6528

BRITISH NEWFOUNDLAND EXPLORATION LIMITED

GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL REPORT

FORD CLAIM, KAMLOOPS MINING DIVISION

BY: Bradford D. Pearson, P. Eng.

of

Richmond, B.C.

FIELD PERIOD: September 30 to October 11, 1977

REPORT PERIOD: October 17 to November 14, 1977

TABLE OF CONTENTS

INTRODUCTION

A program of work on the Ford Claim at Knutsford, B.C. was completed in early October. The work consisted of soil sampling, magnetometry and geological mapping. It was carried out by a crew of two, consisting of B. D. Pearson, P.Eng., consulting geologist and Daniel Spancers, a graduate geologist who acted as Pearson's assistant. It was designed by Pearson and C. Sampson of British Newfoundland Exploration Ltd., following a joint examination of the property on June 16.

CONTROLS

A grid was established based on the Legal Corner Post which is located at the Northwest corner of the claim. Lines were run east-west using a 50 meter nylon chain with directional control provided by a Brunton compass. Stations were established at 50 meter intervals.
It was attempted to hold line spacing to 100 meters, but very erratic variations in the local magnetic field made this difficult. To compensate, compass readings were made every 50 meters, and lines were tied together by chaining on the west side (0E), the east side (2000E) and near the middle (950E). The points thus established served as control points for all geological data collected, and were the sites of soil collection and magnetometer readings. These points are plotted as dots on Plates 1, 2, 3 and 4. Occasionally, points visible on air-photos were tied into the grid for future reference. Photos used were BC 7640 - 117, 157 and 158.

