TECHNICAL REPORT ON THE COPPERSTONE GOLD PROPERTY
La Paz County, Arizona

FOR

AMERICAN BONANZA GOLD MINING CORP., INTERNATIONAL TAURUS RESOURCES INC., FAIRSTAR EXPLORATIONS INC. and 0710887 BC Ltd., to be renamed AMERICAN BONANZA GOLD CORP.

Date of report: January 26, 2005,
using drilling data up to and including January 18, 2005

Michael R. Pawlowski
Registered Professional Geologist
State Board of Technical Registration, State of Arizona #24509
Certified Professional Geologist
American Institute of Professional Geologist, AIPG #7681
Gilbert, Arizona, 85234
480 632-6476

REGISTERED GEOLOGIST
CERTIFICATE
24509
MICHAEL R.
PAWLOWSKI
DATE SIGNED Jan 27, 2005
ARIZONA, U.S.A.

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1.0 Summary

Copperstone is a mid-Tertiary, detachment fault hosted, high-grade gold deposit structurally controlled by the Copperstone Fault. The Copperstone property of American Bonanza Gold Mining Corp. (“Bonanza”), is located in La Paz County, Arizona, about 9.5 miles north of the town of Quartzite. The property consists of 335 unpatented mining claims and 3 state mineral sections covering an area of approximately 8,821 acres. From 1987-1993, Cyprus Minerals Corporation operated an open-pit mine at Copperstone. Production was reported at 514,000 ounces of gold from 5.6 million tons of ore grading 0.089 ounces of Au per ton. In 2002, Bonanza gained control of a 100% equity interest in Copperstone subject only to a royalty schedule payable to the Patch Living Trust.

In 1999, MRDI completed detailed resource estimation with an Indicated Resource of 892,200 tons at 0.32 ounce per ton gold and Inferred Resource of 1,193,700 tons averaging 0.354 ounces per ton gold. For comparison of the effects of capping grades, the uncapped resource estimate for these same zones is comprised of 2.1 million tons grading 0.58 opt Au, exceeding 1.2 million ounces of contained gold. Within the Indicated and Inferred Resources, MRDI estimated “resources available for mining” as a total of 827,000 tons grading 0.56 opt Au (using capped, diluted grades). Economic studies were performed on this 459,500 ounce resource estimate. This estimate is not NI 43-101 compliant and is provided for historic purposes only.

American Bonanza Gold Mining Corp. is presently conducting exploration drilling on the D-Zone and High wall targets to convert known indicated and inferred resources into measured resources and reserves. Additional drilling and structural analysis is needed on the Footwall Target, a mineralized fault parallel to and about 400 feet below the Copperstone Fault in the central area of the open-pit. The Copperstone geologic staff is presently working to identify additional exploration targets for exploration drilling.

The Copperstone area lies within the northern Moon Mountains and regionally within the Basin and Range province of western Arizona. The Moon Mountain detachment fault, about 1.5 miles south of Copperstone, strikes easterly and dips shallow to the northeast. Copperstone mineralization lies within the listric Copperstone Fault in brittle upper-plate volcanics and sediments of Mesozoic and Tertiary age.

The stratigraphy of the Copperstone area, from oldest to youngest, consists of Triassic phyllites, Triassic metasediments, Jurassic quartz latite porphyry, Miocene monolithic breccia and basalts. A 100+ foot wide, metasedimentary package of quartzite, chlorite schist, and marble overlies basal phyllites. Overlying the metasediments is the principle gold bearing, quartz latite porphyry flow unit overlain by a monolithic breccia comprised of quartz latite fragments. A 450+ thick basalt unit overlies the volcanic-sedimentary sequence.

The brecciated Copperstone Fault zone ranges from 45 to 185 feet in width, strikes N 30 to 60° W, and dips 20 to 50° NE. High grade, “bonanza” gold ore shoots with minor copper occur as fissure veins, breccia fillings, and replacements within the brecciated quartz latite porphyry, monolithic breccias, and reactive metasediments.

Copperstone mineralization occurs as free gold associated with copper oxides and is associated with early and late state quartz/amethyst and calcite. Mineralization has the following characteristics similar to epithermal deposits: host rocks, vein mineralogy, stockworks, temperatures of mineralization (190-320° C), depth of formation (1 kilometer), and ore horizons. However, mineralization differs from typical epithermal mineralization in the following ways: relatively high salinities, the total oxide assemblage, and scarcity of typical pathfinder suite elements of As, Sb, Te, Se, and Hg.

The author recommends a Proposed Budget for 2005 of US$2,963,000 beginning on February 1, 2005 and extending to August 31, 2005. The Proposed Budget for 2005 will consist of continuing the ongoing Copperstone exploration drilling and geological research to complete the surface and underground exploration programs, complete a baseline study, preliminary permitting and prefeasiblility study. The Proposed Budget of 2005 would have 20,000 feet of exploration drilling, 10,000 feet of underground D-Zone drilling, and 30,000 feet of surface in-fill drilling in the B-Zone, C-Zone, and HW-zone.

The estimated Feasibility Stage Budget beginning in September 1, 2005 and extending to April 30, 2006 will cost US$3,091,000. The estimated Feasibility Stage Budget will consist of exploration drilling; underground access and drilling of the C-Zone; surface in-fill drilling of the B, C, and HW zone; underground mine management; and baseline, preliminary permitting, and feasibility studies.

2.0 Introduction

Michael R. Pawlowski and Thornwell Rogers visited the Copperstone Gold property in La Paz County, Arizona on January 10, 2005. The scope of this report is based upon the author’s personal examination of the property; examination of select drill core and mineralized exposures; and review of technical reports supplied by American Bonanza Gold Mining Corp. Michael R. Pawlowski, Thornwell Rogers, and Daniel P. Laux assembled the report, figures and tables with the help of Copperstone personnel at the Copperstone Site, near Quartzite, Arizona and at the Bonanza Office in Reno, Nevada.

The report was prepared at the request of Joe Kircher, VP of Operations for American Bonanza Gold Mining Corp. This report provided a summary of the project history, geology, deposit types, mineralization, exploration activities and results, quality assurance, baseline testing, resource, conclusions and recommendations.

2.1 Terms of Reference

American Bonanza Gold Mining Corp. requested that Michael R. Pawlowski and Thornwell Rogers review the Copperstone prospect and prepare a technical summary of the Copperstone Gold property. This report has been prepared in compliance with Canadian National Instrument 43-101 and is to be submitted as a technical report to the TSX Venture Exchange ("TSX-V") and the BC, Alberta, Ontario and Quebec Securities Commissions and summarized in an information circular to obtain shareholder approval of the merger of American Bonanza Gold Mining Corp., International Taurus Resources Inc., a subsidiary of Fairstar Explorations Inc. 0710882 BC Ltd. ("Fairstarsub") holding Fairstar's interest in the Fenelon project in Quebec, and 0710887 BC Ltd., to be renamed American Bonanza Gold Corp. ("New Bonanza"), the resulting company, and its application to list its common shares on one or more senior stock exchanges, including the Toronto Stock Exchange ("TSX"). These companies trade under the following symbols: American Bonanza Gold Mining Corp. (TSX-V: BZA), International Taurus Resources Inc. (TSX-V: ITS) and Fairstar Exploration Inc. (TSX: FFR). This report as requested by Joe Kircher makes budget recommendations to take the project through to the preparation of a prefeasiblility report.

2.2 Units of Measure

This report uses many of the units of measurement based on past practices. Units of measure and conversion factors used in this report include:

Currency (All currency is in U.S. dollars unless otherwise noted)
U.S.$ = refers to U.S. dollar
C$ = refers to Canadian dollar

Linear Measure

1 inch	= 2.54 centimeters
1 foot	= 0.3048 meter
1 yard	= 0.9144 meter
1 mile	= 1.6 kilometers

Area Measure

1 acre		= 0.4047 hectare
1 square mile	= 640 acres	= 259 hectares

Weight

1 short ton	= 2000 pounds	= 0.907 tonne
1 pound = 16 oz	= 0.454 kg	= 14.5833 troy ounces

Assay Values	percent	grams per metric ton (g/t)	troy ounces per short ton (opt)
1%	1%	10,000	291.667
1 gm/ton	0.0001%	1	0.0291667
1 oz troy/short ton	0.003429%	34.2857	1
10 ppb			0.00029
100 ppm			2.917

2.3 Sources of Information

Outside sources of information utilized in the undertaking of this report consist of exploration, geological, and other reports available in the public record and from private corporate files. There were no limitations put on the authors in preparation of this report with respect to available Bonanza data. Certain confidential items, such as geophysical data, were considered proprietary and sensitive to Bonanza and not divulged to the authors. Where cited, references are referred to in text by author and date. Cited references are provided in Section 19 (References).

2.4 Scope of Work

The authors of this report, Michael R. Pawlowski and Thornwell Rogers, conducted a site visit to the Copperstone Gold property on January 10, 2005 to examine the property site, assess the geological setting, mineralization, and alteration of the property, and to review location monuments and mineral claim posts. Three representative mineralized samples of drill core and 6 mineralized samples from the underground workings were collected and submitted to American Assay in Reno, Nevada of analysis. Sample results are discussed in Section 12 (Sampling Methods and Approach) and Section 14 (Data Verification).

3.0 Disclaimer

American Bonanza Gold Corp. requested that the authors review the Copperstone Gold Property, and prepare a technical summary of the property. The report has been prepared in accordance with National Instrument 43-101.

The authors have prepared this report based upon information believed to be accurate at the time of completion. The authors have principally relied on information contained in reports, maps, data, and press releases on SEDAR and supplied by American Bonanza Gold Corp... All sources of information for this report are referenced in Section 19 (References). Michael R. Pawlowski, P. Geo., supervised Thornwell Rogers and Daniel P. Laux in the preparation of this report.

The authors do not fulfill criteria for being a “Qualified Person” in respect of land title and environmental matters. The authors completed review of the mineral claim records for La Paz County and the state mineral lease records to verify the validity of the mineral claims and the state mineral leases.

4.0 Property Description and Location

The Copperstone Gold property totals approximately 8,821 acres and is located in La Paz County, Arizona, about 9.5miles north of the town of Quartzite (Figure 4.1). The property consist of 335 contiguous unpatented lode mining claims covering an area of approximately 6,901 acres (20.6 acres per claim) and comprised of 274 “Copperstone”, 51 CSA, and 10 “Iron Reef” claims (Figure 4.2, Appendix 1). The property also includes mineral leases on state mineral lands in T 7 N, R 19 W, section 31 and T 7N, R 19 W, sections 6 and 7 totaling approximately 1,920 acres.

The Department of Interior, Bureau of Land Management ("BLM") under the Federal Land Policy and Management Act of 1976 administers public lands in the area of the Copperstone Property. The Copperstone claims are located in T 6 N, R 19 W, including sections 18-22 and T 6 N, R 20 W including sections 1, 2, 11-14, 22-27. The west side of the property bounds against the Colorado River Indian Tribes reservation.

Annual claim maintenance fees for the 335 claims are payable yearly by September 1 in the amount of $125 per claim for a total of $41,875. Each of the 335 mining claims is active with the current assessment paid though September 1, 2005. The La Paz County yearly tax for real and personal property has been paid on existing building and improvement on the Copperstone property.

Bonanza holds a 100% leasehold interest in the Copperstone Project. The landlord is the Patch Living trust and the lease is for 10-year term starting June 12, 1995. The Patch Living Trust receives an annual advance royalty payment of $30,000 over the 10-year term of the agreement. The lease is renewable by Bonanza for one or more ten-year terms at Bonanza's option under the same terms and conditions. Bonanza is obligated to pay for all permitting and state lease bonding, insurance, and taxes. The production royalty is paid on the basis of all gold refined and/or sold from the property as follows:

Figure 4.1; Copperstone Mine Location Map

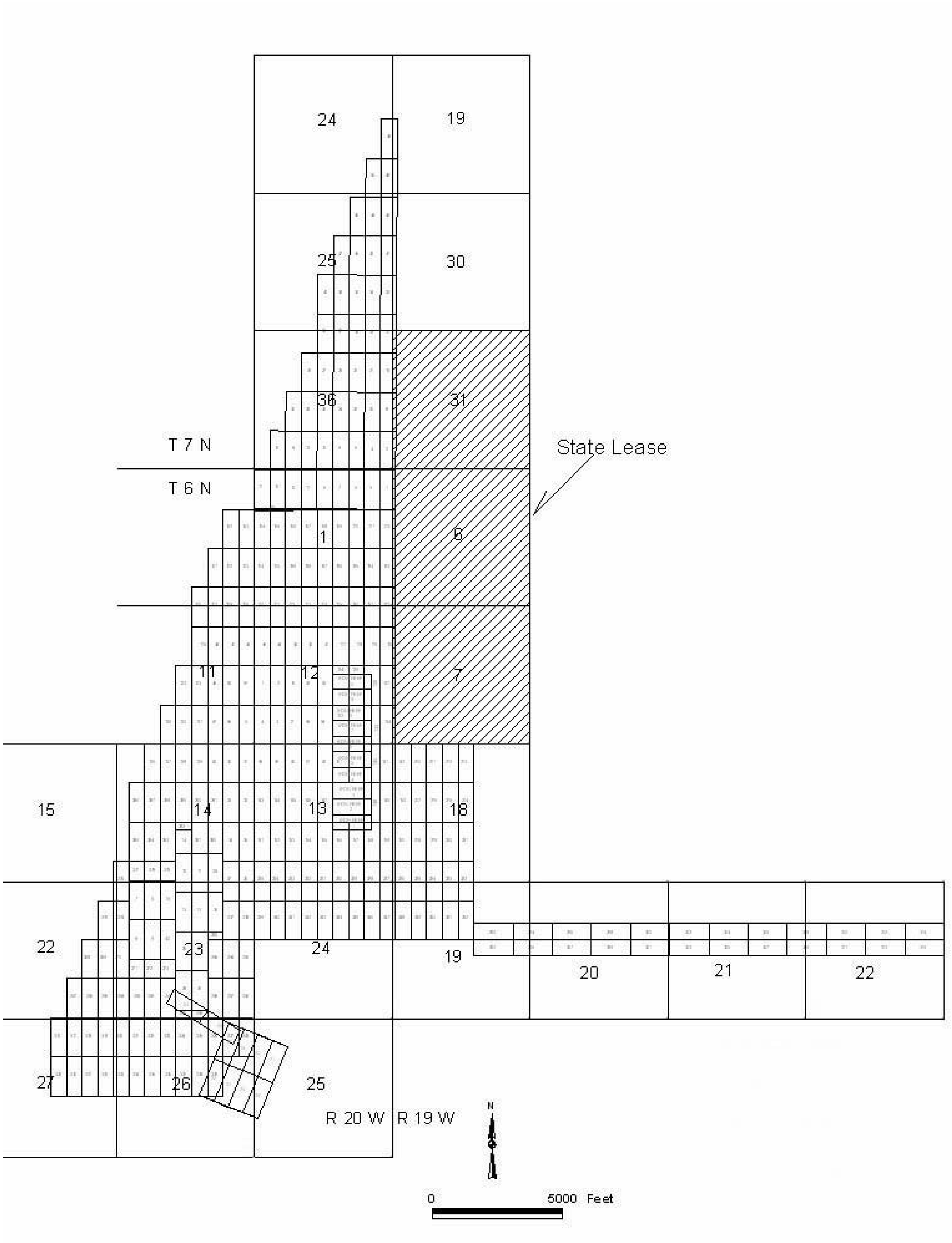


Figure 4.2: Copperstone Claim Map

Royalty (GPR)	Avg. LME Gold Price (monthly/oz)
1%	< $350
2%	$350 to $400.99
3%	$401 to $450.99
4%	$451 to $500.99
5%	$501 to $550.99
6%	>$551

In August 1998, Bonanza entered into an agreement with Arctic Precious Metals Inc. (“Arctic”), a subsidiary of Royal Oak Mines Inc., to explore and develop the Copperstone gold property. Pursuant to this agreement, the Corporation acquired a 25% interest in the Copperstone project for a cash payment of US$500,000 with an option to increase its interest in the property to 80 percent by incurring US$4,000,000 of exploration expenditures and other payments. In addition, Bonanza continued to make the US$30,000 annual advance royalty payment to the property owner.

In November 1999,Bonanza entered into a purchase and sale agreement with Arctic whereby Bonanza agreed to purchase for US$1,000,000 all of Arctic’s right, title and interest in the Copperstone Project owned by Arctic who was undergoing U.S. Bankruptcy Code Chapter 11 financial restructuring.

On March 4, 2002, upon approval of the U.S. Bankruptcy court, Bonanza completed the acquisition of the remaining 75% not already owned in the Copperstone property at the cost of US$1,000,000. This transaction was funded by loan of US$1,100,000 from Brascan Financial Corporation. On October 29, 2003, the Corporation paid the final payment on the loan to Brascan Financial Corporation.

In June 2000, Bonanza entered into an agreement (the D-Zone Joint Venture) with Centennial Development Corporation (“CDC”) for the underground exploration and extraction of mineralized materials from only the D-Zone of up to 50,000 tons of mineralized material at the Copperstone property. According to this agreement, the Bonanza assumed a 55% interest in the property as follows:

1) additional 5% interest if Bonanza provides all funding necessary to complete Phase One as documented in the agreement (completed by Bonanza in 2001).
2) further 15 percent interest for a cash payment of US$500,000.

On February 14, 2002, Bonanza entered into an agreement with CDC whereby it would acquire the remaining 40 percent of the D-Zone Joint Venture not already owned for the following considerations:

1) assumption of a total of US$325,000 of the Copperstone related liabilities and if these liabilities exceed the estimated amount then the additional amounts will be paid equally by CDC and the Corporation.

2) assumption of an estimated CDC payroll tax liability of up to US$180,000 and if above, then the amount to be equally paid by CDC and the Corporation.
3) US$345,000 payable to CDC and or its principal on or before July 31, 2002.
4) A net smelter royalty of 3% paid to CDC form the first 50,000 tons of mineralized materials extracted from the D-Zone, following repayment of the Brascan loan agreement.
5) US$70,000 from initial proceeds from extraction of mineralized materials from the D-Zone, following repayment of the Brascan loan agreement.

5.0 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

5.1 Accessibility

The Copperstone property is located 9.4 miles north of the town of Quartzite, Arizona and about 25 miles south of the Parker, the county seat of La Paz. The property is accessible from the Highway 95, north of Quartzite, and then turning west on a 4-mile gravel road to the mine site. The site access road is well maintained and suitable for all anticipated mine usage. The main east-west line for the Santa Fe railroad is about 15 miles north of the property.

5.2 Climate

The climate in the area is very dry with an average annual precipitation of 4 inches. Summers are extremely hot with an average temperature from May to September of 88.7 degrees Fahrenheit. Winters are mild with an average temperature from October to April of 63 degrees Fahrenheit. The maximum and minimum temperatures for the area are about 120 degrees Fahrenheit and 20 degrees Fahrenheit, respectively.

5.3 Local Resources and Infrastructure

Significant infrastructure exists from the previous Cyprus mining operation conducted from 1988 to 1993 (Figure 5.1). The present infrastructure consists of office, shops, storage facilities, various housing trailers, power, and water. Operational water can be available from existing on-site well while potable water must be trucked on site. Presently, the mine communication utilizes a satellite phone, cell phones, and satellite internet.

5.4 Physiography

The Copperstone property is located on sandy desert terrain, with scattered small hills and local sand dunes. The area is relatively flat with surface elevations ranging from about 650 to 825 feet.

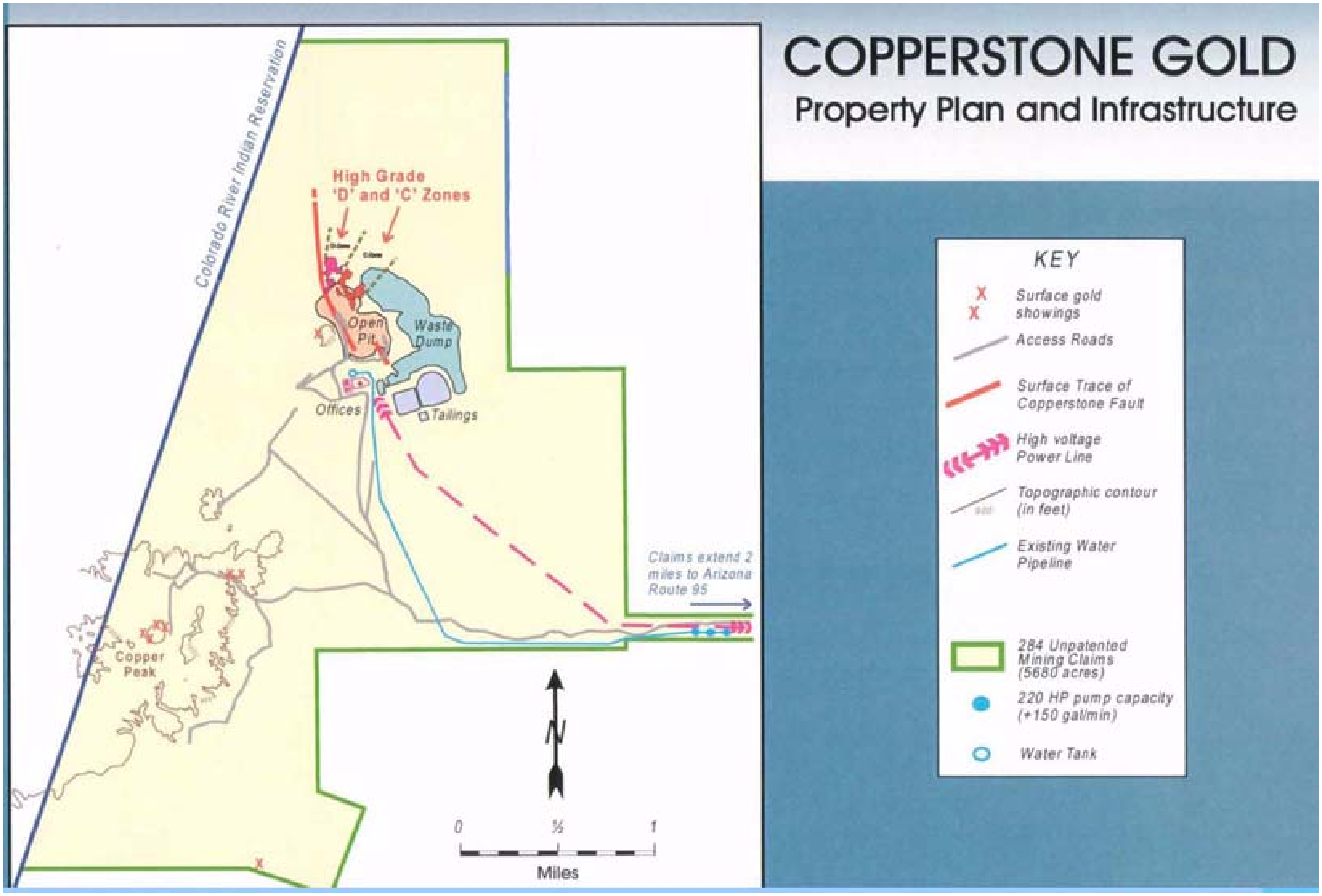


Figure 5.1 Copperstone Property Plan and Infrastructure

6.0 History

The first recorded activity on the property was from 1968 to 1980, when Charles Ellis of the Southwest Silver Company, controlled the Continental Silver claim group (Salem, 1993). In 1975, Newmont Gold Company leased the property, conducted a geophysical survey, and completed one drill hole for porphyry copper mineralization (McCartney, 1998). Southwest Silver Company drilled 6 rotary holes with unknown results and then dropped then claims in 1980. Subsequently in 1980, Don Patch staked 63 Copperstone claims and leased the property to Cyprus-Amoco (Salem, 1993). Cyprus then purchased the Iron Reef Claim group from W. Rhea and added additional claims to expand the claim block to 284 claims (MDA, 2000).

Cyprus completed 73 diamond drill holes and over 496 reverse circulation holes between 1980 and 1986. Cyprus then completed various baseline, financial, and metallurgical studies leading to mine design, initial construction, and partially completed decline in 1996. In 1987, Cyprus commissioned an on-site 2,500 ton/day carbon-in-pulp milling facility and commenced open pit mining that continued until 1993 when Cyprus terminated their lease. The reported production of the Copperstone mine was 447,000 ounces of gold from 5,880,017 tons of ore grading 0.086 ounces of Au per ton (Salem, 1993). Ackerman (1998) reported production by Cyprus at Copperstone of 514,000 ounces of gold from 5,600,000 million tons of ore grading 0.089 ounces of Au per ton.

Santa Fe Pacific Gold Corporation leased the property in 1993 and completed 12,500 feet of reverse circulation drilling on 7 exploration targets (Asia Minerals, 1999). One Santa Fe drill hole (DCU-8) intersected significant gold mineralization in the probable footwall of the Copperstone fault and assaying 0.646 ounces of gold per ton over 15 feet (Santa Fe, 1994).

In 1995, Royal Oak Mines leased the property from the Patch Living Trust and drilled 35 drill holes totaling about 25,875 feet between 1995 and 1997 (McCartney, 2000). The drill program concentrated on deep extension of the mineralization in the Copperstone Fault to the north and down dip to the east of the open pit. Results showed several high-grade gold intersections to the north and east of the open-pit and with potential for underground mining (McCartney, 2000).

In August of 1998, Asia Minerals entered into a joint venture with Royal Oak Mines to explore and develop the Copperstone property. During the summer of 1998, Asia Minerals drilled 15 holes (A98-1 to 15) with a total of about 10,050 feet of drilling completed. A series of drill holes within the D-Zone showed relatively high-grade gold intersections (Figure 6.1).

In February of 1999, MRDI Canada and Golder Associates completed a scoping level evaluation of the high-grade gold mineralized zones to the northwest of the Cyprus open-pit. The report included a preliminary resource estimate discussed in section 16.

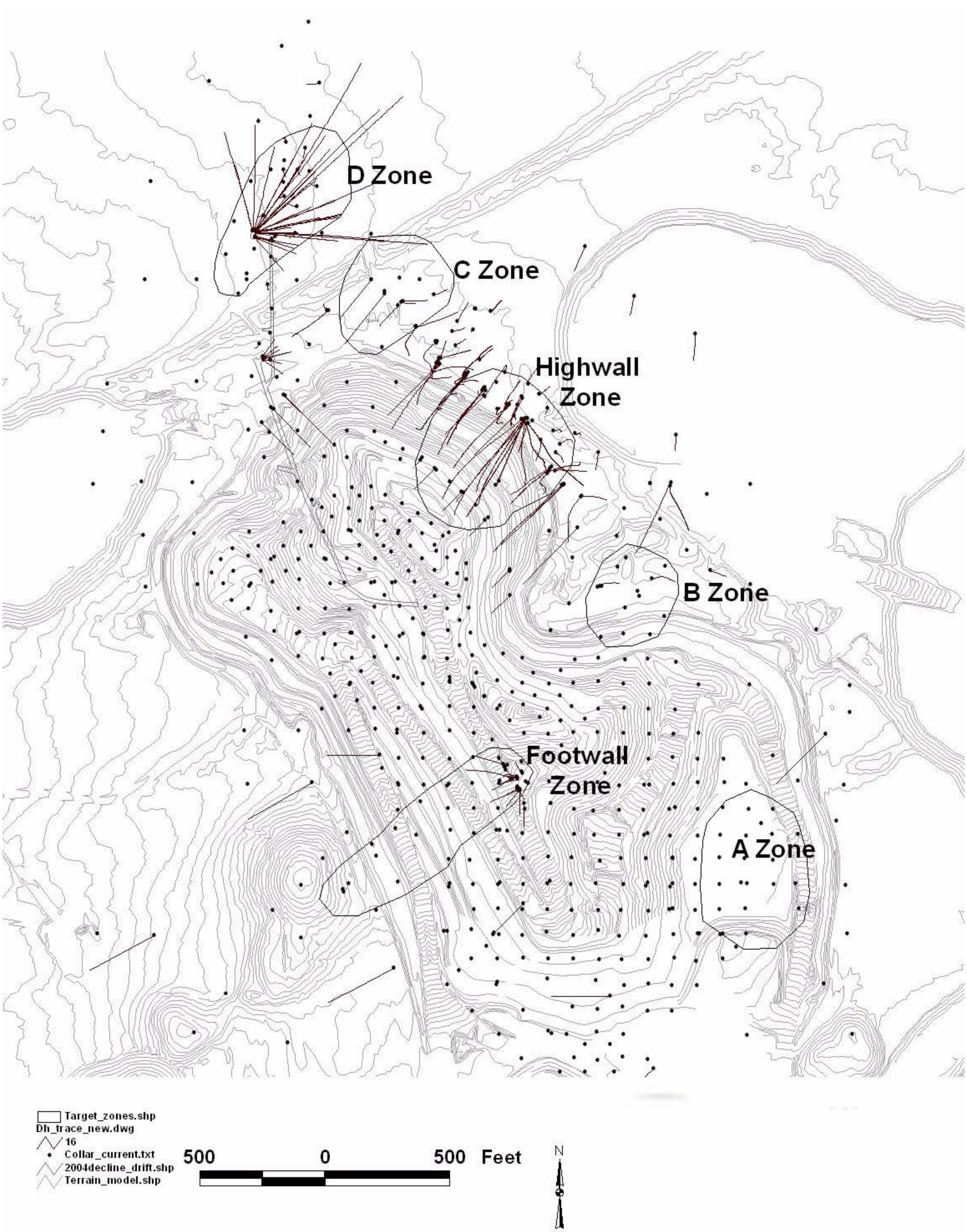


Figure 6.1 Copperstone Mineralized Zones

Furthermore, MRDI concluded that additional exploration potential exists to increase the resource in the B, C and D zone, the northern strike extension of the Copperstone Fault, and in the footwall of the Copperstone Fault (MRDI, 1999).

In early 2000, Asia Minerals conducted additional diamond and reverse-circulation drilling (A00-1 to 11) with a total footage of 7,470 feet. The holes were designed to test the strike extension of the D-Zone with the best intercept in hole A00-10 which assayed 0.943 ounce per ton gold over 10.5 feet.

On September 13, 2000, Centennial Development Corp. of Salt Lake City, in joint venture with Asia Minerals, began an underground development and exploration decline from the north side of the Copperstone open-pit. The purpose of the northward decline was to test the higher-grade gold mineralization identified from drilling, provide underground drill station for further exploration drilling, and possible extraction of a bulk sample material. The planned length for the decline was 2,000 feet and permitting were obtained to remove up to 50,000 tons of material (Asia Minerals, Sept, 2000). A 64 lb. high grade sample was sent to the McClelland Labs in Sparks, Nevada for various metallurgical and milling tests. In 2000, Asia Minerals changed its name to American Bonanza Gold Mining Corp. to better reflect the geographic, metal, and grade focus of the company.

On October 26, 2000, Mine Development Associates completed a report in compliance with National Instrument 43-101 on the Copperstone Property for Bonanza.
MDA visited the property, took samples, review published and unpublished reports, modified the exploration plan.

On March 4, 2002, Bonanza announced that it had gained control of a 100% equity interest in Copperstone subject only to the royalty schedule payable to the Patch Living Trust and the agreement with Trilon Securities whereby Trilon will arrange a US$1.1 million secured credit facility for the company.

In Nov, 2002, Bonanza announced selection of Merritt Construction of Kingman, Arizona, as the underground mining contractor. The objective of extending the decline was to establish underground infrastructure for subsequent exploration and development programs.

On May 5, 2003, Bonanza announced that significant high-grade gold exposed in the D zone was sampled in the decline. In June 2003, an underground drill station was completed and drilling began in July. By May 17, 2004 Bonanza had drilled 33 underground core holes on the D zone with a total of 9,234 feet.

Throughout 2004, Bonanza conducted the D zone, Footwall, and High Wall drilling programs. The D zone drilling from underground drill bay number one, is focused on estimation and of measured and indicated resources in the northern D and then southern D zones. The Footwall drill program targets a fault about 400 feet below the main

Copperstone fault. The High Wall drilling program is focused on the area immediately north of the open-pit, to the southeast of the D zone and the C zone.
The target of this drilling is high-grade gold mineralization known to exist in the base of the high wall of the open-pit and extending to the north along strike of the Copperstone Fault.

In October, 2004, Bonanza retained certain specialized firms to assist it with collecting environmental, geotechnical, hydrological and metallurgical baseline data to support the prefeasibility study planned for 2005. The firms include Golder Associates Inc. to review geotechnical data; Water Management Consultants to assess hydrological characteristics and The Mine's Group to provide input with overall project permitting of the Copperstone site (American Bonanza, Oct 6, 2004).

In early January 2005, Bonanza retained Michael R. Pawlowski and Thornwell Rogers to complete by late January an updated National Instrument 43-101 technical report on the Copperstone Project. The report was not to include an updated ore resource calculation since infill drilling is still ongoing. Following completion of the infill drilling, an updated resource estimate is currently planned for mid-2005.

7.0 Geological Setting

7.1 Regional Geology

The Copperstone property is located in the northern Moon Mountains, regionally within the Basin and Range province of western Arizona (Figure 7.1). The Moon Mountains are located in the westernmost exposure of the regional Whipple-Buckskin-Rawhide detachment system and centrally located within the Maria fold and thrust belt (Spencer and Reynolds, figure 11, 1989).

The middle Tertiary tectonic activity in Arizona was dominated by widespread normal faulting and fault-block rotation that accommodated major northeast to southwest and east-northeast to west-southwest crustal extension (Spencer and Reynolds, 1989). Movement occurred on low to high-angle normal faults, and many high-angle normal faults are known or suspected to be truncated downward by, or to flatten downward and merge with major detachment faults (Spencer and Reynolds, 1989). Detachment faults in Arizona have several to several tens of kilometers of displacement and are the most important structural features of mid-Tertiary age in the Basin and Range Province.

In most cases, the upper-plate rocks above major detachment faults are tilted in one direction, toward the breakaway fault and opposite to the direction of upper-plate displacement. The lower-plate, mylonitic rocks are typically plutonic and high-grade metamorphic rocks exposed in domal uplifts termed "metamorphic core complexes".

