

SOUTH-CENTRAL REGION

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HIGHLIGHTS

- Exploration indicators continued their gradual upward trend to the **highest levels in five years**.
- An aquifer-dewatering plan approved at the **Highland Valley Copper** mine, will help the mine operate until mid-2009.
- Approval was granted for a doubling of production at the **Ashcroft** quarry and roofing granule plant.
- A coal washing plant was purchased for the **Basin Coal** project near Princeton, and small-scale mining and processing began.
- Drilling tested the potential for coalbed methane at **Princeton**, and oil and gas rights were subsequently sold for \$2.07 million to three Alberta-based companies.
- Good progress was made at several advanced exploration projects including Afton (Cu-Au), Elk (Au-Ag) and Fir (Ta-Nb-P).

EXPLORATION TRENDS

Exploration activity in the South-Central region continued a gradual upward trend to its highest level in five years. Exploration spending for the year is estimated at \$6.0 million (Figure 1) while drilling activity increased to about 37 000 metres (Figure 2). There were twelve major projects (Figure 3; Table 1), defined as those involving drilling or trenching with more than \$100 000 in spending.

4715 claim units were staked in the region by year-end, down by nearly 24% from the previous year (Figure 4). A total of 5780 claim units forfeited during the year, down about 9.5% from 2001. In terms of location, most of the major projects (Figure 5) were located in the Kamloops-Princeton corridor, with a few others scattered to the north and west. Grassroots projects accounted for about 60 per cent of spending with the remainder split evenly between minesite and advanced projects. As was the case last year, the **Afton** mine project was by far the largest drilling program. Junior companies and individuals funded most of the exploration; major companies were responsible for less than 5% of spending.

The most popular exploration targets were copper-gold-molybdenum porphyries (with about 40% of spending), coal and coalbed methane (20%), precious-metal veins (15%) and industrial minerals (10%). The remainder was split between stratiform base metal,

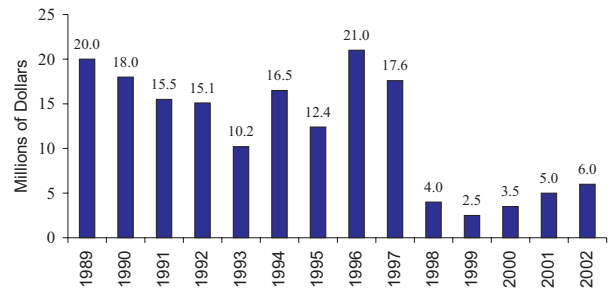


Figure 1. Annual exploration spending, in million of dollars, South-Central Region.

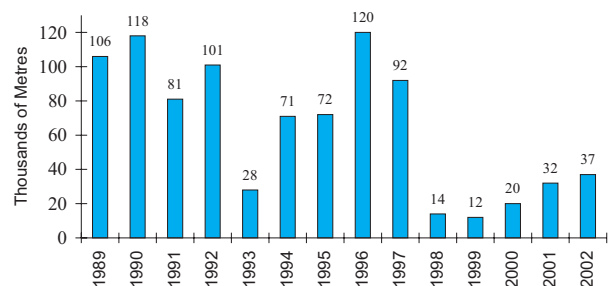


Figure 2. Annual exploration and development drilling, in thousands of metres, South-Central Region.

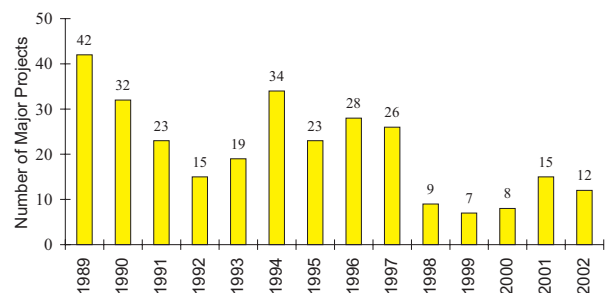


Figure 3. Number of major exploration projects per year, South Central Region. Major projects are defined as those with trenching or drilling and expenditures exceeding \$100 000.

