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76-1171

ANNUAL REPORT

E.L. 9/66

1975-76

By: N.P. Stevens-Hoare

Draughting By: R. Wilson

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June, 1976

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FIGURES

FIG. 1 · Diagramatic Cross Section Red Hills-Gooseneck Area

FIG. 2 · Diagramatic Section Showing Depositional Relationships between Rock Units

FIG. 3 · Diagramatic N.-S. Stratigraphic Section of the Henty Fault Zone

1. INTRODUCTION

During 1975-76, exploration on the licence area involved geological mapping in the Red Hills, Gooseneck, Henty Fault Zone, Mt. Read and Lake Dora areas, with geochemical follow up of induced polarization anomalies in the Mt. Read-Henty Fault Zone and Red Hills-Gooseneck areas. A review of all previous work undertaken in the Selina-Dora area was also undertaken to enable an assessment of future exploration requirements and assignment of priorities.

Expenditure to 19th May, 1976 was $30,000 bringing the total expenditure on E.L. 9/66 since 1966 to approximately $873,000.

2. RED HILLS-GOOSENECK

2.1 Introduction

Previous exploration in the area outlined several major geophysical anomalies (Omnes 1970, 1971), and some drilling had been completed (McKibben 1972).

Work during 1975-76 involved the further evaluation of these anomalies to outline targets for diamond drilling, and included detailed geological mapping, soil sampling and ground magnetics.

2.2 Geology Fig. 1, Maps 2 - 4

The Mt. Read Volcanics are the oldest rocks present and have been subdivided into two rock units:

Unit 1 - is the most complex, consisting of lavas and pyroclastics. It is predominantly lavas in the north but pyroclastic in the south with a zone between, which appears to be flow brecciated lavas or agglomerates, occasionally showing pyroclastic features. The lavas to the north are massive, occasionally flow banded and brecciated; good continuity is visible across strike but correlation along strike is very difficult. The pyroclastics to the south, best seen in drill holes GN1 and GN2, are ignimbritic crystal tuffs. The associated black shales carry pyrite and some anomalous (11200 ppm) Zn values. The pyroclastics and black shales possibly(?) extend south towards Lake Westwood through a narrow corridor in the Owen, but are covered by moraine.

Unit 2 - The Red Hills intrusive, previously described as Darwin-type rhyolite is typically a brecciated fine grained acid volcanic characterised by a lack of large phenocrysts and the presence of haematite and chlorite within the matrix. Veins of

haematite, magnetite, chalcopyrite and quartz-chlorite are present throughout. Flow banding and brecciation visible near the south-west contact where the brecciated volcanic contains rounded modules of magnetite/haematite indicating the high Fe content to be an original part of the volcanic. Much of the brecciation present within the unit is tight with interlocking angular fragments. The occurrence of identical vein type mineralisation in rocks surrounding the main mass of Red Hills rock is also indicative of its intrusive nature.

The Tyndall Group, to the west, is faulted against Units 1 and 2 and consists of a quartz porphyry lava/intrusive body with characteristically large clear phenocrysts up to 5 mm in diameter. Flow banding is common with rare flow differentiation into 2 cm bands of quartz-rich and quartz-poor material. The Tyndall Group is represented to the east by volcanoclastic breccias (Jukes Conglomerate) which unconformably overlie the volcanics. In places the Owen Conglomerate conformably overlies the Tyndall Group and elsewhere unconformably overlies the older section of the Mt. Read Volcanics.

The lavas and intrusives yield little structural information and although the areal distribution of the rock types is well known, the structure is at best conjecture. One interpretation is given in Fig. 1. This implies a partially discordant sill-like form for Unit 2. Faulting is the most obvious structural feature in the area. Most of them appear to have only minor displacements and some were probably active in the late Cambrian.

2.3 Geochemistry Maps 6 - 12

I.P. Anomalous zones E5, E4 and E1 were soil sampled at 50 ft. intervals. 'C' Horizon material was collected and sieved to -10+80 and -80 mesh. Both fractions have been assayed for Cu, Pb and Zn. The results have been plotted as profiles with the I.P. data on 1:2400 scale. Where discrepancies occur between the results of each fraction both were plotted, however, if the results from each fraction were similar, the fraction showing the best contrast was plotted.

I.P. Zone E5 - This zone has a strong coincident double peaked response in Pb, Zn and Cu with the eastern peak generally having higher values, this response is seen on lines 28S., 32S., 40S., 48S., 56S., 64S. and 72S. The geochemical response is still seen on line 80S. despite thin peak and moraine cover. High Pb values with an erratic distribution are present over the anomaly.

The geochemical response is probably due to two black shale horizons or mineralisation closely associated with them.

Three diamond drill holes have been drilled on the zone by Rio Tinto and E.Z. GN2 approximately 750 ft. south of 80S. did not intersect any mineralisation. GN1 approximately 300 ft. north of 72S. did not intersect mineralisation. RHP95 approximately 100 ft. south of line 40S. extended from 15E. to 20E. and intersected black shales with minor sulphides (2'6" assayed 0.4% Pb, 0.15% Zn, 0.60% Cu) but did not reach the eastern part of the anomaly.

I.P. Zone E4 - On lines 24S. and 16S., this zone has a weak to non-existant Cu-Zn response with a few high Pb values.

The I.P. response is weak and hence it remains a low priority zone.

I.P. Zone E1 - The southern end of this zone was soil sampled on lines 48S., 40S. and 32S. to try and detect chalcopyrite-magnetite mineralisation. Very low Cu values were found with weak Pb, Zn responses. The results do not encourage any further work on lines 48S., 40S. and 32S.

Grab samples of rock were collected, pulverized and assayed. The results along with other rock samples from elsewhere in the lease are presented in Appendix A. Of particular note is sample No. 20773, a black shale from line 72S. assaying 950 ppm Cu, 970 ppm Pb and 11200 ppm Zn, when compared to the average assay value of 21 shale samples collected on E.L. 9/66 and E.L. 41/71 (198 ppm Cu, 116 ppm Pb, 127 ppm Zn).

2.4 Magnetics

A few additional traverses of proton magnetometer survey were undertaken to complete the coverage on lines 8N., ON., 8S., 16S. and 24S., the results have been plotted on Map 6. No new magnetic anomalies of significance are apparent.

2.5 Conclusions

Work to date has indicated two potential targets in the area:

(a) Copper mineralisation associated with the altered margins of the Red Hills intrusive.

(b) Massive, bedded Zn, Pb, Cu mineralisation of the Rosebery-Hercules type, associated with the black shale pyroclastic sequence which extends from the western side of Red Hills south through the Gooseneck area.

Both zones E5 and E1 are considered to warrant further testing by diamond drilling, possibly requiring seven drill holes.

3. N.E. OF MT. READ

3.1 Introduction

Reconnaissance geological mapping was extended north to the lease boundary, and soil sampling of geophysical anomalies was completed.

3.2 Geology Map 2

The geology of the Mt. Read area has been outlined previously in E.L. 9/66 Annual Reports 1973-74 and 1974-75. The reconnaissance mapping undertaken between line 60N. and the northern boundary of the lease indicated a sequence of acid feldspar phyric lavas, acid pyroclastics and minor intermediate volcanics being part of rock unit PV1, which appears to be equivalent to the Mt. Black Volcanics.

3.3 Geochemistry Maps 6, 13 - 20

Detailed soil sampling at 50 ft. intervals was undertaken over the I.P. anomalies between lines 46N. and 63N. Residual soil were encountered north of line 60N. but elsewhere glacial materials appear to predominate. 'C' Horizon material was collected where possible and sieved to -80 and -10+80 mesh and assayed for Cu, Pb and Zn.

The I.P. anomalies screened by soil geochemistry have been classified into four classes:

A. I.P. anomalies with a coincident geochemical response from residual soil.

B. Moderate I.P. anomalies covered by transported glacial soils.

C. Weak I.P. anomalies covered by transported glacial soils.

D. I.P. anomalies covered by residual soil showing no geochemical response.

The anomalies are listed below by class, and the classes have been plotted on Map 6.

Class	Anomaly	Map No.
A	50N. 250W.	8
	60N. 2950W.	14
	61N. 2950W.	13
B	46N. 700E.	8
	48N. 750E.	20
	52N. 650E.	17
	55N. 600-1000E.	16
	51N. 1900E.	17
C	48N. 350W.	20
	49N. 200-500W.	19
	51N. 100-400E.	18
	53N. 1250W.	17
	54N. 400W.	17
	56N. 750E.	15
	57N. 550E.	14
D	48N. 2050W.	20
	49N. 100-500E.	19
	57N. 980E.	18
	50N. 1280W.	18
	50N. 1900W.	18
	53N. 600E.	16
	56N. 300W.	15
	55N. 300W.	15
	57N. 150W.	14
	63N. 850W.	13
	62N. 900W.	13

3.4 Conclusions

1. The class A and B anomalies require further evaluation by detailed geophysical and geochemical work to close up the grid spacing along strike prior to diamond drilling.

2. It is considered that class C and D anomalies do not warrant further evaluation.

3. Some twenty two anomalous responses remain to be screened by soil geochemistry.

4. HENTY FAULT ZONE Map 5

Detailed mapping at 1:2400 scale was undertaken over the Henty Fault Zone in order to more accurately define the position of the fault and to obtain more information on the environment of the mineralisation intersected in diamond drill holes HFZ5 (49N.) and HFZ6 (48N.). The majority of the area is covered with glacial materials and few new outcrops were found. Several outcrops previously mapped are considered to be erratics and were disregarded.

The deformation associated with the Henty Fault Zone has been located near lines 44N., 45N., 46N. and 49N. while drilling has indicated its location on lines 40N., 42N., 43N., 48N. and 49N. However, north of line 49N. its position is still only approximate.

The mineralisation on lines 49N. and 48N. is considered to be a syngenetic massive sulphide deposit; predominantly massive pyrite with galena, chalcopyrite and sphalerite. It occurs in very siliceous and possibly silicified fine grained acid tuffs.

The occurrence of acid lava flows with 'cherty' tops, line 42N., is probably indicative of extrusion into shallow water. Regional "thinning" off of the Queenstown Pyroclastics and Dundas Group from Newton Creek to the Henty Camp is clear in Figs. 2 and 3.

5. WHITE SPUR

A limited amount of track cutting and regional soil sampling was undertaken in the White Spur area. The results of the geochemistry were not available at the time of writing.

New evidence of mineralisation was discovered when a boulder (2 ft. x 2 ft. x ?) of massive pyrite was found on the White Spur - Mt. Read track in the agglomerate sequence near line 38N. The massive pyrite carried a few fine quartz veins and assayed : 87 ppm Cu, 420 ppm Pb, 70 ppm Zn, 5 ppm Ni, 5 ppm Co, <0.1 ppm Au, 54 ppm Ag and 49.2% S.

The agglomerate occurs in rock unit PV3 (1974-75 Annual Report) which is predominantly crystal tuff, pyritic black shale, minor flow breccias and welded tuff. The agglomerate shows crude primary depositional bedding and contains a mixed variety of fragments up to 5 ft. in length. It probably indicates a depositional environment in close proximity to an explosive vent.

N.

S.

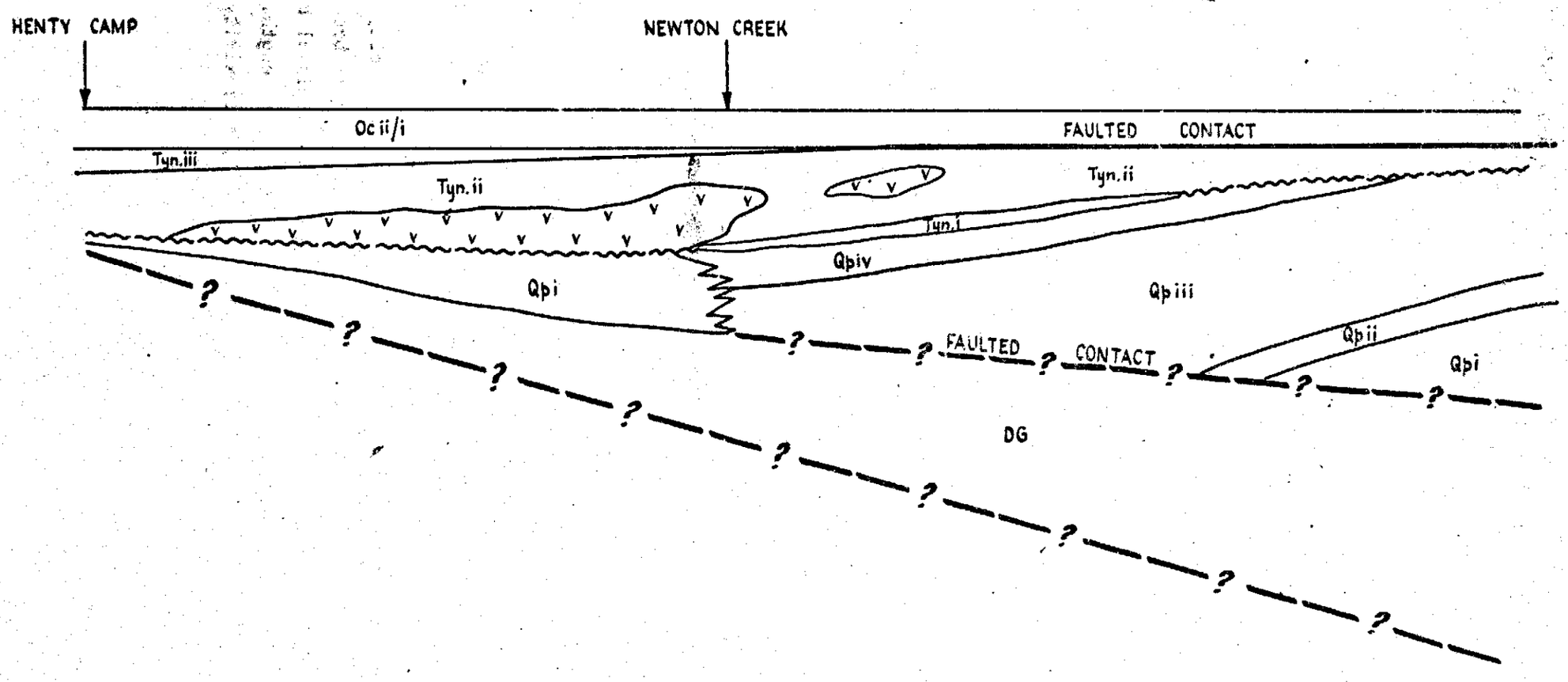


FIG. 2

DIAGRAMMATIC SECTION OF BLOCK A & B SHOWING DEPOSITIONAL RELATIONSHIP BETWEEN ROCK UNITS.

(SEE FIGURE FOR KEY)

N. S.

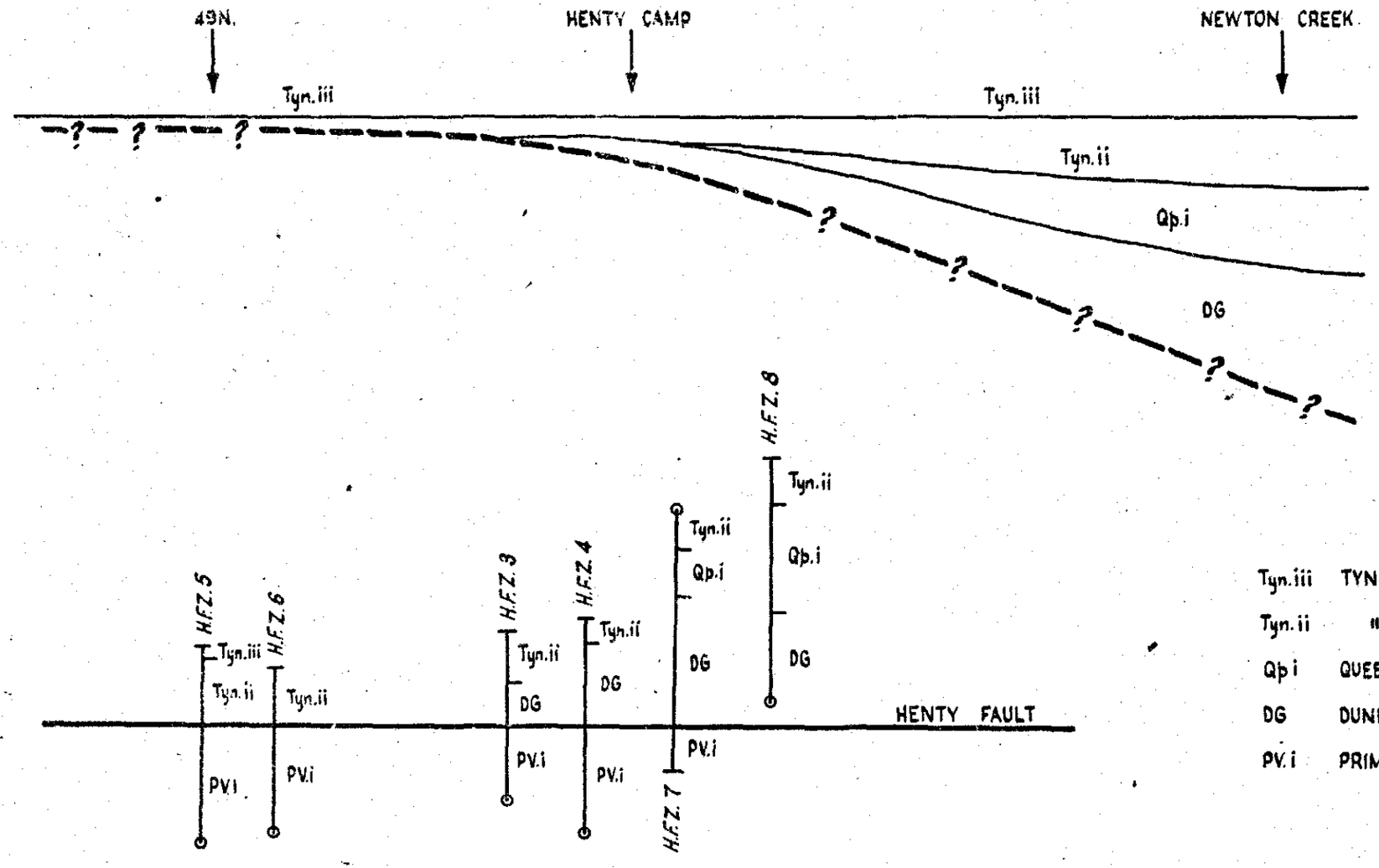


FIG. 3

DIAGRAMMATIC N.-S. STRATIGRAPHIC SECTION OF THE HENTY FAULT ZONE.

Recommendations

1. The present White Spur grid should be extended to the lease boundary and intermediate lines be cut from 21N. to 41N.

2. A detailed E.I.P. survey or E.M. survey should be conducted on the whole of the White Spur grid.

3. Soil geochemical screening of the geophysical anomalies should be undertaken prior to diamond drilling.

6. SELINA-DORA

A comprehensive review of all previous work in this area was undertaken in November, 1975. (A Review of the Area East of the Tyndall Range, K. Wells). The geological, geophysical and geochemical coverages of the area were examined and in some cases re-interpreted. The majority of the I.P. anomalies in the area remain to be evaluated and further detailed geophysics and/or geochemistry is required over some of the anomalies prior to the selection of drilling targets. The geophysical and geochemical coverage should also be extended northwards into the Anthony Creek Gorge area.

The geological mapping in the area was not considered detailed enough to aid in the definition of diamond drilling targets, consequently a detailed geological mapping programme was commenced in February, 1976 at the southern end near Lake Spicer. A detailed description of the mapping, to date, is included in the Annual Report E.L. 10/69, 1975-76 by P. Brophy. A brief description is given below.

The main feature is a belt of Cambrian Volcanics underlain to the east by Lower Cambrian sediments quartzites, siltstones and shales which steeply dip and face west. The volcanics are overlain to the west by Owen Conglomerate which also dips and faces west. The volcanics consist of chloritised acid lavas and pyroclastics intruded by small dacitic bodies. Mineralisation in the form of pyrite and chalcopyrite as thin veins is exposed in old workings and often appears to be closely associated with the dacitic sills.

7. PROPOSED EXPLORATION PROGRAMME 1976-77

The proposed programme for 1976-77 essentially involves exploration in two main areas :

(i) Red Hills-Gooseneck

Three diamond drill holes have been proposed to test the pyrite-chalcopyrite mineralisation associated with the Red Hills felsic lava body and the mineralised black shale-pyroclastic sequence on its western flank. All drill targets have been defined with pole-dipole and/or gradient array E.I.P. and soil/rock geochemistry.

The geophysical anomalous zone on the Gooseneck grid is still open to the south and consequently 4 additional lines will be cut and surveyed by gradient array E.I.P. If warranted soil sampling will be undertaken in order to assist in the definition of drill targets prior to the removal of the drill rig from the immediate area.

(ii) White Spur

It is proposed to extend the 8 original lines of the White Spur grid westwards to the licence boundary and to cut intermediate lines from the boundary to the Henty River (totalling 100,000 ft.). Gradient array E.I.P. coverage of the complete grid (160,000 ft.) is scheduled for Periods 6 and 7 followed by geochemical sampling of anomalous areas as time is available.

