4886

BRITISH NEWFOUNDLAND EXPLORATION LIMITED 94G/4W

GEOLOGICAL AND GEOCHEMICAL REPORT

J.R. MINERAL CLAIM GROUPS A AND B

MT. McCUSKER AREA

LIARD M.D.

57°   123°   N.W.

BY: Bradford D. Pearson, P.Eng.
of
Richmond, B.C.

AND

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of
Vancouver, B.C.

FIELD PERIOD: July 9 to September 12, 1973

REPORT PERIOD: September 17, 1973 to February 20, 1974

TABLE OF CONTENTS

INTRODUCTION

This report supplements the geological and geochemical plan maps to be found in the front and back pockets, and within the body of the report.

The index map (Fig. 1) gives the location of all plans and sections with respect to the claim groups involved and to the geographic co-ordinates. It also shows the location of all claims with respect to one another.

The principals included in the programme are:

Dr. Neil Westoll, Manager, Western Exploration,
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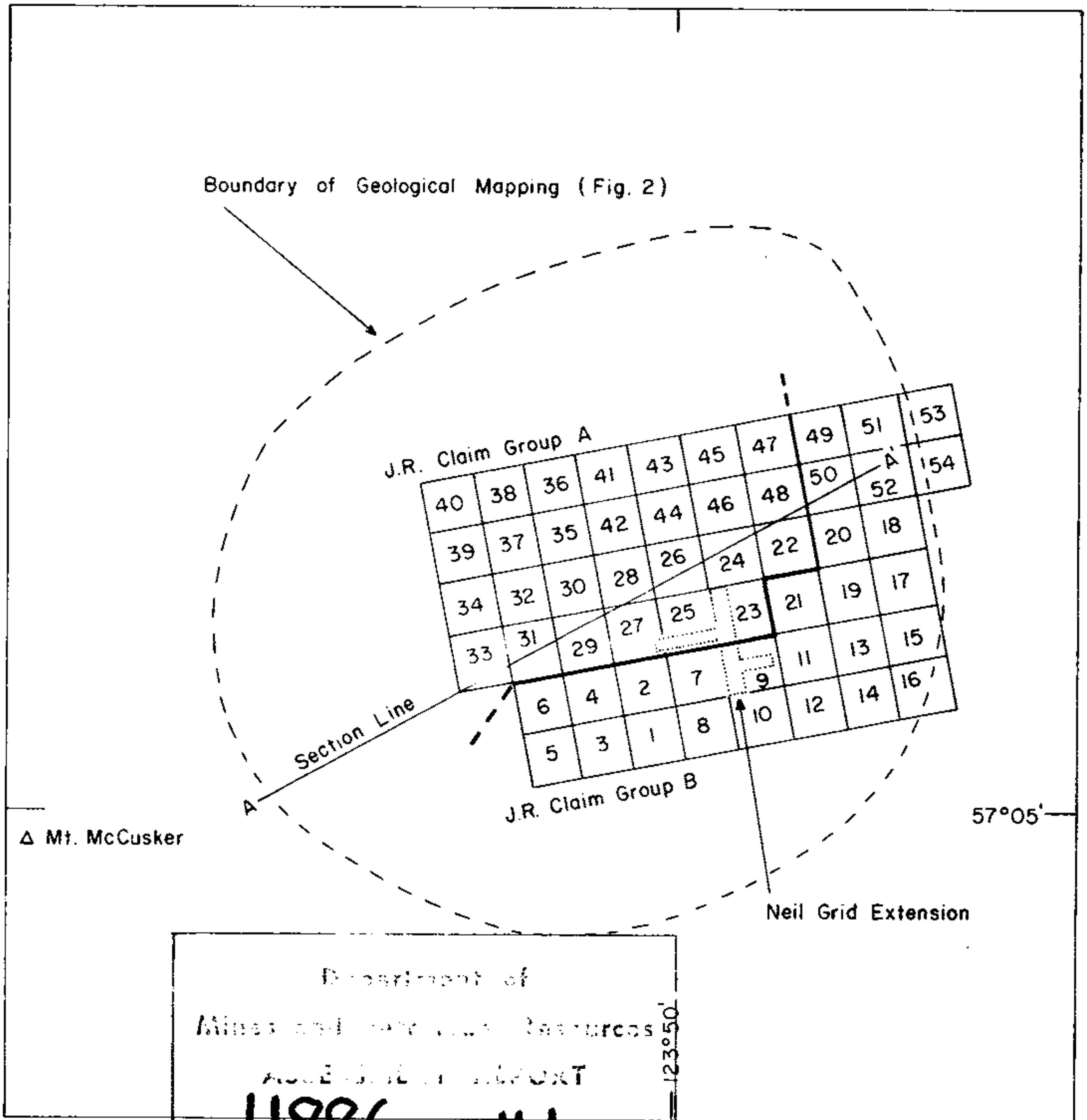
Contributions made by the individual are acknowledged throughout the text.



