



BRITISH COLUMBIA **MINES & MINERAL EXPLORATION** **OVERVIEW 2011**



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Ministry of Energy and Mines

Ministry of Forests, Lands and Natural Resource Operations

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OVERVIEW HIGHLIGHTS FOR 2011

- Solid mineral production of \$8.6 billion
- Two mine openings and two new mines under construction
- Major expansions and upgrades at existing mines
- 26 mine projects in process with Environmental Assessment Office
- Exploration expenditures of \$463 million

INTRODUCTION

British Columbia has a complex geological history and this is reflected in a wealth of varied geological and mineralogical environments. The province is Canada's largest producer of copper, its only producer of molybdenum and the largest exporter of coal. Also produced are significant amounts of gold, silver, lead and zinc and over 30 industrial minerals, including gypsum, magnesite, limestone and dimension stone. Numerous quarries produce sand and gravel or crushed aggregate.

The British Columbia mining industry is well served with extensive and modern infrastructure. Its transportation infrastructure provides ready access to world markets through expanding ports, rail and highways networks. There are three major coal terminals at British Columbia's ports: Westshore Terminals at Roberts Bank near Vancouver, Neptune Bulk Terminals in North Vancouver, and Ridley Island Terminal at Prince Rupert. Additional ice-free, deep water ports include Stewart and Kitimat. The province boasts very attractive industrial electrical power rates. Commitments to expand British Columbia's power grid to the northwest of the province have the potential to increase mine development and exploration in one of the more geologically prospective areas of the province.

Another key infrastructure advantage are the geoscience databases and modern, web-based mineral tenure system. MapPlace is an online application that provides easy, interactive map access to information related to British Columbia's geology, mineral exploration, mining and energy resources. Mineral Titles Online allows simple acquisition and maintenance mineral titles on a seamless digital geographic information system. Collectively these databases

document the deep intellectual knowledge that the industry has generated in the province.

More than half of the Canadian exploration and mining companies are based in British Columbia, which has the world's largest concentration of exploration companies and mining professionals. The province is recognized as a centre of excellence in mining and related fields, such as metallurgy, environmental engineering, mine safety and the geosciences

Mining plays a key part of the provincial economy. The Mining Exploration Tax Credit Program and Exploration Investment Tax Credit for flow-through investors, provide additional incentives to attract risk capital to the province. The British Columbia and federal non-refundable tax credits, when added to the regular 100% deductions are equivalent to a 141% exploration expense deduction for income tax purposes. In addition, the Mining Exploration Tax Credit has been increased to 30% for qualified mineral exploration undertaken in prescribed Mountain Pine Beetle affected areas of the province.

Throughout this overview report, the descriptions of mines, mine development projects and larger exploration properties are presented by regions (Figure 1).

Two companion documents support this overview publication and provide more information and detail than is contained here: *Operating Mines and Selected Major Exploration Projects in British Columbia 2011* (Map Format, Open File 2012-1) and *Exploration and Mining in British Columbia 2011* (Photo 1).

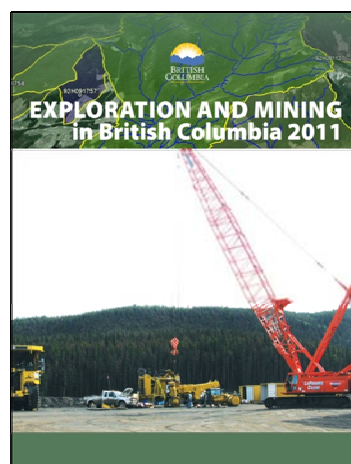


Photo 1. EMBC 2011 cover.



Figure 1. The locations of the various regions referred to in this publication and the locations of many of the cities and towns in the province.

MINING HIGHLIGHTS

Metal mining from the province's eleven major producers as highlighted in Table 1 and shown on the centerfold map. The total value of solid mineral production for British Columbia in 2011 is estimated at \$8.6 billion (Figure 2). Coal, copper and molybdenum remain in order British Columbia's first, second and third most important solid mineral products by value (Figure 3).

Coal production in the province was robust in light of strong demand and many operations are expanding or extending mine lives through capital investments, new mine plans and aggressive exploration (Photo 2).

Coal production is forecast to be approximately 24 Mt in 2011. The majority of coal produced is metallurgical grade, specifically hard coking coal, and largely exported to Asia with lesser amounts going to Europe and South America.

Copper producers continued to benefit from elevated prices and most are expanding or extending mine lives

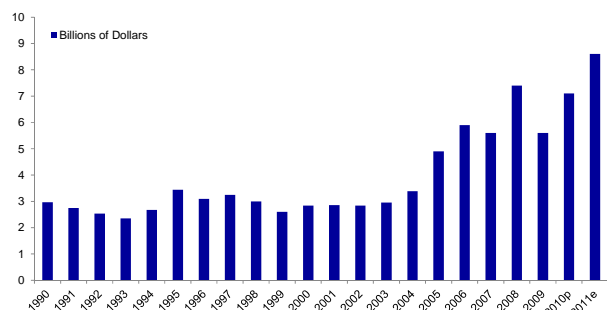


Figure 2. Solid mineral production in British Columbia, 1990 to 2011.

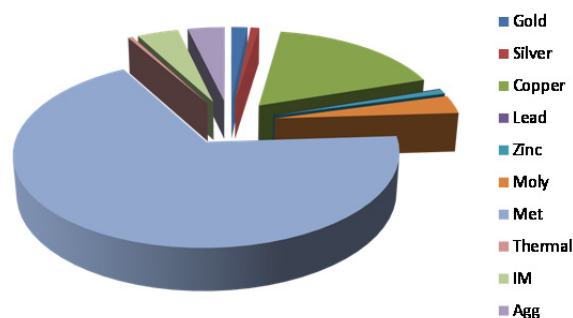


Figure 3. Pie chart showing the relative values of mineral production by commodity in British Columbia for 2011.



Photo 2. View looking north at Greenhills Operations (Teck Coal Limited) along the Greenhills Range. North of the visible highwall are the Cougar North Extension and Swift Project exploration areas (Greenhills and Fording River operations, respectively).

through capital investments, new mine plans and aggressive exploration. Some of the base metal producers carry significant precious metals values and this has enhanced their operations further. The Copper Mountain copper mine opened this year ushering in the third generation of mining at the camp (Photo 3). Two operations closed this year: the Kemess South copper-gold and Max molybdenum mines.

Mines with primarily precious metals production are also experiencing elevated commodity prices: the Bralorne mine re-opened this year and the Shasta



Photo 3. New 30 000 tonne/day mill at Copper Mountain (courtesy Copper Mountain Mining Corporation).

operation produced gold on a seasonal basis. The QR mine closed down as it depleted its reserves, but anticipates processing ore from the recently permitted Bonanza Ledge mine.

The significant Myra Falls zinc-copper-lead-silver-gold producer continues to capitalize on new opportunities and now has reserves to sustain it for an extended mine life (Photo 4).

The contribution of industrial minerals and aggregate production is also significant, estimated at approximately 7.4% of total mineral value. Over 40 industrial minerals products are mined and processed from more than 30 active industrial minerals quarries and well over 1000 aggregate operations. Cement production and construction aggregates constitute the largest share of the products produced.

Skeena Region – Major Mines

METAL MINES

Thompson Creek Metals Corp and partner Sojitz Corporation focussed on constructing a new mill and upgrading resources to reserves at their co-owned



Photo 4. A scoop leaves the underground shop at Myra Falls. The mine has a new owner, Nyrstar N.V. In the past few years the mine's efficiency has improved to the point where not only has early closure been averted, but a long-term mine plan is in preparation.

Endako open pit molybdenum mine (MINFILE 093K 006). Project engineering and procurement of the new mill are complete and most major components are in place. Pre-commissioning activities are underway and are forecast to be complete by early 2012. Processing capacity of the new facility is expected to increase 44% to 49 895 tonnes per day.

The **Huckleberry** copper-gold-silver-molybdenum mine (MINFILE 93E 037) is operated by Huckleberry Mines Ltd. Development planning to extend the mine life includes plans to mine material below the Main Zone Pit, across the "Saddle Zone" which separates the Main Zone and the Main Zone Extension Pits and beneath the current tailings facility to form a "Super Pit". This approved plan is known as the "Main Zone Optimization" and will extend mine life to 2021.

INDUSTRIAL MINERALS MINES

Fireside Minerals Ltd continued to mine barite from its summer-seasonal **Fireside** barite operation (MINFILE 94M 003) located 125 km east of Watson Lake (Photo 5). Bagged product is sold on site to various operators who utilize the heavy additive in drilling fluids in the oil and gas industry.

In northwest British Columbia, jade is mined chiefly by Cassiar Jade Contracting. Production of high-value gemstone comes from three localities: **Provencher Lake** (MINFILE 104I 073, 92), **Kutcho** (MINFILE 104I 078) and **Cassiar** (MINFILE 104P 005). At both Provencher and Kutcho, the jade that is recovered occurs equally as "placer" boulders in glacial till and as lenses in bedrock.

Northeast Region – Major Mines

Mining operations continued at the four operations in the Northeast Region, namely the Trend, Perry Creek, Brule and Willow Creek mines. Most coal is shipped by rail through Ridley Terminals Inc at Prince Rupert.

TABLE 1. PRODUCTION AND RESERVE ESTIMATES FOR MINERAL PRODUCERS IN BRITISH COLUMBIA, 2011

Mine	Operator	Deposit Type/Commodity	Forecast 2011 Production	Proven and Probable Reserves (on Dec 31, 2010/Jan 1, 2011 or as indicated)	Region
Metals					
Bralorne	Bralorne Gold Mines	Vein Au	50.7 kg Au	N/A	Thompson-Okanagan Cariboo
Copper Mountain	Copper Mountain / Mitsubishi Materials	Alkalic porphyry, Cu	4218 t Cu; with Au and Ag credits	211 000 000 t at 0.36% Cu	Thompson-Okanagan Cariboo
Endako	Thompson Creek Metals Company	Porphyry Mo	2355 t Mo (9 months ending 30 Sept 2011)	340 300 000 tonnes @ 0.046% Mo (June 1 2011)	Skeena
Gibraltar	Taseko Mines Limited / Cariboo Copper Corp	Sub-alkalic porphyry / Cu-Mo	17 500 t Cu, 281 t Mo (6 months ending 30 June 2011)	727 000 000 t at 0.30% Cu and 0.008% Mo	Thompson-Okanagan Cariboo
Highland Valley Copper	Teck Cominco Ltd/ Highmont Mining Company Ltd	Calcalkalic porphyry / Cu-Mo	70 000 t Cu; 2313 t Mo (9 months ending 30 Sept 2011)	623 700 000 t at 0.31% Cu and 0.009% Mo	Thompson-Okanagan Cariboo
Huckleberry	Huckleberry Mines Ltd (50% Imperial Metals Corp)	Porphyry Cu-Mo	15 442 t Cu (9 months ending 30 Sept 2011)	11 747 400 tonnes @ 0.359% Cu, 0.005% Mo (May 11, 2010)	Skeena
Kemess South MAX	Northgate Minerals Corp Roca Mines Inc	Calcalkalic porphyry / Au-Cu Mo	2947 million kg Cu, 410 kg Au	Measured and indicated resource of 1.7 Mt at 0.73% Mo (December 2009)	Omineca Kootenay
Mount Polley	Imperial Metals Corp	Alkalic porphyry / Cu-Au-Ag	16 150 Mt Cu, 1516 kg Au, 5897 kg Ag	37 946 000 t at 0.313% Cu, 0.266 g/t Au and 0.703 g/t Ag	Thompson-Okanagan Cariboo
Myra Falls	NVI Mining Ltd (Nyrstar N.V.)	Zn-Cu-Pb-Au-Ag	N/A (~ 0.5 Mt mill throughput)	6.255 Mt at 4.9% Zn, 0.5% Pb, 0.9% Cu, 1.3 g/t Au, 43 g/t Ag	Coast
QR (shut down n 9 November 2011)	Barkerville Gold Mines Ltd	Skarn / Au	110 000 t at 3.8 g/t Au (Jan to Nov 2011)	Depleted	Thompson-Okanagan Cariboo
Coal					
Basin	Coalmont Energy Corp	Thermal coal	0 (mining to resume in 2012)		Thompson-Okanagan Cariboo
Brule	Western Coal Corp	ULV-PCI coal	0.3 Mt	33.6 measured + indicated, reserves under review (March 2010)	Northeast
Coal Mountain	Teck Coal Limited	PCI and thermal coal	2.78 Mt	19.5 million tonnes	Kootenay
Elkview	Teck Coal Limited	Metallurgical coal	4.19 Mt	220.6 million tonnes	Kootenay
Fording River	Teck Coal Limited	Metallurgical and thermal coal	8.34 Mt	263.8 million tonnes	Kootenay
Greenhills	Teck Coal Limited	Metallurgical, PCI and thermal coal	5.10 Mt	80.6 million tonnes	Kootenay
Line Creek	Teck Coal Limited	Metallurgical, PCI and thermal coal	2.76 Mt	38.6 million tonnes	Kootenay
Quinsam	Quinsam Coal Corp (Hillsborough Resources Ltd)	Thermal coal	480 000 t clean coal	N/A (Developing 5,10,15 year plans)	Coast
Trend	Peace River Coal Inc	Metallurgical coal	1.4 Mt	38.84 measured, 8.0 indicated (current Nov 2011)	Northeast
Willow Creek	Western Coal Corp	PCI, HCC	0.9 (0.8 PCI, 0.1 (CC)	Under review	Northeast
Wolverine (Perry Creek)	Western Coal Corp	Hard coking coal (HCC)	1.8 Mt	28 measured + indicated, reserves under review (March 2010)	Northeast
Industrial Minerals (selected)					
4J	Georgia-Pacific Canada Inc	Gypsum			Kootenay
Ashcroft	IG Machine and Fiber Ltd (IKO Industries Ltd)	Basalt (Roofing granules)	~350 000 t		Thompson-Okanagan Cariboo
Apple Bay (PEM 100)	Electra Gold Ltd	Chalky geyserite		~5 million t	Coast