**TABLE 1
MAJOR EXPLORATION PROJECTS, SOUTH-CENTRAL REGION, 2002**

Property	Operator	MINFILE	Mining Division	NTS	Commodities	Target Type	Work done
Afton	DRC Resources Corp.	92INE023	Kamloops	92I/10E	Cu, Au, Pd, Ag	Alkalic Porphyry	27 ddh; approx. 15,000 m
Afton Area	Abacus Mining and Exploration Corp.	92INE028	Kamloops	92I/09W	Cu, Au, Ag, Pd	Alkalic Porphyry	10 ddh, approx 3000 m; geol; geochem
Ann North	GWR Resources Inc.	92P 115	Similkameen	92P/14W	Cu, Au	Alkalic Porphyry	6 ddh
AU-Wen-Mal	Lateegra Resources Corp.	92HNE144	Nicola	92H/16W	Au, Ag, Cu	Vein, skarn	6 ddh, approx.500 m; geochem; geol; grid
Elizabeth	J-Pacific Gold Inc.	92O 012	Lillooet	92O/02E	Au, Ag	Mesothermal Vein	16 ddh, 1683 m; geochem; geol
Elk (Siwash North)	Almaden Minerals Ltd.	92HNE096	Similkameen	92H/16W	Au, Ag	Vein	26 ddh, 5012 m; trail
Fir	Commerce Resources Corp.	83D 035	Similkameen	83D/06E	Ta, Nb, Phosphate	Carbonatite	5 ddh, approx. 900 m; mineral processing studies; geol; geochem; prosp
Loco-Cosmopolitan (Peter Vein)	Bralorne Pioneer Gold Mines Ltd.	92JNE164	Kamloops	92J/15W	Au, Ag	Mesothermal Vein	9 ddh, 679 m; 460 m trenching
Panorama Ridge	Goldcliff Resource Corp.	None	Kamloops	82E.031	Au	Skarn	Trenching; geochem
Sadim	Toby Ventures Inc.	92HNE095, 126	Clinton	92H078	Au, Ag, Cu	Vein, Porphyry	12 ddh, 1385 m; geochem
Similkameen	Connaught Energy Corp.	92HSE227, 216, 212, 215, 224	Similkameen	92H/07E	Coal, Coalbed Methane	Sedimentary	3 rdh, 2100 m
Tulameen	Bright Star Ventures Ltd./Cusac Gold Mines Ltd.	92HSE120, 142	Similkameen	92H/07W	Cu, Pt, Pd, Au	Magmatic?	6 ddh, 1024.8 m; road; grid; geophys; geochem; geol

magmatic copper-platinum group metals and gold-copper skarn prospects.

MINES AND QUARRIES

The region's larger operating mines and quarries are shown on Figure 5. The larger mines operate all year round, whereas many of the smaller quarries operate on an intermittent or seasonal basis only.

The large, low-grade **Highland Valley Copper (HVC)** mine (Photo 1) is located southwest of Kamloops and employs about 950 people. The partnership of Teck Cominco Ltd., BHP Billiton Ltd. and Highmont Mining Company own the mine. Production in 2002 was 181 300 tonnes of copper plus by-product molybdenum, gold and silver, down slightly from 2001. Mill throughput for the year was 49 900 000 tonnes, or 136 712 tonnes per day on average, with a head grade of 0.41% Cu and recovery of 88.78% Cu (Teck Cominco Ltd., Fourth Quarter Report, 2002).

During 2002, the Government of British Columbia approved an aquifer dewatering plan that will reduce groundwater inflow into the Valley pit and help the mine continue operating until its scheduled closure in mid-2009. The company is still evaluating a proposal to extend the mine-life by 30 months by deepening the Valley pit. Regionally, the

company conducted an IP survey on the **Pimainus** property 8 kilometres southwest of the mine.

Several other moderate to large-sized metal mines and developed prospects remain on care and maintenance status, awaiting higher metal prices or discovery of additional ore. Imperial Metals Corp. owns the **Similco** porphyry copper-gold mine and mill complex at Princeton, and the **Invermay** project near Hope. Similco has a resource of 142 million tonnes grading 0.397% Cu in the area of Pits 2 and 3 on the Copper Mountain side of the property. During 2002,

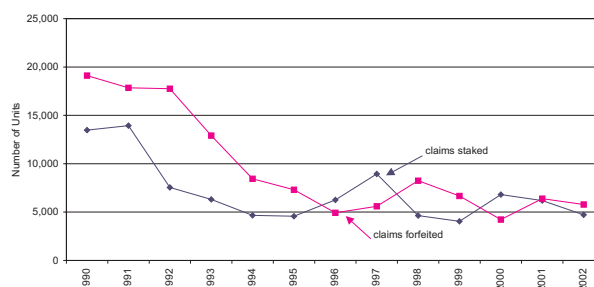


Figure 4. Claim units staked and forfeited, South-Central Region



Figure 5. Mines, quarries and major exploration projects, South-Central Region, 2002.

Imperial entered into agreements to sell the Similco mine for \$450 000 to an unnamed buyer. The agreement does not include Similco's real estate holdings or its major mining equipment.