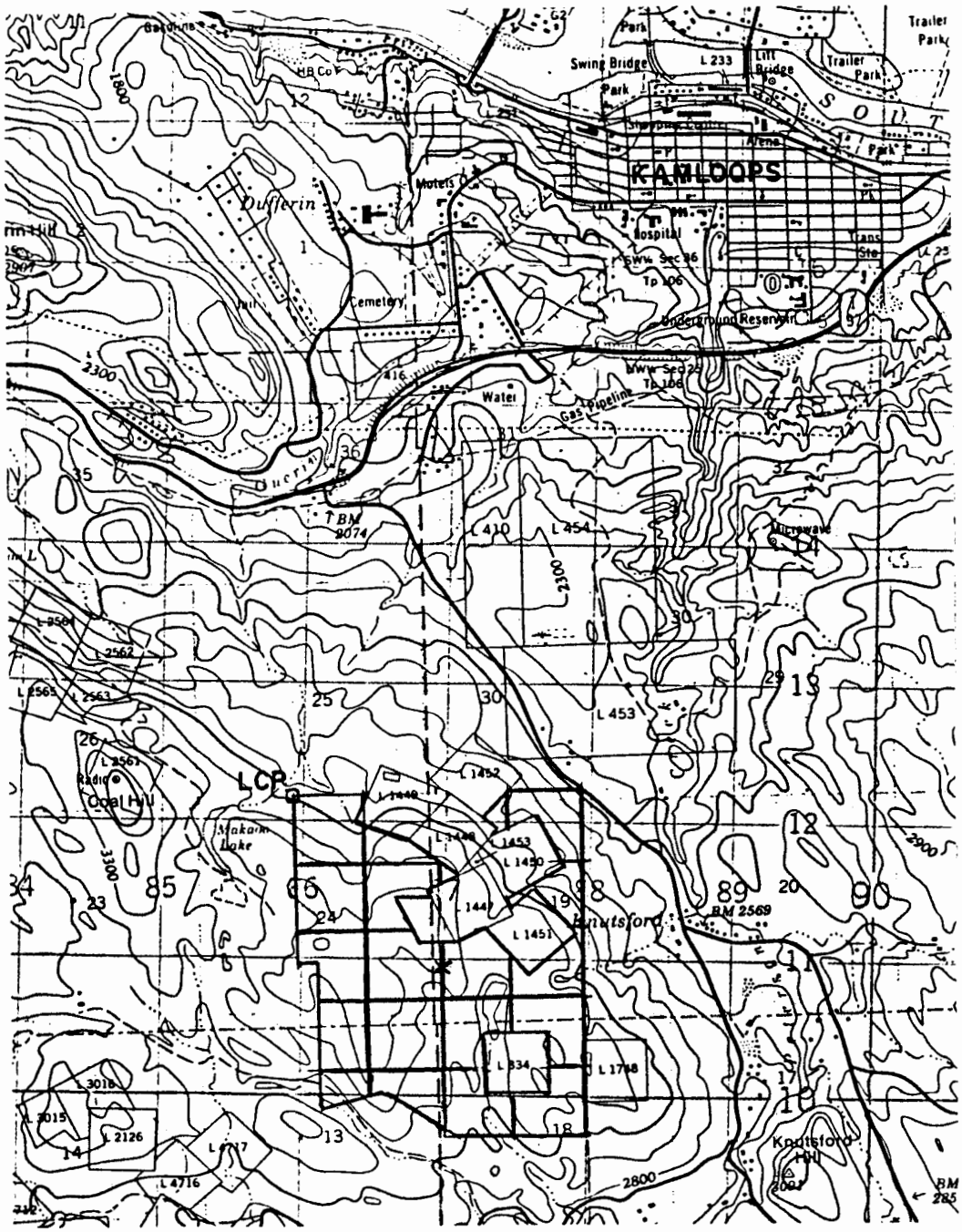


FIG. 1 LOCATION MAP

FORD CLAIM
KNUTSFORD, B.C.
1: 50,000

GEOCHEMISTRY

Soil sampling was carried out by Spancers who worked with a generally-poorly-developed B horizon below the root level of a thin, heavily-grazed, grass and sage-brush vegetation. The minus 80 mesh fraction was analyzed by Min-En Labs. of North Vancouver who determined copper using hot nitric acid-perchloric acid extraction and atomic absorption techniques. Results are shown on Plate 3.

Values have not been grouped by contouring. It was judged more productive, in view of the abundance of data, (in excess of 700 samples), to break the numbers down into their component populations using cumulative probability techniques, as described by Sinclair (1976). The resulting graph (Fig. 2) reveals the presence of three distinct, major homogeneous populations, and two other distinct but minor populations. The inflection points on the graph are sufficiently sharply defined to allow separation of the populations without further graphical manipulation. In other words, overlapping values are minimal, and should cause little error in the plan display. All values in the uppermost population are anomalous with respect to the other populations and should be checked on the ground to determine their source. One value (475 ppm) is anomalous even with respect to the uppermost population, and may be the more significant in that it lies at the north end of a somewhat lower-valued south-trending zone of highs. The trend is similar to that of glacial transport in the area, and may be the result of glacial smearing from a small source area close to the site where the 475 ppm value was obtained. Investigation is warranted.