BRITISH NEWFOUNDLAND EXPLORATION, LTD.		
Fig. 1 Claim Location & Index Map – J.R. Groups		
DATE : FEB. 1974	SCALE : 1" = 4167'	DRAWN BY : B.D.P.
	MAP No.	
	MAP REF. 94G/4W	

PROPERTIES AND LOCATIONS (57° 123° N.W.)

This report concerns 54 located mineral claims owned by British Newfoundland Exploration Limited, 704 - 602 West Hastings Street, Vancouver, B.C.

These are divided into 2 groups, the J.R. A group (27 claims) and the J.R. B group (27 claims) as listed on the index map (Fig. 1). These groups lie northeast of Mt. McCusker between the Sikanni Chief River and Sidenius Creek in the Liard Mining Division. The area is in the centre of the Rocky Mountain crest, 46 miles west of the Pink Mountain post office on the Alaska Highway. Work was carried out from a camp on Lady Laurier Lake 28 miles to the south. Personnel and supplies were transported by helicopter.

The topography is youthful and rugged, and most of the claim area lies above timberline. Elevations vary from 4,700' to 8,000'. Traverses can generally be made easily, but on a larger scale only a helicopter can provide suitable transportation.

Bedrock is completely exposed over most of the western half of the claim block. Exposures are excellent too in the valley of the creek which drains east through the centre of the block. To the north and south of the eastern portion of this valley, extensive talus slopes and a thin immature mountain soil conceal extensive areas. Some forest cover is present along the eastern edge of the claim block.

MAPPING CONTROLS

Geological observations were plotted on existing topographic maps on a scale of 1:50,000, controlled chiefly by such topographic features as streams, lakes and ridges. The geochemical survey was based on a grid established during the 1972 season which utilized claim cairns as reference points. The location of these cairns with respect to topographic features is well established.

SURVEY PROCEDURES

(a) Geological

Preliminary geological mapping had been carried out during the 1972 season by Dr. G.J. Dickie (Westoll et al, 1973) by means of widely separated ground traverses linked by helicopter observations. Paleontological techniques were used to establish controls along measured sections. In 1973, T. Katayama carried out systematic mapping on foot, concentrating on the detailing of lithological and textural variations in bedrock, and assigned formational names in accordance with the framework used by Dickie.

(b) Geochemical

A soil geochemical survey was undertaken in order to confirm and, hopefully, enlarge anomalies developed in 1972 which were described under the heading "Neil Grid" by Westoll et al (1973). At each station, surficial material was cleared away and a pit dug in the underlying soil. In virtually all cases, development of discrete soil horizons was absent. Most material could probably be considered as falling within the C soil category.

Sample preparation and analysis were performed by Chemex Labs Ltd. of North Vancouver, B.C. using standard procedures. The 80 mesh fractions were digested in hot nitric/perchloric acid and analyzed by Atomic Absorption Spectrometry for copper, lead and zinc.

SURVEY RESULTS

(a) Geology (See Fig. 2)

The geology of the area has been described briefly by Dickie (Westoll et al, 1973). A number of imbricate sheets have been thrust up from the west, exposing rocks successively younger to the east. Ages range from Lower Silurian to Upper Devonian. A stream valley incised across the section has revealed the presence, in one of these slices, of an anticlinal dome. This feature has been mapped in detail by Katayama.

A central core of light grey dolomite referred to the Lower Devonian Stone Formation is surrounded by a series of concentric shells of standstone and strongly brecciated and recrystallized dolomite, referred to the Middle Devonian Dunedin Formation. Zebra rock is commonly developed in the dolomite units. Stratigraphically above these units on the east is a section of black shale containing two thin but apparently continuous units of banded dark grey dolomite, the lower of which can be traced around the southern part of the dome.

