

# ANNUAL REPORT OF THE MINISTER OF MINES

OF THE PROVINCE OF

## BRITISH COLUMBIA

### NORTH-WESTERN MINERAL SURVEY DISTRICT (No. 1).

REPORT BY JOSEPH T. MANDY, RESIDENT MINING ENGINEER (HEADQUARTERS, PRINCE RUPERT).

#### NORTH-WESTERN DISTRICT (No. 1).

A 41

##### MORESBY ISLAND SECTION.

This section is thoroughly covered in former Annual Reports. In those for 1929 and 1930 and in Bulletin No. 1, 1932, its geological aspects and the opportunities for prospecting are reported. Further details of promising localities for prospecting are given previously in this report.

This property consists of the *Early Bird* and is situated on Gold harbour, Mitchell inlet, Moore channel. By water, Gold harbour is 26 miles south of Skidegate point and about 54 miles from Queen Charlotte. The property is owned by J. McLellan, formerly of Queen Charlotte, whose agent is A. J. Gordon, of Skidegate. About \$20,000 worth of gold was recovered from the mining carried on as early as 1851. This was the first lode-gold mine in British Columbia.

A number of years ago the deposit was staked by the present owner, who has spasmodically carried out small-scale selective mining and some leasing on a narrow vein, with gold-recovery in a 3-stamp mill of about 1/2-ton capacity. Some nice profits for an individual are reported from these operations. In recent years assessments have been kept up on the property.

The rocks of the area embraced by the *Early Bird* consist of altered lavas of probably the Yakoum formation of middle Jurassic age. Two types of rocks occur in the vicinity of the veins. The main or bulk rock is dense-textured, slightly spherulitic, and amygdaloidal in structure and dark green in colour. In narrow reticulated structure relationship with this rock is a greenish and characteristically spherulitic rock exhibiting decided breccia and amygdaloidal structure in places. Breccia fragments of the associated dense-textured rock indicate the spherulitic rock to be intrusive into the latter. Veinlets and amygdules of calcite and quartz are a marked feature of this rock-type, the quartz amygdules in places being 3 to 6 inches in diameter. Small crystals of pyrite and some small blebs of chalcocopyrite occur in the matrix. The matrix tends decidedly to what appears to be serpentine.

On the *Early Bird* the above-described rock association occupies the low-lying area. Near veins and fracturing the rocks have undergone intensive silicification and are featured by numerous small veinlets of quartz. The high ridge to the south is generally composed of a dense-textured greenish lava of andesitic type.

In the low-lying area a fracture-zone about 200 feet wide, striking north-easterly, occurs. This is evident in a series of at least seventeen fractures from 1/2 to 4 or 5 inches in width, filled with quartz and calcite, that outcrops along the shore, striking generally N. 30° E. (mag.) and dipping from vertical to about 70° west. These small veins are spaced at distances apart varying from about 1 foot to about 40 feet. In one section along the immediate west side of the creek-draw six small veins or stringers are distributed across a width of 30 feet. A network of fine quartz veinlets, varying alteration and partial to, in places, comparatively complete silicification, is characteristic of the country-rock between the veins. Only limited tracing of the veins has been carried out, the bulk of this being on the vein which has been developed. This has been uncovered by intermittent stripping and open-cutting for a distance of about 400 feet, showing a variable strike and varying in width from 1 inch to about 20 inches of compounded stringers. On the high knoll about 800 feet south-westerly from the shore a network of quartz veinlets can be seen.

The filling of the veins consists of dense-textured milky quartz with some calcite. In sections where compounding of stringers and veinlets forms the veins, evidence of crushing and breccia-structure can be noted. The veins are generally tightly frozen to the walls, with quartz replacement gradually fading into the wall-rock. A generally sparse mineralization of fine specks of pyrite and chalcocopyrite occurs in the veins in places and in the wall-rock contiguous to them. Native gold in comparatively fine and erratic distribution can be seen in places in the vein on which development has been carried out. The characteristics of the occurrence suggest classification as a fracture-zone siliceous replacement.

