GEOLOGICAL REPORT

ON THE

1984 DRILL EXPLORATION PROGRAM

ON THE

GIANT BAY RESOURCES LTD.

MAHE, AD, POL, AR, BEAR and LYNK

CLAIM GROUP

MACKENZIE MINING DISTRICT (N.W.T.), CANADA

N.T.S.: 85/I-14 LAT.: 62o58'N LONG.: 113o19'W

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December 18, 1984

TABLE OF CONTENTS

GIANT BAY RESOURCES LTD's GOLD PROPERTY AT KNIGHT BAY, N.W.T.

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1. SUMMARY

1. The present report presents the 1984 diamond drilling information and the geological description and interpretation of the gold mineralization at the Knight Bay property, 100% owned by Giant Bay Resources Ltd.

2. Drilling carried out in 1983 and 1984 at GBR's Knight Bay property has tested seven gold-bearing zones. Zones No. 1 and No. 2 have returned significant values. Zones No. 4 and VIV 15 gave encouraging results that warrant follow-up work. Finally, the Bulge Zone is considered sufficiently tested at the present, and assays from Zones No. 3 and VIV 8 were discouraging -no more work is recommended on those zones.

3. Zone No. 1 has been tested by diamond drilling for 870 ft along strike and to a maximum depth of 600 ft -the zone is still open at one end and at depth. Drill-indicated reserves down to the 550-ft level are 700,163 tons grading 0.154 oz/tn Au (uncut assays and no dilution incorporated), including 239,941 tons averaging 0.330 oz/tn Au; contained in the larger tonnage down to the -200 ft level are 309,014 tons of drill indicated, open pitable reserves grading 0.132 oz/tn Au with a strip ratio of 4.38 to 1 (Knutsen, 1984b). Further drilling is considered to have good chances of increasing the grade or the tonnage of the reserves, or both.

4. Zone No. 2 extends intermittently for 800 ft along strike and has been tested mainly by shallow percussion and diamond drill holes. It seems to contain short lenses or shoots, albeit of high grade, for example, diamond drill hole 84-62 returned 7.4 ft grading 0.491 oz/tn Au (uncut) and 18.9 ft averaging 0.812 oz/tn Au. Shoots containing from 4,000 to 10,000 tons, perhaps of open pitable material, are considered reasonable targets for further, detailed drilling.

5. It is recommended to firm-up reserves of Zone No. 1 by fill-in diamond

drilling, specially close to surface, to test the open end along strike with shallow holes, and to put one or two deep holes to cut the projected mineralization around 1,000 ft below surface.

6. For Zone No. 2 it is recommended to drill fences of shallow, closely-spaced holes to test the open pit potential of the known shoots.

7. Further diamond drilling along strike and at depth is recommended for the completely-open Zone No. 4, looking for higher grade shoots or lenses. Two or three shallow diamond drill holes on the projected strike of the mineralization on the VIV 15 Zone is considered advisable, with the aim of finding high-grade shoots.

2. INTRODUCTION

The Knight Bay property at Gordon Lake is located approximately 50 miles north of Yellowknife, N.W.T., Canada. It has had a long history of exploration and is presently 100%-owned by Giant Bay Resources Ltd. (GBR).

In 1938 The Borealis Syndicate carried out extensive trenching, stripping and sampling of gold-bearing zones, and drilled few X-Ray holes (Thompson, 1938).

In 1944 the Lynk Yellowknife Gold Mines drilled 2,600 ft of E-size core in 18 holes (Knutsen, 1984a).

In 1983 nine BQ diamond drill holes totalling 2,795 ft and several plugger holes were drilled, intersecting gold mineralization of economic-grade in three zones: Kidney Pond, Middle Kidney Pond and Skull (Humphries, 1983; Knutsen, 1984a). During this time GBR adquired the property.

In the spring and summer of 1984 GBR conducted extensive exploration work on the property. It consisted of:

a) cutting a grid that partially covers the property with lines spaced 200 ft apart over mineralized zones and its surroundings, and 400 ft apart over the rest of the grid;
b) completing a magnetometer survey over the cut grid;
c) mapping the grid at a scale that varied from 40 to 200 ft to the inch;
d) sampling old workings and trenching newly-discovered showings;
e) diamond drilling 20,537 ft of BQ core in 64 holes;
f) percussion drilling of 1630 ft in 30 holes.

