NORTHWEST REGION

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SUMMARY AND OUTLOOK

Mineral exploration activity increased again in 2003 and higher metal prices benefited mines in the region. Exploration spending in the Northwest doubled from 2002 to $21.1 million (see Figure 1). Exploration drilling, a major indicator of work on advanced properties, increased substantially from 57 252 metres in 2002 to 98 872 metres in 2003 (see Figure 2). The growth in the number of mineral claims in the region vividly demonstrates the improved health of the mining industry. Activity jumped in all four mining divisions: Atlin, Omineca, Skeena and Liard. There were 14 931 units staked and only 2743 lapsed or forfeited, the fifth successive year where the number of lapsed claims decreased (Figure 3). The net increase of 12 188 claim units in 2003 reflects high activity at the grassroots level of the industry.

Despite an increased mining rate, production of gold and silver from the Eskay Creek mine diminished slightly because lower grade ore was mined. Current reserves of high grade, direct-shipping ore at Eskay Creek will be exhausted in 2005, although known reserves of milling ore will last until 2008. However, the mine has a track record of adding reserves and Barrick Gold Corporation reported that recent exploration of the 22 zone at Eskay Creek is "encouraging". The output of molybdenum from Endako is similar to that in 2002 but production of copper and molybdenum from the Huckleberry mine declined slightly due to decreased mill throughput. Huckleberry is expected to maintain operations until 2007; under favourable economic conditions, Endako could continue until 2010. Mine data, including production and reserves, is shown in Table 1. All mines benefited from the strong resurgence in metal prices that more than offset decreased metal output. The locations of mines and exploration projects are shown in Figure 4.

Renewed exploration and pre-development work on advanced prospects highlight exploration in 2003. NovaGold Inc. acquired the Galore Creek property and bcMetals Corporation Ltd. optioned the Red Chris prospect. Both contain large copper-gold porphyry deposits that are near the development stage. Late in the season, immediately upon completion of acquisition agreements, the new owners of both Galore Creek and Red Chris began work necessary to reach development

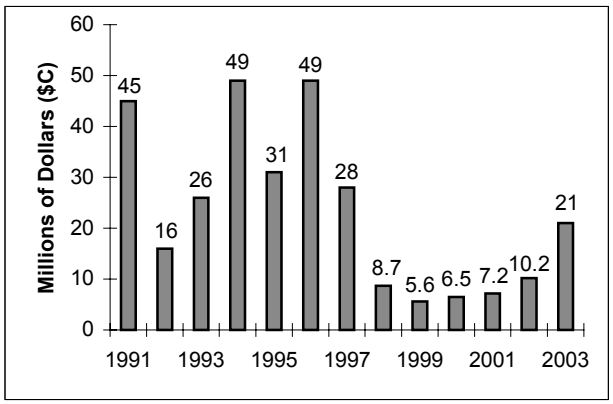

Figure 1. Exploration Expenditures in Northwest British Columbia.

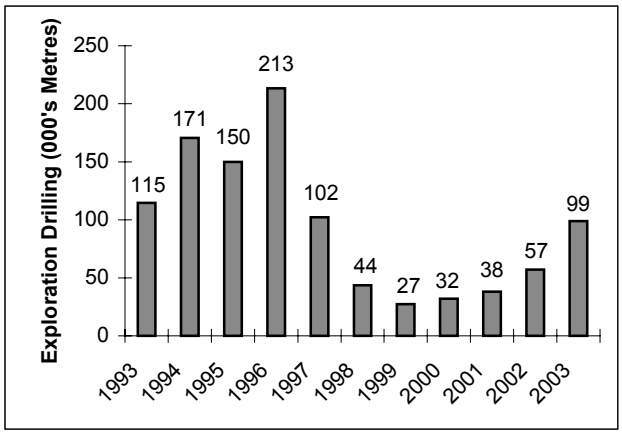

Figure 2. Exploration Drilling in Northwest British Columbia.

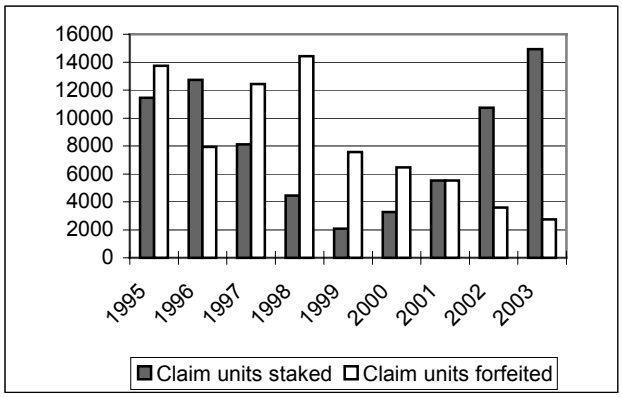

Figure 3. Claim Activity Summary in Northwest British Columbia

decisions. In both cases, mine development would require significant new infrastructure. bcMetals announced updated Measured plus Indicated resources at Red Chris totaling 60.1 million tonnes grading 0.70% Cu and 0.59 g/t Au at a 0.5% Cu cut-off. Updated figures are not yet available for Galore Creek. Armed with a reconfirmed Mine Development Certificate, Redcorp Ventures Ltd. undertook a sizeable drilling campaign at the Tulsequah Chief volcanogenic massive sulphide deposit. The program augmented copper-zinc-silver-gold resources, and discovered a new ore lens. Both Red Chris and Morrison, a copper-gold porphyry deposit owned by Pacific Booker Minerals Inc., entered Government's Environmental Assessment process to attain Mine Development Certificates. A production rate of 25 000 tonnes per day is proposed for Red Chris and a 20 000 to 25 000 tonne per day rate for Morrison.

Table 2 lists significant exploration projects in the region. Spending on each of the largest programs, where expenditure exceeded $1 million, were Red Chris, Galore Creek, Eskay Creek, SIB/Eskay district, Tulsequah Chief, Turnagain and Foremore. Promising discoveries or significant exploration results were announced from several projects. In the far northwest, drilling by Cangold Limited and Rimfire Minerals Corporation on the Thorn property encountered a wide zone of epithermal silver-gold mineralization and Imperial Metals Corporation intersected significant copper in its holes on the Nak quasi-volcanogenic prospect. In the Iskut district, prospecting by Roca Mines Inc. discovered volcanogenic massive sulphide mineralization on the Foremore property but only one drill hole was able to extend the zone. On the Kalum property near Terrace, prospecting and geological work by Eagle Plains Resources Ltd. located new gold veins and outlined targets in known zones to be tested by drilling in 2004. Canadian Metals Exploration Ltd. continued to intersect wide zones of low-grade nickel in the Turnagain ultramafic complex but the economic potential has not been determined. On the Big Bulk porphyry prospect, Canadian Empire Exploration Corp. intersected interesting widths of copper-gold mineralization. Looking ahead to 2004, the largest drilling program in the region will be at Galore Creek. Drilling is also anticipated at a number of other copper-gold porphyry prospects including GJ (Kinaskan), Kerr and Copper Creek (Kaketsa).

METAL MINES

At the **Eskay Creek** underground gold-silver mine, Barrick Gold Corporation increased the mining rate to 690 tonnes per day (tpd). Gold output in 2003 was 10 951 kilograms (352 069 ounces) and silver was 527 775 kilograms (Table 1). These volcanogenic massive sulphide deposits, which have exceptional gold and silver content and an epithermal geochemical signature, occur at the top of the early Jurassic Hazelton Group. The Eskay Creek deposits formed during the last stages of volcanic activity in the Hazelton volcanic island arc and during the early stages of formation of the mid - Jurassic Bowser rift

TABLE 1. MINE PRODUCTION AND RESERVES

Mine	Operator	Employment	Production (2003)	Reserves (on Jan. 1, 2003 unless stated	Reference for Reserves
Endako	Thompson Creek Mining, Ltd. & Nissho Iwai Moly Resources Inc.	229	5 000 000 kg Mo (approx.)	Endako Pit, 38 200 000 tonnes at 0.072% Mo; Denak Pit, 22 700 000 tonnes at 0.069% Mo; Stockpile, 26 300 000 tonnes at 0.048% Mo (on Oct 1, 2003)	Alan Morrish, Vice President and General Manager, written comm., Dec. 5, 2003
Eskay Creek	Barrick Gold Corporation	316	10 951 kg (352 069 oz) Au, 527 775 kg Ag	Shipping ore, 248 264 tonnes at 56.4 g/t Au, 3015 g/t Ag; Milling ore, 592 631 tonnes at 25.77 g/t Au, 1013 g/t Ag	E.J. Mahoney, Chief Geologist, written comm., Feb. 16, 2004
Huckleberry	Imperial Metals Corporation	225	32 780 828 kg Cu, 323 499 kg Mo, 8017 kg Ag, 289 kg Au	25 018 000 tonnes at 0.507% Cu, 0.014% Mo, 0.059 g/t Au, 2.97 g/t Ag	J.C. Bottaro, Chief Mine Engineer, written comm., Feb. 24, 2004
Fireside	Fireside Minerals Ltd.	20 (seasonal)	10 000 tonnes barite	Not available	

Table Notes: Employment includes all employees and contractors as of December, 2003.

basin. Rift tectonics controlled formation and accumulation of the various Eskay Creek massive sulphide bodies along the folded western margin of the Bowser Lake Group, a series of clastic sedimentary rocks that filled the Bowser Basin. Approximately half of daily mine production in 2003, some 360 tpd, came from the stratiform 21B orebody; it is direct-shipping smelter ore. Direct-shipping ore amounted to 134 850 tonnes and graded 67.5 g/t Au and 3141 g/t Ag. It was trucked either to Stewart for ship loading to Japan, or to Kitwanga for rail shipment to Quebec. Direct-shipping ore is custom-blended to suit contract terms at each smelter; the cut-off grade is 30 g/t gold equivalent. A further 25% of production came from the NEX zone, the northern extension of 21B, and the balance came from the Pumphouse, Hanging Wall and footwall zones. Most ore from these areas is treated in a flotation mill at a rate of 330 tpd. Mill ore amounted to 115 052 tonnes at an average grade of 24.3 g/t Au and 1213 g/t Ag. Gold production cost for 2003, net of silver credits, is estimated at $US 67 per ounce.