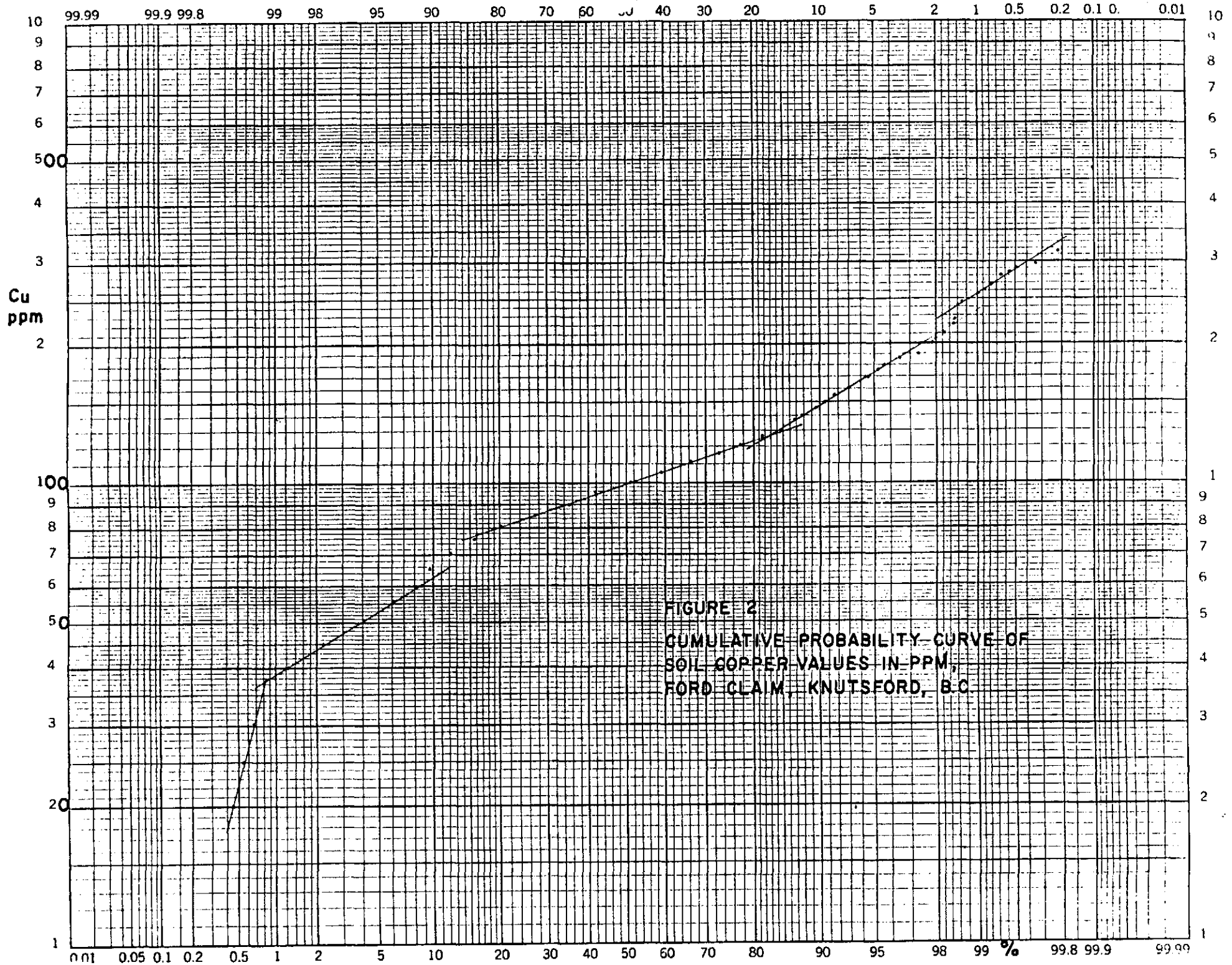


FIGURE 2

CUMULATIVE PROBABILITY CURVE OF SOIL COPPER VALUES IN PPM, FORD CLAIM, KNUTSFORD, B.C.

Most of the members of the uppermost population are sited close to zones of high magnetic gradient (see later). The presence of high copper values close to concentrations of magnetite is a well-known feature of the Iron Mask batholith and its environs.

MAGNETOMETRY

Magnetometry was carried out by Pearson. The instrument employed was a Phoenix MV-1 fluxgate type, which measures the vertical component of the total magnetic field. Sensitivity is reported as ± 10 gammas on the most sensitive scale (300 gammas full scale). In practice we found it to be somewhat less, but this was unimportant in view of a magnetic relief on the property of approximately 10,000 gammas and, locally, horizontal gradients of 160 gammas per meter.

All readings were taken over loops requiring no more than three hours to complete and each loop tied into the preceding loop, thus allowing correction for diurnal changes in the magnetic field and for instrumental drift. Relative to the high magnetic relief on the property, such corrections were minor.

The magnetic data are displayed on Plate 4. As with the geochemical results, the figures have been plotted on a cumulative probability curve (Fig. 3). However, the results are less easily interpreted. Nine separate linearities have been distinguished and, for purposes of display, classed as populations. Plate 4 has been color-coded accordingly. Some of the linearities undoubtedly represent homogeneous populations, but others (for instance the intervals 2151 - 2550 and 3301 - 3600) may each represent zones of mixing of two populations.

