local volcanic rocks, Eocene volcanic rocks, Neogene and Quaternary basalt, and Middle Jurassic to Eocene granitic intrusions.

The oldest rocks in the region are Paleoproterozoic basement gneiss complexes at the eastern boundary, such as in the Monashee complex. These are interpreted as parts of the North American craton (Armstrong et al., 1991), overlain by Neoproterozic to Paleozoic cover deposited following rifting that formed the western margin of Ancestral North America (McDonough and Parrish, 1991; Murphy et al., 1991). To the northwest, the Cassiar terrane consists of Neoproterozoic to mid-Paleozoic siliciclastic and carbonate rocks interpreted as distal facies of the North American platform (Struik, 1988a). Also affiliated with Ancestral North America, the Kootenay terrane (deep-water basin strata on Figure 1) include Neoproterozoic to mid-Paleozoic deep-water facies equivalents deposited west of the North American platform. Lower Cambrian and older rocks are similar to North American strata to the east, but the overlying lower Paleozoic succession is characterized by units of coarse siliciclastic and mafic volcanic rocks that may reflect intermittent crustal extension (Colpron and Price, 1995). This belt also includes Devono-Mississippian calc-alkaline to alkalic volcanic rocks and associated granitoid intrusions, found mainly in the Eagle Bay assemblage (Schiarizza and Preto, 1987), which reflect the initiation of east-dipping subduction beneath the North American plate margin. These rocks host polymetallic volcanogenic massive sulphide (VMS) occurrences, and the **Yellowhead** bulk tonnage copper deposit. Slide Mountain terrane is the easternmost tract of oceanic rocks in the Canadian Cordillera. These rocks may be the remnant of a Late Paleozoic marginal basin that formed behind a westward-retreating volcanic arc in Quesnel terrane. The Fennell Formation hosts copper-zinc-silver massive sulphide mineralization at the **Chu Chua** occurrence.

Quesnel terrane is a Late Triassic to Early Jurassic island arc complex (e.g., Mortimer, 1987; Struik, 1988a, b; Unterschutz et al., 2002). It also includes a Late Paleozoic arc sequence, represented by the Harper Ranch Group (Beatty et al., 2006)

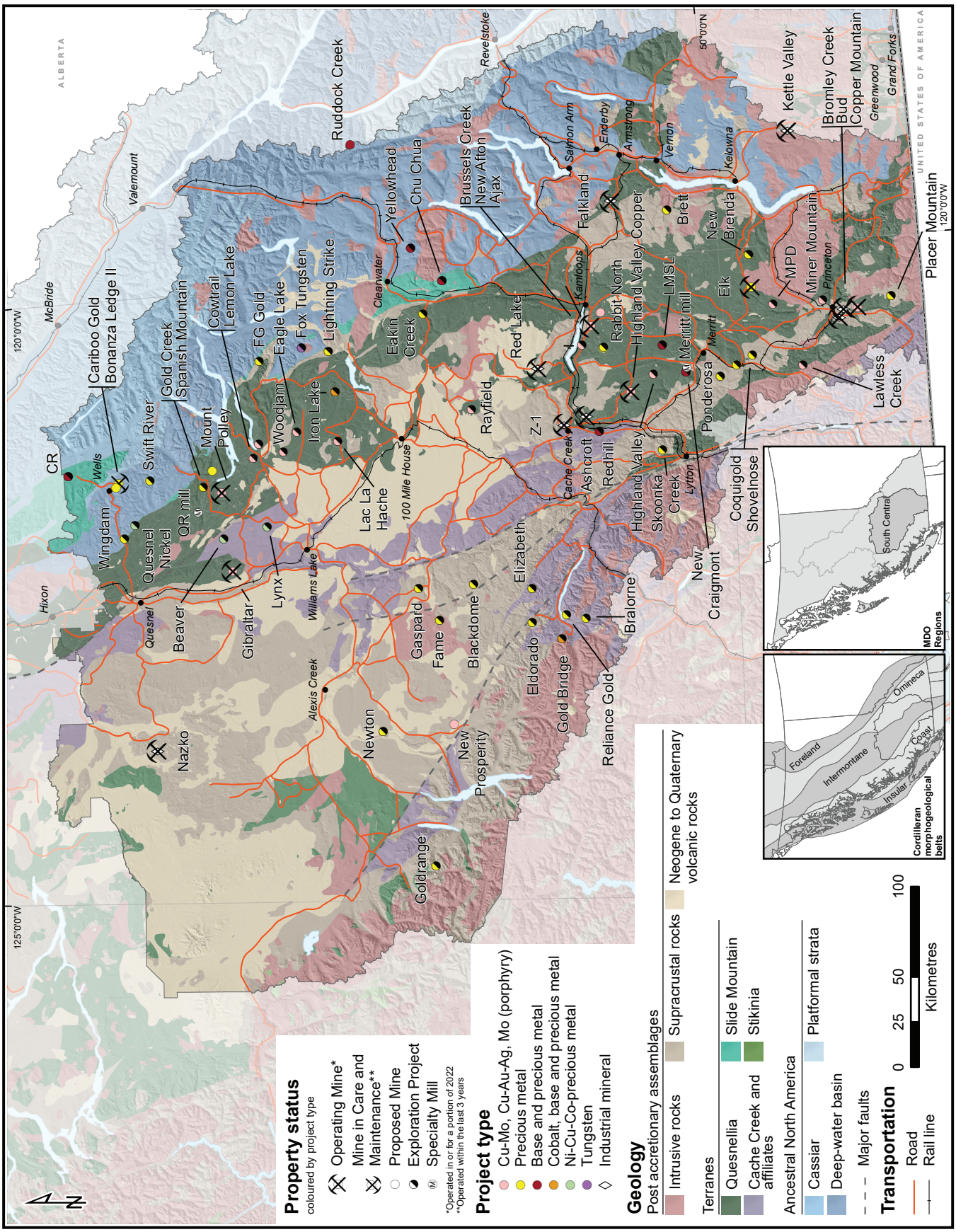

Fig. 1. Mines, proposed mines and selected exploration projects, South Central Region, 2022. Terranes after Nelson et al. (2013).

and, in the south, assemblages of oceanic rocks (Tempelman-Kluit, 1989). The Mesozoic rocks are represented mainly by Middle to Upper Triassic volcanic and sedimentary rocks of the Nicola Group, together with abundant Upper Triassic to Lower Jurassic calc-alkaline to alkaline intrusions (Preto, 1977, 1979; Mortimer, 1987; Panteleyev et al., 1996; Schiarizza et al., 2013). The Nicola Group consists mainly of volcanic and volcanic-derived sedimentary rocks, but also includes siltstone and slate intercalated with quartzite and limestone (Bloodgood, 1990; Schiarizza et al., 2013; Mihalynuk et al., 2015; Schiarizza, 2019; Mihalynuk and Diakow, 2020). The volcanic rocks are mainly augite-phyric shoshonitic basalts, but the western part of the group locally includes a belt of calc-alkaline volcanic rocks with substantial amounts of rhyolite and dacite (Preto, 1977, 1979; Mortimer, 1987). A younger stratigraphic component of Quesnel terrane consists of Lower to Middle Jurassic sedimentary rocks that unconformably overlie the western parts of the Nicola Group (Travers, 1978; Logan and Moynihan, 2009; Schiarizza et al., 2013).

Quesnel terrane is important for its porphyry copper deposits (e.g., Logan, 2013; Logan and Mihalynuk, 2014). The plutons that host these deposits conform, in part, to a pattern defined by parallel belts of calc-alkaline and alkalic plutons that become progressively younger from west to east (Schiarizza, 2014). The western (Late Triassic) calc-alkaline belt includes the Guichon Creek batholith, host to the **Highland Valley Copper** copper-molybdenum mine, and the Granite Mountain batholith, host to the **Gibraltar** copper-molybdenum mine. A well-defined belt farther east comprises younger, latest Triassic alkalic plutons, which host alkalic porphyry copper-gold deposits, including producing mines at **Copper Mountain** and **New Afton** and the **Mount Polley** mine, which has resumed operation. A third belt, younger and farther to the east, is defined by several large, Lower Jurassic calc-alkaline plutons. Cache Creek terrane, consisting of Carboniferous to Early Jurassic chert, argillite, basalt, limestone, sandstone, gabbro, and serpentinized ultramafic rocks of the Cache Creek complex, forms a belt to the west of Quesnel terrane in the central and northern parts of the region. It is interpreted, at least in part, as a subduction complex responsible for generating the Quesnel magmatic arc (Travers, 1978; Struik et al., 2001).

Cadwallader terrane, as interpreted by Schiarizza (2013), underlies parts of the Intermontane and eastern Coast belts, west of Cache Creek and Quesnel terranes. It includes a Late Permian-Early Triassic primitive oceanic arc complex, and an overlying Late Triassic-Middle Jurassic arc complex and associated siliciclastic apron.

Bridge River terrane is in the eastern Coast belt, west of Lytton and Lillooet, where it is partially enveloped by Cadwallader terrane. It is represented mainly by the Bridge River complex, comprising structurally interleaved slivers of chert, argillite, basalt, blueschist, gabbro, serpentinite, limestone, and sandstone (Schiarizza et al., 1997). Both Cadwallader and Bridge River terranes are shown as 'Cache Creek and affiliates' on Figure 1.

Stikinia (Stikine terrane) is a mid-Paleozoic to Middle Jurassic arc terrane that is markedly similar to Quesnellia (Quesnel terrane), and forms a predominant component of the Cordillera in central and northern British Columbia. It is represented in the northwestern part of the South Central Region by a few scattered exposures of volcanic and sedimentary rocks correlated with the Hazelton Group (Upper Triassic to Middle Jurassic; Tipper, 1959, 1969). Younger stratigraphic units overlap older terranes and cover large parts of the region. These units include: Upper Jurassic to Upper Cretaceous siliciclastic rocks of the Tyaughton-Methow basin, which overlap Cadwallader and Bridge River terranes in the eastern Coast belt (Schiarizza et al., 1997); and mid-Cretaceous arc volcanic rocks of the Spences Bridge Group, which form a northwest-trending belt that overlaps Quesnel and Cache Creek terranes in the Merritt-Lillooet area (Monger and McMillan, 1989), and continues westward across the Fraser River where it overlaps Cadwallader and possibly Stikine terranes (Mahoney et al., 2013). Eocene volcanic and subordinate sedimentary rocks (e.g., Kamloops Group, Penticton Group, Princeton Group) are prominent in some locations. Neogene basalt of the Chilcotin Group overlaps Quesnel, Cache Creek, Cadwallader, and Stikine terranes throughout much of the central part of the region (Dohaney et al., 2010). Granitic plutons, ranging from late Middle Jurassic to Eocene, occur throughout the region and, in some cases, are responsible for significant mineralization (e.g., **IKE**, **New Prosperity**).

3. Mines and quarries

The region produces copper, molybdenum, gold, and silver from five large mines, and a variety of industrial minerals (bentonite, zeolite, diatomaceous earth, gypsum, scoria, opal, and dimension stone) from about ten quarries. Almost 1000 placer mines and gravel pits have active permits, but not all produce in any given year.

3.1. Metal mines

The South Central Region hosts seven of the province's metal mines (Fig. 1; Table 1). These include the two largest copper-molybdenum producers (**Gibraltar** and **Highland Valley Copper**) and two major copper-gold mines (**New Afton** and **Copper Mountain**). A third copper-gold producer, **Mount Polley**, restarted in 2022. The region hosts two small precious metal mines, **Bonanza Ledge II**, which resumed mining mid-2021 and **Elk**, which began mining late in 2021.

3.1.1. Bonanza Ledge II (Osisko Development Corp.)

Barkerville Gold Mines Ltd. (now under Osisko Development Corp.) restarted the **Bonanza Ledge** mine in 2017 as an underground long-hole and cemented fill operation below the existing pit. Osisko Development Corp. began a second phase of underground mining at Bonanza Ledge in 2021 that was suspended in June 2022. Bonanza Ledge is considered a test mine, part of the larger Cariboo Gold project, a proposal for a larger 12-year mining operation to the north. Bonanza Ledge

Table 1. Metal mines, South Central Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Bonanza Ledge II	**Osisko Development Corp.**	Au; Au-quartz veins; 093H 140	7153 oz Au	na	M: 47 t 5.1 g/t Au I: 32 Mt 4.0 g/t Au M+I: 12,000 oz Au	Production at Bonanza Ledge was suspended June 2022.
Copper Mountain	**Copper Mountain Mining Corporation 75%**, Mitsubishi Materials Corporation 25%	Cu, Au, Ag; Porphyry Cu-Au, Alkalic; 092HSE001	52.8 Mlb Cu 22,600 oz Au 242,600 oz Ag	P+Pr: 702 Mt 0.24% Cu 0.10 g/t Au 0.71 g/t Ag	M+I: 1.132 Bt 0.22% Cu 0.09 g/t Au 0.64 g/t Ag	Increased resources and reserves. Resources inclusive of reserves.
Elk	**Gold Mountain Mining Corp**.	Au, Ag; Au quartz veins; 092HNE009, 295, 41, 261	22,164 t at 3.68 g/t Au mined in first 6 months of 2022	na	M+I: 4.359 Mt 5.6 g/t Au 11.0 g/t Ag Inf: 1.497 Mt 5.3 g/t Au 14.4 g/t Ag	Effort to improve grade control may change production in H2. Exploration is ongoing.
Gibraltar	**Taseko Mines Limited 75%**, Cariboo Copper Corp. 25%	Cu, Mo; Porphyry Cu±Mo±Au; 093B 012	93.9 Mlb Cu 1.0 Mlb Mo	P+Pr: 706 million short tons 0.25% Cu 0.008% Mo (sulphide mineral reserves) P+Pr: 17 short tons 0.15% (acid soluble Cu)	M+I: 1.215 million short tons 0.24% Cu 0.007% Mo (inclusive of reserves)	Trend toward improving production in Q3. Reserves increased over previous year for a 23 year projected mine life.
Highland Valley Copper	**Teck Resources Limited**	Cu, Mo; Porphyry Cu±Mo±Au; 092ISW012, 45	268.1 Mlb Cu 1.1 Mlb Mo	P+Pr: 338.3 Mt 0.31% Cu 0.008% Mo	M: 582.8 Mt 0.30% Cu 0.009% Mo I: 626.7 Mt 0.26% Cu 0.010% Mo Inf: 232.3 Mt 0.22% Cu 0.007% Mo	HVC 2040 project, if implemented, would extend mine life from 2028 to 2042.

Table 1. Continued.

Mount Polley	**Imperial Metals Corporation**	Cu, Au, Ag; Porphyry Cu-Au, Alkalic; 093A 008	>5 Mlb Cu (2.4 Mlb produced during Q3)	P+Pr: 53.8 Mt 0.34% Cu 0.30 g/t Au 0.90 g/t Ag	M+I open pit: 186.9 Mt 0.27% Cu 0.28 g/t Au 0.49 g/t Ag M+I underground: 7.4 Mt 0.29% Cu 0.29 g/t Au 6.57 g/t Ag	Reserves and resources estimated in 2016 adjusted for mining to 2020. Q3 production was a ramp-up period. Production expected to increase in Q4.
New Afton	**New Gold Inc.**	Au, Ag, Cu; Porphyry Cu-Au, Alkalic; 092INE023	32.1 Mlb Cu 40,800 oz Au	P+Pr: 41.3 Mt 0.67 g/t Au 1.8 g/t Ag 0.74% Cu	M+I: 64.9 Mt 0.56 g/t Au 2.0 g/t Ag 0.70% Cu (exclusive of reserves)	Underground exploration drilling results to be incorporated in 2022 year-end resource estimates.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

is permitted for production of up to 215,000 tpy of ore. The mine life of phase II is an anticipated 18 months in. Ore was trucked to the Quesnel River Mill. They have a memorandum of understanding with Nicola Mining Inc. to process approximately 15,000 t of stockpiled ore. In 2022, the mine produced 7163 oz Au at an average grade of 6.50 g/t Au from 53,352 t of mineralized material milled as of September 30.

Two types of mineralization are of interest at Bonanza Ledge: pyrite replacement and vein, which consists of native gold in quartz veins cutting pyrite-bearing, carbonaceous and chloritic phyllite of the Snowshoe Group (Proterozoic-Paleozoic).

3.1.2. Copper Mountain (Copper Mountain Mining Corporation 75%; Mitsubishi Materials Corporation 25%)

The **Copper Mountain** copper-gold open-pit mine has produced since August 2011 and, after commissioning a third ball mill, can currently mill at a rate of 45,000 tpd. Further mill expansion to 65,000 tpd, to be commissioned by 2028, is projected to increase annual production to 138 Mlb Cu. In the first nine months of 2022, the mine produced 39.6 Mlbs Cu, 16,980 oz Au, 181,953 oz Ag. Management's guidance for 2022 was 55-60 Mlb Cu. The mine is conducting trials of electric trolley assist haul trucks to reduce diesel use.

Following a resource expansion drilling program completed in early 2022, Copper Mountain increased reserves by 57% to Proven and Probable 702 Mt at average grades of 0.24% Cu, 0.10 g/t Au, 0.71 g/t Ag. Projected mine life is now 32 years (up from 21 years), accounting for the planned increase in production. Measured and Indicated mineral resources inclusive of reserves are 1.132 Bt at 0.22% Cu, 0.09 g/t Au, 0.64 g/t Ag.

The Copper Mountain ore bodies are Late Triassic alkalic porphyry Cu-Au deposits, mainly in Nicola Group rocks (Triassic) intruded by the high-level Copper Mountain intrusions (Upper Triassic). Holbek et al. (2015, 2020) described the deposit as an alkalic porphyry Cu-Au system with strong vertical continuity.

3.1.3. Elk (Gold Mountain Mining Corp.)

Gold Mountain Mining Corp. began mining operations at the **Elk** project in November of 2021. A 2021 updated Preliminary Economic Assessment considers a 70,000 tpy open pit-only operation expanding to 324,000 tpy open pit and underground after three years. The total mine life would be 11 years with 570,388 oz Au produced. The BC Environmental Assessment Office has not designated the expansion reviewable, as it would occupy the same footprint as the current operation. Ore is trucked to New Afton for processing under an agreement with New Gold Inc.

In the first half of 2022 the company reported sales of 2455 oz Au in crushed ore and production of 22,164 t at a grade of 3.68 g/t Au. The company is testing concentration methods such as dense media separation to improve the grade of material shipped. As of December 2021, the total property combined pit-constrained and underground resources were estimated at 4.359 Mt Measured + Indicated grading 5.6 g/t Au and 11.0 g/t Ag, and 1.497 Mt Inferred grading 5.3 g/t Au and 14.4 g/t Ag. An initial 3700 m of infill drilling was carried out to assist in grade control. Exploration drilling (20,000 m to date) is continuing and the company reported discovering the 'Elusive zone' several km from the mine. Highlight intersections include: 1.31 m grading 65.37 g/t Au; 2.04 m grading 48.38 g/t Au; 1.30 m grading 59.54 g/t Au; 0.79 m grading 104.72 g/t Au; 1.47 m grading 32.32 g/t Au; and 0.95 m grading 66.60 g/t Au.

3.1.4. Gibraltar (Taseko Mines Limited 75%; Cariboo Copper Corp. 25%)

Taseko Mines Limited mined 65.7 million tons at **Gibraltar** in the first 9 months of 2022 and produced concentrate containing

70.3 Mlb Cu and 759,000 lb Mo. Production was affected by lower-than-expected head grades early in the year. Production improved in Q3 as mining progressed deeper into the Gibraltar pit, which is to be the primary source of ore in 2023. Stripping will begin at the new Connector pit. Taseko announced a new Proven and Probable reserve estimate of 706 million tons grading 0.25% Cu. Projected mine life increased to 23 years with an average annual production of 129 million lbs Cu and 2.3 million lbs Mo.

The calc-alkaline porphyry Cu-Mo deposit is in the Granite Mountain batholith (Upper Triassic; van Straaten et al., 2013; Schiarizza and Friedman, 2021) in a fault-bounded section of Nicola Group and Dragon Mountain succession volcanic and sedimentary rocks (Quesnel terrane; Schiarizza 2014, 2015, van Straaten et al., 2020) bounded by Cache Creek terrane rocks to the east and west.

3.1.5. Highland Valley Copper (Teck Resources Limited)

Management's production guidance for the year is 127,000 to 133,000 t Cu, and 0.8 to 1.3 million lb Mo. Production in the first three quarters was 91,200 t Cu and 0.8 Mlb Mo. Guidance for 2023-25 is 110,000 to 170,000 t Cu and 1.0-5.0 million lb Mo. Teck announced a temporary suspension of activity in the Valley Pit in December because of geotechnical concerns. The company announced a trial of an electric haul truck to transport concentrate to its rail loading facility in Ashcroft, a 95 km round trip made four to five times every day.

The HVC 2040 project is a proposed extension that would increase the projected mine life from about 2028 to 2042 and produce an additional 900 Mt of ore at grades of 0.254% Cu and 0.008% Mo (Valley Pit 786 Mt) and 0.178% Cu and 0.016% Mo (Highmont Pit 100 Mt). The production rate would increase from approximately 136,000 tpd to 178,000 tpd. Increases in Cu and Mo recovery are also planned. The project is advancing through the pre- application stage of environmental assessment. Progress in 2022 included completing draft application information requirements and a draft assessment plan with a proposed 180 day effects assessment and recommendation timeline if the application is accepted by the Environmental Assessment Office.

All mineralization at **Highland Valley Copper** is calc-alkaline Cu-Mo type in the Guichon Creek batholith (Upper Triassic), which has been divided into several pre-, syn- and post-mineral phases (see Byrne et al., 2013, 2020; Ryan et al., 2020).

3.1.6. Mount Polley (Imperial Metals Corporation)

Mount Polley resumed milling in summer 2022, producing 2.4 Mlb Cu and 5084 oz Au in the third quarter. Throughput approached 14,000 tpd in September. The mine had been on care and maintenance since 2019. Exploration, preparations for re-opening, environmental monitoring, and remediation continued during this period. Following several months of preparation and stockpiling of ore, milling began in June and throughput gradually ramped up month over month.