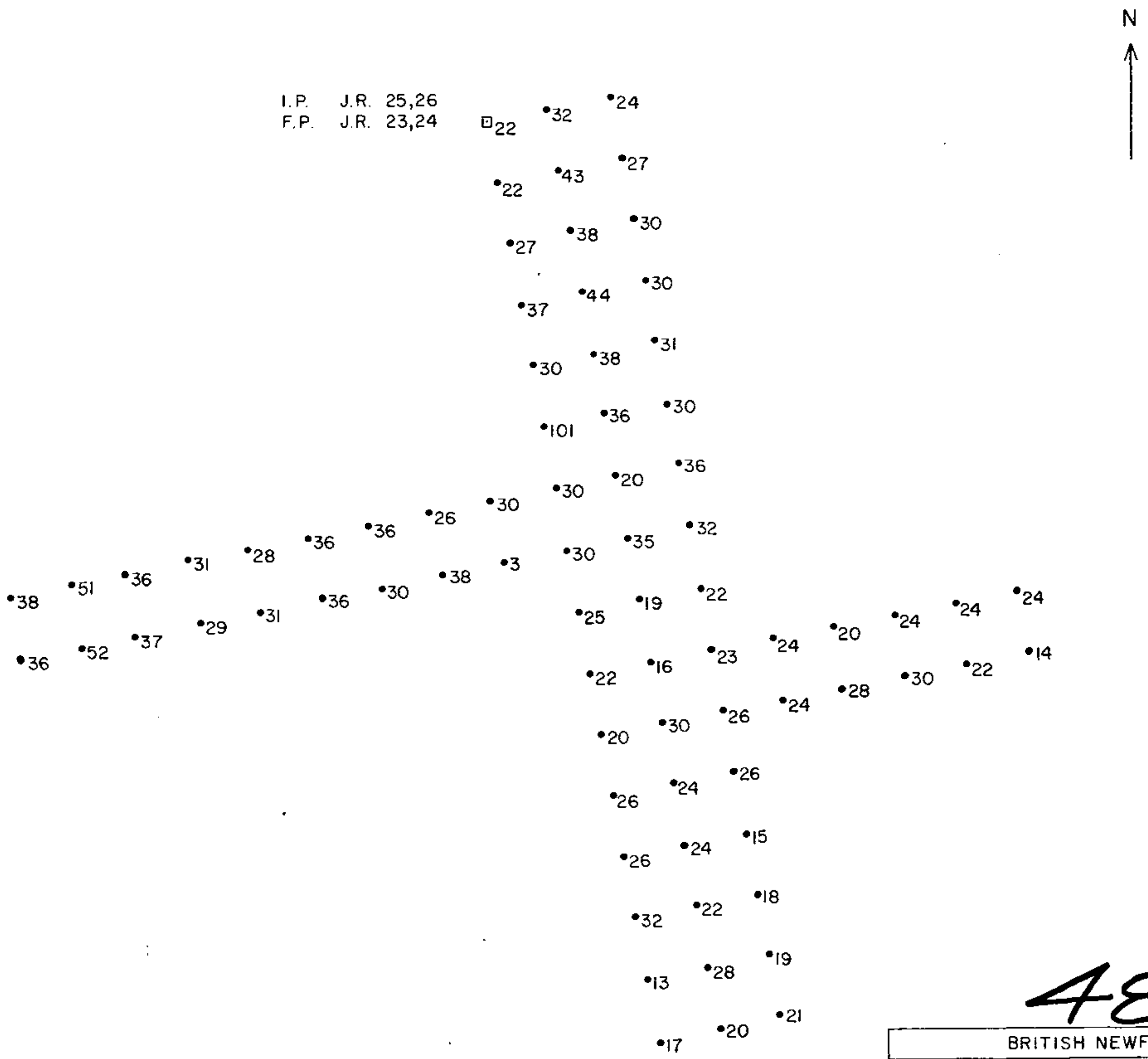
The sequence along the west side of the dome, although apparently correlative with that on the east, differs in lithology, containing at least two relatively thick sections of strongly brecciated and recrystallized dolomite. The stratigraphically lower of these fingers out to the south into black shale. This interfingering and the variation in lithology across the axis of the dome indicate that the axis closely coincides with a facies front which developed in Middle to Late Devonian time. It is probable that the two dolomite sections along the western side are correlative with the Pine Point - Sulphur Point sequence developed to the south in the Nabesche River area. (See Pearson, 1974).

(b) Geochemistry

Figures 3, 4 and 5 show the assay results for copper, lead and zinc respectively. Figure 6 shows cumulative frequency distribution curves for the three metals. Those for copper and lead indicate the presence of single homogeneous populations. Slight variations from linearity probably reflect analytical distortions accentuated by the relatively small number of samples.