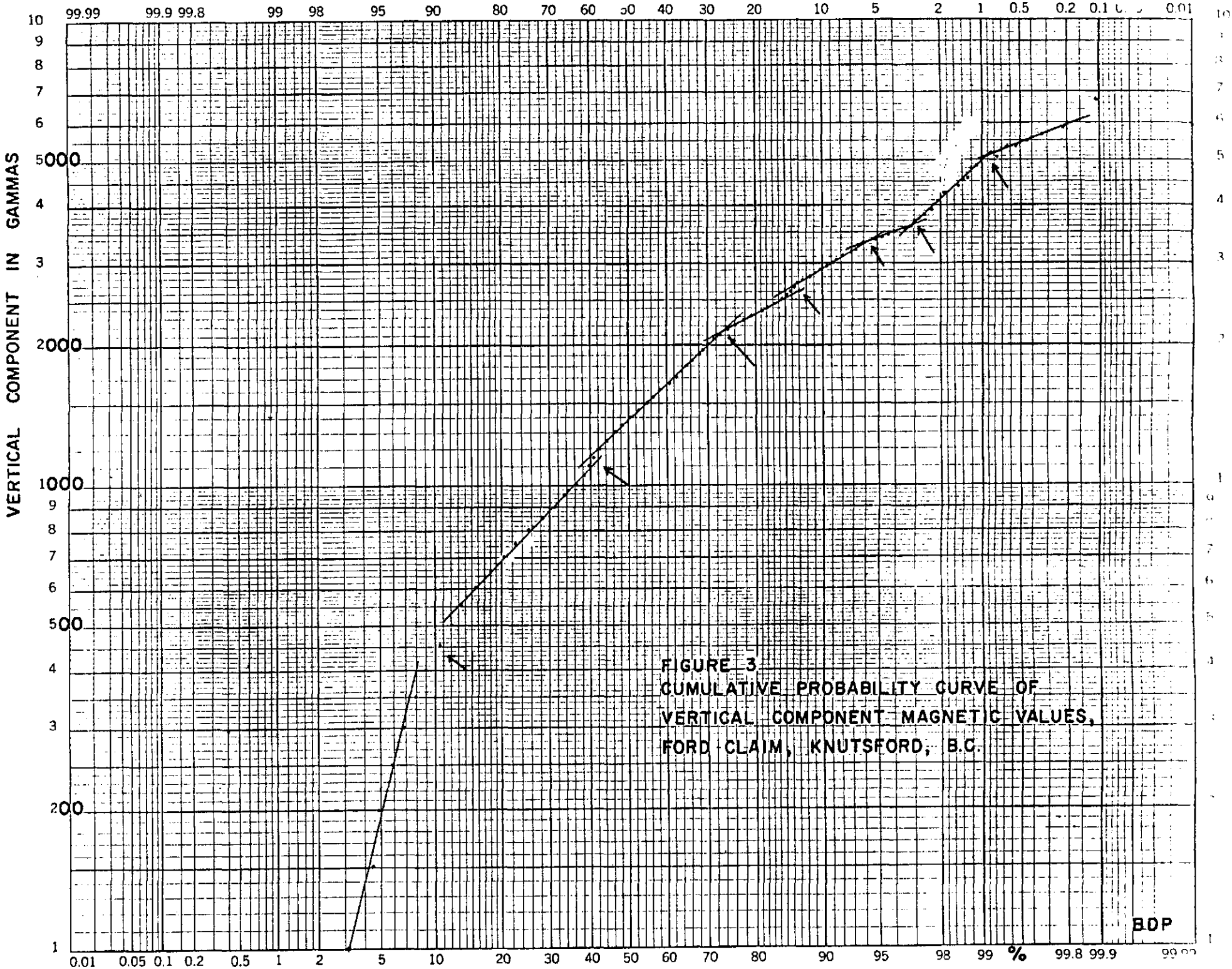


FIGURE 3
CUMULATIVE PROBABILITY CURVE OF
VERTICAL COMPONENT MAGNETIC VALUES,
FORD CLAIM, KNUTSFORD, B.C.