The deposits at Mount Polley are alkalic porphyry Cu-Au in the syenitic to monzodioritic Polley stock (Upper Triassic-Lower Jurassic), which intrudes Nicola Group volcanic rocks. At least eight discrete mineralized zones have contributed to production or host resources (see Rees, 2013, Brown et al., 2016; Rees et al., 2020).

3.1.7. New Afton (New Gold Inc.)

The **New Afton** gold-copper mine is a block cave operation that opened in mid-2012 (Hall and May, 2013). The New Afton deposits form a high-grade keel beneath the past-producing (1978-1997) Afton open-pit mine, an alkalic porphyry in the Iron Mask batholith (Upper Triassic). In the first three quarters of 2022 the mine produced 24.1 Mlb Cu and 30,610 oz Au.

New Gold received a Mines Act permit amendment allowing mining of the C-Zone in October (below and extending west of the current mining area). Development of the C-Zone is continuing, with production anticipated in 2023. Electrification is part of the plan at New Afton. An electric scoop has been in operation since 2021 and electric haul trucks were purchased in 2022.

The company reported underground exploration drilling at the mine, with underground results to be included in the 2022 year-end mineral resource estimate. Surface exploration drilling at the Cherry Creek trend 3 km west of the mine concluded and there was reconnaissance drilling (5000 m) 8 km southwest of the mine. The main targets are alkalic porphyry Cu-Au hosted by the Iron Mask batholith and volcanosedimentary rocks of the Nicola Group (Upper Triassic; Lipske et al., 2020).

3.1.8. Merritt Mill (Nicola Mining Inc.)

Nicola Mining's 200 tpd custom mill and tailings facility at the Craigmont mine site resumed operation in 2021, processing stockpiled ore from Blue Lagoon Resources Inc.'s **Dome Mountain** gold project in the Northwest Region. Shipments of concentrate to Ocean Partners UK Limited continued in 2022. Nicola signed a memorandum of understanding with Osisko Development Corp. to process stockpiled ore (see **Bonanza Ledge II**, section 3.1.1.).

3.2. Selected industrial mineral mines

More than a dozen industrial mineral quarries and processing plants are in the region (Fig. 1; Table 2). In addition, nearly 300 sand and gravel pits and 45 quarries have active Mines Act permits, although many are intermittently active. Industrial minerals producers and explorers compete in local markets and information is commonly not made public. Operations are listed here to highlight the local availability of selected products.

3.2.1. Ashcroft (IG Machine and Fibers Ltd.)

IG Machine and Fiber Ltd, a subsidiary of IKO Industries Ltd., operates the **Ashcroft** basalt quarry and roofing granule plant. They began production in 2001 and now typically produce 300,000 tpy of granules. The quarry is permitted to mine 500,000 tpy, 60% of which is processed into granule products.

Table 2. Selected industrial mineral mines and quarries, South Central Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Ashcroft	**IG Machine and Fibers Ltd. (IKO Industries Ltd.)**	Basalt (roofing granules); 092INW104	300,000 t	na	Approx. 13.3 Mt in 2002	Typically mines 500,000 t with 60% processed into granule products.
Bromley Creek (Zeotech)	**Progressive Planet Products Inc. (International Zeolite Corp. 77%, Progressive Planet Solutions Inc. 23%)**	Zeolite; Open system zeolites; 092HSE243	na	na	M+I (as of 2013-06-30): 50,000 t	Progressive Planet has an agreement to acquire 50%.
Bud	**Progressive Planet Products Inc.**	Bentonite; 092HSE162	Approx. 20,000 t annually	na	na	Progressive Planet Solutions Inc. acquired in 2022.
Falkland	**Lafarge Canada Inc.**	Gypsum; 082LNW001	10,000-20,000 t annually	na	Approx. 1.8 Mt	Found alternate uses since closure of Lafarge's Kamloops cement plant.
Kettle Valley Quarries	**Kelowna Sand and Gravel Ltd./Kettle Valley Stone Company**	Ashlar, flagstone, thin veneer; 082ENW109, 111, 112	na	na	na	
Nazko	**CanLava Mining Corporation**	Lava rock; Cinder cone; 093B 060	na	na	Historical: 45 Mt	
Red Lake	**Progressive Planet Products Inc.**	Diatomaceous earth; Lacustrine diatomite; 092INE081	Approx. 30,000 t annually	na	na	Progressive Planet Solutions Inc. acquired in 2022.
Z-1	**Progressive Planet Solutions Inc.**	Zeolite; Open system zeolites; 092INW095	na	na	Approx. 800,000 t	Historical resource.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

It has reserves of about 13 Mt or 30 years of production. There was no reported change to the mine plan which extends to 2031.

3.2.2. Bromley Creek (International Zeolite Corp. 77%, Progressive Planet Solutions Inc. 23%)

Progressive Planet has an agreement with International Zeolite Corporation to acquire a 50% interest in the **Bromley Creek** zeolite mine. Progressive Planet intends to focus on marketing the Bromley Creek product as an animal feed additive, soil additive, and cement additive.

3.2.3. Bud (Progressive Planet Solutions Inc.)

Progressive Planet acquired Absorbent Products Ltd. in 2022 and renamed it Progressive Planet Products Inc. The acquisition included the **Bud** and **Red Lake** mines. Progressive Planet expects to continue producing bentonite at Bud for its own brand of cat litter. They are exploring other applications in fertilizer and geothermal systems.

3.2.4. Falkland (Lafarge Canada Inc.)

Gypsum and anhydrite mined at the **Falkland** quarry. Although the quarry no longer supplies Lafarge's cement plant

in Kamloops, it still supplies gypsum or anhydrite for other uses including agriculture. After operating intermittently for many years supplying cement to western Canada, the Kamloops cement plant and Harper Ranch limestone quarry of Lafarge Canada Inc. are now mainly on care and maintenance, although it produces some construction aggregate.

3.2.5. Kettle Valley quarries (Kelowna Sand and Gravel Ltd.)

Decorative rock and dimension stone are produced from small quarries throughout the region. Kelowna Sand and Gravel Ltd. mines gneiss, dacite tuff, and basalt at the Nipple Mountain, Kettle Valley, Canyon, and Gemini quarries and has been issued permits to explore other sites. Kettle Valley Stone Company of Kelowna produces flagstone, ashlar, facing stone, and landscape rock.

3.2.6. Nazko (Canlava Mining Corp.)

Canlava Mining Corp. produces red and black scoria from the **Nazko** quarry for geotechnical and other applications requiring lightweight fill. It is also sold for landscaping.

3.2.7. Red Lake (Progressive Planet Solutions Inc.)

With its acquisition of Absorbent Products Ltd., Progressive Planet now produces diatomaceous earth from the **Red Lake** quarry through a subsidiary Progressive Planet Products Inc. Uses include cat litter, barn deodorizer, industrial absorbents, cement additives, and carriers for agricultural products.

3.2.8. Z-1 (Progressive Planet Solutions Inc.)

The **Z-1** mine is now owned by Progressive Planet Solutions. Their zeolite product has been used as an agricultural feed additive, a growth medium, a filtration medium, a component of lightweight concrete, and for soil remediation. Progressive Planet is planning to shift focus to Bromley Creek but assessing the Z-1 product as a lightweight aggregate and component of cat litter.

4. Placer mines

The region has several hundred placer mines. Most of these operations are small, intermittent, or seasonal, and production data and details of exploration are generally unavailable.

4.1. Wingdam (Omineca Mining and Metals Ltd. 50%, Hamilton Gold Royalties Ltd. 50%)

Omineca reported that gold recovery operations had begun at **Wingdam** and development had advanced into the paleochannel hosting pay gravel. The gold-bearing placer channel is 50 m below Lightning Creek. A freeze technology allows access to this historically difficult-to-mine deposit. Gold is recovered through gravity separation. Exploration for lode gold is ongoing (see section 7.1.21).

5. Mine development

Mine development projects are those that have a positive production decision and key government approvals, and on-site construction has begun. No major projects meet these criteria in the South Central Region.

6. Proposed mines

Proposed mines are defined as feasibility-stage projects for which the process of formal socioeconomic and environmental review has begun. For projects that exceed thresholds set by the British Columbia Environmental Assessment Act (or its federal equivalent), reviews are coordinated by the British Columbia Environmental Assessment Office and Canadian Environmental Assessment Agency. Smaller projects are reviewed by an interagency Mine Development Review Committee (MDRC) chaired by the Ministry of Energy, Mines and Low Carbon Innovation. Five projects are in this category: **Ajax**, **Cariboo Gold**, **New Prosperity**, **Ruddock Creek**, **Spanish Mountain** (Fig. 1; Table 3). Taseko Mines Limited's **Yellowhead** is active, but the environmental assessment terminated in 2018. Taseko indicates their intention to re-apply with a new project description. Ajax was rejected by both provincial and federal levels of government, and New Prosperity's provincial certification expired in early 2022. In neither of these cases has the operator abandoned their project.

6.1. Proposed metal mines

6.1.1. Ajax (KGHM Ajax Mining Inc.)

The **Ajax** porphyry copper-gold project, owned by KGHM Ajax Mining Inc., is an 80:20 joint venture between KGHM Polska Miedź S.A. and Abacus Mining and Exploration Corporation. Mineralization is in the Iron Mask batholith, a multi-phase Triassic alkalic intrusive complex. A revised Feasibility Study released in 2016 modelled Ajax as a 65,000 tpd open-pit mine with a projected 18-year life. In December 2017, the project was denied certification by the British Columbia Ministry of Environment and Climate Change Strategy and Ministry of Energy, Mines and Petroleum Resources. In June 2018, Natural Resources Canada, Fisheries and Oceans Canada, and the Canadian Coast Guard denied federal certification. Although KGHM Ajax has not announced plans for the site, Abacus issued an update stating that the project remains a priority and that KGHM is continuing to engage with First Nations.

6.1.2. Cariboo Gold (Osisko Development Corp.)

Osisko Development Corp. acquired the **Cariboo Gold** project in 2019 through a purchase of Barkerville Gold Mines. The property consolidates several historic gold mines. The company engaged in the British Columbia environmental assessment process in 2019, and the application is now in the development and review phase with an updated project description. A 2022 Preliminary Economic Assessment incorporates an updated underground resource and changing costs. The study models an initial 2000 tpd mine expanding to 8000 tpd. It would have a 12 year life with average annual production of 236,000 oz Au. Measured and Indicated resources

Table 3. Selected proposed mines or quarries, South Central Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resource	Comments
Ajax	**KGHM Ajax Mining Inc. (KGHM Polska Miedź SA 80%, Abacus Mining and Exploration Corporation 20%)**	Cu, Au; Alkalic porphyry; 092INE012, 13	P+Pr (NSR cut-off US$7.10/t): 426 Mt 0.29% Cu, 0.19 g/t Au, 0.39 g/t Ag	M+I (NSR cut-off US$7.10/t): 568 Mt 0.26% Cu, 0.18 g/t Au, 0.35 g/t Ag	Environmental certification denied by provincial (2017) and federal ministers (2018). Proponents are investigating a possible resubmission.
Cariboo Gold	**Osisko Development Corp**.	Au; Au-quartz veins; 093H 140, 139, 19, 6	na	M+I: 27.1 Mt 4.0 g/t Au Inf: 14.4 Mt 3.5 g/t Au (total of multiple zones)	Feasibility study in progress.
New Prosperity	**Taseko Mines Limited**	Cu, Au; Porphyry; 092O 041	P+Pr (NSR cut-off $5.50/t): 831 Mt 0.23% Cu, 0.41 g/t Au containing (recoverable) 3.6 Blb Cu, 7.7 Moz Au	M+I (cut-off 0.14% Cu): 1010 Mt 0.24% Cu, 0.41 g/t Au	Granted provincial environmental certificate (expired) but denied federal approval. Taseko and Tŝilhqot'in Nation in discussions.
Ruddock Creek	**Ruddock Creek Mining Corporation (Imperial Metals 100%)**	Pb, Zn, Ag; Broken Hill-type; 082M 082	na	M+I (cut-off 4.0% Pb+Zn): 6.2 Mt 6.50% Zn, 1.33% Pb Inf: 6.678 Mt 6.33% Zn, 1.20% Pb	Project at environmental assessment pre-application stage. Feb. 2013 resource before 2018-19 drilling. Imperial Metals now owns 100%.
Spanish Mountain	**Spanish Mountain Gold Ltd**.	Au, Ag; Au-quartz veins; 093A 043	P+Pr: 95.9 Mt 0.76 g/t Au, 0.71 g/t Ag	M+I: 294 Mt 0.50 g/t Au, 0.72 g/t Ag Inf: 18 Mt 0.63 g/t Au, 0.76 g/t Ag	Re-entered BC environmental assessment process with a new project description. Feasibility work is continuing.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

are 27.102 Mt grading 4.0 g/t Au. Ore crushing, sorting, and a flotation circuit on site would produce a flotation concentrate to be trucked to the Quesnel River mill. Tailings would be disposed of as paste backfill on site and at the Quesnel River mill with a filtered stack tailings storage facility. Initial capital costs are estimated at $121.5 million and the expansion at $716.1 million. A feasibility study was to be completed near the end of 2022. A portal was constructed for a proposed 2200 m drift and 10,000 t bulk sample, but this part of the project paused while focussing on feasibility work. There was infill drilling at 12.5 m centres in the sample area.

6.1.3. New Prosperity (Taseko Mines Limited)

Taseko Mines Limited's **New Prosperity** project was denied a 12-month extension of its provincial environmental certificate for a 70,000 tpd open pit copper-gold mine. New Prosperity received provincial certification in 2010 but in 2014 the Government of Canada refused to authorize the project. Taseko has a standstill agreement with the Tŝilhqot'in Nation pending a dialogue between the parties to arrive at a long-term resolution of differences about the project.

6.1.4. Ruddock Creek (Imperial Metals Corporation 100%)

Imperial Metals Corporation has been 100% owner of the **Ruddock Creek** project since 2021 when it purchased the interests held by Japanese partners in Ruddock Creek Mining Corporation. The project remains in the pre-application phase of the British Columbia Environmental Assessment process.

A 2014 revised project description referred to a 3000 tpd underground lead-zinc mine with an 8-year life. A mineral resource estimate, released in February 2013, reported 6.246 Mt grading 6.5% Zn and 1.33% Pb (Indicated) and 6.678 Mt grading 6.33% Zn and 1.20% Pb (Inferred), using a 4.0% combined Pb+Zn cut off. This estimate does not incorporate 2018-19 drilling. The deposit is described as sedimentary exhalative, Monashee, or Broken Hill-type, in marble, gneiss, and calc-silicate rocks.

6.1.5. Spanish Mountain (Spanish Mountain Gold Ltd.)

Spanish Mountain Gold Ltd. continued engineering, metallurgy, and environmental baseline monitoring and mobilized a crew in September for work (including drilling) to advance project evaluation. Spanish Mountain completed a Pre-feasibility study in 2021. In 2022, the project re-entered the BC Environmental Assessment process with an initial project description based on a 20,000 tpd 14-year operation that would produce 2.1 Moz Au and 0.9 Moz Ag. The mine would exploit the Main zone, with estimated Proven and Probable reserves of 95.9 Mt grading 0.76 g/t Au and 0.71 g/t Ag for 2.34 Moz Au.

The **Spanish Mountain** deposit consists of disseminated gold in graphitic argillite and gold-bearing quartz veins in siltstone, greywacke, and tuff. Host rocks are Upper Triassic and mineralization is Late Jurassic, older than that at the **Cariboo Gold** project (Allan et al., 2017).

6.2. Proposed industrial mineral and aggregate quarries

The proposed quarries in the region are below environmental assessment thresholds, and not treated herein because details are not widely reported.

7. Selected exploration activities and highlights

Exploration spending in 2022 was predominantly for gold, although exploration for porphyry copper remained significant. Some projects targeted different types of deposits; in the summaries below, such projects are treated according to the type where most of the 2022 exploration took place.

7.1. Selected precious metal projects

The South Central Region has many precious metal deposit types including orogenic veins, transitional veins, epithermal veins, hot spring systems, replacements, skarns, sediment-hosted, and intrusion-related breccias (Fig. 1; Table 4).

7.1.1. Bralorne (Talisker Resources Ltd.)

Talisker Resources Ltd. drilled 140,476 m in 286 holes at **Bralorne** between February 2020 and October 2022. They expect to release a resource estimate by the end of 2022 that would replace the 2020 estimate. Drilling has extended from surface to a depth of about 700 m. Most of the resource area is between historic mines. Talisker has reported numerous narrow, high-grade intersections from the current drilling. Highlight intersections include 1.3 m of 42.61 g/t Au within 3.70 m of 15.51 g/t Au. Average vein width is 1.6 m in the resource area.

Talisker acquired the Bralorne project in 2019 and subsequently assembled a larger contiguous land position in the Bridge River Camp, which comprises the Congress and Royalle properties. The camp produced more than 4 Moz of gold between 1900 and 1971 at average grades of about 15 g/t Au. Veins have characteristics typical of orogenic gold deposits; the age of mineralization is estimated at ca. 68-64 Ma ($^{40}Ar/^{39}Ar$ muscovite; Hart and Goldfarb, 2017). Historical development traced veins to a depth of 1900 m (Church and Jones, 1999).

7.1.2. Brett (Ximen Mining Corp.)

Ximen reported airborne magnetic and lidar surveys at the **Brett** property. The magnetic survey covered 54 km^2 at 50 m spaced lines, lidar covered 12 km^2. The target at Brett is epithermal gold mineralization.

7.1.3. Coquigold (Cariboo Rose Resources Ltd., CMP Minerals Inc.)

Cariboo Rose reported soil geochemistry and airborne magnetic, radiometric, and VLF-EM surveys (490 line km) at **Coquigold**. In December they announced starting to drill up to four holes. The target is epithermal precious metals in the Spences Bridge belt. CMP Minerals Inc. has an option to earn up to 70%.

7.1.4. CR (Eastfield Resources Ltd.)

Eastfield started drilling late in the year at **CR**, testing part of an induced polarization anomaly to determine if it represents a zone of gold-bearing silicification. The target is gold mineralization as identified in surface samples returning anomalous gold and arsenic values.

7.1.5. Eakin Creek (Trailbreaker Resources Ltd.)

Trailbreaker Resources conducted soil geochemical and induced polarization surveys at **Eakin Creek**. They identified a 1000 by 600 m Au-Ag-Cu-Sb mobile metal ion soil anomaly with coincident resistivity and chargeability anomalies. Grab samples returned up to 8.2 g/t Au and 130 g/t Ag. The target is intrusive-related gold. Trailbreaker indicated that this grassroots property is available for option.

7.1.6. Eldorado (Gelum Resources Ltd.)

Gelum Resources Ltd. completed three holes (800 m) of a planned 11 hole (3000 m) program at **Eldorado** late in 2022. The company also completed an airborne magnetic and VTEM survey (890 line km). The target is orogenic vein gold.

7.1.7. Elizabeth, Blackdome-Elizabeth (Tempus Resources Ltd.)

Tempus Resources Ltd. focussed on their **Elizabeth** property, the southern portion of the linked **Blackdome-Elizabeth** project, with 40 holes drilled for a total of approximately 9760 m. The Blue Vein, a 2021 discovery, was targeted by 21 holes and the No. 9 vein was targeted by 10 holes. Initial

Table 4. Selected exploration projects, South Central Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Resource (NI 43-101 compliant unless indicated otherwise)	Comments
Beaver-Lynx	**Inomin Mines Inc.**	Ni, Co; Ultramafic-mafic; 093B 073, 285	na	Ground magnetic survey at Lynx. Highlight of 2021 drilling at Beaver: 252 m grading 20.6% Mg, 0.16% Ni, and 0.33% Cr.
Bralorne	**Talisker Resources Ltd.**	Au; Au-quartz veins; 092JNE001	M+I: 260,000 tons 0.351 oz/ton Au Inf. 317,000 tons 0.231 oz/ton Au	Multi-year drilling campaign continued. New resource estimate in preparation.
Brett	**Ximen Mining Corp.**	Au, Ag; Epithermal Au-Ag-Cu low sulphidation; 082LSW110, 131	na	Airborne magnetic and lidar surveys.
Brussels Creek	**Recharge Resources Ltd.**	Cu, Au, Pd; Porphyry Cu-Au (alkalic); 092INE089	na	Initiated drilling late in 2022.
Chu Chua	**Newport Exploration Ltd.**	Cu, Zn, Ag, Au; Cyprus massive sulphide; 092P 140	Inf: 2.29 Mt 2.11% Cu, 0.30% Zn, 9.99 g/t Ag, 0.50 g/t Au	2022 updated resource estimate.
Coquigold	**Cariboo Rose Resources Ltd. (CMP Minerals Inc.)**	Au, Au; Epithermal Au-Ag-Cu low sulphidation; 092HNE062	na	Soil geochemistry. (453 samples), airborne magnetic, VLF-EM (490 line km), drilling started (3-4 holes).
Cowtrail	**Cariboo Rose Resources Ltd.** (BRS Mining Resources Ltd.)	Au, Cu; Alkalic porphyry Cu-Au; 093A 266, 116	na	Soil geochemistry.
CR	**Eastfield Resources Ltd.**	Au	na	Drilling started late in 2022.
Eagle Lake	**Trailbreaker Resources Ltd.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093A 268, 255	na	Soil geochemistry, drill core re-logging.
Eakin Creek	**Trailbreaker Resources Ltd.**	Au; Plutonic-related Au quartz veins; 092P 103, 172, 26	na	Soil geochemistry. IP, grab samples up to 8.2 g/t Au and 130 g/t Ag.
Eldorado	**Gelum Resources Ltd.**	Au, Cu; Polymetallic veins, Au-quartz veins; 092O 026, 092JNE105, 95, 45	na	Magnetic and VTEM survey (890 line km). Drilling 3 holes, 800 m.
Elizabeth (Elizabeth-Blackdome)	**Tempus Resources Ltd.**	Au, Ag; Au quartz veins, Epithermal Au-Ag-Cu low sulphidation; 092O 053, 12	Inf: 522,843 t 12.26 g/t Au	Drilling 40 holes, 9760 m. Initial highlight 2.11 m grading 87.0 g/t Au.
Fame	**Longhorn Exploration Corp.**	Au; Epithermal Au-Ag-Cu low sulphidation; 092O 019	na	Airborne magnetic and soil geochemistry surveys.

