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RENISON LIMITED

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E.L. 2/63

MT. LINDSAY AREA, WESTERN TASMANIA

1981-1982 ANNUAL REPORT

D. of M	A.O.	C.G.	E.O.	D.S.M.E.

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SUMMARY

Exploration carried out on E.L. 2/63 during 1981-82 consisted of:

(i) A four hole diamond drilling program at Merton Hill, together with geological and geochemical surveys on extensions of the Merton Hill Grid.

(ii) A three hole diamond drilling program at Mt. Lindsay.

(iii) A stream sediment sampling program over the relatively unexplored north-east portion of the licence area.

(iv) Establishment of infill lines on the Harman River Grid at Parsons Hood, and completion of detailed geochemical and geophysical surveys thereon.

The above work cost $215,969 to complete.

Encouraging results were obtained from both the Parsons Hood and stream sediment work. At Parsons Hood, several strong geophysical and geochemical anomalies were outlined within Crimson Creek Formation rocks adjacent to the Meredith Granite. The stream sediment program resulted in the identification of several areas anomalous in tin, east and south-east of Merton Hill.

The diamond drilling results at both Merton Hill and Mt. Lindsay were uniformly discouraging, and further work on either prospects is not recommended at this stage.

In 1982-83 it is proposed to spend $100,000 on E.L. 2/63, primarily by drilling two diamond drill holes at Parsons Hood, with helicopter support. In addition, geological mapping possibly followed by limited gridding, geochemistry and geophysics is recommended to test the source of stream sediment geochemical anomalies east and south-east of Merton Hill.

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1. INTRODUCTION

E.L. 2/63, the Mt. Lindsay Area, is located north of Renison Bell on the West Coast of Tasmania and covers an area of 90 square kilometres (see Figure 1).

Access is possible by the first class H.E.C. Pieman Road which bisects the licence area in an east-west direction, and by several four-wheel-drive tracks. However, in the more remote northern and eastern parts of the area, the most effective means of access is helicopter transport during the summer months of January to March.

Geologically, the area consists of faulted and folded north-west trending Cambrian to Devonian sedimentary rocks on the western limb of the Huskisson Syncline, with re-mobilised ultramafics intruded along the Cambrian-Ordovician boundary. In the north-west corner of the licence area, the Devonian Meredith Granite intrudes both the sediments and ultramafics.

Prior to 1979, exploration had centred on the Mt. Lindsay Mine area, where a series of out-cropping carbonate-chert beds have been contact metamorphosed and tin-tungsten-mineralised by the Meredith Granite.

More recently, interest has also concentrated on the following areas:

(i) The Harman River Grid Area, in the north of the licence area, where Crimson Creek Formation, Ordovician Gordon Limestone, Silurian carbonate-bearing rocks, and ultramafics come in contact with the Meredith Granite.

(ii) The Merton Hill Area where Cambrian-Devonian rocks are faulted and mineralised with tin, silver, lead and zinc in fault zones and thin veins.

(iii) The north-east corner of the licence area where carbonate bearing Devonian and Silurian rocks occur, and where minor alluvial tin workings are reported.

In 1981-82, work was directed towards more detailed investigation of the above three areas, together with a small drilling program on the Mt. Lindsay Grid.

2. LAND TENURE

Aberfoyle Limited is the holder of E.L. 2/63, renewed to 1st April, 1983. Renison Limited is the operator through a Joint Venture Agreement with Paringa Mining and Exploration Company Limited and Aberfoyle Limited. Equity in the project as at June 1982 is:

Paringa	23.8%
Aberfoyle	16.2%
Renison Limited	41.0%
C.G.F.A.	19.0%

3. PREVIOUS WORK

Exploration activity in the Mt. Lindsay licence area has occurred since the late 1950's and a brief summary is presented below. All available reports covering this work are listed in the bibliography.

1963 - 1970:	Aberfoyle outlined five anomalous zones at and near the Mt. Lindsay Mine: The Main Ore Zone, No. 1 and No. 2 anomalies were partially tested by shallow diamond drilling. "Potential reserves" of 208,000 tonnes of 0.83% Sn were outlined in the Main Ore Zone.
1970 - 1972:	Paringa undertook regional and semi-detailed ground surveys between Mt. Lindsay and Pieman-Wilson River Area.
1972 - 1973:	Exploration commenced by Renison. Road access created north of Pieman River. Airborne EM-magnetic survey. Semi-regional mapping of SW part of the area.
1973 - 1974:	Continued access development. Misty Valley and Mt. Lindsay Grids cut over two anomalous areas. Detailed ground surveys commenced.
1974 - 1975:	Continued access development to Mt. Lindsay Mine. Completion of major phase of ground work on Mt. Lindsay Grid.
1975 - 1979:	Diamond drilling programmes on Mt. Lindsay Grid by Renison. Encouraging stanniferous skarn mineralisation intersected at Mt. Lindsay Mine and to the S.E. along strike from the No. 2 and Main Ore Zone Anomalies.

1979 - 1980: Establishment of Harman River Grid and Harman River access road from the H.E.C. Pieman Road. Establishment of Merton Hill Grid. Ground magnetics, soil geochemistry, gradient array I.P. and geological mapping carried out on both grids.

1980 - 1981: Three hole diamond drilling program and stream sediment survey carried out at Merton Hill. Minor extension and re-sampling of the northern part of the Mt. Lindsay Grid over 'Anomaly A'.

4. WORK COMPLETED 1981-82

Work carried out on E.L. 2/63 during 1981-82 comprised:

(i) Diamond drilling, together with geological, geochemical and geophysical surveys at Merton Hill.

(ii) Diamond drilling at Mt. Lindsay.

(iii) Stream sediment sampling in the north-east portion of the licence area.

(iv) Geophysical and geochemical surveys on the Harman River Grid at Parsons Hood.

A total of $215,969 was spent on this work. Expenditure details are listed in Appendix 1.

The details of the Merton Hill work have already been described in the April 1982 Progress Report (by L. Martin and P. Roberts), to which the reader is referred. A full description is therefore unnecessary here, however a brief summary is included below:

> The Merton Hill Grid was extended to the north-west and south-east for a total of 5.3 line km. Grid lines were geochemically soil sampled, and samples were assayed for Sn, As, Cu, Pb, Zn and Ni. The lines were also covered by ground magnetics and detailed geological mapping.
>
> Four diamond drill holes were completed for a total of 1295m. They were designed to test for mineralisation at depth below and along strike from tin-base metals mineralisation encountered in the earlier drill holes and old adits. The results of these holes were disappointing; only minor sub-economic vein-style base metal mineralisation was intersected.

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Assessment of the data from this and previous years' work on Merton Hill has indicated that the prospect contains only sub-economic mineralisation of tin and base metals in fault zones and thin veins. Consequently no further work is recommended there.

4.1 Mt. Lindsay Drilling

Research work on the complex skarns zone at Mt. Lindsay, undertaken by Dr. T. Kwak at La Trobe University, suggested that the mineralisation within these skarns is compositionally zoned. A significant volume of cassiterite-bearing skarn within each carbonate horizon at Mt. Lindsay was postulated as a result of this work. Assessment of previous drilling indicated that few drill holes had penetrated such a zone in the Main Ore Zone and No. 2 Anomaly, and none had intersected it in the No. 1 Anomaly.

To investigate the extent of this cassiterite-bearing zone, three diamond drill holes were completed, totalling 715m. Drill hole ML58 was designed to test the No. 2 Anomaly, however it had to be abandoned at 83m because of excessive deviation. The hole was re-drilled as ML59, which intersected the No. 2 Anomaly successfully. ML60 was drilled into the Main Ore Zone. Plan and section views are presented on Figures 8, 9 and 10.

Mineralised intervals were assayed for Sn, WO_3 and, in some cases, As, Cu, Pb and Zn by XRF, and for Bi, Ag and acid soluble Sn by A.A.S. in the Renison Laboratory. Parts of the core were analysed using the Renison Tin Core Analyser. Magnetic susceptibility readings were recorded for one metre sections along each of the three drill holes. Results are presented with the drill logs and plots in Appendix 3.

Samples were taken of mineralised intervals and significant rock types and petrologically described by D. Cowan (see Appendix 7, Part 1).

4.2 Parsons Hood Infill Lines on Harman River Grid

The 1979/80 work on the Harman River Grid resulted in the identification of numerous geophysical and geochemical anomalies, the most interesting of which occur near the Meredith Granite-Crimson Creek Formation contact. Carbonate units commonly occur in the Crimson Creek Formation and may contain replacement mineralisation when in contact with the Meredith Granite. These anomalies may be explained as the surface expression of such mineralisation.

Therefore, five infill lines and two sub-baselines, totalling 5.8 line km, were established over and to the north of Parsons Hood. The location of these lines is shown on the 1:5,000 Corinna D1/4 and D3/2 sheets (Figures 3, 5 and 6). The following work was undertaken along them:

(i) Geochemical sampling was carried out on most of the grid lines and one sub-baseline; part of Line 9 and sub-baseline 2300W were omitted because of lack of time. Samples were taken by hand auger, by contractor Graeme McCall, from a maximum depth of one metre, or as deep as conditions allowed. The samples were sieved and the minus 180 micron fractions assayed for Sn and As by XRF and for Cu, Pb, Zn by A.A.S. in the Renison Assay Laboratory. Samples with significant amounts of total tin were re-assayed for acid soluble tin by A.A.S. in the Renison Assay Laboratory. Results are presented in Appendix 4 and on Figures 5(a) and (b).

(ii) Magnetic readings were taken on all lines and the sub-baseline, at 10 metre intervals. A Geometrics G816 Magnetometer was used with a sensor height of 2.6 metres. No base station corrections were made for diurnal variation, as it was anticipated that the differences between values would be much larger than the diurnal variation. The data was contoured by Scintrex Pty. Ltd. Results are presented in Appendix 5 and on Figure 6.

(iii) Dipole-Dipole surveying was carried out by contractor, Scintrex Pty. Ltd., on all of the infill lines (5, 7, 9, 11 and 13) and on sections of three of the more interesting Harman River Grid Lines (6, 12 and 14). Details of the survey are reported in Appendix 9. Pseudo-sections are plotted, on line profiles, Figures 7(a) - (h).

(iv) Geological mapping was carried out over most of the infill lines by the writer, and is presented in Figures 4(a)-(d). A quantity of rock chip samples were collected; rock chip sample descriptions and assays are presented in Appendix 6 and petrological descriptions by D. Cowan (C.M.S.) are presented in Appendix 7.

4.3 Stream Sediment Sampling

A regional stream sediment sampling program was conducted by contractor P. Ashton, from the beginning of December 1981 to the end of January 1982.

The area sampled consists of the north-east corner of E.L. 2/63. Most samples were collected using vehicular access along the H.E.C. Pieman Road and associated tracks, but in the more remote northerly parts, samples were collected using helicopter support. 217 samples were collected over approximately 15 km^2 at a frequency of approximately one per 200m of stream length. All small side creeks were sampled and a sample was taken in each main creek just above its junction with them.

The Huskisson River was not sampled due to the magnitude and varying provenance of its sediments.

The samples were wet sieved to -40 mesh in the field, oven dried and then sieved to -80 mesh. They were submitted to the Renison Assay Laboratory and assayed by XRF for Sn, WO_3, As and by A.A.S. for Cu, Pb, Zn and Ni. Results for each element are appended as Figures 11(a)-(g).

Location of the samples in the field was by means of air photographs (1:15,000 Burnie Concession coloured prints). A stream location map was produced from a combination of the old imperial topographic map sheets, photo-geological map sheets and field reconnaissance. In some particularly overgrown, low-lying swampy areas, the course of a stream was dramatically different from that plotted on the old imperial maps.

5. RESULTS

5.1 Mt. Lindsay Drilling

Results of the drilling at Mt. Lindsay were disappointing. Although drill holes ML59 and 60 cut the skarn zones close to their planned intersection points, neither of them intersected the target cassiterite-bearing zone. The results, therefore indicate that this zone is much more limited in extent than was previously anticipated (see Figures 8(a) and (b)). Drill hole details are:

D.D.H. ML58

83m deep, was drilled in a north-easterly direction to test for the interpreted cassiterite-bearing zone in the No. 2 Anomaly. It intersected hornfelsed, tuffaceous siltstones and shales, but was abandoned at 83m because of excessive deviation.

D.D.H. ML59

371m deep, was drilled on the same site as ML58 but oriented slightly differently to allow for expected deviation. It intersected a hornfelsed series of near-vertical, magnetic and non-magnetic siltstones, and some banded cherts, before intersecting the No. 2 Anomaly from 316.6 to 347.5m. Between 316.6 and 340.7m, this unit consists of fine to medium grained, dark green skarn composed of hastingsite, phlogopite, actinolite, tremolite and minor quartz, with minor pyrrhotite as disseminations and veinlets. At 340.7m, the No. 2 Anomaly grades into a banded, cherty pale brown-green skarn, with very minor pyrrhotite. Only very minor amounts of fine grained cassiterite were detected in petrological samples (see Appendix 7). The hole finished in hornfelsed, banded siltstones and shales at 371m. A fault zone was intersected at 163.3-167.1m; it is interpreted as being the same zone intersected in ML55 at 159.9m, which caused the fault-repetition of the No. 2 Anomaly in that hole.

The No. 2 Anomaly assay results were disappointing. Between 316.6 and 347.5m (31m), assays averaged 0.08%Sn (0.04% acid soluble), 0.06%Cu, 0.02%Zn, 0.006%Bi, 0.02%WO_3, 2g/t Ag. Higher grade intersections were 1.0m of 0.19% tin (0.06% acid soluble), 0.36% WO_3 at 324.5-325.5m and 1.0m of 0.24% Sn (0.01% acid soluble), at 335.5-336.5m.

D.D.H. ML60

265m deep, was also drilled in a north-easterly direction, to test for the interpreted cassiterite-bearing zone within the Main Ore Zone. It intersected a hornfelsed series of near vertical, magnetic and non-magnetic tuffaceous shales, siltstones and greywackes to 183.7m, altered hornfels with numerous veinlets of pyrrhotite to 188.1m, and banded, altered, hornfelsed tuff, chert, shale and quartzite (mottled zone of Schellekens?), to 192.0m. The Main Ore Zone was intersected from 192.0-251.9m and consisted of three main zones:

(i) 192.0-215.0m:
siliceous calc-silicate, and probable carbonate, now weathered and removed and represented by large cavities and major core loss

(ii) 215.0-245.8m:
hornfelsed quartzite, chert and probable carbonate, also weathered and removed and represented by large cavities and major core loss

(iii) 245.8-251.9m:
banded, light grey, fine grained limestone with minor chert bands.

Only very minor disseminations of pyrrhotite occur in the Main Ore Zone. Below the Main Ore Zone, the hole intersected a fault zone from 251.9 to 253.9m, of severely sheared and brecciated, fine grained, grey-brown skarn with minor blebs of pyrrhotite. From 253.9m hornfelsed silicified sediments and minor calc-silicates were intersected and a large cavity was encountered at 258.0m. The hole was finally abandoned at 265m after the lower four rods of the drill string broke off. Only 11.8m (or20%) of the Main Ore Zone was recovered.

Only minor sulphide mineralisation was observed in the drill core and no anomalous tin, bismuth, silver or tungsten values were obtained when intervals were assayed.

5.2 Parsons Hood Infill Lines on Harman River Grid

Most of the infill lines, except for the eastern ends of lines 11 and 13 which lie on the Meredith Granite, were established over Crimson Creek Formation rocks. As with the Mt. Lindsay Grid, work carried out on these lines resulted in a proliferation of anomalies as outlined in Sections 5.2.2 to 5.2.4, below. Table 1 lists the more interesting, co-incident geophysical and geochemical anomalies.

5.2.1. Geology

The Parsons Hood Infill Lines have been established in an area which lies on the north-west side of the Huskisson Syncline. Here,Crimson Creek Formation rocks are in contact with the Devonian Meredith Granite.

Parts of the area are covered with alluvium and vegetation and the rocks observed occur in rubbly outcrops covered in low scrub and moss. No reliable bedding readings could be taken on them. However, the general trend of the rock units appears to be essentially north-west in the southern part of the area, becoming more northerly over its northern part.

Detailed mapping of the area, as shown on Figures 4(a)-(d), indicates that the middle part of the Crimson Creek Formation consists of massive, mostly tuffaceous shales, siltstones, minor sandstones and irregularly banded cherts with rare gabbro, tuff and probable calcareous units. One of the latter has been altered and metasomatised to garnet-magnetite skarn. All of the rocks examined have been variably hornfelsed by the intrusion of the Meredith Granite and most contain some minor percentage of sulphide as specks or veinlets. It is thought that, also at the time of granite intrusion, certain susceptible rock units were variably impregnated with magnetite or pyrrhotite, forming a metasomatised aureole around the granite for one kilometer or more.

TABLE 1

Anomaly	Co-ordinates	Dipole-Dipole		Gradient I.P.		Magnetics	Geochemistry
Number		Chargeability	Resistivity	Chargeability	Resistivity		
1.	L. 5/400W to west offline	High (110 mv/v)	No change in background of 3000 ohm.m.	NOT	READ	Moderate	Nil
2.	L. 5/50W--25E	High (176mv/v)	Low (250 ohm.m.)	NOT	READ	Moderate to very strong.	Sn anomaly (60ppm max.) to west from 125W-50W.
3.	L. 5/100E-200E	High (135mv/v)	Moderately low(1000-3000 ohm.m.)	NOT	READ	Low	Cu(380ppm max.), Zn(320ppm max.),minor Sn(20ppm max.) and As(40ppm max.) at 175-200E.
4.	L. 5/250E	High (141 mv/v)	Locally lower (150-400 ohm.m.)	NOT	READ	Low	Nearby anomaly at 175-200E.
5.	L. 6/2500W	Relatively High (75mv/v)	Low (150-300 ohm.m)	High (135mv/v) centred at 2475W	Moderate (1000 ohm.m.)	High	High Sn(420ppm max), As(140ppm max.)at 2500W.
6.	L. 6/2350W	High (110mv/v)	Moderately high (3000-4000 ohm.m.)	Moderate (50mv/v)	Moderate to high (3500-4000 ohm.m.)	Low	Nil.
7.	L. 6/2012W offline.	High (70mv/v)	Moderate(1500 ohm.m.)	High (120mv/v)	Low (500 ohm.m.)	Low	Nil.
8.	L. 7/562W	Moderate (50mv/v)	No change in background of 3000-5000 ohm.m.	NOT	READ	Low	Cu(120ppm max.), Pb(110ppm), Zn(260ppm) at 550W.
9.	L. 7/25-50E	Moderate (90mv/v)	Moderate(500-1500 ohm.m.)	NOT	READ	High Peaks on either side at 00 and 50E.	As(70ppm) at 25E and Sn(30ppm) at 00.
10.	L. 9/125E	High (92mv/v)	Low (64ohm.m.)	NOT	READ	Low	NOT SAMPLED.
11.	L. 12/1700-1775W	Moderate(60-70mv/v)	Low(to 16ohm.m.)	Low to less than 0.	Moderate to Low (250 ohm.m)	High at 1730W.	Moderate Sn(40ppm max.) at 1750-1775W. As(45ppm max), Cu(55ppm) at 1775W.
12.	L.12/1612W	Very High (200mv/v) (deep source)	Moderate to relatively low 177 ohm.m., within a chargeable/less resistive zone 1575-1700W.	Moderate (50mv/v)	Moderate(700ohm.m.)	Low	Minor Pb(40ppm) at 1600W.
13.	L.13/12-37W	Moderate(50-70mv/v)	Low(44ohm.m.)	NOT	READ	Low with minor peak at 40W.	Moderate Sn(30ppm), As(60ppm), Cu(110ppm) at 75W.
14.	L14/1925-1850W	Moderate(45-55mv/v)	Moderate to Low (130-140ohm.m.)	Moderate (50mv/v)	Low (150ohm.m.)	Very High peaks at 1925W.	Sn(55ppm), As(80ppm),Cu(190ppm) at 1900W.
15.	L14/1750-1812W	Moderate(60-70mv/v)	Low(50-300ohm.m.)	Moderate (50mv/v)	Moderate(200-500ohm.m)	Low	Minor Cu(55ppm) at 1800W.
16.	Baseline 2300W/350-425S	NOT READ	NOT READ	NOT	READ	High Peak at 390S.	Sn(490ppm max.), As(90ppm max). Cu(600ppm max.), Zn(190ppm max.) at 375-400S.