The plot of zinc values shows two distinct inflections at 140 ppm and 200 ppm. These are taken to reflect the presence of two populations plus a third, mixed, group. Tentatively those samples showing values in excess of 200 ppm are classed as anomalous, and those in the range 140 ppm to 200 ppm as possibly anomalous. The small size of the total sample population should be considered as mitigating against a too strict adherence to these bounding values.

A review of soil data for the area presented as a part of the study of 1972 (Westoll et al, 1973) shows a much more complex zinc distribution in a total population of 334 samples. Inflection points are found at 168 ppm, 210 ppm



4886 M3

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Fig. 3	NEIL GRID EXTENSION, J.R. GROUP SOIL GEOCHEMICAL SURVEY — Cu	
DATE : OCT. 1973	SCALE : 1" = 400'	DRAWN BY : B.D.P.
DATA BY CHEMEX	MAP No.	TRACED BY : B.D.P.
VALUES IN P.P.M.	MAP REF. 94G/4W	CHECKED BY : B.D.P.

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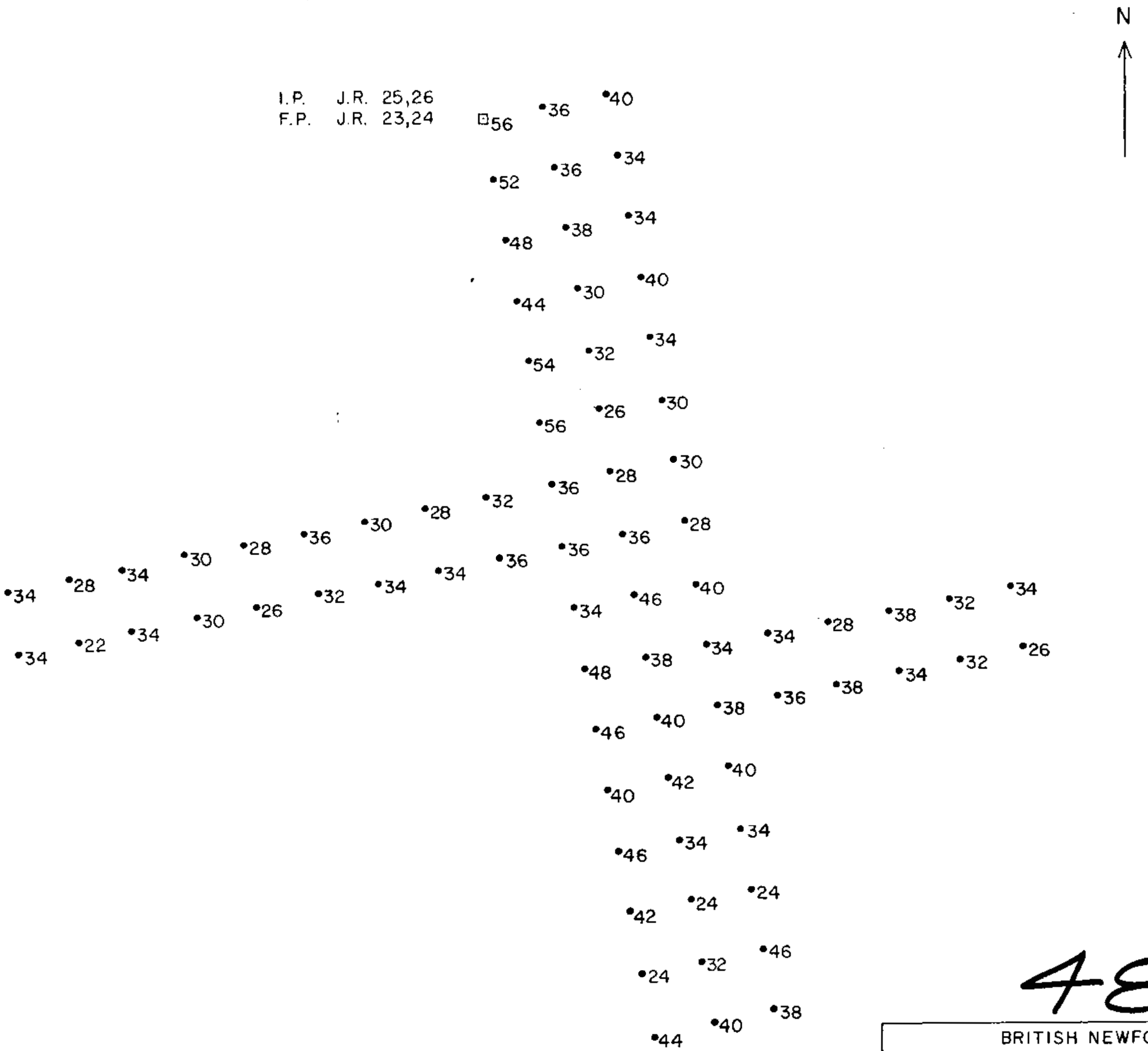
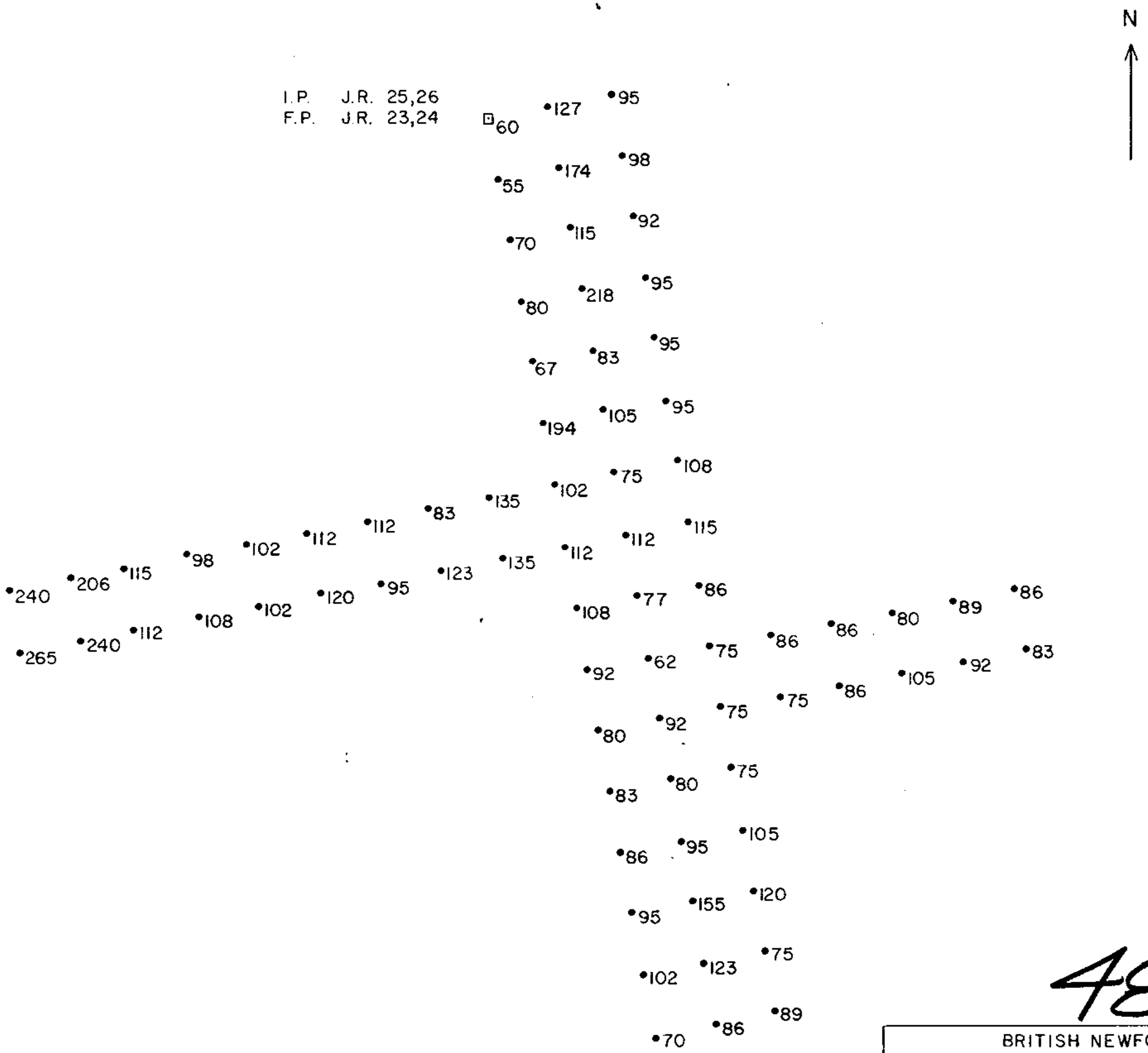
NO. 4886 MAP #3



4886 M4

BRITISH NEWFOUNDLAND EXPLORATION, LTD.		
Fig. 4	NEIL GRID EXTENSION, J.R. GROUP SOIL GEOCHEMICAL SURVEY — Pb	
DATE : OCT. 1973	SCALE : 1" = 400'	DRAWN BY : B.D.P.
DATA BY CHEMEX	MAP No.	TRACED BY : B.D.P.
VALUES IN P.P.M.	MAP REF. 94G/4W	CHECKED BY : B.D.P.



