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King Midas

Charles Starr Material

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REPORT  
ON THE  
KING MIDAS MINE  
Zeballos, Vancouver Island, B. C.

To  
King Midas Mining Co. Ltd.  
Standard Bank Building,  
Vancouver, B. C.

By  
Charles C. Starr,  
Yorkshire Building,  
Vancouver, B. C.

May 3, 1938.

## SUMMARY

**LOCATION:** Eight miles from Zeballos on the North Fork river.

**PROPERTY:** Nine Crown Granted claims and five others.

**EQUIPMENT:** None except four cabins.

**GEOLOGY:** Thick Mesozoic volcanics, with some sediments, are intruded by a granitic batholith, the contact being  $1\frac{1}{2}$  miles west of the property. A tight syncline and extensive faulting pass north and south through the center of the claims. The property is in the volcanics, except a little limestone is present.

**DEVELOPMENT:** There are many cuts and strippings and two tunnels with 110 and 150 feet of crosscuts and 180 feet of drift, the latter mostly on the vein.

**ORE DEPOSITS:** Five narrow gold-quartz-sulphide veins are known, striking about north-south and dipping steeply east. The chief sulphides are zinc blende, pyrite, chalcopyrite and arsenopyrite. Widths vary up to 7 inches and average values up to  $2\frac{3}{4}$  oz. gold. The tunnel vein has been drifted on at a depth of 100 feet for 120 feet, and is there slightly poorer than on the outcrop. It averages  $3\frac{1}{2}$  inches wide and 2.06 Oz. gold.

The contact-vein occurs between limestone and volcanics and averages 5 inches wide and 0.66 Oz. gold. It is a strong appearing vein in most of its exposures.

A 4 foot vein of quartz and silicified rock along a strong shear on the west of the river shows low gold-copper assays. It lacks any development and warrants some exploration.

A large zone of disseminated copper, and a contact zone of scattered rich stringers are not believed to be important.

**GENERAL:** The geology is moderately favorable, but the gold-quartz veins are narrow, comparatively low grade, tight, and appear to be not very persistent. These veins seem to be of a somewhat different type than the rich veins in the granodiorite in the central part of the district, and may be younger.

**RECOMMENDATIONS:** Trace the Contact-vein further in hope of finding sufficient values to warrant the driving of a tunnel to cut it.

Trace the 4 foot vein west of the river and open it up by cuts.

Prospect the property more thoroughly. It contains widespread mineralization and a number of small veins with occasional high gold, and is too attractive to condemn without more thorough exploration.

*Chas. C. Starr*

## THE KING MIDAS MINE

**INTRODUCTION:** No available man was found to act as guide to the property who was entirely familiar with all of the workings, but George McKnight, who had worked on the property for the Pioneer Gold Mines Ltd., and knew the locations of the principal workings, was hired. Four days were spent on the property.

Maps furnished by the King Midas company are used as a basis for this report, and consist of a map of the Crown Granted Claims, and a map of the workings from a compass survey by Prof. J. W. Turnbull made in connection with his report in 1934. Surveys of the more recent workings were made with a compass by the writer. All bearings refer to astronomical north.

Samples taken for this report generally consist of two cuts taken across the vein, one or two feet apart.

**LOCATION & ACCESSIBILITY:** The property is situated along the North Fork of the Zeballos River, upward from the forks for a mile and a half. Zeballos River enters Zeballos Arm, a branch of Esperanza Inlet on the west coast of Vancouver Island. The town of Zeballos is situated at the mouth of the river and is served by a government wharf where sea-going boats may dock. A Canadian Pacific Railway steamer makes tri-monthly trips to Zeballos, and there are frequent planes from Vancouver.

The King Midas camp, at about the center of the property, is approximately eight miles northeasterly from the town of Zeballos and is reached by truck road for four miles, and four miles of fair trail up the east bank of the main river and the North Fork. There is also a poorer trail up the west side of the river.

Supplies may be handled by truck for the first four miles but must be packed on men's backs the remainder of the way. It is reported that an extension of the road may be built this year which will shorten the trail about one and a half miles.