TABLE 2. CONTINUED

Mine	Operator	Deposit Type/Commodity	Forecast 2011 Production	Proven and Probable Reserves (on Dec 31, 2010/Jan 1, 2011 or as indicated)	Region
Industrial Minerals (selected)					
Benson Lake	Imasco Minerals Inc	White marble	26 000 t	100+ years	Coast
Blubber Bay	Ash Grove Cement Company	Limestone aggregate, dolomitic limestone		100+ years	Coast
Bud	Absorbent Products Ltd	Bentonite			Thompson-Okanagan
Buse Lake	Lafarge Canada Inc	Volcanic ash (alumina-silica)			Cariboo
Craigmont	Craigmont Mines Joint Venture	Magnetite tailings	60 - 70 000 t		Thompson-Okanagan
Crawford Bay	Imasco Minerals Inc	Dolomite			Cariboo
Decor	Pacific Bentonite Ltd	Alumina, landscape rock			Kootenay
Elkhorn	CertainTeed Gypsum Canada	Gypsum	430 000 t		Thompson-Okanagan
Falkland	Lafarge Canada Inc	Gypsum	6000 t		Cariboo
Fireside	Fireside Minerals Inc	Barite		170 400 (not NI 43-101 compliant)	Skeena
Garibaldi Pumice	Garibaldi Pumice Ltd	Pumice	5200 t	100+ years	Coast
Gillies Bay	Texada Quarrying Ltd. (Lafarge North America Inc)	Limestone, aggregate	3.3 Mt	100+ years	Coast
Giscome	Graymont Western Canada Inc	Limestone			Omineca
Harper Ranch	Lafarge Canada Inc	Limestone	~220 000 t		Thompson-Okanagan
Kettle Valley quarries	Kettle Valley Stone Company	Ashlar, flagstone, thin veneer			Cariboo
K2	K2 Stone Quarries Inc	Building stone	16 000 t		Thompson-Okanagan
Lime Creek	Imasco Minerals Inc	Limestone			Cariboo
Moberly	HCA Mountain Minerals (Moberly) Ltd	Silica sand			Coast
Monteith Bay	Lehigh Northwest Cement Ltd	Geyserite			Kootenay
Mount Brussilof	Baymag Inc	Magnesite	180 000 t		Coast
Mount Meager	Great Pacific Pumice Inc	Pumice	500 t	100+ years	Kootenay
Nazko	Lightweight Advanced Volcanic Aggregates Inc	Lava rock			Coast
Pavilion	Graymont Western Canada Inc	Limestone	190 000 t		Thompson-Okanagan
Red Lake	Absorbent Products Ltd	Diatomaceous earth			Cariboo
Sumas Mountain	Sumas Shale Ltd (Clayburn Industrial Group and cement manufacturer partners)	Sandstone and shale	381 000 t	~70 years	Thompson-Okanagan
Van Anda	Imperial Limestone Company Ltd (JA Jack and Sons Inc)	Limestone	227 000 t	~50 years	Coast
Winner	Roxul (West) Inc	Gabbro (mineral wool)			Thompson-Okanagan
Zeotech Bromley Creek	Heemskirk Canada Ltd	Zeolite			Cariboo

At Peace River Coal's **Trend** mine (MINFILE 0931 030), mostly metallurgical coal is being extracted by conventional open-pit methods. Production levels are short of the intended production as the adjacent **Roman Mountain** deposit was not brought into production as planned. Pending approvals for Roman Mountain, Peace River is continuing to develop the Trend Mine along

strike to the southwest (Photo 6). Anglo Coal plc acquired the balance of interests in Peace River Coal Limited Partnership to become sole owner.

Walter Energy Inc purchased Western Coal Corp, now a wholly-owned subsidiary company, and with it Western's three open pit mines – **Perry Creek**, **Brule** and **Willow Creek**. The largest of these is the Perry Creek



Photo 5. Fireside barite quarry mined approximately 25 000 tonnes in 2011. Photo courtesy of Fireside Minerals.



Photo 6. Drilling along strike from the Trend Mine. Roman Mountain is in the background to the left (courtesy Peace River Coal).

mine, part of Western's Wolverine Project, that produced hard coking coal from four seams with a cumulative thickness of about 15 m. Western Coal's Brule Mine (MINFILE 093P 007) produces "ultra-low volatile" pulverized coal injection (ULV-PCI) coal from three seams with a combined thickness of about 12.2 m. Only about one-third of the raw coal requires washing. Finally, Western's Willow Creek mine (MINFILE 093O 008) continued production after re-opening in June of 2010. Deformation is more complex at Willow Creek than at other operations in the Northeast Region, limiting the potential rate of extraction.

Omineca Region – Major Mines

The Kemess South mine (MINFILE 094E 094) ceased production late in 2010. Stockpiled ore continued to be processed until March 2011, during which time 3.04 Mt of ore were processed to produce 2947 million kg Cu and 410 kg Au from the old workings. In October 2011, Northgate Minerals Corp was acquired by Aurico Gold,

and with it Northgate's Kemess Project.

Sable Resources Ltd's **Shasta** mine (MINFILE 094E 050) continued to produce gold and silver on an intermittent basis, with the ore processed at the nearby Baker mill.

Thompson-Okanagan-Cariboo Region – Major Mines

METAL MINES

The **Highland Valley Copper** mine is operated by Teck Highland Valley Copper Partnership. The Partnership also reports successful completion of mine enhancements including the completion of the two-year waste stripping and buttress emplacement project on the east wall of the Valley pit. A \$475 million modernization project was announced which will see the existing 40 year old mill replaced by the end of 2013 and serve the new approved mine plan to 2025.

The **Gibraltar** mine is operated by of Taseko Mines Limited and Cariboo Copper Corp. Construction has started on a 55 000 tonne/day concentrator (to complement the same-size concentrator now operating) and a new molybdenum recovery facility. Once completed, the operation will increase annual production of copper to around 81 600 t and molybdenum to 450 t/y. The company announced an 80% increase in reserves which should see this expanded mine assume a distinction of being the nation's second largest base metal operation.

The **Mount Polley** mine of Imperial Metals Corporation milled an average of 20 000 tonnes/day this year with most ore coming from the Springer pit. The Boundary zone has been stripped in preparation for future mining.

In August, **Copper Mountain** mine held its official opening: an event was attended by over 1700 people from around the province. Its first load of concentrate was shipped to Japan in September (Photo 7). Mining has achieved its planned rate of 140 000 tonnes/day and work is underway to ensure the mill reaches its planned capacity of 70 000 tonnes/day. The mine plan forecasts copper production at 47 600 tonnes/year for the first 12 years and a 17 year mine life.

Bralorne Gold Mines Ltd held a "grand re-opening" of the **Bralorne** mine in May which included the pouring of a gold brick. The company is test mining gold-bearing quartz veins in relatively undeveloped areas between three former mines: Bralorne, King and Pioneer. Ore is drawn from the BK and North veins, stockpiled and then fed to an 85 tonne/day mill.

Barkerville Gold Mines Ltd operated the **QR** mine for most of 2011 but shut down in early November due to depletion of ore. Approximately 70 people worked at the mine while it was operating. The mill processed 110 000 tonnes of ore grading 3.8 g/t Au at a rate of 800-900



Photo 7. Copper Mountain's copper concentrate load-out facility (courtesy Copper Mountain Mining Corporation).

tonnes/day. The mill now awaits shipments of ore from the Bonanza Ledge mine, anticipated in April 2012.

COAL MINES

Coalmont Energy Corp, a subsidiary of Arthon Industries Limited, has acquired the rights to the **Basin** mine near Coalmont which contains thermal-grade coal. The mine had been on care and maintenance since 2007. The company intends to put the mine into operation in mid-2012 once they have installed a new wash plant and other equipment.

INDUSTRIAL MINERAL MINES

Lafarge's cement plant draws materials from the **Harper Ranch** limestone quarry, **Falkland** gypsum and **Buse Lake** quarries to produce cement near Kamloops. The **Decor** pit of Pacific Bentonite Ltd supplies alumina-rich burnt shale to the Lafarge cement plant as well and to other niche markets such as the surfacing of baseball diamonds. Graymont Western Canada Inc operates the **Pavilion** limestone quarry and lime plant on the Pavilion Indian Reserve under a forty-year lease with the Ts'kw'aylaxw First Nation who form the bulk of the employees at the mine. East of Ashcroft, IG Machine and Fiber Ltd, a subsidiary of IKO Industries Ltd, operates the **Ashcroft** basalt quarry and roofing granule plant for shingle production at its North American plants. Absorbent Products Ltd manufactures cat litter, barn deodorizer, industrial absorbents, and carriers for agricultural products from its diatomaceous earth mine at **Red Lake** and bentonite mined from the **Bud** quarry. Opal Resources Canada Inc produces attractive fire opal gemstones and jewelry from the **Klinker** property, located west of Vernon. Presently, the gemstone jewelry is marketed from a retail store in Vernon and is aimed at the British Columbia tourist market. Decorative rock and dimension stone are produced at numerous small quarries throughout the region including the Nipple Mountain, Kettle Valley, Canyon and Gemini quarries of Kettle Valley Stone.

Kootenay-Boundary Region – Major Mines

METAL MINES

Roca Mines Inc's **MAX** underground molybdenum mine at Trout Lake was the only producing metal mine in the region, and in fact it produced for only a short period of time during 2011. The company undertook major underground development in support of efforts to deal with underground sill pillar stability issues – these included a by-pass on the main access ramp and drilling of a new stope, along with geotechnical investigations, modeling and monitoring. The mine restarted at the end of July at a rate of 500 tonnes/day. Unfortunately production was suspended again in the first week of October, this time for economic reasons.

Production to date has been from the HG zone, with an initial resource of 280 000 tonnes (measured and indicated) grading 1.95% MoS₂ at a 1.00% cut-off. The overall resource is 42.9 Mt grading 0.2% MoS₂.

COAL MINES

Teck Coal Limited, the world's second-largest exporter of metallurgical coal, operates five open-pit coal mines in the Elk Valley area: **Coal Mountain, Elkview, Line Creek, Greenhills** and **Fording River**. Hard coking coal is the predominant product at four of the five Elk valley mines, the exception being Coal Mountain Operations. In addition, Teck Coal Limited produces PCI or pulverized coal injection coal, mainly from Coal Mountain and Elkview operations in 2011. With the exception of Coal Mountain Operations, all of the mines produce from multiple seams. Seams are typically medium-volatile bituminous in rank, and low in sulphur. Southeast British Columbia coal products have high Coke Strength after Reaction.

INDUSTRIAL MINERALS MINES

Baymag Inc produces high-quality magnesite from its open pit mine near **Mount Brussilof** (MINFILE 082JNW001). Ore is transported by truck to the company's processing facilities in Exshaw, Alberta for production of magnesium oxide (magnesia or MgO) and magnesium hydroxide (MgOH).

CertainTeed Gypsum Canada operates the **Elkhorn** mine (MINFILE 082JSW021) and Georgia-Pacific Canada Inc operates the **4J** gypsum mine (MINFILE 082JSW009) and rail load-out near Canal Flats.

Silica sand is produced by HCA Mountain Minerals (Moberly) Ltd at the **Moberly** mine (MINFILE 082N 001) and plant. A feasibility study of the potential of producing frac sand for the western Canadian oil and gas industry concludes that such an operation at the mine and plant site is economically viable with a capital investment of \$20 million.

Imasco Minerals Inc produces a variety of crushed and ground rock products at its Creston Operations Plant at Sirdar from limestone, dolomite, granite and quartzite rock types. Raw sources for these products include an underground dolomite mine at **Crawford Bay** (MINFILE 082FNE113), a limestone quarry at **Lime Creek** (MINFILE 082FSW307) and a granite quarry at **Sirdar** (MINFILE 082FSE072).

The **Winner** gabbro quarry (MINFILE 082ESE265) supplies feed for the Roxul Inc mineral wool insulation plant in Grand Forks.

South-West Coast Region – Major Mines

METAL MINES

Nyrstar N.V, through subsidiary NVI Mining Ltd now owns and operates the underground **Myra Falls** (MINFILE 092F 071, 72, 73, 330) zinc-copper-lead-silver-gold mine. The mine was on track to mill its target of roughly half a million tonnes this year. An exploration track drift reached the outlying Marshall Zone and a drill program began to upgrade that inferred resource. TRIUMF researchers carried out proof-of-concept muon geotomography testing at the mine. The technique was successful and there are now plans to commercialize it. Overall, the mine continued to replace reserves mined through ongoing exploration and long-term mine plans are under consideration.

COAL MINES

Quinsam coal mine (MINFILE 092F 319) upped production this year over the last previous two years and supplied local cement plants and exports to the energy market around the Pacific Rim. Quinsam is an underground room and pillar operation, producing thermal coal since 1986 (Photo 8). Operator Hillsborough Resources Limited is now a part of the privately-owned Vitol Group, and as such they no longer release current reserve estimates, however medium and long term mine plans are in preparation. An application to mine a new area, the 7-South is in the final stages of environmental review. This is a higher sulphur coal (1.5-2% as compared to 0.5% mined to present) and storage of potentially acid generating rejects is a key consideration in the mine plan. Exploration is ongoing at the mine site and at a site 8 km to the east.

INDUSTRIAL MINERALS AND AGGREGATE MINES

Quarries supplying Lower Mainland and US Pacific Northwest cement plants include Lafarge North America's large limestone quarry near **Gillies Bay** (MINFILE 092F 395), Electra Gold Ltd's **Apple Bay** chalky geyserite quarry (MINFILE 092L 150) (silica and alumina) and **Sumas Shale** quarry (MINFILE



Photo 8. The preparation plant at Quinsam coal mine near Campbell River. The mine produces and ships approximately half a million tonnes clean coal per year. Photo courtesy Hillsborough Resources Ltd.

092GSE024, 4) from which Clayburn Industrial Group Ltd ships shale and sandstone to cement manufacturing partners.

Other industrial mineral producers in the region include Imasco Minerals Inc's **Benson Lake** quarry (MINFILE 092L 295) a producer of high brightness marble filler, The Imperial Limestone Co Ltd quarry near **Van Anda** (MINFILE 092F 394) owned by J.A. Jack & Sons Inc of Seattle and two pumice quarries near **Mount Meager** (MINFILE 092JW 040) operated by Garibaldi Pumice Ltd. and Great Pacific Pumice Inc.