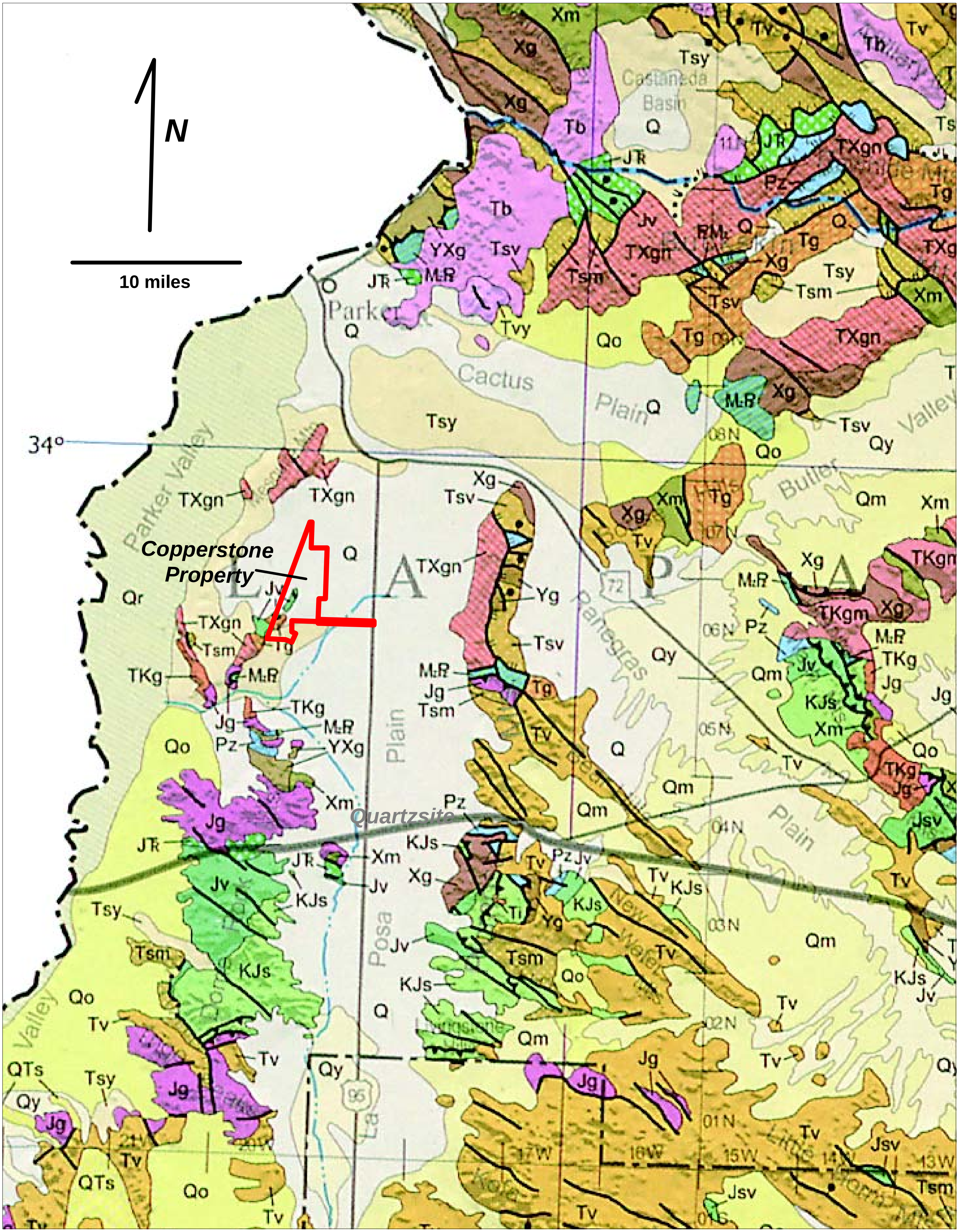


Figure 7.1 Regional Geologic Map

Copperstone Area Geologic Units: Q = Quat Surf Deposits; Qr = River Alluvium; Qo = Older Alluvium; Tsy = Plio-Mio Sediments; Tsm = Mio-Olig Sediments; Tg = Mio-Oligo Granite; TKg = Tert-Cret Granite; TXgn = Tert-pC Gneiss; MzPz = Meso-Paleo Metaseds; Jv = Jur Volcanics; Jg = Jur Granite; Xm = pC Metamorphics

7.2 Local Geology

The Moon Mountains are comprised, from oldest to youngest, of the following rock types (Figure 7.2): Precambrian gneiss, schist, and amphibolites; Paleozoic metavolcanics; Jurassic quartz syenite and quartz latite porphyry; Tertiary granite (Copper Peak), biotite granite, hornblende biotite granite; and Tertiary basalt (Knapp, 1989). Buising (1988) identified outcrops of the upper Miocene to lower Pliocene Bouse Formation at Moon Mountain.

The Moon Mountain detachment fault is exposed in the northern Moon Mountains about 1.5 miles south of the Copperstone property. The detachment fault strikes easterly and dips shallow to the northeast (Figure 7.3). Ductile fabrics display a consistent top-to-the-northeast sense of shear in the footwall biotite granites of early Miocene age (Knapp, 1989).

The Moon Mountain detachment fault displays upper plate Paleozoic, Mesozoic, and Tertiary age brittle rocks over lower plate, ductile deformed, granitic units.
The top of the lower plate is brecciated Copper Peak granite showing a tectonic fabric characterized by flattened, stretched quartz grains and deformed potassium feldspar (Knapp 1989). The Jurassic quartz latite porphyry host to much of the Copperstone mineralization is inferred by Knapp (1989) based upon intrusive relations, to be older than the Tertiary age Copper Peak granite. The Copper Peak granite is intruded by a biotite granite dated by U-Pb zircon as early Miocene (20.8$\pm$ 3.2 million years) in age (Knapp 1989). The mylonitic biotite granites are intruded by hornblende biotite granite. The Moon Mountains show a complex history of deformation, metamorphism, and magnetism that typifies much of the Mojave-Sonoran desert (Table 7.1)

The major structure in the southern Moon Mountains is the Mesozoic Valenzuela thrust fault (Figure 7.2). The Valenzuela thrust fault dips moderately southeast and movement on the thrust was multi-staged, with apparent evidence of south and north directed phases of movement (Knapp, 1989). Late Cretaceous thrusting at the Valenzuela thrust resulted in Jurassic quartz syenites and Precambrian gneisses/schists overlying deformed Paleozoic sediments metamorphosed to the lower amphibolite facies.

7.3 **Copperstone Stratigraphy**

The Copperstone gold mineralization lies in the hanging wall of the Moon Mountain detachment fault, which has not been penetrated in drilling to date. The stratigraphy in the pit and from drilling consists of Triassic sediments, Jurassic volcanics, Miocene breccias and basalt flows (Figures 7.4 and 7.5, and Table 7.2).

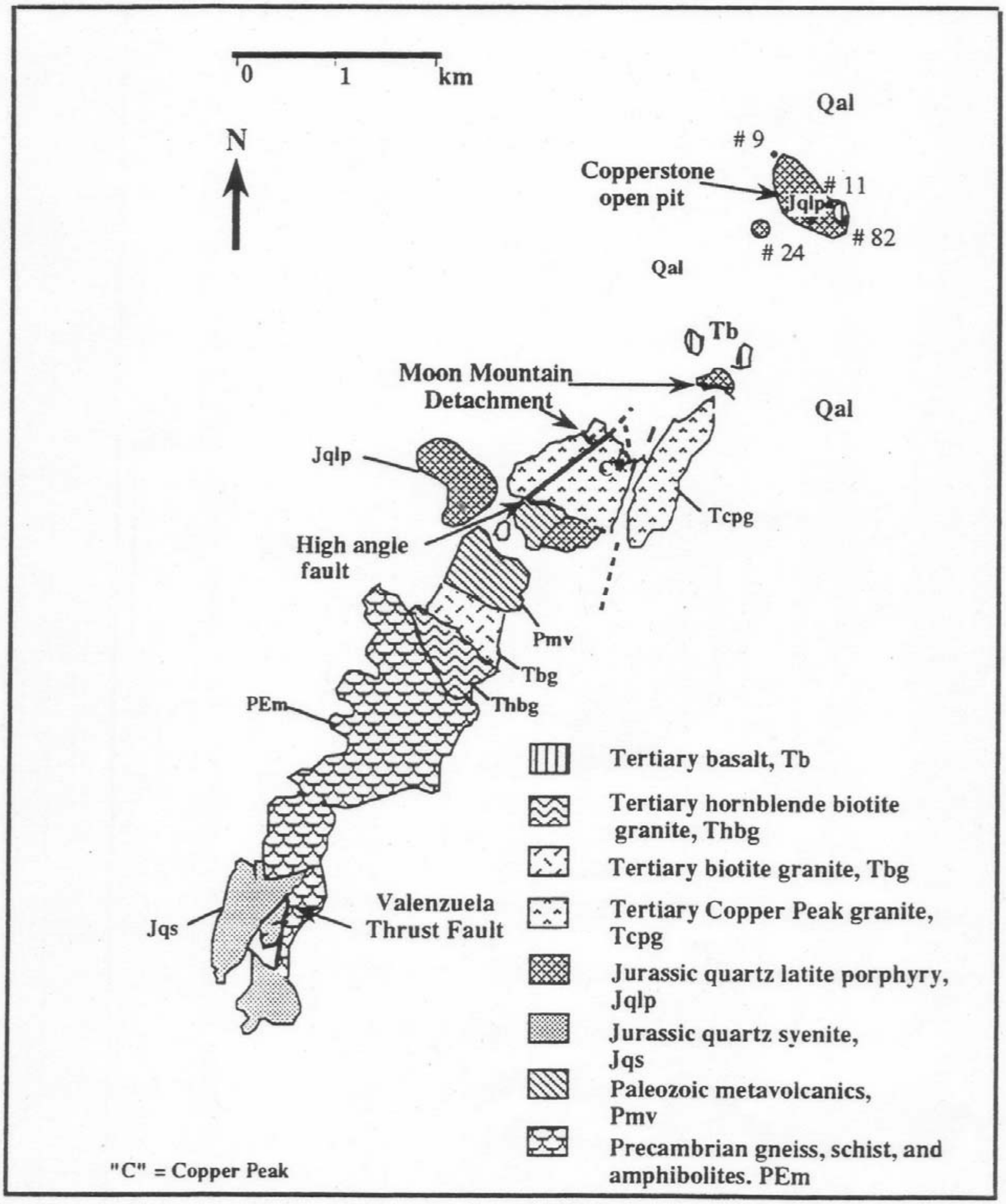


Figure 7.2: Geologic Map of the Moon Mountains

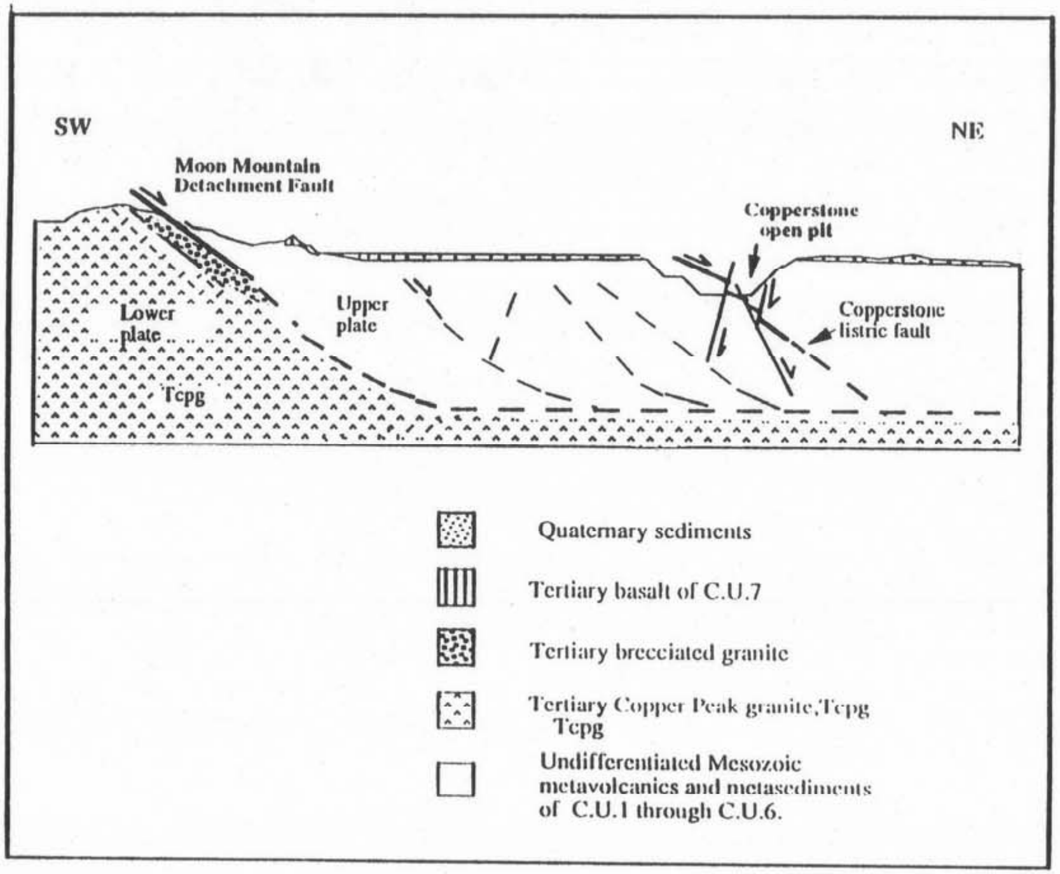


Figure 7.3 Schematic cross-section of the Moon Mountain Detachment Fault and the Copperstone Listric Fault (depth unknown). Solid heavy lines are observed faults; broken lines are projected faults.

Table 7.1 Principle Geological Events in the Copperstone area

Age	Event
mid-late Tertiary	Basin and range normal extensional faulting
mid-Tertiary	Detachment faulting, mineralization
----------------	Metamorphism, formation of metamorphic core complexes
late Cretaceous	Intrusion of plutons, folding and thrust faulting of Maria Belt
Triassic-Jurassic	Volcanic-plutonic rocks, thick clastic sequences
Paleozoic	Carbonate and clastic sedimentation
----------------	Erosion, development of unconformity
Precambrian	Metamorphic rocks, accompanying intrusions

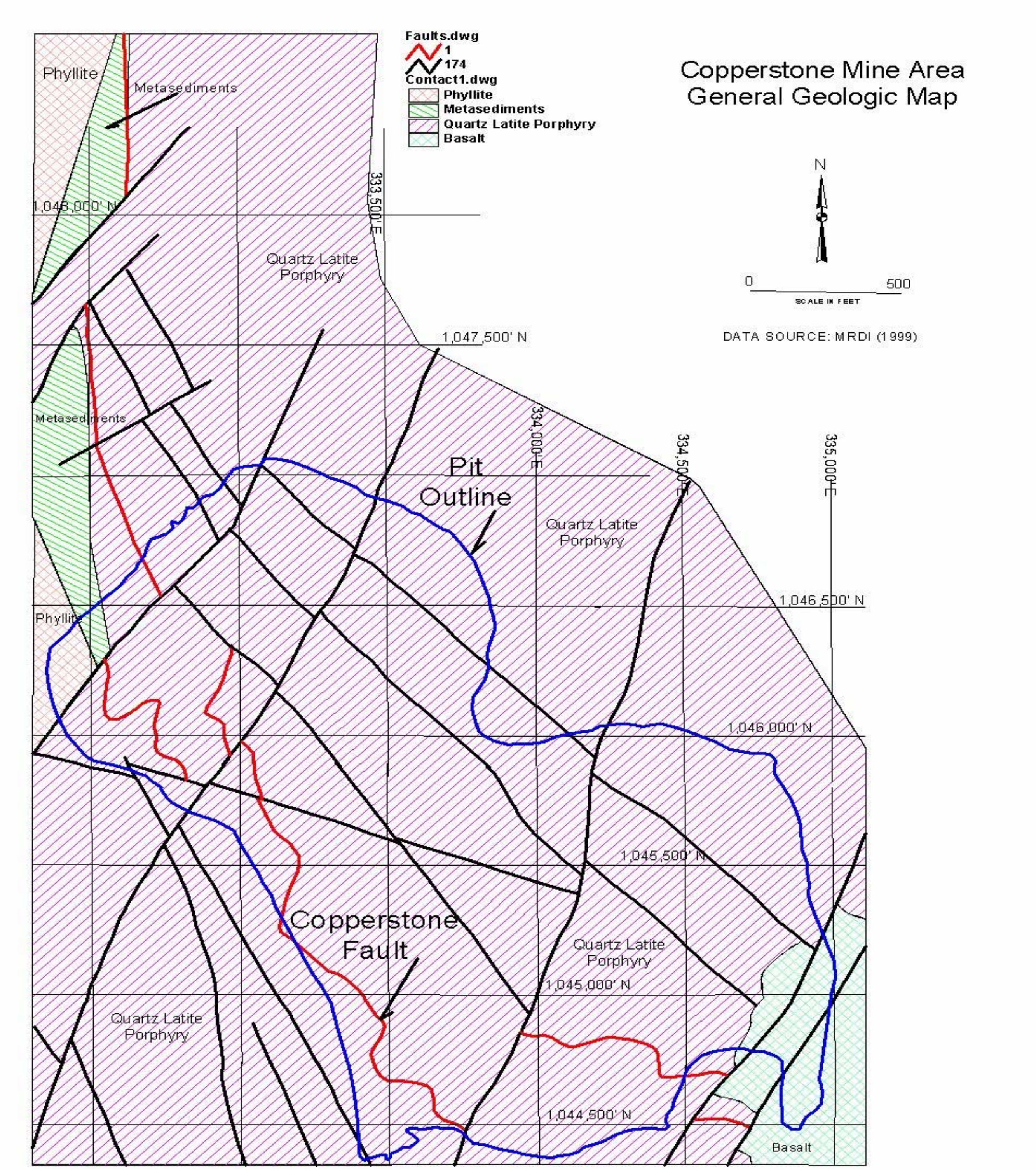
Table 7.2 Detailed Stratigraphy of the Copperstone Pit area

Age	Name	Description
Early Miocene	Basalt	Basalt to andesite. Cut by mineralized amethyst-quartz-specularite veins to the SW of the pit where economic mineralization developed.
Early Miocene	Monolithic Breccia (MSB)	Monolithic fragments derived from Jurassic QLP. Locally developed above the Copperstone fault. Hematization and quartz - specularite mineralization. Contains economic gold mineralization. A sub-aerial sedimentary unit (chaotic breccia?)
Jurassic	Quartz Latite Porphyry (QLP)	Volcanic flows with well-developed metamorphic foliation. The principle ore host in the pit where it occurs in both the hanging wall and footwall of the Copperstone Fault. Where cut by the Copperstone Fault, a brecciated and mineralized interval about 15 meters thick is developed. A minimum thickness of 275 meters is postulated by drilling.
Triassic	Meta-sediment Unit	A fining upwards sedimentary cycle; quartzite, chlorite schist (siltstone) and marble (limestone). The principle host rocks for D-Zone.
		Marble or limestone (LST) occurs at the top of the meta-sediments. It contains intervals of massive specular hematite +/- manganese oxide and secondary Cu minerals as veins and in nodular replacements. The mineralization and brecciation observed in the unit is related to the Copperstone Fault.
		Chlorite schist or siltstone (SLT). This unit typically occurs at the quartzite-marble transition or interbedded within the marble.
		Quartzite (QTZ) is present in the D-Zone area at the base of the meta-sediment package. Characterized by vein and stockwork stringer mineralization
Triassic	Phyllite (PHY)	Phyllite is the oldest exposed unit in the upper plate and up to 90 meters thick in drill holes. Phyllite only has only been recognized in the footwall of the Copperstone Fault in the north part of the pit and in D-Zone and C-zone drill holes.

The Triassic age metasediments display a fining upwards cycle of quartzite, chlorite schist and marble, exposed in widths up to 100+ feet north of the pit. These meta-sediments occur as the principal mineralized host of the D Zone (MRDI, 1999). These chloritic to calcareous phyllites show microfolds, local silicification and sercitization, local carbonate veins, and sparse quartz veinlets. These metasediments are thought to be 240 million year old metamorphosed sedimentary rocks correlative to the Triassic Buckskin Formation (Spencer, 1988).

The quartzite unit, typically at the base of the metasedimentary package, is comprised of quartz with minor biotite and chlorite. Various geologists have interpreted this unit as a silicified carbonate, metamorphosed siliciclastic, and a recrystallized chert (MDA, 2000).

Figure 7.4 Copperstone Mine Area General Geologic Map



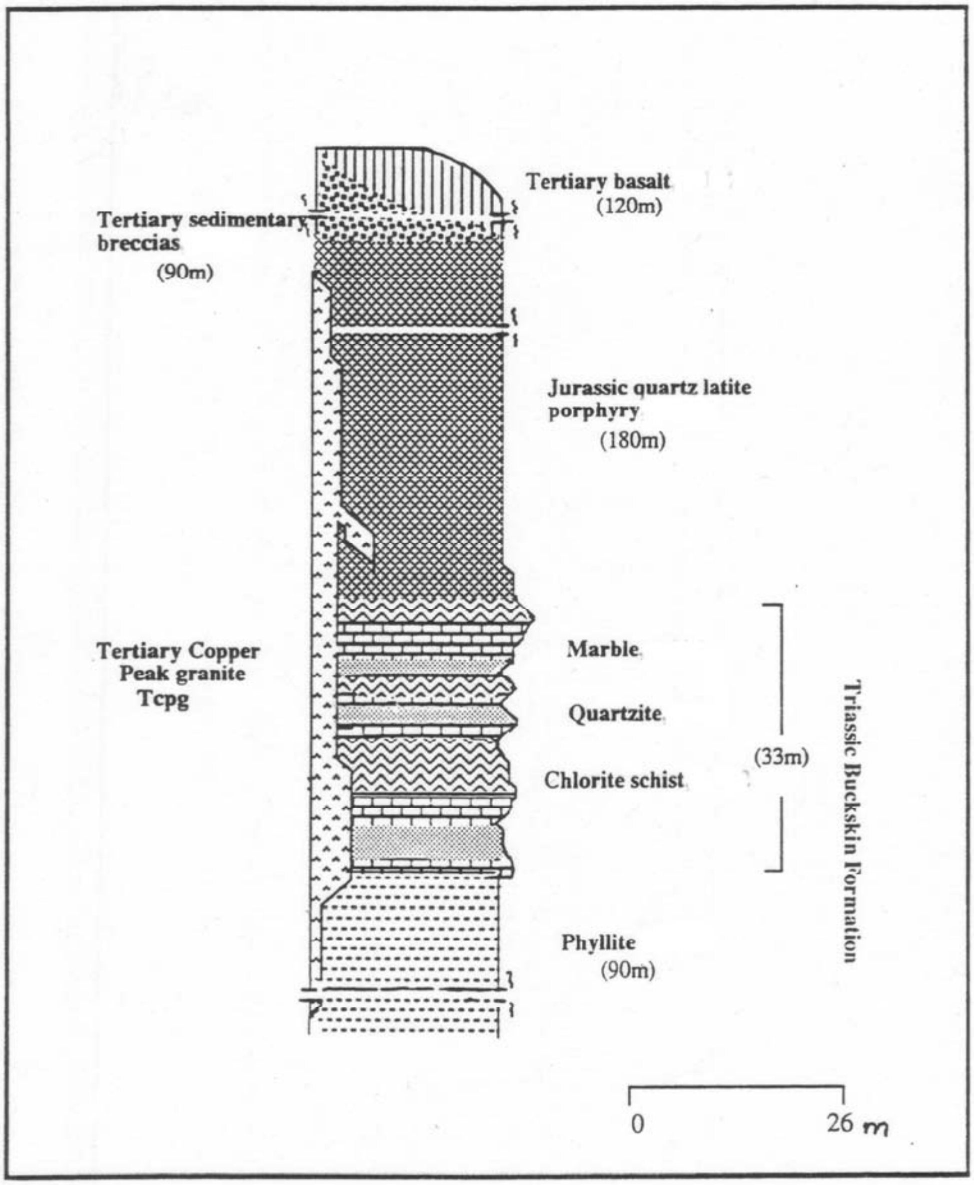


Figure 7.5: Generalized Stratigraphy of the Copperstone deposit as seen in diamond drill core. All units in the upper plate of the Moon Mountain Detachment Fault.

The chlorite schist unit generally occurs at the quartzite-marble transition or interbedded within the marble unit. This epiclastic rock is composed segregated bands formed with chlorite, quartz and minor muscovite and biotite. Associated with the chlorite schist are carbonate veinlets; quartz-specularite as replacements and open-space fillings; and earthy hematite replacing specularite.

Marble occurs at the top of the metasedimentary package associated with intervals of massive specular hematite$\pm$manganese oxides, and copper oxides veins and replacements. In thin section, the marble is comprised of equigranular granoblastic mosaics of calcite with minor siderite-ankerite (Salem, 1993). The unit is interpreted as a sedimentary limestone unit on the basis of its weak bedding feature, interbeds of silty material, and the relationship to an underlying quartzite-siltstone sequence in a fining-upward pattern (MDA, 2000).

The Jurassic quartz latite porphyry unit is a volcanic flow with well-developed metamorphic foliation (MRDI, 1999). Microscopically, the quartz latites are holocrystalline and porphyritic with phenocrysts of quartz, k-feldspar, plagioclase, biotite, and magnetite. (Salem, 1993). The quartz latite porphyry unit is the principal ore host in the pit where it occupies both the hangingwall and footwall of the Copperstone fault. Salem (1993) suggests that the Jurassic quartz latite porphyry may be correlated to the Jurassic Planet volcanics of the Rawhide-Buckskin Mountain by their lithologic similarities and consistent stratigraphic position above the Triassic Buckskin Formation equivalent. Furthermore, Reynolds (1987) reports an age of 162-150 million years by U-Pb analyses on zircon from the Planet Wash volcanics in the Planet Mineral Hill area, which is similar to the age of 138-205 million year bracket for the quartz latite porphyry by Spencer (1988).

The monolithic sedimentary breccias at Copperstone are derived from the quartz latite porphyry and similarly observed near Copper Peak by Spencer (1988). These breccias are interpreted as sub-aerial sedimentary units deposited in basins developed during the regional development of the Moon Mountain detachment fault. The breccias are interpreted as Tertiary in age from lithology and clast composition and comparison with other sediments of known Tertiary age (Spencer, 1988, Knapp, 1989). The breccias are comprised of angular to subangular, pebble to cobble sized fragments with a matrix composed of smaller crushed rock material. Strong hematite occurs in along fractures and filling open-spaces. Quartz and quartz-specularite veins cut the breccias that often host gold mineralization at Copperstone. Tertiary basalt is the youngest unit at Copperstone and is reported from drill holes to be up to 450 feet in thickness. The basalts are red brown to black and hypo- to holo- crystalline with phenocrysts of plagioclase, olivine, clinopyroxene, hornblende and magnetite. Calcite and high-temperature quartz often occur in amygdules in the basalts.

7.4 Copperstone Structure

The brecciated Copperstone fault is the principal host for gold mineralization on the Copperstone property (Figure 7.6). The Copperstone fault strikes about N 30 to 60° W and dips from 20 to 50° NE. The brecciated fault zone ranges from 45 to 180 feet in width with characteristic fault gouge, multi-phase breccia textures, shear fabric, and intense fracture sets (MDA, 2000).

Cyprus (1984) geologists interpreted the Copperstone fault as a conformable, inter-formation volcanic breccia between the contact of quartz-latite tuff and massive quartz latite footwall rocks. Bonanza consultant (verbal communication 2005) and Salem (1993) note that the volcanic breccias are not conformable and that the Copperstone fault is a listric splay of the Moon Mountain detachment. Further supported in that the distribution of gold mineralization in the D-Zone suggests that the Copperstone Fault is gently refracting across a structurally complex sedimentary package (MDA, 2000).

Locally the upper D-Zone is localized along a siltstone-carbonate contact changing down dip as it transgresses up to follow the volcanic-carbonate contact. Mineralization associated with the upper limestone contact shows pervasive hematite/specularite, replaced limestone, often in parallel mineralized fault slivers (MDA, 2000).

Cyprus and Bonanza geologists have mapped several mineralized NW faults, sub-parallel to the Copperstone fault, in the pit area. The NW striking faults dip steeply northeast from 70-80° and locally control mineralization.

A dominant northeast-striking fault zone offset the mineralized Copperstone fault zone at the south end of the pit (Figure 7.4). The mineralized Copperstone fault is offset about 270 feet with left-lateral movement having a dip-slip component as interpreted by Bonanza geologists. This northeast-striking fault dips steeply northwest and contains angular quartz-latite porphyry fragment in a poorly consolidated sandy gouge over an approximately 45 foot thickness (MDA, 2000).

A massive, cataclastic breccia zone was observed in the north end of the drill grid and throughout the length of drill holes A98-12, C97-25, and C97-31 (MDA, 2000).
A northeast striking fault extends into this area but the extensive area with cataclastic rocks cannot be explained by faulting. Furthermore, logging of the fragment and matrix composition showed that the sediment-volcanic contact can be traced into the breccia without significant displacement. McCartney (1999) suggested that the cataclastic unit may be a breccia pipe and not a large fault zone.

Figure 7.6 Mineralized Copperstone Fault Breccia

8.0 Deposit Types

8.1 Exploration Targets

The general exploration targets at Copperstone are high-grade (“bonanza”) ore shoots within the detachments fault-hosted, gold-copper mineralization (Figure 8.1). Present exploration targets include:

1) D-Zone: present underground core drilling to convert known indicated and inferred resources into measured resources and reserves, and mine planning.
2) Highwall drilling program: objective to confirm known indicated and inferred resource; conversion of those resources to measured resources and reserves; resolve structural question on the northern boundary of gold mineralization; and expansion of the resource base north of the open pit and to the southeast of the C and D zones.

The Footwall target is a mineralized fault, parallel to and about 400 feet below the Copperstone Fault in the central part of the open-pit. Numerous drill holes have previously been completed on this target but no resource estimates are available.
The Copperstone exploration staff is presently working to identify additional exploration targets for exploration drilling.

8.2 Models for Detachment Fault Hosted Gold Deposits

Wilkins and others (1996) conclude that detachment fault related mineralization resulted from metal-rich basinal brines that were expelled from synorogenic basins during detachments faulting. The continued and episodic extensional movement during the mid-Tertiary generated the following sequence of events:

1) The lateral compaction of the leading edge of the upper-plate forced warm to hot, salt-rich connate waters out of the synorogenic sedimentary rocks. From fluid inclusion studies it is apparent that the mineralizing solutions was a hot brine with 12% to 20% NaCl at 200 to 325° centigrade. Source of the heat for this temperature is postulated as synkinematic intrusions or late-orogenic dikes and dike swarms (Wilkins and Heidrick, 1982).
2) The brines migrated up dip and counter to upper-plate movement along the breccia envelope. Initial temperatures were maintained and supplemented by excess heat in the lower-plate rocks and by frictional heating.
3) The metals and nonmetals carried in solution as chloride (or bisulfide) complexes were preferentially leached out of basin lithologies and out of the breccias traversed during solution migration.
4) The syntectonic and post-tectonic deposition of metals, gangue, and alterations occurs in the following seven loci (Wilkins and Heidrick, 1982).
    1. along the detachment fault zone.
    2. replacing reactive units.
    3. in gash veins.
    4. associated with listric fault breccias.

5. in fold-axis veins.
6. in chloritic breccias
7. associated with tear faults.

Salem (1993) similarly postulated those mineralizations at Copperstone involved the circulation of moderate to high salinity basin brines that were driven by an intrusive source. The heat source postulated as the mid-Tertiary granitic rocks in the footwall of the Moon Mountain detachment fault, that were emplaced into the upper plate Jurassic quartz latite porphyry. The synkinematic mid-Tertiary granite must have been a major source of heat to drive mineralizing fluid convection in the upper plate (Figure 8.2), which was intruded, mylonitized, and subsequently brecciated (Reynolds and others, 1986). The intensely brecciated fault zone allows fluid migration up into the tangential listric and high angle inter-plate faults. Mineralization forms primarily in open-space fillings and secondarily in replacement of reactive rocks.

From fluid inclusion results, the depth of mineralization at Copperstone was 1 kilometer and the temperature of mineralization was 190 to 320° centigrade, consistent to epithermal mineralization. The salinities at Copperstone are in the range of 11.7 to 25.5 wt%, NaCl which is high for typical epithermal systems.

Copperstone mineralization has the following characteristics similar to epithermal deposits: host rocks, vein mineralogy, stockworks, temperatures of mineralization, depth of formation, and ore horizons. However, Copperstone mineralization differs from typical epithermal mineralization in the following ways: relatively high salinities, the total oxide assemblage, and scarcity of typical pathfinder suite elements of As, Sb, Te, Se, and Hg.

Salem (1993) notes that the Copperstone mineralization was formed by favorable rock chemistry and physical properties in the brecciated quartz latite porphyry and monolithic sedimentary breccias; structural preparation; low pressure at shallow depth; and declining temperature and pressure upward for boiling at the ore horizon.

