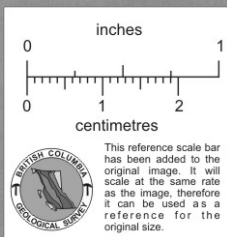
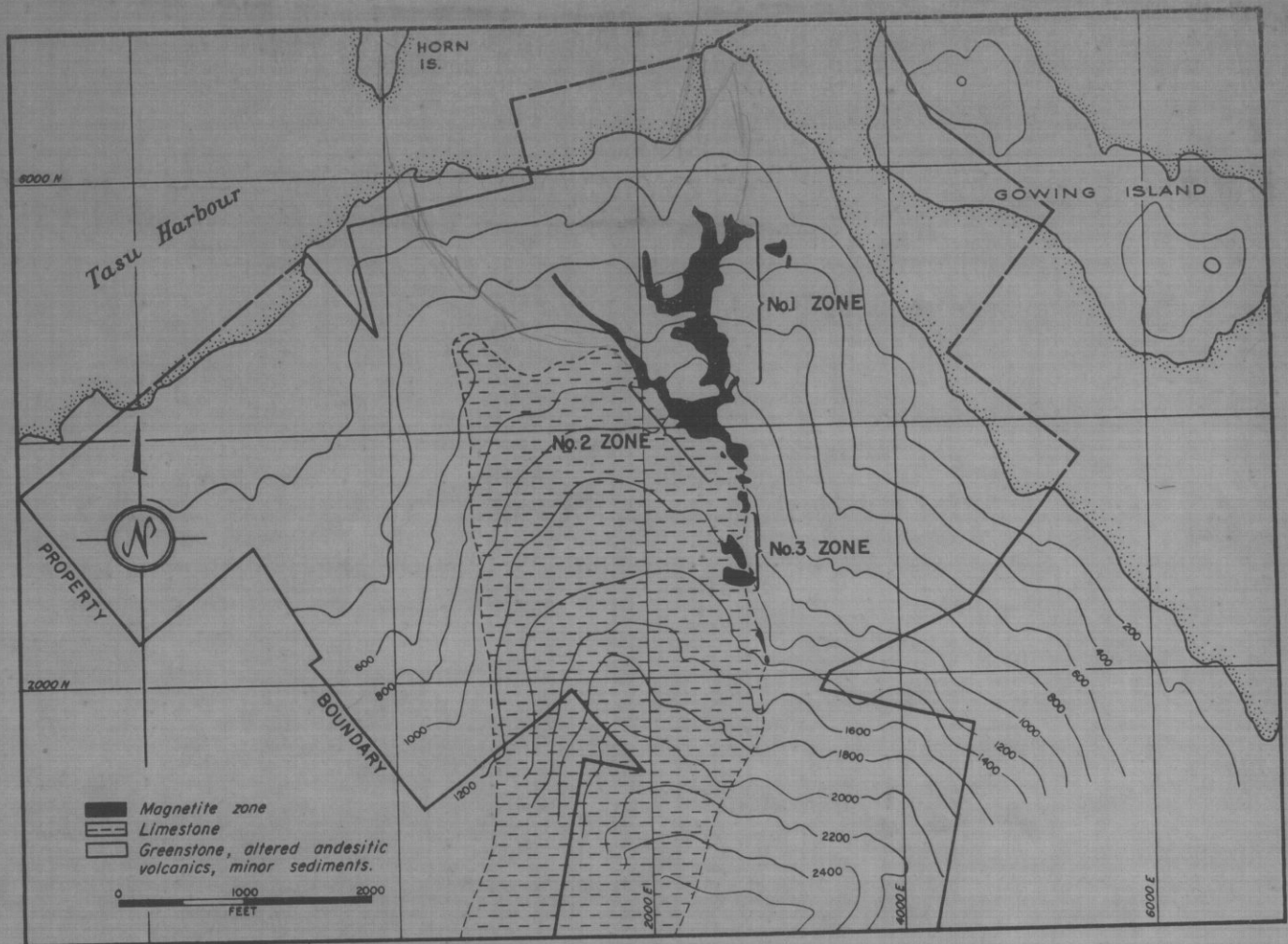


## THE QUEEN CHARLOTTE ISLANDS



## THE TASSOO IRON PROPERTY

## History

THE cuprifera magnetite deposits located at Tassoo Inlet on the west coast of Moresby Island, British Columbia, have been known for at least fifty years. Between 1907 and 1909, a group of 17 claims were prospected under bond by the Tassoo Mining and

An article specially prepared for "Western Miner and Oil Review" by the engineering staff of Frobisher Limited.

