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OEOLOGICAL-OEOPHYSICAL REPORT MARTHA-STOREY ORDUP, MIMPEISH 126° - 50° 5.W.

J.E. O'ROURKE and C.A. AIRD, Authors

G.A. NOEL, Supervisor

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<u>DTAN CONSTRUCTION & MINING CO.</u>

JUNE 14 THROUGH JUNE 22, 1962

ABSTRACT

The Martha and Storey groups of claims, located about 3 miles N.L. of the south and of Nimpkish Lake, on Vancouver Island, were mapped for assessment work in June 1962. Magnetite deposits are widespread and numerous, but small.

Mineralization seems to have been controlled by fracture sets striking approximately E.W. and N. 20° W.

A helicopter survey is recommended to test this control.

INTRODUCTION:

In July 1961 H.M. Jones and M.J. Young of this company investigated the more promising anomalies on the 1958 ^B.C. Ministry of Mines airborne magnetometer survey and staked claims on certain magnetite deposits that they found along Storey ^Creek. In June 1962 J.E. O'Rourke, C.A. Aird and E. Hills mapped the deposits in order to determine their size and to see if they could be correlated. The present report is a summary of the latter investigation of Martha Group #1-6 and Storey ^Claims 1-2.

LOCATION

Nimpkish Lake is located in the northeastern part of Vancouver Island, the southern end being about 20 miles by rail from the harbor at Beaver Cove. The Martha and Storey claim groups are situated along Storey Creek about $3\frac{1}{2}$ miles by trail N.E. of Camp N, (Figure 1).

GEOLOGIC SETTING

The geology of the Nimpkish area has been treated in some detail by Gunning (C.G.S. Sum. Report 1929A) and Hoadley (CGS Mem. 272) who have shown that a well developed upper Triassic section of sediments and volcanics has been thrown into shallow, northwestward trending folds and intruded by granodiorite stocks or sheets with attendant pyrometasomatic ore deposition.

Comparison with nearby districts suggests the emplacement of intrusives and distribution of mineralization may be related to fracture sets trending N 20° i and N 85° W. The first set is parallel to the fold axes and probably accounts for the preservation of the syncline between Nimpkish and Bonanza lakes. The other set is reflected in the orientation of the major streams of the southern part of the area: Nimpkish River, Bonanza River, Steel Creek, Kinman Creek, Storey Creek and Noomas Creek. It is revealed by its effects on the various rock units: for example, a line drawn along Kinman Creek to Bonanza River marks the limits of two limestone belts and two stocks. Data are insufficient to prove that such fractures have exerted a direct control on mineralization, but the three principal mineral deposits of the area, namely Nimpkish Iron Co. (Klaanch), Nimpkish Copper, (Kinman Creek), and the Smith prospect are located along three such N 85" M. faults. Some possible faults in the area of the company's claims have been indicated on Figure 2.

GEDLOGY OF THE CLAIMS

Figure 2 shows a portion of Hoadley's geologic map with known magnetite occurrences and probable faults superimposed. The rocks involved in the mineralization are limestone, granodiorite, and numerous felsite dikes.

The linestone is mostly the messive light gray or white variety typical of the lower part of the Quatsino formation. Some beds, however, consist of coarse fragments of calcite in a matrix of fine graund carbonate.

The granodiorite is composed of scdic plagioclase, hornblende, quartz, and biotite. It is medium grained, holocrystalline and isotropic. Near the main fork of Storey Creek it shows a pronounced sheeting that strikes N 60° N. and dips 15° S.W.

The dike rocks are very fine grained and difficult to classify megascopically, but show tabular phenocrysts of light green feldspar in a light colored matrix of feldspar, quarts, and mafics. The dikes are generally between 10 to 30 feet thick and several hundred feet long. The vertical walls rise sharply above the less resistant limestone to form conspicuous linear mounds. The majority of them are eviented about N 80° E.

The largest magnetite deposit is located on claim h of the Martha Group, (Figure 3). It is a lens 35 by 80 feet situated along a granodiorite-limestone contact that trends approximately N 80° E. The primary structural control is a sheeted zone that forms a broad, solution channel several hundred feet wide parallel to the contact. Another structural control is indicated by faulted dikes, and bedding planes oriented N. 10-30° E. Numerous pods of massive magnetite, the largest of which is about 30 feet by 5 feet, are found along felsite dikes that cut limestone. The trend of the dikes corresponds closely with the strike of the predominant fracture set, i.e. N. 50° E.

The main deposits on the Storey group are veins and lenses of mastive magnetite up to 5 feet thick and 25 feet long situated along the contact of Qusteino limestone and asserive grounstone about 1500 feet from a large granitic intrusive. It is not clear whether the greenstone is a flow of the Karmutsen group, or a sill. The magnetite seems to be localized by northwest fractures, and the occurrence he a whole seems to be localized at the intersection/faults striking N 85° E and H 30° W.

