REPORT ON QP#(1-8) CLAIMS - PEEL INLET AREA

QUEEN CHARLOTTE ISLAND, SKEENA, M.D.

LAT. 52°59'20"N, LONG. 132°08'45"W

FALCONBRIDGE NICKEL MINES LIMITED
(WESFROB MINES LTD., EXPLORATION DEPT.)

N.T.S. 103-C16g

Vancouver, B.C.
December 20, 1976

Terry Janes

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#700 - 1112 WEST PENDER

VANCOUVER, BRITISH COLUMBIA

V6E 2S1

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PEEL INLET AREA - QUEEN CHARLOTTE ISLANDS, SKEENA, M.D.

MAY 12 - 22, 1976

1. INTRODUCTION

The property was presented to Wesfrob Tasu a year earlier and examined by their geologist who then referred it to us. Samples collected during a brief examination by D.H. Brown and B.W. Downing assayed up to two percent copper. On the possibility that the disseminated mineralization could be more widespread and that there could be related Tasu type skarn, the property was optioned.

2. NAME OF PROPERTY

The property QP #1 to 8 was located by Ursela Quesnel and E. LaBelle (Free Miner's Licence Nos. 131664 and 131677) between 10.00 a.m. and 13.35 p.m. on November 16, 1975 N.T.S. 103-C-16g. It consists of eight units - two north and four east of the legal corner post (See Fig. 1).

3. LOCATION AND ACCESS

The property is located approximately 27 km. north of Tasu on the shoreline of Peel Inlet on Moresby Island, Queen Charlotte Islands. Access to and from the area was by float plane from Prince Rupert or Sandspit. Camp was located at an old logging camp approximately 3 km. up the inlet from the property. Access to the property itself was via a Zodiac rubber boat.

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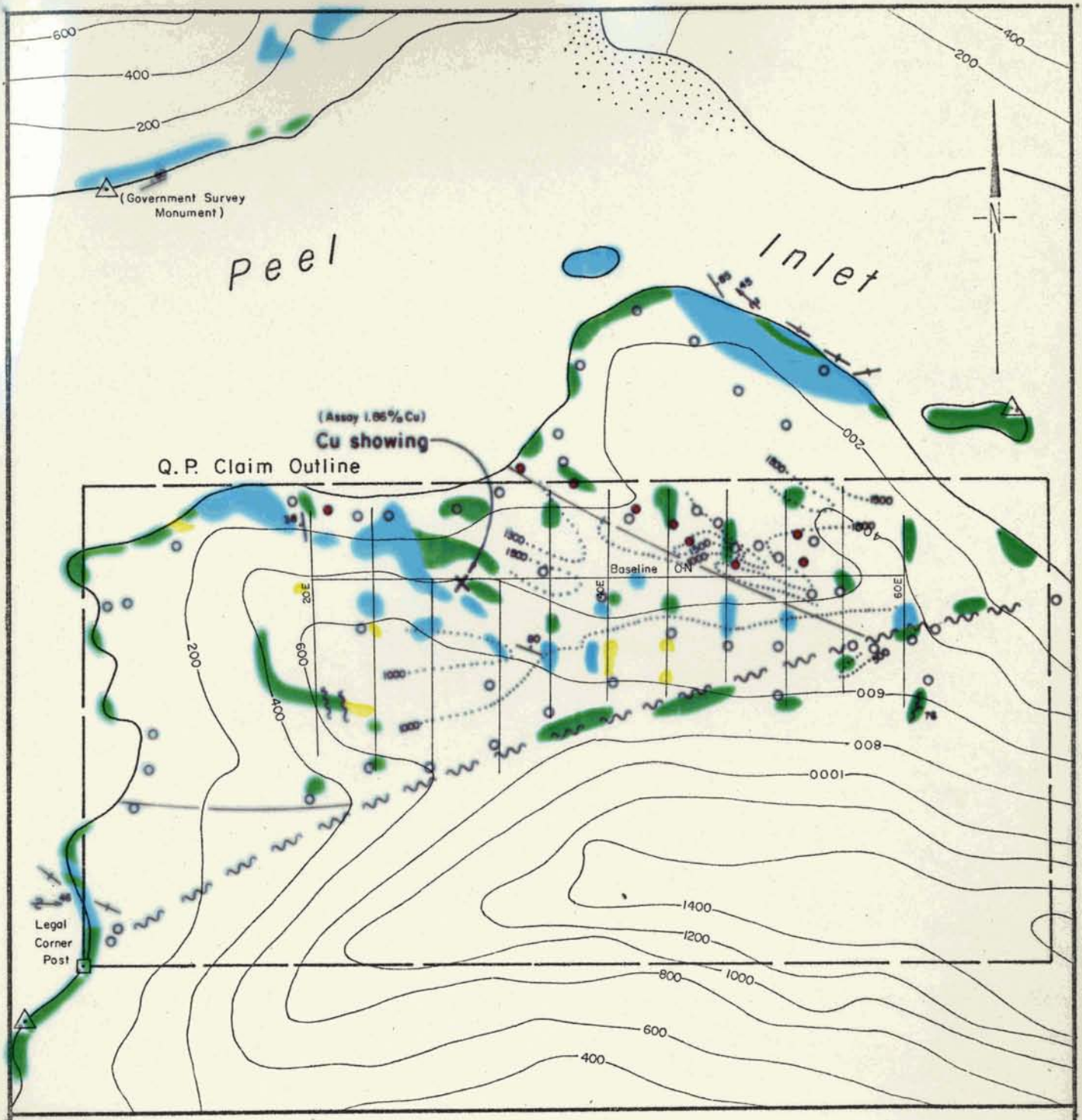