Smelting Company Limited. Four years later, in 1913, the property was optioned to a Vancouver group who undertook development work on a section of the deposits containing relatively high copper values. Ore sections were exposed at the surface by stripping. A limited amount of underground development was done at this time by way of a 300-foot adit, at an elevation of 1180 feet, and a 40-foot winze. A second adit was driven at an eleva-

tion of 1060 feet but stopped before reaching the ore zone.

Between 1914 and 1915 an aerial tramway was erected on the property to carry ore to a bunker built on the beach. Records show that during this period 1100 tons of ore were shipped from the mine to Tacoma, Washington. Small shipments were probably made in 1916 and 1917 but since that time there has been no production from the deposits.

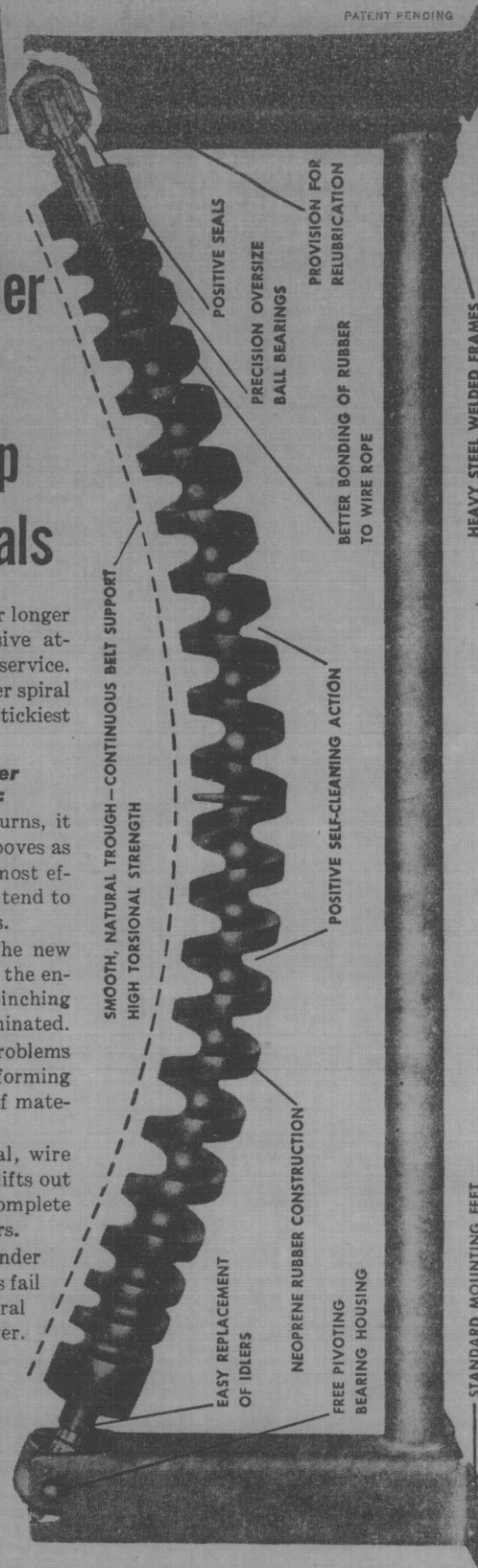
**NEW**  
**Rubber Spiral Idler**  
 lasts far longer,  
 prevents build-up  
 of sticky materials

This new rubber spiral idler lasts far longer than conventional idlers in corrosive atmospheres or exceptionally abrasive service. And its exclusive self-cleaning rubber spiral prevents build-up of even the stickiest materials.

