4214

REPORT

on the

MAGNETOMETER INDUCED POLARIZATION

and

GEOCHEMICAL SURVEYS

on the

RICH GROUP

CHERRY CREEK AREA

KAMLOOPS MINING DIVISION

PROVINCE OF BRITISH COLUMBIA

for

LEWES RIVER MINES LIMITED (NPL)

COPPER GIANT MINING CORPORATION LIMITED (NPL)

J.B. Prendergast, M.A. P.Eng.

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INTRODUCTION

A magnetometer, induced polarization and geochemical survey were carried out over a part of the Rich Group of mining claims in the Kamloops area of Central British Columbia. This work was done at the request of Lewes River Mines Limited (NPL) and Copper Giant Mining Corporation Limited (NPL) under the direction of C.T. Pasieka. Some 187,800 feet of magnetics, 79,400 feet of IP and 75,500 feet of geochemical measurements were made.

The results have been presented as contoured plans of magnetics, resistivity (two separations), chargeability (two separations) parts per million copper and as profiles of chargeability and resistivity. Slightly anomalous chargeability values have been observed with some correlation to weak magnetic highs, positive copper geochem anomalies and, in some cases, reduced resistivity. The cause of these anomalies could be metallic sulphides and/or magnetite. Thirteen percussion holes have been recommended to test the zones of possible interest.

PURPOSE

The magnetometer survey was carried out to delineate zones for evaluation using the induced polarization technique. It was hoped that in the course of the dual geophysical surveys that areas in the Rich Group of mining claims, potential metallic sulphide targets would be turned up for further investigation by diamond drilling.

PROPERTY

Description, Location and Accessibility.

The mining property under discussion herein may be more particularly described as:-

Lewes River Mines Limited (NPL)

Claim	Record Nos.	Expiry Date
RICH # 3	103761	February 1, 1973
4	62	
5	63	
6	103764	
33	103787	
34	88	
35	89	
36	103790	
77	103831	
78	32	
79	33	
80	34	
81	35	
82	36	
83	37	
84	38	
85	39	
86	40	
87	41	
88	42	
89	43	
90	44	
91	45	
92	46	
93	47	
94	103848	

Copper Giant Mining Corporation Limited (NPL)

Claim	Record Nos.	Expiry Date
RICH # 1	103759	February 1, 1973
2	103760	
59	103813	
60	103814	
61	15	

Copper Giant Mining Corporation Limited (NPL)

Claim	Record Nos.	Expiry Date
RICH # 62	103816	February 1, 1973
63	17	
64	18	
65	19	
66	20	
67	21	
68	22	
69		
70	24	
71	25	
72	26	
73	27	
74	28	
75	29	
76	103830	

LOCATION & ACCESS

The located mining claims described above are under an option agreement by Lewes River Mines Limited (NPL) and Copper Giant Mining Corporation Limited (NPL).

The Group is located some 11.5 miles southwest of the City of Kamloops, British Columbia. Kamloops is itself situated 300 air miles northeast of Vancouver.

The Kamloops area is well served by public transportation systems including the Canadian Pacific and Canadian National Railways, the Trans Canada Highway and Pacific Western Airlines. Frequent service on all of these is available.

The property itself may be reached by driving west along the Trans Canada Highway to a point twelve miles from Kamloops, thence southerly on secondary gravel roads to a point about six miles

south of the main highway. Traversing over the ground was on foot along a network of base lines and picket lines.

WATER, TIMBER AND TOPOGRAPHY

There are a number of small creeks within the property boundary and one pond on line 20E some 400 feet northwest of the base line. Sufficient water for drilling is available on the property. The usual forest cover of the higher country of the Kamloops area is present, i.e. a reasonably dense coniferous growth of pine, spruce, cedar and hemlock. Some poplar and birth trees are intermixed with the evergreens. Underbrush is not extreme. The country in and around the property is rolling with some steepness associated with the drainage pattern. Elevations range from just over 5000 feet to just under 4000 feet above sea level.

GEOLOGY

The oldest rocks in the area are Paleozoic sediments and volcanics, both badly deformed, altered and sheared. These in turn have been overlain by the Triassic Age, Nicola Group of altered volcanics with minor sediments also present. Intrusive rocks of widely varying composition and of Jurassic Age cut the older formations and are evidently the source of much of the economic mineralization in the area.

Post Coast Intrusive formations include Cretaceous and Tertiary sediments and lavas, relatively unaltered, and later Cenozoic rocks of similar description. A few occurrences of acidic intrusives of late Cretaceous or Tertiary age, intrude older formations north of Kamloops Lake along the Carabine and Criss Creek drainages.

In the area near Kamloops Lake triassic rocks seem to have northwesterly trending fold axes. Airborne magnetic data indicates that most of the other trends in the general area are slightly west of north. Major structural lineaments are expressed topographically by the west trending South Thompson River and Kamloops Lake features and by the north striking North Thompson River and Guichon Creek.

Locally the property under discussion lies in an area mapped by the Geological Survey of Canada (Map 886A) as being underlain by rocks of the Triassic Nicola Group. These consist of andesites and basalts with minor associated sedimentary rocks. They are largely altered with predominately grey to green colour due to chloritizations and epidotization - variations from the typical "greenstone" appearance are due to varying amounts of iron oxides.

Intrusive activity near the property includes the Iron Mask Batholith with which much of the recent mineral exploration activity in the Kamloops area has been associated. Smaller occurrences of Coast Intrusive have been mapped west of the property near the Dairy Lake, evidence indicates these to be somewhat larger than surface mapping has shown them. As noted above copper mineralization of interest seems to be mainly associated with Coast Intrusions.