The dormant **Blackdome** gold-silver mine of J-Pacific Gold Inc. and Jipangu Inc. also remains on care and maintenance. This underground mine, developed on narrow, high-grade epithermal quartz veins, operated in the 1980's and again briefly from October 1998 to May 1999. The 200 tonne-per-day mill is intact, awaiting a higher gold price and new reserves. An inferred mineral resource stands at 124 120 tonnes grading 12.8 g/t Au and 33.7 g/t Ag. In 2002 J-Pacific drilled 51 holes to test the grade of tailings, and staked a large block of claims south of the mine.

Orphan Boy Resources Inc. now owns the **Goldstream** property north of Revelstoke, including the dormant copper-zinc mine and mill. No exploration work was done in 2002 but the company is examining the feasibility of using the Goldstream mill to process copper-gold ore from the recently purchased **Willa** property located 230 kilometres to the south near the town of Silverton. Orphan Boy also has several other good prospects in the Big Bend area, including the stratiform **Rift** Zn-Pb-Cu deposit, and the recently discovered **Spire** Cu-Zn massive sulphide occurrence that is located seven kilometres southwest of the Goldstream mill.

In 2002, IG Machine and Fiber Ltd., a subsidiary of IKO Industries Ltd. enjoyed a very successful first full year



Photo 1. Valley pit, Highland Valley Copper mine. Photo courtesy of Teck Cominco Ltd.



Photo 2. Ashcroft roofing granule plant of IG Machine and Fibers Ltd.

of production from their **Ashcroft** basalt quarry and roofing granule plant (Photo 2). Six distinct colours of granules are produced at the Ashcroft plant for shipment by rail and truck to IKO shingle plants in Calgary, Alberta; Sumas, Washington; and elsewhere in North America.

During the year, the plant operated at about 50 per cent capacity, but was granted government approval to double the quarry production to 500 000 tonnes per year, the rated capacity of the plant. On average about 60% of the basalt fed into the plant becomes roofing granules; the company will try to market the remaining undersized material for other uses, such as road grit. The operation employed about 55 people during the year, not including construction personnel, but this should rise to about 75 when full production is attained. Further along the Thompson River to the northeast, the **McAbee** and **Walhachin** quarries supply railroad ballast for the Canadian National and Canadian Pacific railways respectively. The railroads also have several other quarries in the region.

The Kamloops cement plant and **Harper Ranch** limestone quarry of Lafarge Canada Inc., with an annual capacity of about 220 000 tonnes of cement, operated at about 55 per cent capacity on an intermittent basis during the year (Jeff Colbourne, Personal Communication, January 20, 2003). Lafarge also draws materials from the **Falkland** and **Buse Lake** quarries, which produce gypsum and alumina-silica rock respectively. The company is looking for a new, local source of alumina, which could reduce their dependence on more expensive shale from Sumas Mountain quarry near Abbotsford.

At **Pavilion** north of Cache Creek, Graymont Western Canada Inc. (formerly Continental Lime Ltd.) operates a limestone quarry and lime kiln. The operation produces about 190 000 tonnes of lime per year, mainly for use in pulp mills.

Craigmont Holdings Ltd. own the **Craigmont magnetite tailings** operation, located near Merritt. Tailings from the old Craigmont copper mine are processed to recover about 70 000 tonnes of magnetite annually. The plant is operated 6 to 8 months per year but product is trucked from the property for 12 months of the year. The magnetite is used in coal washing plants in British Columbia, Alberta and



Photo 3. Basin Coal mine near Coalmont. The stripped but unmined coal seam is in the foreground with screened, raw coal on the pile near the conveyor. Photo courtesy of Eric Beresford, Compliance Energy Corp.

Washington State. There are enough reserves for about six more years of operations and the company is currently evaluating other magnetite sources, both on and off the property, as well as new markets (Eugene Mehr, Personal Communication, January 2003). On **Placer Lease 392136** on the Tulameen River, joint venture partners Firstline Recovery Systems Inc. and Golden Spike Exploration Ltd. produced magnetite (-20 mesh size) for sandblasting purposes. The magnetite content of Tulameen River gravels is quite high and recovery is relatively simple using standard placer mining methods and magnetic separators.

Near Coalmont, partners Compliance Energy Corp. (65%) and Nissho Iwai Canada Ltd. (35%) mined about 10 000 tonnes of thermal coal at the **Basin Coal** project (Photo 3), formerly known as the Tulameen project. The coal, which is high volatile bituminous B and C in rank, is being trucked to a newly constructed wash plant on the Similco site near Princeton, about 45 kilometres away. Clean coal is being marketed to industrial users in the Lower Mainland and southern British Columbia, but the partners are also evaluating export sales opportunities. The project, with measured and indicated resources of 19 million tonnes, has a permit for up to 250 000 tonnes of annual coal production.