Table 4. Continued.

FG Gold and Gold Creek	**Karus Gold Corp.**	Au, Ag; Au-quartz veins; 093A 061	M: 5,600,000 t 0.812 g/t Au I: 9,570,000 t 0.755 g/t Au Inf: 27,493,000 t 0.718 g/t Au	Announced 2021 results. Highlights included 59.35 m grading 1.13 g/t Au including 17.87 m grading 2.23 g/t Au at FG Gold and 80.65 m grading 0.5 g/t Au including 46.4 m grading 0.74 g/t Au at Gold Creek. Filed technical report. 2015 resource estimate considered historical by Karus.
Fox Tungsten	**Happy Creek Minerals Ltd.**	W; W skarns; 093A 259, 260, 261, 211	I: 582,000 t 0.826% WO_3 Inf: 565,400 t 1.231% WO_3	Released 2021 drill results. Highlights included 6.7 m grading 0.43% WO_3 with 1.2 m grading 1.83% WO_3 in the Nightcrawler zone. Some 2022 surface work.
Gaspard	**Falcon Gold Corp.**	Au; Epithermal	na	Airborne magnetic and radiometric survey (347 line km).
Gold Bridge	**Blackstone Minerals Ltd.**	Cu, Ni, Co, Au; 5 element veins?; 092JNE068, 108	na	Reported results of 2021 drilling. Highlights included 81 m grading 0.21% Ni at the Western Gem prospect and 0.9 m grading 1.45% Cu, 0.56% Ni, and 0.19% Co at the Jewel prospect. Reconnaissance prospecting and geophysical modelling.
Goldrange	**Kingfisher Metals Corp.**	Au, Ag; Au and Cu±Ag quartz veins; 092N 058, 59, 47, 57, 48	na	Rotary air blast and diamond drilling (10,000 m) Initial results include 40 m grading 2.86 g/t Au.
Highland Valley	**Happy Creek Minerals Ltd.**	Cu, Mo, Au, Ag, Re; Porphyry Cu±Mo±Au; 092ISE199	na	Reported porphyry targets, expanded land holdings.
Iron Lake	**Tech-X Resources Inc.**	Cu, Au, Pt, Pd, Co; Alkalic porphyry Cu-Au and ultramafic hosted; 092P 132, 113, 182, 222	na	Drilling 23+ holes as of November. Tech-X is a private company.
Lac La Hache	**Engold Mines Ltd.**	Cu, Au, Ag, Fe; Alkalic porphyry Cu-Au, Cu skarn; 092P 120, 108, 2, 153	Aurizon Inf: 1.99 Mt 2.32 g/t Au, 0.6% Cu, 5.37 g/t Ag Spout zone open pit I: 6.5 Mt 0.33% Cu, 1.34 g/t Ag, 0.05 g/t Au, 11.62% magnetite Spout zone open pit Inf: 7.66 Mt 0.27% Cu, 0.99 g/t Ag, 0.04 g/t Au, 9.5% magnetite Spout zone underground Inf: 0.39 Mt 1.0% Cu, 2.58 g/t Ag, 0.13 g/t Ag, 10.33% magnetite G1 underground Inf: 1.71 Mt 1.25% Cu, 6.45 g/t Ag, 0.19 g/t Au, 30.94% magnetite	Drilling (more than 3100 m) at Au (Aurizon) and Ann North Cu-Au porphyry targets.

Table 4. Continued.

Lawless Creek	**Tech-X Resources Inc.**	Cu, Mo, Au; Porphyry Cu±Mo±Au; 092HNE006, 39	na	Private company; reported drilling.
Lemon Lake	**Acme Gold Company Ltd.**	Cu, Au, Ag; Alkalic porphyry Cu-Au; 093A 002, 272, 338	na	Drilling, 2 holes, 501 m.
Lightning Strike	**Cariboo Rose Resources Ltd.**	Au, Ag; Au-quartz veins; 093A 250	na	RC drilling 11 holes, 1465 m.
LMSL	**ArcPacific Resources Corp.**	Cu, Au, Mo, W; Porphyry Cu±Mo±Au, W skarn; 092ISE027, 94, 128, 129	na	Surface sampling highlight 20.1 g/t Au, 3.6% Cu.
Miner Mountain	**Sego Resources Inc.**	Cu, Au; Alkalic porphyry Cu-Au; 092HSE203, 78	na	7 holes, 1582 m. Highlight assay 80 m 0.95 g/t Au.
MPD	**Kodiak Copper Corp.**	Cu, Au; Alkalic porphyry Cu-Au; 092HNE243, 55, 191, 244	na	41 holes, 26,103 m drilling, IP, soil surveys, trenching. Southern Gate zone highlights included 735.4 m grading 0.24% Cu, 0.14 g/t Au and 0.71 g/t Ag. Within this was a 117 m interval grading 0.69% Cu, 0.46 g/t Au and 2.22 g/t Ag.
Newton	**Carlyle Commodities Corp.**	Au, Ag; Epithermal Au-Ag-Cu (high sulphidation)	Inf.: 42,396,600 t 0.63 g/t Au, 3.43 g/t Ag	Updated resource estimate 2022. Preparation for late 2022-early 2023 drilling.
New Brenda	**Flow Metals Corp.**	Au, Ag, Cu; Au-quartz veins; 092HNE289, 302, 303	na	Geological mapping, sampling, up to 53.5 g/t Au, 32.3 g/t Au.
New Craigmont	**Nicola Mining Inc.**	Cu, Au; Cu skarn; 092ISE035	18.669 Mt 0.13% Cu. Craigmont waste dumps in Portal Area and Southern Dump 0.06% Cu cut off.	Permitting, ZTEM and soil geochemistry.
Placer Mountain	**Damara Gold Corp.**	Au, Ag; Au quartz veins; 092HSE262, 263	na	2021 results released, highlight 3.0 m grading 39.2 g/t Au.
Ponderosa	**Au Gold Corp.**	Au, Ag; Au-quartz veins; 092ISE192	na	20 holes totalling 2335 m. Anomalous Au and Ag reported.
Quesnel Nickel	**Green River Gold Corp.**	Ni, Co, talc; Mafic-ultramafic; 093A 130, 093H 061, 139	na	Portable drill results include Mg, Ni, Co, Cr values.
Rabbit North	**Tower Resources Ltd.**	Cu, Au; Alkalic porphyry Cu-Au; 092INE045, 147	na	Drilling of gold discovery (Lightning zone), another new gold target identified based on trail of gold in till. Initial drill results included 95.0 m grading 1.40 g/t Au including and interval of 19.2 m with 4.21 g/t Au.
Rayfield	**Golden Sky Minerals Corp.**	Cu, Au; Alkalic porphyry Cu-Au; 092P 005	na	Soil geochemistry.
Redhill	**Bessor Minerals Inc.**	Zn, Cu, Ag, Au; Kuroko massive sulphide; 092INW042, 57	na	Drilling, 1 hole.

Table 4. Continued.

Reliance Gold	**Endurance Gold Corporation**	Au, Ag, Sb; Au quartz veins, Stibnite veins and disseminations; 092JNE033, 136, 191	na	Drilling of Eagle zone and feeder structures.
Shovelnose	**Westhaven Gold Corp.**	Au, Ag; Epithermal Au-Ag-Cu low sulphidation; 092HNE309, 308	I: 10,592,000 t 2.32 g/t Au, 11.43 g/t Ag Inf: 9,177,000 t 0.89 g/t Au, 3.47 g/t Ag	Pit-constrained resource at South zone, 0.35 g/t AuEq cut off.
Skoonka Creek	**Westhaven Gold Corp.**	Au, Ag; Epithermal Au-Ag-Cu low sulphidation; 092ISW104, 129, 105, 126	na	Drilling 16 holes, 3340 m. Initial results included 5.66 m grading 6.83 g/t Au and 1.90 m grading 21.15 g/t Au.
Swift River (and other Barkeville area)	**Hawkeye Gold and Diamond Inc.**	Ag, Au, Pb, Zn, Cu	na	Regional reconnaissance.
Wingdam	**Omineca Mining and Metals Ltd.**	Au; Au-quartz veins; 093H 012	na	Drilling lode gold targets. Began placer gold recovery.
Woodjam	**Vizsla Copper Corp.**	Cu, Au; Alkalic porphyry Cu-Au; 093A 269, 78	Southeast zone Inf: 227.5 Mt 0.31% Cu Deerhorn zone Inf: 32.8 Mt 0.49 g/t Au, 0.22% Cu Takom zone Inf: 8.3 Mt 0.26 g/t Au, 0.22% Cu	Vizsla Copper to acquire Consolidated Woodjam Copper.
Yellowhead	**Taseko Mines Limited**	Cu, Au, Ag; Noranda/Kuroko; 082M 008, 9	M+I: 1292 Mt 0.25% Cu, 0.028 g/t Au, 1.2 g/t Ag Inf: 109 Mt 0.24% Cu, 0.026 g/t Au, 1.2 g/t Ag, 0.15% Cu cut off	Engineering and community relations.

M = Measured; I = Indicated; Inf = Inferred

results included 2.11 m of 87.0 g/t Au at the No. 9 vein. The Ella zone, SW vein, and Main/West zone were also drilled. The linked Blackdome and Elizabeth properties were the subject of a 2010 Preliminary Economic Assessment in which mining would occur at both sites, with processing at an existing mill at Blackdome.

Blackdome is a low-sulphidation epithermal deposit in Cenozoic intermediate to felsic volcanic rocks. Elizabeth, 30 km to the south, is a series of veins in a Paleocene quartz diorite intrusion in the Shulaps ultramafic complex. Historically they have been compared to the Bralorne-Pioneer orogenic deposits.

7.1.8. Fame (Longhorn Exploration Corp.)

Longhorn Exploration Corp. completed an airborne magnetic survey and soil geochemistry at the **Fame** property. They reported gold-in-soil anomalies and magnetic lows, one of which coincides with known showings. Targets include epithermal precious metals.

7.1.9. FG Gold and Gold Creek (Karus Gold Corp.)

Karus Gold Corp. announced results of 2021 drilling at its **FG Gold** and **Gold Creek** projects in 2022. Among the highlights was 59.35 m grading 1.13 g/t Au including 17.87 m grading 2.23 g/t Au at FG Gold and 80.65 m grading 0.5 g/t Au including 46.4 m grading 0.74 g/t Au at Gold Creek. The company filed a technical report covering both properties. The company also announced signing a non-binding letter of intent to be acquired by Kenadyr Metals Corp., valuing Karus at $19.7 million. Karus' principal assets are its Cariboo district gold properties.

7.1.10. Gaspard (Falcon Gold Corp.)

Falcon Gold Corp. expanded its **Gaspard** property and flew a 347-line km airborne magnetic and radiometric survey. The target is epithermal gold mineralization at the northern end of the Spences Bridge gold trend.

7.1.11. Goldrange (Kingfisher Metals Corp.)

Kingfisher Metals Corp. conducted an induced polarization

survey, rotary air blast (RAB) and diamond drilling (total approximately 10,000 m as of October) on its **Goldrange** project in 2022. Results of RAB drilling at the Day Trip zone included 4.6 m of 2.7 g/t Au, 12.2 m of 0.5 g/t Au, 4.6 m of 2.1 g/t Au, and 9.1 m of 0.8 g/t Au. The company reported anomalous portable X-Ray fluorescence analyses at the Langara zone and intervals of vein, breccia, and disseminated sulphide at the Could Drifter trend. Initial diamond drill results at the Cloud Drifter included 40 m grading 2.86 g/t Au, with 9 m grading 5.56 g/t Au, 1 m grading 58.88 g/t Au, 2 m grading 19.54 g/t Au, 1 m grading 10.39 g/t Au, and 2 m grading 9.55 g/t Au. Mineralization at the Cloud Drifter includes a 35 m interval of strongly altered and mineralized quartz diorite.

7.1.12. Lightning Strike (Cariboo Rose Resources Ltd.)

Cariboo Rose Resources Ltd. completed reverse circulation drilling of 11 holes totalling 1465 m at their **Lightning Strike** project, following up on 2021 drilling. The target is shale-hosted orogenic gold as targeted at Spanish Mountain and FG.

7.1.13. Miner Mountain (Sego Resources Inc.)

Sego Resources Inc. drilled at the Southern Gold zone of its **Miner Mountain** project in spring 2022 with seven holes totaling 1582 m. Results included 80 m of 0.95 g/t Au, consistent with 2020-21 results that attracted the company's focus to the gold target. The project also has several alkalic Cu-Au targets (Britten et al., 2020).

7.1.14. New Brenda (Flow Metals Corp.)

At **New Brenda**, Flow Metals Corp. followed up 2021 airborne magnetic results with geological mapping and sampling. Highlight samples returned 53.5 g/t and 32.3 g/t Au, with highly anomalous bismuth and tellurium in a hand-trenched quartz vein carrying visible gold and bismuthinite.

7.1.15. Newton (Carlyle Commodities Corp.)

Carlyle Commodities Corp. updated the resource estimate at **Newton** to a pit-optimized Inferred 42.4 Mt 0.63 g/t Au and 3.43 g/t Ag with a 0.25 g/t Au cut off. They have a permit to drill and completed some preparatory work. As of December, a 14 hole infill and step-out program was scheduled to begin.

7.1.16. Placer Mountain (Damara Gold Corp.)

Damara Gold Corp. completed a drilling program at its **Placer Mountain** gold vein project in December 2021. Highlight results released in 2022 included 1.40 m grading 34.12 g/t Au and 87.74 g/t Ag, 3.0 m grading 39.2 g/t Au and 80.4 g/t Ag, 1.35 m grading 46.51 g/t Au and 32.2 g/t Ag, and 1.30 m grading 31.80 g/t Au and 47.3 g/t Ag. The company expanded their land holdings in 2022.

7.1.17. Ponderosa (Au Gold Corp.)

In the Spences Bridge belt, Au Gold Corp. drilled 20 holes totalling 2335 m at **Ponderosa**, partially testing two of four epithermal target areas in pyroclastic volcanic rocks. They intersected silicification and anomalous gold and silver values at shallow depths.

7.1.18. Rabbit North (Tower Resources Ltd.)

Tower Resources Ltd. identified the source of a gold grain anomaly in till and reported an initial drill intersection of 95.0 m grading 1.40 g/t Au including an interval of 19.2 m with 4.21 g/t Au in this new discovery, referred to as the 'Lightning zone' (Fig. 2). Follow up in 2022 included additional drilling and till sampling that indicated another gold dispersal train, called the Central Train, 400 m west of the Lightning zone. Seventeen new samples yielded between 40 to 452 gold grains per sample leading to a target under young (possibly Miocene) basalts. The **Rabbit North** project also hosts alkalic porphyry Cu-Au targets.

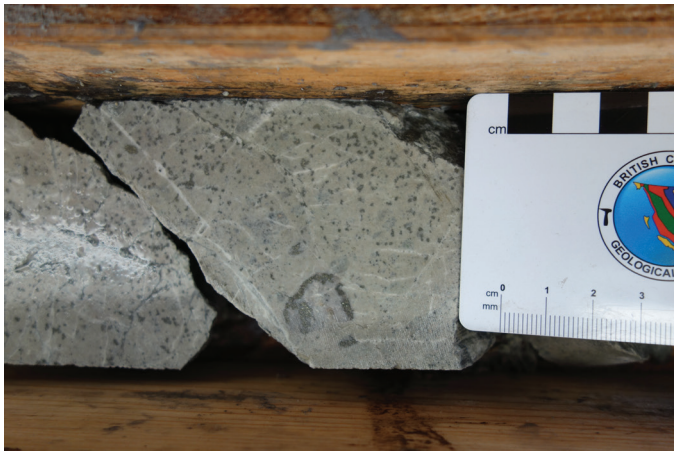

Fig. 2. Silicified (±sericitized) Nicola Group crystal-lithic tuff with disseminated pyrite. This type of rock has returned significant gold values in Lightning zone intersections. Tower Resources Ltd., Rabbit North project.

7.1.19. Reliance Gold (Endurance Gold Corporation)

Endurance Gold Corporation reported 38 diamond-drill holes totalling 8274 m and 33 reverse circulation holes totalling 2455 m at **Reliance Gold** in 2022. The primary targets were the Eagle zone and structures interpreted as feeders to that shallowly dipping, near-surface target. Highlight feeder zone (Eagle South Feeder) intersections included 11.6 m grading 7.31 g/t Au, 12.1 m grading 4.95 g/t Au, 13.5 m grading, 8.06 g/t Au, 11.9 m grading 8.31 g/t Au, and 4.3 m grading 16.66 g/t Au. Highlight intersections from the overlying Eagle zone included 12.0 m grading 7.68 g/t Au, and 30.48 m grading 6.64 g/t Au (Fig. 3). Significant intersections in the Eagle South Feeder zone span about 400 m strike length. Endurance expanded their land holdings in the Gold Bridge area in 2022.

7.1.20. Shovelnose (Westhaven Gold Corp.)

In January, Westhaven Gold Corp. announced an initial pit-constrained mineral resource estimate for the South zone of **Shovelnose** of 10.6 Mt grading 2.32 g/t Au and 11.43 g/t Ag Indicated and 9.2 Mt grading 0.89 g/t Au and 3.47 g/t Ag Inferred. Drilling in 2022 (approximately 100 holes, 40,000 m)

Fig. 3. Brecciated quartz veins and sulphides from a drill sample grading 16 g/t Au. Eagle zone, Reliance project, Endurance Gold Corporation.

included peripheral targets off the main mineralized structure, a 4 km trend including the South zone, FMN and Franz targets. The company discovered a gold-bearing zone 1.2 km northeast of the South zone resource area. Highlight results at the FMN zone included 23.03 m grading 37.24 g/t Au and 209.52 g/t Ag, and 14.96 m grading 5.96 g/t Au and 343.57 g/t Ag. Detailed mapping at a 1:100 scale of the Franz zone was carried out to guide surface sampling and complement earlier drilling. The Shovelnose project incudes multiple low-sulphidation epithermal precious metals prospects and targets in the Spences Bridge gold belt.

7.1.21. Skoonka Creek (Westhaven Gold Corp.)

Westhaven Gold Corp. drilled 3340 m in 16 holes at **Skoonka Creek**, another of their properties in the Spences Bridge belt. The program was designed to step out from previous drilling on an epithermal vein system. Initial results included 5.66 m grading 6.83 g/t Au and 1.90 m grading 21.15 g/t Au.

7.1.22. Wingdam (Omineca Mining and Metals Ltd.)

In addition to the paleoplacer project at **Wingdam** (section 4.1.), Omineca Mining and Metals Ltd. resumed lode gold exploration drilling in the late summer and fall. Targets included Skopos, about 900 m south of the placer mine and Mary Creek, about 6 km northwest of the mine.

7.2. Selected porphyry projects

Most of the large projects in the South Central Mining Region targeted gold in 2022, as was the case in 2021. Kodiak Copper continued a major drill program at **MPD**, Engold Mines tested porphyry targets at **Lac La Hache,** and Nicola Mining is targeted porphyry and skarn mineralization at **New Craigmont**. Several smaller and grassroots projects also targeted porphyry mineralization.

7.2.1. Brussels Creek (Recharge Resources Ltd.)

Recharge Resources Ltd. announced the imminent start of 1100 m drill program at **Brussels Creek** late in the year. Preparatory work included archaeological studies. The drilling is permitted, and funded. The target is alkalic porphyry Cu-Au mineralization.

7.2.2. Cowtrail (Cariboo Rose Resources Ltd., BRS Mining Resources Ltd.)

Cariboo Rose Resources Ltd. extended a soil grid at **Cowtrail**. BRS Mining Resources Ltd. has entered an option agreement to earn a 60% interest in the drill-permitted property.

7.2.3. Eagle Lake (Trailbreaker Resources Ltd.)

Trailbreaker Resources Ltd. identified an 850 by 700 metre Au-Cu-Ag-Mo mobile metal ion soil anomaly at **Eagle Lake** and re-logged 2011 core drilled by Newmont Canada Corporation. The anomaly lies near a contact between Copper Mountain suite and Takomkane suite intrusive rocks.

7.2.4. Highland Valley (Happy Creek Minerals Ltd.)

Happy Creek Minerals Ltd. reported three new porphyry Cu-Mo targets at their high **Highland Valley** project arising from 2021 field work. They acquired the adjoining Mystery property in 2022.

7.2.5. Lac La Hache (Engold Mines Ltd.)

The **Lac La Hache** project includes Cu-Fe skarn, Au vein and breccia, and porphyry Cu targets. Resource estimates exist for several (Table 4). Drilling in 2022 at the Aurizon gold deposit returned an initial highlight of 7.11 m grading 5.7 g/t Au, 0.90% Cu, 0.60 g/t Ag, and 2.5 m grading 8.8 g/t Au, 1.02% Cu, 81.8 g/t Ag. Deep drilling at the Ann North alkalic porphyry target encountered a 655 m interval of low-grade Cu mineralization grading 0.10% Cu, 0.04 g/t Au, 0.03 g/t Ag. Engold Mines reported some 2021 results in 2022 including 34 m grading 0.48% Cu, 0.07 g/t Au, 1.57 g/t Ag from south of the G-1 skarn deposit. The company engaged Goldspot Discoveries Ltd. to generate targets using artificial intelligence exploration techniques.

7.2.6. Lawless Creek (Tech-X Resources Inc.)

Tech-X Resources Inc. was active **at Lawless Creek** in 2022. As a private company, they are not obliged to make details public, although some assessment reports are no longer on confidential status. Targets include Cu-Mo porphyry mineralization.

7.2.7. Lemon Lake (Acme Gold Company Ltd.)

Acme Gold Company Ltd. drilled two holes (501 m) at two targets at the **Lemon Lake** property and intersected anomalous Cu and Au.