**PROPERTY:** There are nine Crown Granted claims in the King Midas group, the Big Ben Nos. 1, 2, 3, & 4 and Yauco Nos. 2, 4, 5, 6, & 7. Gold Rock Nos. 1 and 3 are in process of being Crown Granted. The Gold Rock Fr., Yauco No. 12 (#13 on the map) and the Big Ben Fr. are held by location. The total area is 567 acres.

No attempt was made by the writer to verify the titles to these claims, but they are believed to be in good standing.

**GENERAL:** The whole property is heavily timbered, chiefly with hemlock and balsam, but with some fir, spruce and cedar.

The rainfall is heavy; creeks are numerous and their flow varies greatly with the precipitation. Snowfall is generally light.

Sufficient power for development purposes could probably be developed on Fault Creek if, after survey, it seemed preferable to Diesel power.

The elevation at the Forks, on the lower end of the property, is about 250 feet, the river rising to about 450 feet at the north end of the property, a distance of one and a half miles. The river valley is narrow, the lower slopes varying from almost vertical to  $45^{\circ}$  for the first one or two hundred feet above the river, followed by a more gently sloping bench, above which the slopes again become steep with frequent cliffs. Trails all follow the bench, while most of the known mineral showings are in the bluffs between the bench and the river.

There are two cable crossings over the North Fork, one near the forks, and one near the tunnels.

**EQUIPMENT:** There is a forge, a small anvil, and a few drills at the No. 1 tunnel, but no other tools.

There are four small cabins on the property, two at the forks on the west side, one on the west bank of the North Fork near the tunnels, and one on the east bank on the bench opposite the tunnels. None of them contain any equipment.

**GENERAL GEOLOGY:** The geology of the district has been mapped and described by H. C. Gunning (1932) and N. F. Bancroft (1935) for the Dominion Government.

Briefly summarized, the oldest rocks of the district are early Mesozoic volcanics and sediments of the Vancouver Group which are intruded by a batholith of granitic rocks. The Vancouver Group are subdivided into three groups, the Karmutsen volcanics consisting largely of andesitic flows and tuffs, which are overlain by the Quatsino limestones, and they in turn by the Bonanza group of volcanic flows and fragmental rocks with inter-bedded sediments.

The axis of a tightly folded syncline follows closely along the North Fork of the Zeballos river. This folding has been accompanied by faulting along a  $N 5^{\circ}$  to  $10^{\circ}$  W course and dipping  $60^{\circ}$  to  $70^{\circ}$  east. The east side of the fault has moved down and possibly northward an unknown amount. There is also some major faulting, probably older, striking  $N 65^{\circ}$  W along

Fault Creek and, on the east bank of the river, near the north end of the property another fault strikes northeast and dips southeast at a medium angle.

The border of the main batholith lies from one to one and a half miles west of the King Midas property, which is located in the Karmutsen volcanics except in the southeastern part of the claims where the limestones overlie it in the form of a northerly pointing wedge.

**DEVELOPMENT:** Development on the property consists of a large number of open-cuts and strippings, mostly small, and two tunnels. The tunnels are crosscuts from the west bank of the river on the Big Ben No. 2 claim and designed to cut a narrow quartz vein which has been exposed in open-cuts on the surface nearly a hundred feet above. No. 1 tunnel consists of 110 feet of crosscut, 180 feet of drifts north and south, and a winze, now full of water, said to be 15½ feet deep.

No. 2 tunnel, 200 feet southward, and also running west from the river level, is a crosscut 150 feet long.

**ORE DEPOSITS:** The known veins on the property are narrow quartz-sulphide veins which sometimes contain high gold values. They vary from little more than seams to eight or nine inches in width, generally strike nearly north and south roughly parallel to the river and the main faulting, and dip steeply eastward. There is usually no gouge along them but they are separated from the walls proper by two or three inches of sheared and altered rock.

They occur in the Karmutsen volcanics which here are dense greenish rocks of apparently andesitic composition, except in one instance a vein occurs on the volcanic-limestone contact.