In view of the time required to resolve such a complex polymodal distribution, this approach has not yet been carried to completion. Interpretation of Plate 4 should be carried out with these limitations in mind.

Of possible importance is the general south-southeast trend. A similar trend is less well defined on the geochemical map. A preceding reference to glacial smearing will be recalled. The magnetic trends imply that an elongate bedrock source of high copper values is an alternative explanation.

Reference to the geologic map (Plate 2; See next section for discussion) shows that the bulk of the magnetic relief lies close to or within areas underlain by Iron Mask Gabbro. Areas underlain by Cherry Creek Rocks have little relief and a low content of magnetic minerals.

GEOLOGICAL MAPPING

Mapping was carried out by Pearson. All outcrops were tied into grid stations. In view of the sparseness of vegetation it is unlikely that any outcrops were missed. Rock types were identified by gross visual examination and examination under a 20 power hand lens. They were compared with descriptions of various suites given by Preto (1967). Results are shown on Plate 2.

The property is underlain by a central core of moderately coarse-grained amphibole-plagioclase gabbro bordered by moderately-fine-grained rocks of the Cherry Creek suite, (See Preto, 1967). The gabbro trends south-southeast and noses out near the northwest corner of the Ford Claim. Outcrop areas are generally small, but

in most cases, where outcrops occur, pits have been sunk or trenches dug, in order to investigate rusty zones which appear to be common in the gabbro. Fracturing is common but apparently random in orientation. The magnetic survey resulted in the discovery of one outcrop within the gabbro which contained major masses of fine-grained magnetite. In spite of the intensive prospecting throughout the area, there were no signs that this outcrop (located at 1300 S, 1000 E) had been sampled or hammered on in any way. The magnetic survey showed the likelihood that other such zones exist which have not yet been investigated.

The Cherry Creek rocks generally consist of fine-grained syenite, monzonite and diorite. No attempt was made to separate these varieties in the field. Gross variations noted are as follows: A slightly coarser-grained variety containing porphyroblasts of chlorite and possessing a poorly developed mineral lineation was noted at 200S, 250E. The development of orange K-spar alteration is common, but especially so at 700S, 1850E, 0 S, 50E and 250 E, and 1000 S, 250 E. Very fine grained chlorite also appears to be common at the latter locality. Epidote veining along fractures is common, most notably at 1400 S, 775 E.

Volcanic rocks of probable Nicola age are found at several points. A large outcrop occurs just east of the claim at 800 S. Regional mapping indicates that this outcrop lies close to the eastern border of the Iron Mask batholith, an interpretation strengthened by the results of the accompanying magnetic survey which shows a pronounced

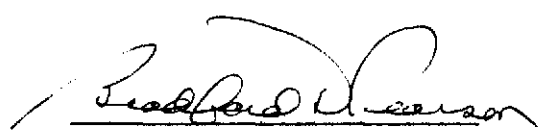
low crossing the northeast corner of the claim, just to the north of the outcrop. Amygdaloidal volcanics are found in a small area at 1300 S, 1750 E. There is a possibility that this exposure is a largely buried glacial erratic, but a reconnaissance of ground immediately to the northwest indicates several other small outcrops of volcanic rock, lending weight to the interpretation that a small slice of volcanics lies between the gabbro and the Cherry Creek rocks in this area.

Volcanic rubble and angular boulders are also found at 800 S, 650 E, 1800 S, 1225 E and 2000 S, 2000 E. In all cases, these may be interpreted either as glacial erratics (or their fragmented remains) or as derived from small underlying slices of volcanic rock lying upon the main gabbroic mass.