In 1852 the Hudson's Bay Company excavated an open-cut on one of the veins at just about high-tide mark. At what is presumed to be this point and about 3 feet above high-tide mark, the present owner has driven a tunnel 219 feet on what appears to be related veins which in places pass into the walls. General vein-widths exposed in this working vary from about 4 to 42 inches of compounded stringers. At 57 feet from the portal a winze is sunk 38 feet. This was full of fresh water and could not be examined. It is authoritatively reported, however, that from the bottom of the winze a crosscut was run 10 feet to the vein and the vein drifted on for 70 feet, showing good values. This winze is connected with the surface by a shaft 35 feet deep to the main level. At 141 feet from the portal the main level is connected with an upper tunnel by a 50-foot raise. At this point in the main tunnel a crosscut 31 feet to west intersects at 20 feet a vein 4 to 8 inches in width of 1 inch in the face. At both winzes on the main level some limited stoping has been carried out.

At elevation 60 feet, about 150 feet southerly from the portal of the lower tunnel, a 25-foot crosscut has been driven to the vein, the vein drifted on for 44 feet, and stoped out to surface. In this working 13 inches of compound vein-structure and several small isolated stringers are

intersected by the crosscut, and in the east wall of the south drift a series of quartz stringers across 3 feet is exposed. In the face of the south drift is a width of 3 to 11 inches of quartz stringers. A cross-structure 12 inches in width cuts across the face of a short north drift on this level. On surface several open-cuts have been excavated. With the exception of four along the shore, these have generally sloughed.

As would be expected, the values are quite variable. Time was not available to the Resident Engineer to carry out as complete sampling with a view to locating possible ore-shoots as was desired. However, in order to procure some evidence of values, the following samples were taken:—

- (1.) Across 6 inches and a height of 5 feet of quartz stringers and veinlets 1/8 to 1 inch wide, main tunnel portal, west side: Gold, 1.20 oz. per ton; silver, 0.1 oz. per ton.
- (2.) Composite chip-sample, at intervals of 12 feet, of veins in main tunnel from the portal to the face (exclusive of the two inaccessible stope sections of 40 and 20 feet respectively in the regions of the winze and shaft), representing fourteen sections across vein-widths varying from 1.5 to 42 inches and averaging 12.8 inches: Gold, 0.06 oz. per ton.
- (3.) Six inches quartz stringers and crushed country-rock, face main drift: Gold, nil; silver, nil (12 inches of quartz stringers in the floor on east side of this face were not sampled).

In the upper tunnel-workings the following samples were taken:—

- (1.) Three to eleven inches of quartz stringers in face of south drift: Gold, 0.34 oz. per ton; silver, 0.04 oz. per ton.
- (2.) Thirteen inches of stringers, north side upper tunnel crosscut: Gold, nil; silver, nil.
- (3.) North drift-face, across 12 inches stringers and veinlets: Gold, 0.1 oz. per ton; silver, 0.01 oz. per ton.

Visible gold was found in many pieces of banded vein-rock lying on the dumps of the main and upper tunnels, and in a small pile lying on the floor of the old mill native gold was seen in every piece examined. Estimated from the openings of the upper tunnel-workings, the dump from these should contain about 200 tons of rock. This dump was not sampled, but, judging from specimens examined and the general characteristics of the material, it is quite possible it might contain good milling values.

Only one small vein or series of adjacent and related small veins have been but partially explored and selectively mined on this property. The workings indicate one high-grade ore-shoot of small to fair length selectively mined from the upper tunnel. In the lower or main tunnel two small shoots are indicated by the limited stope areas neighbouring the winze and raise. A possible third high-grade shoot is indicated at the tunnel portal by the old Hudson's Bay Company open-cut and the value indicated in the vein at this point. The reported values in the drift at the bottom of the winze from the main tunnel indicate the possibility of an ore-shoot also at this point. Although it would seem probable that these ore-shoots rake to the north, it is not considered that the workings have determined this definitely. Nor is it considered that the workings have delimited the extent of these ore-shoots, no matter in what direction they may rake.