The vein filling is generally friable quartz with zinc blende, pyrite, arsenopyrite, chalcopyrite, and sometimes pyrrhotite and magnetite in the approximate descending order of their importance. Any or all of these sulphides may be lacking in a given section of the vein, or the relative proportions may vary somewhat from place to place.

In addition to the veins proper, there are irregular, and apparently low grade and unimportant zones of stringers and silicification carrying pyrite and chalcopyrite in the country rock bordering many of the dikes.

None of the occurrences of this type seen, appeared to be of economic importance, although the outcrops are so scattered and poorly exposed that no very definite conclusions can be drawn.

Also there is occasional vague, scattered, low grade mineralization in both the volcanics and the limestone on and near their fault-contact along the edge of the river.

**DETAILS OF VEINS AND WORKINGS: (See also Maps)**

**Big Ben No. 2 Vein. (No. 1 Vein of Turnbull's report)**

This vein has been opened on the surface for 180 feet at 100 feet west of the river and 100 feet higher, and has been exposed by five cuts which are open and possibly several more which have filled in. It strikes N 5° W, dips 80° east, and varies from a seam up to four inches in width. The northern exposures of the vein are in two cuts at 55 feet and 25 feet north of the No. 1 tunnel. In these cuts the vein is from ½" to 2" in width, is more or less "frozen" to the walls and irregular; no samples were taken.

In a cut ten feet south of the tunnel the vein is from 1" to 3" in width and shows strong zinc blende, fair pyrite, and a little chalcopryite. Sample #300 from here assays 5.23 Oz. gold.

From 30 to 65 feet south of the tunnel the vein has been stripped; the vein being very narrow at the north end and widening to three and a half inches at the south end. It shows zinc blende and some pyrite in quartz and assays 0.57 Oz. gold (#298).

At 40 feet south of the stripping a cut shows 3½" of quartz with blende, arsenopyrite, and pyrite with a very little chalcopryite. It assays (#299) 0.22 Oz. gold. South of the tunnel the vein follows the wall of a small black dike, which is not visible north of the tunnel.

On the maps, several small cuts are shown about 75 feet to the southwest which are now partly filled; a few small quartz seams can be seen striking about parallel to the vein and are probably the surface continuation of the stringer zone near the face of the No. 2 tunnel. It is improbable that the main vein turns sharply and passes through these cuts.

Including assays of Prof. Turnbull's samples, the average value of the vein along the surface (8 samples) is 2.47 Oz. gold over a width of three inches.

Underground, No. 1 Tunnel passes through a small black dike at 40 feet and encounters the vein at 60 feet from the portal. Here the vein consists of several stringers on, and near, the east wall of a small black dike; all stringers except the east one pinch out within a short distance north and south.

The east stringer has been followed northward for 112 feet at which point the drift lost it. From the crosscut northward for 70 feet the vein is 1" to 5" wide and following a narrow weak shear. It is free from gouge along the walls and the sulphide content varies greatly.

Samples Nos. 318, 319, & 320, 6", 3", and 3½" respectively are taken at 20 foot intervals from the center of the crosscut and assay 0.16 Oz., 1.11 Oz., and 0.06 Oz. gold; they contain varying amounts of the usual sulphides and seem to fairly represent the 70 feet of vein they cover.

Sample #321, 3" wide and assaying 9.50 Oz. gold represents a spur-vein which contains strong zinc blende but pinches out in about fifteen feet.

From 70 to 110 feet in the north drift the vein is narrow and scarcely traceable. At 112 feet sample #322 assays 0.60 Oz. gold across 3½" of quartz and silicified rock showing a little blende and pyrite.

In the south drift from the crosscut there is a good looking narrow vein, sometimes showing nearly solid zinc blende, for 25 feet, - to the south the vein rapidly pinches and passes into the east wall of the drift.

The average of the two samplings in the tunnel, omitting Turnbull's winze assays, is 1.75 Oz. gold over a width of 4 inches, or, for the surface and tunnel combined 2.06 Oz. gold over a width of 3½ inches.