FIELD MEASUREMENTS

Using a grid having picket lines running in a northwest-southeast direction and controlled by base lines cut perpendicular to this, a magnetometer survey was carried out. A Seintrey MF2 fluxgate magnetometer was read at 100 foot intervals along the picket lines which are spaced at 400 feet. Some 187,800 feet of line were run in this fashion and evaluated prior to laying out the induced polarization check work.

A Huntic Mark III receiver and 2.5 kw transmitter were employed to observe chargeability and resistivity at selected locations. A pole-dipole electrode assay was chosen and a system of survey allowing exploration at two separations (two depths below surface). This method allows for correlation of the results with depth. The Mark III receiver also permits the observation of three points on the polarization decay curve, thus giving the interpreter a further and valuable means of assessing the data.

Soil samples for geochemical analysis were collected in the five main areas of interest as delineated by the geophysical work. These samples were analyzed for copper content, plotted and contoured.

PRENSENTATION OF RESULTS

The magnetic readings have been corrected for diurnal variation, posted on a map of 1 inch equals 400 feet scale and contoured.

The more sophisticated data resulting from the induced polarisation work has been treated in dual fashion. The resistivity and chargeability data for each of the 200 and 400 foot separations have been posted on similar maps to the magnetics and contoured. These data, now including all values on the decay curve for each observation point, have also been plotted as profiles for each line read.

Geochemical data has been posted and contoured on the same base scale.

DISCUSSION OF RESULTS

Some nine zones of anomalous magnetic valves were turned up by the survey. These range in intensity from several hundred gammas above background in the western corner of the surveyed area to a few locally prominent points a few thousand gammas above background on the high side to local positives of 100 to 200 gammas. None of the features is thought to be of any direct economic significance. They have served to position the induced polarization lines and to indicate geological trends. The general north easterly trend is at odds with regional strikes in the area but in agreement with published aeromagnetic information.

No anomalies of an intensity or form that might be associated with sub-cropping intrusives are evident. The trends are probably related to local deformations of the volcanic flows. The more intense anomalies of the west and north central parts of the survey are due, in all probability, to locally higher concentrations of magnetite in the underlying rocks.
All features were investigated by induced polarization surveying with the results described below.

INDUCED POLARIZATION

No high intensity chargeability anomalies were turned up in the present work. However a number of features varying in amplitude from 1.5 to 2 times local background were discovered. Five separate features are commented on in this section.

Zone A Located in the west corner of the survey area Zone A shows a chargeability amplitude of background plus 50 per cent, a magnetic high of 400 to 600 gammas and locally high resistivity; in addition locally anomalous geochemical values to the east. The cause is probably local high magnetite content and the zone is of secondary importance.

Zone B Somewhat higher chargeability is displayed here, about 1.6 times background, good geochemical support, very slight magnetic correlation, and no distinct resistivity association. Despite the weakness of the feature the cause of the chargeability is worth investigating.

Zone C The anomaly in this instance reaches twice local background values. No magnetic association is noted, a slightly lower resistivity trend is correlateable, and positive copper values occur nearby. Sulphides could be the cause of the feature and further effort is warranted.

Zone D In this instance an anomaly of 1.5 to 1.7 times background has been detected. No magnetic, resistivity or geochemical association is present and the anomaly is not considered to be of high priority.

Zone E The feature in the north central part of the survey area has an amplitude of about 1.8 times background over its short extent (400 to 800 feet). The chargeability zone is within an area of relatively low resistivity and is associated with a weak magnetic feature as well as weakly anomalous copper value. The magnetic map indicates an area of somewhat greater geological complexity. The cause of the feature should be investigated.

SUMMARY AND CONCLUSION

A magnetometer survey over a portion of the joint venture Lewes River - Copper Giant, Kamloops area claim group was performed, evaluated and followed up by induced polarization profiling and soil sampling. The results indicate an overall area of relatively low magnetic intensity with five weakly anomalous induced polarization features and some quite positive copper anomalies.

Three zones are worth further investigation.

RECOMMENDATION

Considering the results of these surveys percussion drilling would be warranted to test the features. A preference is given initially over diamond drilling on two counts. First of all the cross correlation of the three exploration techniques is not precise and often indicates a zone of interest rather than a point of line. Secondly percussion drilling is less expensive per foot and thereby allows a wider coverage on the ground for the same expenditure.

Drilling is recommended as listed below:

ZONE	LOCATION	HOLES
B	Line	Vertical 200 - 250 feet deep, at 34S/36S, 38S, 42S, 40S and 46S Total: 1200 - 1500 feet.
* C	Line	Vertical 200 - 250 feet deep, at 24S, 26 and 50S and 29S. Total: 600 - 750 feet.
E	Line	Vertical 200 - 250 feet deep, at 22S, 24S and 28S. Total: 800 - 1000 feet.

* This zone is very close to the property boundary; the boundary should be positively established. Negotiations for a joint effort with the holders of the claims adjoining to the south and east with a view to detailing the feature before drilling.

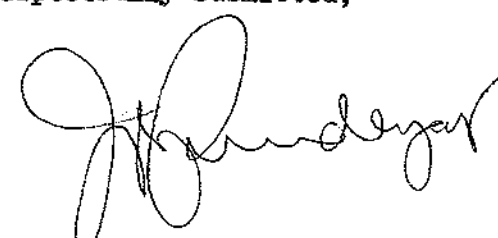
If the results of the drilling are positive then further geophysical and geochemical work should be done in order to properly design a more complete drilling program.

