

DIAMOND DRILLING AND GPS GRID SURVEYING REPORT

on the

FYRE LAKE PROPERTY 093 778

**Watson Lake Mining District
Yukon Territory, Canada**

**Latitude: 61°14' North Longitude: 130°30' West
N.T.S. 105G/1,2,7,8**

Mineral Claims:

KONA 43 to 46 FIRE 1 to 214 DUB 1 to 20

DUB 23 to 70 EDY 1 to 24 EDY 111 to 112

EMBER 1 to 99 FIRE 55F to 56F FIRE 215F to 216F

Work Period: April 4 to November 30, 1997

- Prepared For -

COLUMBIA GOLD MINES LTD.

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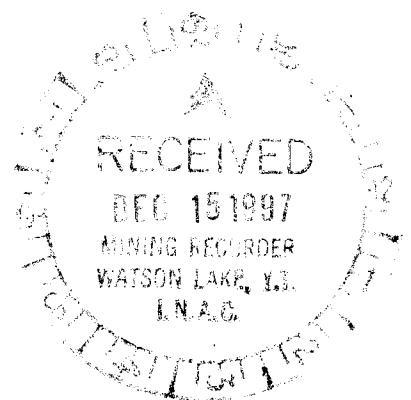
- Prepared By -

John Deighton, B.Sc., P.Geo.

and

Ian J. Foreman, B.Sc.

December 4, 1997



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SUMMARY

Columbia Gold Mines Ltd. is currently exploring the Fyre Lake copper-cobalt-gold (zinc, silver) property, which was known as the "Dub" when it was explored in the 1960's or the "Kona" in the early 1990's. The property is located immediately east of Fire (formerly Fyre) Lake within the North River drainage, approximately 160 kilometres northwest of Watson Lake, 140 kilometres southeast of Ross River, or 250 kilometres east of Whitehorse, in southeastern Yukon Territory, Canada. Its geographic coordinates are centred at latitude 61°14' North by longitude 130°30' West (N.T.S. 105 G/1,2,7,8) in the Watson Lake Mining District. The Cominco Ltd. "Kudz Ze Kayah and Atna Resources Ltd.-Westmin Resources Ltd. "Wolverine" volcanogenic massive sulphide deposits are situated approximately 30 kilometres north and 30 kilometres northeast of the property respectively.

The property is readily accessible year-round by float- or ski-mounted fixed wing aircraft, or by helicopter. Charter fixed wing aircraft are available in Watson Lake, Whitehorse and Ross River, and a variety of light- and medium-lift helicopters are available for charter from several companies with permanent bases in Ross River, Watson Lake and/or Whitehorse, Yukon Territory.

The claim holdings cover approximately 85 square kilometres and comprise 415 Yukon Quartz Mining Act mineral claims. The four KONA 43 to KONA 46 mineral claims were originally staked in 1980 by Welcome North Mines Ltd., and the FIRE 1 to FIRE 192 mineral claims were originally staked in 1990 and 1991 by Placer Dome Exploration Limited. These claims were subsequently transferred to Welcome Opportunities Ltd. and are the subject to a 1995 Letter of Agreement between Columbia Gold Mines Ltd. and Welcome Opportunities Ltd. Columbia Gold Mines Ltd. may earn an eighty-percent interest in the property by completing exploration expenditures of CAN \$6.0 million over a five-year period. Welcome Opportunities Ltd. may then elect to complete final feasibility, provide production financing and place the property into production to increase its interest from twenty to fifty-five percent. Columbia Gold Mines Ltd. would then have a forty-five percent carried and non-assessable interest.

The property is situated regionally within the Yukon Plateau physiographic region in the Simpson Range of the eastern Pelly Mountains, approximately five kilometres northeast of the Tintina Trench. The topographic relief is moderate to locally high with elevations ranging from 1,100 m at Fire Lake to 1,900 m along the eastern ridge crests. Bedrock exposures are generally absent in areas of low to moderate relief; often limited to stream canyons, ridges and cliffs due to an extensive glacial till cover.

Since Columbia Gold mines acquired the property in 1995, the company has conducted two years of intensive exploration work on the claims. In 1996, this work included a comprehensive helicopter-supported exploration program to evaluate the exploration potential of the Fyre Lake property. This exploration work included cutting, picketing, and labeling 150.8 kilometers of grid, followed by geochemical and geophysical surveys along with 9667.93m (31,716 feet) of diamond drilling in 71 holes.

In 1997, Columbia gold Mines conducted an additional helicopter-supported comprehensive and intensive exploration work program to further evaluate the exploration potential of the Fyre Lake property. A portion of this exploration work is documented in this report to fulfil assessment requirements on the EMBER 1 to 99, FIRE 55F, 56F, 215F, & 216F mineral claims.

This work included:

- a) GPS survey of the grids cut and chained to establish a tight control for plotting geochemical soil sampling analytical results, geophysical ground magnetic and horizontal loop (Max-Min II) electromagnetic data collected in 1996 and 1997;
- b) a diamond drilling program of 13,598.98m (44,616 feet) of NQ2 and/or BQ core in 44 holes, of which four of the holes totaling 473.97 metres (1,555 feet) of NQ2 drilling are included in this report to fulfill the requirements for recording assessment work on the claims requiring work ;
- c) this report and accompanying plans and maps.

The Fyre Lake property is regionally underlain by an Early Paleozoic metamorphosed volcano-sedimentary assemblage within the Yukon-Tanana Terrane. The Yukon-Tanana Terrane is an exotic terrane that was accreted to the North American continent and was in place by Late Triassic time. In the

Fire Lake region the Yukon-Tanana Terrane is bounded to the southwest by the Tintina Fault and to the northeast by the Finlayson Lake Fault zone (Mortensen, 1985). This terrane hosts several known volcanogenic massive sulphide deposits, including Kudzu Kayah, Wolverine, and "Kona". The terrane is currently receiving intense exploration by a number of mineral exploration companies.

The claim holdings are underlain by a sequence of metamorphosed sedimentary rocks with a complex metamorphosed volcanic assemblage, part of the Layered Metamorphic Sequence of the Yukon-Tanana Terrane (Mortensen, 1985; Tempelman-Kluit et al, 1977). The Layered Metamorphic Sequence comprises three units; lower and upper metasedimentary units separated by an interlayered metamorphosed volcanic-sedimentary middle unit. Lower member metasedimentary rocks crop out predominantly along the western side of the property. A belt of metamorphosed mafic volcanic and carbonaceous clastic sedimentary rocks of the middle member underlies the centre of the property. The eastern portion of the property contains a thin wedge of upper unit metasedimentary rocks which is overthrust by the Late Devonian to Late Pennsylvanian-Early Permian Slide Mountain Terrane (Anvil-Campbell Allochthonous Assemblage).

Volcanogenic massive sulphide, oxide and silicate-hosted mineralization crop out and occur in float boulder trains over a six kilometre distance. This mineralization is hosted by stratiform volcanogenic iron formation horizons that occur within an interlayered sequence of metamorphosed Late Devonian mafic flows and volcanoclastics and volcanically derived fine-grained sedimentary rocks. The general geologic setting and style of the mineralization is analogous to a "Besshi-type" volcanogenic deposit (Morin, 1981). Other Besshi-type volcanogenic deposits in the northern Cordillera include Windy Craggy and Granduc in British Columbia, and Greens Creek in Alaska (McMillan et al., 1991).

Detailed diamond drilling, undertaken during the 1996 and 1997 exploration programs, discovered three distinct horizons of massive to semi-massive sulphide and magnetite mineralization. This mineralization hosts significant copper-cobalt-gold (zinc, silver) values over a combined thickness of 70 to 80 metres, a continuous strike length of more than 1,500 metres and widths in excess of 200 metres. This mineralization, called the Kona deposit, is dominantly hosted within the upper section of the chlorite-actinolite-quartz schist unit and immediately beneath the chlorite-actinolite-quartz schist and phyllite stratigraphic contact.

The Kona zone has been explored by airborne and ground magnetometer and electromagnetic surveys, soil and rock geochemical sampling, reconnaissance and detailed geological mapping, along with local detailed and exploratory diamond drilling. Along the 1.8-kilometre trend of coincident geophysical and geochemical anomalies, the drill-tested mineralization generally strikes north-northwesterly and is flat to moderately eastward dipping.

The Lake exploration target is reflected by several subparallel coincident geophysical and soil geochemical anomalies over a strike length of three kilometres between the east shore of Fire Lake and the 1,200- to 1,300-metre elevation contours, centred near the south end of the lake. This area has been well surveyed and has a similar geologic setting to that of the Kona zone, but it has only been tested with three vertical AX-core diamond drill holes (Atlas Explorations, 1967) and an additional eight NQ2 holes drilled during the 1997 exploration program.

The Dub exploration target is situated immediately east of the base line of the survey control grid from 101300 to 104300 N, a strike length of 3.2 km. This target is comprised of coincident ground and airborne magnetic, HLEM and local soil geochemical anomalies. Prospecting and reconnaissance geological mapping along the length of this target failed to locate geological evidence of any mineralized lithological or structural host, largely because of an extensive and deep overburden cover.

The GPS grid survey provided control for the mapping of the geology, the accurate location of the geochemical and geophysical stations so that all data collected could be easily compared on various scales, as well as aided in the positioning of the diamond drill holes. The GPS survey established the position of the 50 and 100 metre stations along all grid lines to an accuracy of +/- one metre.

The Fyre Lake property has very good exploration potential worthy of immediate detailed diamond drilling while property-wide geological, geochemical and geophysical surveying work is being conducted.

RECOMMENDATIONS

It is recommended that the economic potential of the Kona zone, and the exploration potentials of the Lake and Dub zones, be evaluated with NQ-core diamond drilling. Ongoing, property-wide geological, geochemical and geophysical surveying to cover the property should be continued to fully evaluate the mineral claim holdings.

The Kona zone covers most of the known surface mineral occurrences within and north of the Kona Creek cirque, and diamond drilling is warranted to continue evaluating the known mineralization and explore the strike and dip extensions of that mineralization, and additional targets not drill tested to date.

The Lake zone covers a number of coincident geophysical and soil geochemical anomalies over strike length of three kilometres. Further exploratory diamond drilling will be required to determine the sources of the delineated anomalies and assess their exploration potentials.

The Dub zone covers a number of coincident geophysical and soil geochemical anomalies, with a strike length greater than over 3.2 kilometres. Exploratory diamond drilling will be required to determine the sources of the delineated anomalies and assess their exploration potential.

INTRODUCTION

Columbia Gold Mines Ltd. has an option to acquire control of the Fyre Lake volcanogenic massive sulphide copper-cobalt-gold (zinc, silver) property; subject to the terms and conditions of a 1995 Letter of Agreement with Welcome Opportunities Ltd. The property is comprised of 415 Yukon Quartz mineral claims situated immediately east of Fire (formerly Fyre) Lake in the Watson Lake Mining District of southeastern Yukon Territory, Canada. The Cominco Ltd. Kudz Ze Kayah and Atna Resources Ltd.-Westmin Resources Ltd. Wolverine volcanogenic massive sulphide deposits are situated approximately 30 kilometres north and 30 kilometres northeast of the property respectively.

A portion of the 1997 exploration work, which is documented in this property assessment report, includes:

- a) four holes 473.97 m, (1,555 feet) of the diamond drilling program. The entire 1997 program consisted of 13,598.98m, (44,616 feet) of NQ2 or BQ core in 44 holes;
- b) a GPS survey of the grids cut and chained to establish a tight control for plotting geochemical soil sampling analytical results, geophysical ground magnetic and horizontal loop (Max-Min II) electromagnetic data collected in 1996 and 1997 and to aid in the control for geological mapping,
- c) preparing this report and accompanying plans and maps.

This report, and accompanying plans and data, document the results of the 1997 work program, GPS surveying of the DUB grid and geological, geotechnical, assays, logs and positions of the four diamond drill holes used to fulfil the assessment requirements for the work applied to the EMBER 1 to 99, FIRE 55F, 56F, 215F and 216F mineral claims. The report also contains a Statement of 1997 Exploration Expenditures for each diamond drill hole reported, and for the GPS survey of the Dub grid. These expenditures are for the fieldwork that was conducted on the subject claims. Mr. Ian Foreman, B.Sc. and Mr. John Deighton, SBC., P.Geo. are both qualified and experienced geologists employed by J. S. Brock Limited of Vancouver, BC which provides field and administrative services to Columbia Gold Mines Ltd.

GENERAL DESCRIPTION

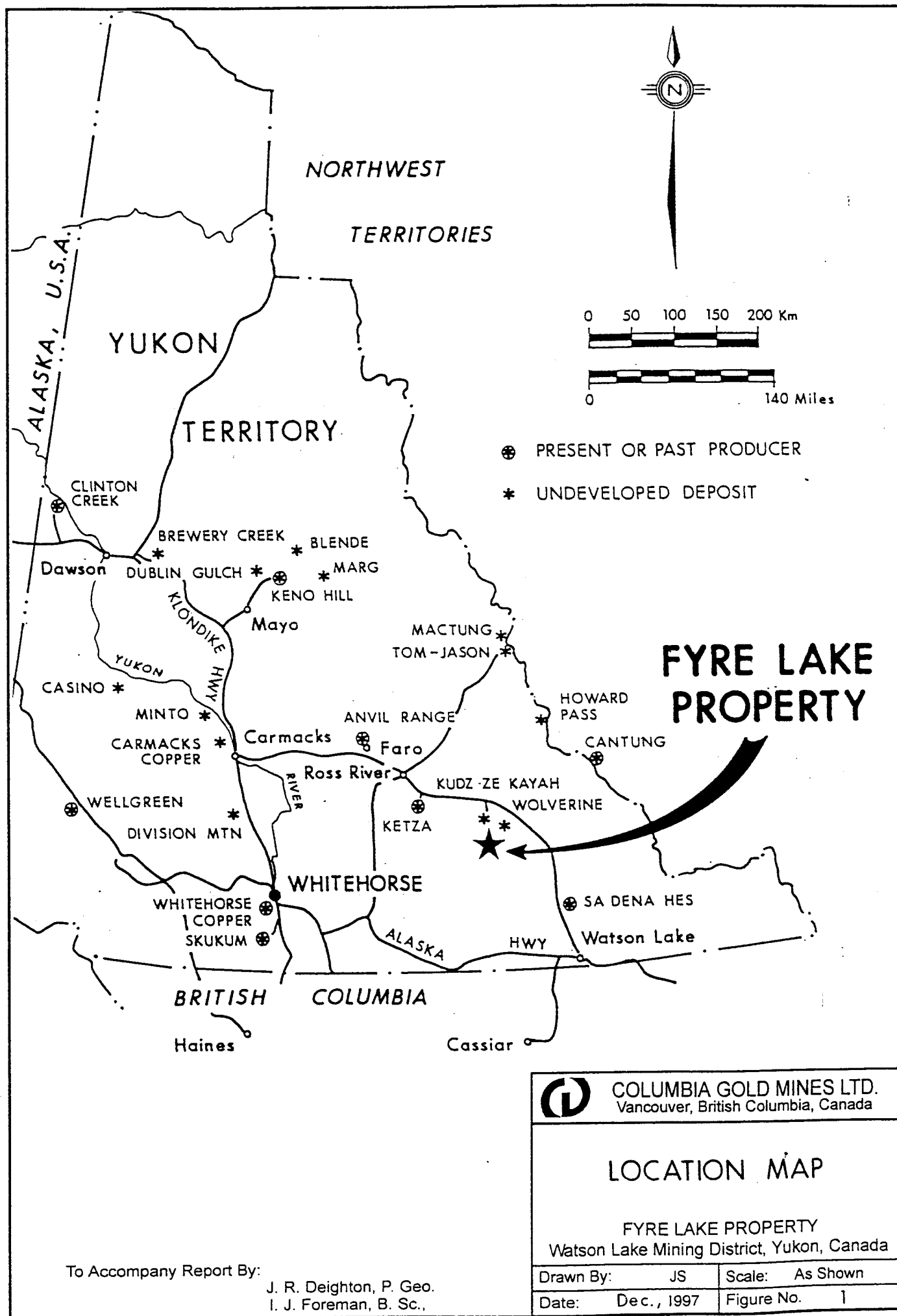
Location and Access

The Fyre Lake property is located immediately east of Fire (formerly Fyre) Lake within the North River drainage, approximately 160 kilometres northwest of Watson Lake, 140 kilometres southeast of Ross River, or 250 kilometres east of Whitehorse, in Ross River-Finlayson Lake area of southeastern Yukon Territory, Canada. Its geographic coordinates are centred at latitude 61°14' North by longitude 130°30' West (N.T.S. 105 G/1,2,7,8) in the Watson Lake Mining District.

The property is readily accessible year-round with fixed wing aircraft, or helicopter support. Fire Lake is five miles long with excellent approaches that could be utilized by a variety of float- or ski-mounted fixed wing aircraft throughout the year. Charter fixed wing aircraft are available in Watson Lake, Whitehorse, and from Finlayson Lake near the Robert Campbell Highway. A variety of light- and medium-lift helicopters are available for charter from several companies with permanent bases in Ross River, Watson Lake and/or Whitehorse (see Figures 1 and 2).

Property and Ownership

The subject property covers approximately 85 square kilometres and is comprised of 415 Yukon Quartz mineral claims; all located in the Watson Lake Mining District. Welcome North Mines Ltd. originally staked the four KONA 43 to KONA 46 mineral claims in 1980. The FIRE 1 to FIRE 184 and FIRE 185 to FIRE 192 mineral claims were staked in 1990 and 1991 by Placer Dome Exploration Limited and subsequently transferred to Welcome Opportunities Ltd. of Vancouver, British Columbia.



To Accompany Report By:

J. R. Deighton, P. Geo.
I. J. Foreman, B. Sc.,

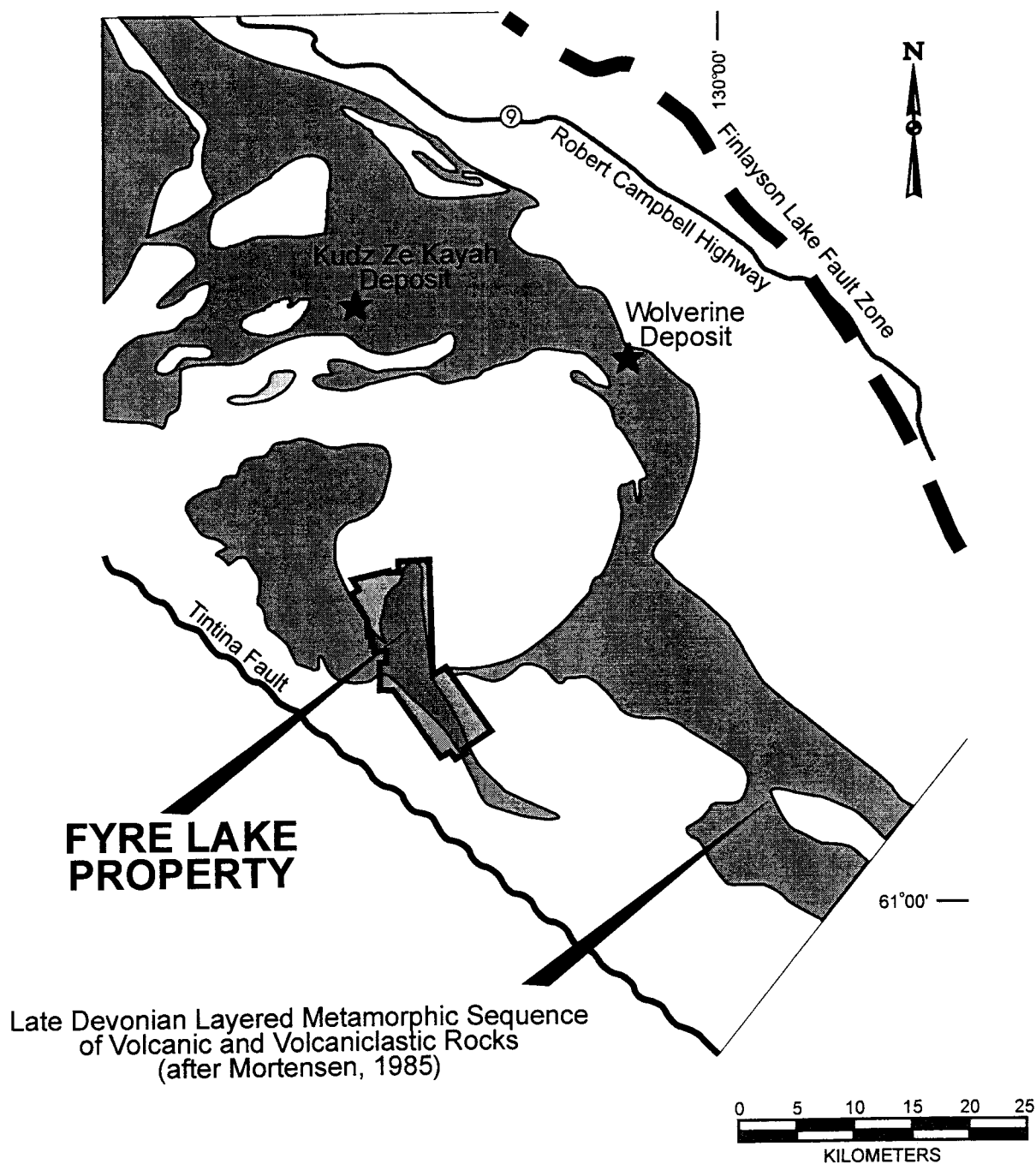


COLUMBIA GOLD MINES LTD.
Vancouver, British Columbia, Canada

LOCATION MAP

FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon, Canada

Drawn By:	JS	Scale:	As Shown
Date:	Dec., 1997	Figure No.	1



COLUMBIA GOLD MINES LTD.
Vancouver, British Columbia, Canada

REGIONAL MAP

FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon, Canada

Drawn By: JDB

Scale: As Shown

Date: December, 1997

Figure No.

2

Subject to a 1995 Letter of Agreement, Columbia Gold Mines Ltd. has an option to earn a majority interest in these claims from Welcome Opportunities Ltd. The Letter of Agreement allows Columbia Gold Mines Ltd. to earn an eighty percent (80%) interest in the property by completing exploration expenditures of CAN \$6.0 million. Welcome Opportunities Ltd. may then elect to complete final feasibility, provide production financing and place the property into production to increase its interest from twenty percent (20%) to fifty-five percent (55%). Columbia Gold Mines Ltd. would then have a forty-five percent (45%) carried and non-assessable interest.

The DUB 1 to DUB 70, EDY 1 to EDY 24 and EDY 111 and EDY 112 mineral claims were staked by Columbia Gold Mines Ltd. in February, 1996 to cover a southeasterly trend of coincident airborne geophysical anomalies. Later, in July and August 1996, Columbia Gold Mines Ltd. staked the 22 FIRE 192 to FIRE 214 mineral claims along the eastern shore of Fire Lake and in December 1996, staked the EMBER 1 to EMBER 99 mineral claims to cover potential exploration ground. Subsequent to mapping during the 1997 exploration program, internal fractions were discovered and the FIRE 55F, 56F, 215F, and 216F fractional mineral claims were staked to cover these fractions of open ground. Figure 3 shows the location and configuration of the mineral claims, and Table I documents the pertinent mineral claim data.

Physiography

The property is situated regionally within the Yukon Plateau physiographic region in the Simpson Range of the eastern Pelly Mountains, approximately five kilometres northeast of the Tintina Trench. The Fire Lake area has linear open valleys and high rolling to craggy ridges and mountains. Topographic relief is moderate to locally high with elevations ranging from 1,100 m (3,609 ft) at Fire Lake to 1,900 m (6,234 ft) A.M.S.L. along the eastern ridge crests. A 2,351-metre high peak situated six kilometres north of the property is the highest mountain in the area. The various mineral showings are situated between elevations of 1,450 and 1,700 m A.M.S.L.

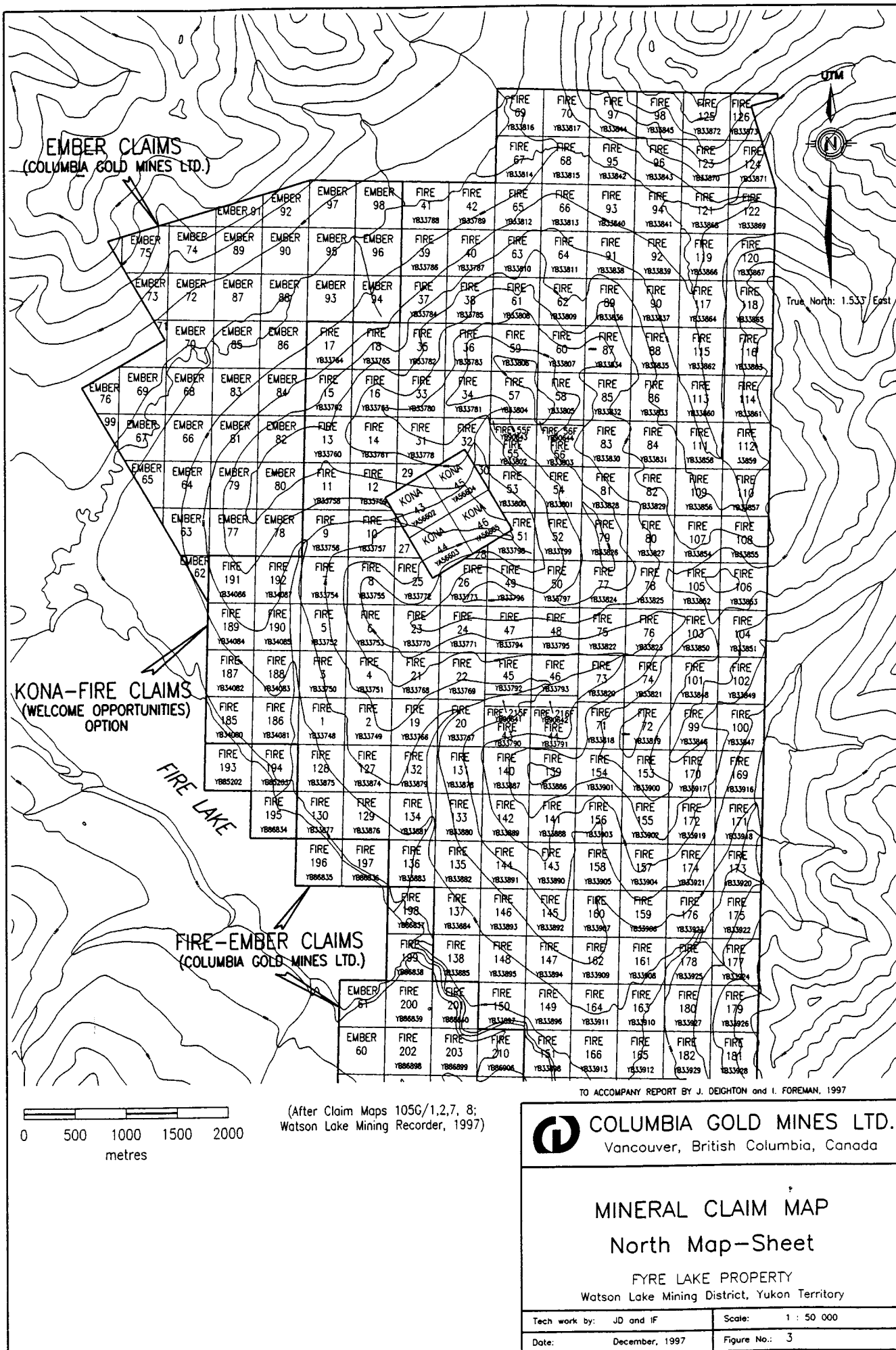
Fire Lake is situated midway along the southeasterly-flowing North River. To the northeast, there are two easterly trending hanging valleys and broad open cirques. The northern hanging valley within which most of the known mineral showings are situated is called "Kona Creek" and the creek on which the outfitters cabins are located at the south end of Fire Lake, is called "Outfitters Creek". The first drainage flowing westerly into the North River, to the southeast of Fire Lake, is not named on any government map. This creek was named "Johnny Creek" while the next or second major drainage southeast of Fire Lake was named "Katie Creek" for purposes of identification. The next most southern drainage, which joins North River south of Fire Lake, is not named.