This report presents the diamond and percussion drilling information obtained by GBR in 1984, to which the 1983 drilling data has been incorporated in the sections and maps, and the geological description and interpretation of the data by the author, who logged all the 1984 core. The 1984 surface mapping, trenching and sampling work is reported by Love (1984), the magnetometer survey by Humphreys (1984) and a ore reserve calculation by Knutsen (1984b).

3. PROPERTY GEOLOGY

The Knight Bay property is located in the Slave Province of the Canadian Shield. It is underlain by the Archean Yellowknife Supergroup, which is locally made up of a turbidite sequence composed predominantly of greywackes with intercalations of subordinate siltstones and, less abundantly, argillites.

The greywackes occur as light to dark grey, medium- to fine-grained beds, which vary in thickness from 3 ft to a few inches. Preliminary petrographic work (samples 84-29 [700'] and 84-80 [36'] in Appendix 6) shows that the greywackes are composed of mainly plagioclase with subordinate amounts of quartz and biotite grains distributed as clasts "floating" in, and commonly reacting with, a fine-grained matrix of similar mineralogy. The rock source that accords best with the immature mineral composition, low roundness and poor sorting of the sediment is a water-laid tuff of intermediate composition, which has undergone limited transport other than by turbidite currents.

The intercalated siltstones and argillites are grey to dark grey, thin to very thinly bedded and often show contorted bedding, a product of slumping or drag folding, or both of them.

Black siltstones, partly argillic, are a very minor component in the sedimentary sequence and occur in very restricted areas. The known occurrences are always associated with 15 to 30% quartz, 2 to 5% sulphides (pyrite, pyrrhotite and arsenopyrite), and contain gold. Those zones commonly exhibit brecciation, feature believed to have formed by forceful injection of remobilized quartz (see below). The black colour is given by carbonaceous matter. Thin section study reveals a volcaniclastic composition, with angular and irregular fragments, what together with the mineral composition, presence of fine-grained, mineralogically-unstable matrix and ubiquituous attendance of sphene (see Love's report) strongly suggests that the black siltstones are crystal tuffs or slightly-reworked tuffs (see Appendix 6: 84-74 [56.5'] and 84-63 [111.3'] slides). The black siltstones are less resistant to erosion than the greywackes and due to recessive weathering presently occupy low, swampy areas between ridges, with scarce or no outcrops.

Several diabase dykes striking northwesterly and up to 100 ft wide have been mapped on the property. Three thin sections show that the diabase is composed of mainly plagioclase and pyroxene, the latter mineral partially altered to amphibole (see Appendix 11: 84-12 [79'], 84-27 [536'] and 84-28 [550']. Drilling has intersected diabase dykes up to 10 ft wide, averaging 1 to 3 ft in thickness. These dykes crosscut all the structural features, indicating its post-tectonic emplacement.

Bedding is generally very evident, except in those places where the strata are exclusively massive greywackes or is obscured by cleavage. Occasionally, these arenites exhibit graded bedding, which, due to the lack of marker horizons in the stratigraphy, constitutes the only useful feature in determining the structural setting.

The sediments contain biotite and have been regionally metamorphosed to the upper greenschist facies. The fine-grained sediments have been transformed locally into phyllites.

Regionally, the metasedimentary sequence has been subjected to three periods of deformation (Fyson, 1975). The first period of deformation created open, 1 to 15 km apart, steeply-plunging folds, which have not been identified in the property. According to Fyson (1975) the second deformational event produced tight to isoclinal folds with a wavelenth of few hundreds of metres and limbs of comparable length. Those folds are recognizable in the Knight Bay property -they are characterized by bedding and axial-plane cleavage dipping vertically to very steeply and striking northwesterly to west-northwesterly. The third and youngest period of deformation effected a refolding of the earlier structures in a direction almost perpendicular to the axial plane of the isoclinal folds, resulting in a complex structural pattern.