APPENDIX A

Table 1 lists rock samples collected during 1975-76, the location of the samples is plotted on plan No. 007. If these figures are compared with those from Table 5 of the Annual Report for E.L. 9/66, 1974-75 it will be noted that the acid volcanics at Red Hills-Gooseneck have high background values of Cu, Pb and Zn.

Sample No.	Area	Rock Type	Cu	Pb	Zn
20770	Dundas	1Txfq waterlain	150	30	240
20771	"	5bv xf	240	40	80
20772	Gooseneck/Red Hills	1a au/Tw	557	122	74
20773	"	5a black	950	970	11200
20774	"	1a pyritic	1060	4030	268
20775	"	1?pf, haematite	128	74	475
20776	"	1Tpfw	780	38	132
20777	"	1a flow banded	378	189	148
20778	"	1a/T	201	44	61
20779	"	1Tw/a chlorite + haematite	113	25	82
20780	"	1a/?5	153	1790	197
20781	"	1a Fe rich	11	8	50
20782	"	1Tvw	91	86	47
20784	"	1Tw/c	201	37	134
20785	"	1Tcpfw	159	28	105
20787	"	1a au/Tc	50	168	70
20788	"	1apfq	29	8	83
20789	"	1pq?v	11	180	10
20790	"	1/2? Fe rich clots	132	84	227
20791	White Spur	5a black	55	28	32
20792	"	1Tx pyritic	55	28	32
20793	Gooseneck/Red Hills	1apq	35	16	16
20794	"	1apq flow banded	1000	16	41
20795	"	1a	78	12	61
20796	N.E. Corner	1?a	47	6	24
20798	"	1apf sheared	69	34	107
20799	White Spur	5a black	26	420	80
20800	"	Sulphide bornite Ag 54, Au 0.1, Ni 5, Co 5, 49.2% S	87	420	70
20801	Gooseneck GN1	5a black	69	190	270
20802	" GN2	5a black	36	40	95
20797	N.E. Corner	1a?	24	14	18
20786	Red Hills	1 + haematite	290	116	115
20801A	Mt. Read North	1 sheared ?T	285	191	150
20802A	"	1pq dh green	285	1950	1350

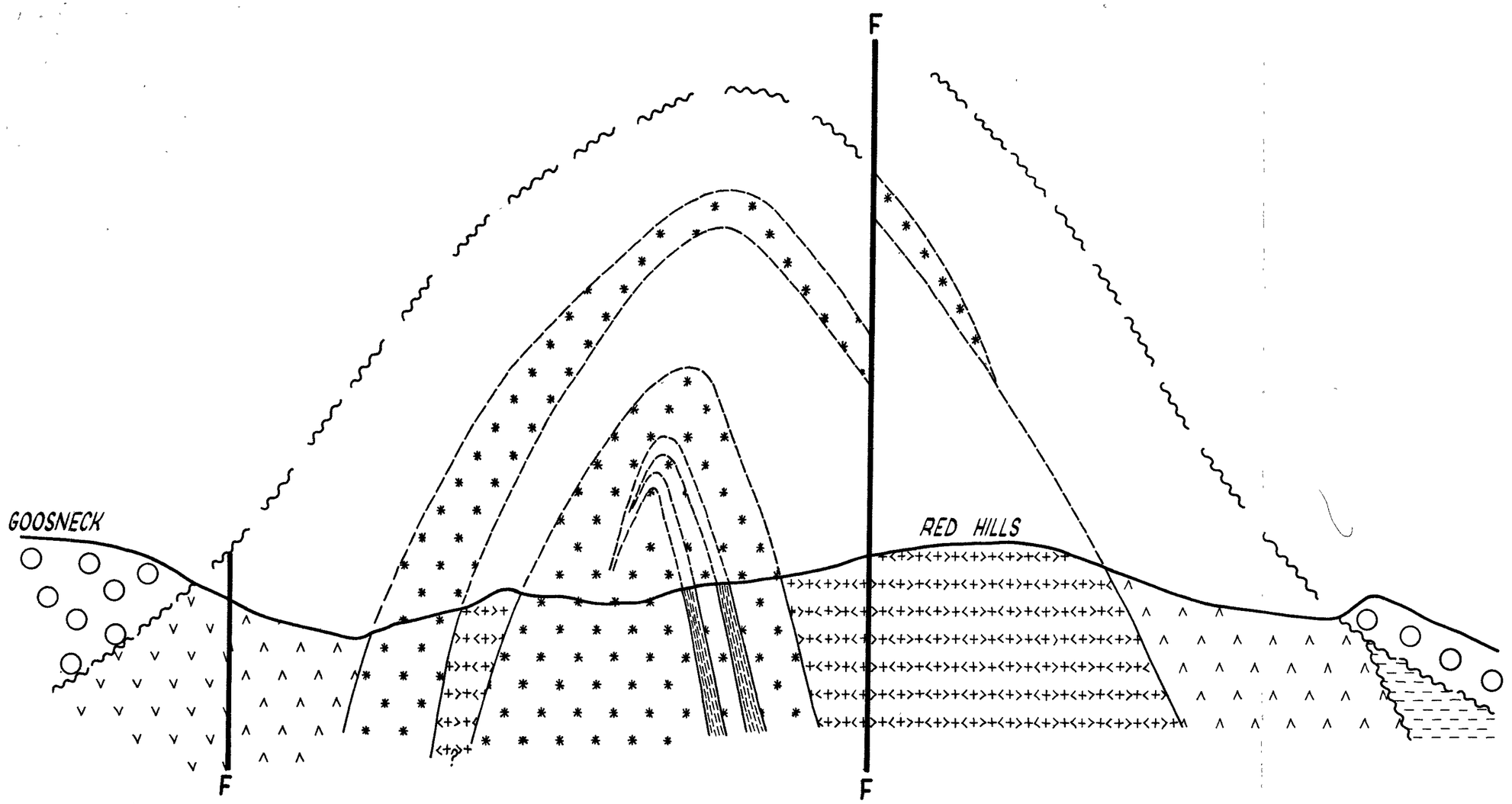
Sample No.	Area	Rock Type	Cu	Pb	Zn
20790A	Red Hills/Gooseneck	la?pf	95	404	355
20804	Henty Fault Zone	1 ?i	415	83	94
20805	"	1 strongly sheared	225	154	165
20807	Mt. Read North	lapq	59	370	380
20808	"	1 sheared sericitic	116	312	146
20810	"	lpf pink green	110	1025	860
20809	"	lpfq	58	190	147
20811	"	Sulphides	205	17300	+1%
20812	"	Sulphides	780	+10%	+1%
20812B	"	Gossan	2300	3650	1950
20814	Henty Fault Zone	lpfq pink green	285	770	1000
20815	"	2	285	880	650
20820	"	Mineralised erratic	61	17	71
20821	"	2a/T	118	100	260

REFERENCES

McKIBBEN, P.	1972	Annual Report E.L. 9/66
OMNES, G.	1970	Geophysical Survey on the Eastern Part of Mt. Tyndall Lease (E.L. 9/66)
OMNES, G.	1971	Geophysical Surveys at Mt. Tyndall (Tasmania)
WELLS, K.	1975	A Review of the Area East of the Tyndall Range

WEST

453017 EAST



5 cm

FIG. 1

NOTE: REFER TO 4inch = 1mile GEOLOGY MAP FOR KEY.

THE MT. LYELL M. & R. CO. LTD.	
DIAGRAMATIC CROSS SECTION GOOSENECK - RED HILLS AREA	DRAWN. N.P.S-H.
	CHECKED.
	DATE. April 1976
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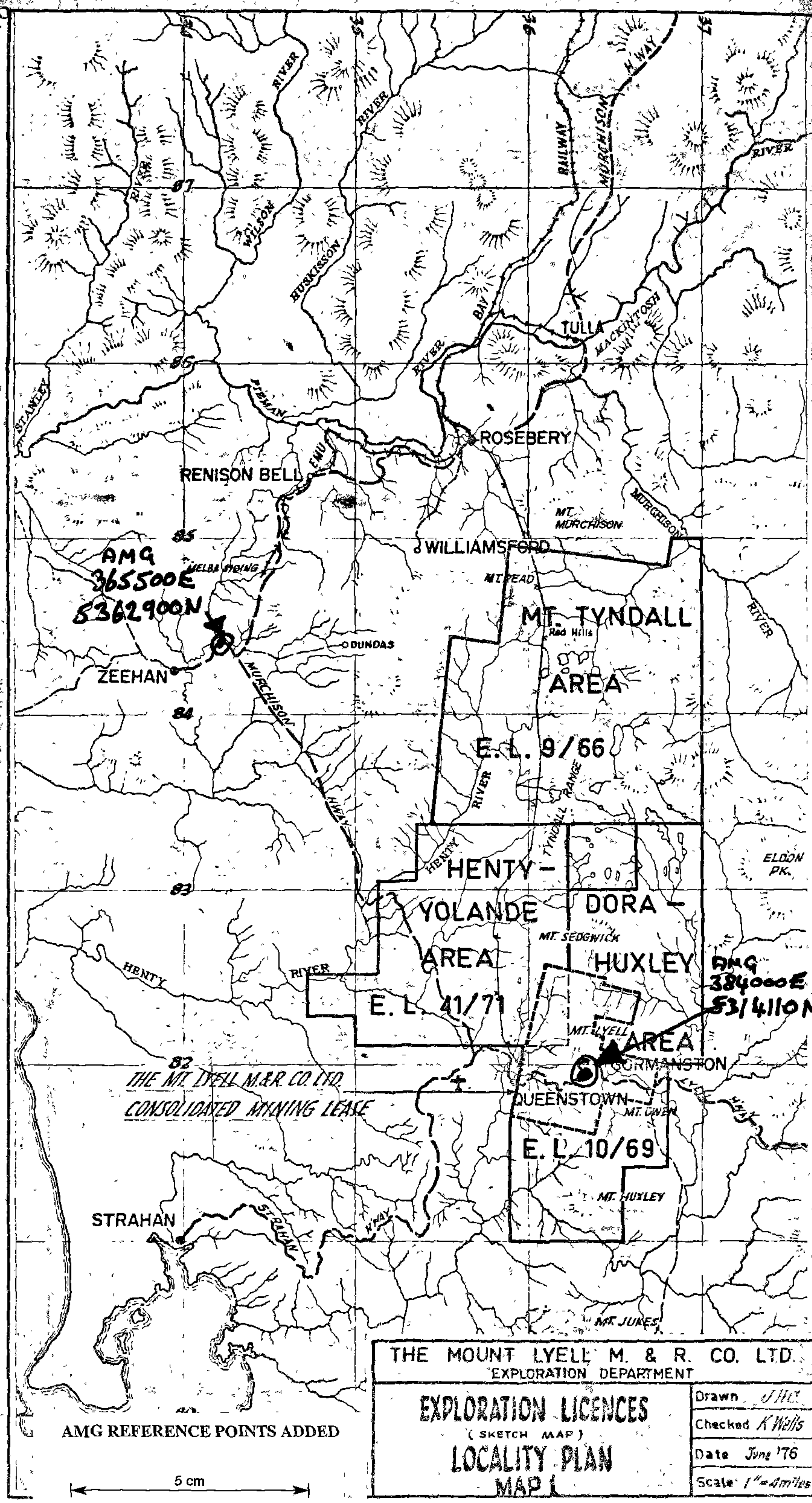
RIVER
WILSON
HUSKISSON
RIVER
RAILWAY
MURCHISON
H'WAY
RIVER
BAY
RIVER
TULLA
MACKINTOSH
STANLEY
PIEMAN
ROSEBERY
RENISON BELL
EMU
MT. MURCHISON
MURCHISON
WILLIAMSFORD
AMG
365500E
5362900N
MELBA SIDING
MT. READ
MT. TYNDALL
Red Hills
AREA
DUNDAS
ZEEHAN
MURCHISON
E. L. 9/66
RIVER
TYNDALL RANGE
H'WAY
HENTY
HENTY -
YOLANDE
AREA
E. L. 41/71
DORA -
HUXLEY
AREA
MT. SEDGWICK
ELDON PK.
HENTY
RIVER
AMG
384000E
5314110N
MT. LYELL
GORMANSTON
QUEENSTOWN
MT. OWEN
LYELL H'WAY
E. L. 10/69
MT. HUXLEY
THE MT. LYELL M.&R. CO. LTD.
CONSOLIDATED MINING LEASE
STRAHAN
H'WAY
MT. JUKES
THE MOUNT LYELL M. & R. CO. LTD.
EXPLORATION DEPARTMENT
EXPLORATION LICENCES
(SKETCH MAP)
LOCALITY PLAN
MAP 1
Drawn J.H.
Checked K Wells
Date June '76
Scale 1" = 4 miles
AMG REFERENCE POINTS ADDED
5 cm

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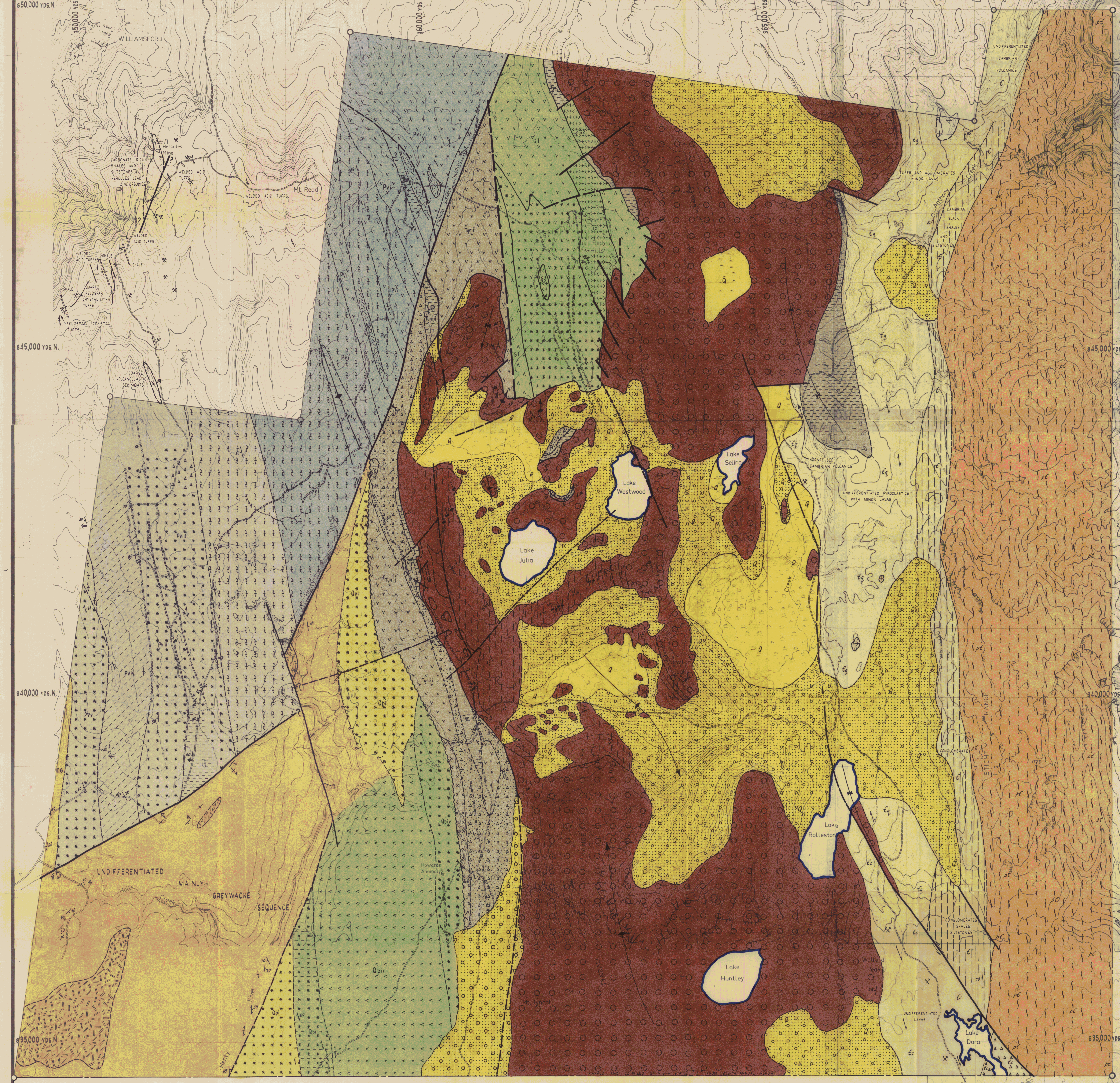

NORTH OF HENTY FAULT

DUNDAS GROUP
- DG — SHALE, SILTSTONE, GREYWACKE, MINOR CRYSTAL TUFF.

MT. READ VOLCANICS — PRIMROSE VOLCANICS
- Pvv — ACID CRYSTAL FELDSPAR LITHIC TUFFS, OCCASIONALLY WELDED.
- Pviv — SHALES SILTSTONES, FINE GRAINED TUFFS.
- Pviii — ACID QUARTZ FELDSPAR LITHIC TUFFS, OCCASIONALLY WELDED.
- AGGLOMERATES.
- PYRITIC BLACK SHALES.
- SHALES, GREYWACKES, FINE TUFFS.
- Pvii — ACID WELDED TUFFS. BASIC INTRUSIVES.
- Pvi — ACID LAVAS, FELDSPAR PHYRIC.
- ACID WELDED TUFFS.
- BASIC TO INTERMEDIATE INTRUSIVES AND EXTRUSIVES.
- VOLCANOCLASTIC SEDIMENTS.

SOUTH OF HENTY FAULT

MT. READ VOLCANICS — TYNDALL GROUP
- Tyniii — (JUKES) VOLCANOCLASTIC SEDIMENTS.
- Tynii — (COMSTOCK TUFF) CRYSTAL TUFFS, AGGLOMERATES, BANDED TUFF SHALES.
- QUARTZ PORPHYRY AUTOBRECCIATED LAVAS.
- Tyni — HEMATITIC CARBONATES, CRYSTAL TUFFS; CARBONATE SEDIMENTS, MAGNETITE RICH LAVAS.

QUEENSTOWN PYROCLASTICS
- Qpiv — INTERMEDIATE PYROCLASTICS, SILTSTONES, SHALES, CARBONATES, MINOR ACID VOLCANICS.
- Qpiii — INTERMEDIATE LAVAS AND INTRUSIVES, QUARTZ, FELDSPAR, HORNBLENDE PHYRIC TYPES.
- Qpii — INTERMEDIATE PYROCLASTICS, GREYWACKES, SHALES, MINOR ACID VOLCANICS.
- Qpi — ACID PYROCLASTICS, MINOR LAVAS AND SEDIMENTS.
- PYRITIC BLACK SHALES.

DUNDAS GROUP
- DG — GREYWACKES, SILTSTONES AND SHALES.
- MAFIC AND ULTRAMAFIC INTRUSIVE.

OWEN CONGLOMERATE
- CONGLOMERATE, SANDSTONE. (NEWTON CREEK FORMATION) SANDSTONE, SILTSTONE, SHALE AND CONGLOMERATE.

RED HILLS - GOOSENECK

QUATERNARY
- Q — SWAMP.
- Q — MORAINE AND SCREE.

OWEN CONGLOMERATE
- CONGLOMERATE, SANDSTONE, SILTSTONE AND SHALE.

MT. READ VOLCANICS — TYNDALL GROUP
- Tyniii — (JUKES) VOLCANOCLASTIC SEDIMENTS.
- Tynii — ACID LAVAS.

CENTRAL LAVAS
- G2 — DARWIN "RHYOLITE".
- G1 — ACID PYROCLASTICS, AGGLOMERATES.
- SHALES.
- G1 — ACID FELDSPAR PHYRIC LAVAS.
- G1 — ACID QUARTZ PHYRIC LAVAS.

SELINA - ROLLESTON

QUATERNARY
- Q — SWAMP.
- Q — MORAINE AND SCREE.

OWEN CONGLOMERATE
- CONGLOMERATE, SANDSTONE, SILTSTONE AND SHALE.

CAMBRIAN
- TYNDALL GROUP.
- Ꞓq — UNDIFFERENTIATED TUFFS, LAVAS AND AGGLOMERATES.
- Ꞓ — UNDIFFERENTIATED CAMBRIAN VOLCANICS.
- Ꞓc — AGGLOMERATES.

PRECAMBRIAN
- pꞒ — STICHT QUARTZITE.