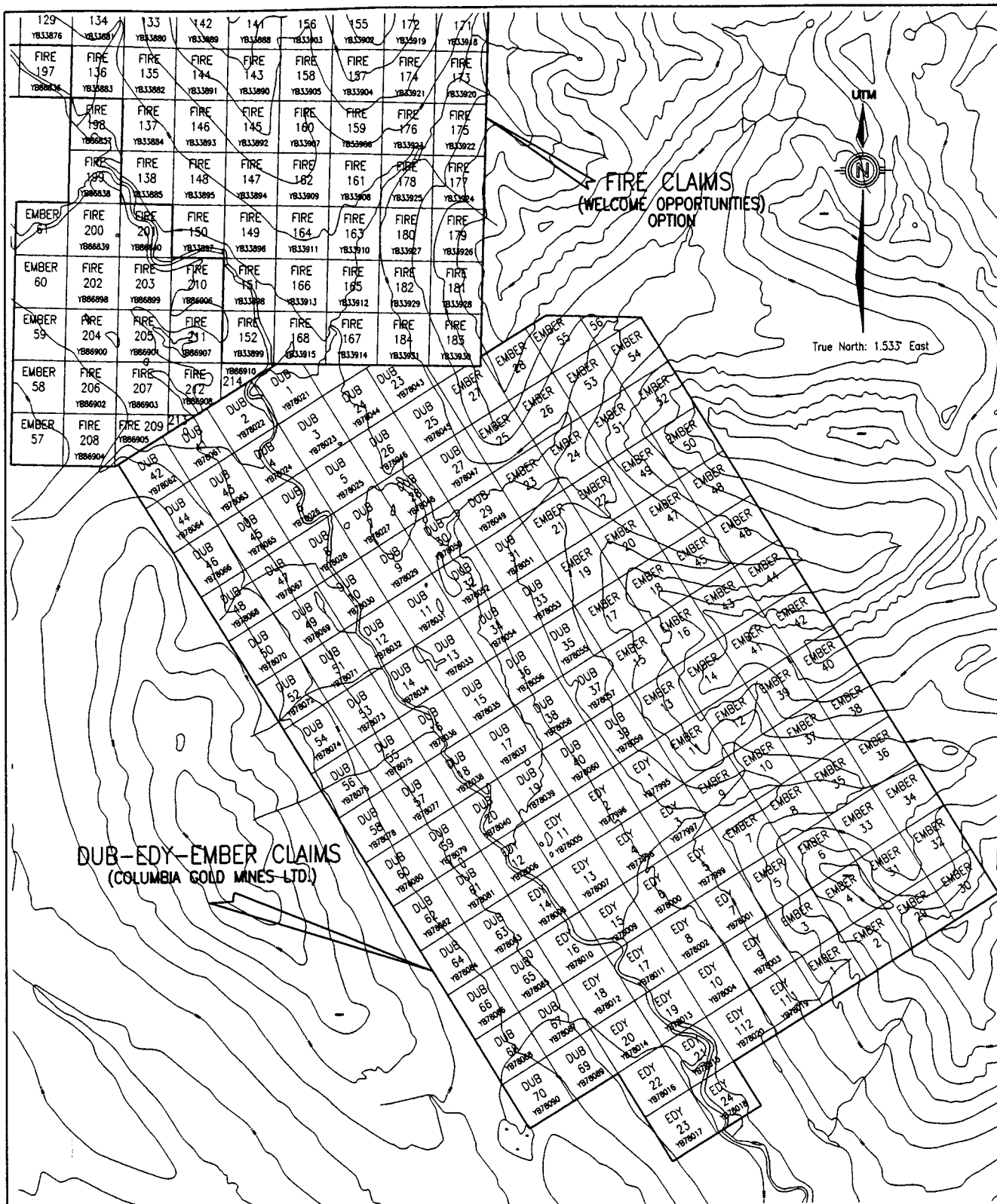
The annual mean daily temperature for the eastern Pelly mountains is -5°C ranging from approximately -50°C in January to 13°C in July. Snow cover is minimal, averaging about 60 centimetres by late winter. Permafrost is discontinuous but widespread. Bedrock exposures are generally absent in areas of low to moderate relief; often limited to stream canyons, ridges and cliffs due to an extensive glacial till cover.

Near Fire Lake, a dense spruce forest extends to tree line at an elevation of 1,500 m. To the north, the dense vegetation becomes more open with buckbrush (dwarf birch) and eventually disappears to a caribou moss cover. Kona and Outfitters Creek drainages have sufficient flows of water for diamond drilling purposes until mid-October or later.

History

The Pelly Mountains were originally mapped by the Geological Survey of Canada in 1958 and 1959 and the results of this work were published as the "Finlayson Lake" map-sheet in 1960 (Wheeler, Green and Roddick, 1960). In September 1960, prospectors employed by Cassiar Asbestos Corporation discovered a 2.5 by 2.0-metre massive sulphide float boulder on a glacial esker, near a guide/outfitter's cabin at the south end of Fire Lake. Shortly after, prospectors discovered massive pyrite mineralization exposed in Kona Creek; they called this showing the "E" zone. During the fall and winter of 1960, Cassiar Asbestos staked the "TOP" mineral claims covering the southwesterly facing slopes of Fire Lake. In 1961, Cassiar Asbestos explored their claim holdings with prospecting, geological mapping, geophysical surveys (electromagnetics and magnetics), trenching and drilling. The drilling comprised 23 shallow packsack drill holes,





TO ACCOMPANY REPORT BY J. DEIGHTON and I. FOREMAN, 1997



COLUMBIA GOLD MINES LTD.
Vancouver, British Columbia, Canada

MINERAL CLAIM MAP South Map-Sheet

FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon Territory

Tech work by: JD and IF

Scale: 1 : 50 000

Date: December, 1997

Figure No.: 4

MINERAL CLAIM DATA

FYRE LAKE PROPERTY

[illegible]

COLUMBIA GOLD MINES LTD.

MINERAL CLAIM DATA

FYRE LAKE PROPERTY[illegible]

COLUMBIA GOLD MINES LTD.

MINERAL CLAIM DATA

FYRE LAKE PROPERTY[illegible]

COLUMBIA GOLD MINES LTD.

MINERAL CLAIM DATA

FYRE LAKE PROPERTY

[illegible]

COLUMBIA GOLD MINES LTD.

MINERAL CLAIM DATA

FYRE LAKE PROPERTY

[illegible]

COLUMBIA GOLD MINES LTD.

MINERAL CLAIM DATA

FYRE LAKE PROPERTY

Claim Name	NTS	Record Number	Record Date	Expiry Date	Registered Owner	Mineral Claim Operator
DUB 49	105 G/2	YB 78069	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 50	105 G/2	YB 78070	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 51	105 G/2	YB 78071	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 52	105 G/2	YB 78072	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 53	105 G/2	YB 78073	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 54	105 G/2	YB 78074	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 55	105 G/2	YB 78075	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 56	105 G/2	YB 78076	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 57	105 G/2	YB 78077	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 58	105 G/2	YB 78078	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 59	105 G/2	YB 78079	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 60	105 G/2	YB 78080	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 61	105 G/2	YB 78081	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 62	105 G/2	YB 78082	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 63	105 G/2	YB 78083	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 64	105 G/2	YB 78084	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 65	105 G/2	YB 78085	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 66	105 G/2	YB 78086	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 67	105 G/2	YB 78087	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 68	105 G/2	YB 78088	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 69	105 G/2	YB 78089	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
DUB 70	105 G/2	YB 78090	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 1	105 G/2	YB 77995	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 2	105 G/2	YB 77996	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 3	105 G/2	YB 77997	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 4	105 G/2	YB 77998	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 5	105 G/2	YB 77999	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 6	105 G/2	YB 78000	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 7	105 G/2	YB 78001	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 8	105 G/2	YB 78002	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 9	105 G/2	YB 78003	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 10	105 G/2	YB 78004	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 11	105 G/2	YB 78005	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 12	105 G/2	YB 78006	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 13	105 G/2	YB 78007	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 14	105 G/2	YB 78008	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 15	105 G/2	YB 78009	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 16	105 G/2	YB 78010	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 17	105 G/2	YB 78011	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 18	105 G/2	YB 78012	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 19	105 G/2	YB 78013	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 20	105 G/2	YB 78014	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 21	105 G/2	YB 78015	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 22	105 G/2	YB 78016	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 23	105 G/2	YB 78017	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 24	105 G/2	YB 78018	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 111	105 G/2	YB 78019	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EDY 112	105 G/2	YB 78020	01-Mar-96	01-Mar-02	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EMBER 1	105 G/1	YB 88808	03-Dec-96	03-Dec-97	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EMBER 2	105 G/1	YB 88809	03-Dec-96	03-Dec-97	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.
EMBER 3	105 G/1	YB 88810	03-Dec-96	03-Dec-97	Columbia Gold Mines Ltd.	Columbia Gold Mines Ltd.

COLUMBIA GOLD MINES LTD.

MINERAL CLAIM DATA

FYRE LAKE PROPERTY

[illegible]

COLUMBIA GOLD MINES LTD.

MINERAL CLAIM DATA

FYRE LAKE PROPERTY[illegible]

Total Number of Mineral Claims

415

totaling 224 metres, and 12 AX-core diamond drill holes, totaling 582 metres. Most of their efforts were concentrated on assessing the "E" and "K" mineral showings where they reportedly encountered mineralization with an average grade of 1.0% copper, 0.95% zinc, 4.80 gpT (0.14 o.p.t.), silver and 0.72 gpT. (0.021 o.p.t.), gold (Crawford, 1981).

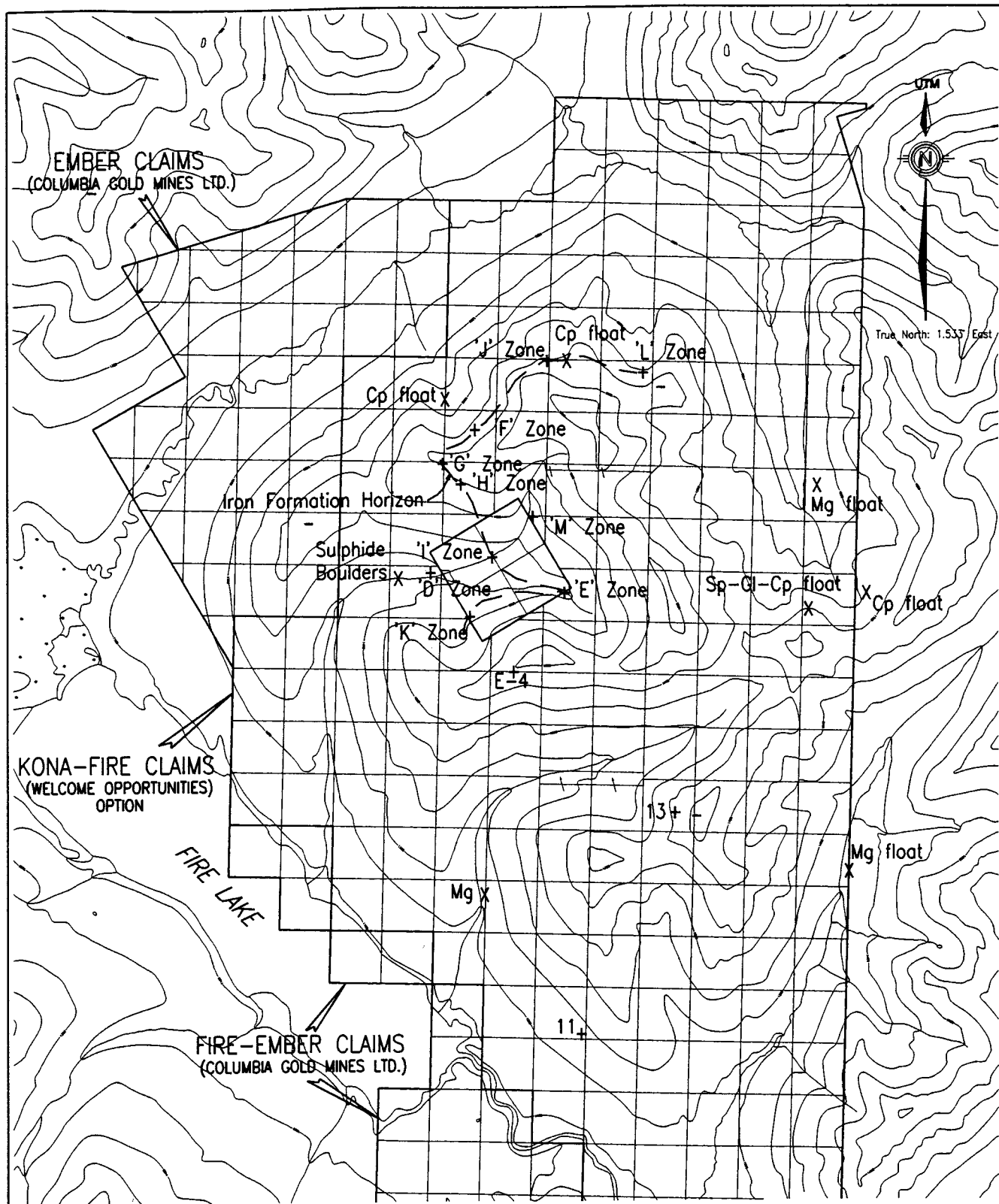
In January 1966, Atlas Explorations Ltd. staked the DUB mineral claims to cover the Fyre Lake mineral showings, and then conducted an airborne electromagnetic and magnetometer survey over the Kona Creek cirque and along the eastern slopes of Fire Lake and North River. Atlas Explorations identified two target areas, called "DUB I" and "DUB II", for ground surveying. A cut survey control grid, totaling 31.5 line-kilometres, was established over the northern DUB II area, and electromagnetics (horizontal loop electromagnetic - HLEM) and magnetometer surveying with concurrent soil geochemical sampling for copper, lead and zinc were undertaken. Five diamond drill holes, totaling 589 metres, tested and extended the copper-bearing iron formation at "I" and "K" mineral showings which had been identified by earlier Cassiar Asbestos drilling. Intercepts of massive sulphide mineralization up to 12.2 metres thick are reported from this drilling (Sadler-Brown, 1966). Selected drill core from three of the drill holes is stored at the Hugh Bostock Core Library in Whitehorse, Y.T. (Stroshein, 1991).

In 1967, Atlas Explorations explored the southern DUB I target area near the original massive sulphide float boulder discovery site. A 15.5 line-kilometre survey control grid was established, and the grid area was explored with horizontal loop electromagnetic (HLEM) and magnetometer surveying, soil geochemical sampling for copper lead and zinc, and diamond drilling (three AX-core holes totaling 252 metres). The diamond drilling intersected disseminated pyrite and pyrrhotite mineralization but no significant base or precious metal mineralization (Sadler-Brown, 1967).

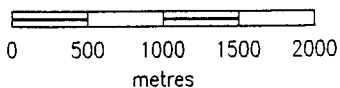
Between 1974 and 1977, D. J. Tempelman-Kluit of the Geological Survey of Canada remapped and revised the regional geology of the Pelly Mountains (G.S.C. Open File 486). As a consequence of this work, Amax Potash Limited re-staked the Fyre Lake massive sulphide showings in 1976 and conducted a limited geological mapping and rock geochemical sampling program. Due to a lack of funding for the project the claims were allowed to lapse in 1977 (Crawford, 1981).

In late August and early September, 1980, Welcome North Mines Ltd. staked 68 KONA mineral claims covering the Fyre Lake massive sulphide showings, after they discovered disseminated copper mineralization in metamorphosed volcanic rocks approximately two kilometres north of the known mineral showings. This work was carried out as part of the Basin Joint Venture with Esperanza Explorations Ltd. Unfortunately, an early snowfall and other work priorities prevented further exploration that year. In 1981, Welcome North extended the soil sampling coverage from the Kona cirque area (16.9 line-km survey grid, 255 soil samples for copper, lead and zinc) and completed a geological study of the mineral showings without additional geological mapping. According to Crawford (1981), the results of the Welcome North exploration work indicated that the known Fyre Lake mineralization is exposed in intermittent outcrops for 2.5 kilometres in a northwesterly direction. The mineralization is dominantly hosted by a cupriferous iron formation facies and varies in character from laminated massive pyrite (chalcopyrite, sphalerite, and quartz), through banded cupriferous iron formation (quartz, magnetite, chlorite, chalcopyrite, and/or sphalerite), to disseminated chalcopyrite and pyrite in greenschists. The mineralization occurs within the Nisutlin Allochthon in a dark green, chlorite schist unit approximately 100 metres beneath its contact with an overlying quartz-sericite schist unit.

In 1981, J. Morin of the Geology Section, Department of Indian and Northern Affairs, reported on a 1979-80 geological and geochemical study of the mineralization at Fire Lake and several other mineral showings in the district. According to Morin (1981), the Fyre Lake mineralization is characteristic of a Besshi-type volcanogenic exhalative model.



TO ACCOMPANY REPORT BY J. DEIGHTON and I. FOREMAN, 1997



(After Claim Maps 105G/1,2,7, 8;
Watson Lake Mining Recorder, 1997)

X Mineral showing
+ Mineral zone

Cp Chalcopyrite
Gl Galena
Mg Magnetite
Sp Sphalerite



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MINERAL OCCURRENCE MAP North Map-Sheet

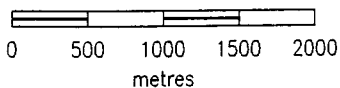
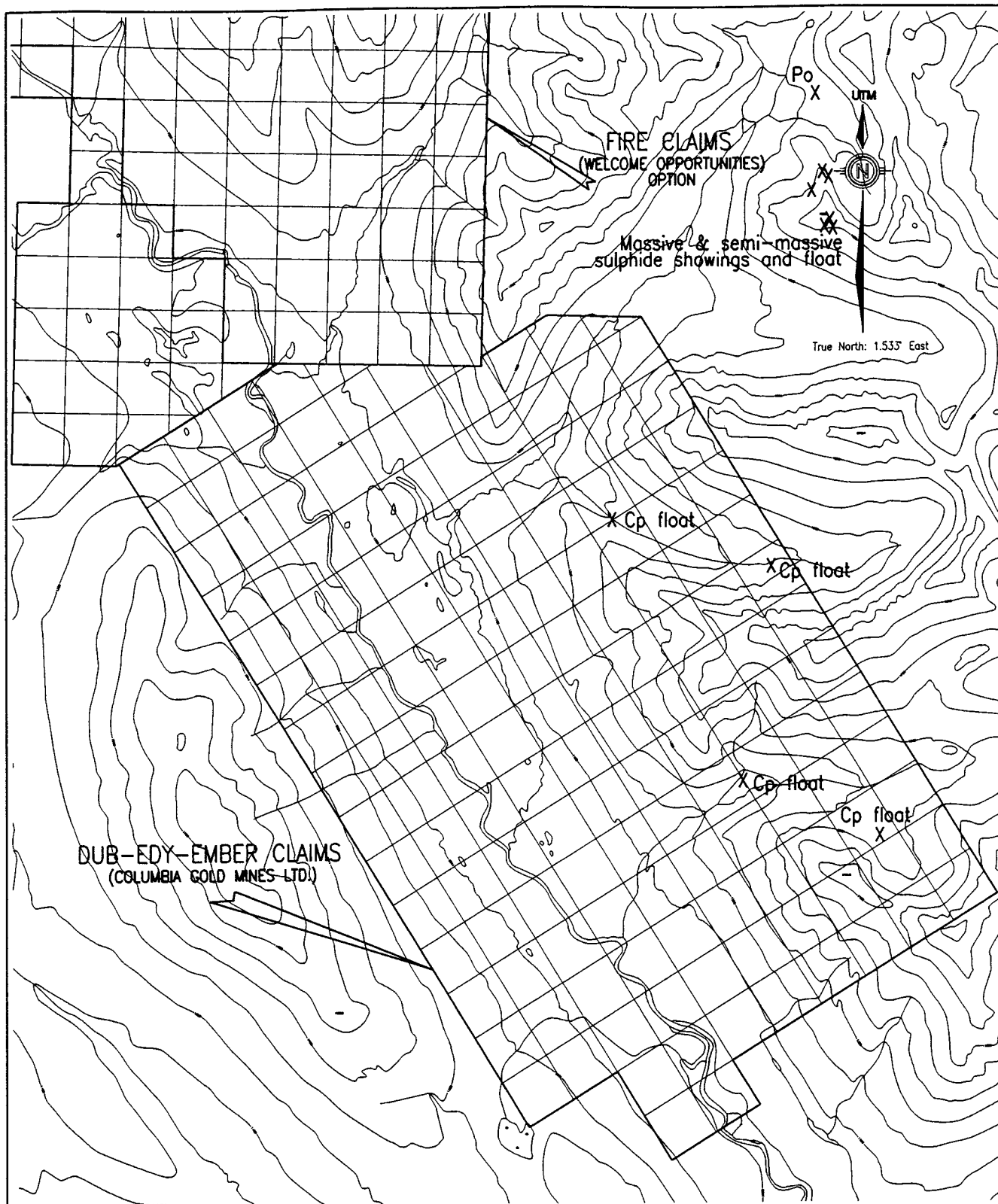
FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon Territory

Technic work by: JD and IF

Scale: 1 : 50 000

Date: December, 1997

Figure No.: 5



(After Claim Maps 105G/1,2,7, 8;
Watson Lake Mining Recorder, 1997)

X Mineral showing
+ Mineral zone

Cp Chalcopyrite
Gt Galena
Mg Magnetite
Po Pyrrhotite
Sp Sphalerite

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MINERAL OCCURRENCE MAP South Map-Sheet

FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon Territory

Tech work by: JD and IF

Scale: 1 : 50 000

Date: December, 1997

Figure No.: 5

Placer Dome Inc. optioned the KONA mineral claims from Welcome North Mines Ltd. on November 30, 1990, and staked the FIRE 1 to FIRE 184 mineral claims in December, 1990. Prior to signing the option agreement with Welcome North, Placer Dome contracted Dighem Surveys and Processing Inc. to carry out a helicopter-supported airborne survey of a 36-square kilometre area (308 flight line-kilometres) centred on the Fyre Lake mineral showings within the Kona Creek drainage. Dighem prepared a report with electromagnetics, total field magnetics, calculated vertical gradient, resistivity and Very Low Frequency electromagnetics interpretations and maps (Smith, 1990).

In 1991, Placer Dome conducted a surface exploration program including geological mapping, geophysical surveying (Apex MaxMin EM) and soil, silt and rock geochemical sampling based upon the 1990 airborne geophysical survey results. Two survey control grids were established for the 1991 exploration work. Using the old Atlas Exploration baseline location and orientation (340°), Placer Dome contractors extended the baseline south-southeasterly from 10000 to 8200 North and cut east-northeasterly and west-southwesterly gridlines (070°-250°) covering the southwesterly-facing slopes between Outfitters Creek and the south end of Fire Lake, totaling 31.5 line-kilometres. For the northern survey control grid, Placer Dome contractors re-established portions of the old Atlas Explorations grid and cut five north-northwesterly gridlines over the "M" zone showing, totaling 3.5 line-kilometres. Apex MaxMin EM-II surveying with a 100-metre coil separation and a ground magnetics survey were conducted over both grid areas. A total of 1,750 B- and C-horizon soil samples and seven stream sediment samples were collected during the program, and these samples were analyzed for their gold content and a 27-element suite of base metal, pathfinder, trace and mineral forming elements. In addition, 112 rock geochemical samples were collected and analyzed for 10 elements including precious and base metals.

The results of the 1991 exploration program by Placer Dome found that the Fyre Lake mineral showings are volcanogenic massive sulphide deposits hosted by metamorphosed and highly deformed Late Devonian volcanic rocks. Furthermore, the iron formations hosting the mineralization can be traced by airborne and ground geophysics and soil geochemistry for 1 kilometre southeast of the Kona Creek cirque; however, the property option agreement was terminated in 1992.

In November 1995, Columbia Gold Mines Ltd. negotiated an agreement with Welcome North Opportunities Ltd. to acquire the KONA and FIRE mineral claims, and in 1996 and 1997 the Company staked 219 mineral claims west and south of the claim holdings. These claims included the FIRE 193 to FIRE 214, DUB 1 to 20, DUB 23 to 70, EDY 1 to 24, EDY 111 and 112, EMBER 1 to 99, FIRE 55F and 56F, FIRE 215F and 216F. During 1996 and 1997, the company conducted exploration programs to target and drill test volcanogenic massive sulphide mineralization. A portion of the 1997 program is documented in this report.

GEOLOGICAL SETTING

The regional geology of the eastern Pelly Mountains has been the subject of several Geological Survey of Canada mapping projects. These include those of: J. O. Wheeler (1958, 1959), L. H. Green (1959), J. A. Roddick (1959), G. Abbott (1974, 1976), S. P. Gordey (1975, 1976), and D. J. Tempelman-Kluit (1973-76). These geological works have been published by the Geological Survey of Canada as G.S.C. Map 8-1960 (J. O. Wheeler *et al.*, 1960) and G.S.C. Open File 486 (D. J. Tempelman-Kluit, 1977). In 1985, J. A. Mortensen (1985) discussed the regional geological evidence from the eastern Pelly Mountains and related this evidence to the evolution of the Yukon-Tanana Terrane (YTT).

The following text summarizes the geological works of D. J. Tempelman-Kluit (1977), J. A. Mortensen (1985) and R. W. Stroshein (1991). See Figure 6 of this report for the regional geological setting of the property (after Mortensen, 1985).

Regional Geology

The Fyre Lake volcanogenic massive sulphide mineralization is hosted by an Early Paleozoic metamorphosed volcano-sedimentary assemblage within the YTT. The YTT is an exotic terrane that was accreted to the North American continent, in place by Late Triassic time. The YTT is regionally bounded to

the southwest by the Tintina Fault and to the northeast by the Finlayson Lake Fault zone (Mortensen, 1985), and its lithologic units are strongly deformed and metamorphosed.

Several, distinct lithologic packages have been identified in the region by various workers (Mortensen, 1985; Tempelman-Kluit, 1977):

- 1) A penetratively deformed layered metamorphic sequence previously known as the Nasina Quartzite and Klondike Schist;
- 2) A group of Paleozoic plutonic and metaplutonic rocks;
- 3) A sheared mafic-ultramafic igneous assemblage; a dismembered ophiolite sequence mapped as the Anvil-Campbell Allochthon (Tempelman-Kluit, 1977) and now included in the Slide Mountain Terrane (Monger, 1984); and
- 4) Cretaceous to Tertiary plutonic and volcanic to sub-volcanic rocks.

The Fyre Lake property is underlain by the Early Paleozoic volcano-sedimentary assemblage of the Layered Metamorphic Sequence (LMS) which has been intensely deformed and metamorphosed. The LMS is comprised of three units with a total thickness estimated to be three kilometres. The lower unit of Pre-Devonian age is dominantly metasedimentary rocks, commonly micaceous and feldspathic quartzite with carbonate beds in the upper portion of the unit. The middle unit is composed of interlayered metavolcanic and metasedimentary rocks, distinguished by the presence of carbonaceous material. The predominant rock type is gray carbonaceous siliceous siltstone. The metavolcanic rocks include mafic beds of greenschist composed primarily of chlorite and commonly biotite, epidote and actinolite. Felsic metavolcanic rocks weather tan or rusty in outcrop and are commonly associated with potash feldspar porphyry. The volcanic rocks have been dated at various localities as Devonian age. The upper unit of the LMS consists of light gray limestone interbedded with calcareous quartzite and has been dated as being from Early Pennsylvanian to Early Permian age. Primary features within the LMS have been obliterated by the intense ductile deformation during Late Triassic to Early Jurassic time. The penetrative foliation, which contains a streaking lineation is parallel to compositional layering. Mortensen (1985) has interpreted the LMS to represent transposed stratigraphy (Stroshein, 1991).

There are three suites of metamorphosed mid-Paleozoic plutonic rocks in the region. The Simpson Range plutonic suite is composed of quartz monzonite to quartz diorite in a large fault bounded stock. The wall rocks of this intrusive are pyritized and form prominent gossans. Elsewhere, augen orthogneiss and monzonitic orthogneiss comprise the metaplutonic rocks.

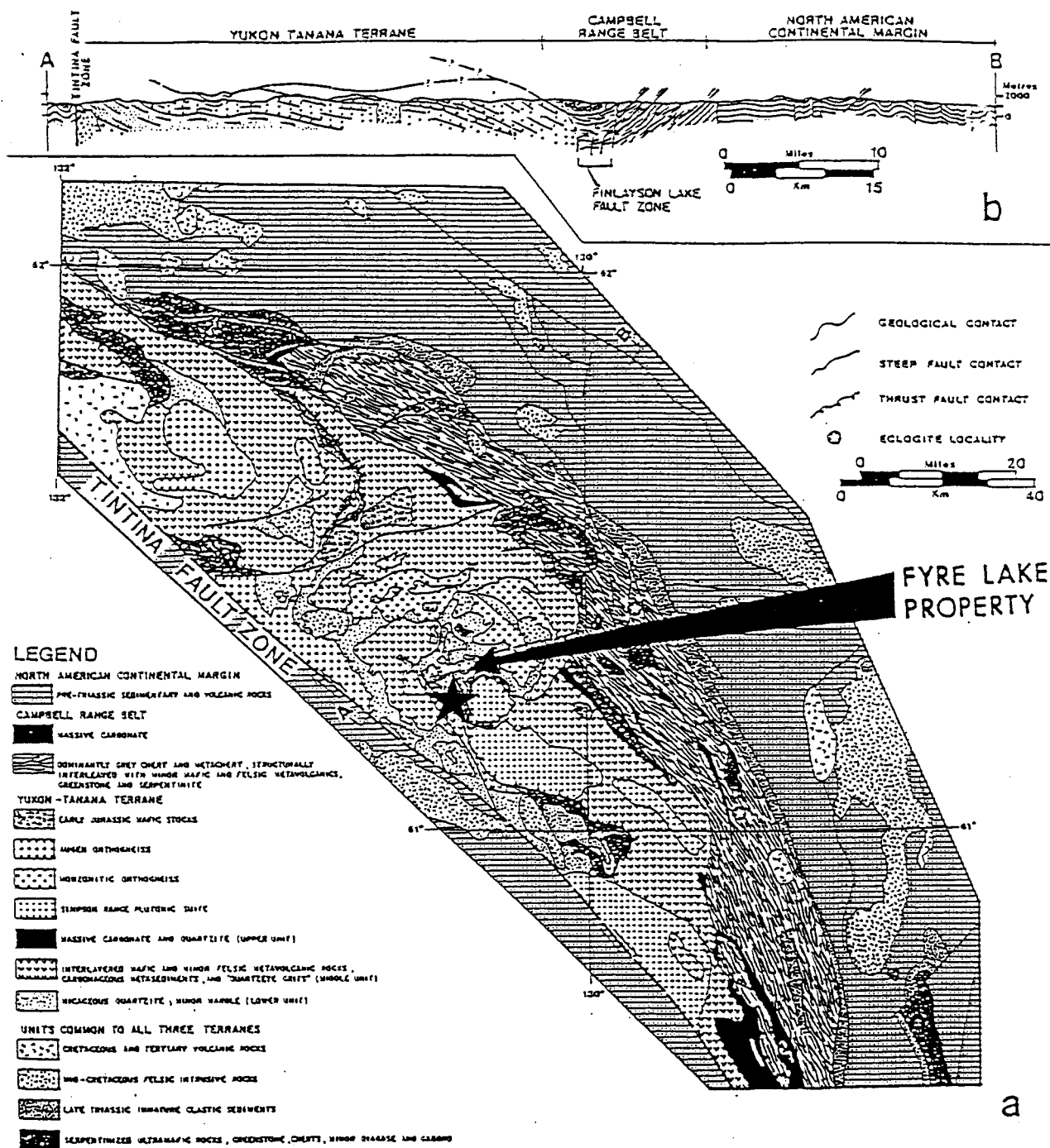
Sheared mafic and ultramafic volcanic and plutonic rocks of the Late Devonian to Late Pennsylvanian-Early Permian Slide Mountain Terrane (Anvil-Campbell Allochthonous Assemblage) overlie the Layered Metamorphic Sequence and are preserved as klippens at elevations above approximately 1,400 metres. This allochthonous assemblage has been interpreted as a dismembered ophiolite sequence comprised of massive greenstone with associated sediments, mafic and ultramafic gabbroic rocks and serpentine matrix melange (Stroshein, 1991).