Estimated costs for the above recommendations are as follows:-

A.	Percussion drilling - 3000' @ $3 per foot	9,000.00
B.	Diamond Drilling BQ Wireline - 3000' @ $10 " "	30,000.00
C.	Sampling & Assaying	2,000.00
D.	Consulting & Supervision	4,000.00
E.	Transport, Communication, Accommodation	4,500.00
F.	Contingency	7,425.00
	TOTAL - PHASE 1	$ 56,925.00

It is to be noted that the continuing exploration programme will be contingent upon results of the preliminary stages and, in fact, may be expanded or curtailed.

Respectfully submitted,



J.B. Prendergast, M.A. P.Eng.

B.C. Licence
Expiry date
May 20/13

DECLARATION OF WORK AND EXPENDITURES

I, JOSEPH BENOIT PRENDERGAST of the City of Calgary, Province of Alberta, HEREBY DECLARE:

1. That the following work was carried out on the Rich group of claims in the Cherry Creek area of the Kamloops Mining Division in the Province of British Columbia on behalf of Lewes River Mines Limited (NPL) and Copper Giant Mining Corporation Limited (NPL) as joint operators of the project:

a) 42.88 miles of line cutting and picketing

b) 37 miles of magnetometer surveying

c) 24 miles of geochemical sample collecting and 1249 analyses.

d) 13 operational days and 2 weather days of Induced Polarization surveying.

2. The above work was invoiced to the above mentioned mining companies at the rates indicated below:

a) Line cutting at $95.00 per mile for 42.88 miles or	$4,073.60
b) Magnetometer surveying at $55.00 per mile for 37 miles at	2,035.00
c) Geochemical sampling at $50.00 per mile and analyses	2,698.80
d) I.P. Surveying at $495.00 per operating day and $400.00 per weather day	6,235.00
Total invoiced	15,042.40

Dated this 23 day of January, 1973 at the City of Calgary, Province of Alberta.

J.B. Prendergast, M.A., P.Eng.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. B. PRENDERGAST

Expiry Date: May 28, 1973

LIST OF PERSONNEL

Name	Period	Position	Salary
R.J. ARSENAULT 202 - 421 Greenstone Drive, Kamloops, B.C	JUNE 8,9,10 12,22,24,25, 26,27,28,29, 30 JULY 1,2,3, 4,5,6,10,12	Geophysical Technician	$70.00 per day
P. MARSHALL 202 - 421 Greenstone Drive, Kamloops, B.C.	JUNE 12,22,23, 24,25,26,27, 28,29,30 JULY 1,2,3,4, 5,8	IP Operator	$35.00 per day
BRIAN SCHIEBELHEIN 202 - 421 Greenstone Drive, Kamloops, B.C.	JUNE 12,13,14, 15,16,17,18, 19,22,23,24, 25,26,27,28 JULY 1,3,4	IP Asst.	$25.00 per day
DAL CHRISTENSEN 202 - 421 Greenstone Drive, Kamloops, B.C.	JUNE 14,15,16, 17,18,19,22,25, 26,27,29,30 JULY 1	IP Asst.	$25.00 per day
BRUCE CAMPBELL 320 Lorne Street, Kamloops, B.C.	JUNE 23,24,25, 26,27,28,29, JULY 2,3,4,5	IP Asst.	$25.00 per day
RICK PESKOVITZ 314 - 267 4th Ave., Kamloops, B.C.	JUNE 23,24,25, 27,28,29 JULY 1,2,3,4, 5	IP Asst.	$25.00 per day
B. RICHARDSON 202 - 421 Greenstone Drive, Kamloops, B.C.	JUNE 26,27,28, 29,30 JULY 1	IP Asst.	$25.00 per day
JOHN MOEN 202 - 421 Greenstone Drive, Kamloops, B.C.	JUNE 26,28,29	IP Asst.	$25.00 per day

Name	Period	Position	Salary
BRUCE MILLER 202 - 421 Greenstone Drive, Kamloops, B.C.	JUNE 27,28,30 JULY 3,4,5	IP Asst.	$25.00 per day
LYLE UNWIN 11 - 8th Avenue, Kamloops, B.C.	JUNE 27, 30	IP Asst.	$25.00 per day
LILIAN NESLING 865 Seymour Street, Kamloops, B.C.	AUGUST 17,18	Typist	$16.50 per day

I, JOSEPH BENOIT PRENDERGAST, of the City of Calgary, Province of Alberta, HEREBY CERTIFY

1. THAT I am a geophysicist-geologist with offices at 1323 - 48th Avenue, N.E., Calgary, Alta.

2. THAT I am a graduate of the University of Toronto, B.A. (Physics and Geology,) M.A. (Geophysics) 1951.

3. THAT I have been actively and continuously engaged in mineral exploration and development for 18 years.

4. THAT I am a member of the Associations of Professional Engineers of Ontario, Manitoba, Alberta, and British Columbia.

5. THAT I have no interest, directly or indirectly, nor in the securities of, nor do I expect to receive any such interest in Lewes River Mines Ltd.(NPL) and/or Copper Giant Mining Corporation Ltd.(NPL).

6. THAT this report is based on data derived from work carried out directly under my supervision on the property and from government publications relevant to the area.

DATED this day of August, 1972, in the City of Province of

Respectfully submitted:

J.B. Prendergast, M.A., P.Eng.

B.C. licence
Expiry date
May 28/73

Mr. C. T. Pasieka
Box 175
Kamloops, B. C.

Mr. J. E. Bowles
Chief Gold Commissioner
Dept. of Mines and Petroleum Resources
Victoria, B. C.

File #166 Kamloops
Re: Rich Mineral Claims
Geophysical, Geochemical, Line Cutting Report.

