

CONSOLIDATED ZINC PROPRIETARY LIMITED
(Incorporated in Victoria)

BEACONSFIELD NICKEL DEPOSIT

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CONSOLIDATED ZINC PROPRIETARY LIMITED

(Incorporated in Victoria)

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58-195

TELEPHONE
MF 5661

REGISTERED OFFICE:

95 COLLINS STREET, MELBOURNE, C.1
ADDRESS MAIL TO P.O. BOX 384 D, MELBOURNE, C.1

CODES USED
BENTLEY'S
BROOKHILL'S

000

442001

20 January, 1958.

DOFM	S & A	UG	CC & M	ACIM & E
<i>JK</i>		<i>[Signature]</i>		
RECEIVED	22 JAN 1958			REGISTRAR
ANSWERED				E & IL
DEPT. OF MINES				
REF. NO. 230/58				

Mr. J. Symons,
Director of Mines,
Department of Mines,
HOBART, TASMANIA.

Dear Jack,

BEACONSFIELD NICKEL PROSPECT

Enclosed for your confidential information is a copy of the final report (with plans) on our testing of the Beaconsfield nickel prospect.

Sincerely,

Haddon F. King
(Haddon F. King).

MICROFILMED

Encl:
w/plans-
X27/933.
X27/975.
X27/990. mlk

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ENTERPRISE EXPLORATION COMPANY PROPRIETARY LIMITED

TELEPHONE
MF 566 F

001

Head Office.

95 COLLINS STREET,
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CODES USED
BENTLEY'S
BROOMHALL'S

442002

17th January, 1958.

Beaconsfield Nickel Deposit

Introduction

Nickel was recorded from Beaconsfield many years ago. In 1955-56 the Ben Lomond Mining Company found that nickel was more widespread in the area than previously known, and brought the prospect to the attention of Consolidated Zinc Pty. Ltd. in May 1956. Originally Ben Lomond was interested in the possibility of a large reserve of nickel silicate in partly weathered serpentine, and carried out assays of nickel-bearing serpentine exposed at outcrop and in a small number of pits sunk to hard rock. In 1957 they found that the clayey weathering product of the nickeliferous serpentine also contained nickel, and advised Consolidated Zinc in May that an "enormous area of nickeliferous plastic clay of deep brown or yellowish colour with 1.75% Ni" had been disclosed, and invited a further inspection.

The terms of an option agreement were drawn up, and an inspection of the prospect made in June. Decision was made to spend £2,000 on testing the most promising area of clay by auger-boreholes along three lines, and to extend the test if initial results were interesting.

Test Work

W. Betske - an Enterprise Exploration Co. employee - commenced work on the prospect on 23 June, in company with W. Pitulej of Ben Lomond Mining Company. Betske's mapping showed that outcrops of garnierite-bearing weathered serpentine were restricted largely to a triangular shaped area, 4,000 feet by 2,500 feet, at the southeastern tip of the ultrabasic mass, bounded on the south by alluvium and non-igneous rocks, on the northeast by massive quartzite (probably steeply dipping) and on the northwest by an extensive and thick capping of highly ferruginous laterite. Although the ultrabasic area measures

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4 miles by $1\frac{1}{2}$ miles, one third of which area consists of weathered ultrabasic rock or soil derived from ultrabasic unconcealed by thick laterite or alluvium, only two or three small outcrops of nickeliferous serpentine were found outside the triangle.

The triangular area of interest was tested by boring auger holes at 100 foot intervals along three parallel lines - 1,400, 1,700 and 2,400 feet long. Boring was done under contract. The holes were sampled in suitable lengths, and samples submitted to the Government analyst in Launceston. Each sample comprised full cuttings over the length sampled, except in the case of a few holes where a larger auger was used for the top 2 to 4 feet of loose material, and in these cases representative portions only of the cuttings were submitted for assay. The auger cut a clean hole and recovered full "core", and there is little risk of contamination or dilution of a sample by material higher in the hole. All holes except two bottomed on hard rock. Mr. Pitulej assisted throughout the boring.

On completion of the above test of the main area of interest, seven other areas of unconcealed ultrabasic were reconnaissance bored along lines aggregating 3 miles in length.

Assay Results

Main Area of Interest (holes spaced 100 feet apart)

Line 1 : Length 1,400 feet, average depth (exclusive of 2 feet of overburden) 9 feet, average assay 0.96% Ni, 19% Fe.

Best continuous section - 1,000 feet long, assay 1.1% Ni over 10 feet depth.

Best hole - 1.35% Ni over 15 feet.