A producer of glacial clay, Ironwood Clay Company, has a quarry at **De Cosmos Lagoon** (MINFILE 092M 019) on the Central Coast. The clay is used in cosmetic and skin care products.

A number of quarries produce decorative stone in the Coast Area. Among these the **K2 Quarry** (MINFILE 092C 159) operated by K2 Stone Inc is the largest, producing slate on southern Vancouver Island. The region also has producers of basalt, andesite, dacite, rhyolite, granite, marble and limestone. Some still-active quarries, such as those at Haddington Island, and Hardy Island have supplied local buildings and monuments of historical significance.

Aggregates are an important part of the mining industry in the southwestern part of the province. These operations are numerous and difficult to track, but those producing more than 1 million tonnes per year include the **Orca** sand and gravel quarry, operated by Polaris Minerals Corporation, **Cox Station** quarry, operated by Mainland Sand and Gravel Ltd, the **Sechelt** mine of Lehigh Hanson, Inc, and Lafarge North America's **Earle Creek** (MINFILE 092GNW102) and **Pitt River** Quarry (MINFILE 092GSE007). All of these operations employ transportation by water.

MINE DEVELOPMENT AND EVALUATION PROJECTS

As part of the BC Jobs Plan, the province expects to see eight new mines and another nine mining expansions

operational in British Columbia by 2015.

Construction continues at the New Afton and Mount Milligan copper-gold projects that are anticipated to be open in 2012 and 2013, respectively. The Bonanza Ledge gold project received a Mines Act permit to construct an open pit mine and re-start the QR mine that closed as a result of an ore shortage.

The provincial Environmental Assessment Office indicates there are 26 mine proposals in process with three currently under review and 23 in the pre-application stage. New pre-application projects that entered the process this year are the Ajax copper-gold project and the Spanish Mountain gold project. The province's coal mining industry is also ramping up dramatically with eight projects currently indicated as being in the review process.

This section covers projects that are both within the various regional, provincial and federal review processes as well as those that at advanced points in their evaluation and candidates for upcoming approval processes. Table 2 shows the published resources for most of these projects; however, readers should consult further for the most recent and accurate information as much new information is currently being generated.

Skeena Region – Metal Mine Development Projects

Economic copper-gold mineralization continues below the proposed 400 m open pit depth on Imperial Metals Corporation's **Red Chris** copper-gold project (MINFILE 104H 005). The deposit remains open to the east and south emphasizing the size potential of this porphyry system (Photo 9). Mine construction is scheduled to begin in 2012 upon receipt of pending Mines Act and related permits. Capital costs are estimated at \$443 million to construct the mill and a 115 km high voltage power line to connect to the proposed Northern Transmission Line sub-station at Bob Quinn Lake.

Chieftain Metals Inc continues re-development of the past producing **Tulsequah Chief** (MINFILE 104K 002) copper-zinc-lead-silver-gold volcanic hosted massive sulphide deposit. Mines Act permits were transferred from previous operator Redfern Resources early in the year allowing development plans to proceed. Main objectives this year included construction of a water treatment plant, upgrading and expanding the resource and commencing an updated feasibility study. The Interim Water Treatment Plant is scheduled for completion later in the year with the remainder of site preparation and construction to be complete in 2012.

Exploration included drilling on both Tulsequah Chief and satellite past producer **Big Bull** (MINFILE 104K 008). Results will be incorporated into the updated feasibility study anticipated in early 2012. A 2011 preliminary economic assessment used the 2007 feasibility study's technical data.

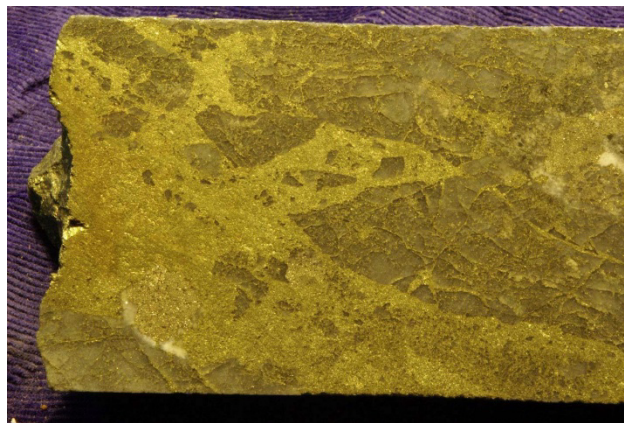


Photo 9. Massive chalcopyrite from Red Chris drill core. Photo courtesy of Imperial Metals.

Metal Mountain Resources Inc continued development of its **Dome Mountain** underground gold-silver mine. Wholly-owned subsidiary and mine operator Gavin Mines Inc completed construction of main infrastructure components and 700 t of ore are ready to be shipped. Full-time production awaits installation of an additional vent raise. Underground development is focussed on re-opening the 1290 and 1370 m levels built in 1991. Discussions with Mount Polley mine to process Dome Mountain ore by sulphide floatation are ongoing.

Eagle Plains Resources Ltd has created wholly-owned subsidiary Yellowjacket Resources Ltd to continue mining and development of the **Yellowjacket** gold property (MINFILE 104N 043). A resource estimate is not available, but mine plans include several open pits entirely within an area of disturbed and potentially gold-bearing placer workings.

The **Morrison** (MINFILE 093M 007) copper-gold project of Pacific Booker Minerals Inc is undergoing an independent review of environmental data as part of the Environmental Assessment process.

Skeena Region – Metal Mine Evaluation Projects

Exploration of the Iron Cap deposit in 2010 significantly augmented the resource of the **KSM (Kerr - Sulphurets - Mitchell)** gold-copper-molybdenum porphyry project of Seabridge Gold Inc (Photo 10). An updated pre-feasibility study released in May extended mine life from 37 to 52 years. Contiguous to KSM, the **Snowfield** deposit is bisected by mineral claims owned by Pretium Resources Inc and Seabridge Gold Inc. The companies have signed agreements regarding their projects that enables the preparation of an engineering study combining the KSM and Snowfield projects as a single mine operation. Plans to submit an environmental assessment application were subsequently delayed due to an ongoing engineering study of the joint mine plan.

Bonanza-grade gold intersections this year at the **Brucejack** project of Pretium Resources Inc have prompted aggressive follow-up development (Photo 11).

TABLE 2. RESOURCE ESTIMATES FOR PROJECTS UNDER DEVELOPMENT OR EVALUATION IN BRITISH COLUMBIA, 2011

Project	Region	Company	Category	Reserve/Resource	Source
KSM	Skene	Seabridge Gold Inc	P+P	2192.4 Mt 0.55 g/t Au, 0.21% Cu, 3.04 g/t Ag, 53.2 ppm Mo	Owner-operator Seabridge Gold Inc released an updated resource estimate in February 2011: proven and probable reserves total 2192.4 Mt averaging 0.55 g/t Au, 0.21% Cu, 3.04 g/t Ag and 53.2 ppm Mo.
Snowfield	Skene	Pretium Resources Inc	MHI	1370 Mt 0.59 g/t Au, 0.1% Cu, 85.5 ppm Mo	An updated resource estimate released in February exclusively on Pretium property, reports measured plus indicated resources totalling 1370 Mt averaging 0.59 g/t Au, 0.1% Cu and 85.5 ppm Mo.
Brucjack	Skene	Pretium Resources Inc	MHI	9.3 Mt 16.92 g/t Au, 105.6 g/t Ag	Measured plus indicated resources total 9.3 Mt grading 16.92 g/t Au and 105.6 g/t Ag.
Red Chris	Skene	Imperial Metals Corporation	P+P	302 Mt 0.359% Cu, 0.274 g/t Au	Proven and probable reserves do not reflect the most recent drilling results and therefore remain unchanged from 2010 at 302 Mt with an average grade of 0.359% Cu and 0.274 g/t Au.
Tulsequah Chief	Skene	Chieftain Metals Inc	MHI	6.3 Mt 1.38% Cu, 1.23% Pb, 6.32% Zn, 2.64 g/t Au, 98.1 g/t Ag	Co web page
Kutcho Creek	Skene	Capstone Mining Corporation	Prob	10.44 Mt 2.01% Cu, 3.19% Zn, 34.61 g/t Ag, 0.37 g/t Au	10.44 Mt of probable mineral reserves averaging 2.01% Cu, 3.19% Zn, 34.61 g/t Ag and 0.37 g/t Au.
Schaff Creek	Skene	Copper Fox Metals Inc	MHI	1011.5 Mt 0.27% Cu, 0.017% Mo, 0.18 g/t Au	Co web page
Mount Klappan	Skene	Fortune Minerals Limited	MHI	101.7 Mt in situ metallurgical coal (Lost Fox area)	Co web page
Kitsault	Skene	Avanti Mining Corp	Ind	158 Mt 0.100% Mo, 4.31 g/t Ag, 0.022% Pb, 0.008% WO3	Co web page
Dome Mountain	Skene	Metall Mountain Resources Inc	Ind	144 Mt 17.7 g/t Au	Co web page
Yellow Jacket	Skene	Yellow Jacket Resources Ltd	n/a		not available - there is a 2009 inferred resource 133 Mt 5.8 g/t not clear if they're still using it
Galore Creek	Skene	Teck Resources Ltd/NovaGold Resources Inc	P+P	528 Mt 0.59% Cu, 0.32 g/t Au, 6.02 g/t Ag	Co web page
Yellow Giant	Skene	Banks Island Gold Ltd	Inf	115 Mt 22.2 g/t Au, 73.3 g/t Ag	An updated inferred resource reported in September sums three deposits (Tel, Bob and Discovery) totalling 115 Mt averaging 22.2 g/t Au and 73.3 g/t Ag in situ, without applying a cut-off.
Quintette	Northeast	Teck Coal Limited	n/a	15-17 years at 3-3.5 Mt/yr clean coal (Babcock Mt 210 Mt met coal)	A re-opened mine could see a 15- to 17-year mine life with a production rate of 3 to 3.5 Mt of clean coal per year.
Gething	Northeast	Canadian Kalkan Dehua Mines Co	n/a	40 years at 2 Mt/yr clean coal	The projected mine life would be about 40 years, producing 2 Mt of clean coal per year.
Mount Milligan	Onineca	Thompson Creek Metals Co Inc	P+P	482.4 Mt 0.2% Cu, 0.388 g/t Au	Total reserves stand at 952 500 kg Cu and 170 000 kg Au (482.4 Mt at 0.200% Cu and 0.388 g/t Au).
Kemess Underground	Onineca	Aurico Gold Inc	Ind	136.5 Mt 0.56 g/t Au, 0.29% Cu, 2.11 g/t Ag	The ore body contains a 10.3 million tonne high-grade sector of 1.35 g/t Au and 0.52% Cu, within a broader indicated resource of 136.5 Mt.
Chu	Onineca	TTM Resources Inc	MHI	370.64 Mt 0.059% Mo	The deposit contains measured plus indicated resources of 370.64 Mt averaging 0.059% Mo at a cutoff of 0.04%, and an inferred resource of 256.56 Mt at the same cutoff.
Bonanza Ledge	Cariboo	Barkerville Gold Mines Ltd	P+P	130.7 Mt 10.2 g/t Au + 166.9 Mt 8.114 g/t Au	Reserves include 130 724 tonnes grading 10.227 g/t Au in the proven category and 166 808 tonnes grading 8.114 g/t Au in the probable category.
Cariboo Gold Quartz	Cariboo	Barkerville Gold Mines Ltd	n/a		2006 Groux estimate of indicated 602 Mt at 2.02 g/t Au does not seem to be cited by Barkerville
New Afton	Thompson-Onkagan	New Gold Inc	Prob	47.4 Mt 0.95% Cu, 0.69 g/t Au, 2.03 g/t Ag	Stated reserves (probable category): as of 31 December 2010 are 47.4 million tonnes grading 0.95% Cu, 0.69 g/t Au and 2.03 g/t Ag.
New Prosperity	Cariboo	Taseko Mines Limited	P+P	830 Mt 0.42 g/t Au, 0.23% Cu	It is described as a gold-copper porphyry with proven and probable reserves of 830 million tonnes grading 0.42 g/t Au and 0.23% Cu.
Harper Creek	Thompson-Onkagan	Yellowhead Mining Inc	MHI	532 Mt 0.31% Cu, 0.032 g/t Au, 1.08 g/t Ag	Co web page
Ruddock Creek	Thompson-Onkagan	Imperial Metals Corporation	MHI	2.338 Mt 7.79% Zn, 1.61% Pb + 1.492 Mt 6.5% Zn, 1.26% Pb	Co web page
Ajax	Thompson-Onkagan	Abacus Mining and Exploration Corporation/KGHM Polska Miedz S.A.	P+P	503 Mt 0.27% Cu, 0.17 g/t Au	Co web pages
Spanish Mountain	Cariboo	Spanish Mountain Gold Ltd	MHI	138 Mt 0.49 g/t Au, 0.64 g/t Ag	Co web pages
Blackdome	Cariboo	Sona Resources Corporation	Ind	144.5 Mt 11.29 g/t Au	Co web pages
Elizabeth	Thompson-Onkagan	Sona Resources Corporation	Inf	522.9 Mt 12.3 g/t Au	Co web pages
Treasure Mountain	Thompson-Onkagan	Hukira Silver Inc	Hst	33 Mt 828 g/t Ag, 4.16% Pb, 3.6% Zn	An historical resource estimate prepared in 2009 was 33 000 tonnes grading 828 g/t Ag, 4.16% Pb, and 3.6%, at a 311 g/t Ag cut-off.
Line Creek Phase 2	Kootenay-Boundary	Teck Coal Limited	n/a	20.2 Mt addition to Line Creek reserves	20.2 million tonnes additional reserves in Mt Michael mining area, in permitting
Baldy Ridge BR2	Kootenay-Boundary	Teck Coal Limited	n/a		
Swift Project	Kootenay-Boundary	Teck Coal Limited	n/a		
Raven	West Coast	Compliance Energy Corporation	P+P	29.9 Mt ROM Coal	Proven and probable reserves are 29.9 million tonnes.
McNab Valley	South Coast	Burnco Rock Products Ltd	n/a	30 Mt+ sand and gravel	Golden project Description - preliminary conservative estimate of volume

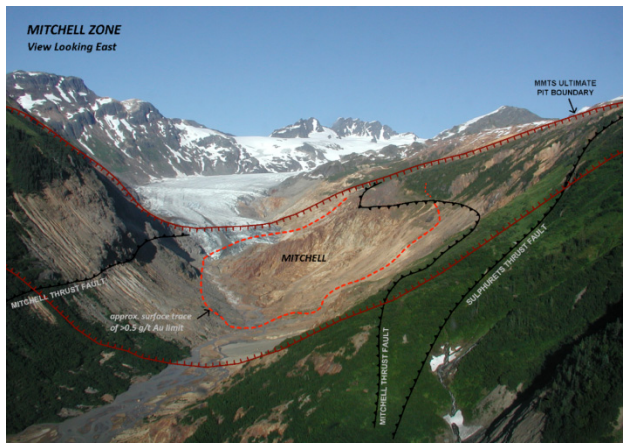


Photo 10. Mitchell deposit outline with 0.3% Cu cut-off limit. Photo courtesy of Seabridge Gold.