4619

Dear Sir:

I have for reply your letter of March 8, 1973. A location sketch in duplicate is enclosed.

The Huntec Mk III receiver measures resistivity and the amplitude of the decay curve at four preselected positions in time, i. e. M1, M2, M3 and M4. The decay curve amplitudes are automatically normalized with respect to the resistivity reading. In this case the preselected total integrating time for the four 'M' readings was from 30 to 480 milliseconds after transmission shut-off time. The 'M' values may be combined to convert into milliseconds by the following:

$$0.3 (M1 + 2M2 + 4M3 + 8M4)$$

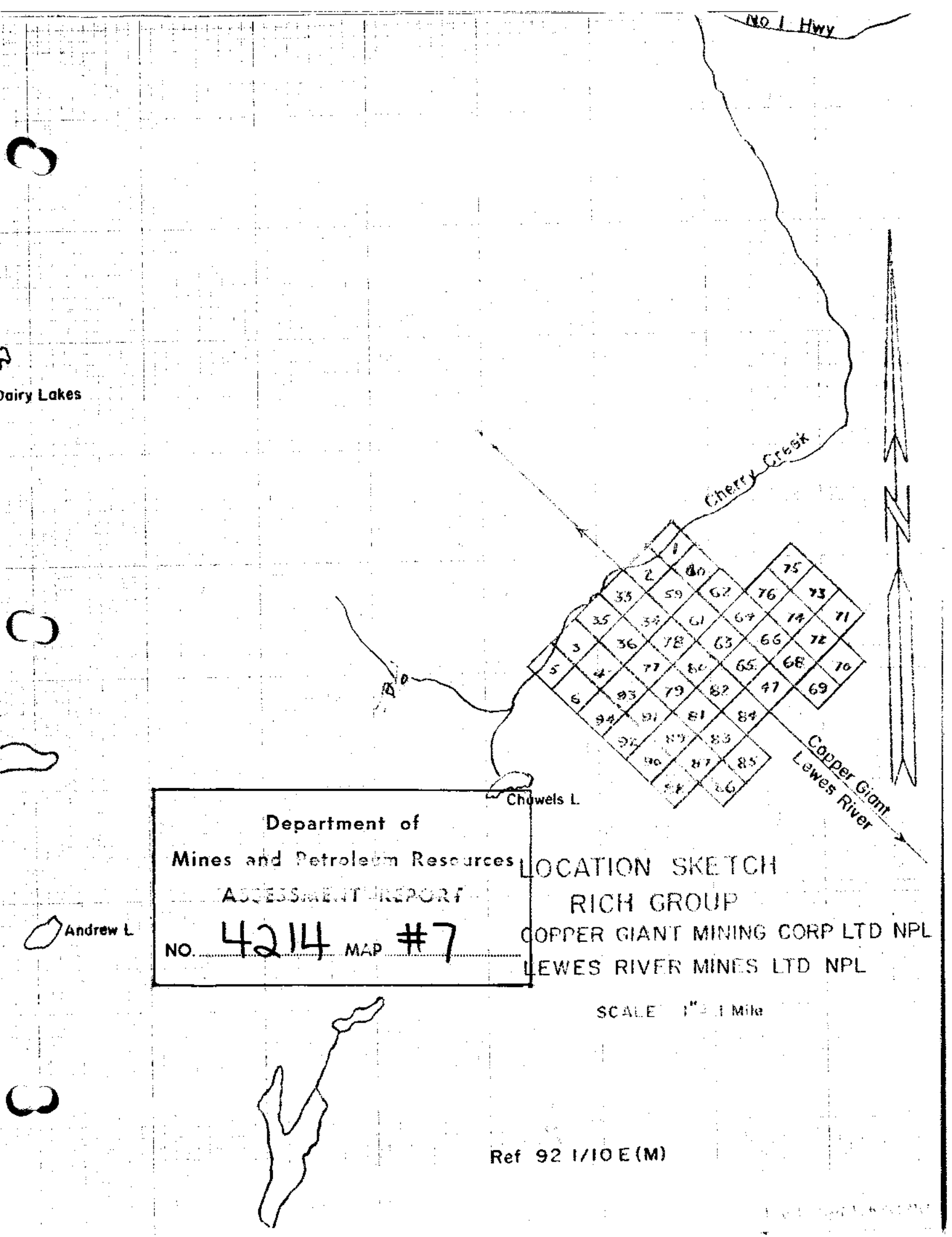
The 'B' horizon immediately below the humus layer was sampled at an average depth of one foot. The samples were extracted using the hot acid extraction technique, i. e. hot 1:3 nitric acid, digestion for thirty minutes followed by hot 1:3 hydrochloric acid. Copper determination was by means of atomic absorption and values expressed as parts per million.

Yours truly,

C. T. Pasieka

encl/2

REFERRED TO	DATE	INITIAL
D. M.		
C.G.C.		
C.C.		
D.C.G.C.		
D.C.C.		
ACCTS.		
C.M.B.		
C.I.		
C.A.		
R. T.		
C.P.E.		
FILING CLERK		