Three cleavage directions are present in different strata at one place and, more commonly, in different locations within the property. Two of them are axial-plane cleavages sequentially superimposed by the last two deformational events. The third cleavage is the youngest and regularly strikes northwesterly over large areas, unaffected by local folding -it is thought to have been caused by regional stress without accompaniment of fold development.

Highly-irregular quartz veining is very common within the property. Two types of quartz are recognized macroscopically: grey and white. Grey quartz varies in colour from light grey to bluish grey and is, at least locally, cut and injected by white quartz veins. In most places white quartz (sometimes described as *bullquartz*) has a more erratic distribution than the grey-coloured variety, and often shows evidence of emplacement by forceful injection. On the other hand, white quartz forms the largest pure quartz concentrations in the property, for example the Bulge showing (see Economic Geology below). The white quartz commonly occurs as isolated *blow-outs* or nests without any discernible access conduit, strongly suggesting its local remobilization and emplacement during folding, possibly in tension gashes. The white quartz is considered, at least partly, remobilization of the earlier grey variety.

4. ECONOMIC GEOLOGY

The 1984 drilling program tested the three mineralized zones discovered by the 1983 exploration work, as well as four more occurrances found during the course of the 1984 program.

The zones tested in 1984 were (see Plate I for location):

a) Zone No. 1 (Kidney Pond Zone in Humphries's 1983 report);
b) Zone No. 2 (Middle Pond Zone in Humphries's 1983 report);
c) Zone No. 3 (Skull Zone in Humphries's 1983 report);
d) Zone No. 4 (discovered in 1984);

e) Bulge Zone (Main Zone in Knutsen's 1984 report);
f) VIV 8 Zone (VIV 8 in Thompson's 1938 report);
g) VIV 15 Zone (VIV 15 in Thompson's 1938 report).

4.1 ZONE No. 1

This zone is the best known in the property today and a preliminary ore estimation has indicated most encouraging values (Knutsen, 1984b). That report concludes that the drill-indicated total reserves down to the -550 ft level are 700,163 tons grading 0.154 oz/tn without applying any assay cutting or dilution. Contained within the total reserves are 239,941 tons grading 0.330 oz/tn Au. Although the information close to surface is scanty because of swampy or water-covered ground over the zone that hindered summer drilling, down to the -200 ft level there are 309,014 tons of drill-indicated reserves grading 0.132 oz/tn Au whith a strip ratio of 4.38 to 1. More drilling is required to get information closer to surface.

The location of Zone No. 1 within the property is given in Plate I, the location of diamond drill holes in Plate II and the sections outlined by drilling in Plates 1 to 13. The diamond drill logs are summarized in Appendix 1. Plates V, VI, VII and VIII depict the subsurface, 150-, 300- and 400-ft level plans, respectively, of Zone No. 1, as defined by the geological sections.

The Zone No. 1 does not outcrop -it is located in a swamp between two rocky ridges and is partially covered by Kidney Pond. It has been tested by 17,462 ft of BQ diamond drilling, 2,795 ft completed in 1983 and 14,667 ft drilled in 1984. This work has delineated the zone for 870 ft along strike and has intersected it to a maximum depth of 600 ft below surface. The zone, localized in a series of contiguous drag folds, generally strikes west-northwesterly and dips vertically to very steeply, concordantly with the stratigraphy. The mineralized zone is open at depth and northwesterly along strike -it peters out or is faulted off southeast of DDH-84/60 because it was not intersected by holes 84/61, 84/73 and 84/74.

The wallrocks are greywackes and siltstones. The gold-bearing zone is made up of fine-grained, black siltstone with up to 30% grey quartz and an average of 2% sulphides. The boundaries of the zone are clearly recognizable and both the hanging wall and footwall contacts are quite sharp, occurring within a foot or less. The thickness varies along strike and depth from 20 to 110 ft. Brecciated narrow sections are common; they are up to 1 ft wide and comprise angular rock fragments embedded in a quartz matrix. Contorted bedding with a wave length of 1 inch or less is frequently present in thinly-laminated sediments within the zone.