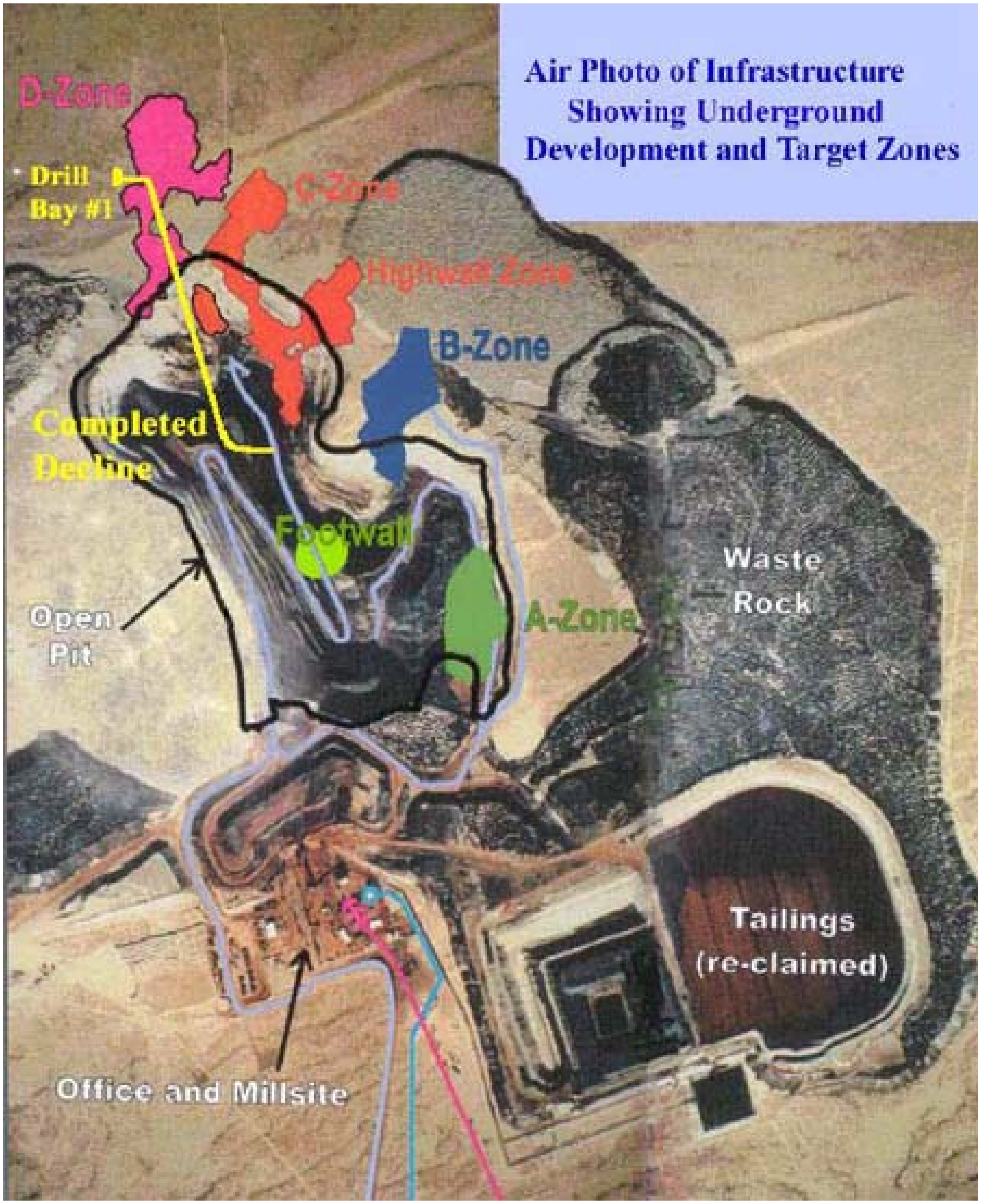


Figure 8.1 Air Photo of Infrastructure showing Underground Development and Target Zones

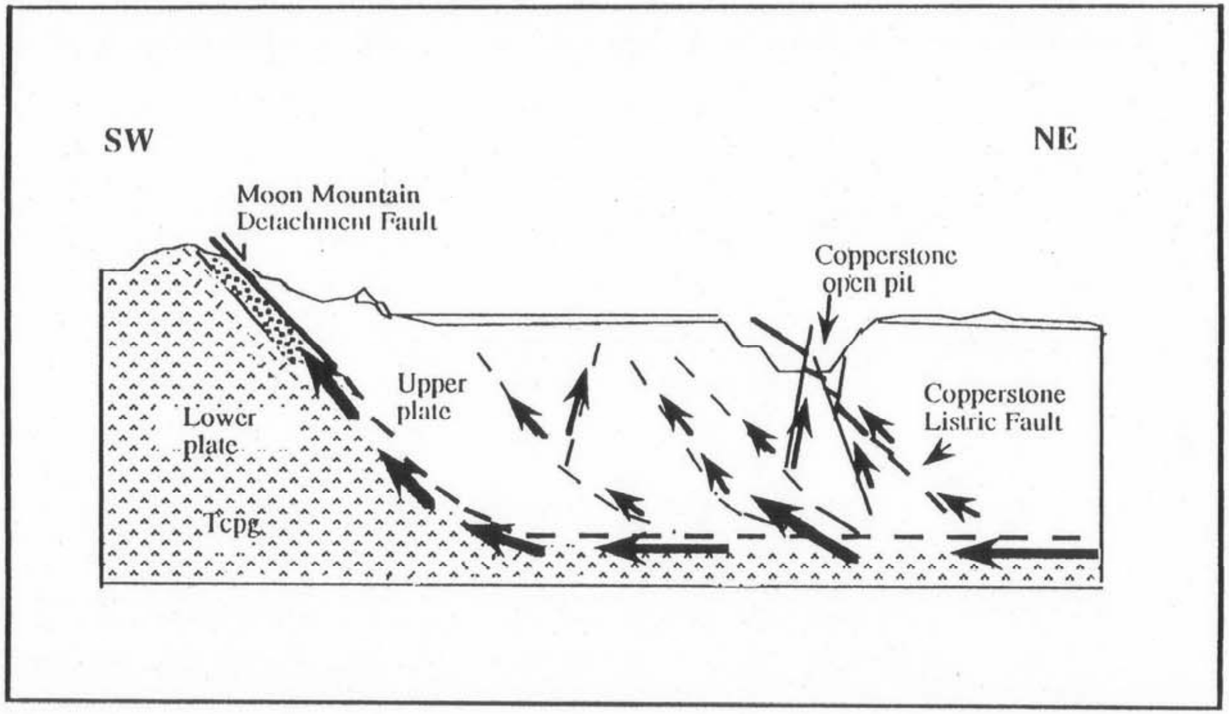


Figure 8.2 Schematic cross-section of the principal direction of mineralizing fluid flow during ore deposition. The arrows illustrate flow direction along the Moon Mountain Detachment surface, Copperstone Listric Fault, and high angle faults at the Copperstone gold deposit. Tcpg is Copper Peak granite; open is Jurassic quartz latite porphyry. Horizontal dimension is about 2.5 km; vertical dimension is about 500 meters.

9.0 Mineralization

9.1 Alteration and Mineralization

The following detailed discussion of alteration and hydrothermal mineral assemblages (Table 9.1) is principally from the detailed petrographic, geochemical, and electron analytical studies at Copperstone by Salem (1993). The early stages of pre-mineralization alteration were potassic and propylitic. Followed by early amethyst-quartz-chlorite-specularite-hematite-fluorite-barite-calcite-gold; late fine-grained quartz-adularia-earthy hematite±specularite±magnetite-chrysocolla-malachite-gold; and barren quartz-pale green fluorite-barite-hematite. Silicification is introduced in two stages, an early stage made up of amethyst-quartz-iron-chlorite and a continuing one of late-stage quartz-adularia-copper oxides.

Table 9.1 Principle Phases of Alteration and Mineralization

Alt/Min Phase	Description
Oxidation	All host rocks are oxidized down to maximum depths of exploration, often producing earthy red hematite. Some oxides such as specularite and chrysocolla are primary. Sulfide phases are rarely observed.
Post mineral veins	Quartz-fluorite-barite-hematite veins
Late stage mineralization	Fine grained quartz and earthy hematite with minor chalcopyrite, chrysocolla and malachite. *Auriferous*.
Early stage mineralization	Amethyst-quartz-chlorite-specularite veins/replacements. *Auriferous*. Pyrolusite is a common associate. Well developed in meta-sediments, includes massive Fe-oxide replacement of marble in D-Zone. In volcanic host rocks, characterized by thin veinlets with open space filling textures. Amethyst is not abundant in D-zone but increases to the south in the pit area.
Propylitic alteration	Pre-mineralization phase
Potassic alteration	Pre-mineralization phase

Potassic alteration of Tertiary volcanic and sedimentary upper plate rocks accompanied Tertiary crustal extension in many of the precious-metal mineralized detachment fault deposits in the southwest United States (Davis, 1986). At Copperstone, potassic alteration is early stage associated with potassic metasomatized basalts. Also near the Copperstone fault, sericite alters the plagioclase and biotite in the quartz latite porphyry.

Propylitic alteration comprised of an assemblage of chlorite, epidote, and calcite is well developed in the Moon Mountain detachment fault in the Copper Peak area. Similar chloritic alteration is typical of most mineralized detachment faults in the southwest United States. At Copperstone, chlorite as a result of retrograde metamorphism is typical in the phyllite, schists, and marble units. Epidote, chlorite, and calcite after plagioclase are strongly developed in the quartz latite porphyry as a result of Fe-rich hydrothermal fluids.

In the early stage hydrothermal alteration, specularite mineralization is well developed in the metasedimentary rocks and minor in the basal phyllites as veinlets and replacement mineralization associated with earthy hematite along the Copperstone Fault. In the quartz-latite porphyry rocks, specularite-hematite-chlorite is introduced with banded amethyst-quartz veins with local cockcomb textures. Chlorite alteration, an important stage of alteration/mineralization associated with gold mineralization, occurs with fracture-controlled structures within the quartz-latite porphyry. Gold is introduced along the Copperstone fault in this early stage of quartz-chlorite-specularite-hematite alteration. Gold is associated with amethyst and white quartz.

The late-stage fine-grained quartz mineralization occurs as replacements and open-space fillings in the quartz latite porphyry and in the Tertiary sedimentary breccia along the Copperstone Fault. In thin section, quartz-adularia-hematite-magnetite veinlets cross cut the early stage amethyst-quartz-chlorite-specularite veinlets in the quartz latite porphyry. Gold mineralization in the Copperstone Fault is associated with earthy hematite, quartz, and locally calcite. Chrysocolla and malachite are associated with gold mineralization within the quartz latite porphyry and monolithic sedimentary breccias associated with the Copperstone Fault (Figure 9.1).

The last stage of mineralization was barren quartz-fluorite-barite-earthy hematite veins observed crosscutting the late stage gold-copper mineralized quartz-adularia-hematite veins. Barite occurs in fractures and open-space filling in the quartz latite porphyry and monolithic sedimentary breccias. Occasionally the rock is exclusively comprised of earthy hematite, pale green fluorite, and barite.

9.2 Gold Mineralization

Salem (1993) and Hazen Research (1995) conducted petrographic examinations and assays to study the gold mineralization at Copperstone. Gold occurs mostly as particles with about 80% as small flakes ranging between 4 to 40 microns. Coarse gold ranges in size from 50 to 150 microns. Gold typically is free and associated with early and late stage quartz/amethyst and occasionally calcite.

Coarse gold occurs in the quartz latite porphyry cut by amethyst-quartz vein fringes, as flakes in fracture, and on the wall rock associated with copper oxides. Salem (1993) concludes that much of the coarse gold is directly depositional in origin, because it occurs as discrete three-dimensional grains and aggregates apparently co-genetic with amethyst-quartz-specularite veins.

9.3 Copper Mineralization

Copper oxide minerals chrysocolla and minor malachite and local azurite are common in the mineralized Copperstone Fault. Copper sulfides are sparse with chalcopyrite observed in petrographic studies and rarely in the pit (Salem 1993). Salem (1993) observed chalcopyrite replaced by covellite along its borders in polished section.

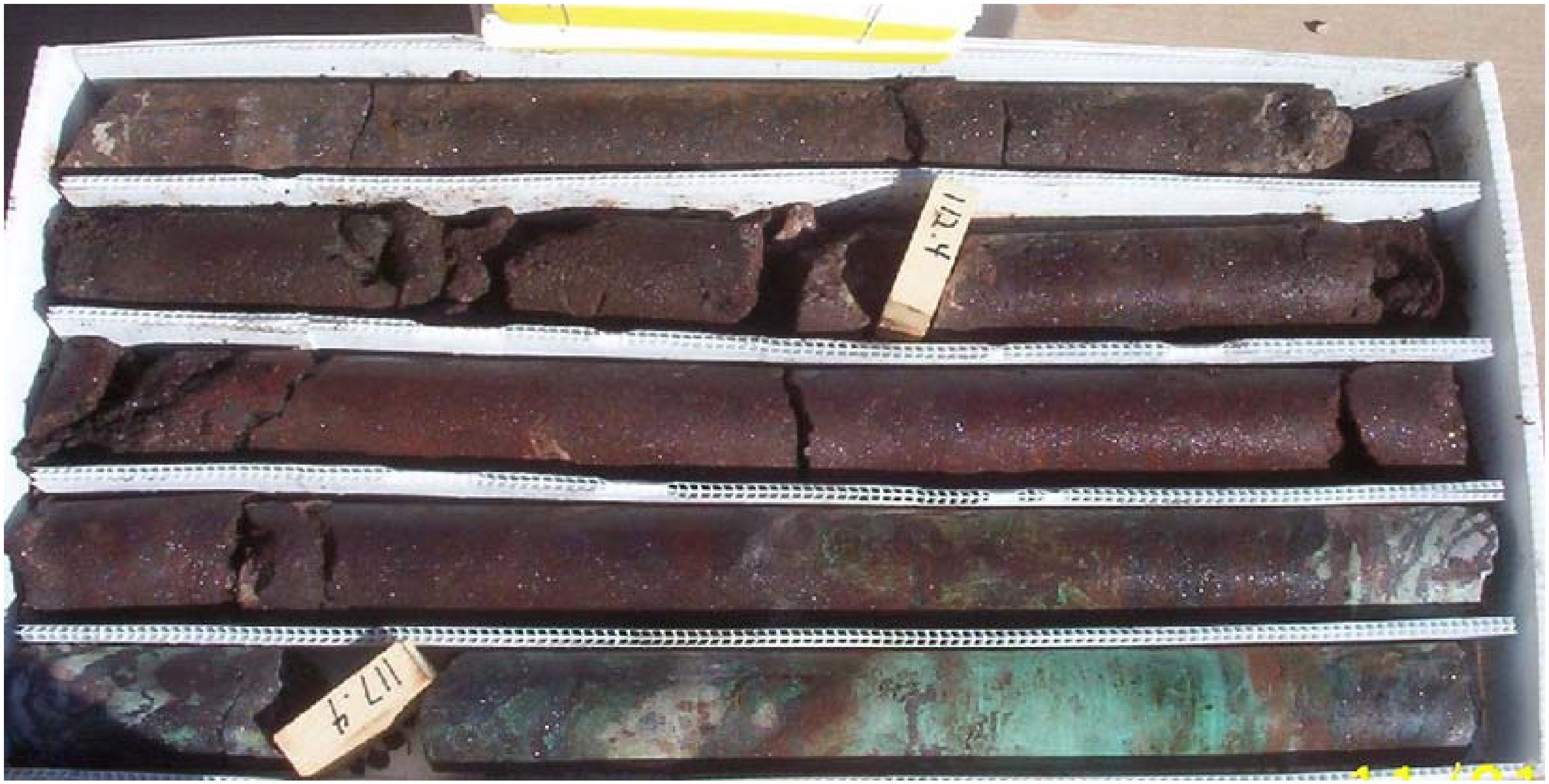


Figure 9.1 High Grade (multi ounce/ton) Core from D-Zone Drilling

A summary compilation of all the available Cu assays from Cyprus drill drilling, and select Bonanza drilling are shown respectively in Tables 9.2, 9.3, and 9.4. No geochemical analyses for copper were conducted during the Royal Oaks drilling program.

Table 9.2 Cu in Significant Cyprus Au Drill Intercepts by Zone (McCartney, 1999)

Zone	Hole	From (ft)	To (ft)	Interval (ft)	Au (opt)	Cu (%)
A	CS-78	330.0	380.0	50.0	0.137	0.23
A	CS-79	300.0	340.0	40.0	0.043	0.21
B	CS-98	420.0	460.0	40.0	0.118	0.28
B	CS-98	430.0	460.0	30.0	0.152	0.29
B	CS-100	550.0	600.0	50.0	0.226	0.48
C	CS-54	630.0	680.0	50.0	0.065	0.53
C	CS-54	640.0	660.0	20.0	0.106	0.73
C	CS-115	730.0	770.0	40.0	0.056	0.14
D	CSD-9	489.5	535.0	45.5	0.110	0.25
D	CSD-9	489.5	508.0	18.5	0.243	0.20
D	CS-64	350.0	370.0	20.0	0.112	0.01
D	CS-72	440.0	460.0	20.0	0.115	0.41
D	CS-73	540.0	570.0	30.0	0.043	0.54
D	CS-74	480.0	520.0	40.0	0.243	0.29
D	CS-106	550.0	580.0	30.0	0.093	0.11
			Total		**Average**	**0.32**

Table 9.3 Cu in Significant Asia Au Drill Intercepts by Zone (McCartney, 1999)

Zone	Hole	From (ft)	To (ft)	Interval (ft)	Au (opt)	Cu (%)	Cu/Au
D	A98-1	550.5	554.0	3.5	0.028	0.37	13.1
D	A98-2	592.8	613.0	20.2	0.452	0.84	1.9
D	A98-3	623.7	637.0	13.3	4.905	2.24	0.5
D	A98-4	538.5	546.2	7.7	0.086	0.30	3.5
D	A98-5	553.0	591.0	38.0	0.380	0.34	0.9
C	A98-6	727.0	729.0	2.0	0.712	0.78	1.1
D	A98-9	427.0	430.5	3.5	0.231	0.35	1.5
D	A98-11	636.3	658.1	21.8	0.037	1.85	50.4
D	A98-13	578.5	592.9	14.4	0.571	0.22	0.4
D	A98-14	675.6	679.0	3.4	0.279	4.40	15.8
D	A98-15	656.3	666.6	10.3	0.172	0.80	4.7
			Total		**Ave**	**0.96**	

The association of copper and gold is highly erratic as shown in Tables 9.2, 9.3, and 9.4. Copper values from drill intercepts range from a trace to multiple percent but have little correlation with gold grade.

Table 9.4 Select 2004 American Bonanza Drill Intercepts

Recent D-Zone Underground Core Results

Hole ID	From – To (ft)	Intercept (m)	Gold (g/t)	Gold (opt)	Copper (%)
DU4-37	249-253	1.2	36.3	1.059	trace
DU4-40	114-124	4.3	21.4	0.62	0.5
DU4-41	379-386	2.1	34.7	1.01	1.1
DU4-43	116.3-128	3.6	5.8	0.169	0.3
including	311-315.3	1.3	7.1	0.206	TR
DU4-45	135.3-140.3	1.5	10.1	0.296	TR
including	150.7-154	1.0	14.7	0.430	TR
and	163.3-164.5	0.4	6.9	0.201	TR
and	176.9-181.1	1.3	5.5	0.159	TR
DU4-50	65.6-70.4	1.5	54.0	1.576	0.3
CUD3-12	124-169	14.5	24.6	0.72	1.9
CUD3-14	179-205.9	8.5	12.3	0.36	0.3
CRD4-01	814.5-827.5	4	26.5	0.77	0.5

Recent Highwall Zone Core Results

Hole ID	From - To (ft)	Intercept (m)	Gold (g/t)	Gold (opt)	Copper (%)
H4-16	835-848.5	4.1	14.9	0.44	0.4
H4-18	825.5-834	2.7	14.1	0.41	1.6
H4-19	834.5-850	5	18.1	0.527	0.7
H4-36	854-885	9.4	13.1	0.383	1.0
including	854-864	3.0	35.2	1.026	1.5
H4-37	855-865	3.0	3.5	0.101	0.2
H4-40	834-857	7.0	2.3	0.068	1.7
H4-42	832-835	0.9	15.1	0.440	0.9
and	855.5-858.8	1.0	4.4	0.127	TR
H4-43	710-735	7.6	15.8	0.460	0.8
including	725-735	3.0	38.2	1.115	0.6
H4-44	907-927.5	6.1	3.8	0.111	TR
H4-46	821-834	4.0	5.8	0.169	0.7
H4-47	858.5-863.8	1.6	6.2	0.181	0.8
H4-48	585-600	4.6	6.9	0.201	TR
including	590-595	1.5	17.8	0.519	TR
H4-48	825.8-838.5	3.9	5.8	0.168	0.6
H4-49	620-640	6.1	2.1	0.062	TR
and	755.5-763	2.3	4.8	0.140	TR
and	779-782	0.9	8.5	0.249	TR
H4-50	620-630	3.0	5.8	0.169	0.8
and	666.8-672	1.6	6.6	0.192	0.5
and	680-685.7	1.7	2.4	0.070	1.2
and	697-712	4.6	6.8	0.197	0.3
H4-51	639-642	1.0	12.1	0.354	TR
H4-52	749-753	1.2	11.2	0.327	TR

9.4 Other Elements

In the Copperstone deposit, silver is depleted as reflected in geochemical data and with enrichment of gold (Salem, 1993). Production records for the Copperstone mine show a high gold-to-silver ratio of about 33:1 (Ackermann, 1998).

Salem (1993) collected sixty-two samples from Copperstone which were analyzed for major and traced elements by a combination of x-ray fluorescence spectrometry, neutron activation, and induction coupled plasma spectrometry. The whole rock and trace element geochemistry showed the following results:

1) Copper values correlate with the chlorite and gold zone.
2) Ore zone is depleted in Zr, As, and Y.
3) Iron value are generally high but not related to the ore horizon since hematitization is pre-, syn-, and post-gold mineralization.
4) Ba and silica are enriched with gold mineralization.
5) W and Cu are lightly enriched with gold mineralization.
6) The gold horizon is depleted in K Na, Ti, Rb, Zr, Al, Pb, As, Sc, V, Rb, Y, La, and Th.
7) As and Sb values are erratic with depth and show no trend.

Unlike most epithermal systems, the use of pathfinder trace elements is non-diagnostic at Copperstone since As, Sb, and Te are generally below detection limits and have no discernable patterns. Furthermore, Pb and Zn are negligible in the analyzed samples. The Copperstone trace element association may be due to the deposit containing the oxidation association of hematite, magnetite, and limonite. Salem (1993) therefore concludes that the low level of sulfophile elements such as Pb, Zn, As, and Sb may be explained by the absence of sulfides.

10.0 Bonanza's Exploration

In 2000, Asia Minerals changed it name to American Bonanza Gold Mining Corp. American Bonanza Gold Mining Corp. has through January 18th, 2005, completed 58 underground and 107 surface drill holes for a total of 104,688.4 feet of drilling. Bonanza's exploration work has consisted of primarily exploration drilling, both surface and underground; extension of the decline; underground mapping and sampling; limited surface mapping and sampling; and a geophysical surveys, including magnetics. The drilling program is designed to convert resources into measured resources or reserves in the D and C zone while testing additional exploration targets down dip and along strike. A detailed geologic mapping and structural study is underway in the pit area.

All exploration work is conducted by, or under the direct supervision of Bonanza personnel and Gregory French, a Qualified Person as defined in the Canadian National Instrument 43-101. Reputable, experienced, and qualified contractors have been hired by Bonanza to conduct drilling, underground development work, and all geologic exploration. Quality control measure applied during the execution of the work are described in section 12.0 “Sampling Methods and Approach”, section 13 “Sample Preparation, Analyses, and Security” and section 14 “Data Verification”. Detailed descriptions of significant drill hole intercepts with gold values and future exploration recommendations in the D-zone, C-Zone, Highwall Zone and Footwall Zone are discussed in Sections 17.2, 17.3 and 17.4.

11.0 Drilling

At time of report writing, 6 drill rigs are drilling on the Copperstone property (Figure 11.1). As of January 18th, 2005, American Bonanza Gold Mining Corp. has completed 58 underground and 107 surface drill holes on the Copperstone project for a total of 104,688.4 feet (Figure 11.2, Appendix 2). A list of high-grade drill hole intercepts is included in Appendix 3.

The three drilling contractors presently operating at Copperstone are Layne-Christensen, Ruen Drilling, and Diversified Drilling. All of these drilling contractors are respected professionals and with methods and equipment at or above industry standards. Bonanza reports that all drill rod lubricants and additives in contact with the drill holes are certified chemically inert in Au and Cu used for geochemical interpretations.

11.1 Surveying

The Copperstone mine grid is in the Arizona state plane coordinate system. Surface control points are benchmarks previously established by Cyprus. Underground control points in the Asia Minerals’ decline, the 2003 bonanza drift and crosscut were established by Lemme Engineering Inc., of Phoenix, Arizona.

All surface drill hole sites are located by using a Trimble TSC-GPS system with base station and rover unit providing sub-centimeter accuracy. The GPS system is calibrated using Cyprus survey control points and checked for calibration each survey against two control points. All underground drill collars and drill hole azimuths are established with a transit and chain using the Lemme survey points for control.

Down hole surveys of the surface drill holes are performed by Wel Nav, Tustin, Ca, using a gyroscopic multi-shot instrument. Wel Nav surveys all RC pre-collars and diamond holes with the drill steel in the holes. When it is not feasible to use Wel Nav to survey a core hole, the hole is surveyed using a Wel Nav single shot camera, with a shot for azimuth and inclination taken every 100 to 150’. Underground drill holes are surveyed using a Wel Nav single shot camera. Survey shots for azimuth and dip are taken at 100 to 150’ intervals or a minimum of 3 shots per hole.

Figure 11.1 Surface Diamond Drilling, looking into open-pit

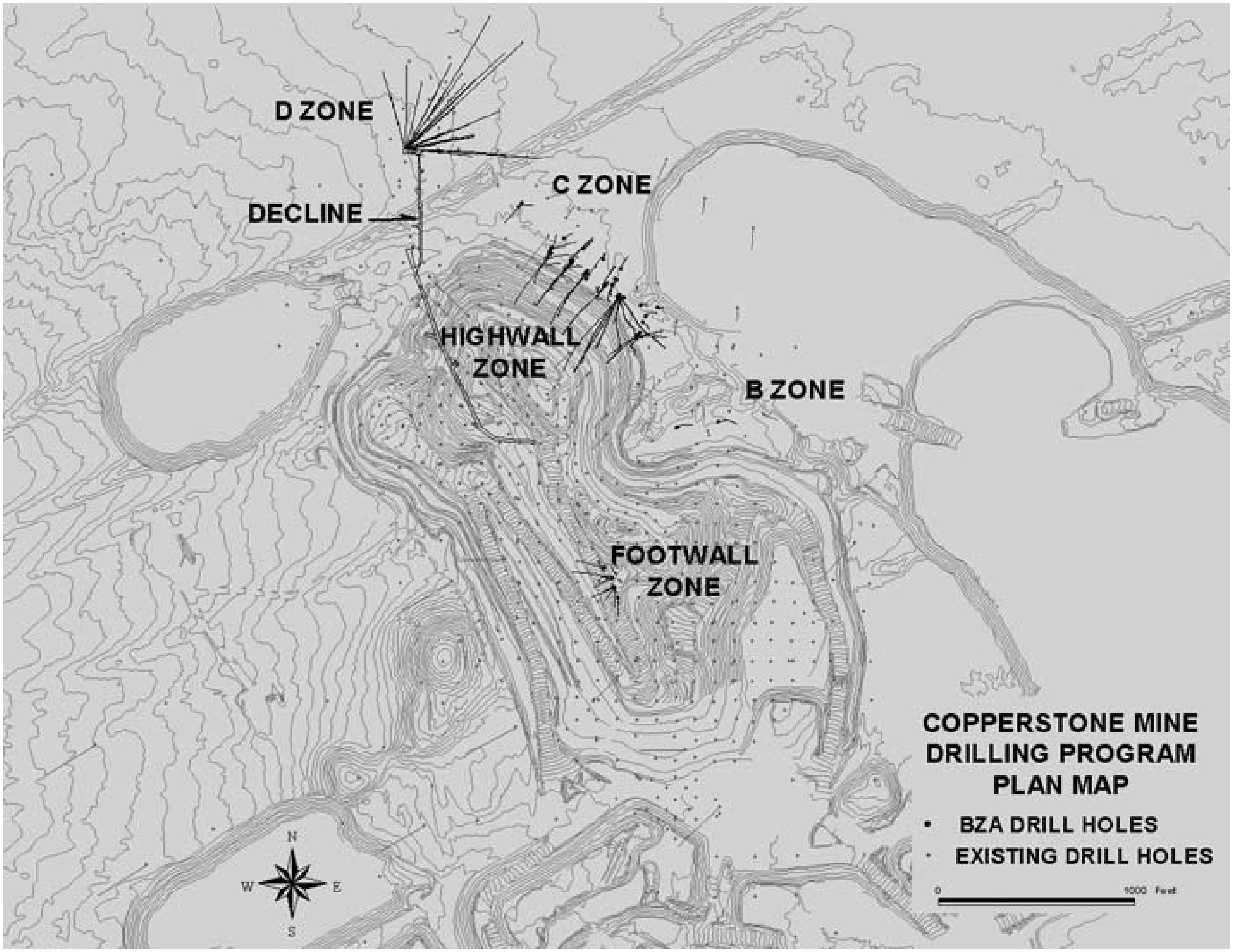


Figure 11.2 Copperstone Drill Hole Location Map

11.2 Diamond Drilling and Logging

The diamond drilling contractors are Layne-Christensen, based in Chandler, Arizona, and Ruen Drilling, based in Clark Fork, Idaho. Both these drilling contractors are highly respected throughout the mining industry.

All surface diamond drill holes are pre-collared through overburden and barren rock to a pre-determined depth above projected mineralization, generally between 500 and 640 feet depth. The pre-collar is completed with a reverse circulation rotary drill, with a nominal hole size of 5 ½ inch. The RC hole is then cased with 4 ½ inch flush joint casing and completed to TD by a diamond core rig, drilling HQ size core. All underground drill holes are core drilled from collar to TD using NQ size core.

11.3 Reverse Circulation drilling and logging

The reverse circulation drill contractors are Layne-Christenson, based in Chandler, Arizona, and Diversified Drilling, based in Missoula, Montana. Both these drilling contractors are highly respected throughout the mining industry.

Reverse circulation drill rigs are used to drill to a predetermined depth of 500 to 640 feet to pre-collar surface diamond drill holes. The reverse circulation holes are drilled with a nominal hole size of 5 ½ inch and then cased with 4 ½ inch flush joint casing. The depth for each drill hole has been pre-determined by the site geologist.

12.0 Sampling Methods and Approach

An individual geologist is assigned to each drill rig and is responsible to insure proper handling and boxing of core/cuttings at the drill site, transportation of core/cuttings to the logging facility, logging, sampling and preparation for shipment of the core/cuttings from his assigned rig. The authors examined some of the drill core/cuttings, core facility, and drill sites and all the samples are collected, secured, and stored in industry acceptable procedures.

All drill core is placed by the drill helper into standard waxed cardboard core boxes at the drill site and wood footage indicators blocks are placed at the end of each core run. Each core box is permanently marked with labels with appropriated “Hole ID #” and footage interval. Each filled box is covered with a cardboard box top.

Core is collected daily, at appropriate intervals, from the core rigs by the geologist and transported to the logging facility. Whole core is then initially rough logged for recovery, rock quality, rock strength, roughness of fracture, major lithology and mineralization. Core is photographed with a digital camera, photographs are downloaded and archived. Rough logs are then entered into a spreadsheet. Core is then sawed into 2 pieces using a 10” industrial masonry saw. Split core is logged for detailed geology, alteration, structure and mineralization. All drill logging and handling is consistent or above standard industry procedures.

At the reverse circulation drill sites, the drill helper collects samples every 5 feet from the cyclone-rotary splitter. Part of the sample is placed in a chip tray, pre-marked by the site geologist. A 5 to 7 lbs. sample is placed in a pre-numbered bag corresponding to a sample card number determined by the site geologist. A total of 8-10 sample bags are placed in a rice sack and sealed with metal wire for transport to the logging facility. The site geologist logs reverse circulation chips for geology, alteration and mineralization. All reverse circulation drilling and sample handling is consistent or above standard industry procedures.

The authors collected six rock chip samples (C 1-6) from the underground drill station area and three samples (C 7-9) were collected from gold mineralized drill intercepts from the “D Zone”. All of the samples were personally collected, bagged, and hand carried on January 11th to the air freight office of America West Airline in Phoenix for delivery to American Assay in Reno Nevada. At no time were the samples out of the author’s possession. Sample verification of gold assay was done by a comparison of past gold assays by Bonanza and the rock/drill core samples collected by the authors on January on 10th 2005 and gold analyzed by American Assay on January 24th , 2005.

13.0 Sampling Preparation, Analyses, and Security

The geologist marks core sample intervals with flagging in the core run and by a black marker line on the side of the core box. Sample intervals are based on geologic breaks with a 5-ft maximum sample length. A sample card is made for each sample, and when the sample is collected, a corresponding sample tag is placed in the bag. Sample intervals for each drill hole are split, sampled and shipped to the lab as a single work order, one drill hole per order. Samples are placed in shipping bags or boxes and loaded on to shipping crates supplied by American Assay Laboratories. Samples are kept in a secure fenced area and shipped directly from the mine site to the Lab via DATS Trucking, Inc. Pickups are made by DATS twice weekly or as required. The mine maintains 24 hr on site security. All sample collection, preparation, and security procedures were examined and found to be industry acceptable by the authors.

Two certified standards are placed in the sample string of each drill hole as well as a high-grade mine sample and a mine waste sample. Certified standards are obtained from the Nevada Bureau of Mines in Reno, Nevada. Mine standards are collected and blended from stockpile material at the mine site.

American Assay Laboratories in Reno, Nevada analyze all samples. Reverse-circulation samples are assayed for Au, Ag and Cu using a 1-assay ton charge. Core samples are assayed for Au, Ag and Cu. Two one assay ton charge fire assays are averaged to yield the final Au and Ag assay value for each core sample. American Assay Laboratories is a highly respected, reputable analytical laboratory.

14.0 Data Verification

The authors took a total of 9 geological rock samples of underground workings and ¼ split of NQ core samples, while at the Copperstone site on January 10, 2005. A total of 6 underground rock chip samples were collected and 3 samples of historic Copperstone diamond core were collected for data verification. The author was limited on January 10, 2005 in the number of core check samples that could be taken, because of the destruction of the ¼ split of the core sample.

Data verification, by the authors, was completed by reviewing geological data and sampling rock material from the exact locations of underground workings and drill core and comparing with the previously sampled and assayed historic Copperstone gold assays from the same locations. The data from the underground drift sampling, north of grid line 1,047,470 North was reported in the May 5, 2003 news release. The author decided to collect 6 geological rock chip samples near underground Drill Station #2. A plastic tarp was placed on the ground and sample panels compared and measured out and marked with spray paint from the historic American Bonanza Copperstone rock chip samples. The authors, Michael R, Pawlowski and Thornwell Rogers preformed the sampling by using a pneumatic chipping hammer across the rock face of the underground drift and hand collected the rock chip samples in marked, 20 pound bags. The underground rock samples and ¼ split of the drill core samples were in the control of the author, as a chain of custody from the underground sampling and diamond core sawing to their personnel delivery to American West Air Express freight shipment, in Phoenix, Arizona, for delivery to the American Assay Laboratories Inc. office at 1500 Glendale Ave, Sparks, Nevada.

A comparison of the authors rock sampling submitted to American Assay Labs. for gold analyses, are compared with the historical 2003 Copperstone rock samples submitted to American Assay Labs. for gold analyses, and are shown in Table 14.1. It should be noted that the same fire assay methods and same analytical laboratory were used for both sets of samples. The American Assay Laboratory Inc. gold and copper analytical results, of samples collected by the author are show in Appendix 4.