At its plant in Kamloops, Western Industrial Clay Products Ltd. manufactures cat litter, barn deodorizer, industrial absorbents, garden mineral supplements and potting soils. The products are mainly prepared from diatomaceous earth mined from the **Red Lake** quarry (Photo 4) northwest of Kamloops, and bentonite mined from the **Bud** quarry at Princeton. Garden supplies are developed from “leonardite” mined at Red Lake, a low-grade coaly material rich in humic acid. In 2002, Western Industrial dug test pits on the **Kitty** claims, adjacent to the Red Lake quarry, in preparation for future mining. North of Cache Creek, Willy Kovacevic sampled bentonite/pozzolan on his **WK Group** property.

The **Z1** (Ranchlands) zeolite quarry near Cache Creek is small-scale, and operates intermittently. The quarry is owned by the Mountain Minerals Division of Highwood Resources Ltd. The ore is shipped to Highwood’s plant in



Photo 4. Flat-lying diatomaceous earth deposit, Red Lake quarry, Western Industrial Clay Products Ltd.

Lethbridge, Alberta for processing. The zeolite is used mainly for agricultural purposes.

The nearby **Z2** quarry and a processing plant in Ashcroft are owned by Industrial Mineral Processors of Calgary. The plant produces barn deodorizers, feed binders, cat litter and industrial absorbents. At Princeton, Zeo-Tech Enviro Corp. mined a 4000 tonne bulk sample of zeolite at the **Zeo** (Bromley Vale) quarry. Zeo-Tech and C2C Zeolite Corp. formed a partnership to market the Princeton zeolite as “Zeo-Fume”, a cement additive with applications in shotcrete, downhole cementing and other construction purposes. At year-end the partners were arranging to ship 2500 tonnes to the Ashcroft processing plant. In addition, Zeo-Tech continues to develop markets in the aquaculture, horticulture and agriculture fields. Also



Photo 5. Ring with fire opal from the Klinker opal mine, west of Vernon. Photo courtesy of Okanagan Opal Corp.

near Princeton, Canmark International Resources Inc. continues to test markets for zeolite from its **Sun** quarry.

Okanagan Opal Inc. produces attractive fire opal gemstones and jewelry (Photo 5) from the **Klinker** property located west of Vernon. Opal occurs as fracture and vesicle-fillings in andesitic to basaltic laharc breccia of the basal Kamloops Group (Eocene). In 2002 the company conducted small-scale mining and extracted rough opal for processing to meet expanding sales. The company’s goal is to introduce the product to the BC and Alberta tourist-retail market and then to other North American jewelry markets as “Okanagan Opal” (Bob Yorke-Hardy, Electronic Communication, January 21, 2003) .

Production of decorative rock and dimension stone continues to grow in the southern interior, due in part to growing markets for natural stone and in part to the success of the **Kettle Valley Stone Company** of Kelowna. Kettle Valley produces flagstone, ashlar, facing stone and landscape rock, which are particularly popular in the Whistler, British Columbia and western United States markets. Dacite ash, granite gneiss and basalt are quarried from the **Nipple Mountain, Canyon** and **Gemini** quarries respectively, all located east of Kelowna. Kettle Valley Stone now employs about 25 people.

South of Revelstoke, D.G. Olsson produces small amounts of micaceous quartzite flagstone and facing stone by hand at the **Begbie** quarry. Other small, hand-operated flagstone quarries started up in 2002 near Gosnell in the North Thompson River valley. Grey-green and pinkish white micaceous quartzite was produced from the **M.S. 1** and **North Thompson Pearl** claims (Photo 6), owned by



Photo 6. Pallets stacked with micaceous quartzite flagstone from the North Thompson Pearl claim. Photo courtesy of W.B. McEwen.

M.M. Hrytzak and W.B. McEwen. In the same area L.B. Butcher began work on the **BK Mines** property.

Landscaping rock is produced at numerous sites including the **Wing** pit near Princeton (red shale), the **Bailey**, **Leger 2** and **Josh 1** pits south of Vernon (granite), the **Broken Rock Ranch** quarry near Westwold (red lava), the **Pacific Silica** quarry at Oliver (white quartz and pegmatite), and the **Soapy Shale pit** near Armstrong (rusty gneiss). Other prospects being evaluated for small-scale quarrying including the **Barbecue-Landscape** claims near Clinton (red, green and black lava), and the **View** and **Wol** claims near Westwold (lava), to mention just a few.