The thickness of the black siltstones within Zone No. 1 is much larger than at any other known place in the property. Part of this unusual thickness can be explained by the tectonic thicknening caused by the formation of the drag folds. Nevertheless, this association of mineralization and anomalously-thick,

fine-grained, black sediments could have a genetic significance, which will be discussed in the Genesis section.

Two varieties of quartz are distinguisable: grey and white. Grey quartz is far more abundant than white quartz and occurs as both concordant and crosscutting veins, and as matrix in injection breccias . The colour is likely given by impurities of minute inclusions of surrounding rocks in the crystal lattice. White quartz, on the other hand, occurs mainly as crosscutting veins and seldom as concordant veins. White quartz veins were observed to cut grey quartz veins and in few instances made the core of a vein with grey quartz selvages. These spatial relationships indicate that at least two stages of quartz veining are present in the zone, and it is proposed here that the white quartz is, at least partly, remobilization of the earlier grey variety. Gold is related more commonly to the grey quartz in this zone, but mineralized areas with only white quartz and high-gold values are known in the property.

Sulphide contents within the zone vary from 2 to 3%, totalling up to 10% in some intervals. Pyrite and pyrrhotite are present in equal amounts, with subordinate arsenopyrite and trace amounts of chalcopyrite, sphalerite and galena. No correlation of gold with any of the sulphides was observed with the exception of galena. In the few intervals where galena was recognized good gold values were obtained, but this sulphide is not a good pathfinder for gold because its occurrance is rarer than visible gold. Places in the property with more abundant arsenopyrite than in Zone No. 1 are known, but do not carry gold in appreciable amounts.

The Zone No. 1 exhibits biotite, chlorite, and epidote alteration. Biotization is a common alteration throughout the property, and outside the zone it is the product of metamorphism. Chlorite after biotite is also common outside the zone, but in it occurs in higher amounts and also in veins and veinlets; several vissible gold sightings were observed in chlorite-rich veins. Epidote is much less abundant than both biotite and chlorite and is present as replacement of plagioclase, and more conspicuously, as veinlets, the latter occurring very seldom outside the zone. Carbonate alteration is practically negligible, and is limited to very few veinlets of white calcite. Gold content cannot be correlated with any type or intensity of alteration.

Visible gold was observed in 36% of the diamond drill holes completed on Zone No. 1 (14 out of 39 holes). The grain size is fairly coarse varying from 0.2 to 5-6 mm accross.

Few scarlet stains and very fine-grained minerals were observed in an old trench on the fringe of the zone, which were diagnosed as cinnabar. Consequently, drill holes 83-04 and 83-07 were sampled at 10 ft intervals and analyzed for mercury to see if a geochemical halo or anomaly existed. Appendix 5 summarizes the results of this study. The mercury analyses show that the zone is very low in mercury content and lacks any distribution pattern.

One composition sample was sent for emission spectrographic analyses to check for the presence of minor constituents in Zone No. 1. Appendix 7 presents the results, which, compared to averages for the Earth's crust, show that the zone is only anomalous in Arsenic. This is expected considering the conspicuous,

and in places abundant, presence of arsenopyrite.

The mineralized zone is concordant with the stratigraphy. This feature is clearly shown by Plates V, VI, VII and VIII, where the axis of an anticline, inferred from determination of younging directions on core, closely follows the trace of the mineralized zone on the subsurface, -150 ft, -300 ft and -400 ft levels. This relationship has important implications discussed in the Genesis section of this report.

A study of the diamond drill sections indicate that the gold content does not follow any distribution pattern within the zone. Furthermore, no correlation appears to exist between either gold values and any other variable, be it lithological, mineralogical or spatial. Economic-grade intervals occur equally as common immediately below or contiguous to the hanging wall, close or adjacent to the footwall, some place in between the previous two locations, or a combination of all three occurrences. Macroscopically, core with appreciable gold content cannot be differenciated from core that yielded low gold values, except when visible gold is present. This apparently erratic gold distribution, within an otherwise similar mineralized zone, makes the writer conclude that it is very likely that bulk sampling of the zone will improve the grade or the tonnage, or both parameters, as they are indicated by core assays.