FAULT
ANTICLINE
SYNCLINE
STRIKE AND DIP OF BEDDING
STRIKE OF SCHISTOSITY AND DIP
OLD WORKINGS

THE CONSOLIDATED SYNDICATE	DRAWN: N.P.S-H.
MT. TYNDALL AREA	TRACED: R.G.W.
E.L. 9/66 76-1171	CHECKED:
GEOLOGICAL MAP 002	DATE: JUNE '76
	SCALE: 1:15,840
	MAP 2

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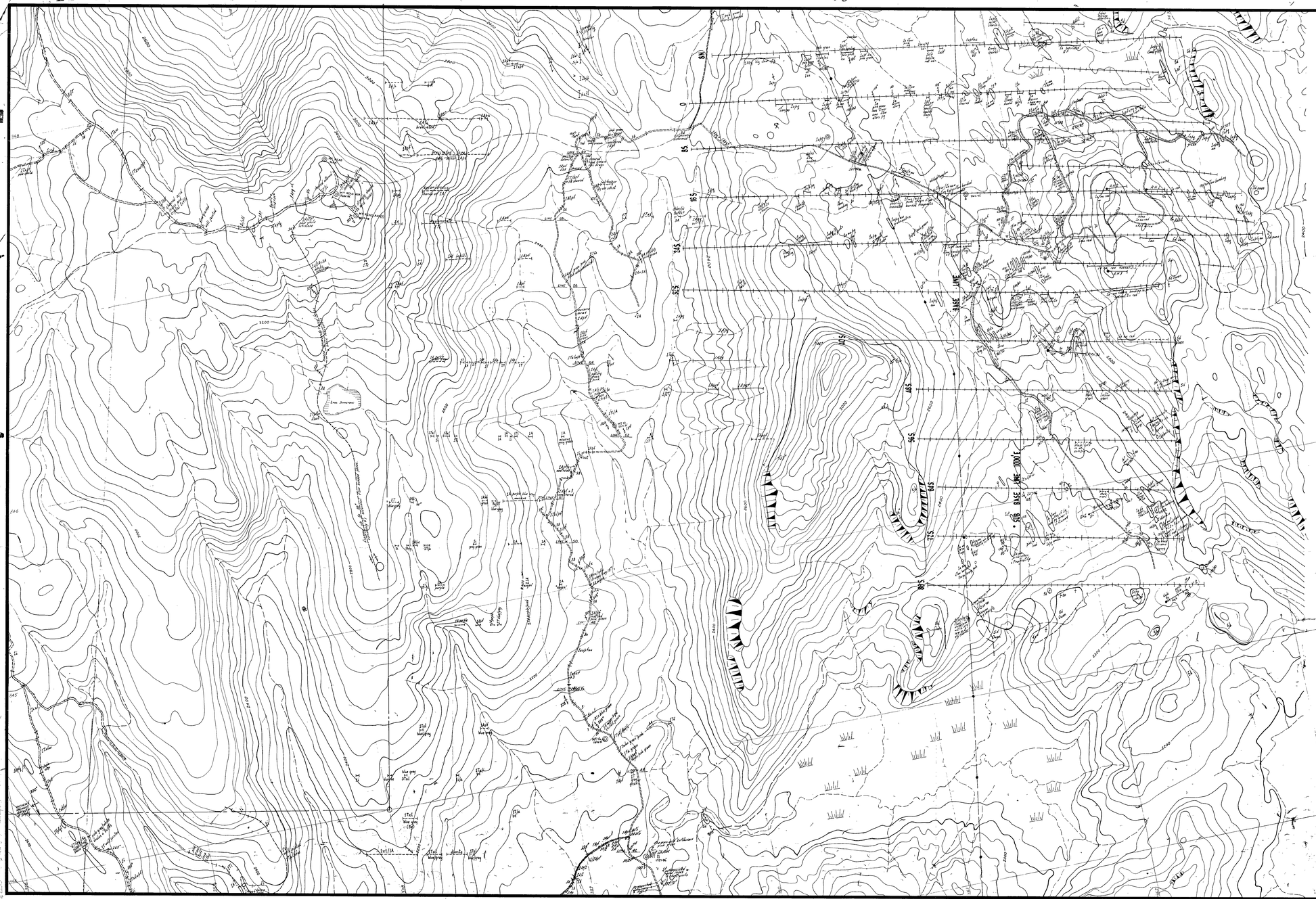


KEY

1 ACID	A EXTRUSIVE	w WELDED
2 INTERMEDIATE	B HYPABYSSAL	x CRYSTAL
3 BASIC	P PLUTONIC	l LITHIC
4 ULTRABASIC	T PYROCLASTIC	v VITRIC
	I IGNIMBRITE	aa AUTOBRECCIATED
		c AGGLOMERATE
		p PHENOCRYSTS
		f FELDSPAR
		h HORNBLENDE
		al ALBITE
		q QUARTZ

SEDIMENTS.

S
- a ARGILLACEOUS
- b ARENACEOUS
- c RUDACEOUS — POLYMICT / OLIGMICT
- d
- e CHEMICAL

CLASTS
- Q QUARTZ
- F FELDSPAR
- V VOLCANIC CLASTS
- S SEDIMENT CLASTS

- OUTCROP
- FLOAT INTERPRETATIONS
- FAULT
- FAULT ?
- UNCONFORMITY
- BEDDING, DIP
- FOLIATION
- JOINTS
- LINEATION
- LINEATION VERTICAL
- FACING

TM N.

6 cm

LOCATION DIAGRAM
SCALE 1" = 16 MILES

453020

THE CONSOLIDATED SYNDICATE

OUTCROP GEOLOGY 003

MT. TYNDALL AREA

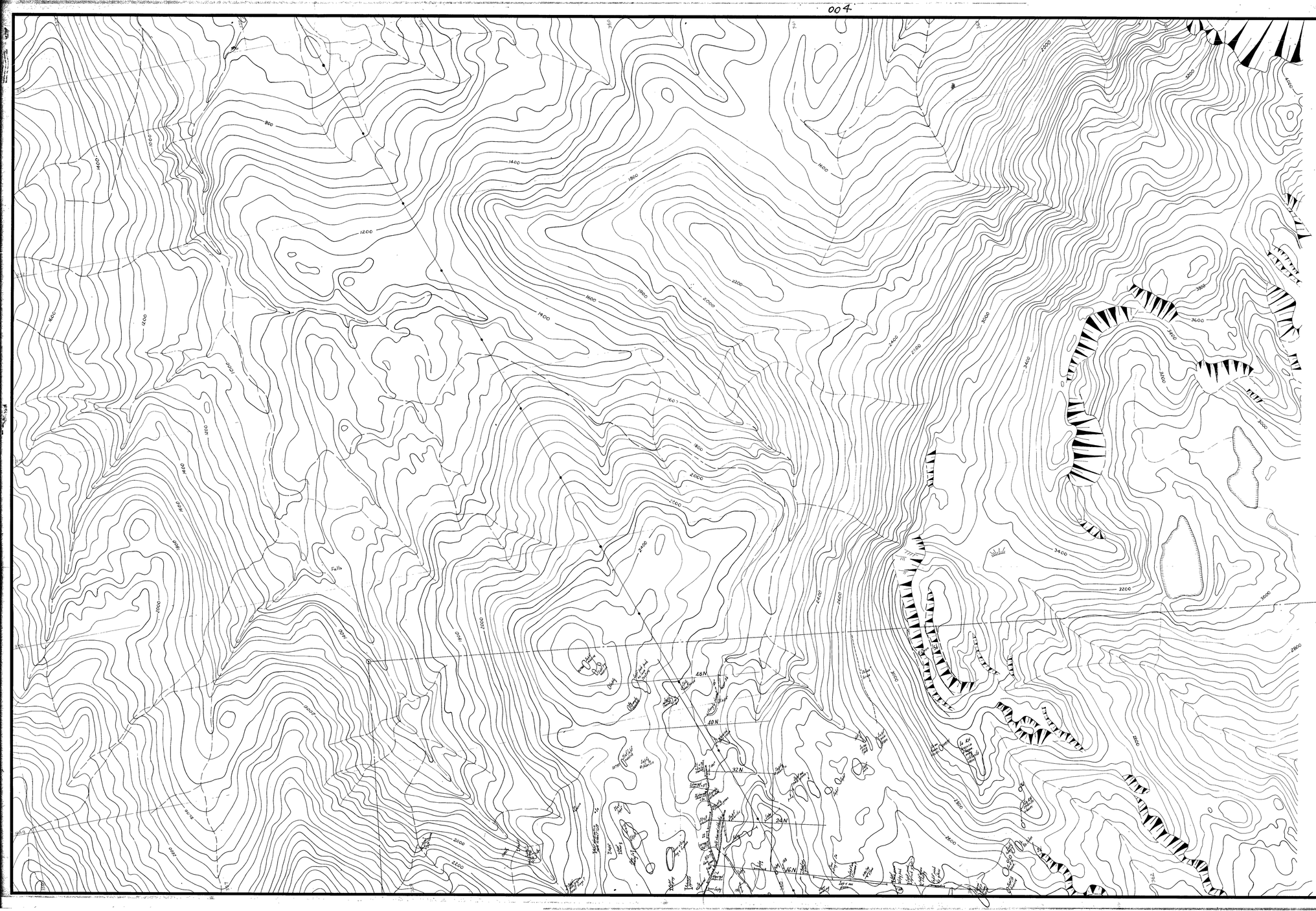
EL 9/66. (6-117)

Sheet 3

DRAWN BY	N.S-H
TRACED BY	R.G.H.
CHECKED BY	
DATE	JUNE '70
SCALE	1" 500'

MAP 3

004



KEY

1 ACID	A EXTRUSIVE	w WELDED
2 INTERMEDIATE	B HYPABYSSAL	x CRYSTAL
3 BASIC	P PLUTONIC	l LITHIC
4 ULTRABASIC	T PYROCLASTIC	v VITRIC
	I IGNIMBRITE	aa AUTOBRECCIATED
		c AGGLOMERATE
		p PHENOCRYSTS
		f FELDSPAR
		h HORNBLENDE
		al ALBITE
		q QUARTZ

SEDIMENTS.

5 a ARGILLACEOUS
b ARENACEOUS
c RUDACEOUS — POLYMICT / OLIGMICT
d
e CHEMICAL

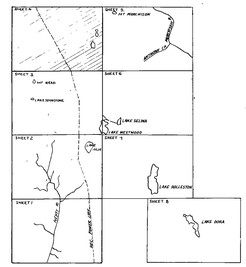
CLASTS
q QUARTZ
f FELDSPAR
v VOLCANIC CLASTS
s SEDIMENT CLASTS

- OUTCROP
- FLOAT INTERPRETATIONS
- FAULT
- FAULT ?
- UNCONFORMITY
- BEDDING, DIP
- FOLIATION
- JOINTS
- LINEATION
- LINEATION VERTICAL
- FACING

T.N. M.V.E.

5 cm

LOCATION DIAGRAM
SCALE 1" = 16 MILES



THE CONSOLIDATED SYNDICATE

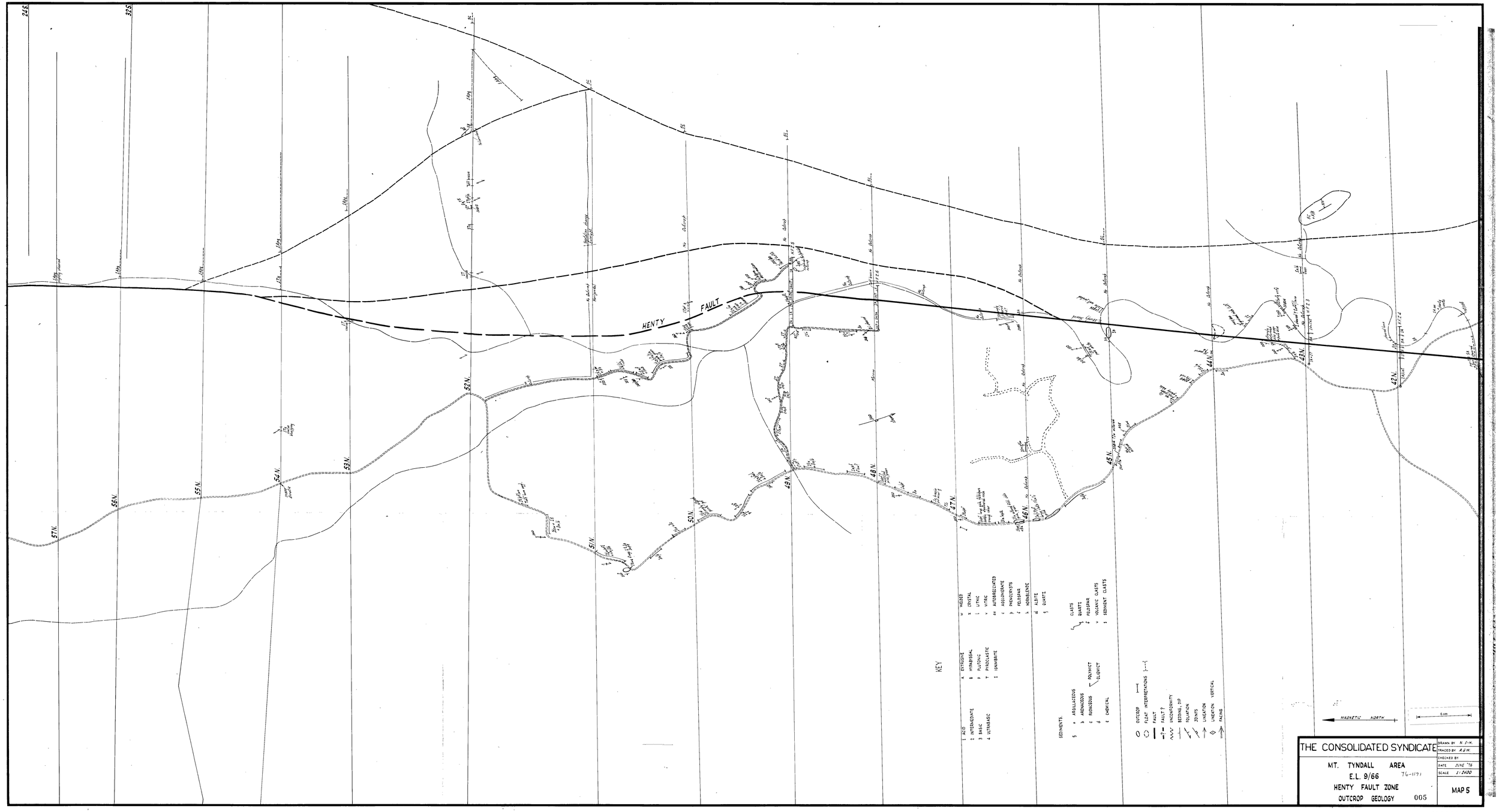
OUTCROP GEOLOGY 76-1171

MT. TYNDALL AREA
EL.9/66.
Sheet 4 · 004

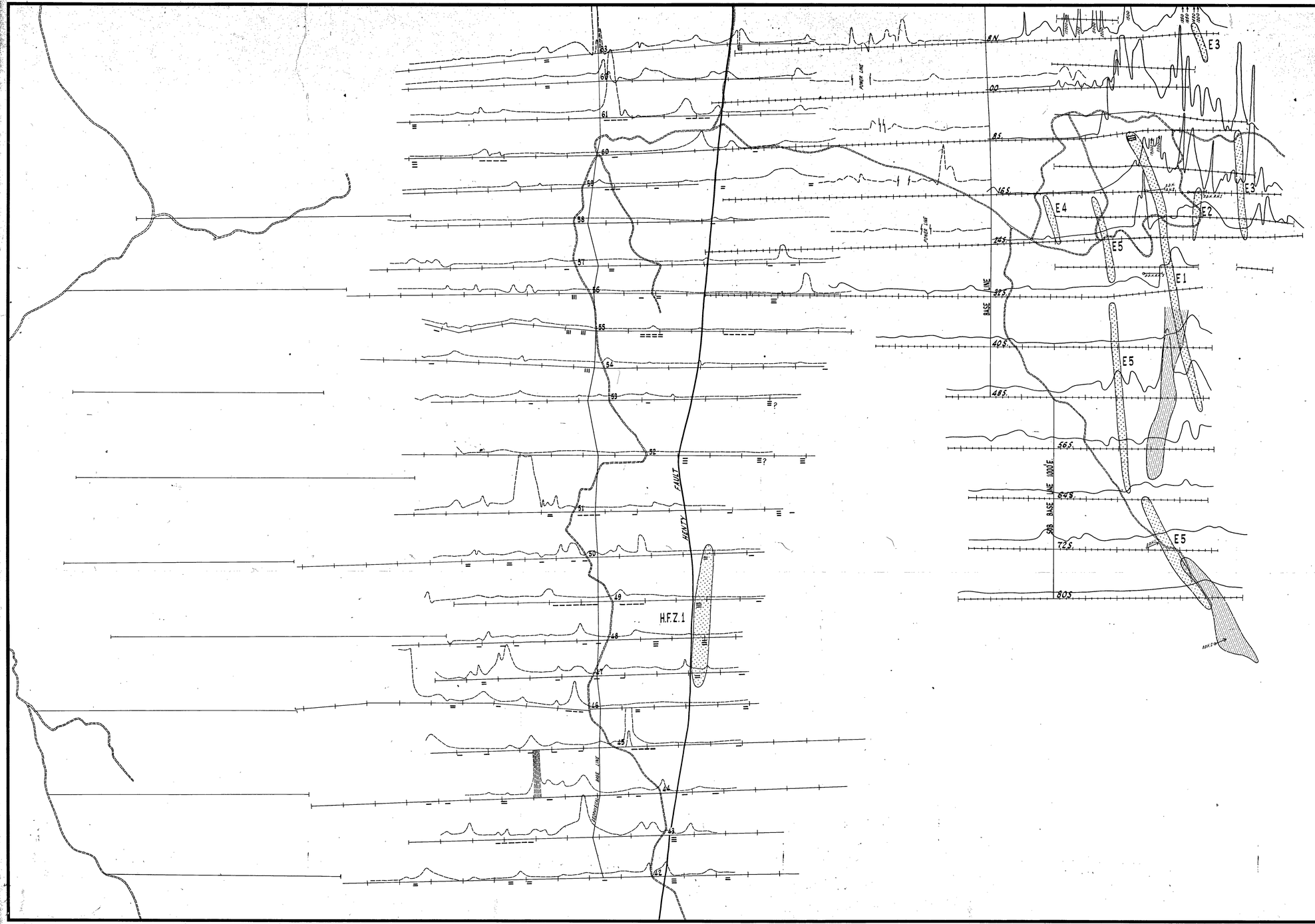
DRAWN BY	N.S-H.
TRACED BY	R.G.W.
CHECKED BY	
DATE	JUNE '76
SCALE	1" = 200

MAP 4

453021


HENTY FAULT
KEY
IGNEOUS
A EXTRUSIVE
B HYPABYSSAL
D PLUTONIC
T PYROCLASTIC
I IGNIMBRITE
1 ACID
2 INTERMEDIATE
3 BASIC
4 ULTRABASIC
SEDIMENTS
5 a ARGILLACEOUS
b ARENACEOUS
c RUDACEOUS
d
e CHEMICAL
POLYMICT
OLIGMICT
METAMORPHIC
w WELDED
x CRYSTAL
l LITHIC
v VITRIC
xx AUTOBRECCIATED
c AGGLOMERATE
p PHENOCRYSTS
f FELDSPAR
h HORNBLENDE
al ALBITE
q QUARTZ
CLASTS
q QUARTZ
f FELDSPAR
v VOLCANIC CLASTS
s SEDIMENT CLASTS
OUTCROP
FLOAT INTERPRETATIONS
FAULT
FAULT ?
INCONFORMITY
BEDDING DIP
FOLIATION
JOINTS
LINEATION
LINEATION VERTICAL
FACING
MAGNETIC NORTH
5cm
THE CONSOLIDATED SYNDICATE
MT. TYNDALL AREA
E.L. 9/66
76-1171
HENTY FAULT ZONE
OUTCROP GEOLOGY
005
DRAWN BY N.F.H.
TRACED BY A.B.W.
CHECKED BY
DATE JUNE '76
SCALE 1:2400
MAP 5

453022


63
62
61
60
59
58
57
56
55
54
53
52
51
50
49
48
47
46
45
44
43
42
BASE LINE
FAULT
H.F.Z.1
8N
00
8S
16S
24S
32S
40S
48S
56S
64S
72S
80S
E1
E2
E3
E4
E5
S.P. ANOMALY
I.P. ANOMALIES
FIRST ORDER ANOMALY.
SECOND ORDER ANOMALY.
THIRD ORDER ANOMALY.
I.P. ZONES.
MAGNETICS
1 INCH = 1000 GAMMAS.
= FLUXGATE VERTICAL FIELD.
= PROTON TOTAL FIELD.
E.M. ANOMALIES
TURAM ANOMALOUS ZONES.
E.M. CONDUCTORS.
453023
5 cm
THE CONSOLIDATED SYNDICATE
MT. TYNDALL AREA
E.L. 9/66
SHEET 3
MAGNETIC PROFILES & I.P. ANOMALIES
76-877
006
DRAWN BY N.S-H.
TRACED BY R.G.W.
CHECKED BY
DATE JUNE '76
SCALE 1:6,000
MAP 6

007

850,000 YDS.N.

845,000 YDS.N.

840,000 YDS.N.

835,000 YDS.N.

350,000 YDS.E.

360,000 YDS.E.

365,000 YDS.E.

370,000 YDS.E.