Photo 11. The Bell 407 played an integral role in Pretium Resources helicopter intensive year at Snowfields – Brucejack projects. Photo courtesy of Joel Ashburner.

The highest grade intercept on the property to date was drilled this year returning **0.6 m grading 18 755 g/t Au and 9312 g/t Ag** (Photo 12). Construction of a 79 km road starting from Highway 37 is underway as well as dewatering of existing underground workings in preparation for underground exploration drilling. Multiple 1000+ g/t Au intercepts from The Valley of the Kings added to an updated resource reported in late 2011 and will be incorporated into an upcoming preliminary economic assessment.

Combined, the KSM, Snowfields and Brucejack deposits comprise the largest in-ground gold resource identified to date in North America. Potential quantities of metals within reserve, measured, indicated and inferred categories across the six projects approach 13.7 million tonnes copper and 4.7 million kilograms (151 million ounces) gold.

NovaGold Resources Inc has announced its intent to sell part or all of its 50% ownership in the **Galore Creek** (MINFILE 104G 090) copper-gold project. Project partner, Teck Resources Ltd has met their funding obligation of \$373.3 million to attain 50% ownership of the project. An updated pre-feasibility study has detailed



Photo 12. Brucejack bonanza gold, 0.6 m grading 18 755 g/t Au and 9312 g/t Ag from 60.60 m in drillhole SU-115. Photo courtesy of Pretium Resources.

an economically viable path to bringing the project to fruition. Fundamental changes to the mine plan include relocation of the tailings and processing facilities, realignment of access road and tunnel and an increase of mill throughput.

Capstone Mining Corporation formally initiated the pre-application phase of the environmental assessment process for the **Kutcho Creek** copper-zinc project (MINFILE 104I 060). Wholly owned subsidiary Kutcho Creek Copper Corp operates the project. A pre-feasibility study completed this year set out a mine life of 12 years with a processing capacity of 2500 tonnes/day producing separate copper and zinc concentrates. Capital costs are an estimated \$213.5 million, which includes a Liquefied Natural Gas power plant making the project independent of the planned Northwest Transmission Line.

Copper Fox Metals Inc has initiated its mine application for the **Schaft Creek** copper-gold-molybdenum project (MINFILE 104G 015). An updated resource estimate reported in July was to be used to prepare a feasibility study. Field activities during 2011 included resource, geotechnical and exploration drilling and an airborne geophysical survey.

Avanti Mining continued evaluation of the past producing **Kitsault** molybdenum mine (MINFILE 103P 120) which operated from 1967 to 1972 and again from 1981 to 1982. Total past production was 13.6 tonnes molybdenum after milling a total of 13.4 Mt grading 0.101% Mo. A proposed new mill site and adjacent tailings facilities would be constructed 1.5 km northeast of the open pit. An environmental assessment is substantially complete and has been submitted to regulators for review.

At the **Yellow Giant** gold project (MINFILE 103G 021) of Banks Island Gold Ltd, a preliminary economic assessment recommends the sequential mining of the three separate mineral zones with a 200 tonne/day mining facility. Mine permitting is expected to commence in 2012.

Skeena Region – Coal Mine Evaluation Projects

Fortune Minerals signed a joint venture agreement with South Korean-based, multinational steel producer POSCO Canada Ltd (POSCAN) to develop further the **Mount Klappan** Coal Project. Wholly-owned subsidiaries Fortune Coal and POSCO Klappan Coal Ltd plan to accelerate development of the project combining Fortune's local operational expertise and POSCAN's financial backing (Photo 13).

Northeast Region –Coal Mine Evaluation Projects

Teck Coal continues to evaluate the feasibility of re-opening the **Quintette** mine (Windy and Window pits) and completed drilling and washability tests this year (MINFILE 093P 019). Given a positive feasibility study production could resume as early as 2013. A re-opened mine could see a 15 to 17-year mine life with a production rate of 3 to 3.5 Mt of clean coal per year.

Canadian Kailuan Dehua Mines Co Ltd is proposing an underground mine, at its **Gething** project, at a total investment of about \$860 million. The projected mine life would be about 40 years with production of 2 Mt of clean coal per year.

Omineca Region –Metal Mine Development Projects

Thompson Creek Metals Co Inc continued development of its 60 000 tonne/day **Mount Milligan** copper-gold mine. Up to 600 workers will be on site to complete the \$1.265 billion mine development in late 2013 (Photo 14). As of November, more than 13 000 m³ of concrete had been poured and engineering design was more than 75% complete.

Omineca Region –Metal Mine Evaluation Projects

Aurico Gold's **Kemess Underground** project is in the permitting process whereby ore would be extracted by a block/panel cave operation over an approximate 12-year mine life. The operation will use the concentrator and tailings facility at the closed Kemess South mine.

TTM Resources' **Chu** porphyry molybdenum project saw a limited drilling program to test the mining conditions in its proposed starter pit (east and west zones) and for bulk sample collection for metallurgical testing.

Thompson-Okanagan-Cariboo Region –Metal Mine Development Projects

Construction of the **New Afton** mine by New Gold Inc continues on a schedule that should see production in mid-2012. Underground mining operations officially

started on 9 September 2011 with blasting of its first drawbell (Photo 15). Almost 14 000 tonnes of ore are now stockpiled at surface and underground workings have been extended 2210 metres. Project spending by end of third quarter was \$182 million and 600 workers are currently on site.

In early December 2011, the **Bonanza Ledge** gold-quartz vein project of Barkerville Gold Mines Ltd received approval under the Mines Act to develop an



Photo 13. Mount Klappan Coal bulk sampling (1986). Photo courtesy of Fortune Minerals.



Photo 14. Mine development and Mount Milligan (courtesy Thompson Creek Metals).



Photo 15. The ore conveyor emerges from the New Afton underground mine development scheduled for opening in 2012 after a five-leg, 4.5 km long journey from preparatory underground mining operations.

open-pit mine. It is expected that construction will proceed in 2012. The current mine plan is to extract approximately 73 000 tonnes/year (grading 9.05 g/t Au) over a period of four years and trucked it 100 km to the QR mill for processing. The company was very actively exploring around the BC Vein which has been traced for 2.2 km from the vicinity of the Bonanza Ledge deposit on Barkerville Mountain.

Thompson-Okanagan-Cariboo Region –Metal Mine Evaluation Projects

Taseko Mines Limited has submitted a revised proposal to mine the enormous **New Prosperity** gold-copper deposit. A federal review panel accepted the proposal in November and the process is underway to complete an evaluation. The project currently holds an environmental certificate from the BC Environmental Assessment Office based on an earlier submission.

At Yellowhead Mining Inc's **Harper Creek** stratiform copper-gold-silver project a preliminary economic assessment was completed and a feasibility study started. At the site, exploration drilling, metallurgical and comminution testing, and the purchase of land for processing and loading operations was undertaken. Hole HC11-87 returned the best intersection on the property to date at approximately 242 metres of 0.39% Cu, 1.6 g/t Ag and 0.037 g/t Au.

The **Ruddock Creek** zinc-lead project of Imperial Metals Corporation saw underground drilling and extending the decline by 309 m in the E zone, as well as surface drilling in the Creek, V, Q zones. The E zone can now be traced continuously over 450 metres (east-west) and 500 metres (north-south).

Both the Ajax and Spanish Mountain projects entered the BC Environmental Assessment Office review process in February and August 2011 respectively. **Ajax** is a copper-gold porphyry project operated as a joint venture between Abacus Mining and Exploration Corporation and KGHM Polska Miedz SA. Work focused this year on studies required for environmental review and preparation of a feasibility study which is expected to be published late in 2011. A community relations office in downtown Kamloops has been opened given the project's location on the outskirts of the city. The **Spanish Mountain** project of Spanish Mountain Gold Ltd is a low-grade, large tonnage gold-silver deposit that saw a large drilling campaign to expand the Main and North zones. Drilling also occurred at the Phoenix Zone, a discovery in northern Cedar Creek approximately 2 kilometres west of the Main zone where mineralization grading about 0.5 g/t Au can be traced for at least 1 kilometre strike length. A pre-feasibility study is underway.

A noteworthy year has occurred for Barkerville Gold Mines Ltd at its **Cariboo Gold Quartz** (and Bonanza Ledge as discussed above) projects in the historical Barkerville camp. These projects encompass seven past

producing mines and two proposed open pit mines. By mid-year up to six drills were making some highly encouraging discoveries such as hole CM11-25B which was located outside and below the current pit design and intersected 19.9 m of 83 g/t Au (Photo 16). The company completed the purchase of the Goldstream mill with the intention of relocating it to the Barkerville camp, refurbishing it and increasing the capacity to 3000 tonnes/day.

Sona Resources Corp worked toward bringing the **Blackdome** mine back into production within two years while advancing development potential of the **Elizabeth**. At the Blackdome epithermal gold-vein deposit, a new area of potential high-grade gold mineralization has opened up with discovery hole BD11-08 that returned an assay of 13.6 g/t Au over 1.50 m. Meanwhile at the Elizabeth mesothermal gold-vein deposit, a surface and underground drilling program successfully furthered understanding of structure, continuity, mineralogy and grade.

The **Treasure Mountain** high-grade silver-lead-zinc project owned by Huldra Silver Inc entered the regional Mines Act permitting process this year and saw exploration focused on delineating the upper 150 metres of the mine and extension of underground workings.

Kootenay-Boundary Region – Coal Mine Evaluation Projects

Teck Coal Limited undertook three mine evaluation projects related to potential expansion at existing operations. The Line Phase 2 Expansion encompasses Mount Michael (MINFILE 082GNE022) and Burnt Ridge North (MINFILE 082JSE001) and will extend production activities to the north of currently active pits. At Elkview Operations the proposed BR-2 pit on Baldy Ridge (MINFILE 082GNE016) is immediately north of the BR-1 pit highwall within the current mine area. At the



Photo 16. A remarkable drill intersection outside of the proposed pit limits at the Cariboo Gold Quartz project of Barkerville Gold Mines Ltd. Hole CM11-25B intersected 19.9 m of 83 g/t Au (not true width) of gold-cosalite-pyrite-quartz mineralization.



Fording River Operations, the Swift project is west of the Fording River and adjacent to current workings and mine facilities. Line Creek Phase 2 and the Swift Project are both in the Environmental Assessment Process, while the BR-2 Pit proposal did not trigger the EAP.

South-West Coast Regions – Coal Mine Evaluation Projects

Compliance Energy Corporation (and minority partners Itochu Corporation and LG Corp) is advancing the **Raven** metallurgical coal project through both federal and provincial environmental assessment processes. A feasibility study considers a 17 year underground operation producing 1.93 million tonnes/year run-of-mine with average annual production of 0.85 million tonnes clean coal. The majority of the product (88%) is to be sold as semi-soft coking coal, with 12% thermal by-product consisting of wash plant middlings of higher ash content.

South-West Coast Regions – Aggregate Mine Evaluation Projects

On Howe Sound, BURNCO Rock products Ltd's **McNab** Valley Aggregate project is also at the feasibility stage and in federal and environmental review processes. Under consideration is a sand and gravel operation producing in excess of one million tonnes per year.

EXPLORATION HIGHLIGHTS ACROSS BRITISH COLUMBIA

Mineral exploration spending was \$463 million in 2011 continuing a sustained rebound from the late 2008 financial crisis which affected the exploration industry (Figure 4). Record levels of expenditures meant permitting processes were challenged and backlogs appeared early in the exploration season.

A selection of significant exploration projects in British Columbia, 2011, by property and operator are shown in Table 3.

Skeena Region-Exploration Highlights

METAL PROJECTS

Porphyry copper-gold targets were actively explored this year in the Iskut district, where the Stikine terrane also hosts the massive KSM and Snowfield deposits. Western Cirque Resources (formerly Sila Industrial Group Ltd) discovered epithermal quartz-carbonate stockwork veining at the **West Gossan Zone** while exploring the company's 100% owned **Tanzilla** copper-gold porphyry property. Exploration drilling on the **GJ (Kinaskan)** property was led by Teck Resources Inc

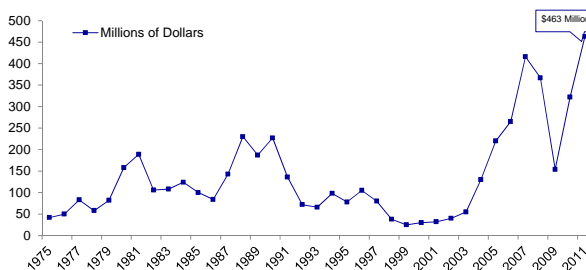


Figure 4. Mineral exploration expenditures in British Columbia, 1974 to 2011.

under option agreement with NGEx Resources Inc. The Donnelly Zone (MINFILE 104G 086, 34) is the primary showing which extends over 1600 m in strike-length by up to 300 m width and hosts disseminated and vein-concordant chalcopyrite. Paget Minerals Corp conducted a review of all historic work on five gold-copper-molybdenum-silver porphyry targets and four gold-silver epithermal vein targets at the **Ball Creek** project (MINFILE 104G 018) prior to drilling. Romios Gold Resources Inc completed geophysical surveys and drilling at the **Trek** prospect (MINFILE 104G 022). Targets were refined from geophysical anomalies identified from last year's TITAN 24 survey and combined with early 2011 results.