4886 M5

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Fig. 5	NEIL GRID EXTENSION, J.R. GROUP SOIL GEOCHEMICAL SURVEY — Zn	
DATE : OCT. 1973	SCALE : 1" = 400'	DRAWN BY : B.D.P.
DATA BY CHEMEX	MAP No.	TRACED BY : B.D.P.
VALUES IN P.P.M.	MAP REF. 94G/4W	CHECKED BY : B.D.P.

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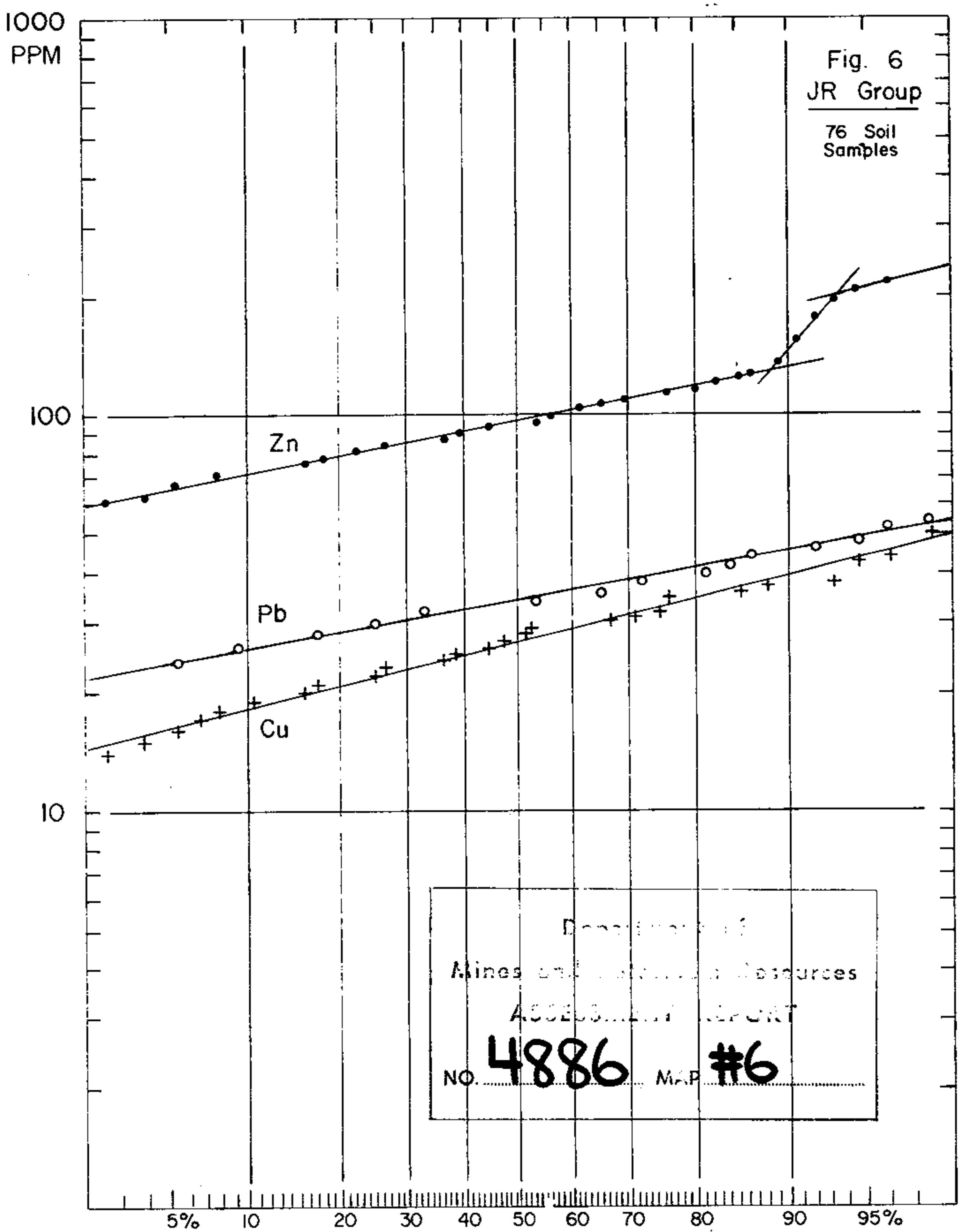
ASSESSMENT REPORT