355,000 YDS.E.

WILLIAMSFORD

Hercules Mine

Mt. Read

Red Hills

Anthony Creek

Goose Neck

Henty River

Henty Camp

White Spur Creek

Newton Creek

Howard's Anomaly

Halls Creek

Tyndall Road

Lake Selina

Lake Westwood

Lake Julia

Newton Peak

Rolleston Camp

Anthony Creek

STICHT RANGE

Lake Rolleston

TYNDALL RANGE

Mt. Tyndall

Lake Huntley

Walford Peak

Lake Dora

5 cm

5 cm

THE CONSOLIDATED SYNDICATE

MT. TYNDALL AREA

E.L. 9/66

76-1171

ROCK SAMPLE LOCATIONS 007

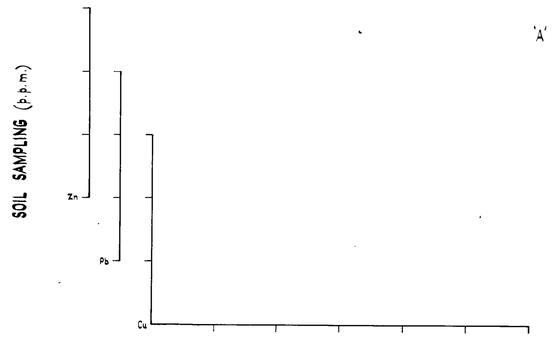
DRAWN:	N.P.S-H.
TRACED:	R.G.W.
CHECKED:	
DATE:	JUNE '74
SCALE:	1:15840

MAP 7

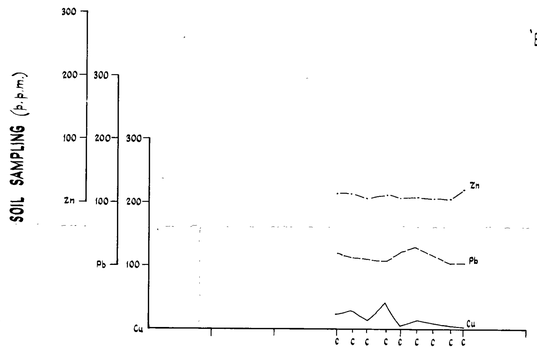
453024

AREA. RED HILLS LINE No. 32 S.

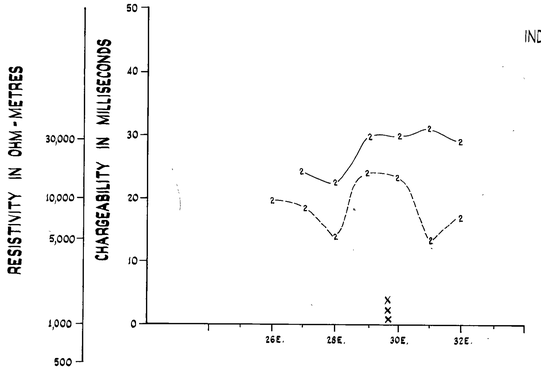
'A' - 10 + 80 FRACTION



'B' - 80 FRACTION

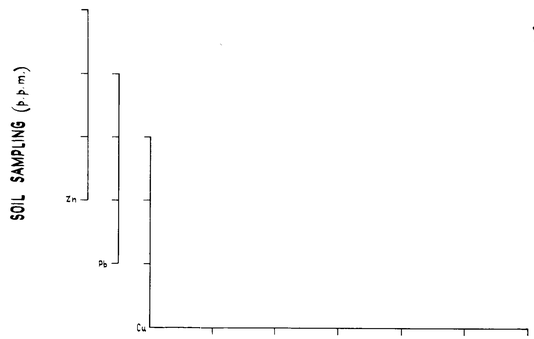


INDUCED POLARISATION

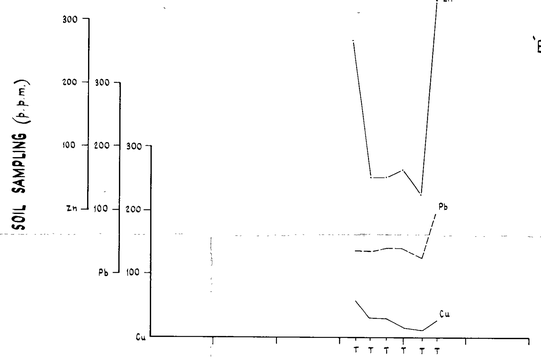


AREA. MT. READ LINE No. 46 N.

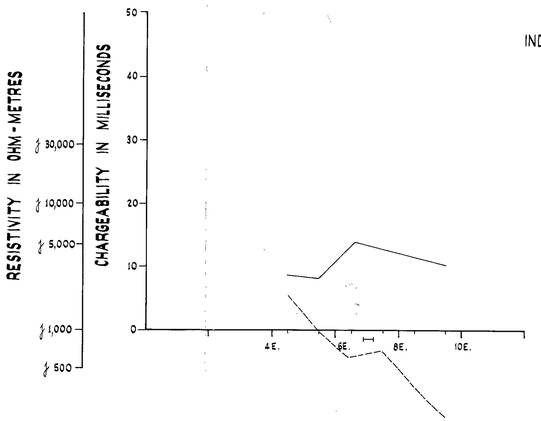
'A' - 10 + 80 FRACTION



'B' - 80 FRACTION

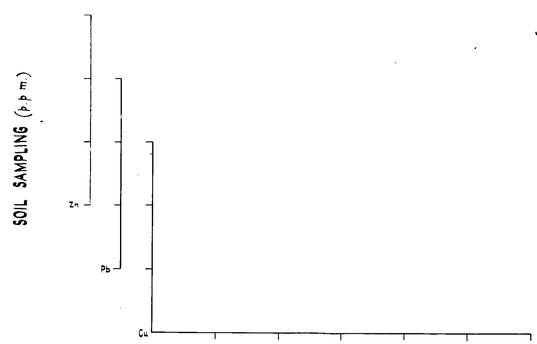


INDUCED POLARISATION

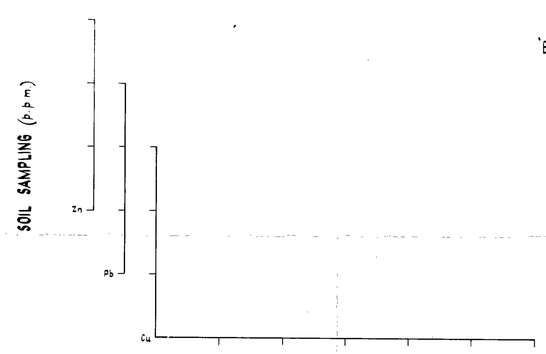


AREA. LINE No.

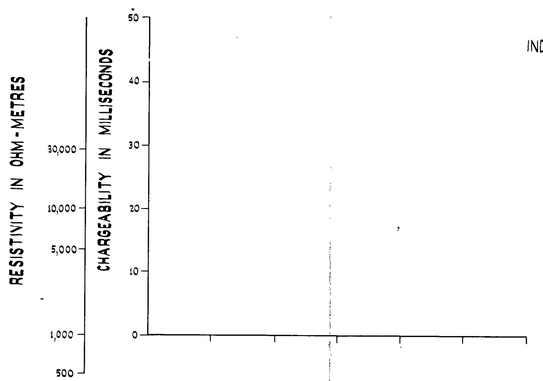
'A' - 10 + 80 FRACTION



'B' - 80 FRACTION



INDUCED POLARISATION



RESISTIVITY ------ ---1---1--- RECEIVER 1
---2---2--- RECEIVER 2

CHARGEABILITY — — — —1—1— RECEIVER 1
—2—2— RECEIVER 2

ANOMALY - C.G.G. INTERPRETATION X X

RESIDUAL SOILS A A HORIZON
B B HORIZON
C C HORIZON

NON RESIDUAL SOILS T

5 cm

453025

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MT. TYNDALL E.L. 9/66 76-117

INDUCED POLARISATION AND GEOCHEMICAL PROFILES 008

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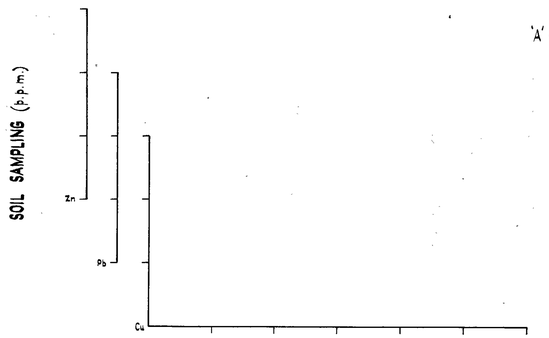
TRACED. R.G.W.
CHECKED.
DATE. JUNE '76
SCALE. 1:2400

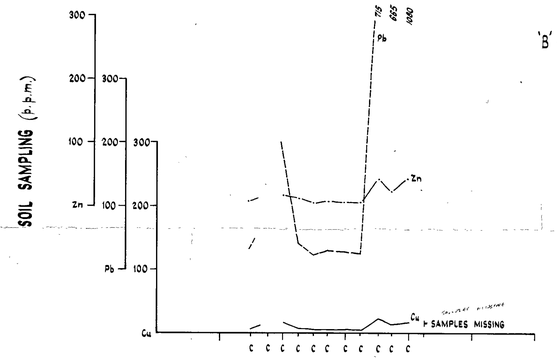
MAP 8

AREA. GOOSENECK. LINE No. 16S.

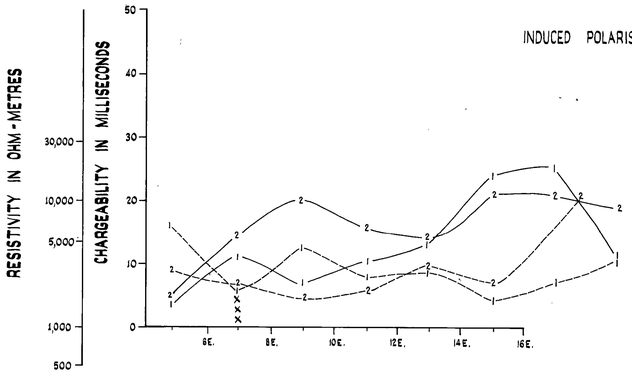
'A' - 10 + 80 FRACTION



'B' - 80 FRACTION

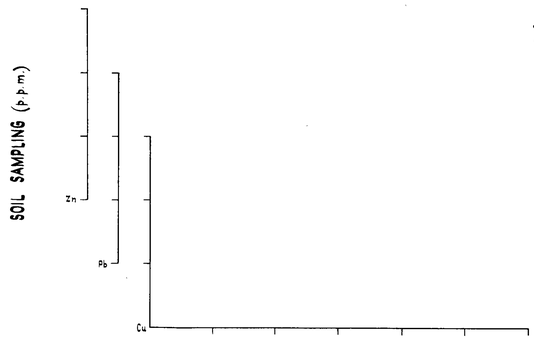


INDUCED POLARISATION

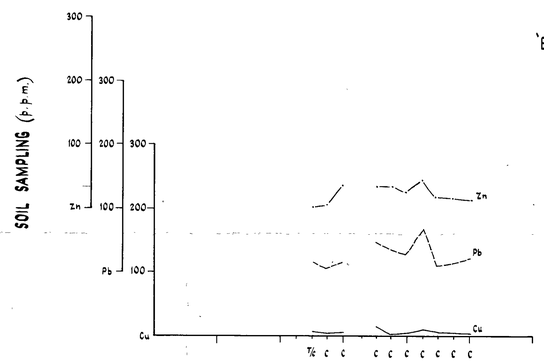


AREA. RED HILLS LINE No. 48S.

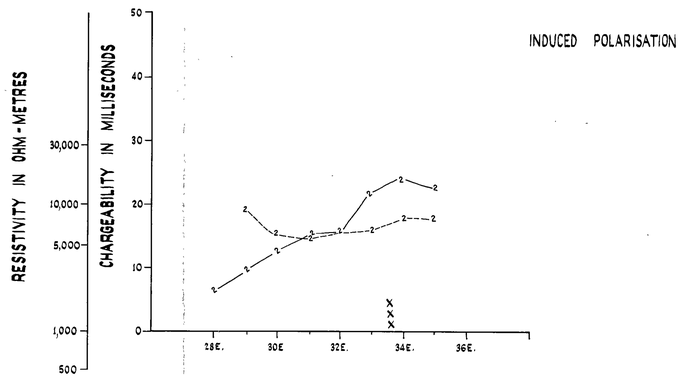
'A' - 10 + 80 FRACTION



'B' - 80 FRACTION

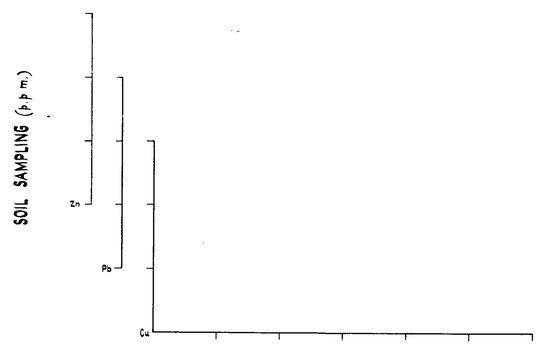


INDUCED POLARISATION

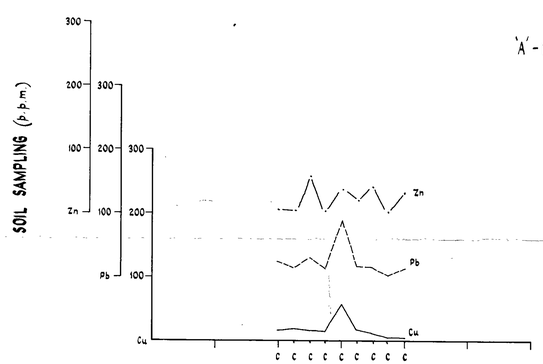


AREA. RED HILLS LINE No. 40S.

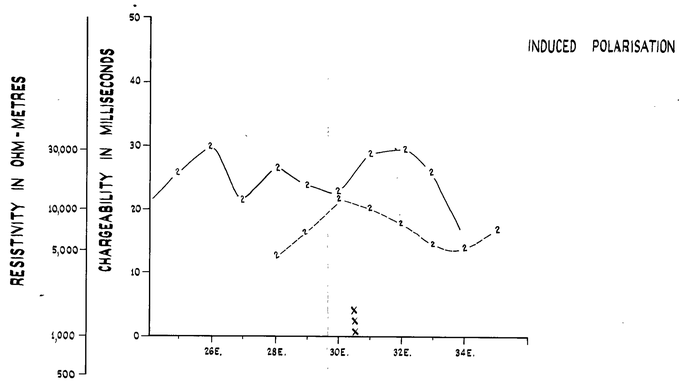
'B' - 80 FRACTION



'A' - 10+80 FRACTION



INDUCED POLARISATION



RESISTIVITY ------- RECEIVER 1 / RECEIVER 2

CHARGEABILITY — — — RECEIVER 1 / RECEIVER 2

ANOMALY - C.G.G. INTERPRETATION X X X

RESIDUAL SOILS A A HORIZON, B B HORIZON, C C HORIZON

NON RESIDUAL SOILS T

453026

5 cm

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MT. TYNDALL E.L. 9/66 76-171

INDUCED POLARISATION AND GEOCHEMICAL PROFILES 009

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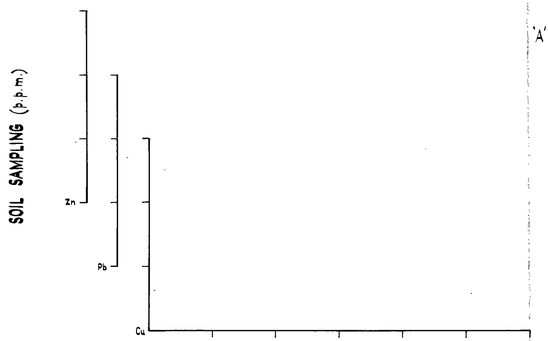
TRACED. R.G.W.
CHECKED.
DATE. JUNE '76
SCALE. 1:2400

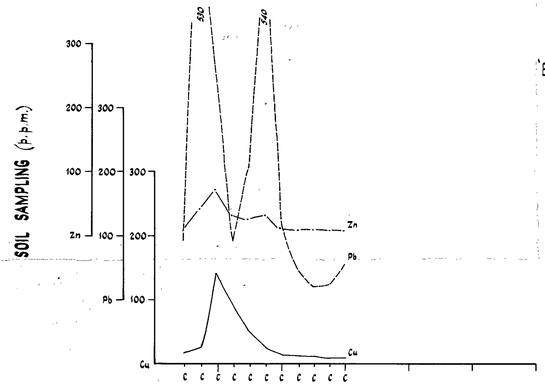
MAP 9

AREA. GOOSENECK LINE No. 32S.

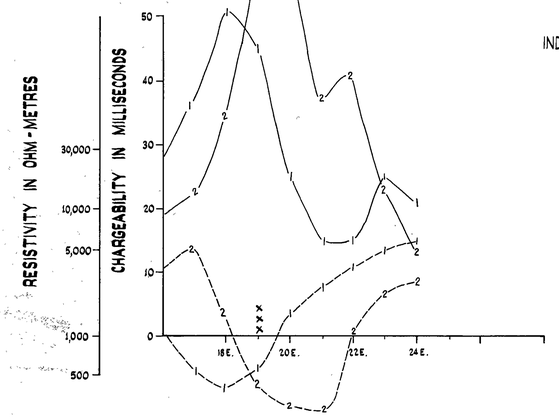
'A' -10+80 FRACTION



'B' -80 FRACTION

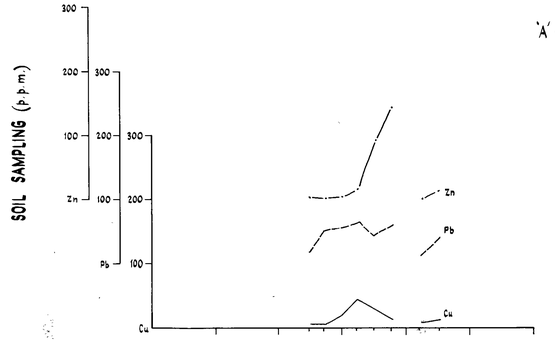


INDUCED POLARISATION

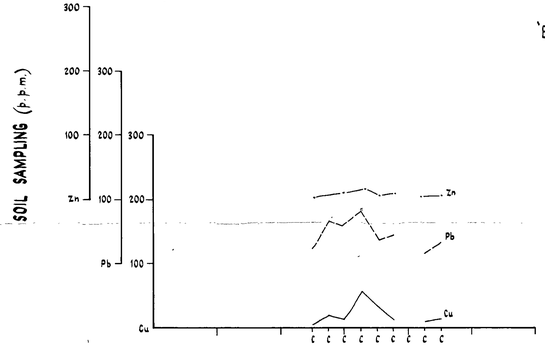


AREA. GOOSENECK LINE No. 28S.

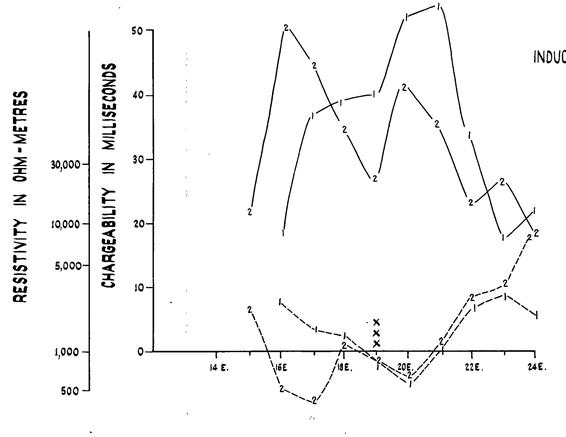
'A' -10+80 FRACTION



'B' -80 FRACTION

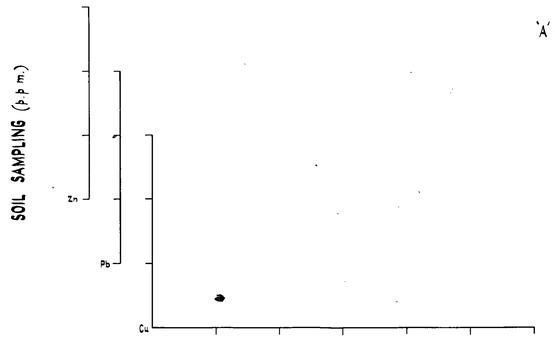


INDUCED POLARISATION

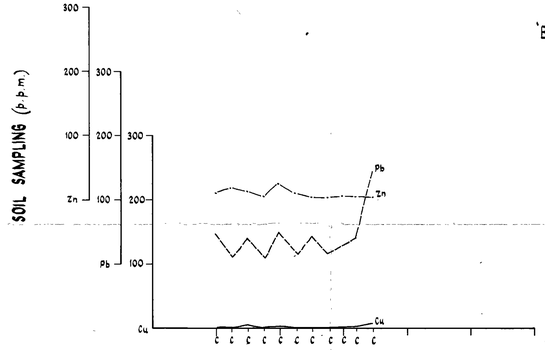


AREA. GOOSENECK LINE No. 24S.