Rock Chip Sampling

The rock chip samples (28/5, 29/3, 29/5, 29/6, 29/13), taken of the garnet-magnetite skarn (described by D. Cowan in Appendix 7) at 225S on the 2300W sub-baseline, were assayed (results shown in Appendix 6). Most contained anomalous tin values ranging from 50 to 230ppm, anomalous zinc values ranging from 20 to 170ppm, slightly anomalous arsenic (with the exception of 29/6 which contained 1020ppm), and low copper, lead and tungsten.

The rest of the samples assayed were hornfelsed tuffaceous siltstones, shales and cherts generally with low values of Sn, Pb, WO_3 minor values of As, Zn, and some high values of Cu. Sample 36/1, however, contained anomalous Sn (130ppm) and As (280 ppm and was described by D. Cowan (Appendix 7) as a skarnised greywacke. Cowan detected minor pyritised pyrrhotite and sphene; the tin may be either associated with the pyrite or the sphene (sphene can carry up to 10%Sn within its crystal lattice).

5.2.2 Geochemistry

A summary of each element's response on the infill lines is given below. As the area covered can be separated into two sub-areas, northern (lines 9 to 14) and southern (lines 4 to 8), the details for most elements are presented separately for each sub-area. Contoured results at 1:5,000 scale are appended as Soil Geochemistry Plans, Figures 5(a) and (b).

Tin (Figures 5(a)(i) and 5(b)(i))

Most values are < 10ppm (detection level).

Northern Area

Minor insignificant anomalies, one to two points, 20 to 30ppm.

Southern Area

A large anomaly extends from Line 5 (50W-125E) to Line 6 (2500-2700W) and along the 2300W sub-baseline (325-500s and 625-750s). Values range from 25 to 95ppm with some values up to 490ppm. Subsequent assaying for acid soluble tin has shown that the majority of the tin in the tin-rich samples is acid soluble. This anomaly may be either a formational one with generally higher background levels in a particular rock unit of the Crimson Creek Formation, or an anomaly derived from a soluble-tin bearing skarn with associated anomalous Cu, Pb, Zn and minor As.

Elsewhere, there are several minor, one to two point anomalies, with values ranging from 20 to 70ppm.

Arsenic (Figures 5(a)(ii) and 5(b)(ii))

Most values are <10ppm (detection level), however in the southern area, background values for the original lines, (4, 6 and 8) range from 20-50ppm, and correlations between these lines and the infill lines (5 and 7) are difficult to make. This discrepancy may have resulted from inaccurate assaying of the earlier samples.

Northern Area

Several anomalous values occur, ranging from 30 to 60ppm, some of which seem to be continuous from Lines 12, 13 and 14. These may have resulted from slightly higher background level in a particular rock unit of the Crimson Creek Formation.

Southern Area

There are several one point anomalies on Lines 5 and 7 which range from 20 to 70ppm. On the 2300W sub-baseline there are several one to three point anomalies, with a maximum value of 90ppm.

Tungsten (Figures 5(a)(iii) and 5(b)(iii))

Most values are below the detection level of 10ppm. On Line 7 there are two one-point anomalies in the range 20 to 30ppm.

Copper (Figures 5(a)(iv) and 5(b)(iv))

The general background level values are between 20 and 40ppm.

Northern Area

Along the Meredith Granite/Crimson Creek Formation contact, a line of single anomalous values occurs from Lines 10 to 16 with a range of 55 to 1100ppm. These appear to indicate a narrow copper enriched contact zone in the Crimson Creek Formation.

A broad anomaly of eleven values occurs on Line 11 with a range of 50 to 90ppm. This appears to be the northern extension of an anomalous area on Lines 4, 6 and 8; it is probably a formational anomaly.

Southern Area

A number of anomalies occur on the southern part, of from one to seven points, ranging from 50-180ppm. Most appear to extend across at least two lines and are probably formational in origin.

A large, strong anomaly occurs from line 5 (150-225E) to the 2300W sub-baseline (375-450s), with values ranging from 110 to 600ppm. This anomaly can be correlated with strong Sn, Pb, Zn and minor As anomalies.

Lead (Figures (5(a)(v) and 4(b)(v))

Most values are below or equal to 20ppm.

Northern Area

Minor one to three point anomalies occur, with values of 30ppm. A broad anomaly occurs on Line 11, consisting of eleven values ranging from 20 to 40ppm; it appears to be continuous with an anomaly on lines 10 and 12.

Southern Area

A number of anomalies occur, one to eight points, ranging from 30 to 120ppm, and apparently continuous for up to three lines. A large anomaly occurs on Lines 5 (25W-300E) and 6 (2575-3100W) and the 2300W sub-baseline (3255-775s) with values ranging up to 120ppm. This anomaly can be correlated with strong Sn, Cu, Zn and minor As anomalies.

Zinc (Figures 5(a)(vi) and 5(b)(vi))

Most values range from 20 to 50ppm.

Northern Area

Minor insignificant one point anomalies occur, with a range of 60 to 90ppm

Southern Area

A large number of anomalies occur in this area, some of which are continuous for up to four lines. Values range from 50 to 100ppm with minor values up to 320ppm. A prominent anomaly occurs on Lines 4(2625-2675W), 5(150-225E) and 6(2500-2600W) and the 2300W sub-baseline (375-450S). Values range from 50 to 320ppm. This anomaly can be correlated with strong Sn, Cu, Pb and minor As anomalies.

5.2.3 Magnetics

The magnetic survey resulted in strongly variable values, similar to those obtained in the area on the original grid lines. Such a response is characteristic of Crimson Creek Formation rocks adjacent to the Meredith Granite and probably results from:

either

the presence of small amounts of magnetic and/or pyrrhotite in certain clastic units within the Crimson Creek Formation.

or

the presence of magnetic skarns, formed by replacement of carbonate units within the Crimson Creek Formation.

It is not possible to distinguish what is the cause of anomalies on the basis of magnetics alone. Therefore, considering the number of magnetic anomalies, there is little point describing them here. Magnetic responses co-incident with I.P. or geochemical anomalies are listed in Table 1.

5.2.4 Dipole-Dipole I.P. Survey

This work was carried out to better define some of the large gradient array I.P. anomalies outlined during the 1979/80 field season. Detailed results are reported in Appendices 8 and 9, to which the reader is referred. Significant anomalies are listed in Table 1.

5.3. Stream Sediment Sampling

The reconnaissance stream sediment sampling survey in 1981-82, outlined a number of anomalous areas, which are plotted on Plan 1. The response of the Merton Hill mineralised area is also plotted for reference. A summary of the type, magnitude and probable source for each major anomaly is presented in Table 2.

The geology of the area is presented for reference on Plan 2.

Anomalous values were determined on a statistical basis using frequency distributions. The median of the grouped data was selected for the regional background values, which usually coincided with the limits of detection of the method used for assaying the samples. A threshold value (the hatched areas on Plans 3 - 9) was taken as the 95th percentile for values of copper, lead, arsenic, nickel and tungsten. The threshold value for tin and zinc was adjusted to a lower percentile to take into account areas of higher local background values. Higher local background values may be attributed to drainage from mineralized bedrock, alluvial concentrations or certain enriched rock units. The cross-hatched areas on Plans 3 to 9 are areas of highly anomalous values which were selected arbitrarily to highlight areas of interest.

Anomalous values for each of the elements assayed for, are described below:

Tin (see Plan 3.):

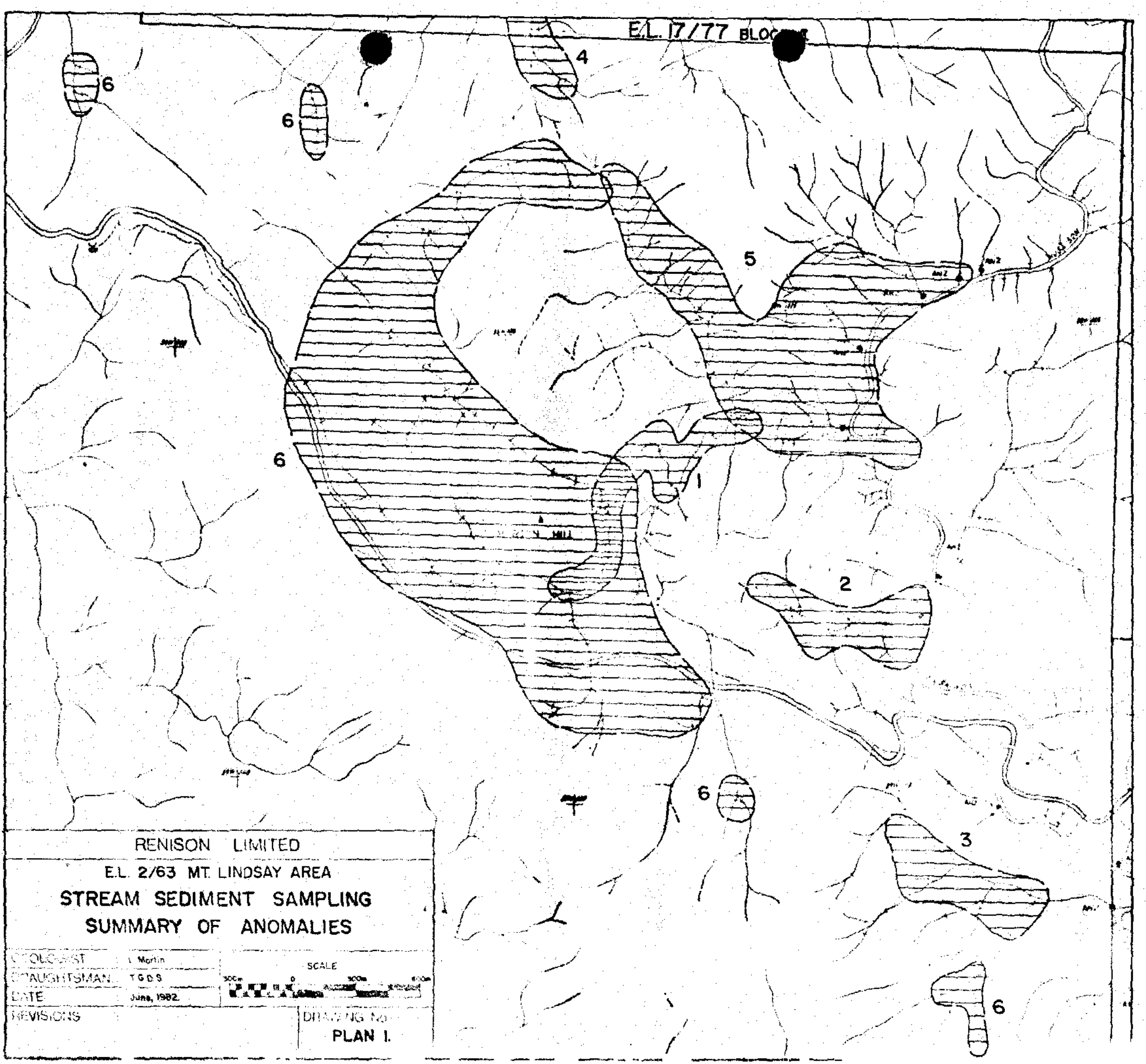
Most values are less than 10ppm, except the following anomalous areas:

1.) Associated with Merton Creek which drains Merton Hill Workings there are several high values up to 1000ppm. These show dilution by decreasing in magnitude downstream towards the Huskisson River, Source: the Merton Hill mineralization.

2.) In Tin Creek, there are eight anomalous values ranging from 60 to 320ppm, associated with old alluvial workings; the remains of an old

ANOMALY NUMBER	GEOCHEMICAL ANOMALY		LOCATION	PROBABLE SOURCE
	STRONG	WEAK		
1.	Sn,Pb,Zn.	Cu,As.	Merton Hill Workings (3 adits, pits: alluvial workings in Merton Creek)	Sn-Pb-Zn-Ag mineralised veins and fault zones.
2.	Sn.	Ni:very Minor Zn (one point)	Tin Creek alluvial workings.	Tin-bearing Tertiary Gravels (?). or Mineralization (?)
3.	Sn	Ni,Cu,Pb,Zn (may be ultrabasic)	Hill Creek alluvial workings.	Tin-bearing Tertiary Gravels(?) or primary mineralization.
4.	Cu	Sn,Zn,Ni.	Alfred River Tributary, minor alluvial workings.	Tin-bearing Tertiary Gravels (?) or higher local background level in Devonian Bell Shale (?).
5.	Zn	Ni,Pb.	Sandstone Creek-Huskisson River.	Higher local background level in Devonian Bell Shale(?)
6.	Ni	Zn,Pb,Cu very minor As.		Very high local background level from Cambrian ultrabasics.

TABLE 2. - Stream Sediment Sample Anomalies

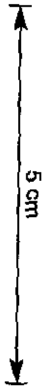


RENISON LIMITED

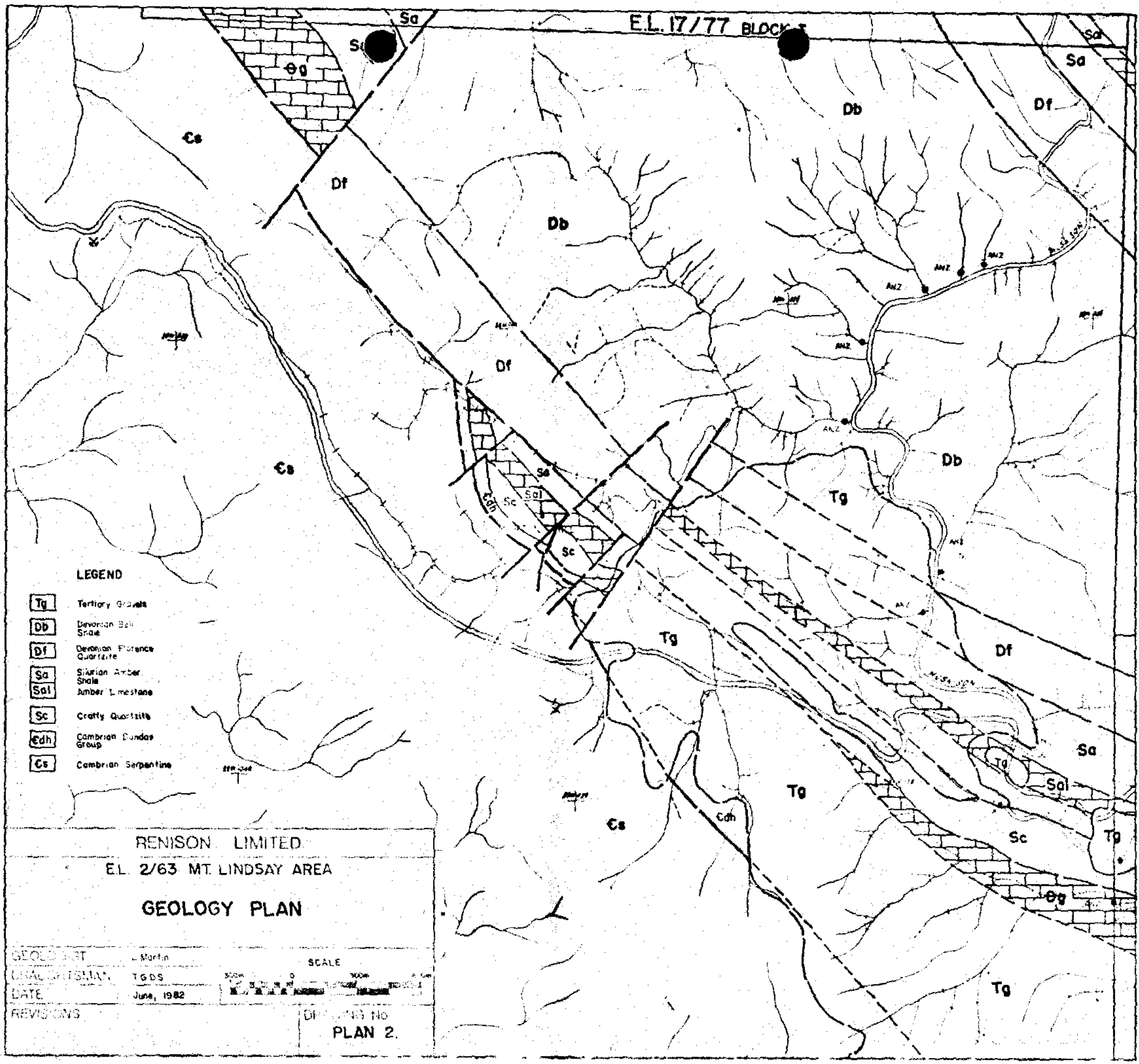
E.L. 2/63 MT. LINDSAY AREA

STREAM SEDIMENT SAMPLING
SUMMARY OF ANOMALIES

GEOLOGIST L Martin
DRAUGHTSMAN T G D S
DATE June, 1982.
REVISIONS
DRAWING No. PLAN I.



027



LEGEND

Tg	Tertiary Gravels
Db	Devonian Bell Shale
Df	Devonian Florence Quartzite
Sa	Silurian Amber Shale
Sal	Amber Limestone
Sc	Crotty Quartzite
Ꞓdh	Cambrian Dundas Group
Ꞓs	Cambrian Serpentine

RENISON LIMITED

E.L. 2/63 MT. LINDSAY AREA

GEOLOGY PLAN

GEOLOGIST L. Martin

DRAUGHTSMAN T.G.D.S.

DATE June, 1982

SCALE

REVISIONS

DRAWING No PLAN 2.

5 cm

243028

grid is also present there. Source: either tin-bearing Tertiary Gravels of mineralization.

3.) In the area of Hill Creek, there are ten anomalous values ranging from 60 to 630ppm, associated with old alluvial workings. Source: either tin-bearing Tertiary Gravels or primary mineralization.

4.) Near Merton Creek, an 85ppm anomalous value occurs. Source: tin-bearing Tertiary Gravels?

5.) In a tributary of the Alfred River, an anomalous value of 795ppm occurs and is associated with minor alluvial workings. Source: tin-bearing Tertiary Gravels (unmapped) or primary mineralization.

6.) In the north of the area sampled, four isolated anomalous values of 360ppm, 120ppm (X2) and 60ppm occur. Source: unknown.

Arsenic (see Plan 4.)

All values are 40ppm except:

1.) In Merton Creek, which drains the Merton Hill Workings, two values of 40ppm occur.
Source: probably the Merton Hill mineralization or possibly the ultrabasic.

2.) Near the ultrabasic's eastern boundary, two values of 40ppm occur. Source: local concentrations in the ultrabasic.

Tungsten (see Plan 5.)

All values are less than 40ppm except, in Sandstone Creek, one 95ppm value occurs and is associated with anomalous lead (40ppm), nickel (90ppm) and zinc (170ppm).
Source: possibly a small mineralized vein.

Copper (see Plan 6.)

Most values are 10ppm or < 10ppm except:

1.) Near Merton Creek and near Hill Creek, five anomalous values occur, ranging from 15 to 30ppm.
Source: probably local concentrations in the ultrabasic.

2.) In a tributary of the Alfred River, several anomalous values occur up to 50ppm.
Source: probably locally higher background in Devonian Bell Shales.

3.) In two creeks, draining into the Huskisson River, minor anomalous values of 20ppm occur.
Source: unknown.

Lead (see Plan 7.)

Most values are less than 30ppm except the following:

1.) In Merton Creek which drains the Merton Hill Workings, three anomalous values occur ranging from 50 to 70ppm.
Source: the Merton Hill mineralization.

2.) In Hill Creek, two anomalous values (40, 150ppm) occur. Source: local concentrations in the ultrabasic (?).

3.) In two creeks, draining into Sandstone Creek, minor anomalous values of 40ppm occur.
Source: minor sulphide veins (?) in Devonian Bell Shale.

Zinc (see Plan 8.)

Most values are less than 60ppm except the following:

1.) In Merton Creek which drains the Merton Hill Workings, there are up to eight anomalous values ranging from 65 to 175ppm. The anomalous values decrease downstream from Merton Hill towards the Huskisson River.
Source: the Merton Hill mineralization.

2.) The large area which is drained by Sandstone Creek and tributaries of the Huskisson River, contains approximately 22 anomalous values ranging from 70 to 900ppm.
Source: higher background levels over Devonian Bell Shale. Higher anomalous values in Sandstone Creek may indicate drainage from a more zinc-rich unit of the Bell Shale.

3.) In a tributary of the Alfred River, an anomalous value of 80ppm occurs.
Source: higher background levels over Devonian Bell Shale.

4.) Near ultrabasic's eastern boundary, a number of anomalous values occur, ranging from 80 to 130ppm.
Source: locally higher background values in the ultrabasic at its boundary.