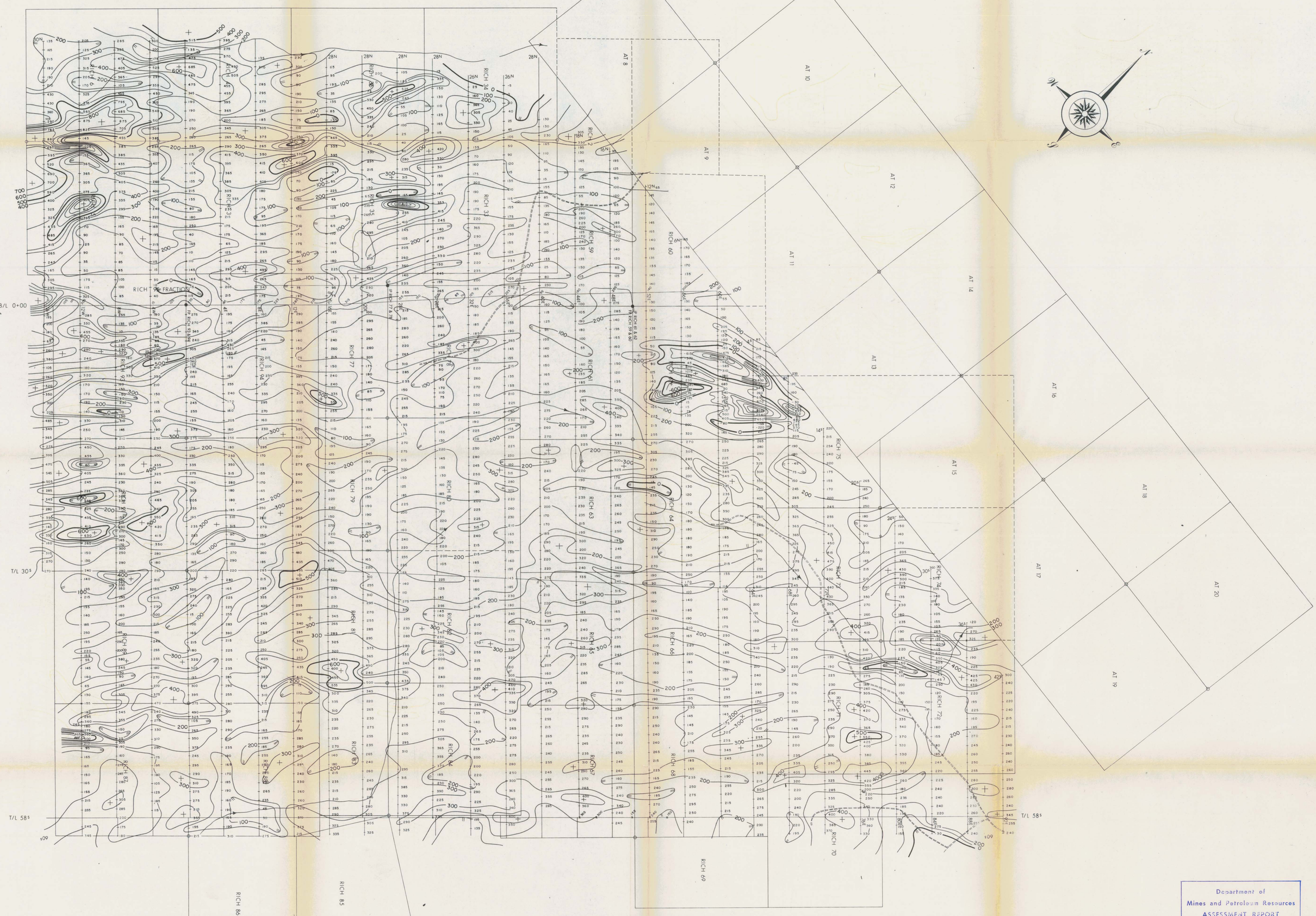


Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4214 MAP #7

LOCATION SKETCH
RICH GROUP
COPPER GIANT MINING CORP LTD NPL
LEWES RIVER MINES LTD NPL

SCALE 1" = 1 Mile

Ref 92 I/10 E (M)



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4214 MAP #2

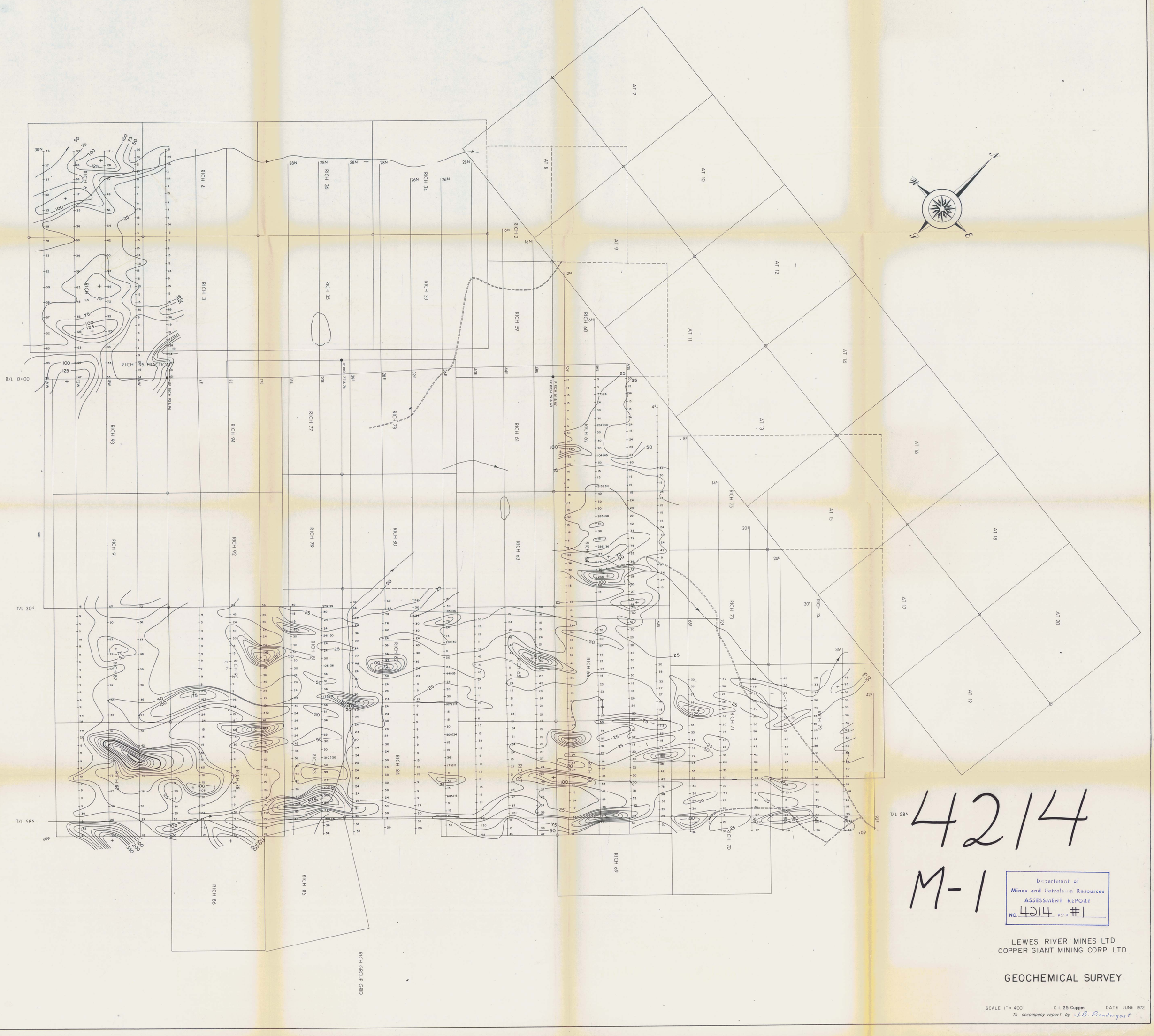
LEWES RIVER MINES LTD.
COPPER GIANT MINING CORP. LTD.