**Here are some of the rubber spiral idler's advantages:**

- **SELF CLEANING.** As the spiral turns, it "works" any material out of the grooves as they change shape. This action is most effective with sticky materials which tend to build up on common types of idlers.
- **CONTINUOUS BELT SUPPORT.** The new rubber spiral design "moves" along the entire width of the belt; therefore, pinching and sharp bending of the belt are eliminated.
- **SELF TRAINING.** Belt training problems are greatly reduced by readily conforming rubber spiral, and by elimination of material build-up.
- **EASY REPLACEMENT.** The spiral, wire rope, and bearing assembly simply lifts out of its brackets—no tools needed. Complete idler fits standard conveyor stringers.
- **TRUE OPERATING ECONOMY.** Under conditions where conventional idlers fail prematurely, the Hewitt-Robins spiral idler will pay for itself many times over.

Deliveries of this revolutionary new idler are now being made in 18, 24, 30, and 36 inch belt sizes. For further information, check your H-R distributor, or write Hewitt-Robins, Stamford, Connecticut. Ask for Bulletin 10-38.



**HEWITT-ROBINS**

**HEWITT-ROBINS (CANADA) LTD.**

2052 ST. CATHERINE ST. W.  
 MONTREAL, P. Q.



Early in 1956, Frobisher Limited formed a subsidiary company, Wesfrob Mines Limited, to acquire, explore, and develop the deposits at Tassoo. Property held by Frobisher Limited and associated companies was transferred to the new company and other adjacent mining claims were located for Wesfrob. An active exploration programme was immediately instigated and between 1956 and 1957 some 22,000 feet of diamond drilling was done. During this period the company also undertook surface geological mapping, topographic surveying, and metallurgical testing of the ores. Although sufficient work was completed by the fall of 1957 to allow for a general evaluation of the deposits, the company recognized that further development was required in order to outline ore blocks. Restrictive legislation introduced by the government of British Columbia in 1957 made the whole future of iron-ore mining in the Province so uncertain that the investment of further funds at that time was considered unwarranted. If these restrictions are removed or further modified, there can be no doubt that the development and exploitation of the Tassoo deposits will be undertaken.

**Location**

The Tassoo iron deposits are located on the south side of Tassoo Inlet on the west coast of Moresby Island in the Queen Charlotte group, British Columbia. The inlet is a natural, well-protected harbour in which docking facilities for large ocean-going ore carriers could be conveniently constructed at relatively low cost. Queen Charlotte City, the largest settlement on the Islands, lies some 35 miles due north of Tassoo.

In the area around the ore deposits the topography is very rugged with the ground rising rapidly to an elevation of 1400 feet. The mountain slopes are heavily forested with mature timber and are cut by a number of creeks flowing north and east into Tassoo Inlet.

Rainfall is heavy throughout the year but snowfall is relatively light close to the coast. There are no wide variations in temperature ex-

perienced during the year.

### Geology

The Tassoo deposits are associated with a group of metamorphosed sediments and volcanics located at the north end of a granitic body which covers the central part of Moresby Island. Geological conditions are complex and the exact age relationships of the various rocks found on the property have not been clearly established. A large number of dikes of various types have intruded both the country rock and the magnetite deposits. Dikes have been intruded over a wide period of time, some being pre-ore in age and others clearly post-ore.

The oldest rocks in the vicinity of the ore deposits are a group of metamorphosed volcanics (greenstones) with minor interbedded metasediments. The greenstones group is overlain by crystalline limestone of unknown thickness in the southern part of the property.

Andesite dikes cut the basement greenstone, the orebodies, and lime-

stone and are probably mostly of pre-ore age. Some of the andesite dikes are porphyritic in texture. Prominent basaltic dikes occur throughout the area and where they cut the ore deposits they are clearly post-ore in age.

Some of the volcanic rocks on the property have been granitized but this has not been noted in the immediate vicinity of the ore deposits. Skarn zones have been noted but are not a dominant feature of this area.

Stratified rocks in the area have been folded, possibly overturned, but details of the structure are, as yet, not clear.

### Mineralization

Preliminary dip-needle surveys and geological mapping on the Tassoo property outlined a magnetite-bearing belt striking north-south and rising from an elevation of 300 feet to 1400 feet. More-detailed mapping showed the existence of three zones of mineralization in which there were distinctive variations in the sulphide content

of the magnetite ores. In all three zones the magnetite occurs in a massive form with sharp contacts against the host rock and intrusive dikes. There are a number of apparently disconnected pods of magnetite occurring within the property but low-grade or disseminated-magnetite mineralization is rare.