Near year-end, the inactive **Frenier** perlite quarry was purchased by BBF Resources Inc. who intend to haul a few hundred tonnes of stockpiled material to Ashcroft for process and market tests. The quarry previously operated from 1983 to 1987 and is located south of the Gang Ranch on the west side of the Fraser River. Perlite prospects in British Columbia are few. Inadequate transportation infrastructure hindered marketing of material produced in the past.

DEVELOPMENT PROJECTS

Again the **Afton Mine** porphyry copper-gold-silver-palladium project of DRC Resources Corporation was the largest project in the region in 2002. The company continued definition and exploration drilling beneath and adjacent to the Afton pit, which a subsidiary of Teck Corp. operated between 1977 and 1987. Later production came from the Pothook, Crescent and Ajax pits before Teck closed the operation in 1997.

Located ten kilometres west of Kamloops, the original Afton pit exploited mainly secondary (supergene) mineralization comprised of native copper and chalcocite with

lesser bornite and chalcopyrite. Drilling beneath the pit by DRC encountered similar supergene mineralization in what is now called the Northeast Zone. To the southwest, in the Main Zone, however, drilling encountered more typical hypogene mineralization with chalcopyrite being the main sulphide mineral.

DRC has drilled more than 38 000 metres since 2000, including about 15 000 metres in 28 holes in 2002. In 2003 the company will be updating the mineral resource calculation to take into account recent holes, which show extensions of the Main Zone to the southwest, and widening of the Northeast Zone (Figure 6). The mineralization is still open to the southwest and to depth beyond the known strike length of 1000 m and depth of 775 metres (DRC News Releases, 2002). The previous resource calculation, done in late 2001, gives an indicated and inferred resource for the Main Zone of 38.7 million tonnes grading 1.55% Cu, 1.14 g/t Au, 0.125 g/t Pd and 3.42 g/t Ag, plus an additional 1.1 million tonnes of indicated resource at a lower grade for the Northeast Zone. Given current prices, copper accounts for about 60% of the gross metal value with the remainder in precious metals, mainly gold. Given the depth of the mineralization, DRC is evaluating bulk underground mining methods for future production.

Several other projects in the region are on hold pending higher commodity prices, financing and/or permits. The **Bralorne** gold project, a joint venture of Bralorne Pioneer Gold Mines Ltd. (50%), Avino Silver and Gold Mines Ltd. (25%) and Coral Gold Corporation (25%), received a Mine Development Certificate in 1995 but has yet to go into production. A 150 to 200 tonne-per-day mill is on site and reported to be substantially complete. In late 2002 the partners conducted trenching and drilled nine holes on the extension of the **Peter** vein (Loco claims); they reported

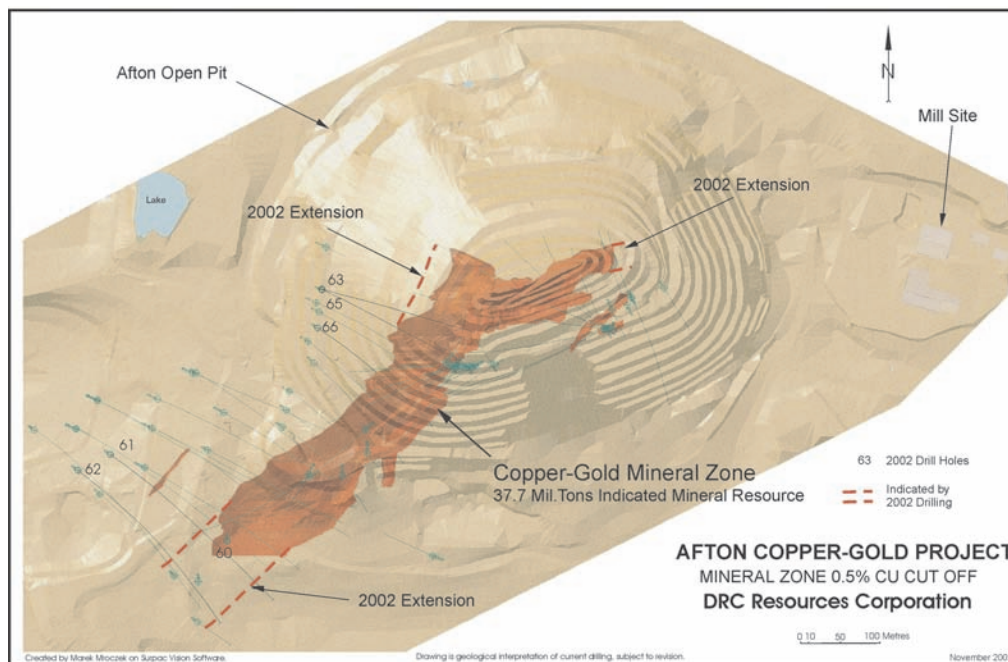


Figure 6. Perspective view (looking north) of the Afton project, courtesy of DRC Resources Corp.

several good intersections, the best being 148.4 g/t Au across 0.46 m.