It is apparent that the workings have embraced a very limited extent of even the selected portion of the fracture-zone worked. It is not considered that commercial ore possibilities on the horizon of the workings or at other horizons on this selected portion have been by any means exhausted. There is no evident reason why other areas of the 200-foot wide fracture-zone with its seventeen major fractures should not contain values and possibilities similar to those uncovered in the workings. Although small sections of some of these may have been crosscut by the main tunnel (and this is uncertain), it can be taken that the remainder of the zone is entirely unexplored.

The examination indicated that the best values occur where the veins assume a swelled and compounded structure of stringers, veinlets, and interspaced silicification, across widths of 2 to 3.5 feet, giving practical mining widths. Examination of vein material showing this structure from the dumps indicated that whereas the bulk of the visible gold (partly visible to the naked eye, but generally necessitating the use of a glass) occurs in the quartz, some also occurs in the altered and partially silicified interspaced rock. This indicates the possibility for the occurrence of an appreciable tonnage of low-grade milling-ore minable across appreciable width that should warrant definite determination.

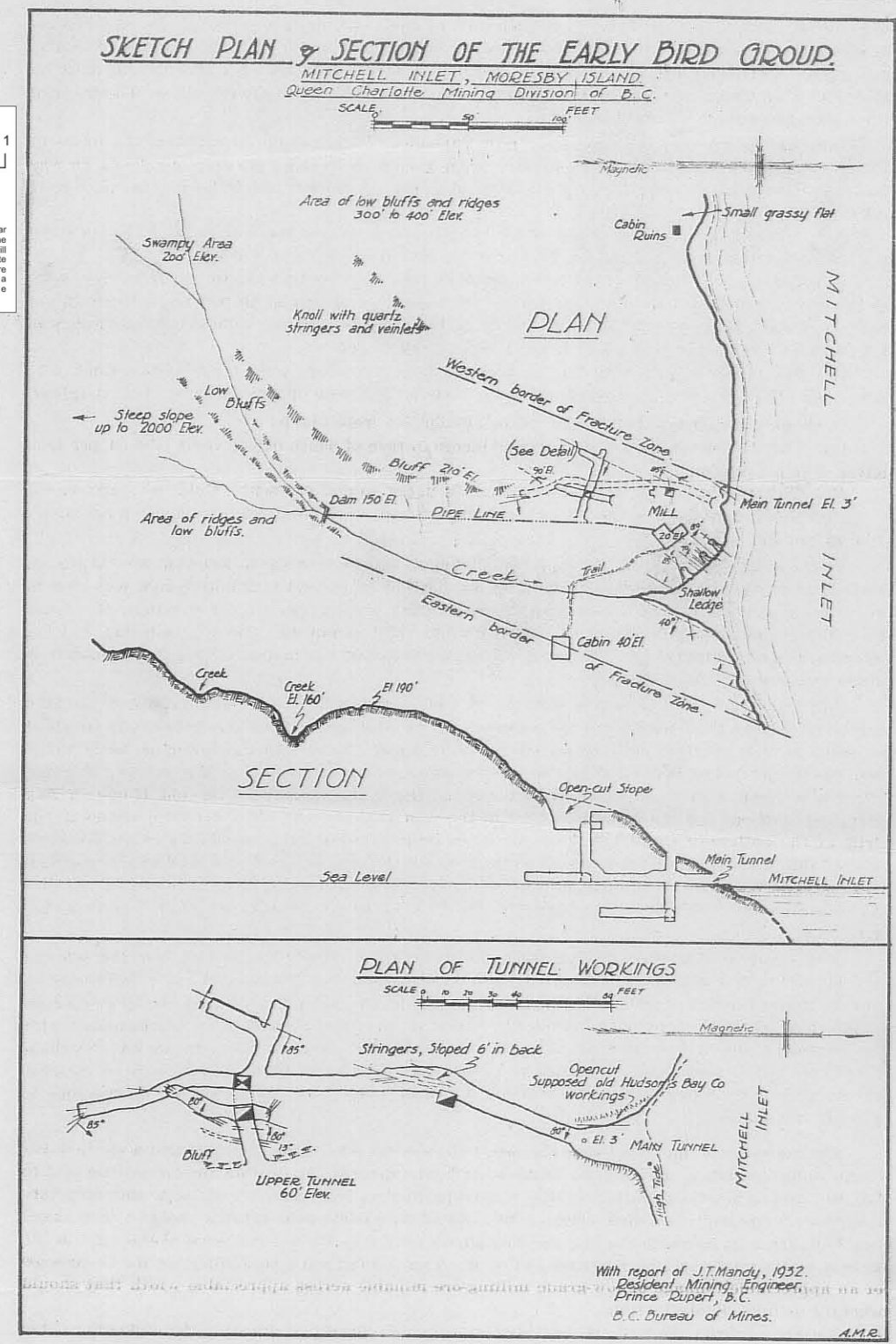
Considered from its various indicated aspects, the property presents the following three possibilities warranting definite determination by further exploration:—