5.) Minor isolated values ranging from 80 to 90ppm.
Source: minor local concentrations in the Silurian Amber Shale and Crotty Quartzite (?)

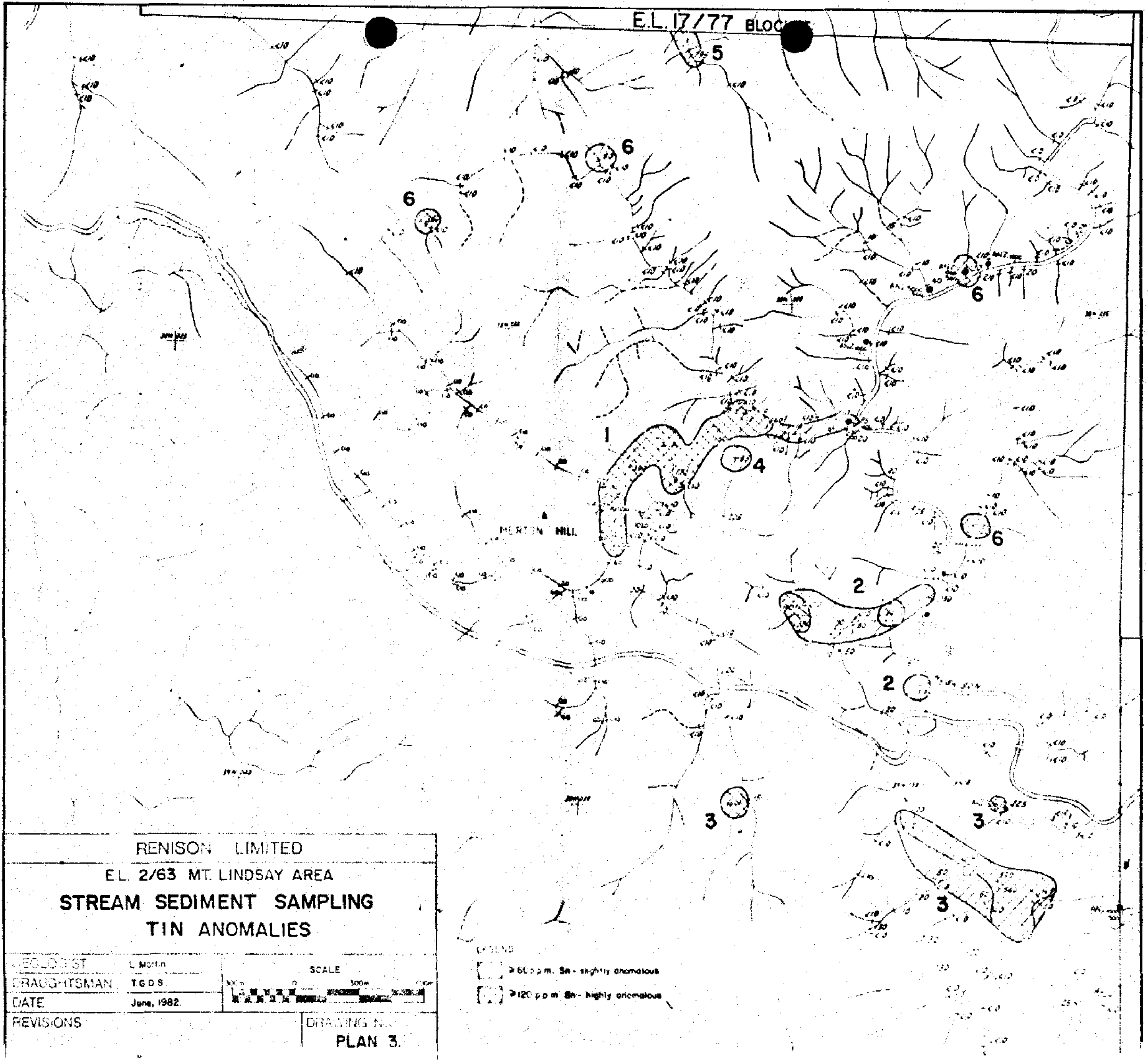
Nickel (see Plan 9.)

Most values are less than 50ppm except for the following:

1.) Around Hill Creek, Merton Creek and the north west part of the sampled area, numerous highly anomalous values occur, ranging up to 6800ppm.
Source: the ultrabasic.

2.) Near Sandstone Creek and adjacent areas draining into the Huskisson River, a number of anomalous values occur, ranging from 50 to 90ppm with a few values ranging as high as 570ppm..
Source: locally higher background levels over Devonian Bell Shale (?).

3.) In Tin Creek area, eight anomalous values occur, ranging from 60 to 320ppm.
Source: unknown.



RENISON LIMITED

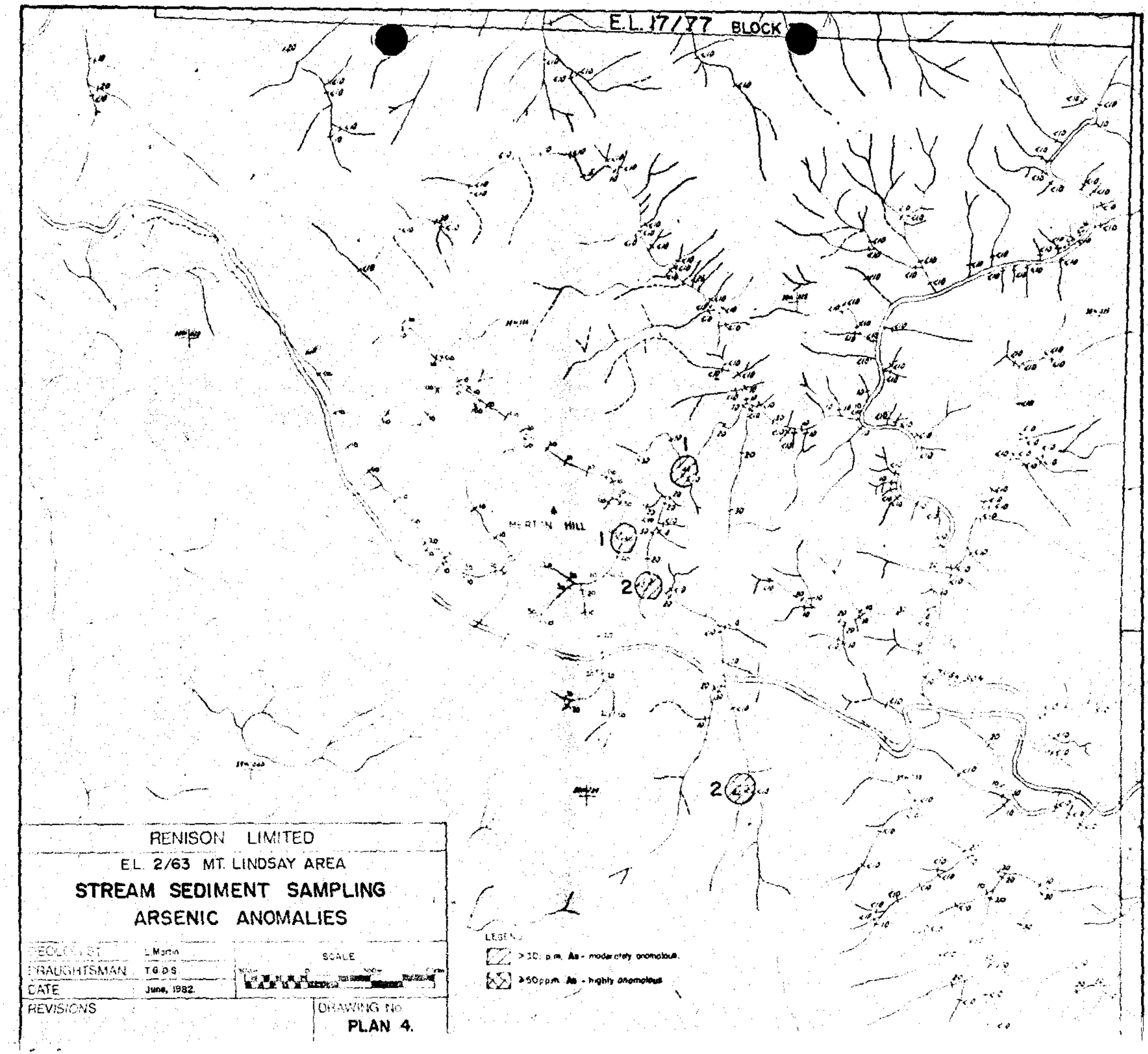
E.L. 2/63 MT. LINDSAY AREA

STREAM SEDIMENT SAMPLING
TIN ANOMALIES

GEOLOGIST L. Morton
DRAUGHTSMAN T.G.D.S.
DATE June, 1982.
REVISIONS
DRAWING No. PLAN 3.

5 cm

032



RENISON LIMITED

E.L. 2/63 MT. LINDSAY AREA

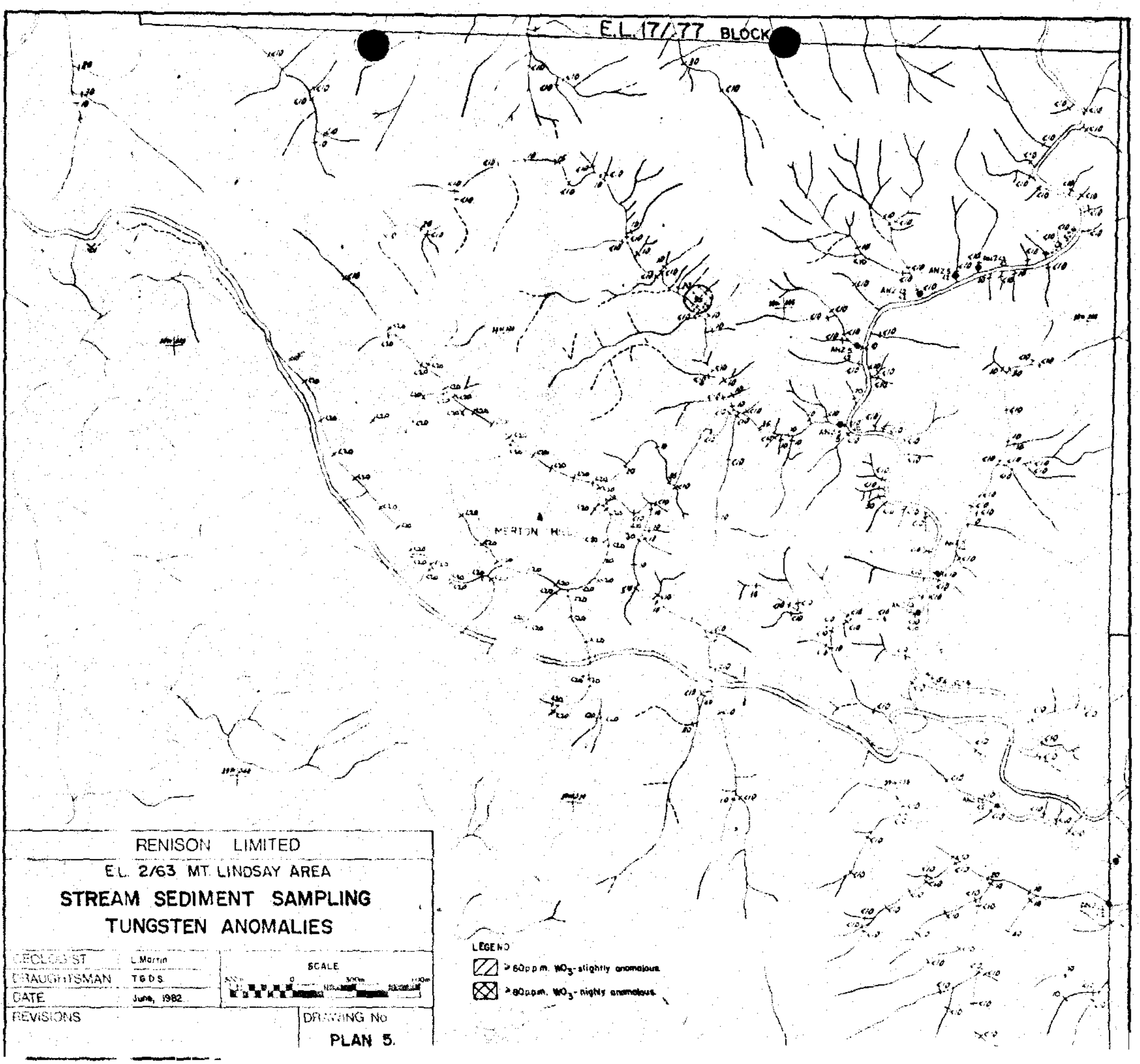
STREAM SEDIMENT SAMPLING
ARSENIC ANOMALIES

GEOLOGIST L.Martin
DRAUGHTSMAN T.G.D.S.
DATE June, 1982.
SCALE
REVISIONS
DRAWING No PLAN 4.

LEGEND
▨ > 30 p.p.m. As - moderately anomalous.
⊠ ≥ 50 ppm As - highly anomalous

5 cm

743033



RENISON LIMITED

E.L. 2/63 MT. LINDSAY AREA

STREAM SEDIMENT SAMPLING
TUNGSTEN ANOMALIES

GEOLOGIST	L.Martin
DRAUGHTSMAN	T.G.D.S.
DATE	June, 1982

REVISIONS

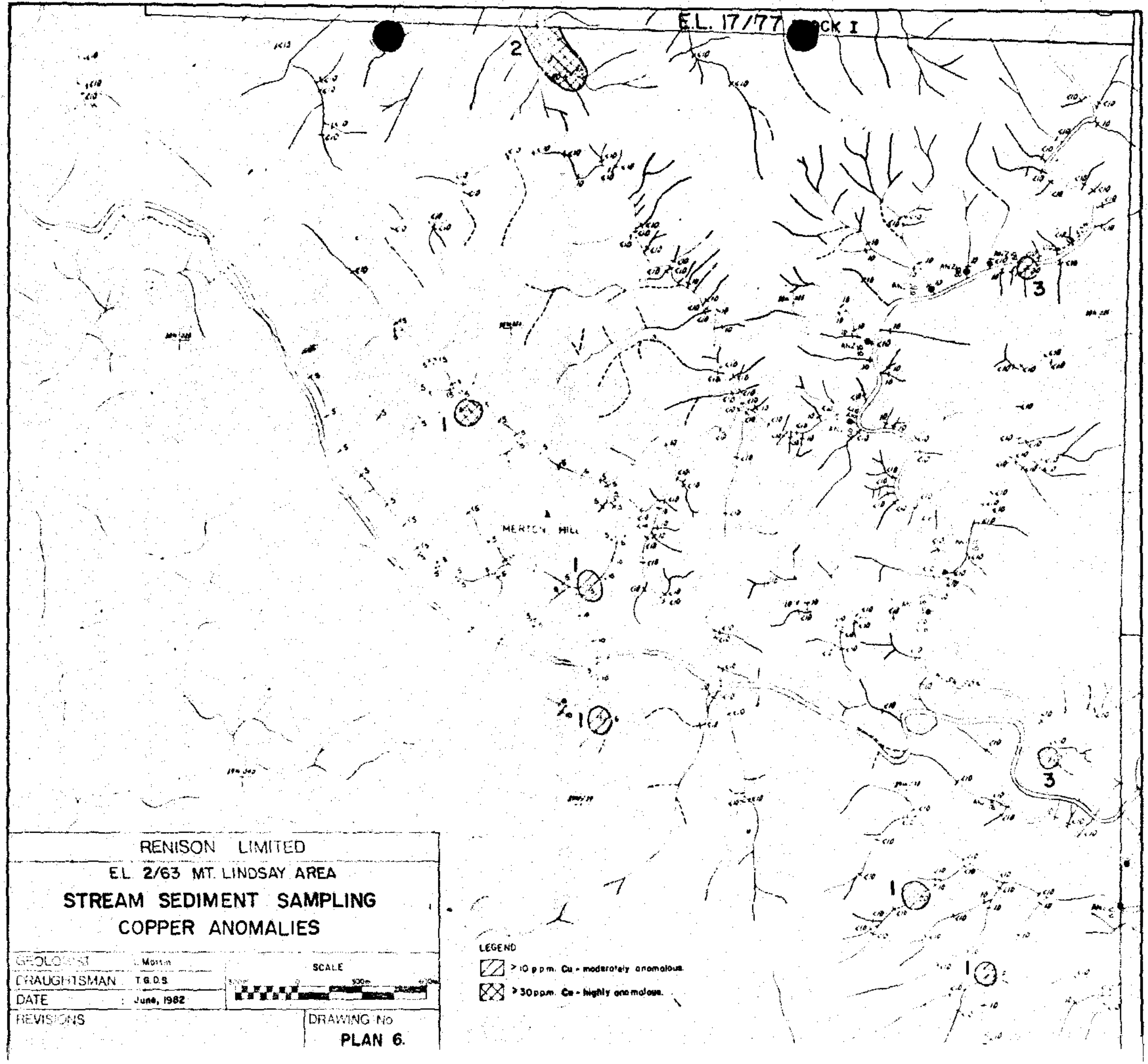
DRAWING No
PLAN 5.

LEGEND

▨ ≥ 60p.p.m. WO_3 - slightly anomalous.

☒ ≥ 80p.p.m. WO_3 - highly anomalous.

5 cm



RENISON LIMITED

E.L. 2/63 MT. LINDSAY AREA

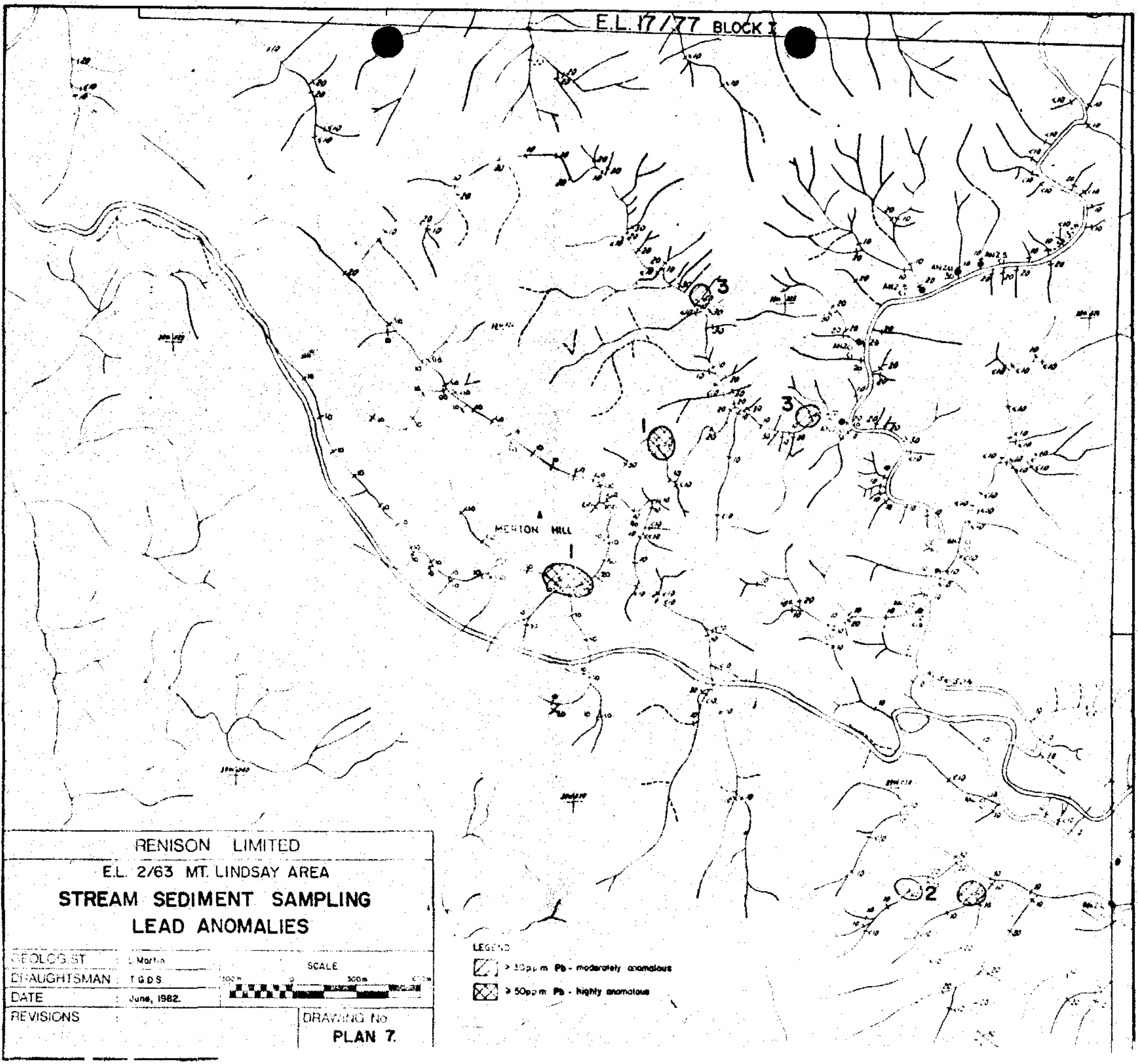
STREAM SEDIMENT SAMPLING
COPPER ANOMALIES

GEOLOGIST L. Martin
DRAUGHTSMAN T.G.D.S.
DATE : June, 1982
SCALE
REVISIONS
DRAWING No
PLAN 6.