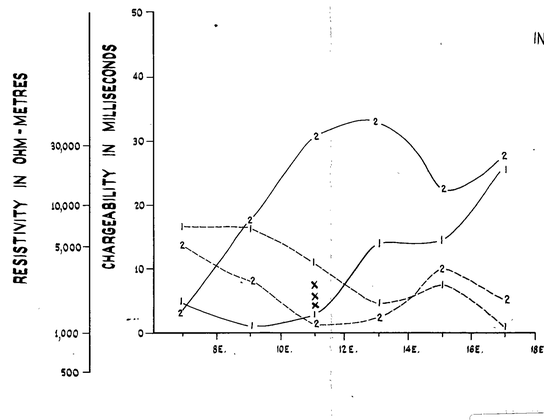
'A' -10+80 FRACTION



'B' -80 FRACTION



INDUCED POLARISATION



RESISTIVITY ——— RECEIVER 1 / RECEIVER 2

CHARGEABILITY — — — RECEIVER 1 / RECEIVER 2

ANOMALY - C.G.G. INTERPRETATION X X X

RESIDUAL SOILS A A HORIZON, B B HORIZON, C C HORIZON

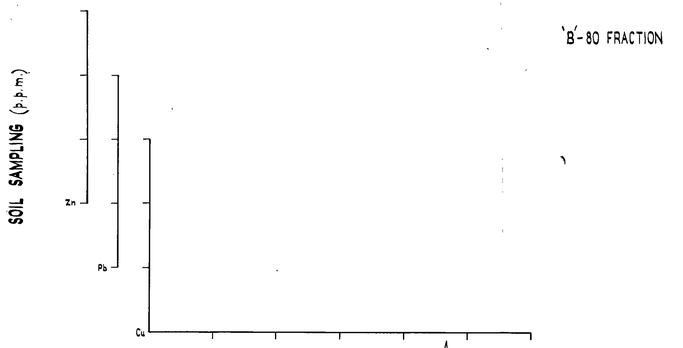
NON RESIDUAL SOILS T

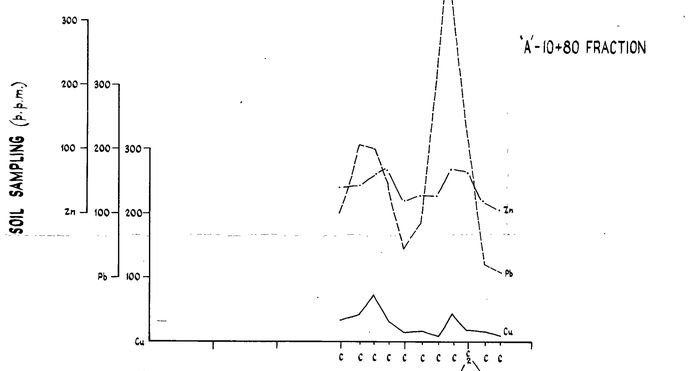
5 cm

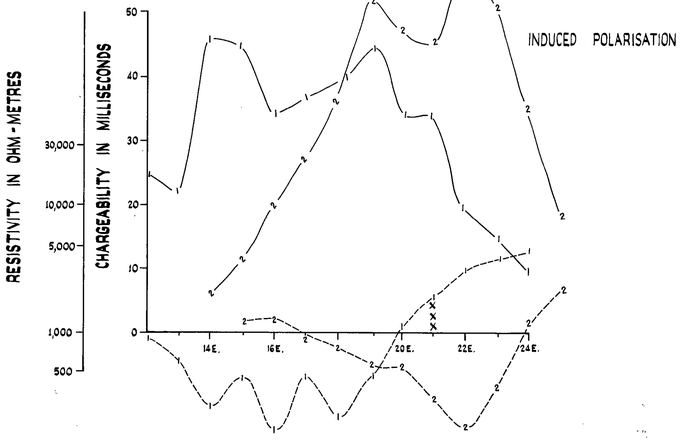
453027

THE MT. LYELL M. & R. CO. LTD.	DRAWN. N.S-H.
	TRACED. R.G.W.
MT. TYNDALL E.L. 9/66 76-177	CHECKED.
INDUCED POLARISATION AND GEOCHEMICAL PROFILES 010	DATE. JUNE '76
	SCALE. 1:2400
	MAP 10

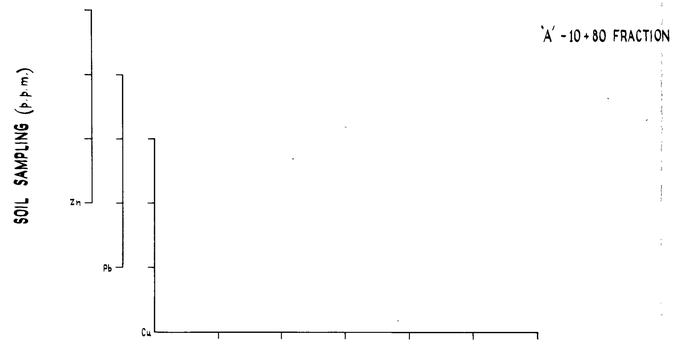
AREA. GOOSENECK LINE No. 56 S.

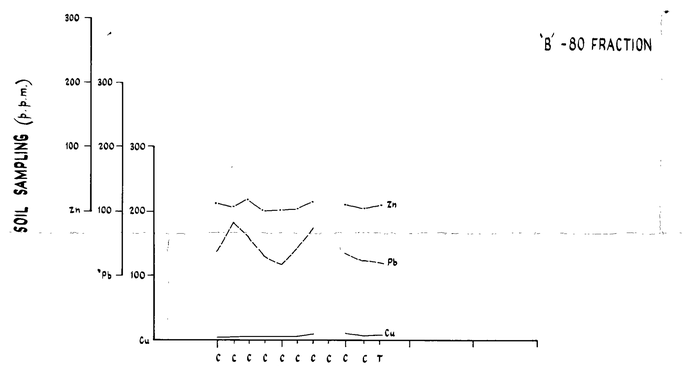


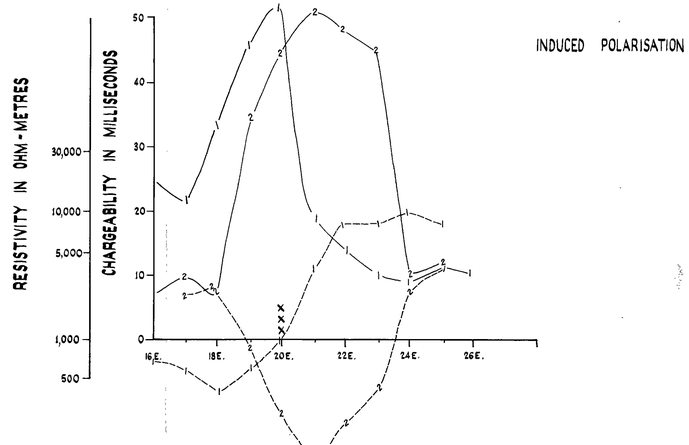




AREA. GOOSENECK LINE No. 48 S.







RESISTIVITY ------ ---1---1--- RECEIVER 1
---2---2--- RECEIVER 2

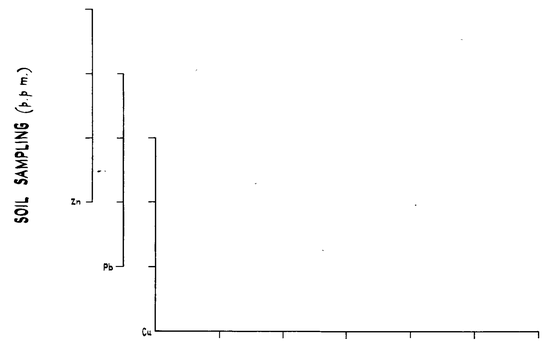
CHARGEABILITY — — — —1—1— RECEIVER 1 N = 2
—2—2— RECEIVER 2 N = 1

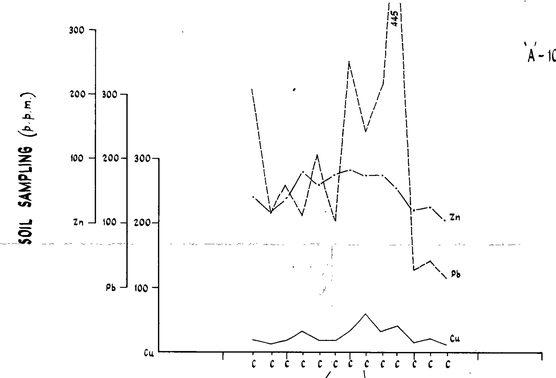
ANOMALY - C.G.G. INTERPRETATION XXX

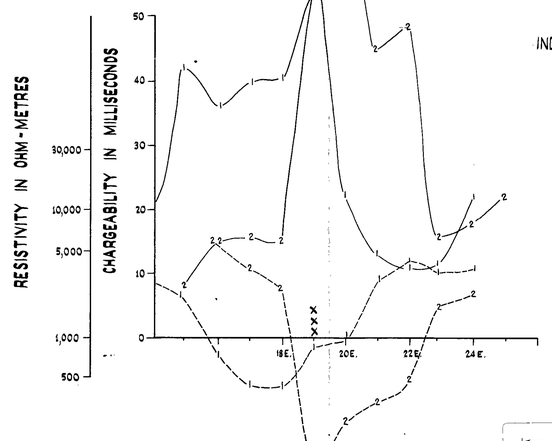
RESIDUAL SOILS A A HORIZON
B B HORIZON
C C HORIZON

NON RESIDUAL SOILS T

AREA. GOOSENECK LINE No. 40 S.





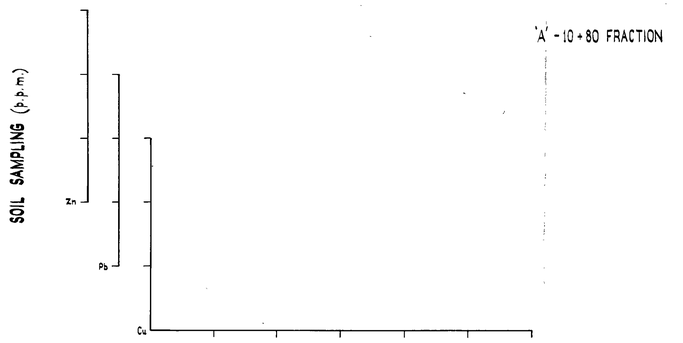


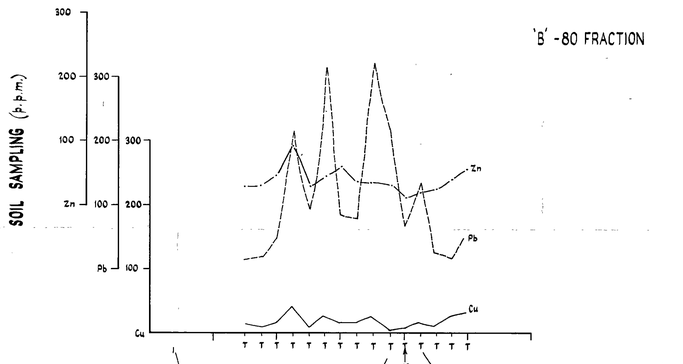
453028

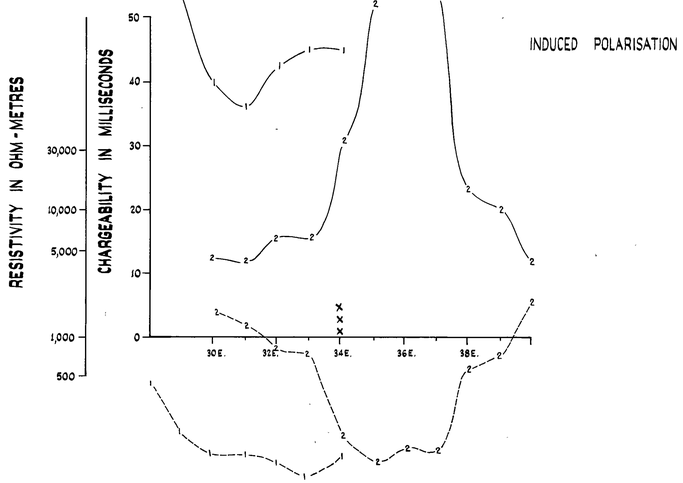
5 cm

THE MT. LYELL M. & R. CO. LTD.	DRAWN. N.S-H.
	TRACED. R.G.W.
MT. TYNDALL E.L. 9/66 76-1171	CHECKED.
INDUCED POLARISATION AND GEOCHEMICAL PROFILES 011	DATE. JUNE '76
	SCALE. 1:2400
	MAP 11

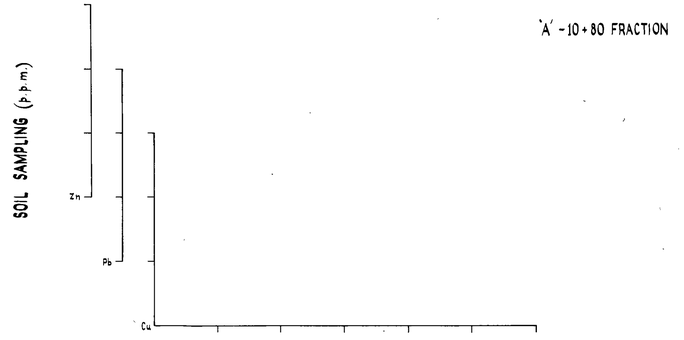
AREA. GOOSENECK LINE No. 80S.

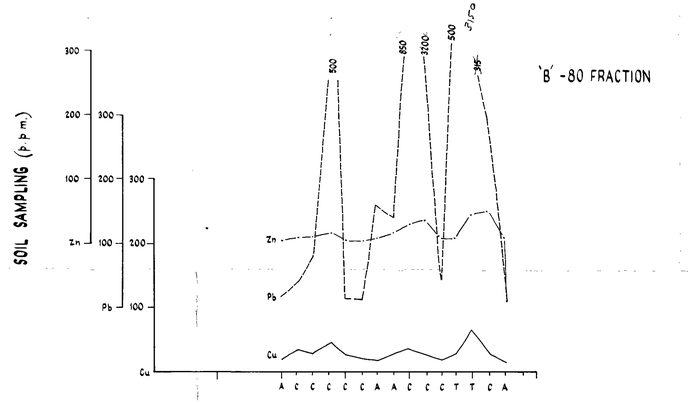


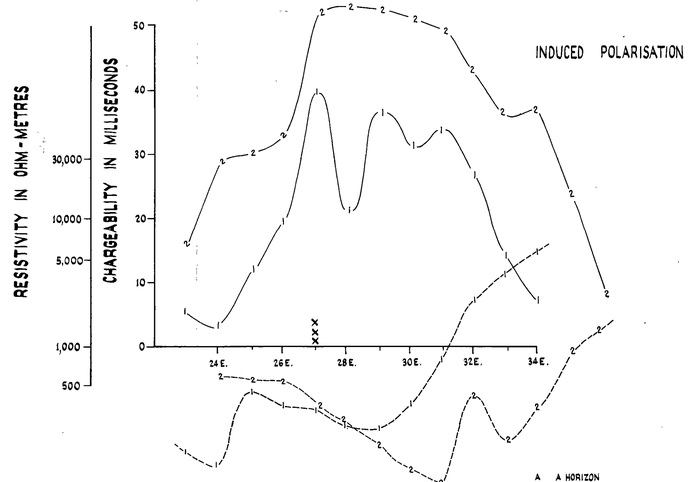




AREA. GOOSENECK LINE No. 72S.







RESISTIVITY ------ ---1---1--- RECEIVER 1 ---2---2--- RECEIVER 2

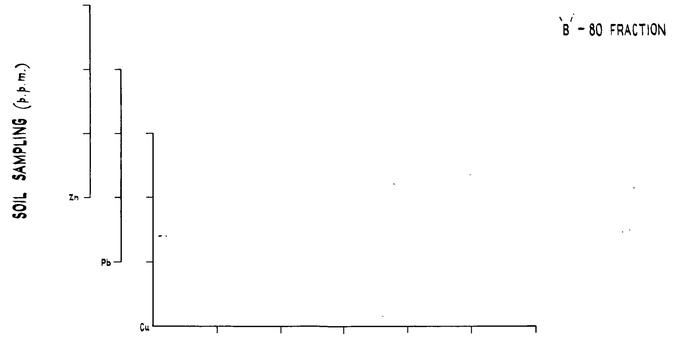
CHARGEABILITY — — — —1—1— RECEIVER 1 —2—2— RECEIVER 2

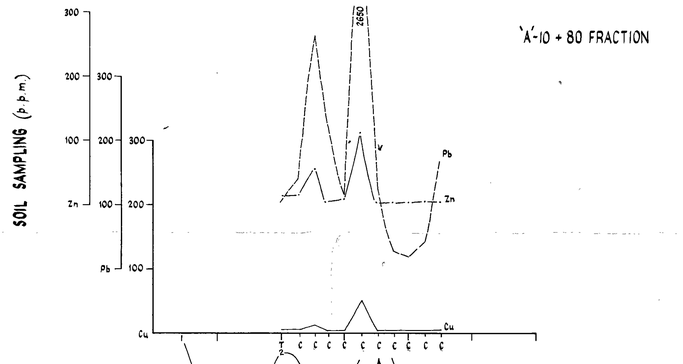
ANOMALY - C.G.G. INTERPRETATION XXX

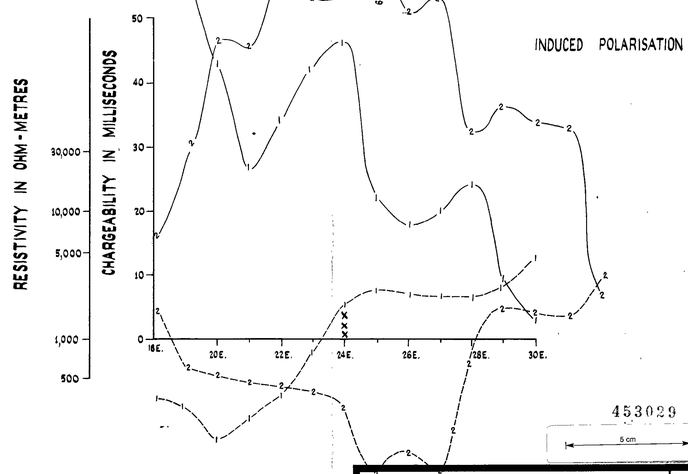
RESIDUAL SOILS A A HORIZON B B HORIZON C C HORIZON

NON RESIDUAL SOILS T

AREA. GOOSENECK LINE No. 64S.





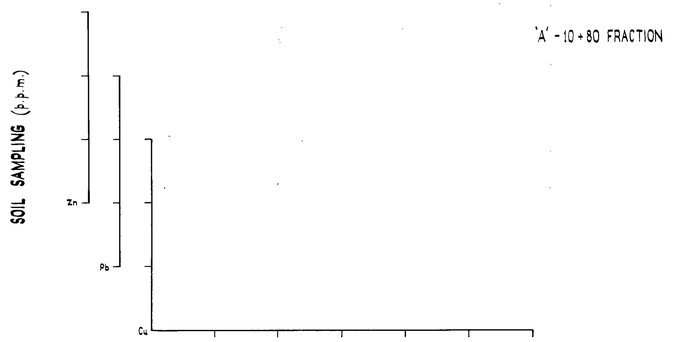


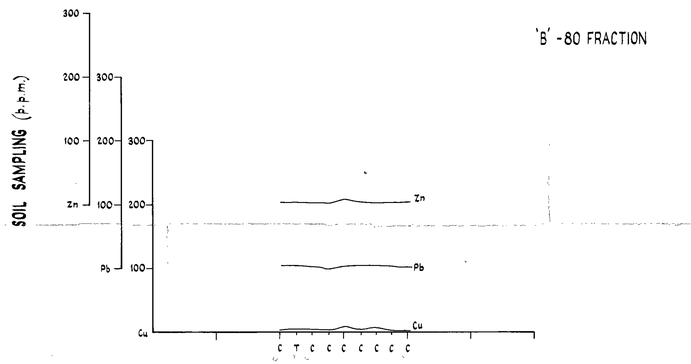
453029

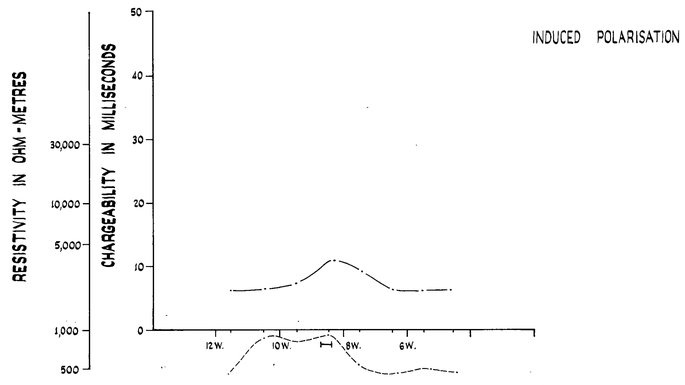
5 cm

THE MT. LYELL M. & R. CO. LTD.	DRAWN. N.S-H.
	TRACED. R.G.W.
MT. TYNDALL E.L. 9/66 76-170	CHECKED.
INDUCED POLARISATION AND GEOCHEMICAL PROFILES C 012	DATE. JUNE '76
	SCALE. 1:2400
	MAP 12

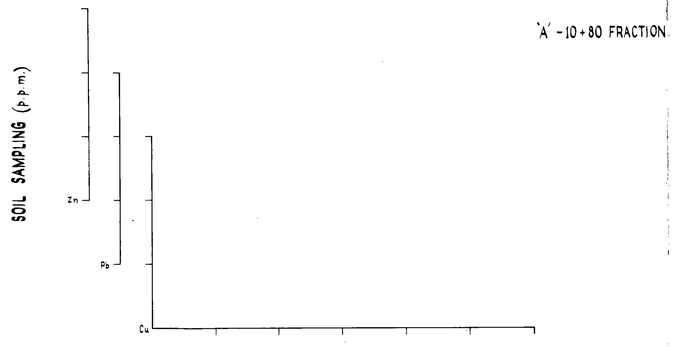
AREA. MT. READ LINE No. 63N.

