

The Northern Miner

Vol. 89 No. 14 Since 1915

NORTH AMERICA'S MINING NEWSPAPER

MAY 26-JUNE 1, 2003

American Bonanza eyes Arizona's high-grade potential

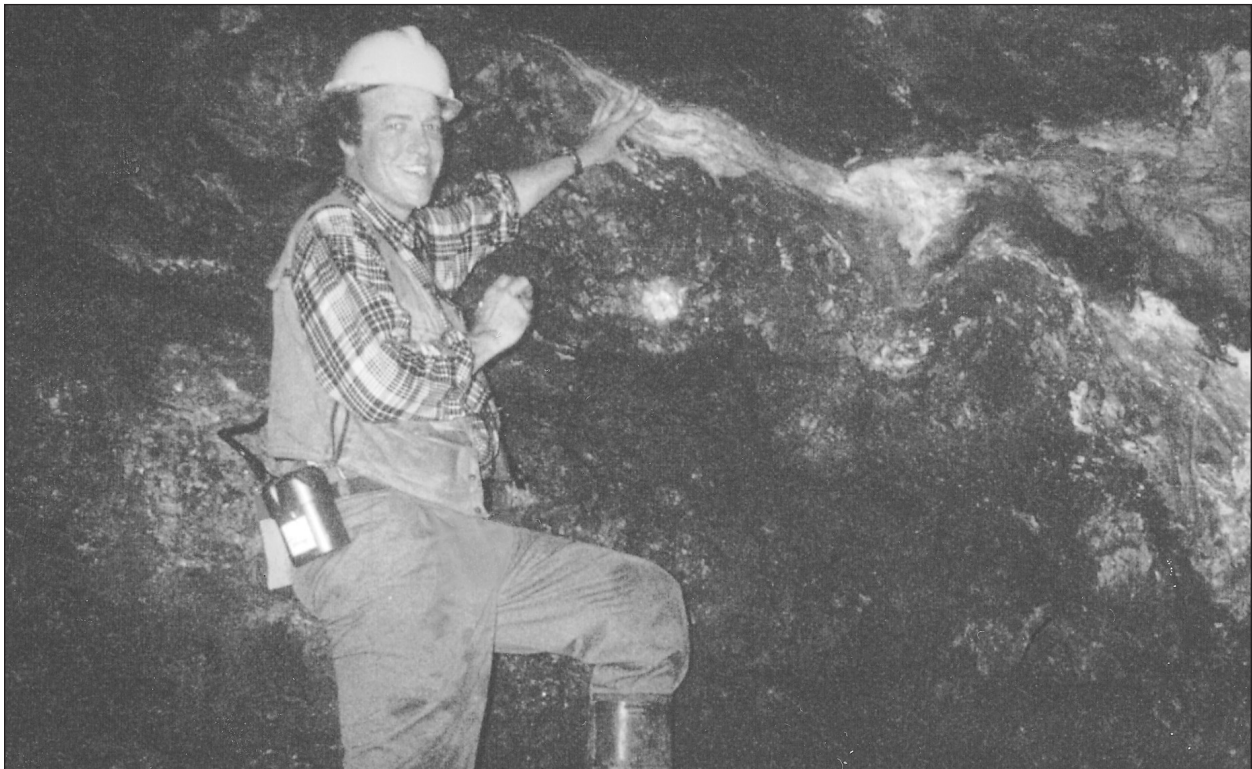


Photo credit: American Bonanza Gold Mining

American Bonanza Gold Mining President Brian Kirwin stands underground in the D zone at the Copperstone gold project in Arizona.

BY ROB ROBERTSON

Having completed a \$4-million equity financing at the first of the year, which saw **Goldcorp** (G-T) acquire a 10% stake in the company, **American Bonanza Gold Mining** (BZA-V) is in the midst of an underground program designed to convert resources into reserves at its Copperstone project in Arizona.

The company has extended an existing decline some 500 ft. to the southern end of the targeted D zone, which is 600-650 ft. beneath the surface. The decline was designed to intercept drill hole C96-19, which returned 5.3 oz. gold per ton over 10 ft. That hole, completed in 1996, was

drilled from surface and is about 80 ft. north of the southern margin of the D zone. Channel sampling from the same mining round that exposes hole C96-19 in the back of the underground workings returned 9.5 ft. grading 4.1 oz. gold, 4.5 ft. grading 9.1 oz., and 4 ft. grading 1.9 oz., confirming the bonanza values of the hole.

The company is cutting an underground drill bay from a crosscut driven westward from the end of the decline into the footwall. "That will position us nice and close to drill out the D zone to reserve level," Brian Kirwin, American Bonanza's president and CEO, tells *The Northern Miner*. "We're going to over drill it to

the point of stope design, and that will help guide our future underground headings. The drilling will help place subsequent driving in the appropriate locations."

The company has spent about US\$600,000 to date on the current program, which began last November with the dewatering of the existing decline.