LEGEND

▨ > 10 p.p.m. Cu – moderately anomalous.

☒ > 30 p.p.m. Cu – highly anomalous.



RENISON LIMITED

E.L. 2/63 MT. LINDSAY AREA

STREAM SEDIMENT SAMPLING
LEAD ANOMALIES

GEOLOGIST : L Martin
DRAUGHTSMAN : T.G.D.S.
DATE : June, 1982.
REVISIONS :

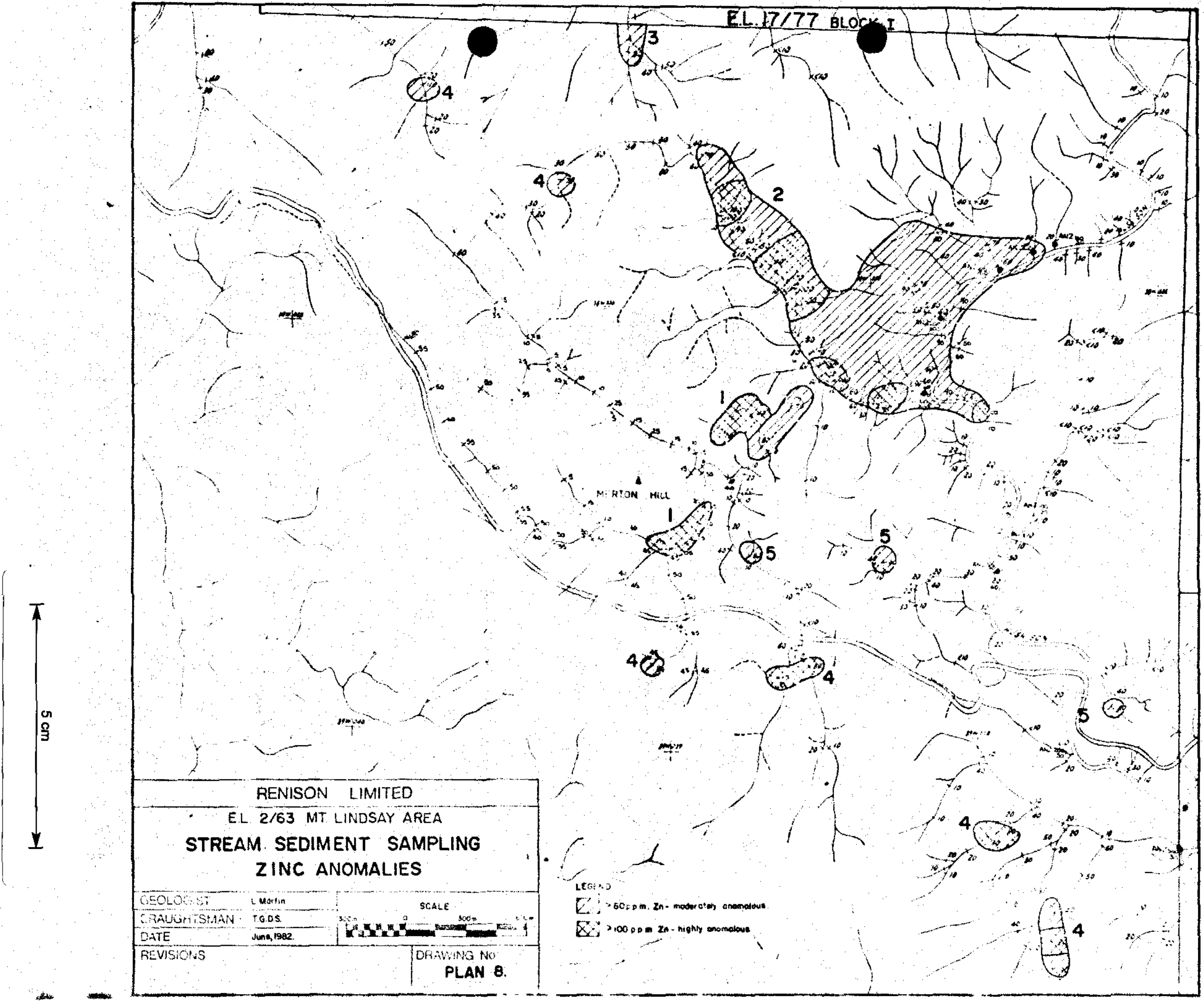
SCALE
200m 0 300m 600m

DRAWING No
PLAN 7.

LEGEND
▨ > 30ppm Pb - moderately anomalous
⊠ > 50ppm Pb - highly anomalous

5 cm

036



RENISON LIMITED

E.L. 2/63 MT LINDSAY AREA

STREAM SEDIMENT SAMPLING
ZINC ANOMALIES

GEOLOGIST L. Martin

DRAUGHTSMAN T.G.D.S.

DATE June, 1982.

SCALE

REVISIONS

DRAWING No PLAN 8.

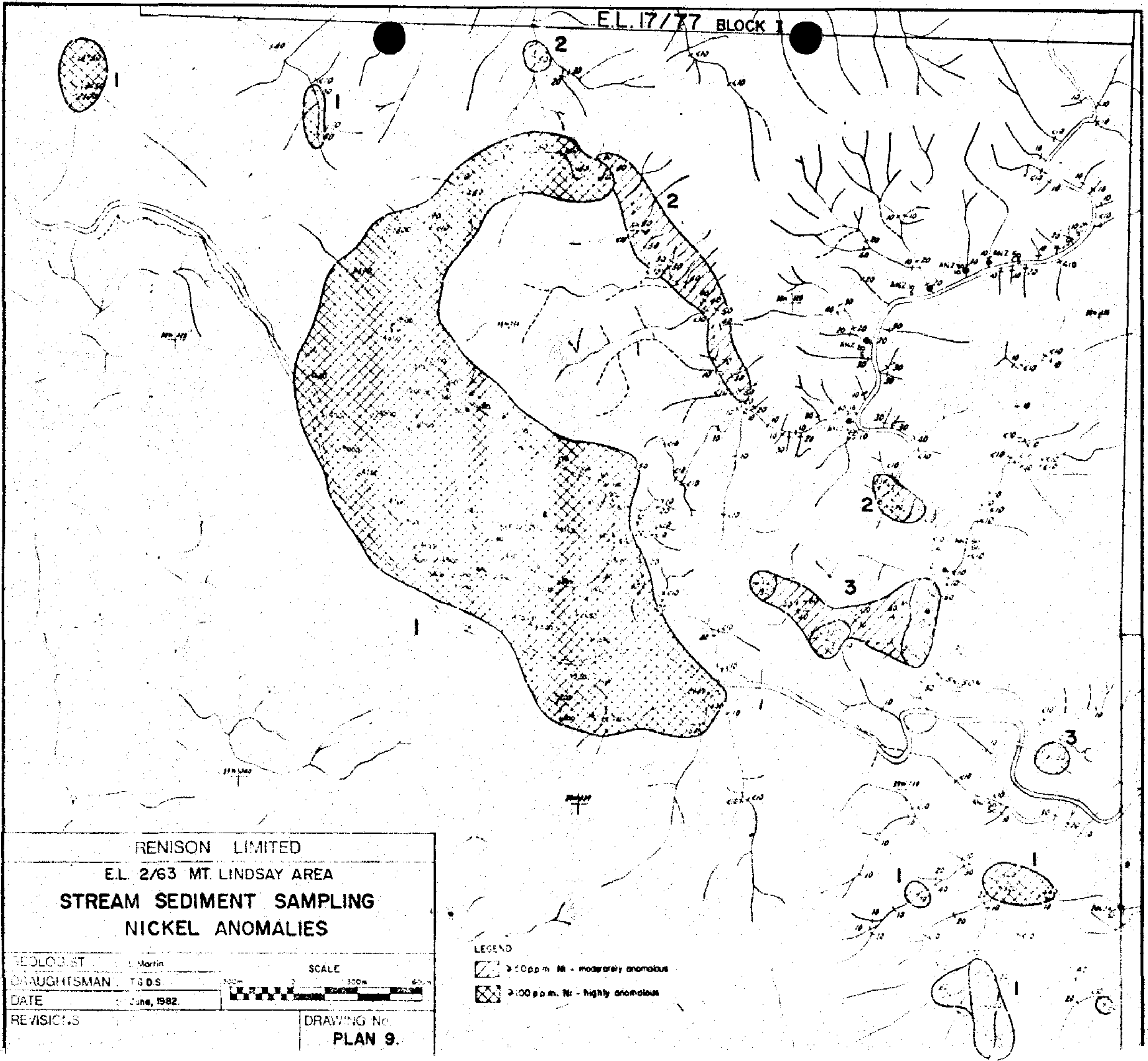
LEGEND

▨ > 60 p.p.m. Zn - moderately anomalous.

⊠ > 100 p.p.m. Zn - highly anomalous.

743037

037



RENISON LIMITED

E.L. 2/63 MT. LINDSAY AREA

STREAM SEDIMENT SAMPLING
NICKEL ANOMALIES

GEOLOGIST L. Martin

DRAUGHTSMAN T.G.D.S.

DATE June, 1982.

SCALE 300m 0 300m 600m

REVISIONS

DRAWING No. **PLAN 9.**

LEGEND

- ▨ ≥50 p.p.m. Ni - moderately anomalous
- ▩ ≥100 p.p.m. Ni - highly anomalous

5 cm

743038

038

6. DISCUSSION

6.1 Mt. Lindsay Drilling

The Mt. Lindsay mineralization is contained within three major distinct carbonate units which extend in a south easterly direction from the Meredith Granite contact. These units, the Main Ore Zone, No. 1 and No. 2 Anomalies, have been metasomatized to form zoned skarns by the granite.

To date, drilling of the Mt. Lindsay skarns has defined a resource of approximately 200,000 tonnes of 0.8% Sn in the vicinity of the old mine workings, as well as outlining a large volume of skarn containing subeconomic tin and tungsten values. Away from the old workings, only two holes have intersected economically significant mineralization, ML38 which contained 23m (true width) of 0.79%Sn. and ML41, which included 5m (true width) of 0.36% Sn., both in the No.2. Anomaly.

Recent research work by T. Kwak of La Trobe University sought to explain the origin of these skarns. This work suggested that the original carbonate units were subjected to three phases of alteration:

First Stage replaced original carbonate with two skarn types:

a.) Cassiterite-siderite-K-feldspar-magnetite-ilmenite-quartz skarn. Tin occurs solely as cassiterite at moderate to high grades. Drill holes ML38 and ML41 intersected this assemblage.

b.) Vesuvianite-garnet-calcite skarn. This assemblage forms a rim around the above skarn type, on the skarn/hanging wall, skarn/foot wall and skarn/carbonate contacts. Tin occurs in solid solution within garnet and sphene, at low grades..

Second Stage overprinted the first stage skarns:
This stage formed four skarn types, in zones oriented parallel to the granite contact. Mineral assemblages include magnetite, pyrrhotite, pyrite, annite, sphene, ilvaite and amphibole.
Tin occurs in solid solution within the latter three minerals, at low grades. This stage apparently dissolved cassiterite,

redistributing only part of the tin into silicate minerals and removing the rest of it from the skarn entirely.

Third Stage overprinted both first and second stage skarns , and resulted in the development of minor hydrous and fluorine-bearing minerals.

Kwak's work therefore suggested that the prime target for exploration at Mt. Lindsay is unaltered first stage, cassiterite-bearing skarn. This could occur as:

Either (a) Relict blocks entirely surrounded by later stage skarns.

Or (b) A continuous relict zone near the skarn/carbonate contact, which has remained unaffected by later alteration stages because of its distance from the granite contact.

Prior to the 1981-82 drilling program, the second possibility was thought to represent the best remaining chance for economic mineralization. Consequently drill holes ML58 to ML60 were designed to test for such a zone in both the Main Ore Zone the No. 2 Anomaly.

As mentioned previously ML58 was abandoned because of excessive deviation. ML59 intersected the No. 2 Anomaly close to it's target, between ML38 and ML41. Unfortunately the hole intersected amphibole-bearing (and therefore second stage altered) skarn with only low tin and tungsten values. This implies that the cassiterite-bearing skarn intersected in ML38 and ML41 either has a very irregular boundary or is not continuous between the two drill holes.

ML60 intersected the Main Ore Zone close to it's target point. It encountered large cavities, together with small amounts of calc-silicate,limestone, and clastic sediments within the Main Ore Zone. The cavities probably represent dissolved carbonate. Therefore ML60 has probably intersected the unaltered carbonate portion of the Main Ore Zone close to it's contact with the main skarn. Examination of the Longitudinal Projection (Figure 9 (a))indicates that there is little room between ML60 and earlier drill holes for a significant amount of cassiterite-bearing skarn to occur, although it may be present above or below the intersection.

The model that Kwak has proposed appears to be largely valid at Mt. Lindsay, however the extent of his cassiterite-bearing skarn type is more limited than was first thought. Instead of occurring in large continuous zones, it is apparently confined to small blocks with irregular margins. Although it is likely that other such blocks remain undiscovered within the three major host horizons, the possibility of an economic tonnage of such mineralization seems remote.

One feature of the Mt. Lindsay skarns remains unexplained, however. The high grade mineralization at the old Mt. Lindsay Mine is sulphide-rich, and apparently cassiterite-bearing. According to Kwak's model, cassiterite-bearing, high grade mineralization should be sulphide-poor.

6.2. Parsons Hood Infill Lines

As outlined in the Results Section, exploration work at Parsons Hood in 1981-82 resulted in the delineation of a number of anomalies, the most prominent of which are listed in Table 1.

Geologically, the Parsons Hood area is of exploration interest because of the presence of Crimson Creek Formation, which is known to contain carbonates, in proximity to the Meredith Granite, a known"tin-granite". There are three possible types of target mineralization:

a) Tin-tungsten mineralized skarn. By analogy with the Mt. Lindsay skarns, a remnant cassiterite-bearing zone is the best target. It is possible that such a zone is more extensive at Parsons Hood than Mt. Lindsay because of locally different geological conditions.

b) Stanniferous sulphide-rich carbonate replacements, analogous to the mineralization at the Mt. Lindsay Mine or Renison.

c) Stanniferous mineralized fault or shear zones.

Such variable target types will probably respond to the various indirect exploration techniques in the ways indicated in Table 3.

Obviously the variety of possible responses makes the task of ranking anomalies difficult. On Crimson Creek Formation rocks, the difficulty of interpreting anomalies is further increased by the presence of:

TABLE 3

MINERALIZATION TYPE	MAGNETITE SKARN		SULPHIDE-RICH CARBONATE REPLACEMENT		MINERALIZED FAULT/ SHEAR ZONE	
EXPLORATION TECHNIQUE	NEAR OUTCROPPING	HIDDEN[1]	NEAR OUTCROPPING	HIDDEN [1]	NEAR OUTCROPPING	HIDDEN [1]
Magnetics	Strong	Strong/ Moderate	Strong/Weak	Moderate/ weak	Moderate/ Weak	Weak/Nil
I.P. (Dipole-Dipole[2])	Moderate/ Weak	Moderate Weak	Strong	Strong	Strong	Strong
Geochemistry	Strong	Weak/ Nil	Strong	Weak/ Nil	Strong	Moderate/ Weak
E.M.	Nil	Nil	Strong/ Moderate	Strong/ Moderate	Strong	Strong/ Moderate

Notes:

1. Hidden mineralization is taken to occur at or below 50m. Obviously if the target mineralization is much more deeply buried than this, responses from all techniques will tend to be weaker.
2. For dipole-dipole I.P., the parameters are assumed to be 25m dipole spacing, read to n=5.

a) Barren magnetite-bearing, clastic rocks, which can give rise to large magnetic anomalies.
b) Barren sulphide-bearing, clastic rocks, which can give rise to large I.P. anomalies.

What is clear,however, is that if a source is near-surface, the geochemical response should be a relatively sensitive discriminant between prospective and spurious anomalies. On the other hand, if a source is buried 50m or more below surface, the best guide to its prospectivity is the quality of the geophysical anomaly. With this in mind two anomalous zones have been selected for follow-up drilling (see plan 10.). One is apparently near-surface and has a supporting geochemical anomaly, the other is buried, with only minor geochemistry.

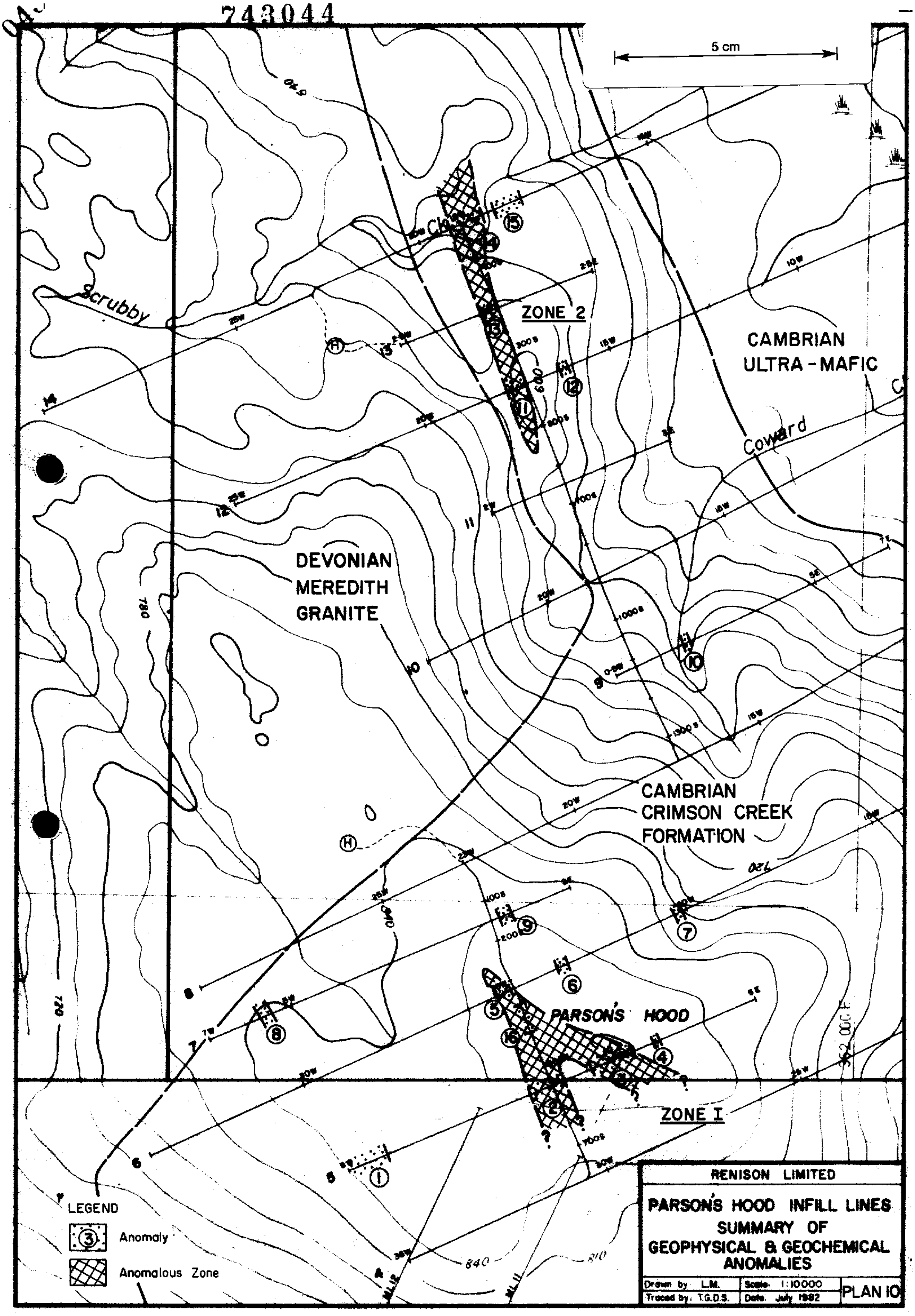
Anomalous Zone 1

This zone occurs on the southern part of the grid(lines 5,6 and sub-baseline 2300W). It consists of the following anomalies:5,16 and either 2 or 3. The zone is anomalous in chargeability, resistivity, magnetics and soil geochemistry (Sn,As,Cu,Zn). In addition, a small outcrop of garnet-magnetite skarn occurs nearby the anomalous area. The zone's strike is unclear, as the magnetics suggests it is NNW, whereas the geochemistry indicates it is WNW. The anomaly source is almost certainly near surface.

