015449

TAPE NO. ? REF. NO 01 PRECON ____ INITIALS ____

Special Instructions ______________________

1sIM-10B/12,STAR,,,KLONDIKE,,,,,,(No. [illegible] ig. D)s8M and ro[illegible]

rm480,By B.,N. Churchs10M and +4pts,

1LOCATION: Lat. 54! 22' Long. [illegible] sroil [illegible]

rm420,(93L/7E)

o OMINECA M.D.,,,[illegible] 150 [illegible] elevation near [illegible]

4 miles so[illegible] of Houston

oCLAIMS: HOT 1 to [illegible] HOT 1 Fraction, CHIEF 2, 9, 10.

oACCESS: About 6 miles by good gravel and dirt roads from Houston.

oOWNER: R. Blusson.

oOPERATOR: PASSPORT MINES [illegible], 30[illegible] Seymour Street, Vancouver 2.

oMETALS: Copper, mol[illegible]denum.

oDESCRIPTION:s10I and +4pts,

jINTRODUCTION:sM,,,,This property, formerly known as the Klondike-Star claim group, appears to be the focus of renewed exploration activity. The area is in a belt of scattered sulphide mineralization in the northwest part of the Buck Creek map-area (Fig.,,,,,), the centre of current attention being the Dungate Creek porphyry prospect. The present report is an attempt to bring together data gathered by the writer during a visit to the area in July 1972 and information available in company reports.s10I and +4pts,

jHISTORY:,,,The initial discovery of chalcopyrite and molybdenite was made in a shallow excavation on the newly constructed Dungate Creek logging road about 1962. Subsequent trenching parallel to the road failed to reveal any important extension of the mineralization and the owners allowed the claims to lapse.s+4pts,

jIn July [illegible], [illegible] of Houston restaked the showing. Additional

[illegible] ca[illegible] and [illegible]perty was then optioned to Southwest

[illegible] at[illegible] [illegible]ied exploration followed which included

[illegible] of soil and rock geochemistry,

[illegible] geological mapping.s+4[illegible],

[illegible] control of the property and

PROPERTY FILE

93L010(7).

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initiated a new phase of investigation. Anco Exploration Ltd. was contracted for general field work including a geochemical survey and in the fall of the same year Huntec Ltd. completed an induced polarization survey. In 1967, Chapman, Wood and Griswold Ltd., under the supervision of Dr.,S.,W. Ward, ran another detailed induced polarization survey to pinpoint diamond-drill targets. Normont optioned the property to Noranda Exploration Company, Limited in December 1967 and by April 1968 drilling began. The programme included seven AQ wireline drill holes, totalling 2,000 feet. Results were disappointing and the property remained dormant from 1969 to 1972.s+4pts,

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jIn April 1972, R. Blusson restaked the Westgarde holdings for Passport Mines Ltd. ~~Subsequently the property was optioned to Granges Exploration AB.~~ and now another period of exploration is anticipated in 1973.s10I and +4pts,

jPHYSIOGRAPHY:sM,,,,The property is conveniently situated on a bench, at 3,150 feet elevation, midway up the south wall of the Bulkley Valley overlooking the town of Houston, at about 1,950 elevation.s+4pts,

jIn the vincinity of the main prospect bedrock exposures are few, the area being mantled by glacial till and outwash sand which, according to diamond-drill logs, averages about 20 feet thick. The best bedrock exposures are bluffs of nearly horizontal Tertiary lava immediately east and southeast of the property and a few low hills and knolls of Hazelton volcanic rocks near the west and northwest boundaries; a good section of Hazelton volcanic rocks is also exposed in Dungate Creek canyon near the southwest corner of the claim block.s+4pts,

jThe conspicuous topographic bench which underlies most of the property is evidently part of an exhumed erosion surface which is roughly coincident in elevation with the base of the adjacent Tertiary pile. Easterly moving glaciers were probably responsible for stripping away much of the Tertiary cover rocks, the mean glacial striae direction in the area being 083 degrees.s+4pts,