This vein as a whole, although sometimes containing considerable gold, is narrow, tight, and pinches to almost nothing at both ends of the workings. There seems no reason to believe that any materially better conditions will be found at further depth.

The face of the No. 1 tunnel crosscut is in a fine grained black dike. In the six foot width adjoining the dike on the east the rock is somewhat silicified and cut by small irregular quartz stringers. Both the stringers and the silicified rock contain sparsely disseminated pyrite and chalcopyrite, but probably too thinly disseminated and too spotty to form commercial ore. Sample #323 is from this zone and assays 0.025 Oz. gold and 1.95% copper. It does not represent the zone as a whole but some of the better streaks, forming perhaps 20% of the whole.

No. 2 tunnel cuts two fine grained black dikes at 10 and 25 feet from the portal. Between them the rock is silicified and contains weakly disseminated pyrite and chalcopyrite. A third dike is cut at 50 feet from the portal and immediately following it on the west side is a zone of stringers and silicification which may represent the pinched vein of No. 1 tunnel; there is only very weak metallic mineralization here. The face of the tunnel is in a fourth dike and the six or eight feet preceding it is cut by a number of tiny erratic quartz stringers and there is some weak silicification and pyritization.

Big Ben No. 3 Vein: Near the southeast corner of the claim and just north of Fault Creek (marked "Little Canyon" on old maps) seven small cuts have exposed two narrow veins close together 100 feet west of the river and 125 feet above it. The east vein is exposed in three cuts and has a maximum exposed width of 3½ inches. One sample (#296) showing quartz and zinc blende assays 1.09 Oz. gold.

The west vein is exposed in two cuts, strikes N 5° W and dips 85° east. As exposed, it is three to six inches in width and is quartz with strong zinc blende and a little pyrite and chalcopyrite; the sulphides are partly oxidised and the vein shows some leaching. Two samples (#295 & 297) assay 0.50 Oz. and 1.09 Oz. gold. Both



veins were sampled in the best appearing places; it is likely that they will join to the northward. Their average assay is 0.83 Oz. over 4 inches.

These veins line up well with the vein of No. 1 tunnel and may possibly be continuations of each other across Fault Creek, where the faulting is probably pre-mineral.

**Big Ben Nos. 3 & 4; Contact Vein:** A vein follows the east contact of the limestone with the volcanics, passing about fifty feet west of the common east corner of these claims, and is exposed by outcrops and cuts at intervals for 180 feet. It strikes north and south, dips 70° east, and lies on a 50° slope about 100 feet above the river on the east bank.

The most southerly exposure of the vein is in a small draw 100 feet south of Glory Hole Creek. Here, the vein is 3 to 5 inches of quartz and silicified rock with pyrite and zinc blende, the quartz and sulphides increasing to the northward. Two samples (#303 & 304) contain quartz, silicified rock, pyrite, zinc blende, arsenopyrite, and chalcopyrite and assay 1.19 Oz. and 0.24 Oz. gold respectively.

Twenty feet northward a cut shows a good looking 6 inch vein with the usual sulphides, assay (#301) 0.64 Oz. gold.

Twenty five feet further north and approximately 50 feet south of Glory Hole Creek a cut exposes the vein 4 inches wide assaying (#302) 0.64 Oz. gold. The next exposures are in Glory Hole Creek where the vein is washed clean for 50 feet, showing a width of 6 to 7 inches of quartz with the usual sulphides. Three samples (308, 307, & 306) show 0.16 Oz., 0.72 Oz., and 1.28 Oz. gold respectively.

At 75 feet north of the creek a cut exposes the vein, showing 4 inches of silicified rock and a little quartz with weak sulphides which assay (#309) 0.60 Oz. gold. No exposures of the vein were found north of this point, nor was the outcrop of a 3 inch vein 150 feet further north, shown on Prof. Turnbull's map, found.

This contact-vein between limestone on the west and volcanics on the east is the strongest, most uniform appearing vein seen on the property, but its average assay is disappointingly low, - 0.66 Oz. gold across 5 inches.