NO. 4886 MAP #5


1000
PPM
100
10
Fig. 6
JR Group
76 Soil Samples
Zn
Pb
Cu
5%
10
20
30
40
50
60
70
80
90
95%

and 270 ppm. With these various factors in mind, we have chosen to refer to values above 200 ppm as possibly anomalous, and those above 270 ppm as definitely anomalous.

Only five possibly anomalous samples were obtained in this year's survey. However, four of these were found in an area where previous sampling had indicated the presence of 6 anomalous and 6 possibly anomalous values. Accordingly they are deemed to be significant.

Thirty-four of the samples taken this year were obtained at sites sampled last year. These sites lie along the line running south from the reference claim cairn, and all sites to the west. See Table I for a comparison. Replication is generally very good, but conspicuously less so in those cases where high values occur. From this observation it is inferred that the anomalous samples represent non-equilibrium assemblages which are probably mechanical mixtures of finely comminuted rock and sulphides/oxides of zinc.

(c) Prospecting

Twelve mandays were devoted to prospecting within the claim groups. One specimen of bornite was found in dolomitic talus below the ridge where, in 1972, rock sampling had shown one site to be high in copper. A second talus fragment found nearby contained small amounts of galena. Investigation of the ridge, which is well exposed and easily accessible, revealed no further traces of sulfide mineralization. It was concluded that no significant amounts of sulfide are likely to be found in the area of the ridge.

TABLE I

REPLICATION STUDY OF ZINC IN SOIL SAMPLES

(Values in ppm)

1972	1973
41	60
47	55
55	70
76	80
65	67
108	194
95	102
112	115
105	108
80	92
92	80
95	83
89	86
108	95
98	102
83	83
152	135
105	83
112	112
102	112
95	102
105	98
115	115
248	206
218	240
140	135
123	123
98	95
108	120
102	102
105	108
123	112
330	240
110	265

CORRELATION OF GEOLOGY WITH GEOCHEMISTRY

Soil sampling in 1972 (Westoll et al, 1973) and 1973 has revealed the presence of an elongate grouping of sample sites showing the presence of unusually large amounts of zinc. (Sixteen samples from thirteen sites.) The zone has a surface area of approximately 500,000 square feet. Reference to Fig. 2 shows that the position of this zone coincides with that of the zone where Katayama has mapped a change in facies within the Devonian succession from strongly brecciated and recrystallized dolomite to black shale. In the context of current exploration ideas, this association is thought to be highly significant.

This area should be studied in much greater detail. Mapping should be carried out on a scale of 50' to the inch, and a soil sampling survey run on 25' centres. The area should also be carefully prospected using recently developed colorimetric techniques. Pitting and X-ray drilling may then be used for follow-up if initial results are favourable.

Respectfully Submitted

Bradford D. Pearson

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K. Barry McHale

K. Barry McHale, F.G.A.C.

Vancouver, B.C.
February 20, 1974

BIBLIOGRAPHY

Pearson, B.D., Geological and Geochemical Report on the Nabesche No. 1, 2, 3 and 4 Groups of Mineral Claims, Nabesche River Area, Liard M.D., B.C., 1974

Westoll, N.D.S. and Sullivan, J., Geological and Geochemical Report, Mount Bertha Area Claim Groups, Liard M.D., B.C., 1973

APPENDIX I

ITEMISED MANDAYS OF WORK

PERSONNEL	SALARY ($/Day)	J.R. CLAIM GROUP NO. A (27 Claims)	NO. B (27 Claims)
PEARSON	$62.00	1	1
KATAYAMA	75.00	1	1
SMITH	36.75	5	-
LEE	22.00	5	-
MASTERTON	23.80	1½	½
PERKINS	21.00	1	1
GANDHI	75.00	1	-
DRUMMOND	28.10	1½	½
TOTALS PER CLAIM GROUP		17	4

21 TOTAL MANDAYS

APPENDIX II

CONSOLIDATED DECLARATION OF COSTS

EXPENSES	J.R. CLAIM GROUP NO. A (27 Claims)	NO. B (27 Claims)
WAGES AND BOARD	$1,003.96	$ 260.48
HELICOPTER COSTS	2,712.62	703.78
GEOCHEMICAL ANALYSES	188.31	154.07
REPORT PREPARATION	400.00	200.00
TOTALS	$4,304.89	$1,318.33

Declared before me at the
of , in the
Province of British Columbia, this
day of , A.D.

