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Excerpt from
SUMMARY REPORT OF MINING INVESTIGATIONS
IN THE KETCHIKAN, WRANGELL, PETERSBURG,
AND JUNEAU PRECINCTS BY J. C. Roehm

May 24 - June 27, 1942

June 3-4. Trip into George Inlet

The Mahoney Prospect is located on the west shore of George Inlet, 4 miles north of the Cannery on the north side of Mahoney Creek at its mouth. A trail leads from the north shore of a small lagoon at the mouth of Mahoney Creek to the adit, 250 feet from the beach at an elevation of 50 feet.

This prospect was originally known as the Ashe group and is described by Wright, F. E. and C. W. in Bulletin #347, "The Ketchikan and Wrangell Mining Districts", pp 150-151.

This showing consists of a bedded vein ranging from 12 inches to 3 feet in width, averaging over 2 feet, and is exposed in twelve surface cuts and one adit. The strike is in a general east-west direction and it is exposed on the surface for 400 feet.

The geology and structure surrounding this showing is of interest; however, a complete survey of conditions could not be made due to extensive cover. This compound bedded vein is enclosed in black slates which, due to their overlying positions relative to a small protruding tongue of quartz diorite to the south, have been folded in gentle plunging anticlines and synclines and along which a schistose struc ture has been developed. The footwall of the vein is a small porphyry dike along which the vein has been formed. The alternating anticlinal and synclinal folds have a width of nearly 150 feet measured from crest to crest, and they were apparently formed by the pressure and thrusting of the intruding quartz diorite. Associated with this folding was the injection of three different types of dikes into the sediments (alternating sandstones and slates) paralleling the bedding and occupying the crests and limbs of the developed folds. The small dike associated with the vein maintains a width of from 3 to 5 feet. It is of a light gray color with enclosed greenish porphyritic crystals of unidentified nature. It has a fine grained highly crystalline texture, and appears to have a high silica content. In some localities it is slightly mineralized.

Specimen T. D. M. 449 represents a fresh portion of this dike taken underground.

Another form of dike intercalated in the folding of the sediments is of a dark gray color and fine crystalline texture. This form weathers black and maintains a larger size than the siliceous dike along the vein. These dikes appear to be closely related to the diorite and represent the first series to have been injected. These dikes are not mineralized and have no associated veins.

Specimen T. D. M. 450 represents a fresh portion of one of these dikes.

The third type of dike found is situated above the vein dike and outcrops along the beach. It ranges from 2 to 3 feet in width and is intercalated with the folded structure of the sediments. This dike has a dull bluish gray color and it is very fine grained with abundant phenocrysts of blue quartz and a light green crystalline mineral. It weathers to a light reddish brown color.

Specimen T. D. M. 451 shows both altered and unaltered portions of this dike.

The sediments as shown in this vicinity on Plate No. 1, U.S.G.S. Bulletin 800, are classed as of Triassic age. The quartz diorite, from which the above dikes are believed to have originated, is classified as upper Jurassic or lower Cretaceous. The acid dike, with associated vein, appears to be in a weaker section of the slate stratum. This stratum differs slightly in composition and texture from the other slate strata in that it represents a conglomerate phase and has become more schistose and altered by heat and pressure. It has a speckled appearance.

The vein is a compound bedded vein in that the footwall portion is banded quartz with scattered metallic minerals and the hangwall portion is made up of nearly massive sphalerite, galena, pyrite and chalcopyrite. Both the quartz portion and the massive sulphide portion reach their maximum widths at the crests of the anticlines, and gradually narrow down on the extensions of the limbs.

Two anticlines, and one syncline in between, show along the outcrops as exposed in the cuts. The vein outcrops along a general east-west strike, which is irregular due to folds and it has a variable dip of 10 to 20°, which also represents the plunge of the folds slightly east of north. The eastward extension of the vein in the long cut 120 feet northeast of the adit portal dips along the east limit of the east anticline and goes under cover. It

has not been exposed on the beach 400 feet east. The westward extension was lost past St. 12 (note sketch map) by change in strike of downward plunging limit of west anticline. This west end could, no doubt, be further extended by calculating changes in strike and dip.