4.2 ZONE No. 2

The location of Zone No. 2 is shown in Plate I, the location of diamond and percussion drill holes in Plate II and the drill hole sections in Plates 14 to 18. Appendix 1 summarizes the diamond drill hole logs and Appendix 2 presents the logs of the percussion drill holes.

Zone No. 2 extends intermittently for over 800 ft along strike, of which about 700 ft are on a ridge with continuous outcrop. It has been tested with 8 diamond drill holes totalling 2,771 ft (DDH's 84-60 to 84-67) and 21 percussion drill holes adding 1,350 ft (PDH' 84-000 to 84-021). The drilling was mostly very shallow, reaching a maximum depth of 150 ft. The zone pinches and swells on outcrop, and although it provided very good intersections, for example hole 84-62 cut 7.4 ft grading 0.491 oz/tn Au and 18.9 ft assaying 0.812 oz/tn Au (both values with uncut assays), it appears to contain short lenses or shoots. These shoots could provide high-grade ore as a "sweetener" for material from Zone No. 1. The available information is too sparse to make any ore reserve calculation, for what a closely-spaced drilling program will be necessary.

This mineralized zone contains black sediments in much lesser amounts and a larger white quartz to grey quartz ratio than the Zone No. 1. It also contains less overall concentration of sulphides. In all other features it is similar to Zone No. 1.

Although the possibility exists that Zone No. 2 constitutes the southestern

extension of Zone No. 1, the writer believes that they are two different zones. This conclusion is based on the observable differences in type of quartz and thickness of black sediments, and on the high magnetic anomaly coincident with Zone No. 2, which trends parallel to, but is discretely separated from, the much weaker, medium-magnetic trend indicated for the Zone No. 1.

4.3 ZONE No. 3

Plate I depicts the location of Zone No. 3, Plate III shows the location of the diamond and percussion drill holes, and Plates 24 and 27 contain the diamond drill hole sections.

Zone No. 3 yielded disappointing results that did not bear the encouragement given by the surface sampling carried out in 1983. This zone can be divided in two areas, which may be connected: **Skull West** and **Skull** (see Plate III).

The **Skull West** showing outcrops over 100 ft along strike before dissappearing under overburden at both ends. The width is variable, reaching up to 20 feet. Two diamond drill holes totalling 432 ft were completed (84-85 and 84-86). The best intersection was obtained in hole 84-87, which yielded 0.065 oz/tn Au over 6 ft.

The Skull outcrops on a ridge for over 180 ft. Drilling comprised one diamond drill hole down to 127 ft (84-92) and 9 percussion drill holes totalling 280 ft (84-022 to 84-030). No values of economic significance were found. The surface showing appears to be of limited vertical extent.

This mineralized zone, especially the Skull, is located in an place of structural complexity, where drag folds and areas of quartz breccias are present.

4.4 ZONE No. 4

The location of Zone No. 4 is shown in Plate I, the location of diamond drill holes in Plate III and the drill hole sections in Plates 23, 25 and 26. Appendix 1 includes the diamond drill logs.

This zone was discovered in 1984 by drill testing a magnetic "plateau" between two magnetic "highs" and a coincident anomalous gold sample obtained in an old trench, a similar situation to that of Zone No. 1. It is located in a swampy area suggesting recesive weathering of a less resistant rock, also resembling Zone No. 1 in this respect. The zone has been tested by 7 diamond drill holes (Holes 84-83, -84, -87, -88, -89, -90, and -91), totalling 1,511 ft over a strike length of 300 ft. The deepest hole (84-90) intersected the zone 150 ft

below surface. The mineralized zone remains open on both ends and at depth.

The style of mineralization is very similar to that of the Zone No.1. It is hosted by black siltstones, contains a gangue of mainly grey quartz, and the sulphide minerals amount to 3 to 5%.

The assay results were dissapointing, considering the strength and quality of the zone. The only significant intersection was obtained in hole 84-83 where a 24.2 ft interval contained 0.091 oz/tn Au, including 7.1 ft averaging 0.237 oz/tn Au.