The 21B deposit consists of clastic beds in the Contact Mudstone containing sphalerite, tetrahedrite – freibergite, lead-sulphosalts (including boulangerite, bournonite, jamesonite), stibnite, galena, pyrite, electrum and amalgam. Because this high-grade, mudstone-hosted ore contains problematic amounts of mercury, antimony and arsenic, it must be shipped to smelters for treatment. Northward, sulphosalt minerals in the ore zone are less abundant and concentrations of toxic elements are lower. Consequently, most NEX ore is amenable to on-site processing. To the south, the stratiform 21A zone consists of massive to semi-massive realgar, stibnite, cinnabar and arsenopyrite with moderate gold content; it has been uneconomic to mine due to very high levels of deleterious elements. Basalt overlying the 21B zone is not mineralized but intercalated mudstone beds stratigraphically above the 21 zones that are generally above the first basalt flow or sill, contain massive pyrite-sphalerite-galena-chalcopyrite and barite-rich gold-bearing layers. These are referred to as hangingwall ore and mined mainly as mill feed. Footwall ore in the underlying rhyolite consists of the silicified, pipe-shaped 109 zone, and sericitic rhyolite with disseminated pyrite in the 21C zone. The 109 zone contains stockwork veins carrying coarse sphalerite, galena, pyrite, visible gold and amorphous carbon. Footwall ore has lower gold grades, negligible silver and low levels of toxic elements compared to stratiform ore, so it too is treated on site. Ore from the 109 zone has good mining and ideal milling characteristics but other footwall zones are in weak ground and/or are difficult to mill; consequently, the cut-off grade for mill ore varies from 12 to 15 g/t gold equivalent. Mining costs at Eskay Creek are uncommonly high, approximately $600 per tonne, due to difficult mining conditions, environmental considerations and transportation costs. Mudstone and altered rhyolite are very weak and because the 21 zone orebodies are near the hinge of a tight anticline, they are under high strain. Ground conditions dictate the size of development workings and drift-and-fill stopes, which are generally less than 2.5 metres wide by 2.5 metres high. Stopes are backfilled with cemented gravel, hauled by truck from the Iskut River. Potentially acid generating waste rock is trucked 8 km to Albino Lake for sub-aqueous disposal. Mill tailings are pumped through a 5 km pipeline to Tom MacKay Lake for subaqueous disposal.

Eskay Creek continued to develop new ore zones during 2003. A spiral ramp system was advanced to access ore at the deepest levels in the NEX trend, which plunges north at about 55°. Production began late in the year from a new stope in the 44 zone, some 300 metres below surface. Fill-in drilling of the Water Tower zone, a footwall zone similar to 21C, found erratic gold grades and assessment of the zone continues. Exploration at Eskay Creek made use of 35 500 metres of surface and underground diamond drilling. The main focus of the 71-hole surface program was the 22 zone, situated 2 km south of the mine site. Drilling also expanded known resources in the 21C, 21A and 21E zones. At the northern end of the deposit, deeper holes tested the area down plunge from the NEX and Hangingwall zones. In its third quarter report, Barrick describes exploration results as “encouraging” and noted that drilling targeted both stratiform and structurally controlled mineralization. On January 1, 2004 the total of mill and smelter ore reserves was 840 895 tonnes at an average grade of 34.81 g/t Au and 1604 g/t Ag.

Endako is a porphyry molybdenum deposit within an early Cretaceous granite batholith. The Endako open pit mine has operated for 33 years and is a low-cost producer. Thompson Creek Mining Ltd. (75%) and Nissho Iwai Moly Resources Inc. (25%) own the operation. The pit, which is elongated west-northwest, measures 650 metres by 230 metres and is 250 metres deep. The mill normally processes 28 000 tonnes per day, the total for the year was 9.8 million tonnes of ore containing 0.070% Mo. Molybdenum production was approximately 5 000 000 kilograms, the exact amount is confidential. Most of the flotation concentrate is converted to molybdic oxide in an on-site roaster. The balance is upgraded and sold as ‘Ultrapure’ (a trademarked product containing 99.15% molybdenum sulphide). Endako treats concentrate from other mines on a toll basis sporadically, depending on roaster capacity and the availability of material. During the year, the price of molybdenum rose to more than US $7 from less than US $4 per pound at the beginning of the year.

Slope instability on the South wall of the Endako pit resulted in changes to the mine plan in 2003. Mining was

TABLE 2. MAJOR EXPLORATION PROJECTS, 2003

Property	Operator	MINFILE	NTS	Commodity	Deposit Type	Work Done
Beale	Sutcliffe Resources Ltd.	104I 098	104I/14	Au	Intrusion-related Gold	Geol; Prosp; Geochem
Big Bulk	Canadian Empire Exploration Corp.	103P 016	104P/11W	Cu, Au	Porphyry	Geol; 11 ddh, 1664 m
BX	Goldrea Resource Corp. & Golden Chalice Resources Inc.	new	104B/10W	Au, Ag, Cu	Vein	Geol; 3 ddh, 509 m
Clone	Lateegra Resources Corp.	103P 251	103P/13W	Au	Shear Vein	8 ddh, 330 m
Copper Creek (Kaketsa)	Firesteel Resources Inc.	104J 005, 018, 035	104J/4E	Cu, Au	Porphyry	Geol; Geochem; IP, 10 km
Del Norte	Lateegra Resources Corp.	104A 161	104A/4E	Au, Ag, Zn	Vein	10 ddh, 850 m
Eskay Creek	Barrick Gold Corporation	104B 008	104B/9W	Au, Ag, Zn, Cu	Epithermal VMS	Geol; 71 sfc ddh, 18 328 m; U/g ddh, 17 172 m
Foremore	Roca Mines Inc.	104G 148	104G/2W	Cu, Zn, Ag, Au	VMS	Geol; Prosp; Geochem; Max-Min EM, 13.8 km; 11 ddh, 1031 m
Galore Creek	NovaGold Inc.	104G 090, 092, 095, 099	104G/3W	Cu, Au, Ag	Alkalic Porphyry	Geol; 8 ddh, 2947 m; Reclamation
Georgia River	Mountain Boy Minerals Ltd.	103O 013	103O/16E	Au	Orogenic Gold Vein	20 ddh, 1010 m
GJ (Kinaskan)	International Curator Resources Inc.	104G 034, 086, 171, 177	104G/9E	Cu, Au	Porphyry	Geol; Airborne EM-Mag, 1300 km; IP & Mag, 18 km; 254 O/B holes
Homestake Ridge	Bravo Venture Group Inc.	103P 216, 082, 093	103P/12E	Au, Ag	Intrusion-related Gold; VMS	Geol; 11 ddh, 1001 m
Kalum	Eagle Plains Resources Ltd.	103I 018, 019, 020, 021, 173, 174, 211, 213	103I/10, 15	Au, Ag	Epithermal Vein; Intrusion-related Gold	Geol; Prosp; Geochem
Morrison	Pacific Booker Minerals Inc.	093M 007	93M/1W	Cu, Au	Porphyry	8 ddh, 2420 m; Engineering & Environmental studies
Nak	Imperial Metals Corp.	104N 136	104N/2W	Cu	VMS ?	Geol; Prosp; Geochem; HLEM, 4.5 km; 9 ddh, 1511 m
New Polaris	Canarc Resource Corp.	104K 003	104K/12	Au	Mesothermal Vein	3 ddh, 1554 m
PBR	Roca Mines Inc.		104B/15E	Au, Ag	Epithermal VMS	Extend 1 ddh, 351 m
Praxis	Praxis Goldfields Inc.		103P/12W, 103P/13W	Cu, Zn, Au, Ag	VMS	3 ddh, 1239 m
Red Chris	bcMetals Corp.	104H 005	104H/12W	Cu, Au	Porphyry	Test pits; 49 ddh, 16 591 m
SIB/ Eskay district	Heritage Explorations Limited	104B 376, 383, 078	104B/9, 10	Au, Ag	Epithermal VMS	Geol; Geochem; 14 ddh, 3841 m
Table Mountain	Cusac Gold Mines Ltd.	104P 070	104P/4W	Au	Orogenic gold vein	Drill access, 300 m; 2 ddh, 626 m
Taurus	Navasota Resources Ltd.	104P 010, 011, 012	104P/5E	Au	Orogenic gold vein	Geol; 13 ddh, 1974 m
Thorn	Cangold Limited & Rimfire Minerals Corp.	104K 031	104K/10W	Au, Ag, Cu	Epithermal Vein	Excavator trenching, 800 m; 8 ddh, 874 m
Tommy Jack	Kodiak Resources Inc.	94D 031	94D/4E	Au, Ag	Intrusion-related Gold	Geol; IP, 20 km; 5 ddh, 1036 m
Tulsequah Chief	Redcorp Ventures Ltd.	104K 002	104K/12E	Cu, Zn, Ag, Au	VMS	2 sfc ddh, 1069 m; 21u/g ddh, 9040 m
Turnagain	Canadian Metals Exploration Ltd.	104I 119	104I/7W	Ni, Cu, Co, Pt, Pd	Magmatic	23 ddh, 8624 m
William's Gold	Stikine Gold Corp.	94E 092	94E/13	Au	Intrusion-related Gold	11 ddh, 2855 m