The youngest rocks of the region include Late Cretaceous (91 Ma) quartz monzonite plutons which intrude all older rock units, and Late Cretaceous or early Tertiary unfoliated dark mafic volcanoclastic and volcanic flow rocks.

Two phases of deformation with regional metamorphism are recognized in the region (Mortensen, 1985). The earliest and most pervasive episode affected the LMS and Paleozoic metaplutonic rocks which resulted in a well developed shallow dipping foliation (F_1) accompanied by regional middle greenschist to middle amphibolite metamorphism. The F_1 foliation typically parallels compositional layering and in coarse grained rocks is accompanied by a stretching lineation. The second phase of deformation involved a locally strong crenulation cleavage accompanied by middle greenschist facies metamorphism. Mortensen (1985)

and earlier workers identified six major thrust faults in the region. The faults are cut by mid-Cretaceous intrusions and postdate Late Triassic strata (Stroshein, 1991).

As a result of the recent discoveries of polymetallic massive sulphide deposits, within the Yukon Tanana Terrane (YTT), including the Kudz Ze Kayah and Wolverine polymetallic deposits, exploration attention, in the Yukon, has now focused on the economic potential of the volcanogenic mineralization, hosted by metamorphosed Devonian-Mississippian volcanic and sedimentary rocks. Much of southeastern Yukon Territory received a high level of exploration in the 1960's due to the discovery of the sedimentary exhalative Anvil Range (Faro) lead-zinc-silver deposits, approximately 170 kilometres to the northwest. In fact, many of the mineral showings in the eastern Pelly Mountains were discovered during this exploration period, including the Fetish copper-zinc-lead-gold-silver showing, the outcrop of the Wolverine volcanic massive sulphide deposit, and the Fyre Lake (Kona) copper-cobalt-gold (zinc, silver) showings.



Generalized geologic map (a) and cross section (b) of study area. Note that main metamorphic foliation (shown by formlines in b) is parallel to compositional layering and subparallel to major thrust surfaces shown. Scale of cross section is twice that of map.

Regional Geology Map, Yukon Tanana Terrane,
Southeastern Yukon Territory (After Mortensen, 1985)



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REGIONAL GEOLOGY MAP

FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon, Canada

To Accompany Report By:

J. R. Deighton, P. Geo.
I. J. Foreman, B. Sc.,

Drawn By: JS Scale: As Shown

Date: Dec., 1997 Figure No. 7

Renewed exploration attention to the Finlayson Lake and eastern Pelly Mountains region began in the fall of 1993. Cominco Ltd. carried out soil geochemical and geophysical surveys in the headwaters of a creek, where there were anomalous lead-, zinc- and copper-in-silt values reported from a government-sponsored regional stream sediment survey; approximately 30 kilometres due north of the subject property. The surveys discovered coincident soil geochemical anomalies, electromagnetic conductors and positive magnetic features, and prospecting downstream of the survey area discovered massive sulphide float. The first diamond drill hole, collared in April, 1994, intersected massive sulphide mineralization, now known as the Kudz Ze Kayah deposit. Cominco quickly conducted a regional-scale helicopter-supported magnetometer and electromagnetics survey followed by a major claim staking program. By the fall of 1994, Cominco had completed 50 diamond drill holes, totaling 8,300 m of drilling. This outlined a shallow-dipping massive sulphide deposit located within 200 m of the surface and suitable for open pit mining, and had staked approximately 4,200 mineral claims to acquire other airborne geophysical targets in the region. Exploration and development continued in 1995, which included the construction of a 20-kilometre access road, from the Robert Campbell Highway to the Kudz Ze Kayah deposit, completion of 131 diamond drill holes (16,540 m) to define the resource, engineering and environmental studies and the purchase of a 3,000 tonne per day grinding circuit. Reported reserves are 13 million tonnes grading 5.5% Zn, 1% Cu, 1.3% Pb, 125 g Ag/T and 1.2 g Au/T (Wolfe, 1996).

The Wolverine Project is a joint venture between Westmin Resources Limited and Atna Resources Ltd. In June 1995, surface exploration of the former Fetish mineral showing, situated at the southeastern end of Wolverine Lake or approximately 30 kilometres northeast of the Fyre Lake property, resulted in the recognition of a sequence of rhyolitic tuffs, sediments and exhalative units with coincident high copper, lead, zinc and barium soil geochemistry. These anomalies and rock units occurred along an 8-kilometre strike length. In August, a 15-hole drill program tested the Fetish chalcopyrite-sphalerite showing and discovered the Wolverine volcanic massive sulphide deposit beneath and immediately northeast of the showing (Tucker, 1996). After two years of exploration, it was reported, by Westmin and Atna, that the average thickness of 49 drill intersections within the Wolverine and recently-discovered Lynx zones is 6.1 metres. They also reported, the combined geologic inventory of the Wolverine and Lynx zones totals 5,311,000 tonnes grading 1.81 grams gold/tonne, 359.1 grams silver/tonne, 1.41% copper, 1.53% lead and 12.96% zinc (G.C.N.L. 230 (1996), P. 1). The Westmin-Atna joint venture continued detailed drilling and pre-feasibility engineering studies during the 1997 field season.

According to Johnston (1996), three distinct types of syngenetic stratabound Devonian-Mississippian mineralization are present in the Yukon Tanana Terrane. These can be broadly classified as: (1) Kuroko-type VMS deposits, in which the host rocks are mainly felsic volcanic and high-level subvolcanic rocks; (2) Besshi-type VMS deposits, hosted mainly by mafic volcanic rocks and associated sedimentary rocks; and (3) SEDEX-type, hosted mainly by carbonaceous siliciclastic rocks. Lead isotopic studies of the various stratiform base metal occurrences provide strong evidence for syngenetic formation of the sulphide deposits within their immediate host rocks.

Kuroko-type VMS deposits occur northeast of the Tintina Fault in southeastern Yukon. Lenses of massive and semi-massive pyritic Pb-Zn-Cu mineralization occur within felsic metavolcanic and volcanoclastic assemblages of Early Mississippian age. These occurrences are spatially associated with deformed subvolcanic domes or thick sills. The host volcanic sequences are lensoid, and their distal portions interfinger with carbonaceous schist and fine-grained carbonaceous quartzite. Included in this class of deposits are the recently discovered Kudz Ze Kayah and Wolverine deposits, located southwest of Finlayson Lake.

Besshi-type VMS mineralization at Fire Lake in southeastern Yukon consists of conformable bands of locally copper, cobalt, gold rich massive pyrite, pyrrhotite and magnetite iron formation within an assemblage of interlayered mafic metavolcanic rocks, carbonaceous schist and fine-grained quartzite (See Figure 2 for the locations of the above occurrences in the Finlayson Lake region.

Property Geology

Lithology

The Fyre Lake property is underlain by all three sequences of metamorphosed sedimentary and volcanic rocks belonging to the Layered Metamorphic Sequence (LMS) of the Yukon-Tanana Terrane. The lower metasedimentary rocks crop out predominantly along the western side of the property and a belt of metamorphosed mafic volcanic and carbonaceous clastic sedimentary rocks of the middle member underlie the centre of the property. The eastern portion of the property contains a thin wedge of upper unit metasedimentary rocks that is overthrust by the Late Devonian to Late Pennsylvanian-Early Permian Slide Mountain Terrane (Anvil-Campbell Allochthonous Assemblage).

Copper-cobalt-gold VMS mineralization within the Kona cirque area is hosted by a well deformed and metamorphosed chlorite-actinolite-quartz schist sequence that is interpreted to be a succession of basic to possibly intermediate flows with intercalated volcanoclastics and volcanically-derived fine-grained sedimentary rocks belonging to the middle unit of the LMS. The chlorite-actinolite-quartz schist is medium to dark green in color, aphanitic to fine-grained, and has a pervasive distinct foliation. Chlorite and actinolite contents range from less than 10 to over 40 percent of the rock volume, and there is 3 to 5 percent, locally up to 20 percent, clear to milky white quartz as 2 to 15 mm thick laminae and 2 to 20 cm boudins. The quartz content is very irregular possibly indicating a variety of protoliths. Biotite is pervasive in varying amounts as less than 1.5 mm phenocrysts in the groundmass, or as less than 4 mm black to dark brown masses that commonly form 0.5 to 2 cm thick laminae. Variations of the chlorite-actinolite-quartz schist include those, hosting local 1 to 6 cm irregular masses of black amphibole, probably actinolite or tremolite, and rare subhedral to anhedral, 2 to 4 mm porphyroblasts of an orange-red garnet.

The chlorite-actinolite-quartz schist is overlain by thick sequence of phyllitic metasedimentary rocks with a basal unit of micaceous quartz-chlorite mica schist. The phyllitic metasedimentary rocks are very fine-grained to fine-grained and finely laminated. This rock unit may locally contain 3 to 10 percent fine-grained biotite and/or phlogopite as laminae within 10 to 50 cm wide biotite-rich layers. The unit is locally calcareous with mottled white carbonate-rich layers up to 50 cm thick. Feldspar-, biotite- and/or carbonate-rich bands with local orange-red garnetiferous sections reflect a variety of protoliths.

The basal micaceous quartz-chlorite schist unit occurs consistently between the upper phyllitic metasedimentary rocks and the lower chlorite-actinolite-quartz schists. It averages approximately 4 m in thickness but thickens to 20 m in a southerly direction. This unit contains brown and locally massive green laminae with 50 to 80 percent quartz as 2 to 20 cm white bands, resembling metamorphosed chert horizons.

Structure

Large scale thrust faulting is prominent within the region and evident on the property. Internal thrust faults have been mapped within the YTT rocks (LMS) as well as at the emplacement of the Slide Mountain Terrane. Geological results reported from the 1991 Placer Dome exploration work documented a thrust fault contact between the upper metasedimentary (i.e. phyllites) and lower metavolcanic rocks. The results of the 1996 and 1997 exploration work indicate that these two rock units are not separated by any obvious large scale faulting but represent a continuous stratigraphic succession, at least within the Kona cirque area.

The structural geology of the property is very complex due to the intense nature of deformation and metamorphism of the LMS. There is a S_1 foliation parallel to compositional layering, defined by conformable bands of new growth micas, actinolite and chlorite in the mafic rocks and as ribbons of stretched quartz bands in the quartz-rich sedimentary rocks, and a L_1 lineation defined by mineral streaking along the foliation surface. When the S_1 foliation is used as a substitute for bedding plane measurements and the L_1 measurements are used to define direction and plunge of deformation the schistosity measurements within the property are consistent with a shallow easterly dipping regional trend. Structural lineations are shallow plunging in a general southeasterly direction. In the Kona Creek cirque area L_1 lineations parallel the orientation of the mineralization at 120° to 140° and plunge approximately 20° southward with a 30° easterly rake.

Alteration

The greenschist facies metamorphic minerals, chlorite and biotite are common in the volcanic and sedimentary rocks on the property. Biotite is most commonly associated with sedimentary argillaceous rocks and chlorite is abundant in the mafic volcanic rocks. Sericite occurs in the felsic lenses in the volcanic sequence.

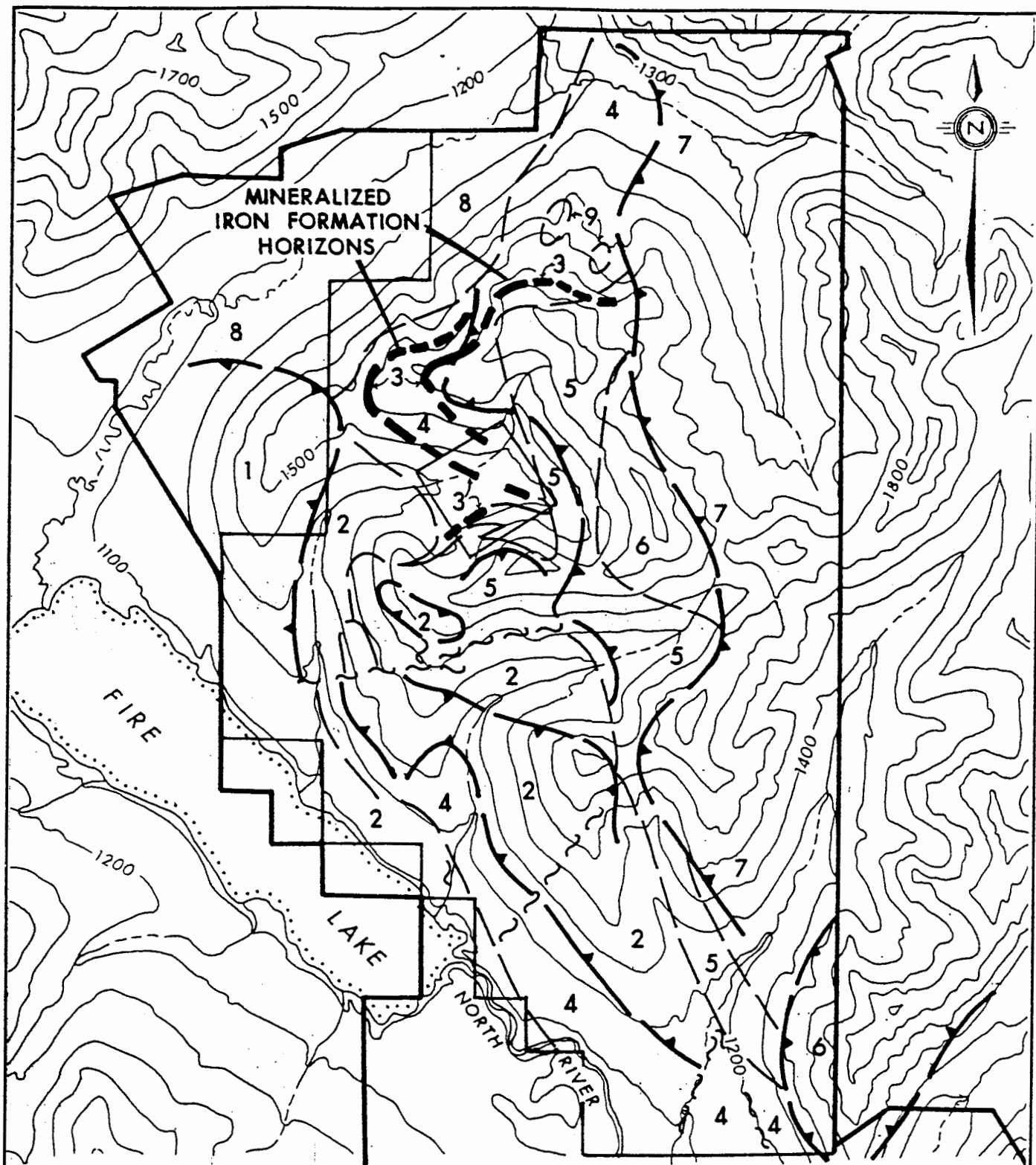
Hydrothermal alteration has not been well documented except that weak quartz-chlorite alteration appears to occur in the footwall rocks of the iron formation magnetite and pyrite. These rocks are of original mafic composition and the chloritic alteration reported may be mainly metamorphically derived. The rusty weathered outcrops on the northerly facing cliff, north of the Kona Creek cirque, appear to be typical of other felsic volcanic occurrences on the property but are mineralized with chalcopyrite as well as pyrite and contain abundant chlorite which may be a result of hydrothermal alteration.

Mineralization

Volcanogenic massive sulphide (VMS) mineralization has been located in outcrop and in boulder trains over a six kilometre strike length from the southern Lake grid to the northern Kona grid. Due to the extensive till cover and local vegetation, work has been guided by geophysical and geochemical surveying and limited drilling to locate poorly-exposed, near-surface sulphide mineralization. However, despite a number of geophysical and geochemical survey programs, very little drilling was conducted beyond the main showings in the Kona Creek cirque until the 1996 and 1997, exploration program.

Massive sulphide volcanogenic mineralization has been discovered in outcrop within the Kona Creek cirque. These showings include the old Cassiar Asbestos/Atlas occurrences known as "E" zone - massive pyrite-chalcopyrite, sphalerite showing exposed in the Kona Creek bed; "I" zone - massive, well laminated magnetite-chalcopyrite showing in the north fork of Kona Creek along trend of the "E" zone mineralization; "J" zone - 1 to 1.5 metre thick mineralized horizon and disseminated pyrite and chalcopyrite in gray siliceous bands of 25 to 30 cm on the north-facing ridge northeast of the Kona Creek cirque; and "K" zone - a pyrite-magnetite-quartz intercept in drill hole 66-3 southeast of the "E" zone.

Massive sulphide float, has also been discovered at the "F", "G" and "H" showings on the northern slopes of Kona Creek cirque, between the "I" and "J" zones, downstream of the "E" zone, called the "D" showing; and at the "E-4", "11", "12" and "13" showings on the southwesterly-facing slopes of the mountain, some 4 kilometres south of the Kona Creek cirque. All of these zones and showings are shown on Figure 5 of this report.



(Modified After Tempelman-Kluit, 1977)



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GEOLOGICAL PLAN

NORTH MAP SHEET

FYRE LAKE PROPERTY

Watson Lake Mining District, Yukon, Canada

Drawn By: JS

Scale: 1 : 50,000

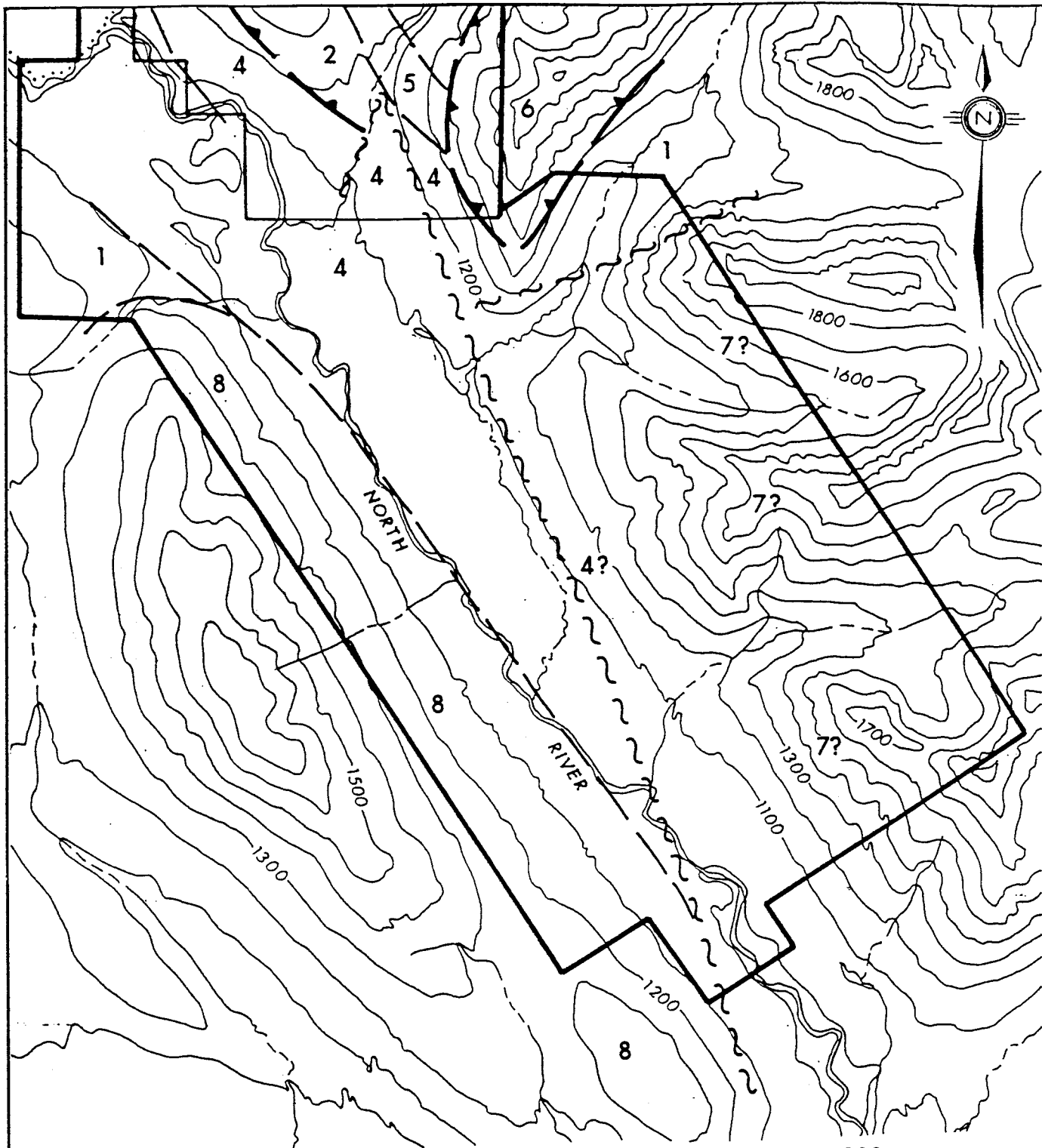
Date: Dec., 1997

Figure No. 8

To Accompany Report By:

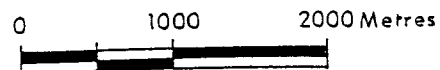
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I. J. Foreman, B. Sc.,



(Modified After Tempelman-Kluit, 1977)

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GEOLOGICAL PLAN

SOUTH MAP SHEET

FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon, Canada

To Accompany Report By:

J. R. Deighton, P. Geo.
I. J. Foreman, B. Sc.,

Drawn By: JS	Scale: As Shown
Date: Dec., 1997	Figure No. 9

-TABLE OF GEOLOGICAL FORMATIONS -

(After Stroshein, 1991)

TERTIARY

- 9 Orange weathering, dark green basalt and basalt breccia

CRETACEOUS

- 8 Leucocratic quartz monzonite

LATE DEVONIAN TO PERMIAN**Slide Mountain Terrane (Campbell-Anvil Allochthonous Assemblage)**

- 7 Sheared and mylonitized dark mafic volcanic and coarse-grained sedimentary rocks

PENNSYLVANIAN TO PERMIAN**Upper Layered Metamorphic Sequence**

- 6 Interbedded dolomitic sandstone or quartzite, micaceous sandstone, basalt and limestone

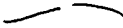
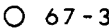
LATE DEVONIAN**Middle Layered Metamorphic Sequence**

- 5 Thinly-laminated argillite to siltstone/phyllite; tan weathering quartzite
- 4 Metamorphosed volcanic rocks - mafic flows and tuffs (chlorite-biotite) with minor felsic rocks (quartz-sericite)
- 3 Iron formation - a) sulphide, b) magnetite and c) silicate mineralization

DEVONIAN**Lower Layered Metamorphic Sequence**

- 2 Calcareous quartz-sericite schist, platy micaceous sandstone, thick-bedded quartzite
- 1 Dark gray, biotite-rich, sandstone or quartzite

- SYMBOLS -

- | | |
|---|------------------------------------|
|  | Outcrop |
|  | Geological Contact |
|  | Normal fault |
|  | Thrust fault |
|  | Atlas Explorations drill hole site |

The copper-cobalt-gold (zinc, silver) VMS mineralization within the Kona deposit occurs as three distinct horizons of massive to semi-massive sulphide and magnetite mineralization, designated East Kona and West Kona. Both zones have an eastern dip and plunge to the south. The East Kona consists of two horizons of mineralization that have been drill tested along a strike length of 900 metres. The Upper and Lower Horizons, each of which have an average thickness of 8 to 12 metres, and average widths of 100 to 125 metres. The mineralization of the Upper Horizon consists of massive pyrite with lesser amounts of pyrrhotite and chalcopyrite overlying banded sulphides. The mineralization of the Lower Horizon consists of massive pyrite with lesser amounts of pyrrhotite, chalcopyrite and sphalerite surrounding local lenses of massive magnetite. The upper horizon occurs immediately below the contact of the metasediments and the metavolcanics, while the Lower Horizon occurs 40 to 70 metres deeper, still within the mafic volcanics. The West Kona, defined during the 1997 program, has a strike length of 1500 metres, a width reaching 150 metres and a thickness varying from 9 to 40 metres. The mineralization is predominantly pyrite, magnetite, and chalcopyrite with lesser amounts of pyrrhotite hosted within a gray silicious matrix. The West Kona mineralization occurs immediately below the metasedimentary and metavolcanic contact; the same stratigraphic position as the East Kona Upper Horizon.

Drill holes 97-114 and 115 (the last two holes of the 1997 program) intersected mineralization in a step-out of 450 metres along strike, to the southeast of previous drilling. Hole 97-114 intersected 2.6 metres of banded sulphides immediately below the metasedimentary/metavolcanic contact and hence is interpreted to be the Upper Horizon of the East Kona. More importantly, hole 97-115 intersected 16.3 metres of mineralization consisting of pyrite, magnetite, and chalcopyrite belonging to West Kona. These two holes are significant in that the Kona deposit remains open for continued exploration to the southeast.

1997 EXPLORATION PROGRAM

The 1997 exploration program was designed and directed to explore for additional volcanogenic massive sulphide mineralization outlined in the 1996 drilling program. The program was also designed to confirm and assess several coincident soil geochemical and geophysical anomalies outlined in the 1996 field program. This program included additional camp construction, topographic and drill hole collar surveying, GPS surveying of the cut grids to facilitate mapping and data assimilation, linecutting, prospecting, geological mapping, rock and soil geochemical sampling, geophysical surveying, NQ2- and BQTK-core diamond drilling, assaying or analyses of drill core and geochemical samples, reclamation work and program documentation. Columbia Gold Mines Ltd. financed and operated the 1996 and 1997 exploration programs.

The camp opening and initial field personnel were mobilized to the property on April 4th, 1997, and the 1997 field exploration work was completed on October 9th, 1997, with the closure of the camp and demobilization of the field personnel. The field camp was winterized and secured; the diamond drill core was stored at the core logging facilities at the Fire Lake field camp site, and one diamond drill rig and its auxiliary equipment was winterized and stored at the camp site. The other diamond drill rig and its attendant equipment were also removed from the property and demobilized to Smithers, BC. All diamond drill core is stored at the Fire Lake camp site.

Columbia Gold Mines Ltd. employed various mineral exploration industry contractors to conduct the exploration work. The soil geochemical sampling, drill core processing, silt sampling, mapping, prospecting and camp management duties were carried out by employees of J. S. Brock Ltd. Administration and field supervision of the program, including the field geological personnel, were also provided by J. S. Brock Ltd. of Vancouver, BC, which has a contract with Columbia Gold Mines Ltd. to provide exploration and administration services. Mr. J. Douglas Blanchflower, a qualified and professional geological consultant employed by Minorex Consulting Ltd. of 11967 - 83A Avenue, Delta, BC, V4C 2K2, was contracted by Columbia Gold Mines Ltd. from time to time, to have input into the direction of the program and to help in documenting the program. The supervisory duties were shared between Mr. John Deighton and Mr. Ian Foreman both experienced and qualified geologists employed by J. S. Brock Ltd. and the authors of this report.

The following experienced and qualified field personnel were contracted to Columbia Gold Mines Ltd. during the 1997 exploration program through J. S. Brock Ltd., both of Suite 1500 - 675 West Hastings Street, Vancouver, BC, V6B 1N2.

Geological Personnel (J. S. Brock Ltd. personnel)

John Deighton, P. Geo. - geologist and project supervisor; July 2 to November 30, 1997
 Ian Foreman - geologist and project supervisor; April 1 to November 30, 1997
 Christopher Sebert, P. Eng.- geologist; June 10 to November 8, 1997
 Susan Wollner - geologist; July 28 to September 2, 1997

Geological Technical Personnel (J. S. Brock Ltd. personnel)

Willem Zantvoort - geological technical assistant; May 1 to August 27, 1997

Soil Geochemical Sampling/Drill Core Processing Personnel (J. S. Brock Ltd. personnel)

Katie Brock - sampler/splitter; June 3 to October 9, 1997
 Silvie DuFault - sampler/splitter; June 3 to July 29, 1997
 Aidan Flanagan - GPS technician; July 15 to July 31, 1997
 Chris James - sampler/splitter; April 14 to May 28, July 29 to August 27, 1997
 Aurelea Mahood - sampler/splitter; June 24 to September 2, 1997
 Robin Mahood - sampler/splitter; June 3 to October 9, 1997
 Brandie Roberts - sampler/splitter; July 2 to August 13, 1997
 Brooke Roberts - sampler/splitter; May 21 to August 13, 1997

Environmental Personnel (J. S. Brock Ltd. personnel)

Rachel Brock - Environmental Coordinator; May 4 to September 15, 1997

Camp Management, Cooking and First Aid Personnel (J. S. Brock Ltd. personnel)

Joyce Warren - cook; May 6 to September 2, 1997
 Nancy Osmond - cook/first aid attendant; July 31 to October 9, 1997
 Jane Moir - cook/first aid attendant; April 4 to July 29, 1997
 Eva Jaycox - cook/first aid attendant/GPS technician; June 3 to September 24, 1997
 James O'Rourke - camp manager; April 11 to September 2, 1997

Allen Redies, assistant to the camp manager, was contracted through the Ross River Dena Development Corporation from May 12 to August 7, 1997.