The Stewart district was very active this year with epithermal and intrusion-related precious metals exploration. Ascot Resources Ltd drilled gold-silver vein targets at the **Big Missouri** (MINFILE 104B 092) and **Dilworth** properties for bulk tonnage and underground potential. Drilling at the Province (MINFILE 104B 147) and Unicorn (MINFILE 104B 044) areas intersected visible gold and electrum. Jayden Resources Inc completed a major drill program at the **Silver Coin** property (also known as Silver Butte, 104B 150) north of the former Premier mine. A composite bulk sample was collected to test and refine metallurgical processes to optimize recoveries. A pre-feasibility study is anticipated early in 2012. Mountain Boy Minerals Ltd drilled its **Dunwell** property which covers the inferred structural extension of the past producing Dunwell silver-gold mine (MINFILE 103P 052). Potential depth and strike extension of previously mined high-grade veins was tested. Teuton Resources Corp conducted a bulk sample program this year on the **Clone** property (MINFILE 103P 251) where each 1-tonne lot returned an average grade of 137.1 g/t Au for the 102 tonnes taken. The samples will be shipped for processing upon completion of metallurgical testing. The **Homestake Ridge** property (MINFILE 103P 216) is owned by Bravo Gold Corp and this year an updated resource estimate was reported to include an indicated resource of 888 Kt grading 6.69 g/t Au and 47.2 g/t Ag.

The Stewart-Iskut district is also host to volcanogenic massive sulphide (VMS) mineralization. Castle Resources Inc deployed five drill rigs to the past producing **Granduc** mine area (MINFILE 104B 021) for a large program. Mineralized extensions, down dip and to the

TABLE 3. SELECTED SIGNIFICANT EXPLORATION PROJECTS IN BRITISH COLUMBIA, 2011

Property name	Operator name	MINFILE	Commodity	Deposit type	Work Program	Region
3Ts	Silver Quest Resources Ltd	093F 055, 068	Ag, Au	low-sulphidation epithermal	GC, DD (1645 m)	Omineca
Ajax	Abacus Mining and Exploration Corp. / KGHM	092INE012, 013, 028, 030	Cu, Au, Ag, Pd	porphyry	FS, EN	Thompson-Okanagan-Cariboo
Akie	Canada Zinc Metals Corp	094F 031	Zn, Pb, Ag	SEDEX	A, GC, EN, DD (6028 m), GD (444 m)	Omineca
Aley	Taseko Mines Ltd	094B 027	Nb	carbonatite	DD (20 000 m)	Omineca
Angus	Stikine Energy Corp	(093J 042)	sandstone	sedimentary	G, DD, GC (rock), PP, DD (1850 m)	Omineca
Ball Creek	Paget Minerals Corp.	104G 018	Cu, Au	porphyry	DD (1060 m, 8 holes)	Skeena
Beaverdell Silver	Molycor Gold Corp	082ESW032, 067, 072	Ag, Pb, Zn, Cu, Au	polymetallic veins	DD	Kootenay
Berg	Thompson Creek Metals Company Inc.	093E 046	Cu, Mo	porphyry	DD (10 678 m, 36 holes)	Skeena
Bingay Creek	Centremount Coal Ltd	082JSE011	coal	sedimentary	DD, RC	Kootenay
Blackdome Mine	Sona Resource Corp.	092O 053, 051, 052	Au, Ag	vein / breccia	DD (3176 m), PFS	Thompson-Okanagan-Cariboo
Blackwater	New Gold Inc	093F 037	Au, Ag	low-sulphidation epithermal	A, IP, GC (rock), DD (60 000 m)	Omineca
Blackwater East & West	RJK Explorations Ltd	093F 037	Au, Ag	low-sulphidation epithermal	P, IP, AB-EM, GC (soil & silt, rock)	Omineca
Blue River Tantalum/Niobium	Commerce Resources Corp.	083D 005, 035	Ta, Nb	magmatic	DD (8715 m), PFS, MS	Thompson-Okanagan-Cariboo
Bonanza Ledge	Barkerville Gold Mines Ltd.	093H 140	Au	vein / breccia	EN, DD, TR, MS,	Thompson-Okanagan-Cariboo
Bralorne Camp	Bralorne Gold Mines Ltd.	092JNE164, 001	Au, Ag	vein / breccia	UG, G, PP, FS	Thompson-Okanagan-Cariboo
Bridge River Copper	Cresval Capital Corp	092JW 010	Cu, Mo, Au	porphyry	DD (~2030 m)	Thompson-Okanagan-Cariboo
Brucejack	Pretium Resources Inc.	104B 193	Au, Cu	porphyry	DD (73 255 m)	Skeena
Brynnor	Ridgemont Iron Ore Corporation	092F 001	Fe (magnetite)	Fe skarn	MG, DD (in prog.)	Coast
Bugaboo Creek	Pacific Iron Ore Corporation	092C 022, 023, 025, 027, 091	Fe (magnetite)	Fe skarn	DD (17 holes); EN	Coast
Bullmoose River	Canadian Kailuan Dehua Mines Co Ltd	093P 001, 012, 013	coal	sedimentary	EN, FS	Northeast
Camp Lake	Compliance Energy Corporation	092F 571	Fe (magnetite)	Fe skarn	GC (rock, moss mat); DD (9 holes)	Coast
Capoose	New Gold Inc	093F 040	Ag, Au	vein	A, IP, AB-EM, AB-MG, GC, EN, DD (4759 m)	Omineca
Captain	Orestone Mining Corp	093J 026	Cu, Au	porphyry	IP, DD (2000 m)	Omineca
Carbo	Canadian International Minerals Inc	093J 014	REE	carbonatite	GC (rock), DD (3090 m)	Omineca
Carbon Creek	Coalhunter Mining Corp	093O 028	coal	sedimentary	A, EN, BU, CT, WA, DD (8500 m), RC (6000 m)	Northeast
Carbonatite Syndicate	Bolero Resources Corp	093J 014	REE	carbonatite	GC (soil), DD (2000 m)	Omineca
Cariboo Gold Quartz	Barkerville Gold Mines Ltd.	093H 019	Au	vein / breccia	DD (~55 000 m), EN, PFS	Thompson-Okanagan-Cariboo
Chu	TTM Resources Inc	093F 001	Mo	porphyry	EN, DD (2000 m)	Omineca
Chuchi	Logan Resources Ltd	093N 159	Cu, Au	porphyry	IP, GC (soil, silt, rock)	Omineca
Clone	Teuton Resources Corp.	103P 251	Au	shear vein	MS, BU(102)	Skeena
Coal Creek	Crownest Pass Coal Mining Ltd	(82G.046)	coal	sedimentary	RC, DD	Kootenay
Coles Creek	Callinex Mines Ltd.	093E 041	Cu, Au	porphyry	DD (4579 m, 11 holes)	Skeena
Columario	Argonaut Exploration Inc.	103I 077	Au	vein / breccia	DD (2600), G, A	Skeena
Columbia Belle	Goldstar Minerals Inc	082M 190	Zn, Pb, Cu, Ag, Au	SEDEX	DD	Kootenay
Decar	Cliffs Natural Resources Inc	093K 041	Ni	ultramafic	GC (rock), BU (250t), MS, EN, DD (12 000 m)	Omineca
Deer Horn	Deer Horn Metals Inc.	093E 019	Te, Au, Ag, W, Mo	vein / breccia	DD (3773 m, 55 holes), AB-MG, G, GC, TR (300 m)	Skeena
Dewdney Trail	PJX Resources Inc	(82G.073)	Au	sediment-hosted vein	DD, TR, G	Kootenay
Dilworth/Big Missouri	Ascot Resources Ltd.	104B 092	Au, Ag	epithermal	DD (36 318 m, 150 holes)	Skeena
Dome Mountain	Metal Mountain Resources Inc.	093L 022	Au	orogenic vein	MD	Skeena
Dunwell	Mountain Boy Minerals Ltd.	103P 052	Au, Ag	vein	DD (30 holes)	Skeena
Eholt	Open Gold Corp	082ESE187	Au, Cu	skarn, epithermal, massive sulphide	DD	Kootenay
Elizabeth	Sona Resources Corp.	092O 012	Au, Ag, Cu, Mo	vein / breccia	DD (7355 m), UG	Thompson-Okanagan-Cariboo
Elk (Siwash North)	Gold Mountain Mining Corp	092HNE096	Au, Ag	vein / breccia	DD (~14 000 m), PF	Thompson-Okanagan-Cariboo
Elkview Operations (includes Baldy Ridge BR-2 Pit)	Teck Coal Limited	082GNE017	coal	sedimentary	RC	Kootenay
Endako	Thompson Creek Metals Company Inc.	093K 006	Mo	porphyry	DD (12 824 m)	Skeena
Engineer	BCGold Corp.	104M 014	Au	epithermal vein	DD (1500 m), BU(400), AB-EM, -MG (600 km), MS, GC	Skeena
Fireweed	Shamrock Enterprises Inc.	093M 151	Ag, Zn, Pb	mantle, vein	DD (1500 m)	Skeena
Fording River Operations (includes Swift Project)	Teck Coal Limited	082JSE010	coal	sedimentary	A, RC	Kootenay
Fox	Happy Creek Minerals Ltd.		W	porphyry	DD	Thompson-Okanagan-Cariboo
Fran	Yankee Hat Minerals Ltd	093K 108	Cu, Au	porphyry	DD (1100 m)	Omineca
Galore Creek	NovaGold Resources Inc., Teck Resources Ltd.	104G 090	Cu, Au	porphyry	MD	Skeena
Gething	Canadian Kailuan Dehua Mines Co Ltd		coal	sedimentary	EN, PF	Northeast
Getty Copper	Getty Copper Inc				GP, MS	
Gj, Kiniskan	NGEx Resources Inc., Teck Resources Ltd	104G 034	Cu, Au	porphyry	DD (4307 m, 10 holes), IP (145 km), G, P, MG (125 km)	Skeena
GK	Bitterroot Resources Ltd	082ESE175	Au, Cu, Ag	intrusion-related veins	A, DD	Kootenay
Gold Creek / Horsefly	Tiex Inc				GP-IP, GC, DD (~2000 m)	Thompson-Okanagan-Cariboo
Granduc	Castle Resources Inc	104B 021	Cu	massive sulphide	DD (31 000 m, 64 holes), EN, A	Skeena
Greenhills Operations (Cougar North Extension)	Teck Coal Limited	082JSE007	coal	sedimentary	A, RC, DD	Kootenay
Greenwood Gold (includes Motherlode, Ket 28, Dayton, Overlander, Copper Mountain)	Grizzly Discoveries Inc	082ESE034, 147, 174, 255, 082ESW022, 210, 231	Au, Cu, Ag, Mo, Zn, Pt	vein, skarn, intrusion-related, porphyry	DD, GC, GP, G	Kootenay
Greenwood Project (includes Wild Rose and Boundary Falls)	Golden Dawn Minerals Inc	082ESE045, 116, 130, 171	Au, Cu, Ag	vein, porphyry	DD, GC	Kootenay
Harper Creek	Yellowhead Mining Inc.	082M 008, 009	Cu, Ag, Au, Zn, Mo	massive sulphide	PF, EN, MS, DD (~30 000 m)	Thompson-Okanagan-Cariboo
Highland Valley Mine (Exploration)	Teck Highland Valley Copper Partnership	092ISE013	Cu, Mo	porphyry	DD (~10 000 m)	Thompson-Okanagan-Cariboo
Homestake Ridge	Bravo Gold Corp.	103P 216	Au, Ag, Cu	epithermal vein	DD (7364 m, 23 holes), GC, GP, IP 15 km), EN	Skeena
Huckleberry	Huckleberry Mines Ltd.	093E 037	Cu, Mo	porphyry	TITAN, NSAMT	Skeena
Huguenot	Colonial Coal International Corp	(093I.049,050)	coal	sedimentary	A, CQ, DD (3401 m), RC (3109 m)	Northeast
International Basin	Kingsman Resources Inc	082KNW094	Au, Ag, Pb, Cu, Zn	polymetallic veins	DD	Kootenay