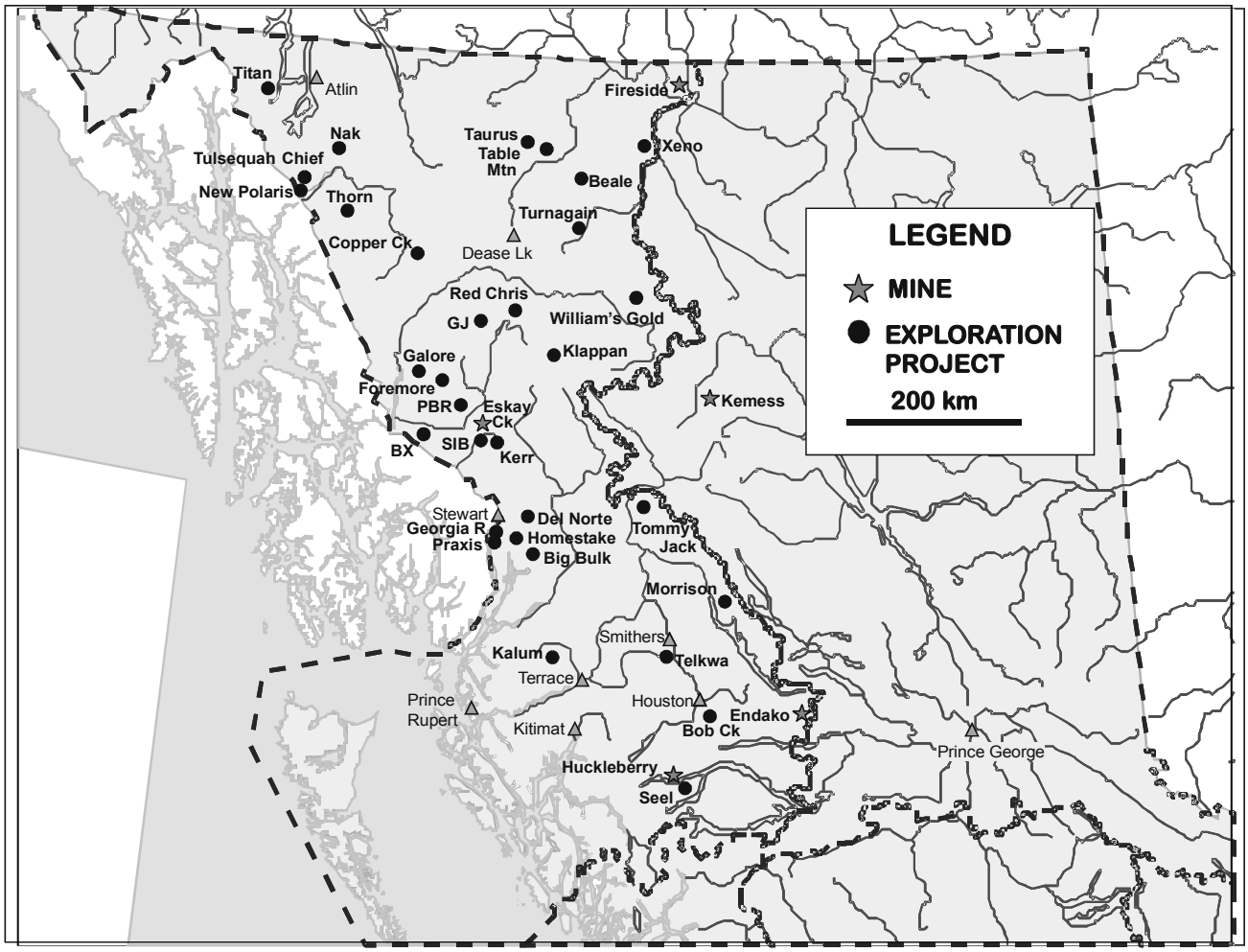

Figure 4. Location map, Mines and Exploration Projects in Northwest British Columbia, 2003.

relocated away from the toe of the slide to an area of slightly lower grade material. Metal production was only slightly affected because mill recovery was higher in the lower grade ore. Stripping of waste rock on the South wall of the Endako pit to unload the South Basalt fault and alleviate slope instability proceeded throughout the year. Stripping was interrupted at times by recurring ground movement and unavailability of haul trucks during repair of the conveyor from the in-pit crusher. Despite this, more than 5 million tonnes of waste rock were mined. A small slide also occurred on the North wall but had minimal affect on production.

Huckleberry is a porphyry copper deposit related to the late Cretaceous Bulkley intrusions. Huckleberry Mines Ltd. is owned by Imperial Metals Corporation (50%) and a consortium of Mitsubishi Material Corp., Dowa Mining Ltd., Furakawa Company Ltd. and Marubeni Corp. The mine is located at the foot of Huckleberry Mountain, 125 kilometres by road from Houston (Photo 1). Copper mineralization, which occurs in two zones one kilometre apart, is developed within a granodiorite stock, in a related dike, and in adjacent hornfelsed and fractured volcanic rocks. Production from the Main zone ended in 2002, so all ore mined in 2003 came from the East pit. The mill processed 6 699 100 tonnes grading 0.542% copper, at an average rate of about 21 000 tpd. Copper production was 32 781 tonnes (see Table 1), an average recovery of 86.5% but molybdenum recovery was just 17.6%. East zone ore is not as amenable to molybdenum recovery as the Main zone ore was. Copper concentrate is trucked to the port of Stewart for shipment to Japan. Economic gains afforded by higher copper price were partially offset by increased costs due to a stronger Canadian versus US dollar exchange rate.

Mining of the East zone required removal of overburden (glacial till) and waste rock, mainly east of the starter pit. This material includes potentially acid generating waste rock that is dumped into the Main pit,

which will be flooded when the mine closes. In October and November, two separate slides of overburden occurred on the north wall of the East pit. Ore production was interrupted and up to one million tonnes of material must be removed to stabilize the pit wall. Better diversion of runoff water from Huckleberry Mountain away from the pit will reduce the risk of a recurrence.

Photo 1. View west over the Huckleberry open pit mine showing Phase 2 stripping on the high wall of the East pit. The concluded Main pit and tailings pond are in the middle distance and Tahtsa Reach is in the far distance.

MINERAL EXPLORATION

Tulsequah-Taku Area

Redfern Resources Ltd., a wholly owned subsidiary of Redcorp Ventures Ltd., conducted a surface and underground drill program to locate extensions of existing resources at the **Tulsequah Chief** deposit (104K 002). Tulsequah Chief is a volcanogenic massive sulphide deposit located in the hinge zone and limbs of a steeply plunging syncline within Mississippian strata. Sulphide lenses are stacked near the base of a rhyolite-dominated sequence overlying a quartz-pyrite-sericite-cordierite alteration zone in a thick sequence of mafic volcanic rocks. In the 1950's Cominco Ltd. mined 575 000 tonnes from Tulsequah Chief. Exploration up to 1994 by Cominco and Redfern determined a measured and indicated resource of 5 940 000 tonnes grading 1.42% Cu, 1.26% Pb, 6.72% Zn, 107 g/t Ag, 2.59 g/t Au and an additional 3 million tonnes of inferred resources of similar grade. The deposit is open in several areas. Continuity is excellent in the down-dip direction but drill holes at least 800 metres long are required, therefore Redfern explored a more accessible area west of the deposit for a continuation of ore lenses across the 4400 fault. A new massive sulphide lens, with deposit-average grade that is stratigraphically above the main deposit, was intersected in six holes. Nine holes cut the principal H lens, including an uncommonly thick (37 metre) intercept, and six holes cut the AB lenses. One intersection of uncertain correlation returned exceptional precious metal grades of 16.3 g/t Au, 511 g/t Ag, 0.08% Cu, 0.7% Pb and 1.2% Zn over 7.6 metres. The company contracted an independent audit to bring measured and indicated resources into compliance with National Policy 43-101, and a study to determine an infill drill program to upgrade inferred resources.