jThe mixed stand of spruce, pine, and balsam which once covered the area has been selectively logged and in some places completely clear cut. Characteristically between the few standing large trees the scattered slash is enveloped in a dense growth of brush and mountain salad.s10I and +4pts,

jGENERAL,,GEOLOGY:sM,,,,Owing to exceedingly poor exposure, details on the geology of the property are lacking, however, some interpretation of bedrock can be gained from the few exposures on the property and surrounding areas, diamond-drill logs, and geophysical data.s10I and +4pts,

jBedded Rocks:sM,,,,The oldest and predominant geological units in the area are assigned to the Mesozoic Hazelton Group. The suite is mainly volcanic although shales and greywacke are recorded in a few of the drill logs. The lavas and volcanic breccias exhibit both aphanitic and feldspathic phases and range in

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colour from dark to light grey, greenish grey, and light brown. The results of arc fusions and quartz determinations performed on a volcanic suite representing 20 geological stations in the area have been plotted on a special graph designed by the writer, Figure,,,. This shows a bimodal composition distribution consisting of (1) basic and intermediate rocks, basalts, and andesites, and (2) siliceous rocks, dacites, and rhyolites.s+4pts,

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jThe fortuitous combination of basic volcanic beds, presumably characterized by high magnetic susceptibility, and siliceous units, with low susceptibility, provides a base for interpretation of available magnetic data. Figure,,,shows the known geology superimposed on a magnetometer survey map. The most conspicuous features are the bands of magnetometer highs alternating with lows. These bands strike northeast at about 020 degrees suggesting that this direction is in fact the strike of the underlying Hazelton Group. This interpretation is supported by the discovery of outcrops of siliceous lavas in the area of magnetometer lows near the northwest boundary of the property and basic volcanic rocks exposed at the extremities of the broad magnetometer high band in the southwest part of the property and beyond the north boundary east of Mud Lake.s+4pts,

jThe area of very low magnetic response in the southeast corner of the map-area appears to be, at least in part, a dipole edge effect caused by the Tertiary volcanic pile lapping onto the Hazelton rocks. The Tertiary succession here consists of a few hundred feet of typical feldspar porphyry Goosly Lake trachyandesite lavas overlain by many hundreds of feet of brown aphanitic Buck Creek dacitic andesite volcanic breccias.s10I and +4pts,

jIntrusive Rocks:sM,,,,Biotite quartz feldspar porphyry is exposed in trenches in the main prospect area in the east central part of the property and on the logging road 3,500 feet to the west. No natural exposures are known and the outline of the intrusion shown on Figure,,, is wholly based on the interpretation of company geologists. This model appears to be somewhat oversimplifi of the discovery of similar porphyry in some of the outlying drill holes.s+4pts,

jTypically the rock is cream-grey on freshly broken surfaces and rust-brown where weathered. The most common phase contains about 30 per cent subhedral plagioclase phenocrysts ranging from 1.5 to 7 millimetres in diameter and a few scattered quartz eyes and biotite books embedded in a fine-grained groundmass. A partial analysis of this rock obtained from a company report shows 3.20 per cent potash, 3.50 per cent soda, and 1.15 per cent lime. According to norm calculations this would yield about 19 per cent orthoclase, 30 per cent albite, and 6 per cent anorthite. Evidently the alkali feldspar is almost entirely a groundmass con[illegible]ent +4pts,

