

Mineralogical
Examination

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Mineralogical Examination
of Samples from
Turnagain Property, B.C.

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NAME

TURNAGAIN PROPERTY
Mineralogy Report 1124 to
1979

104-I-7
B.C.

MR#1124

FALCONBRIDGE NICKEL MINES LIMITED
METALLURGICAL LABORATORIES
THORNHILL, ONTARIO

FALCONBRIDGE METALLURGICAL LABORATORIES

Mineralogical Examination
of Samples from
Turnagain Property, B.C.

by
R. Buchan

September 19, 1979

KEYWORDS: Ultramafic

PROJECT: 302
(JO#2585)

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FALCONBRIDGE METALLURGICAL LABORATORIES

MINERALOGY REPORT #1124

TO: J.J. McDougall

PROJECT No. 302 (JO#2585)

FROM: R. Buchan

SAMPLE No. L#79-525

DATE: September 19, 1979

SUBJECT: Mineralogical Examination of Samples from Turnagain Property, B.C.

KEYWORDS: Ultramafic

DISTRIBUTION: RAB, ~~AMC~~/WDH/JCC, Min File

DESCRIPTION OF SAMPLE: INFORMATION REQUESTED

About 15 lbs of material, tentatively classified as tuffaceous fragmental or intrusive breccia was submitted on August 15th, 1979 for mineralogical examination. It was requested that particular emphasis be placed on whether or not the material is of kimberlitic affinity. Four bags of drill core are labelled T.C.9, DDH 2 @ 182'-185', DDH 2 @ 200'-225' and DDH 3 @ 230'. A separate drill core specimen labelled 'A' was enclosed with the samples.

PROCEDURES: Spectrochem. Analysis Chemical Analysis X.R.D.
 Optical Microscopy Electron Probe

RESULTS:

Three pol-thin sections were prepared from selected drill core pieces. Results of pol-thin section examination are given on the following pages.

Sample 'A', which appears typical of the basic intrusive breccia, is classified as hornblende-clinopyroxene porphyry containing occasional breccia fragments. It has no kimberlitic features and likely represents a basic intrusive containing variable amounts of wallrock fragments.

The other two sections were prepared likely from wallrock ultramafics and consist of heavily serpentinized wehrlite or lherzolite and very fresh dunite.

R. Buchan

R. Buchan

Location Turnagain Property, B.C.

Lab. No. 79-525

Sample Description DDH 3 @ 230'

PTS No. 5489

MINERALS	Est. % by Vol.	Grain Size (m.m.)	
		Max.	Avg.
Olivine	70-75		
Orthopyroxene	4-6		
Serpentine	6-8		
Magnetite	8-10		
Cr-Spinel	2-3		
Pyrrhotite/Pentlandite	Tr		

DESCRIPTION

One of the drill core sections from DDH 3 @ 230' is a dark ultramafic rock. In pol-thin section, it displays a very fresh appearance with only minimal alteration to serpentine. A coarse grained mosaic of olivine and lesser orthopyroxene is transected by narrow serpentine-secondary magnetite veinlets. Minor patches of sulphides consist of pyrrhotite and pentlandite. Euhedral grains of chrome spinel are usually altered somewhat with an iron-rich alteration rim.

CLASSIFICATION

Dunite

Location Turnagain Property, B.C.

Lab. No. 79-525

Sample Description T.C. 9

PTS No. 5488

MINERALS	Est. % by Vol.	Grain Size (m.m.)	
		Max.	Avg.
Serpentine	75-80		
Chlorite	2-4		
Clinopyroxene	15-18		
Amphibole	2-4		
Biotite	2-4		
Pyrrhotite/Pentlandite	Tr		

DESCRIPTION

The dark serpentinite core of T.C. 9 is typically ultramafic. In pol-thin section, serpentine after olivine is the major component. Anhedral corroded grains and coarse laths of clinopyroxene are relicts from an original wehrlite or lherzolite. Accessory minerals include amphibole, biotite and chlorite. Minute traces of sulphides consist of about 50:50 pentlandite: pyrrhotite.

CLASSIFICATION

Serpentinized wehrlite or lherzolite

MINERALS	Est. % by Vol.	Grain Size (m.m.)	
		Max.	Avg.
Hornblende	45-50		
Clinopyroxene	6-8		
Plagioclase	25-30		
Phlogopite	3-5		
Epidote/Saussurite	10-12		
Chalcopyrite	Tr		
Arsenide?	Tr		

DESCRIPTIONHand Sample

Rare patches of leucocratic material up to 1 cm diameter occur in a porphyritic groundmass. The latter consists of dark phenocrysts up to 2 mm diameter set in a grey feldspathic matrix. This sample is quite representative of most of the drill core from DDH 2 @ 200'-225' although several sections in the latter contain larger breccia fragments (up to 5 cm diameter) of different rock types including coarse grained gabbro and fine grained andesite or basalt.

PTS 5487 consists mainly of sharply euhedral hornblende grains set in a fine grained granular matrix of calcic plagioclase. The hornblende is often zoned and is occasionally partly altered to phlogopite. Epidote and saussurite have formed by alteration of the plagioclase. Very coarse phenocrysts (up to 2.5 mm) of colourless clinopyroxene are subhedral and show peripheral alteration to amphibole. Only one breccia inclusion is present in the section. It consists of a fine grained mixture of amphibole and phlogopite with a few coarse grains of calcic plagioclase. Traces of chalcopyrite enclosing a white mineral tentatively identified as an arsenide occur in association with epidote.

CLASSIFICATION

On the basis of texture and mineral composition the rock is classified as a hornblende-clinopyroxene porphyry containing rare breccia fragments. It is likely a basic intrusive breccia but has no kimberlitic affinity.