Rimfire Minerals Corp. and Cangold Limited performed a trenching and drilling program on the **Thorn** gold-silver prospect (104K 031) that resulted in a significant discovery. Trenching in the Oban breccia with a helicopter-transported excavator was unable to expose mineralized bedrock but helped select drill targets in a strong multi-element soil anomaly. The fourth to eighth holes of an 8-hole program intersected heterolithic breccia with a black matrix containing pyrite, sphalerite and boulangerite. Current drilling indicates the zone is 50 to 70 metres wide with a 20-25 metre wide core of higher silver and gold grades. The discovery hole, THN03-19, collared in the zone and intersected 1.22 g/t Au and 103.2 g/t Ag over 38.6 metres including a higher grade interval of 1.97 g/t Au and 190.0 g/t Ag over 14.0 metres. Intensely altered Upper Cretaceous volcanic rocks and a related biotite-quartz-feldspar porphyry stock underlie the property. Earlier exploration focused on pyrite-tetrahedrite-enargite quartz veins up to 5 metres wide that contain significant to bonanza grades of silver, copper and gold. Continued drilling is anticipated. Thorn is 125 km southeast of Atlin, midway to Telegraph Creek.

Imperial Metals Corporation optioned claims to consolidate ownership over the Joss'alun copper discovery (104N 136) into the **Nak** project and undertook a comprehensive exploration program. The property is 75 km southeast of Atlin. Chalcopyrite occurs as massive pods and discontinuous veins that are interstitial to poorly developed pillows and lesser agglomerate in basalt of the Cache Creek Group. Pyrite and epidote are associated with chalcopyrite. Bodies of gabbro invade the mafic volcanic rocks and, based on their chemical similarity, are closely related. Along strike to the northwest, gabbro is host to the Jennusty and Bor copper showings. Faulted contacts between the gabbro and underlying serpentinized harzburgite appear to limit the potential of these latter zones. In the Joss'alun zone, geological mapping and soil geochemistry led to selection of drill targets (Photo 2). The zone did not respond to EM or magnetic surveys. All seven holes drilled in the Joss'alun zone returned significant copper values. The best intercepts are 0.94% Cu over 17.8 metres in hole 5, and 0.34% Cu over 53.4 metres in hole 7. Two holes in the Jennusty zone failed to intersect significant copper mineralization.

At the **New Polaris** property, across the Tulsequah River from the Tulsequah Chief project, Canarc Resource Corp. drilled 3 holes to test two deep targets beneath the

Photo 2. Nak property; drill crew ready to move to the next site in the Joss'alun copper zone, tent camp in the valley.

underground workings of the former Polaris mine (104K 003). The best intercepts were at relatively shallow depth. One returned 9.26 g/t Au over 5.7 metres beginning at 104.7 m in hole P03-2, and the other 17.48 g/t Au over 7.4 metres beginning at 24.1 m in hole P03-3. This final hole, which was 762 metres in length, crossed volcanic rocks of the mine sequence and intersected 14 auriferous quartz veins below the cited interval before it penetrated the terrane-bounding Limestone fault. The veins contain less than 10 g/t Au over widths of 2 metres or less, but may be parallel to the productive AB veins and worthy of follow-up. Canarc contracted a resource study to bring the reserve estimate into compliance with N.I. 43-101. In 1997 the company estimated geological resources of 3.7 million tonnes at 13.7 g/t Au. The company also undertook engineering studies of mining methods (longhole vs. shrinkage), underground access (ramp vs. shaft), the type of processing plant (concentrate shipment vs. bioleach) and transportation options. Metallurgical testing improved the estimated gold recovery from 90% to 97% in a sulphide concentrate.

Atlin Area

Forty kilometres west of Atlin, Eagle Plains Resources Ltd. optioned the **Titan** claims from Dennis Ouellette to explore a high-grade molybdenum showing. Molybdenum was discovered in the 1980's during investigation for precious metals based on showings two kilometres to the northeast (104M 037, 073). Quartz-molybdenite veins occur near the contact of a Cretaceous granodiorite with metasedimentary rocks in outcrops recently exposed by glacial retreat. Grab samples from outcrop and boulders assay up to 1.88% Mo. Two IP lines spaced 300 metres apart produced a strong anomaly that corresponds to the granite contact. Eagle Plains plans a drill program in 2004.

The **Yellow Jacket** (104N 043) gold prospect on Pine Creek in the Atlin placer district was acquired by Muskox Minerals Corp. Two holes were drilled in December, the beginning of a 20-hole program that will continue in 2004. Gold occurs in fault zones near the contact between serpentinized ultramafic and mafic volcanic rocks of the oceanic Cache Creek terrane. Drill programs in the 1980's by Canova Resources Ltd. and Homestake Mineral Development Corp. yielded many 10 to 35 g/t Au intercepts over widths up to 4 metres. Queenstake Resources Ltd. mined overlying stream gravels for placer gold.

Cassiar Area

Navasota Resources Ltd. completed geological mapping and a 13-hole drill program on the **Taurus** gold prospect under an agreement with International Taurus Resources Inc. The holes tested the bulk-tonnage potential of the 88 Hill area and of the Sable and Plaza vein systems (104P 010, 012). Auriferous quartz veins with minor base metal sulphides occur in carbonate-altered mafic volcanic rocks of the Sylvester Group. In the 88 Hill zone, holes COR-03-06 and COR-03-08 intersected 10 to 30 metre long core intervals averaging 0.7 to 1.0 g/t Au and narrow intervals of higher grade material, the best intersection was 4.74 g/t Au over 5.18 metres. In the Taurus West zone, hole COR-03-01 returned up to 37 metres of core length averaging between 1.0 and 1.7 g/t Au. In early 2004, Navasota announced it would not maintain its option on the property.

On the **Table Mountain** gold mine property, Cusac Gold Mines Ltd. explored for an eastern continuation of the productive Bain vein. Two holes were drilled but no results were announced. The drill program was terminated due to lack of funds; subsequent financing will permit drilling to resume in 2004.

On its **Magno** property near the Cassiar town site, Eveready Resources Corp. explored a series of vein and replacement showings in limestone of the Cambrian Rosella Formation and also a porphyry molybdenum prospect in the adjacent Cassiar batholith. Magno (104P 006) and Pant (104P 082) are massive sulphide replacement zones 1-2 metres wide containing arsenopyrite, sphalerite, galena, cassiterite, pyrrhotite, pyrite, magnetite and siderite. Targets for further work were identified at these showings and at Granite Creek (104P 081), a galena-sphalerite-pyrite vein where previous drill holes were oriented incorrectly (J. Pautler, pers. comm., 2003). The Ray molybdenum showing (104P 040) is restricted to a two-metre pegmatite pod but Eveready recognizes good potential south and east of the Storie porphyry molybdenum deposit (104P 069).

Kiniskan Area

After an eight-year hiatus, exploration and pre-development work resumed on the **Red Chris** copper-

gold porphyry deposit (104H 005). bcMetals Corporation Ltd. acquired an 80% interest in the property from American Bullion Minerals Ltd. and subsequently struck an agreement to acquire the remaining 20% interest and back-in rights held by Teck Cominco Limited. Red Chris is situated 15 km east of Highway 37 and 20 km southeast of the Tahltan community of Iskut. Copper-gold mineralization is contained in the Red Stock, an east-northeast elongated Early Jurassic monzodiorite that was emplaced into Hazelton Group volcanic rocks. The intrusion is less than 200 metres from the fault-bounded northern margin of the Bowser Basin. The distinct Main and East zones are some 500 metres apart. A quartz-pyrite-chalcopyrite stockwork with lesser bornite characterizes the Main zone, whereas densely sheeted veins typify the higher grade East zone. Morphology of the deposit is complicated by close-spaced conjugate faults and crosscutting 'barren phase' intrusions that closely resemble the mineralized phase.

The company completed a 41-hole program to upgrade resource classification, and to provide material for metallurgical testing and for acid-base accounting of waste rock. The objective of the metallurgical testing is to determine if gold recovery can be improved from circa 73% indicated by previous studies. An additional 8 holes were drilled for geotechnical purposes and test pits were dug in overburden to characterize construction materials. Based on new and previous drilling, bcMetals estimates resources above a 0.5% Cu cut-off grade to be:

- 29.8 million tonnes at 0.78% Cu and 0.66 g/t Au (Measured)
- 30.4 million tonnes at 0.63% Cu and 0.53 g/t Au (Indicated)
- 14 million tonnes at 0.56% Cu and 0.41 g/t Au (Inferred)

On October 27, 2003 bcMetals submitted a proposal to the Environmental Assessment Office to develop a 25 000 tonne per day open pit mine at Red Chris. The company aims to complete a feasibility study by September 2004 and, if results are favourable, to begin construction in early 2005.