Peel Inlet-Piweck Option Scale - 1"=1000'

N.T.S.-103C/16g

- Limestone
- Qtz. feldspar porphyry
- Andesite, Volcaniclastics
- Bedding
- Fold Axis
- Fault
- Air photo lineament
- Silt Sample site
- 150-300 ppm Cu
- Magnetic contours

Sept./76 R.J.E.

Fig. 171-76-1

4. NUMBER OF DAYS WORKED AND CURRENT STATUS OF CLAIMS

Field work was completed by the following Falconbridge employees: geologist T. Janes, geologist T. Terriff, geochemist and surveyor S. Zastavnikovich, and prospector K. Christensen. Times involved were:

T. Janes	May 12-13, May 15, May 17-18, May 21-22
T. Terriff	May 12-13, May 15-18, May 21-22
S. Zastavnikovich	May 12-13, May 15, May 17, May 21-22
K. Christensen	May 12-13, May 15-18, May 21-22

Direct field costs involved exceeded $6,000 of which $5,600 was applied (for an additional $400 fee) to keep the property in good standing until December, 1981. Total expenditures were more than double direct costs.

5. TOPOGRAPHY - VEGETATION

The property lies between sea level and 1500 feet elevation. The property is characterized by steep slopes rising from Peel Inlet and by thick underbrush and forest with little outcrop showing except along occasional cliffs and in logged off areas adjacent to the inlet. The area is well drained by numerous small streams and seeps.

6. LINECUTTING

Eight man-days were spent cutting and E-W base line, 1340m. long, across the property from 20E to 64E.

Between 28E and 38E a transit was used for control and line of site pickets used for the remainder of the base line. Cross

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lines were run by chain and compass and flagged with stations marked every one hundred feet.

7. GEOLOGY

7.1 Regional Geology

This area is generally underlain by the Karmutsen Formation of Upper Triassic age which is composed of basic volcanic rocks, related clastic rocks and derived amphibolites and schists, with much of the formation being composed of highly chloritized textureless basic volcanic rocks (greenstones) and of massive amygdaloidal slightly chloritized basalt. However, the characteristic rocks of the formation are basaltic pillow lavas and related aquagene tuffs (Sutherland Brown, 1968). Minor bodies of Kunga Formation, a Triassic-Jurassic sedimentary unit comprised primarily of limestone and argillite, are also found in the general area.