Best assay - 1.83% Ni over 4 feet. Cobalt content - 10 samples assayed for cobalt averaged 1.2% Ni, trace Co.

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Line 2 : Length 1,500 feet, average depth $5\frac{1}{2}$ feet,
average assay 0.41% Ni, 14% Fe.

Best assay - 0.83% Ni over 5 feet.

Line 3 : Length 2,200 feet, average depth 7 feet,
average assay 0.52% Ni, 19% Fe.

Best assay - 1.3% Ni over 4 feet.

Other Areas (holes spaced 200 feet apart)

	length	average	average	best assay	
	ft.	depth	assay	% Ni	length
		ft.	% Ni		
Line 4	2,400	$4\frac{1}{2}$	0.23	0.42	6
Line 5	2,600	$5\frac{1}{2}$	0.21	0.43	5
Line 6	1,600	6	0.30	0.41	7
Line 7	600	5	0.22	0.25	6
Line 8	3,200	5	0.20	0.50	$3\frac{1}{2}$
Line 9	3,600	5	0.05	0.25	6
Line 10	1,600	4	0.16	0.32	$4\frac{1}{2}$

Analysis of Results

The Beaconsfield nickel occurrence is similar to lateritic nickel deposits known in New Guinea, Cuba, the Phillipines and elsewhere. They are secondary accumulations formed by concentration, during erosion and weathering, of nickel into soil profiles developed on outcrops of weakly nickeliferous portions of ultrabasic masses. The primary nickel in the ultrabasic is not in the form of sulphide, but is generally believed to be a primary component of one or more of the silicate minerals.

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There is no reason for supposing that nickel content of the unweathered ultrabasic rock at Beaconsfield is other than very low; the value of the prospect must be assessed on the nickel content of the secondary concentration in the soil and the weathered rock zone between soil and unweathered serpentine.

All auger holes, except two of the deep ones, traversed the soil profile and bottomed on hard rock. The soil profile on all lines bored outside the main area of interest - Lines 4 to 10 - was quite shallow, varying between averages of 4 and 6 feet, and nickel content was also very low. The negative results of this reconnaissance boring, together with the almost complete lack of visible garnierite in these areas, suggests very strongly that appreciable concentrations of nickel are restricted to the main area of interest.

Three parallel lines of holes were bored across the main area of interest, 900 feet apart. Of these, only the most southerly line (Line 1) intersected values of any interest, and it is significant that this line traversed an area containing the majority of nickel-bearing outcrops. The boring indicated a grade approaching 1.1% Ni over a length of 1,000 feet and an average depth of 10 feet along Line 1. No holes on Line 2, 900 feet to the north, averaged higher than 0.76% Ni, and it is clear that the body of soil of plus 1% grade does not cross Line 2 except perhaps as tongues of insignificant size. It seems, then, that the quantity of soil of grade approximately 1% Ni is very unlikely to exceed 500,000 tons.

It is possible that some of the holes bottomed on residual boulders instead of bedrock, but the absence of any assay of 2% Ni at hole bottom is a clear indication that no high grade band of appreciable dimensions exists at the base of the soil horizon.