Table 14.1 Assay Comparisons for Data Verification of rock samples collected by the Author and compared to American Bonanza assay results

Sample Number Collected by Author 1/10/04 and compared with historic Au assays	**Location Underground Channel Samples/Drill Core**	**Historic sample 1 5/2003**	**Historic sample 2 5/2003**	**Historic Average 5/2003**	**Author Sampling 1/10/05**	**Author Sampling 1/10/05**	**Average Author Sampling**	**Comments**
		Bonanza Sampling Au opt	**Bonanza Sampling Au opt**	**Bonanza Sampling Au opt**	**Au opt American Assay 1/24/05**	**Au opt American Assay Labs 1/24/05**	**Au opt American Assay Labs 1/24/05**	
C-01	Underground Drill Station #2, 3 to 9-feet from end of drift, 3-feet high, Fe-breccia	0.103	0.637	0.37	0.328	0.336	0.33	Variance is 0.04 Au opt higher
C-02	Underground Drill Station #2, 9 to 16.5-feet from end of drift, 3-feet high, Fe-breccia	1.253	1.674	1.46	1.646	1.694	1.67	Variance is 0.21 Au opt lower
C-03	Underground Drill Station #2, 16,5 to 23-feet from end of drift, 3-feet high, Fe breccia	0.699	0.296	0.5	0.756	0.751	0.75	Variance is 0.25 opt Au lower
C-04	Underground Drill Station #2, 23 to 29.5-feet from end of drift, 3-feet high, Fe-breccia	0.414	0.23	0.32	1.803	1.868	1.84	Variance is 1.54 opt Au lower
C-05	Underground Drill Station #2, 29.5 to 35-feet from end of drift, 3-feet high, Fe-breccia	2.961	0.378	1.68	0.124	0.117	0.12	Variance is 1.54 opt Au higher
C-06	Underground Drill Station #2, 0 to 3-feet from end of drift, 6-feet high, Fe-breccia	0.047	0.253	0.15	0.265	0.218	0.24	Variance is 0.09 opt Au lower
C-07	Drill Hole CUDH-03-12 155.6 to 159 feet, 1/4 diamond core split ironstone breccia	0.42			0.363	0.384	0.37	Variance is 0.04 opt Au higher

C-08	Drill Hole CUDH-03-12 154 to 155.6 feet, ¼ diamond core split ironstone	2.447			1.552	1.472	1.51	Variance is 0.94 opt Au higher
C-09	Drill Hole CUDH-03-12 159 to 162 feet, 1/4 diamond core split Specularite-Chrysocolla	0.886			0.661	0.681	0.67	Variance is 0.22 opt Au higher

The rock samples collected by the author on January 10, 2005 have very high gold values that range from 0.117 opt Au to 1.868 opt Au, Table 14.1. The historical Bonanza sampling consisting of chip sampling across 2 underground panels, approximately 3-feet thick, in the Copperstone Fault Zone, The two panels were averaged and shown on the historic average of Bonanza sampling in Au opt, Table 14.1. The historic averages are compared to the authors' sampling of the exact same geological sample. The difference or variance is shown in ounces per ton gold values. The historic average and the average authors' sampling in opt Au can be directly compared for data verification. The difference between the historic sampling and the authors' sampling ranges between 0.04 and 1.54 opt Au values. The authors' sampling is both higher and lower in gold values compared with the Bonanza Copperstone sample results. All gold assays submitted by Bonanza Copperstone are routinely double or triple checked by fire assaying different sample pulps from the same sample. High copper values were noted in rock samples, Appendix 4.

Rock samples in the underground workings and drill core consisted of red brecciated rock material in the Copperstone Fault, appear to visually corresponded to intervals of anomalous gold assays. The assay comparisons in Table 14.1, do show some variability but do show good correlation of gold values between the samples collected by the author and compared to Bonanza assay results. Numerous samples collected by the authors have very high gold values and are thought to show the nugget effect of gold in the sampling method and in the assay method.

The sampling was not meant to validate sample precision, but rather verify the presence and order of magnitude of gold grades. The results are substantially the same as those presented by the historic Bonanza Copperstone geological group, in that high gold values exist in both sets of sampling.

The small sample population anticipated inherent variance in the sampling method, and the intended use of the samples did not warrant extensive data corroboration or statistical review. The laboratory's internal standards and duplicate assay results were reviewed and documented. Standard internal quality control performed by the laboratory included pulp duplicate analysis, blanks, and standard reference materials. The limited corroborative data available for the surface samples and under did not indicate any problems in the analyses conducted. The few comparative sample analyses indicated both expected and acceptable limits of relative variance. None of the samples were submitted to an umpire laboratory and no resource estimates have been based on the surface sample data.

Geological methods of sample collection from the surface, underground and drill core appear to be the best available technology and within industry standards. Drill hole deflection and or wandering is significant. The Copperstone geological staff controls adjustments to the drilling equipment and drilling technique to manage deflection.

The authors were not present during any of the drill campaigns at Copperstone. All descriptions of drilling practices, sample collection, and data documentation are based solely on information provided by, and conversations with, Bonanza personnel. Bonanza Copperstone recognizes that the occurrence of samples containing relatively high gold values might materially impact the accuracy and reliability of sample results. However, the use of core drilling and appropriate sample preparation and analytical protocols were employed by Bonanza to maintain the integrity of the gold analyses.

The primary sample preparation facility, principal analytical lab and umpire laboratories utilized for data corroboration each acted as independent operations. Beyond normal service-client relations, the preparation and analytical laboratories utilized are in no way associated with any employees, officers or directors of Bonanza. No affiliate, employee, officer, or director of Bonanza conducted any part of the corroboration sample preparation/submission procedure. Due to budgetary constraints, no check assays were submitted to an umpire laboratory.

15.0 Mineral Processing and Metallurgical Testing

To date, only preliminary characterization and scoping-level metallurgical studies have been or are being conducted on high-grade gold mineralization from the Copperstone primary target areas. Overall metallurgical results show that gravity/cyanidation and whole ore cyanidation leach are viable options for Copperstone, as shown in the completed McClelland Laboratory, Inc. Report, MLI Job #2790. Detailed production and cyanide leaching characteristics of differing mineral types should be available in the historic Cyprus Copperstone mine and metallurgical production data that is being acquired from Cyprus files, now owned by Phelps Dodge Corporation, Phoenix, Arizona.

Preliminary cyanidation testing was also conducted in 1999 at the Resource Development Inc. facility in Denver, Colorado as outlined in MDA report (2000). The two composite samples were selected from core intervals within the “Hanging Wall” and D-Zone mineralization (Table 15.1). The characterization-level testing on the two samples is not considered conclusive. However, it provided insight regarding the level of potential cyanide consumption associated with copper minerals that commonly accompany the gold mineralization at Copperstone. The 24-hour leach test results indicated that the Hanging Wall sample consumed a minor amount of cyanide (0.004 kg/mt of feed), while cyanide consumption in the D-Zone sample was significantly higher (1.085 kg/mt). Although both samples contained copper, the D-Zone sample contained approximately five times more copper than the Hanging Wall sample. The amount of cyanide-soluble copper in the D-Zone sample was similarly high, suggesting that the presence of soluble copper minerals that locally accompany gold mineralization will consume cyanide. MDA concluded that additional test work was required to better define the relationship between cyanide consumption and copper mineralization.

Metallurgical scoping tests were completed on November 20, 2000 at McClelland Laboratories in Reno, NV on a 30-kilogram (64 pound) composite of representative D-Zone mineralized material. The composite was prepared with the objective of obtaining a composite gold grade of >1.0 oz/ton, copper content of >0.5%, and representative host rock/chemical reactivity characteristics of silicified limestone. Surplus reject material remaining from the assay lab's initial sample prep procedure for drill-hole intervals that intersected the D-Zone mineralization was used. The original bags were double bagged, and the appropriate sample numbers relabeled on the outside bag. These were placed in large "rice" bags and shipped to McClelland. McClelland prepared the composite used for the test work. Table 15.2 summarizes the drill sample intervals blended to prepare the composite submitted for metallurgical test work.

The McClelland test work includes determination of the Bond Ball Mill Work Index, whole-ore cyanidation tests on P80~200 mesh material, kinetic leach tests on gravity concentrate of P80~270 mesh material, kinetic cyanide leach tests on gravity concentrate tails, and thickener sizing and pulp viscosity tests.

The McClelland Laboratory, Inc. Report, MLI Job #2790 was completed on November 20, 2000 after the MDA Report (2000) was completed. A summary of the McClelland Laboratory, Inc. Report, 2000 showed gold recovery rate increases markedly with the higher NaCN leaching concentration, because there was sufficient free cyanide available for concurrent dissolution of copper and gold. The 1.5 g/L NaCN leaching concentration was considered near optimum. NaCN consumptions were high for all cyanide test and ranges from 6.33(0.5 g/L) to 7.23 lbs/ton feed. Consumption rates were more rapid early in the leach cycles (to about 24 hours) when copper dissolution rates were most rapid. Lime additions were moderate and ranged from 4.8 (whole ore cyanidation) to 6.1 (gravity/cyanidation, 270 M, 0.5 g NaCN/L) lbs per ton of feed. A preliminary bulk sulfide flotation test was completed in the McClelland Laboratory that showed a rougher flotation product of 16.7 percent of feed weight that would have to be cyanided to achieve a gold recovery of over 90%. Additional metallurgical tests in the future will be required from the different mineralized zones, after reviewing all past historical metallurgical work completed on Copperstone.

Table 15.1 Preliminary Cyanidation/Leaching Studies

(Resource Development Inc, 1999)

(A) 1000 gram "Hanging Wall" Sample

Parameter*	Au	Ag	Cu	Extraction % (per calculated head grade)			
				time	Au	Ag	Cu
Recovery (%)	82.7	27	5.2	2 hours	12.3	4.4	2.1
Calc. Head (g/mt)	11.36	1.37	510	4 hours	32.7	7.8	3.3
Actual Head (g/mt)	7.42	< 2	476	6 hours	45	12.4	4.3
Tail assay (g/mt)	1.97	<2	483	24 hours	82.7	27	5.2
Cyanide consumption: 0.004 kgNaCN/tonne							
Lime Added: 0.531 kg CaO/tonne feed							

(B) 1000 gram "D-Zone" Sample

Parameter*	Au	Ag	Cu	Extraction % (per calculated head grade)			
				time	Au	Ag	Cu
Recovery (%)	91.2	48.9	15.6	2 hours	26.5	24.7	9.7
Calc. Head (g/mt)	19.09	1.96	2419	4 hours	57.1	38.3	12
Actual Head (g/mt)	26.4	< 2	2656	6 hours	70	43.6	13.2
Tail assay (g/mt)	1.68	<2	2042	24 hours	91.2	48.9	15.6
Cyanide consumption: 1.085 kg NaCN/tonne							
Lime Added: 0.564 kg CaO/tonne feed							

*Note: both tests were conducted on P80~150 mesh grind, ~ 1.00 gr/l NaCN conc., 40% solids

Table 15.2 D-Zone Met. Composite Components (McClelland Labs test work)

Hole	From (ft)	To (ft)	Length (ft)	% Core Recovery	Geologic Character	Au (oz/ton)	Cu (%)	Approx Weight (lbs)
A98-2	592.8	596.4	3.6	100	Spec., CuOx	0.905	0.49	8.6
A98-2	596.4	602.0	5.6	99.6	Spec., CuOx	0.473	0.90	11.8
A98-2	606.3	609.6	3.3	79.7	Spec., CuOx	0.676	1.51	4.1
Sub-total / Ave.			**12.5**			**0.658**	**0.86**	**24.5**
A98-3	623.7	628.7	5.0	100	MSB	1.036	0.17	8.3
A98-3	632.0	637.0	5.0	93.6	SLT, Spec., Bx	12.010	3.80	2.3
Sub-total / Ave.			**10.0**			**3.417**	**0.954**	**10.6**
A98-5	568.0	573.0	5.0	89.1	LST, SIL/ Spec, Chl	0.483	0.30	4.9
A98-5	573.0	578.0	5.0	89.5	LST, SIL/ Spec, Chl	0.770	0.43	6.7
Sub-total / Ave.			**10.0**			**0.649**	**0.38**	**11.6**
A98-13	582.7	586.6	3.9	97	LST, Spec ,Chl	0.329	0.08	7.2
A98-13	586.6	589.1	2.5	94.5	LST, VG, Chl, MASS	2.359	0.10	5.1
A98-13	630.5	634.0	3.5	-	LST, SIL, Spec, CuOx	0.359	0.29	4.7
Sub-total / Ave.			**9.9**			**0.946**	**0.16**	**17.0**
Estimated Composite Sample Total / Average						**1.193**	**0.60**	**63.7**

16.0 Mineral Resource and Mineral Reserve Estimates

The continuity of the Copperstone mineralization along strike and down dip has been difficult at times to understand, and model, because of pre-mineral, syn-mineral and post-mineral faulting. The gold resource is located in tabular, occasionally bifurcating, sheeted zones hosted and controlled by the Copperstone Fault. The fault strikes N30 to 60^o W, and dips generally about 40^o to 45^o NE in the south and central pit area and around 25^o NE in the northwest pit and D zone areas. The structural deformation caused by the Copperstone Fault is the control on both location and grade of the mineralization. Gold mineralization exists within the Copperstone Fault, parallel faults, and hanging wall listric faults. Any model must therefore utilize these aspects of geology to estimate the location, grade, and distribution of gold in the system. Pertinent geologic characteristics include intensity and style of deformation, host rock competence, intensity of alteration and associated mineralogy, as well as structural offsets and changes in orientation. High-grade gold mineralization,(plus 1 opt Au), appears to occur over narrow vertical thicknesses, of 3 feet, in the, lower-grade, (less than 0.20 opt Au), Copperstone Fault Zone.

16.1 Resource

No additional resource estimations were completed in this report and have not been updated since the MRDI, 1999 study was completed. Numerous new drill holes from the surface and underground at the Copperstone property in the 2003 and 2004 drill campaigns have shown high-grade pods of gold mineralization, averaging above 1 opt Au. These will require special care when modeling for tonnage and grade estimations. The pods of high grade gold mineralization appear to have continuity over 100's of feet along strike and down-dip and maybe caused by pre-mineralization, syn-mineralization or post-mineralization faults and the geological understanding of these faults and or offsets, will effect any resource estimation.

MRDI completed detailed resource estimation in 1999 with Indicated Resource of 892,200 tons at 0.32 ounces per ton gold and Inferred Resource Estimation of 1,193,700 tons averaging 0.354 ounces per ton gold. For comparison of the effects of capping grades, the uncapped resource estimate for these same zones is comprised of 2.1 million tons grading 0.58 opt Au, exceeding 1.2 million ounces of contained gold. Within the Indicated and Inferred Resources, MRDI estimated "resources available for mining" as a total of 827,000 tons grading 0.56 opt Au (using capped, diluted grades). Economic studies were performed on this 459,500 ounce resource estimate. This estimate is not NI 43-101 compliant and is provided for historic purposes only

The increase of the price of gold to above $400 US per ounce gold, ($426 US per ounce gold as of January 26, 2005) should positively effect the economics of the Copperstone Project. The 1999 MRDI study reported economic mining cut-off grades that were based on a gold price of $300 per ounce gold. The exact definition of previous resource estimated by Asia Minerals (as Bonanza was then called) in the MRDI, 1999 Report may not be in full compliance with current National Instrument 43-101 standards. These historic resource estimates at Copperstone are not proven to be economically viable and are based on conceptual mine models. The Bonanza Copperstone drilling programs, in 2003 to 2005, have added 58 underground and 107 surface drill holes. Approximately 104,688.4 feet of drilling have been completed since the last resource estimations. All drill holes are down-hole surveyed to insure the exact location of the drill-hole intercepts of the mineralized zones. A new Copperstone resource estimation is scheduled mid-2005 following completion of the current in-fill drilling.

MRDI performed an economic scoping study based on this resource estimate. The estimated capital cost was US$22.54 million, including direct costs of US$ 14.67 million and indirect costs of US$ 7.87 million. Indirect costs include US$ 1.75 million in owners' costs and a 20% contingency of US$ 3.76 million. These capital costs make no allowance for performing exploratory drilling, geotechnical environmental and metallurgical studies, or performing the feasibility study. The project base case is a 520 tons per day underground mine and a gold price of US$300/troy ounce over a 5 year mine life. The results of a pretax cash flow analysis of the base case was as follows:

• Cumulative Cash Flow	US$ 31.56 million
• Net Present Value @ 10% discount	US$ 18.18 million
• DCFROR	45.4%
• Capital Payback	1.2 years
• Cash Cost of Production	US$ 149 per ounce

The most recent resource estimate, as summarized by Steve Ristorcelli, (MDA, 2000), was done by MRDI (MRDI Canada, Scoping Study Report, 1999), an independent consultant, on behalf of Asia Minerals. MRDI performed data analysis and made recommendations for a QA/QC program. The modeling began with the mineralized zones defined by Asia Minerals; the zones were essentially cross sectional polygons drawn around and between mineralized drill-hole intercepts. These zones included only C and D zones, which were broken down into two and three sub-zones, respectively. All the zones are substantially the same geologically, but are distinguished because of their spatial separation. These outlines were later slightly modified by MRDI and were considered by MRDI to “reflect the constraints imposed by geology, structure, and assays”.

The zones were used to tag assays and to code the model blocks. Once tagged, MRDI had the sample assays composited, within these zones to 5-foot lengths. Compositing honored the mineralized zone boundaries constructed by Asia Minerals. No minimum length restrictions were placed on the compositing routine, though the shorter samples are lower grade by a significant amount, thus placing a conservative bias into the estimate.

MRDI studied the gold grade distributions by zone, which formed the basis for capping the highest grades. MRDI capped outlier grades to 4.7 oz Au/t in the D zone and 2.5 oz Au/t in the C zone. A total of 3.5% of the samples were capped. The block model is composed of blocks sized at 10.7 m (35 ft) by 4.6 m (15 ft) by 1.524 m (5 ft). Tonnage factor used for the zones was 10.7 ft^3/ton. Variography (correlograms) was performed on the composite data. The 3D correlograms did not produce interpretable results, so most work was done with 2D correlograms. Still the results were found to be inconclusive and, possibly significantly, affected by the drill spacing. MRDI chose not to perform kriging estimation because of the lack of supporting data. Estimation was restricted to blocks within the defined zones and from composites within the defined zones. MRDI used inverse distance cubed (ID^3) with no minimum composite length requirements. A two-pass approach was done, the first with a longer range of 1,000 ft to fill the zones and the second with a shorter range of 34 m (110 ft) to obtain better local estimation and for use in the Indicated classification. MRDI used the capped composite grades for the Indicated and Inferred resource definition, but also performed an estimate with the grades uncapped for comparison purposes only.

In the MRDI Report,(1999) a Copperstone Resource only estimated the C and D zones; their results are given in Table 16.1. Steve Ristorcelli, P. Geo, modified the table in the

MDA Report to adapt to the requirements of the CDNX in 2000 by separating Indicated Resource and a Inferred Resource. MDA did not list the uncapped resource because it was done for comparative purposes only and, in MDA's opinion, probably overstates the presently defined resource. MRDI did not classify any material as Measured.

Table 16.1 Copperstone Resource as Estimated by MRDI , 1999

(This estimate is not NI 43-101 compliant and is provided for historic purposes only)

Zone	Tons	Au Grade (oz/ton)	Au Ounces
Indicated			
C	478,400	0.194	92,700
D	413,800	0.466	193,000
Total	892,200	0.320	285,700
Inferred			
C	696,700	0.323	225,000
D	497,000	0.398	198,000
Total	1,193,700	0.354	423,000

Steve Ristorcelli noted that Royal Oak Mines estimated a resource for the A and B zones, but as these are neither the objective of this program nor reviewed by MDA, they are mentioned only for completeness (MDA, 2000). The A zone is located below the extreme southeast corner of the open pit and measures about 200 m (650 ft) by 76 m (250 ft) in plan. The outcrop of A-Zone within the pit is now beneath a waste rock pile. Royal Oaks Minerals calculated a "geological resource" of 222,084 tons grading 0.149 oz Au/t, containing 33,000 oz Au (Royal Oak Mines, 1997). The B Zone outcrops on the north flank in the central part of the open pit and measures about 230 m (750 ft) by 106 m (350 ft) in plan. The outcrop of B-Zone is exposed at the base of and immediately south of the prominent nose in the east pit wall. Royal Oak Mines calculated a geological resource of 553,977 tons grading 0.168 oz Au/t, containing 93,000 oz Au (Royal Oak Mines, 1997).

The recent drilling and underground drifting completed by Bonanza has shown bonanza gold grades above 1 opt(ounces per ton) Au, in the D-Zone. The current surface and under-ground drilling in 2003 to 2005 and planned ore resource estimations in 2005, will yield a better understanding of the Copperstone mineralization.

16.2 Minability

No reserves have been delineated at Copperstone, as detailed drilling and engineering studies have yet to be completed. However, mining, metallurgy, and infrastructure issues at Copperstone should allow for the exploitation of the ore, if and once it is defined. No negative impacts are expected or known to exist from environmental, permitting, legal, title, taxation, socio-economic, marketing, or political issues. Much of this has been addressed in a scoping study by MRDI and the MDA Report, 2000 by Steve Ristorcelli, P. Geo., copies of which are available on Bonanza's Website and at www.sedar.com. The MRDI report, as summarized by Steve Ristorcelli (MDA, 2000), states that mining of the C and D zones clearly must be as an underground operation and could be at a rate of 450 to 550 tons per day. MRDI envisions access in a 4 m (13 ft) by 4 m (13 ft) decline with a 13% grade located in the footwall about 21 m (70 ft) from the Copperstone Fault. They also felt that drift and fill stoping, utilizing a paste backfill, would be the most effective method of ore extraction, with access driven from the footwall ramp.

To date, preliminary metallurgical characterization suggests that recoveries of close to 90% can be expected for gold. The association of copper with the gold may cause some problems, but as the recoveries for Cyprus' production was also close to 90%.

17.0 INTERPRETATIONS AND CONCLUSIONS

Copperstone was successfully operated as an open pit mine by Cyprus Minerals between 1987 and 1992, producing approximately 500,000 ounces of gold from cyanide heap leaching. The Bonanza Copperstone drilling and exploration project started in 2003 and is currently ongoing as of January 2005. The Bonanza Copperstone Program is exploring the continuation of gold mineralization along strike and down dip from the Copperstone open pit, and is finding similar mineralization and newly discovered high grade, bonanza-type gold mineralization, greater than 1.0 ounces per ton gold, in podiform zones. A continuation of this drilling program at Copperstone is recommended.

After the completion of the currently recommended drilling budget at Copperstone, a resource estimate and pre-feasibility study is recommended in 2005. The Copperstone Project has many positive attributes for future mine development, including fully developed power and water services, surface and underground access, an oxide deposit minimizing environmental risks, a clean environmental record from the previous mine operations, and pre-disturbed land footprint.

Mineralization at the Copperstone mine is localized within the brecciated, listric Copperstone fault zone on the upper plate of the Moon Mountain detachment fault. The authors are of the opinion that the property has good potential to discover additional ore shoots:

1) to the northwest and southeast, along strike of the Copperstone fault.
2) down dip along the Copperstone fault
3) parallel listric fault in the hanging wall and foot wall of the Copperstone fault, analogous to the Footwall target zone.
4) property wide targets parallel to the Copperstone fault, and in the upper plate rocks both to the northeast and also to the southeast towards the Moon Mountain detachment fault.

Bonanza's geologists must continue to define and develop the mineral-deposit model. A better understanding of the ore and structural controls along with diagnostic geophysical parameters are necessary to define quality exploration drill targets elsewhere on the property.

The Bonanza Copperstone program is designed to convert resources into measured resources or reserves in the C and the D zones and the testing of additional exploration targets down dip and along strike. Approximately $450,000 per month is being spent by Bonanza on the Copperstone exploration program, in accordance with the recommended budget below.

17.1 Principle Targets

The principal gold targets being addressed in the current program are the high grade intercepts of the D- Zone, the High Wall Zone and Footwall Zone. Additional targets exist in the A, B and C Zones. Recent 2004 drill targets explored by Bonanza are summarized below.

17.2 D-Zone Zone

Underground core drilling continues at the D-Zone at Drill Station#2. Drill holes have been drilled from 2 drill stations in vertical up and vertical down and horizontal fans of drill holes. All drill fans have been drilled to the north, east and northeast into the Copperstone Fault on approximately 50-foot centers (Figure 17.1-17.5). Drill intercepts are sometimes parallel and/or oblique to the mineralized Copperstone Fault. True thicknesses of the gold mineralized zone are difficult to interpret when drilling oblique drill holes and therefore are calculated by plotting the drill-hole fans on cross sections.

Objectives of the D-Zone Drilling Program include conversion of the MRDI, 1999 indicated and inferred resources into measured resources and reserves for future mine planning. A main focus of the future D-Zone drilling campaign is to resolve structural questions regarding the northern boundary of the gold mineralization in the D-Zone area. A total of over 50 holes have been drilled with a total footage of about 15,084 feet. Approximately 6,000 feet in about 26 drill holes remain to be drilled.

Including the D-Zone and the ore mined from the pit, the Copperstone Fault is known to be mineralized over a strike length of about 3,600 feet, a vertical extent of 600 feet, and a down dip extent of 1,800 feet True thickness of the D-Zone mineralization ranges up to