A 1999 scoping level study by MRDI Canada estimated the total geological resource for the C and D zones at 2.1 million tons grading 0.34 oz., equivalent to 709,000 oz. gold, using cut grades. The D zone alone contains 391,500 oz. in an indicated and inferred resource totalling

910,800 tons averaging 0.43 oz. Gold grades were capped at 4.7 oz. in the D zone and 2.5 oz. in the C zone.

Uncut, the C and D resource averages 0.58 oz. gold, giving an estimated 1.2 million oz. MRDI used a database containing 71 drill holes, with 253 associated assays, to develop the resource model.

The Copperstone project is a former-producing open-pit mine 80 miles west of Phoenix in La Paz Cty. The closest communities are Quartzite, 10 miles to the south, and Parker, 25 miles to the north. A 3-mile-long gravel road connects the property to a paved road. The project is in an area of arid sandy desert terrain, with surface elevations ranging from 720 to 900 feet.

American Bonanza owns a 100% leasehold interest in 284 contiguous mineral claims comprising 5,680 acres. Under a 1995 lease agreement with the Patch Living Trust, annual advance royalty payments of US\$30,000 are payable over a renewable term of 10 years. The junior is obligated to pay for all permitting and state lease bonding, as well as insurance taxes, amounting to a further US\$30,000 a year. A sliding-scale production royalty ranging from 1% to 6% is tied to the price of gold.

From 1987 to 1993, Cyprus Minerals operated a 2,500-ton-per-day open-pit mine and carbon-in-pulp (CIP) milling complex. During its life, the Copperstone mine produced 514,000 oz. gold from 5.6 million tons of CIP mill ore grading 0.089 oz. gold per tonne and 1.2 million tons of heap-leach ore grading 0.03 oz. Gold recoveries averaged 89% in the CIP mill. Following the mine closure, Cyprus reclaimed the tailings pond and removed the CIP mill. Certain on-site buildings, roadways, a water system, power lines and a sub-station remain in service.

Santa Fe Pacific leased the Copperstone property in 1993 and drilled 12,500 ft. in 17 widely spaced reverse-circulation holes. A deep, 1,000-ft. vertical hole drilled from the pit encountered 15 ft. grading 0.65 oz. gold per tonne in the footwall of the Copperstone fault at 479 ft. from surface. This hole was never followed up, and the lease was terminated in 1994.

The Copperstone property occurs in the "basin and range" province of the southwestern U.S. The regional geology is strongly influenced by Tertiary-age detachment faults and younger high-angle normal faults. The Copperstone gold mineralization occurs in northwest-striking, moderate-to-shallow-dipping fault zones related to the Copperstone structural horizon within a package of Triassic sediments and Jurassic quartz latite volcanics. Most gold mineralization occurs in a breccia zone related to the fault.

Intensely sheared, altered and replaced rock textures characterize the Copperstone fault in the vicinity of the D zone. Gold is commonly associated with intense hematite and magnetite replacement, chloritization, silicification and copper oxides.

Fault zones

Gold mineralization is restricted to the fault zones, with little or no gold present in the wallrocks. The Copperstone fault dips 25° to the east in the D zone area. A sequence of quartzite, chlorite schist (siltstone) and marble (limestone) is the predominant host in the high-grade portion of the D zone.

Royal Oak Mines leased the property in 1995 and proceeded to test for deeper extensions of mineralization in the Copperstone fault below the open-pit and along strike. Some 35 surface holes totalling 28,330 ft. were completed between 1995 and 1997, resulting in the discovery of several bonanza-grade intercepts on strike to the north (the "D zone") and down-dip to the northeast (the "C zone"). Highlights included 20 ft. averaging 1.98 oz. (including 5 ft. of 6.27 oz.) from the D zone and 10 ft. grading an impressive 21 oz. from the C zone. In addition, Royal Oak outlined two smaller zones of lower-grade mineralization beneath the pit area.

In 1998, American Bonanza's predecessor, Asia Minerals, acquired a 25% interest in the project from Royal Oak, along with an option to earn up to 80% by incurring certain exploration costs and cash payments totalling US\$4 million. At the time, Royal Oak was a controlling shareholder of Asia Minerals, with a 44%

stake. The relationship between the companies dated back to 1993, when Royal Oak bought a 40% interest in Asia Minerals, which was then exploring for gold in China.

In the fall of 1998, Asia Minerals targeted the C and D zones with 10,970 ft. of drilling in 15 holes. Notable intercepts (all from the D zone) included: 20.2 ft. of 0.45 oz. in hole 98-2 starting at a down-hole depth of 593 ft.; 13.3 ft. of 4.91 oz. (including 5 ft. of 12 oz.) in hole 98-3 starting at a 624-ft. depth; 20.5 ft. of 0.63 oz. (including 4 ft. of 1.5 oz.) in hole 98-5 at a depth of 553 ft; and 14.4 ft. of 0.57 oz. (including 6.4 ft. of 1.12 oz.) in hole 98-13 at 578 ft.