Anomalous Zone 2

This zone occurs on the northern part of the grid (lines 12 to 14). It comprises the following anomalies:11,13,14 and possibly 12. The first three anomalies lie along a line parallel, and close to the Meredith Granite contact; anomaly 12 is offset about 100m east of anomaly 11 along line 12. The three-anomaly zone is anomalous in chargeability, resistivity, soil geochemistry (Sn,As,Cu) and partly in magnetics. Anomaly 12 is very strongly anomalous in chargeability with some supporting resistivity, but lacking any geochemistry or magnetics.
The anomaly 12 chargeability and resistivity responses clearly reflect a buried source with the best values occuring at n=5(dipole-dipole I.P.). This pattern of responses may represent either two different sources,or

04 743044



RENISON LIMITED

PARSON'S HOOD INFILL LINES
SUMMARY OF
GEOPHYSICAL & GEOCHEMICAL
ANOMALIES

Drawn by L.M.
Traced by: T.G.D.S.
Scale. 1:10000
Date. July 1982
PLAN 10

possibly a zoned skarn dipping west, with a weakly stanniferous magnetic zone near the surface and a more tin-rich, sulphide replacement zone at depth.

7. RECOMMENDATIONS

7.1. Parsons Hood Infill Lines

It is recommended that a 400m, two hole diamond drilling program be completed at Parsons Hood in January/February 1983. The drilling should be helicopter supported to minimize environmental damage in this rugged and remote area. Drill hole details (see figure 7(b), 7(f)):

Hole 1- collar: Line 6/2425W
- bearing:grid west
- dip:-50°
- length:150m

This drill hole should test the width of the combined geochemical and geophysical anomalies on Line 6 (anomalous zone 1).

Hole 2- collar: Line 12/1575W
- bearing:grid west
- dip: -45°
- length:250m

This drill hole should test both anomalies 11 and 12 on Line 12. It is designed to be drilled grid west because the target zone may dip moderately to the east if the two anomalies represent a zoned skarn. Given the steepness of the terrain, as well as the hole's planned dip and depth, this will be a difficult hole to drill. More detailed mapping should be carried out prior to drilling: if it can be proven that bedding dips near-vertically or to the west, this hole should be collared from the west side of the anomaly and drilled east.

Some down-hole geophysical work will probably be necessary on both holes.

7.2 Tin Creek Area

The stream sediment tin geochemistry anomalies in this area, east and south-east of Merton Hill, should be followed up. Initially the area should be geologically mapped in some detail and rock chip sampled.
If some evidence of primary tin mineralization is found in the area, a limited program of gridding, soil geochemistry and geophysics is recommended. However if the tin geochemical anomalies are found to reflect minor tin enrichments in the Tertiary Gravels widespread in this area, no further work should be required.

7.3 Proposed Expenditure

For the above recommended programs , a budget of $100,000 is proposed and allocated as follows:

Parsons Hood Area	$86,000
- diamond drilling, helicopter support, drill pad and water line preparation, consumables, geophysics.	
Tin Creek Area	$14,000
- geological mapping, track cutting, rock and soil sampling, geophysics.	
TOTAL	$100,000

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052

APPENDIX 1

Expenditure 1981-1982

743054

053

EL 27/05 - MOUNT LINDSAY RESPONSIBILITY 076 P/E 297 6/82

ACCOUNT NUMBER	ACCOUNT NAME	PERIOD TO DATE ACTUAL	PERIOD TO DATE VARIANCE	YEAR TO DATE ACTUAL	YEAR TO DATE VARIANCE
010760702	SALARIES	61	295 G	13651	13233 G
010760703	SALARY LOADING	9	82 G	2341	1837 G
010760705	CONSUMABLES	123	123 L	7008	1443 L
010760708	VEHICLES				1080 G
010760710	TRAVEL & ACCOMODATION	54	54 L	175	395 G
010760720	RENISON SERVICES - SURVEY			480	265 G
010760721	RENISON SERVICES - ASSAY			204	4239 G
010760722	RENISON SERVICES - RESEARCH			207	1307 G
010760730	OUTSIDE SERVICES - GEOLOGICAL	605	605 L	605	2913 G
010760731	OUTSIDE SERVICES - GEOPHYSICAL	200	200 L	4346	1280 G
010760732	OUTSIDE SERVICES - GEOCHEMICAL			8592	5763 L
010760733	OUTSIDE SERVICES - TRK CUTTING			5427	926 L
010760735	OUTSIDE SERVICES -SITE ACC DEV			12682	9340 L
010760736	OUTSIDE SERVICES-DIAMOND DRLNG			148934	44729 L
010760737	OUTSIDE SERVICES - OTHER	4000	4000 L	11317	5525 L
010760740	LEASE PAYMENTS				2400 G
010760760	SUB TOTAL	5052	4605 L	215969	38777 L
010760770	LESS RECHARGE TO ABERFOYLE	2021-	1842 G	86390-	15513 G
	ROUNDING	1	1 L		