7.2.8. LMSL (Arcpacific Resources Corp.)

Arcpacific Resources Corp. reported initial results of surface sampling at its **LMSL** project, a consolidation of the **Lucky Mike** and **Silver Lode** properties. Highlights included grab

samples grading 20.1 g/t Au and 3.6% Cu. An initial targeting program was completed by GoldSpot Discoveries Corp. using artificial intelligence systems. Priority targets include porphyry Cu-Au-Mo-Ag mineralization.

7.2.9. MPD (Kodiak Copper Corp.)

Kodiak Copper Corp. continued to drill at their **MPD** project, with a 41 hole, 26,103 m program, and conducted induced polarization and soil geochemical surveys. Southern Gate zone highlights included 735.4 m grading 0.24% Cu, 0.14 g/t Au and 0.71 g/t Ag. Within this was a 117 m interval grading 0.69% Cu, 0.46 g/t Au and 2.22 g/t Ag. The Gate zone was traced along a 1 km strike length and to a depth of 900 m. Kodiak reported discovering a near-surface Au-Ag target south of the Gate zone and Man zone. Highlights from trenches included 2 m grading 9.11 g/t Au and 24 g/t Ag, 2 m grading 5.29 g/t Au and 27.7 g/t Ag

MPD is a consolidation of the Man, Prime, and Dillard alkalic porphyry Cu-Au targets, which had historically been explored to about 200 m depth. The Gate zone, a 2019 discovery, indicated that significant Cu-Au mineralization extended to greater depths (Fig. 4).

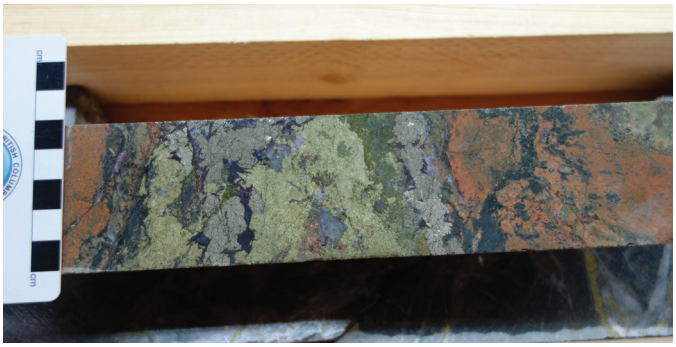

Fig. 4. Semi-massive chalcopyrite (+pyrite+magnetite). The orange staining is probably hematitic rather than from potassic alteration. The green interpreted as propylitic alteration (mainly epidote). Kodiak Copper Corp., MPD project.

7.2.10. Rayfield (Golden Sky Minerals Corp.)

Golden Sky Minerals Corp. conducted soil geochemical surveys at **Rayfield**. They report three possible porphyry Cu-Au drill targets. A permit application for drilling is in process.

7.2.11. Woodjam (Vizsla Copper Corp.)

Consolidated Woodjam Copper Corp. announced 2021 drill results early in 2022, including a highlight of 24.0 m grading 3.12 g/t Au, and 0.18% Cu at Deerhorn. In September, Vizsla Copper Corp. announced an agreement to acquire Consolidated Woodjam Copper Corp. for Vizsla shares. The deal has shareholder and court approval and Consolidated Woodjam will de-list when the transaction closes. **Woodjam** comprises six zones in a cluster approximately 5 km in diameter. The Deerhorn zone has an Inferred resource of 32.8 Mt grading 0.49 g/t Au and 0.22% Cu. Mineralization exhibits both alkaline and calc-alkaline characteristics (del Real et al., 2020).

7.3. Selected polymetallic base and precious metal projects

The region has numerous polymetallic massive sulphide prospects, including those hosted by the Eagle Bay assemblage (e.g., **Samatosum, Rea, Yellowhead**) and other Paleozoic strata.

7.3.1. Chu Chua (Newport Exploration Ltd.)

Newport Exploration Ltd. updated the resource estimate for the **Chu Chua** deposit in December 2021. At a 1% Cu cut off the pit-constrained Inferred resource is 2.289 Mt grading 2.11% Cu, 0.30% Zn, 9.99 g/t Ag, and 0.5 g/t Au. They propose infill and step out drilling.

7.3.2. Redhill (Bessor Minerals Inc.)

Bessor Minerals Inc. drilled one hole at the **Redhill** property. Redhill is a Kuroko type VMS Cu-Zn-Ag-Au target in rocks that may be correlated with the Kutcho Assemblage (Schiarizza, 2013).

7.3.3. Swift River and other Barkerville area (Hawkeye Gold and Diamond Inc.)

Hawkeye Gold and Diamond Inc. reported reconnaissance field work including mapping and prospecting at several grass roots properties in the Barkerville area (**Keithley Creek**, **Seller Creek**, **2 Aces**, **Swift River**, **Cariboo Valley**). They reported initial anomalous sample results for several elements at Swift River, including Ag.

7.3.4. Yellowhead (Taseko Mines Limited)

Yellowhead is a feasibility-stage bulk-tonnage copper project, previously in the environmental assessment process as the Harper Creek project. Taseko Mines Limited is focussing on re-entering the environmental assessment process through engineering work and engagement with local communities, including First Nations. The company is also collecting baseline data and developing models that will be used to support environmental assessment and permitting. Taseko announced results of an updated Feasibility Study in 2020, including a new development plan and resource estimate. Proven and Probable reserves now stand at 817 Mt grading 0.28% Cu at a 0.17% cut off.

Although porphyry-like in its bulk tonnage and grade, Yellowhead is generally considered a marine volcanogenic and syngenetic deposit. It is hosted by metavolcanic and metasedimentary rocks of the Eagle Bay assemblage (Lower Cambrian to Mississippian).

7.4. Selected skarn projects (tungsten, copper, gold)

Historically, copper skarns have been important sources of high-grade ore. One, the Craigmont mine, has been reactivated as the **New Craigmont** exploration project, which also targets porphyry mineralization. One tungsten skarn project, **Fox Tungsten** was drilled in 2021, with results reported in 2022. **LMSL** and **Lac La Hache** both host copper skarn targets but they are treated in the porphyry section (7.2.5.).

7.4.1. Fox Tungsten (Happy Creek Minerals Ltd.)

At **Fox Tungsten,** Happy Creek Minerals Ltd. carried out prospecting and mapping in 2022 and reported results of 2021 drilling, including 6.7 m grading 0.43% WO_3 with 1.2 m grading 1.83% WO_3 in the Nightcrawler zone. This zone is 5-6 km south of the existing resource area.

7.4.2. New Craigmont (Nicola Mining Inc.)

Nicola Mining Inc. conducted a 1029 line-km ZTEM survey and a soil geochemical survey at the **New Craigmont** project. They obtained a permit for drilling up to 190 holes, trenching (up to 12 km), and conducting an induced polarization survey. The Craigmont mine was a copper skarn, but current targets include porphyry copper mineralization.

7.5. Selected mafic- and ultramafic-hosted projects

The South Central Region saw several early-stage Ni-Co, Cu-Ni-Co, Au-Co projects hosted by, or spatially related to, mafic and ultramafic rocks.

7.5.1. Beaver-Lynx (Inomin Mines Inc.)

The **Beaver** and **Lynx** projects are on linked properties in the Cache Creek complex; Mg-Ni-Cr-Co mineralization is targeted at the Beaver and Ni mineralization at the Lynx. Inomin Mines Inc. reported results of 2021 drilling at the Beaver, which included a highlight of 252 m grading 20.6% Mg, 0.16% Ni, and 0.33% Cr, and conducted a ground magnetic survey at the Lynx. They expanded both properties. A highlight of drilling included 252 m grading 20.6% Mg, 0.16% Ni, 0.33% Cr at Beaver. They used a sodium peroxide digestion intended to discriminate between sulphide and silicate Ni.

7.5.2. Gold Bridge (Blackstone Minerals Limited)

Blackstone Minerals Limited reported 2021 results from its **Gold Bridge** project. They reported 81 m grading 0.21% Ni at the Western Gem prospect and 0.9 m grading 1.45% Cu, 0.56% Ni, and 0.19% Co at the Jewel prospect. They also reported conducting reconnaissance prospecting and geophysical modelling.

7.5.3. Iron Lake (Tech-X Resources Inc.)

Optionee Tech-X Resources Inc., who optioned the **Iron Lake** property from Eastfield Resources Ltd., drilled 23 holes (ongoing as of November). This work followed a target definition program started in 2021, which included induced polarization and airborne surveys, mapping, and trenching. Tech-X is a private company, but some initial results released by Eastfield include Cu, Ni, Co, Pt, and Re values.

Iron Lake is underlain by the Iron Lake mafic-ultramafic intrusive complex in Nicola Group rocks. Magmatic Cu-Ni-Co-Pt-Pd mineralization is among the target types. Nicola rocks and the mafic-ultramafic complex are in contact with Takomkane batholith. Porphyry Cu and Au mineralization are also targets.

7.5.4. Quesnel Nickel (Green River Gold Corp.)

Green River Gold Corp. was active at its **Quesnel Nickel** project with portable drilling and remotely piloted aircraft-based magnetic surveys. They report initial Mg, Ni, and Cr results including 79 m grading 20.1% Mg, 0.177% Ni, 0.138% Cr, and 0.01% Co. Metallurgical analyses were in process.

7.6. Niobium, tantalum, and rare earth elements

Significant new work on pegmatite, carbonatite or alkaline intrusion related specialty metals targets (rare earths, Nb, Ta) was not reported in the South Central region. Some reconnaissance work targeting Sc was reported with sparse details and is not treated here.

7.7. Industrial minerals

Although work on industrial minerals projects was permitted and reported to regulators, information is not generally made public.

8. Geological research

Schiarizza (2022) released a 1:50,000 bedrock geology map of the Stump Lake-Salmon River area of the Thompson Plateau, and Schiarizza and Friedman (2023) reported U-Pb igneous and detrital zircon data from the Cadwallader terrane along the Chilcotin River, 50 km southwest of Williams Lake. Continuing work to detect mineralization buried beneath drift cover in the South Central Region, Plouffe et al. (2022) provided a case study from the Gibraltar deposit, Ferbey et al. (2023) and Elia et al. (2023) tested remotely piloted aircraft systems (RPAS, or drones) carrying radiometric, aeromagnetic, and lidar instrumentation at the **Mount Polley**, **Woodjam**, and **Highland Valley** deposits, and Sacco et al. (2022) reported on surficial geology mapping (including till sampling suitability and drift thickness maps), and re-analysis of archived till samples from a large area in the Interior Plateau. Damant and Enkelmann (2022) reported collecting samples from across the southern Intermontane belt that will be analyzed using apatite and zircon (U-Th)/He and fission-track thermochronology to establish the timing and magnitude of exhumation in the region and the implications for porphyry deposit exploration. Zou et al. (2022) used samples from **Highland Valley** porphyry copper deposits to evaluate machine learning models that were trained using large magmatic zircon trace-element datasets to distinguish zircons from mineralized and nonmineralized systems, an approach that may be effective in greenfield and brownfield exploration.

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Exploration and mining in the Southeast Region, British Columbia

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1. Introduction

Four metallurgical coal mines operate in the Elk Valley of the Southeast Region, accounting for most of Canada's coal production and exports, and mine expansion and exploration continued at these mines. Dating back to the mid-1800s, the region has a long history of metals mining, including lead, zinc, and silver from the past-producing Sullivan mine and gold and silver from the Rossland, Greenwood, Sheep Creek, and Slocan camps. Today, exploration in the region focusses on base and precious metals with some recent extensions into Rare Earth Metals (REE) and related metals on Canada's critical minerals list. The region hosts several industrial mineral mines and quarries, and placer mining continues. The Trail smelter (Teck Resources Ltd.) produces refined lead, and zinc (which is on Canada's critical minerals list), silver and cadmium along with other metals on Canada's critical minerals list (germanium, indium), and fertilizer products.

Estimates for exploration expenditures, drilling programs, and other metrics were captured in the British Columbia Mineral and Coal Exploration Survey, a joint initiative of the Province of British Columbia Ministry of Energy, Mines and Low Carbon Innovation, the Association for Mineral Exploration in British Columbia, and EY LLP. For the Southeast Region, exploration expenditures are forecasted at $29.4 million and exploration drilling is estimated at approximately 53,170 m (Clarke et al., 2023; EY LLP, 2023). Although the number of exploration projects remained similar to recent years, the amount of drilling decreased significantly to slightly more than half of what it was in 2021.

2. Geological overview

The mineral endowment of British Columbia, including the Southeast Region, is intimately tied to the tectonic evolution of the Canadian Cordillera, which records a protracted history of supercontinent breakup followed by accretion of allochthonous terranes to the western flank of Ancestral North America and post-accretion deformation and magmatism (e.g., Nelson et al., 2013). From east to west, the Southeast Region provides a cross-section through several components of the Canadian Cordillera (Fig. 1). On the east are Archean to Mesoproterozoic basement rocks of Ancestral North America, Proterozoic rift and intracratonic basin successions (Belt Purcell and Windermere supergroups), Paleozoic to Jurassic passive margin and deep-water basin deposits, and Jurassic to Cretaceous foreland basin deposits. To the west are the Slide Mountain terrane, which records Devonian subduction beneath the western flank of Ancestral North America and back-arc extension that led to the creation of the 1000 km-wide Slide Mountain ocean, and the Quesnel volcanosedimentary arc terrane and its basement (Nelson and Colpron, 2007; Nelson et al., 2013). The Southeast Region contains two of the major physiographic belts commonly used to describe the Canadian Cordillera (Fig. 1). In the Rocky Mountain foreland belt, mainly unmetamorphosed sedimentary rocks are deformed by northeast-vergent, thin-skinned thrusts and folds. The Omineca belt contains greenschist- to amphibolite-grade siliciclastic and volcanic rocks and basement-cored gneiss domes (Monger, 1999).

3. Mines and quarries

3.1. Metal mines

There are no metal mines operating in the Southeast Region of British Columbia.

3.2. Coal mines

Coal remains British Columbia's most valuable mined commodity with sales forecasted at $CDN 12.21 billion for 2022, which accounts for approximately 67% of the mining revenue for the province. In the Southeast Region, Teck Coal Limited mines coal from structurally thickened seams of the Kootenay Group (upper Jurassic to lower Cretaceous; Fig. 2; Table 1) at four open-pit operations along the Elk River valley: Fording River, Greenhills, Line Creek, and Elkview. More than 95% is metallurgical, high-quality hard coking coal. Coal is shipped via rail to three main shipping terminals on the west coast (Westshore, Neptune, and Ridley). Total annual production from the mines in the Southeast Region for 2022 is estimated to be 22-22.5 Mt of metallurgical coal. Teck reported that Q3 2022 production was 5% lower than in the same quarter of 2021. Q3 production was 5.7 Mt with nine-month

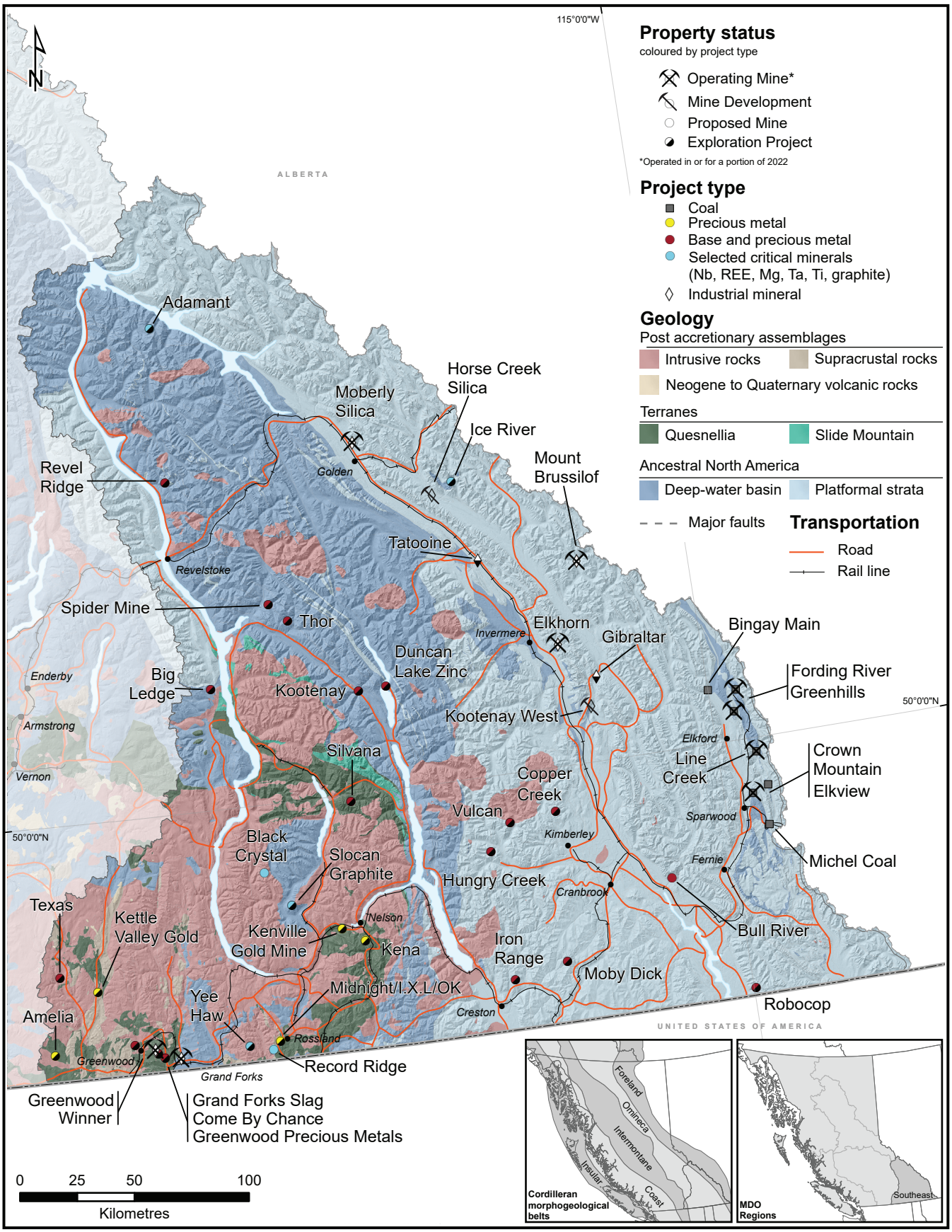

Fig. 1. Mines and selected exploration projects, Southeast Region, 2022. Terranes after Nelson et al. (2013).

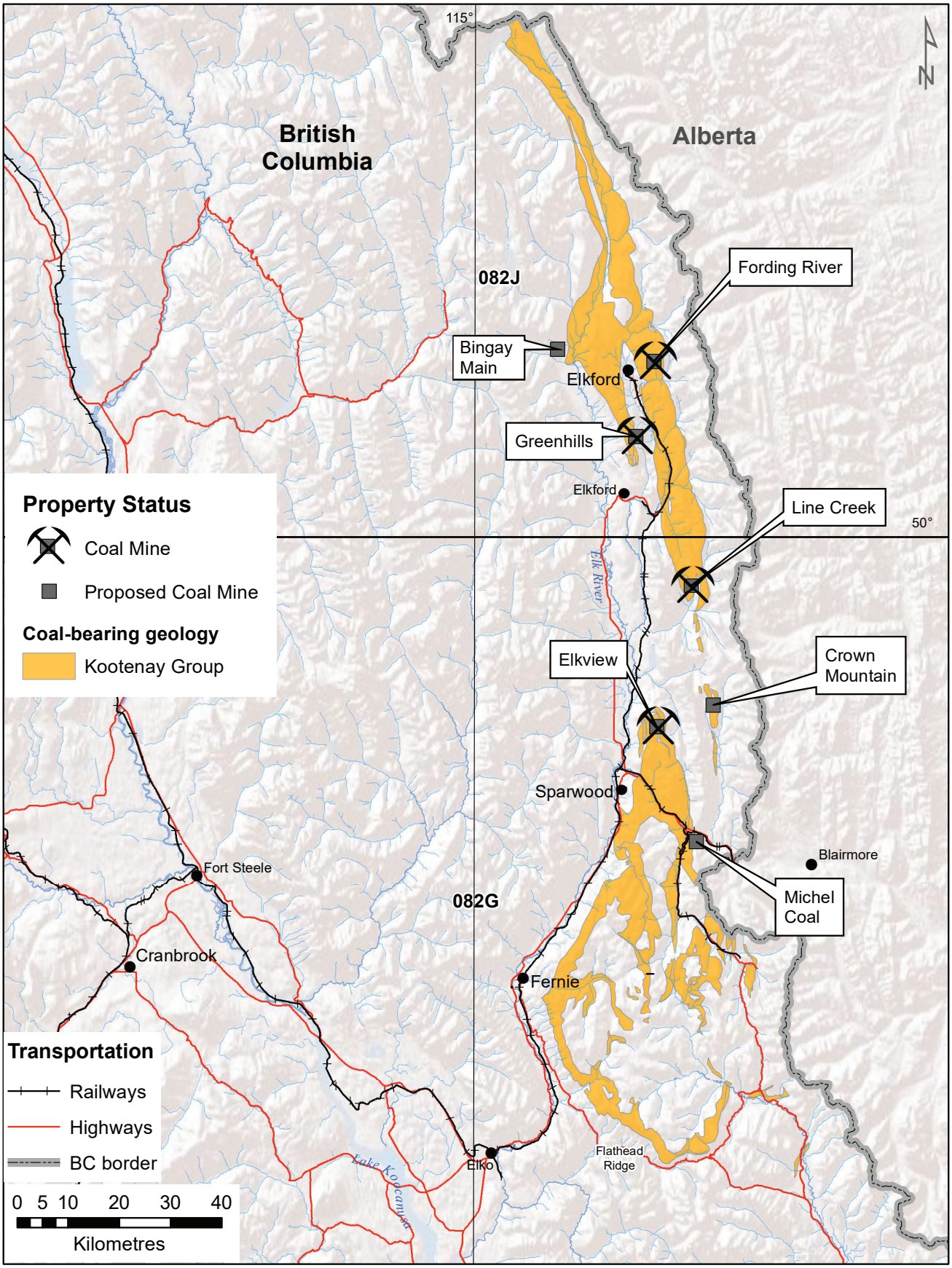

Fig. 2. Map of the Kootenay Group and East Kootenay coalfields, including the major coal mines and projects in southeastern British Columbia.