4.5 BULGE ZONE

The Bulge Zone is located north of Zone No. 1, on the northern side of Sentinel Lake (Plate 1). The diamond drill locations are given in Plate IX and Plate 20 shows the diamond drill sections.

A total of 23 old trenches uncover a conformable white quartz vein that strikes northwesterly and varies in width from less than a foot to 2.5 feet, averaging about 10 in. Near the northwestern end of the workings the vein widens to over 20 ft into a quarz "bulge" for an exposed distance of 25 ft and pinches again, in about 80 ft, to 1 ft or less before disappearing under overburden. The discoverers found that the vein contains coarse-grained, visible gold but their distribution was very erratic. Later, 15 shallow, small core drill holes were bored into the vein and "bulge" obtaining low values, but due to the poor recovery the results could not be considered conclusive. To test the posibility of existence of low-tonnage but high-grade material underneath the Bulge, 4 short BQ diamond drill holes were drilled in 1984 (718 ft).

The results summarized on Plate IX indicate that the Bulge is still present 50 ft below surface, but narrows considerable at the -100 ft level. There is also a suggestion that it may rake steeply to the northwest, because it was intersected by hole 84-76 and missed by 84-77.

The Bulge could represent the mobilization of auriferous quartz into the nose of a drag fold, suggested by structural complexity in its vicinity, an identical feature observed in Zone No. 1 and 3. It has been likened to the Camlaren deposit, 4.5 miles to the northwest of the Bulge, where a narrow, white quartz body dipping 56° occurs on the nose of a drag fold -it was proven to extend at least to the -1000 ft level and has produced 73,000 tons with a recoverable grade of 0.74 oz/tn Au.

Similarly to the Zone No. 2, the Bulge could be a supply of high-grade ore to Zone No. 1, if the grade encountered by bulk sampling on surface holds at depth. This possibility will have to be tested with closely-spaced drilling, at a maximum interval of 20 ft.

4.6 VIV 8 ZONE

Attention to this showing was brought by an old trench that yielded encouraging results. Its location is shown on Plate I and the section of the only diamond drill hole bored is shown on Plate 21.

The 117-ft long diamond drill hole intersected an 18-ft wide zone of fine-grained sediments with 5 to 10% quartz and about 1% sulphides at a depth of 40 ft. The assays were very low in gold.

4.7 VIV 15 ZONE

This zone was delineated by a high-magnetic anomaly coincident with a gold-bearing section determined by sampling of old trenches (see Love, 1984). The location in the property is given on Plate 1. Three diamond drill holes, recovering 602 ft of BQ core, were drilled from the same set up (84-80,-81 and -82) -one through the middle of the trench and one hole on both sides of the first one. These holes were not surveyed and the coordinates in their logs (Appendix 1) correspond to those of the cut grid.

A well-mineralized zone with sulphides was intersected by holes 84-80 and 84-81, with two small sightings of visible gold in the first hole. Hole 84-80 cut an interval of 2.5 ft averaging 0.108 oz/tn Au at a depth of -50 ft and another one approximately 100 ft below surface grading 0.182 oz/tn Au over 8.7 ft. Hole 84-81 intersected a much wider quartz-sulphide-bearing zone; an 8.2-ft interval assayed 0.088 oz/tn Au at a depth of 100 ft below surface, including a 3.8-ft section with 0.120 oz/tn Au. Hole 84-82 did not intersect the zone, an unexpected result given the proximity to the other two holes, although not too unusual in this type of gold deposits.

The information so far obtained is encouraging and it is recommended to test the extension of the zone along strike, looking for the possibility of higher grade sections or shoots.

5. GOLD ASSAYS

The Knight Bay property, like most of coarse-grained, free gold-bearing ore deposits, presents problems for duplicating assays. At the beginning of the 1984 field season core samples were sent to Loring Laboratories of Calgary for fire assaying. Since June, when the start-up problems of GBR's fire assay office

located on the property were solved, all the core and exploration samples were analyzed at the campsite facility. Later, check samples were run on GBR assays by Loring, as well as many of Loring samples were analyzed at GBR's laboratory.