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010769999    TOTAL EL 2/63 MT. LINDSAY           3032      2764 L                   129579     23264 L
```

055

743056

APPENDIX 2

Expenditure 1982-1983

056

APPENDIX 2

PROPOSED EXPENDITURE 1982-83

Salaries (and loading)	$17,550.00
Consumables	3,182.00
Travel and Accomadation	3,000.00
Geophysics	8,000.00
Geochemistry - Assaying, sample collection	3,400.00
Diamond Drilling	22,000.00
Site/Access - Helicopter, drill pad, waterline preparation. Track Cutting.	35,000.00
Petrology	1,200.00
Surveying	918.00
Drafting	3,500.00
Land Acquisition	2,250.00
	$100,000.00

R.G.C. Share	60,000.00
Paringa Share	23,800.00
Aberfoyle Share	16,200.00
	$100,000.00

*Attached operating budget.

ITEM		1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Salaries		1,000	1,000	1,000	1,000	1,000	1,000	1,500	1,500	1,500	1,000	1,000	1,000	13,500
Salary Overheads		300	300	300	300	300	300	450	450	450	300	300	300	4,050
Drafting		500	-	-	-	-	-	-	-	-	500	500	-	1,500
Petrology		-	-	-	-	-	-	-	-	600	600	-	-	1,200
Travel and Accommodation		100	100	100	100	100	100	700	700	700	100	100	100	3,000
Consumables		100	100	100	100	100	200	500	500	500	100	100	100	2,500
Geophysics		150	150	150	150	150	500	4,000	2,000	1,100	500	500	150	9,500
Geochemistry		-	-	-	-	-	-	1,500	1,500	900	-	-	-	3,900
Drilling		-	-	-	-	-	-	14,000	8,000	-	-	-	-	22,000
Land Acquisition		-	-	-	-	-	-	-	-	-	2,932	-	-	2,932
Site/Access		-	-	-	-	-	-	15,000	10,000	10,000	-	-	-	35,000
Surveying		-	-	-	-	-	-	-	918	-	-	-	-	918
TOTALS	Monthly	2,150	1,650	1,650	1,650	1,650	2,100	37,650	25,568	15,750	6,032	2,500	1,650	100,000
	Quarterly			5,450			5,400			78,968			10,182	100,000
RGC SHARE (60%)	Monthly	1,290	990	990	990	990	1,260	22,590	15,341	9,450	3,619	1,500	990	60,000
	Quarterly			3,270			3,240			47,381			6,109	60,000

E.L. 2/63 MT. LINDSAY PROJECT - OPERATING BUDGET 1982/83

058

743059

APPENDIX 3

Diamond Drill Hole Logs and Plots

- ML58, ML59, and ML60

059

RENISON LIMITED – DRILL CORE RECORD

HOLE NUMBER	ML 58
PURPOSE	To test for cassiterite bearing zone of No.2 Anomaly, intersected in ML 51 and ML 55.
LOCATION	Mt. Lindsay
COLLAR R.L.	2370.922M
CO-ORDINATES	31,467,635mN (AMG) 11,440.969mE
LENGTH	83m
HOLE SIZE	0 ——— 3m HQ 3 ——— 51m NQ 51 ——— 83m BQ
DATE DRILLED	25/11/1981 - 1/12/1981
SIGNIFICANT CORE LOSS ZONES	—
ORE ZONE GROUND CONDITIONS	
LOGGED BY	LINDA MARTIN
COMMENTS	Hole abandoned due to excessive deviation

SURVEY			From – To	Distance D	VERTICAL		HORIZONTAL	
Depth	Bearing(AMG)	Dip			D.Sin.Dip	R.L.	D.Cos.Dip	Prog Total
Colllar	45° 19' 8"	-58°	0 - 4	4.0				
8m	51°	-58°	-15.5	11.5				
23m	51°	-59.25°	-34.0	18.5				
45m	51°	-58°	-52.0	18				
59m	51°	-58°	-64.5	12.5				
70m	58°	-59°	-77.5	13				
93m	57°	-58°	-85.0	7.5				
	(• MAG N → AMG N ADD 26.45°)							

SUMMARY – ASSAY DATA

LODE NAME	FROM	TO	LENGTH (m)	AVERAGE WEIGHTED ASSAYS													B.C.A.
				Sn.	Acid Sol. Sn.	Cu.	As.	S.	Pb.	Zn.	Bi.	WO_3	Ag g/t				

NWPS 27344

743060

060

HOLE No **ML 58**

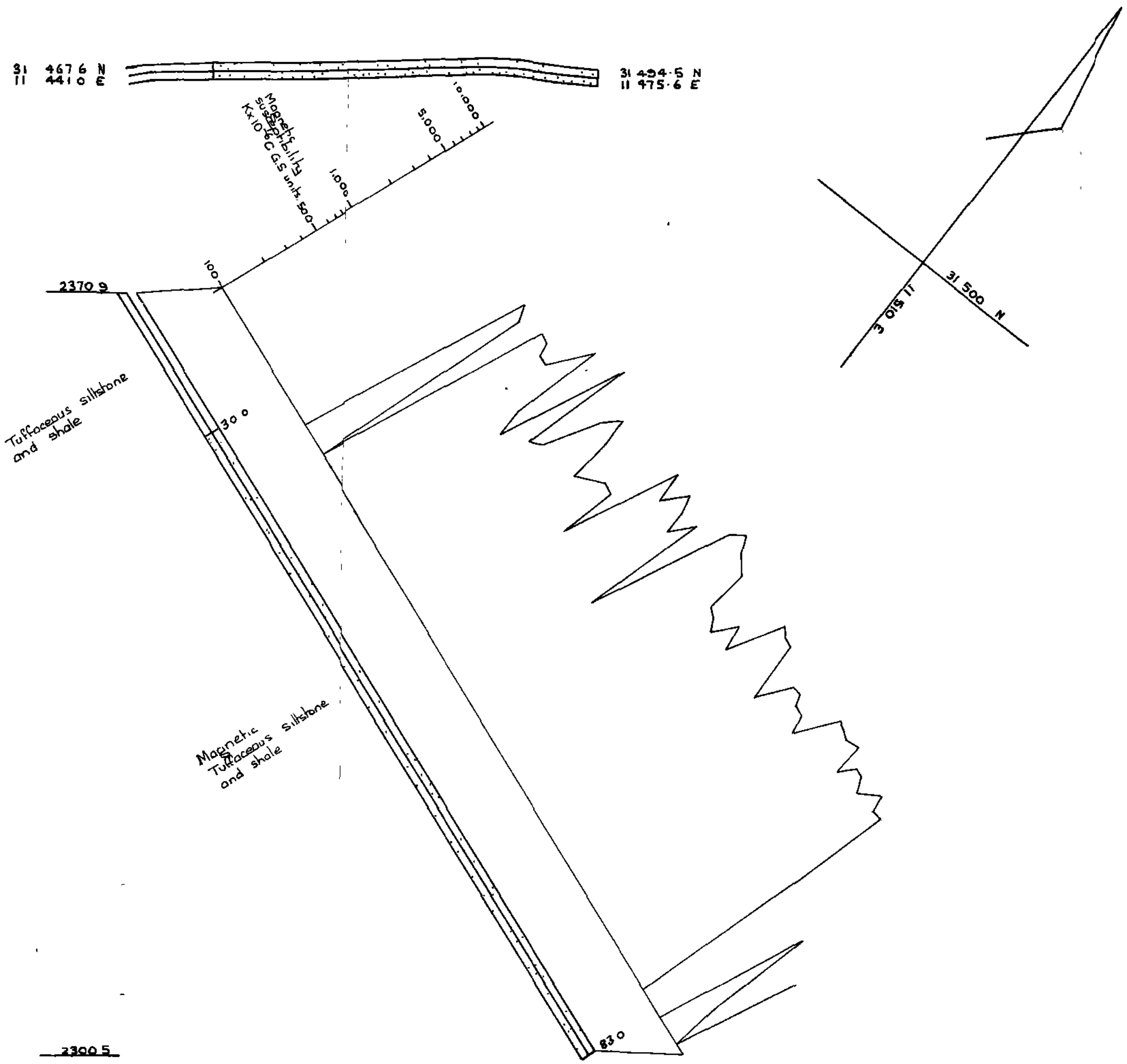
SCALE 10 0 10 metres

5 cm

RENISON LIMITED

DIAMOND DRILL HOLE PLOT

743061



82-1797
(Vol 1 = F 4)

RENISON LIMITED

PAGE 1

DIAMOND DRILL RECORD

HOLE NUMBER : ML 58

LOGGED BY : Linda Martin

WWPS

	INTERVAL (m)		RECOVERY		DESCRIPTION	FORM.			% Sn.									
	FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	% WO3
	0	3.0	-	-	RUBBLE - NO CORE													
	3.0	83.0			TUFFACEOUS SILTSTONE AND SHALE													
			0.5	4.5	3.0 - 14.0m : - Dark grey to yellowish brown. Very weathered, crumby and fractured. Fe-oxide staining especially along joints and fractures. No discernable bedding.													
			19.1	65.5	14.0 - 43.1m : - Fresher than above, but still weathered and broken with Fe-oxide staining. Has distinct interbedded siltstone and shale layers at: 21m ——— 32° 40m ———33° 29m ——— 10° 42m ———35° 38m ——— 22° 45m ———31° Has minor fine irregular veins of a soft cream zeolite? mineral.													
			27.6	95.1	43.1 - 72.16m : - Slightly weathered to fresh, hard dark grey to chocolate inter bedded tuffaceous siltstone and shale. Well bedded but slightly irregular with minor fine grained sandy bands with scoured UPPER SURFACES AND GRADING DOWNHOLE INTO FINER GRAINED MATERIAL (indicate "Younging" downhole). Bedding at: 45m ———— 31° 61m ————29° 48m ———— 37° 63m ————31° 52m ———— 38° 66m ————37° 55m ———— 32° 70m ————39° 58m ———— 35° 72m ————34°													
			10.8	99%	72.16 - 83.0 : - Similar rock to above but has irregular medium greenish veins of amphibole? and chlorite? with minor specks of quartz, pyrrhotite and chalcopyrite. Larger veins are up to 4cm wide, at 50°-60°, often with irregular margins. Fine veinlets form an irregular network and obscure or disrupt bedding. In places the rock near the veins is altered but still hard and has fine specks of green amphibole, chlorite and rarely minor specks of pyrrhotite. Bedding at 77m - 45°, 81m - 42°													
					End of Hole.													

062

RENISON LIMITED

PAGE 2

DIAMOND DRILL RECORD

HOLE NUMBER : ML 58

LOGGED BY : Linda Martin

NWPS

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM.			% Sn.									
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	% WO$_3$

MAGNETIC SUSCEPTIBILITY (x10^{-6} C.G.S. UNITS)

FROM	TO	READING	FROM	TO	READING	FROM	TO	READING
0	– 8	No Recovery		– 38	5200		– 62	6200
8	– 15	100		– 39	8300		– 63	5000
15	– 16	4200		– 40	6900		– 64	9900
16	– 17	3500		– 41	4600		– 65	9700
	– 18	<100		– 42	7100		– 66	9600
	– 19	4400		– 43	1000		– 67	10,00
	– 20	4200		– 44	10,00		– 68	6800
	– 21	3600		– 45	11,00		– 69	8400
	– 22	3600		– 46	10,00		– 70	8400
	– 23	7500		– 47	9200		– 71	7300
	– 24	1700		– 48	8600		– 72	9200
	– 25	1100		– 49	4500		– 73	7600
	– 26	5900		– 50	4200		– 74	7900
	– 27	1600		– 51	3900		– 75	1800
	– 28	1900		– 52	5600		– 76	<100
	– 29	4800		– 53	4100		– 77	"
	– 30	6400		– 54	9600		– 78	"
	– 31	4200		– 55	9300		– 79	"
	– 32	2100		– 56	9200		– 80	1100
	– 33	2600		– 57	6600		– 81	200
	– 34	3000		– 58	4000		– 82	<100
	– 35	2900		– 59	7300		– 83	700
	– 36	1200		– 60	7500			
	– 37	8300		– 61	6200			

743063

RENISON LIMITED - DRILL CORE RECORD

HOLE NUMBER	ML 59
PURPOSE	To test for cassiterite bearing zone of No.2 Anomaly, intersected in ML51 and ML55.
LOCATION	Mt. Lindsay
COLLAR R.L.	2371. 145
CO-ORDINATES	31467.900 N (RMG) 11440.589 E
LENGTH	371m
HOLE SIZE	0 ——— 6m H.W 6 ——— 40m H.Q 40 ——— 190m N.Q 190 ——— 371m B.Q
DATE DRILLED	1/12/1981 - 21/12/1981
SIGNIFICANT CORE LOSS ZONES	
ORE ZONE GROUND CONDITIONS	Excellent
LOGGED BY	LINDA MARTIN
COMMENTS	

SURVEY					VERTICAL		HORIZONTAL	
Depth	Bearing(RMG)	Dip	From – To	Distance D	D.Sin.Dip	R.L.	D.Cos.Dip	Prog. Total
Collar	41° 34' 56"	- 58°	0- 6.5	6.5	5.51	2365.64	3.44	3.44
13m	045°	- 58.75°	0- 17	10.5	8.98	2356.66	5.45	8.89
21m	045°	-58.75°	26	9.0	7.69	2348.97	4.67	13.56
31m	* 042°	- 58.75°	35.5	9.5	8.12	2340.85	4.93	18.49
40m	049°	- 58.75°	45	9.5	8.12	2332.73	4.93	23.42
50m	049.5°	- 58°	59	14.0	11.87	2320.86	7.43	30.84
68m	050°	- 58°	80.5	21.50	18.23	2302.63	11.39	42.23
93m	050.5°	- 58°	102.5	22.0	18.66	2283.97	11.66	53.89
112m	* 046°	- 58°	117	14.5	12.30	2271.67	7.68	61.57
122m	052.5°	- 58°	129.5	12.5	10.60	2261.07	6.62	68.19
137m	051°	- 58°	143.5	14.0	11.87	2249.20	7.42	75.61
150m	046.5°	- 58°	156.0	12.5	10.60	2238.60	6.62	82.23
162m	044°	- 58°	175.0	19.0	16.11	2222.49	10.07	92.30
188m	045.5°	- 57.5°	200.0	25.0	21.08	2201.41	13.43	105.73
212m	049	- 57.5°	212	12.0	10.12	2191.29	6.45	112.18
254m	050.5°	- 56.25°						
278m	056°	- 56°						
302m	055°	- 55.5°						
332m	054°	- 54°						
362m	051.5°	- 53.75°						
	* Dubious Reading							

SUMMARY – ASSAY DATA

LODE NAME	FROM	TO	LENGTH (m)	AVERAGE WEIGHTED ASSAYS													B.C.A.
				Sn.	Acid Sol. Sn.	Cu.	As.	S.	Pb.	Zn.	Bi.	WO_3	Ag g/t				
No.2 Anomaly	316.5	347.5	31m	0.08	0.04	0.06	< 0.1		<0.01	0.016	0.006	0.02	2				

NWPS 27344

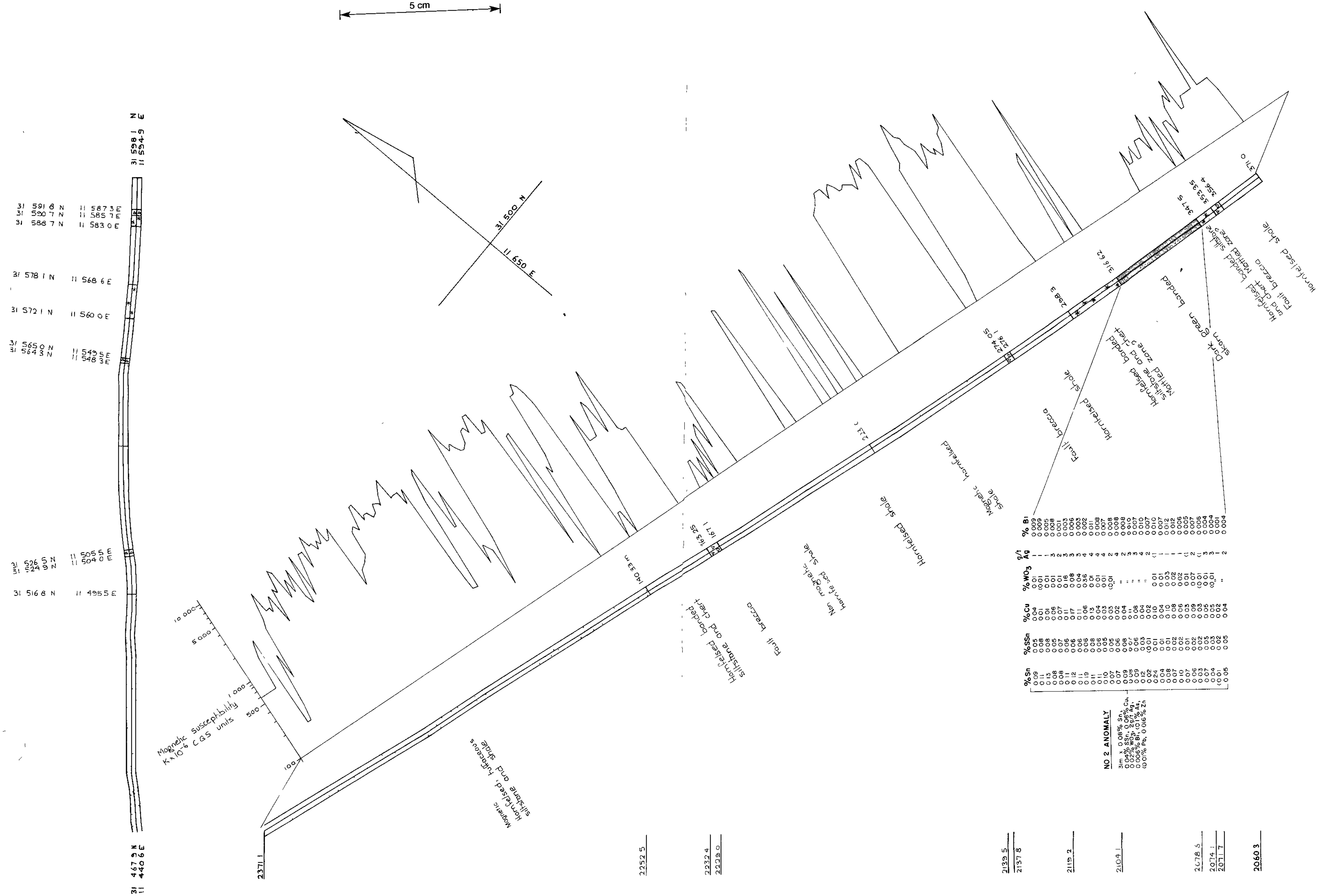
064

HOLE No **ML 59**

SCALE 1 1000

RENISON LIMITED
DIAMOND DRILL HOLE PLOT

743065



NO 2 ANOMALY

3im x 0 08% Sn, 0 04% SSn, 0 06% Cu, 0 02% WO3, 2g/t Ag, 0 006% Bi, <0 1% As, <0 01% Pb, 0 016% Zn

%Sn	%SSn	%Cu	%WO3	g/t Ag	% Bi
0 09	0 05	0 04	0 01	1	0 009
0 11	0 08	0 01	<0 01	1	0 009
0 13	0 08	0 01	0 01	1	0 005
0 08	0 05	0 06	0 01	3	0 008
0 08	0 07	0 07	0 01	2	0 001
0 11	0 06	0 11	0 16	3	0 003
0 12	0 06	0 17	0 08	3	0 006
0 11	0 06	0 11	0 04	3	0 003
0 19	0 06	0 06	0 36	4	0 002
0 11	0 08	0 13	0 01	4	0 011
0 11	0 06	0 04	0 01	4	0 008
0 10	0 05	0 03	0 01	4	0 007
0 07	0 05	0 03	<0 01	2	0 008
0 07	0 06	0 02	"	4	0 008
0 09	0 08	0 04	"	2	0 008
0 08	0 07	0 11	"	3	0 010
0 09	0 06	0 08	"	3	0 007
0 12	0 03	0 04	"	4	0 010
0 02	<0 01	0 02	"	2	0 007
0 24	0 01	0 10	0 01	<1	0 010
0 04	0 01	0 04	0 01	1	0 007
0 08	0 01	0 10	0 03	1	0 012
0 07	0 02	0 08	0 02	1	0 012
0 10	0 02	0 06	0 02	1	0 006
0 07	0 01	0 03	0 01	<1	0 005
0 06	0 02	0 09	0 07	2	0 007
0 03	0 02	0 03	<0 01	<1	0 006
0 07	0 05	0 05	0 01	3	0 004
0 04	0 03	0 05	<0 01	3	0 004
<0 01	0 02	0 02	"	1	0 001
0 05	0 05	0 04	"	2	0 004

RENISON LIMITED

PAGE 1

DIAMOND DRILL RECORD

HOLE NUMBER : RL 59

LOGGED BY : Linda Martin

NWFS

	INTERVAL (m)		RECOVERY		DESCRIPTION	FORM.			% Sn.									
	FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	% WO$_3$
	0	6	–	–	WEATHERED RUBBLE													
	6	140.33			TUFFACEOUS SILTSTONE AND SHALE:	Crimson												
			8.3	55.3	6.0 - 21.0m Very weathered, broken and crumbly, fine grained,	Creek												
					massive rock, with iron oxide staining and deposition along fractures.	Formation												
					Moderate core loss. Minor thin irregular veins, filled with													
					weathered, soft, white zeolite?;+ 0°-30° TCA.													
			21.1	82	21.0 - 46.8m Fresher rock, well fractured with iron oxide													
					staining along fracture surfaces. Fine grained generally massive													
					rock with minor very fine grained well bedded layers:													
					So : 36m — 24° 45m — 15°													
					38m — 30° 48m — 32°													
			91.6	98	46.8 - 140.33m Fresh, dark grey, fine grained rock. Minor													
					iron oxide staining on fractures for first 3 metres. Generally													
					massive with minor finer grained well bedded layers:													
					53m — 34° 80m — 42°													
					57m — 35° 88m — 46°													
					59m — 42° 91m — 49°													
					61m — 41° 93m — 43°													
					64m — 40° 97m — 50°													
					69m — 39° 131m — 41°													
					73m — 42°													
					Zones of chlorite-actinolite-quartz- very minor chalcopyrite-													
					pyrrhotite veining at 69.1 - 85.67m, 106.1 - 113.5m and 121.71 -													
					129.54m. This veining may be up to 15cm wide, at 35°-80° T.C.A.,													
					and usually disrupts bedding.													
					- Coarse grained, gritty zone at 108.96 - 109.99m, with blebs of													
					pyrrhotite replacing grit fragments, associated with fine green,													
					pyrrhotite-bearing veining.													
					- Fine flecks of pyrrhotite replace the rock from 128.3													
					- 132.5m													
	140.33	163.25	25.4	95	BANDED HORNFELSED SILTSTONE AND CHERT													
					Fine grained, banded, medium to light green and brown rock.													
					Banding/Bedding is faulted and disrupted in places.													
					So: 142m — 32° 149m — 46°													
					145m — 41° 156m — 51°													
					146m — 33° 162m — 41°													
					Veins of chlorite - actinolite - quartzite ± pyrite, pyrrhotite or minor chalcopyrite, up to 10cm wide, at 22° - 65°, occur at 142.4 -													
					143.93, 145.66 - 145.82, 146.36, and 151.97m.													

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RENISON LIMITED

PAGE 2

DIAMOND DRILL RECORD

HOLE NUMBER : RL 59

LOGGED BY : Linda Martin

NWPS

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM.			% Sn.									
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	% WO3
				From 160m to 167.1m, minor pink and green bands of calc-silicates occur up to 10cm wide, with minor fine stringers and flecks of pyrrhotite.													
163.25	167.1	3.85	90	FAULT BRECCIA	Fault Zone												
				Brecciated rock fragments of hornfelsed siltstone and chert with a chlorite and minor quartz, matrix. Grades above and below into unfractured rock with frequency of quartz-chlorite veining decreasing from fault zone.													
167.1	274.05	106.95	100	HORNFELSED SHALE	C.C.F												
				Dark grey, fine grained massive rock: Very minor bedding at: 231m——47°; 242m——20°. Minor chlorite - actinolite - quartz ± pyrrhotite, and chalcopyrite,veining at 199.15m, 221.67——222.9m, and at 224.12m.													
274.05	276.1	1.8	88	ALTERED FAULT BRECCIA	Fault Zone												
				Brecciated bleached light brown hornfelsed shale with a matrix of white calcite. Minor brecciation and veining extends into the surrounding unaltered rock.													
276.1	298.3	22.2	100	HORNFELSED SHALE	C.C.F												
				As for 167.1 - 274.05m													
298.3	316.62	18.32	100	BANDED HORNFELSED SILTSTONE AND CHERT	"												
				Dark grey to choclate brown siltstone to shale grading into light grey-green cherty bands up to 30cm wide.													
				Banding: 299m——31° 310m——22°													
				302m——30° 312m——31°													
				307m——25°													
316.62	347.5	30.88	100	CALC-SILICATE ROCK	"No.2	316.5	317.5	0.09	0.05	0.04	< 0.1		<0.01	0.02	0.009	1	0.01
				316.62 - 340.72m Dark green banded rock with blebs of	Anomaly"	317.5	318.5	0.11	0.08	0.01	< 0.1		<0.01	0.01	0.009	1	<0.01
				pyrrhotite in bands, minor bands of whitish calcite and veins of		318.5	319.5	0.13	0.08	0.01	< 0.1		<0.01	0.02	0.005	1	0.01
				coarse, green fibrous actinolite. Minor fine grained pinkish		319.5	320.5	0.08	0.05	0.06	< 0.1		<0.01	0.01	0.008	3	0.01
				garnet. Rare blebs of chalcopyrite are associated with the pyrrhotite.		320.5	321.5	0.08	0.07	0.07	< 0.1		<0.01	0.01	0.001	2	0.01
				Banding: 319m——33° 335m——31°		321.5	322.5	0.11	0.06	0.11	< 0.1		<0.01	0.01	0.003	3	0.16
				323m——24° 337m——22°		322.5	323.5	0.12	0.06	0.17	< 0.1		<0.01	0.01	0.006	3	0.03
				328m——29°		323.5	324.5	0.11	0.06	0.11	< 0.1		<0.01	0.01	0.003	3	0.04
				336.72 - 337.31m: Light pink to green band of fine grained		324.5	325.5	0.19	0.06	0.06	< 0.1		<0.01	0.02	0.002	4	0.36
				garnet and chert? very minor to no pyrrhotite.		325.5	326.5	0.11	0.08	0.13	< 0.1		<0.01	0.02	0.011	4	0.01
						326.5	327.5	0.11	0.06	0.04	< 0.1		<0.01	0.02	0.008	4	0.01
						327.5	328.5	0.10	0.05	0.03	< 0.1		0.01	0.02	0.007	3	0.0

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RENISON LIMITED

DIAMOND DRILL RECORD

HOLE NUMBER : RL 59

LOGGED BY : Linda Martin

INTERVAL (m) FROM	INTERVAL (m) TO	RECOVERY m	RECOVERY %	DESCRIPTION	FORM.
				340.72 - 347.5m : Pink brown to greenish banded rock. Richer in garnet and more cherty than rock from 316.62 - 340.72m. Minor pyrrhotite grading to none at base of unit.	"No2 Anomaly"
				Banding: 341m - 29°; 344m - 33°; 346m - 39°.	
				Gradational upper boundary but sharp lower one at 32° I.C.A.	
				Fine grained granite?vein at 341.54 - 341.61m; Light grey, porphyritic with actinolite alteration.	
347.5	353.35	5.85	100	BANDED HORNFELSED SILTSTONE AND CHERT	C.G.F
				Similar to rock at 298.3 0 316.62m. Minor bands of pink and green calc-silicates.	
				Banding: 350m - 32°; 352m - 37°.	
				Very minor thin veinlets and blebs of pyrrhotite to 351m.	
353.35	356.4	2.74	90	FAULT BRECCIA	Fault Zone
				Brecciated hornfelsed shale and banded hornfelsed siltstone and chert, bleached and altered in places. Zones of quartz and chlorite veining. Core fairly broken; minor core loss.	
356.4	371.0	14.6	100	HORNFELSED SHALE	
				Dark grey, fine grained, massive. Similar to rock at 167.1 - 274.05.	
				END OF HOLE	

FROM	TO	% Sn. TOTAL	% Sn. ACID SOL.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	% WO$_3$
328.5	329.5	0.07	0.05	0.03	<0.1		0.01	0.02	0.008	2	<0.01
329.5	330.5	0.07	0.06	0.02	"		"	0.01	0.008	4	<0.01
330.5	331.5	0.09	0.08	0.04	"		"	0.02	0.008	2	<0.01
331.5	332.5	0.08	0.07	0.11	"		"	0.02	0.010	3	<0.01
332.5	333.5	0.09	0.06	0.08	"		"	0.01	0.007	3	<0.01
333.5	334.5	0.12	0.03	0.04	"		"	0.01	0.010	4	<0.01
334.5	335.5	0.02	<0.01	0.02	"		"	0.02	0.007	2	<0.01
335.5	336.5	0.24	0.01	0.10	"		"	0.02	0.010	<1	0.01
336.5	337.5	0.04	0.01	0.04	"		"	0.02	0.007	1	0.01
337.5	338.5	0.08	0.01	0.10	"		"	0.02	0.012	1	0.03
338.5	339.5	0.07	0.02	0.08	"		"	0.02	0.012	1	0.02