This is a somewhat similar geologic setting to that at the Tasu mine, where skarnified Kunga limestone and Karmutsen greenstones are host to iron-copper mineralization. Tasu is characterized by magnetite-chalcopyrite associated with skarn adjacent to a syntectonic batholith. Other pyrometasomatic copper occurrences are found in similar geologic settings.

7.2 Local Geology (Fig. 2)

Of main interest on the property is a sequence of limestones and minor argillite. The main portion of this sequence is composed of massive, light to medium grey limestone which generally contains minor stringers and blebs of quartz. This is interbedded

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with a dark grey to black, thin bedded linestone that probably represents a facies change from the more massive limestone. In several places, the two limestones are thinly interbedded over thicknesses of several feet. A black argillite similar in appearance to the dark limestone is also present, but it is uncommon on the property. Its extent is so minor as to be unmappable on the scale used. The sequence attains a maximum thickness of approximately 120 m., and appears to be a member of the Kunga Formation.

The limestones are in contact with a mafic, fine to medium grained andesite which is occasionally porphyritic and in places extensively chloritized. No flow structures were discernable. One outcrop of a very fine grained slightly reddish coloured mafic tuff was identified. The tuff is slightly limey with minor quartz stringers and blebs of minor disseminated pyrite. The volcanic sequence might be a member of the Yakoun Formation (middle Jurrassic) unconformably in contact with the limestone but this is not known with any certainty.

Intruding both the limestones and the andesites is a quartz-eye porphyry, - a white, silicified rock with stringers and blebs of quartz. In one outcrop where the quartz-eye porphyry is in contact with the dark limestone, it truncates bedding and the dark limestone contains small scale (over 0.2 to 0.6 m.) chevron folding.

The S.E. portion of the property is composed of a massive chloritized greenstone that appears to be in fault contact with the sequences along an E.N.E. trending fault. The greenstone contains

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minor quartz blebs and disseminated pyrite throughout the outcrops checked. This greenstone is probably a member of the Karmutsen Formation.

Two north trending, steep dipping basalt dikes outcrop along the shoreline. These dikes are 0.5 - 1.0 m. wide, have sharp contacts and are undeformed while cross-cutting other rock types.

7.3 Structure

The overall structure appears to be of a complex fold-fault nature. The chaotic distribution of strikes and dips and the limestone outcrop pattern is most likely indicative of some form of complex folding, but the exact form is unknown to date. Repetition of rock sequences and air photo lineations infer two large faults running in easterly directions across the property. These inferred faults both intersect the larger regional fault trending E.N.E. from near the Legal Corner Post in the south corner of the property. The fault zone is exposed on the shoreline in the S.W. corner of the claim and appears as a 30 metre wide chloritized mylonite zone that strikes approximately 060^{o} and dips 85^{o} to the north. Further east, at Line 60E + 3S, it manifests itself as a fault contact between the dark grey limestone and the greenstone. Greenstone cliffs are also in evidence along much of the fault trace. Two other smaller faults striking 350^{o} probably intersect the southernmost of the two east-trending lineations.

7.4 Metamorphism

Metamorphism is probably of greenschist grade but is hard to determine in rock types present. Limestones are partially recrystallized and andesites chloritized.

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7.5 Fossils

Fossils found in a black flaggy limestone were tentatively identified as 'Monotis' type pelecypods.

7.6 Mineralization

The only mineralization of interest discovered on the property to date occurs 21m. at 160° from 30E on the base line (Fig. 3). A small amount of blasting had been done to uncover the showing, but some earth has slumped back into the pit. Assays to date on grab samples are:

Cu. (%)	Zn (%)	Au.(oz/ton)	Ag.(oz/ton)
1.84	0.01	0.009	0.10
4.15	-	0.004	tr.
2.22	0.01	0.004	tr.
1.86	-	-	-

An assay of abount 1.8% Cu would be representative of the showing.

