ABSTRACT BOOK.

→ MIKE GRAY
→ TOM SHROETER

108 → Eskay Ck.

ROUNDUP '99
Jan. '99

Final DRAFT - Must have FINAL edits by Monday - Noon
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Wednesday, January 27, 1999 – Morning

DOMESTIC SNAPSHOTS & TINTINA GOLD BELT SESSION
Regency Ballroom, Hyatt Regency Hotel

Session Chairmen: Michael Gray, Rubicon Minerals Corporation, Tom Schroeter, BC Geological Survey

Domestic Overview & Snapshot Session

882895

08:30 *Keynote Address*: Overview of the Discovery Process and Vancouver's Key Role in Wealth Creation
Walter Segsworth, President of Homestake Canada Inc., Vancouver

Vancouver has historically provided a substantial part of the foundation that allows the evolution of mineral discoveries both in Canada and around the world. Because of various factors, Vancouver is in danger of losing the underpinnings of this technical advantage, and such a loss would be disastrous for our province and our country.

A brief overview of the key role that Vancouver-initiated mineral discoveries have played in Canada's wealth creation, including the "case history" of Eskay Creek, clearly illustrates the importance of maintaining Vancouver's expertise. Our leading edge can be preserved and the paper will examine what things need to be put in place to do so.

→ **09:00 Eskay Creek Deposit, B.C. : An Update**
Carl Edmunds, Homestake Canada Inc., Vancouver, B.C.

The Eskay Creek Mine located 85 kilometers northeast of Stewart British Columbia has been in continuous production since December 1994. The property is now 100% owned and operated by Homestake Canada Inc. following an amalgamation between Homestake and Prime Resources Group Inc. Production to date for 1998 is 254,290 ounces of gold and 10,688,995 ounces of silver from 150,674 tons of ore. Precious metal products include direct shipping ore and sulfide concentrate that is treated in smelters in Quebec and Japan.

The production, exploration, and reserve statistics are presented below. It can be seen that exploration over the period has been very successful in replacing mined ore. A 182-ton per day gravity-flotation mill was commissioned in January 1998. This allows the mining of cleaner, lower grade ore and contributes to the project's life and profitability. In addition, there are obvious implications for exploration in expanding the scope of target environments.

Year	Production (year end)			P& P* Reserves (as at January)			Exploration
	Tons	Gold (Oz)	Silver (Oz)	Tons	Gold (Oz)	Silver (Oz)	Drilling (m)
1994				1,190,000	2,272,900	101,745,000	3,531
1995	104,100	196,544	9,950,000	1,190,000	2,272,900	101,745,000	3,468
1996	115,868	211,276	12,054,161	1,124,000	2,108,000	93,752,000	21,280
1997	121,465	244,722	11,765,902	1,397,000	2,418,000	110,810,000	16,220
1998**	150,674	254,290	10,688,995	1,495,000	2,532,000	117,011,000	21,892
Total	492,107	906,832	44,459,058	*=Proven & Probable **=to Nov '98			66,391

Grades Au Ag

58.28 2683.4

Exploration has been continuously active on several fronts since mid-1995. Since 1989 Eskay has been well understood as a unique precious metal enriched volcanic massive sulfide deposit comprised of several zones that have been differentiated on the basis of texture, metallurgy and host rock. The simplified geology shows much in common with other VMS deposits. Stacked stratiform sulfide mineralization is found in a mudstone host within interleaved basalt and sericite-orthoclase altered rhyolite volcanics. The latter are developed above siliciclastic and calc-alkaline arc-related volcanic rocks. The entire assemblage is lower middle Jurassic in age and is part of the allocthonous Stikine Arch.

Homestake's minimum exploration objectives are to replace reserves that have been mined. Reserve statistics shown above confirm the success in this realm, since the operation now has a higher reserve base than at mine opening. In-Mine strategy has been geared towards resource conversion and expanding upon the numerous drill intercepts not included in a formal resource. In some instances, the tightly spaced drilling pattern of 7-10m centers dictated by delineation has identified small (<5000T) structurally dismembered blocks, which have sufficiently high unit value to enable profitable mining. The Near-Mine strategy has been to concentrate on known zones assigned a crudely constrained resource or poorly constrained metallurgical characteristics. The objective is to increase confidence in resource attributes of weakly understood or sparsely drilled zones. The preeminent goal at Eskay is to locate new precious metal bearing sulfide deposits, and presently this implies deep exploration beneath post-ore cover.