A high-grade intercept was also obtained from the C zone in hole 98-6; it ran 0.71 oz. across 2 ft. at 727 ft. down-hole.

After spending US\$560,000 exploring the property and completing a positive preliminary scoping study of a proposed small high-grade underground operation, Asia Minerals was forced to resolve the problems associated with the 1999 bankruptcy of Royal Oak. The junior lined up a group of private investors to purchase Royal Oak's position in Asia Minerals and arranged a credit facility to buy out the remaining 75% interest in the Copperstone project not already held.

From February to March 2000, Asia Minerals completed 11 additional reverse-circulation and core holes totalling 8,164 ft. Five of the holes tested the strike extension of the D zone to the north of an interpreted crosscutting northeast-striking fault without encountering any significant mineralization. The drill results indicated that the favourable volcanic stratigraphy in this area is locally faulted out and that, where present, it is offset up to 60 metres vertically relative to the stratigraphy in the D zone.

Four other holes tested areas of low drill density in the D zone. Despite intersecting strong hematite-chlorite-copper oxide mineralization, no significant gold values were encountered (with the exception of hole 00-2, which returned 3.4 ft. of 0.28 oz.).

Asia Minerals completed one

exploration hole as a follow-up to Santa Fe's lone high-grade intercept in the Footwall zone under the pit. Steeping out 100 ft. north of the Santa Fe hole, this follow-up hole intersected 0.94 oz. gold across 10.5 ft.

In September 2000, Asia Minerals began driving an underground exploration decline north into the D zone area from a portal near the north floor of the Copperstone pit. The decline was advanced 1,350 ft. before lack of funding forced the company to stop exploration in early 2001. The decline failed to reach the targeted D zone, falling some 500 ft. short.

In late 2000, Asia Minerals changed its name to American Bonanza Gold Mining after acquiring all the shares of Bonanza Gold, a private company exploring in Nevada. The acquisition resulted in a change of management, with Brian Kirwin appointed president and CEO. Kirwin was vice-president exploration for Vengold from 1996 to 2000 and prior to that, from 1989 to 1996, was employed by Placer Dome in various capacities, including senior evaluations geologist in the corporate development group.

Directors

American Bonanza's current board of directors consists of Ian Telfer, chairman and CEO of **Wheaton River Minerals** (WRM-T) and former president and CEO of Vengold; Giulio Bonifacio, who was vice-president finance at Vengold from 1994 to 2001 and who now serves as executive vice-president and CFO of American

Bonanza; and Robert McKnight, a recent vice-president of Pincock Allen & Holt and former director and principal of Endeavor Financial Corp.

In March 2002, American Bonanza completed the acquisition of Copperstone through a US\$1.1-million loan provided by Brascan Financial. The loan is repayable in two equal instalments over two years. The junior made its first payment of US\$550,000 in March 2003.

American Bonanza took advantage of the turnaround in the price of gold to raise several million dollars last year through equity financings brokered by Canaccord Capital. In January 2003, the company raised a further \$4 million in a private placement consisting of 18.3 million units priced at 22¢ apiece. The largest subscriber was Goldcorp, which now owns a 10% stake in the company. American Bonanza is currently trading at around 29¢ in a 52-week range of 38-11¢. The company has 115 million shares outstanding, or 164 million on a fully diluted basis.

The 1999 MRDI scoping study concluded that the Copperstone project could support a 520-ton-per-day underground mine over a life of five years based on a potential minable resource containing 459,500 oz. gold in 827,400 tons at a cut and capped grade of 0.56 oz. gold per tonne. The plan is based on selective drift-and-fill mining, utilizing paste tailings backfill. The mill design incorporates crushing and grinding circuits, a gravity concentrator, and cyanide-tank leaching with CIP gold recovery.

Ninety-percent recovery

The preliminary study assumed a gold recovery of 90% on the basis of Cyprus Minerals' historical data. Gold occurs predominantly in native form with some quartz and iron oxide encapsulation. Annual gold production in the first year was forecast at 157,000 oz., dropping to 72,000 oz. in years two to five, with an overall cash cost of US\$149 per oz.

Capital costs were estimated at US\$22.5 million. The base-case scenario offers a pretax cash flow of US\$32 million, a payback period of 1.2 years and a 10% discounted net present value of US\$18 million, using a gold price of US\$300 per oz.

The current objective of the underground exploration program is to convert the resources to reserves and expand those numbers. "Now that we are in on the D zone, it will allow things like metallurgical sampling and reserve level definition," says Kirwin. The company will also target the C zone with further drilling from surface. The C zone cannot yet be reached from underground; it sits about 700 ft. due east off a point in the decline 200 ft. south of the last heading. "There is a real serious shortfall of data on what we call the broader C zone," says Kirwin, noting there has been little drilling in the vicinity of Royal Oak's 1995 program, which resulted in 21 oz. gold across 10 ft., the best hole to date on the property. The surface drilling will be challenged by 200 ft. of overlying aeolian sands, which have previously posed problems for drill crews.