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jAnother less common phase of the intrusion is characteristically charged with small plagioclase phenocrysts which seldom exceed 2 millimetres in diameter; these comprise about 40 per cent of the volume of the rock. There is some suggestion that this rock is an apophysis or a dyke offshoot phase of the main porphyry body.s10Iand +4pts,

jMINERALIZATION:s10M,,,,The main area of mineralization is shown on Figure,,,. This consists primarily of pyrite and subordinate chalcopyrite occurring as thin fracture fillings and fine-grained disseminations in the porphyry intrusion and adjacent volcanic rocks. Molybdenite is found in minor amounts as thin smears on fractures at the edge of the intrusion.s+4pts,

jAlteration of the porphyry has resulted locally in conversion and, in places, the complete breakdown of feldspar,-,albitization and carbonation of plagioclase phenocrysts and sericitization and kaolinization of the fine-grained constituents. Biotite is commonly slightly chloritized and hornblende, where it occurs, is generally converted to magnetite and chlorite.s+4pts,

jA well-developed zone of intense silicification, about 100 feet wide, is found immediately adjacent to the northeast contact of the porphyry in the northeast trench. Here a system of composite reticulate quartz veinlets has been emplaced by repeated injections of hydrothermal solutions. Numerous cherty quartz seams, each ~~usually less~~ not more than a few centimetres wide, are separated by narrow screens and wedges of intensely altered fine-grained country rock displaying which is characteristically charged with a reddish yellow hematite-limonite mixture.s+4pts,

jThe most common jointing in the porphyry intrusion and surrounding Hazelton rocks strikes northeasterly; a very persistent steeply dipping joint set trends about 070 degrees subparallel to the zone of silicification (Fig. ,,,). A weaker nearly vertical cross-fracture set strikes southeasterly.s+4pts,

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jDiamond drilling by Noranda was designed to test geochemical response and various geophysical anomalies. According to company records holes Nos. 1, 2, and 3 were drilled to test combinations of induced polarization and magnetic anomalies; holes Nos. 4, 5, 6, and 7 were intended to test various combinations of induce; polarization, magnetic, electromagnetic, and geochemical anomalies.s+4pts,

jHoles Nos. 1 and 2, each 300 feet in length, cut what appeared to be altered porphyry with narrow seams of magnetite and minor chalcopyrite. A quartz-rich section of hole No. 2, between 240 and 260 feet, ran 0.28 per cent copper.s+4pts, 20 ft. section

jHoles Nos. 4 and 6, measuring 295 and 202 feet in length respectively, showed continuous intersectings of pyrite-bearing porphyry. Chalcopyrite was scarce, the highest assay result showed only 0.14 per cent copper.s+4pts,

jHoles Nos. 3, 5, and 7, al feet in length, had large intersections of poorly mineralized Hazelton rocks; Nos. 3 and 5 with mostly volcanic debris and No. 7, sedimentary rocks. The core from hole No. 3 showed an abundance of disseminated magnetite which probably accounts for a high magnetic anomaly in the area.s+4pts,