Samples were prepared and assayed at GBR's laboratory by the standard fire assay method. The following procedure was followed to do all the assays of samples with visible gold:

1. total sample was weighed and sample weight recorded;
2. total sample was crushed in a jaw crusher;
3. total sample was pulverized in a ring pulverizer;
4. total sample was screened through 140-mesh screen to recover metallics;
5. weight of metallics was recorded;
6. remaining pulp was rolled 160 times and then three sample cuts were taken;
7. the three pulp samples were then blended together and three separate assays run for gold; the screened-out metallics were also assayed;
8. after completion of assays a calculation was done using all assay results to determine the gold content for the entire sample.

Several check assays done by GBR and Loring yielded significantly-different results. These samples were then sent to Chemex Labs Ltd. in Vancouver, to have a third opinion. Appendix 3 lists all the assays of drill core, including repeat assays, and Appendix 4 the check samples analyzed by the three laboratories.

Statistical treatment of the check assays using the linear regression method of the least-squares fit give the following values:

Giant Bay/Loring
(x) / (y)
correlation coefficient = 0.703
slope (m) = 0.935
intercept (b) = -0.011
x'= (y+0.011)/0.935
y'= 0.935x-0.011

Giant Bay/Chemex
(x) / (y)
correlation coefficient = 0.859
slope (m) = 1.105
intercept (b) = -0.018
x'= (y+0.018)/1.105
y'= 1.105x-0.018

Loring/Chemex
(x) / (y)
r = 0.749
m = 0.724
b = 0.031
x'= (y-0.031)/0.749
y'= 0.749x+0.031

According to this calculations, based entirely on samples with the widest spread between GBR and Loring assays, GBR'determinations are statistically 8.6% higher than Loring's and 8.7% lower than Chemex's. Loring's samples are 22% higher than Chemex's.

These statistical inferences are not conclusive because they are based on the "anomalous" check samples, having left out many GBR and Loring check samples that returned close values. It is recommended to average all the assays available, as was done in Appendix 3, until further checks are run in 1985.

6. GENESIS

The occurrences of gold-bearing quartz veins in the turbidity sequence of the Gordon Lake basin have been classified as epithermal-hydrothermal. A few examples of "quartz stockworks" are found in the bibliography, which are poorly known and for which the possibility for a different origin was suggested without further elaboration (Padgham, 1983).

Zone No. 1 of the Knight Bay property presents the characteristics of the above-mentioned "quartz stockworks". Several features point to another origin than the epithermal-hydrothermal advanced for the quartz veins. These features are:

1. A very wide, up to 100 ft, "zone" of auriferous quartz veins, veinlets and breccia matrix associated with 2 to 5% sulphides associated to fine-grained, black siltstones and minor argillites. These sediments ocur in much narrower widths throughout the property, perhaps with the exception of Zone No. 4, which has a style of mineralization similar to that of Zone No. 1.
2. The black sediments are crystal tuffs or slightly-reworked tuffs. The available data are permissive for the writer to postulate that the tuffs could have accumulated in a restricted basin on the ocean floor, what explains the local greater thickness of the beds.
3. Zone No. 1 is located on the northern limb of a west-northwesterly trending anticline, with a vertical or steeply-dipping axial plane. The structural setting allows the formulation of the hypothesis that the thicker fine-grained sediments, less competent than the hanging and footwall greywackes, localized the drag folds present in the zone, as opposed to the popular belief that the quartz and gold migrated into the folds during or after the deformation period. Furthermore, the drag folds and structural complexity of the zone attenuate and disappear in tens of feet stratigraphically above and below it.
4. Zone No. 1 is concordant with the stratigraphy (see Plates V, VI, VII, VIII), although abundant crosscutting quartz veins are common. This apparent contradiction can be explained by later remobilization of quartz into tension fractures during folding.
5. The previous four arguments suggest the possibility that the gold was introduced at the same time or shortly after deposition of the black sediments.

The writer concludes that the Zone No. 1 gold mineralization is likely a syngenetic/hydrothermal type of deposit or, if it is epigenetic, it is strata controlled. These characteristics should be kept in mind as a possible useful guide in exploration for more occurrences of the same style of mineralization in the property and in the region.