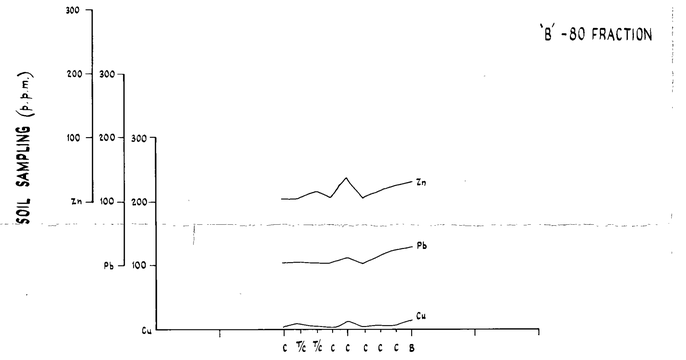


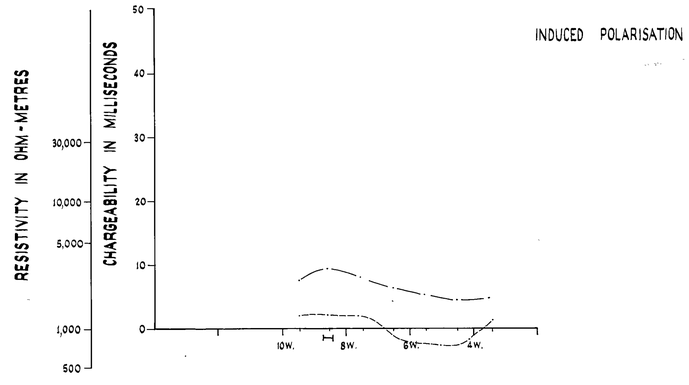




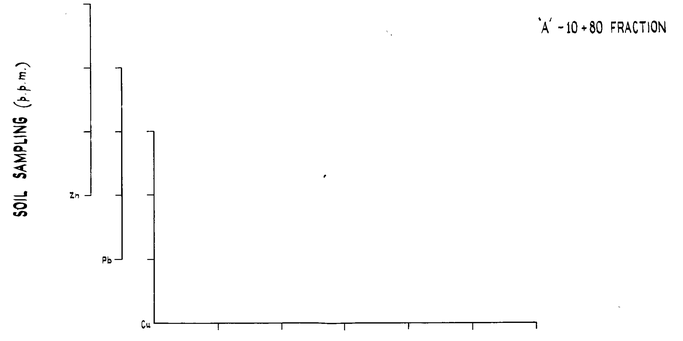
AREA. MT. READ LINE No. 62N.

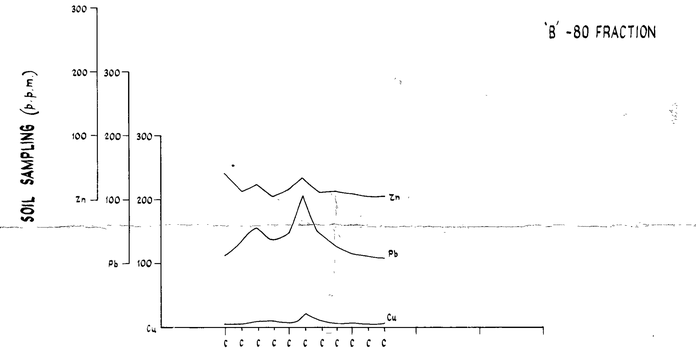


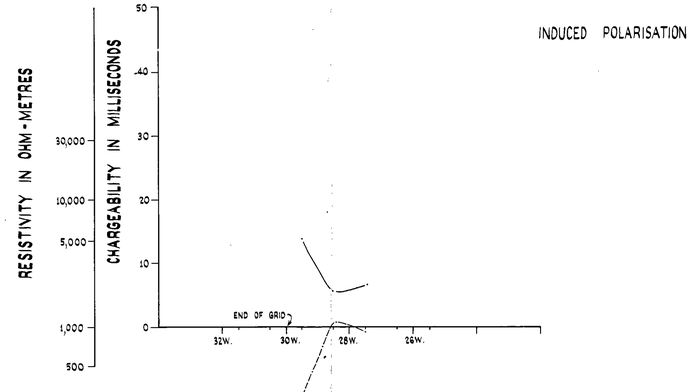




AREA. MT. READ LINE No. 61N.







453030

RESISTIVITY ------ ---1---1--- RECEIVER 1 ---2---2--- RECEIVER 2

CHARGEABILITY —— —1—1— RECEIVER 1 —2—2— RECEIVER 2

ANOMALY - SCINTREX INTERPRETATION H

RESIDUAL SOILS A A HORIZON, B B HORIZON, C C HORIZON

NON RESIDUAL SOILS T

5 cm

THE MT. LYELL M. & R. CO. LTD.

MT. TYNDALL E.L. 9/66 76-1171

INDUCED POLARISATION AND GEOCHEMICAL PROFILES 013

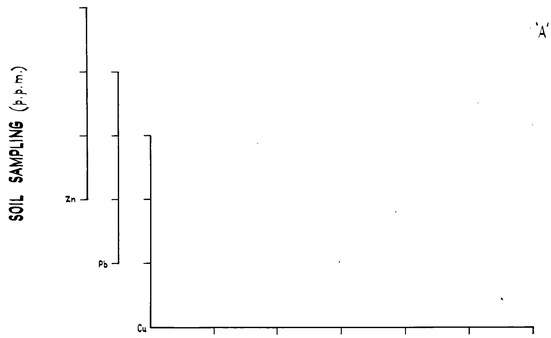
DRAWN.	N.S-H.
TRACED.	R.G.W.
CHECKED.	
DATE.	JUNE '76
SCALE.	1:2400

MAP 13

AREA. MT. READ LINE No. 60N.

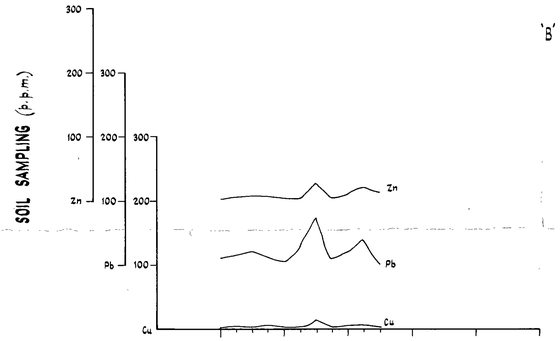
'A' -10+80 FRACTION

SOIL SAMPLING (p.p.m.)



'B' -80 FRACTION

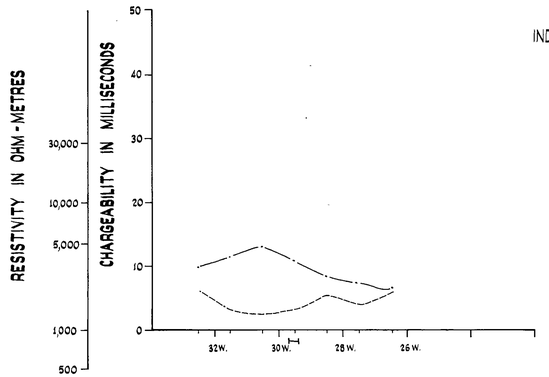
SOIL SAMPLING (p.p.m.)



INDUCED POLARISATION

RESISTIVITY IN OHM-METRES

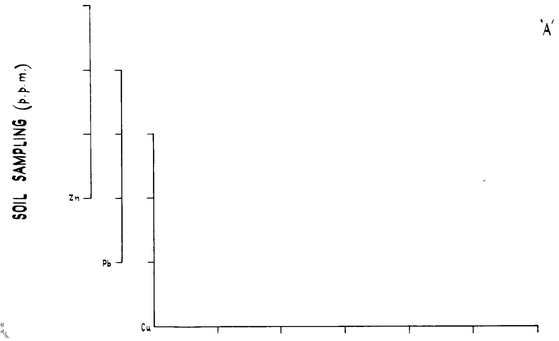
CHARGEABILITY IN MILLISECONDS



AREA. MT. READ LINE No. 57N.

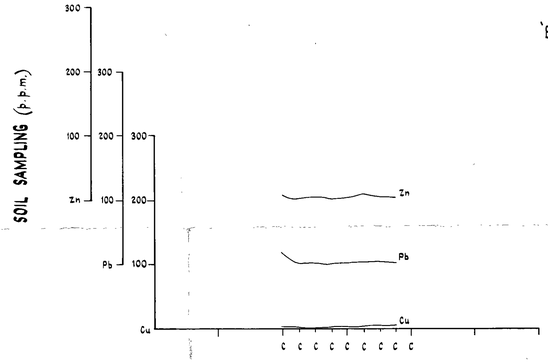
'A' -10+80 FRACTION

SOIL SAMPLING (p.p.m.)



'B' -80 FRACTION

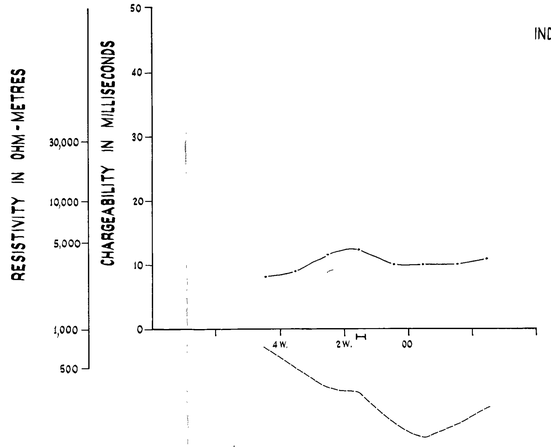
SOIL SAMPLING (p.p.m.)



INDUCED POLARISATION

RESISTIVITY IN OHM-METRES

CHARGEABILITY IN MILLISECONDS



RESISTIVITY ---1---1--- RECEIVER 1
---2---2--- RECEIVER 2

CHARGEABILITY —1—1— RECEIVER 1
—2—2— RECEIVER 2

ANOMALY - SCINTREX INTERPRETATION

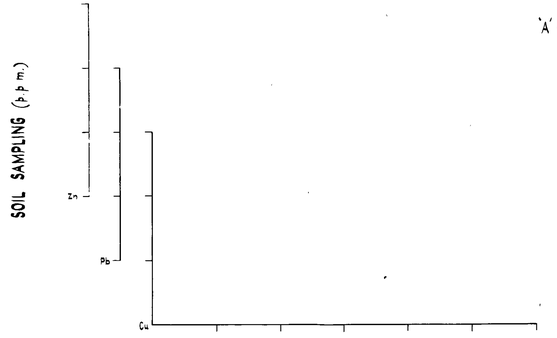
RESIDUAL SOILS A A HORIZON
B B HORIZON
C C HORIZON

NON RESIDUAL SOILS T

AREA. MT. READ LINE No. 57N.

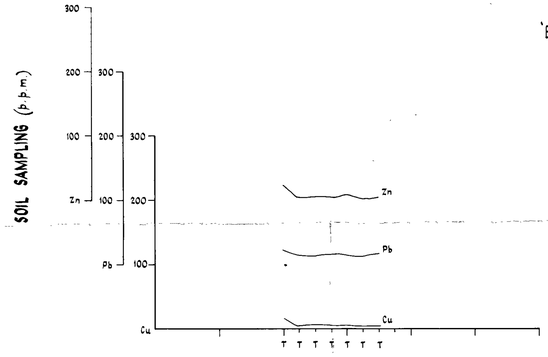
'A' -10+80 FRACTION

SOIL SAMPLING (p.p.m.)



'B' -80 FRACTION

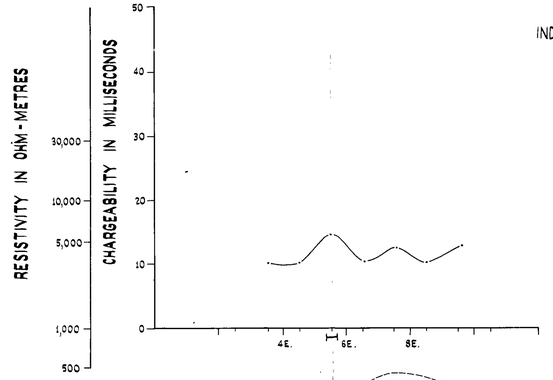
SOIL SAMPLING (p.p.m.)



INDUCED POLARISATION

RESISTIVITY IN OHM-METRES

CHARGEABILITY IN MILLISECONDS



453031

5 cm

THE MT. LYELL M. & R. CO. LTD.

MT. TYNDALL E.L. 9/66 76-1171

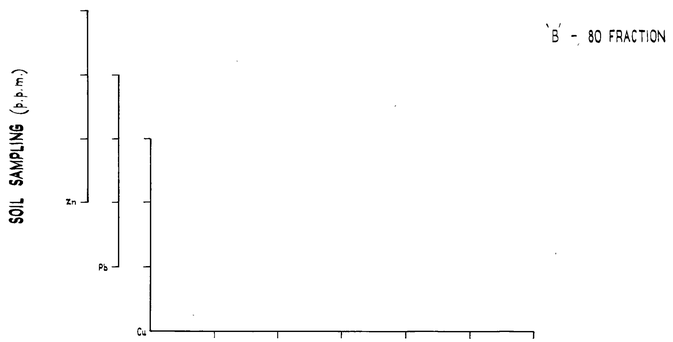
INDUCED POLARISATION AND GEOCHEMICAL PROFILES

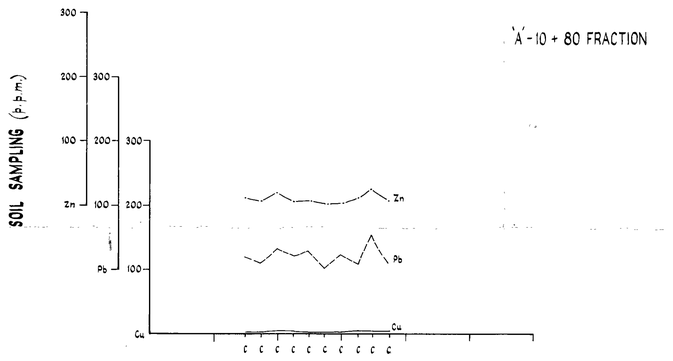
014

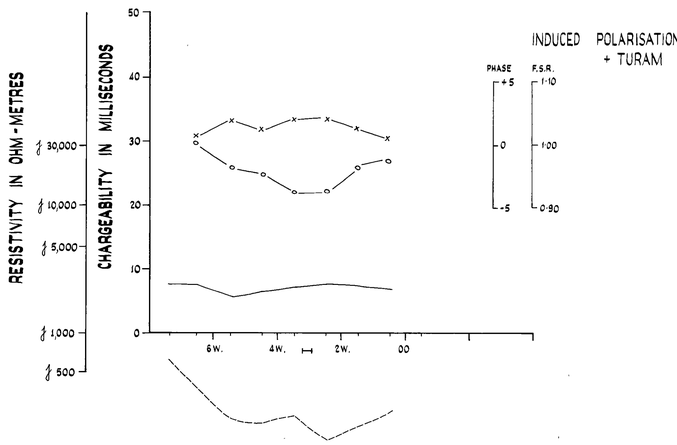
DRAWN. N.S.H.
TRACED. R.G.W.
CHECKED.
DATE. JUNE '76
SCALE. 1:2400

MAP 14

AREA. MT. READ LINE No. 56 N.

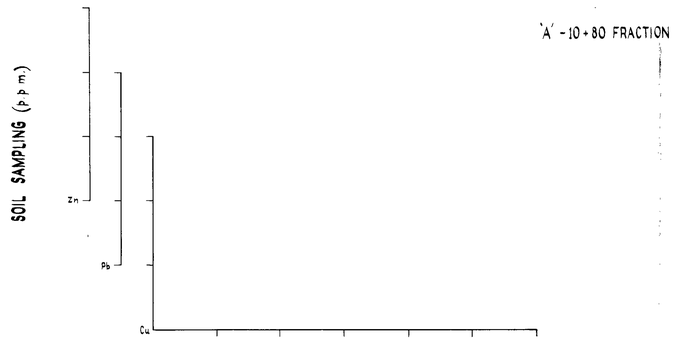


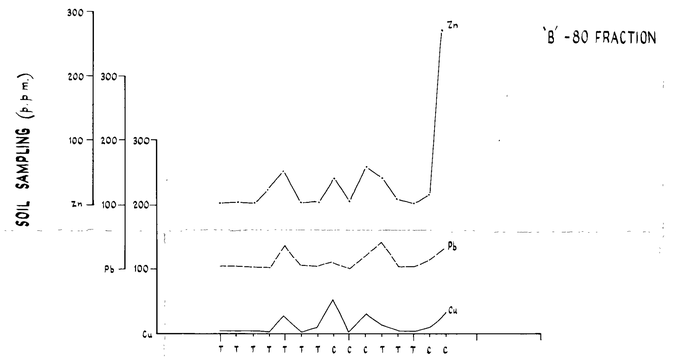


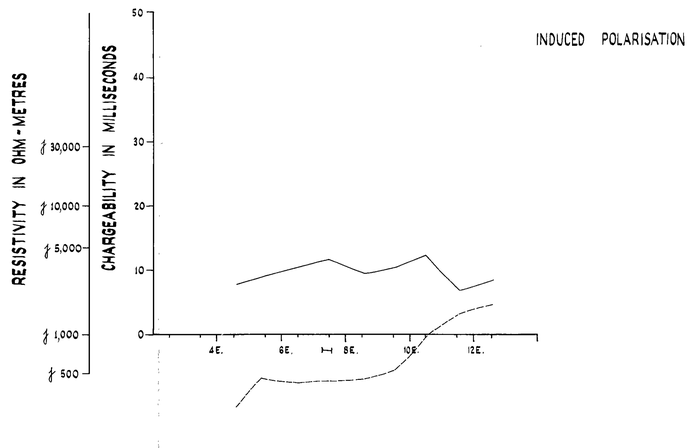


TURAM E.M.
X FIELD STRENGTH RATIO.
O PHASE.

AREA. MT. READ LINE No. 56 N.







RESISTIVITY ------ ---1---1--- RECEIVER 1
---2---2--- RECEIVER 2

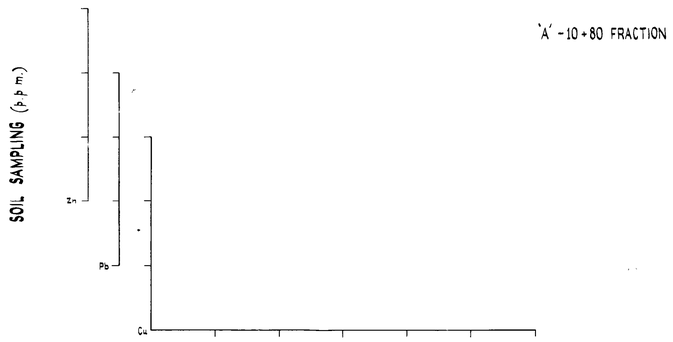
CHARGEABILITY — — — —1—1— RECEIVER 1
—2—2— RECEIVER 2

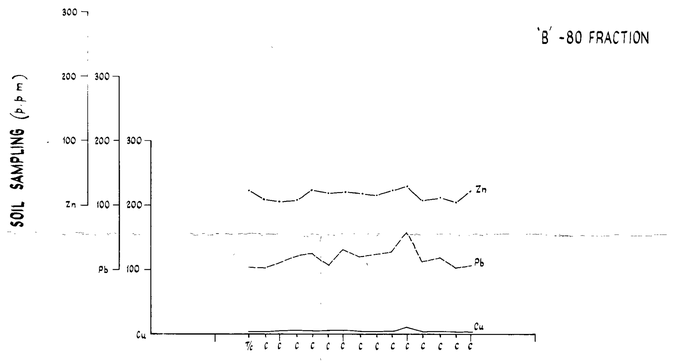
ANOMALY - SCINTREX INTERPRETATION ⊢

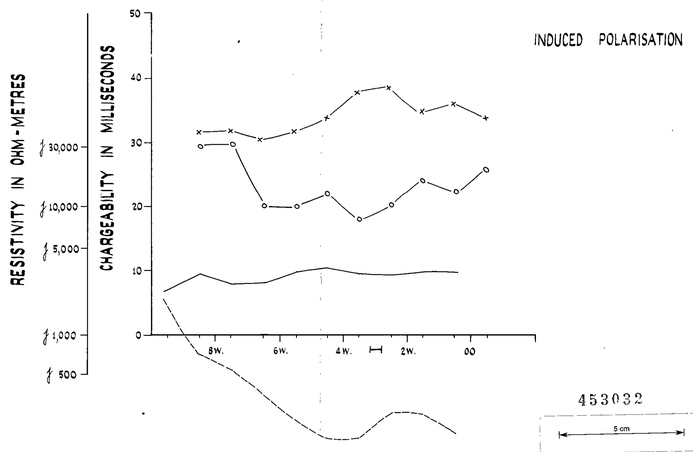
RESIDUAL SOILS A A HORIZON
B B HORIZON
C C HORIZON

NON RESIDUAL SOILS T

AREA. MT. READ LINE No. 55 N.