A crosscut adit, elevation 50 feet, was driven and intersected the vein at a point 65 feet from the portal. Thence the vein was followed by a drift to the west for 80 feet, at which point the drift overran the vein and was later exposed in the bottom of a 6-foot winze. At a point 20 feet west of the small winze a raise nearly vertical was extended upward 30 or 40 feet. Lack of timber prohibited the inspection of this raise. The vein as shown in the small winze plunges downward on the limb of the fold and is under the drift as it continues westward. At a point 60 feet west of the winze the vein again shows in the bottom of the drift for 30 feet. Thence again the vein dips under and the remaining drift, plus two crosscuts, one north and one south, failed to intersect the vein. (note sketch) The total underground workings consist of 172 feet of crosscut, 270 feet of drift, 30-40 feet of raise and a 6-foot winze.

The ore minerals noted in the vein consist of sphalerite (dark variety), galena, pyrite, chalcopyrite, hydrozincite, hematite, limonite and secondary lead minerals. Gold and silver are apprently contained in the ore. The gangue minerals consist of crushed and altered slate pieces, quartz, calcite, dolomite and a green variety of mica. A total of 18 channel samples (Nos. 1007-1019 inclusive) were taken in the tunnel and various cuts which, with the results will later be shown on a sketch of the adit and surface workings.

The use of a fluorescent light underground was an advantage due to the alteration of the sphalerite to a thin coating of hydrozincite on the exposed surfaces. This latter mineral gives off a bluish white glow under the ultra violet light, which in itself is almost identical in color and intensity of the illumination of the tungsten mineral scheelite. This enabled the writer to immediately determine the limits of the ore underground.

## KETCHIKAN PRECINCT

| Book No. Sample No. | Property | Location | Sample Location | Width | Ounces per Ton Gold | Silver | Percentages Pb. | Zn. | Cd |
|---|---|---|---|---|---|---|---|---|---|
| 11 - 1002 | J. Mahoney | Revillagigedo Island | Across vein 12' W. of St. 11 | 30" | Trace | 4.68 | 17.88 | 26.10 | |
| 1003 | do. | do. | 25' E. of St. 11 Hangingwall dike | 23" | 0.02 | 1.54 | 5.05 | 23.34 | |
| 1004 | do. | do. | 55' W. of St. 9 Footwall of dike | 20" | 0.02 | 4.00 | 11.51 | 13.16 | |
| 1005 | do. | do | 30' W. of St. 9 Bottom of cut | 23" | Trace | 5.40 | 17.42 | 15.20 | |
| 1006 | do. | do. | 10' W. of St. 6 Bottom of cut - across | 40" | Trace | Trace | 2.13 | 17.34 | |
| 1007 | do. | do. | 5' W. of St. 6 Bottom cut | 3' | Trace | Trace | 2.99 | 35.84 | |
| 1008 | do. | do. | 15' W. of St. 14 Wall | 20" | 0.02 | Trace | 2.45 | 20.15 | |
| 1009 | do. | do. | Tunnel - 20' past St. 14; 5' W. of 1008. Wall | 21" | Trace | 1.20 | 8.72 | 38.00 | |
| 1010 | do. | do. | 30' W. of St. 14; Wall tunnel | 21" | Trace | 1.00 | 6.86 | 43.80 | |
| 1011 | do. | do. | 40' W. of St. 14; Wall | 30" | 0.02 | 2.34 | 9.75 | 31.29 | |
| 1012 | do. | do. | 45' W. of St. 14; Wall | 30" | 0.01 | 2.00 | 8.82 | 36.65 | Tr |

| Book No. Sample No. | Property | Location | Sample Location | Width | Ounces per Ton Gold | Ounces per Ton Silver | Percentages Pb. | Percentages Zn. | Percentages Cd |
|---|---|---|---|---|---|---|---|---|---|
| 11 - 1013 | J. Mahoney | Revillagigedo Island | 3' W. of St.15; 5' W. of 1012; Wall | 20" | 0.01 | 2.31 | 5.97 | 31.74 | Tr. |
| 1014 | do. | do. | 5' W. of 1013; 8' W. of St. 15; Wall of drift | | 0.01 | 0.76 | 4.28 | 49.80 | Tr. |
| 1015 | do. | do. | 13' W. of St. 15. | 24" | Trace | 2.31 | 10.04 | 28.52 | Tr. |
| 1016 | do. | do. | 18' W. of St. 15; Wall - near bottom | 18" | Trace | Trace | 2.15 | 15.20 | |
| 1017 | do. | do. | 23' W. of St. 15; Wall - bottom | 18" | Trace | Trace | 1.17 | 12.78 | |
| 1018 | do. | do. | 28' W. of St. 15; Bottom of drift | 12" | Trace | Trace | 0.61 | 22.26 | |
| 1019 | do. | do. | Shaft; center south wall | 14" | 0.03 | Trace | 2.20 | 11.72 | |