CONCLUSIONS AND RECOMMENDATIONS:

The very high magnetic gradients found in several parts of the Ford Claim must be due to features very close to the surface, probably within a hundred meters. These areas should be re-surveyed with a magnetometer using a grid spacing on the order of 5 to 10 meters in order to delineate contact zones. Vertical gradient magnetometry may also be useful. Trenching could then be carried out over critical areas; and percussion drilling where necessitated by the presence of overburden.

Respectfully Submitted



Bradford D. Pearson, P.Eng.

Vancouver, B.C.
November 14, 1977

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Preto, V.A.G. 1967 Geology of the Eastern Part of Iron Mask Batholith, B.C. Dept. of Mines Annual Report, pp 137 - 141

Sinclair, A.J. 1976 Applications of Probability Graphs in Mineral Exploration.
Spec. Vol. #4, Assn. of Exploration Geochemists.

Appendix I

ITEMIZED MANDAYS OF WORK

Pearson				
Field work	12 3/4	days	@	$145.00
Office work	5 +	days	@	100.00
Sampson	3/4	day	@	100.00
Spancers	12	days	@	60.00

Appendix II

DECLARATION OF COSTS - FORD CLAIM

Wages (field)	$2,643.75
Wages (office)	513.54
Room & Board	567.02
Instrument rental	157.50
Transportation (Flight fares & baggage)	220.50
Freight charges, supplies & packing	63.14
Truck rental & gas	336.42
Geochemical analyses (714 samples)	1,220.23
Report preparation	438.52
	$6,160.62

PERSONNEL

Bradford D. Pearson is a graduate of the Massachusetts Institute of Technology (1950), has an M.A. from Boston University (1961) and has done a further year of graduate study in Economic Geology at Harvard University. He is a member of the Association of Professional Engineers of British Columbia, a Fellow of the Geological Association of Canada, and a member of the American Geophysical Union, the Geological Society of America and the C.I.M. He has had nine years of experience as a mining and exploration geologist with Canadian Exploration Ltd., Cominco Ltd., and Utah Mines Ltd., and a further six years as an independent consulting exploration geologist in Western Canada. In the course of this work he has carried out and supervised numerous geological, geochemical and geophysical surveys.

Daniel Spancers is a graduate of U.B.C. (1977) with five field seasons of experience in geological and geochemical surveying in Western Canada and Australia.

0 E
500 E
1000 E
1500 E
2000 E
0 S
500 S
1000 S
1500 S
2000 S
2500 S
Legal Corner Post
Pink K-spar-rich Cherry Creek Monzonite
Veined with orange K-spar
Cherry Creek Monzonite
Pit in rusty fractured Cherry Creek Monzonite
Cherry Creek Monzonite
Gabbro
Gabbro Rubble
Rubble of angular gabbro boulders
Shaft sunk in highly sheared dark green rusty rock
Large angular boulder of Mafic Plutonic breccia
Fresh medium-to-fine-grained gabbro
Brec. Gabbro veined with Epidote and fine-grained, light-colored felsite
Gabbro 50-75% Amphibole
4' angular boulder(?) dark grey-green Andesite(?) (May be outcrop)
Cherry Creek rock
Light grey, fine-grained felsic rocks of Cherry Creek suite
Fresh Cherry Creek rock
Fresh Intrusive Cherry Creek rock
Pit
Shattered Cherry Creek rock with light green Epidote stain
Rubble of Cherry Creek rock
Orange-grey Cherry Creek rock
Cherry Creek Monzonite
Angular rubble of fresh orange-grey Cherry Creek rock
Chloritic Cherry Creek rock
Cherry Creek rock. Fractures filled with Epidote
Angular rubble of orange-grey Cherry Creek rock.
Dark green Andesite Porphyritic Basalt
Orange-grey medium-to-fine-grained Cherry Creek rock
Angular rubble of pink Cherry Creek rock
Fine-grained Cherry Creek Monzonite with veins of orange K-spar.
Dark green Gabbro.
Amphibole-rich Gabbro
Medium fine-grained Gabbro. 30% Amphibole. Many thin Epidote veins.
Minor rock pit 2 deep
Fine-grained very mafic Magnetite-rich rock
Rubble of bleached rock covered with rust
Orange Cherry Creek rock with Epidote/Chlorite-rich fractures which may be altered basic inclusions.
Bedrock? Dark-weathering. Probably basic.
Medium-grained dark green Gabbro with Amphibole and 10% Plagioclase
Siliceous buff weather in plagioclase
Boundary fine-grained Gabbro/Basalt
Pit in dark green Gabbro
Pit in dark green Gabbro. Slight rust.
Large angular boulders of volcanic breccia.
2 pits in very rusty, highly sheared Gabbro 60% Amphibole, 40% Plagioclase. Med.-grained.
Medium grained Amphibole-Gabbro
Pit in dark green Gabbro