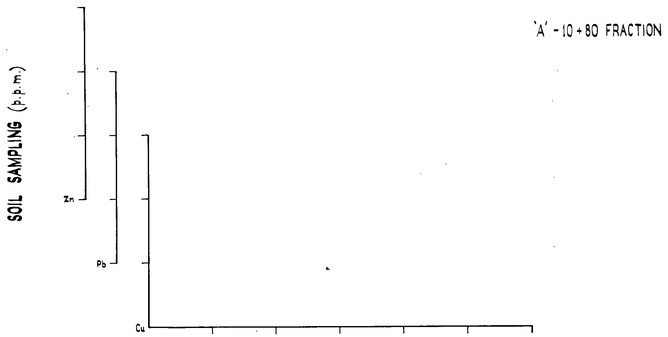
453032

5 cm

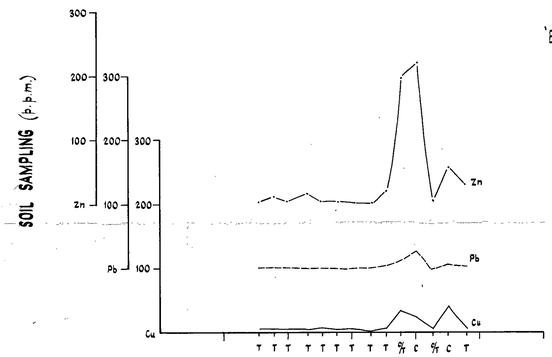
THE MT. LYELL M. & R. CO. LTD.	DRAWN. N.S-H.
	TRACED. R.G.W.
MT. TYNDALL E.L. 9/66 76-171	CHECKED.
INDUCED POLARISATION AND	DATE. JUNE '76
GEOCHEMICAL PROFILES 015	SCALE. 1:2400
	MAP 15

AREA. MT. READ LINE No. 55N.

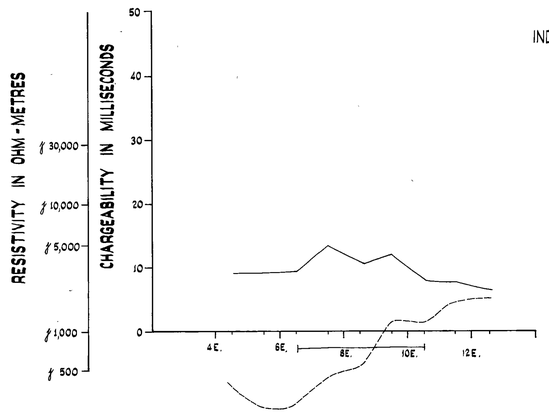
'A' -10+80 FRACTION



'B' -80 FRACTION

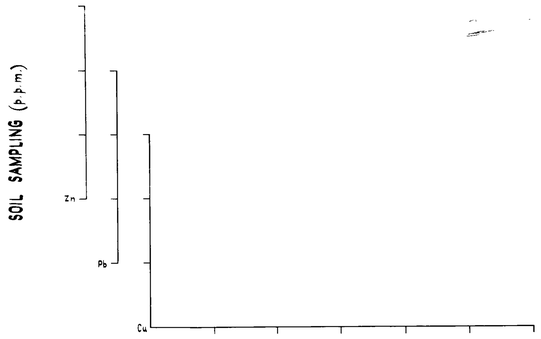


INDUCED POLARISATION

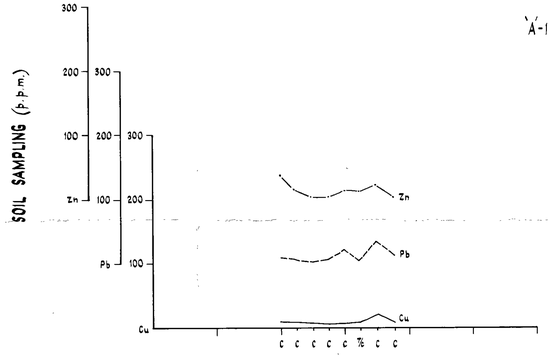


AREA. MT. READ LINE No. 54N.

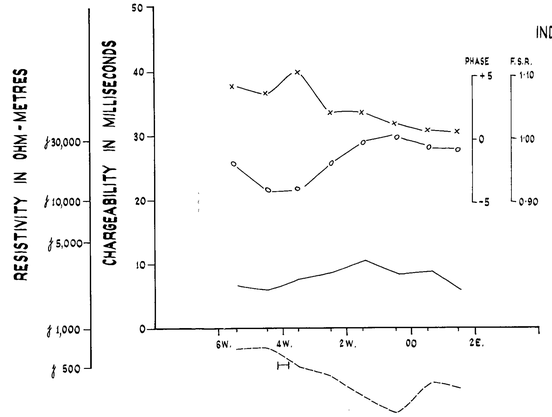
'B' - 80 FRACTION



'A' -10+80 FRACTION

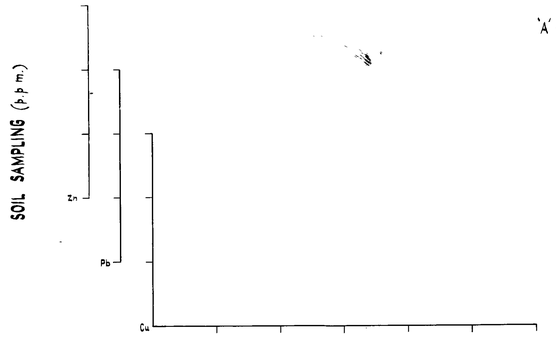


INDUCED POLARISATION PLUS TURAM

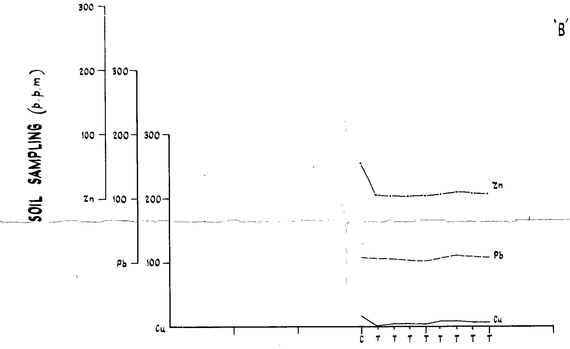


AREA. MT. READ LINE No. 53N.

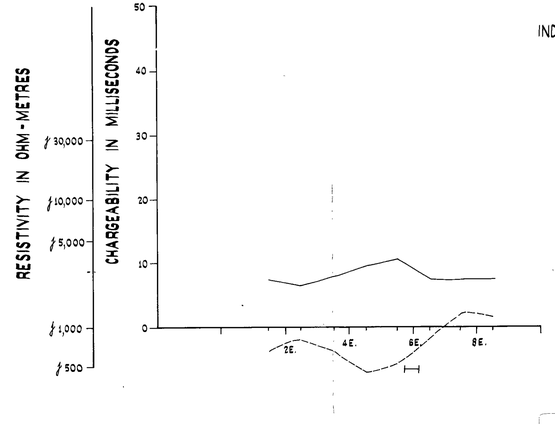
'A' -10+80 FRACTION



'B' -80 FRACTION



INDUCED POLARISATION



RESISTIVITY ------- ---1---1--- RECEIVER 1 ---2---2--- RECEIVER 2

CHARGEABILITY — — — —1—1— RECEIVER 1 —2—2— RECEIVER 2

ANOMALY - SCINTREX INTERPRETATION ⊢

RESIDUAL SOILS A A HORIZON B B HORIZON C C HORIZON

NON RESIDUAL SOILS T

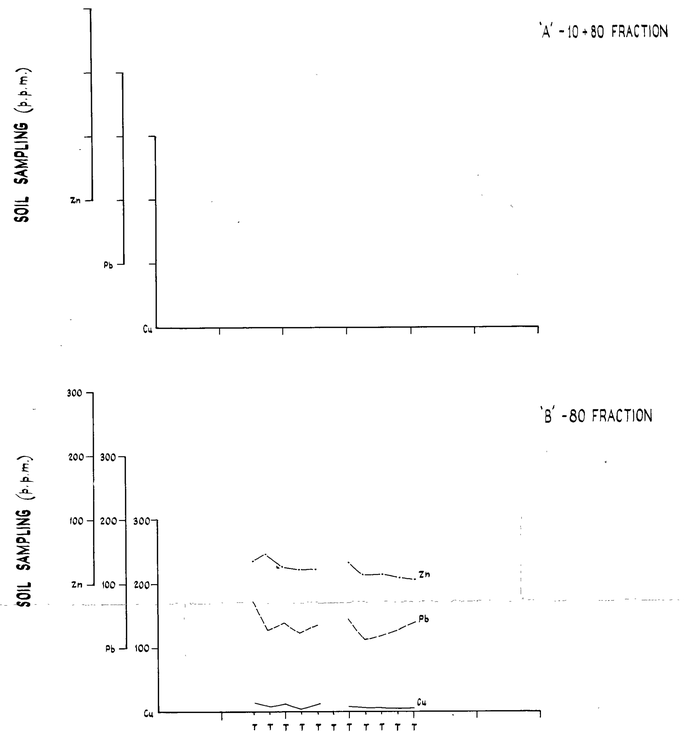
TURAM E.M.
× FIELD STRENGTH RATIO.
O PHASE.

453033

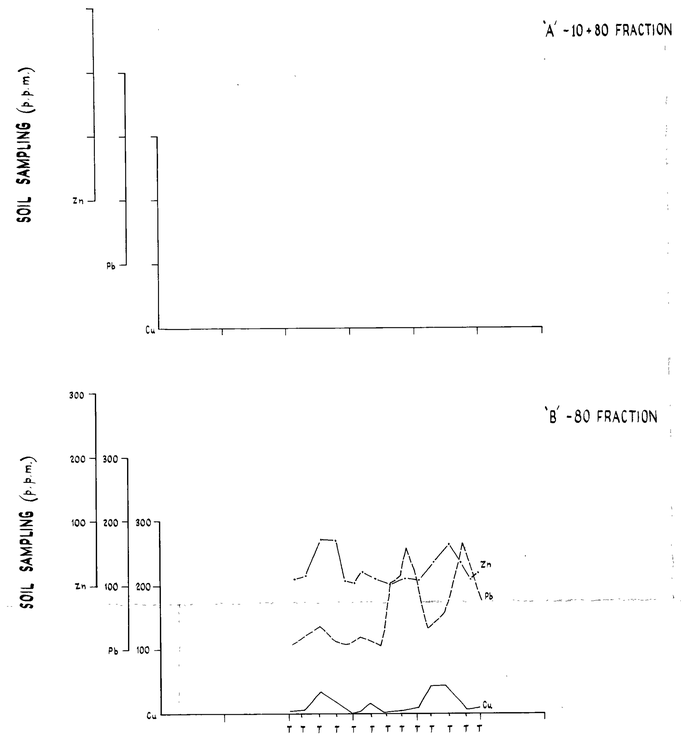
5 cm

THE MT. LYELL M. & R. CO. LTD.	DRAWN. N.S.+M
	TRACED. R.G.W.
MT. TYNDALL E.L. 9/66 76-171	CHECKED.
INDUCED POLARISATION AND	DATE. JUNE '76
GEOCHEMICAL PROFILES 016	SCALE. 1:2400
	MAP 16

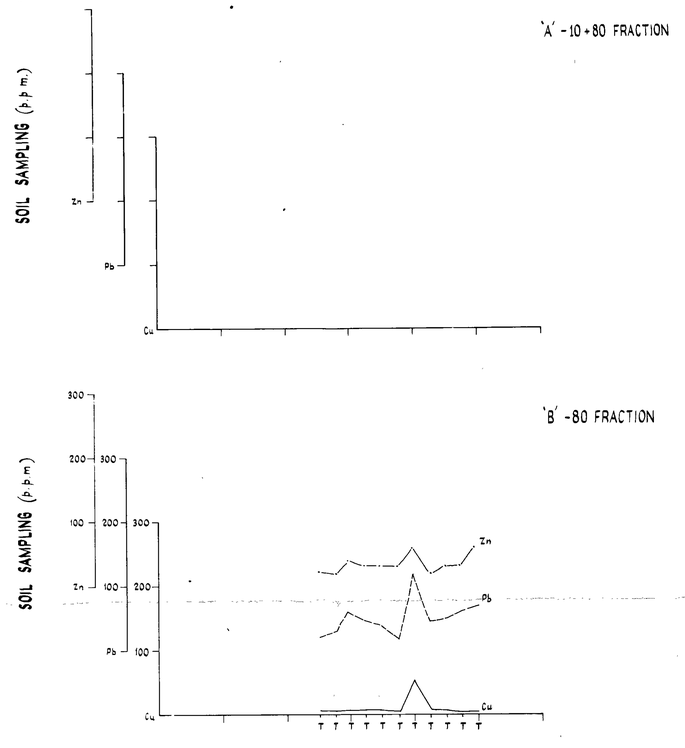
AREA. MT. READ LINE No. 53 N.



AREA. HENTY FAULT ZONE LINE No. 52N.



AREA. HENTY FAULT ZONE LINE No. 51N.



RESISTIVITY ------ RECEIVER 1 / RECEIVER 2

CHARGEABILITY — - — RECEIVER 1 / RECEIVER 2

ANOMALY - SCINTREX INTERPRETATION

RESIDUAL SOILS A A HORIZON, B B HORIZON, C C HORIZON

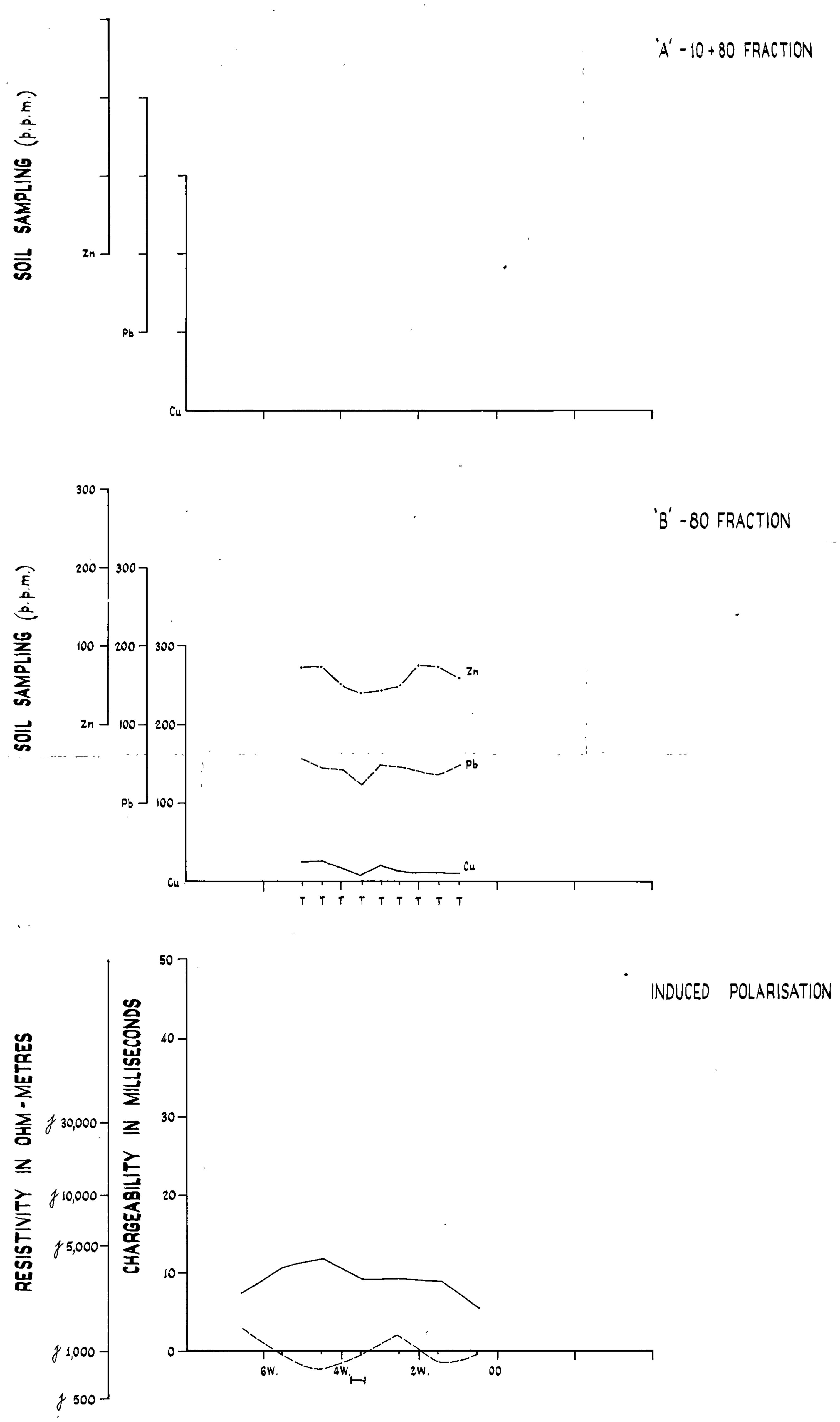
NON RESIDUAL SOILS T

5 cm

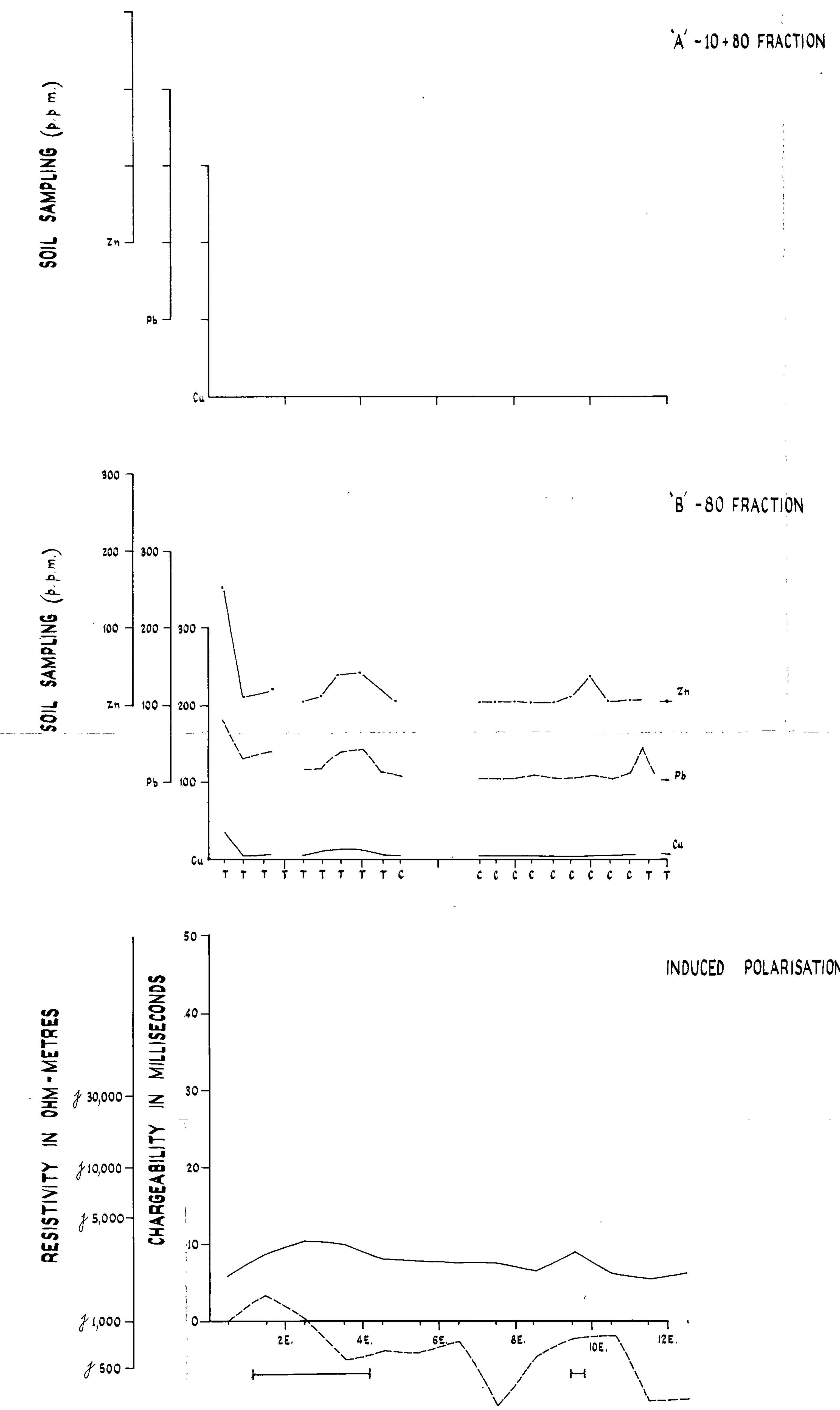
453034

THE MT. LYELL M. & R. CO. LTD.	DRAWN. N.S-H.
	TRACED. R.G.W.
MT. TYNDALL E.L. 9/66 76-171	CHECKED.
INDUCED POLARISATION AND GEOCHEMICAL PROFILES 017	DATE. JUNE '76
	SCALE. 1:2400
	MAP 17