Table 1. Coal mines, Southeast Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Elkview	**Teck Coal Limited 95%**; Nippon Steel & Sumitomo Metal Corporation, 2.5%; POSCO, 2.5%	HCC; Bituminous coal; 082GNE016, 17	5.4 Mt	na	na	Teck estimates a remaining reserve life of approximately 29 years at the current production rate.
Fording River	**Teck Coal Limited**	HCC; Bituminous coal; 082JSE012	8.2 Mt	na	na	The focus for development in 2022 was the Fording River Extension project. Proven and Probable reserves sufficient for 27 years mine life; increase to 47 years including the Fording River Extension project.
Greenhills	**Teck Coal Limited, 80%**; POSCO Canada Limited ('POSCAN'), 20%	HCC; Bituminous coal; 082JSE007, 10	6.3 Mt	na	na	Proven and Probable reserves are projected to support another 46 years of mining at planned production rates.
Line Creek	**Teck Coal Limited**	HCC, TC; Bituminous coal; 082GNE020	3.4 Mt	na	na	Proven and Probable reserves at Line Creek are projected to support planned production rates for a further 14 years.

HCC = hard coking coal; PCI = pulverized coal injection; TC = thermal coal; ULV = ultra low volatile
P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

sales (2022) of 16.6 Mt. Mine operations at Teck's Elkview operation suffered a major failure of the in-pit conveyor system in September that resulted in a roughly one month modification of operations, with a 1.5 Mt projected loss of production. Additionally, labour issues at Westshore Terminals for two weeks also impacted coal sales, though this was partly mitigated with transfer of material through the Neptune port.

3.2.1. Elkview (Teck Coal Limited, 95%; Nippon Steel & Sumitomo Metal Corporation, 2.5%; POSCO, 2.5%)

The **Elkview** mine, which extends across 27,100 ha of coal lands, produces metallurgical coal. Upgraded in 2020, the annual production capacity of the mine and preparation plant is 9.0 Mt and Teck estimates a remaining mine life of 29 years.

3.2.2. Fording River (Teck Coal Limited)

The **Fording River** mine, which extends across 13,000 ha of coal lands, produces metallurgical coal and minor thermal coal. The current annual production capacity of the mine is 9 Mt; the preparation plant has a capacity of 9.5 Mt. In 2022, production continued from the Eagle Mountain and Swift pits. The focus for development and drilling in 2022 was the Fording River Extension project. Teck also did exploration drilling and large-diameter core drilling, in their producing pits. Proven and Probable reserves at the mine are sufficient for a 27-year mine life and, if the Fording River Extension project is included, a 47-year life.

3.2.3. Greenhills (Teck Coal Limited, 80%; POSCO Canada Limited ('POSCAN'), 20%)

The **Greenhills mine** consists of 11,800 ha of coal lands. Mainly metallurgical coal is produced although some thermal coal is mined. The current annual production capacity is 5.9 Mt from the mine and 5.4 Mt from the preparation plant. Some coal from Greenhills is processed at Fording River. Proven and Probable reserves are projected to support 46 years of mining.

3.2.4. Line Creek (Teck Coal Limited)

The **Line Creek** mine consists of 8200 ha of coal lands and produces mainly metallurgical coal and minor thermal coal. The annual production capacity of the mine and preparation plant is 4.0 Mt. Proven and Probable reserves are projected to support mining for a further 14 years.

3.3. Industrial minerals mines and quarries

The Southeast Region has several industrial mineral mines and quarries (Fig. 1; Table 2). The operators range from local companies through to large international corporations.

Table 2. Selected industrial mineral mines, Southeast Region.

Mine	Operator	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Elkhorn	**CertainTeed Gypsum Canada Inc.**	Gypsum; Bedded gypsum; 082JSW021	na	na	na	Elkhorn site nearing end of mine life. Operations will be transferred to the developing Kootenay West site.
Grand Forks Slag	**Pacific Abrasives and Supply Inc.**	Slag; Tailings; 082ESE264	na	na	na	Seasonal operation.
Moberly Silica	**Vitreo Minerals Ltd.**	Silica; Industrial silica; 082N 001	About 60 kt product on contract for sales through 2022	na	na	About 200 kt of stockpiled material on site from 2019 mining operations. No mining in 2022.
Mount Brussilof	**Baymag Inc.**	Magnesite; Sparry magnesite; 082JNW001	230 kt	na	na	Material is coarse crushed on site and trucked to processing facility in Exshaw, AB.
Winner	**Rockwool Inc.**	Gabbro/basalt; Crushed rock, for mineral wool; 082ESE265	na	na	na	Seasonal operation.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

3.3.1. Elkhorn (CertainTeed Gypsum Canada Inc.)

The **Elkhorn mine** produces gypsum from Middle Devonian evaporites of the Burnais Formation. Because the reserve life for gypsum is ending, the mine is blending a product with the anhydrite that was once left behind as waste, allowing the mine to continue production until 2023. Production will be transferred to the developing Kootenay West mine in 2023.

3.3.2. Grand Forks Slag (Pacific Abrasives and Supply Inc.)

The company supplies slag material from the former Granby Consolidated Mining, Smelting and Power Company smelter site for sand blasting abrasive material.

3.3.3. Moberly Silica (Vitreo Minerals Ltd.)

The last production at the **Moberly Silica** mine, owned by Vitreo Minerals Ltd., was in 2019 and 200,000 t of material was stockpiled. The company began contract sales of 60,000 t in the summer of 2021 and continued through 2022. The silica deposit (99% SiO_2) is in regionally extensive orthoquartzites, 300 m thick at the mine site, of the Mount Wilson Formation (Middle to Upper Ordovician).

3.3.4. Mount Brussilof (Baymag Inc.)

In production since 1981, Baymag Inc. produces magnesite at the **Mount Brussilof** mine from Cambrian limestones in which magnesium has replaced calcium. Quarried ore is crushed then trucked to the company's processing facilities in Exshaw, Alberta. Annual magnesite production is approximately 230 kt.

3.3.5. Winner (Rockwool Inc.)

Rockwool Inc. extracts gabbro and basalt from its seasonal **Winner** quarry.

4. Placer operations

Placer mines have operated in southeastern British Columbia since the gold rush of the 1860s. Although activities were not tracked in 2022, several placer areas have operations under Mines Act permits. Active locations include, Goldstream River, Quartz Creek, Lardeau Creek, Perry Creek, Moyie River, Wild Horse River, and the Nelson-Salmo-Trail region. The placer creeks are generally linked to areas with known bedrock gold mineralization.

5. Mine or quarry development

Two industrial mineral projects in the Southeast Region are at the mine development stage, Horse Creek Silica, and Kootenay West (Table 3).

5.1. Horse Creek Silica (Sinova Global)

At the **Horse Creek Silica** mine, Sinova Global operates a

Table 3. Selected mine development projects, Southeast Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resource	Comments
Horse Creek Silica	**Sinova Global**	Silica; Silica sandstone; 082N 043	na	1.4 Mt est.	High purity silica >99.9% SiO_2, permit updates, road and rail construction, mine site preparation. Planned up to 400,000 tpy.
Kootenay West	**CertainTeed Gypsum Inc.**	Gypsum; Evaporitic bedded gypsum; 082JSW005, 20	na	North and South quarries: Total 17 Mt (blended quality of 83% gypsum)	Pre-stripping and Pre-production mining, mine road construction, environmental mitigation; planned 400,000 tpy; 43-year mine life.

seasonal quarry in Mount Wilson orthoquartzites. In 2022, the company continued with permit updates, road construction, rail siding development, and mine site preparation. The mine is expected to produce up to 400,000 tpy of >99% SiO_2 with an estimated resource of 1.4 Mt.

5.2. Kootenay West (CertainTeed Gypsum Canada Inc.)

The company continued development work on its **Kootenay West mine**. Most work was on developing and improving road access to the mine site and environmental mitigation. Some pre-strip and pre-production extraction work was done as well. The mine reported a resource of 17 Mt gypsum at a blended quality of 83%, with annual production of 400,000 tpy. The deposit is in evaporites of the Burnais Formation (Devonian) in a section 20-25 m thick grading 75-95% gypsum. Mining operations will begin in 2023 and the projected mine life is 43 years.

6. Proposed mines and quarries

The Southeast Region has two proposed metal mines (**Bull River, Record Ridge**), three proposed coal mines, (**Bingay Main, Crown Mountain, Michel Coal**), and one proposed graphite mine, **Black Crystal** (Fig. 1; Table 4).

6.1. Proposed metal mines

6.1.1. Bull River (Braveheart Resources Inc.)

Braveheart Resources is continuing development of its **Bull River** mine. Work included further refurbishment of all surface facilities. The company completed a ground management plan to advance the mine permit process. The mine permit and environmental permit process ongoing.

6.1.2. Record Ridge (West High Yield Resources Ltd.)

The **Record Ridge** magnesium project is in a variably serpentinized and locally carbonatized ultramafic cumulate body. The body is cut by Coryell intrusion syenites, quartz-poor monzonites, and granodiorite to the west and faulted against andesite and basalt of the Elise Formation to the east. The company drilled one 35 m hole. The company amended its ongoing application for a Mines Act permit and completed a pre-feasibility study for the project.

6.2. Proposed coal mines

Three coal mine proposals are currently in the Environmental Review process.

6.2.1. Bingay Main (Centerpoint Resources Inc.)

The **Bingay Main** project proposed by Centerpoint Resources Inc. remains in the Pre-Application process at the Environmental Review Office. The company has proposed a mine with a production capacity of 1 Mt per year and a mine life of 12 to 14 years.

6.2.2. Crown Mountain (NWP Coal Canada Ltd.)

The **Crown Mountain** mine proposed by NWP Coal Canada Ltd. is in the Pre-Application process at the Environmental Review Office. The company was granted an extension to the expiry of the Application Information Requirements (AIR) for the project from October 26, 2021 to April 26, 2022 to accommodate First Nations concerns. The proposed mine has a production capacity of 3.7 Mt per year for 16 years.

6.2.3. Michel Coal (North Coal Limited)

The **Michel Coal** project proposed by North Coal Limited is in the Pre-Application process at the Environmental Review Office. The company has proposed a mine with production capacity of 2.3-4 Mt per year and a mine life of 30 years. In December, the Tobacco Plains Indian Band, Pacific Road Capital and North Coal Limited signed a letter of intent centred around the principles of co-ownership, co-management, and co-governance for the project.

6.3. Selected proposed critical mineral (graphite) mine

6.3.1. Black Crystal (Eagle Graphite Inc.)

The Black Crystal project has an active mining lease. No work was reported for the site in 2022.

Table 4. Selected proposed mines, Southeast Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resource	Comments
Bingay	**Centermount Coal Ltd.**	Coal; Bituminous coal; 082JSE011	na	na	Pre-application stages of EA; letter submitted in 2020 for project to remain in EA. Proposed 1 Mty operation with 12 to 14 year mine life.
Black Crystal	**Eagle Graphite Inc.**	Graphite; Crystalline flake graphite; 082FNW260, 283	na	Regolith + calc-silicate; M + I: 19.23 Mt 1.35% fixed carbon Inf: 23.92 Mt 1.3% fixed carbon (2018)	Active mine lease. No work reported for 2022.
Bull River	**Braveheart Resources Inc.**	Cu, Au, Ag; Cu±Ag quartz veins; 082GNW002	na	I: 2.26 Mt 1.80% Cu 0.42 g/t Au 15.3 g/t Ag Inf: 1.36 Mt 1.60% Cu 0.42 g/t Au 13.6 g/t Ag	Further surface facilities refurbishment. Ground control plan provided to advance mine permit process.
Crown Mountain	**NWP Coal Canada Limited** (Jameson Resources Limited (80%), Bathurst Resources Limited (20%))	HCC and PCI; Bituminous coal; 082GNE018	HCC: P: 42.60 Mt Pr: 4.91 Mt PCI: P: 7.13 Mt Pr: 1.19 Mt (2014)	HCC + PCI: M: 68.9 Mt I: 6.0 Mt (2014)	Pre-Application EA stage, 2021 extended FN consultation to 2022. Proposed 2 Mtpy operation (86% HCC and 14% PCI) with 15-year mine life.
Michel Coal	**North Coal Limited**	HCC and PCI; Bituminous coal; 082GSE050	na	HCC: M: 44.6 Mt I: 42.5 Mt open-pit and underground (2015)	Entered pre-application of EA in 2015; received AIR requirements in September 2020.
Record Ridge	**West High Yield (W.H.Y.) Resources Ltd.**	Mg; Alaskan-type Pt±Os±Rh±Ir; 082FSW398	na	M: 28.4 Mt 24.82% Mg I: 14.6 Mt 24.12% Mg Inf: 1.07 Mt 24.37% Mg	35 m drill hole, pre-feasibility study.

HCC = hard coking coal; PCI = pulverized coal injection; TC = thermal coal
P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

7. Selected exploration activities and highlights

In 2022, numerous precious metal, polymetallic base and precious metal, and industrial mineral projects were active in the Southeast Region (Table 5).

7.1. Selected precious metal projects

7.1.1. Amelia (Ximen Mining Corp.)

Ximen Mining Corp. completed a helicopter-borne lidar and photographic survey at its **Amelia** property. A drone-mounted magnetic survey was also completed. The surveys covered an area of 8 km^2. Mineralization at Amelia is in the Cariboo/McKinney vein, which contains white quartz and disseminated to massive pyrite with lesser sphalerite, galena, chalcopyrite, and rare tetrahedrite and pyrrhotite. Visible native gold is locally prominent.

7.1.2. Greenwood Precious Metals (CanXGold Mining Corp.)

In September, the company began drilling at the Phoenix targets of its **Greenwood Precious Metals**. The Phoenix targets were identified by helicopter-borne VTEM and magnetic geophysical surveys completed in 2021. Three holes were drilled for a total of 968 m. Bedrock includes Bonanza Group (Mesozoic) volcanic rocks and limestones that overlie Knob Hill complex (Paleozoic) metasedimentary rocks that include chert and graphitic argillite. Some trachyte dikes and/or sills are also present. Extensive and complex skarn alteration of Brooklyn Group carbonate and adjacent rocks are the main source of gold-silver-copper mineralization. The company's adjacent Lexington mine project is currently on care and maintenance.

7.1.3. Kena (West Mining Corp.)

West Mining Corp. continued exploration at their **Kena** project. The project includes three adjacent properties (Kena, Daylight, and Athabasca) that extend along a 20 km trend. The properties cover known mineralized zones and historical mine sites. Mineralization comprises quartz-pyrite stockwork and veinlet zones in bleached and silicified Jurassic plagioclase porphyry of the Silver King intrusion and well-foliated, pyritic intermediate volcanic rocks of the Elise Formation. In 2022, the company had composite drill core samples from the Kena Gold zone and the Gold Mountain zone drilled in 2021 examined for crushing, milling, and recovery characteristics. Results indicate the mineralization is amenable to whole-ore cyanidation and sulphide flotation processes. Additionally, property work comprised drilling of 9 DDH holes for a total of 2400 m at the Gold Mountain zone.

7.1.4. Kenville Gold Mine (Ximen Mining Corp.)

Ximen Mining Corp. continued mine rehabilitation at its **Kenville Gold Mine** project. Site facility structures and portal support materials, plus many ancillary items are being acquired. Mine permitting is ongoing. The company preformed rock sampling and volume surveying of the dumps at the Protection and Wilcox mines, southeast of Kenville mine. The Wilcox samples yielded 2.39 g/t Au and the Protection dump samples yielded an average grade of 9.5 g/t Au, 47.5 g/t Ag, 1.13% Pb, and 1.37% Zn. A small soil sampling survey was done in an area immediately southeast of the Kenville mine and 36.4 km^2 of lidar surveying was carried out over the historic mine site and surrounding area.

7.1.5. Kettle Valley Gold (Goldcliff Resource Corporation)

Goldcliff Resource Corporation drilled 5 holes totalling 1500 m to test geochemical anomalies at their **Kettle Valley Gold** project. The best reported assay was 1.5 m grading 1.272 g/t Au and 11.42 g/t Ag. Other work included rock sampling and prospecting. One composite sample of galena-rich quartz yielded 170 g/t Ag, and 0.065 g/t Au along with elevated values of Pb, Bi, Te, and Mo. A second similar quartz-rich sample yielded 88.5 g/t Ag with elevated Pb, Bi, Te, and Mo. Mineralization is hosted in quartz-carbonate altered Eocene rhyolitic volcanic rocks of the Marron Formation and in dioritic rock.

7.1.6. Midnight/I.X.L./OK (West High Yield Resources Ltd.)

The company drilled 41 holes for 6202 m on its **Midnight/I.X.L./OK** property near Rossland. Drilling was divided into two sets of holes. The first set was focussed on near-surface targets (0- 200m depth) southeast and east of the historical high-grade Baker Vein, near a listwanite (quartz-carbonate-serpentine) zone that straddles an east-northeast trending fault juxtaposing an ultramafic intrusion and predominantly Jurassic andesites. The second set was focussed on targets of depths of 200-600 m, below the Baker vein. Multiple high-grade precious metals intersections were made, several with visible gold. Selected assay highlights from early results of typically 1.5 m sample intervals yielded grades of 38.4, 36.1, 22.6 and 20.7 g/t Au. Highlights from a later release included 1. 5 m grading 15.7 g/t Au, 2.9 g/t Ag and 1.05 m grading 33.7 g/t Au, 3.5 g/t Ag.

7.2. Selected porphyry project

7.2.1. Come-By-Chance (Belmont Resources Inc.)

Belmont completed a six-hole, 2304 m drilling program that focussed on the Betts, Iron Chief and Lady M zones of their **Come-By-Chance** project where 2021 geophysical surveying identified anomalies coincident with high-grade copper-gold grab sampling results. Drilling intersected notable propylitic alteration zones and intervals with up to 20% pyrite. Belmont interprets results possibly indicating proximity to porphyry-style mineralization. Some molybdenum mineralization was identified. Further sampling and mapping were done in the fall. The property is largely underlain by tuffaceous sedimentary rocks, limestone, conglomerate, and greenstone of the Brooklyn Formation (Triassic). Mineralization includes mesothermal veins, possible epithermal veins, and replacement mineralization with copper and gold values.

Table 5. Selected exploration projects, Southeast Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Resource (NI 43-101 compliant unless indicated otherwise)	Comments
Adamant	**Eagle Plains Resources Ltd**.	REE; Nepheline Syenite; 082M 173	na	Silt sampling, geological mapping, channel samples, metallurgical studies.
Amelia	**Ximen Mining Corp.**	Au; Polymetallic veins Ag-Pb-Zn±Au; 082ESW020	na	LIDAR, airborne photogrammetry, airborne magnetic survey.
Big Ledge	**Stuhini Exploration Ltd.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag; 082LSE012	Inf: 100 Mt 4% Zn (1980, non-compliant)	Airborne TDEM, magnetic.
Come-By-Chance (CBC)	**Belmont Resources Inc.**	Cu, Au; Porphyry, Skarn; 082ESE261	na	6 DDH 2304 m, mapping, sampling. Belmont interprets results possibly indicating proximity to porphyry-style mineralization.
Copper Creek	**DLP Resources Inc.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag	na	1 DDH 386 m.
Duncan Lake Zinc	**Rokmaster Resources Corp.**	Zn, Pb, Ag; Mississippi Valley-type Pb-Zn; 082KSE023	na	3 DDH 681 m.
Greenwood	**Grizzly Discoveries Inc.**	Cu; Cu skarn; 082ESE034	na	15 DDH 3123 m total: 4 DDH 1014 m (Dayton), 9 DDH (Motherlode), 2 DDH 387 m (Marguerite), rock and soil sampling.
Greenwood Precious Metals	**CanXGold Mining Corp.**	Au, Cu; Au-quartz veins, Porphyry Cu±Mo±Au; 082ESE032, 41	na	3 DDH 698 m (Phoenix).
Hungry Creek	**DLP Resources Inc.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag; 082FSE110	na	5 DDH 1442 m (711), 1 DDH 3786 m (Copper Creek).
Ice River	**Eagle Plains Resources Ltd.**	REE; Nepheline syenite; 082N 028	na	Mapping, rock & soil sampling.
Iron Range	**Private company**	Pb, Zn, Ag; Iron oxide breccias & veins±P±Cu±Au±Ag±U, Polymetallic veins Ag-Pb-Zn±Au; 082FSE014	na	4 DDH 2618 m
Kena	**West Mining Corp.**	Au; Alkalic, Porphyry Cu-Au; 082FSW237	na	9 DDH 2400 m; metallurgical testing.

Table 5. Continued.