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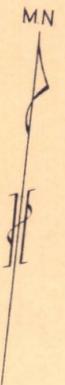
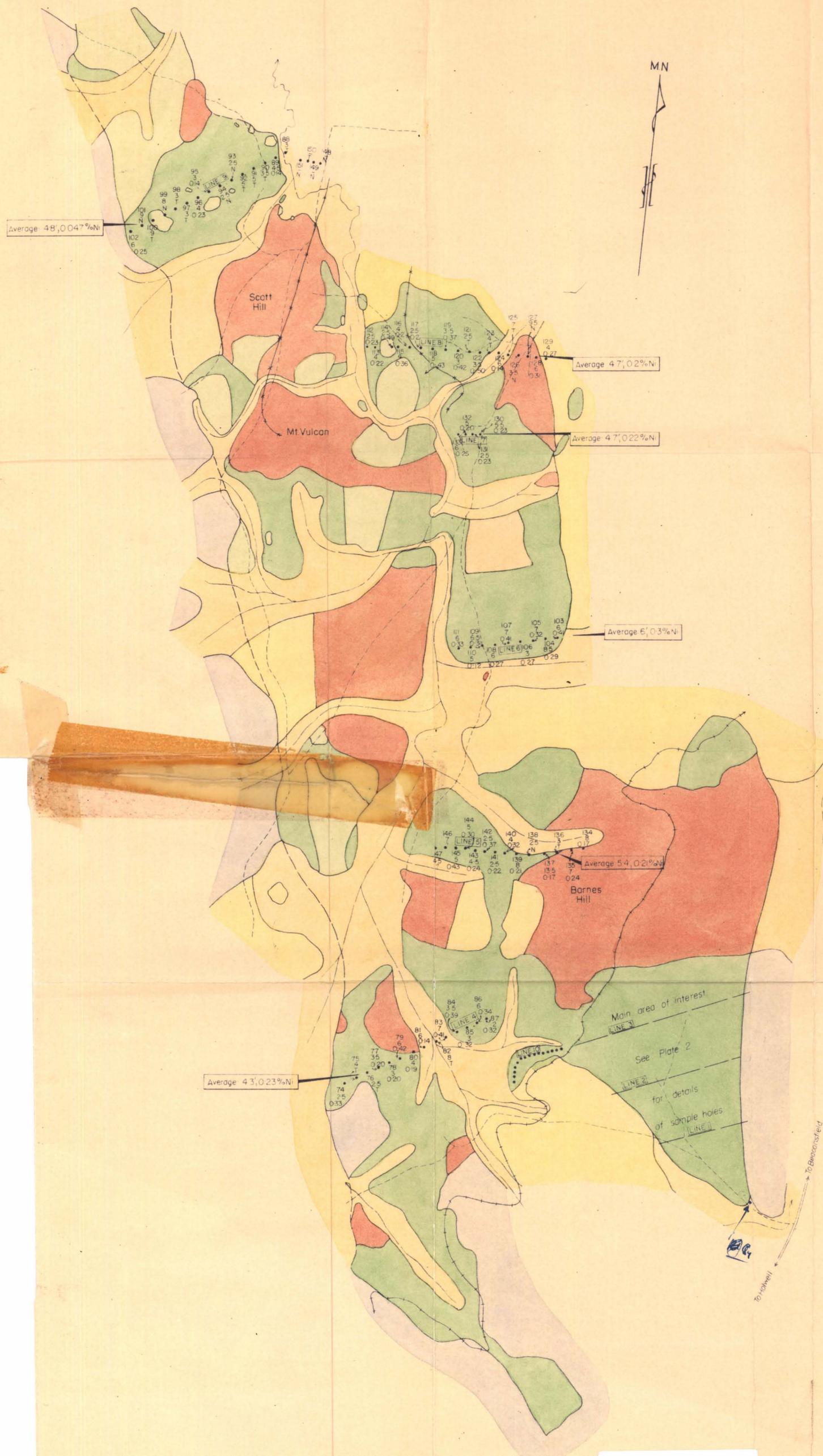
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As indicated grade was well below 2.5% Ni, which seems to be the lowest level at which a lateritic nickel body can be regarded as interesting, the option was abandoned at the end of the initial three months option period.

C. L. Knight

C.L. Knight.

CLK/JC



Average 48,0047%Ni

Average 47,022%Ni

Average 47,022%Ni

Average 6,033%Ni

Average 54,021%Ni

Average 43,023%Ni

LEGEND

- Serpentine
- Other ultrabasics
- Sedimentary and metamorphic
- Highly ferruginous laterite
- Recent alluvium
- Old alluvium
- Auger holes
- Tram line
- Water race
- Watercourse
- Main road
- Track

Assay values on lines 4-9 are shown thus: Hole No
Depth in feet
%Ni

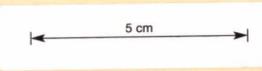
(NOTE: Assay values for lines 1-3 shown on plate 2
and for line 10 on plate 3.)