339.5	340.5	0.10	0.02	0.06	"		"	0.02	0.006	1	0.02
340.5	341.5	0.07	0.01	0.03	"		"	0.01	0.005	<1	0.01
341.5	342.5	0.06	0.02	0.09	"		"	0.02	0.007	2	0.07
342.5	343.5	0.03	0.02	0.03	"		"	0.02	0.006	<1	<0.01
343.5	344.5	0.07	0.05	0.05	"		"	0.02	0.004	2	0.01
344.5	345.5	0.04	0.03	0.05	"		"	0.02	0.004	3	<0.01
345.5	346.5	<0.01	0.02	0.02	"		"	0.02	0.001	1	<0.01
346.5	347.5	0.05	0.05	0.04	"		"	0.02	0.004	2	<0.01

CORE ANALYSER

FROM	TO	%Sn	FROM	TO	%Sn
315	316	0.04	334	335	0.1
316	317	0.06	335	336	0.06
317	318	0.06	336	337	0.03
318	319	0.16	337	338	0.05
319	320	0.06	338	339	0.07
320	321	0.09	339	340	0.02
321	322	0.05	340	341	0.05
322	323	0.13	341	342	0.05
323	324	0.07	342	343	0.04
324	325	0.05	343	344	0.08
325	326	0.08	344	345	0.03
326	327	0.08	345	346	0.02
327	328	0.08	346	347	0.02
328	329	0.05	347	348	0.06
329	330	0.02	348	349	0.05
330	331	0.07	349	350	0.05
331	332	0.05	350	351	0.05
332	333	0.03	351	352	0.03
333	334	0.04			

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RENISON LIMITED

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DIAMOND DRILL RECORD

HOLE NUMBER : ML 59
LOGGED BY : Linda Martin

NWPS

INTERVAL (m)			MAGNETIC SUSCEPTIBILITY ($\times 10^{-6}$ C.G.S. UNITS)					FORM					
FROM	TO	READING	FROM-TO	READING	FROM-TO	READING	FROM-TO	READING	FROM	TO	READING	FROM - TO	READING
0 -	5	600	-48	2100	-91	7500	-134	2700	210	-214	100	- 270	3200
-	6	1600	-49	2200	-92	8700	-135	1200		-216	< 100	- 271	4400
-	7	2300	-50	2500	-93	7500	-136	4700		-217	100	-272	5700
-	8	200	-51	2800	-94	6500	-137	6800		-218	< 100	- 273	6300
-	9	200	-52	5100	-95	6400	-138	1100	218	-221	100	- 274	8900
-	10	300	-53	6000	-96	5700	-139	1000	221	-224	< 100	- 275	200
-	11	1300	-54	5000	-97	9000	-140	1000		-225	100	275 - 277	< 100
-	12	600	-55	8200	-98	9500	140-145	100		-226	6000	- 278	100
-	13	2600	-56	8700	-99	8100	145-146	<100		-227	6500	278 - 287	< 100
-	14	3300	-57	6900	-100	11,000	146-150	100		-228	7000	- 288	1000
-	15	6200	-58	7800	-101	11,000	150-152	200		-229	8000	- 289	1200
-	16	3500	-59	6500	-102	7000	-153	100	229	-232	9000	- 290	100
-	17	3700	-60	5100	-103	6800	-154	200		-233	7000	- 291	1000
-	18	3300	-61	5800	-104	8900	-155	100		-234	8000	- 292	5000
-	19	4800	-62	7400	-105	5900	-156	300		-235	9000	292-315	< 100
-	20	2100	-63	7000	-106	900	-157	<100		-236	8000	-316	300
-	21	5000	-64	6400	-107	200	-158	300	236	-238	7000	316 -318	200
-	22	4500	-65	8300	-108	4500	-159	400		-239	7500	-319	300
-	23	8000	-66	9300	-109	4600	-160	200		-240	7000	319 -321	200
-	24	7200	-67	10,600	-110	500	-161	1300		-241	6500	321 -324	300
-	25	3100	-68	6200	-111	200	-162	1200		-242	5300	-325	200
-	26	5000	-69	6600	-112	100	-163	700		-243	7400	-326	300
-	27	3300	-70	6700	-113	1400	-164	100		-244	10,000	-327	500
-	28	6200	-71	4500	-114	1100	164-169	< 100		-245	6500	-328	200
-	29	2800	-72	6100	-115	1800	-170	100		-246	8900	-329	100
-	30	2100	-73	500	-116	9500	-171	< 100	246	-248	10,000	-330	400
-	31	8000	-74	300	-117	9500	171-182	100		-249	7900	-331	200
-	32	2400	-75	300	-118	11,000	-183	3300	249	-254	< 100	-332	100
-	33	4300	-76	3800	-119	10,200	-184	3100		-255	200	-333	300
-	34	7500	-77	7300	-120	8100	-185	300		-256	4500	333 -335	200
-	35	7800	-78	8200	-121	5900	-186	100		-257	5000	-336	400
-	36	4500	-79	1500	-122	800	-187	< 100		-258	8300	-337	500
-	37	10,000	-80	2500	-123	100	-188	100		-259	12,000	-338	400
-	38	7600	-81	3800	-124	200	-189	< 100		-260	9600	-339	700
-	39	7900	-82	1700	-125	200	189-191	100		-261	8500	339 -341	300
-	40	6200	-83	400	-126	100	191-196	< 100		-262	7200	341 -346	400
-	41	7500	-84	600	-127	300	-197	5300		-263	5400	-347	3700
-	42	6500	-85	500	-128	2800	-198	4500		-264	3000	347 -352	400
-	43	9700	-86	200	-129	1300	198-201	< 100		-265	3900	-353	300
-	44	6900	-87	600	-130	1300	201-202	100		-266	5900	353 -355	100
-	45	6600	-88	4200	-131	1300	202-203	2000		-267	4100	355 -360	< 100
-	46	8200	-89	12,000	-132	1400	203 -209	100		-269	3600	-361	100
-	47	1600	-90	9700	-133	3 00	-2 0	.000		269	.00	361 -371	< .00

743069

REPORT CMS 82/5/15

PETROLOGICAL DESCRIPTIONS OF DRILL CORE SAMPLES

Summary

Mount Lindsay Drill Cores

With the exception of ML 60/186.8 m, which represents a spotted hornfels with a weak greisening overprint, these rocks are entirely metasomatic types, broadly skarns, developed in labile psammopelites. The characteristic assemblage, rather typical of Mount Lindsay contact-alteration zones, is hastingsite-phlogopite± quartz. A few rocks exhibit a late retrogressive alteration typified by development of carbonate and prehnite.

Cassiterite appears of strictly limited occurrence in these rocks, consistent with the generally high but variable proportion of acid soluble to total Sn. Within the limits of sampling variations it is likely that at least sone Sn is present as stanniferous sphene, and this may be supplemented by other forms of non-cassiterite Sn. Electron-probe micro-analyses, inconjunction with detailed mineragraphy, would be required to confirm the nature of tin mineralogy.

070

743071

ML 59 DRILL CORE SAMPLE DESCRIPTIONS

Central Mineralogical Services

Sample No.	Classification - Composition	Fabric	Accessories	Comments
316.9 (T.S. 42033)	"Skarn". Fine-grained tremolite-actinolite with subordinate/variable hastingsite. Irregular zones of coarse hastingsite, minor phlogopite, disseminated pyrrhotite.	Relict laminated silty clastic fabric in fine-grained areas. Sporadic late calcite veinlets.	Traces magnetite, sphene, chalcopyrite, quartz.	Skarnised labile siltstone. Sulphide essentially restricted to crudely vein-like, coarser-grained hastingsite aggregates. No detectable cassiterite.
324.6	"Skarn". Hastingsite with subordinate/variable, closely intergrown phlogopite. Sporadic vugs, crude veins of quartz, fluorite, pyrrhotite.	Similar to 316.9 m, finer-grained with relatively marked relict banding.	Sphene, magnetite, minor trace chalcopyrite. Disseminated cassiterite (vugs, veinlets).	Close affinities with 316.9 m. Minor relatively phlogopitised pelitic bands. Cassiterite as inclusions, micro-inclusions in quartz, fluorite sized <10-50 μ, mean 10-15 μ.
335.7	"Skarn". Hastingsite with subordinate/variable phlogopite, spongy pyrrhotite disseminations, sporadic vugs of quartz; irregular late corrosive patches of poikilitic calcite, tremolite.	Similar to 316.9 m, 324.6 m, but with late poikilitic carbonate mottling.	Magnetite, traces sphene, ultrafine ?cassiterite, minor trace chalcopyrite.	Close affinities with 316.9 m and particularly 324.6 m.Late calcite patches with associated tremolitisation hastingsite. ?Cassiterite size < 15 μ,patchy inclusions in quartz.
341.6	"Skarn"/Vein-Quartz. Banded hastingsite-phlogopite rock with patchy poikilitic quartz, minor pyrrhotite, late calcite impregnations. Vein-quartz with included hastingsite, myriads of micro-inclusions.	Semi-banded, fine- to medium-grained skarn with essentially conformable vein-quartz.	Sphene, apatite micro-inclusions in quartz. Minor magnetite, minor traces chalcopyrite.	Vein-quartz similar to the ?cassiterite-bearing patches in 335.7 m, bu devoid of identifiable cassiterite. Host rock is typical of this zone (skarnised labile silty pelite).
343.7	"Skarn". Hastingsite with subordinate/variable phlogopite, conspicuous sphene, minor disseminations, discontinuous films of pyrrhotite.	Fine- to medium-grained, banded.	Fine-grained magnetite, ilmenite, traces quartz, minor late poikilitic carbonate.	Typical hastingsite-phlogopite rock representing a skarnised labile clastic sediment. No detectable cassiterite.
346.2	Skarn. Partly degraded (carbonated) grossular-andradite with closely intergrown vesuvianite, subordinate zoisitic epidote, minor actinolite, disseminated pyritised pyrrhotite.	Fine-grained, banded, with sporadic coarse poikilitic patches of garnet.	Fine to ultrafine sphene. Minor late chlorite.	Garnet-vesuvianite-zoisite skarn representing relatively high-grade metasomatised labile sediment. Late "retrograde" carbonate-chlorite-pyrite alteration.

RENISON LIMITED - DRILL CORE RECORD

743072

HOLE NUMBER	ML60
PURPOSE	To test for a cassiterite-bearing zone similar to the ML38 intersection in the main ore zone.
LOCATION	Mt. Lindsay
COLLAR R.L.	2490.6
CO-ORDINATES	31726.5 N 11093.1 E
LENGTH	265.0m
HOLE SIZE	0-45.5m HQ 45.5-143.0m NQ 143.0-265.0m BQ
DATE DRILLED	4/1/82 - 18/1/82
SIGNIFICANT CORE LOSS ZONES	191.0-246.0m 48.25m (ie. 88% loss)
ORE ZONE GROUND CONDITIONS	Very large cavities
LOGGED BY	P.A. Roberts

SURVEY			From – To	Distance D	VERTICAL		HORIZONTAL	
Depth	Bearing	Dip			D.Sin.Dip	R.L.	D.Cos.Dip	Prog Total
	(RMG)							
COLLAR	035°	-56°	0-15.0	15.0	12.4	2478.2	8.4	8.4
30.0	033°	-56°	-37.5	22.5	18.7	2459.5	12.6	21.0
45.0	034°	-56°	-52.0	14.5	12.0	2447.5	8.1	29.1
59.0	034°	-56.5°	-67.0	15.0	12.5	2435.0	9.3	37.4
75.0	033°	-55.5°	-79.0	12.0	9.9	2425.1	6.8	44.2
83.0	035°	-56°	-98.0	19.0	15.8	2409.3	10.5	54.8
113.0	035°	-55°	-128.0	30.0	24.6	2384.7	17.2	72.0
143.0	037°	-55°	-151.5	23.5	19.3	2365.4	13.5	85.5
160.0	036°	-54°	-172.0	20.5	16.6	2348.8	12.0	97.5
184.0	037°	-54°	-265.0	93.0	75.2	2273.6	54.7	152.2

COMMENTS

This hole intersected the Main Ore Zone between 192.0m and 251.9m. From 192.0m-245.8m, no calcareous rocks were encountered, however only 5.65m of core was recovered, the rest being very large cavities. The cavities which were probably derived by groundwater solution of limestone, are most unusual at such depths at Mt. Lindsay. The hole failed to intersect a cassiterite-bearing zone.

Drilling was abandoned after the lower four rods of the drillstring broke off after encountering a 7m cavity between 258.0m and 265.0m. No surveys were taken below 184.0m because of the risk to the camera in such broken, unpredictable ground.

SUMMARY – ASSAY DATA

LODE NAME	FROM	TO	LENGTH (m)	AVERAGE WEIGHTED ASSAYS													B.C.A.
				Sn.	Acid Sol. Sn.	Cu.	As.	S.	Pb.	Zn.	Bi.	WO_3	Ag g/t				
"Main ore zone"	192.0	251.9	59.9	<0.01	~ <0.01	—	—	—	—	—	~0.003	<0.01	~ 2				

072

HOLE No ML 60

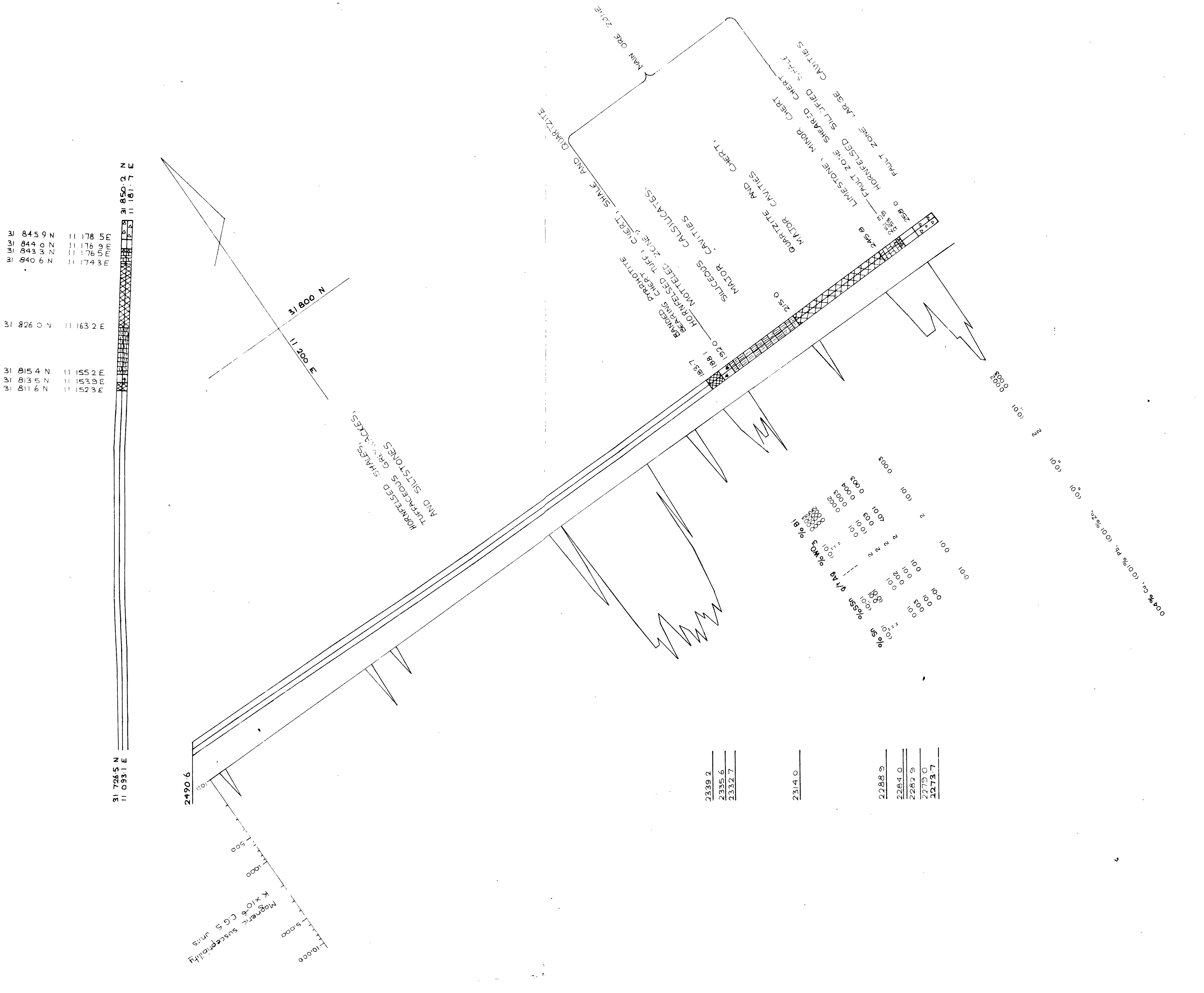
SCALE : 1:1000 0 20 40 metres

RENISON LIMITED

DIAMOND DRILL HOLE PLOT

743073

5 cm



RENISON LIMITED

PAGE 1

DIAMOND DRILL RECORD

HOLE NUMBER : ML60
LOGGED BY : P. ROBERTS

RWPS

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM			% Sn.									
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	% WO.
0.0	10.0	8.6	86	HORNFELSED TUFFACEOUS GRAYWACKES AND SHALES Dark grey, hard Greywackes, generally fine grained (av. 1mm) with few larger clasts, rarely >1cm diameter, partly bedded. Shales also partly bedded, probably tuffaceous. BCA'S 40°-50°. Rare irregular veins of actinolite ±quartz. Badly broken on yellow clay-coated joints.													
10.0	45.5	35.3	99	HORNFELSED SHALES Dark grey, hard, similar to shales above. Mostly massive, minor bedding (BCA'S 30-50°). Rare clasts (≤1cm) suggest tuffaceous nature. Minor, irregular veins of actinolite ±quartz mostly ≤2cm thick. Thicker veins contain minor sulfides-pyrrhotite, pyrite and chalcopyrite. Broken on numerous flat joints - less broken than 0.0-10.0m, however. Rare microfaults.													
				29.05-29.20 Vein of actinolite, quartz, minor pyrite and chalcopyrite. VCA 35°.													
45.5	91.0	45.3	100	HORNFELSED SHALES AND TUFFACEOUS GREYWACKES Dark grey, grey-brown and grey-green. Greywackes generally fine grained (av. 0.5mm), few larger clasts. Minor bedding in both greywackes and shales (BCA'S 40-45°). Minor actinolite in veins and rounded altered patches 1-10cm across, ±quartz in thin (1-2mm) veins ± minor sulfides (pyrrhotite and pyrite). Core is bleached and pale green where there are abundant quartz veins and alteration. Broken on few flat joints and irregular breaks, badly broken where quartz veining is intense.													
91.0	117.0	26.0	100	HORNFELSED TUFFACEOUS GREYWACKES AND SHALES Similar to above except vein and alteration zones containing actinolite less frequent, thinner. Quartz veins rare. Tuffs contain rare rounded shaley clasts, generally elongated parallel bedding. Increasing tuffaceous content downwards. Broken on few joints and irregular fractures. Rare microfaults.													
117.0	168.9	51.9	100	HORNFELSED TUFFACEOUS GREYWACKES Dark grey, minor grey-green, hard; partly weakly bedded-BCA'S 35-60° (av. 45°). Fine grained, grainsize varying 0.5-1mm to <0.5mm, few larger clasts mostly <1cm. Minor alteration: (1) thin (≤10cm) green very fine grained zones of cal-silicate(?) ± minor sulfide (pyrrhotite and chalcopyrite). (2) small (≤4cm) rounded siliceous													

743074

DIAMOND DRILL RECORD

HOLE NUMBER : ML60
LOGGED BY : P. ROBERTS

NWPS

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM	% Sn.				% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	% WO3
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.								
				patches, quartz with minor brown mineral + sulfides(?) in centre,													
				with outer rim of pale grey chalcedony. Rare thin (≤3mm) veins of													
				actinolite ± minor sulfide (chalcopyrite, pyrrhotite), also thin													
				(1mm) veins of quartz and/or pink feldspar (??). Few patches of													
				sparsely disseminated, fine grained (<0.5mm) sulfide patches of													
				apparently unaltered greywacke . Broken on flat joints, JCA'S 30-45°.													
				121.155 Magnetite-bearing horizon, M.S.0-6500, average 3000													
168.9	183.7	14.5	98	ALTERED, HORNFELSED SHALES AND TUFFACEOUS SILTSTONES													
				Dark brown, grey-green mottled, hard. Pale green alteration is													
				at least partly calc-silicate. Minor patches of pyrrhotite													
				disseminated finely and in larger (1-3mm) rounded blebs, particularly													
				in calc-silicate (?) zones. Also very minor pyrrhotite with quartz													
				in mostly thin (≤2mm) veins. Bottom 40cm of intersection is													
				silicified. Partly bedded. BCA'S 50-60°. Broken on few flat joints													
				(JCA'S 30-60°), and irregular breaks.													
183.7	188.1	4.4	100	ALTERED MINERALIZED CHERT(?)		183.7	184.7	<0.01	<0.01						0.003	1	<0.01
				Pale brown, hard. Banded - (bedded? BCA'S 45-60°) banding marked by		184.7	185.7	<0.01	<0.01						0.002	1	<0.01
				elongated blebs of pyrrhotite (5-10% of total). Minor bands of		185.7	186.7	<0.01	0.01						0.002	1	<0.01
				pale green, calc-silicate alteration with quartz and sulfides.		186.7	188.1	<0.01	<0.01						0.002	1	<0.01
				Broken on few pyrite coated joints and irregular fractures.													
188.1	192.0	3.8	97	ALTERED HORNFELSED TUFF, CHERT, SHALE AND QUARTZITE													
				Pale grey-green, pale green, brown, hard. Bedded (BCA'S 50-70°).													
				Visibly tuffaceous, with angular clasts 188.1-188.9m; very minor													
				sulfide (pyrrhotite and pyrite) disseminated and in veinlets.													
				Broken on few flat joints and irregular fractures.													
192.0	215.0	2.35	10	SILICEOUS CALC-SILICATE, MAJOR CAVITIES	mex	192.0	194.0	0.01	0.01						0.002	2	0.01
				Pale brown, pale green, grey. Pale brown rock is vuggy, porous and	ofe	194.0	197.0	0.03	0.02						0.003	2	<0.01
				very badly broken, with green-brown crystals of axinite(?) or tourmaline(?), also	rcxe	197.0	200.0	0.01	0.01						0.006	2	0.03
				minor pyrite in vug fillings - this material is evidently at the		200.0	203.0	0.01	0.01						0.003	2	<0.01
				edges of the large cavities. There are several small (<1cm thick)													
				patches of yellow-brown, soft sandy material attached to the vuggy		207.0	216.0	0.01	0.01						0.023	2	<0.01
				rock - this may fill part of the cavities. The pale grey, green													
				rock is mostly unbedded, hard and competent. Both rock types non-													
				calcareous. 20.65m core loss.													

743075

RENISON LIMITED

PAGE 3

DIAMOND DRILL RECORD

HOLE NUMBER : RL60

LOGGED BY : P. ROBERTS

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM.	% Sn.											
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	% WO_3
215.0	245.8	3.3	11	HORNFELSED SEDIMENTS, MAJOR CAVITIES Grey, very hard, fine grained quartzite, and cherts. Bedded. BCA'S 25-40°. Corroded-looking sandy surfaces apparently mark the cavities. Trace veinlet pyrrhotite. 27.5m core loss.	Maw ore zone												