7. CONCLUSIONS

1. Zone No. 1 was tested by 17,462 ft of BQ diamond drilling. Drill-indicated

reserves of 700,163 tons grading 0.154 oz/tn Au (uncut assays and no dilution included) have been estimated, which contain 239,941 tons averaging 0.330 oz/tn Au. The drilling also indicates that, down to the -200 ft level, 309,014 tons containing 0.132 oz/tn Au are ameanable to open pit mining, with a strip ratio of 4.38 to 1. The zone is open at one end and at depth; it requires more fill-in drilling as well as step-out testing along strike and at depth.

2. Zone No. 2 was tested by 2,771 ft of BQ diamond drilling and 1,350 ft of percussion drilling. The mineralized zone appears to have lenses or shoots along the 800 ft of recognized strike length. Excellent intersections were cut, including 7.4 ft grading 0.491 oz/tn Au and 18.9 ft assaying 0.812 oz/tn Au encountered in hole 84-62. The discovered shoots need to be delineated in more detail by diamond drilling. The high-grade shoots, even if small, could make a significant economic contribution to the Zone No. 1 ore.

3. Zone No. 4 is geologically very similar to Zone No. 1. It was tested by 1,511 ft of BQ diamond drilling, which intersected a very strong zone. Results were lower than anticipated, with one significant intersection of 24.2 ft grading 0.091 oz/tn Au including a 7.1 ft interval averaging 0.237 az/tn Au. The mineralized zone is open at both ends and at depth. Step-out drilling along strike and at depth is warranted.

4. The VIV 15 Zone was tested by 602 ft of diamond drilling from the same set up. Two of the three holes intersected a quartz-rich, sulphide-bearing zone, where two small sightings of visible gold were observed. The best intersections were 2.5 ft containing 0.108 zo/tn Au and 8.7 ft averaging 0.182 oz/tn Au in one hole, and 8.2 ft grading 0.088 oz/tn Au, which includes a 3.8-ft section with 0.120 oz/tn Au, in another hole. This zone is open at both ends and at depth. Drilling along strike is warranted.

5. The Bulge Zone underwent 718 ft of diamond drilling. It was proven that the outcropping gold-bearing "hump" of white quartz has a limited lateral extension but it is still open at depth. It could be another "sweetening" source for the Zone No. 1 ore. Further work here is contingent to future results obtained from that zone.

6. Drilling returned discouraging assays from 559 ft of diamond drilling and 280 ft of percussion drilling in Zone No. 3 and 117 ft of diamond drilling in VIV 8 Zone. No further work is here warranted at the present time.

8. RECOMMENDATIONS

The following recommendations, based on the 1983/1984 diamond drilling programs are made:

1. Firm up the reserves indicated for Zone No. 1 by fill-in drilling, starting with shallow holes to get information close to surface to improve the

confidence of the open pit reserves. Step-out drilling northwesterly along strike is also recommended, as well as one or two deep holes to intersect the zone at about 1000 ft below surface.

2. Fences of shallow holes spaced between 20 and 30 ft apart are recommended for Zone No. 2, to test the open pit potential of some of the known high-grade shoots. The churn drill could be used here for the initial drilling.

3. Step-out, shallow diamond drilling along strike at both ends of Zone No. 4 to test for the presence of higher-grade shoots is recommended. At least one hole is also recommended to cut the zone at about 200 to 300 ft below surface, to be drilled on the best mineralized section.

4. Two or three shallow diamond drill holes are recommended for testing the presence of ore-grade shoots along strike of VIV 15 Zone.

5. No further work is recommended on the Bulge, No. 3 and VIV 8 Zones. More drilling on the Bulge Zone should be reconsidered if the results obtained for the other zones continue to be encouraging.

6. Work on the Lynk claims delineated a zone 3,000 ft long with widely-spaced old trenches along it, from where surface samples returned excellent gold values. This work is summarized by Love's report on the 1984 surface exploration program. Detailed mapping, prospecting, trenching and diamond drilling is strongly recommended for this part of the property.

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LIST OF PLATES