At project start-up, In-Mine exploration focussed on the 109 Zone, which was a well mineralized cross-structure located in the volcanic footwall to the massive sulfides. Initial underground exploration began in 1992 with a dozen short holes following up surface hole #109 which had intersected 45m grading 3.53 opt Au in a silicified cross-structure. Ultimately, it required 112 holes to define a millable reserve of 297,623 tons grading 0.69 opt Au and 0.73 opt Ag by January 1997. Other exploration successes close to the mine have been the resource to reserve conversion of the NEX and the 21C Zones. During 1995, an exploration program was initiated to further explore the 21 B northern extension (NEX). NEX work continued through 1996 and from underground in 1997. By January 1998, the work had identified a reserve of 217,155 tons grading 1.34 opt Au and 90.59 opt Ag. Both NEX and 109 Zone ore supplies the new on-site mill.

Most recently Near-Mine exploration has focussed on the 21C Zone, which prior to 1997 was a discontinuous, but linear distribution of intercepts in the footwall felsic volcanic rocks. By late 1997 a diluted resource of 212,746 tons grading 0.66 opt Au and 2.8 opt Ag had been defined. Surface drilling over the past season has now resulted in a millable zone giving a diluted resource of 334,000 tons grading 0.48 opt Au and 2.10 opt Ag.

One of the most significant additions of the past year came from definition drilling in the thickest part of the 21B Zone in the #4 Stope area. Here close-spaced drilling identified an irregularity in the lower margin of the massive sulfide, which ultimately added 36,376 tons grading 3.19 opt Au and 129.44 opt Ag. The feature was missed by earlier drilling and accounts for nearly half a year's production (116,000 ounces Au and 4.7 M ounces Ag).

Future exploration at Eskay will involve underground drilling on the 21C Zone, a conceptual test beneath the mine, and an increased amount of deep drilling on newly acquired ground where the geology is obscured by thick, post-mineral sedimentary rocks. Previous work has demonstrated that moderately altered mine stratigraphy is present at depths up to 1000m beneath cover. The next phase of exploration will prove most challenging and interesting as the favorable, but largely unknown, volcanic package that flanks the northwestern sector of the deposit is drill tested.

09:20 Exploration Highlights : British Columbia 1998
Tom Schroeter, B.C. Geological Survey, Vancouver

The opening of the **Kemess South** mine, in the Toodoggone district, in the spring was the mining highlight for 1998. Kemess South has reserves of leached, supergene and hypogene mineralization estimated at 200.4 million tonnes grading 0.63 g/t Au and 0.22% Cu. Capital costs totaled C$480 million, including construction of a 380-kilometre power line from a base station near Mackenzie. At a daily milling rate of 45 000 tonnes, the mine is forecast to produce 7775 kilograms (250 000 oz) of gold and 27 240 tonnes (60 million pounds) of copper annually, over a mine life of 16 years. The improved infrastructure in the Toodoggone area has stimulated exploration in the region. After a 7-year hiatus, the **Blackdome** mine reopened in late 1998.

At the **Eskay Creek** underground mine, one of the worlds highest grade gold and silver mines, both direct shipping of high-grade ore and production of concentrate from the newly-constructed 150 tpd flotation mill is expected to result in production for 1998 in excess of 7600 kilograms (245 000 oz) of gold and 342 000 kilograms (11 million oz) of silver, at a total cash cost of US$161 per gold equivalent ounce. An aggressive exploration program was carried out, both at the minesite and regionally. Since start up in 1995, exploration has successfully

In the East pit, ore is derived 85% from Hazelton Group andesite and 15% from a 40 metre wide dike emplaced along an ore-controlling 110° fault. The dike is an offshoot of a 82 Ma biotite granodiorite stock which metamorphosed Hazelton andesite to biotite hornfels, followed by fracturing and mineralization by hydrothermal fluids. Best copper grade occurs in the granodiorite dike and on the south (footwall) side of the steeply north dipping 110° fault (S. Blower, pers. comm.). High mill throughput is possible because strong fracturing south of the fault, and dissolution of gypsum cemented fractures by ground water, results in unusually soft ore that hardly requires crushing or grinding. This is blended with somewhat harder ore from north of the fault. When mining reaches the bottom of the water table and more competent rock is encountered mill throughput is expected to be lower (S. Blower, pers. comm.). Huckleberry drilled seven exploration holes in a 700 metre semi-circular arc around the west side of the Main stock. A hole near the south contact of the stock intersected a zone of secondary copper enrichment including chalcocite and native copper that graded 0.8% copper over the initial 27 metres of the hole, and then continued in primary mineralization that graded 0.4% copper. Poor mill recovery is obtained from oxide and native copper minerals so that this area is not currently under consideration for mining. Evaluation of this zone is continuing, to determine if it may be incorporated into the Main zone pit.