Kenville Gold Mine	**Ximen Mining Corp.**	Au; Au-quartz veins; 082FSW086	na	Ongoing mine rehabilitation, material acquisition, rock sampling, dump volume surveys. Samples from dump at former Protection mine returned an average grade of 9.5 g/t Au, 47.5 g/t Ag, 1.13% Pb, and 1.37% Zn; sample from former Wilcox mine dump with 2.39 g/t Au.
Kettle Valley Gold	**Goldcliff Resources Corporation**	Au; Au-quartz veins	na	5 DDH 1500 m; rock sampling, prospecting. One composite sample of galena-rich quartz assayed 170 g/t Ag and 0.065 g/t Au, another 88.5 g/t Ag.
Kootenay	**Wealth Minerals Ltd.**	Au; Polymetallic veins Ag-Pb-Zn±Au; 082KSW088	na	Prospecting, rock sampling.
Midnight/ I.X.L./OK	**West High Yield Resources Ltd.**	Au; Polymetallic veins Ag-Pb-Zn±Au; 082FSW119	na	41 DDH 6202 m. Selected early results: 1.5 m with 15.7 g/t Au and 2.9 g/t Ag, and 1.05m with 33.7 g/t Au and 3.5 g/t Ag.
Moby Dick	**DLP Resources Inc.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag	na	1 DDH 1305 m, hole abandoned.
Regional Project 2 (Spider Mine)	**New Gold Inc.**	Polymetallic veins Ag-Pb-Zn±Au; 082KNW045	na	Soil geochemistry, rock sampling, mapping, structural analysis.
Revel Ridge	**Rokmaster Resources Corp.**	Pb, Zn, Ag; Irish-type carbonate-hosted Zn-Pb; 082M 003	M+I: 6.7 Mt 50 g/t Ag, 3.69 g/t Au, 1.93% Pb, 3.68% Zn Inf: 6 Mt 37 g/t Ag, 4.7 g/t Au, 1.19% Pb, 2.2% Zn (2021)	14 DDH (10 underground, 4 surface); rock and soil sampling, stream sampling. Selected highlights: Main zone 4.35 m grading 2.57 g/t Au, 17.11 g/t Ag, 0.66% Pb, and 1.94% Zn; Yellowjacket zone 4.45 m grading 0.01 g/t Au, 5.32 g/t Ag, 0.06% Pb, and 0.87% Zn.
Robocop	**Grizzly Discoveries Inc.**	Co; Polymetallic veins Ag-Pb-Zn±Au; 082GSW019	na	Mapping; rock sampling.
Silvana Mine	**Klondike Silver Corp.**	Polymetallic veins Ag-Pb-Zn±Au; 082FNW050	na	Underground drilling.
Slocan Graphite	**Aben Resources Ltd.**	Graphite; Crystalline flake graphite; 082FNW285	na	Mapping; rock and soil sampling.
Tatooine Silica	**Homerun Resources Inc.**	Silica; Silica sandstone; 082KNE012	na	Acquisition. High purity silica (SiO_2) quarry development. Historical (1964) sample: 98.66% SiO_2, 0.47% Al_2O_3, 0.06% Fe_2O_3, and 0.08% CaO.
Texas	**Troubadour Resources Inc.**	Au, Ag; Polymetallic veins Ag-Pb-Zn±Au; 082ESW235	na	Mapping, rock and soil sampling, soil geochemistry, magnetic survey. Former Inyo-Ackworth mine dump selected grab sample: 6.72 g/t Au, 509 g/t Ag, 292 ppm Cu, 73,800 ppm Pb, and 2210 ppm Zn.

Table 5. Continued.

Thor	**Taranis Resources Inc.**	Base metals, Polymetallic manto Ag-Pb-Zn; 082KNW030	na	Mapping, rock and soil sampling, soil geochemistry, aeromagnetic survey, ground VLF survey. Ripper zone channel: 0.33 m grading 12.5 g/t Au, 1100 g/t Ag, 0.03% Cu, 14.9% Pb, and 0.10% Zn.
Vulcan	**Eagle Plains Resources Ltd.**	Zn, Pb, Ag; Sedimentary exhalative Zn-Pb-Ag; 082FNE093	na	3 DDH 1700 m; aeromagnetic survey.
Yee Haw	**Lithium Corporation**	Ti-REE; Lamprophyric dike	na	Prospecting, hand trenching.

M = Measured; I = Indicated; Inf = Inferred

7.3. Selected polymetallic base and precious metal projects

7.3.1. Big Ledge (Stuhini Exploration Ltd.)

Stuhini Exploration Ltd. completed an airborne electromagnetic (TDEM) and magnetic survey over its Big Ledge property, covering 51 km^2. Known mineralization consists of sphalerite, pyrite, pyrrhotite, galena, hosted in highly folded marble and quartzite within the Shuswap metamorphic complex of the Monashee Group (Proterozoic). Cominco previously explored the property and released a historical resource of 100 Mt grading 4% Zn in 1980.

7.3.2. Copper Creek (DLP Resources Inc.)

DLP Resources drilled one 386 m hole on their **Copper Creek** property. Drilling targeted sediment hosted-stratiform copper-silver-cobalt mineralization in the middle to upper parts of the Creston Formation (Belt-Purcell basin).

7.3.3. Duncan Lake (Rokmaster Resources Corp.)

Assessment work was completed on the company's **Duncan Lake** property. Three holes were wedged off former Cominco hole 97-12, for a total of 681 m drilled. Hole D22-02 intersected 34.75 m of semi-massive pyrite-sphalerite-galena mineralization that graded 7.03 g/t Ag, 1.56% Pb and 1.76% Zn, including an interval of 3.66 m grading 17.28 g/t Ag, 7.29% Pb and 4.94% Zn. The holes intersected similar intervals of lead-zinc-silver mineralization that were seen in hole 97-12.

7.3.4. Hungry Creek (DLP Resources Inc.)

Following up on 2021 drilling, five holes totalling 1442 m were drilled at the '711' target on the **Hungry Creek** property. Chalcopyrite, intense sericite alteration, and carbonate alteration were observed in upper Creston Formation quartzites.

7.3.5. Greenwood (Grizzly Discoveries Inc.)

Geological mapping, rock and soil sampling programs at its **Greenwood** holdings, focussed at the Motherlode and Dayton targets and the Midway and Sappho occurrences. The company completed 15 holes for a total of 3123 m. This includes 4 holes (1014 m) at the Dayton copper-gold skarn target, 9 holes (1722 m) at the Motherlode North copper-gold-silver ±lead-zinc target, and 2 holes (387 m) at the Marguerite target. The company performed extensive grab sampling plus some soil sampling from locations across its Greenwood area holdings totalling several hundred samples. Selected rock samples from old Midway mine pits yielded results of 12.05 to 70.8 g/t Au. Selected rock samples from the Sappho occurrence yielded copper values between 1% and 9% with anomalous Au, Ag, Pt, and Pd.

7.3.6. Iron Range (private company)

A private company optioned the **Iron Range** project from Eagle Plains Resources Ltd. Four holes totalling 2618 m were drilled at the project where massive to disseminated hematite with local magnetite are in the Aldridge Formation (Purcell Supergroup, Mesoproterozoic) along the north trending, subvertical Iron Range fault zone. The company targeted both iron-oxide copper-gold ('IOCG') and Sullivan-style lead-zinc-silver sedimentary-exhalative ('sedex') mineralization.

7.3.7. Kootenay (Wealth Minerals Ltd.)

The company completed a helicopter-borne VTEM and magnetic survey across 5456 hectares (12,014 line-km) of its **Kootenay** project, which comprises the Goldsmith, Lardeau and Ledgend claim blocks. At Goldsmith, gold mineralization is in listwanite-altered ultramafic rocks and the area also has nickel-cobalt mineralization associated with ultramafic bodies. Ground follow up on targets identified in the geophysical survey led to the discovery of a 6 m-wide zone of massive sulphide mineralization in the Ledgend claim block. Sphalerite, hydrozincite, chalcopyrite, bornite and pyrite were visually identified in outcrop. In addition, two outcrops of sulphide mineralization, containing pyrite-pyrrhotite with minor chalcopyrite and sphalerite, were located on the Goldsmith block. The showings coincide with geophysical anomalies and previous geochemical soil sampling anomalies.

7.3.8. Moby Dick (DLP Resources Inc.)

The company drilled one hole at its **Moby Dick** property.

Ground problems at 1200 m depth led to a re-drill off a downhole wedge placed at 1150 m, which also had to be abandoned. The hole was in Middle Aldridge Formation sedimentary rocks with weak pyrrhotite mineralization and intense sericite alteration with trace tourmaline.

7.3.9. Regional Project 2 (Spider Mine) (New Gold Inc.)

New Gold Inc. conducted a regional exploration program on its mineral holdings in the Incomappleux River area, along Poole Creek, that includes the historical mines **Spider**, Meridian, Cholla, Eva, and Criterion-Oyster. New Gold completed a reconnaissance program of soil geochemistry, rock sampling, geological mapping and detailed structural analysis, and petrography, and completed an airborne lidar survey. Lardeau Group (Cambrian-Devonian) metasedimentary rocks, consisting mostly of thinly laminated phyllites and argillites of the Broadview Formation, underlie the property.

7.3.10. Revel Ridge (Rokmaster Resources Corp.)

At the **Revel Ridge** project, 14 holes (10 underground and 4 surface) totalling 4803 m were completed, primarily testing extension of mineralization at the Main and Yellowjacket zones. Highlights from the Main zone include 4.35 m grading 2.57 g/t Au, 17.11 g/t Ag, 0.66% Pb, and 1.94% Zn and the Yellowjacket zone 4.45 m grading 0.01 g/t Au, 5.32 g/t Ag, 0.06% Pb, and 0.87% Zn.

The company also completed mapping, prospecting, and geochemical sampling across the property. A total of 62 channel samples, 91 rock samples, 562 soil samples, and 70 stream sediment samples were taken. In January 2022, the company released an updated mineral resource estimate that included 2021 drilling results. Current to November 2021 the company reported a Measured and Indicated resource of 6.734 Mt grading 50 g/t Ag, 3.69 g/t Au, 1.93% Pb, and 3.68% Zn, an Inferred resource of 5.996 Mt grading 37 g/t Ag, 4.7 g/t Au, 1.19% Pb, and 2.2% Zn.

The Revel Ridge property is underlain by north- to northwest-striking, moderate to steeply east dipping metasedimentary and metavolcanic rocks of the Hamill and Lardeau groups; mineralization is in the Hamill Group (Badshot and Mohican formations). The Main zone is a structurally controlled stratiform massive sulphide zinc-lead-silver-gold-iron-arsenic deposit overprinting a pre-existing silver-lead-zinc deposit (the Yellowjacket zone).

7.3.11. Robocop (Grizzly Discoveries Inc.)

Grizzly Discoveries Inc. completed geological mapping, rock sampling, and geophysical surveys at its **Robocop** property. The company is waiting on permits for drilling.

7.3.12. Silvana mine (Klondike Silver Corp.)

The company recommenced exploration at its **Silvana mine** project near Sandon. The company did underground drifting for a drill station and completed one hole that intersected the ‘Main lode’. The mine formerly produced from the Main lode, an extensive structure that yielded silver, zinc, and lead. The Silvana mine is hosted by predominantly interbedded black argillite and medium to dark grey quartzite and argillaceous quartzite of the Slocan Group. Silver-lead-zinc mineralization is hosted in a structurally bound carbonate-quartz breccia.

7.3.13. Texas (Troubadour Resources Inc.)

The company completed property-wide exploration with detailed work at the Golden Bug, Golden Eagle, Midnight and Doorn showings at its **Texas** property. This work included geological mapping, rock and soil geochemical sampling and magnetic surveys. Packsack drilling was done at the Golden Bug for representative core samples. A selected core sample yielded 5.5 g/t Au along 70 cm, which corroborates a chip sample from 2020 that returned 8.19 g/t Au along 1.0 m. The past-producing Inyo-Ackworth mine on the claims recovered silver, gold, lead, and zinc from vuggy quartz-calcite veins that carried galena, native silver, sphalerite, tetrahedrite, and pyrite. A selected grab sample from the old dump yielded 6.72 g/t Au, 509 g/t Ag, 292 ppm Cu, 73,800 ppm Pb, and 2210 ppm Zn. The property is underlain by a Nelson suite granodiorite pluton (Middle Jurassic) that is cut by quartz and lesser carbonate veins with strong chlorite-carbonate-clay-silica alteration envelopes.

7.3.14. Thor (Taranis Resources Inc.)

The company completed geological mapping, rock and soil sampling, helicopter-borne magnetic and electromagnetic surveys, a ground VLF survey, and drilling on its **Thor** project. Seven drill holes totaling 844 m were completed at the Thunder zone. A new showing near the Thunder zone, referred to as the ‘Ripper fault’, exposed bonanza-type mineralization. The structure appears to connect several known mineral showings on the property. Selected channel samples from Ripper included 0.33 m grading 0.26 g/t Au, 52.7 g/t Ag, 0.03% Cu, 0.291% Pb, 0.12% Zn and 0.33 m grading 12.5 g/t Au, 1100 g/t Ag, 0.03% Cu, 14.9% Pb, and 0.10% Zn. The property is underlain mostly by Cambrian to Devonian carbonate and fine-grained sedimentary rocks of the Lardeau Group. From stratigraphic bottom to top, the section includes black siliceous of the Sharon Creek Formation, mafic volcanic rocks of the Jowett Formation, and coarse siliciclastic sedimentary rocks of the Broadview Formation. Mineralization generally appears spatially related to the Jowett Formation system at depth.

7.3.15. Vulcan (Eagle Plains Resources Ltd.)

Early in the year, the company completed a 537 line-km high-resolution aeromagnetic survey at **Vulcan**. Subsequently, a three-hole, 1700 m drill program was completed. Disseminated sulphides and thin massive sulphide layers were intersected in the Alldridge Formation. Down-hole electromagnetic surveys were done upon completion of each hole. Drilling targeted sedex silver-lead-zinc mineralization at the transition between the lower and middle parts of Alldridge Formation such as found at the historical Sullivan mine.

7.4. Selected REE, Ti, Nb and graphite projects

7.4.1. Adamant (Eagle Plains Resources Ltd.)

The company completed silt sampling, geological mapping, channel sampling, and mineralogical studies. REE mineralization at **Adamant** (previously known as Trident Mountain) is in a nepheline syenite and carbonatite dike system. The Late Devonian dikes intrude psammatic and kyanite-bearing pelitic schists of the Horsethief Creek Group (Neoproterozoic).

7.4.2. Ice River (Eagle Plains Resources Ltd.)

The company completed mapping and rock and soil sampling in both areas of known REE mineralization and at previously identified exploration targets. Limestone of the Ottertail Formation (Cambrian) is cut by nepheline syenite of the **Ice River** complex (Devonian or Carboniferous).

7.4.3. Slocan Graphite (Aben Resources Ltd.)

A property-wide field reconnaissance, geological mapping, soil and rock sampling program was done on the **Slocan Graphite** property. Graphite mineralization is hosted primarily in carbonate and calc-silicate rocks in the Passmore dome of the Valhalla metamorphic complex. Based on field observations, the company staked additional claims to expand the property. The project is near Eagle Graphite Corporation's flake graphite processing facility.

7.4.4. Yee Haw (Lithium Corporation)

Lithium Corporation completed a small program of hand trenching and prospecting at the **Yee Haw** titanium-REE showings related to lamprophyric dikes previously examined in 2017. The property appears to be underlain by Eocene rocks of the Coryell intrusion, including syenites, quartz-poor monzonites, and granodiorites.

7.5. Selected industrial mineral projects

7.5.1. Tatooine Silica (Homerun Resources Inc.)

Homerun purchased an option to acquire 100% of the Brisco silica property and adjacent claims and have renamed it the **Tatooine Silica** project. The company intends to develop the property as a high-purity silica operation. The silica is in a 60-90 m thick quartzite bed in the Mount Wilson Formation (Ordovician). Previous work yielded a typical sample grading 98.66% SiO_2, 0.47% Al_2O_3, 0.06% Fe_2O_3, and 0.08% CaO (1964).

8. Geological research

Taerum (2022) interpreted that regionally developed normal faults in the eastern Main Ranges, hitherto considered to have formed from transtension during Cenozoic contraction, to be reactivated structures that originated during Paleozoic rifting and opening of the Slide Mountain ocean. Working in the British Columbia alkaline province, Burgess et al. (2022) obtained ultra-precise perovskite dates from the Ice River alkaline intrusive complex province and evaluated the suitability of the Ice River perovskite as a U-Pb age reference material, and Piilonen et al. (2022) described a sodalite-bearing carbohydrothermal breccia that hosts a suite of rare and unique Ba-Sr-REE minerals at Mount Mather Creek. Paradis et al. (2022a, b) reviewed carbonate-hosted deposits in the southeastern Cordillera, Simandl et al. (2022) examined rare-earth elements of carbonate minerals in sediment-hosted Pb-Zn deposits, and Araoka et al. (2022) considered the origin of carbonate-hosted REE-F-Ba at the Rock Canyon Creek deposit, using Mg-Sr isotopes in dolomite, calcite, and fluorite. Kuppusamy and Holuszko (2022) presented geochemical analyses of coal samples as a step in developing a rare-earth element database for the East Kootenay coalfield.

9. Summary

Companies have been able to obtain financing for fieldwork. Exploration has been varied across a spectrum of commodities, including precious and base metals, critical minerals, industrial minerals, and coal. Industrial minerals production has remained steady. Coal prices were high during the year and demand for metallurgical coal remains strong.

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Exploration and mining in the Southwest Region, British Columbia

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1. Introduction

The Southwest Region (Fig. 1) has a long history of mining. This history includes: the use of native copper by First Nations; silver, gold, and coal mining by the mid-19th century; mining of iron in the mid-20th century; and substantial copper production throughout the 20th century. Although mining and exploration for metals continues in the region, most mining is for construction materials, mainly aggregates for local markets with some exports from the largest coastal quarries.

The area has one major polymetallic metal mine, **Myra Falls** (Myra Falls Mine Ltd., Trafigura Mining Group), one coal mine on care and maintenance, **Quinsam** (Quinsam Coal Corporation), and numerous industrial minerals and aggregate operations. Having been on care and maintenance since 2015, Nyrstar prepared to return Myra Falls to production in 2017 and produced some concentrate in 2018. Operations were suspended in 2018 for compliance reasons but restarted in April 2019 and have continued. The Quinsam mine, on care and maintenance since 2016, had returned to production in 2017, after being purchased by ERP Compliant Fuels LLC, and produced about 200,000 t in 2018. However, the mine was placed on care and maintenance again in May 2019 and remained so through 2022.

Mine site exploration at Myra Falls has continued since 2017. Northisle Copper and Gold Inc. was active on northern Vancouver Island. More than 30 other exploration projects were tracked, mainly grass roots or early stage and small scale.

Estimates for exploration expenditures, drilling programs, and other metrics were captured in the British Columbia Mineral and Coal Exploration Survey, a joint initiative of the Province of British Columbia Ministry of Energy, Mines and Low Carbon Innovation, the Association for Mineral Exploration in British Columbia, and EY LLP. For the Southwest Region, exploration expenditures were estimated at $10.8 million and exploration drilling was estimated at approximately 28,570 m (Clarke et al., 2023; EY LLP, 2023).

2. Geological overview

Metallogeny in British Columbia is closely linked to the tectonic evolution of the Canadian Cordillera, first as an accretionary orogen consisting of allochthonous terranes that were welded to and deformed with the western margin of ancestral North America, primarily during the Jurassic, and then as the site of post-accretionary tectonism and magmatism (e.g., Nelson et al., 2013).

The Southwest Region includes parts of the Insular, Coast, and Intermontane physiographic regions. Most of the area is underlain by rocks of the Wrangell terrane and the Coast Plutonic complex (Fig. 1). Wrangellia is a Devonian to Jurassic island arc terrane that underlies most of Vancouver Island and Haida Gwaii. The oldest rocks on Vancouver Island are Devonian volcanic arc andesites, basalts, breccias, tuffs, and tuffaceous sediments of the Sicker Group and allied intrusive rocks, which are overlain by Mississippian-Permian limestones, argillites, and minor conglomerate of the Buttle Lake Group. This Paleozoic basement is exposed in two major uplifts on southern and central Vancouver Island. The Cowichan anticlinorium and the Buttle Lake anticlinorium host the past volcanogenic massive sulphide polymetallic producer at Mount Sicker and the current mine at **Myra Falls**.

Unconformably overlying the Paleozoic rocks are Middle to Upper Triassic oceanic flood basalts and related sedimentary rocks of the Vancouver Group. The upper part of the Vancouver Group contains numerous skarn occurrences adjacent to Jurassic intrusions (Island Plutonic suite). The Tasu past producer on Haida Gwaii is one of the larger examples of numerous iron and iron-copper skarns. Between 1914 and 1983, it produced 12 Mt of iron concentrate as well as copper, gold, and silver.

The Vancouver Group is overlain by arc rocks of Bonanza Group (Upper Triassic-Middle Jurassic), which consist of a volcano-sedimentary succession and subaerial basalt to rhyolitic flows and tuffs (Nixon and Orr, 2007). The Bonanza Group north of Holberg Inlet host the past-producing Island Copper Cu-Mo-Au porphyry deposit and other undeveloped porphyry and epithermal prospects where they are intruded by Island Plutonic suite granodiorite and quartz diorite.