TABLE 3. CONTINUED

Property name	Operator name	MINFILE	Commodity	Deposit type	Work Program	Region
Iron Range	Providence Resources Corp	082FSE014 to 028	Au, Zn, Pb, Fe, Cu	SEDEX, IOCG	DD, GC, G, IP, AB-EM, AB-gravity	Kootenay
Island Copper	Northisle Copper and Gold Inc.	092L 173, 177 200, 240, 273	Cu, Mo, Au, Re	porphyry Cu-Mo-Au	IP, G; GC (core re-log and analysis)	Coast
J & L	Huakan International Mining Inc	082M 003	Au, Ag, Pb, Zn	SEDEX, replacement	UG, UG-DD	Kootenay
Kemess North	Aurico Gold Inc	094E 021	Cu, Au	calcalkalic porphyry	GDS (6166 m)	Omineca
Kenville Gold Mine (Nelson Mining Camp project)	Anglo Swiss Resources Inc	082FSW086	Au, Cu	vein	DD	Kootenay
Kitsault	Avanti Mining Inc.	103P 120	Mo	porphyry	DD (13 350 m, 32 holes), CD(665, 12)	Skeena
Klovance (Castlegar project)	Swift Resources Inc	(82F.023)	Ag, Cu, Pb, Zn, Au	polymetallic veins	DD, TR, G	Kootenay
Kootenay Arc	Mineral Mountain Resources Ltd	082KNW095, 110, 112	Au, Ag, Pb, Cu, Zn	polymetallic veins, Carlin?	DD, GC	Kootenay
KSM	Seabridge Gold Inc.	104B 103	Au, Cu	porphyry	DD (15 188, 44), GD(5530 m, 19 holes)	Skeena
Kutcho Creek	Capstone Mining Corp.	104I 060	Cu, Zn, Au, Ag	massive sulphide	DD (4227 m, 19 holes)	Skeena
Kwanika	Serengeti Resources Inc	093N 019	Cu, Au	alkalic porphyry	A, GC (soil), DD (1320 m)	Omineca
Lac La Hache (Spout)	GWR Resources Inc.	092P 001, 002, 034, 035	Cu, Au, Fe, Ag	porphyry	DD (~25 000 m), TR, GC, GP-MAG, G	Thompson-Okanagan-Cariboo
Ladner Gold	New Carolin Gold Corp	092HNW007, 003, 018	Au	veins	GC; AB (762 line km);	Coast
Letaim	First Point Minerals Corp.	104I 053	Ni	magmatic	GC, G	Skeena
Logan Lake	Logan Copper Inc.	092ISE012, 190	Cu, Mo, Ag	porphyry	DD (2828 m), GP-MAG	Thompson-Okanagan-Cariboo
Lone Pine	Bard Ventures Ltd.	093L 027	Mo	porphyry	DD (2400 m)	Skeena
Magnetite Ridge	Magnetite Ridge Metals and Minerals Ltd					
Marten-Wheeler	Teck Coal Limited	082GNE006	coal	sedimentary	A, RC	Kootenay
McNab Valley	BURNCO Rock Products Ltd	(092G.053)	Aggregate	sand and gravel	GP (seismic); EN, FS	Coast
Morrison	Pacific Booker Minerals Inc.	093M 007	Cu, Au	porphyry	EN	Skeena
Mount Klappan	Fortune Minerals Ltd.	104H 022		coal	Corporate	Skeena
Mount Polley (Exploration)	Imperial Metals Corp	093A 008, 164	Cu, Au	porphyry	DD (11 564 m), G, UG	Thompson-Okanagan-Cariboo
Murray River	Canadian Kailuan Dehua Mines Co Ltd	(093P.005)	coal	sedimentary	EN, A, DD (18 000 m), RC (2000 m)	Northeast
Myra Falls	NVI Mining Ltd (Nyrstar Mining N.V.)	092F 071,072,073, 330	Zn, Cu, Pb, Au, Ag	VMS	DD; UG; GP (experimental)	Coast
New Prosperity	Taseko Mines Ltd	092O 041	Cu, Mo, Au	porphyry	FS, EN, GD	Thompson-Okanagan-Cariboo
New ton Mountain	Amarc Resources Ltd	092O050	Au, Cu	porphyry	DD	Thompson-Okanagan-Cariboo
NIC	Compliance Energy Corporation	092L 266	Cu, Mo	porphyry Cu-Mo	IP, GC rock, moss mat); DD (17 holes)	Coast
Nithi Mountain	Leeward Capital Corp	093F 006-016	Mo	porphyry	A, EN, DD (7000 m)	Omineca
Ootsa Lake	Gold Reach Resources Ltd.	093E 105	Cu, Au	porphyry	DD (10 393 m), IP(44.5km), GP	Skeena
Poplar	Lions Gate Metals Inc.	093L 239	Cu, Mo	porphyry	DD (16 481 m, 42 holes)	Skeena
Prospect Valley	Altair Ventures Inc		Au, Ag	vein / breccia	DD (722 m), G, GC, P	Thompson-Okanagan-Cariboo
Plamigan	Silver Mountain Mines Inc	082KSE030, 036	Ag, Au, Cu, Zn	polymetallic veins, manto?	DD	Kootenay
Quesnel Trough	Xstrata Copper Canada	(093J, K)	Cu, Au	porphyry	A, IP, GC (soil, rock), DD (7563 m)	Omineca
Quintette	Teck Coal Ltd	093P 019	coal	sedimentary	EN, WT, DD (2491 m), RC (964 m)	Northeast
Rateria	Happy Creek Minerals Ltd	092SE092, 150, 060	Cu, Mo	porphyry	DD (~10 000 m)	Thompson-Okanagan-Cariboo
Raven	Comox Joint Venture (Compliance Energy Corporation, Itochu Corporation, LG International Corp)	092F 333	Coal	sedimentary	EN, FS	Coast
Record Ridge (Rossland project)	West High Yield (WHY) Resources Ltd	082FSW119, 116, 117	Mg, Au, Ni, Co	ultramafic; vein	DD	Kootenay
Red Chris	Imperial Metals Corp.	104H 005	Cu, Au	porphyry	DD (17 770 m) enviro	Skeena
Red Lobster (Kimberley Gold Trend Project)	Fjordland Exploration Inc	(82F.068)	Pb, Zn	SEDEX	DD	Kootenay
Rogers Creek	Miocene Metals Limited	(092J.008, 009)	Cu, Au, Ag, Mo	porphyry Cu	GC (rock channel, soil, silt); DD (5 holes)	Coast
Ruddock Creek	Imperial Metals Corp	082M 082, 83	Zn, Pb, Ag	massive sulphide	DD (14 133 m), UG (309 m)	Thompson-Okanagan-Cariboo
Salat Creek	Miocene Metals Limited	092JW 005	Mo	porphyry Mo	P,G,GC,DD (two holes)	Coast
Schaft Creek	Copper Fox Metals Inc., Teck Resources Ltd	104G 015	Cu, Mo, Au	porphyry	DD (3444 m)	Skeena
Shovelnose	Westhaven Ventures Inc		Au	vein / breccia	P, GC, G, DD	Thompson-Okanagan-Cariboo
Silver Coin	Jayden Resources Inc.	104B 150	Au, Ag, Pb, Zn	epithermal vein	DD (17 500 m, 115 holes), MS, EN	Skeena
Silver Queen	New Nadina Exploration Ltd.	093L 002	Cu, Mo, Au	porphyry, vein	DD (5000 m), AB-MG	Skeena
Silvertip	Silvercorp Metals	104O 038	Ag, Pb, Zn, Au	SEDEX	D (3500 m), MS	Skeena
Snow field	Pretium Resources Inc.	104B 179	Au, Cu, Mo, Re	porphyry	MD	Skeena
Spanish Mountain	Spanish Mountain Gold Ltd	093A 043	Au, Ag	vein / breccia	DD (~18 000 m), PFS, MS	Thompson-Okanagan-Cariboo
Star	Valterra Resource Corporation	082FSW083, 084, 294	Au, Ag, Cu	vein, porphyry	P, DD	Kootenay
Stewart	Engold Mining Corporation	082FSW229	Mo, W, Au, Ag, Cu, Pb, Zn	vein, skarn	DD	Kootenay
Tak (Moffat)	Fjordland		Au, Cu, Mo	porphyry	DD (739 m)	Thompson-Okanagan-Cariboo
Tanzilla	West Cirque Resources Inc.	104I 023	Cu	porphyry?	G, GC, IP(16km)	Skeena
Trapper Gold	Ocean Park Ventures Corp.	104K 078	Au	unknown	DD (8500 m, 42 holes), GC, G, AB-EM, IP	Skeena
Treasure Mountain	Huldra Silver Inc	092HSW016, 018	Ag, Pb, Zn	vein / breccia	DD (5073 m)	Thompson-Okanagan-Cariboo
Trek	Romios Gold Resources Inc.	104G 022	Cu, Au	porphyry	DD (7342 m, 14 holes, IP (2.4 km)	Skeena
Tulsequah Chief	Chieftain Metals Inc.	104K 002	Cu, Zn	massive sulphide	DD (31 181 m, 82 holes)	Skeena
Turnagain	Hard Creek Nickel Corp.	104I 119	Ni, Co, Pt	magmatic	Enviro, Met	Skeena
Valentine Mountain	Mill Bay Ventures Inc	092B 108	Au	veins	DD (9 holes); TR; GC (rock, soil)	Coast
Wann River	Blind Creek Resources Ltd.	104M 026	Au	vein	DD(3325 m, 17), GC, G, P	Skeena
Weedon	Teck Resources Ltd	093J 062, 072	Cu, Au	alkaline porphyry	IP, GC (Soil)	Omineca
Wildcat	Cayden Resources Inc	093N 228	Cu, Au	porphyry	GC (rock), DD (2 000 m)	Omineca

TABLE 3. CONTINUED

Property name	Operator name	MINFILE	Commodity	Deposit type	Work Program	Region
Woodjam North / South	Gold Fields Horsefly Exploration Corp	093A 078	Cu, Au	porphyry	DD (26 044 m)	Thompson-Okanagan-Cariboo
Yellow Giant	Banks Island Gold Ltd.	103G 021	Au	vein	DD (563 m, 8 holes), MS, AB-EM	Skeena
Yellow Jacket	Eagle Plains Resources Ltd.	104N 043	Au	vein / breccia	Mapping	Skeena

Work Program Abbreviations:

A = access (trail, road construction on claims); AB-EM = airborne electromagnetics; AB-MG = airborne magnetics; AB-RD = airborne radiometrics; BU (X tonnes) = bulk sample (weight in tonnes if known); CD = condemnation drilling; CQ = coal quality testing; CT = carbonization test (coal); DD (Xm) = diamond drilling totalling X metres; EN = environmental baseline studies/monitoring, remediation work; FS = feasibility studies; G = geology, mapping etc.; GC = geochemical sampling (rock, soil, silt etc.); GD = geotech drilling; GP = geophysics (general); IP = Induced Polarization; 3D-IP; MG = magnetics; MK = marketing (primarily for industrial mineral products); MS = metallurgical studies; OB = overburden drilling; OP-BU = open-pit bulk sample; P = prospecting; PD = percussion drilling; PF = pre-feasibility studies; R = reclamation; RC = reverse circulation drilling; TR = trenching; UG (Xm) = X metres of underground development; UG-BU = underground bulk sample; UT = UTEM; VLF; WT = washability test (coal)

south of the previously mined Main Ore zone were identified. Refurbishing of a 17 km long Tide tunnel is nearing completion. It connects the Granduc mine and mill site and the 51 km all-season road to the deep sea terminal of Stewart.

Porphyry copper targets with molybdenum and gold form a distinct group of deposits hosted in post-accretion Skeena Arch intrusions. The transverse geological feature and topographic high separates the Bowser and Nechako basins and hosts the producing Huckleberry mine. The **Silver Queen** (MINFILE 093L 002) project is known historically as a polymetallic vein system with past production of gold, silver, zinc, lead, copper and cadmium. New Nadina Explorations Ltd drilled the property this year discovering porphyry-style mineralization: a possible source of historic vein systems. Several projects surrounding the Huckleberry mine were active this year. Gold Reach Resources Ltd owns the **Ootsa Lake** property (MINFILE 093E 105) where three target areas are identified: the Seel and Ox lake porphyry deposits and the Damascus silver vein. Drilling focused on the Seel deposit where new mineralization was identified and the deposit extended to 700 m depth. Lions Gate Metals drilled the **Poplar** (MINFILE 093L 239) property, intercepted broad intervals of copper-gold-molybdenum mineralization and generated an inferred resource. The **Berg** property is a copper-molybdenum-silver porphyry deposit (MINFILE 093E 046) where Berg Metals Limited drilled to expand and upgrade resources.

Porphyry molybdenum targets form a second group of deposits in the Skeena Arch which includes the producing Endako mine. Bard Ventures Ltd drilled the **Lone Pine** property (MINFILE 093L 027, 28) and focused on three zones: Alaskite, Quartz Breccia and 61. Bard Ventures earned 100% interest on the adjoining **Grouse Mountain** polymetallic property (MINFILE 093L 026, 251) now included as part of the Lone Pine project.

The Skeena Arch is also host to numerous intrusion-related gold projects. Deer Horn Metals Inc drilled its **Deer Horn** property (MINFILE 093E 019) located south of the Huckleberry mine. Most holes were centered on the historic Deer Horn adit with the intention of establishing a tellurium resource. An historical tungsten showing with scheelite in talus was also drilled. Callinex Mines Inc drilled the **Coles Creek** property (MINFILE 093E 041)

where mineralization is hosted in three zones; porphyritic granodiorite, fragmental volcanoclastics and their contact zone. Argonaut Exploration Inc initiated work on the **Columario** property (MINFILE 103I 077) where drilling targeted vein-hosted polymetallic mineralization. The past producing mine area has never been drilled systematically.

The Skeena region is seeing expanded interest in nickel mineralization hosted in ultramafic rocks. The **Turnagain** (MINFILE 104I 014) is a bulk tonnage prospect in a zoned 3 by 8 km Alaskan-type ultramafic complex (Photo 17). Owner Hard Creek Nickel Corporation is projecting a greatly decreased initial capital expenditure, from \$2.9 to \$1.319 billion, by no longer requiring a hydrometallurgical plant. Platinum and palladium values occur on the property in significant amounts and will be subject to further investigation. First Point Minerals Corp owns four properties including **Letain** east of Dease Lake. Their target is nickel-iron alloy (awaruite) mineralization in the Cache Creek terrane. Awaruite is a natural alloy of 75% nickel and 25% iron (Ni₃Fe) and may require little processing to extract elemental nickel.

In the far north western reaches of the province lay the Atlin and Cassiar districts. The area is well known for its epithermal and orogenic precious metals deposits. At the historic **Engineer** gold mine (MINFILE 104M 014) BCGold Corp took six bulk samples totalling 300 tonnes from the Engineer and Decker veins. Fine-grained gold was reported in the bulk sample and metallurgical testing is ongoing. Infrastructure upgrades included

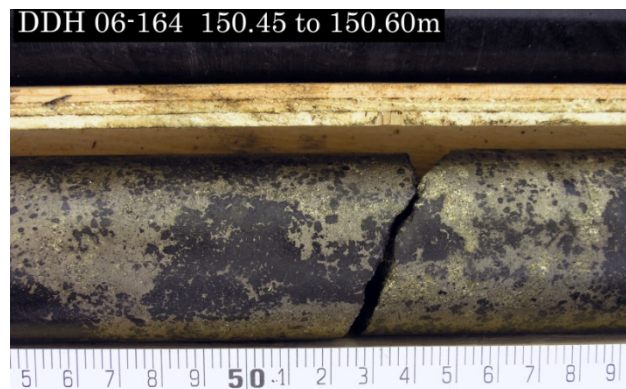


Photo 17. Magmatic pentlandite with interstitial PGEs hosted in serpentinized wherlite.

refurbishment of the 30 tonne/day gravity mill circuit and shaft area and dewatering. Blind Creek Resources Ltd drilled their **Wann River** polymetallic vein project (MINFILE 104M 026) where the mineralization style is interpreted to be analogous to the ore zone at the Engineer mine. Exploration on the **Trapper Gold** project drill tested a 2 km gold-arsenic soil anomaly and coincident, pervasive rock alteration zone by joint venture partners Ocean Parks Ventures Corp and Constantine Metal Resources Ltd.