**Yauco No. 6 Vein:** A 3 or 4 inch vein, striking N 30° E and dipping 75° east, outcrops along the trail about 300 feet east of the river in the bottom of Glory Hole Creek. It either pinches to the north or is faulted, as trenching has not found it on the north bank. A sample on a short stripping on the south bank (#305) shows quartz with pyrite, arsenopyrite, chalcopyrite, and a little zinc blende and pyrrhotite and assays 0.02 Oz. gold. At 250 feet south of the creek an open cut shows 5 inches of quartz with pyrite, zinc blende, arsenopyrite and chalcopyrite which assays (#311) 0.03 Oz. gold and is probably the continuation

of the vein at the creek. From 45 to 80 feet further south the vein has been stripped and is from  $3\frac{1}{2}$  inches wide at the north end to 1 inch at the south end. The quartz is much mixed with silicified rock and contains a little pyrite; two samples (#312 & 313) show 0.025 Oz. and 0.015 Oz. gold. The vein appears to be pinching out to the southward; the average value is negligible.

Yauco No. 7. Vein: A vein has recently been found in a small out ten feet south of the north line of the claim (and property) and 75 feet west of the northwest corner post. It strikes  $N 10^{\circ} E$ , dips  $50^{\circ}$  east and consists of 3 or 4 inches of quartz with strong zinc blende and some pyrite, chalcopyrite, and pyrrhotite, bordered by 6 inches of ironstained and altered rock. A sample (#314) of the quartz assays 0.22 Oz. gold, and one of the altered rock on both sides of the quartz (#315) 0.06 Oz. gold. To the northward this vein goes out of your property, and to the south soon passes under heavy overburden.

Big Ben No. 4 Vein: About 850 feet north of the Glory Hole and near the river level on the east bank, there is a large cut showing a shear or fault striking  $N 10^{\circ} W$  and dipping  $60^{\circ}$  east. On the footwall side there are 3 inches of quartz with weak pyrite and chalcopyrite; in the remaining two feet to the hanging wall there is sheared and altered rock and gouge with erratic streaks and spots of quartz. A sample (#310) of the best appearing footwall quartz assays 0.025 Oz. gold.

Big Ben No. 3 Vein: Near the north-south center of the claim and about 200 feet west of the river there is a vein or shear which outcrops on both sides of a small draw and is about 4 feet wide. It strikes  $N 25^{\circ} W$ , dips  $65^{\circ}$  east, and consists of quartz, silicified volcanic rock, and gouge. On the south of the draw only the harder part of the vein outcrops; it shows disseminated pyrite and chalcopyrite and assays (#316) 0.015 Oz. gold and 0.6% copper across 15 inches. The whole vein is exposed on the north side of the draw and assays (#317) 0.02 Oz. gold, 0.6 Oz. silver, and 0.6 % copper across 50 inches. So far as noted, this vein has not been traced in either direction; it is strong and should be persistent, and may show better values at other points.

Big Ben Nos. 3 & 4: West: Nothing was found in this section of the property to indicate a disseminated copper belt of possible economic importance bordering the river. Several silicified seams were noted which showed some chalcopyrite, but nothing which seemed to indicate the probability of any considerable percentage of copper or tonnage of ore.

Big Ben No. 2, South: Previous reports on the property mention a large belt of limestone and volcanic rocks with quartz stringers mineralized with pyrite and arsenopyrite and gold chiefly exposed in and near the river bed. The writer, whether from failure to search in the right place or on account of too high water in the river, was unable to find anything as attractive as described. Some small mineralized seams cutting the volcanics were noted, but nothing which seemed to be of economic importance.

**DISCUSSION OF DATA:** The general geology of the property seems moderately favorable for the occurrence of ore deposits. The rocks are hard, brittle, and fracture cleanly, and seem fairly easily replaced by mineralizing solutions. Nevertheless the gold-quartz veins of the property occupy tight and weak, though numerous, fissures without gouge or evidence of movement along the walls, and give the impression of probable limited length and depth.