Trans North Helicopters Ltd. of Whitehorse, Y.T. was contracted to provide either Bell 206L or Bell 206 helicopter support for the project. Fixed-wing aircraft support, including Sky Van, Otter, Beaver, Cessna 185 and 206 aircraft, was contracted from Summit Air Charters of Whitehorse, Y.T., Northern Lights Air of Watson Lake, Y.T. and Kluane Airways Ltd. of Whitehorse, Y.T.

This report documents a portion of the GPS surveying, the DUB grid, and four holes of the diamond drill program conducted during the 1997 program. This exploration work included establishing GPS survey control of the Dub cut line grid (59.475 line kilometers of a total cut line survey of 236.85 line kilometers) cut in 1996 within the property for subsequent accurate control and re-plotting of geophysical and geochemical data collected in 1996;

- a) diamond drilling four holes for a total of 473.97m (1,555 feet);
- b) pad building and pad dismantling of the four drill hole sites;
- c) geological and geotechnical logging of the drill core and sampling of the mineralized intervals or sections of interest; and
- d) preparing this report and accompanying plans and maps.

Camp Construction

During 1996, Columbia Gold Mines Ltd. contracted the construction of the field camp and core logging facilities to Madd Dawg Equipment Ltd. of P. O. Box 4379, Smithers, BC, V0J 2N0 and Pellow Construction Ltd. of P. O. Box 3814, Smithers, BC, V0J 2N0. These companies also supplied the camp equipment (i.e. canvas roofs, tarps, kitchen equipment, etc.). The camp construction work was carried out between June 15 and July 7, 1996.

During 1997, an additional four sleeping tents were constructed and the core shack was doubled in size. In addition, an aluminum metal roof was constructed on the first aid tent to add additional storage space for off-season storage. This work was done by Pellow Construction of Smithers BC, from June 29 to July 7, 1997.

GPS Control Surveying of Cut Line Grids

ADW Engineering Ltd., P. O. Box 4379, Smithers, BC, V0J 2N0, was contracted to undertake a detailed Global Positioning System (GPS) survey. This survey would establish the position of the 50 and 100 metre stations along all the cut grid lines on the property by utilizing a GPS instrument with an accuracy of +/- 1 metre. The survey was requested, after it was found that the location of the cut line grids was not accurate enough to locate the drill holes and to locate the lines relative to topography. This inaccuracy lead to confusion with regard to the spacing between holes and the location of the geophysical and geochemical data collected. GPS survey points were also established for the diamond drill hole collars. The survey was undertaken during the period of July 29 to September 24, 1997. A total of 236.85 kilometres of cut grid lines were surveyed during this period as well as surveying of 115 diamond drill hole collars and positioning of several potential drilling sites. All the drill hole collars in the Kona Creek cirque were also surveyed in by transit, utilizing a electrodistamat (EDM) survey instrument.

The survey control and GPS data are utilized in the preparation of the various maps and plans. The cut line Dub Grid GPS survey portion of the total GPS survey totals, some 59.475 kilometers. This portion of the survey required a total of 1,185 GPS recorded position readings. The readings were taken at 50 and 100 metre sites along all the cut lines including the base line. GPS readings were not obtainable at a few stations, due to the thick foliation and or the lack of a sufficient number of satellites to obtain a reading. Several of the GPS station readings were repeated to obtain sufficient satellites to obtain a position for the station.

1997 Diamond Drilling Program

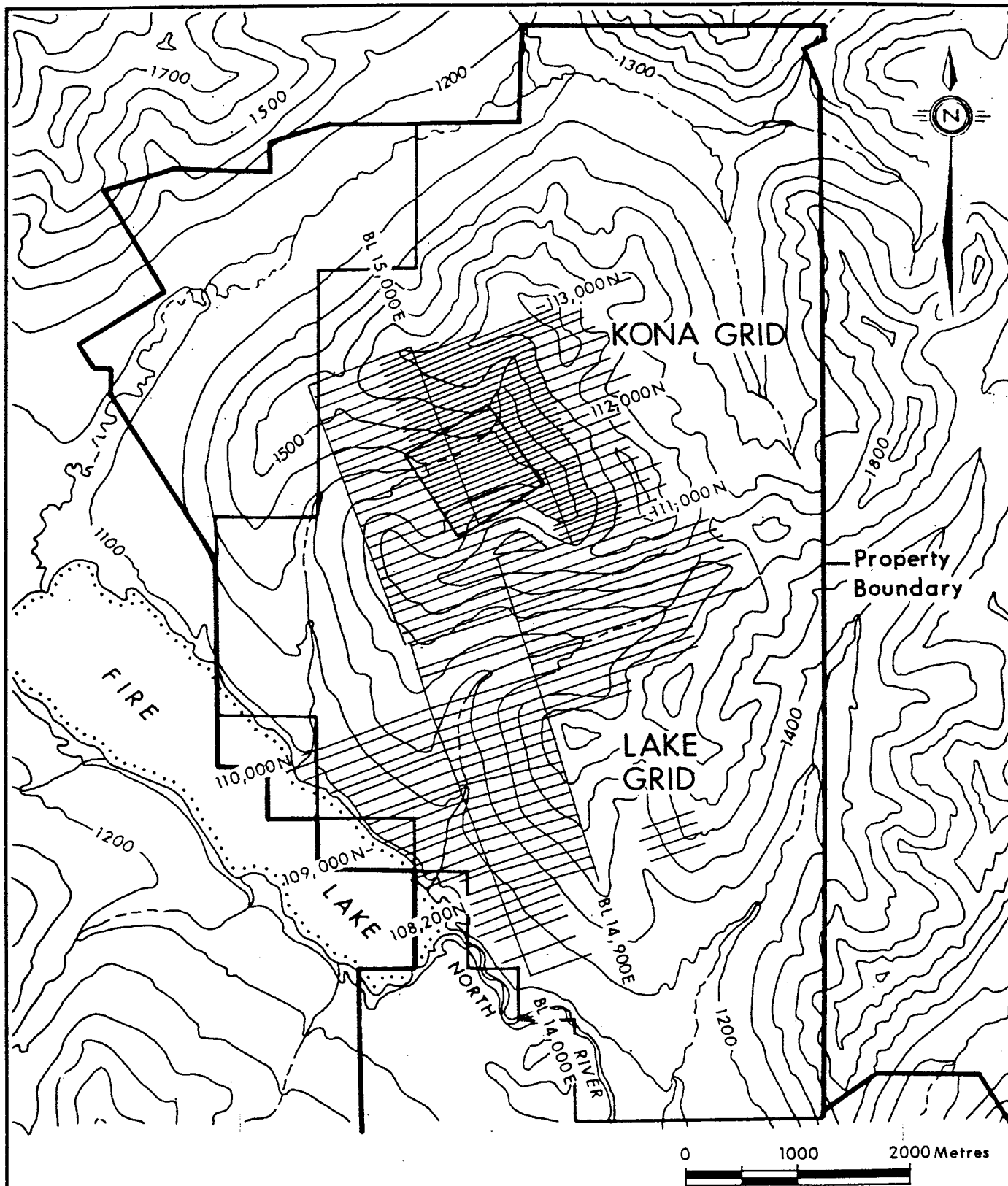
A diamond drilling program consisting of 44 holes, totaling 13598.98 metres of NQ2 and BQTK core, commenced on May 11th, and was completed on October 5th, 1997. Drill crews were de-mobilized on October 7th, 1997. The drilling was conducted by J.T. Thomas Diamond Drilling Ltd. of Smithers, BC, using a Longyear fly 38 rig and a JT2000 rig, both machines were adapted to drill NQ2 and BQTK core. The JT 2000 rig was stored on the property over the winter of 1996-97 and was de-mobilized from the property at the completion of the 1997, drilling program on October 6th and 7th, 1997. The Longyear fly 38 rig was mobilized onto the property on June 17th, 1997 and on completion of the drilling program the drill rig and auxiliary support equipment was flown to the camp at Fire Lake and stored for the winter.

Field personnel employed by Coureur Des Bois Ltee. of Whitehorse, Y.T. were contracted to prepare, build and dismantle the drill site platforms. A Bell 206L helicopter was used to move, supply and service the drill rigs, transport the geological personnel, pad building and drilling crews to and from the drill sites, and to bring the drill core to the logging and sampling site in the field camp.

The diamond drill core was properly handled, processed, logged and sampled on the property. After the drill core had been delivered to the logging and sampling facility, its foot markers were converted to metric measurements and each box was properly labeled with its respective hole number, box number, and drilling length interval. Qualified geological or geological technical personnel logged the core. The geological information was recorded on a matrix coding log form. Geological data was then inputted into a

computerized database for both documentation and computer- assisted drafting (CAD). Core recoveries, rock quality, and specific gravity measurements were also logged and recorded. Core recoveries were generally good to excellent, except in extremely fractured near surface rock or wider fault structures. Specific gravity measurements were recorded at 8-metre intervals, except in mineralized zones where measurements were recorded for every one metre sampled or for samples of less than one metre. All of the drill core was then photographed, prior to splitting and sampling.

The labeled sections of mineralization were split in half lengthways using a Longyear manual splitter between labeled sections. The sample interval varied for marginal mineralized material, but within the mineralized horizons the sampling interval was usually less than or equal to one metre long. One metre samples were collected immediately above and below the massive and/or semi-massive mineralization to detect lithological signatures for the mineralized horizons. All of the split core samples were labeled, double bagged and flown by fixed wing aircraft to Watson Lake, Y.T. where the project expeditor shipped the samples to either the preparation facilities of Min-En laboratories in Smithers or Vancouver BC. The remaining one-half of the split core was replaced in the core box in its appropriate spot and the boxes are stored at the core logging and storage facilities on the property.



COLUMBIA GOLD MINES LTD.
Vancouver, British Columbia, Canada

SURVEY CONTROL GRIDS

NORTH MAP SHEET

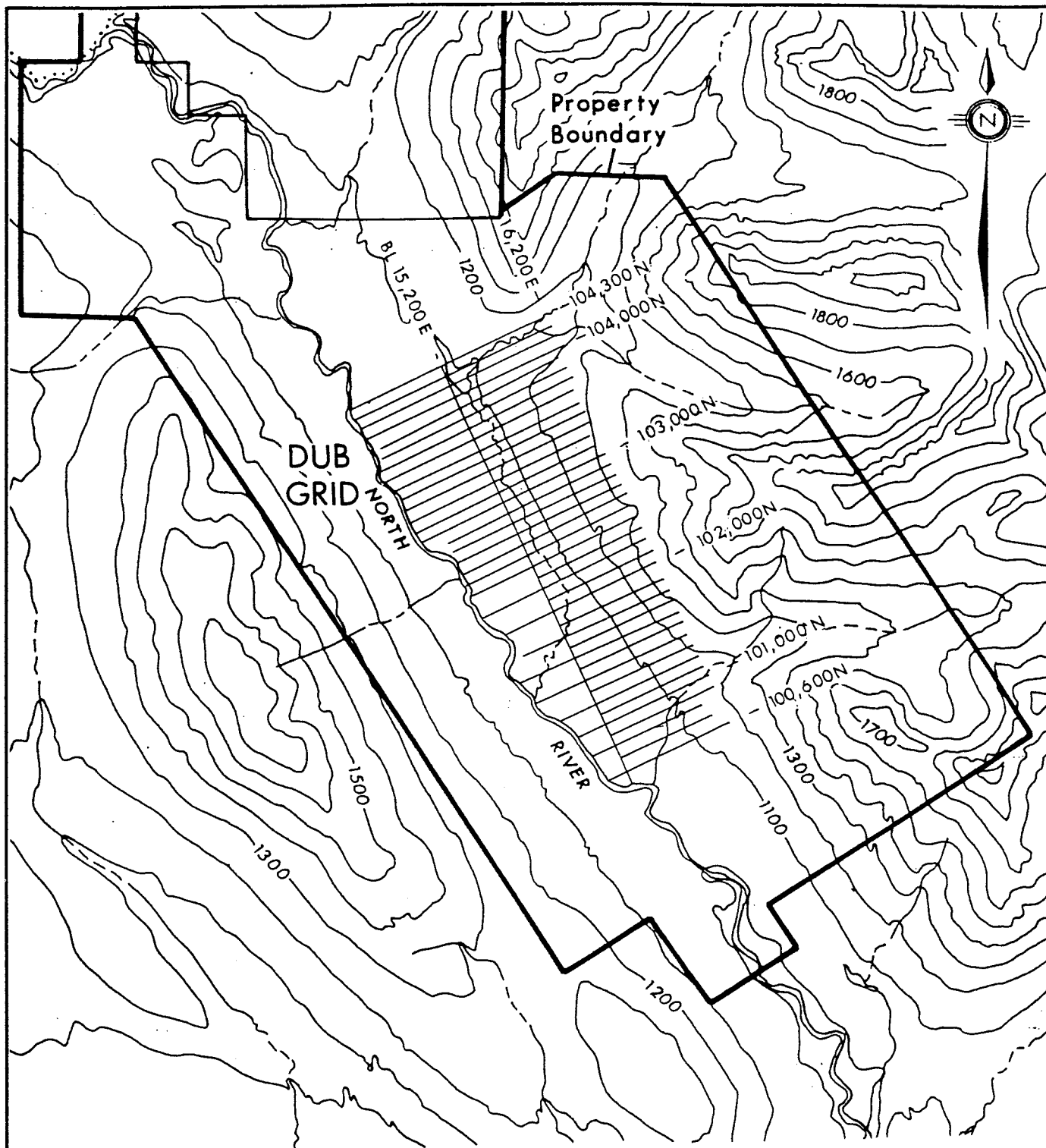
FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon, Canada

Drawn By: JS Scale: As Shown

Date: Dec., 1997 Figure No. 10

To Accompany Report By:

J. R. Deighton, P. Geo.
I. J. Foreman, B. Sc.,



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COLUMBIA GOLD MINES LTD.
Vancouver, British Columbia, Canada

SURVEY CONTROL, GRIDS

SOUTH MAP SHEET

FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon, Canada

Drawn By: JS Scale: As Shown

Date: Dec., 1997 Figure No. 11

To Accompany Report By:

J. R. Deighton, P. Geo.
I. J. Foreman, B. Sc.,

Lithogeochemical samples of the drilled core were commonly collected at 8-metre intervals or less where country rock lithologies varied, but these 15 to 20 cm samples were not collected from the previously sampled sections of massive to semi-massive mineralization or the samples immediately above or below the mineralization. Several one and two metre samples of the country rock were substituted for these shorter sections to see if there was any variation between the smaller and the larger samples. Lithogeochemical sampling of the phyllitic metasediments was discontinued part way through the drilling program as no economic minerals, minerals having an economic value, were noted within this sequence of rocks. All the lithogeochemical samples were bagged, labeled and shipped to Min-En Laboratories in Smithers, BC for preparation, and their resultant pulps were then delivered to the Min-En Laboratory facilities in Vancouver, BC for 31-element ICP analysis. The locations of the lithogeochemical samples within the various core boxes were marked with stapled flagging marker with indelible pen ICP

Analytical Program

A total of 767 mineralized drill core samples were delivered to Min-En Laboratories Ltd., to be assayed for copper, cobalt, zinc and gold. Geochemical analysis was carried out on the remaining drill core samples that the geologist had estimated to contain less than 0.5% copper. Copper, cobalt, zinc and gold geochemical analysis were carried out on 330 drill core samples and the remaining 437 samples were assayed for copper, cobalt, zinc and gold. If a sample returned a value greater than 10,000 ppm, copper, the sample was re-assayed for its copper, cobalt in percent and gold values in grams. In addition, all the above samples, and an additional 969 samples taken for litho-geochemical signature, were analyzed by ICP Methods.

In Smithers, Min-En Laboratories personnel dried each sample at 65°C before crushing it to minus 3 inch. The crushed sample was then reduced to minus 1/8 inch size by a secondary roll crusher. The whole sample was then split on a Jones Riffle to a statistically- representative 300-gram sample pulp. This sample was then pulverized in a ring pulverizer to 95 percent 150 mesh, rolled and bagged. All of the sample pulps were shipped to the Min-En Laboratory facility in Vancouver for assay. The remaining coarse rejects from the Jones Riffle were bagged, catalogued, placed on pallets, covered with plastic and stored in Smithers, BC.

At Min-En Laboratories, the analytical procedure for copper, cobalt, zinc and nickel uses a 0.500 to 2.0 gram sub-sample, which is weighed from the sample pulp for analysis. Each batch of 70 or less samples has a natural standard and a reagent blank included. The sub-samples are digested using a $\text{HNO}_3\text{-KClO}_3$ mixture and when the reaction subsides, HCl is added before it is placed on a hotplate to digest. After digestion is complete the flasks are cooled, diluted to volume and mixed. The resulting solutions are analyzed on an atomic absorption spectrometer using the appropriate standard sets. The natural standard digested along with this set must be within 2 standard deviations of its known or the whole set is re-assayed. If any of the samples assays are more than 1 percent copper they are re-assayed at a lower weight, and 10 percent of the submitted samples are assayed in duplicate (Min-En Laboratories, 1995)

Gold fire assays were undertaken on 437 drill core samples and any blind duplicate samples. All gold fire assay procedures at Min-En Laboratories were conducted using a one assay ton sample weight. The sub-samples were fluxed and a silver inquart was added and mixed. These sub-samples were fluxed in batches of 24 assays with a natural standard and a blank. This batch of 26 assays was carried through the whole procedure as described. After cupellation, the precious metal beads were transferred into new glassware, dissolved with aqua regia solution, and diluted to volume and mixed. The resulting solutions were analyzed on an atomic absorption spectrometer using a suitable standard set. The natural standard fused along with this set must be within 2 standard deviations of its known or the whole set is re-assayed. Likewise, the blank assay must be less than 0.015 gpT. The top 10 percent of all assays per printed page were re-checked and reported along with the standard and blank. Gold values are reported in grams per tonne (gpT) with a detection limit of 0.02 gpT.

Another 330 drill core samples were geochemically analyzed for their gold content. A 10.0 gram portion from each sub-sample was weighed and placed into a porcelain crucible, and cindered at 800°C for 3 hours. All the sub-samples were then transferred to beakers and digested using aqua regia, diluted to

volume and mixed. Seventy-five percent of each of the diluted samples were further oxidized, treated and extracted for gold analysis using methyl iso-butyl ketone (MIBK). The MIBK solutions were then analyzed by an atomic absorption spectrometer (AA) using a suitable standard set and the values of gold (Au) were then reported. Gold values are reported in parts per billion (ppb) with a detection limit of one ppb.

A total of 969 drill core samples were geochemically analyzed by induced plasma coupled (ICP) techniques. These samples of core were from drill core that was taken for litho-geochemical analysis. The litho-geochemical drill core samples were taken at 8 metre intervals throughout the meta-volcanic and transitional rock sequences as well as the few litho-geochemical samples taken in the meta-sedimentary sequence during the beginning of the diamond drill program.

Min-En Labs ICP procedures for analysis of the 31 elements is as follows. After the sample is prepared, a 0.50 gram sample of the pulp is digested for two hours with a 1:3:4 nitric acid, hydrochloric acid and water mixture. After cooling, the sample is diluted to standard volume. The resulting solutions are analyzed by computer operated Perkin Elmer Optima 3000, Inductively Coupled Plasma Spectrophotometers. The results are reported in ppm for the 31 elements.

Fifty-three drill core sample pulps were pulled on a random basis, with at least one sample being pulled from each hole, in trying to obtain a spread of values for all the elements assayed. These pulps were sent to Chemex Labs Ltd. for check re-assaying. The results of this assaying to be used to check the assaying and give an idea of the randomness of the assay results. Chemex Labs Ltd. uses similar procedures as Min-En Laboratories Ltd. for the detection of copper, cobalt and zinc. After processing, the 0.4 gram sample is digested in a hot perchloric-nitric-hydrochloric acid mixture and evaporated to dryness. Hydrochloric acid is added for further digestion, and the sample is taken to dryness. The residue is dissolved in 25%hydrochloric acid and transferred to a 100ml volumetric flask. The resulting solution is diluted to volume with de-mineralized water, mixed and then analyzed on an atomic adsorption spectrometry against matrix-matched standards. Copper cobalt and zinc values are reported in percent (%) with a universal detection limit of 0.1%.

Chemex Labs uses the following procedures for both gold fire assays and gold atomic absorption analysis. A 10.0-gram sub-sample is fused with a neutral lead oxide flux, inquarted with 6 mg of gold-free silver, and then cupelled to yield a precious metal bead. These beads are digested for 30 minutes in 0.5 ml concentrated nitric acid, and then 1.5 ml of concentrated hydrochloric acid is added, and the mixture is digested for one hour. The solutions are cooled, diluted to a final volume of 5 ml, homogenized and analyzed using atomic absorption spectroscopy.

Only diamond drill holes 97-72, located on the Fire 137; 97-78 on Fire 148; 97-86 on Kona 43 and 97-87 on Fire 29 mineral claims are documented in this report to fulfill the assessment for the claims on which work is required. Appendix I contains photocopies of the original geological drill logs for holes 97-72, 97-78, 97-86, 97-87 and Appendix II contains the tabulated rock quality and specific gravity data and Appendix III contains the assay and analytical results for the diamond drill holes. Plans and cross sectional plots of the drilling results accompany this report as part of the logs and Figure 13.

DISCUSSION OF EXPLORATION RESULTS

The GPS survey provided accurate positioning of 50 and 100 metre stations of the cut line grids to an accuracy of +/- one metre. The accuracy of the stations allowed for a more precise positioning of drill sites and the accurate positioning of outcrops during the geological mapping program, as well as enabling the accurate plotting of geochemical and geophysical surface and drill collar information. The GPS survey also enabled the accurate plotting of down hole geochemical, assay and geophysical information by accurately locating the diamond drill hole collars.

Diamond droll holes 97-72 and 97-78 are located on the Lake grid. Hole 97-72 is located in the middle section of the grid and was designed to test a coincident geochemical and geophysical target. The hole intersected alternating bands of phyllite (mudstones) and biotite-chlorite-quartz-carbonate schists

(siltstones), similar to sections of phyllite encountered in the Kona area. The siltstones encountered vary slightly from those in the Kona zone in that they appear to have a marginal increase in carbonate or chlorite which may be lateral stratigraphic changes in composition.

Hole 97-78 is located at the extreme southern end of the Lake grid and was also designed to test a geochemical and geophysical anomaly. This hole cut a sequence of phyllites and siltstones similar to that encountered in hole 97-72. Only trace amounts of disseminated pyrite and pyrrhotite were noted.

Other holes drilled in the lake grid did encounter metavolcanics with disseminated chalcopyrite which may be the reflection of a mineralized horizon. Ongoing studies of the lithogeochemical information may indicate where these holes fit into the stratigraphy.

Holes 97-86 and 97-87 are located northwest of the Kona deposit. Both holes intersected the metavolcanics similar to the metavolcanics in the Kona deposit. Hole 97-86 intersected disseminated magnetite in silicious bands in the metavolcanics that is similar to mineralization found underlying the massive sulphide horizons. Hole 97-87 intersected a section of disseminated sulphides that may indicate a mineralized horizon. Although these holes did not encounter any massive sulphide mineralization, the mineralization encountered is similar to mineralization that occurs peripheral to massive sulphide mineralization of the Kona deposit.

EXPLORATION POTENTIAL

The exploration potential of the Fyre Lake property is excellent and further detailed diamond drilling and detailed mapping, geophysical and geochemical surveys are warranted. Such drilling should be prioritized to continue evaluating the economic potential of the VMS copper-cobalt-gold mineralization within the Kona zone, and also to continue to further assess the coincident geological, geochemical and geophysical anomalies within the Lake grid. Thought should also be directed to initially test, by diamond drilling, the coincident geophysical and geochemical anomalies of the Dub grid area. Detailed geological mapping should be continued to expand the area covered by the current mapping. Reconnaissance type geophysical and geochemical surveys should be expanded to cover a greater proportion of the property.

Many of the geologists who have worked on the property, especially those who have mapped and sampled the Kona Creek cirque mineral showings, have stated that the in-situ mineralization has many similarities to that of Besshi-type volcanogenic massive sulphide mineralization. According to Franklin *et al.* (1981), the Besshi group of massive sulphide deposits occurs in strata consisting of subequal amounts of clastic sedimentary rocks and basalt. They typically contain chalcopyrite and pyrite, with lesser sphalerite, and are stratiform bodies with little or no evidence of stringer zones. It has been noted that their setting is commonly close to a tectonic boundary such as between an ocean floor and an island arc, an ocean floor and a craton, or an ocean floor and continental crust.

The Besshi volcanogenic massive sulphide deposits in Japan, the model for these type of deposits, occur in the metamorphosed upper Paleozoic volcanic and sedimentary rocks of the Sambagawa Schist Group in the Shikoku and Iwami districts. The deposits lie close to the abundant volcanic strata (greenschists) and commonly near the transition to more dominantly sedimentary, siliceous strata. Although the deposits vary in detailed stratigraphic position with the Minawa (Besshi district) and Iwami (Iwami district) Formations, the main Besshi ore bodies typically lie in a central member of the Minawa Formation. The deposits have a mafic volcanic rock (greenschist) beneath the ore and are immediately overlain by pyrite-bearing siliceous schist. Magnetite-rich layers (iron-formation) occur within the siliceous schist. The deposits consist of exceptionally elongate to tabular massive ore zones. The Besshi deposit is 1,800 m in strike length; individual ore beds attain a maximum thickness of 10 to 20 m. In most deposits, folding locally increases the thickness of the ore (Franklin *et al.*, 1981).

Most of the Besshi deposits are comprised of two types of ore, massive and banded sulphides. In addition, some deposits have local copper-rich structurally thickened zones. The massive ores contain pyrite, chalcopyrite, sphalerite, and bornite, with minor magnetite, and quartz and calcite as gangue

minerals. The banded ore dominantly consists of pyrite, with lesser chalcopyrite and sphalerite in a gangue of quartz, carbonate, albite, chlorite and minor epidote, amphiboles and tourmaline. Sulphides and gangue are present in subequal amounts. The massive and banded ores are mutually transitional. Locally, sulphides have been remobilized into faults and fractures, forming very copper-rich ore containing pyrrhotite which is otherwise quite rare in this deposit type (Franklin *et al.*, 1981).

The average copper content of the Besshi ores is 1.40 percent with massive ores containing 3 percent copper on average. The total production to 1970 from the Besshi deposits was 28 million metric tons containing 2.46 percent copper. The ores typically contained 0.3 to 0.9 percent zinc and 20 to 200 ppm lead with zinc/lead ratios of 0.1:0.3; a few deposits have ratios of 0.3:1.0. In general, Besshi-type ores contain much higher cobalt contents ($1,000 \pm 200$ ppm) than those of the Kuroko district, and cobalt is contained almost entirely in pyrite. The ores are all re-crystallized, fine-grained aggregates; grain size increases with metamorphic grade (Franklin *et al.*, 1981).

The results from the 1996 and 1997 exploration programs indicate that there is Besshi-type volcanogenic copper-cobalt-gold (zinc, silver) mineralization within the Kona deposit. This deposit is divided into the Kona East and Kona West. The Kona East occurs as two distinct horizons of massive to semi-massive sulphide and magnetite mineralization each having an average thickness of 8-12 metres and average widths of 100 to 125 metres. The two horizons are separated by metavolcanics varying between 40 to 70 metres. The horizons have been drill tested for 900 metres, with indications that the horizons continue to the step out hole 97-114 450 metres to the southeast. The Kona West horizon, as defined by the 1997 drilling, has a strike length of 1500 metres, a width reaching 150 metres and a thickness varying from 9 to 40 metres. This mineralization is dominantly hosted within the upper section of the chlorite-actinolite-quartz schist unit and immediately beneath the chlorite-actinolite-quartz schist and phyllite stratigraphic contact. Hole 97-115, a step out hole 450 metres to the southeast, intersected 16.3 metres of the Kona West style mineralization. These holes are significant in that the Kona Deposit remains open for continued exploration to the southeast.

Coincident soil geochemical and geophysical anomalies and mineralized float boulders spatially-associated with the favourable metamorphosed Late Devonian mafic volcanic and volcanoclastic rocks occur along a six-kilometre northerly trend from the central Lake grid to the northern Kona grid. To date, only 1100 metres of strike length in the south-central portion of the Kona grid has been evaluated with detailed diamond drilling and an additional 1000 metres on the Kona grid, and 1900 metres on the Lake grid which only wide spaced diamond drilling has occurred. This has resulted in the discovery of a substantial VMS deposit within the Kona grid, which is open along both strike directions and down-dip.

The Kona zone exploration target covers most of the known mineral occurrences within and north of the Kona Creek cirque. This target is of the highest priority and worthy of immediate definition diamond drilling.

The Lake zone exploration target covers a number of coincident geophysical and soil geochemical anomalies over a strike length of 3 kilometres on the west-facing slopes of Fire Lake. Exploratory diamond drilling in eight widely spaced holes (97-72 to 97-79) indicated that a potentially similar horizon as that hosting the mineralization in the Kona cirque exists in the Lake grid area, and further drilling will be required to further assess these targets.