The deposits on Claim 5 of the Martha Group (Figures 3 & h) differ inasmuch as they are not related to either limestone or greenstone, but occur along the edges of felsite dikes enclosed in granodiorite. Nest of them are small pods, but some are voins of massive magnetite up to 1.5 feet thick and ten feet long. Garnet-epidete skarn is found in small patches along fractures, but many of the deposits have aureoles of ferromagnesian minerals, as though they were segregations of local derivation. It seems probable that most of the other deposits of the area are also

#3...

GEOLOGY OF THE CLAIMS - Cont.

genetically related to the dikes with which they occur, although it is conceivable that extraneous mineralization was merely localized along the dike contacts.

With regard to future exploration, the most significant fact to emerge from the present examination is the structural control of mineralization as well as dike emplacement along zones of fracturing striking approximately E.W.

GEOPHYSICS OF CLAIMS

The instrument used to obtain magnetic data on the Martha and Storey groups is a Finnish made "Jalander" vertical intensity magnetometer, serial No. 5779. It is self orienting and requires no tripod, being suspended by a shoulder strap. The instrument merely requires leveling by a circular bubble while the needle deflection in scale divisions is read. The range is from 0 to plus or minus 250,000 gammas with a sensitivity of 10, 30, 100, 300 and 1,000 gammas per scale division, respectively, over 5 operating ranges.

Procedure followed in examining each showing was to lay out a chained baseline roughly along the considered strike of the orebody and run traverse lines normal to the baseline at intervals of not more than 50 feet and often at 25 and 10 feet intervals where required. Readings with the magnetometer were then made at 25 or 10 feet intervals along the traverse lines to form a grid pattern. A plan showing the density and value of readings is supplied with each magnetic contour sketch.

Figure 3a shows the magnetics associated with a typically small deposit situated roughly on the boundary of Martha 1 and 3 mineral claims near the centre line. The magnetic contours show a strong northeasterly trend with a suggestion of a minor east to west control.

Figure 3b shows the most important deposit of the Martha group on claim 4 near the centerline. It is interpreted as a narrow northeast trending body dipping almost vertically i.e., with an attitude similar to that of some nearby dykes. The body terminates to the northeast against the intrusive and may be terminated to the southeast by an eastwest fault.

Figure ha. This showing on Martha mineral claim,6, although not economically interesting, is interesting magnetically in that the values are inordinately high and are no doubt in part responsible for the airborne magnetic anomaly in this area. The high magnetic response appears to be due to a general concentration of magnetite in the diorite intrusive with small remnants of country rock locally replaced by high grade magnetite.

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GEOPHYSICS OF CLAIMS, Cont.

Figure 6a. A search for several showings, indicated by the 1961 reconnaissance to be on the north side of Storey Creek on Storey mineral claim 1, was unsuccessful. However, one showing in the creek was found and mapped and some magnetic data obtained (see fig. 6a). Another traverse located a magnetic anomaly about 500 feet further down the creek which had a maximum intensity of 45,000 gammas and was found to be due to an outcrop of magnetite, about 5 feet in thickness, occurring in limestone. Visual examination of outcrops in the creek bed showed the α deposit to be small and erratica.

CONCLUSIONS

The known deposits on the Martha & Storey claims do not approach commercial size, even though mineralization is wide-spread. Chances of finding concealed deposits would seen small, since the area has already been explored by airborne magnetometer; but that survey is too broad to tell whether the anomalies are due to an aggregate effect of numerous small deposits or represent larger, concealed deposits. This question could easily be decided by a modest helicopter survey. Now that the controls of ore deposition are apparent, it would be possible to explore the central areas of the district at relatively small cost.

Dr. J.E. O'Rourke, Geologist

C.A. Aird, Geologist



VANCOUVER, B.C. June 29, 1962 DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA. In the Matter of

To Wit:

I, GERALD A. NOEL

of Room 204, 510 West Hastings Street, Vancouver 2, B.C.

in the Province of British Columbia, do solemnly declare that I am District Geologist in charge

of operations of Utah Construction & Mining Co. in the Province of British Columbia and further that during the period June 14 through June 29, 1962, Utah Construction & Mining Co. paid salaries for work actually done on and for the Martha group of six claims located in the Nanaimo Mining Division. These claims have record numbers 15419 through 15424 and were recorded on July 4, 1961.

Dr. J.E. O'Rourke was paid a total of \$300.00 for 12 days work at the rate of \$750.00/month.

C.A. Aird was paid a total of \$220.00 for 12 days work at the rate of \$550.00/month.

Edward Hills was paid a total of \$93.33 for 8 days work at the rate of \$350.00/month.