The largest potential development in the region is the **Prosperity** porphyry gold-copper deposit of Taseko Mines Ltd., located southwest of Williams Lake. The most recent information from the company lists estimated measured and indicated resources at 491 million tonnes grading 0.22% Cu and 0.43 g/t Au, based on a 70 000 tonnes-per-day open pit design.

No work was done at the **Getty North** porphyry copper project of Getty Copper Corporation in 2002, however, assuming financing can be arranged, the company plans drilling and trenching programs, and to establish a pilot SX-EW mill in 2003. Located on the north slope of the Highland Valley, the Getty North deposit is estimated to contain a resource of 72.1 million tonnes grading 0.31% Cu, including 10.0 million tonnes of oxide grading 0.40% Cu.

EXPLORATION PROJECTS

PORPHYRY AND RELATED TARGETS

Abacus Mining and Exploration Corp. optioned seven **Afton Area** properties in the Iron Mask batholith from Teck Cominco Ltd. The properties include the Rainbow, Crescent and DM-Audra alkalic porphyry Cu-Au occurrences, along with the recently closed Ajax West and Ajax East pits. In 2002, Abacus compiled and reviewed the voluminous dataset for the properties, and drilled 10 holes on the **Rainbow** property. Re-sampling of Teck's hole 95-22 returned 57 metres grading 1.06% Cu, 0.27 g/t Au and 1.04 g/t Pd. Abacus' 2002 hole R-02-006 cut 299.2 m grading 0.25 g/t Au, 0.81% Cu and 0.05 g/t Pd, and hole R-02-008 intersected 31.1 m grading 0.045 g/t Au, 1.12% Cu, and 0.94 g/t Pd. The company also reported good precious metal assays from surface samples on several nearby prospects.

G W R Resources Inc. drilled several holes in 2002 on the **Ann** property near Lac La Hache. The holes tested alkalic porphyry-style copper-gold mineralization; however, results have not yet been released.

VEIN TARGETS

The rising price of gold helped rekindle interest in precious-metal bearing vein targets in the region. The high-grade **Elk (Siwash North)** property east of Merritt was the subject of a large exploratory drill program in 2002. Almaden Minerals Ltd., in joint venture with Wheaton River Minerals Ltd., drilled over 5000 m in 26 holes to test the Deep B shoot on the main Siwash North vein, the WD vein, the Gold Creek West vein and the Bullion Creek structure. Mining of the Siwash North vein between 1992 and 1995 produced more than 1440 kilograms (51 000 ounces) of gold, mainly from an open-pit (Photo 7). The Almaden website shows the current Elk resource as 141 962 ounces of gold, however, this figure is currently being updated based on the recent drilling.

Almaden also conducted trenching and pitting on the early-stage **Prospect Valley** epithermal gold-silver pros-



Photo 7. The Siwash North pit of Almaden Minerals Ltd. People are standing on the footwall of the mined-out vein.

pect, located 50 kilometres west of Merritt. Grab samples of float collected in 2001 assayed up to 43.34 g/t Au with anomalous Ag, As, Sb and Mo in host rocks thought to be volcanics of the Cretaceous Spences Bridge Group.

Northwest of Lillooet, J-Pacific Gold Corp drilled several mesothermal vein targets on the **Elizabeth** property (Photo 8). The property is known to have at least six narrow, high-grade veins on which Bralorne Gold Mines Ltd., Bethlehem Resources and Blackdome Mining Corp. drove adits in the 1940s, 1950s and 1990 respectively. Underground sampling (with metallic-screen fire assaying) by J-Pacific confirmed the erratic and locally very high-grade "nuggety" gold distribution in the West vein (Photo 9). For example, a 0.4 m chip channel sample returned 144 g/t Au. The best 2002 hole returned 13.5 g/t Au over 0.55 metres from the West vein (Photo 9). Soil sampling and geological work was also done, and a new area of porphyry-hosted stockwork mineralization discovered. There is potential for near-term, high-grade gold production from this property because it is only 45 kilometres from J-Pacific's **Blackdome** mill, and a road connection may be feasible.