On the east coast of Vancouver Island, in the Strait of Georgia and on the western mainland, Wrangellia is buried by rocks of the Nanaimo Group, an Upper Cretaceous continental to marine molassoid succession containing debris derived from

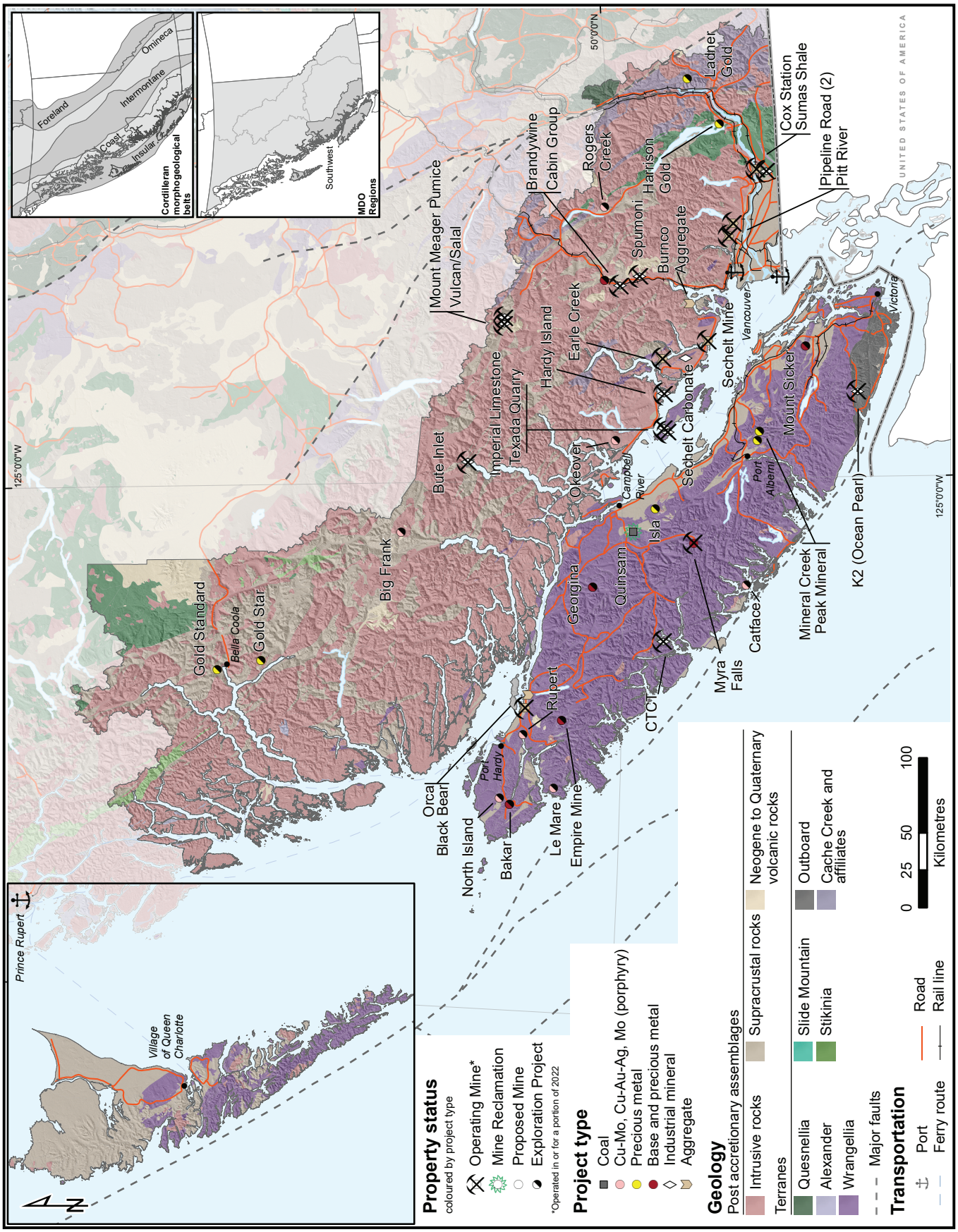

Fig. 1. Mines, proposed mines and selected exploration projects, Southwest Region, 2022. Terranes after Nelson et al. (2013).

unroofing of the Coast Belt and northern Cascades (Mustard, 1994). The Comox Formation, the basal unit of the Nanaimo Group, hosts economically important coal deposits that were mined historically in the Nanaimo area.

The Coast Mountain range is underlain by the Coast Plutonic complex, a large northwest-trending batholith consisting largely of diorite, quartz diorite, tonalite, and granodiorite calcalkaline rocks with less abundant high-grade metamorphic rocks. For the most part, uplift and erosion have removed the levels at which epithermal and porphyry-style mineralization form, with some exceptions. At the southern end of the Coast Plutonic complex, economically important deposits occur in pendants of the Gambier Group, overlapping Late Jurassic to Mid-Cretaceous arc-related volcanic and sedimentary rocks. The most productive of these deposits was the Britannia mine, a Kuroko-type polymetallic volcanogenic massive sulphide deposit that produced 517,000 t of copper along with zinc, silver, gold, lead, and cadmium between 1905 and 1974. At the southeastern edge of the Coast ranges, the Giant Mascot ultramafic-mafic intrusive suite (Late Cretaceous, Manor et al., 2014, 2015, 2016, 2017) hosts the province's only past-producing nickel mine, Giant Mascot Nickel, which operated between 1958 and 1974.

Eocene to Miocene ancestral Cascades arc magmatism extended as far northward as southwestern British Columbia, as does present day Cascades magmatism. Evidence of forearc Paleocene to Miocene magmatism can be traced from southern Oregon through Alaska (Madsen et al., 2006). Mount Washington Copper (Eocene) produced 3548 t of copper, 131 kg gold and 7235 kg silver. **Catface Copper** (Eocene) has a significant undeveloped resource. Other presumably Cenozoic targets include Giant Copper and **Okeover**. **Harmony**, on Graham Island, Haida Gwaii (Fig. 1) is a Miocene epithermal deposit with a significant undeveloped gold resource. Some recent exploration targets Neogene mineralization along a magmatic belt between the Brooks Peninsula and Alert Bay on northern Vancouver Island (Nixon et al., 2011a, b; 2020).

Quaternary Cascades magmatism has produced pumice and other volcanic rocks quarried for construction, landscaping, and other applications. The Mount Meager area has also been investigated as a possible source of geothermal energy.

On Vancouver Island, the western and southern margins of Wrangellia are structurally juxtaposed with the Pacific Rim terrane, which consists of possible mélange deposits (Rusmore and Cowan, 1985; Brandon, 1989) and the Leech River complex, an assemblage of greenschist- to amphibolite-grade mudstones, sandstones, and mafic volcanic rocks cut by granitic bodies (Groome et al., 2003). Slate and siltstone are quarried for building stone in the Leech River complex. The Leech River has been an active placer gold camp since 1864. Gold quartz veins have been the subject of recent exploration near the Leech River fault, along the southern margin of the terrane (Fig. 1).

The Crescent terrane represents Eocene accretion of Late Cretaceous or Paleocene to Early Eocene seamounts. The Leech River fault marks the boundary of Pacific Rim and Crescent terranes. The Metchosin Igneous complex, a partial ophiolite and northernmost extent of the Coast Range basalt province (Massey, 1986), contains three tholeiitic intrusion-hosted past producers of copper and precious metals, the most significant of which was the Sunro mine.

The southeastern Coast Belt, north of the international border is underlain by the Nooksack-Harrison and Chilliwack terranes (equivalent to Stikinia; Monger and Struik, 2006), and the Bridge River, Cadwallader, and Methow terranes, allied with the main Cache Creek terrane (Fig. 1). These represent slices of oceanic and arc-related rocks enclosed between Intermontane and Insular terranes during Middle Jurassic to Middle Cretaceous regional sinistral faulting (Bustin et al., 2013; Monger and Brown, 2016). Gambier Group-equivalent overlap deposits and parts of the Nooksack-Harrison terrane are prospective for VMS mineralization. The Coquihalla Serpentine belt, along the Hozameen fault between the Bridge River terrane to the west and the Methow terrane to the east, hosts several gold prospects and five past producers including the Carolin mine, which operated between 1981 and 1984.

Tectonic uplift, erosion, and glaciation produced sand and gravel deposits important to the construction and transportation industries of the Lower Mainland. Most are products of the most recent retreat of the Cordilleran Ice Sheet in the Pleistocene (e.g., Howes, 1983; Clague and Ward, 2011).

3. Mines

The Southwest Region has one metal mine, one coal mine placed on care and maintenance in 2019 and numerous industrial minerals and aggregate operations (Fig. 1; Tables 1-3). Of eight large-scale industrial minerals operations in the region, two entered care and maintenance in 2016 and remained so through 2022. Aggregate operations in the region number in the 100s and only the most prominent (e.g., those producing at least 1 Mty) are reported here.

3.1. Metal mines

3.1.1. Myra Falls (Myra Falls Mine Ltd., Trafigura Mining Group)

Trafigura Mining Group, part of Trafigura Group Pte. Ltd. acquired the **Myra Falls** underground Zn-Cu-Pb-Ag-Au mine in 2020 from Nyrstar N.V. Trafigura is a private multinational commodity trading company and is not required to publish compliant production or reserves figures. However, they have a target throughput of 800,000 tpy of ore and estimate the operation has approximately 10 years of reserves (Table 1). They reported that 2022 production was not meeting the 800,000 t expectation, although production was significantly higher than in 2021. After re-starting following infrastructure upgrades and closing again for compliance reasons in 2018, the mine reopened in April 2019 and continued operation through 2022. The mine has a history of replacing reserves through exploration, which continued in 2022. Ability to store tailings may place limitations on mine life before exhaustion of

Table 1. Metal mines, Southwest Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves (last reported December 31, 2018)	Resource (last reported December 31, 2018)	Comments
Myra Falls	**Myra Falls Mine Ltd. (Part of Trafigura Mining Group)**	Zn, Cu, Pb, Ag, Au; Kuroko massive sulphide; 092F 330, 71, 72, 73	Not reported. Mill capacity 2000 tpd. Long term target 800,000 tpy of ore	P+Pr: 4.7 Mt 7.11% Zn, 0.78% Pb, 0.92% Cu, 76.55 g/t Ag, 1.78 g/t Au	M+I: 7.64 Mt 6.59% Zn, 0.72% Pb, 0.99% Cu, 72.52 g/t Ag, 1.79 g/t Au	Trafigura indicates the mine has reserves and resources sufficient for 10 years operation. Exploration is ongoing.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 2. Coal mines, Southwest Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Quinsam	**Quinsam Coal Corporation (receiver Bowra Group Inc.)**	TC; Bituminous coal; 092F 319	nil	Not reported	Unofficial, non-compliant resources estimated at 40 Mt in 2013 by mine staff.	Placed on care and maintenance May 2019. Property and assets offered for sale 2020. Sale process discontinued 2021.

HCC = hard coking coal; PCI = pulverized coal injection; TC = thermal coal

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

Table 3. Selected industrial mineral mines, quarries and aggregate quarries, Southwest Region.

Mine	Operator (partner)	Commodity; Deposit type; MINFILE	Forecast 2022 Production (based on Q1-Q3)	Reserves	Resource	Comments
Bute Inlet	**Ironwood Clay Company Inc.**	Clay; Sedimentary kaolin? (or illite)	na	na	na	Intermittent mining as needed.
Cabin Group	**Northwest Landscape and Stone Supply Ltd.**	Landscaping stone	na	na	na	
Cox Station	**Mainland Construction Materials ULC**	Aggregate; Crushed rock; 092GSE103	Approx. 3-4 Mty	na	na	River and rail access.
CTCT	**Vancouver Island Marble Quarries Ltd.**	Marble; Limestone; 092E 020	Typically, about 400 t annually	na	na	Supplies Matrix Marble and Stone Inc.
Earle Creek	**Lafarge Canada Inc.**	Sand and Gravel	Typically, >1 Mty	na	na	Material barged.

Table 3. Continued.

Garibaldi Pumice (Vulcan/ Salal)	**Garibaldi Pumice Ltd.**	Pumice; Volcanic ash; 092JW 039	Typically, 10,000-20,000 m^3	na	11,396,000 m^3 pumice 4,990,000 m^3 pumicite (fines)	2014 resource. There has been both exploration and production since.
Hardy Island	**Hardy Island Granite Quarries Ltd.**	Dimension stone, building stone; Dimension stone-granite; 092F 425	3000-5000 tpy	na	Approx. 100,000 t	
Imperial Limestone	**Imperial Limestone Co. Ltd.**	Limestone; Limestone; 092F 394	Approx. 600,000 tpy	na	75 years	250,000 to 275,000 t high purity product + cement feedstock.
K2 (Ocean Pearl)	**K2 Stone Quarries Inc.**	Dimension stone, flagstone; Flagstone; 092C 159	15,000-20,000 t annually	na	na	Production number represents material extracted.
Mount Meager Pumice	**Great Pacific Pumice Inc.**	Pumice; Volcanic ash; 092JW 039	na	na	na	Production as required.
Orca	**Polaris Minerals Corporation** (Vulcan Materials Company and 'Namgis First Nation)	Sand and Gravel	Up to 6 Mty	na	121.6 Mt initial resource (2005)	Recently 3.5 to 5 Mty increase in mine plan. Vulcan Materials Company acquired previous owner US Concrete Inc. The quarry has a freighter loading facility.
Pipeline Road (2)	**Lehigh Hanson Materials Ltd., Allard Contractors Ltd.**	Sand and Gravel	na	na	na	Two adjacent operating sites.
Pitt River	**Lafarge Canada Inc.**	Aggregate; Crushed rock; 092GSE007	Typically, >1 Mty	na	na	River access for barging.
Sechelt	**Lehigh Hanson Materials Limited**	Sand and Gravel	Typically, 5-6 Mty	na	Several decades	Freighter loading facility.
Spumoni	**Northwest Landscape and Stone Supply Ltd.**	Flagstone; Flagstone; 092GNW100	na	na	na	Seasonal quarry.
Sumas Shale	**Sumas Shale Ltd.** (Lafarge Canada Inc., Clayburn Industrial Group)	Shale, clay, sandstone; Residual kaolin; 092GSE024	About 500,000 t annually	na	50+ years	Approximately 55% shale, 45% sandstone for cement production.
Texada Quarry	**Texada Quarrying Ltd.** (Lafarge Canada Inc.)	Limestone, aggregate; Limestone; 092F 395	Typically, approx. 3.5 to 4.5 Mty	na	100+ years	Mostly produces limestone for cement manufacture. Freighter loading facility.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

resources. The Myra Falls camp hosts Kuroko-type, or bimodal felsic type Zn-Cu- Pb-Ag-Au VMS deposits from which more than 30 Mt of ore have been mined since 1966.

3.2. Coal mines

3.2.1. Quinsam (Quinsam Coal Corporation, Bowra Group Inc.)

Quinsam is an underground mine that began commercial production of thermal coal in 1988 (Table 2). At its peak, it produced approximately 1 Mt clean coal annually. It ceased operation and entered care and maintenance in early 2016. It was then purchased by ERP Compliant Fuels LLC in 2017 and operated by Quinsam Coal Corporation until 2019. In 2018, its last full year of operation, it produced about 200,000 t and employed 50 people.

Quinsam placed the mine on care and maintenance at the end of May 2019. The company subsequently made an assignment into bankruptcy. The receiver and manager Bowra Group Inc. offered the property and assets for sale in 2020. That process closed without a sale, except that of the existing mined coal inventory. One conditional offer for the mine was ultimately rejected. Neither the receiver nor the Province of British Columbia support further marketing efforts. Reclamation is a long-term option for the property. Reclamation liability is estimated at $12.4 million.

3.3. Industrial minerals and aggregates

Large quarries on the coast (Table 3) serve the Lower Mainland, Vancouver Island, and U.S. Pacific northwest markets by barge. Those with access to freighter loadout facilities can also supply eastern Pacific international markets and Hawaii. Aggregates are an important part of the mining industry on the south coast, generating many more jobs in the region than metal and coal mining. The area hosts some of the largest aggregate pits and quarries in Canada. Most quarries serve local markets. General sales and production trends follow those of the construction industry. Lafarge North America Inc., Lehigh Hanson Materials Ltd., Vulcan Materials Company, and a local company, Mainland Sand and Gravel Ltd., are the largest participants in the coast area, although hundreds of pits and quarries produce in the region.

One of the largest aggregate-only mines is the **Sechelt mine**, operated by Lehigh Hanson. The company no longer makes production figures public, but volumes have been in the 5-6 Mt range in recent years. It is permitted for up to 7.5 Mty. They expect reserves to last several more decades. A loading facility capable of accommodating Panamax-class freighters handles most of the shipments.

In addition to the **Texada Quarry**, Lafarge North America operates two of the largest aggregate quarries in the region (**Earle Creek** and **Pitt River**) each of which typically produces more than 1 Mty.

Pipeline Road is the site of large operations by Lehigh Hanson Materials Ltd. and Allard Contractors Ltd. Together they produce more than 1 Mty. Lehigh Hanson also has a large crushed aggregate operation at Treat Creek on Jervis Inlet.

Polaris Minerals Corporation, a subsidiary Vulcan Materials Company, operates the **Orca** quarry near Port McNeill, in partnership with the ‘Namgis First Nation, which holds a 12% interest. The owner-operator partnership is Orca Sand and Gravel LP. The quarry produces sand and gravel mainly for export to California. The operation was originally permitted for up to 6 Mty, but Polaris planned to increase production by 2023. In 2017, Polaris applied to the British Columbia Environmental Assessment Office for an amendment to its Orca project certificate to allow for producing aggregate at a site approximately 4 km from current operations. The new site was previously known as the **Black Bear** project. In 2020, Polaris revised the proposal to 3-4 Mty, then withdrew from the environmental assessment process with the stated intention of re-applying under new legislation.

The **Cox Station** quarry, on the north side of Sumas Mountain, is operated by Mainland Sand and Gravel Ltd. More than 95% of the crushed quartz diorite product goes to the Lower Mainland market via barge on the Fraser River. The quarry also has two CN Rail spur lines, which allow shipment by rail. Production and shipments have recently been on about 3-4 Mty.

Small operations produce building stone on Vancouver Island. Island Stone Landscape Supply is a producer and supplier of flagstone, as is San Juan Quarries. Vancouver Island Marble Quarries Ltd. continues to quarry marble on Vancouver Island and fabricate a line of products including countertops, sinks, and tiles at Matrix Marble and Stone Inc. They quarry marbles referred to as ‘Tlupana Blue Grey’ and ‘Vancouver Island White’ near Hisnit Inlet (**CTCT** quarry). K2 Stone Quarries Inc. now quarries a variety of products on Vancouver Island. In addition to the original Port Renfrew Ocean Pearl stone, they quarry sandstone near Nanaimo and a granite product near Courtenay.

Landscaping stone and dimension stone is quarried in the Squamish-Whistler corridor. The largest operator is Northwest Landscape and Stone Supply Ltd., with the **Spumoni** quarry and their **Cabin Group** property, which now has a Mines Act quarry permit. Others active in the area include Bedrock Granite Sales Ltd., Citadel Stone Ltd., and Alpine Natural Stone Ltd.

Hardy Island Granite Quarries Ltd. produces up to 5000 tpy from a Coast Plutonic complex granodiorite unit. Like Haddington Island, it is an historic quarry that mainly serves the local market. Hardy Island has opened another quarry on Valdes Island that supplies sandstone from the Nanaimo Group, another rock type common to many older buildings in Vancouver and Victoria.

3.3.1. Bute Inlet (Ironwood Clay Company Inc.)

Ironwood Clay Company Inc. mines glacial marine clay on the central coast. Until 2015, production was from the De Cosmos Lagoon south of Bella Bella (Fig. 1). The company has a site at the head of Bute Inlet, which is active and likely to supply future raw material. Mining is intermittent. Ironwood

produces cosmetic products using the clay at its Richmond plant, a business that has continued for 30 years. Glacial Bay Organic Clay Inc. also extracts material by hand near the head of Bute Inlet. Other individuals and companies supply the growing cosmetic clay market at smaller scales from locations on the central coast and Vancouver Island. Generally, Mines Act permits are not required where material is collected by hand, and these glacial marine clay operations are unreported.

3.3.2. Garibaldi Pumice and Mount Meager Pumice (Garibaldi Pumice Ltd.; Great Pacific Pumice Inc.)

In the Mount Meager area, Garibaldi Pumice Ltd. produces 15,000-20,000 m^3 of pumice annually from their quarry (**Vulcan/Salal**). Neighbouring Great Pacific Pumice Inc. has been producing smaller quantities but have stockpiles in Squamish from which they can ship year-round.

3.3.3. Imperial Limestone (Imperial Limestone Co.)

In recent years, the **Imperial Limestone** quarry near Van Anda on Texada Island (Fig. 1) has produced approximately 250,000 to 275,000 tpy of high-purity product, most of which is shipped to their parent company in Seattle. Imperial Limestone Co. also mine and stockpile a larger quantity of lower quality limestone that goes to local cement plants. Quarrying at the Imperial site dates to the 1930s. The company anticipate reserves will last about 75 years.

3.3.4. K2 Ocean Pearl (K2 Stone Quarries Inc.)

K2 Stone is a natural stone product supplier with a quarry near Port Renfrew on Vancouver Island **(K2)**. They extract about 15,000-20,000 t annually. The rock is trucked to Nanaimo for processing into masonry and landscaping products. The company has opened additional quarries near Nanaimo and Courtenay, producing sandstone and a salt-and-pepper granite (granodiorite).

3.3.5. Sumas Shale (Sumas Shale Ltd.)

The **Sumas Shale** quarry of Sumas Shale Ltd., operated by contractor Fraser Pacific Enterprises Inc., delivers sandstone and shale product to the Lafarge and Lehigh cement plants in Richmond and Ash Grove in Seattle. Sumas Shale Ltd is 50% owned by Lafarge Canada Inc. and 50% by Clayburn Industrial Group. Production and shipments have been approximately 500,000 tpy in recent years. Mining plans include an average 475,000 tpy of approximately 55% shale and 45% sandstone. Because Clayburn's brick and refractory products plant in Abbotsford closed, fire clay is no longer produced separately.

3.3.6. Texada Quarry (Texada Quarrying Ltd.)

The largest limestone quarry on the coast is the **Texada Quarry** operation near Gillies Bay. Texada Quarrying Ltd. is a subsidiary of Lafarge Canada Inc. The quarry also produces aggregate, mainly from quartz monzonite to gabbro dikes and sills, which would otherwise be waste rock. The site also hosts a white carbonate quarry, one of only a few sources on the coast. The quarry, which has operated for more than 60 years, has extensive reserves and, at current rates, could produce for more than 100 years. They produce about 3.5 to 4.5 Mt annually.

4. Placer gold

Historic placer camps include the Lower Fraser River, Leech River, and China Creek. Although short lived, a gold rush in the Fraser Canyon, beginning in 1858 at Hills Bar, led miners farther up the Fraser River into the Chilcotin and Cariboo. In 1864, reports of gold in the Leech River on southern Vancouver Island led to another brief gold rush. Both camps are worked by placer miners to the present day. The Lillooet River was also on a historic route to the Cariboo. It also remains an active placer camp.

5. Mine development

Mine development projects are those for which a decision to produce has been made, key government approvals are in place, and on-site construction has begun. The Southwest Region has no such large-scale projects.

6. Proposed mines

Proposed mines are feasibility-stage projects for which proponents have begun the environmental certification process (in the case of large projects) or have submitted applications for Mines Act permits (in the case of projects below British Columbia Environmental Assessment Act thresholds). The Southwest Region has three such projects (Table 4); several small-scale and inactive larger projects are not covered in this report.

6.1. Proposed metal mines

The Southwest Region had no proposed major metal mine projects active in 2022.

6.2. Proposed coal mines

The region has no active proposed coal mine projects.

6.3. Selected proposed industrial minerals mines

Proposed mines include the **BURNCO Aggregate** project and the **Sechelt Carbonate** project, which has been inactive apart from a request by the owner to remain in the provincial environmental assessment process. The **Black Bear** aggregate project near Port McNeill was the subject of an application to amend the Orca Environmental Certificate. The application was withdrawn with a request for review under new legislation.