MAGNETOMETER SURVEY

SHARP MF-2

SCALE 1" = 400' C.I. 100 γ DATE: JUNE 1972

To accompany report by J.D. Prendergast



4214

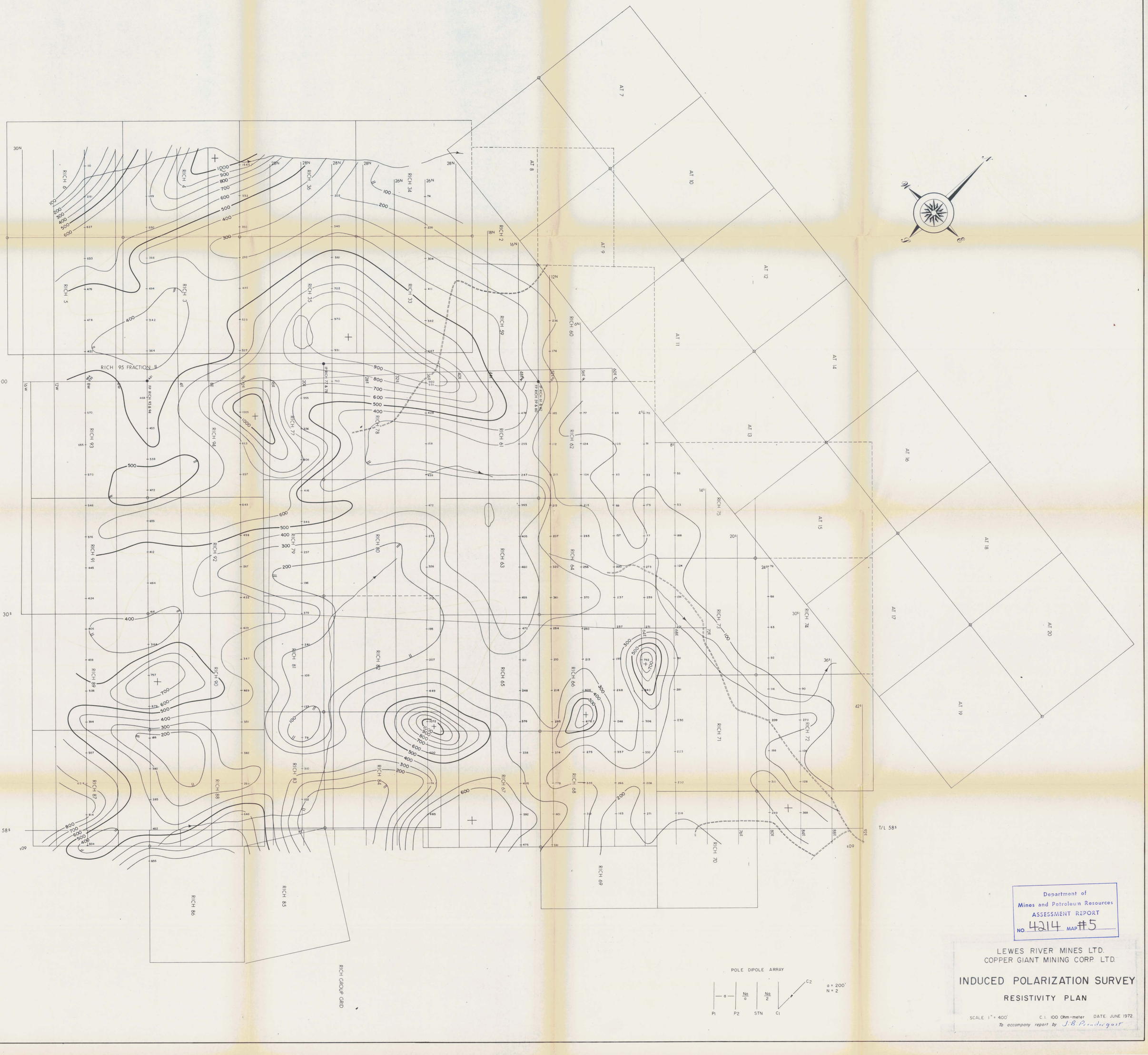
M-1

LEWES RIVER MINES LTD.
COPPER GIANT MINING CORP LTD.