Thus a total of \$613.33 was spent on wages for work on and for the Martha group of claims.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the C1ty Gorald a. York , in the of Vancouver Province of British Columbia, this 3rd day of July, 1962 for taking Affidavits within British Columbia or missioner ***** 0

DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA. In the Matter of

TO WIT:

GERALD A. NOEL

of Room 204, 510 West Hastings Street, Vancouver 2, B.C.

in the Province of British Columbia, do solemnly declare that I am District Geologist in charge of operations of Utah Construction & Mining Co. in the Province of British Columbia and further that during the period June 14 through June 29, 1962, Utah Construction & Mining Co. paid salaries for work actually done on and for the Storey group of two claims located in the Nanaimo Mining Division. These claims have record numbers 15417 and 15418 and were recorded on July 4, 1961.

Dr. J.E. O'Rourke was paid a total of \$100.00 for h days work at the rate of \$750.00 per month.

C.A. Aird was paid a total of \$73.33 for 4 days at the rate of \$550.00 per month.

Edward Hills was paid a total of \$46.67 for 4 days at the rate of \$350.00 per month.

Thus a total of \$220.00 was spent on wages for work on and for the Storey group of claims.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City Good a. U. of Vancouver , in the Province of British Columbia, this 3rd day of July, 1962 er for taking Affidavits within British Columbia or A Commissio umbia ***** 0

STATEMENT OF QUALIFICATIONS

THIS IS TO CERTIFY THAT I, Joseph Edward O'Rourke, am a U.S. citizen born at Pittsburgh (36) Pennsylvania on September 16, 1927;

attended grade school and high school in that locality, graduating from Snowden High School in May 1944;

attended college at the University of Wisconsin, where I received a B.S. in geology in 1951 and a PhD in geology in 1958;

worked as a geologist for the U.S. Geological Survey for 4 years, of which 2 years were devoted to mapping 2 quadrangles in the Quadrilatero Ferrifero of central Brasil, and 2 years were spent on various economic geology projects in the continental U.S.; (1950-1956)

worked as a geologist for the U.S. Steel Corp. mapping careal geology in southern California and examining iron prospects in other areas of the western U.S. (1956-57);

worked as a minerals consultant to the government of Nepal for the U.S. Department of State (1957-1959);

worked as a private consultant for various mining and oil companies (1959-present)

J.E. O'Rourke, B.S., PhD Geologist

VANCOUVER, B.C. July 4, 1962

\$ 1,00

STATEMENT OF QUALIFICATIONS

THIS IS TO CERTIFY THAT I, Charles, Alexander Aird, am a Canadian citizen, born in the City of London, London, England October 18, 1925.

attended elementary and high schools in Oxfordshire, England, completing the equivalent of Grade X11 at the City of Oxford High School in Oxford in 1941.

received my University education from The University of British Columbia situated at Vancouver, British Columbia and graduated from there in May, 1959 with the degree of B.Sc. in geology and mathematics, following which I spent an additional year studying geology and geophysics at the same University.

worked as a junior geologist for Mackenzie Syndicate during the summer months of May through September in 1958 and 1959 under the supervision of L.G. White, P. Eng., and as a geologist for Canada Tungsten Mining Corporation from May through November 1960 under the supervision of L.G. white, P. Eng. and C.J. Brown, Chief Geologist. Duties included sampling and geological mapping of properties with pertinent survey work, diamond drill core logging, ore reserve calculations and some assistance on magnetometer and electromagnetic surveys.

worked as a geologist for Utah Construction and Mining Co. from November 1960 to the present under the supervision of G.A. Noel, P. Eng. Duties involved diamond drill supervision, core logging, detailed geological mapping, geologic reconnaissance, magnetic surveys, and property examination.

Charles A. Aird, B. Sc., Geologist Utah Construction & Mining Co.

VANCOUVER, B.C. July 4, 1962.









Instrument : Jalander#5779 magnetometer Figures in gammas UTAH CONSTRUCTION & MINING CO. Vancouver B.C. MAGNETIC READINGS MARTHA GROUP M.C. Nai1,3. IRON SHOWING STOREY CREEK , NIMPKISH LAKE V.I.

Scale: 1 = 50' June 1962

Dwg. No. 40-C-56

Drawn: C.A.A.

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FIGURE 3B

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> UTAH CONSTRUCTION & MINING CO. Vancouver B.C. MAGNETIC READINGS MARTHA GROUP M.C. N.S.1,3. IRON SHOWING STOREY CREEK, NIMPKISH LAKE V.1.

Scale: 1 = 50 June 1962

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FIGURE 3B

Mines and Petroleum Resources

ASSESSMENT REPORT

NO.

417 MAP 3B

Dwg. No. 40-C-56

Drawn: C.A.A.









SECTION A-A- LOOKING N.E (PART OF FIG. 4)



MAIN SHOWING- CLAIM G MARTHA GROUP

M.D & G.D Vancouver B.D.

GEOLOGY SECTION MARTHA- STOREY GLAIMS

TP

REVISEd

NIMPKISHLAKE AREA M

SCALE 1'= 10' Nº 40-6-56

FIG. 5

DR

Approved