The coincident geophysical-geochemical anomalies along the central axis of the Dub grid should be investigated with exploratory diamond drilling to penetrate the deep alluvium.

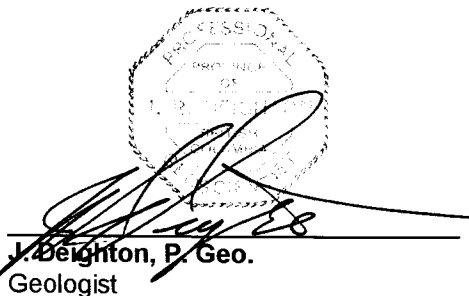
CONCLUSIONS

The 1997 exploration drilling program investigated the Kona and Lake grid areas for volcanogenic massive sulphide mineralization with 44 diamond drill holes. The results of the diamond drilling indicate that there is a deposit of copper-cobalt-gold +/- silver and zinc outlined in the Kona cirque area that is open along strike to the southeast and only partially tested to the northwest. The initial diamond drill testing of some of the coincident geochemical and geophysical anomalies in the Lake zone defined the stratigraphic contact of metasediments and metavolcanics that hosts volcanogenic massive sulphide mineralization in the nearby Kona area. No massive sulphide mineralization was encountered in either hole 97-72 or 97-78. At the present, further study of the data collected is needed to fully understand the contact zone, but indications are that mineralization may exist along this contact. The results of the 1996 and 1997 exploration programs confirm that Fyre Lake property has very good exploration and economic potential.

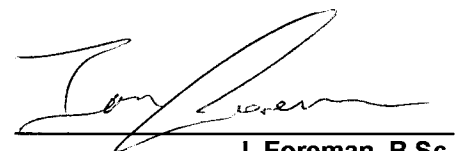
The GPS survey provided the field program with an accurate method to locate collars and grid coordinates on the property. It is recommended that all future field programs utilize this survey to maintain the present data base.

It is recommended that the VMS mineralization within the Kona zone and the coincident geological, geochemical, and/or geophysical anomalies within the Lake zone be further investigated by NQ-core diamond drilling. The Dub zone should be evaluated with an initial program of NQ-core diamond drilling. Furthermore, the property-wide geological, geochemical and geophysical surveying should be continued to fully evaluate the mineral claim holdings.

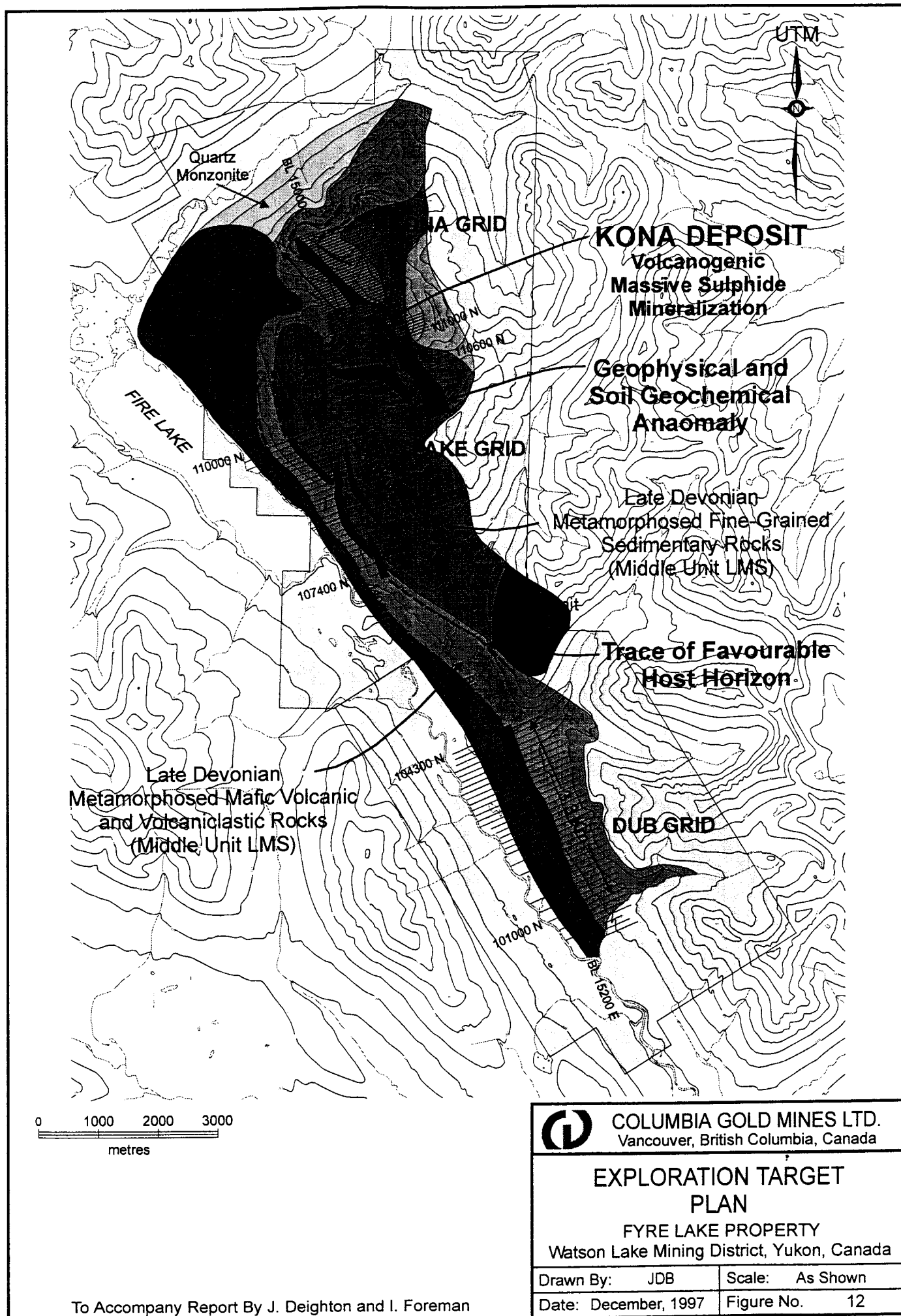
Submitted by,



J. Beighton, P. Geo.
Geologist



I. Foreman, B.Sc.
Geologist



STATEMENT OF 1997 EXPLORATION EXPENDITURES

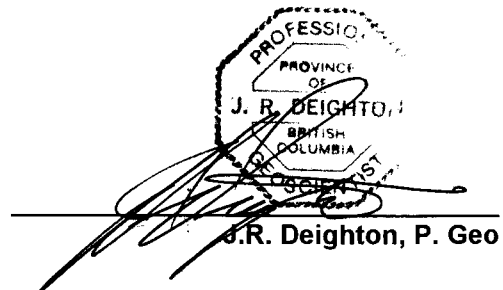
The following exploration expenditures are for the period of April 4 to November 30, 1997 and are exclusive to the subjects of this report (Columbia Gold Mines Ltd., 1997).

Accommodation	CDN \$ 3,850.00
Drilling Charges.....	38,037.19
Equipment Rentals - GPS.....	1,400.00
Fuel - Diesel	1,028.16
Fuel - JP 4	2,685.84
Salary & Wages (John S. Brock Ltd.).....	7,220.00
Pad Building (Coureur Des Bois).....	3,300.00
Transportation - Helicopter (Trans North Turbo Air)	17,257.50
GPS Plotting Charges.....	290.00
GPS Survey Charges.....	4,200.00
TOTAL.....	<u>CDN \$ 79,268.69</u>

STATEMENT OF QUALIFICATIONS

I, JOHN RAYMOND DEIGHTON, DO HEREBY CERTIFY THAT:

1. I am a professional geologist residing at 3250 West 33rd Avenue, Vancouver, British Columbia, Canada.
2. I am a graduate from the University of British Columbia with a Bachelor of Science degree in geology (1965).
3. I am professional geoscientist registered with the Association of Professional Engineers and Geoscientists of the Province of British Columbia (No. 20411).
4. I have practiced my profession in mineral exploration for thirty-one years with numerous multinational mining corporations and junior mining companies.
5. I am a fellow of the Geological Association of Canada (No. F0899).
6. I am a member of the BC & Yukon Chamber of Mines.



J.R. Deighton, P. Geo

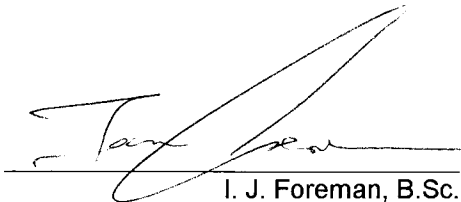
Dated at Vancouver, British Columbia, this 4th Day of December, 1997.

STATEMENT OF QUALIFICATIONS

I, IAN J. FOREMAN, DO HEREBY CERTIFY THAT:

1. I am an employee of John S. Brock Ltd. with a business address at 1500 - 675 West Hastings Street, Vancouver, B.C., V6B 1N2
2. I graduated from Queen's University in 1992 with an Honours Bachelor of Science degree, subject of specialization in Geology.
3. I am a Geoscientist-in-training in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (G00003).
4. I have practiced my profession in mineral exploration continuously for four years.

2 months with fox Geological consultants Ltd.
2 months with Coast Mountain Geological Ltd.
4 1/2 months with Westmin Resources Ltd.
2 months with Canamera Geological Ltd.
6 months with Lac Minerals Ltd.
2 months with BHP Minerals Canada Ltd.
2 1/2 years with John S. Brock Ltd.
5. I was the project geologist on the Fyre Lake program, spending six months on the property during the 1997 field season, and co-authored this report which documents the results of the 1997 program.



I. J. Foreman, B.Sc.

Dated at Vancouver, British Columbia, this 4th Day of December, 1997.

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APPENDIX I

Geological Diamond Drill Logs 97-72, 97-78, 97-86, 97-87

FYRE LAKE PROPERTY

Drill Hole 97-72

COLUMBIA GOLD MINES LTD.

FYRE LAKE PROPERTY

1997 Diamond Drilling Program - Geological Database

DDH No.	Intercept			Rock Type Code	Meta Rock Code	Mod 1 Min	Mod 2 Min	Structure					Modal Mineralogy												Mineralization							
	From (m)	To (m)	Int. (m)					Shr (deg)	From (m)	To (m)	Fol (deg)	Bed (deg)	Qz (%)	Cl	Ms	Bi	Hm	Cb	Gp	Ep	Gr	At	Ph	Mp	Type	Py (%)	Cp (%)	Po (%)	Mg (%)	Sp (%)	Bo (%)	Gl (%)
97072	0.00	4.27	4.27	CASN																												
97072	4.27	36.56	32.29	SLST	SCHT	Cl	Bi		9.85	10.03	80		10	50		20		10		Tr	Tr				40	Tr	Tr	Tr				
97072	36.56	40.14	3.58	MDST	PHYL	Po	Qz	75	38.04	38.10	80		25	Tr	5	10		Tr			Tr				40	6.5		1.0				
97072	40.14	52.77	12.63	SLST	SCHT	Bi	Qz				75		15	Tr	20	30		5						40	0.5	Tr	0.5					
97072	52.77	75.71	22.94	MDST	PHYL	Qz	Bi	35	57.33	57.42	85		10		Tr	10		Tr						40	0.5		1.0					
97072	75.71	79.07	3.36	SLST	SCHT	Bi	Cl				70		8	15		30		Tr						40	Tr		0.5					
97072	79.07	87.75	8.68	SLST	SCHT	Bi	Cb	70	87.29	87.37	70		5	20		40		20			Tr			40	Tr		0.5					
97072	87.75	92.91	5.16	MDST	PHYL	Qz	Bi	80	87.82	87.87	80		10	2	Tr	10		Tr						40	0.5		1.0					
97072	92.91	108.90	15.99	SLST	SCHT	Bi	Cb				75		5	20		40		20						40	Tr		0.5					
97072	108.90	131.10	22.20	MDST	PHYL	Qz	Bi						10	2	Tr	10		Tr						40	0.5		1.0					
97072	131.10	148.47	17.37	SLST	SCHT	Bi	Cl				70		10	20		40		5						40	Tr		0.5					
97072	148.47	152.40	3.93	MDST	PHYL	Qz	B	40	148.47	148.52	75		10		Tr	10		Tr						40	0.5		1.0					

DRILL HOLE SUMMARY

**Watson Lake Mining District
Yukon Territory, Canada**

Northing: 108500

Azimuth: 250

Drill Hole : 97-072

Easting: 14 00 0

Dip: -60

Zone: LAKE

Total length: 152.40m

Geologist: I. Foreman

[illegible]

LAKE ZONE

CASN

SLST SCMT
C1, bi
Tr P₁, P₀, 1 Tr CP

MDST PHYL
0.57 Py 1/10

SLST SCHR
Pi QZ
051Py, 17P,
+TCP

MDST PHYL
Q2 Bi
1.5/Py, 0.1 P.

GLST SCHR
bi, ci
Ti 17, 0.5% P.

SLST SCNT
Bj, cb
T. Py, 0.5/P.
TRACE GARNET

MDST PHYL
Q2, B1
6.5/P, 1.1/P.

SLST SHT
Bz, CI
Telp, 12. P.

graduated

MDST PHYL
az. Bi
0.5/Py, 1/1.Po

gradakiss¹³⁰

SLST SCHT
Bi Cl
Tr P₇, 1% Po

MDST PHYL
• AZ, Bi
• S/P, I/P.

E.O.H. @ 152.40m

97-72

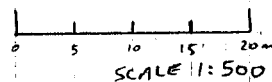
NORTHING : 108500

EASTING : 14000

AZIMUTH : 250

DIP : -60

TOTAL LENGTH: 152.40 m



MAY 14 '97
IAN FOREMAN

BEST AVAILABLE
IMAGE

1

[illegible]

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - 72

Location Sketch



Grid Northing (m):

108 500

Grid Easting (m):

14 000

Elevation (m):

1217.0

Total Length (m):

152.40m

Casing Depth (m):

4.27

Reduction Depth:

Collar Core Size:

NQ 11

Date Started:

MAY 11 1997

Date Completed:

MAY 12 1997

Logged By:

Ian Foreman

Date Logged:

MAY 12 1997

Data Entry:

Entry Date:

Casing (In/Out):

OUT

Survey

Depth

Azimuth

Dip

COLLAR

250

-60

ACID

152.40

?

-65

[illegible]



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - 72

Logged By: Tan Fong

Date: MAY 12 '97

[illegible]

DRILL HOLE NO. 97 - 72

- No noticeable amounts of graphite through the section.
- rare carbonate as 1-3mm banded beds.

Page 2 of 9

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - **72**
Logged By: John Foreman
Date: MAY 13 '97

P S	Interval		Rock Code	Meta Rx	Mod 1	Mod 2	Structure					Mineralogy							Mineralization					
	From	To					Shr	Frm	To	Fol	Bed	Qz	Cl	Ms	Bi	Hm	Cb	Ep	Typ	Py	Cp	Po	Mg	Sp
	36.56	40.14	CONT'D																					
				MIN:	→	Trace to 2% fine grained pyroxenite as <1.5mm whiskers and disseminations																		
					→	Trace to locally 1% pyrite as fine grained disseminations and fine whiskers																		
				STRUC:	→	Strong foliation through out @ 75 to 85° to core axis																		
					→	locally, the unit is strongly deformed.																		
					→	37.42m - Healed Fault @ 160° with foliation locally dragged. = Top Down or normal displacement. Foliation and banding is chaotic in the foot wall.																		
					→	38.04-38.10 - 8cm of cemented dark grey gouge with 2% pyrite and 15-20% 1-8mm angular fragments. Slip is subparallel to fabric of the unit @ 75°																		
					→	38.78-38.87m - moderately bkn <1 to 3cm angular core with local gouge.																		
				L.C.:	→	Sharp and parallel to foliation.																		
	40.14	52.77	SLST	SCHT	Bi	QZ			75°			15	Tr	20	30		5		40	0.5	Tr	0.5		
				LITH:	→	A predominately, light to dark brown banded unit with 15-20% white to cream 1mm-2cm irregular quartz and carbonate to gtz bands.																		
					→	20-40% biotite primarily as <1-2mm subhedral brown (PHLOGOPITE ??) grains as well as aphanitic grains making up the groundmass.																		
					→	Locally cream bands are possibly SERICITE and vary in colour with the amount of chlorite to light green.																		
					→	Locally, over 25cm sections, the unit is very siliceous and individual layers contain 1-3mm subrounded white to translucent quartz eyes.																		
					→	Between 43.10 to 43.46 and 49.31 to 49.59 are beds of black PHYLICITE as described between 36.56 and 40.14m. All upper and lower contacts are sharp and appears to be conformable.																		
					→	Carbonate layers vary from 1mm to 1.5cm and locally make up 10-15cm																		



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - 72

Logged By: Zan Fodor

Date: MAY 13 '97

DRILL HOLE NO. 97 - 72

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - **72**
 Logged By: Tam Foran
 Date: MAY 13 '97

P S	Interval		Rock Code	Meta Rx	Mod 1	Mod 2	Structure					Mineralogy								Mineralization					
	From	To					Shr	Frm	To	Fol	Bed	Qz	Cl	Ms	Bi	Hm	Cb	Ep		Typ	Py	Cp	Po	Mg	Sp
	52.77	75.71	CONT'D		STRUC:	→	Well preserved strong foliation throughout. @ 80 to 90° is locally folded. Folds appear parasitic but 'S's can not be distinguished from 'Z's																		
						→	- 54.53 - 54.56 - weakly bkn <1-2cm angular core in p.s.s cemented gouge @ 70°																		
							- 57.33 - 57.42m - bkn cemented gouge with <1-8mm angular fragments zone is @ 35°																		
							- 59.72m - 2mm gouge :: rubble @ 65° - foliation is dragged into shear @ some angle																		
							- 59.82m - gouge on break in core																		
							- 60.01m - 2-3mm gouge in slip @ 70°																		
							- 60.26m - gouge and rubble in break in core - possibly @ 60°																		
							- 71.56 - 71.72 - moderate to strongly bkn <1-2cm angular core in gouge throughout																		
						L.C:	→	sharp @ bottom of 2-5mm quartz band - conformable.																	
	75.71	79.07	SCST	SCHT	bi	cl			70			8	15	?	30		Tr			40	Tr		0.5		
						LITH:	→	Composed of <1-4mm green brown and black bands with lesser white to cream quartz & carbonate layers.																	
							→	Green layers are chlorite-rich and locally have 1mm brown biotite grains. The biotite-rich layers are predominately brown and have 1-2mm subhedral to euhedral grains surrounded by an aphanitic groundmass.																	
							→	The unit over all is predominately dark (dark greys and black) with a laminated appearance.																	
							→	Carbonate rich layers are mottled and average 1-2mm wide																	
							→	Quartz is generally frosty white and occurs as 1mm-2cm wide bands.																	
							→	local 2-4cm sections are similar in appearance to the surrounding phyllitic units.																	



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: John Foketyn

Date: MAY 13 '97

72

DRILL HOLE NO. 97 - 72

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: John Foreman

Date: MAY 13 '97

72

P S	Interval		Rock Code	Meta Rx	Mod 1	Mod 2	Structure					Mineralogy							Mineralization												
	From	To					Shr	Frm	To	Fol	Bed	Qz	Cl	Ms	Bi	Hm	Cb	Ep	Typ	Py	Cp	Po	Mg	Sp							
	79.07	87.75	C-NFD		STRUC:	→	well preserved strong foliation through out @ 70°																								
						→	rare quartz veins crosscut the fabric.																								
							- 84.41 - 84.43m = weakly bkn <1cm angular core with break @ 40°.																								
							with trace limonite.																								
							- 84.58 = 4mm cemented gouge @ 80°																								
							- 87.29 - 87.37m = moderately bkn 1-2cm angular core w cemented gouge @ 70°																								
					L.C:	→	Sharp and conformable - marks the start of Phyllite																								
	87.75	92.91	MDST	PHYL	Qz	Bi	80°	87.82	87.87	80°		10	2	Tr	10		Tr			40	0.5		10								
					LITH:	→	This is similar to aplomitic laminated flint to gray and brown																								
							PHYLLITE as described between 52.77 and 75.71																								
						→	As with 52.77 to 75.71, this unit contains 10-30cm sections of chlorite																								
							biotite quartz + carbonate schist																								
					MIN:	→	0.5% Pyrite and 1% pyrrhotite occur predominately as rigid dissemination																								
							and elongate <1mm wide whips.																								
					STRUC:	→	Strong foliation @ 80°																								
						→	87.82 - 87.87m = moderately bkn <1-3cm subangular core with lam of																								
							cemented gouge approx @ 80° to core axis.																								
					L.C:	→	SHARP @ 80°.																								
	92.91	108.90	SLST	SCHT	Bi	Cb				75°		5	20		40		20			40	Tr		0.5								
					LITH:	→	This unit is similar in both composition and appearance to the																								
							biotite chlorite carbonate quartz schist described between																								
							79.07 and 87.75m.																								



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: Jan Foleman

Date: MAY 13 '97

72

DRILL HOLE NO. 97 - 72



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: Jan Foreman

Date: MAY 13 '97

72

DRILL HOLE NO. 97 - 72

FYRE LAKE PROPERTY

Drill Hole 97-78

COLUMBIA GOLD MINES LTD.

FYRE LAKE PROPERTY

1997 Diamond Drilling Program - Geological Database

DDH No.	Intercept			Rock Type Code	Meta Rock Code	Mod 1 Min	Mod 2 Min	Structure					Modal Mineralogy												Mineralization							
	From (m)	To (m)	Int. (m)					Shr (deg)	From (m)	To (m)	Fol (deg)	Bed (deg)	Qz (%)	Cl	Ms	Bi	Hm	Cb	Gp	Ep	Gr	At	Ph	Mp	Type	Py (%)	Cp (%)	Po (%)	Mg (%)	Sp (%)	Bo (%)	Gl (%)
97078	0.00	12.19	12.19	CASN																												
97078	12.19	13.20	1.01	OVB																												
97078	13.20	14.20	1.00	MDST	PHYL	Qz	Po				73		50	5	5	5								40	Tr		Tr					
97078	14.20	15.24	1.04	SLST	SCHT	Qz	Cl				75		45	25	5	20		5						40	Tr		Tr					
97078	15.24	98.41	83.17	MDST	PHYL	Qz	Po	65	72.68	72.75	75		55	5	4	5		4		Tr				40	1.0		2					
97078	98.41	123.24	24.83	SLST	SCHT	Bi	At				70		30	25	5	35					Tr	1		40	Tr		Tr					
97078	123.24	125.52	2.28	MDST	PHYL	Qz	Po						55	5		5		Tr						40	Tr		Tr					
97078	125.52	132.50	6.98	SLST	SCHT	Cl	Bi				75		30	35		25		2			Tr	Tr		40	Tr		Tr					
97078	132.50	135.84	3.34	MDST	PHYL	Qz	Po						50	1		10		1						40	Tr		Tr					
97078	135.84	150.88	15.04	SLST	SCHT	Bi	Cl				75		30	20		30		Tr				Tr	Tr	40	Tr		Tr					

LAKE ZONE

97-78

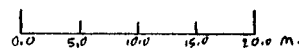
NORTHING : 107600

EASTING : 14300

AZIMUTH : 250°

DIP : -50

TOTAL LENGTH: 150.88 m.



SCALE 1:500
William H. Zentgraf maps, 97

CASN

MDST PHYL qz Tr. py, po
SLST SCHK qz, cl Tr. py, po

OVBN
gradational
Sharp

MDST PHYL
qz, po
py 1%, po 2%

SLST SCHK
bi, at
Tr. py, Tr. po

MDST PHYL Tr. py, po
gradational
Sharp

SLST SCHK cl, bi
Tr. py, po

MDST PHYL qz, Tr. py, po
gradational
Sharp

SLST SCHK
bi, cl Tr. py, po

E.O.H. at 150.88 m.

FYRE LAKE PROJECT
1997 ICP SAMPLE DATA

DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.
78	15.00	78	24.50	78	32.00	78	40.00	78	48.00	78	56.00
78	64.00	78	72.00	78	80.00	78	88.00	78	96.00	78	104.00
78	112.00	78	120.00	78	124.00	78	134.40	78	136.00	78	148.00



**Watson Lake Mining District
Yukon Territory, Canada**

DRILL HOLE NO. 97 - 78

Location Sketch

107 600

14300

1193.0 m.

150.88

13.20 m

NQ II

May 19, 1997

May 20, 1997

Willem G. Zantwaart

Mar 20, 1997

0

Survey	Depth	Azimuth	Dip
	collar	250°	-50°
S.S.	bottom of ceiling	252	-49
S.S.	149.35	253	-48

[illegible]



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: W. G. Z.

Date: _____

78

DRILL HOLE NO. 97 - 78



**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: W. G. F.

Date:

[illegible]



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: W.G.Z.

Date:

78

[illegible]

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

78

Logged By: W. F. Gustafson

Date: _____

P S	Interval		Rock Code	Meta Rx	Mod 1	Mod 2	Structure					Mineralogy							Mineralization							
	From	To					Shr	Frm	To	Fol	Bed	Qz	Cl	Ms	Bi	Hm	Cb	At	Ep	Gr	Typ	Py	Cp	Po	Mg	Sp
	15.24	98.41	CONT	PHYL																						
					STRU	-	24.18 m - 24.23 m very fine to coarse grained unconsolidated fault gouge.																			
						-	72.68 - 72.75 m fault gouge comprised of very fine to coarse angular fragments - slickensides on shear face with chlorite defining the lineations. fol'n = 85° to core axis shear = 65° to core axis																			
						-	small scale drag fold at 96.27																			
						24.5 m = 55°	72.0 m = 70°																			
						32.0 m = 75°	80.0 m = irregular																			
						40.0 m = 70°	88.0 m = 85°																			
						48.0 m = 70°	96.0 m = 75°																			
						56.0 m = 75°																				
						64.0 m = 75°																				
	98.41	123.24	SLST	SCHT	bi	AT			70°		30	25	5	35			1%		Tr	40	Tr.		Tr	?		
					LITH	-	very fine to medium grained biotite (3%) in lenses 1.0 - 5.0 mm thick defines the dominant foliation.																			
						-	very fine to fine grained ^{thin} aligned parallel to the dominant foliation occurs in bands containing minor biotite 1.0 - 10.0 cm thick ≈ 25%.																			
						-	subhedral amphiboles 1.0 - 10.0 mm occur in small amounts trace - 1% throughout the section - Amphiboles are weakly to moderately magnetic. Pyroxenite is visible in some amphiboles in trace amounts which would account for the magnetic properties, however magnetite replacement could also be a factor.																			
						-	Garnet occurs in trace amounts 1.0 - 2.0 mm subhedral.																			

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: W. G. Gentry

Date:

78

[illegible]

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By:

Date:

[illegible]



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: W. G. Carter

Date: 8th

78

DRILL HOLE NO. 97 - 78



**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: W. B. Gentry

Date: May 20/97

[illegible]

FYRE LAKE PROPERTY

Drill Hole 97-86

COLUMBIA GOLD MINES LTD.
FYRE LAKE PROPERTY
1997 Diamond Drilling Program - Geological Database

DDH No.	Intercept			Rock Type Code	Meta Rock Code	Mod 1 Min	Mod 2 Min	Structure				Modal Mineralogy												Mineralization								
	From (m)	To (m)	Int. (m)					Shr (deg)	From (m)	To (m)	Fol (deg)	Bed (deg)	Qz (%)	Cl	Ms	Bi	Hm	Cb	Gp	Ep	Gr	At	Ph	Mp	Type	Py (%)	Cp (%)	Po (%)	Mg (%)	Sp (%)	Bo (%)	Gl (%)
97086	0.00	3.05	3.05	CASN																												
97086	3.05	22.25	19.20	MFVC	SCHT	Cl	Qz		12.10	12.20	45		10	60	4	7		Tr		2		Tr			42	Tr		Tr				
97086	22.25	69.69	47.44	MFVC	SCHT	Cl	Qz		63.25	63.40	50		15	60	3	9	Tr	Tr		2				53	Tr	Tr	Tr	2.5				
97086	69.69	103.63	33.94	MFVC	SCHT	Cl	Qz		72.05	72.24	40		10	60	5	5		Tr		3		0.5			42	Tr	Tr	Tr				



**Watson Lake Mining District
Yukon Territory, Canada**

EXPL. GRID

Northing: 112300

Azimuth: 070

Drill Hole : 97- 8 6

Easting: 15 000

Dip: -5°

Zone: KONA NORTH

Total length: 103.63

Geologist: I. Foreman

[illegible]

NORTH KONA

97-86

CASN

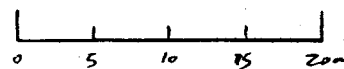
NORTHING : 112300

EASTING : 15000

AZIMUTH : 070°

DIP : -50°

TOTAL DEPTH : 103.63m



SCALE = 1:500

Jan Foreman

SONE 01 '97

40 MFVC SHT
TrP₁, TrP₀

gradational

40 MFVC SHT
TrP₁, TrP₀, TrCP
2.5% mg.
(Sporadically throughout)

gradational

40 MFVC SHT
TrP₁, TrP₀, TrCP

E-H @ 103.63m

FYRE LAKE PROJECT
1997 ICP SAMPLE DATA

DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.
86	8.00	86	16.00	86	24.00	86	32.00	86	40.00	86	48.00
86	56.00	86	64.00	86	72.00	86	80.00	86	88.00	86	96.00





DRILL HOLE NO. 97 -

**Watson Lake Mining District
Yukon Territory, Canada**

Logged By: Tan Foon

Date: MAY 31 '97

86

[illegible]



**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: Tan Fokanta

Date: May 31 '97

DRILL HOLE NO. 97 - 86

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 -

Logged By: Law Foreman

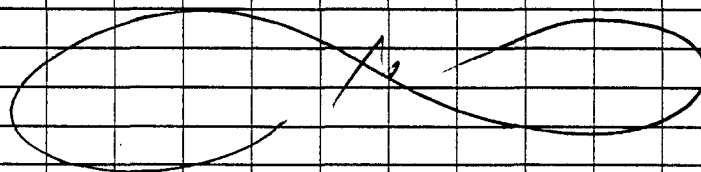
Date: MAY 31 '97

[illegible]

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - 86
 Logged By: Jim Foreman
 Date: MAY 31 '97

P S	Interval		Rock Code	Meta Rx	Mod 1	Mod 2	Structure					Mineralogy							Mineralization														
	From	To					Shr	Frm	To	Fol	Bed	Qz	Cl	Ms	Bi	Hm	Cb		Ep		Typ	Py	Cp	Po	Mg	Sp							
	69.69	103.63	Cont'd			→	Foliation is strong throughout.																										
							72m = 60°		88m = 40°																								
							80m = 50°		96m = 40°																								
						→	-69.98 - 70.05m =		Strongly bkn <1-2cm subang to subrounded core with gouge throughout.																								
							-72.05 - 72.24m =		Strongly to moderately bkn <1 to 3cm angular to subangular core with local gouge and rubble - possibly between 50-70°																								
							-84.80 - 85.04m =		4 or 5 slips @ 40-50° with trace gouge and poss. iron carbonate.																								
							-90.83m =		open fracture coated with light (lime) green iron carbonate and trace pyrite @ 20°																								
							L.S. →		E.O.H.																								
	103.63	103.63	E.O.H.																														