Copper mineralization is confined to a silicified fault bounded shale wedge (0.5m. by 2m.) in part graphitic but non-calcareous. It is surrounded by non-mineralized chloritized andesites. Bornite and malachite are the principal copper minerals and occur in cross-cutting quartz veinlets and on dry fractures. Quartz veinlets are of ramdom orientation and in part open suggesting mineralization of brittle rock during a late stage fracturing period.

7.7 Alteration

The main alteration within the volcanics is chloritization, especially adjacent to fault zones, but particularly intense 50-100 m. from the trace of the major E.N.E. trending regional fault. Mineralized shale has been silicified but only in this one minor outcrop.

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8. MAGNETOMETER SURVEY

8.1 Instrument

The instrument used was a Scintrex MF-1 magnetometer, serial number Mag.30-541. This is a fluxgate magnetometer with I.C. circuiting and temperature compensation of less than one gamma/^{o}C over the range -40^{o}C to +40^{o}C. It has a full terrestrial range of 0-100,000 gammas and an orientation independent, internal sensor and an accuracy of ±0.5%. Readings were taken every 100 ft. along the lines. As only relative readings are of interest in this survey the instrument was arbitrarily adjusted to 1300 gammas at the first station, 40E on the base line. Base line stations were re-read after each line to correct for diurnal variations.

8.2 Interpretation (Fig. 4)

The magnetometer survey shows a good correlation with geology. A broad zone of moderate, low contrast readings south of the base line corresponds to the area of limestone and quartz-eye porphyry. The volcanics are characterized by much higher values and very large erratic changes between stations.

The large E.N.E. trending regional fault at the south end of the lines is reflected by a zone of lower readings down to 380 gammas. The other fault zone north of the base line and trending W.N.W. is also represented by lower values.

The survey does not indicate high values characteristic of a magnetite skarn deposit in the area of limestone or copper mineralization.

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9. GEOCHEMICAL SURVEY (Fig. 5)

9.1 Method of Survey

Stream sediment samples were systematically collected in small creeks and seeps across the property draining the area of potential mineralization. The material collected was silt sized particles from creek centres. The samples were collected in water-resistant paper bags on which was recorded sample numbers, date, size of stream, rate of flow and type of material collected. The samples were shipped to Bondar Clegg in North Vancouver for analysis.

9.2 Laboratory Techniques

The samples were dried in a gas-fired hot air cabinet and then screened through a normal 80 mesh nylon screen. The minus 80 mesh portion of the dried sample was analysed for copper, using standard atomic absorption techniques as follows.

A one gram sample of the minus 80 mesh material is extracted at boiling point for one hour with 10% nitric acid solution. The extract is filtered through Whatman No.1 paper and the filtrate is analysed by atomic absorption at the appropriate wavelength for the element concerned.

Using a standard series of quality control standards and a system of random duplicates, the precision of the analyses is estimated to be better than ±20% at the 95% confidence level.

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9.3 Interpretation

Analytical results for the 52 samples collected are as follows :-

	Range	Background	Threshold
Copper	26-282 ppm	90 ppm	230 ppm

The background and threshold were calculated from a cumulative frequency plot.

A low order anomaly exists north of the base line between lines 44E and 48E in a small creek draining north. Values also increase downstream in the larger creek it drains into.

The anomaly is probably associated with minor copper mineralization because of its limited extent in a small creek. Mineralization is probably related to faulting (striking W.N.W. across the zone) as interpreted from the magnetometer survey and air photo linears.

10. GENERAL COMMENTS

The geochemical and magnetometer surveys do not indicate a major magnetite-chalcopyrite skarn deposit. Extensive mapping and prospecting locally along the favourable limestone-greenstone contact has turned up no skarn alteration or mineralization other than the discovery showing. No granitic body necessary to produce a skarn deposit has been observed, and the only intrusive rocks are quartz-eye porphyry dykes and plugs. Solution of local faulting could possibly lead to location of other mineralized wedges.

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11. BIBLIOGRAPHY

Sutherland-Brown, A. 1968

Geology of the Queen Charlotte Islands, British Columbia Department of Mines and Petroleum Resources, Bulletin No. 54. 226pp.

T. Janes,
Geologist

Vancouver, B.C.