On the **Sadim** property north of Princeton, Toby Ventures Inc. drilled 12 holes in search of vein Au and



Photo 8. Drill at upper portal, Elizabeth property. Photo courtesy of Warner Gruenwald, consultant to J-Pacific Gold Corp.

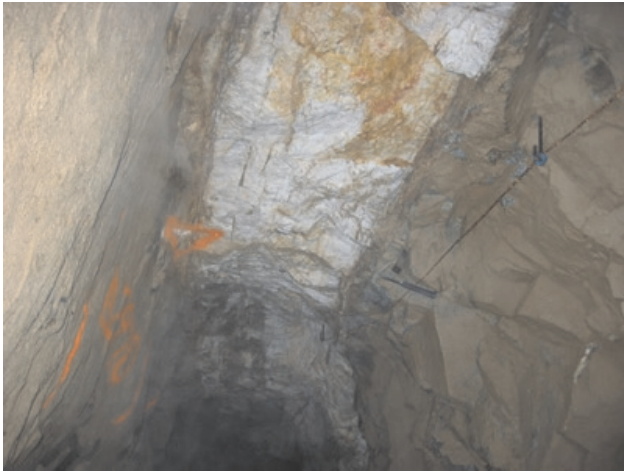


Photo 9. West vein (approximately 60 cm wide), Elizabeth property. Photo courtesy of Warner Gruenwald, consultant to J-Pacific Gold Corp.

stockwork or porphyry Cu-Au mineralization. Nine holes tested the Sadim vein swarm and the best intersection was 15.2 cm grading 48 g/t Au. On the KR showing, the best result was 0.177% Cu and 0.074 g/t Au over a core length of 19.8 m.

Under the direction of geologist Murray Morrison, Doublestar Resources Ltd. drill-tested several areas on the **Gold-Rainbow** property near Venner Meadows, southeast of Okanagan Falls. Au-Ag mineralization occurs in epithermal quartz-calcite veins and silica-clay-pyrite-hematite alteration zones within Tertiary volcanics above an inferred detachment fault. The style of mineralization is somewhat analogous to the former producing **Dusty Mac** gold-silver mine to the northwest, which was optioned during the year by Ecstall Mining Corp.

With the rising price of gold, several other companies optioned high-grade gold-silver vein prospects, and several of these should receive significant work in the near future. In the Princeton-Keromeos area Cassidy Gold Corp. optioned the **Hit** and **Kero**, and Bright Star Ventures Ltd. optioned the **Golden Lode** property. West of Lillooet, Quartz Mountain Resources Ltd. optioned the **Ample-Goldmax** mesothermal gold prospect, and Avino Silver and Gold Mines Ltd. optioned the **Aumax** property. To the northwest near Gold Bridge, Viceroy Resource Corp. staked the **Big Sheep** and **Dash Creek** gold properties; subsequently Royal County Minerals Corp. optioned the properties. Over near Cherryville, Cantech Ventures Inc. optioned the **Mac (Top)** gold prospect. At year end, a deal was rumoured to be close for a company to option the past producing, high-grade **Windpass** gold mine north of Barriere.

SKARN TARGETS

Goldcliff Resources Corporation worked on its **Panorama Ridge** gold skarn property, located a few kilometres east of the past producing Nickel Plate gold mine. Soil and rock chip sampling and trenching were done in several areas, including the Panorama, Epic and Castle targets. At the

York prospect (Panorama target) re-sampling of an old Placer Development trench returned 0.59 g/t Au across 86 metres, including 22 m grading 1.258 g/t Au (Photo 10), while at the Tower prospect (Castle target), channel sampling of pyrrhotite-bearing garnet-pyroxene skarn returned 0.418 g/t Au across 27.35 m, including 2 m at 1.735 g/t Au (Goldcliff Resources Corp. News Release, January 17, 2003). Staking was done in the Winters Creek area to cover a new area of anomalous stream sediment samples.

MAGMATIC TARGETS

Bright Star Ventures Ltd. drilled six holes on the **DP** target near Olivine Mountain on their large claim block in the Tulameen ultramafic complex. The DP zone was first identified as a strong magnetic anomaly from a 2001 airborne geophysical survey. Follow-up soil and rock geochemistry identified two significant NNW-trending soil anomalies (with up to 280 ppb Pt, 195 ppb Pd and 4500 ppm Cu) that extend over a combined strike length of 2 kilometres. Mineralization is described as “*disseminated and fracture-controlled pyrite-chalcopyrite mineralization with malachite staining... within magnetite-rich hornblende clinopyroxenite*” (Bright Star Ventures Ltd. News Release, September 20, 2002).