N

0 100 200 300 400 500
SCALE IN METERS

Plate 2 To accompany geological, geochemical and geophysical report by B. D. Pearson, P. Eng. on the Ford Claim, Kamloops M. D.

- Cherry Creek Suite (Syenite, Monzonite, Diorite)
- Iron Mask Gabbro
- Volcanic Rocks (probably Nicola)

B D Pearson

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6528

BRITISH NEWFOUNDLAND EXPLORATION LIMITED
VANCOUVER, B.C., CANADA
GEOLOGY
FORD CLAIM, KNUTSFORD, B. C.

DATE: NOV. 7, 1977	SCALE: 1 CM. = 50 M.	DRAWN BY: B.D. PEARSON
REV:	MAP NO:	TRACED BY:
	MAP REF:	CHECKED BY:

BCIL 6009A1 - B.N.E.X.

0 E
500 E
1000 E
1500 E
2000 E

0 S
500 S
1000 S
1500 S
2000 S
2500 S

legal Corner Post

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Plate I To accompany geological, geochemical and geophysical report by B. D. Pearson, P. Eng. on the Ford Claim, Kamloops M. D.

B D Pearson

0 100 200 300 400 500
SCALE IN METERS

N

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6528

BRITISH NEWFOUNDLAND EXPLORATION LIMITED
VANCOUVER, B.C., CANADA

FORD CLAIM, KNUTSFORD, B.C.
UNIT NUMBERING

DATE: NOV.7, 1977	SCALE: 1 CM. = 50 M.	DRAWN BY: BDP
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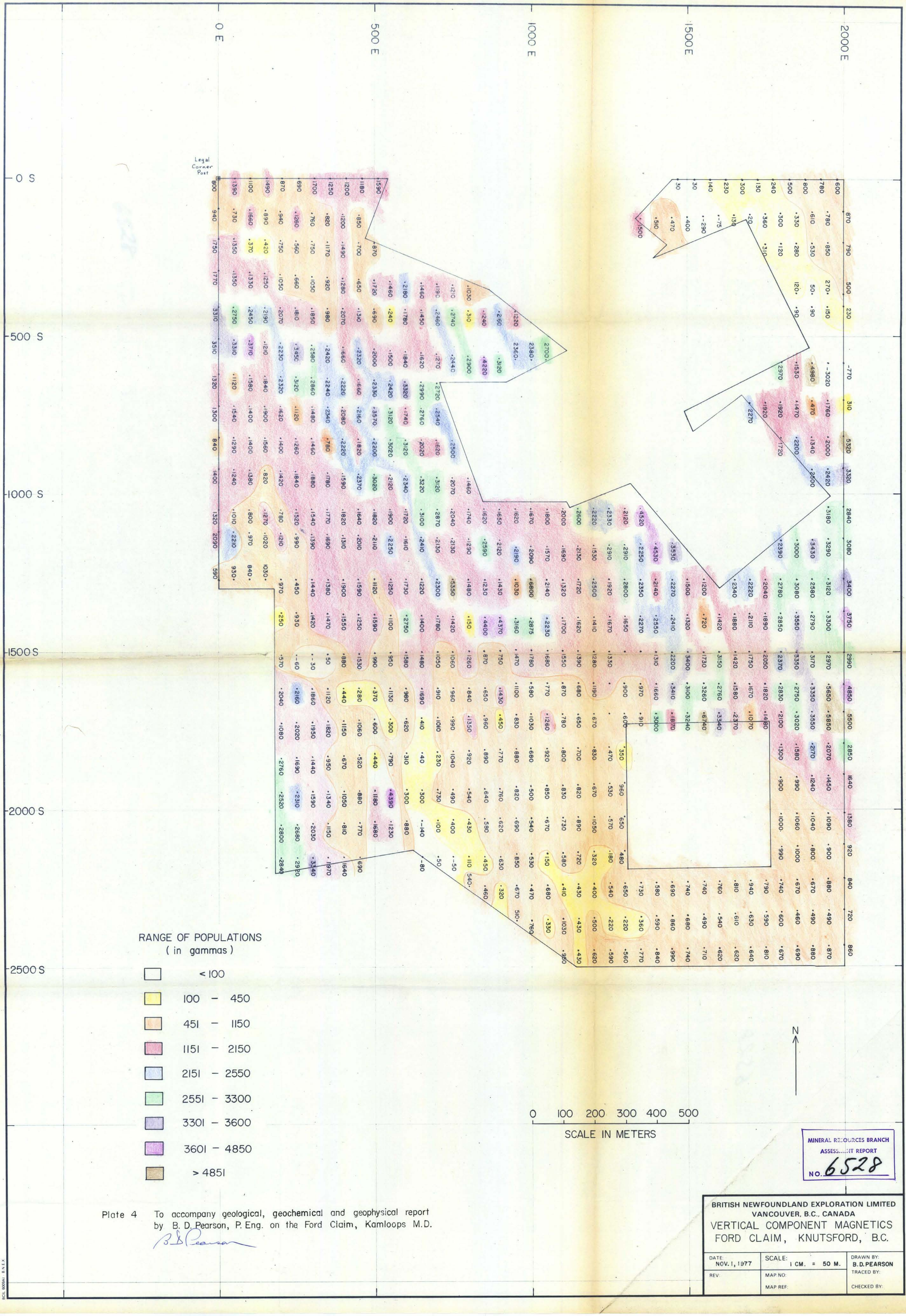