QP#1-8 Claim Outline

Peel Point

Legal Corner Post

Baseline, O-north

PEEL INLET

Silt sample site 93 ← ppm Copper

MAP REF. NO.:
N.T.S.:

1cm = 48m

0 240 480

400 0 400 800 1200

SCALE: 1 INCH TO 400'

FALCONBRIDGE NICKEL MINES LIMITED

PROPERTY: QP#1-8 Claims

LOCATION: Peel Inlet, Q.C.I. - 52°59'20"N, 132°08'45"W

TYPE OF MAP: Geochemistry

WORKING PLACE: QP 1-8 Claims

BASED ON: Fieldwork by Sam Z.

DATE OF WORK: May 1976

DRAWN BY: R.J.E.

DATE: November 1976

MAP REF. NO.: 171-76-6

N.T.S. NO.: 103C/16g

FIG. NO.: 5

MAP REF. NO.:
N.T.S.:

Magnetometer readings in gammas

Contour Interval – 200 gammas

PEEL INLET

Peel Point

base line, 0 North

64 E

20 E

24 E

28 E

32 E

36 E

40 E

44 E

48 E

52 E

56 E

60 E

1cm=48m

0 240 480

400 0 400 800 1200

SCALE: 1 INCH TO 400'

FALCONBRIDGE NICKEL MINES LIMITED

PROPERTY:
QP 1-8 Claims

LOCATION:
Peel Inlet Q.C.I. - 52°59'20" N, 132°08'45"

TYPE OF MAP:
Geophysics – Magnetometer

WORKING PLACE: QP 1-8 Claims

BASED ON: Fieldwork by T. Jones

DATE OF WORK: May 1976	MAP REF. NO.: 171 - 76 - 5	FIG. NO.: 4
DRAWN BY: R.J.E., T.J.		
DATE: November 1976	N.T.S. NO.: 103C/16g	

BCIL - 33410 - P.N.

MAP REF. NO.:
N.T.S.:

Peel Inlet

Sta. 4

Sta. 3

Sta. 2

Sta. 1

Baseline

24 E

28 E

32 E

N

Andesitic, minor volcaniclastics

Light grey limestone

Basalt dyke

Fault

Outcrop boundary

Survey hub

Stadia station

Geologic contact

1cm = 6m

0 30 60

50 0 50 100 150

SCALE: 1 INCH TO 50 feet

Copper Mineralization

S8

Detail
Scale-1"=2'

FALCONBRIDGE NICKEL MINES LIMITED

PROPERTY:
QP#1-8 Claims

LOCATION:
(See Fig. 2)

TYPE OF MAP:
Detailed Geology

WORKING PLACE: Showing Area

BASED ON: Fieldwork by T. Janes and Sam Z.

DATE OF WORK: May/76	MAP REF. NO.: 171-76-4	FIG. NO.: 3
DRAWN BY: T.J.		
DATE: November / 76	N.T.S. NO.: 103 C/16g	

MAP REF. NO.:
N.T.S.:

Legend

- Andesites - volcaniclastics
- Quartz-eye porphyry
- Light grey limestone
- Dark grey limestone
- Basalt dyke
- Bedding (strike and dip)
- minor fold
- Air photo lineation
- Fault

1cm = 48m

0 240 480

400 0 400 800 1200

SCALE: 1 INCH TO 400'

Peel Point

QP#1-8 Claim Outline

See Fig. 3 for detail

Baseline, O-north

Legal Corner Post

PEEL INLET

FALCONBRIDGE NICKEL MINES LIMITED	
PROPERTY: QP#1-8 Claims	
LOCATION: Peel Inlet, Q.C.I. - 52°59'20"N, 132°08'45"W	
TYPE OF MAP: Geology	
WORKING PLACE: QP 1-8 Claims	
BASED ON: Fieldwork by T. Terriff, T. Jones	
DATE OF WORK: May 1976	MAP REF. NO.: 171-76-3
DRAWN BY: R.J.E.	FIG. NO.: 2
DATE: November 1976	N.T.S. NO.: 103C/16g