FYRE LAKE PROPERTY

Drill Hole 97-87

**COLUMBIA GOLD MINES LTD.
FYRE LAKE PROPERTY**

1997 Diamond Drilling Program - Geological Database

DDH No.	Intercept			Rock Type Code	Meta Rock Code	Mod 1 Min	Mod 2 Min	Structure				Modal Mineralogy													Mineralization							
	From (m)	To (m)	Int. (m)					Shr (deg)	From (m)	To (m)	Fol (deg)	Bed (deg)	Qz (%)	Cl	Ms	Bi	Hm	Cb	Gp	Ep	Gr	At	Ph	Mp	Type	Py (%)	Cp (%)	Po (%)	Mg (%)	Sp (%)	Bo (%)	Gl (%)
97087	0.00	3.05	3.05	CASN																												
97087	3.05	13.84	10.79	MFVC	SCHT	Cl	Qz						7	70	10	Tr									42	Tr		Tr				
97087	13.84	15.66	1.82	FHPP		Pf	Hb				55						Tr								40	Tr						
97087	15.66	44.45	28.79	MFVC	SCHT	Cl	Qz	40	29.04	29.44	50		15	60		1									43	0.5	Tr	1.0	Tr			
97087	44.45	46.46	2.01	MFVC	SCHT	Cl	Qz				75		10	60											43	Tr		Tr	Tr			
97087	46.46	47.39	0.93	DSSX	SCHT	Cl	Bi				60		15	60		10									43	1.0	0.5	3	Tr			
97087	47.39	67.06	19.67	MFVC	SCHT	Cl	Qz				50		15	60			5			Tr					42	Tr		Tr				



**Watson Lake Mining District
Yukon Territory, Canada**

Drill Hole : 97- 87

DRILL HOI SAMPLE DATA

Northing: 112 400
 Easting: 15 025
 Azimuth: 070
 Dip: -30

Start date: MAY 31 '97
Comp. date: MAY 31 '97
Total length: 67.06 m
Geologist: For Foreman

Zone: N. Kona

Page 1 of 1

[illegible]

NORTH KONA

97-87

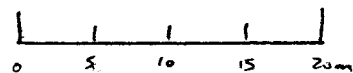
NORTHING : 112400

EASTING : 15025

AZIMUTH : 070

DIP : -50

TOTAL LENGTH : 67.06m



SCALE = 1:500

Jan Foreman

JUNE 02 '97

CASN

40 MFUC SHT
TrPy, TrPo

FHPP
FELDSPAR HORNBLAND
PORPHYRITIC DYKE

B.C.
B.C.

43 MFUC SHT
0.5% Py, TrPy, 1.0% Po
TrMg

40 MFUC SHT gradational
TrPy, TrPo, TrMg
43 DSSX gradational
1.1% Py, 0.5% Lp, 3% Po, TrMg

250669

250670

250671

40 MFUC SHT
TrPy, TrPo

E.O.H. @ 67.06m

**COLUMBIA GOLD MINES LTD.
FYRE LAKE PROJECT 1997
Diamond Drill Core Sampling Results**

DDH No.	Tag No.	From (m)	To (m)	Intvl (m)	Au (gpT)	Co (%)	Cu (%)	Zn (%)	Intvl X Au	Intvl X Co	Intvl x Cu	Intvl x Zn	Weighted Averages						
													Intersection (m)			Au gpt	Co %	Cu %	Zn %
87	250669	45.46	46.46	1.00	0.013	0.003	0.019	0.006	0.013	0.003	0.019	0.006							
87	250670	46.46	47.39	0.93	0.010	0.011	0.068	0.010	0.009	0.010	0.063	0.009							
87	250671	47.39	48.39	1.00	0.009	0.004	0.014	0.008	0.009	0.004	0.014	0.008							

Columbia Gold Mines Ltd.
Fyre Lake Project - 1997

DIAMOND DRILL CORE SAMPLING DATA

DDH No.	Code	Interval (m)		Length	Sample No.	Dup.	Assay, GC or ICP	Date Split	Date Shipped
87	DI	45.46	46.46	1.00	250669		GC		June 25, 1997
87	DI	46.46	47.39	0.93	250670		ASSAY		June 25, 1997
87	DI	47.39	48.39	1.00	250671		GC		June 25, 1997

FYRE LAKE PROJECT
1997 ICP SAMPLE DATA

DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.	DDH No.	Sample No.
87	6.00	87	14.00	87	22.00	87	46.00	87	54.00	87	62.00



**Watson Lake Mining District
Yukon Territory, Canada**

DRILL HOLE NO. 97 - 87

EXPL. GRID

Location Sketch

112 400

15025

1538_m

67.06 m

9.14m

NQ2

MAY 31 1997

MAY 31 1997

Law Enforcement

JUNE 01 1997

out

Survey	Depth	Azimuth	Dip
	60.00	070	-50
S.S.	67.06	065	-52

[illegible]



GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - 87
 Logged By: In. Freeman
 Date: 25 Jun 01/97

[illegible]

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - **87**
 Logged By: Jan Foreman
 Date: JUNE 01/97

P S	Interval		Rock Code	Meta Rx	Mod 1	Mod 2	Structure					Mineralogy							Mineralization							
	From	To					Shr	Frm	To	Fol	Bed	Qz	Cl	Ms	Bi	Hm	Cb	Ep	Typ	Py	Cp	Po	Mg	Sp		
	15.66	44.45					occurs through sections with increased mineralization.																			
							<u>MIN:</u> → Mineralization is very inconsistent throughout the unit but concentrations occur as such intervals that it wouldn't be effective to break out individual sections.																			
							→ Pyrrhotite makes up approx 1.0% through out but varies from non-existent to 5-10% over 5-20cm sections. It predominately occurs as whips within, and smeared along, all foliation planes. Pyrrhotite also occurs as irregular 1-4mm blebs which form a boxwork through 2mm - 2.5cm siliceous bands. Rarely pyrrhotite is concentrated into elongate blebs along cross-cutting fractures.																			
							→ Pyrite is rare through this unit and only occurs in trace amounts primarily as 1-4mm irregular blebs and fracture fill.																			
							→ Chalcopyrite is predominately intimately associated with the pyrrhotite mineralization. It primarily occurs as 4mm wide 2-6mm long whips and commonly is combined with pyrrhotite. Cp also locally occurs as solitary 1-3mm irregular blebs.																			
							→ Magnetite occurs primarily as fine disseminations within 2-13mm wide siliceous bands and bandings.																			
							<u>STRUC:</u> → In general this unit is very contorted and locally the quartz bands and bandings are isoclinally folded about fold axes which are subparallel to the dominant foliation which averages 50°.																			
							→ Apparently all important structures are hidden by strongly bkn core.																			
							- 15.66 - 16.46m → very strongly bkn 4cm core with approx 60cm lost core																			
							- 19.60 - 19.68m → very strongly bkn 4cm core																			
							- 21.93 - 21.64m → moderately to very strongly bkn 4-3cm angular core with local gouge and 10-20cm lost core																			
							- 25.70 - 25.77m → strongly bkn 4cm arg core @ approx. 40°																			



FYRE LAKE PROJECT - 1997

**Watson Lake Mining District
Yukon Territory, Canada**

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - 87

Logged By: Jan Koronan

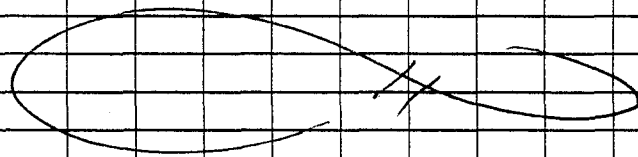
Date: June 01/97

DRILL HOLE NO. 97 - 87

GEOLOGIC DRILL LOG

DRILL HOLE NO. 97 - **87**
 Logged By: Jan Foreman
 Date: JUNE 01'97

P S	Interval		Rock Code	Meta Rx	Mod 1	Mod 2	Structure					Mineralogy							Mineralization					
	From	To					Shr	Frm	To	Fol	Bed	Qz	Cl	Ms	Bi	Hm	Cb	Ep	Typ	Py	Cp	Po	Mg	Sp
	47.39	67.07	Conrb				quartz	is	cl-4mm	irregular	bands	and	bandings	as	well	as	2-6mm							
							wide	swaths.																
							→	4-6%	black	to	brown	biotite	occurs	predominately	as	cl-2mm								
								subhedral	crystals	within	the	plane	of	the	foliation	-	and	trails						
								as	2mm	wide	bands	and	cl-3mm	wide	bands.									
							ALT:	→	Locally	black	subhedral	2-8mm	crystals	of	ACTINOLITE	and								
								Trace	epidote	as	1-4mm	irregular	blebs	typically										
								concentrated	into	1-10cm	wide	bands.												
							MIN:	→	Trace	pyrite	and	pyrrhotite	is	fine	dissemination	and	1-6mm							
								whisks.																
							STAGE:	→	The	unit	is	locally	massive	in	appearance	but	has	a						
								Strong	foliation	throughout	@	approx.	50°											
							→	No	significant	structures	through	the	unit	only	local									
								sections	of	weakly	bkn	angular	1-5cm	core										
							L.C:	→	E.O.H.															



APPENDIX II
Drill Hole Rock Quality and Specific Gravity Data

COLUMBIA GOLD MINES LTD.
FYRE LAKE PROPERTY
1997 Diamond Drill Hole - Rock Quality Data

DDH	Interval (m)			Recovery		RQD		Brkg	Hard	Wthr	XJnt	Shape	Rgh	Comments
No.	From	To	Lgth	m.	%	m.	%							
72	4.27	6.10	1.83	0.24	13.1	0.04	2.2	6	4	5	10	2	3	no gouge material/ redrilled core throughout
72	6.10	8.23	2.13	2.13	100.0	1.75	82.2	10	4	4	18	1	1	15 cm crushed material @7.2m
72	8.23	10.36	2.13	1.79	84.0	1.27	59.6	10	4	4	19	1	1	13cm gouge @ 10m
72	10.36	10.97	0.61	0.50	82.0	0.50	82.0	13	3	5	2	3	2	core is becoming competent
72	10.97	12.19	1.22	1.05	86.1	0.92	75.4	12	3	5	6	1	3	majority of natural breaks stepped and rough
72	12.19	15.24	3.05	2.88	94.4	2.86	93.8	14	4	5	5	3	2	majority of natural breaks stepped and rough
72	15.24	18.29	3.05	2.94	96.4	2.94	96.4	15	5	5	4	2	3	no significant breaks
72	18.29	21.34	3.05	2.98	97.7	2.86	93.8	14	4	5	7	3	2	minor gouge @ 20.0m/ mostly stepped joints
72	21.34	24.38	3.04	2.86	94.1	2.66	87.5	14	3	5	5	3	2	majority of natural fractures are stepped
72	24.38	27.43	3.05	2.72	89.2	2.62	85.9	14	4	5	9	2	3	2 minor gouge zones, one weathered
72	27.43	30.48	3.05	2.92	95.7	2.83	92.8	15	3	5	4	3	2	minor gouge material @ one fracture
72	30.48	33.53	3.05	2.95	96.7	2.95	96.7	15	3/4	6	1	3	1	good core with one fracture
72	33.53	36.58	3.05	2.85	93.4	2.68	87.9	13	4	5	13	1	1	minor gouge material occurs frequently @ join
72	36.58	39.62	3.04	2.77	91.1	2.19	72.0	10	3	6	20	1	1	19cm gouge material in two places
72	39.62	42.67	3.05	2.98	97.7	2.87	94.1	14	3	6	9	2	2	core competency increasing
72	42.67	45.72	3.05	2.93	96.1	2.89	94.8	14	3	6	5	4	3	healed fractures sub-parallel to axis throughou
72	45.72	48.77	3.05	2.94	96.4	2.94	96.4	15	3	6	2	3	2	decent core
72	48.77	51.82	3.05	2.81	92.1	2.72	89.2	14	3	6	9	3	1	one fracture with minor gouge/ mostly stepped
72	51.82	54.86	3.04	2.88	94.7	2.78	91.4	15	3	6	6	3	1	26cm of healed fracture throughout
72	54.86	57.91	3.05	2.66	87.2	2.34	76.7	12	3	5	14	1	1	13cm fault gouge @ 57.2m
72	57.91	60.35	2.44	2.22	91.0	1.98	81.1	12	3	5	12	1	1	5cm of gouge through interval
72	60.35	63.40	3.05	2.92	95.7	2.92	95.7	15	3	5	2	4	3	good core
72	63.40	66.45	3.05	2.96	97.0	2.91	95.4	15	3	5	3	4	2	good core
72	66.45	67.10	0.65	0.58	89.2	0.58	89.2	15	3	6	0			one healed fracture of 10cm sub-parallel to ax
72	67.10	69.50	2.40	2.30	95.8	2.24	93.3	15	4	6	3	3	1	healed fractures throughout
72	69.50	71.63	2.13	2.07	97.2	1.77	83.1	12	4	6	12	2	2	
72	71.63	73.15	1.52	1.33	87.5	1.18	77.6	10	4	6	11	1	1	20cm gouge @71.63/ mostly stepped joints
72	73.15	75.29	2.14	1.93	90.2	1.80	84.1	14	4	5	6	3	2	
72	75.29	78.33	3.04	2.78	91.4	2.68	88.2	14	3	5	8	2	3	breaks perpendicular to foliation
72	78.33	79.25	0.92	1.10	119.6	1.10	119.6	12	4	5	7	3	3	redrilled @ 78.33/ fractures crosscut foliation
72	79.25	82.30	3.05	3.00	98.4	2.97	97.4	13	3	6	11	1	3	
72	82.30	85.34	3.04	2.95	97.0	2.77	91.1	13	4	5	13	1	1	
72	85.34	88.40	3.06	3.03	99.0	2.97	97.1	13	4	5	11	1	1	
72	88.40	91.44	3.04	2.96	97.4	2.96	97.4	14	4	6	6	2	3	
72	91.44	94.50	3.06	3.02	98.7	3.02	98.7	15	4	6	3	3	3	competent rock/ fractures crosscut foliation
72	94.50	97.54	3.04	2.98	98.0	2.91	95.7	15	3	6	3	3	3	
72	97.54	100.60	3.06	3.00	98.0	2.96	96.7	15	4	6	3	1	2	1,2 joint is isolated to minor fault gouge
72	100.60	103.63	3.03	2.93	96.7	2.93	96.7	15	4	6	3	3	3	

COLUMBIA GOLD MINES LTD.
FYRE LAKE PROPERTY
1997 Diamond Drill Hole - Rock Quality Data

DDH	Interval (m)			Recovery		RQD		Brkg	Hard	Wthr	XJnt	Shape	Rgh	Comments
No.	From	To	Lgth	m.	%	m.	%							
72	103.63	106.70	3.07	3.02	98.4	3.02	98.4	15	4	6	0			
72	106.70	109.73	3.03	3.03	100.0	3.03	100.0	15	4	6	0			
72	109.73	112.78	3.05	2.99	98.0	2.99	98.0	15	4	6	3	4	3	
72	112.78	115.82	3.04	3.04	100.0	3.04	100.0	15	4	6	3	3	3	
72	115.82	118.87	3.05	2.84	93.1	2.84	93.1	15	3	6	1	3	3	some slick joints
72	118.87	121.92	3.05	3.01	98.7	3.01	98.7	15	4	6	0			healed fractures throughout
72	121.92	124.97	3.05	2.93	96.1	2.93	96.1	15	4	6	1	4	3	decent core
72	124.97	128.02	3.05	2.91	95.4	2.91	95.4	15	4	6	1	2	2	
72	128.02	131.06	3.04	3.06	100.7	3.00	98.7	15	4	6	5	4	3	competent rock/ very few fractures
72	131.06	134.11	3.05	2.95	96.7	2.95	96.7	15	4	6	2	2	2	competent rock/ very few fractures
72	134.11	137.16	3.05	3.04	99.7	1.99	65.2	15	3	6	3	4	3	competent rock/ very few fractures
72	137.16	140.21	3.05	3.02	99.0	3.02	99.0	15	4	6	0			
72	140.21	143.26	3.05	3.02	99.0	3.02	99.0	15	4	6	0			good core
72	143.26	146.30	3.04	2.99	98.4	2.99	98.4	15	4	6	0			solid core
72	146.30	149.35	3.05	2.94	96.4	2.74	89.8	14	3	6	6	1	1	4cm gouge material amidst 20cm weak core
72	149.35	152.40	3.05	2.69	88.2	2.35	77.0	13	3	6	12	1	1	2cm gouge material/ 15cm crushed rock

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DDH No.	Interval (m)			Recovery		RQD		Brkg	Hard	Wthr	XJnt	Shape	Rgh	Comments
	From	To	Lgth	m.	%	m.	%							
78	12.19	13.72	1.53	0.25	16.3	0.15	9.8	5	4-5	5	4	4	3	rubble and redrilled core
78	13.72	15.24	1.52	0.83	54.6	0.51	33.6	9	4	5	10	3	3	most joints are 4,3
78	15.24	16.15	0.91	0.16	17.6	0.00	0.0	4	4	5	6	4	3	moderate staining/ broken rock through interv
78	16.15	17.68	1.53	0.23	15.0	0.12	7.8	4	4	5	7	1	1	very broken rock for 10cm w/o gouge/mild stai
78	17.68	18.59	0.91	0.14	15.4	0.07	7.7	4	4	5	4	1	1	2cm fault gouge @ 17.7/ minimal staining
78	18.59	19.81	1.22	0.48	39.3	0.18	14.8	4	3	5	15	3	2	very broken rock without gouge
78	19.81	21.34	1.53	0.94	61.4	0.84	54.9	11	4	5	6	3	3	25cm rubble @ 20.14
78	21.34	22.86	1.52	1.03	67.8	0.51	33.6	7	4-5	6	14	1	1	20cm crushed rock w/ gouge @ 22.0 m
78	22.86	24.38	1.52	1.39	91.4	0.92	60.5	7	4	6	25	1	1	9cm fault gouge @ 24.25m
78	24.38	25.60	1.22	0.97	79.5	0.64	52.5	7	4-5	5	14	1	1	10cm crushed rock w/ gouge @ 25.35m
78	25.60	27.43	1.83	1.05	57.4	0.74	40.4	10	3	5	10	3	2	core competency increasing
78	27.43	30.48	3.05	2.42	79.3	2.18	71.5	12	4	5	14	3	2	core competency gaining/1cm gouge @ 27.43
78	30.48	33.53	3.05	2.76	90.5	2.75	90.2	15	4	5	2	3	2	minor gouge @ joints
78	33.53	36.58	3.05	2.73	89.5	2.68	87.9	14	3	6	5	3	2	minor gouge at joints
78	36.58	39.62	3.04	2.87	94.4	2.86	94.1	15	3	5	2	3	3	
78	39.62	42.67	3.05	2.77	90.8	2.70	88.5	15	3	5	4	1	1	3cm crushed, broken rock w/ 1cm gouge @ 4
78	42.67	44.20	1.53	1.20	78.4	1.05	68.6	13	3	5	5	3	3	30cm healed fracture @ 42.92m
78	44.20	45.72	1.52	1.50	98.7	1.48	97.4	15	3	6	2	3	2	mild staining @ several joints
78	45.72	48.77	3.05	2.81	92.1	2.74	89.8	15	3-4	6	4	3	3	2 crossjoints are 4,3
78	48.77	51.21	2.44	2.32	95.1	2.08	85.2	13	3	6	8	2	2	other crossjoints are 3,2
78	51.21	54.25	3.04	2.88	94.7	2.88	94.7	15	3-4	6	1	3	2	healed 4,3 fractures over first 60 cm
78	54.25	55.47	1.22	0.96	78.7	0.95	77.9	14	3	6	3	3	2	10cm quartz @ 54.6m
78	55.47	57.91	2.44	2.20	90.2	2.20	90.2	15	3-4	6	1	3	2	
78	57.91	60.96	3.05	2.85	93.4	2.85	93.4	15	4	6	1	3	2	
78	60.96	64.01	3.05	2.85	93.4	2.80	91.8	15	4	6	4	3	1	occasional highly polished joints/ healed joint
78	64.01	67.06	3.05	2.91	95.4	2.89	94.8	15	3-4	6	3	3	2	
78	67.06	70.10	3.04	2.88	94.7	2.88	94.7	15	3-4	6	0			competent core
78	70.10	73.15	3.05	2.77	90.8	2.72	89.2	15	3-4	6	3	1	1	5cm fault ouge @ 72.77m
78	73.15	75.29	2.14	1.85	86.4	1.85	86.4	15	3	6	1	2	2	
78	75.29	78.33	3.04	2.74	90.1	2.58	84.9	15	3	6	7	3	2	all x-joints in 16cm weak rock @ 78.05m
78	78.33	79.25	0.92	0.69	75.0	0.40	43.5	7	3	6	11	1	1	25cm broken rock w/ minor gouge @ 78.8m
78	79.25	82.30	3.05	2.71	88.9	2.40	78.7	12	3	6	14	1	1	2cm gouge @ 3 diff places/ rock competence
78	82.30	85.34	3.04	2.70	88.8	2.68	88.2	15	3	6	3	3	2	competency increasing
78	85.34	88.39	3.05	2.90	95.1	2.90	95.1	15	3	6	0			competent core
78	88.39	91.44	3.05	2.93	96.1	2.93	96.1	15	3-4	6	1	4	3	otherwise competent core
78	91.44	94.49	3.05	2.83	92.8	2.83	92.8	15	3-4	6	1	3	3	
78	94.49	97.54	3.05	2.85	93.4	2.85	93.4	15	3	6	1	4	3	
78	97.54	100.58	3.04	2.71	89.1	2.71	89.1	15	3	6	3	3	2	30cm quartz throughout interval

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	From	To	Lgth	m.	%	m.	%							
78	100.58	103.63	3.05	2.93	96.1	2.93	96.1	15	3-4	6	2	2	2	
78	103.63	106.68	3.05	2.85	93.4	2.84	93.1	15	3-4	6	3	3	2	
78	106.68	109.73	3.05	2.89	94.8	2.89	94.8	15	4	6	2	4	3	fracture sub-parallel to core axis
78	109.73	112.78	3.05	3.03	99.3	3.01	98.7	15	3-4	6	4	3	3	3cm weak quartz, held together w/ minor gouge
78	112.78	115.82	3.04	2.99	98.4	2.95	97.0	15	4	6	2	3	3	
78	115.82	118.87	3.05	2.91	95.4	2.91	95.4	15	4	6	2	3	2	other x-joint is 4,3
78	118.87	121.92	3.05	2.81	92.1	2.81	92.1	15	4	6	2	3	2	competent core
78	121.92	123.14	1.22	1.02	83.6	1.02	83.6	15	4	6	0			competent core
78	123.14	124.97	1.83	1.77	96.7	1.77	96.7	15	3	6	0			competent core
78	124.97	128.02	3.05	2.95	96.7	2.95	96.7	15	4	6	0			competent core
78	128.02	131.06	3.04	2.87	94.4	2.79	91.8	15	3-4	6	2	4	3	
78	131.06	134.11	3.05	2.85	93.4	2.85	93.4	15	3	6	0			competent core
78	134.11	137.16	3.05	2.94	96.4	2.94	96.4	15	3	6	0			competent core
78	137.16	140.21	3.05	2.35	77.0	2.35	77.0	15	3-4	6	0			redrilled core throughout
78	140.21	143.26	3.05	2.91	95.4	2.91	95.4	15	4	6	0			competent core
78	143.26	146.30	3.04	2.90	95.4	2.90	95.4	15	3	6	0			competent core
78	146.30	149.35	3.05	2.89	94.8	2.89	94.8	15	3	6	0			competent core
78	149.35	150.88	1.53	1.23	80.4	1.23	80.4	15	3	6	1	3	2	

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DDH	Interval (m)			Recovery		RQD		Brkg	Hard	Wthr	XJnt	Shape	Rgh	Comments
No.	From	To	Lgth	m.	%	m.	%							
86	3.05	5.79	2.74	1.26	46.0	1.26	46.0	15	3-4	5	2	5	3	core suprisingly competent
86	5.79	6.71	0.92	0.89	96.7	0.89	96.7	14	3-4	5	3	1	2	competent core
86	6.71	7.32	0.61	0.57	93.4	0.52	85.2	13	3-4	5	3	1	2	last 10cm broken core
86	7.32	7.92	0.60	0.42	70.0	0.35	58.3	10	4	5	3	1	2	last 20 cm broken core
86	7.92	8.84	0.92	0.80	87.0	0.62	67.4	13	4	5	5	1	2	most of interval broken core
86	8.84	9.45	0.61	0.75	123.0	0.57	93.4	13	4	6	5	1	1	not slick/ trace of iron carbonate
86	9.45	10.06	0.61	0.36	59.0	0.29	47.5	14	3-4	5	3	5	2	last 6cm broken rock
86	10.06	11.89	1.83	1.53	83.6	1.50	82.0	15	3-4	6	3	1	2	
86	11.89	12.80	0.91	0.82	90.1	0.70	76.9	14	3	6	4	1	2	20cm broken rock in middle of interval
86	12.80	13.41	0.61	0.62	101.6	0.62	101.6	14	3-4	6	2	1	2	numerous breaks throughout interval
86	13.41	14.33	0.92	0.76	82.6	0.53	57.6	14	3-4	6	4	1	2	numerous breaks throughout interval
86	14.33	14.94	0.61	0.39	63.9	0.23	37.7	13	3	6	3	1	2	10cm broken core @ start of interval/ many fr
86	14.94	15.54	0.60	0.60	100.0	0.54	90.0	14	4	6	3	1	2	redrilled core @ end of interval
86	15.54	16.15	0.61	0.41	67.2	0.32	52.5	13	3-4	6	4	1	2	most of interval broken core
86	16.15	16.76	0.61	0.61	100.0	0.61	100.0	14	4	6	2	1	2	
86	16.76	17.68	0.92	0.95	103.3	0.84	91.3	14	4	6	7	1	2	
86	17.68	20.12	2.44	2.40	98.4	2.40	98.4	15	4	6	2	1	1	not slick/ trace of iron carbonate/ competent c
86	20.12	21.03	0.91	0.75	82.4	0.75	82.4	14	3-4	6	3	1	1	not slick/ trace of iron carbonate
86	21.03	21.64	0.61	0.58	95.1	0.58	95.1	14	3	6	2	1	1	not slick / trace of iron carbonate
86	21.64	22.25	0.61	0.52	85.2	0.48	78.7	14	3-4	6	2	1	3	gouge on fractures/ many fractures w/ interval
86	22.25	23.77	1.52	1.54	101.3	1.43	94.1	15	3-4	6	3	1	2	fewer fractures
86	23.77	24.69	0.92	0.92	100.0	0.92	100.0	15	3	6	1	1	1	not slick/ trace of iron carbonate
86	24.69	26.21	1.52	1.37	90.1	1.17	77.0	15	3	6	4	1	2	significant foliation occuring
86	26.21	27.13	0.92	0.84	91.3	0.73	79.3	14	4-5	6	3	1	2	gouge on fractures/ foliation occuring
86	27.13	29.57	2.44	2.34	95.9	2.12	86.9	15	3-4	6	12	1	3	gouge on fractures/ foliation occuring
86	29.57	30.48	0.91	0.97	106.6	0.92	101.1	14	3	6	3	1	2	
86	30.48	32.31	1.83	1.60	87.4	1.60	87.4	15	3	6	2	1	2	foliations numerous
86	32.31	33.83	1.52	1.38	90.8	1.01	66.4	13	3	6	8	1	1	not slick/ red mineral on inside of each xjoint
86	33.83	35.05	1.22	1.11	91.0	0.71	58.2	13	3	6	6	1	3	core foliated
86	35.05	37.80	2.75	2.77	100.7	2.60	94.5	15	3-4	6	5	1	3	competent core/ moderate foliations
86	37.80	39.62	1.82	1.82	100.0	1.82	100.0	15	3	6	3	1	2	foliated core
86	39.62	41.45	1.83	1.68	91.8	1.51	82.5	15	3	6	4	1	3	last 15cm broken core
86	41.45	43.28	1.83	1.82	99.5	1.80	98.4	15	3	6	4	1	2	foliated core
86	43.28	45.72	2.44	2.33	95.5	2.33	95.5	15	3	6	1	1	2	foliated core
86	45.72	48.77	3.05	2.98	97.7	2.83	92.8	15	3	6	4	1	2	
86	48.77	49.99	1.22	1.27	104.1	1.23	100.8	15	3	6	3	1	3	fairly competent core
86	49.99	51.82	1.83	1.63	89.1	1.63	89.1	15	3	6	1	1	3	foliated core
86	51.82	54.86	3.04	2.96	97.4	2.96	97.4	15	3	6	4	1	3	