The accompanying plan shows the limits of the magnetite-bearing belt and also the extent of the three ore zones outlined by Wesfrob's exploration programme. Zone 1 is a flat-lying body occurring entirely within the volcanic rocks towards the north end of the mineralized belt. The structural control is not clear but it is suggested that mineralization is localized by north-striking fault zones. The sulphur content of the ore body is low, averaging 2.17%, and the copper content is less than 0.1%.

Magnetite in Zone 2 occurs at, or close to, the contact between volcanic rocks with overlying crystalline limestone. The deposit appears to be steeply dipping near the surface but at depth is flat-lying in

*Quality Castings in the Mining Industry*

**"Ni - Hard" Mill Liners**

**Alloy Steel Castings**

**"Quick Quench" Grinding Balls**

**THE GRANBY MINING COMPANY LIMITED**

*Allenby Foundry Division*

1111 WEST GEORGIA STREET

VANCOUVER 5, B.C.

**Byron BJ  
Jackson  
PUMPS**

Vertical and  
Utiline

**G. J. HAMILTON**

**CARVER  
PUMPS**

Standard or  
Custom Built

**G. J. HAMILTON**

**PUMPS  
RENTALS  
SALES &  
SERVICE**

**G. J. HAMILTON**

**HAMLOY  
BRAND**

**ROCK  
DRILL  
RODS**

**G. J. HAMILTON**

**KANGO  
ELECTRIC  
HAMMERS**

**G. J. HAMILTON**

910 Beach Avenue  
**VANCOUVER 1, B.C.**  
Phone MUtual 4-7261

to be steeply dipping near the surface but at depth is flat-lying in conformity with the limestone-volcanic contact. Exploration completed on this deposit has indicated an average copper content of 0.30% and a sulphur content of 3.59%.

Zone 3 was considered of particular interest at the start of exploration in 1956 due to the significant copper content. Diamond drilling completed during 1956 and 1957 has indicated an average grade of 1.32% copper and 59.6% iron. Ore occurs at the contact of greenstone with overlying limestone and, like the other zones explored, is cut by numerous dikes of various age.

Like most pyrometamorphic deposits of this type, the Tassoo deposits are very irregular in outline and it is difficult to predict the shape of potential ore blocks without a considerable amount of detailed drilling or underground development. Structural controls are not clear at the present time but it appears that two sets of fractures,

striking north-south and N 40°W, may have been a factor localizing the ore. The limestone-greenstone contact, has certainly been a controlling factor in the No. 2 and No. 3 zones.

**Exploration and Development**

Exploration work at the property started early in 1956 at which time the company established a camp at Tassoo Inlet. A dip needle survey was run to locate the magnetite zone and surface geological mapping was completed in the vicinity of the known ore occurrences.

Between April 1956 and September 1957 some 22,000 feet of diamond drilling was completed on the property. This work indicated a substantial tonnage of iron (and copper-iron) ore occurring in three distinct zones. Further development work is required to confirm, and to add to, the reserves indicated during this diamond-drilling programme.

The ore reserves indicated by work completed to date are shown in Table 1 below:

**Table 1**

	Tons	% Fe	% S	% Cu
Zone 1 (Extension) .....	918,000	55.8	2.34	---
Zone 1 .....	705,000	57.5	1.95	---
Zone 2 .....	1,498,000	60.1	3.59	0.30
Zone 3 .....	1,879,000	59.6	2.43	1.32
	5,000,000	58.7	2.69	

Metallurgical test work has demonstrated that the Tassoo ores can be milled to produce an acceptable grade of iron and copper concentrates. Laboratory-scale tests, using composite drill-core samples, gave the average results illustrated in Table 2.

**Table 2**

	% Fe	% Cu	Au Ozs/ton	Ag Ozs/ton	% Recovery			
					Fe	Cu	Au	Ag
Iron Concentrate ..	69.0	0.14	---	---	94	---	---	---
Copper Concentrate ..	---	20.00	0.13	5.3	84	63	73	---

**Outlook**

The deposits at Tassoo represent one of the most promising sources of iron ore on the West Coast and it is felt that further exploration will add significantly to the presently indicated ore reserves. Exploitation of the number 3 zone can be a particularly attractive proposition when base-metal prices are strong.

If a firm market can be established for the West Coast iron ores, and if production is unrestricted, Wesfrob Mines Limited will proceed with the development of the Tassoo deposits.