Within a 300 by 200 metre Pd-Pt-Cu-Au lithochemical anomaly, a one metre bedrock chip assayed 2.09 g/t PGE and 0.17% Cu. The zones appear to be



Photo 10. Goldcliff Resources Corp. president Len Saleken and consultant Grant Crooker examining gold skarn mineralization in an old Placer Development trench, York prospect, Panorama Ridge property.

broadly parallel to the trend of the mapped lithological units in the complex, however it is not yet clear if mineralization is of magmatic or epigenetic origin. The drill holes tested the easternmost anomaly, and although long intersections of anomalous copper were intersected, the best result were just 0.2% Cu and 0.2 g/t PGE across 8.6 m, and 0.66 g/t PGE across 2.0 m. Nevertheless, the DP mineralization represents a new style of copper-PGE target for the Tulameen complex. The company intends more drilling in 2003 to follow up the western anomaly, which has better surface results but more challenging terrain. In addition, the company has several other targets to evaluate with trenching and drilling.

Five holes were drilled at the **Fir** property north of Blue River in order to define additional reserves of carbonatite-hosted tantalum-niobium-phosphate mineralization (Photo 11). Grades were similar to those in previous drilling. The carbonatite layers are flat lying and average about 40 metres in thickness. Owners Commerce Resource Corp. also conducted metallurgical testwork to determine the best methods of recovery. Resources stated prior to the 2002 drilling totaled 5.2 million tonnes grading 194 g/t Ta₂O₅, 897 g/t Nb₂O₅ and 3.5% P₂O₅. Tantalum and niobium occur in the minerals ferrocolumbite and pyrochlore and phosphate occurs as apatite. In addition, a new prospect was discovered called **Upper Fir**, and it appears to have a higher niobium content than the main Fir deposit. Samples returned up to 6738 ppm Nb₂O₅. Commerce also owns the **Verity** deposit, which lies to the north, and has a resource of 3.06 million tonnes grading 196 g/t Ta₂O₅, 646 g/t Nb₂O₅ and 3.2% P₂O₅. No work was done there in 2002.

Targeting coalbed methane, Connaught Energy Corp. of Calgary drilled three holes, totaling 2100 m, in the **Similkameen** (Princeton) coalfield in 2002. The basin includes Tertiary coal beds that were mined by open-pit and underground methods in the first half of the last century. Connaught now holds and has applied for coal licenses to cover more than 21 000 hectares in the Princeton basin. In November 2002, partners Birchill Resources Ltd. (30%), Connaught Energy (Alberta) Corp. (10%) and Petrobank Energy and Resources Ltd. (60%) acquired Petroleum and Natural Gas exploration and development rights from the Province for three parcels in the Princeton area. A total bonus bid of \$2.07 million was accepted for the parcels. Petrobank indicated that it plans to shoot up to 100 kilometres of 2D seismic survey lines, and to execute a four-well coalbed methane pilot project (Petrobank Energy and Resources Ltd., 2002 Third Quarter Report).

There is also interest in coalbed methane in other Tertiary basins in the region. The Province is currently re-



Photo 11. Tantalum, niobium and phosphate-bearing carbonatite in drill core from Commerce Resources' Fir property near Blue River (Hole 2002-7, 67m).

searching both the **Hat Creek** and **Merritt** areas to determine Crown ownership of Petroleum and Natural Gas rights. Disposition of available Crown rights in these basins may occur in 2003.

In the **Merritt** basin, Forum Development Corp. holds 1501 hectares of coal licenses and has an option to gain a 50 per cent interest from Imperial Metals Corp. in a 506-hectare freehold property that contains the Coal Gully Hill, Middlesboro and Coldwater Hill collieries. The properties are reported to contain substantial in-situ resources of high volatile bituminous coal. Seven to eight seams with about 24 metres total thickness occur within a 260 metres section of the Eocene Coldwater Formation. Forum is evaluating the potential for both coal and coalbed methane on these properties, and has submitted a request to the Province to post Petroleum and Natural Gas rights (Forum Development Corp. News Release, August 2, 2002).

At **Hat Creek**, where coal rights are owned by BC Hydro, a Crown oil and gas reserve is currently in place. In 2002, Hydro completed an update of its 1981 feasibility study for a large mine and thermal generating station at Hat Creek, concluding that it would not proceed with development at this time. BC Hydro has stated that it is considering relinquishing its coal rights and other assets in the area.

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