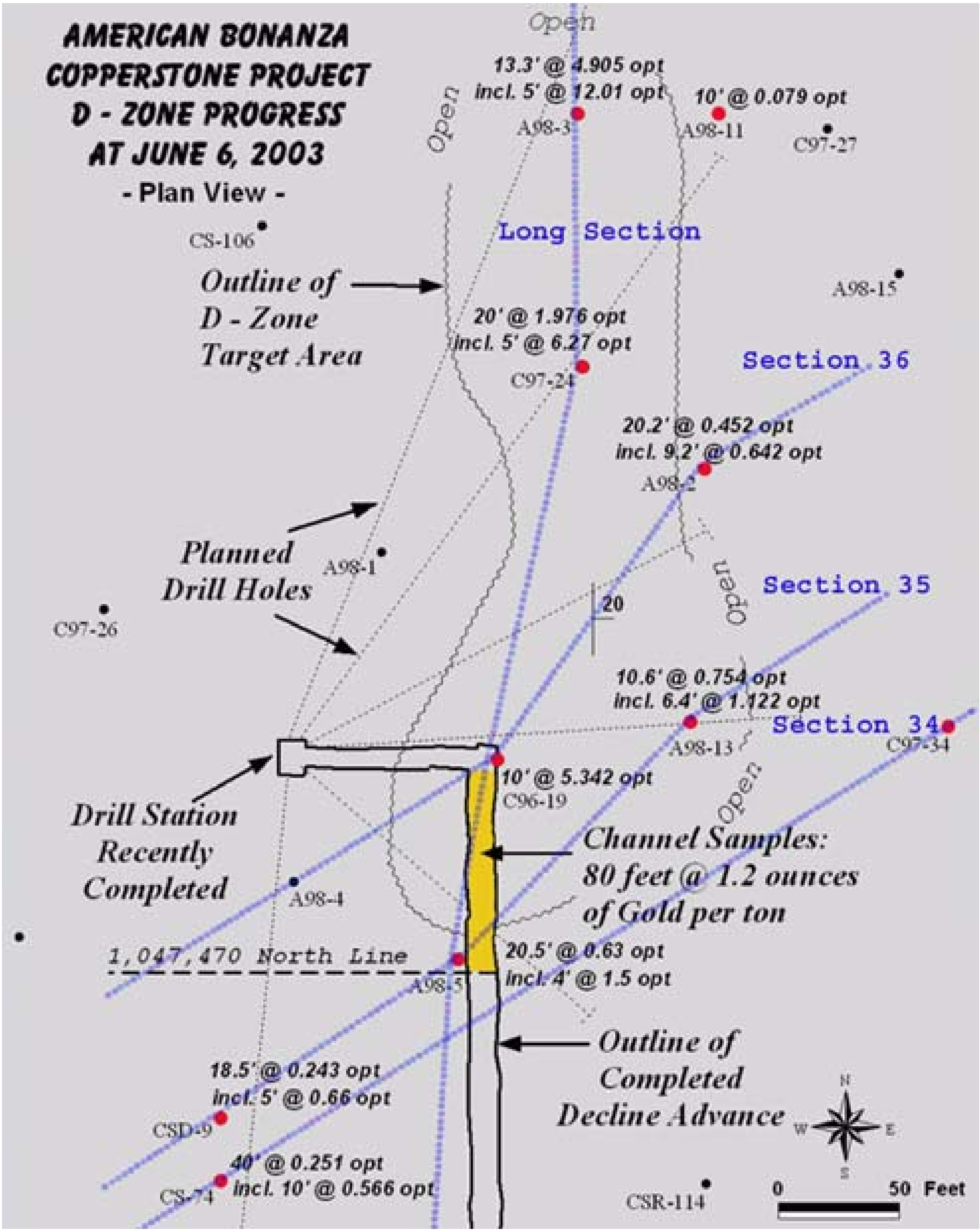


Figure 17.1 D-Zone Section Location and Summary Map

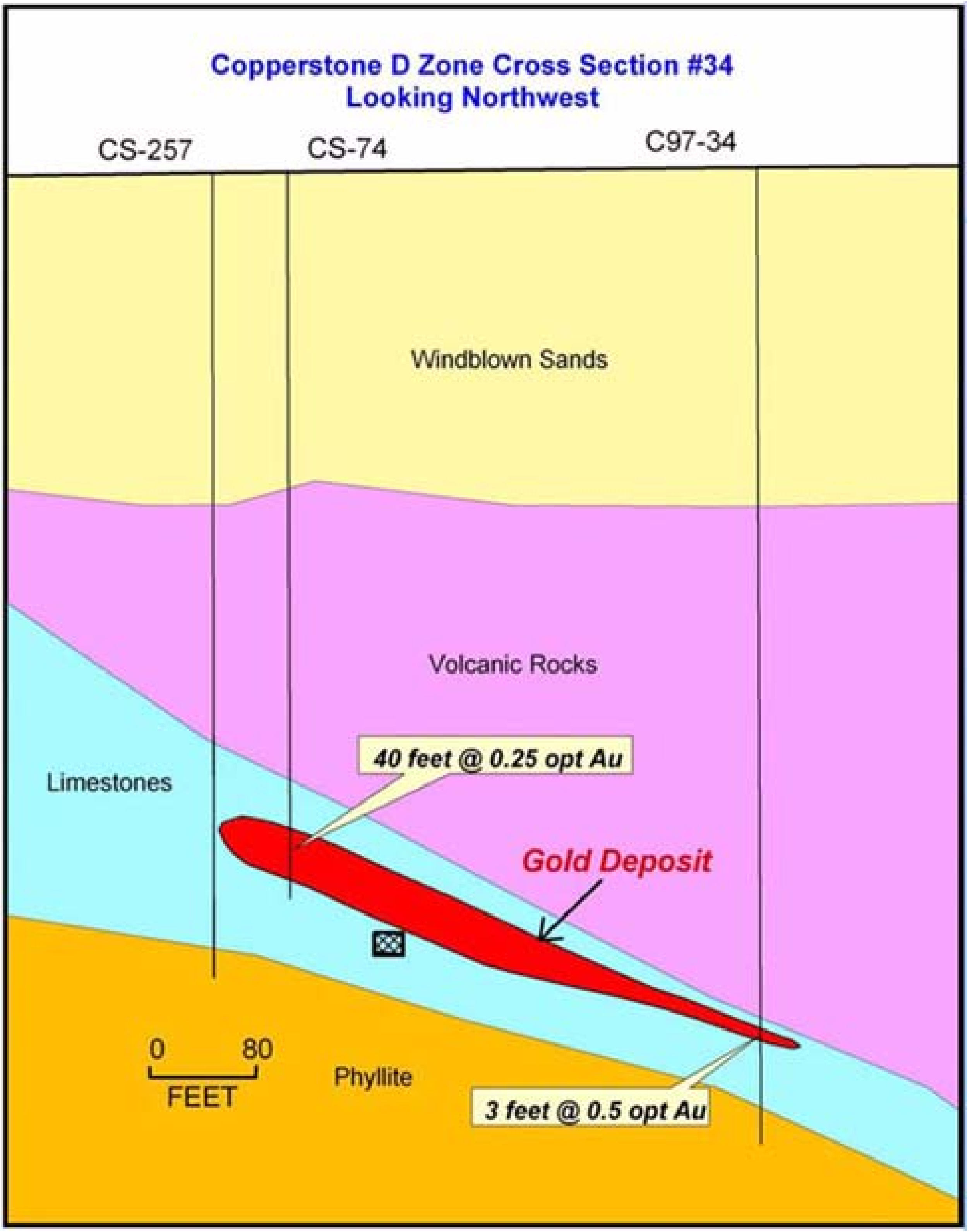


Figure 17.2 Copperstone D-Zone Cross Section #34

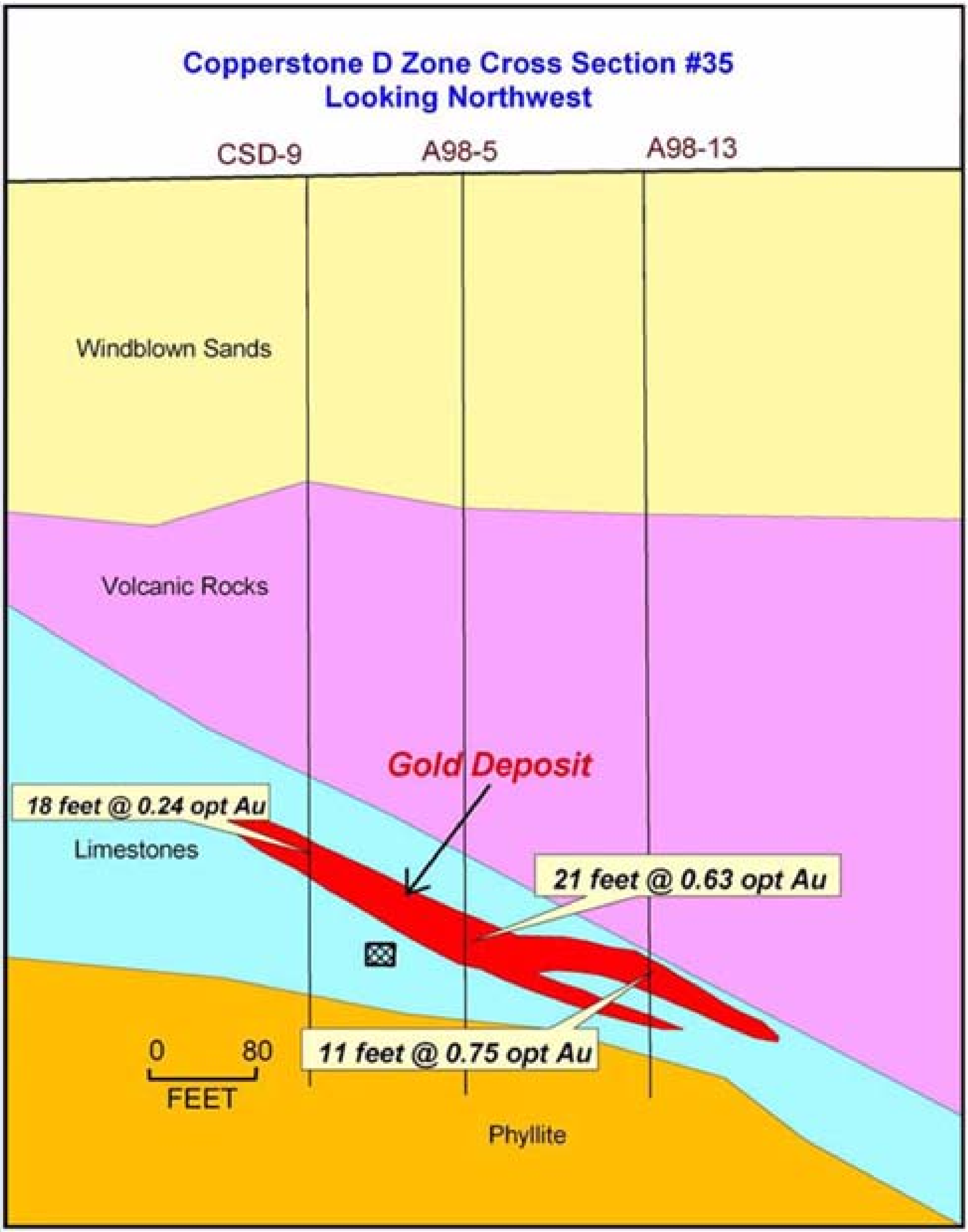


Figure 17.3 Copperstone D-Zone Cross Section #35

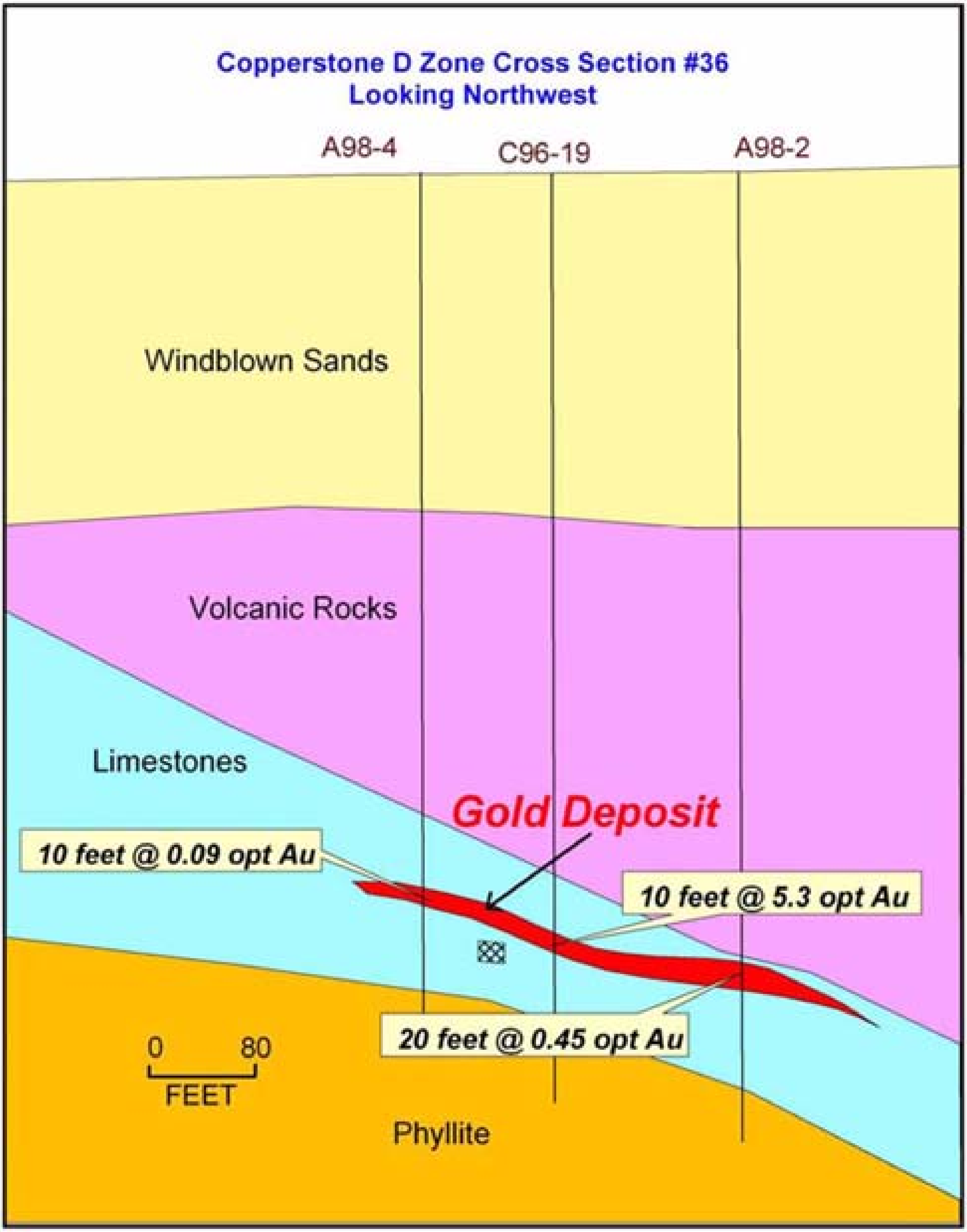


Figure 17.4 Copperstone D-Zone Cross Section #36

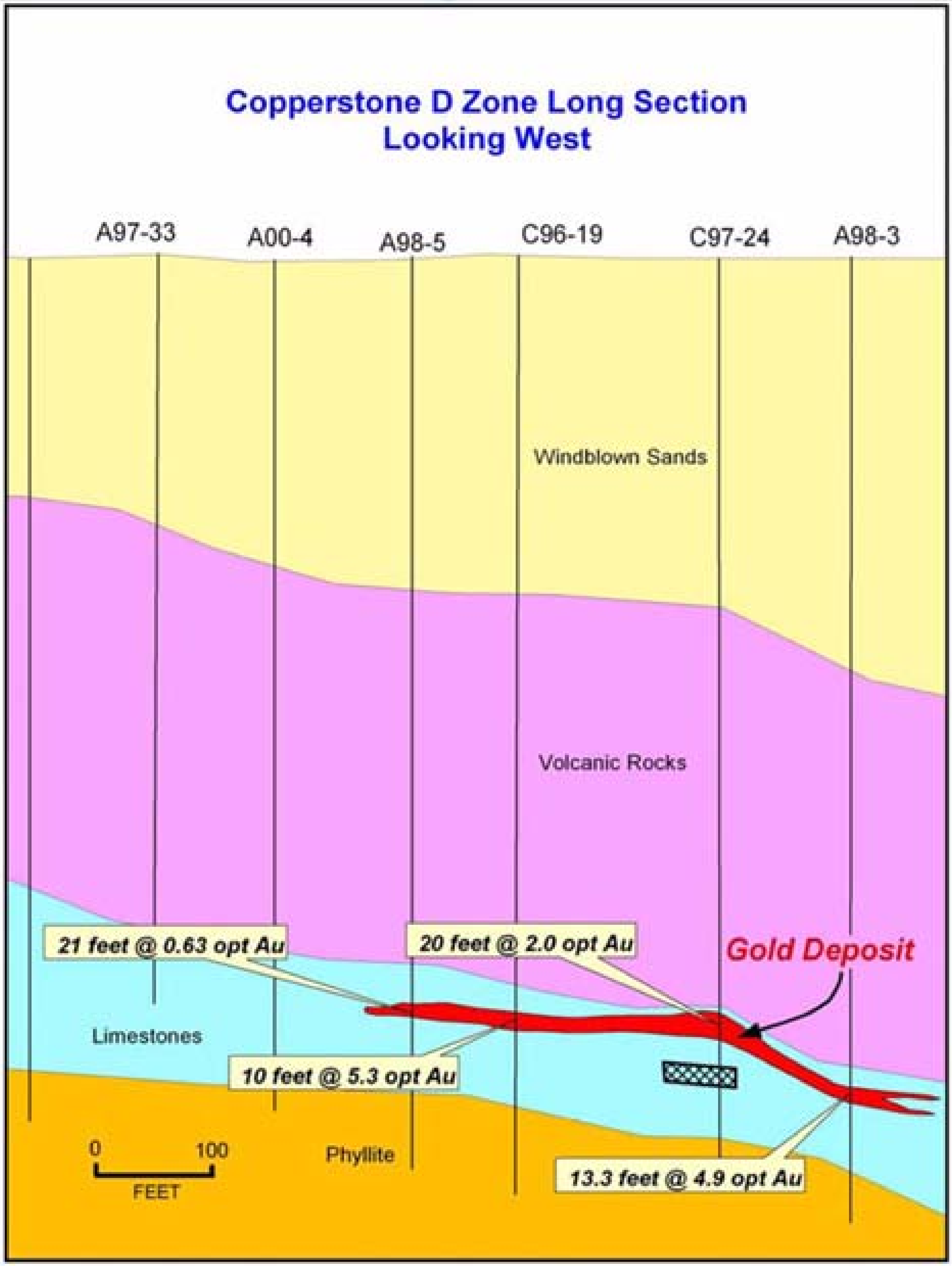


Figure 17.5 Copperstone D-Zone Cross Section #37

40+ feet thick in the Copperstone Fault, but higher gold mineralization occurs in thinner 3-foot zones (Figure 17.2-17.5). High-grade gold mineralization, above 1 opt Au is not continuous in the Copperstone Fault but exists as structural podiform, mineralized zones in the hanging wall side and footwall side of the Copperstone Fault. Additionally, it appears that sub-parallel structures well into the hanging wall and footwall of the Copperstone Fault contain unexplored occurrences of high grade mineralization. The D-Zone, high-grade gold mineralization appears to be open to the north and possibly down dip, to the northeast. Additional underground drill sites and underground drilling are necessary to explore and block out the D-Zone mineralization.

Significant intercepts are summarized in Table 17.1. The intercepts of 1.5 meters grading 1.576 ounces per ton gold or 54.0 grams per ton gold in drill-hole number DU04-50 show the high-grade gold mineralization that can be encountered over narrow zones. The author also sampled similar high-grade gold mineralization over a 1-meter true thickness in sample C-4 averaging over 1.8 ounces per ton gold (Table 14.1). Additional high grade gold mineralization include 4 feet averaging 1.05 ounces per ton in drill hole DU4-37, 10.8 feet averaging 1.49 ounce per ton in drill hole CUDH4-26, and 3.5 feet averaging 2.4 ounces per ton in drill hole CUDH4-32 (Table 17.1).

Table 17.1 Significant Gold Intercepts in the D Zone

Hole ID	From – To (ft)	Intercept (ft)	Gold (opt)	Gold (g/t)	Copper (%)
DU4-50	65.6-70.4	4,8	1.576	54	0.3
DU4-37	249-253	4	1.059	36.3	tr
DU4-37	296-307.6	11.6	0.269	9.2	2.3
CUDH-04-26	199-204	5	0.264	9.1	0.1
CUDH-04-26	341.1-354	10.8	1.493	51.2	0.7
Including	345.5-349	3.5	2.979	102.1	.6
CUDH-04-32	514-529	15	0.74	25.4	0.6
Including	519-522.5	3.5	2.438	83.6	0.8

17.3 Highwall Zone

The High Wall drilling program is immediately to the north of the open pit and to the southeast of the C-Zone and the D-Zone. Objectives of the program are the confirmation of indicated and inferred resources from the MRDI, 1999 report and the conversion of those resources to measured resources and reserves and expansion of the resources, north of the open pit. As of December 15th, 2004, 50 drill holes had been completed with a total footage of 12,720 meters. Additional drilling is in progress and will continue to move toward the B zone, the C zone, and the D zone. The drill target in the High Wall Zone is high-grade gold mineralization known to exist in the base of the Copperstone open pit high wall and extending to the north along strike and down dip of the Copperstone Fault (Figures 17.6-17.7).

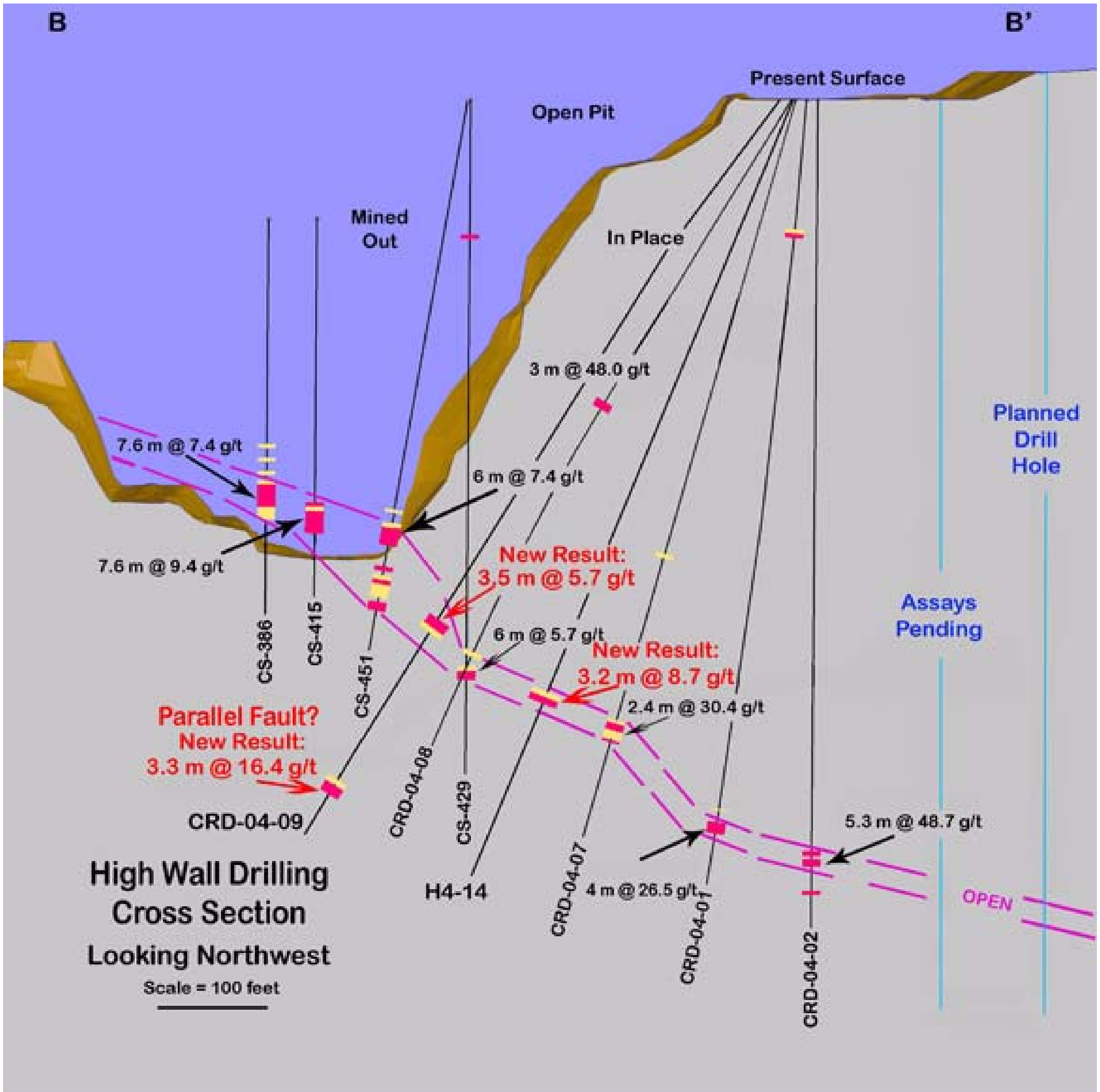


Figure 17.6 High Wall Drilling Cross Section

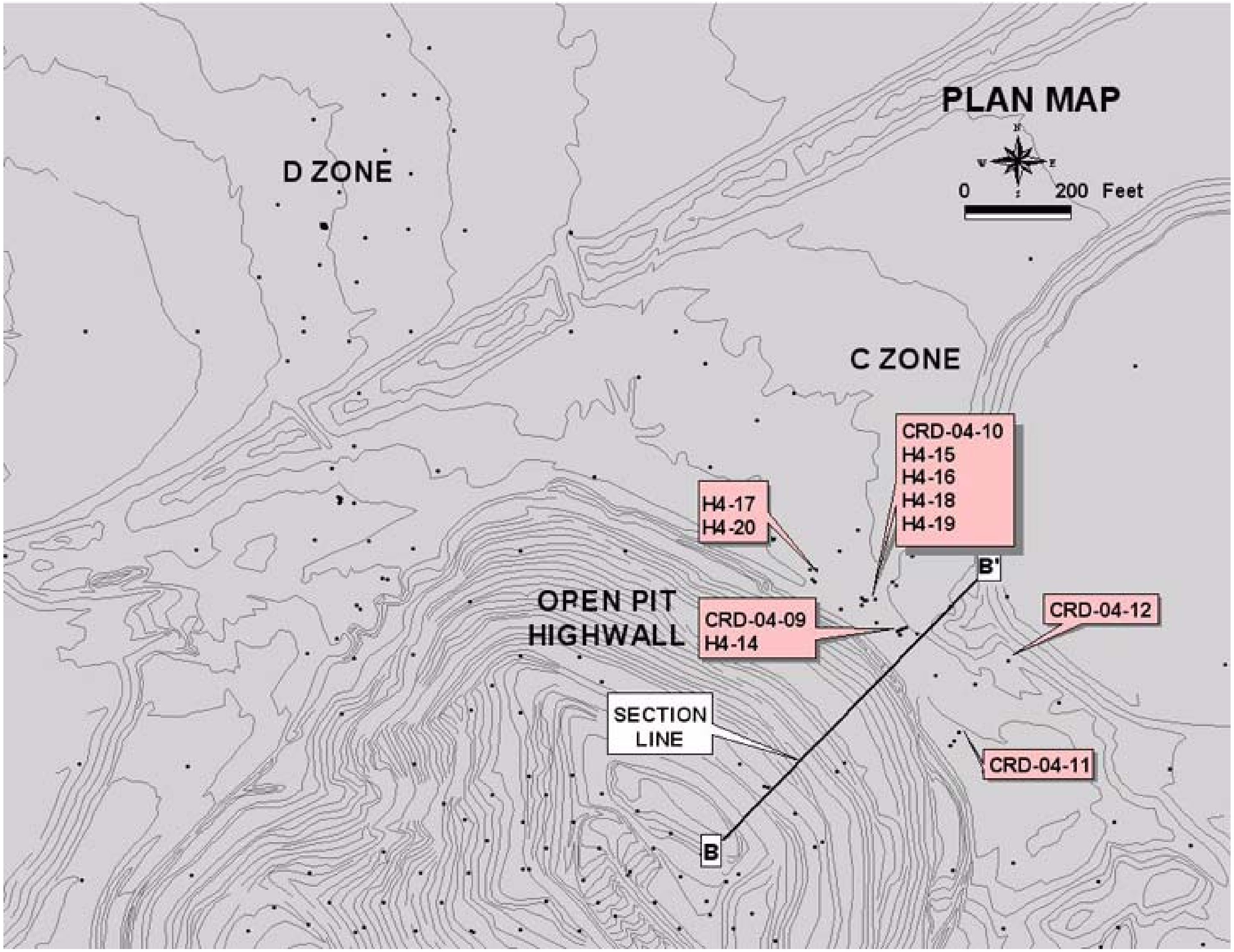


Figure 17.7 High Wall Plan Map

High grade gold intercepts from the High Wall Zone include 3 meters grading 38.2 grams per ton gold in drill hole number H04-43, 3 meters grading 35.2 grams per ton gold in drill hole number H04-36, and 1.5 meters grading 17.8 grams per ton in drill hole number H4-48 (Table 17.2)

Table 17.2 Drill Intercepts for the Highwall Target

Hole ID	From - To (ft)	Intercept (m)	Gold (g/t)	Gold (opt)	Copper (%)
H4-36	854-885	9.4	13.1	0.383	1.0
Including	854-864	3.0	35.2	1.026	1.5
And	926-928.5	0.8	TR	TR	3.0
H4-37	855-865	3.0	3.5	0.101	0.2
H4-39	885-890	1.5	TR	TR	3.7
H4-40	834-857	7.0	2.3	0.068	1.7
H4-42	832-835	0.9	15.1	0.440	0.9
And	855.5-858.8	1.0	4.4	0.127	TR
H4-43	710-735	7.6	15.8	0.460	0.8
Including	725-735	3.0	38.2	1.115	0.6
H4-44	907-927.5	6.1	3.8	0.111	TR
H4-46	821-834	4.0	5.8	0.169	0.7
H4-47	858.5-863.8	1.6	6.2	0.181	0.8
H4-48	585-600	4.6	6.9	0.201	TR
Including	590-595	1.5	17.8	0.519	TR
H4-48	825.8-838.5	3.9	5.8	0.168	0.6
H4-49	620-640	6.1	2.1	0.062	TR
And	755.5-763	2.3	4.8	0.140	TR
And	779-782	0.9	8.5	0.249	TR
H4-50	620-630	3.0	5.8	0.169	0.8
And	666.8-672	1.6	6.6	0.192	0.5
And	680-685.7	1.7	2.4	0.070	1.2
And	697-712	4.6	6.8	0.197	0.3
H4-51	639-642	1.0	12.1	0.354	TR
H4-52	749-753	1.2	11.2	0.327	TR

Additional drill holes are recommended to test the Hanging Wall Zone and new techniques are currently being developed, with some success, to keep the drill holes from deviating from their projected mineralized structural targets. A geological or structural understanding of the controls on high-grade gold mineralization is very important to the drill program and the resource estimates.

17.4 Footwall Zone

The Footwall target is an exploration target located about 400 feet (122 meters) below the main Copperstone Fault in the central part of the Copperstone open pit. The fault hosting the Footwall mineralization appears roughly parallel to the Copperstone Fault. A visible altered fault was encountered by most of the previous drill holes and most of the drill holes contain either low or high grade gold values. The best intercept is in drill hole CRD-03-10 with a 1.5 meter intercept grading 47 g/t gold. Drill hole F04-8 contained 3 meters grading 5.9 g/t gold. Santa Fe drill-hole DCU-08 and Asia Minerals drill hole A00-10 encountered high-grade mineralization believed to be a distinct mineralized structure in the footwall of the Copperstone Fault zone and subsequently termed the Footwall Zone (Figure 17.8).

Through August, 2004, Bonanza had drilled 17 holes in the zone confirming the presence of a fault structure with low to high grade gold mineralization, parallel to and beneath the Copperstone Fault. Table 17.3 summarizes some of the recent drill intercepts. The objective of this drilling program is to expand the Copperstone resource by exploring for new gold zones not included in any current resource estimates.

Table 17.3 Footwall Parallel Structures – Significant Intercepts

Hole ID	Dip (o)	From - To (ft)	Intercept (ft)	Gold (opt)	Gold (g/t)	Copper (%)
F4-1	-83	574-579	5	0.408	14.0	tr
F4-2	-72	595-601	6	tr	tr	3.6
F4-2		601-604	3	0.079	2.7	0.2
F4-4	-79	453.5-457	3.5	0.255	8.7	tr

Current work in progress on the Footwall target is to focus on completing a three dimensional model for further analysis prior to follow-up drilling.

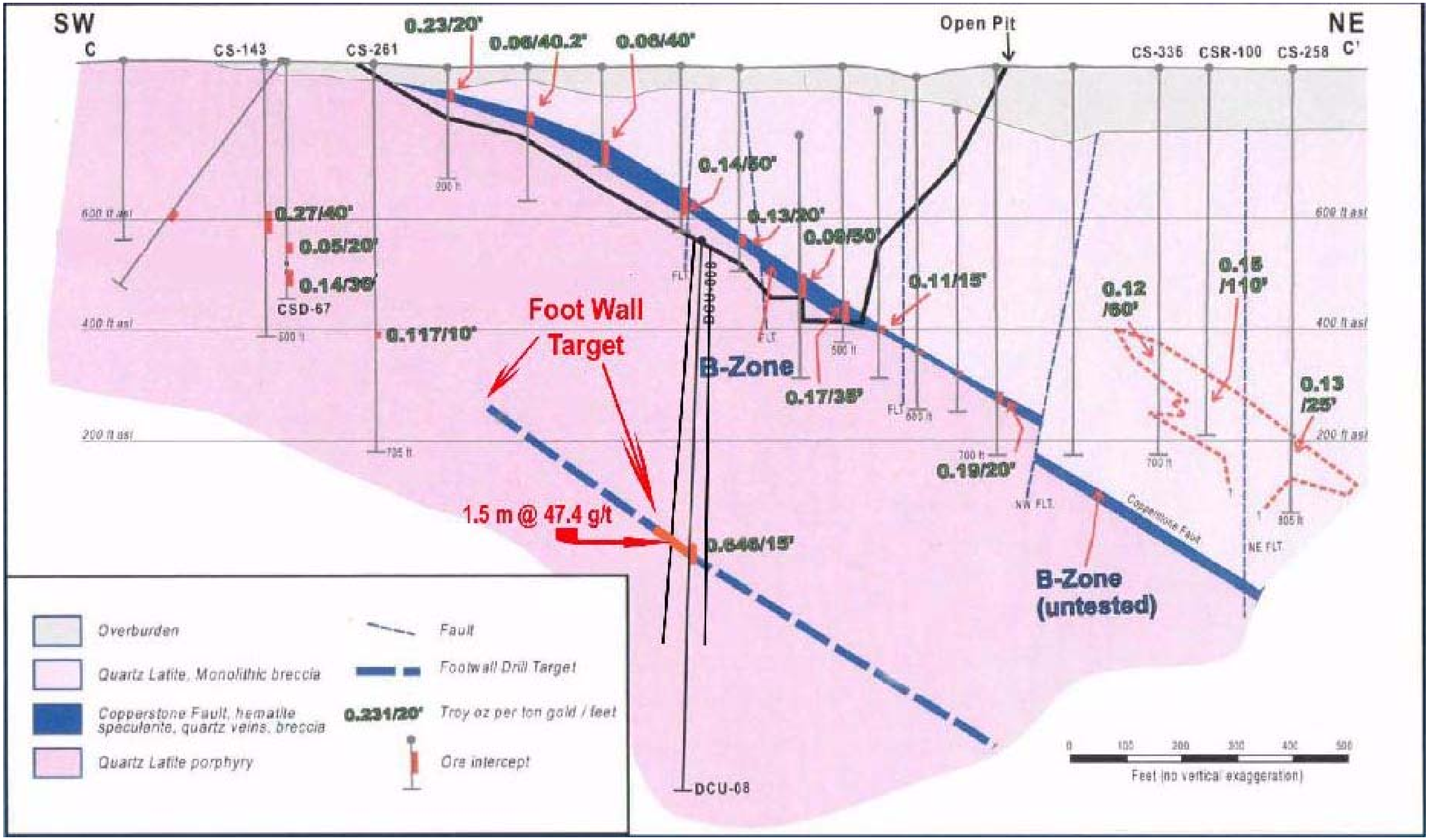


Figure 17.8 Copperstone Footwall Target Zone Cross Section

18.0 Recommendations

The author recommends a Proposed Budget for 2005 consisting of continuing the ongoing Copperstone exploration drilling and geological research to complete the surface and underground exploration drilling program, with the work remaining estimated at US$2,390,000 and a baseline study, preliminary permitting and prefeasibility study estimated at US$564,000. The estimated total Proposed Budget for 2005 is US$2,963,000 beginning on February 1, 2005 and extending to August 31, 2005. The Copperstone Proposed Budget for 2005 was discussed and reviewed by written and verbal communication with Bonanza senior staff. (Table 18.1).

The Proposed Budget 2005, Table 18.1, would have 20,000 feet of exploration drilling, 10,000 feet of underground D-Zone drilling and 30,000 feet of surface in-fill drilling in the B-Zone, C-Zone and HW-zone. Step-out exploration drilling of past targets to the northeast and northwest are also recommended to test for other bonanza-type, gold zones, above and within the Copperstone Fault. Past geophysical results completed on the Copperstone Property are recommended to be reviewed. The induced polarization and resisitivity geophysical methods and magnetic geophysical methods have had some success defining alteration and mineralization associated with similar structures as the Copperstone Fault. It is important that the structural continuity and paragenesis of the ore zones be completely understood before resource outlines and metallurgical testing are completed. Additional geological work on the origin, paragenesis and structural controls of the Copperstone deposit should be completed to help define the drilling targets. It is recommended that at least 20% of the drilling budget be used for defining extensions of mineralized blocks.

The Copperstone Baseline study would consist of geotechnical, hydrological and metallurgical data collection. Resource block model estimation by a independent party should begin after all the drilling assay results have been completed. A mineable reserve estimation and mine plan, plant design, and capital cost should be completed by an independent third party.

A pre-feasibility study describes a conceptual installation that could realistically be built. The study demonstrates probable economic viability and provides the framework to allow follow-up “bankable” feasibility studies to be put together. Pre-feasibility studies should have recommendations and business process flow sheets concerning the objectives, scope of work and past studies and a decision on current activities required. An outline of the pre-feasibility study and costs should include; Project Management, Data Collection-Site Visits, Check and verification, Data Analysis, Development of Concepts, Personnel Estimates, Environmental/ Permitting Review, Schedule Development, Capital Cost Estimates, Contingency, Contingency Allowance, Management Reserves Operating Cost Estimate, Marketing Analysis, Risk Assessment, Economic Evaluation, Document Preparation, Conclusions: Geology, Hydrology, Land, Metallurgy,, Infrastructure, Utilities, Environmental Permitting, Business Climate, Mine Plan, Process Flow Sheet, Plant Layout, Resource, Reserves, Plant Capacity, Power, Water Support Facilities, Pre-Feasibility Study Document and Management Review, Pre-Feasibility Study Checklist.

TABLE 18.1 COPPERSTONE – Recommended Budget 2005

EXPLORATION AND PREFEASIBILITY BUDGET
February 1 to August 31, 2005

Description	#/Units	Units	$/Unit	Cost
Exploration Drilling				**$ 700,000**
Contract Drilling	20,000	feet	$ 25	$ 500,000
Assay/Geo Support	20,000	feet	$ 10	$ 200,000
Underground D-Zone Drilling				**$ 400,000**
Contract Drilling	10,000	feet	$ 30	$ 300,000
Assay/Geo Support	10,000	feet	$ 10	$ 100,000
Surface B/C/HW In-fill Drilling				**$ 1,050,000**
Contract Drilling	30,000	feet	$ 25	$ 750,000
Assay/Geo Support	30,000	feet	$ 10	$ 300,000
Underground Mine Management				**$ 249,000**
Contractor February - April	3	months	$25,000	$ 75,000
Support Equipment	LS			$ 65,000
Owner May-August	4	months	$15,000	$ 60,000
Utilities	7	months	$7,000	$ 49,000
Baseline Date Collection				**$ 314,000**
Geotechnical	LS			$ 74,000
Hydrological	LS			$ 82,000
Metallurgical	LS			$ 158,000
Preliminary Permitting				**$ 65,000**
Project Management	LS			$ 30,000
Studies	LS			$ 20,000
Draft Permits	LS			$ 15,000
Prefeasibility				**$ 185,000**
Project Management	LS			$ 50,000
Internal Modeling & Resource Est.	LS			$ 30,000
Third Party Review	LS			$ 10,000
Mineable Reserve Estimate	LS			$ 10,000
Mine/Plant/Paste Plant Design	LS			$ 55,000
Capital & Operating Costs	LS			$ 10,000
Financial Analysis	LS			$ 10,000
43-101 Report	LS			$ 10,000
PROPOSED February to August 2005 Budget				**US$ 2,963,000**

The pre-feasibility financial analysis and a new NI 43-101 report may result in additional studies recommended before a feasibility estimated cost is finalized. However, an order of magnitude estimated cost for exploration and feasibility work is projected to be completed from September 1, 2005 to April 30, 2006 has been included in Table 18.2

TABLE 18.2 COPPERSTONE Estimated Cost September 1, 2005 to April 30, 2006
FEASIBILITY STAGE

Description	#/Units	Units	$/Unit	Cost
Exploration Drilling				**$ 700,000**
Contract Drilling	20,000	feet	$ 25	$ 500,000
Assay/Geo Support	20,000	feet	$ 10	$ 200,000
Underground Access - C Zone				**$ 935,000**
Design/Mob	LS			$ 70,000
DBM	1,000	feet	$ 675	$ 675,000
Drill Bays	3	ea	$ 30,000	$ 90,000
Contingency	LS			$ 100,000
Underground C-Zone Drilling				**$ 600,000**
Contract Drilling	15,000	feet	$ 30	$ 450,000
Assay/Geo Support	15,000	feet	$ 10	$ 150,000
Surface B/C/HW In-fill Drilling				**$ 175,000**
Contract Drilling	5,000	feet	$ 25	$ 125,000
Assay/Geo Support	5,000	feet	$ 10	$ 50,000
Underground Mine Management				**$ 251,000**
Support Equipment	LS			$ 75,000
Owner Sept – April	8	months	$ 15,000	$ 120,000
Utilities	8	months	$7,000	$ 56,000
Baseline Date Collection				**$ 70,000**
Geotechnical	LS			$ 35,000
Hydrological	LS			$ 35,000
Metallurgical	LS			$ -
Preliminary Permitting				**$ 175,000**
Project Management	LS			$ 60,000
Studies	LS			$ 5,000
Draft Permits	LS			$ 110,000
Feasibility				**$185,000**
Project Management	LS			$ 50,000
Third Party Contractor	LS			$ 120,000
Report	LS			$ 15,000
TOTAL Estimated Cost September 1, 2005 to April 30, 2006				**US$3,091,000**

Additional recommendations are that drilling should be core and at least NQ in size, which is the current practice. All units of measurement should be standard in either feet or meters and ounces per ton or grams per ton. All drill holes should target ore blocks on a geostatistical grid by underground drifting to those grid points and then up-hole or down-hole drilling. Efforts to control the angle of drill-hole deviation should be maximized. Reverse Circulation Drilling, RVC, have been successful at pre-collaring drill holes, but drill-hole angle deviation has been noted as locally significant. Additional geologic cross sections should be constructed based on a structural study or at right angles to the strike of the ore zones.

Statistical analyses need to be completed of the structural regimes and or domains of the gold and copper grades. A detailed understanding of the Copperstone mineralized system can only be completed by detailed geological, structural, geophysical, paragenetic, geochemical vectoring and mapping followed by exploration drilling. The identification of very high grade gold associated with magnetic minerals provides the potential for the exploration of high grade zones through the use of magnetic geophysics.

Three-dimensional computer modeling interpretations should be constantly tested by exploration drilling or underground drifting, with site geologists in control to refine and constantly test the gold mineralized targets. Site geologists need to continue digitizing the surface geological data including structural geological mapping, rock type codes, blast-hole assays, topography, and sample data. Subsurface data needs to be coded into the database including drill data codes, mapping codes and sampling data from the underground workings, and extrapolations of the surface data. Three-dimensional modeling of all geologic, metallurgical and rock type codes will assist in visualizing the deposit, as well as conceptualizing the exploration and mining plan.

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Only the cited references are listed below. Numerous other data sources were reviewed but not cited in the report.

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20.0 Certificate of Author

Michael R. Pawlowski
1700 E. Lakeside Drive #57
Gilbert, Arizona 85234
480 632-6476

1) I, Michael R. Pawlowski, am a Registered Professional Geologist by the State Board of Technical Registration, State of Arizona #24509 and am a Certified Professional Geologist by the American Institute of Professional Geologist, #7681.

2) I am presently employed as a Consulting Geologist at 1700 E. Lakeside Drive #57, Gilbert, Arizona with phone number at 480 632-6476.

3) I am a graduate of the University of Idaho, College of Mines, Moscow, Idaho with a Masters of Science degree in Geology in 1982 with over 25 years of geological exploration, evaluation, resource and reserve estimation experience in copper, silver, gold, cobalt, industrial minerals and geological mine development experience working in North and South America, Africa, Europe and the Southwest Pacific, including Australia, Indonesia and Papua New Guinea.

4) I have membership in the following mineral industry technical societies:
- **American Institute of Professional Geologist (AIPG)**
- **Society of Mining, Metallurgy and Exploration (SME)**
- **Society of Economic Geologist (SEG)**
- **Arizona Geological Society (AGS)**

5) As a result of my education and experience, I am a "Qualified Person" as defined in National Policy 43-101.