GEOCHEMICAL SURVEY

SCALE 1" = 400' C.I. 25 Cuppm DATE JUNE 1972

To accompany report by J.B. Prendergast


RICH GROUP GRID
RICH 95 FRACTION
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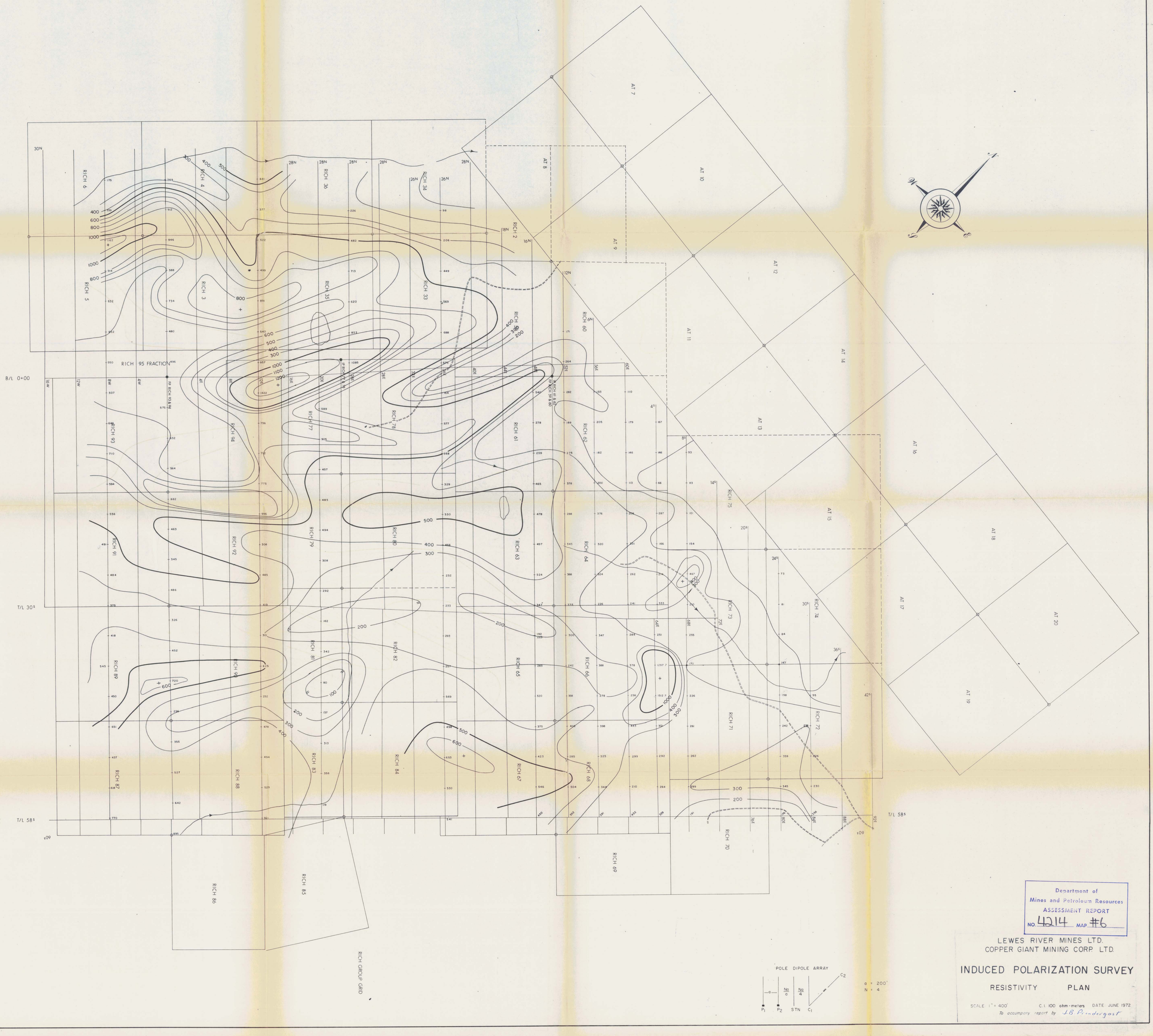
RICH 92
RICH 93
RICH 94
FF RICH 93 & 94
IP RICH 77 & 78
FF RICH 59 & 60
POLE DIPOLE ARRAY
a = 200'
N = 2
P1
P2
STN
C1
C2
LEWES RIVER MINES LTD.
COPPER GIANT MINING CORP. LTD.
INDUCED POLARIZATION SURVEY
RESISTIVITY PLAN
SCALE 1" = 400'
C.I. 100 Ohm-meter
DATE: JUNE 1972
To accompany report by J.B. Prendergast
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4214 MAP #5