The **GJ** (Kinaskan) property of Canadian Gold Hunter Corp. (formerly International Curator Resources Ltd.) is located 25 km west of Red Chris and 10 km from Highway 37. Exploration comprised grid-controlled geochemical and geophysical surveys that helped develop drill targets, and a 1300 line-kilometre airborne high-sensitivity magnetic survey to search for new zones. Splays of the Ealue Lake fault controlled emplacement of the Groat stock, the host to porphyry copper-gold mineralization at GJ (104G 034), Donnelly (104G 086, also known as Groat) and in the North zone, a poorly exposed area along the north contact. Compositionally, the Groat Creek stock is similar to the Red Stock. Work in these three areas between 1970 and 1990 included 52 diamond drill holes. Mineralized intervals consistently exhibit a high gold to copper ratio, for example, an intercept from the Donnelly zone of 0.70% Cu and 1.9 g/t Au over 68 metres and an intercept from the GJ zone of 0.36% Cu and 1.4 g/t Au over 72.6 metres. In 2003, overburden drilling through a widespread till blanket outlined a copper-gold anomaly that extends the Donnelly zone 700 metres beyond previous drilling. As well, in the North zone, new geophysical surveys found a 1500 metre-long anomaly with high chargeability and high magnetic response that corresponds with a soil anomaly. The best of five hand-dug trenches in the North zone returned 63 metres grading 0.20% Cu and 0.24 g/t Au and an additional 17.5 metres grading 0.54% Cu and 0.58 g/t Au. Drilling is planned in 2004. Two other targets tested returned poor results. The Blow-down occurrence (104G 171) at the east end of the exposed Groat stock, consists of narrow fracture veins in fresh intrusive rock, and at the Horn East occurrence (104G 177), a reconnaissance IP line across a gold soil anomaly did not detect high chargeability (A. Travis, pers. comm., 2003).

Turnagain-Upper Stikine Area

Canadian Metals Exploration completed a 23-hole drilling program on the **Turnagain** bulk-tonnage nickel project, 110 kilometres east of Dease Lake. Work focused on the Horsetrail zone (104I 119). The 3 by 8 kilometre Turnagain ultramafic body consists of serpentinized dunite, wehrlite, clinopyroxenite and hornblendite, all crystal cumulate phases. Wehrlite (clinopyroxene-bearing peridotite) and clinopyroxenite contain wide intervals of up to 10% disseminated, net-textured pyrrhotite, lesser pentlandite and minor chalcopyrite (Photo 3). The plutonic complex was emplaced into basinal sedimentary rocks of the Cache Creek Group that may be the origin of abundant graphite associated with these sulphide-rich intervals. Nickel grade is rather uniform; the 2003 drill holes contain 0.19% to 0.31% nickel over their full core length of 200 to more than 500 metres. Shorter intervals,

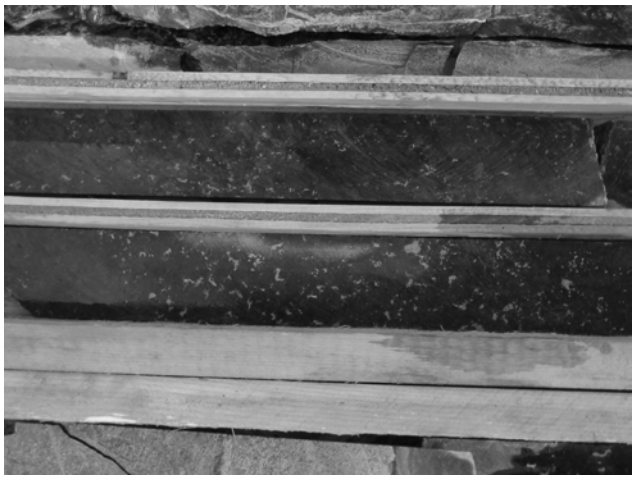

Photo 3. Turnagain property, drill hole 03-12; net-textured disseminated pyrrhotite and pentlandite in ultramafic rock.

10 to 70 metres wide, contain 0.3% to 0.4% Ni and the highest recorded intervals are 0.80% Ni, 0.29% Cu across 13.5 metres in hole 03-16 and 1.00% Ni, 0.15% Cu, 0.219 g/t Pt, 0.216 g/t Pd across 25 metres in hole 03-18. Geologic control and drill hole correlation of these higher-grade intervals has not been established. One core sample in ten is analyzed using a selective extraction with ascorbic acid. Results show that nickel is present primarily in sulphide minerals rather than in silicates (T. Hitchins, R. McCaffrey, pers. comm., 2003). Hitchins suggests that wallrock contamination resulted in a highly reduced magma that partitioned nickel into the sulphide phase.

The **William's Gold** property (94E 092), 140 km southeast of Dease Lake, was drilled by Stikine Gold Corporation. Gold occurs in arsenopyrite-bearing quartz veins within Paleozoic metavolcanic schist and mineralization may be related to a buried intrusion. Ten holes tested a gold soil anomaly and coincident low resistivity zone outlined by an IP survey. The anomaly measures 800 by 450 metres in size. Hole 03-10 cut three intervals from 0.6 to 1.4 metres wide grading 12 to 20 g/t Au within a 195-metre zone of sporadic metre-wide intervals containing more than 500 ppb gold. The other holes intersected fewer and weaker gold-bearing intervals. The final hole explored a separate soil anomaly to the north.

Hyder Gold Inc. acquired the **Tanzilla** claims 25 km southeast of Dease Lake to explore a mineralized belt (104I 022, 023, 102) for a VMS deposit similar to Eskay Creek. Stuhini and Hazelton group volcanic rocks and the Jurassic Snowdrift granodiorite pluton underlie the area. An eight kilometre-long belt of strong gossans is derived from stratigraphically controlled zones of advanced argillic alteration but no rhyolite was identified and the company concluded that the geologic setting is not comparable to Eskay Creek.

A 985-unit block of mineral claims near **Beale Lake** was staked by Sutcliffe Resources Ltd. to enclose the BLT claims, which the company optioned from David Fleming and Rudi Durfeld. The property, which is 75 km northeast of Dease Lake, is underlain by metamorphosed and tectonized continental margin strata of the mid-Paleozoic Kootenay terrane that are cut by the northeast margin of the Cretaceous Cassiar granite batholith. Gold occurs in quartz-arsenopyrite-pyrite-scheelite-galena veins (104I 098) with elevated bismuth. The target is a high-grade intrusion-proximal gold deposit, like the Pogo deposit in Alaska. Sutcliffe conducted a mid-fall soil geochemical survey, and a prospecting and geological mapping program but work was cut short by onset of winter conditions.

Iskut District

SpectrumGold Inc., 56% owned and managed by NovaGold Inc., reactivated exploration of the **Galore Creek** porphyry copper-gold deposit (104G 090), one of the principal undeveloped mineral resources in the Province. Discovered in 1960, the property is located 75 km west of Bob Quinn. Galore Creek was re-appraised in 1991 and 1992 by Kennecott Exploration, which estimated a measured and indicated resource of 243.2 million tonnes grading 0.75% Cu, 0.45 g/t Au, 6.0 g/t Ag plus an inferred resource of 70.6 million tonnes grading 0.59% Cu, 0.63 g/t Au, 6.0 g/t Ag. The estimate is based on nearly 500 drill holes totaling over 100 000 metres of core. Alkaline volcanic rocks of the Stuhini Group and comagmatic syenite intrusions and related breccias host the Galore Creek copper-gold deposit. SpectrumGold acquired the property from subsidiary companies of Rio Tinto plc and Anglo American plc. New drilling confirmed previous grades and revised understanding of ore controls (Photo 4). Characteristics of mineralization are intermediate between those of skarn and porphyry deposits (J. Muntzert, pers. comm., 2003). Unlike a typical porphyry deposit, there is very little stockwork veining. Chalcopyrite occurs as massive zones and disseminations and pyrite content is low. As in many skarn deposits, copper and gold are concentrated as replacement zones in limy horizons and accompanied by abundant garnet. As in most porphyry deposits, alteration includes K-feldspar flooding, hydrothermal biotite and magnetite, and there are cross-cutting anhydrite veins. The eight holes drilled by SpectrumGold were distributed in four sub-zones throughout the deposit and were drilled as angle holes to clarify gold distribution. Prior drilling employed mainly vertical holes and focused on copper distribution. A 30 000 metre drilling program is planned for 2004. It will explore for new ore zones and continue to study ore controls in known zones by using oriented core.

Photo 4. Core logging at Galore Creek.

The program will include exploration of the Copper Canyon alkalic porphyry copper-gold deposit (104G 017), 10 km to the northwest, acquired under a separate agreement with Eagle Plains Resources Ltd. Other planned work includes an access study, gold metallurgical testing, and assessment of on-site hydroelectric power generation potential.

Roca Mines Inc. worked on its **Foremore** property (104G 148), a gold and volcanogenic massive sulphide prospect located 45 km west of Bob Quinn. Geological mapping of the host deformed Devono-Mississippian volcanic and sedimentary rocks that comprise the basement assemblage of Stikine Terrane, continued under a partnership program with the B.C. Geological Survey. This work determined the probable source area of the southern mineralized boulder field, the stratabound SG mineral zone, which was discovered in 2002, lies on the south flank of a two kilometre-long rhyolite dome. The best channel sample in the SG zone graded 2.34% Pb, 6.69% Zn, 42.9 g/t Ag, 0.11 g/t Au across 1.82 metres but the four holes drilled through the horizon returned lower grades. An EM survey delineated a 200 metre-long conductor that extends north along strike from the SG showing. The company plans to explore the conductor by drilling in 2004. Three kilometres west, prospecting discovered the BRT showing (Photo 5) upslope from the north boulder field, an area of mineralized boulders at the northern terminus of the More glacier. Two outcrop channel samples across laminated, massive to semi-massive pyrite layers with lesser chalcopyrite, sphalerite and galena assayed 0.73% Cu, 0.94% Pb, 6.34% Zn, 189.7 g/t Ag and 2.75 g/t Au across 2.05 metres and 0.11% Cu, 4.27% Pb, 9.52% Zn, 161.9 g/t Ag and 2.03 g/t Au across 2.80 metres. Seven holes were drilled from three sites. A zone of massive to semi-massive pyrite, but no other base metal sulphides, was encountered in one hole; it returned an assay of 7.9 g/t Au, 22.6 g/t Ag, <0.1% Cu and 0.1% Zn over 2.3 metres. Drilling determined that the BRT zone is contained within a felsic tuff between carbonaceous sedimentary and overlying mafic volcanic rocks. Elsewhere on the Foremore property, Roca prospectors discovered the Wishbone zone, another train of mineralized boulders. Quartz-carbonate vein material contains interesting amounts of copper, zinc, silver and gold. In the Sunday zone, Roca explored widely spaced fractures filled by gold-bearing arsenopyrite, sphalerite and galena.