Godfrey Pearson

A Commissioner for taking Affidavits within British Col
A Notary Public in and for the Province of British Col

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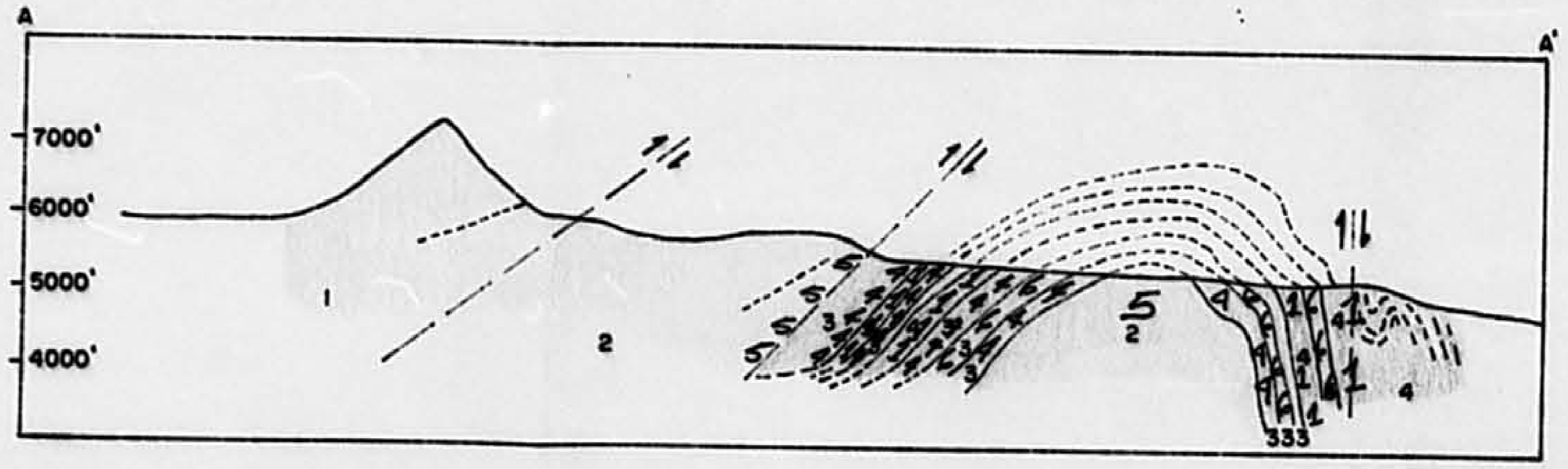
NO. 4886 MAP #2

SYMBOLS

60	STRIKE & DIP SYMBOL
	THRUST FAULT (DIP INDICATED BY ▼)
– – –	NORMAL FAULT
	ZONE OF LATERAL FACIES CHANGE
A——A'	TRACE OF CROSS SECTION

FORMATIONAL CORRELATIONS

4	BESA RIVER FORMATION (UPPER DEVONIAN)
3	DUNEDIN FORMATION (MIDDLE DEVONIAN)
2	STONE FORMATION (LOWER DEVONIAN)
1	NONDA FORMATION (SILURIAN)



LITHOLOGY

1	SHALE, CALCAREOUS SHALE, SILTSTONE (BLACK TO DARK GREY)
2	SANDSTONE, QUARTZITE
3	LIMESTONE, SHALY LIMESTONE (DARK GREY)
4	DOLOMITE, STRONGLY BRECCIATED (LIGHT GREY)
5	DOLOMITE, WEAK TO MEDIUM BRECCIATION (LIGHT TO MEDIUM GREY)
6	DOLOMITE, BANDED (DARK GREY)

Fig. 2 To accompany Geological & Geochemical Report by B. D. Pearson, P. Eng. & K. B. McHale, F.G.A.C., dated Feb. 15, 1974, on the J.R. Claim Groups A & B. B.D.Pearson K.B.McHale

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GEOLOGY - J.R. CLAIM GROUP AREA

DATE : FEB. 1974	SCALE : 1" = 2000'	DRAWN BY : T. K.
LIARD M.D.	MAP No.	TRACED BY : K. B. McH.
	MAP REF. 94G/4W	CHECKED BY : B.D.P.

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