6) I have visited the Copperstone Property on January 10, 2005 and have examined the old Copperstone open pit, underground prospect drift and past diamond drill core and detailed geological maps and cross sections at the Copperstone Mine Office. During my examination on the Copperstone Property I collected 6 geological rock chip samples in the underground workings and sampled and collected 3 samples of drill core and ¼ split the core and submitted all to American West Cargo in Phoenix for direct shipment to the American Assay Laboratories Inc. office at 1500 Glendale Ave. Sparks, Nevada. The samples were always in my possession to complete the chain of custody of the data verification samples from collection to delivery to air freight, for shipment directly to American Assay Laboratories Inc.

7) I have no direct involvement or interest with American Bonanza on the Copperstone Property prior to beginning data collection for this report on January 10, 2005. I am independent applying all tests in Section 1.5 of NI 43-101.

8) I am responsible for preparation of this report and utilizing data summarized in the Reference Section of this report. The author relied on Daniel P. Laux and Thornwell Rogers and Bonanza personnel for computer drafting of maps and tables and information for the report.

9) I am not aware of any material facts or material changes with respect to the subject matter of the technical report that is not reflected in the technical report, the omission to disclose which make the technical report misleading. I am independent of American Bonanza Gold Mining Corp. "Bonanza"), International Taurus Resources Inc. ("Taurus") and Fairstar Explorations Inc. ("Fairstar") as well as 0710882 BC Ltd. ("Fairstarsub") and 0710887 BC Ltd., to be renamed American Bonanza old Corp. ("New Bonanza").

10) I have read NI 43-101 and NI 43-101F1 and the technical report has been prepared in compliance with that instrument and form.

13) I consent to the use of this report for the purpose of complying with the requirement set out in NI 43-101 for support for American Bonanza Gold Mining Corp. (TSX VENTURE:BZA) ("Bonanza"), International Taurus Resources Inc. (TSX VENTURE:ITS) ("Taurus") And Fairstar Explorations Inc. (TSX:FFR) ("Fairstar") as well as 0710882 BC Ltd. ("Fairstarsub") and 0710887 BC Ltd.

14) I consent for this report to be submitted to SEDAR for electronic filing and to any other regulatory authorities and any publication by them, including electronic publication in the public company files on their websites accessible by the public.

15) This report is based on the examination of available data provided me by Bonanza and discussions with involved people. The author visited the Copperstone property on January, 10, 2005 and requested and reviewed Copperstone reports and maps from January 11, 2005 to January 25, 2005, while writing this report.

Dated at Gilbert, Arizona this Tuesday, 25th day of January 2005.

REGISTERED GEOLOGIST
24509
MICHAEL R.
PAWLOWSKI
DATE SIGNED JAN. 27, 2005
ARIZONA, U.S.A.

Appendix 1: List of Copperstone Claims

NAME OF CLAIM	ORIGINAL RECORDATION BOOK	PAGE	PRESENT RECORDATION INSTRUMENT	BLM SERIAL NUMBER (AMC)
Iron Reef # 1-10	1168	69-88		105953-105962
Copperstone # 1-14			95-05841	335231-335244
Formerly:	1128	65-80	86-2300 – 2313	91283-91296
Copperstone # 15-17			95-05841	335245-335247
Formerly:	1129	627-632	86-2314 – 2316	88612-88614
Copperstone # 18-29			95-05841	335248-335259
Formerly:	1131	294-309	86-2317 – 2328	95246-95257
Copperstone # 30-40	1151	145-157	86-2329 – 2339	98423-98433
Copperstone # 41-53	1152	181-205	86-2340 – 2352	98957-98969
Copperstone # 54-57	1152	763-770	86-2353 – 2356	98970-98973
Copperstone # 58-62	1152	771-779	86-2357 – 2361	98974-98978
Copperstone # 63	1152	781	86-2362	98979
Copperstone # 64-65	1173	716-719	86-2363 – 2364	108058-108059
Copperstone # 101-115	1254	76-105	86-2365 – 2379	144884-144898
Copperstone # 116A	1254	107	86-2380	144899
Copperstone # 117-120	1254	109-115	86-2381 – 2384	144900-144903
Copperstone # 122-127	1254	119-129	86-2385 – 2390	144905-144910
Copperstone # 129-131	1254	133-138	86-2391 – 2393	144912-144914
Copperstone # 132-133	1254	139-140	86-2394 – 2395	144915-144916
Copperstone # 134	1254	142	86-2396	144917
Copperstone # 136-139	1254	147-154	86-2397 – 2400	144919-144922
Copperstone # 140-150	1254	155-175	86-2401 – 2411	144923-144933
Copperstone # 151-161	1254	176-197	86-2412 – 2422	144934-144944
Copperstone # 162-171	1276	349-371	86-2423 – 2432	164418-164427
Copperstone # 172A	1276	373	86-2433	164428
Copperstone # 183A	1276	395	86-2434	164439
Copperstone # 184-191	1276	397-410	86-2435 – 2442	164440-164447
Copperstone # 192A	1276	412	86-2443	164448
Copperstone # 210-315	1276	448-658	86-2444 – 2549	164466-164571
Copperstone # 316-328	84-2460-2472		86-2550 – 2562	220648-220660
Copperstone # 329-339	86-4548-4558			260459-260469
CSA #1–51				

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
A00-10	1.504	479	485		
A00-10	0.195	485	489.5		
A00-2	0.238	657.6	661		
A98-11	0.116	655.3	658.1		
A98-13	0.194	578.5	582.7		
A98-13	0.329	582.7	586.6		
A98-13	2.359	586.6	589.1		
A98-13	0.359	630.5	634		
A98-14	0.279	675.6	679		
A98-15	0.187	656.3	661		
A98-15	0.128	661	663.8		
A98-15	0.189	663.8	666.6		
A98-15	0.121	699	702		
A98-2	0.905	592.8	596.4		
A98-2	0.473	596.4	602		
A98-2	0.676	606.3	609.6		
A98-2	0.277	609.6	613		
A98-2	0.238	648	653.5		
A98-3	1.036	623.7	628.7		
A98-3	12.010	632	637		
A98-5	0.118	531.3	532.6		
A98-5	0.205	558	563		
A98-5	0.483	568	573		
A98-5	0.770	573	578		
A98-5	0.109	578	582		
A98-5	1.504	584.5	588.5		
A98-6	0.712	727	729		
A98-9	0.231	427	430.5		
BBU-1	0.141	58	59		
BBU-1	0.475	59	61.5		
BBU-3	0.249	53	57.8		
BBU-4	0.238	53	55.7		
BBU-4	0.219	61	64		
BBU-5	0.129	55.4	59.4		
BBU-5	1.408	60.5	62.9		
BBU-6	0.258	0	15		
BBU-6	0.258	57.9	62.9		
BBU-6	0.518	87.9	92.9		
BBU-6	1.599	147.9	152.9		
BBU-6	0.547	152.9	157.7		
BBU-6	0.154	157.7	162.2		
BBU-7	0.345	68	73		
BBU-8	0.290	60.5	63.4		
BBU-8	0.289	63.4	68		
BBU-8	0.211	87.3	91.8		
BBU-8	0.106	91.8	96.8		
BBU-8	0.144	101.5	106.5		
C95-01	0.122	565	570		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
C95-05	0.146	450	455		
C95-06	0.417	745	750		
C95-07	0.334	765	770		
C95-07	0.106	770	775		
C95-08	0.280	725	730		
C95-08	0.150	730	735		
C95-08	0.226	735	740		
C95-08	1.080	740	746		
C95-10	0.128	310	315		
C95-10	0.183	315	320		
C95-10	3.313	575	580		
C95-10	3.743	580	585		
C95-10	0.680	585	590		
C95-10	1.542	590	595		
C95-10	1.716	595	600		
C95-11	0.270	390	395		
C95-11	0.875	395	400		
C95-11	0.107	400	405		
C95-11	0.169	530	535		
C95-11	19.519	710	715		
C95-11	23.519	715	720		
C96-15	0.185	810	815		
C96-15	0.113	855	860		
C96-16	0.182	1135	1140		
C96-16	0.192	1205	1210		
C96-18	0.118	785	790		
C96-18	0.353	805	810		
C96-18	0.766	810	815		
C96-18	1.462	815	820		
C96-19	5.808	570	575		
C96-19	4.972	575	580		
C96-19	0.141	585	590		
C97-21	0.143	615	620		
C97-21	0.771	620	625		
C97-24	1.496	570	575		
C97-24	0.124	575	580		
C97-24	6.272	585	590		
C97-24	0.103	590	595		
C97-26	0.105	545	550		
C97-28	0.146	720	725		
C97-28	0.217	730	735		
C97-29	2.500	805	810		
C97-29	0.269	810	815		
C97-34	0.479	644	647		
CDH-10	0.168	50	55		
CDH-2	0.355	10	15		
CDH-2	0.203	27.5	31		
CDH-3	0.123	21	25		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CR-380	0.322	190	195		
CR-380	0.135	220	225		
CR-381	0.200	300	305		
CR-382	0.130	230	235		
CR-382	0.143	260	265		
CR-382	0.112	265	270		
CR-382	0.101	305	310		
CRD-03-01	0.238	220	225		
CRD-03-02	0.212	535.5	539	0.635	
CRD-03-04	0.108	430	435		
CRD-03-08	0.130	550.8	556	0.44	
CRD-03-08	0.371	556	560	0.49	
CRD-03-10	3.380	466	468	0.08	
CRD-04-01	0.419	150	155	0.39	RC
CRD-04-01	0.269	814.5	817.5	0.51	CORE
CRD-04-01	0.391	817.5	819.5	0.45	CORE
CRD-04-01	1.884	819.5	822.5	0.86	CORE
CRD-04-01	0.673	822.5	825.5	0.48	CORE
CRD-04-01	0.400	825.5	827.5	0.14	CORE
CRD-04-02	5.990	834.5	837.5	0.83	CORE
CRD-04-02	0.298	837.5	840.5	3.73	CORE
CRD-04-02	0.326	843.5	846	1.4	CORE
CRD-04-02	0.856	846	848.8	0.62	CORE
CRD-04-02	0.923	848.8	852	2.35	CORE
CRD-04-02	0.189	879	883	0.01	CORE
CRD-04-03	0.111	792	794	0.67	CORE
CRD-04-03	0.111	794	797	0.56	CORE
CRD-04-05	0.221	816	819	0.12	CORE
CRD-04-06	0.100	804	806	0.03	CORE
CRD-04-07	3.649	735.5	736.5	0.49	CORE
CRD-04-07	0.858	736.5	739.5	2.96	CORE
CRD-04-07	0.213	739.5	743.5	0.3	CORE
CRD-04-07	0.421	755	757.5	2.04	CORE
CRD-04-08	0.134	410	415	0	RC
CRD-04-08	2.669	415	420	0	RC
CRD-04-09	0.156	170	175	0.17	RC
CRD-04-09	0.457	630	635	0.2	RC
CRD-04-09	0.358	694.5	697.5	0.05	CORE
CRD-04-09	0.119	697.5	700	0.25	CORE
CRD-04-09	1.777	703	706	0	CORE
CRD-04-09	0.138	706	708	0.24	CORE
CRD-04-09	0.546	864	868	0.16	CORE
CRD-04-09	0.930	870	873	2.61	CORE
CRD-04-09	0.138	873	875	1.03	CORE
CRD-04-10	0.183	395	400	0.17	RC
CRD-04-11	0.137	731.5	734.5	1.205	CORE
CRD-04-11	0.327	744.5	747	1.34	CORE
CRD-04-11	0.118	747	749	0.9425	CORE

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CRD-04-12	0.111	610	615	0.03225	RC
CRD-04-13	0.147	843	846	0.4	CORE
CRD-04-13	0.211	846	848	0.34	CORE
CS-106	0.140	570	580		
CS-107	0.146	400	410		
CS-115	0.203	730	740		
CS-151	0.112	125	130		
CS-151	0.125	150	155		
CS-151	0.211	155	160		
CS-151	0.120	180	185		
CS-151	0.191	185	190		
CS-151	0.175	190	195		
CS-151	0.152	195	200		
CS-152	0.127	105	110		
CS-152	0.177	115	120		
CS-155	0.157	75	80		
CS-155	0.308	80	85		
CS-155	0.203	85	90		
CS-155	0.136	90	95		
CS-156	0.470	260	265		
CS-156	0.130	265	270		
CS-158	0.138	90	95		
CS-158	0.132	100	105		
CS-159	0.142	50	55		
CS-159	0.124	55	60		
CS-159	0.352	100	105		
CS-160	0.445	195	200		
CS-160	0.247	200	205		
CS-162	0.117	90	95		
CS-162	0.472	95	100		
CS-162	0.176	100	105		
CS-162	0.100	250	255		
CS-163	0.379	225	230		
CS-163	0.730	230	235		
CS-163	0.493	235	240		
CS-163	0.314	240	245		
CS-163	0.216	245	250		
CS-164	0.261	240	245		
CS-164	0.126	285	290		
CS-165	0.103	60	65		
CS-165	0.107	95	100		
CS-165	0.101	105	110		
CS-165	0.200	110	115		
CS-167	0.259	90	95		
CS-168	0.118	230	235		
CS-168	0.227	235	240		
CS-168	0.370	240	245		
CS-168	0.137	245	250		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-168	0.122	250	255		
CS-169	0.189	110	120		
CS-169	0.295	210	215		
CS-169	0.197	215	220		
CS-169	0.111	225	230		
CS-169	0.158	240	245		
CS-170	0.129	110	115		
CS-170	0.286	125	130		
CS-172	0.166	215	220		
CS-173	0.117	165	170		
CS-174	0.111	260	265		
CS-174	0.261	265	270		
CS-176	0.285	60	65		
CS-176	0.615	65	70		
CS-176	0.363	70	75		
CS-176	0.128	75	80		
CS-178	0.353	140	145		
CS-179	0.400	180	185		
CS-179	0.380	185	190		
CS-179	0.385	190	195		
CS-179	0.269	195	200		
CS-179	0.385	200	205		
CS-182	0.144	170	175		
CS-183	0.107	25	30		
CS-183	0.227	75	80		
CS-183	0.103	80	85		
CS-183	0.732	85	90		
CS-183	0.309	90	95		
CS-184	0.102	285	290		
CS-185	0.176	280	285		
CS-185	0.148	285	290		
CS-186	0.125	180	185		
CS-186	0.342	185	190		
CS-186	0.200	190	195		
CS-186	0.154	195	200		
CS-187	0.124	50	60		
CS-187	0.110	65	70		
CS-187	0.115	120	125		
CS-189	0.412	180	185		
CS-189	0.409	250	255		
CS-189	0.447	255	260		
CS-190	0.134	140	145		
CS-190	0.142	190	195		
CS-190	0.291	195	200		
CS-191	0.113	190	195		
CS-191	0.271	195	200		
CS-191	0.197	200	205		
CS-192	0.192	165	170		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-193	0.238	205	210		
CS-193	0.210	210	215		
CS-193	0.182	215	220		
CS-194	0.315	115	120		
CS-194	0.109	120	125		
CS-194	0.104	130	135		
CS-194	0.302	135	140		
CS-195	0.146	60	65		
CS-196	0.101	235	240		
CS-196	0.124	260	265		
CS-197	0.208	130	135		
CS-197	0.118	135	140		
CS-197	0.133	155	160		
CS-198	0.215	90	95		
CS-198	0.240	95	100		
CS-198	0.145	100	105		
CS-198	0.167	170	175		
CS-199	0.106	185	190		
CS-199	0.105	190	195		
CS-199	0.125	195	200		
CS-199	0.543	200	205		
CS-199	0.382	205	210		
CS-199	0.265	210	215		
CS-199	0.120	215	220		
CS-203	0.151	65	70		
CS-203	0.110	255	260		
CS-203	0.157	300	305		
CS-203	0.135	305	310		
CS-204	0.371	295	300		
CS-204	0.387	300	305		
CS-204	0.145	310	315		
CS-205	0.269	150	155		
CS-205	0.235	155	160		
CS-207	0.227	145	150		
CS-209	0.229	230	235		
CS-211	0.255	250	255		
CS-211	0.172	275	280		
CS-211	0.269	280	285		
CS-213	0.125	255	260		
CS-213	0.108	260	265		
CS-214	0.316	275	280		
CS-214	0.108	290	295		
CS-216	0.482	295	300		
CS-216	0.199	300	305		
CS-216	0.137	305	310		
CS-218	0.133	215	220		
CS-219	0.540	325	330		
CS-219	0.126	330	335		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-220	0.172	150	155		
CS-220	0.212	165	170		
CS-220	0.103	170	175		
CS-220	0.238	175	180		
CS-220	0.154	185	190		
CS-220	0.188	190	195		
CS-220	0.111	200	205		
CS-220	0.258	205	210		
CS-220	0.234	210	215		
CS-221	0.263	305	310		
CS-221	0.401	310	315		
CS-221	0.384	315	320		
CS-222	0.118	155	160		
CS-222	1.057	160	165		
CS-222	0.493	165	170		
CS-222	0.116	170	175		
CS-222	0.338	180	185		
CS-223	0.172	280	285		
CS-224	0.179	205	210		
CS-224	0.219	220	225		
CS-224	0.207	225	230		
CS-224	0.256	295	300		
CS-226	0.101	230	235		
CS-226	0.448	235	240		
CS-227	0.236	145	150		
CS-227	0.338	150	155		
CS-227	0.272	155	160		
CS-229	0.160	195	200		
CS-229	0.374	230	235		
CS-229	0.101	250	255		
CS-230	0.101	250	255		
CS-230	0.263	260	265		
CS-231	0.274	215	220		
CS-233	0.158	120	125		
CS-233	0.181	125	130		
CS-233	0.263	145	150		
CS-233	0.618	150	155		
CS-233	0.291	155	160		
CS-233	0.114	160	165		
CS-236A	0.246	235	240		
CS-236A	0.189	240	245		
CS-236A	0.133	250	255		
CS-236A	0.165	255	260		
CS-238	0.121	360	365		
CS-238	0.235	365	370		
CS-238	0.395	370	375		
CS-238A	0.114	70	75		
CS-239	0.230	320	325		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-239	0.144	355	360		
CS-240	0.385	285	290		
CS-240	0.679	290	295		
CS-240	0.357	295	300		
CS-240	0.239	300	305		
CS-240	0.323	305	310		
CS-241	0.126	285	290		
CS-243	0.162	205	210		
CS-243	0.173	210	215		
CS-243	0.102	215	220		
CS-244	0.113	180	185		
CS-244	0.102	200	205		
CS-245	0.113	225	230		
CS-246	0.213	275	280		
CS-246	0.100	280	285		
CS-246	0.102	290	295		
CS-246	0.107	295	300		
CS-246	0.256	300	305		
CS-246	0.508	305	310		
CS-246	0.100	315	320		
CS-248	0.195	15	20		
CS-248	0.167	30	35		
CS-248	0.410	35	40		
CS-248	0.530	50	55		
CS-248	0.235	55	60		
CS-249	0.125	300	305		
CS-249	0.184	305	310		
CS-249	0.144	310	315		
CS-250	0.118	285	290		
CS-250	0.153	290	295		
CS-250	0.112	295	300		
CS-250	0.116	300	305		
CS-250	0.106	305	310		
CS-250	0.171	310	315		
CS-250	0.236	315	320		
CS-250	0.101	320	325		
CS-255	0.120	25	30		
CS-255	0.217	35	40		
CS-255	0.119	40	45		
CS-256	0.115	675	680		
CS-258	0.209	685	690		
CS-258	0.151	690	695		
CS-258	0.132	700	705		
CS-258	0.104	720	725		
CS-259	0.115	250	260		
CS-259	0.366	260	265		
CS-259	0.278	265	270		
CS-261	0.117	490	500		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-266	0.100	780	790		
CS-267	0.215	800	810		
CS-269	0.112	345	350		
CS-269	0.406	350	355		
CS-269	0.520	355	360		
CS-271	0.100	420	425		
CS-274	0.161	380	385		
CS-274	0.725	385	390		
CS-274	0.425	390	395		
CS-275	0.199	385	390		
CS-275	0.239	400	405		
CS-275	0.366	405	410		
CS-275	0.244	410	415		
CS-275	0.261	480	485		
CS-275	0.166	485	490		
CS-278	0.119	160	165		
CS-278	0.167	165	170		
CS-280	0.165	140	150		
CS-280	0.251	150	155		
CS-281	0.162	355	360		
CS-281	0.105	360	365		
CS-281	0.234	395	400		
CS-281	0.872	400	405		
CS-281	0.637	405	410		
CS-281	0.357	410	415		
CS-282	0.573	365	370		
CS-282	0.379	370	375		
CS-282	0.313	375	380		
CS-286	0.108	220	225		
CS-287	0.287	335	340		
CS-287	0.390	340	345		
CS-287	0.162	345	350		
CS-289	0.102	200	210		
CS-294	0.365	150	160		
CS-294	0.277	160	170		
CS-295	0.162	385	390		
CS-295	0.102	390	395		
CS-295	0.422	395	400		
CS-295	0.421	400	405		
CS-295	0.190	405	410		
CS-296	0.250	375	380		
CS-296	0.154	385	390		
CS-298	0.115	150	155		
CS-299	0.292	320	330		
CS-299	0.105	330	340		
CS-303	0.470	420	425		
CS-303	0.335	425	430		
CS-303	0.157	465	470		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-304	0.132	200	210		
CS-305	0.123	290	300		
CS-306	0.734	290	295		
CS-306	0.175	295	300		
CS-309	0.115	350	355		
CS-310	0.119	230	235		
CS-311	0.385	450	460		
CS-313	0.220	470	480		
CS-314	0.193	230	240		
CS-316	0.169	170	175		
CS-316	0.135	175	180		
CS-316	0.271	195	200		
CS-316	0.147	200	205		
CS-316	0.331	205	210		
CS-316	0.305	215	220		
CS-316	0.106	290	300		
CS-316	0.180	300	310		
CS-317	0.194	290	300		
CS-317	0.310	300	310		
CS-317	0.293	310	315		
CS-317	0.113	320	325		
CS-317	0.730	325	330		
CS-317	0.119	330	335		
CS-318	0.130	415	420		
CS-318	0.190	420	425		
CS-318	0.554	425	430		
CS-321	0.319	380	385		
CS-321	0.214	385	390		
CS-322	0.145	360	370		
CS-322	0.268	370	380		
CS-323	0.200	510	520		
CS-325	0.538	425	430		
CS-325	0.212	440	450		
CS-327	0.109	430	440		
CS-328	0.265	315	320		
CS-331	0.394	410	420		
CS-331	0.121	420	430		
CS-331	0.130	580	590		
CS-332	0.223	360	370		
CS-332	0.192	510	520		
CS-334	0.169	275	280		
CS-334	0.249	280	285		
CS-334	0.108	285	290		
CS-335	0.101	460	470		
CS-335	0.133	470	480		
CS-335	0.163	500	510		
CS-335	0.142	510	520		
CS-335	0.133	590	595		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-335	0.111	595	600		
CS-336	0.304	510	515		
CS-336	0.153	520	525		
CS-336	0.159	525	530		
CS-336	0.141	530	535		
CS-336	0.242	550	555		
CS-338	0.254	560	565		
CS-340	0.840	665	670		
CS-344	0.168	680	690		
CS-348	0.316	590	595		
CS-348	0.247	595	600		
CS-348	0.107	600	610		
CS-349	0.105	400	410		
CS-349	0.249	470	480		
CS-349	0.139	480	490		
CS-350	0.128	390	400		
CS-350	0.298	400	410		
CS-350	0.168	450	460		
CS-351	0.283	380	390		
CS-351	0.249	390	400		
CS-351	0.180	480	490		
CS-356	0.139	495	500		
CS-357	0.110	515	520		
CS-358	0.226	320	325		
CS-358	0.120	355	360		
CS-360	0.110	420	430		
CS-362	0.122	220	230		
CS-365	0.126	400	410		
CS-365	0.376	530	540		
CS-367	0.150	510	515		
CS-367	0.518	520	525		
CS-369	0.164	800	810		
CS-370	0.304	630	640		
CS-370	0.852	640	650		
CS-370	0.294	650	660		
CS-373	0.123	550	560		
CS-373	0.132	590	600		
CS-375	0.118	200	210		
CS-377	0.152	540	545		
CS-377	0.202	550	555		
CS-378	0.104	240	250		
CS-378	0.336	310	320		
CS-378	0.106	320	330		
CS-383	0.129	215	220		
CS-383	0.266	220	225		
CS-383	0.159	225	230		
CS-383	0.194	230	235		
CS-383	0.164	235	240		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-383	0.223	240	245		
CS-383	0.136	245	250		
CS-384	0.129	330	335		
CS-384	1.055	335	340		
CS-386	0.214	295	300		
CS-386	0.170	300	305		
CS-386	0.132	305	310		
CS-386	0.307	310	315		
CS-386	0.250	315	320		
CS-387	0.178	190	195		
CS-387	0.217	195	200		
CS-387	0.289	200	205		
CS-387	0.129	205	210		
CS-388	0.234	180	185		
CS-388	0.278	185	190		
CS-388	0.250	290	295		
CS-389	0.256	280	285		
CS-389	0.327	295	300		
CS-389	0.148	305	310		
CS-389	0.339	310	315		
CS-389	0.201	315	320		
CS-389	0.141	330	335		
CS-390	0.187	50	60		
CS-392	0.120	315	320		
CS-392	0.143	320	325		
CS-392	0.263	325	330		
CS-393	0.176	210	215		
CS-393	0.121	215	220		
CS-393	0.185	220	225		
CS-393	0.239	225	230		
CS-393	0.232	365	370		
CS-394	0.171	335	340		
CS-394	0.113	365	370		
CS-400	0.210	130	135		
CS-400	0.271	255	260		
CS-401	0.204	155	160		
CS-401	0.198	160	165		
CS-402	0.263	190	195		
CS-402	0.133	220	225		
CS-402	0.192	225	230		
CS-403	0.132	175	180		
CS-404	0.245	245	250		
CS-404	0.542	250	255		
CS-404	0.438	255	260		
CS-405	0.110	225	230		
CS-406	0.274	230	235		
CS-407	0.209	245	250		
CS-407	0.404	250	255		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-407	0.574	270	275		
CS-407	0.134	275	280		
CS-407	0.125	285	290		
CS-407	0.150	295	300		
CS-407	0.119	300	305		
CS-407	0.258	305	310		
CS-407	1.013	310	315		
CS-407	0.392	315	320		
CS-408	0.110	315	320		
CS-409	0.268	55	60		
CS-409	0.157	90	95		
CS-409	0.108	105	110		
CS-410	0.242	285	290		
CS-410	0.217	290	295		
CS-410	0.136	295	300		
CS-410	0.137	345	350		
CS-410	0.288	405	410		
CS-411	0.174	105	110		
CS-413	0.107	240	245		
CS-413	0.182	265	270		
CS-414	0.116	350	355		
CS-414	0.230	380	385		
CS-414	0.343	385	390		
CS-414	0.373	390	395		
CS-414	0.127	395	400		
CS-415	0.128	315	320		
CS-415	0.298	325	330		
CS-415	0.161	335	340		
CS-415	0.249	340	345		
CS-415	0.293	345	350		
CS-415	0.122	350	355		
CS-415	0.699	355	360		
CS-415	0.330	360	365		
CS-415	0.113	365	370		
CS-416	0.491	345	350		
CS-416	0.443	350	355		
CS-416	0.511	355	360		
CS-417	0.150	345	350		
CS-417	0.199	350	355		
CS-417	0.207	375	380		
CS-417	0.620	380	385		
CS-417	0.359	385	390		
CS-418	0.351	195	200		
CS-418	0.416	200	205		
CS-420	0.116	60	65		
CS-421	0.114	50	55		
CS-422	0.182	290	295		
CS-422	0.876	315	320		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-422	0.698	320	325		
CS-422	0.164	325	330		
CS-422	0.159	330	335		
CS-422	0.235	340	345		
CS-422	0.284	345	350		
CS-422	0.163	350	355		
CS-423	0.202	315	320		
CS-423	0.110	320	325		
CS-423	0.203	330	335		
CS-425	0.119	515	520		
CS-425	0.113	525	530		
CS-425	0.156	535	540		
CS-425	0.100	540	545		
CS-425	0.197	605	610		
CS-427	0.830	300	305		
CS-428	0.147	270	275		
CS-428	0.189	280	285		
CS-429	0.294	150	155		
CS-429	0.327	635	640		
CS-429	0.249	640	645		
CS-431	0.118	380	385		
CS-432	0.157	390	395		
CS-432	0.116	395	400		
CS-433	0.125	475	480		
CS-436	0.299	355	360		
CS-436	0.232	360	365		
CS-436	0.136	510	515		
CS-437	0.117	370	375		
CS-438	0.570	380	385		
CS-438	0.580	385	390		
CS-438	0.186	425	430		
CS-438	0.103	430	435		
CS-440	0.222	480	485		
CS-442	0.155	385	390		
CS-442	0.998	390	395		
CS-442	0.185	435	440		
CS-443	0.845	335	340		
CS-443	0.226	340	345		
CS-443	0.122	390	395		
CS-445	0.105	515	520		
CS-445	0.168	580	585		
CS-445	0.204	585	590		
CS-445	0.177	590	595		
CS-445	0.111	595	600		
CS-445	0.171	625	630		
CS-446	0.125	200	205		
CS-446	0.133	450	455		
CS-446	0.148	590	595		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CS-446	0.255	605	610		
CS-446	0.137	610	615		
CS-447	0.244	550	555		
CS-449	0.155	510	515		
CS-449	0.146	530	535		
CS-450	0.170	640	645		
CS-451	0.311	480	485		
CS-451	0.230	485	490		
CS-451	0.120	490	495		
CS-451	0.206	495	500		
CS-451	0.244	525	530		
CS-451	0.182	540	545		
CS-451	0.355	565	570		
CS-451	0.134	570	575		
CS-453	0.312	575	580		
CS-453	0.242	580	585		
CS-453	0.198	585	590		
CS-455	0.185	515	520		
CS-470	0.124	5	10		
CS-470	0.115	10	15		
CS-471	0.825	115	120		
CS-471	0.449	135	140		
CS-474	0.400	15	20		
CS-474	0.380	20	25		
CS-474	0.202	25	30		
CS-474	0.118	30	35		
CS-474	0.156	40	45		
CS-475	0.148	40	45		
CS-475	0.414	45	50		
CS-481	0.126	325	330		
CS-482	0.284	385	390		
CS-483	0.132	415	420		
CS-485	0.200	45	50		
CS-485	0.140	50	55		
CS-485	0.130	55	60		
CS-485	0.821	60	65		
CS-485	0.366	65	70		
CS-489	0.183	85	90		
CS-494	0.108	325	330		
CS-62	0.229	510	520		
CS-64	0.114	350	360		
CS-64	0.110	360	370		
CS-72	0.154	440	450		
CS-74	0.130	480	490		
CS-74	0.566	490	500		
CS-74	0.102	500	510		
CS-74	0.207	510	520		
CSD-1	0.697	217	220		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CSD-1	0.948	220	225		
CSD-1	0.721	225	230		
CSD-1	0.941	230	234		
CSD-1	0.121	234	240		
CSD-10	0.218	410	420		
CSD-10	0.146	690	700		
CSD-11	0.197	330	335		
CSD-11	0.167	350	355		
CSD-11	0.244	355	360		
CSD-11	0.382	360	365		
CSD-17	0.706	85	87.5		
CSD-17	0.306	90	95		
CSD-17	0.466	95	100		
CSD-17	0.341	100	105		
CSD-17	0.101	105	110		
CSD-18	0.263	170	180		
CSD-19	0.112	130	140		
CSD-19	0.342	140	150		
CSD-19	0.106	150	160		
CSD-2	0.328	133.5	140		
CSD-2	0.131	140	145		
CSD-2	0.132	145	150		
CSD-2	0.137	160	165.7		
CSD-2	0.127	165.7	170.3		
CSD-2	0.157	177	180		
CSD-2	0.113	180	185.7		
CSD-2	0.109	200	209		
CSD-2	0.110	209	213.4		
CSD-2	0.138	213.4	220		
CSD-20	0.105	110	115		
CSD-22	0.123	155	160		
CSD-23	0.172	130	135		
CSD-23	0.196	150	155		
CSD-24	0.110	265	270		
CSD-24	0.144	270	275		
CSD-26	0.328	180	185		
CSD-29	0.118	210	215		
CSD-29	0.105	220	225		
CSD-29	0.158	225	230		
CSD-29	0.173	245	250		
CSD-29	0.123	250	255		
CSD-3	0.177	75	81.2		
CSD-3	0.108	87.5	95		
CSD-30	0.137	370	375		
CSD-31	0.217	192	196		
CSD-32	0.209	235	240		
CSD-32	0.144	240	245		
CSD-32	0.199	245	250		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CSD-32	0.161	250	255		
CSD-33	0.113	130	140		
CSD-34	0.163	225	230		
CSD-34	0.177	235	240		
CSD-34	0.200	240	245		
CSD-34	0.254	245	250		
CSD-34	0.113	250	255		
CSD-34	0.258	255	260		
CSD-35	0.123	109.4	115		
CSD-35	0.293	125	130		
CSD-35	0.595	130	135		
CSD-35	0.136	135	140		
CSD-35	0.260	140	145		
CSD-35	0.502	145	150		
CSD-35	0.462	150	156.8		
CSD-35	0.203	156.8	160		
CSD-37	0.114	125	130		
CSD-37	0.331	145	150		
CSD-37	0.153	165	170		
CSD-37	0.130	180	185		
CSD-38	0.207	290	295		
CSD-38	0.116	320	330		
CSD-4	0.746	177.5	180.5		
CSD-43A	0.149	290	295		
CSD-44	0.235	230	240		
CSD-47	0.347	160	165		
CSD-48	0.142	160	170		
CSD-49	0.134	134	140		
CSD-49	0.242	145	150		
CSD-49	0.236	150	155		
CSD-5	0.217	308	317		
CSD-50	0.100	90	95		
CSD-50	0.330	100	105		
CSD-50	0.177	105	110		
CSD-56	0.250	75	80		
CSD-56	0.629	85	90		
CSD-56	0.104	90	100		
CSD-57	0.135	40	50		
CSD-57	0.112	95	100		
CSD-58	0.207	40	50		
CSD-58	0.101	90	100		
CSD-59	0.147	220	225		
CSD-6	0.446	150	160		
CSD-6	0.108	242	245		
CSD-6	0.221	245	250		
CSD-6	0.523	250	255		
CSD-6	0.389	255	260		
CSD-60	0.110	245	250		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CSD-60	0.101	255	260		
CSD-63	0.166	225	230		
CSD-63	0.144	235	240		
CSD-63	0.427	240	245		
CSD-63	0.238	250	255		
CSD-63	0.123	265	270		
CSD-64	0.226	105	110		
CSD-66	0.151	145	150		
CSD-66	0.117	150	155		
CSD-66	0.475	155	160		
CSD-66	0.143	160	165		
CSD-66	0.169	165	170		
CSD-67	0.100	385	390		
CSD-67	0.333	395	400		
CSD-67	0.194	400	405		
CSD-69	0.101	65	70		
CSD-71	0.140	515	520		
CSD-72	0.123	455	460		
CSD-72	0.111	460	465		
CSD-72	0.177	465	470		
CSD-72	0.110	470	475		
CSD-72	0.120	475	480		
CSD-73	0.122	475	480		
CSD-73	0.152	480	485		
CSD-73	0.159	495	500		
CSD-73	0.106	533	535		
CSD-73	0.550	535	540		
CSD-73	0.107	540	545		
CSD-9	0.666	489.5	493.5		
CSD-9	0.181	498	508		
CSR-100	0.822	550	560		
CSR-100	0.154	590	600		
CSR-100	0.238	650	660		
CSR-100A	0.151	710	720		
CSR-100A	0.313	720	730		
CSR-104	0.110	440	450		
CSR-110	0.125	530	540		
CSR-14	0.189	110	120		
CSR-142	0.329	90	100		
CSR-142	0.359	100	110		
CSR-142	0.165	110	120		
CSR-143	0.330	270	280		
CSR-143	0.588	280	290		
CSR-143	0.102	290	300		
CSR-144	0.186	50	60		
CSR-144	0.139	60	70		
CSR-144	0.191	240	250		
CSR-147	0.102	350	360		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CSR-16	0.227	40	50		
CSR-16	0.234	50	60		
CSR-20	0.160	120	130		
CSR-20	0.151	140	145		
CSR-21	0.105	190	200		
CSR-22	0.271	180	190		
CSR-22	0.101	200	210		
CSR-25	0.106	280	290		
CSR-29	0.105	150	160		
CSR-29	0.168	240	250		
CSR-29	0.193	250	260		
CSR-32	0.256	210	220		
CSR-32	0.634	220	230		
CSR-32	0.377	230	240		
CSR-32	0.244	250	260		
CSR-33B	0.129	290	300		
CSR-33B	0.153	300	305		
CSR-38	0.128	140	150		
CSR-4	0.178	50	60		
CSR-4	0.127	60	70		
CSR-41	0.184	110	120		
CSR-42	0.156	200	210		
CSR-42	0.120	220	225		
CSR-42	0.194	250	260		
CSR-52	0.165	300	310		
CSR-54	0.268	380	390		
CSR-54	0.108	640	650		
CSR-54	0.103	650	660		
CSR-5A	0.100	170	180		
CSR-60	0.116	200	210		
CSR-60	0.134	360	370		
CSR-63	0.171	290	300		
CSR-7	0.127	80	90		
CSR-7	0.170	90	100		
CSR-77	0.130	250	260		
CSR-78A	0.173	330	340		
CSR-78A	0.138	340	350		
CSR-78A	0.112	350	360		
CSR-78A	0.174	370	380		
CSR-8	0.219	90	100		
CSR-8	0.256	100	110		
CSR-8	0.105	110	120		
CSR-89	0.199	400	410		
CSR-89	0.264	460	470		
CSR-9	0.167	180	190		
CSR-90	0.257	300	310		
CSR-90	0.115	310	320		
CSR-90	0.109	320	330		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CSR-90	0.332	330	340		
CSR-98	0.276	430	440		
CUDH-03-01	0.135	36.9	37.9		
CUDH-03-02	0.172	46.5	48.1		
CUDH-03-02	0.312	79	83.5		
CUDH-03-03	0.653	51	55.8		
CUDH-03-03	0.646	55.8	58		
CUDH-03-03	0.303	58	59.5		
CUDH-03-03	0.185	81.6	83.7		
CUDH-03-03	0.257	100.4	104.5		
CUDH-03-03	0.569	104.5	108.2		
CUDH-03-03	3.116	108.2	114		
CUDH-03-03	2.756	114	116		
CUDH-03-03	1.263	116	120.4		
CUDH-03-03	2.393	120.4	125.3		
CUDH-03-03	0.433	125.3	130		
CUDH-03-03	0.182	134.6	136.4		
CUDH-03-03	0.685	136.4	140		
CUDH-03-04	0.918	55.3	58.8		
CUDH-03-04	0.336	58.8	62.8		
CUDH-03-04	0.125	62.8	65.8		
CUDH-03-04	0.379	65.8	69.6		
CUDH-03-04	0.467	141	143		
CUDH-03-04	1.019	148	150		
CUDH-03-04	0.533	150	154		
CUDH-03-04	0.713	162	166		
CUDH-03-04	1.542	166	170		
CUDH-03-04	1.503	170	174		
CUDH-03-04	0.137	174	177		
CUDH-03-04	0.465	177	180		
CUDH-03-05	0.307	89	92	0.21	
CUDH-03-05	0.192	104	107.5	0.17	
CUDH-03-05	0.153	114	117	2.45	
CUDH-03-06	0.109	44	47.6	0.2	
CUDH-03-07	0.163	44.9	49	0.26	
CUDH-03-07	0.109	112.3	115.7	0.27	
CUDH-03-09	0.937	111.5	113.6	0.8	
CUDH-03-09	0.593	113.6	115.6	0.3	
CUDH-03-09	0.143	117.6	120	0.7	
CUDH-03-09	0.166	136.3	139	1.2	
CUDH-03-09	0.229	159	162	1.3	
CUDH-03-09	0.275	162	166	13	
CUDH-03-09	0.270	171	174	0.2	
CUDH-03-09	0.243	184	187.5	3.6	
CUDH-03-10	0.314	86	88.6	1	
CUDH-03-11	0.335	113.5	116	0.4	
CUDH-03-11	0.109	131	133.8	0.3	
CUDH-03-11	0.118	150	151.5	0.2	