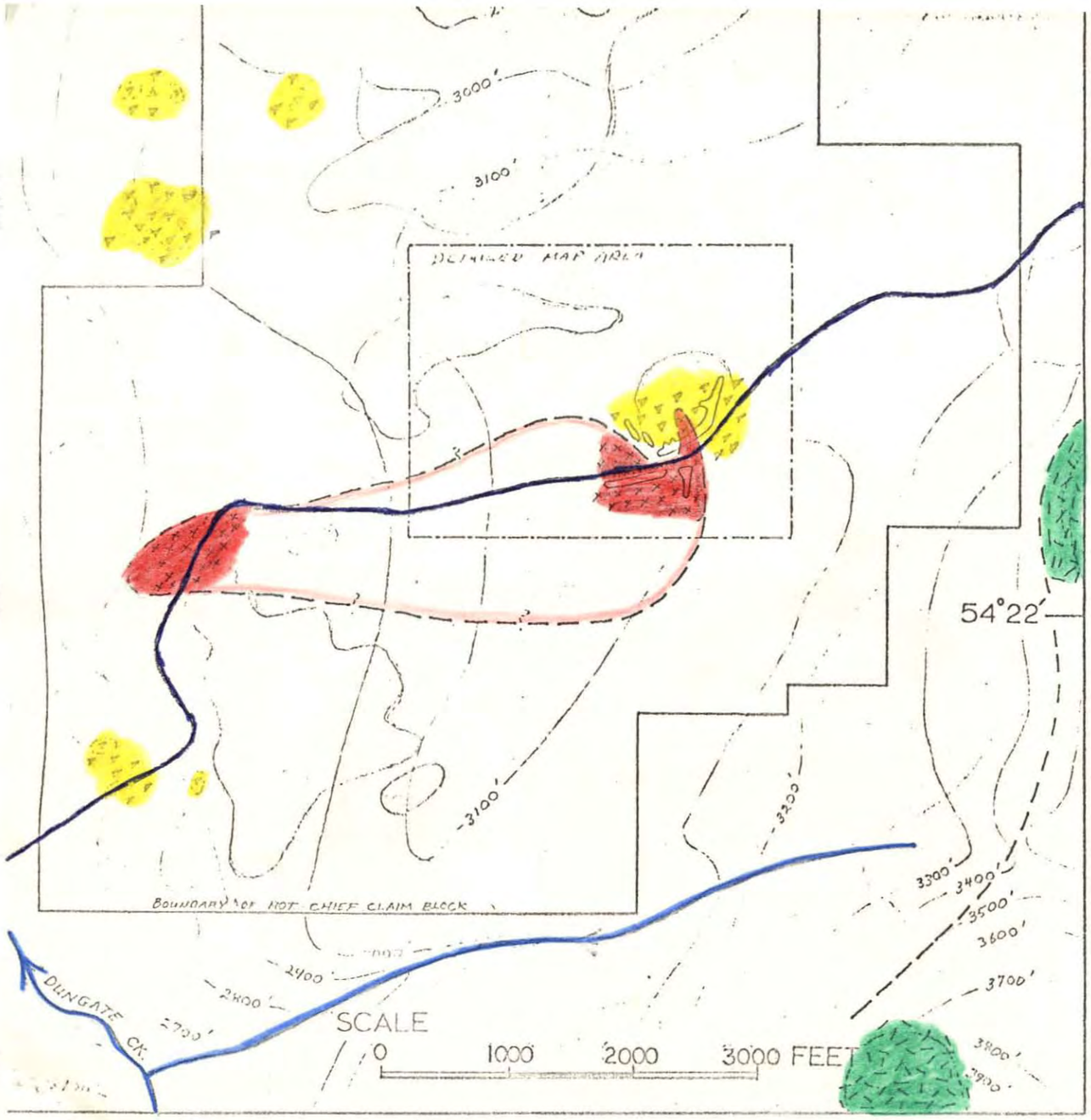
jSix grab samples of mineralized bedrock were collected from the trenches by the writer (Fig. ,,,). Analysis of the porphyry samples showed a range of 0.01 to 0.54 per cent copper and 3.80 to 5.00 per cent iron. The nearby country rock showed a range 0.01 to 0.18 per cent copper and 4.70 to 5.55 per cent iron. A company report quotes an average of 160 ppm copper and 20 ppm molybdenum for nine samples of porphyry and 310 ppm copper and 50 ppm molybdenum for four samples of country rock. Also composite samples submitted by the company for gold and silver assay returned results ranging from trace to 0.02 ounce per ton gold and 0.2 to 0.4 low ounce per ton silver.s+4pts,

jThe general low values, especially for copper as determined from core and surface rock chip samples, do not appear to account for some very high soil geochemical results. A total of 720 soil samples collected by the company showed 100 samples with more than 50 ppm copper and some of these with copper in excess of 500 ppm.

oREFERENCES

Minister of Mines, B.C., Ann. Rept., 1965, p. 80; 1966, p. 103; 1968, p. 138; Assessment Reports 909, 1157, 1181; company reports by N. Shepherd (1965) and G. Dirom (1968).s10B,