6.3.1. Black Bear (Polaris Materials Corporation)

As noted above, Polaris Materials Corporation included the **Black Bear** project near its Orca sand and gravel quarry in an Environmental Certificate amendment for Orca. If the project proceeds, it will be a source of up to 3-4 Mty of crushed basalt, an increase over the 250,000 tpy proposed in a 2017 project

Table 4. Selected proposed mines or quarries, Southwest Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Reserves	Resource	Comments
Black Bear	**Polaris Materials Corporation** (Vulcan Materials Company and and 'Namgis First Nation)	Aggregate; Crushed rock	na	20 years (proposed life)	Orca environmental certificate amendment application withdrawn. Proposed 250,000 tpy 4 km from the Orca quarry revised to 3-4 Mtpy. Indicate intention to re-apply under 2018 Act.
BURNCO Aggregate	**BURNCO Rock Products Ltd.**	Aggregate; Sand and Gravel	na	Approx. 20 Mt	Has environmental certification, would require Mines Act and other permits.
Sechelt Carbonate	**Ballinteer Management Inc.**	Limestone, dolostone, aggregate; Limestone, dolomite, crushed rock; 093GNW031	na	Carbonate rock: 76.1 Mt Gabbro: >700 Mt	Proponent requests project remain in environmental assessment pre- application stage.

P = Proven; Pr = Probable; M = Measured; I = Indicated; Inf = Inferred

description. Mine life would be extended from 10 to 20 years. This application was withdrawn with a request by the proponent to re-apply under the 2018 Environmental Assessment Act.

6.3.2. BURNCO Aggregate (BURNCO Rock Products Ltd.)

The **BURNCO Aggregate** project in the McNab Creek Valley (Fig. 1) received environmental certification in 2018 and may proceed with British Columbia Mines Act and other permitting. Certifications are valid for 5 years. Fisheries and Oceans Canada concluded that the project is unlikely to cause significant environmental harm. The proposed sand and gravel mine would ramp up to a 1.6 Mty operation, initially barging product to BURNCO Rock Products Ltd.'s ready-mix concrete plants in South Burnaby and Port Kells. BURNCO submitted revisions to the project in 2014, changing production rate, relocating some facilities, and specifying a mine life of 16 years.

6.3.3. Sechelt Carbonate (Ballinteer Management Inc.)

Ballinteer Management Inc. now holds the property comprising the **Sechelt Carbonate** project. They filed engineering, archeological, and baseline environmental studies for assessment in 2016; activity was not reported for 2017-22. The property contains resources of calcite- and dolomite bearing carbonate rock and gabbroic rock for potential use as aggregate. The original proposal was for a 4-6 tpy carbonate quarry producing both limestone and dolostone. Product was to be shipped from a barge load out on Sechelt Inlet.

7. Exploration activities and highlights

Exploration projects are categorized as grassroots, early stage, advanced, and mine evaluation, depending upon the nature of recent work. Work directed at discovering new resources away from ore bodies in an existing mine plan can be considered mine-lease or on-site exploration. The Southwest Region had few large exploration programs in 2022 (Table 5), however it has a number of small programs.

7.1. Selected precious metal projects

Precious metal prospects are found in a variety of settings in the region and although some are at advanced stages of exploration, limited work was reported on gold projects in 2022.

7.1.1. Gold Standard (Juggernaut Exploration Ltd.)

Juggernaut Exploration Ltd. returned to the **Gold Standard** project following positive 2021 results. They reported 41 m of mineralized veins and schist at the Kraken vein. However, they noted that 2022 drill results, although returning anomalous gold, were not comparable to 2021 results.

7.1.2. Gold Star (Juggernaut Exploration Ltd.)

Juggernaut Exploration Ltd. returned to the **Gold Star** project following positive 2021 results at the Goldilocks zone. They reported sulphide mineralization and anomalous gold from drilling in 2022, but that the values did not match 2021 results.

7.1.3. Harrison Gold (Bear Mountain Gold Mines Ltd.)

Bear Mountain Gold Mines Ltd. reported engineering work at **Harrison Gold**, following underground drilling in 2021. The company is considering the possibility of accessing underground targets with minimal disruption to nearby

Table 5. Selected exploration projects, Southwest Region.

Project	Operator (partner)	Commodity; Deposit type; MINFILE	Resource (NI 43-101 compliant unless indicated otherwise)	Comments
Bakar	**Sherpa II Holdings Corp.** (District Metals Corp.)	Cu, Ag; Volcanic Redbed Cu; 102I 010, 7, 6, 15, 16, 17, 092L 080, 462, 247	na	Airborne geophysics, soil geochemistry.
Big Frank	**Goldplay Mining Inc.**	Cu, Au, Mo, Ag; Porphyry Cu±Mo±Au; 092N 051, 29, 28	na	2021 sampling reported with highlights of 37.3 g/t Au, 174 g/t Ag, 4.3% Cu, and 16 g/t Au and 1162 g/t Ag.
Brandywine	**Bayhorse Silver Inc.,** (Turnagain Resources Inc.)	Ag, Au, Pb, Zn; Polymetallic veins; 092JW 001, 21, 22	na	Permitting, geology.
Catface		Cu, Mo, Ag; Porphyry Cu±Mo±Au; 092F 120, 251, 231	I: 56.863 Mt 0.040% Cu Inf: 262.448 Mt 0.38% Cu	Minor 2022 work filed for assessment. Resource estimated in 2009 did not include subsequent drilling.
Empire Mine	**Coast Copper Corp.**	Au, Ag, Cu, Fe, Co; Fe skarn, Cu skarn; 092L 044, 45, 46	M+I: 960,000 t 2 g/t Au, 5.6 g/t Ag, 0.34% Cu, 0.013% Co Inf: 120,000 t 1.2 g/t Au, 2.8 g/t Ag, 0.13% Cu, 0.008% Co	Drilling 10 holes, 1483.7 m, underground survey, sampling with highlights 3.37 g/t Au, 0.97% Cu and >1% Co.
Georgina	**Madi Minerals Ltd.**	Au, Cu, V; Polymetallic veins; 092K 070	na	Soil and rock geochemistry.
Gold Standard	**Juggernaut Exploration Ltd.**	Au, Ag; Au-quartz veins	na	Drilling.
Gold Star	**Juggernaut Exploration Ltd.**	Au, Ag; Au-quartz veins	na	Drilling.
Harrison Gold	**Bear Mountain Gold Mines Ltd.**	Au, Ag; Au-quartz veins; 092HSW092	Historical I: 1.845 Mt 2.79 g/t Au Inf: 0.6 Mt 2.8 g/t Au	Engineering.
Isla	**Blanton Resources Corp.**	Au, Ag, Cu; Polymetallic veins; 092F 643, 701, 515	na	Soil and rock geochemistry, ground magnetic survey.

Table 5. Continued.

Ladner Gold	**Talisker Resources Ltd.**	Au, Ag; Au-quartz veins; 092HNW003, 7, 18, 092HSW034	Carolin Inf: 12,352,124 t 1.53 g/t Au McMaster Inf: 3,575,000 t 0.69 g/t Au Tailings I: 445,378 t 1.83 g/t Au Inf: 93,304 t 1.85 g/t Au	Soil geochemistry and data review.
Le Mare	**Homegold Resources Ltd.**	Cu, Mo, Au, Ag, pyrophyllite; Porphyry Cu±Mo±Au; 092L 381, 328, 385, 378, 380, 329, 382, 379	na	Airborne geophysics, geology.
Mineral Creek	**Theia Gold Corp.**	Au, Ag; Au-quartz veins; 092F 079, 331	na	Soil geochemistry.
Mount Sicker	**Sasquatch Resources Corp.**	Cu, Au, Ag, Pb, Zn; Kuroko massive sulphide Cu-Pb-Zn; 092B 040, 76, 110, 1	na	Lidar survey, inversion of geophysical data.
North Island	**Northisle Copper and Gold Inc.**	Cu, Au, Mo, Re; Porphyry Cu±Mo±Au; 092L 185, 240, 200	I: 527,344,000 t 0.20% Cu, 0.24 g/t Au, 0.008% Mo, 0.31 ppm Re Inf: 417,272,000 t 0.15% Cu, 0.18 g/t Au, 0.006% Mo, 0.29 ppm Re	Resource includes both Hushamu and Red Dog deposits. Work in 2022 included drilling (6390 m, 15 holes), mapping, and geophysics. Highlights included 49.5 m grading 0.345% Cu, 0.435 g/t Au, 0.014% Mo, and 0.736 g/t Re at Hushamu and 100.9 m grading 0.204% Cu, 0.890 g/t Au, 0.014% Mo, and 0.573 g/t Re in a 200 m step out.
Okeover	**Alpha Copper Corp.**	Cu, Mo; Porphyry Cu±Mo±Au; 092K 008, 57, 168	Inf: 86.8 Mt 0.31% Cu, 0.014% Mo	Drilling, approx. 2000 m planned.
Peak Mineral	**Corcel Exploration Inc.**	Au, Ag, Cu; Cu±Ag quartz veins; 092F 143, 607, 606, 564	na	Rock, silt, and soil geochemistry.
Rogers Creek	**Cascade Copper Corp.**	Cu, Mo, Au, Ag; Porphyry Cu±Mo±Au ; 092JSE033, 34, 35, 36	na	Lidar survey, rock sampling, and mapping.

Table 5. Continued.

Rupert	**Buscando Resources Corp.**	Cu, Mo; Porphyry Cu±Mo±Au; 092L 273	na	Soil geochemistry, prospecting.

M = Measured; I = Indicated; Inf = Inferred

communities. An historical (1989, restated 2002) resource estimate has 1.845 Mt grading 2.79 g/t Au in the indicated category and 0.6 Mt grading 2.8 g/t Au in the inferred category.

7.1.4. Ladner Gold (Talisker Resources Ltd.)

Talisker Resources Ltd. acquired the **Ladner Gold** project in September 2021 and completed a soil geochemistry survey. Work in 2022 included further soil sampling and a compilation and analysis of historical data (600+ drill holes, underground survey, 3D model). The project includes the past-producing Carolin mine. The mine, tailings, and another area, the McMaster zone, have resource estimates (Table 5).

7.1.5. Mineral Creek (Theia Gold Corp.)

Theia Gold Corp. reported fieldwork at their **Mineral Creek** project since acquiring the property from Tempus Resources in 2021. Work included soil geochemistry. Theia is a private company and has not reported details. Mineral Creek is a gold vein prospect hosted by Sicker Group volcanic rocks (Paleozoic).

7.1.6. Peak Mineral (Corcel Exploration Inc.)

Corcel Exploration Inc. reported soil, silt, and rock geochemistry at the **Peak Mineral** property. The company noted three gold-in-soil anomalies and rock samples grading 1.89 and 4.88 g/t Au. The property is underlain by Sicker Group (Paleozoic) volcanic rocks intruded by Mount Hall Gabbro (Triassic) and Island Plutonic Suite granodiorite (Jurassic).

7.2. Selected porphyry projects

Jurassic porphyry mineralization is a target on Vancouver Island. Southwestern British Columbia also has several advanced Eocene to Miocene porphyry copper targets.

7.2.1. Big Frank (Goldplay Mining Inc.)

Gold Play Mining Inc. reported results of 2021 sampling at **Big Frank** including 37.3 g/t Au, 174 g/t Ag, and 4.3% Cu from a grab sample near the Hannah prospect and 16 g/t Au and 1162 g/t Ag from a newly discovered vein. Further work was not reported, apart from the filing of a NI-43-101 technical report. The property includes several porphyry Cu-Mo-Au-Ag prospects.

7.2.2. Catface (Catface Copper Mines Limited)

Catface Copper Mines Limited is a subsidiary of Imperial Metals Corporation. The company reported geochemical work at **Catface** without details. Catface is an Eocene Cu-Mo porphyry deposit.

7.2.3. Le Mare (Homegold Resources Ltd.)

Homegold Resources Ltd. reported carrying out an airborne magnetic and radiometric survey and geological work on the **Le Mare** property, where there are several porphyry Cu-Mo targets. The area is mainly underlain by the Le Mare volcanic unit of the Bonanza Group (Fig. 2).

7.2.4. North Island Project (Northisle Copper and Gold Inc.)

Northisle Copper and Gold Inc. drilled approximately 6390 m in 15 holes at its **North Island Project** (Fig. 2), including 9 holes at and near the Hushamu resource area. A highlight included 49.5 m grading 0.345% Cu 0.435 g/t Au, 0.014% Mo, and 0.736 g/t Re. The company also reported another intersection in a step out hole 200 m from the model pit shell where mineralization had not been recognized of 100.9 m grading 0.204% Cu, 0.890 g/t Au, 0.014% Mo, and 0.573 g/t Re. Work in 2022 also included mapping, sampling, and surface geophysics at a (re)discovery referred to as 'Downward Dog'. A 2021 Preliminary Economic Assessment was updated and there was some metallurgical testing of Hushamu, Red Dog, and Northwest Expo. Of more than seven Cu-Au-Mo±Re porphyry targets and deposits spanning approximately 40 km west-northwest of the past producing Island Copper mine, two deposits have resource estimates. Hushamu has an Indicated resource of 472.9 Mt grading 0.20% Cu, 0.23 g/t Au, 0.008% Mo, and 0.35 ppm Re plus a large Inferred resource. Red Dog has an Indicated resource of 54.5 Mt grading 0.22% Cu, 0.31 g/t Au, and 0.004% Mo.

7.2.5. Okeover (Alpha Copper Corp.)

Alpha Copper Corp. mobilized to their **Okeover** project in the fall for a planned 2000 m of drilling at the North lake zone where there is an existing resource. The North Lake zone is at the northern end of an north-northwest trending string of porphyry Cu-Mo targets related to younger intrusions in Cretaceous diorite-granodiorite of the Coast Plutonic complex.

7.2.6. Rogers Creek (Cascade Copper Corp.)

Cascade Copper Corp. acquired the **Rogers Creek** property from Tocvan Ventures Corp. Cascade carried out a lidar survey, rock geochemistry, and geological mapping, including alteration mapping using Terraspec spectrometry.

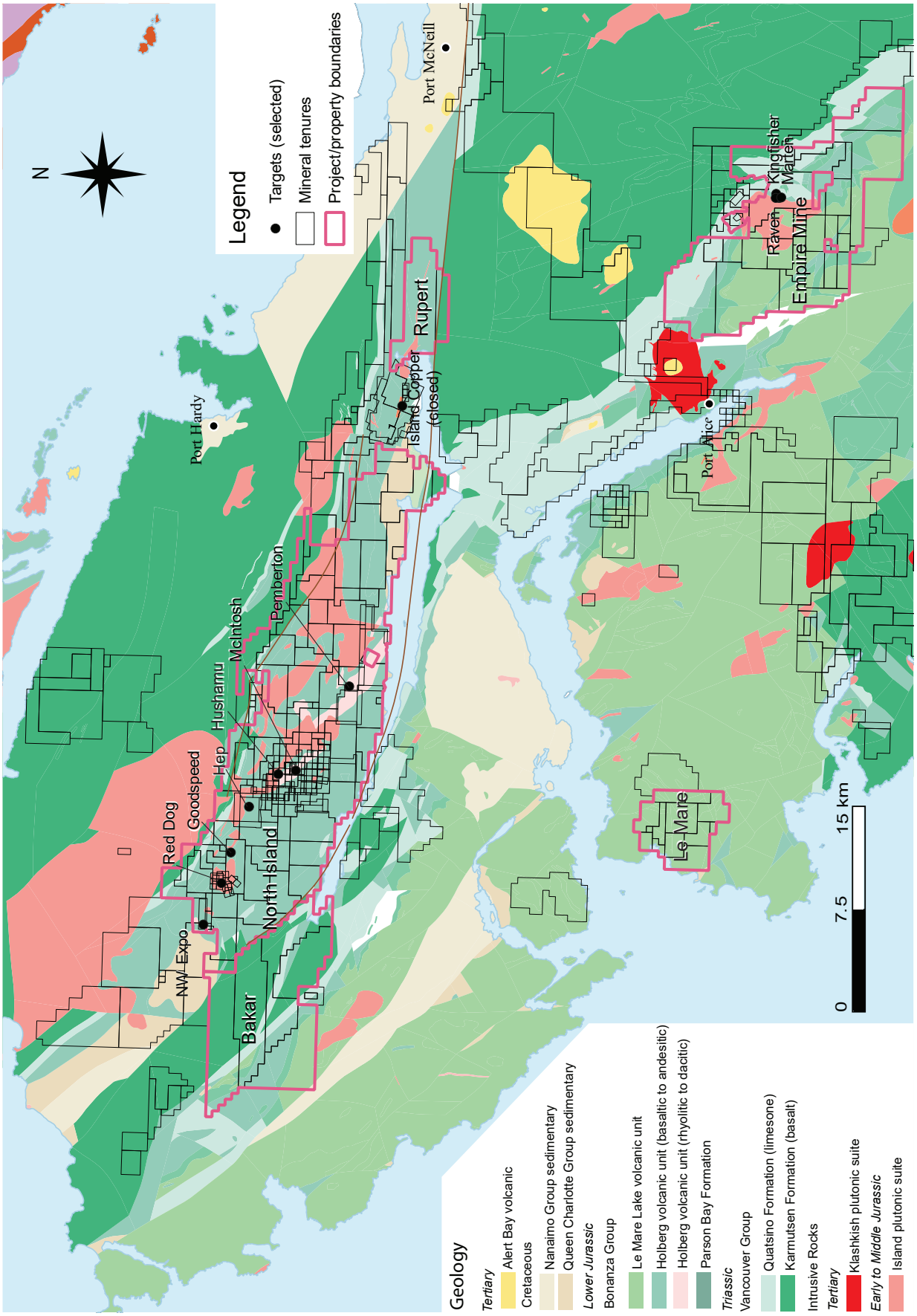

Fig. 2. Northern Vancouver Island projects mentioned in text. Geology simplified after Nixon (2011a, b).

7.2.7 Rupert (Buscando Resources Corp.)

Buscando Resources Corp. reported soil geochemical sampling and prospecting at the **Rupert** project. The principal target is calc-alkaline porphyry Cu-Mo-Au mineralization.

7.3. Selected polymetallic base and precious metal projects

Polymetallic vein, VMS and copper-silver vein occurrences are among the target types sought.

7.3.1. Bakar (District Metals Corp., Sherpa II Holdings Corp.)

The District Metals Corp.-Sherpa II Holdings Corp. joint venture reallocated its 2022 exploration drilling budget for **Bakar** (Fig. 2) while awaiting a permit for drilling. Late-season work was to include airborne VTEM, magnetics and a soil survey. Known mineralization includes Cu-Ag veins and volcanic-hosted redbed copper. Porphyry copper mineralization is also a target.

7.3.2. Brandywine (Bayhorse Silver Inc. 80%; Turnagain Resources Inc. 20%)

Bayhorse Silver Inc. reported little activity on the ground at **Brandywine** but received a permit for drilling. Brandywine has vein targets and precious metals-enriched massive sulphide targets.

7.3.3. Georgina (Madi Minerals Ltd.)

Exploration by Madi Minerals Ltd. at **Georgina** included soil and rock geochemistry, with soil samples returning anomalous gold, copper, and vanadium values. Rock samples returned up to 2.32% Cu, 202 ppm V, and 373 ppm V. The company also reported anomalous gold. The property is underlain mainly by Vancouver Group and Bonanza Group rocks.

7.3.4. Isla (Blanton Resources Corp.)

Blanton Resources Corp. reported soil and rock geochemistry and a ground magnetic survey (17.9 line-km) at the grass roots stage **Isla** property. They reported anomalous copper, gold, and arsenic. The property hosts several copper-silver MINFILE occurrences in Karmutsen Formation basalts. Targets include precious metal bearing veins.

7.3.5. Mount Sicker (Sasquatch Resources Corp.)

Sasquatch Resources Corp. reported a lidar survey and geophysical inversion of airborne time domain electromagnetic data and produced a NI-43-101 technical report. **Mount Sicker** hosts several past-producing VMS deposits hosted by Sicker Group volcanic rocks (Paleozoic) and Mount Hall gabbro (Triassic).

7.4. Selected skarn projects

Skarn deposits were historically important sources of copper and magnetite on Vancouver Island and Haida Gwaii. They commonly occur where the Island Plutonic suite intrudes the Vancouver Group.

7.4.1. Empire Mine (Coast Copper Corp.)

Coast Copper Corp. drilled 10 holes totalling 1483.7 m at **Empire Mine** in the spring and contracted geological work and an underground survey of the Kingfisher, a past producing underground magnetite iron mine. Significant drill intersections included Au, Cu, Ag and Co values. Individual underground samples also returned up to 3.37 g/t Au, 0.97% Cu, and over 1% Co. The deposits are Cu-Fe skarns in Vancouver Group and lower Bonanza Group rocks intruded by diorite to gabbro of the Island Plutonic suite (Fig. 2).

8. Geological research

McNulty et al. (2022) reported stratigraphic, volcanosedimentary facies, and U-Pb geochronologic data from the **Myra Falls** polymetallic volcanic-hosted massive sulfide deposit on Vancouver Island and concluded that a previously unrecognized unconformity separates temporally distinct felsic volcanism-related hydrothermal mineralization processes. In an effort to establish the provenance of Nanaimo Group Late Cretaceous sedimentary rocks, Boivin et al. (2022) provided U-Pb data from Mesozoic, Proterozoic, and Archean detrital zircons with cores that are mantled by pre-erosional metamorphic rims and concluded likely derivation from rapidly exhumed Coast Mountains batholith and related metasedimentary rocks. Iulianella Phillips et al. (2022) reported sampling soils to establish microbial communities at the Mount Washington high-sulphidation Au-Ag-Cu epithermal prospect on Vancouver Island, following up on previous work at the Highland Valley (porphyry Cu-Mo) and Deerhorn (porphyry Cu-Au) deposits in the Interior Plateau to test the utility of microbial composition as an exploration tool in areas of thick overburden.

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