In the Cassiar district, near the Yukon Territory, the **Silvertip** high-grade silver manto prospect was explored by Silvercorp Metals Inc. Drilling tested exhalative mineralization and satellite geophysical anomalies around the known deposit as well as the DM zone to the south. A preliminary assessment has proposed a 500 tonne/day seasonal operation with estimated start-up capital of \$50 million.

West of Smithers and near Babine Lake, the **Fireweed** (MINFILE 093M 151) sediment hosted massive sulphide property was drilled by Shamrock Enterprises Ltd under an option agreement with Pachamama Resources Ltd.

Northeast Region-Exploration Highlights

COAL PROJECTS

The northeastern coal fields are very active currently as global demand for coal increases. Colonial Coal International Corp continued aggressive exploration on its **Huguenot** property where testing of samples recovered from large diameter drill cores is in progress. The north block of the property contains measured and indicated resources of 45.5 Mt metallurgical coal, with the middle and south blocks containing between 83 and 113 Mt of potential resources. Canadian Kailuan Dehua International Mines Co Ltd, in joint venture with HD Mining International Corp, is developing its **Murray River** metallurgical coal project. This year core drilling was completed, a formal resource assessment is in progress and a bulk sample is planned. An underground resource of about 780 Mt has been identified at Murray River, and the project is potentially much larger. Coalhunter Mining Corp has been advancing its **Carbon Creek** (MINFILE 093O 028) property. The metallurgical coal property has a measured and indicated 53.2 Mt open pit resource and a 113.5 Mt underground resource. The company has begun a ground investigation for a future wash plant. Bulk sample collection by large-diameter drilling for washability and carbonization testing was undertaken (Photo 18).



Photo 18. Coal seam exposure at Carbon Creek (courtesy Coalhunter Mining).

Omineca Region-Exploration Highlights

METAL PROJECTS

Mineral exploration in the Omineca region was extremely active this year with much of the work centred on the Quesnel and Stikine terranes, where both porphyry and epithermal projects were important. SEDEX, rare earth element (rare metal) and ultramafic-hosted deposits captured much interest as well.

Leeward Capital Corp drilled its **Nithi Mountain** porphyry molybdenum project. A high-grade molybdenum phase within its Delta Zone has been identified over about 1 km in length and open in two directions. Highlight intercepts included 24.38 m grading 0.122% Mo, 6.1 m grading 0.188% Mo, 62.69 m grading 0.119% Mo. Current resource estimates include 147.604 Mt in the indicated category grading 0.023% Mo and 239.588 Mt grading 0.20% Mo in the inferred category.

Several projects were underway in the vicinity of the Mount Milligan mine development looking for similar copper-gold porphyry-style mineralization. Drilling programs were completed at the **Captain** project (Orestone Mining), **Wildcat** deposit (Cayden Resources Inc), and **Fran** (Yankee Hat Minerals). Notable grassroots programs were completed at the **Weedon** project (Teck) and **Chuchi** project (Logan Resources Ltd). Further to the north, Serengeti Resources Ltd drilled its **Kwanika** project to test new targets and completed an extensive geochemistry program to identify other targets. Work began on a preliminary economic assessment of the higher-grade copper-gold resource.

As part of its ongoing Quesnel trough project, and partly in joint venture with Serengeti, XStrata Copper Canada drilled and completed ground surveys across some 19 claim blocks northwest of Prince George.

The extreme southeast corner of the Omineca region saw intense activity by New Gold Inc who drilled about

60 000 m on the **Blackwater** gold project (MINFILE 093F 037). New Gold classifies the deposit as a, bulk tonnage, low-sulphidation epithermal gold-silver type. The deposit remains open in all directions and at depth. As of September this year indicated resources stood at 165 Mt grading 1.01 g/t and inferred resources at 39 Mt grading 0.94 g/t Au, both at a cut-off grade of 0.4 g/t Au. In related activities, Silver Quest/New Gold drilled and completed geophysical surveys on the **Capoose** project. Silver Quest also completed a drilling program and geochemical reconnaissance of its **3Ts** property. Close by Blackwater, RJK Explorations conducted grassroots-level exploration to define areas for future drilling on its Blackwater East and Blackwater West holdings.

To the north of Williston Lake, Canada Zinc Metals Corp drilled the Cardiac Zone at its advanced-stage **Akie** (MINFILE 094F 031) zinc-lead SEDEX deposit (Photo 19). Geotechnical drilling in support of a planned access portal were completed, along with upgrades to the trail leading to the site.

Significant exploration efforts are being directed toward the discovery and definition of rare metals mineralization in the Omineca region, particularly related to alkaline rocks in a recently coined “Rocky Mountain Rare Metal Belt”. Much of the activity surrounded the Wicheeda project of Spectrum Mining where recent success has spurred on other projects. Bolero Resources Corp drilled coincident geophysical and cerium-lanthanum-in-soil anomalies at its **Carbonatite Syndicate** project (MINFILE 093J 014). Carbonatite-hosted niobium, lanthanum, cerium, praseodymium and neodymium rare metals were also the subject of Canadian International Minerals Inc’s exploration of its nearby **Carbo** (MINFILE 093J 014) project (Photo 20). Drilling encountered carbonatite in four out of six holes and a 250 tonne bulk sample was taken for metallurgical testing.

Taseko Mines continued work on its **Aley** niobium (carbonatite) deposit (MINFILE 094B 027) completing a substantial diamond drilling program that is expected to allow an upgrade of the current inferred resource of 159 Mt grading 0.43% Nb₂O₅ with a cut-off at 0.20% Nb₂O₅. Mineralization is close to surface, appears to be continuous throughout the area drilled to date, and is open in three directions and at depth.

As was seen in the Skeena region, expanded interest in nickel mineralization hosted in ultramafic rocks occurs in the Omineca region. Cliffs Natural Resources Inc executed a very active field program at the **Decar** project (MINFILE 093K 041) including drilling of the Baptiste and Sydney zones. At Decar, awaruite comprises between 0.1% and 0.15% of its hostrock. Metallurgical testing was initiated and studies to date, using a composite sample from 2010 core, and indicated a head grade of 0.22% total Ni of which 0.14% appeared to be potentially recoverable.

INDUSTRIAL MINERALS PROJECTS

Exploration for sources of high-purity, bedrock-



Photo 19. Diamond drilling on the Northwest extension of the Akie SEDEX project (courtesy Canada Zinc Metals).



Photo 20. Drill on site at the Carbo REE project (courtesy Canadian International Minerals).

sourced, frac sand (for use in the petroleum industry) was carried out by Stikine Energy Corp at the **Angus** project. The company drilled the property, collected a bulk sample for testing at its pilot plant in Abbotsford and announced an inferred resource of 726 Mt. A preliminary economic assessment of the project was positive forecasting a payback period of 2.6 years or less with an initial capital cost of about \$314 million. The company maintains its 625 Mt **Nonda** frac sand project near the Yukon Territory border.

Thompson-Okanagan-Cariboo Region- Exploration Highlights

METAL PROJECTS

Several projects actively explored for porphyry-style copper-molybdenum mineralization in the Guichon batholith which hosts the world class Highland Valley mine. At the **Highland Valley** mine, Teck Highland Valley Copper Partnership completed a reduced drill campaign in areas under lease. Happy Creek Minerals Ltd

drilled Zones 1 and 2 at the **Rateria** property, southeast of Highland Valley mine. In both zones, widely-spaced holes returned intersections of substantial length with grades comparable to mine grades at Highland Valley. Molybdenum, silver and rhenium values have also been reported. At the **Logan Lake** project, Logan Copper Inc drilled the Dansey prospect and completed geophysical surveys. The longest mineralized intersection returned 68.6 m at 0.20% Cu in hole 11-LCD-24. Getty Copper Inc released results of their geophysical survey at the **Getty Copper** project deposit which identified 39 anomalies, of which 12 of which are considered high-priority drill targets.

The Cariboo region of the province hosts the Mount Polley and Gibraltar mines and is a very active area for copper-gold-molybdenum porphyry-related mineralization. At the **Mount Polley** mine, Imperial Metals Corporation surface exploration focused on the C2, Cariboo, Junction and Polley Mountain zones whilst underground drilling from a 550 m decline confirmed the continuity of high grade copper-gold-silver mineralization. Gold Fields Horsefly Exploration Corporation drilled the **Woodjam South** and **Woodjam North** properties under an option from Consolidated Woodjam Copper Corp (Photos 21 and 22). Results are matching previous campaigns and further defining the area of mineralization. Drilling at the nearby **Tak** property by Capstone Mining Corp intersected chalcopyrite and pyrite mineralization in all three holes completed. GWR Resources Inc drilled the Spout Lake magnetite skarn deposit at its **Lac La Hache** project and extended the strike length of this zone by 500 metres and confirmed the tenor of mineralization. More drilling is underway on the Spout South zone and at the Peach Lake target, which has a geophysical anomaly that is similar to Spout. At the **Fox** tungsten property, Happy Creek Minerals Ltd reported encouraging drill results from what is shaping up to be a significant tungsten discovery at the Ridley Creek zone. Results of up to 1.02% WO₂ were reported with short intervals yielding an impressive 8.15% WO₂.

A new exploration target in the Cariboo is described as sediment-hosted gold and the subject of exploration at the Spanish Mountain project (described previously under Mine Evaluation). Tiex Inc drilled the **Gold Creek** project utilizing both diamond and reverse circulation drilling on its nearby holdings.

Amarc Resources Ltd drilled its **Newton Mountain** property within the Plateau Gold Copper Belt (thought to extend from Blackdome gold mine in the south to Blackwater and Capoose deposits in the north). Targets are disseminated gold, copper and molybdenum mineralization with epithermal and porphyry characteristics. Preliminary results include the thickest mineralized interval encountered to date: 293.6 m of 0.6 g/t Au.

Cresval Capital Corp conducted a drilling program at



Photo 21. Several years of drilling at the Woodjam projects means large core facilities at Horsefly (photo courtesy of Consolidated Woodjam Copper Corp).



Photo 22. Intensive drilling continues at the Woodjam project Southeast Zone by Gold Fields Horsefly Exploration Corporation under option from Consolidated Woodjam Copper Corp (photo courtesy of Consolidated Woodjam Copper Corp).

its **Bridge River Copper** project near Goldbridge where drilling intersected broad zones of copper mineralization in a calcalkaline porphyry system.

Gold Mountain Mining Corp drilled the **Elk** mesothermal gold-quartz vein project. This past producer from open pit and underground operations is yielding positive results that demonstrate that a viable mining project could be launched. A resource update, to include the 2010 and 2011 drill results, is to be conducted.

Exploration activity in the Spences Bridge Group of volcanic rocks continues to define a low-sulphidation epithermal gold mineralization model. Altair Ventures Incorporated has released the first resource calculation for the **Prospect Valley** epithermal gold project: it contains a resource of 10.08 Mt of 0.511 g/t Au at a 0.3 g/t cut-off grade. Last winter an abbreviated drill program tested the new NEZ and further prospecting has discovered mineralization outside the current Discovery zone. Westhaven Ventures Inc conducted the first ever drill program at the **Shovelnose** property where the Line 6 and

Mik showings were tested.

The central portions of the “Rocky Mountain Rare Metals Belt” are expressed at Commerce Resources Corp’s **Blue River** tantalum and niobium project. A preliminary economic assessment concluded that the deposit can be developed economically as an underground mine. Further work to support a pre-feasibility study was carried out including more definition drilling on the Upper Fir zone.

Near Tulameen, private company Magnetite Ridge Metals and Minerals Ltd continued to investigate small-sale mining opportunities at a large magnetite deposit on its **Magnetite Ridge** project within the Tulameen Ultramafic Complex.

Kootenay-Boundary Region-Exploration Highlights

METAL PROJECTS

Grizzly Discoveries Ltd’s **Greenwood Gold** Project, which covers an area roughly 70 km by 25 to 30 km, hosts many known mineral occurrences which encompass varying types of mineralization, including gold-quartz veins, polymetallic veins and skarns. This year the Dayton (MINFILE 082ESW022), Motherlode (MINFILE 082ESE034), Ket 28 (MINFILE 082ESW210) and Overlander (MINFILE 082ESE174) areas were drilled

Golden Dawn Minerals drilled the Wild Rose (MINFILE 082ESE116) gold-silver-copper vein property, which includes the adjacent Tam O-Shanter (MINFILE 082ESE130). Along with the Boundary Falls polymetallic project, the Wild Rose is part of Golden Dawn’s **Greenwood** Project. A recent focus at the Wild Rose has been a system of lower-grade, bulk tonnage gold-copper targets (porphyry style) in zones to the east and west of the old workings.

Huakan International Mining Inc carried out underground drilling of the Main zone at the **J&L** (MINFILE 082M 003) stratabound gold-silver-zinc-lead prospect. A new resource estimate was completed and includes 2.368 million tonnes grading 6.81 g/t Au, 67.8 g/t Ag, 2.16% Pb and 2.99% Zn in the combined measured and indicated categories.

Providence Capital Corp continued a 2010 drilling program begun on the **Iron Range** property. There are two settings for mineralization at the Iron Range: one is gold associated with iron oxide breccias along the Iron Range fault that have affinities with iron oxide-copper-gold (IOCG) mineralization (MINFILE 082FSE014 to 28) and the second style is sedimentary exhalative (SEDEX) mineralization analogous to the Sullivan Mine ore body at Kimberley. Most recent exploration has been focused on a SEDEX target near the south end of the Iron Range, in an area of pervasive albite alteration. Results have been encouraging and suggest the presence of a hydrothermal

vent system at Sullivan time, and also indicate that there are significant levels of associated gold.

Anglo Swiss Resources Inc was active again on its **Kenville Gold Mine** (MINFILE 082FSW086) property, focusing on sulphide-bearing quartz veins. Extensions of economic high-grade gold and silver veins have been intersected up to approximately 500 m south of the underground workings.