In addition, Roca Mines Inc. optioned the **PBR** claims from Barrick Gold Corp. in order to deepen a hole drilled in 2001 that stopped short of testing the Eskay Creek horizon. The PBR claims are underlain by a thick sequence of pillow basalts that correlate with similar rocks at Eskay Creek. There they mark the restricted rift basin in which the Eskay massive sulphide deposits accumulated (the 'Eskay Rift'). Stream sediments at PBR are anomalous in Eskay Creek pathfinder elements (Au, Ag, Hg, As, Sb, Zn). Interpretation of displacement by the Forrest Kerr and Iskut River faults suggests PBR is 15 kilometres along strike from the Eskay Creek gold-silver deposit, with movement removed. The drill hole was deepened from 1420 to 1770 metres and intersected interlayered basalt and variably pyritic mudstone. Arsenopyrite occurs as disseminated needle-shaped crystals in a two-metre interval of mudstone, a mode of occurrence found proximal to gold-silver zones at Eskay Creek. Although no significant assays were obtained, the company is encouraged and proposes to employ down-hole geophysics to derive a target for a wedge off-cut hole.

Photo 5. John Mirko (director, Roca Mines Inc.), Sandy Sears and Jen Stronge examine the new BRT volcanogenic massive sulphide showing.

Heritage Explorations Ltd. continued exploration of its extensive mineral claim holdings that surround the Eskay Creek mine property. Seven holes were drilled in the Hexagon zone, a target derived from high-energy stream silt samples collected in 2002. The zone is located near the eastern boundary of the **SIB** claims within the Betty Creek Formation, a lower stratigraphic level than has been considered prospective by past explorers for Eskay Creek type mineralization. The company is encouraged by a wide zone of pyrite-sericite alteration that has been traced more than 4 kilometres along strike and is up to 185 metres wide in core; it contains elevated silver, mercury, arsenic and locally gold values. Heritage completed three drill holes on the **Bonsai** prospect (104B 383) optioned from Teuton Resources Corp., where beds of mudstone-hosted massive to framboidal pyrite are in close proximity to bodies of rhyolite. The best intersection obtained by Heritage was 0.38 g/t Au, 27.1 g/t Ag across 64 metres within brecciated rhyolite. Two holes drilled in the Pie Area on Battleship Knoll, followed up a 2002 intersection. Drill hole 03-126 intersected 7.32 g/t Au, 16.7 g/t Ag over 0.9 metres within an intra-rhyolite mudstone. Two additional holes on the SIB claims tested two large IP anomalies that correspond to

the intersection of this mudstone horizon with a northwesterly structure. No significant values were obtained. Prospecting and mapping on the Treaty Creek property identified three drill targets but, due to poor late-summer weather, drilling was postponed until 2004.

On the **Rest** claims, Northgate Exploration Limited conducted geological mapping, prospecting and geochemical sampling in search of an Eskay Creek type deposit. The Rest claims are located in the 'Eskay Rift' between the PBR and RDN properties. Results were disappointing and no work is planned in 2004.

Goldrea Resources Corp. and Golden Chalice Resources Inc. explored the Ernie Creek zone on the **BX** claims, 6 km southeast of the former Snip gold mine. Noranda Exploration Inc. drilled two holes that targeted shear-hosted, gold-bearing quartz veins in 1990-1991 on what is now the BX-10 claim but the Ernie Creek zone is not listed in Minfile. Gold is associated with minor pyrite, chalcopyrite and arsenopyrite. Chip sampling in 2003 returned up to 28.56 g/t Au across 0.5 metres but none of the three drill holes intersected economic mineralization.

Noranda Exploration Inc. carried out reconnaissance geological mapping and sampling on the **Kerr-Sulphurets** property acquired from Seabridge Gold Inc. The property contains the Kerr porphyry copper-gold deposit and the Sulphurets gold zone. Work will continue in 2004, and may include core drilling.

The **Schaft Creek** porphyry copper deposit (104G 015) was acquired by 955528 Alberta Ltd., a private company, but no work was done. Similarly, Hathor Exploration Ltd. did no work on its extensive claim holdings in the Eskay Creek - Granduc area.

Stewart District

Canadian Empire Exploration Corp. acquired the **Big Bulk** porphyry copper-gold prospect (103P 016) under an agreement with Teck Cominco Limited. On the property, a hornblende-feldspar porphyry monzonite invades intermediate Hazelton Group fragmental volcanic rocks on the shore of Kinskuch Lake, 50 kilometres southeast of Stewart. Both the pluton and country rocks are cut by a fracture stockwork of quartz-chalcopyrite veins with associated potassium feldspar flooding in the core, to peripheral chlorite-pyrite-chalcopyrite veins with associated epidote alteration (B. Thurston, pers. comm., 2003). The best copper and gold grade occurs within a 1250 metre by 300 metre area of the chloritic zone. A saw-cut sample across a portion of the zone assayed 0.89% Cu and 0.83 g/t Au over 70 metres. The first five holes were drilled in this target (the Bonnie zone) and included the best intercepts of the program,

- 0.68% Cu and 0.41 g/t Au over 12.2 m in BB03-01
- 0.79% Cu and 0.58 g/t Au over 21.3 m in BB03-02
- 0.64% Cu and 0.42 g/t Au over 27.4 m in BB03-03

One hole was drilled 800 metres to the east but it did not intersect significant copper-gold mineralization. Two holes located on an island 250 metres to the southwest yielded lower grade material, for example, 0.45% Cu and 0.18 g/t Au over 9.1 metres. In outcrop 400 metres southwest of the Bonnie zone, coarse gold was discovered in a flat-lying, late-stage quartz-epidote-chlorite vein cutting the potassic core of the alteration system. No economically significant assays were obtained in three drill holes beneath the surface exposure.

Bravo Venture Group Inc. acquired the **Homestake Ridge** property at the head of the Kitsault River, 30 km south of Stewart. The company focused its drill program primarily on structurally controlled gold mineralization (103P 216) in the Goldslide pluton rather than exploring for a precious metal enriched VMS deposit as Teck Cominco Ltd. sought. Six 2003 holes tested a zone of quartz-pyrite stockwork veining and breccia at the contact of the feldspar-hornblende porphyry stock where previous workers collected a 10.5 metre trench sample that assayed 18.2 g/t Au, 60.0 g/t Ag and 3.5% Cu. At a depth of 160 metres below the trench, drill hole HR03-06 intercepted a 3.05 metre interval of 9.8 g/t Au and 9.8 g/t Ag. The geologic setting and mineralization, with local sphalerite, galena and chalcopyrite, is comparable to deep portions of the Silbak Premier deposit. Bravo Ventures drilled five additional holes to test four other targets: the rhyolite – argillite contact formerly explored by Teck Cominco, the Silver Crown zone (103P 082), and the Fox-Gold Reef zone (103P 093, 103P 213), and the Dilly vein. No significant assays resulted.

The **FH** claims are also in the Kitsault area, 55 kilometres southeast of Stewart and 8 kilometres northeast of Alice Arm. The property includes the Red Bluff porphyry copper-gold target (103P 160). Energulf Resources Inc. outlined a strong rock and soil copper-gold geochemical anomaly over an area of 300 by 1000 metres that overlies a dike-shaped diorite body and Hazelton Group volcanic rocks. In 1992, Noranda Inc. reported a chip sample containing 2214 ppm Cu and 265 ppb Au over 20 metres (AR 22641).

Praxis Goldfields Inc., a private company, continued to explore for volcanogenic massive sulphide (VMS) mineralization on its **Praxis** property near the Portland Canal, 25 km south of Stewart. Interest is focused on a 370-metre thick, pyrite to pyrrhotite-rich rhyolite that varies in texture from flow-banded to fragmental. Isotopic dating indicates that it is 176 Ma, making it correlative to Eskay Creek. Three drill holes tested the rhyolite and an underlying 300-metre thick sequence of thin-bedded argillite that contains wispy laminations of syngenetic pyrite and pyrrhotite (D. Hanson, pers. comm., 2003). Locally, the argillite contains chiastolite, a variety of the metamorphic mineral andalusite. Beneath the argillite, a

distinctive, heterolithic andesite breccia about 40 metres thick separates the sedimentary unit from a thick sequence of pillow basalt and implies proximity to a volcanic center. Minor base metal mineralization was encountered in the andesite breccia in 2002 and 2003. No 2003 drill results have been reported but additional drilling is planned for 2004.