DUNGATE CREEK AREA



0 30 40 50 60 70 80 90 80 70 60 50 40 30 20 10 0

LEGEND

- TERTIARY VOLCANICS
- MESOZOIC VOLCANICS
- QUARTZ FELDSPAR PORPHYRY
- INTERPOLATED GEOLOGICAL CONTACT
- BEDROCK EXPOSURE
- TOPOGRAPHIC CONTOUR (INTERVAL, 100 FEET)
- ROAD
- STREAM
- TRENCH

MAGNETIC INTENSITY

- HIGH
- INTERMEDIATE
- LOW
- VERY LOW

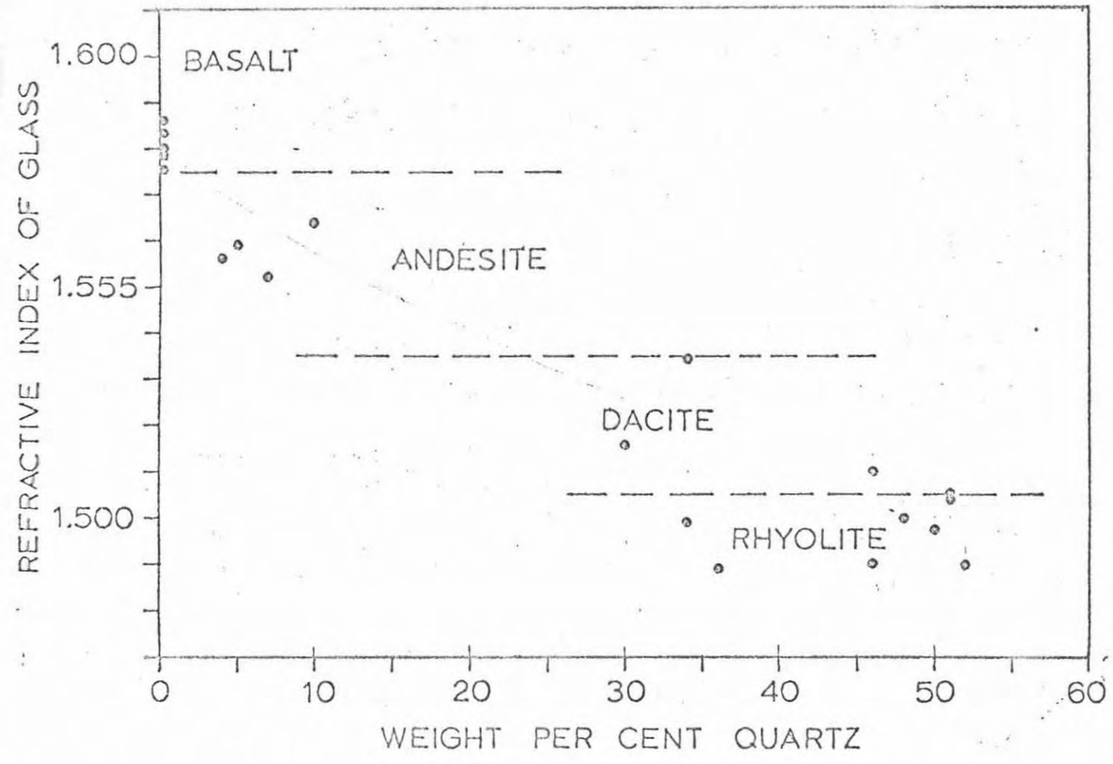
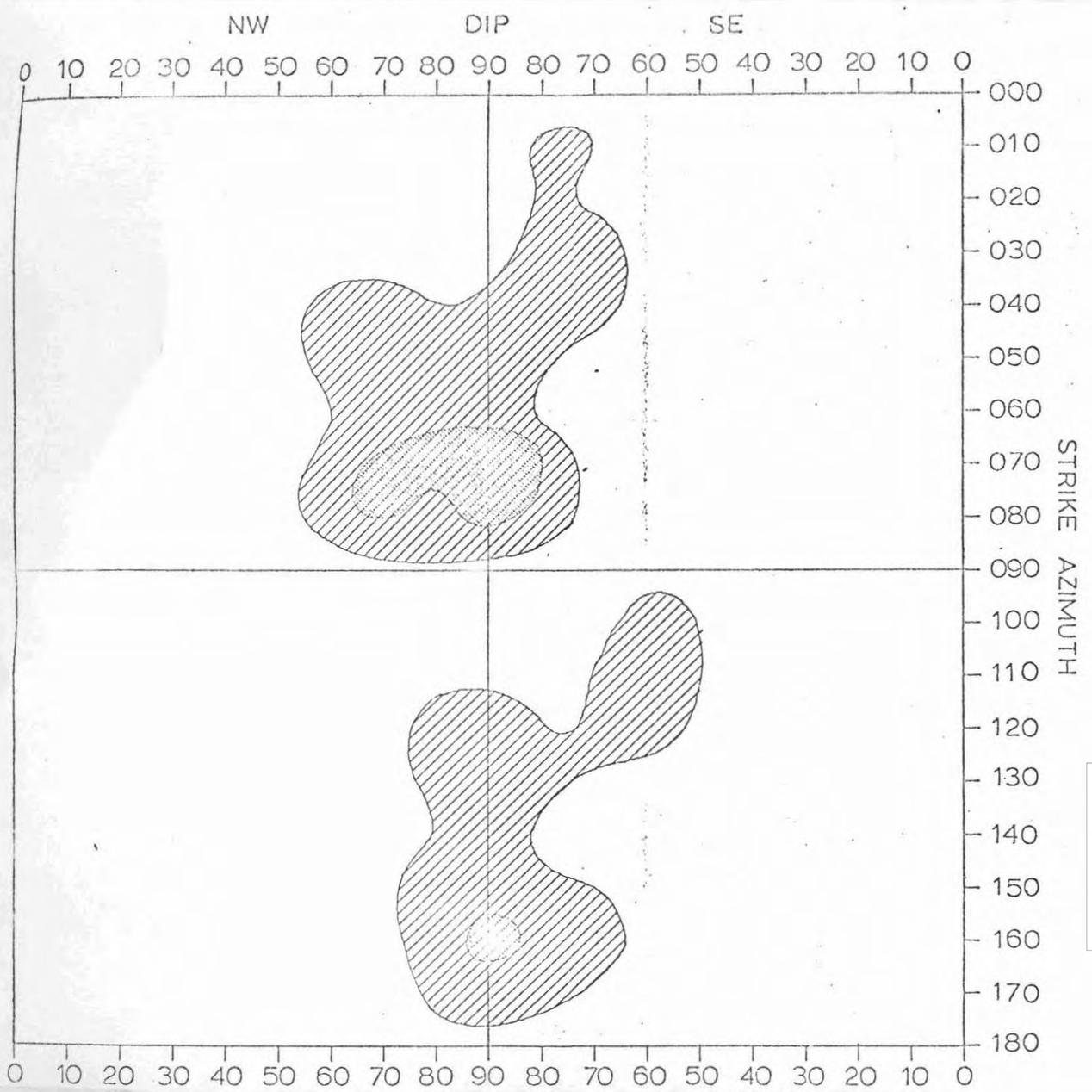


Figure — The refractive index - quartz variation of Hazelton volcanic rocks in the Dungate Creek area.

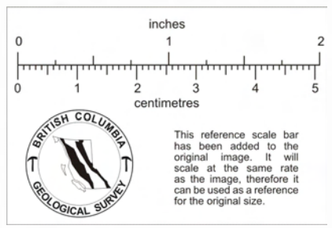


FRACTURE FREQUENCY

VERY FREQUENT

LESS FREQUENT

54 MEASUREMENTS



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.