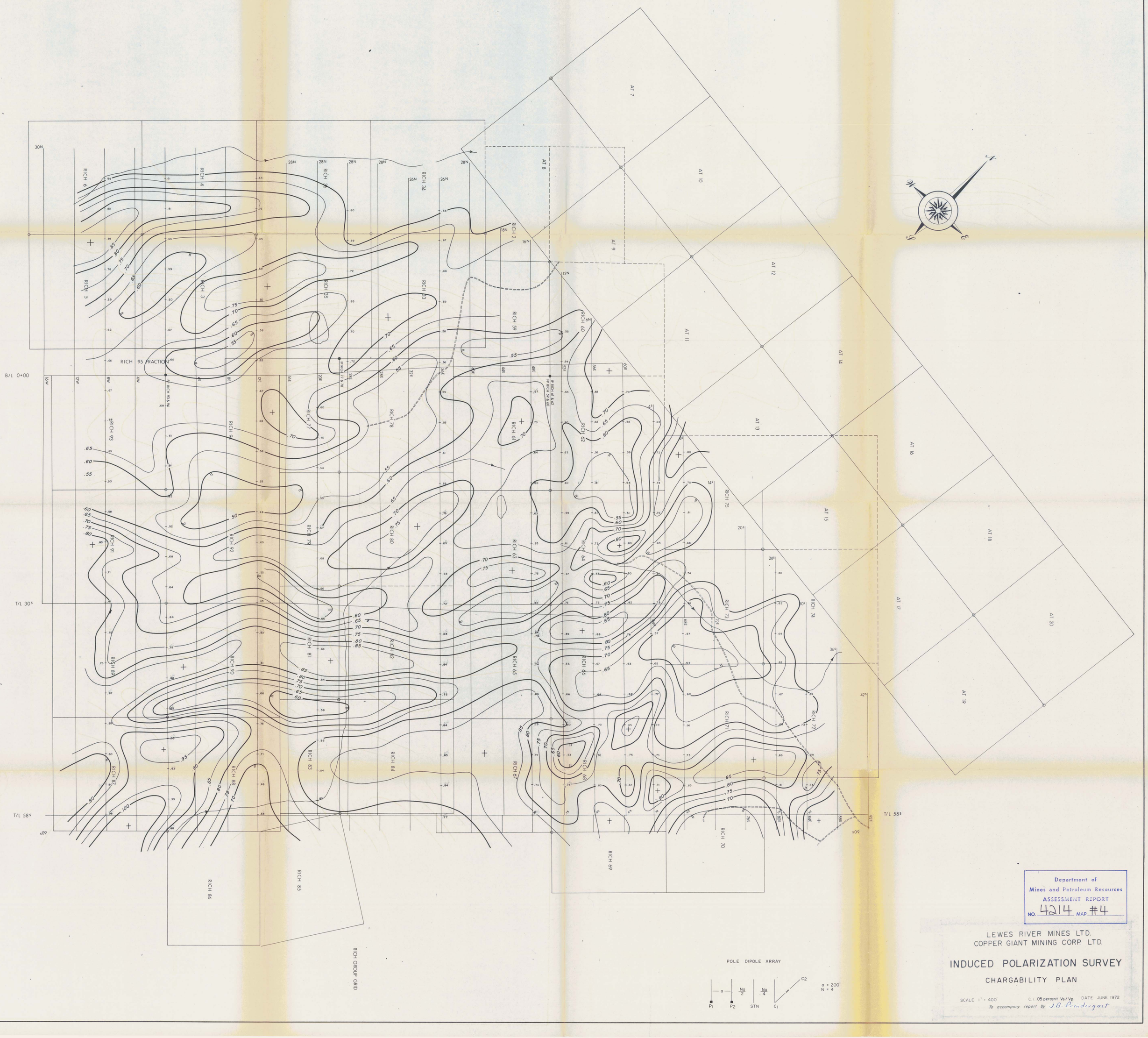
LEWES RIVER MINES LTD.
COPPER GIANT MINING CORP. LTD.

INDUCED POLARIZATION SURVEY

RESISTIVITY PLAN

SCALE 1" = 400' C.I. 100 ohm-meters DATE JUNE 1972

To accompany report by J.B. Prendergast



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
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LEWES RIVER MINES LTD.
COPPER GIANT MINING CORP. LTD.

INDUCED POLARIZATION SURVEY

CHARGABILITY PLAN

SCALE 1" = 400' C.I. 05 percent Vs/Vp DATE JUNE 1972

To accompany report by J.B. Prendergast

RICH 95 FRACTION

B/L 0+00

T/L 30S

T/L 58S

RICH 1 RICH 2 RICH 3 RICH 4 RICH 5 RICH 6 RICH 33 RICH 34 RICH 35 RICH 36 RICH 59 RICH 60 RICH 61 RICH 62 RICH 63 RICH 64 RICH 65 RICH 66 RICH 67 RICH 68 RICH 69 RICH 70 RICH 71 RICH 72 RICH 73 RICH 74 RICH 75 RICH 76 RICH 77 RICH 78 RICH 79 RICH 80 RICH 81 RICH 82 RICH 83 RICH 84 RICH 85 RICH 86 RICH 87 RICH 88 RICH 89 RICH 90 RICH 91 RICH 92 RICH 93

AT 7 AT 8 AT 9 AT 10 AT 11 AT 12 AT 13 AT 14 AT 15 AT 16 AT 17 AT 18 AT 19 AT 20

RICH GROUP GRID

IP RICH 77 & 78

IP RICH 61 & 62

FP RICH 93 & 94

FP RICH 59 & 60

· POLE DIPOLE ARRAY

P1 P2 STN C1 C2

a = 200'
N = 2

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4214 MAP #3

LEWES RIVER MINES LTD.
COPPER GIANT MINING CORP. LTD.

INDUCED POLARIZATION SURVEY

CHARGABILITY PLAN

SCALE 1" = 400' C.I. 05 percent Vs / Vp DATE JUNE 1972

To accompany report by J.B. Prendergast