The character of the mineralization is similar to that in the proven properties in the district, but the King Midas veins lack the strong fracturing, gouge, and wall-rock bleaching which is characteristic of other veins, and they are narrower and lower grade.

The King Midas property is further from the granodiorite contact than the proven properties, although the distance does not seem great enough to matter materially.

The North Fork fault is, so far as observed, comparatively tight and free from extensive shattering. While it was very probably a channel for mineralizing solutions from the underlying batholith, there is reason to fear that the channel was too constricted to permit passage of sufficient solution to effect economic mineralization, or that the batholithic source of the solutions was too distant.

All as yet known rich and economically important veins of the district strike approximately at right angles to the general course of the batholith, that is northeasterly, while the King Midas veins are more nearly parallel to it, roughly north and south. The significance of this would appear to be that the King Midas veins were probably caused by different agencies and are probably of an earlier age. Contrary to the general opinion, I see no evidence that the North Fork fault has had anything to do with the formation of the veins in the batholith in the central part of the district. For these reasons the King Midas veins cannot be expected to be entirely similar to the other veins in extent and gold content.

The five or six narrow high-grade gold-bearing veins that have been found and more or less opened up by

cuts all average less than six inches in width and from almost nothing to 2½ ounces in gold. The best vein if mined over a stoping width of 2½ feet would be diluted to a gold content of 0.25 Oz. per ton, or \$8.75, which is hardly a commercial grade. Although in actual mining the vein would be stripped and taken out clean, the comparison still holds good as to the quantity of rock to be broken. In addition the veins are shown to pinch to almost nothing; whether they pinch out completely or open up again has not yet been proven, - the former seems most likely.

No. 1 tunnel has opened one vein at a depth of 100 feet and has found no improvement in values or size, but rather the reverse. Developments in the central part of the district cannot be used here as a criterion, since basic conditions such as host-rock and probably age are different.

The copper-belt on Big Ben No. 3, judged by what showings I was able to find, does not seem sufficiently wide-spread or to carry enough values to be of economic importance, although it must be admitted that the exposures are few and far between and do not permit the forming of an entirely definite opinion.

The wide zone of gold-stringer mineralization reported along the contact and river bed on the Big Ben No. 2 claim must now be largely under water, or else I did not find the best part of the zone. What mineralized stringers I saw in this section are too small to be worked individually, and too scattered to form a body that could be worked en mass. I did not sample it.

The single sample taken from this section by Prof. Turnball (20 feet carrying 0.01 Oz. gold) tends to confirm this opinion, while Mr. Ellis reports the average of three samples was \$9.85 per ton, and leaves a question as to whether I found the place he sampled.

**RECOMMENDATIONS:** It seems inadvisable to recommend any further work on the Big Ben No. 2 (tunnel vein).

An attempt should be made to trace the contact-vein (northwest corner Yauco No. 6) further both north and south in the hope of finding improvement in width or value sufficient to justify the driving of a crosscut tunnel (about 100 feet) from the river level.

The Big Ben No. 3 vein should be traced north and south. While this vein is low grade where found it may be better at other points; it is stronger and wider than the other veins.

The claims have not yet been thoroughly pros-

pected, and I would recommend that this be done, not only along the steep narrow belt along the river but on other parts as well.

There is very persistent and widespread mineralization on the property and numerous veins, and even though none of the deposits yet found have shown values and widths sufficient to be economically workable, yet the showings are too attractive to condemn the property without further exploration.

**CONCLUSION:** Exploration and development thus far has not resulted in finding any quantity of commercial ore.

Numerous small veins have been found, often showing attractive gold assays, but on the whole rather discouraging.

The disseminated and contact deposits appear too low grade and vague to hold very much promise.

Some tracing and open-cutting of known veins is recommended, and further systematic prospecting of the entire property.

Respectfully submitted,

*Chas. C. Starr*

**MAPS:**

Principal workings and veins with assays.  
Portion of Claims showing location of veins.