Silver Mountain Mines Inc drilled the **Ptarmigan** polymetallic property which includes the small past-producing Ptarmigan (MINFILE 082KSE030) and Iron Cap (MINFILE 082KSE036) occurrences. Mineralization occurs in veins or in massive sulphide replacements in carbonates, and generally consists of pyrite, galena, sphalerite and tetrahedrite.

Emgold Mining Corporation focussed primarily on drilling the SMZ (MINFILE 082FSW229) molybdenum zone at the **Stewart** property this year. Mineralization is associated with quartz-stockwork and breccia zones; tungsten-bearing skarns and lead-zinc-silver veins also occur.

Kingsman Resources Inc carried out a helicopter-supported drill program on the **International Basin** polymetallic, quartz vein property (MINFILE 082KNW094) (Photo 23). Gold is associated with pyrite in veins that carry mainly galena and pyrite with minor tetrahedrite, chalcopyrite and sphalerite.

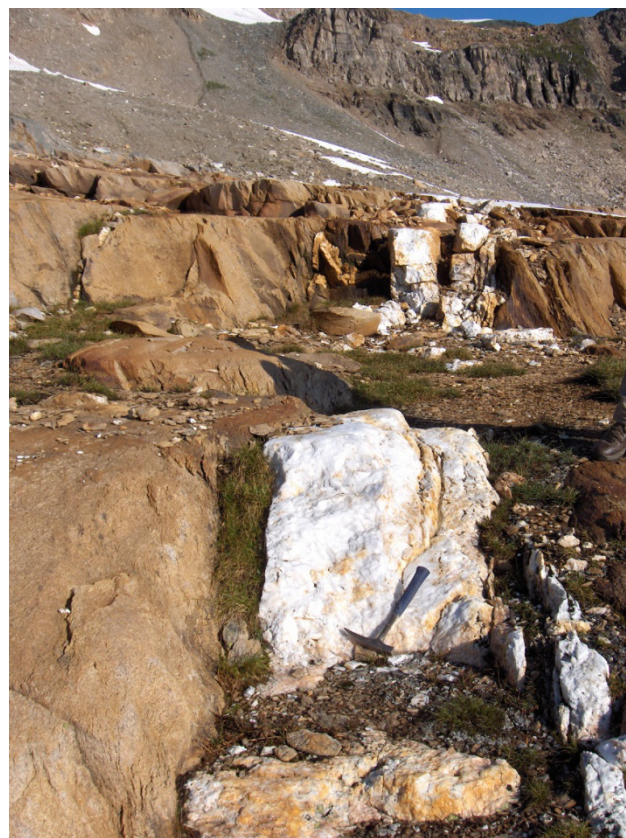


Photo 23. Mineralized quartz vein on the International Basin property (Kingsman Resources Inc).

Mineral Mountain Resources Ltd drilled the Black Warrior and Butte Bonanza properties as part of the **Kootenay Arc** Project a series of gold-bearing polymetallic properties. Grassroots work was completed on other priority gold-silver targets.

Fjordland Exploration Inc carried out a diamond drilling program on the **Red Lobster** property where the targets are SEDEX lead-zinc and gold at a site on trend with the Iron Range Fault. The project is part of the company's Kimberley Gold Trend Project.

At the **Klovance** polymetallic property Swift Resources undertook a trenching and initial drilling program. The Klovance is part of the Castlegar Project which also includes the Skarn and Amazing Grace properties.

Bitterroot Resources Ltd drilled for bulk-mineable, stockwork-hosted gold-copper mineralization at the **GK** gold property (MINFILE 082ESE175, 217, 252 and 256).

Drilling this year targeted a zoned porphyry model with higher grade zones at Valterra Resource Corporation's gold-silver-copper **Star** project which includes both the Star and the Toughnut properties.

PJX Resources Inc carried out trenching and initial diamond drilling on the **Dewdney Trail** gold property where known gold-quartz vein occurrences are being likened to the sediment-hosted vein (SHV) model.

Molycor Gold Corp drilled its **Beaverdell Silver** property where polymetallic veins are characterized by a high silver content. The project includes several small past producers including the Wellington (MINFILE 082ESW072), Duncan (MINFILE 082ESW032) and Tiger (MINFILE 082ESW067).

Open Gold Corp's **Eholt** copper-gold property (MINFILE 082ESE187) contains various styles of mineralization, including skarn, massive sulphide and epithermal style mineralization. This year the Dead Honda skarn and Senator massive sulphide showings were drilled

Goldstar Minerals Inc carried out a diamond drilling program at the **Columbia Belle** lead-zinc-silver-copper property (MINFILE 082M 190) where mineralization consists predominantly of stratiform (possibly SEDEX) massive galena and sphalerite.

West High Yield (WHY) Resources Ltd drilled its **Record Ridge** magnesium project (MINFILE 082FSW214) to upgrade resource estimates and provide geotechnical information for a Preliminary Economic Assessment. The company is also interested in the gold potential of Rossland-style veins within its overall Rossland property.

COAL PROJECTS

Teck Coal Limited continued to assess several sites within its operating areas in the East Kootenay coalfields. In the Fording River Operations area, this included the

Swift Project Phase 1 and 2, Swift RX2 and Henretta Phase 4 areas. The Swift Project is in the North Greenhills Range (MINFILE 082JSE010), and occupies the Greenhills portion of the Fording River property. It is along strike to the north from Teck's Greenhills Operations. At Greenhills Operations rotary and diamond drilling were carried out in the Cougar North Extension area, north of the existing operations and immediately adjacent to the Swift Project area. Within the general Elkview Operations area assessments included the Baldy Ridge (approved BR-2 pit), Natal Ridge (Natal Phase 2) and Adit Ridge areas. A major rotary drilling program was completed at the **Marten-Wheeler** property (MINFILE 082GNE006, 7) (Photo 24). This site represents a possible future expansion area for Coal Mountain Operations.

Crows Nest Pass Coal Mining Ltd carried out a rotary and partial core drilling program on its **Coal Creek** property (Photo 25). Individual seams are downdip extensions of coal seams mined at the underground Coal Creek Colliery, which closed in 1958. The company is targeting three seams in the uppermost part of the Mist Mountain Formation, and is evaluating the potential for underground mining.

Centremount Coal Ltd followed up on its large 2010 diamond and rotary-drilling program on the **Bingay Creek** property (MINFILE 082JSE011) with a small diamond drilling program and rotary drill-sampling program.

South-West Coast Regions-Exploration Highlights

METAL PROJECTS

Western Copper Corporation formed a spin-out company, Northisle Copper and Gold Inc to explore and develop the **Island Copper-Gold** project. This year an IP survey was completed and approximately 20 km of historic drill core was re-logged and sampled for current commodities of interest.



Photo 24. Rotary drilling on the Marten-Wheeler Project (Teck Coal Limited).



Photo 25. Geologist Gordon Shewchuk examining drill core on the Coal Creek Project (Crownsnest Pass Coal Mining Ltd).

Compliance Energy drilled the northern Vancouver Island **NIC** property (MINFILE 092L 266) (Photo 26) where the principal target is porphyry copper-molybdenum mineralization. The company also drilled its **Camp Lake** (MINFILE 092F 571) project which includes a magnetite skarn as well as a recently discovered occurrence of porphyry-style mineralization.

Ridgemont Iron Ore Corporation drilled to augment existing resources at the **Brynnor** Iron Mine (MINFILE 092F 001) (Photo 27). Brynnor is a past producing open pit mine, operated by Noranda from 1962 to 1968, which left an underground resource unexploited.

To the south, Pacific Iron Ore drilled its Port Renfrew property with the focus on the **Bugaboo Creek** (MINFILE 092C 022) magnetite resource. Prior to this drilling, the company announced an inferred resource of 14.3 million tonnes grading 60% recoverable magnetite (20% cut-off), based on work up to and including 2010.

Valentine Mountain (MINFILE 092B 108) is a gold-quartz vein property, which was drilled this year by Mill Bay Ventures Inc. An April 2011 resource estimate



Photo 26. Examining drill core at the NIC property, Northern Vancouver Island. Left to right are Jacques Houle, Michelle Ickringill, and Dan Berkshire.



Photo 27. Massive magnetite at the Brynnor project. Brynnor is a 1960s past-producer of iron ore, one of several magnetite skarns on the coast that are subject to re-examination in light of recent demand for iron ore.

has 54 763 tonnes in the indicated category in two veins, with uncut grade of 16.4 g/t Au, cut grade 9.3 g/t. A further 20 700 tonnes at 22.6 g/t is in inferred categories (uncut, two veins).

Miocene Metals Limited carried out a modest drill program on the **Salal** (MINFILE 092JW 005) property, a porphyry molybdenum prospect which has an exploration history spanning more than 50 years. There was also a late season program at the company's **Roger's Creek** project, consisting of grassroots exploration and a drill program. The project is in its early stages and began with a 2007 discovery of porphyry-style mineralization and alteration along a new logging road. Surface discoveries continue, including this year's report of gold-copper-silver values in a series of samples from the Rogers Creek Valley.

New Carolin Gold Corp's **Ladner Gold Project** has three principal target areas plus a regional component, which included an airborne geophysical survey. One of the targets is the tailings pond of the former **Carolin** mine (MINFILE 092HNW007) where the company released an indicated resource estimate of 404 500 tonnes grading 1.83 g/t Au at a cut-off of 1.0 g/t Au. There is a further inferred 84 500 tonnes at 1.85 g/t Au and a preliminary economic assessment is in preparation. Two other exploration targets are the underground historical resource at the Carolin mine and a historical surface resource at the **McMaster Zone** (MINFILE 092HNW018).

THE BRITISH COLUMBIA GEOLOGICAL SURVEY

The British Columbia Geological Survey (BCGS) continues to play a leading role in the creation of a thriving, safe, and sustainable mining industry in British Columbia. A priority of the survey is to generate new geoscience data and products, including bedrock and surficial geology maps and targeted mineral deposit

studies. This often is completed through cooperative partnerships with the federal government, universities, industry, and other public geoscience agencies.

MapPlace continues to provide clients with efficiencies in research time, data costs and analysis. Improvements continue to be made to the province's digital geological map, BCGeologyMap. Property File continues to grow with more than 31,100 unique industry documents and maps documents available online. The most recent release of the entire Regional Geochemical Survey RGS database of 61,425 samples was published as GeoFile 2011-7. Users can now access more than 31,600 company mineral assessment reports using the online ARIS database. All geoscience publications and digital data are available online at the BCGS website: www.empr.gov.bc.ca/geology.

GEOSCIENCE BC - PUBLIC GEOSCIENCE DELIVERY OUTSIDE OF GOVERNMENT

Geoscience BC (GBC) is an industry-led, not-for-profit, applied geoscience organization established in 2005. GBC works in partnership with industry, academia, government, First Nations, and communities to fund applied geoscience projects with the objective to attract mineral and oil and gas exploration and investment to British Columbia.

GBC's mandate includes the collection, interpretation, and delivery of geoscience data and expertise, to promote investment in resource exploration and development in British Columbia. It has received \$48.7M in grants from the British Columbia government since 2005 to complete minerals and oil and gas related geoscience, including a grant of \$12 million in 2011.

The organization is governed by a volunteer Board of Directors which includes representatives from the mining and oil and gas industries, communities, First Nations and academia. Volunteer Technical Advisory Committees, whose members are largely drawn from industry, recommend funding priorities and projects to the Board.

From April 2005 to September 2011, GBC has made funding commitments of \$36 million to a total of 9 major programs, 93 proposal-driven partnership projects, support for 37 student projects and 48 graduate scholarships. GBC leveraged over \$17 million through partnerships with industry, university, government (federal) and communities, including receiving significant grants from the Mountain Pine Beetle Recovery Accounts of the Northern Development Initiative Trust.

Project highlights from 2011 include:

- GBC launched the QUEST-Northwest Project in April 2011 at the Minerals North Conference in Stewart, which is designed to stimulate exploration interest and investment in the northwest part of the Province, and to enhance

the success of exploration activities in the region. The QUEST-Northwest project currently includes three separate activities: two high resolution airborne magnetic surveys, a regional ground geochemical program and bedrock geological mapping partnership project with the British Columbia Geological Survey. Results will be released in early 2012.

- GBC launched the SEEK (Stimulating Exploration in the East Kootenays) Project at Minerals South in November 2011. The project is a partnership with the East Kootenays Chamber of Mines. The goal of the SEEK Project is to increase economic activity related to mineral exploration by acquiring, compiling and adding value to public and private sector mineral exploration information.
- GBC officially launched Phase 2 of the Horn River Basin Aquifer Project in September 2011, aimed at continuing baseline research on water resources in the Horn River Basin. Phase 2 activities include a three-year surface water study focused on collecting data on the quantity and quality of surface water sources, a pilot airborne electromagnetic survey designed to examine its applicability to mapping near-surface groundwater, and a continuation of the Phase 1 study on deep saline aquifers in the region. Results will be released in early 2012.
- GBC released 16 reports throughout 2011, presenting final results from both mineral and oil and gas geoscience projects.

GBC's annual Summary of Activities 2011 volume, containing 16 technical reports on GBC's ongoing and recently completed projects will be released in early 2012 at the annual Mineral Exploration Roundup. More details on all of GBC's projects and reports are available from their website at www.geosciencebc.com.

FOREIGN INVESTMENT ATTRACTION

Throughout the year, the province's Regional Geologists and the Mineral Development Office in Vancouver are active in providing information to potential investors from a variety of places domestically and abroad. This is often coordinated with industry associations, exploration and mining companies and other government agencies. The Ministry of Jobs, Tourism and Innovation (MJTI) is a key agency in coordinating foreign investment initiatives and this Ministry provides much of the technical information as part of the effort. In 2011, great interest surrounded mineral and coal opportunities in the province leading up to and following a major investment mission to both China and India.

There are opportunities for BC companies that wish to gain exposure to attracting foreign investment opportunities through the Ministries of Energy and Mines;

Forest, Lands, and Natural Operations; and Jobs, Tourism and Innovation. If your company is interested in profiling your projects or investment opportunities in upcoming investment missions, you can contact the BC Mineral Development Office in Vancouver at the address below.

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