Enterprise Exploration Co.PtyLtd

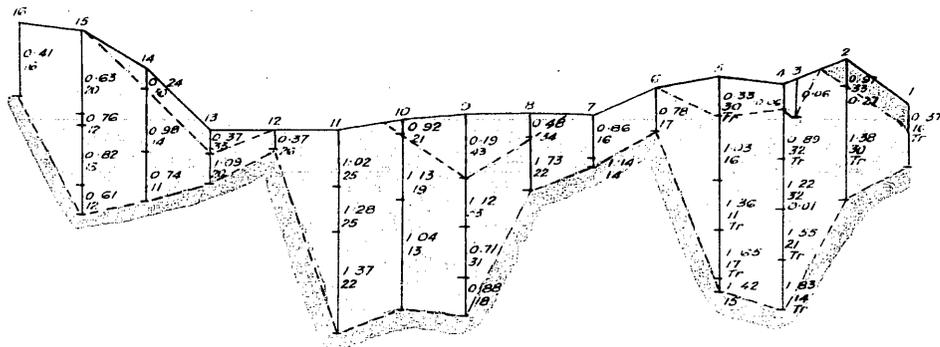
PLATE I 442007

BEACONSFIELD NICKEL DEPOSITS
GEOLOGICAL MAP (after B.L.Taylor) SHOWING
AUGER SAMPLE HOLES

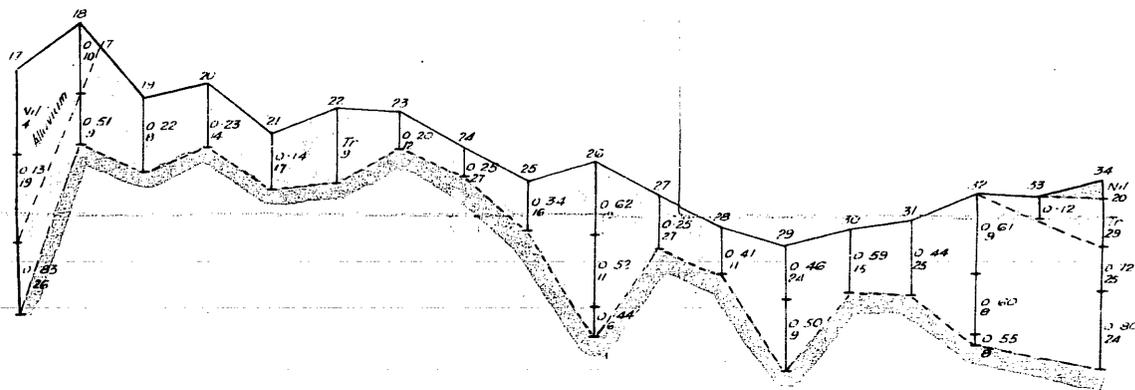
58-195



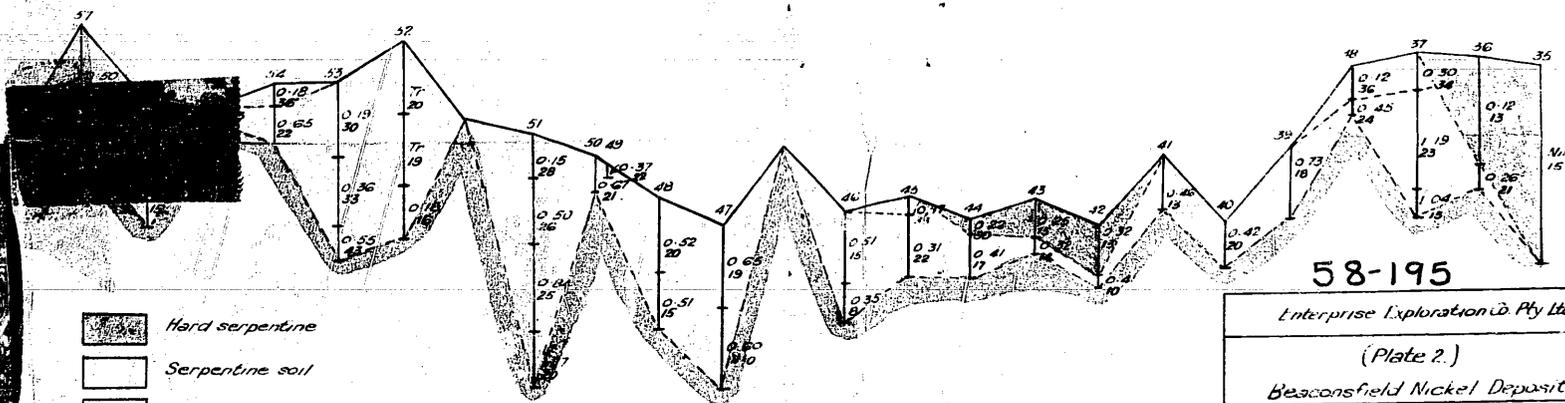
Scale: 1 inch = 990 feet W.Betcke Plan No. X27/975
Oct 1957



Line No. 1



Line No. 2



Line No. 3

-  Hard serpentine
-  Serpentine soil
-  Laterite
-  Quartz float

0.52 = 0.52% Ni
 30 = 30% Fe
 0.27 = 0.27% Cu

Note:- Vertical scale in inches

58-195

Enterprise Exploration Co. Pty Ltd

(Plate 2.)

Beaconsfield Nickel Deposits

Section Lines 1-3

006

Hor 1"=200'
 Vert 1"=10'

W Betcke
 Oct 1957

Plan No
 X 27/990