RANGE OF POPULATIONS
(in gammas)

- < 100
- 100 – 450
- 451 – 1150
- 1151 – 2150
- 2151 – 2550
- 2551 – 3300
- 3301 – 3600
- 3601 – 4850
- > 4851

0 100 200 300 400 500
SCALE IN METERS

N

Plate 4 To accompany geological, geochemical and geophysical report by B. D. Pearson, P. Eng. on the Ford Claim, Kamloops M.D.

B D Pearson

BRITISH NEWFOUNDLAND EXPLORATION LIMITED
VANCOUVER, B.C., CANADA

VERTICAL COMPONENT MAGNETICS
FORD CLAIM, KNUTSFORD, B.C.

DATE: NOV. 1, 1977	SCALE: 1 CM. = 50 M.	DRAWN BY: B.D. PEARSON
REV:	MAP NO:	TRACED BY:
	MAP REF:	CHECKED BY:

BCIL 6009AI B.N.E.X.

2000 E

1500 E

1000 E

500 E

0 E

S 0

500 S

1000 S

1500 S

2000 S

2500 S

Legal Corner Post

RANGE OF POPULATIONS

20 – 37	ppm
38 – 70	"
71 – 120	"
121 – 225	"
240 – 315	"

Plate 3 To accompany geological, geochemical and geophysical report by B. D. Pearson, P. Eng. on the Ford Claim, Kamloops M. D.

B D Pearson

N

0 100 200 300 400 500

SCALE IN METERS

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6528

BRITISH NEWFOUNDLAND EXPLORATION LIMITED
VANCOUVER, B.C., CANADA

SOIL COPPER (ppm)
FORD CLAIM, KNUTSFORD, B.C.

DATE OCT. 27, 1977	SCALE 1 CM. = 50 M.	DRAWN BY B.D. PEARSON
REV.	MAP NO.	TRACED BY
	MAP REF.	CHECKED BY

HOR. BOOBA I. B N E X