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	From	To	Lgth	m.	%	m.	%							
86	54.86	57.91	3.05	2.72	89.2	2.72	89.2	15	3-4	6	4	3	2	competent core
86	57.91	60.96	3.05	3.07	100.7	3.07	100.7	15	3	6	5	3	3	redrilled core/ foliated core/ 35cm quartz veini
86	60.96	63.40	2.44	2.44	100.0	2.21	90.6	15	3-4	6	7	1	3	last 20 cm broken core
86	63.40	65.23	1.83	1.82	99.5	1.50	82.0	14	3	6	5	1	2	last 15cm broken core
86	65.23	67.06	1.83	1.58	86.3	1.58	86.3	15	3-4	6	1	1	3	
86	67.06	70.10	3.04	2.95	97.0	2.65	87.2	15	3	6	8	1	3	last 25cm crushed core
86	70.10	72.24	2.14	1.80	84.1	1.40	65.4	14	3	6	8	3	3	last 25 cm crushed core
86	72.24	74.07	1.83	1.79	97.8	1.79	97.8	15	3	6	6	1	3	core fairly weak
86	74.07	76.20	2.13	1.95	91.5	1.95	91.5	15	3	6	5	3	3	significant veining throughout core/ easily bro
86	76.20	77.42	1.22	1.29	105.7	1.29	105.7	15	3	6	4	1	2	significant veining throughout core/ easily bro
86	77.42	79.25	1.83	1.59	86.9	1.33	72.7	14	3	6	8	1	2	significant veining throughout core
86	79.25	80.47	1.22	1.27	104.1	1.02	83.6	14	3	6	6	5	3	30cm broken rock in interval
86	80.47	82.30	1.83	1.70	92.9	1.48	80.9	15	3-4	6	6	1	1	not slick/ trace of iron carbonate
86	82.30	83.52	1.22	1.17	95.9	0.93	76.2	13	3	6	7	1	2	
86	83.52	85.04	1.52	1.39	91.4	1.10	72.4	14	3	6	7	1	2	most of interval is broken
86	85.04	87.78	2.74	2.63	96.0	2.58	94.2	15	3-4	6	5	1	2	numerous carbonate based veins
86	87.78	90.83	3.05	2.89	94.8	2.89	94.8	15	3	6	4	1	2	very competent rock/ very few breaks
86	90.83	92.96	2.13	2.13	100.0	2.13	100.0	15	3-4	6	3	1	2	very competent rock/ very few breaks
86	92.96	94.79	1.83	1.89	103.3	1.89	103.3	15	3-4	6	3	1	3	6cm solid quartz
86	94.79	97.54	2.75	1.47	53.5	1.33	48.4	15	3	6	6	3	3	
86	97.54	100.58	3.04	2.81	92.4	2.81	92.4	15	4	6	3	3	3	competent core
86	100.58	103.63	3.05	2.90	95.1	2.90	95.1	15	3-4	6	4	1	2	competent core

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No.	From	To	Lgth	m.	%	m.	%							
87	3.05	9.14	6.09	0.38	6.2	0.00	0.0	6	3	5	35+	5	3	gouge on fractures /entire interval broken
87	9.14	12.19	3.05	0.26	8.5	0.10	3.3	8	3-4	6	3	1	2	poor recovery/ mica dust on core pieces
87	12.19	13.41	1.22	0.78	63.9	0.07	5.7	6	2	6	50+	1	2	entire interval mica
87	13.41	14.63	1.22	1.07	87.7	0.70	57.4	8	3-4	6	25+	1	3	half of interval mica/ half speckled rock
87	14.63	16.46	1.83	1.21	66.1	1.06	57.9	12	3	6	15+	1	2	last 15 cm mica/ mostly speckled rock
87	16.46	17.37	0.91	0.83	91.2	0.25	27.5	7	2-3	6	15+	1	2	15cm solid qz/ redrilled core/ mostly broken m
87	17.37	18.29	0.92	0.80	87.0	0.66	71.7	10	3	6	5	1	2	12cm solid qz/ most of core foliated
87	18.29	19.81	1.52	1.12	73.7	0.90	59.2	9	3	6	10	1	2	mostly mica/ qz also prevalent
87	19.81	21.03	1.22	0.79	64.8	0.52	42.6	9	3	6	15+	1	2	areas of crushed mica
87	21.03	21.64	0.61	0.44	72.1	0.05	8.2	5	2-3	6	30+	5	2	entire interval broken core/ mostly mica
87	21.64	23.47	1.83	1.62	88.5	1.41	77.0	13	3	6	10	1	2	foliated area of core more easily broken
87	23.47	25.91	2.44	1.97	80.7	1.76	72.1	14	3	6	9	1	2	highly foliated core
87	25.91	27.74	1.83	1.55	84.7	1.31	71.6	14	3	6	9	1	2	20cm solid qz/ last 20cm broken core/ foliatio
87	27.74	28.65	0.91	0.39	42.9	0.00	0.0	3	2-3	6	40+	1	2	entire interval broken core w/ crushed mica
87	28.65	29.87	1.22	0.99	81.1	0.36	29.5	6	2-3	6	20+	3	3	7cm fault gouge/ core very soft (weak)
87	29.87	31.39	1.52	1.22	80.3	1.03	67.8	13	3	6	6	1	2	gouge on fractures
87	31.39	33.22	1.83	1.51	82.5	1.28	69.9	14	3	6	15	1	2	15cm solid qz/ gouge on fractures
87	33.22	34.75	1.53	1.01	66.0	0.68	44.4	13	3	6	25+	1	2	15cm solid qz/ most of interval broken core
87	34.75	35.97	1.22	0.97	79.5	0.44	36.1	6	3	6	25+	1	2	most of interval crushed core
87	35.97	38.40	2.43	1.97	81.1	1.86	76.5	15	3	6	10	1	2	10cm solid qz/ foliations numerous
87	38.40	41.45	3.05	2.90	95.1	2.90	95.1	15	3	6	4	1	2	foliations numerous
87	41.45	44.50	3.05	2.83	92.8	2.83	92.8	15	3	6	3	3	2	foliations numerous
87	44.50	47.55	3.05	2.80	91.8	2.80	91.8	15	3	6	2	3	2	more competent core
87	47.55	50.60	3.05	2.92	95.7	2.92	95.7	15	3	6	3	1	3	numerous foliations but more competent core
87	50.60	53.64	3.04	2.86	94.1	2.86	94.1	14	3-4	6	5	1	3	numerous qz veins
87	53.64	54.86	1.22	1.19	97.5	1.05	86.1	13	3	6	10	1	2	numerous foliations
87	54.86	56.69	1.83	1.74	95.1	1.36	74.3	13	3	6	10	1	3	gouge on fractures/ entire interval broken core
87	56.69	58.52	1.83	1.91	104.4	1.91	104.4	14	3	6	4	1	3	gouge on fractures
87	58.52	60.66	2.14	1.87	87.4	1.65	77.1	13	3-4	6	9	1	3	most of interval broken core
87	60.66	61.57	0.91	0.78	85.7	0.62	68.1	13	3-4	6	6	1	2	most of interval broken core
87	61.57	62.79	1.22	1.15	94.3	0.89	73.0	13	3	6	6	1	2	most of interval is broken core
87	62.79	63.70	0.91	0.89	97.8	0.57	62.6	12	3-4	6	9	3	3	xjoints on carbonate based veins
87	63.70	64.92	1.22	1.13	92.6	0.83	68.0	13	4	6	8	3	3	most of interval is broken core
87	64.92	65.53	0.61	0.42	68.9	0.19	31.1	6	4-5	6	6	5	3	entire interval broken core
87	65.53	67.06	1.53	1.45	94.8	1.45	94.8	15	3-4	6	1	1	2	very few fractures/ very competent core

COLUMBIA GOLD MINES LTD.
FYRE LAKE PROPERTY

1997 Diamond Drilling Program - Specific Gravity Data

Drill Hole No.	Rock Code	Depth (m)	Mass in Air (Ma)	Mass in Water (Mw)	Core Vol. (Vc=Ma-Mw)	S.G. (Ma/Vc)	Comment (rock code)
72	SLST	8.00	529.30	346.40	182.90	2.89	
72	SLST	16.00	414.50	271.00	143.50	2.89	
72	SLST	24.00	464.70	299.70	165.00	2.82	
72	SLST	32.00	376.80	244.50	132.30	2.85	
72	MDST	40.00	266.00	168.80	97.20	2.74	
72	SLST	48.00	249.40	160.80	88.60	2.81	
72	MDST	56.00	305.60	196.40	109.20	2.80	
72	MDST	64.00	352.10	222.50	129.60	2.72	
72	MDST	72.00	321.10	207.80	113.30	2.83	
72	SLST	80.00	342.20	223.00	119.20	2.87	
72	MDST	88.00	445.90	283.90	162.00	2.75	
72	SLST	96.00	337.70	220.00	117.70	2.87	
72	SLST	104.00	556.70	359.30	197.40	2.82	
72	MDST	112.00	375.30	241.80	133.50	2.81	
72	MDST	120.00	353.40	225.40	128.00	2.76	
72	MDST	128.00	355.30	228.90	126.40	2.81	
72	SLST	136.00	372.80	241.80	131.00	2.85	
72	SLST	144.00	431.60	280.00	151.60	2.85	
72	MDST	152.00	348.80	220.50	128.30	2.72	

COLUMBIA GOLD MINES LTD.

FYRE LAKE PROPERTY

1997 Diamond Drilling Program - Specific Gravity Data

Drill Hole No.	Rock Code	Depth (m)	Mass in Air (Ma)	Mass in Water (Mw)	Core Vol. (Vc=Ma-Mw)	S.G. (Ma/Vc)	Comment (rock code)
78	SLST	15.00	330.60	210.00	120.60	2.74	
78	MDST	24.50	358.40	225.60	132.80	2.70	
78	MDST	32.00	604.50	380.60	223.90	2.70	
78	MDST	40.00	496.20	314.30	181.90	2.73	
78	MDST	48.00	508.50	321.90	186.60	2.73	
78	MDST	56.00	480.70	306.60	174.10	2.76	
78	MDST	64.00	435.30	277.10	158.20	2.75	
78	MDST	72.00	487.70	312.90	174.80	2.79	
78	MDST	80.00	515.90	328.30	187.60	2.75	
78	MDST	88.00	484.20	307.50	176.70	2.74	
78	MDST	96.00	520.40	332.90	187.50	2.78	
78	SLST	104.00	574.60	369.90	204.70	2.81	
78	SLST	112.00	483.30	313.60	169.70	2.85	
78	SLST	120.00	601.80	390.00	211.80	2.84	
78	SLST	128.00	539.40	354.90	184.50	2.92	
78	SLST	136.00	544.90	353.90	191.00	2.85	
78	SLST	148.00	552.10	362.40	189.70	2.91	

COLUMBIA GOLD MINES LTD.
FYRE LAKE PROPERTY

1997 Diamond Drilling Program - Specific Gravity Data

Drill Hole No.	Rock Code	Depth (m)	Mass in Air (Ma)	Mass in Water (Mw)	Core Vol. (Vc=Ma-Mw)	S.G. (Ma/Vc)	Comment (rock code)
86	MFVC	8.00	464.10	306.00	158.10	2.94	
86	MFVC	16.00	383.80	253.10	130.70	2.94	
86	MFVC	24.00	344.30	224.20	120.10	2.87	
86	MFVC	32.00	292.20	192.80	99.40	2.94	
86	MFVC	40.00	304.90	197.40	107.50	2.84	
86	MFVC	48.00	575.60	379.60	196.00	2.94	
86	MFVC	56.00	468.00	307.60	160.40	2.92	
86	MFVC	64.00	521.50	340.30	181.20	2.88	
86	MFVC	72.00	511.20	330.40	180.80	2.83	
86	MFVC	80.00	575.50	377.40	198.10	2.91	
86	MFVC	88.00	712.50	472.40	240.10	2.97	
86	MFVC	96.00	417.50	274.60	142.90	2.92	

COLUMBIA GOLD MINES LTD.
FYRE LAKE PROPERTY

1997 Diamond Drilling Program - Specific Gravity Data

Drill Hole No.	Rock Code	Depth (m)	Mass in Air (Ma)	Mass in Water (Mw)	Core Vol. (Vc=Ma-Mw)	S.G. (Ma/Vc)	Comment (rock code)
87	MFVC	6.00	188.30	120.90	67.40	2.79	
87	FHPP	14.00	359.40	218.30	141.10	2.55	
87	MFVC	22.00	255.70	164.20	91.50	2.79	
87	MFVC	30.00	553.90	359.80	194.10	2.85	
87	MFVC	38.00	282.30	182.40	99.90	2.83	
87	MFVC	46.00	445.60	295.80	149.80	2.97	
87	MFVC	54.00	292.60	194.10	98.50	2.97	
87	MFVC	62.00	525.10	345.10	180.00	2.92	

APPENDIX III
Drill Hole Assays and Analytical Results
Certificate of Analysis
Min-En Laboratories Ltd.



MINERAL ENVIRONMENTS LABORATORIES LTD.

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
8282 SHERBROOKE STREET
VANCOUVER, B.C., CANADA V5X 4E8
TELEPHONE (604) 327-3436
FAX (604) 327-3423

SMITHERS LAB:
3176 TATLOW ROAD
SMITHERS, B.C., CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Quality Assaying for over 25 Years

Assay Certificate

7S-0115-RA1

Company: COLUMBIA GOLD MINES LTD
Project: FYRE LAKE
Attn: WAYNE ROBERTS

Date: JUL-03-97

We hereby certify the following Assay of 18 CORE samples
submitted JUN-26-97 by IAN FOREMAN.

Sample Number	AU-FIRE g/tonne	CO %	CU %	ZN %
250644	.07	.056	.314	.02
250651	.01	.032	.310	.01
250654	.05	.018	.355	.01
250657	.12	.003	.284	.01
250660	.11	.021	.650	.01
250661	.04	.024	.163	.01
250662	.09	.022	.521	.01
250663	.97	.071	4.680	.04
250664	.50	.108	2.540	.03
250665	.38	.115	1.790	.01
250666	.46	.162	1.660	.01
250667	.44	.110	1.590	.03
250670	.01	.011	.068	.01
250676	.02	.016	.051	.03
250677	.01	.008	.037	.01
250678	.02	.015	.107	.02
250681	.01	.009	.037	.01
250682	.02	.014	.094	.01

* Hole 87

Certified by

MIN-EN LABORATORIES



VANCOUVER OFFICE:
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3176 TATLOW ROAD
SMITHERS, B.C., CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Quality Assaying for over 25 Years

Geochemical Analysis Certificate

7S-0116-RG1

Company: COLUMBIA GOLD MINES LTD
Project: FYRE LAKE
Attn: WAYNE ROBERTS

Date: JUL-03-97

We hereby certify the following Geochemical Analysis of 23 CORE samples submitted JUN-26-97 by IAN FOREMAN.

Sample Number	AU-FIRE PPB	CO PPM	CU PPM	ZN PPM
250643	8	46	95	236
250645	7	75	319	150
250646	8	95	415	176
250647	20	112	1125	429
250648	28	151	1640	427
250649	11	114	438	543
250650	1	36	312	90
250652	2	37	65	59
250653	2	55	413	86
250655	6	78	279	104
250656	2	14	47	24
250658	5	11	20	23
250659	16	140	1180	436
250668	9	42	219	65
250669	13	32	187	55
250671	9	38	142	76
250672	10	28	843	66
250673	12	31	380	58
250674	11	43	432	36
250675	11	54	514	75
250679	24	98	748	79
250680	38	99	726	81
250683	11	84	163	70

* Hole 87

Certified by

MIN-EN LABORATORIES

COMP: COLUMBIA GOLD MINES LTD.

PROJ: FYRE LAKE

ATTN: Wayne Roberts

MIN-EN LABS — ICP REPORT

8282 SHERBROOKE ST., VANCOUVER, B.C. V5X 4E8

TEL: (604) 327-3436 FAX: (604) 327-3423

FILE NO: 7S-0078-RJ1+2

DATE: 97/05/30

* * (ACT: ICP 31)

SAMPLE NUMBER	AG PPM	AL %	AS PPM	BA PPM	BE PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	GA PPM	K %	LI PPM	MG %	MN PPM	MO PPM	NA %	NI PPM	P PPM	PB PPM	SB PPM	SN PPM	SR PPM	TH PPM	TI %	U PPM	V PPM	W PPM	ZN PPM
72 - 8.0	.1	2.26	5	144	.1	1	2.06	.1	17	147	47	3.38	6	.46	47	2.05	295	1	.15	52	1840	6	3	1	62	12	.12	4	120.7	1	49
72 - 16.0	.1	1.92	2	169	.1	1	5.46	.1	15	128	64	2.23	4	.50	29	1.31	476	1	.15	51	1460	3	3	1	105	8	.17	3	76.4	1	31
72 - 24.0	.1	2.07	1	419	.1	1	5.29	.1	20	225	43	3.55	5	.77	31	1.75	591	1	.15	58	1720	3	1	1	74	12	.20	4	127.0	1	47
72 - 32.0	.1	5.13	3	335	.1	1	.65	.3	30	65	107	8.06	12	1.36	62	3.30	634	1	.13	27	250	10	3	1	25	29	.18	10	152.6	1	106
72 - 40.0	.1	4.16	6	116	.3	1	4.70	.5	8	103	25	2.67	6	.21	32	1.78	809	1	.26	12	260	7	5	1	170	9	.07	3	86.8	1	113
72 - 48.0	.1	3.23	7	452	.1	1	5.29	.2	18	126	25	3.94	7	1.19	41	2.67	762	1	.22	33	1300	5	1	1	106	20	.20	5	127.8	1	71
72 - 56.0	.3	1.23	1	118	.1	1	1.58	.8	12	212	44	3.68	4	.30	13	.87	477	17	.08	42	890	11	3	1	37	18	.04	4	60.6	1	92
72 - 64.0	.1	1.28	1	65	.1	1	.51	.2	8	107	14	2.83	4	.25	18	.90	261	1	.05	22	460	8	1	1	26	14	.05	3	35.3	1	53
72 - 72.0	.1	4.09	5	279	.1	1	2.27	.2	17	259	11	2.96	7	.35	25	2.84	276	1	.12	98	2120	2	3	1	73	9	.12	4	71.3	1	75
72 - 80.0	.6	2.31	1	345	.1	1	7.86	.7	19	183	53	3.50	1	.94	20	1.54	3190	7	.12	54	3010	7	2	1	98	11	.19	4	145.0	1	56
72 - 88.0	.1	1.81	2	106	.1	1	.31	.1	12	107	29	3.87	6	.55	30	1.36	226	1	.04	31	610	6	2	1	7	16	.08	5	53.3	1	92
72 - 96.0	.1	3.33	1	810	.1	1	7.05	.3	22	239	93	3.80	7	1.39	33	1.93	452	1	.17	77	2940	6	3	1	230	13	.22	5	116.3	1	75
72 - 104.0	.1	4.15	4	250	.1	1	3.93	.2	19	269	15	5.48	10	1.98	80	2.45	322	1	.16	39	4150	7	4	1	96	20	.36	7	150.8	1	117
72 - 112.0	.1	2.32	1	265	.1	1	.37	.5	14	99	55	4.72	6	1.33	29	1.89	310	9	.04	46	790	9	1	1	11	25	.24	6	81.5	1	270
72 - 120.0	.3	4.17	1	269	.1	1	3.06	19.8	9	178	71	3.32	7	.72	9	1.09	506	51	.16	65	740	12	2	1	102	16	.13	4	148.4	1	187
72 - 128.0	.1	2.01	2	160	.1	1	.48	.4	10	76	62	3.31	5	.91	18	1.05	167	1	.08	25	580	6	2	1	32	19	.13	4	38.4	1	101
72 - 136.0	.1	6.98	6	881	.1	1	2.64	.4	29	347	39	5.92	11	2.75	53	3.03	426	1	.23	88	740	6	3	1	165	20	.45	8	92.0	1	139
72 - 144.0	.1	4.45	4	921	.1	1	3.29	.1	29	261	1	5.40	10	2.45	74	2.85	518	1	.16	88	2360	6	4	1	75	18	.39	7	73.0	1	109
72 - 152.0	.1	1.09	1	55	.3	1	2.38	1.5	10	174	42	2.80	3	.17	22	1.26	491	23	.01	60	860	17	3	1	83	14	.01	3	82.7	1	143
73 - 16.25	.1	4.64	5	752	.1	1	4.60	.6	13	128	8	3.61	8	.98	20	2.35	516	1	.25	17	540	49	2	1	315	14	.14	4	100.3	1	115
73 - 25.0	.1	3.31	4	368	.1	1	3.07	.3	19	278	1	4.46	7	2.21	47	2.90	955	1	.08	15	770	5	1	1	63	18	.29	6	138.8	1	108
73 - 32.0	.1	1.30	2	109	.3	1	.69	.2	2	90	1	1.72	4	.60	19	1.01	283	1	.03	6	180	25	1	1	25	30	.05	2	6.6	1	77
73 - 40.0	.1	1.67	4	169	.1	1	1.24	.8	7	138	7	2.75	4	.77	19	1.10	488	2	.06	4	610	7	1	1	28	23	.11	3	26.8	1	191
73 - 48.0	.1	1.57	53	84	.1	1	2.07	.2	46	132	42	7.30	7	.34	18	1.01	246	3	.09	135	1830	17	5	1	45	29	.12	9	57.9	1	84
73 - 56.0	.1	1.62	4	110	.1	1	1.37	.4	12	134	87	3.82	5	.52	17	1.52	370	35	.10	66	1270	19	1	1	40	17	.05	5	146.2	1	46
73 - 64.0	.1	1.23	1	33	.1	1	1.92	.2	14	96	34	2.25	4	.15	17	1.46	298	1	.07	40	1460	2	1	1	30	7	.13	3	59.1	1	35
73 - 72.0	.1	2.39	3	68	.1	1	3.51	.2	20	148	53	4.43	7	.18	22	2.48	615	1	.12	49	1400	6	2	1	59	14	.15	5	156.5	1	47
73 - 80.0	.1	2.19	1	163	.1	1	1.59	.7	19	133	105	3.83	6	.87	30	2.87	501	1	.06	51	1360	6	1	1	20	14	.15	5	113.0	1	67
73 - 88.0	.1	1.14	1	64	.1	1	1.31	.1	11	112	96	1.98	3	.22	9	1.18	309	1	.10	39	1460	2	1	1	23	5	.12	2	60.7	1	24
73 - 96.0	.1	1.34	1	46	.1	1	1.59	.2	13	145	33	2.38	4	.14	14	1.53	394	1	.10	48	1390	1	2	1	29	7	.12	3	69.7	1	28
73 - 104.0	.1	1.96	1	8	.1	1	1.41	.4	16	189	23	2.97	4	.04	18	2.16	473	1	.09	73	1520	10	1	1	27	9	.08	3	74.7	1	50
73 - 112.0	.1	1.32	1	59	.1	1	1.08	.1	12	136	41	2.04	3	.22	16	1.42	229	1	.09	51	1440	2	1	1	21	6	.10	2	55.5	1	24
73 - 120.0	.1	2.73	3	73	.1	1	1.26	.4	20	238	47	3.59	6	.21	37	3.79	684	1	.02	93	1090	26	1	1	29	11	.09	4	111.0	1	90
73 - 128.0	.1	2.05	1	215	.1	1	.69	.1	18	202	46	2.80	5	.70	25	2.60	330	1	.04	83	1200	3	2	1	13	7	.14	3	86.7	1	35
73 - 136.0	.2	1.41	1	93	.1	1	1.21	.1	10	125	71	1.45	2	.29	12	1.05	156	1	.14	49	1420	1	1	1	54	4	.09	2	44.2	1	14
73 - 144.0	.1	1.87	1	148	.1	1	.77	.1	16	208	81	2.49	4	.51	21	2.01	172	1	.08	73	1460	1	1	1	21	7	.10	3	67.5	1	36
74 - 16.5	.1	2.09	1	891	.1	1	.33	.2	8	98	21	2.98	6	1.02	19	1.49	289	1	.07	15	550	7	1	1	24	17	.14	4	68.6	1	70
74 - 24.0	.1	2.62	1	692	.1	1	.48	.1	8	111	43	3.68	7	1.64	23	2.14	395	3	.06	16	1270	7	1	1	49	17	.22	5	129.7	1	101
74 - 32.0	.1	.93	2	285	.1	1	.41	.3	3	91	4	1.63	3	.31	10	.64	204	1	.04	4	230	4	1	1	15	18	.04	2	14.3	1	33
74 - 40.0	.1	2.72	1	543	.1	1	1.56	.2	14	117	71	3.41	6	.61	10	1.40	427	1	.22	34	500	5	1	1	70	12	.09	4	67.6	1	48
74 - 48.0	.1	3.36	5	518	.1	1	.64	.3	13	64	14	5.05	9	.92	27	2.53	475	1	.12	8	840	10	1	1	32	22	.11	6	107.7	1	94
74 - 56.0	.1	3.17	1	458	.1	1	.80	.3	17	107	9	4.66	8	.76	23	2.77	373	1	.14	12	710	9	1	1	41	17	.15	6	123.8	1	72
74 - 64.0	.1	1.67	2	93	.4	1	1.54	2.6	9	135	54	2.86	4	.26	17	1.64	471	19	.10	50	820	18	1	1	43	13	.02	4	104.6	1	247
74 - 72.0	.1	1.64	3	162	.1	1	1.31	.4	9	148	65	2.71	4	.24	9	1.20	284	10	.12	42	910	6	1	1	45	14	.05	3	46.2	1	57
74 - 80.0	.1	1.45	2	28	.1	1	4.38	.1	12	129	44	1.77	3	.08	10	1.22	307	1	.12	53	1080	1	1	1	65	5	.14	2	56.6	1	17
74 - 88.0	.1	1.31	3	111	.1	1	2.40	.1	13	99	20	2.28	3	.45	9	1.37	317	1	.07	37	1520	2	1	1	27	7	.19	3	66.5	1	33
74 - 96.0	.1	2.74	1	20	.1	1	2.59	.2	21	202	49	4.13	6	.22	14	2.53	423	1	.20	77	1290	10	1	1	96	13	.11	5	116.8	1	38
74 - 104.0	.1	1.63	2	5	.1	1	.96	.9	15	107	44	2.65	4	.03	18	1.94	340	1	.05	58	1350	4	1	1	11	7	.09	3	57.3	1	86

ATTN: Wayne Roberts

8282 SHERBROOKE ST., VANCOUVER, B.C. V5X 4E8

TEL: (604) 327-3436 FAX: (604) 327-3423

* * (ACT:ICP 31)