On the **Del Norte** property 34 km east of Stewart, Lateegra Resources Corporation, under terms of an agreement with Teuton Resources Corp., intersected the LG vein (104A 161) in seven of ten holes drilled. LG is a steeply dipping, quartz-calcite breccia vein about one metre thick that contains pyrite, sphalerite and galena. The host rock is an argillite near the base of the Salmon River Formation. A fan of four holes was collared from a site 3 to 4 metres from the vein. Intersections ranged from 3.19 to 13.92 g/t Au and 242 to 565 g/t Ag across apparent widths of 1.86 to 3.05 metres. A fan of three holes was drilled from a second site 200 metres north and set back about 35 metres from the vein. These holes returned higher grades over narrower widths; grades ranged from 11.55 to 15.46 g/t Au and 1177 to 2619 g/t Ag across apparent widths of 1.0 to 1.5 metres. No significant mineralization was intersected by two holes collared from a third site 50 metres south of the first site, and the final hole did not reach target depth. The LG vein has been traced for 550 metres on surface and likely correlates with the Kosciuszko vein 475 metres further south across a snowfield. Drill core assays from the geologically similar Kosciuszko vein were reported in *Exploration and Mining in BC – 2002*.

Lateegra Resources Corporation also worked on the **Clone** property, 18 km south of Stewart. Clone (103P 251) is a gold-bearing braided shear zone on a nunatak in the Cambria icefield. In 1996, Teuton Resource Corp. and Minvita Enterprises Ltd. drilled 95 closely spaced core holes and blasted 140 rock trenches over a distance of 400 metres (*Exploration and Mining in BC – 1996*, page B9). A number of holes produced bonanza-grade intercepts. The shear zone weakens and is obscured by permanent snowfields to the northwest and disappears beneath a valley glacier to the southeast. In 2003 Lateegra drilled an additional eight holes; four tested the shear zone and three yielded high-grade assays. The most spectacular intersection was in CL03-2, which twinned a 1996 hole, and intersected 80.80 g/t Au over an apparent width of 8.47 metres.

Seabridge Resources Inc. commissioned an independent engineering study of the **Red Mountain** gold deposit (103P 086) located 18 km east of Stewart on the margin of the Goldslide diorite to granodiorite pluton. Based on a resource of 1 261 600 tonnes grading 9.14 g/t gold and 28.7 g/t silver, the best development options were determined to be:

- A seasonal (May-October), 1000 tonne per day, trackless mine using the existing portal at 1870 metre elevation and a new portal at 1650 metre elevation,
- On-site milling using conventional grinding and cyanidation (CIP) circuits,
- Subaqueous tailings disposal in Red Mountain cirque and
- Road access to the mine using the route designed in 2001 by North American Metals, previous owner of the property.

Capital cost is estimated to be Cd $61.8 million.

Mountain Boy Minerals Ltd. cored 20 drill holes on the **Georgia River** gold vein prospect (103O 013), 13 km south of Stewart. A series of quartz-sulphide veins fill shears and related dilation zones in Hazelton Group volcanic rocks. Previous work on the Southwest vein comprised trenching, 81 diamond drill holes and drifting on two underground levels over a total length of 600 metres and vertical range of 260 metres. The company claims an indicated resource of 130 000 tonnes grading 19.2 g/t Au and an inferred resource of 53 700 tonnes grading 16.9 g/t Au. Eight of the 2003 Mountain Boy drill holes tested the northeast trending Summit vein at its intersection with the Main vein. The best intersection came in the first hole, 22.61 g/t Au and 13.2 g/t Ag over 1.07 metres. Twelve other holes tested the northeast trending Southwest and Bullion veins, where the Gem vein intersects them. These holes cut altered and silicified rocks but no significant gold values. Mountain Boy Minerals also drilled one short hole at Dunwell (103P 052), a past producer of precious and base metals 7.5 km northeast of Stewart.

Valgold Resources Ltd. acquired the **Horseshoe** (Marmot) property, 12 km south of Stewart, from Rick Kasum. Valgold appraised a series of previously explored, precious metal-bearing quartz sulphide veins. The Engineer (103P 103), Washington (103P 104) and Prince George (103P 107) veins lie in the hornfels margin of the Hyder pluton, part of the Coast Range plutonic complex.

Terrace-Kitimat Area

Eagle Plains Resources Ltd. acquired the 500-unit **Kalum** property 35 km northwest of Terrace to cover the Allard stock, a 4 km by 11 km intrusion that has been mapped west of Kitsumkalum Lake. High-grade gold-bearing quartz veins fringe the Allard stock near its contact with Bowser Lake Group country rocks. The stock consists of hornblende-biotite granodiorite to diorite and is marked by a strong magnetic anomaly that extends south of the mapped extent of the stock. Though it is not

isotopically dated, Gareau and Woodsworth assigned an early Tertiary age to the Allard stock based on their regional mapping (Current Research 1997-A, Geological Survey of Canada, p. 47-55). Further, they describe it as a composite pluton with an eastern syenitic phase that is "dissimilar to any other [intrusion] in the map area". Eagle Plains did not recognize this second phase. The stock is bordered by a weak contact metamorphic and metasomatic aureole 100 to 300 metres wide (J. Stephens, pers. comm., 2004).

Eagle Plains conducted a property-wide program to evaluate known showings and discover new areas of gold-silver mineralization. It involved geological mapping, prospecting, rock grab and channel sampling, and stream sediment and soil sampling. Targets will be prioritized and drilling is anticipated in 2004. Most historic work was carried out at the east end of the Allard stock. In the 1940s a small tonnage of ore with a recovery grade of 49.6 g/t gold was shipped from the low-sulphide **Kalum** quartz vein (103I 019). Further work in the 1980s defined a small resource grading 16.1 g/t gold. Along the north contact of the pluton, Eagle Plains delineated a gold soil anomaly over a distance of 4.5 km between the **Chris** (103I 174) and **Martin** (103I 020) showings (Photo 6).

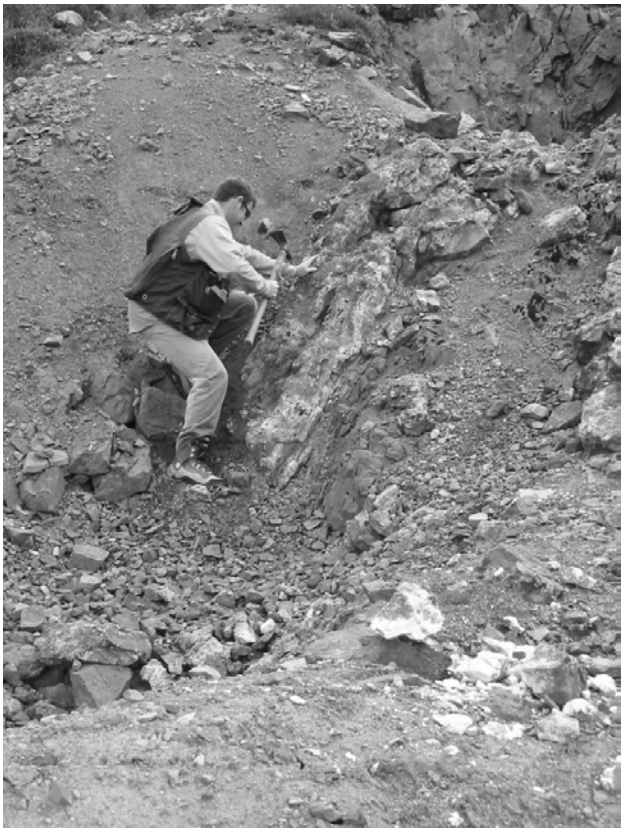

Photo 6. Julian Stephens sampling the Chris gold-bearing quartz-arsenopyrite vein.

Also in the 1980s, trenching and drilling of the Chris quartz-arsenopyrite vein showed an average of 11.3 g/t Au and 80.6 g/t Ag across 0.6 metres along a 300 m strike length. The Martin showing comprises two parallel, sulphide-rich veins with comparable gold content. Abundant sulphides include pyrrhotite, pyrite, arsenopyrite, galena and sphalerite. Neither the Martin vein nor the intervening ground has been drilling tested. At the northwest end of the Allard stock, work on the **Hat** (103I 173) and nearby veins confirmed previous results and discovered new veins. For example, the Pick vein assayed 4.8 g/t Au, 380 g/t Ag across 0.7 metres and the new 5000 vein returned 6.1 g/t Au, 17.3 g/t Ag across 1.0 metre. The veins contain arsenopyrite, galena, chalcopyrite sphalerite and pyrite. Midway between the Martin and Hat occurrences, the newly discovered Tojo zone consists of an area of sheeted quartz veins over a 30 by 80 metre area within granodiorite. The best grab sample graded 73.1 g/t Au and 495.4 g/t Ag. About 1 kilometre south of the Hat/Pick zone, along the western contact of the stock, soil sampling and prospecting located several areas with multiple quartz veins. Among these, the Rico vein returned a best sample of 11.0 g/t Au over 2.5 metres. Another new showing, the Tuppie zone was discovered in the hornfels carapace above the pluton in the west-central area of the property. Drusy quartz-cemented breccias and narrow comb-textured quartz-sulphide veins are associated with aplite and vein-dikes. Grab samples from the sulphide veins contain up to 2.8 g/t Au and 975 g/t Ag. Julian Stephens (pers. comm., 2004) notes that the Allard magma is weakly oxidized, and mineralization is relatively high in silver, lacks bismuth, and is associated with propylitic, argillic and silicic alteration. Consequently, Eagle Plains concluded that the principal exploration target is an epithermal gold-silver vein deposit rather than a gold deposit related to a reduced granitic intrusion, like Fort Knox. An airborne resistivity, magnetic and electromagnetic survey is planned in 2004.