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CUDH-03-12	0.275	124	129	0.6	
CUDH-03-12	3.712	133.4	134	2.9	
CUDH-03-12	2.423	134	136.3	1.1	
CUDH-03-12	1.161	136.3	139	0.6	
CUDH-03-12	0.579	139	142.6	1.4	
CUDH-03-12	0.642	142.6	144	0.7	
CUDH-03-12	0.381	144	146.2	4.9	
CUDH-03-12	1.301	146.2	149	7.4	
CUDH-03-12	0.748	149	152	2.5	
CUDH-03-12	0.252	152	154	0.7	
CUDH-03-12	2.447	154	155.6	1.2	
CUDH-03-12	0.420	155.6	159	2.8	
CUDH-03-12	0.886	159	162	0.2	
CUDH-03-12	0.191	162	164	2.4	
CUDH-03-12	0.259	164	169	0.1	
CUDH-03-12	0.495	175.3	177.4	0.1	
CUDH-03-12	0.186	177.4	179	0.1	
CUDH-03-12	0.145	179	181	0	
CUDH-03-12	0.198	184	186.7	0.1	
CUDH-03-12	0.114	191	194.5	0.9	
CUDH-03-13	0.135	89	92	1.2	
CUDH-03-13	0.304	113	114.2	0	
CUDH-03-13	0.266	242	245	0.1	
CUDH-03-13	0.360	245	249	0.1	
CUDH-03-14	0.578	171.5	172.5	0.46	
CUDH-03-14	0.275	179	181.8	0.42	
CUDH-03-14	0.259	184	188.8	0.05	
CUDH-03-14	1.230	188.8	190	0.05	
CUDH-03-14	0.149	190	192	0.08	
CUDH-03-14	0.332	192	195.5	0.34	
CUDH-03-14	1.043	195.5	199	1.1	
CUDH-03-14	0.118	200.5	201.5	0.37	
CUDH-03-14	0.236	201.5	204.2	0.09	
CUDH-03-14	0.111	204.2	205.9	0.12	
CUDH-03-15	0.366	146	149	0.21	
CUDH-03-15	1.135	174	177	0.07	
CUDH-03-15	0.982	177	179.6	1.97	
CUDH-04-16	0.722	137	140		
CUDH-04-16	0.181	140	143		
CUDH-04-16	1.778	225	227.5		
CUDH-04-16	0.558	227.5	230		
CUDH-04-16	0.312	230	233.8		
CUDH-04-16	0.293	240	243.2		
CUDH-04-17	0.113	134	137		
CUDH-04-17	0.152	144.5	147.1		
CUDH-04-17	0.266	154	156.5		
CUDH-04-17	0.255	165.9	168.3		
CUDH-04-17	0.186	168.3	170.8		

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CUDH-04-18	0.169	59	62.7		
CUDH-04-18	0.172	193	194		
CUDH-04-18	0.142	194	195.8		
CUDH-04-18	0.352	199	199.4		
CUDH-04-19	0.118	13	18		
CUDH-04-19	0.134	118.2	123		
CUDH-04-19	0.395	193.2	195		
CUDH-04-19	0.417	195	198.6		
CUDH-04-19	0.540	198.6	200		
CUDH-04-19	0.837	200	203		
CUDH-04-19	0.277	203	205.5		
CUDH-04-19	0.862	207.6	209		
CUDH-04-19	0.161	209	212.8		
CUDH-04-19	0.594	224	226.2		
CUDH-04-22	0.293	209	211.6	3.72	
CUDH-04-23	0.285	158	160.5	0.1	
CUDH-04-23	0.505	407.6	409.4	1.65	
CUDH-04-24	0.162	204	207.2	0.03	
CUDH-04-24	0.169	209	211	0.03	
CUDH-04-24	0.348	211	214	0.05	
CUDH-04-24	0.124	219	222.2	0.08	
CUDH-04-24	0.519	229	231	1.89	
CUDH-04-25	0.195	114	119	0.94	
CUDH-04-25	0.133	259	264	0.4	
CUDH-04-25	0.390	284	288.4	0.08	
CUDH-04-25	0.144	292	295.5	0.07	
CUDH-04-25	0.469	295.5	299	0.11	
CUDH-04-25	0.767	299	301	0.15	
CUDH-04-25	0.867	301	304	0.41	
CUDH-04-25	0.100	306.5	309	0.74	
CUDH-04-25	0.361	316.2	319	4.12	
CUDH-04-25	0.163	370.7	373	0.87	
CUDH-04-25	1.040	379	381.9	0.03	
CUDH-04-25	0.240	384.9	386.9	1.16	
CUDH-04-25	0.102	390.8	394	0.26	
CUDH-04-26	0.264	199	204	0.1	
CUDH-04-26	0.112	341.4	343.2	0.6	
CUDH-04-26	0.583	343.2	345.5	0.5	
CUDH-04-26	2.979	345.5	349	0.6	
CUDH-04-26	0.956	349	352	0.9	
CUDH-04-26	0.744	352	354	0.8	
CUDH-04-28	0.258	74	77.5	0.47	
CUDH-04-28	0.192	149	150.2	0.15	
CUDH-04-29	3.162	105.6	106	0.17	
CUDH-04-29	0.804	106	109	0.02	
CUDH-04-29	0.122	109	114	0.02	
CUDH-04-29	0.310	116.6	121.6	0.01	
CUDH-04-30	0.134	36.2	37.8	0.47	

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
CUDH-04-31	0.127	84	88	0.35	
CUDH-04-31	0.958	104.9	106	0.68	
CUDH-04-31	0.228	108	110.7	0.04	
CUDH-04-31	0.975	121.2	123.9	2.66	
CUDH-04-31	0.118	194	199	0.64	
CUDH-04-31	0.821	214	216.2	0.02	
CUDH-04-31	0.103	216.2	219	0.06	
CUDH-04-31	0.587	219	221	0.05	
CUDH-04-31	2.175	221	223	0.03	
CUDH-04-31	0.212	254	258.5	0.06	
CUDH-04-31	0.158	260	262	0.05	
CUDH-04-31	0.210	262	267	0.08	
CUDH-04-31	0.366	267	272	0.09	
CUDH-04-31	0.844	307	308.3	0.14	
CUDH-04-31	0.212	308.3	313	0.09	
CUDH-04-32	0.272	179	182	0.35	CORE
CUDH-04-32	0.119	514	516	0.69	CORE
CUDH-04-32	2.438	519	522.5	0.82	CORE
CUDH-04-32	0.171	522.5	524.5	0.59	CORE
CUDH-04-32	0.373	524.5	526.7	0.32	CORE
CUDH-04-32	0.406	526.7	529	0.21	CORE
DCU-8	1.672	555	560		
DCU-8	0.167	560	565		
DU4-33	0.809	80.4	84	0.21675	CORE
DU4-33	0.686	84	85.4	0.11075	CORE
DU4-33	0.153	202	207	0.053	CORE
DU4-33	0.894	218.2	219.1	0.092	CORE
DU4-34	0.108	263.1	266	0.01425	CORE
DU4-35	0.770	146	149	2.01	CORE
DU4-35	0.505	149	152.3	1.57	CORE
DU4-35	0.506	152.3	154	2.54	CORE
DU4-35	0.272	160.2	162.5	0.37	CORE
DU4-35	0.176	162.5	164	0.77	CORE
DU4-35	0.362	164	166.6	2.54	CORE
DU4-35	0.324	166.6	169.5	0.27	CORE
DU4-35	0.315	176	179	1.46	CORE
DU4-35	0.125	191	194	1.43	CORE
DU4-36	0.214	236	239	1.82	CORE
DU4-36	0.271	239	241	6.08	CORE
DU4-36	0.267	244	246.2	0.66	CORE
DU4-37	1.637	249	250.1	2.4	CORE
DU4-37	0.840	250.1	253	0.18	CORE
DU4-37	0.120	296	299	0.06	CORE
DU4-37	0.506	299	301	0.15	CORE
DU4-37	0.346	301	304	1.02	CORE
DU4-37	0.198	304	307.6	6.38	CORE
DU4-40	0.173	84	88	0.47	CORE
DU4-40	0.194	88	89	0.09	CORE

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
DU4-40	0.781	92	97	0.07	CORE
DU4-40	0.962	114	119	0.86	CORE
DU4-40	0.291	119	124	0.14	CORE
DU4-41	0.320	109.3	114	0.25	CORE
DU4-41	0.164	346.7	349	0.31	CORE
DU4-41	0.156	356	359	0.06	CORE
DU4-41	0.564	359	361	0.35	CORE
DU4-41	1.674	361	361.8	0.73	CORE
DU4-41	0.267	375.9	379	0.09	CORE
DU4-41	1.082	379	383	1.82	CORE
DU4-41	0.917	383	386	0.19	CORE
DU4-41	0.184	386	386.8	0.07	CORE
DU4-41	0.137	386.8	387.4	0.06	CORE
DU4-41	0.100	387.4	391	0.04	CORE
DU4-41	0.110	394	397.8	0.05	CORE
DU4-41	0.369	401.6	406.7	0.12	CORE
DU4-41	0.807	406.7	409.2	0.09	CORE
DU4-43	0.247	116.3	118.5	0.08	CORE
DU4-43	0.286	123	127.7	0.36	CORE
DU4-44	0.206	311	315.3	0.01	CORE
DU4-45	0.296	135.3	140.3	0.05	CORE
DU4-45	0.430	150.7	154	0.22	CORE
DU4-45	0.201	163.3	164.5	0	CORE
DU4-45	0.159	176.9	181.1	0.08	CORE
DU4-47	0.174	179	181.2	0.05808	CORE
DU4-47	0.506	181.2	184	0.13264	CORE
DU4-48	0.246	109	111	1	CORE
DU4-50	0.575	19	24.6	0.06	CORE
DU4-50	0.343	65.6	68.3	0.15	CORE
DU4-50	3.162	68.3	70.4	0.46	CORE
F4-1	0.408	574	579	0.02	CORE
F4-4	0.225	453.5	455	0.05	CORE
F4-4	0.279	455	457	0.04	CORE
F4-5	0.221	601	602	0.86	CORE
F4-6	0.277	653	655	4.91	CORE
F4-7	0.132	535	540	0.21	CORE
F4-8	0.234	379	382	0	CORE
F4-8	0.119	545	550	0.2	CORE
F4-8	0.227	550	555	0.54	CORE
H4-14	0.286	714	717	2.29	CORE
H4-14	0.295	717	720	1.43	CORE
H4-14	0.123	720	722	0.98	CORE
H4-14	0.267	722	724.5	2.21	CORE
H4-15	0.336	815	818	1	CORE
H4-15	0.885	818	821	0.37	CORE
H4-15	0.154	821	824	0.28	CORE
H4-15	0.354	824	826	1.08	CORE
H4-15	0.124	826	829	2	CORE

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
H4-16	0.215	835	837	0.07	CORE
H4-16	0.341	837	839	0.06	CORE
H4-16	0.570	839	841	1.03	CORE
H4-16	0.471	841	844	0.42	CORE
H4-16	0.309	844	846.5	0.9	CORE
H4-16	0.721	846.5	848.5	0.12	CORE
H4-18	0.120	817	820	0.17	CORE
H4-18	0.155	825.5	828.5	0.21	CORE
H4-18	0.478	828.5	831	1.61	CORE
H4-18	0.612	831	834	3.12	CORE
H4-19	0.106	834.5	837.5	0.3575	CORE
H4-19	0.376	837.5	840	0.328	CORE
H4-19	1.482	840	843	0.91	CORE
H4-19	0.649	843	845	2.37	CORE
H4-19	0.350	845	847	0.715	CORE
H4-19	0.155	847	850	0.20225	CORE
H4-20	0.447	816	817	18.33	CORE
H4-20	0.119	821	823	8.83	CORE
H4-21	0.288	704	708	0.41	CORE
H4-22	0.214	699	703	0.04	CORE
H4-22	0.385	948	952	0.05	CORE
H4-23	0.271	470	475	0.04	RC
H4-25	0.129	760	764	2.09	CORE
H4-26	0.187	620.5	623.5	0.04	CORE
H4-26	0.191	645	649	0.37	CORE
H4-26	0.639	649	652	2.21	CORE
H4-26	0.187	652	655	0.61	CORE
H4-26	0.452	655	658	0.83	CORE
H4-26	0.233	661	664	0.2	CORE
H4-27	0.132	658	660	0.14	CORE
H4-29	0.374	681	684	0.09	CORE
H4-29	0.102	687	689.5	0.63	CORE
H4-30	0.138	700	704	0.06	CORE
H4-30	0.157	788	792	0.05	CORE
H4-31	0.345	744	748	0.04	CORE
H4-31	0.263	877	881	0.05	CORE
H4-31	0.418	905	907	0.02	CORE
H4-31	0.129	907	910	0.02	CORE
H4-36	0.106	854	857	0.25	CORE
H4-36	3.245	857	860	2.95	CORE
H4-36	0.421	882.5	885	1.37	CORE
H4-37	0.111	855	860	0.21	CORE
H4-38	0.149	385	390	0.01	RC
H4-38	0.103	887	889	0.0683	CORE
H4-40	0.184	834	836.5	1	CORE
H4-40	0.123	836.5	839	0.91	CORE
H4-42	0.440	832	835	0.91	CORE
H4-42	0.127	855.5	858.8	0.17	CORE

Appendix 2: List of High Grade (> 0.1 opt) Copperstone Drill Hole Intercepts

hole_id	auopt	depth_from	depth_to	percent_cu	SAMPLE_TYPE
H4-43	2.119	725	730	0.81	CORE
H4-43	0.111	730	735	0.46	CORE
H4-44	0.307	912	917	0.03	CORE
H4-46	0.219	826	834	0.61	CORE
H4-47	0.348	858.5	861	1.19	CORE
H4-47	0.511	883	887	0.02	CORE
H4-48	0.519	590	595	0.15	RC
H4-48	0.189	825.8	828.8	1.6	CORE
H4-48	0.119	830.8	833.8	0.14	CORE
H4-48	0.131	833.8	835.8	0.19	CORE
H4-48	0.290	835.8	838.5	0.72	CORE
H4-49	0.153	755.5	758.5	0.04	CORE
H4-49	0.193	760	763	0.04	CORE
H4-49	0.249	779	782	0.01	CORE
H4-50	0.283	620	625	0.16	RC
H4-50	0.273	666.8	669.3	0.42	CORE
H4-50	0.125	669.3	672	0.63	CORE
H4-50	0.120	684	685.7	2.16	CORE
H4-50	0.155	697	700	0.2	CORE
H4-50	0.182	700	703.5	0.21	CORE
H4-50	0.234	703.5	705	0.2	CORE
H4-50	0.279	705	709	0.75	CORE
H4-50	0.129	709	712	0.17	CORE
H4-50	0.750	946.7	950	0.18	CORE
H4-51	0.354	639	642	0.06	CORE
H4-52	0.327	749	753	0.1	CORE
H4-55	0.165	844	848	1.02	CORE
H4-56	0.252	682	686	0.84	CORE
H4-60	1.045	820	821.6	8.84	CORE
H4-64	0.112	719	724	0.19	CORE
H4-64	0.136	746	750	0.47	CORE
H4-65	0.393	844	849	0.01	CORE
H4-66	0.106	330	335	0.13	RC
H4-67	0.206	620	625	0.05	RC