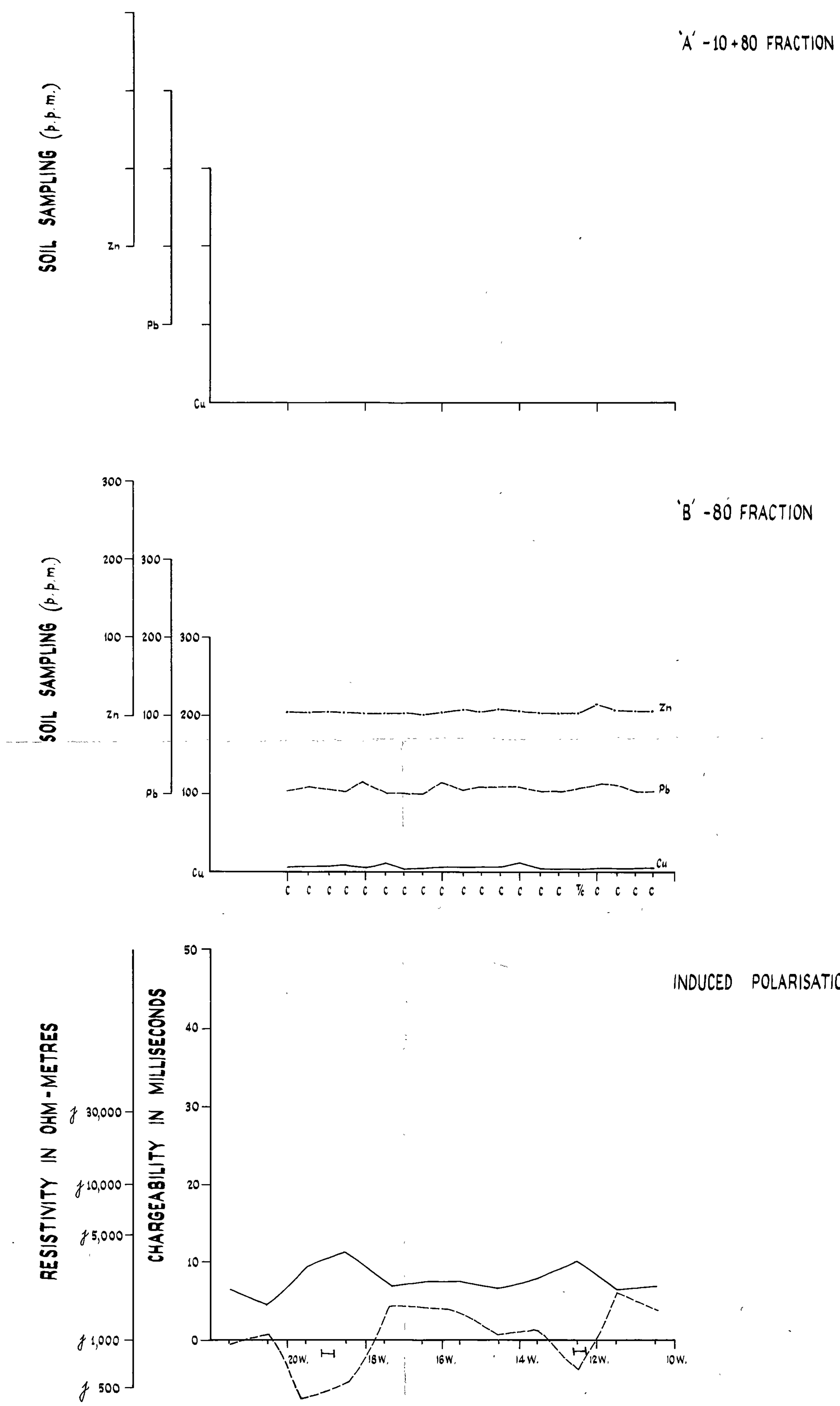
AREA. MT. READ LINE No. 51N.



AREA. MT. READ LINE No. 51N.



AREA. MT. READ LINE No. 50N.



RESISTIVITY ——— — —1— —1— — RECEIVER 1; — —2— —2— — RECEIVER 2

CHARGEABILITY — — — —1— 1— RECEIVER 1; —2— 2— RECEIVER 2

ANOMALY - SCINTREX INTERPRETATION |—|

RESIDUAL SOILS: A A HORIZON; B B HORIZON; C C HORIZON

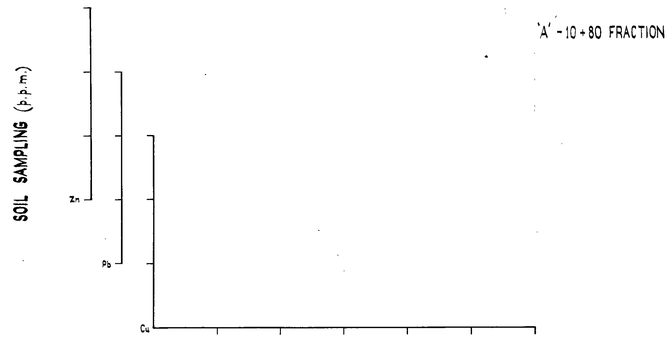
NON RESIDUAL SOILS T

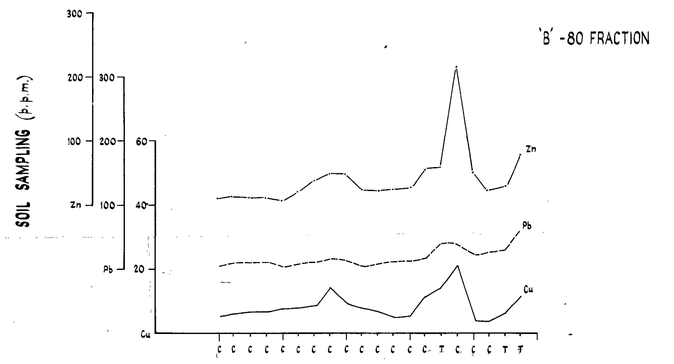
453036

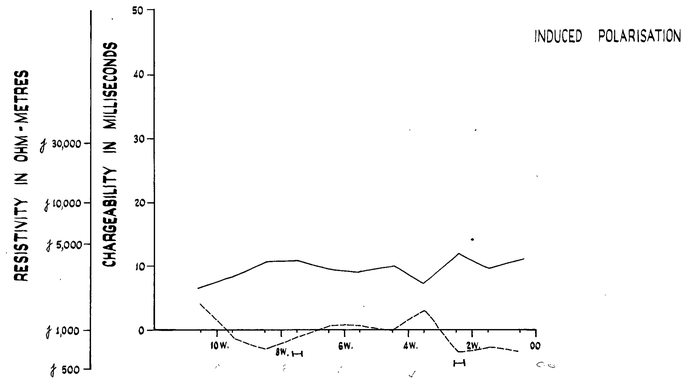
5 cm

THE MT. LYELL M. & R. CO. LTD.	DRAWN. N.S-H.
MT. TYNDALL E.L. 9/66 76-1171	TRACED. R.G.W.
INDUCED POLARISATION AND	CHECKED.
GEOCHEMICAL PROFILES 018	DATE. JUNE '76
	SCALE. 1:2400
	MAP 18

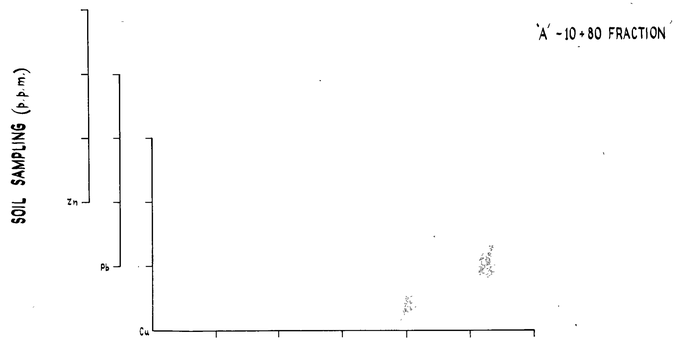
AREA. MT. READ LINE No. 50N.

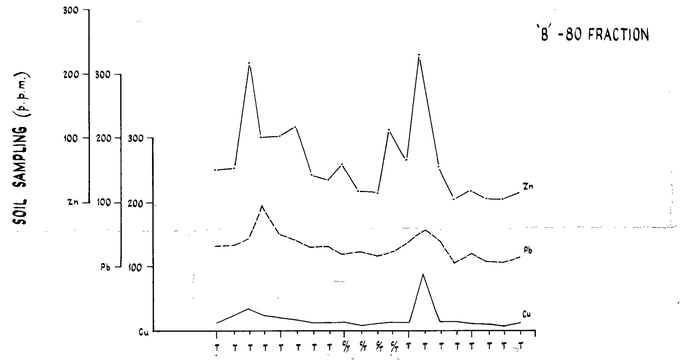


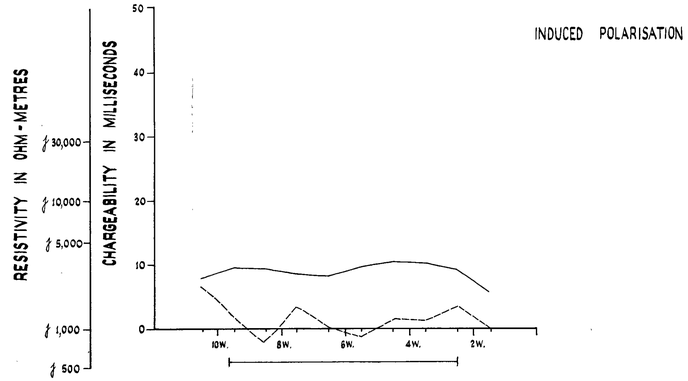




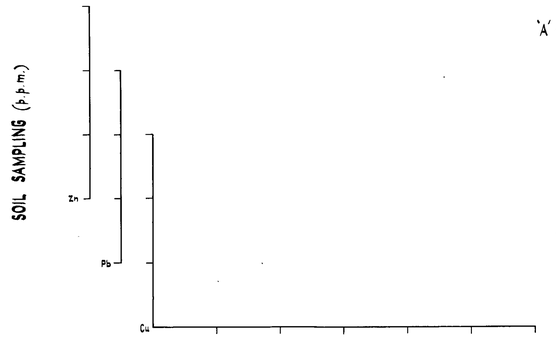
AREA. MT. READ LINE No. 49N.

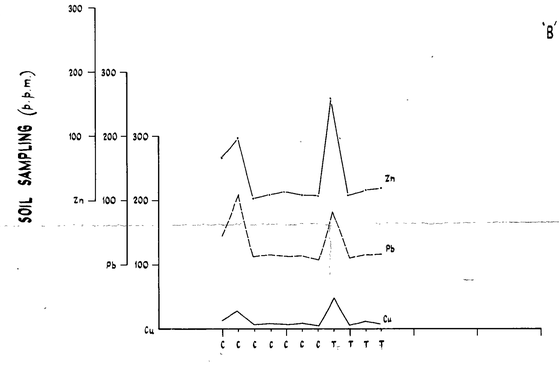


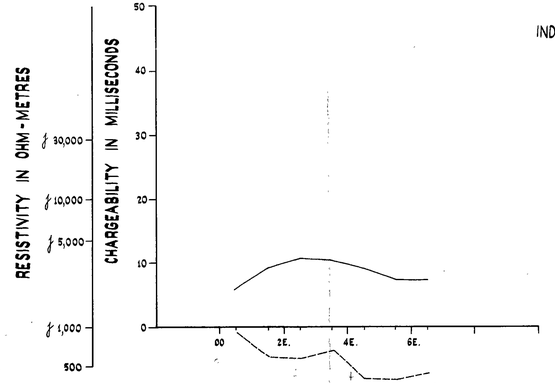




AREA. MT. READ LINE No. 49N.







453036

5 cm

RESISTIVITY ——— RECEIVER 1 — — — RECEIVER 2

CHARGEABILITY — — — RECEIVER 1 ——— RECEIVER 2

ANOMALY - SCINTREX INTERPRETATION ⊢⊣

RESIDUAL SOILS A A HORIZON, B B HORIZON, C C HORIZON

NON RESIDUAL SOILS T

THE MT. LYELL M. & R. CO. LTD.

MT. TYNDALL E.L. 9/66

INDUCED POLARISATION AND GEOCHEMICAL PROFILES

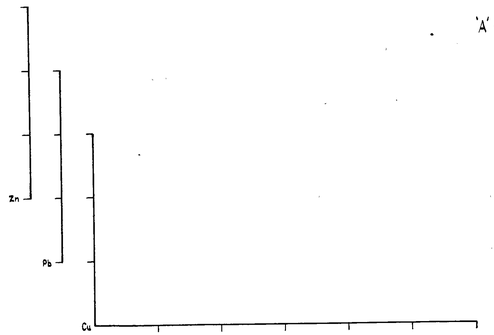
019

DRAWN.	N.S-H.
TRACED.	R.G.W.
CHECKED.	
DATE.	JUNE '76
SCALE.	1:2400
	MAP 19

AREA. MT. READ LINE No. 48N.

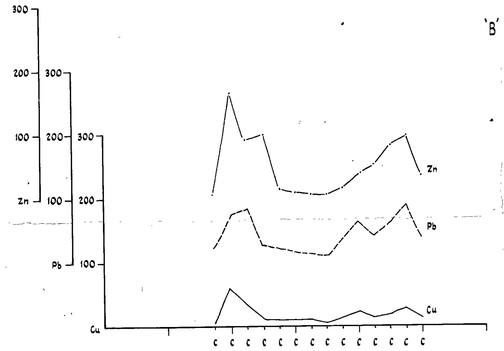
'A' - 10 + 80 FRACTION

SOIL SAMPLING (p.p.m.)



'B' - 80 FRACTION

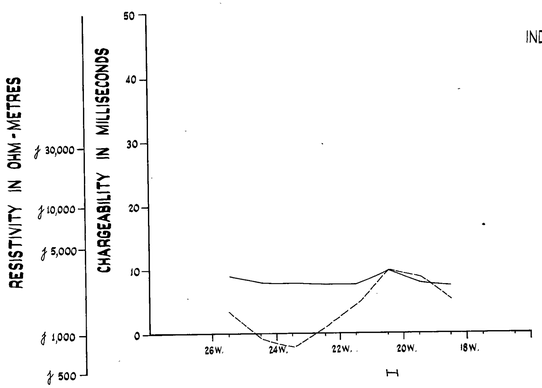
SOIL SAMPLING (p.p.m.)



INDUCED POLARISATION

RESISTIVITY IN OHM-METRES

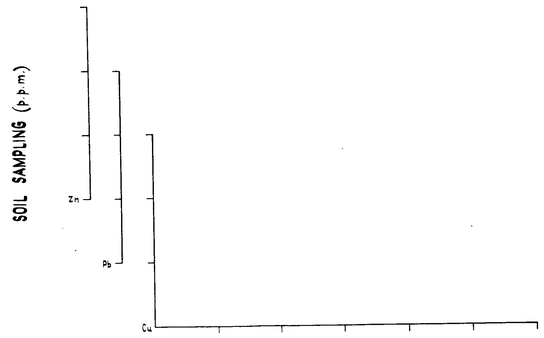
CHARGEABILITY IN MILLISECONDS



AREA. MT. READ LINE No. 48N.

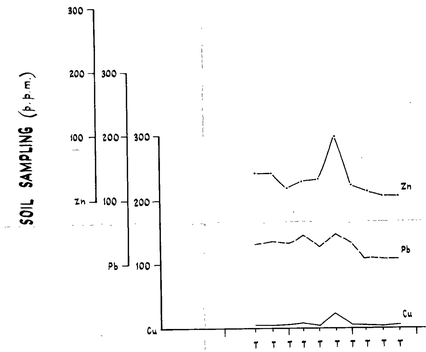
'B' - 80 FRACTION

SOIL SAMPLING (p.p.m.)



'A' - 10 + 80 FRACTION

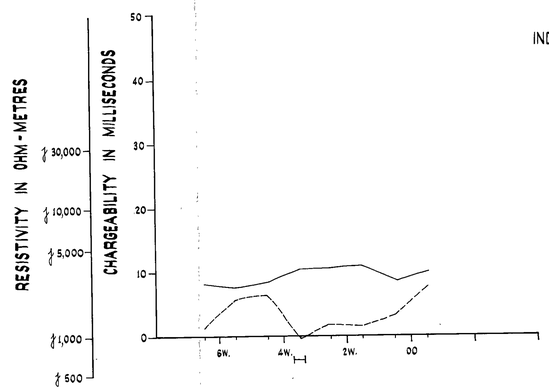
SOIL SAMPLING (p.p.m.)



INDUCED POLARISATION

RESISTIVITY IN OHM-METRES

CHARGEABILITY IN MILLISECONDS



RESISTIVITY ——— RECEIVER 1 / RECEIVER 2

CHARGEABILITY - - - RECEIVER 1 / RECEIVER 2

ANOMALY - SCINTREX INTERPRETATION

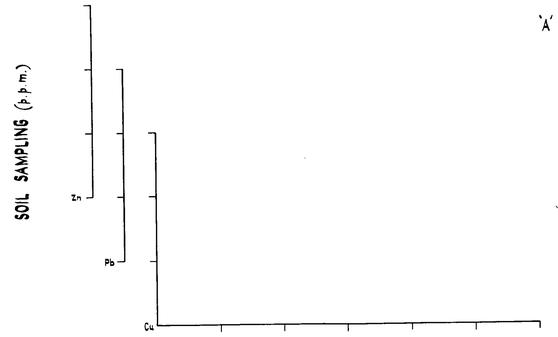
RESIDUAL SOILS A A HORIZON, B B HORIZON, C C HORIZON

NON RESIDUAL SOILS T

AREA. MT. READ LINE No. 48N.

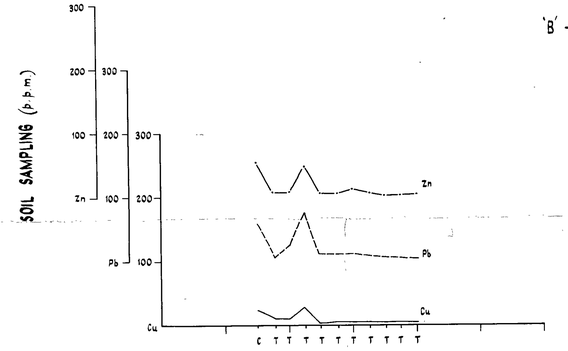
'A' - 10 + 80 FRACTION

SOIL SAMPLING (p.p.m.)



'B' - 80 FRACTION

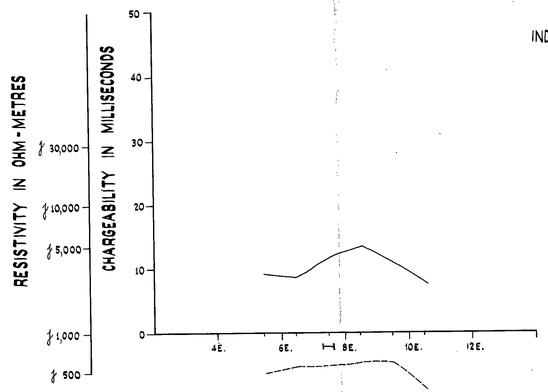
SOIL SAMPLING (p.p.m.)



INDUCED POLARISATION

RESISTIVITY IN OHM-METRES

CHARGEABILITY IN MILLISECONDS



453034

5 cm

THE MT. LYELL M. & R. CO. LTD.	DRAWN. N.S-H.
	TRACED. R.G.W.
MT. TYNDALL E.L. 9/66 76-1171	CHECKED.
	DATE. JUNE '76
INDUCED POLARISATION AND	SCALE. 1:2400
GEOCHEMICAL PROFILES 020	MAP 20