Eskay Creek mine increased the tonnage mined and gold-silver production as the 150 tonne per day mill came into full operation, offsetting a decrease in sale of direct shipping ore. On December 3, 1998 Prime Resources Group Inc., owner of the Eskay Creek mine became a wholly owned subsidiary of Homestake Mining Company. Ore mined through the third quarter amounted to 68 726 tonnes of shipping ore grading 78.1 g/t gold and 3178 g/t silver, and 41 415 tonnes of mill ore grading 43.2 g/t gold and 1299 g/t silver. Third quarter production was 6666 kg (214 305 oz) of gold and 283 541 kg (9 116 044 oz) of silver at a cost of $US 138 per ounce of gold equivalent. Mill recovery is 92.1% for gold and 95.1% for silver. Shipping ore is derived from the 21B zone, a west dipping sheet of clastic sulphide and sulphosalt beds within mudstone and containing high levels of deleterious elements, mercury, antimony and arsenic. Mill ore comes from the NEX zone, a northern extension of the 21B zone in the hinge of the Eskay anticline and containing acceptable levels of deleterious elements, and from the 109 zone, a pipe-shaped body below 21B consisting of coarse grained vein quartz, sphalerite and galena.

Homestake and Prime Resources continued a land acquisition strategy in the Iskut district and carried out Eskay Creek property and regional exploration. Drilling on the mine and immediately adjacent properties was conducted with four machines. All holes were drilled through the footwall rhyolite to test for mineralized mudstone horizons below the contact mudstone and included the following targets (I. Dunlop, pers. comm.):

- 21C, a rod shaped pyritic zone within footwall rhyolite (Figure 5). It comes to surface at the original 21 zone trenches excavated in the 1930's (near the 21A deposit) and plunges gently northward for 900 metres, passing below and 200 meters downdip of the 21B deposit to its truncation by the Argillite Creek fault. In 1997 it was estimated to contain 190 000 tonnes at a grade of 18 g/t gold and negligible silver. Deleterious elements are very low, so that gold could be recovered by conventional milling.

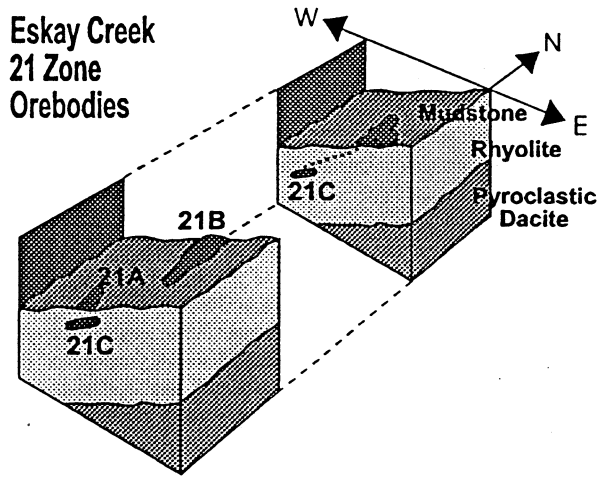

Figure 5. *Expanded block diagram of Eskay Creek mineral zones with folding removed*

- the Eskay depositional trough in the contact mudstone was traced south beneath Bowser Group cover rocks with holes up to 1350 metres long.
- the contact mudstone was drilled at 100 to 200 metre spacing over a one kilometre strike length on the west limb of the Eskay anticline from the 22 zone to the 28 zone.
- the east limb of the Eskay anticline.
- the fringes of the 21A deposit. Encouraging gold intersections were obtained but arsenic, antimony and mercury are extremely enriched.
- an undrilled gap between 21A and 21B deposits. A mineralized link between the two deposits was not found; somewhat surprising because the south end of 21B resembles the 21A zone, containing realgar and orpiment.

Snip gold mine appears to be near the end of its life. The mine is owned by Prime Resources Group Inc. which became a wholly owned subsidiary of Homestake Canada Inc. late in 1998. Third quarter production was 2452 kg (78 834 oz) of gold from milling of 109 787 tonnes. Recovery in the gravity mill was 91.8% from ore averaging 25.0 g/t gold. Costs were $US 198 per ounce. The orebody at Snip comprises a principal and several footwall quartz-carbonate-sulphide veins within biotitic shear zones northwest of the dike-shaped, early Jurassic Red Bluff granodiorite. The granodiorite stock contains the Bronson Slope porphyry gold-copper deposit of International Skyline Corporation. The Twin deposit at Snip is zoned laterally from massive pyrite-pyrrhotite ore close to the stock, to low pyrite "pink and green" ore (with