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
A00-1	332819.24	1048319.65	876.48	534	CURVED
A00-10	333711.84	1045430.8	539.36	649	CURVED
A00-11	332799.68	1046994.66	871.7	700	CURVED
A00-2	332835.12	1047934.23	875.21	743.5	CURVED
A00-3	332924.99	1048416.12	878.14	595	CURVED
A00-4	332762.22	1047365.65	873.81	645.5	CURVED
A00-5	332729.52	1047128.5	872.41	637.5	CURVED
A00-6	333024.69	1048512.72	878.02	890	CURVED
A00-7	333028.94	1048715.72	876.13	1035	CURVED
A00-8	332824.69	1048519.74	876	880	CURVED
A00-9	333223.5	1048714.65	877.5	1300	CURVED
A98-1	332744.15	1047643.34	873.8	665.2	CURVED
A98-10	332771.74	1047171.3	873.92	651.5	CURVED
A98-11	332883.55	1047823.8	874.29	734.3	CURVED
A98-12	332969.59	1048170.25	875.76	943.2	CURVED
A98-13	332872.01	1047573.55	874.47	693.9	CURVED
A98-14	332911.67	1047911.76	874.64	745	CURVED
A98-15	332957.48	1047758.08	875.13	747.1	CURVED
A98-2	332877.97	1047677.47	874.69	731	CURVED
A98-3	332825.79	1047824.35	874.02	728	CURVED
A98-4	332707.87	1047507.43	873.09	660	CURVED
A98-5	332775.59	1047475.53	873.19	690	CURVED
A98-6	333424.34	1047323.85	876.58	900	CURVED
A98-7	333433.73	1047132.8	875.27	630	CURVED
A98-8	333300.88	1047300.31	875.19	915	CURVED
A98-9	332698.42	1046997.69	870.47	545	CURVED
BBU-1	332713.9	1047571	301	93	
BBU-2	332713.9	1047571	303.5	76	
BBU-3	332713.9	1047571	301	68.7	
BBU-4	332719.9	1047571	301	88	
BBU-5	332713.9	1047574.7	300.5	101.5	
BBU-6	332713.9	1047574.7	300.5	172.2	
BBU-7	332709	1047561	300.5	73	
BBU-8	332709	1047561	300.5	168.7	
C95-01	334989.7	1045574.17	882.39	744.5	CURVED
C95-02	333062.82	1044953.32	901.76	500	
C95-03	333677.1	1046868.92	875.77	850	CURVED
C95-04	333744.03	1046843.82	876.59	820	CURVED
C95-05	333624.52	1046923.44	875.84	850	CURVED
C95-06	333431.41	1047036.01	873.34	800	CURVED
C95-07	334327.91	1046428.51	877.22	820	CURVED
C95-08	333218.8	1047114.67	872.52	785	CURVED
C95-09	334154.73	1046363	875.5	796	CURVED
C95-10	332770.82	1047066.32	871.37	624	CURVED
C95-11	333369.44	1047384.91	875.92	795	CURVED
C95-12	334081.95	1046695.14	878.69	867	CURVED
C95-13	333998.57	1046396.71	874.66	750	CURVED
C96-14	334470	1047170	920.81	1227	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
C96-15	334224.99	1047320	921.69	1313	CURVED
C96-16	334030	1047520	875	1245	CURVED
C96-17	334513.85	1046528.25	895.93	1007	CURVED
C96-18	333853.38	1046743.98	876.64	958	CURVED
C96-19	332792.43	1047558.14	874.35	704	CURVED
C97-20	335084.77	1045660.41	883.18	950	CURVED
C97-21	333588.61	1047269.57	876.26	710	CURVED
C97-22	334392.43	1046766.4	905.25	1123	CURVED
C97-23	332928	1047124	873.93	628	CURVED
C97-24	332828	1047720	874.86	700	CURVED
C97-25	332726	1048018	875.33	801	CURVED
C97-26	332630	1047620	872.72	650	CURVED
C97-27	332928	1047818	875.46	600	CURVED
C97-28	333175	1047568	881.76	834	CURVED
C97-29	333520	1047220	876.23	906	CURVED
C97-30	333880	1046873	879.32	931	CURVED
C97-31	332932.99	1048037.32	875.39	870	CURVED
C97-32	334528	1046225	881.44	950	CURVED
C97-33	332780	1047270	879.98	571	CURVED
C97-34	332978	1047572	875.35	734	CURVED
CDH-1	332746.2	1047073.8	281.9	77	
CDH-10	332741.3	1047077.2	285.1	92	
CDH-2	332746.2	1047073.8	284.6	68	
CDH-3	332744.8	1047074.7	285.4	80	
CDH-4	332744.8	1047074.7	282.5	75	
CDH-5	332747.5	1047071.8	285.9	118	
CDH-5A	332747.5	1047071.8	282	8	
CDH-6	332745.9	1047067.8	284.2	75	
CDH-7	332744.3	1047065.3	284.4	101	
CDH-8	332747.5	1047071.8	283	98	
CDH-9	332747.5	1047071.8	288.8	101	
CR-380	333528.7	1045925	740.2	360	CURVED
CR-381	333594.5	1045817	739	410	CURVED
CR-382	333565.29	1046076	740.8	385	CURVED
CRD-03-01	333708.9	1045438.432	538.7	600	CURVED
CRD-03-02	333705.9	1045444.5	538.6	600	CURVED
CRD-03-03	333702.4	1045453.27	537.4	520	CURVED
CRD-03-04	333759	1045360	548.9	595	CURVED
CRD-03-05	333758.7	1045363	548.9	600	CURVED
CRD-03-06	333738	1045397	548	650	CURVED
CRD-03-07	333731	1045394	548	600	CURVED
CRD-03-08	333757	1045355.6	549.3	600	CURVED
CRD-03-09	333761.8	1045355.65	548.7	600	CURVED
CRD-03-10	333760.2	1045396.37	546	600	CURVED
CRD-03-11	333801.8	1045376.23	547.5	600	CURVED
CRD-03-12	333773.6	1045421.4	547.22	600	CURVED
CRD-03-13	333777.3	1045414.9	547	600	CURVED
CRD-04-01	333797.34	1046833.2	877	885	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CRD-04-02	333819.1	1046821.63	877	920	
CRD-04-03	333790.71	1046831.51	877	920	
CRD-04-04	333927.17	1046728.85	876	988	
CRD-04-05	333880.09	1046613.5	874	896	
CRD-04-06	333886.77	1046622.61	875	901	
CRD-04-07	333786.27	1046828.36	877	869	
CRD-04-08	333786.28	1046819.32	877	850	
CRD-04-09	333786.23	1046819.27	877	951	
CRD-04-10	333714.79	1046874.93	876	850	
CRD-04-11	333896.77	1046639.65	876	847	
CRD-04-12	333988.86	1046771.6	879	987	
CRD-04-13	333715.6	1046889.17	877	900	
CS-103	332123	1046968	868.32	600	CURVED
CS-106	332695	1047778	867	640	CURVED
CS-107	335085	1045767	876.4	680	
CS-108	335060	1045368	882.17	680	CURVED
CS-109	332295	1047780	868	750	CURVED
CS-111	332273	1047385	862	650	CURVED
CS-112	331540.3	1044815.9	851	450	
CS-113	331131.3	1042853.8	852.2	400	
CS-115	333176	1047385	868	790	CURVED
CS-116	331528.8	1045984.9	851.1	500	
CS-117	331489.7	1043967.5	849.7	500	
CS-119A	336770.9	1043692.8	871.6	500	
CS-120	328302.5	1038613.8	855.55	285	
CS-151	333184.9	1045960	891.6	300	CURVED
CS-152	333097.6	1045877	891	160	CURVED
CS-153	332885.4	1046071	869.4	300	CURVED
CS-154	332789.4	1045981	869.1	150	CURVED
CS-155	332886.8	1045883	870.8	150	CURVED
CS-156	333012.99	1046172	870.2	300	CURVED
CS-157	332988.4	1045973	872.7	300	CURVED
CS-158	333087.7	1046068	878.3	240	CURVED
CS-159	333180.7	1045777	890.5	200	CURVED
CS-160	333282.7	1045873	892.5	300	CURVED
CS-161	333385.4	1045970	878.7	300	CURVED
CS-162	332781.7	1046179	866.5	300	CURVED
CS-163	333288.6	1046084	873.5	300	CURVED
CS-164	333385.6	1045875	884	300	CURVED
CS-165	333136.69	1045823	892.1	150	CURVED
CS-166	333574.3	1044793	894.5	200	CURVED
CS-167	333682.8	1044877	885.7	250	CURVED
CS-168	333780.5	1044972	884.1	300	CURVED
CS-169	333878	1044872	883.9	300	CURVED
CS-170	333778.2	1044771	887.6	300	CURVED
CS-171	333678.6	1044676	892.6	200	CURVED
CS-172	334386.1	1044679	879.3	300	CURVED
CS-173	334483.9	1044777	879.2	300	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CS-174	333983.2	1044771	883.7	300	CURVED
CS-175	334479.8	1045165	882.9	350	CURVED
CS-176	333636	1044726	892.5	200	CURVED
CS-177	333526	1044630	891.2	200	CURVED
CS-178	333286.8	1045677	882.7	250	CURVED
CS-179	333234.7	1045921	893.2	300	CURVED
CS-180	333191	1045593	880.1	100	CURVED
CS-181	333033.5	1045724	879.2	100	CURVED
CS-182	333384.8	1045577	878.8	300	CURVED
CS-183	333284.2	1045475	884.3	100	CURVED
CS-184	333282.8	1044984	892.2	300	CURVED
CS-185	333079.3	1045180	888.8	300	CURVED
CS-186	333487.8	1045474	879.3	300	CURVED
CS-187	333384.5	1045368	882.7	200	CURVED
CS-188	333282	1045269	884.1	100	CURVED
CS-189	334564.5	1044874	880.2	300	CURVED
CS-190	334367.3	1044963	880.8	300	CURVED
CS-191	334170.6	1045075	882.2	300	CURVED
CS-192	334072.8	1044975	883.4	300	CURVED
CS-193	333579.9	1045377	881.2	300	CURVED
CS-194	333481.7	1045277	882.8	300	CURVED
CS-195	333354.2	1045168	890	200	CURVED
CS-196	333681.6	1045275	884.4	300	CURVED
CS-197	333585	1045177	888.9	300	CURVED
CS-198	333485.4	1045073	888.9	200	CURVED
CS-199	333682.8	1045071	885.4	300	CURVED
CS-200	334164.7	1045268	880	400	CURVED
CS-201	332887.1	1045585	876.5	300	CURVED
CS-202	334109.6	1045417	884.9	300	CURVED
CS-203	333883.4	1045084	880.9	325	CURVED
CS-204	334272.8	1045077	882.6	325	CURVED
CS-205	334078	1044270	879.7	300	CURVED
CS-206	334181.7	1044372	879.8	305	CURVED
CS-207	334078.5	1044473	878.4	220	CURVED
CS-208	332618.7	1046105	866	225	CURVED
CS-209	332789.3	1046278	868.8	300	CURVED
CS-210	333581.9	1044974	886.6	225	CURVED
CS-211	333778.3	1045175	885.7	320	CURVED
CS-212	334062.2	1045267	880.1	325	CURVED
CS-213	334063.9	1045169	879.8	300	CURVED
CS-214	334262.6	1045268	879.5	340	CURVED
CS-215	334264.7	1045168	880.4	300	CURVED
CS-216	334368.1	1045167	880.3	360	CURVED
CS-217	334164	1044765	880.8	300	CURVED
CS-218	334280.6	1044867	881.3	300	CURVED
CS-219	334467.8	1045074	881.6	355	CURVED
CS-220	334468.2	1044870	884.4	300	CURVED
CS-221	334564.2	1044973	880.1	340	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CS-222	334281.6	1044672	879.7	320	CURVED
CS-223	334383.2	1044774	879.7	300	CURVED
CS-224	334569.1	1044773	879.4	300	CURVED
CS-225	334669.9	1044877	879.6	305	CURVED
CS-226	334472.2	1044666.99	878.8	320	CURVED
CS-227	334180.5	1044973	883	320	CURVED
CS-228	334081.2	1044871	882.5	300	CURVED
CS-229	333971	1044974	882.7	350	CURVED
CS-230	334088.1	1045067	881.1	305	CURVED
CS-231	334164.9	1045169	880.2	325	CURVED
CS-232	334365.5	1045272	880.2	325	CURVED
CS-233	334281.1	1044575	879.7	345	CURVED
CS-234	333881.8	1044675	885.1	275	CURVED
CS-235	333030.7	1045930	877.4	225	CURVED
CS-236A	332887	1046269.99	866.7	300	CURVED
CS-237	334164.5	1045367	882.5	350	CURVED
CS-238	333892	1045295	883.8	385	CURVED
CS-238A	333892	1045295	883.8	275	CURVED
CS-239	333791.7	1045384	883.3	365	CURVED
CS-240	333684.7	1045476	881.9	375	CURVED
CS-241	333585	1045575	878.8	325	CURVED
CS-242	333488.7	1045684	877.9	325	CURVED
CS-243	333381.1	1045773	882.4	325	CURVED
CS-244	332686.8	1046281	865.1	260	CURVED
CS-245	333189.4	1046180	871.6	305	CURVED
CS-246	333349.4	1046179	870.5	350	CURVED
CS-247	333011.2	1045811	880.2	150	CURVED
CS-248	333120	1045705	892.3	150	CURVED
CS-249	333658.2	1045548	878.3	365	CURVED
CS-250	333882.8	1045179	883.8	345	CURVED
CS-251	334183.6	1044571	882.1	245	CURVED
CS-252	334278.3	1044465	881	250	CURVED
CS-253	334375	1044466	881.9	250	CURVED
CS-254	334373.6	1044568	881.9	275	CURVED
CS-255	333217.7	1045436	891.9	150	CURVED
CS-256	334346.4	1046043	878.4	750	CURVED
CS-257	332647	1047330	871	605	CURVED
CS-258	334349.9	1046244	877.3	805	CURVED
CS-259	334673	1045167	882.2	600	CURVED
CS-260	332669.6	1045586	873.7	600	CURVED
CS-261	333196	1045086	893.4	705	CURVED
CS-262	332894.3	1044969	917.7	540	CURVED
CS-263	340429.1	1047619	884.438	600	
CS-264	332595	1047485	866.5	880	CURVED
CS-265	332083	1044776.81	867.3	570	CURVED
CS-266	332596.3	1044536	879.4	905	CURVED
CS-267	333985	1046892	875	1160	CURVED
CS-268	332530	1048180	872	905	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CS-269	334563.4	1045080	883	425	CURVED
CS-270	334665.2	1045076	882.5	425	CURVED
CS-271	334568	1045170	883.9	500	CURVED
CS-273	334950	1045990	880	1140	CURVED
CS-274	333785.2	1045576	881.9	485	CURVED
CS-275	333882.8	1045491	882.5	500	CURVED
CS-276	333985	1044173	882.7	305	CURVED
CS-277	334075.7	1044073	882.2	300	CURVED
CS-278	333984.6	1044280	883.2	300	CURVED
CS-279	332775	1046269	870.5	400	CURVED
CS-280	332984	1046379	870.1	450	CURVED
CS-281	334383	1045373	880.9	425	CURVED
CS-282	334283	1045473	882.7	400	CURVED
CS-283	333680	1045673	879.2	400	CURVED
CS-284	334480	1045273	881.4	600	CURVED
CS-285	333434.5	1046301	870.2	460	CURVED
CS-286	333257	1046298	869.3	360	CURVED
CS-287	334681	1045273	881.7	605	CURVED
CS-288	333480	1046073	875.6	375	CURVED
CS-289	333955	1044373	881.3	250	CURVED
CS-290	334030	1044333	883	250	CURVED
CS-291	333480	1045872.99	875.6	265	CURVED
CS-292	334130	1044333	881.3	250	CURVED
CS-293	333930	1044223	884.5	175	CURVED
CS-294	334030	1044223	882.6	175	CURVED
CS-295	334774.99	1045173	880.9	600	CURVED
CS-296	333985	1045273	880.6	425	CURVED
CS-297	334280	1044273	882	350	CURVED
CS-298	334145	1044223	880	350	CURVED
CS-299	334180	1044173	882.2	350	CURVED
CS-300	333985	1045173	879.9	400	CURVED
CS-301	334035	1044123	882.2	275	CURVED
CS-302	333583	1045768	878.1	400	CURVED
CS-303	333883	1045572.99	881.2	530	CURVED
CS-304	334085	1044673	859.6	300	CURVED
CS-305	332934.99	1046323	868	375	CURVED
CS-306	333480	1045872.99	875.6	400	CURVED
CS-307	332835	1046223	868.5	275	CURVED
CS-308	332685	1046073	869.9	250	CURVED
CS-309	334783	1044972.99	879.9	500	CURVED
CS-310	332585	1046173	865.6	300	CURVED
CS-311	334380	1045478	882.1	550	CURVED
CS-312	332735	1046223	867.8	305	CURVED
CS-313	334480	1045378	880.7	500	CURVED
CS-314	333085	1046473	867.1	345	CURVED
CS-315	334080	1045578	881.4	610	CURVED
CS-316	333080	1046273	868.5	395	CURVED
CS-317	334183	1045476	881.8	565	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CS-318	334285	1045573	882.2	555	CURVED
CS-319	333584.3	1045679	881.1	450	CURVED
CS-320	333773.9	1045462	879.3	500	CURVED
CS-321	333883.9	1045382	881.1	550	CURVED
CS-322	334185.8	1045675	881.5	545	CURVED
CS-323	334388.9	1045668	880.8	655	CURVED
CS-324	334079.3	1045381	881.3	500	CURVED
CS-325	333781.3	1045690	880	500	CURVED
CS-326	333679.6	1045785.99	876.4	500	CURVED
CS-327	333579.2	1045886	875.2	500	CURVED
CS-328	333480.7	1045985	872.5	400	CURVED
CS-329	334387.2	1045280	880.5	500	CURVED
CS-330	334579.2	1045278	879.9	600	CURVED
CS-331	334779.7	1045274	882.6	600	CURVED
CS-332	334776.8	1045069	877.2	600	CURVED
CS-333	334581.1	1045474	881.9	650	CURVED
CS-334	333198.4	1046365	867.4	480	CURVED
CS-335	334187.7	1045870	877	700	CURVED
CS-336	334187.5	1046075	875.3	700	CURVED
CS-337	334481.1	1045576	881.4	650	CURVED
CS-338	333976.7	1045684	878	565	CURVED
CS-339	334877.99	1045174	879.8	620	CURVED
CS-340	334289.6	1045968	877.8	685	CURVED
CS-341	334393.2	1045859	879.6	700	CURVED
CS-342	334093	1045959	877.3	700	CURVED
CS-343	334094.1	1046162	877.1	615	CURVED
CS-344	333964.2	1046094	877.4	750	CURVED
CS-345	334777.6	1045486	882	700	CURVED
CS-346	334878.7	1045386	881.1	750	CURVED
CS-347	333978.4	1046275	877.7	1000	CURVED
CS-348	333989.3	1045868	879.8	700	CURVED
CS-349	334082.69	1045781	860.6	700	CURVED
CS-350	333176.1	1046559	868.8	600	CURVED
CS-351	333080	1046675	868	600	CURVED
CS-352	333886.2	1045771	860.6	600	CURVED
CS-353	334078	1046159	877.4	625	CURVED
CS-354	333780	1045876	860	700	CURVED
CS-355	334584.7	1045378	880.9	650	CURVED
CS-356	334478.6	1045474	881.1	650	CURVED
CS-357	334381.2	1045574	881.8	650	CURVED
CS-358	334180.3	1045575	881.2	500	CURVED
CS-359	333879.2	1045671	860	550	CURVED
CS-360	334080.5	1045674	882.1	650	CURVED
CS-361	334880.8	1044875	879.6	600	CURVED
CS-362	334631.2	1044724	860.1	450	CURVED
CS-363	334980	1044574.99	875	700	CURVED
CS-364	335030.41	1045224.81	882.3	750	CURVED
CS-365	334182.6	1045771	879.9	700	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CS-366	334081.29	1045875	878.1	700	CURVED
CS-367	334279.1	1045874	879.8	700	CURVED
CS-368	334483.3	1045770	879.7	680	CURVED
CS-369	334435.8	1046307	876.4	880	CURVED
CS-370	334193.3	1046277	875.5	795	CURVED
CS-371	334431.7	1046115	877.4	690	CURVED
CS-372	333291.1	1046670	869.3	550	CURVED
CS-373	333190	1046780	862	600	CURVED
CS-374	333182	1046875	869.47	690	CURVED
CS-375	332988	1046882	869.5	700	CURVED
CS-376	333080	1046977	869	750	CURVED
CS-377	333981.4	1045775	861.2	640	CURVED
CS-378	332990	1046680	870	550	CURVED
CS-379	334185	1046472	880	835	CURVED
CS-383	333377.1	1046274	740.3	410	CURVED
CS-384	333478	1046275	740.5	450	CURVED
CS-385	333478.5	1046174	739.9	385	CURVED
CS-386	333378.8	1046372	739.4	440	CURVED
CS-387	333228.4	1046424	739.7	360	CURVED
CS-388	333129.1	1046522	740.9	440	CURVED
CS-389	333297.69	1046492	739.4	480	CURVED
CS-390	332977.3	1046476	741.3	385	CURVED
CS-391	332827.1	1046324	740.6	310	CURVED
CS-392	333427.6	1046326	740.7	470	CURVED
CS-393	333280.5	1046373	740.3	405	CURVED
CS-394	333556.7	1046188	740	460	CURVED
CS-395	332626	1046223	739.8	285	CURVED
CS-396	332726	1046324	740.2	325	CURVED
CS-397	332622.7	1046314	740.4	310	CURVED
CS-398	332575.2	1046270	740.1	310	CURVED
CS-399	332538.8	1046216	740.2	445	CURVED
CS-400	333129.5	1046424	740.5	385	CURVED
CS-401	333226.2	1046323	740.1	360	CURVED
CS-402	333331.1	1046324	740.8	360	CURVED
CS-403	333327	1046223	740	345	CURVED
CS-404	333428.3	1046225	740.5	360	CURVED
CS-405	333429.4	1046123	740.3	320	CURVED
CS-406	333527.5	1046026	740.6	360	CURVED
CS-407	333329.5	1046423	737.8	460	CURVED
CS-408	333179.2	1046473	740	460	CURVED
CS-409	333128.5	1046326	740.3	440	CURVED
CS-410	333232	1046525	739.5	465	CURVED
CS-411	333027.99	1046523	740.8	360	CURVED
CS-412	333572.8	1045977	739.2	460	CURVED
CS-413	333526.6	1046124	740.6	360	CURVED
CS-414	333554.7	1046252	741.3	460	CURVED
CS-415	333416.8	1046413	740.1	420	CURVED
CS-416	333462.9	1046361	741	485	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CS-417	333512	1046303	740.3	460	CURVED
CS-418	333097.8	1046557	739.6	410	CURVED
CS-419	332827.1	1046416	739.8	340	CURVED
CS-420	332938.8	1046506	742.5	460	CURVED
CS-421	333019.9	1046438	740.5	385	CURVED
CS-422	333361.4	1046452	739.1	465	CURVED
CS-423	333517.2	1046213	739.1	440	CURVED
CS-424	333591.4	1046487	872.9	670	CURVED
CS-425	333435.6	1046624	870.4	700	CURVED
CS-426	333628	1045925	760.5	430	CURVED
CS-427	333688.2	1045686	758.2	405	CURVED
CS-428	333728.1	1045626	755.2	440	CURVED
CS-429	333541.8	1046535	874.1	750	CURVED
CS-430	333728.9	1046223.99	882	785	CURVED
CS-431	333703.2	1045893	802.4	520	CURVED
CS-432	333828.7	1045726.99	800.4	485	CURVED
CS-433	333777.09	1045775	799.7	560	CURVED
CS-434	333588.7	1045759	721.4	360	CURVED
CS-434-A	333577.8	1045775	721.7	125	CURVED
CS-435	333624	1045723	720	350	CURVED
CS-436	333846.9	1045638	799.7	525	CURVED
CS-437	333738	1045739	800.5	515	CURVED
CS-438	333981.3	1045580	800.2	545	CURVED
CS-439	333822.2	1045817	800.8	525	CURVED
CS-440	333930.6	1045826	801.4	545	CURVED
CS-441	333927.7	1045725	800	555	CURVED
CS-442	333932.2	1045626	800.9	525	CURVED
CS-443	333934.7	1045527	800.5	515	CURVED
CS-444	334028.7	1045633	800	560	CURVED
CS-445	333489	1046580	870.7	665	CURVED
CS-446	333380.2	1046674	869.4	700	CURVED
CS-447	333302.9	1046708	870.6	725	CURVED
CS-448	333231.2	1046734	871.6	650	CURVED
CS-449	333428.7	1046632	870.1	625	CURVED
CS-45	332265	1046365	859.89	320	CURVED
CS-450	333641.3	1046436	872.2	700	CURVED
CS-451	333534.9	1046539	871.3	620	CURVED
CS-452	333373.3	1046667	868.9	140	CURVED
CS-453	333628.6	1046426	873.3	640	CURVED
CS-454	333727.4	1046228	884.3	645	CURVED
CS-455	333727.2	1046125	884.7	600	CURVED
CS-46	332275	1046160	864.46	300	CURVED
CS-467	337490.66	1040424.84	858.71	600	CURVED
CS-468	333984.84	1043800.38	886.36	520	CURVED
CS-469	334578.16	1044676.2	658.99	130	CURVED
CS-470	334578.45	1044774.98	659.96	200	CURVED
CS-471	334479.53	1044777.28	659.66	160	CURVED
CS-472	334377.65	1044875.5	659.98	180	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CS-473	334377.53	1044975.5	660.8	180	CURVED
CS-474	334377.24	1045076.25	661.13	210	CURVED
CS-475	334278.11	1045174.84	659.66	215	CURVED
CS-476	341224.39	1048479.74	886.71	710	CURVED
CS-477	341260.14	1049449.14	887.63	805	CURVED
CS-481	332824.91	1046925.34	871.19	580	CURVED
CS-482	332775.56	1046874.82	874.15	620	CURVED
CS-483	332770.53	1046776.58	867.29	520	CURVED
CS-484	332748.43	1046674.45	866.14	600	CURVED
CS-485	333027.5	1046725.2	560	320	CURVED
CS-486	333381.5	1045972.5	559.4	150	CURVED
CS-487	333341.9	1046032.34	558.8	170	CURVED
CS-488	333127.8	1046227.47	559.36	160	CURVED
CS-489	333230.37	1046125.71	600	180	CURVED
CS-490	333175.77	1046176.32	600.25	150	CURVED
CS-494	332833.3	1046922.7	870.1	450	CURVED
CS-495	332784	1046867.6	869.7	440	CURVED
CS-496	332740.3	1046814.1	869.2	400	CURVED
CS-55	332462	1046575.99	862	350	CURVED
CS-56	332260	1046580	862.5	350	CURVED
CS-57	332066	1046570	862.9	350	CURVED
CS-58	332105	1046780	868.27	360	CURVED
CS-59	333674	1046975	870	820	CURVED
CS-62	333080	1046782	863.76	550	CURVED
CS-64	332881	1046783	862.57	725	CURVED
CS-72	332685	1046785	861.66	550	CURVED
CS-73	332881	1046981	867	675	CURVED
CS-74	332678	1047384	867	540	CURVED
CS-80	332480	1047385	867	525	CURVED
CS-99	332479	1046978	869.83	725	CURVED
CSD-1	333301.89	1045971	879.8	364	CURVED
CSD-10	331492.6	1047008.1	854.4	852	
CSD-11	334651.8	1044978	876.6	495	CURVED
CSD-12	334301.1	1044237	875	546	CURVED
CSD-15	333278	1045590	882.2	130	CURVED
CSD-16	333675.3	1044572	893.3	269	CURVED
CSD-17	333662.3	1044773	891.4	130	CURVED
CSD-18	333881.2	1044388	881.8	300	CURVED
CSD-19	334078.3	1044171	879.9	249	CURVED
CSD-2	333780	1044874	884.9	294	CURVED
CSD-20	333683.1	1044973	885.6	250	CURVED
CSD-21	333877.9	1044975	883.6	350	CURVED
CSD-22	334272.2	1044966	882	301.5	CURVED
CSD-23	333478.9	1045366	881.3	220	CURVED
CSD-24	333685.6	1045376	881.6	392	CURVED
CSD-25	333286	1045368	891.3	200	CURVED
CSD-26	333372.9	1045684	879.9	250	CURVED
CSD-27	332878.6	1045972	871	180	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CSD-28	333097.2	1045975	876	200	CURVED
CSD-29	333258.2	1046176.99	872.5	320	CURVED
CSD-3	333371.4	1045303	885.8	241	CURVED
CSD-30	333096.69	1046384	870.7	400	CURVED
CSD-31	333974.6	1045080	881.8	400	CURVED
CSD-32	333782.2	1045077	882	270	CURVED
CSD-33	333381.19	1045475	881.8	220	CURVED
CSD-34	333581	1045479	881.6	300	CURVED
CSD-35	333188.7	1045878	895.3	400	CURVED
CSD-36	333584	1045276	884.7	250	CURVED
CSD-37	333570	1045070	891.8	250	CURVED
CSD-38	333787.3	1045273	886	370	CURVED
CSD-39	332779	1045865	870.2	150	CURVED
CSD-4	333379	1045673	879.8	347	CURVED
CSD-40	332675.7	1045959	868.6	170	CURVED
CSD-41	332775.3	1046063	868.9	220	CURVED
CSD-42	332991.2	1046071	871.1	221	CURVED
CSD-43	332988.4	1046271	868.7	246	CURVED
CSD-43A	332994.5	1046269	867.2	351	CURVED
CSD-44	333192	1046271	870.7	341	CURVED
CSD-45	333283.9	1046381	869.6	301	CURVED
CSD-46	333975.2	1044871	883.2	400	CURVED
CSD-47	334173	1044870	883.1	300	CURVED
CSD-48	334270.9	1044767	880.8	300	CURVED
CSD-49	334365.7	1044873	881.4	300	CURVED
CSD-5	334179.7	1044282	879.5	400.5	CURVED
CSD-50	332983.09	1045874	878.1	189	CURVED
CSD-51	333586.5	1044872	889.6	150	CURVED
CSD-52	333577.3	1044467	884.5	150	CURVED
CSD-53	333685.5	1044373	883	200	CURVED
CSD-54	333389	1045879.99	885.3	200	CURVED
CSD-55	333775.7	1044278	881.3	300	CURVED
CSD-56	333187.6	1045676	887.9	150	CURVED
CSD-57	333576.89	1044677	895.4	200	CURVED
CSD-58	333783	1044679	889.9	350	CURVED
CSD-59	333980.7	1044676	883.2	301	CURVED
CSD-6	332695.7	1046174	867.1	282	CURVED
CSD-60	333188.4	1046080	877.7	300	CURVED
CSD-61	333977.7	1044482	881.5	300	CURVED
CSD-62	334175	1044674	881	300	CURVED
CSD-63	334376.8	1045078	884.4	301	CURVED
CSD-64	334178.7	1044484	880.5	300	CURVED
CSD-65	333780.7	1044469	880.9	199	CURVED
CSD-66	333781.1	1044897	885.7	285.5	CURVED
CSD-67	333085.5	1044977	897.9	432	CURVED
CSD-68	333208.7	1045489	885.9	300	CURVED
CSD-69	334127.5	1044525	880.1	331	CURVED
CSD-7	333275	1046975	872	721	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CSD-70	332843	1044341	883.3	210	CURVED
CSD-71	334731.6	1045215	882.2	620	CURVED
CSD-72	334283	1045673	879.5	569	CURVED
CSD-73	334180.5	1045971	877.7	722	CURVED
CSD-74	333629.4	1045723	857.8	585.4	CURVED
CSD-75	333177.5	1045131.4	868.5	510	CURVED
CSD-76	332384.2	1044149	875.3	274	CURVED
CSD-8	333884.89	1046383	874.2	950	CURVED
CSD-9	332678	1047410	866.44	676	CURVED
CSR-1	333479.6	1044785	898.7	125	CURVED
CSR-10	334075.1	1044384	880	300	CURVED
CSR-100	334240	1046142	871.8	840	CURVED
CSR-100A	334245	1046121	871	825	CURVED
CSR-102	334687	1046169	872.7	750	CURVED
CSR-104	334689	1046569	878.7	700	CURVED
CSR-105	334289	1046570.99	870	750	CURVED
CSR-11	333487.2	1044976	889.9	130	CURVED
CSR-110	334869.4	1044975.99	876.1	600	CURVED
CSR-114	332878	1047382.99	872.77	690	CURVED
CSR-118	333464.3	1044785	898.7	635	CURVED
CSR-11A	333486.6	1044963	890	300	CURVED
CSR-12	333091.29	1045977	873	300	CURVED
CSR-13	333086.5	1045585	879.9	265	CURVED
CSR-14	333491.9	1045189	885.9	300	CURVED
CSR-142	333666.2	1044781	889.3	280	CURVED
CSR-143	333065.2	1044944	899.3	500	CURVED
CSR-144	333092.7	1045775	891.4	280	CURVED
CSR-145	333196.9	1044870	895	500	CURVED
CSR-146	332894.8	1044761	903.1	325	CURVED
CSR-147	332980.5	1045076	908.6	430	CURVED
CSR-148	332783.89	1044868	898.4	500	CURVED
CSR-15	333688.4	1044978	884.4	225	CURVED
CSR-16	333272.1	1045197	884.4	200	CURVED
CSR-17	333484.6	1045374	880.2	220	CURVED
CSR-18	332889.6	1046187.99	868.6	300	CURVED
CSR-19	333872.6	1044200	879.9	300	CURVED
CSR-2	333678.8	1044584	893.3	200	CURVED
CSR-20	334074.5	1044187	878.5	300	CURVED
CSR-21	334073.2	1044591	881.4	300	CURVED
CSR-22	333874	1044784	884.3	270	CURVED
CSR-23	333889.2	1044987	883	300	CURVED
CSR-24	333689.3	1045191	887.1	145	CURVED
CSR-24A	333675.7	1045191	887.1	130	CURVED
CSR-25	333689.8	1045386	881.1	300	CURVED
CSR-26	333490.2	1045585	878.7	300	CURVED
CSR-27	333488.9	1045785	879	220	CURVED
CSR-28	332887.9	1045978	871.1	300	CURVED
CSR-29	332689.1	1046164	867.5	300	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CSR-3	333282.8	1045376	891.2	300	CURVED
CSR-30	332688.7	1046379	863.6	300	CURVED
CSR-31	332894.3	1046378	866.8	300	CURVED
CSR-32	333288.7	1045962	880.7	300	CURVED
CSR-33B	334302.7	1044199	877.7	305	CURVED
CSR-34	334696	1043986.87	878.8	500	CURVED
CSR-35	334480.5	1043980.62	882.4	400	CURVED
CSR-36	334687.41	1043787.12	877.3	400	CURVED
CSR-37	334891.69	1043594.69	874.9	380	CURVED
CSR-38	334081.3	1044790	883.1	430	CURVED
CSR-39	333719.4	1045185	888.1	300	CURVED
CSR-4	333088.4	1045770	891.1	300	CURVED
CSR-40	332979.2	1045674	889.5	300	CURVED
CSR-41	333068.5	1046176	871.6	350	CURVED
CSR-42	333273.4	1046179	872	450	CURVED
CSR-43	332480.81	1046170.37	866.9	300	CURVED
CSR-44	332469.19	1046373	860.8	300	CURVED
CSR-47	334287	1043983	882	360	CURVED
CSR-48	334275.5	1043773.37	879.2	340	CURVED
CSR-49	334481.5	1043780.19	877.8	305	CURVED
CSR-5	333282.7	1045796	893.7	46	CURVED
CSR-50	334687.5	1043575.12	876.8	300	CURVED
CSR-51	333488.3	1045780	879.7	310	CURVED
CSR-52	333488.3	1045798	878.9	470	CURVED
CSR-53	333683.7	1046581	873	110	CURVED
CSR-54	333670.39	1046565	873.2	750	CURVED
CSR-5A	333266.59	1045801	894	300	CURVED
CSR-6	333879.2	1044595	883.4	160	CURVED
CSR-60	333086.1	1046385	866.7	420	CURVED
CSR-61	332883.8	1046579	860.7	530	CURVED
CSR-63	333391.7	1046077	873.3	500	CURVED
CSR-65	332681.19	1045373	874.9	500	CURVED
CSR-66	334277.7	1044978	883.9	320	CURVED
CSR-67	333480	1044572	883.4	400	CURVED
CSR-68	332468.81	1044380.99	892.4	500	CURVED
CSR-69	332575.59	1043881.81	872.2	500	CURVED
CSR-7	333278.3	1045577	882.2	300	CURVED
CSR-70	333893.3	1045985	877.9	700	CURVED
CSR-71	333485.8	1046376	873.4	500	CURVED
CSR-75A	331463.81	1047007.87	853.9	470	CURVED
CSR-76	331275.59	1047144.31	855.3	500	CURVED
CSR-77	334466.9	1044972	877.6	400	CURVED
CSR-78A	334674.4	1044975	876.5	500	CURVED
CSR-79	334670	1044775	876.7	430	CURVED
CSR-8	333684.7	1044774	888.6	190	CURVED
CSR-81	335074.19	1044777.19	876.2	700	CURVED
CSR-82A	335093.91	1044372	877.4	870	CURVED
CSR-83	333470	1044171	877.8	595	CURVED

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CSR-84	333072.3	1044167	879.7	700	CURVED
CSR-85	334673.7	1044370.99	877	700	CURVED
CSR-86	334672.9	1045373	876.6	550	CURVED
CSR-87A	334288	1044188	874.7	650	CURVED
CSR-88	334475.1	1044568	877.1	560	CURVED
CSR-89	333956.9	1045464	876.7	550	CURVED
CSR-9	333895.8	1044376	882.8	300	CURVED
CSR-90	334265.4	1045368	877.1	500	CURVED
CSR-90A	334285.59	1045370	876.5	200	CURVED
CSR-91	331639	1047279	856.6	500	CURVED
CSR-92	334685	1045769	880.7	800	CURVED
CSR-93	330909.81	1047441.87	859.1	350	CURVED
CSR-94	335069.49	1044968.87	876.2	750	CURVED
CSR-95	330770.5	1047061.61	855.1	400	CURVED
CSR-96A	336322.5	1042518.19	864.1	815	CURVED
CSR-97	333422.19	1040894.87	870.5	600	CURVED
CSR-98	334285	1045771	877.1	775	CURVED
CUDH-03-01	332718.2	1047576.3	300.5	138	CURVED
CUDH-03-02	332718.2	1047576.3	299	296.5	CURVED
CUDH-03-03	332718.2	1047576.3	297.5	172	CURVED
CUDH-03-04	332718.2	1047576.3	296	199	CURVED
CUDH-03-05	332718.2	1047576.3	294.5	340.1	CURVED
CUDH-03-06	332717.5	1047580	300.5	124	CURVED
CUDH-03-07	332717.5	1047580	299	128	CURVED
CUDH-03-08	332717.5	1047580	297.5	167	CURVED
CUDH-03-09	332717.5	1047580	296	244	CURVED
CUDH-03-10	332718.1	1047578.8	299	159	CURVED
CUDH-03-11	332718.1	1047578.8	297.5	222	CURVED
CUDH-03-12	332718.1	1047578.8	296	226.2	CURVED
CUDH-03-13	332718.1	1047578.8	295	349	CURVED
CUDH-03-14	332714.2	1047583.4	296	299	CURVED
CUDH-03-15	332714.2	1047583.4	297.5	274	CURVED
CUDH-04-16	332714.2	1047583.4	295	299	CURVED
CUDH-04-17	332716	1047582.5	297.5	267.5	CURVED
CUDH-04-18	332716	1047582.5	296	255	CURVED
CUDH-04-19	332716	1047582.5	295	284	CURVED
CUDH-04-20	332712.9	1047584	294.5	353	CURVED
CUDH-04-21	332712.9	1047584	295.5	279	CURVED
CUDH-04-22	332712.9	1047584	296.3	250	CURVED
CUDH-04-23	332712.9	1047584	295.5	509	CURVED
CUDH-04-24	332715.8	1047583.4	295	344	CURVED
CUDH-04-25	332715.8	1047583.4	294	508.6	CURVED
CUDH-04-26	332715.8	1047583.4	294	749	LINEAR
CUDH-04-27	332712.9	1047584	294	46	
CUDH-04-28	332715.8	1047583.4	296.5	219	
CUDH-04-29	332716	1047582.5	294	345	CURVED
CUDH-04-30	332717.9	1047576.5	300	150	
CUDH-04-31	332717.5	1047578	295	348	

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
CUDH-04-32	332718.2	1047576.3	294	764	
DCU-1	333265	1044640	890	700	CURVED
DCU-10	331390	1043940	855	700	CURVED
DCU-11	331730	1044120	859	700	CURVED
DCU-12	337380	1045930	883	700	CURVED
DCU-13	331490	1044760	856	700	CURVED
DCU-14	331130	1044550	852	700	CURVED
DCU-15	336600	1046550	884	500	CURVED
DCU-16	336700	1046740	883	800	CURVED
DCU-17	340500	1048500	885	700	CURVED
DCU-2	332940	1045380	881	700	CURVED
DCU-3	334160	1046240	878	1000	CURVED
DCU-4	333943	1046565	875	800	CURVED
DCU-5	332800	1044140	881	700	CURVED
DCU-6	332310	1044770	872	700	CURVED
DCU-7	332500	1043550	870	700	CURVED
DCU-8	333760	1045350	540	1000	CURVED
DCU-9	332120	1043330	867	700	CURVED
DU4-33	332718.2	1047576.3	295	549	
DU4-34	332713.5	1047583.5	298	266	
DU4-35	332713.5	1047583.5	296	322	
DU4-36	332713.5	1047583.5	294	352	
DU4-37	332713.5	1047583.5	294	489	
DU4-38	332713.5	1047583.5	293	867	
DU4-39	332717.5	1047578	296	264	
DU4-40	332718.1	1047578.8	294	349	
DU4-41	332717.5	1047580	294	537	
DU4-42	332715.8	1047583.4	292	914	
DU4-43	332717.9	1047576.5	293	374	
DU4-44	332714.2	1047583.4	293	494	
DU4-45	332704.9	1047584.2	298	424	
DU4-46	332708.6	1047584.8	297.5	349	
DU4-47	332701	1047582.9	298.5	411	
DU4-48	332701	1047582.9	299	279	
DU4-49	332701	1047582.9	295.5	186.5	
DU4-50	332712.8	1047558.5	298.5	90	
DU4-51	332712	1047555.8	298.5	184	
DU4-52	332712	1047555.8	298.5	183.5	
DU4-53	332712	1047555.8	298.5	179	
DU4-54	332712	1047555.8	298.5	180	
DU4-55	332711.9	1047555.6	297.5	46	
DU5-56	332778.8	1047550.2	298	198	
F4-1	333756.58	1045403.577	545.882	624	
F4-2	333757.889	1045399.093	546.56	789	
F4-3	333758.252	1045393.784	546.484	600	
F4-4	333764	1045352	548	660	
F4-5	333767.88	1045353.58	549	880	
F4-6	333767.52	1045345.38	549.3	776	

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
F4-7	333717.63	1045449.52	540.85	760	
F4-8	333784.4	1045294.73	561.5	777.77	
H4-14	333782.64	1046827.18	877	850	
H4-15	333720.79	1046884.64	879	900	
H4-16	333724.57	1046884.88	879	1151	
H4-17	333627.95	1046919.4	877	1053	
H4-18	333779.34	1046912.67	878	872	
H4-19	333773.75	1046918.62	878	922	
H4-20	333630.69	1046941.31	877	940	
H4-21	333619.17	1046942.66	876	883	
H4-22	333725.49	1046889.52	879	972	
H4-23	333550.19	1046996.25	877	752	
H4-24	333553.64	1047000.02	877	819	
H4-25	333546.14	1047001.25	875	848	
H4-26	333445.93	1047045.22	875	782	
H4-27	333448.69	1047048.78	875	801	
H4-28	333435.01	1047050.8	874	863	
H4-29	333800.95	1046969.13	878	1051	
H4-30	333609.39	1047066.15	878	1013	
H4-31	333510.73	1047121.56	875	972	
H4-32	333709.48	1047016.52	878	1063	
H4-33	333623.1	1046947.5	877	812	
H4-34	333625.95	1046950.53	877	850	
H4-35	333629.38	1046955.46	877	1012	
H4-36	333443.16	1047058.34	873	1000	
H4-37	333446.43	1047071.86	870	975	
H4-38	333450.52	1047072.58	874	975	
H4-39	333562.46	1047016.35	876	915	
H4-40	333554.6	1047005.75	876	970	
H4-41	333908.64	1046622.16	877	950	
H4-42	333911.65	1046696.59	876	952	
H4-43	333887.62	1046633.88	874	968	
H4-44	333548.84	1047011.22	876	996.5	
H4-45	333903.36	1046783.39	877	954	
H4-46	333793.98	1046809.18	878	999	
H4-47	333803.14	1046811.74	878	971	
H4-48	333757.02	1046886.53	877	920	
H4-49	334088.1	1046163.51	878	817	
H4-50	334295.63	1046191.72	878	1072	
H4-51	333295.04	1047296.11	876	877	
H4-52	333281.83	1047280.61	878	822	
H4-53	333581.12	1047184.29	874	989	
H4-54	333650.76	1047257.45	877	1054	
H4-55	334367.69	1046562.62	894	1200	
H4-56	334370.14	1046575.68	894	1000	
H4-57	334289.02	1046572.5	890	999	
H4-58	333498.59	1047178.05	872	1000	
H4-59	333353.54	1047197.17	878	834.5	

Appendix 3: List of Copperstone Drill Hole Locations

hole_id	x	y	z	max_depth	hole_path
H4-60	333354.76	1047197.52	878	983	
H4-61	333432.88	1047138.51	875	843	
H4-62	333437.43	1047139.72	877	1008	
H4-63	333843.72	1046928.43	879	1047	
H4-64	334012.97	1046519.49	875	981	
H4-65	334015.09	1046521.9	875	888	
H4-66	333777.07	1046826.09	878	900	
H4-67	333774.9	1046828.62	877	950	
H4-68	333935.99	1046567.27	878	932	
H4-69	333942.84	1046567.65	875	970	
H4-70	333946.38	1046569.85	875	850	
H4-71	332999.05	1047260.91	877	784	
H4-72	333005.16	1047263.05	878	800	
H4-73	333230.33	1047330.29	875	999	
H4-74	333229.9	1047337.54	891	999	
H4-75	333176	1047385	868	800	
H4-76	333287.21	1047390.56	876	999	
H4-77	333590.67	1047270.22	877	1022	
H4-78	332825.71	1047775.97	875	999	
H4-79	333777.07	1046826.09	878	999	
H4-80	332775.37	1047826.13	875	999	
H4-81	332828.96	1047863.02	875	740	

Appendix 4: American Assays Labs. Gold Results for Data Verification

SP068245
FINAL REPORT

American Assay Laboratories Inc.
1500 GLENDALE AVE.
SPARKS, NV USA 89431-5902
Ph.(775) 356-0606, Fax.(775) 356-14
EMAIL: aallabs@nvbell.net

AMERICAN BONANZA GOLD MINING CORP.

COPIES TO : BRIAN KIRWIN
: MICHAEL R. PAWLOWSKI
:
:

CLIENT REFERENCE No: C-1/C-9 RECEIVED : 14-Jan-2005

No. SAMPLES : 9 REPORTED : 24-Jan-2005

MAIN SAMPLE TYPE : ROCK

COMPANY DISCLAIMER :-
When small samples are submitted, AAL may process the sample at smaller then specified weights to retain some pulp for quality control reassay.

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project. Nevada State Law NRS 519.130.

ANALYSIS	ANALYTICAL METHOD	UNIT	DETECTION
Rec'd Wt	Weight	lbs	0.01
Au(GOZ)	GRAV	OPT	0.003
Au(GRZ)	GRAV	OPT	0.003
Ag(OZ)	GRAV	OPT	0.2
Ag(RZ)	GRAV	OPT	0.2
Cu	D2A	ppm	0.05

SIGNATORY: ______________

Cover Page

Appendix 4: American Assays Labs. Gold Results for Data Verification

SP068245

FINAL REPORT

CLIENT : AMERICAN BONANZA GOLD MINING CORP.
PROJECT : COPPERSTONE
REFERENCE : C-1/C-9
REPORTED : 24-Jan-2005

SAMPLES	Rec'd Wt Weight lbs	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) GRAV OPT	Ag(RZ) GRAV OPT	Cu D2A ppm
C- 1	17.70	0.328	0.336	<0.2	<0.2	910.00
C- 2	18.44	1.646	1.694	<0.2	<0.2	1076.00
C- 3	18.22	0.756	0.751	0.2	0.2	1032.00
C- 4	18.76	1.803	1.868	<0.2	<0.2	1352.00
C- 5	18.24	0.124	0.117	<0.2	<0.2	1809.00
C- 6	17.48	0.265	0.218	<0.2	<0.2	2610.00
C- 7	1.34	0.363	0.384	<0.2	<0.2	16700.00
C- 8	1.62	1.552	1.472	<0.2	<0.2	24850.00
C- 9	1.06	0.661	0.681	<0.2	<0.2	1150.00