Babine Area

The **Morrison-Hearne Hill** project of Pacific Booker Minerals Inc. entered the Environmental Assessment Process with a proposal to develop a 20 000 to 25 000 tonne per day open pit mine. The initial meeting was held in Smithers on October 20. The Morrison porphyry copper-gold deposit (93M 007) is located 65 km northeast of Smithers and is centred on an Eocene biotite-feldspar granodiorite porphyry stock. Measured plus indicated reserves were determined by E. Kimura, P.Geo., to be 12.4 million tonnes at 0.53% Cu, 0.26 g/t Au (at 0.3% Cu cutoff and 0.75 strip ratio) in a starter pit, within an ultimate pit with 62.1 million tonnes grading 0.46% Cu, 0.22 g/t Au (at 0.3% Cu cutoff and 1.15 strip ratio). To close off gaps in the resource base, and for hydrologic and geotechnical assessment, Pacific Booker drilled eight holes in 2003, bringing its total in the Morrison deposit to

90. Other studies include surface water flow and quality, ore and waste rock acidity, fisheries potential, and evaluation of tailings disposal sites. Pacific Booker proposes to begin a full feasibility study in early 2004. Under terms of its agreement with Noranda Inc., Pacific Booker must complete the study by October 31, 2005.

On the west side of Babine Lake, south of Granisle, Lee Foster undertook a program of rotary drilling with a truck-mounted rig on the Big and Paul claims. A total of thirteen 20 to 60 metres deep holes were drilled. Those on the Paul claims did not reach bedrock.

Further north in the Skeena Mountains 160 km from Smithers, Kodiak Resources Inc. (formerly International Kodiak Resources Inc.) carried out an IP survey and drilled five core holes on its **Tommy Jack** (94D 031) property. The holes tested a 2.1 km long and 100 to 300 metres wide zone of high chargeability that coincides with soils anomalous in silver, gold and base metals, and includes the original showing on Tommy Jack Creek. The holes are aligned in a northeast fence across the anomalous zone. Drilling encountered Bowser Lake Group sandstone, greywacke and shale and rare altered dacite dikes, all cut by quartz-carbonate veins. Three veins sets are recognized (S. Wetherup, pers. comm., 2003) and contain galena, sphalerite, pyrite and arsenopyrite. One vein-set is associated with northwesterly graphitic shears that are normal faults with southwest side down offsets. Two of the best intercepts are 2.04 g/t Au, 138.5 g/t Ag over 10.2 metres in TJ03-03 and 31.70 g/t Au, 0.93 g/t Ag over 1.2 metres in TJ03-05.

Houston-Tahtsa Area

The **Seel** claims, which cover the Lean-To porphyry copper prospect (93E 105) 110 km south of Houston, were acquired by Grayd Resource Corp. from prospector Rupert Seel. Grayd conducted geological mapping, prospected and compiled previous drilling results. Mineralization consists of a quartz-chalcopyrite stockwork that is related to an Eocene intrusion. Mineralization is younger than other porphyry deposits in the Tahtsa district, such as Huckleberry and Whiting Creek. Sampling at Seel showed up to 1.6 g/t gold, higher than values in the Cretaceous porphyry deposits. The target was expanded to an area 7 km long by 1-2 km wide but the company was unable to finance IP and drilling programs.

Three claim groups were staked 5-10 km south of Houston. The 64 unit **Bob Creek** property was acquired by Royal Country Minerals Corp., then transferred to International Curator Resources Ltd., which subsequently changed its name to Canadian Gold Hunter Corp. The company was unable to locate important drill logs or core from previous work on the Bob Creek epithermal gold-silver prospect (93L 009) so deferred its proposed fall drilling program to 2004. The 210-unit **Buck** property adjoins Bob Creek to the south and includes a silver-base metal occurrence (93L 265). A private company, United Mineral Services Ltd., acquired the claims and conducted a 40-kilometre reconnaissance IP survey that yielded several chargeability anomalies. Nearby, Lorne Spence acquired the 36-unit **Low** claims, which adjoin the Silver Streak silver-copper showing that he optioned from prospectors Ed and Jerry Westgarde and Barry Hofsink. No work was done.

In the Nechako Plateau near Intata Reach, 110 km southeast of Houston, Southern Rio Resources Ltd. staked the **Sam** claims to cover the Rhuhbarb epithermal gold-silver showing (103F 054). Limited work was done as the company focused on the 3Ts property further east.

INDUSTRIAL MINERALS AND GEMSTONES

Fireside Minerals Ltd. produced 10 000 tonnes of barite from the Bear pit on the **Fireside** property (94M 003), which is 125 km east of Watson Lake. Coarse, white barite comprises a fault-controlled vein within rocks of the lower Paleozoic Kechika Group. The vein strikes east-northeast and dips steeply north. Deepening of the Bear pit showed the vein increases in width to 10 metres (Photo 7). To the north, the vein cuts buff-brown phyllite and to the south it crosses black siltstone and quartzite that is fractured and in-filled by quartz and calcite. Run-of-mine material was concentrated using jigs at the mine site, then trucked to Watson Lake where the barite was ground, bagged and sold to the western Canadian oil and gas drilling industry. Exploration drilling below the Bear pit is planned early in the 2004 season.

Photo 7. Mining the 10-meter wide Bear barite vein on the Fireside property.

Nephrite jade was produced from three properties; **Cassiar** (104P 005), **Polar Jade** (104I 083) near Serpentine Lake, and **Kutcho Creek** (104I 078). Cassiar Jade Contracting Ltd. mined Cassiar, and Polar Gemstones Ltd. operated the other two deposits. The Jade West Group markets all the jade, mainly to Chinese and Korean buyers.

On the **Xeno** property (94L 017) Pacific Ridge Exploration Ltd. carried out additional surface sampling aimed at characterizing rocks associated with a microdiamond it recovered from an earlier sample. The diamond, 0.38 by 0.30 by 0.25 mm in size, was obtained from a 32 kg sample of an ultramafic diatreme dike. The Xeno claims cover a complex of Paleozoic alkalic rocks and carbonatite 15 kilometres west of the Rocky Mountain Trench that occur in an area underlain by continental crust. Access is by helicopter, 140 kilometres east from Dease Lake. The B.C. Geological Survey (Simandl, *Geological Fieldwork, 2003*) also investigated the area to search for kimberlite indicator minerals (Photo 8).

Photo 8. George Simandl, B.C. Geological and Development Branch, examines heavy mineral concentrate for diamond indicator minerals on the Xeno property.

PLACER MINING

Interest in placer mining rose as the price of gold climbed late in the year and more activity is expected in 2004. However, due to staff reductions in the Ministry of Energy and Mines, it is not possible to present a comprehensive report of placer gold mining in the region, so comments here are limited to two areas.

In the Atlin district, **Ruby Creek** continued to be the principal area of activity. A joint venture between Sisters Resources, a private company, and Main Street Mining Ltd. drove an adit on the left bank of the creek beneath the Ruby Creek olivine basalt lava flow to mine the creek paleochannel from underground. The adit was collared from the floor of the pit dug by Sisters Resources in 2002. Unfortunately, the pit was not economically viable (see *Exploration and Mining in BC – 2002*). The chilled base of the lava flow is very strong, and supports an open stope measuring some 60 metres long by 20 metres wide and 6 metres high. Interestingly, the base of the flow preserves the texture of the bed of ancient Ruby Creek, including the cast of a 5-metre boulder. Five to six miners had extracted more than 9000 cubic metres by mid-season (G. Turner, pers. comm., 2003). There was no activity upstream from the Sisters-Main Street JV where West Coast Paving Co. Ltd. and Westrail Construction operated in 2002. Downstream of the underground placer mine, Pelly Construction Ltd. expanded the Ruby Gold pit by another setback of the pit high wall. Mining encountered a granite bedrock 'high' that deflected the paychannel. Mining results were disappointing as paydirt was thinner and lower grade than expected.

Thibert Creek continued to be the most active in the Cassiar district.

COAL PROJECTS

Fortune Minerals Limited is preparing new resource estimates and a revised computer block model for the Lost-Fox deposit on the **Mount Klappan** anthracite coal property (104H 020, 021, 022). An updated feasibility study is planned for 2004. Fortune Minerals contemplates a mining rate of one-half to two million tonnes per annum, and will market premium coals for water purification, cooking briquettes and metallurgical applications. The announced acquisition of BC Rail Ltd. by Canadian National Railway Company may facilitate development of Mount Klappan. A railway sub-grade, constructed decades ago, passes through the property and track is installed to within 70 km of these coal deposits.

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