- (1.) A selective small-tonnage, high-grade operation on isolated veins for individuals or a small syndicate.
- (2.) A semi-selective medium-tonnage, medium-grade operation on vein combinations or zone sections.
- (3.) An appreciable tonnage low-grade operation involving appreciable sections of the entire zone.

A cabin, in comparative disrepair, for three or four men is located on the property. The buildings housing the mill need considerable repair and partial rebuilding, with renewal of foundation timbers. The 3-stamp, 1/2-ton-capacity Fraser and Chalmers stamp-mill is in comparatively good shape for rough work. Water-power was furnished from a 15- by 30- by 3-foot dam by an 8-inch wooden pipe-line to a 3-foot Pelton water-wheel under a 100-foot head. The Pelton wheel with shafting and bearings are in good shape and the timbers sound. The complete pipe-line is in place but in need of repairs.

It is considered that this property warrants further exploration to determine the three possibilities enumerated in the body of this report, and especially the appreciable tonnage low-grade aspect cited as (3). During the course of this work possibilities (1) and (2) would also be determined. It is recommended that this be initiated by a complete, careful, and closely spaced sampling of the entire underground workings. Surface-stripping and open-cutting across the zone-width should also be carried out in conjunction with bulk-sampling of the mined material. To determine values accurately bulk-sampling should be carried out through a small pilot-mill and based on recovery and tailings assay. For this preliminary purpose the present mill could be put into shape and a Diesel engine added at small cost.

Dependent on indication from the preliminary exploration, further exploration underground by crosscutting the zone would be determined. In the event of extended operations it is possible that appreciable water-power could be developed from the stream at the head of Mitchell inlet, about 3 miles distant. The location of the property on seaboard and topographical and general conditions suggest a low-cost operation.



January 2, 1932.

NOTE: Since the foregoing report was written, the Gold Harbor Mines Limited first acquired the Early Bird group of claims above described, four claims adjoining and nineteen other claims forming a solid blanket from Gold Harbor to Douglas Harbor.

The Company started work on July 3rd, with a crew of men, and has erected a modern camp, constructed a floating dock where deep water vessels and lighter water craft can load and unload passengers and cargo.

The buildings comprise camp buildings, mine shaft house, mill building, retort building and assay plant of small proportions.

The mine has been rehabilitated; the mill tuned in smoothly and about \$2,651.90 received in values from dump ore and waste material run through the mill, amounting to about 400 tons. The mill has treated the material, except as to sampling, of selected commercial ore and the values obtained are not indicative of the values of the ore in sight in the underground workings or from surface workings. The dump ore has been hand picked by previous operators of the property and the better ore taken.

For complete report of the Company's operations from July to January 1, 1934, reference is made to a report attached by Edward W. Schroeder, General Superintendent of the Company.

GOLD HARBOR MINES LIMITED.