SAMPLE NUMBER	AG PPM	AL %	AS PPM	BA PPM	BE PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	GA PPM	K %	LI PPM	MG %	MN PPM	MO PPM	NA %	NI PPM	P PPM	PB PPM	SB PPM	SN PPM	SR PPM	TH PPM	TI %	U PPM	V PPM	W PPM	ZN PPM
77 - 64.0	.1	1.87	2	155	.1	1	.33	.2	13	89	54	4.31	5	.64	33	1.34	238	5	.05	50	630	4	1	1	13	20	.10	5	62.1	1	130
77 - 72.0	.1	3.95	3	298	.1	1	1.49	.3	12	120	33	3.95	8	1.27	34	1.51	294	11	.29	51	720	7	1	1	87	18	.17	5	122.5	1	161
77 - 80.0	.1	5.81	2	398	.1	1	2.33	.1	14	108	33	5.66	12	1.27	52	2.36	547	1	.23	46	1000	13	2	1	105	29	.15	7	118.3	1	109
77 - 88.0	.1	.70	1	48	.5	1	1.02	.1	18	34	60	4.54	3	.16	7	.47	517	1	.02	49	230	22	1	1	53	27	.01	5	11.8	1	209
77 - 96.0	.1	2.28	1	191	.1	1	.17	.1	11	105	26	3.97	5	1.07	17	1.24	167	1	.06	36	560	8	1	1	12	15	.13	5	50.7	1	4
77 - 104.0	.1	1.99	3	206	.1	1	.14	.1	13	80	50	3.59	4	1.04	11	1.15	150	1	.05	44	580	6	1	1	3	15	.14	4	48.5	1	3
77 - 112.0	.1	1.26	2	79	.1	1	.16	.1	7	101	21	2.54	3	.39	9	.74	138	1	.03	23	580	1	1	1	6	14	.07	3	29.0	1	6
77 - 120.0	.1	2.21	1	124	.1	1	.18	.1	11	79	29	4.19	5	.75	18	1.36	179	1	.03	36	680	5	1	1	2	17	.11	5	44.6	1	9
77 - 128.0	.1	1.88	1	89	.1	1	.15	.1	10	104	31	3.54	4	.58	11	1.06	150	1	.04	35	600	3	1	1	5	13	.09	4	39.7	1	1
77 - 136.0	.1	1.63	3	80	.1	1	.16	.1	7	77	18	3.06	4	.56	12	.96	165	1	.03	24	610	2	1	1	5	12	.09	4	36.1	1	1
78 - 15.0	.1	2.52	1	115	.1	1	1.05	.4	20	30	87	6.23	7	.19	31	2.67	670	1	.08	27	280	10	1	1	17	20	.07	8	182.9	1	123
78 - 24.5	.1	.51	1	82	.5	1	2.27	1.0	10	71	45	2.58	1	.15	6	.89	554	11	.01	47	660	6	1	1	113	12	.01	3	32.8	1	159
78 - 32.0	.1	2.37	1	129	.4	1	2.02	2.1	13	174	55	3.15	5	.15	23	1.37	533	14	.10	56	800	9	1	1	71	13	.02	4	139.6	1	172
78 - 40.0	.1	3.12	1	212	.1	1	2.29	1.2	10	128	57	3.56	7	.65	23	1.80	383	21	.28	53	1780	12	1	1	118	18	.07	4	183.4	1	173
78 - 48.0	.1	2.45	3	148	.1	1	1.84	2.1	10	192	55	3.27	6	.69	17	1.43	416	20	.20	59	870	13	1	1	54	15	.08	4	148.0	1	235
78 - 56.0	.1	.99	1	51	.4	1	.69	.1	11	55	26	4.08	5	.13	13	1.02	321	1	.02	31	880	7	2	1	25	20	.01	5	26.4	1	94
78 - 64.0	.1	2.27	3	189	.1	1	1.15	2.6	14	145	69	4.09	6	.92	18	1.62	433	33	.11	70	1860	19	1	1	41	20	.11	5	185.2	1	281
78 - 72.0	.1	1.17	1	176	.1	1	.39	.1	14	84	72	3.79	4	.53	14	1.00	232	22	.03	63	1220	8	1	1	8	19	.08	5	56.4	1	103
78 - 80.0	.1	.94	1	129	.4	1	2.71	1.3	11	101	63	3.40	3	.31	6	1.39	329	18	.06	59	1120	12	1	1	130	17	.02	4	60.7	1	180
78 - 88.0	.1	3.49	3	291	.1	1	1.81	1.5	9	150	59	2.88	6	.93	21	1.61	459	17	.25	48	910	6	1	1	116	14	.13	4	169.6	1	186
78 - 96.0	.1	4.34	6	182	.1	1	2.10	1.1	14	200	93	4.31	9	1.24	26	1.98	446	22	.26	79	1040	11	1	1	102	19	.13	5	177.3	1	202
78 - 104.0	.1	3.53	4	815	.1	1	.30	.1	13	58	1	7.40	11	1.37	49	1.74	89	1	.06	26	550	5	1	1	4	28	.21	9	152.5	1	104
78 - 112.0	.1	4.85	1	332	.1	1	1.52	.1	15	108	80	6.50	11	1.93	44	2.04	318	1	.19	24	160	9	1	1	71	22	.18	8	88.5	1	106
78 - 120.0	.1	3.12	1	322	.1	1	1.68	.1	19	41	54	5.97	9	1.05	43	1.43	222	1	.13	23	300	5	1	1	60	20	.17	8	73.0	1	89
78 - 124.0	.1	2.70	9	110	.1	1	.94	.1	15	107	30	4.54	8	.72	42	1.35	298	2	.08	36	740	7	2	1	44	27	.09	6	49.4	1	44
78 - 128.0	.1	2.67	1	177	.1	1	1.73	.2	16	29	28	3.99	6	.74	35	1.62	213	1	.18	17	420	5	1	1	54	13	.12	5	99.6	1	55
78 - 134.4	.1	2.34	5	166	.1	1	2.23	.1	11	137	34	2.86	6	.57	23	.71	413	1	.08	25	440	2	1	1	58	16	.10	3	42.7	1	44
78 - 136.0	.1	4.41	6	397	.1	1	3.37	.1	14	44	43	4.12	8	1.11	33	1.37	413	1	.22	18	170	3	2	1	132	14	.15	5	120.1	1	65
78 - 148.0	.1	3.35	5	198	.1	1	1.88	.1	16	45	1	4.76	8	.81	40	2.41	592	1	.18	8	750	5	2	1	43	16	.14	6	181.2	1	88

COMP: COLUMBIA GOLD MINES LTD
 PROJ: FYRE LAKE
 ATTN: WAYNE ROBERTS

MIN-EN LABS — ICP REPORT
 8282 SHERBROOKE ST., VANCOUVER, B.C. V5X 4E8
 TEL: (604) 327-3436 FAX: (604) 327-3423

FILE NO: 7S-0117-RJ1+2
 DATE: 97/07/03
 * * (ACT: F31)

SAMPLE NUMBER	AG PPM	AL %	AS PPM	BA PPM	BE PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	GA PPM	K %	LI PPM	MG %	MN PPM	MO PPM	NA %	NI PPM	P PPM	PB PPM	SB PPM	SN PPM	SR PPM	TH PPM	TI %	U PPM	V PPM	W PPM	ZN PPM
DE 8.00	2.3	.79	6	59	2.5	6	.89	.1	13	204	107	1.03	1	.04	9	.95	190	1	.06	42	70	34	1	1	18	1	.02	5	26.8	7	20
DE 16.00	7.4	2.58	34	449	.9	1	1.68	.1	38	658	12	4.05	1	.17	52	4.49	811	1	.05	129	10	74	1	1	17	1	.04	18	86.2	16	131
DE 24.00	10.3	.91	1	701	.4	34	1.08	.8	21	429	21	2.07	32	.11	30	1.55	276	6	.07	82	190	63	40	1	54	15	.04	26	61.7	18	26
DE 32.00	1.2	.86	1	114	.2	2	1.46	.1	14	247	3	2.18	1	.06	18	1.45	224	1	.06	55	50	21	1	1	3	1	.06	2	69.3	7	21
DE 40.00	1.0	2.12	1	444	.2	1	.90	.1	26	365	97	4.07	1	.60	61	2.38	348	1	.14	77	10	33	1	1	6	1	.09	2	103.6	10	40
DE 48.00	.9	.95	1	42	.2	1	.55	.1	17	398	3	2.39	1	.03	26	1.74	176	1	.08	80	10	28	1	1	4	1	.03	2	57.0	12	24
DE 56.00	1.2	.51	1	25	.1	5	.82	.1	8	133	6	1.48	1	.02	11	.68	148	1	.09	18	50	16	1	1	12	1	.04	3	49.1	5	19
DE 64.00	1.2	1.87	1	178	.5	1	1.88	.1	24	661	2	3.03	1	.07	63	3.65	499	1	.06	118	10	35	1	1	17	1	.02	2	66.8	15	24
DE 72.00	1.2	.61	1	189	.2	2	.44	.1	9	123	121	1.18	1	.06	28	.95	147	1	.06	30	20	23	1	1	3	1	.04	2	31.4	3	1
DE 80.00	1.1	.46	1	15	.1	4	.77	.1	10	61	158	1.19	1	.02	6	.57	167	1	.10	12	50	13	1	1	2	1	.04	2	49.7	3	1
DF 14.00	1.3	1.22	38	53	.3	4	.59	.1	21	123	38	1.92	1	.04	13	1.16	221	1	.06	19	130	27	1	1	17	1	.06	3	50.6	4	16
DF 22.00	1.0	2.96	1	109	.4	1	.32	.1	30	753	325	3.95	1	.05	47	4.49	463	1	.02	134	10	47	1	1	4	1	.04	2	73.6	16	91
DF 30.00	.9	2.34	1	24	.5	1	.29	.1	20	594	3	2.49	1	.02	30	3.64	364	1	.02	141	10	47	1	1	8	1	.01	2	44.6	13	62
DF 46.00	1	3.54	6	47	.4	1	.19	.1	153	544	468	11.17	1	.03	23	4.43	458	1	.02	147	10	2	1	1	6	1	.02	3	118.4	9	112
DF 54.00	.1	3.93	9	32	.7	1	.11	.1	69	596	95	11.73	1	.02	20	4.90	249	1	.03	116	10	1	1	1	11	1	.03	3	159.1	9	50
DF 62.00	.7	3.42	1	67	.5	1	.68	.1	29	565	146	4.93	1	.06	29	5.36	716	1	.03	100	10	39	1	1	6	1	.02	2	97.8	6	80
DF 70.00	.4	4.81	1	16	.6	1	.88	.1	45	524	451	7.62	1	.01	28	6.67	1042	1	.02	124	10	40	1	1	5	1	.02	3	149.8	1	104
DF 86.00	1.3	.93	1	235	.3	1	.52	.1	14	254	89	1.71	1	.10	15	1.55	200	1	.05	85	10	26	1	1	3	1	.04	2	39.8	7	1
DF 94.00	1.6	1.80	1	483	.4	1	.28	.1	19	423	238	2.37	1	.16	33	2.72	253	1	.04	72	10	38	1	1	7	1	.08	2	62.2	10	5
DF 102.00	1.3	2.19	1	168	.4	1	.33	.1	24	612	5	3.00	1	.09	40	3.55	235	1	.04	108	10	41	1	1	6	1	.06	2	75.3	14	63
DG 10.00	.1	4.30	1	22	.7	1	.29	.1	81	646	297	10.17	1	.02	36	5.79	660	1	.01	152	10	17	1	1	3	1	.02	3	131.7	8	128
DG 12.50	.1	5.35	1	14	1.6	1	.13	.1	75	424	24	10.48	1	.01	43	6.32	535	1	.01	123	10	25	1	1	5	1	.03	3	123.5	1	49
DG 18.00	.8	3.90	1	129	.7	1	.65	.1	29	373	692	6.30	1	.07	43	5.64	586	1	.01	48	10	37	1	1	7	1	.03	3	151.0	1	188
DG 26.00	1.4	.93	1	248	.6	1	.56	.1	12	166	278	1.46	1	.16	18	1.28	158	1	.07	48	20	27	1	1	5	1	.04	2	40.5	5	1
DG 34.00	.7	1.56	1	134	1.3	1	1.37	.1	5	144	10	.62	1	.04	7	.61	92	1	.18	24	30	29	1	1	42	1	.02	1	18.6	5	8
DG 42.00	.7	1.15	1	21	.5	1	1.31	.1	13	413	8	1.72	1	.02	15	1.80	249	1	.10	84	10	28	1	1	3	1	.03	1	46.4	12	27
DG 50.00	.8	1.72	1	269	.4	1	.38	.1	20	509	2	2.12	1	.20	45	2.87	234	1	.05	115	10	37	1	1	5	1	.06	1	42.9	12	44
DG 58.00	.8	1.14	1	358	.3	1	.43	.1	16	446	8	1.74	1	.25	34	1.96	174	1	.06	104	10	32	1	1	2	1	.05	1	44.7	13	27
DG 66.00	.6	1.15	1	20	.3	1	.59	.1	12	336	4	1.56	1	.02	22	1.65	167	1	.06	89	10	28	1	1	1	1	.02	1	34.3	10	28
DG 74.00	.9	1.53	1	291	.3	1	.41	.1	19	409	52	2.20	1	.09	54	2.45	173	1	.05	98	10	36	1	1	5	1	.09	1	62.0	10	31
DG 82.00	.7	2.17	1	599	.6	1	.22	.1	22	476	165	2.57	1	.25	59	3.25	175	1	.03	125	10	41	1	1	4	1	.07	1	50.1	9	39
DG 90.00	.8	1.44	1	144	.5	1	.58	.1	19	83	166	2.60	1	.07	57	1.86	222	1	.07	27	10	31	1	1	4	1	.07	1	96.3	1	29
DG 98.00	.6	1.85	1	8	.7	1	1.14	.1	20	384	11	2.70	1	.01	75	2.68	421	1	.05	107	10	34	1	1	1	1	.04	1	43.7	8	62
DG 106.00	.7	1.75	1	86	.5	1	.28	.1	21	333	20	2.18	1	.06	65	3.09	179	1	.04	103	10	41	1	1	6	1	.06	1	60.4	5	50
DH 8.00	.9	1.73	1	355	.6	1	.42	.1	20	542	296	2.32	1	.23	55	2.64	196	1	.04	119	10	37	1	1	1	1	.06	1	53.9	14	59
DH 16.00	.7	1.94	1	434	.4	1	.28	.1	21	660	42	2.47	1	.26	62	3.00	196	1	.03	133	10	39	1	1	3	1	.06	1	58.0	17	44
DH 24.00	.7	1.66	1	457	.3	1	.74	.1	20	500	164	2.42	1	.26	60	2.49	208	1	.06	111	10	33	1	1	10	1	.07	1	61.0	13	40
DH 32.00	.7	.91	1	589	.2	1	.55	.1	12	311	5	1.56	1	.32	22	1.35	154	1	.06	75	20	23	1	1	1	1	.07	1	41.0	10	27
DH 40.00	.4	.78	1	40	.2	1	.38	.1	16	186	5	2.90	1	.02	17	1.29	174	1	.05	42	60	16	1	1	2	1	.06	1	67.8	6	26
DH 48.00	.8	1.91	1	842	.3	1	.36	.1	19	360	51	2.13	1	.37	26	2.79	262	1	.04	87	10	42	1	1	4	1	.07	1	50.1	7	41
DH 56.00	.7	2.01	1	621	1.0	1	.51	.1	21	454	90	2.50	1	.09	29	2.90	283	1	.05	90	10	38	1	1	8	1	.05	1	51.3	10	43
DH 64.00	.6	3.17	1	663	.5	1	.88	.1	32	629	7	4.01	1	.24	69	5.14	417	1	.04	158	10	43	1	1	7	1	.06	1	111.5	9	64
DH 72.00	.9	1.72	1	101	.5	1	1.58	.1	19	373	40	2.55	1	.03	54	3.26	446	1	.07	88	10	36	1	1	14	1	.07	1	75.4	6	30
DH 80.00	.7	.81	1	54	.2	1	.86	.3	6	231	117	.80	1	.03	7	.63	111	1	.12	35	10	18	1	1	6	1	.03	1	28.1	8	10
DH 88.00	.7	3.03	1	1612	.9	1	.36	.1	30	536	11	3.51	1	1.60	170	4.37	206	1	.07	172	10	46	1	1	3	1	.10	1	83.4	8	61
DH 96.00	.9	.80	1	81	.4	1	.65	.1	9	201	344	1.16	1	.07	20	1.08	132	1	.09	43	10	23	1	1	4	1	.03	1	32.6	6	25
DI 6.00	1	3.79	1	204	.8	1	.14	.1	39	364	235	6.65	1	.03	27	4.42	434	1	.03	94	10	32	1	1	3	1	.03	1	125.1	2	123
DI 14.00	.6	.95	1	88	1.0	1	1.03	.2	7	113	13	2.70	1	.11	10	.93	744	1	.08	5	770	35	1	1	27	1	.03	2	64.5	4	51

Hole 87 Hole 86

COMP: COLUMBIA GOLD MINES LTD

PROJ: FYRE LAKE

ATTN: WAYNE ROBERTS

MIN-EN LABS — ICP REPORT

8282 SHERBROOKE ST., VANCOUVER, B.C. V5X 4E8

TEL: (604) 327-3436 FAX: (604) 327-3423

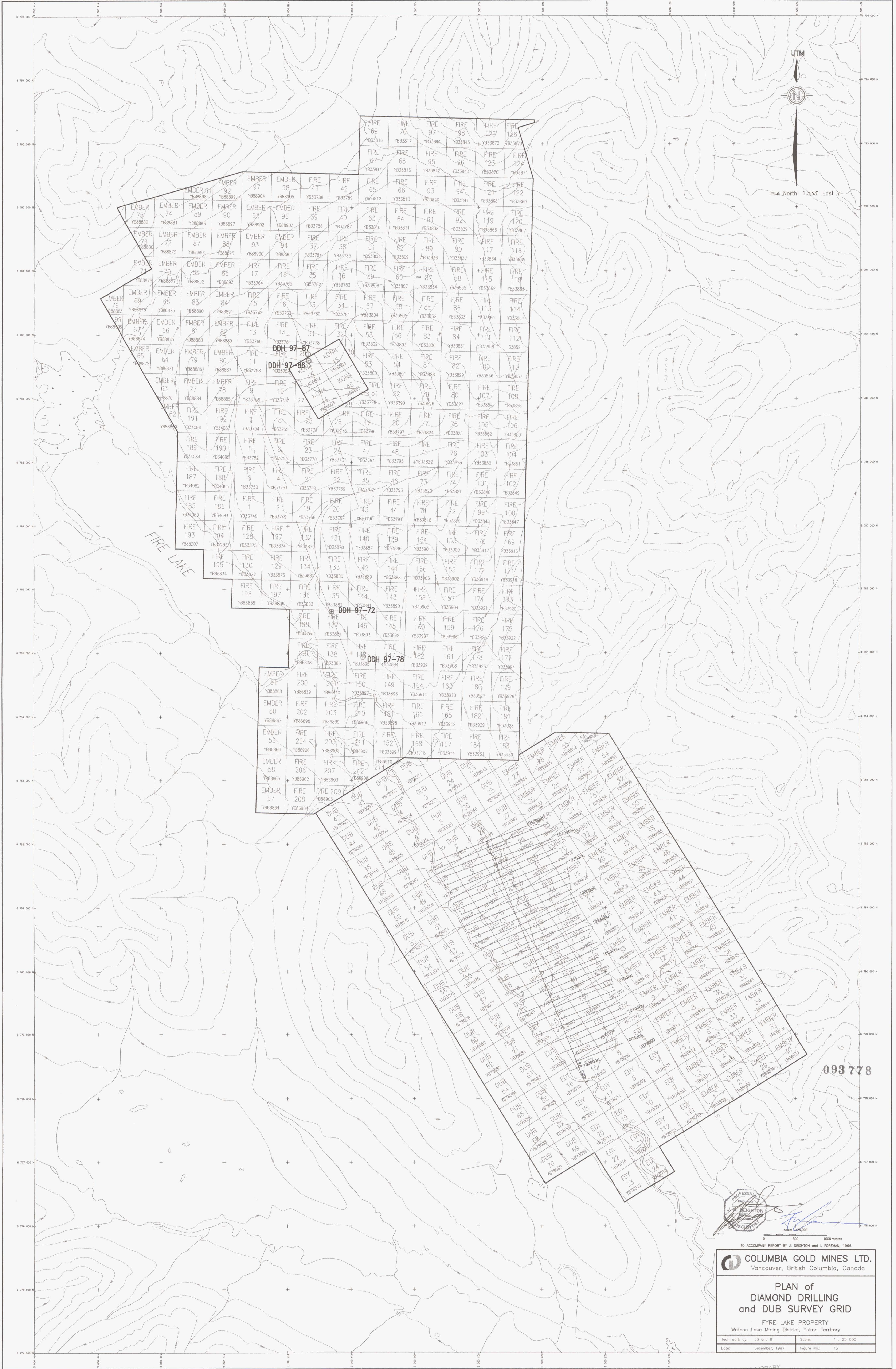
FILE NO: 7S-0117-RJ3+4

DATE: 97/07/03

* * (ACT: F31)

Hole 87

SAMPLE NUMBER	AG PPM	AL %	AS PPM	BA PPM	BE PPM	BI PPM	CA %	CD PPM	CO PPM	CR PPM	CU PPM	FE %	GA PPM	K %	LI PPM	MG %	MN PPM	MO PPM	NA %	NI PPM	P PPM	PB PPM	SB PPM	SN PPM	SR PPM	TH PPM	TI %	U PPM	V PPM	W PPM	ZN PPM
DI 22.00	.1	3.11	1	4	.5	1	.69	.1	31	607	245	4.79	1	.01	18	5.00	514	1	.01	131	10	38	1	1	32	1	.02	1	88.1	8	77
DI 30.00	.1	3.55	1	3	.5	1	.36	.1	29	891	6	4.34	1	.01	21	5.34	418	1	.01	189	10	42	1	1	10	1	.02	1	75.3	17	100
DI 38.00	.1	4.13	1	3	.8	1	.08	.1	35	639	250	5.07	1	.01	34	6.09	471	1	.01	188	10	46	1	1	6	1	.02	1	101.7	5	92
DI 46.00	.1	3.29	1	124	.5	1	.37	.1	28	670	14	4.70	1	.10	25	4.55	357	1	.03	117	10	39	1	1	6	1	.04	1	70.6	12	54
DI 54.00	.3	2.70	1	61	.4	1	.30	.1	22	495	27	3.15	1	.03	24	3.79	421	1	.03	99	10	42	1	1	4	1	.03	1	57.7	8	110
DJ 62.00	.4	1.61	1	22	.3	1	.16	.1	15	493	2	1.94	1	.01	20	2.37	172	1	.02	96	10	36	1	1	4	1	.02	1	38.7	12	34
DJ 22.00	.7	1.45	1	110	.3	1	.66	.1	19	569	5	2.19	1	.09	33	2.45	208	1	.04	118	10	34	1	1	7	1	.05	1	56.3	16	51
DJ 30.00	.8	.95	1	80	1.1	1	1.05	.1	14	337	121	1.57	1	.04	16	1.86	226	1	.06	88	10	25	1	1	20	1	.03	1	43.0	9	37
DJ 38.00	.8	1.99	1	872	.9	1	.57	.1	23	636	4	2.55	1	.78	43	3.16	241	1	.06	136	10	37	1	1	10	1	.07	1	62.9	16	69
DJ 46.00	.8	2.49	1	1037	.4	1	.69	.1	28	686	10	3.33	1	.79	54	4.00	471	1	.05	158	10	42	1	1	11	1	.07	1	95.6	15	70
DJ 54.00	.7	1.77	1	568	.6	1	.65	.1	23	517	96	2.51	1	.63	39	2.90	273	1	.07	141	10	34	1	1	7	1	.05	1	63.5	12	53
DJ 62.00	.7	2.75	1	967	.4	1	.60	.1	31	667	14	3.77	1	.97	63	4.17	438	1	.06	116	10	42	1	1	8	1	.09	1	83.7	14	68
DJ 70.00	.6	1.12	1	312	.3	1	.71	.1	22	331	154	2.32	1	.27	20	1.62	296	1	.08	101	20	26	1	1	6	1	.05	1	55.2	10	41
DJ 78.00	.7	1.17	1	358	.3	1	1.00	.1	15	225	48	2.10	1	.30	22	1.72	454	1	.09	50	10	28	1	1	2	1	.05	1	56.2	6	28
DJ 86.00	.7	.88	1	439	.3	1	.64	.1	15	349	15	1.70	1	.26	18	1.78	262	1	.09	80	110	23	1	1	10	1	.06	1	48.7	11	24
DJ 94.00	.7	.70	1	112	.2	1	.66	.1	11	183	9	1.40	1	.09	14	1.23	326	1	.08	51	90	21	1	1	8	1	.06	1	38.3	5	17
DJ 98.00	.9	2.13	1	498	.4	1	.49	.1	31	373	153	3.81	1	.49	36	3.13	382	1	.08	91	10	37	1	1	12	1	.10	1	94.7	7	92
DJ 102.00	.7	2.47	1	538	.5	1	.62	.1	43	547	198	4.40	1	.67	46	3.78	379	1	.09	161	10	36	1	1	13	1	.12	1	91.1	11	89
DJ 104.50	1.0	2.60	1	372	1.2	11	.49	.1	21	126	219	5.14	1	1.27	49	1.99	600	6	.10	45	720	28	1	1	10	1	.20	2	116.6	3	83
DJ 110.00	1.0	2.26	1	391	.4	1	.95	.1	26	247	372	3.84	1	.31	40	3.35	479	1	.13	60	170	38	1	1	29	1	.07	2	117.7	2	63
DJ 115.50	.9	.98	1	569	1.3	1	1.14	.1	12	176	65	2.18	1	.37	17	1.25	616	1	.07	33	220	26	1	1	30	1	.06	2	45.3	5	59
DK 8.00	.8	2.88	1	1242	.4	1	1.28	.1	32	612	53	4.32	1	1.19	48	4.48	492	1	.05	169	10	40	1	1	2	1	.12	1	117.4	11	68
DK 16.00	.9	1.24	1	84	.4	1	1.59	.1	18	295	102	2.01	1	.03	8	1.10	275	1	.08	88	90	19	1	1	14	1	.05	1	62.3	10	20
DK 24.00	.7	.90	1	17	.2	1	2.27	.1	11	193	34	2.04	1	.02	13	1.21	290	1	.06	43	60	15	1	1	15	1	.05	1	64.0	6	16
DK 32.00	.4	2.07	1	92	.3	1	.32	.1	21	543	16	2.79	1	.08	16	3.28	193	1	.06	94	10	40	1	1	4	1	.04	1	72.8	12	54
DK 40.00	.3	1.95	1	7	.4	1	.43	.1	19	674	1	2.59	1	.01	15	3.25	270	1	.04	99	10	38	1	1	4	1	.01	1	61.5	16	36
DK 48.00	.5	2.95	1	75	.4	1	.25	.1	26	821	14	3.23	1	.02	27	4.81	329	1	.03	173	10	49	1	1	6	1	.06	1	75.5	17	52
DK 56.00	.5	2.33	1	205	.4	1	.29	.1	23	552	19	3.14	1	.15	21	3.70	391	1	.03	152	10	40	1	1	5	1	.07	1	84.6	11	79
DK 64.00	.3	2.88	1	32	.3	1	.87	.1	28	558	10	4.39	1	.03	30	4.46	697	1	.05	103	10	37	1	1	3	1	.03	1	116.8	10	96
DK 72.00	.5	1.55	1	287	.2	1	1.02	.1	14	129	108	2.30	1	.04	11	1.76	321	1	.12	26	40	31	1	1	12	1	.05	1	73.8	2	32
DK 80.00	.5	1.78	2	128	.3	1	.69	.1	21	523	3	3.40	1	.05	18	2.90	316	1	.07	86	10	30	1	1	4	1	.07	1	107.0	13	41
DK 88.00	.3	2.54	1	7	.4	1	.40	.1	21	597	60	3.05	1	.01	20	3.99	317	1	.03	120	10	41	1	1	3	1	.02	1	74.2	11	57
DK 96.00	.4	2.02	1	22	.4	1	.45	.1	26	599	107	2.82	1	.03	15	3.37	269	1	.05	178	10	37	1	1	3	1	.03	1	65.9	14	61
DK 104.00	.5	2.86	1	15	.5	1	2.11	.1	28	811	13	3.91	1	.02	30	5.00	615	1	.04	177	10	40	1	1	1	1	.02	1	103.4	16	92
DK 112.00	.5	1.97	1	9	.3	1	.55	.1	19	421	121	2.66	1	.02	19	2.84	352	1	.05	90	10	37	1	1	1	1	.06	1	68.0	9	59
DK 120.00	.4	1.84	4	92	.4	1	.29	.1	19	686	3	2.28	1	.13	20	3.03	240	1	.03	110	10	39	1	1	1	1	.04	1	57.8	18	49
DK 128.00	.2	2.54	1	11	.4	1	.21	.1	25	475	115	3.09	1	.01	17	3.82	374	1	.03	101	10	40	1	1	2	1	.02	1	72.5	8	61
DK 136.00	.4	2.02	1	10	.4	1	.75	.1	26	462	127	2.97	1	.02	17	3.29	379	1	.06	107	10	34	1	1	1	1	.03	1	73.9	9	74
DK 152.00	.5	1.94	1	93	.4	1	.42	.1	19	297	82	2.84	1	.08	20	2.84	367	1	.05	67	10	34	1	1	1	1	.06	1	71.8	5	49
DK 160.00	.1	3.31	1	47	.8	1	.70	.1	42	800	157	5.23	1	.08	37	5.51	523	1	.04	169	10	34	1	1	1	1	.06	1	134.4	14	89
DL 8.00	.1	2.55	1	51	.9	1	.37	.1	18	151	38	5.41	1	.06	27	1.58	728	2	.05	33	590	26	1	1	25	1	.02	2	66.2	4	81
DL 16.00	.1	.56	12	69	1.3	1	1.38	.1	16	45	35	4.80	1	.12	4	1.33	606	1	.02	27	580	7	1	1	127	1	.01	2	21.9	1	99
DL 24.00	.3	1.45	5	154	.6	1	.82	.1	19	135	64	4.13	1	.43	15	1.05	456	10	.03	44	720	17	1	1	49	1	.05	3	46.8	4	92
DL 32.00	.6	3.21	1	242	1.1	7	1.83	.3	17	91	59	4.24	1	.85	23	1.25	479	5	.13	34	600	39	1	1	99	1	.11	2	65.6	4	150
DL 40.00	.9	3.23	1	1670	.9	3	.63	.1	26	289	121	5.08	1	1.00	56	2.81	768	1	.15	73	210	45	1	1	48	1	.20	2	116.0	6	85
DL 48.00	1.0	2.55	1	2416	.4	1	.69	.1	24	298	48	3.20	1	.93	36	2.63	597	1	.11	82	90	44	1	1	42	1	.13	1	107.6	7	60
DL 56.00	.5	3.70	1	484	.5	1	.52	.1	30	508	299	4.54	1	.15	40	5.88	679	1	.04	100	10	44	1	1	12	1	.06	1	118.0	2	66
DL 64.00	.6	4.40	1	2494	.8	1	.54	.1	41	507	15	5.91	1	1.99	73	5.78	704	1	.09	150	10	46	1	1	15	1	.16	1	160.2	3	95



TO ACCOMPANY REPORT BY J. DEIGHTON and I. FOREMAN, 1996

COLUMBIA GOLD MINES LTD.
Vancouver, British Columbia, Canada

**PLAN of
DIAMOND DRILLING
and DUB SURVEY GRID**

FYRE LAKE PROPERTY
Watson Lake Mining District, Yukon Territory

Tech work by: J.D. and I.F.	Scale: 1 : 25 000
Date: December, 1997	Figure No.: 13

DIAMOND DRILLING
093778
DWG 10