245.8	251.9	6.1	100	LIMESTONE MINOR CHERT Pale grey, banded/bedded. Comprising limestone with fine grained granular appearance interspersed with veins or "beds" of coarsely crystalline calcite and beds of chert. BCA'S 30-40°. Very minor pyrrhotite either in veinlets with calcite or disseminated in the chert. Core competent - few irregular breaks.	″ ″ ″												
251.9	253.9	2.0	100	MINERALIZED, SHEARED CHERT (?) Mottled grey and brown, very hard and siliceous. Severely sheared and brecciated. 10-20% pyrrhotite in blebby patches 0.5-10cm across interspersed with silica. Fault zone (?). Weakly calcareous near the top. Competent core.		251.9 252.9	252.9 253.9	<0.01 <0.01	<0.01 <0.01	0.04			<0.01	<0.01	0.002 0.003	2 2	<0.01 <0.01
253.9	258.0	4.1	100	HORNFELSED SILICIFIED SEDIMENT Grey-brown, very hard, quartz-rich rock. Contains numerous veinlets of white quartz. Brown colour may be derived from dravite(?). No clear bedding except near top where BCA 20-30°. At least partly sheared. Very minor pyrrhotite in veinlets ±quartz. 255.3-255.5 Sheared silicified calc-silicate (?). Pale green, grey and brown. Very hard.													
258.0	265.0	0	0	**No core-large cavity**													
				END OF HOLE 265.0m													

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RENISON LIMITED

DIAMOND DRILL HOLE PLOT

SCALE :

HOLE No. : RL60

Magnetic Susceptibility Measurements (x10^{-6} C.G.S. units)

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0.0-1.0	<100	40-41.0	<100	80.0-81.0	<100	120-121.0	100	160-161	<100				
2.0	"	42.0	100	82.0	"	122.0	500	162	"				
3.0	"	43.0	<100	83.0	"	123.0	800	163	"				
4.0	200	44.0	100	84.0	"	124.0	300	164	"				
5.0	<100	45.0	<100	85.0	"	125.0	100	165	100				
6.0	"	46.0	"	86.0	"	126.0	1800	166	"	242-246	400		
7.0	"	47.0	100	87.0	"	127.0	3500	167	"	247	300		
8.0	"	48.0	"	88.0	"	128.0	3500	168	"	248	200		
9.0	100	49.0	"	89.0	"	129.0	3000	169	<100	249	400		
10.0	"	50.0	<100	90.0	"	130.0	6000	170	"	250	600		
11.0	<100	51.0	100	91.0	"	131.0	3100	171	400	251	600		
12.0	"	52.0	<100	92.0	"	132.0	2400	172	300	252	1300		
13.0	"	53.0	"	93.0	"	133.0	2000	173	<100	253	1400		
14.0	"	54.0	"	94.0	"	134.0	3200	174	"	254	500		
15.0	100	55.0	"	95.0	"	135	5300	175	"	255	600		
16.0	<100	56.0	"	96.0	"	136	3100	176	"	256	<100		
17.0	"	57.0	300	97.0	"	137	4000	177	"	257	"		
18.0	"	58.0	<100	98.0	"	138	6000	178	"	258	"		
19.0	"	59.0	"	99.0	"	139	4200	179	"	265	No Reading		
20.0	100	60.0	"	100.0	"	140	6500	180	"				
21.0	<100	61.0	"	101.0	"	141	4000	181	"				
22.0	100	62.0	"	102.0	"	142	3000	182	"				
23.0	"	63.0	100	103.0	"	143	4000	183	"				
24.0	<100	64.0	"	104.0	"	144	3500	184	200				
25.0	"	65.0	200	105.0	"	145	5200	185	300				
26.0	"	66.0	100	106.0	"	146	4200	186	400				
27.0	100	67.0	"	107.0	"	147	3100	187	200				
28.0	"	68.0	"	108.0	"	148	4400	188	300				
29.0	"	69.0	"	109.0	"	149	3500	189	300				
30.0	"	70.0	"	110.0	"	150	2800	190	200				
31.0	<100	71.0	"	111.0	"	151	1600	191	500				
32.0	"	72.0	<100	112.0	"	152	900	192	100				
33.0	"	73.0	"	113.0	"	153	200	194	"				
34.0	"	74.0	"	114.0	"	154	700	197	"				
35.0	"	75.0	"	115.0	"	155	200	200	<100				
36.0	100	76.0	100	116.0	"	156	<100	203	"				
37.0	"	77.0	<100	117.0	100	157	"	207	No Reading				
38.0	<100	78.0	"	118.0	"	158	"	216	300				
39.0	100	79.0	"	119.0	<100	159	"	239	100				
40.0	<100	80.0	"	120.0	"	160	"	242	200				

74307

REPORT CMS 82/5/15

PETROLOGICAL DESCRIPTIONS OF DRILL CORE SAMPLES

Summary

Mount Lindsay Drill Cores

With the exception of ML 60/186.8 m, which represents a spotted hornfels with a weak greisening overprint, these rocks are entirely metasomatic types, broadly skarns, developed in labile psammopelites. The characteristic assemblage, rather typical of Mount Lindsay contact-alteration zones, is hastingsite-phlogopite± quartz. A few rocks exhibit a late retrogressive alteration typified by development of carbonate and prehnite.

Cassiterite appears of strictly limited occurrence in these rocks, consistent with the generally high but variable proportion of acid soluble to total Sn. Within the limits of sampling variations it is likely that at least sone Sn is present as stanniferous sphene, and this may be supplemented by other forms of non-cassiterite Sn. Electron-probe micro-analyses, inconjunction with detailed mineragraphy, would be required to confirm the nature of tin mineralogy.

ML 60 DRILL CORE SAMPLE DESCRIPTIONS

Central Mineralogical Services

Sample .o.	Classification - Composition	Fabric	Accessories	Comments
06.8	Spotted Hornfels. Microcrystalline quartz, ill-defined clays with abundant cordierite poikiloblasts. Frequent veinlets quartz, muscovite/ phlogopite, pyrrhotite with sericitic replacement selvedges.	Spotted hornfelsic with relict pelitic bedding laminations; semi-concordant veinlets.	Ultrafine metasomatic schorl. Patchy pinite replacementssof cordierite.	Cordierite-quartz-mica hornfels with pervasive "greisen-type" quartz-mica veinlets and associated retrograde sericitisation, pinitisation of cordierite.
96.0	Skarn. Poikilitic vesuvianite with sporadic aggregates of diopside, grossular-andradite, minor late vugs, veinlets, films of prehnite.	Fine- to medium-grained, vaguely banded with semi-mylonitic overprint. Locally vuggy vesuvianite.	Disseminated fine-grained pyrrhotite, minor traces of actinolite.	High-grade skarn. Weakly slickensided, subacicular crystal aggregate (greenish to brown) are sub- to euhedral (terminated tetragonal prisms) of vesuvianite.
215.5	Altered Skarn. Prehnite aggregates with patchy corroded relics of diopside, vesuvianite, grossular-andradite. Patchy cloudy sideritic carbonate impregnations. Late laumontite veinlets.	Distinctly banded relict silty to fine sandy, turbidite-like.	Conspicuous fine-grained, extensively pyritised pyrrhotite. Minor adularia-prehnite veinlets.	Garnet-diopside-vesuvianite skarn (pyrometasomatised labile greywacke) withmarked retrograde prehnitisation late zeolite veining.
252.9 (T.S. 42042)	Altered Skarn. Prehnite and serpentinous chlorite with patchy corroded relict patches of more or less massive fine-grained diopside. Disseminations, spongy aggregates of pyrrhotite	Similar to 215.5 m, with irregular zones of prehnitisation. Minor prehnite veinlets.	Patchy impregnations of adularia. Ultrafine cloudy sphene. Minor traces chalcopyrite.	Close affinities with 215.5m. Diopsidised labile turbidite with retrogressive prehnite, chlorite, adularia assemblage.

079

APPENDIX 4

Parsons Hood Infill Lines on Harman River Grid

a) Soil Sample Description Sheets
b) Assay Results

FORM NO. 81/89

080

743081

RENISON LIMITED

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA Parsons Hood TRAVERSE 5 WEST- DATE 1982. OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	25 WEST	30	CM	BROWN MUDDY SOIL; VEGETATION ON ROCK.
	50	60	"	" " " "
5 METRES SOUTH OF PEG	75	30	"	BROWN SOIL ON ROCK.
3 METRES SOUTH OF PEG	100	60	"	KHAKI CLAY; CHIPS ON ROCK.
	125	0.9	M	BEIGE CLAY.
	150	50	CM	BROWN CLAY; TAN WEATHERED ROCK.
2 M[illegible]RES EAST [illegible]PEG.	175	35	"	" " " ".
	200	0.9	M	BEIGE; GREY; TAN CLAY.
	225	0.9	"	BROWN CLAY.
	250	0.9	"	BEIGE CLAY; TAN WEATHERED ROCK.
	275	85	CM	GREY CLAY.
	300	0.9	M	KHAKI; GREY; BROWN; TAN WEATHERED ROCK.
	325	0.9	"	BEIGE CLAY.
	350	0.9	"	GREY; BROWN; CLAY; TAN WEATHERED ROCK.
	375	15	CM	GREY SOIL; VEGETATION ON ROCK.
	400	20	"	" " " "
	425	10	"	" " " ".
	450			NO SAMPLE TAKEN ROCKY OUTCROP.
5 METRES SOUTH OF PEG.	475	10	"	GREY SOIL; VEGETATION ON ROCK.
2 METRES NORTH OF PEG.	500.	50	"	BROWN CLAY; ROCK CHIPS " "

FORM NO. 81/89

081

743082

RENISON LIMITED

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA PARSONS HOOD TRAVERSE 5 EAST DATE 1982. OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	25 EAST	10	CM	BROWN SOIL; VEGETATION ON ROCK.
4 METRES EAST OF PEG	50	10	"	" " "
2 METRES EAST OF PEG.	75	20	"	" " "
	100	10	"	" " ".
	125	20	"	BEIGE; BROWN CLAY; VEGETATION ON ROCK.
	150	10	"	BROWN SOIL; VEGETATION ON ROCK
5 M[illegible]ES EAST [illegible] PEG.	175	0·9	M	BEIGE CLAY.
	200	0·9	"	BLUE; GREY GRITTY CLAY; BROWN WEATHERED ROCK.
	225	15	CM	GREY SANDY SOIL ON ROCK.
3 METRES WEST OF PEG.	250	15	"	" " ".
	275	10	"	BROWN SOIL; VEGETATION ON ROCK.
	300	15	"	" " " ".
	325	75	CM	BROWN CLAY; WEATHERED ROCK.
	350	0·9	M	TAN CLAY; CHIPS.
	375	0·9	M ~~CM~~	KHAKI; BROWN CLAY.
	400	75	CM	BEIGE CLAY ON ROCK.
	425	75	"	BROWN " "
5 METRES EAST OF PEG.	450	35	"	" " ".
	475	10	"	GREY SOIL; VEGETATION ON ROCK.
	500	15	"	BROWN SOILY CLAY ON ROCK.

FORM NO. 01/83

* UNDER 0·4M IS ON ROCK

082

RENISON LIMITED

743083

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA PARSONS HOOD **TRAVERSE** 7 WEST. **DATE** 1982 **OBS**

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	25 WEST	20	CM	BROWN SOIL; VEG. ON ROCKS.
	50	30	"	" " CHIPS.
	75	0·9	M	KHAKI CLAY; CREAM WETD. ROCK.
	100	0·9	"	LIGHT TAN CLAY; CHIPS.
	125	0·9	"	KHAKI CLAY.
	150	50	CM	BROWN CLAY.
	175	20	"	BROWN SOIL; VEG.
	200	30	"	" " WETD. ROCK.
	225	30	"	" "
	250	65	"	" " CLAY.
	275	0·9	M	KHAKI CLAY WETD. ROCK.
	300	0·9	"	" " " "
	325	0·9	"	TAN CLAY; TAN WETD. ROCK.
	350	50	CM	KHAKI CLAY; ROCK CHIPS.
	375	45	"	GREY SANDY GRIT.
	400	20	"	BROWN SOIL; VEG.
	425	60	"	GREY GRIT.
	450	0·9	M	KHAKI WTD. ROCK.
	475	0·9	"	GREY WTD. ROCK.
	500	0·9	"	KHAKI CLAY.
	525	0·9	"	BEIGE CLAY.
	550	0·9	"	" " ROCK CHIPS.
	575	75	CM	BROWN CLAY.
	600	37·5	"	" "
	625	20	"	" "
	650	0·9	M	KHAKI CLAY; GREY WTD. ROCK.
	675	0·9	"	TAN WTD. ROCK BROWN CLAY.
	700	0·9	"	GREY GRIT TAN WTD ROCK

ORM NO. 81/89

083

* UNDER 0·9 IS STOPPED BY ROCK.

RENISON LIMITED

743084

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA PARSONS HOOD TRAVERSE 7 EAST DATE 1982 OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	25 EAST	12·5	CM	BROWN SOIL.
	50	65	"	" " CHIPS.
	75	0·9	M	TAN CLAY; CREAM WTD. ROCK.
	100	0·9	"	TAN CLAY.
	125	0·9	"	" " CHIPS.
	150	0·9	"	" " ".
	175	0·9	"	" " ".
	200	0·9	"	KHAKI SOIL.

RM NO. 81/89 * UNDER 0·9 IS STOPPED BY ROCK

084

RENISON LIMITED

743085

FIELD SHEET FOR GEOCHEMICAL SURVEY

REA PARSONS HOOD TRAVERSE 9 WEST DATE 1982 OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	25 WEST	0·9	M	BROWN SOILY CLAY.
	50	50	CM	BLACK SOIL

ORM NO. 81/89

085

*UNDER 0·9 IS STOPPED BY ROCK

RENISON LIMITED

743086

FIELD SHEET FOR GEOCHEMICAL SURVEY

REA PARSONS HOOD TRAVERSE 9 EAST DATE 1982 OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	25 EAST	0·9	M	MUSTARD CLAY.
	50	0·9	"	TAN SOILY CLAY.

086

743087

RENISON LIMITED

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA PARSONS HOOD TRAVERSE 11 WEST DATE 1982 OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	25 WEST	60	CM	BLACK GRITTY SOIL.
	50	65	"	BROWN CLAY.
	75	0·9	M	TAN SOILY CLAY.
	100	60	CM	BROWN " " TAN WTD. ROCK.
	125	0·9	M	BROWN GRITTY SOIL, WTD. ROCK.
	150			NO SAMPLE ROCKY OUTCROP.
	175	0·9	M	FAWN GRITTY SOIL.
	200	32·5	CM	" " ".

087

743088

RENISON LIMITED

FIELD SHEET FOR GEOCHEMICAL SURVEY

REA PARSONS HOOD   TRAVERSE 11 EAST   DATE 1982   OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	25 EAST	0·9	M	KHAKI CLAY.
	50	0·9	"	BROWN SOILY CLAY.
	75	0·9	"	BROWN CLAY.
	100	0·9	"	TAN CLAY.
	125	0·9	"	" " WTD. ROCK.
	150	0·9	"	TAN CLAY.
	175	0·9	"	" ".
	200	0·9	"	" " CHIPS.
	225	0·9	"	" ".
	250	0·9	"	TAN CLAY.
	275	60	CM	TAN WTD. ROCK.
	300	25	"	BROWN SANDY SOIL.

FORM NO. 81/89

088

743089

RENISON LIMITED

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA Parsons Hood TRAVERSE 13 EAST
13 WEST DATE 1982 OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
SAMPLE TAKEN 3 METRES NORTH OF PEG	25 EAST	50	CM	BROWN SOIL ON ROCK.
" "	50 " "	50	"	" " "
3 METRES WEST OF PEG	75 " "	75	"	BROWN SOILY CLAY ON ROCK.
	100 " "	50	"	" " ON ROCK.
2. METRES WEST OF PEG	125 " "	62.5	"	" " CLAY ON ROCK.
	150 " "			NO SAMPLE TAKEN ROCKY OUTCROP.
5 [illegible]TRES WES[illegible]F PEG	175 " "	25	"	GREY SOIL; VEGETATION ON ROCK.
	200 " "	45	"	GREY MUDDY SOIL ON ROCK.
2 METRES WEST OF PEG	225 " "	50	"	BROWN SOIL ON ROCK.
	250 " "	0.9	M	KHAKI CLAY.
3 METRES EAST OF PEG	25 WEST	50	CM	" " SOIL ON ROCK.
	50 " "	0.9	M	TAN SOILY CLAY.
5 METRES EAST OF PEG	75 " "	0.9	"	BEIGE CLAY; WEATHERED ROCK.
3 METRES EAST OF PEG	100 " "	0.9	"	GREY GRANITE; BROWN WEATHERED ROCK.
	125 " "	0.9	"	GREY GRITTY GRANITE.
	150 " "	0.9	"	BEIGE WEATHERED ROCK.
5 [illegible]TRES WEST OF PEG	175 " "	35	CM	BROWN MUDDY SOIL; VEGETATION. ON ROCK.
	200 " "	50	"	GREY SOIL; VEGETATION ON ROCK.
	225 " "	75	"	BROWN SOIL; " " ".
	250 " "	30	"	" " " ".

FORM NO. 81/89

089

743090

RENISON LIMITED

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA Parsons Hood TRAVERSE Base Line 19 South DATE 1982 OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	00 SOUTH	0.9	M	BROWN CLAY; ORANGE WEATHERED ROCK.
5 METRES SOUTH OF PEG	25 "	45	CM	TAN SOIL ON ROCK.
" "	50 "	10	"	GREY GRITTY SOIL ON ROCK. (CREEK 1 METRE NORTH OF PEG.)
SAMPLE TAKEN 5 METRES TH OF PEG.	75 "	35	"	" " SOILY CLAY " " (75 SOUTH ON CREEK)
	100 "	37.5	"	" " GRITTY SOIL " "
	125 "	0.9	M	ORANGE CLAY.
	150 "	0.9	"	TAN CLAY.
	175 "	35	CM	FAWN SOIL ON ROCK.
	200 "	20	"	GREY SANDY SOIL " ".
	225 "	20	"	" " "
	250 "	20	"	" " "
	275 "	12.5	"	" " "
	300 "	20	"	" " "
	325 "	20	"	" " "
	350 "	20	"	" " "
3 M[illegible]ES WES[illegible]F PEG.	375 "	0.9	M	BROWN SOIL; ROCK CHIPS.
	400 "	20	CM	BROWN SANDY SOIL ON ROCK.
	425 "	15	"	" " "
	450 "	60	"	" " "
3 METRES WEST OF PEG	475 "	60	"	" " "
" "	500 "	20	"	" " "
	525 "			
	550 "			
	575 "			

FORM NO. 81/89

090

743091

RENISON LIMITED

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA Parsons Hood TRAVERSE Base Line 2300 SOUTH DATE 1982. OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
	00 SOUTH	20	CM	BROWN SOIL ON ROCK.
	25	20	"	" " "
3 METRES EAST OF PEG.	50	50	"	" " CLAY " ".
	75	75	"	" " "
	100	12.5	"	" " SOIL " " VEGETATION.
	125	20	"	GREY GRITTY CLAY ON ROCK.
	150	35	"	BROWN SOILY CLAY; CHIPS ON ROCK.
	175	75	"	TAN WEATHERED ROCK.
	200	30	"	BROWN SOIL; VEGETATION ON ROCK.
	225	12.5	"	" " " ".
	250	25	"	" " " " CHIPS.
	275	75	"	" " CLAY; CREAM WEATHERED ROCK.
	300	35	"	BROWN GRITTY SOIL; CHIPS ON ROCK.
	325	20	"	" " SOIL; VEGETATION " ".
	350	12.5	"	" " " " ".
	375	75	"	" " TAN CLAY " ".
	400	0.9	M	KHAKI SOIL; TAN WEATHERED ROCK.
	425	0.9	"	" " CLAY; BROWN SOIL.
	450	25	CM	BROWN SOIL ON ROCK.
	475	12.5	"	" " ".
	500	15	"	BEIGE SOIL " ".
	525			NO SAMPLE ROCKY OUTCROP.
5 METRES NORTH OF PEG.	550	15	"	BROWN SOIL; VEGETATION ON ROCK.
	575			NO SAMPLE ROCKY OUTCROP.
	600	15	"	BROWN SOIL; VEGETATION ON ROCK.
6 METRES SOUTH OF PEG.	625	65	"	" " CLAY ON ROCK.
1 METRE NORTH OF PEG.	650	50	"	" " ".
	675	60	"	" " " CHIPS

FORM NO. 81/89

091

743092

RENISON LIMITED

FIELD SHEET FOR GEOCHEMICAL SURVEY

AREA PARSON'S HOOD TRAVERSE BASE LINE 2300 SOUTH. DATE 1982. OBS

~~STATION~~	SAMPLE NO.	DEPTH		DESCRIPTION
2 METRES EAST OF PEG	700 SOUTH	0·9	M	TAN CLAY.
	725	20	CM	BROWN SOIL; CHIPS ON ROCK.
	750	65	"	BROWN CLAY ON ROCK.
	775.	40	"	BROWN MUDDY SOIL; CHIPS ON ROCK.

FORM NO. 81/90

092

743093

RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: Pairson Hood

Page 1 of 14

Grid Line: Line 5 W

Date: April 1982

	Sn	As	WO_3	Pb	Zn	Cu	5Sn
25 W	<10	<10	<10	40	30	20	-
50	60	20	<10	20	30	30	<50
75	<10	<10	<10	30	30	30	<50
1[illegible]	30	<10	<10	20	120	90	<50
125	<10	20	10	20	50	40	<50
150	10	<10	<10	30	50	40	-
175	20	<10	<10	20	60	40	-
200	10	<10	<10	20	140	50	-
225	20	10	<10	20	40	30	-
250	10	<10	<10	20	130	60	-
275	<10	<10	<10	20	30	30	-
300	10	<10	<10	30	60	60	-
325	<10	<10	<10	30	50	40	-
350	<10	<10	<10	20	40	20	-
375	<10	<10	<10	10	10	10	-
400	<10	<10	<10	10	10	<10	-
425	<10	<10	<10	20	10	<10	-
450	NO	SAMPLE					
475	<10	<10	<10	30	10	10	-
500	<10	<10	<10	30	30	20	-

FORM NO. 81/90

093

RENISON LIMITED

743094

GEOCHEMICAL ASSAY RESULTS

Area: Parsons Hood:

Grid Line: Line 5 E

Date: April 1982

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	Sn	As	W03	Pb	Zn	Cu
25 E	<10	<10	<10	80	30	20
50	<10	<10	<10	40	20	10
75	<10	<10	<10	40	20	10
100	<10	<10	<10	50	30	10
125	<10	<10	<10	120	20	10
150	<10	<10	<10	50	30	10
175	20	40	<10	50	290	130
200	<10	<10	<10	60	320	380
225	<10	<10	<10	50	30	10
250	<10	<10	<10	100	30	20
275	<10	<10	<10	50	40	10
300	<10	<10	<10	30	10	10
325	<10	<10	<10	20	60	60
3[illegible]0	<10	<10	<10	30	70	100
375	<10	<10	<10	30	60	80
400	10	<10	<10	20	40	60
425	10	<10	<10	20	40	40
450	<10	<10	<10	30	30	20
475	<10	<10	<10	20	10	20
500	<10	<10	<10	30	20	10

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094.

RENISON LIMITED

743095

GEOCHEMICAL ASSAY RESULTS

Area: Parsons Hood

Grid Line: 7

Date: April 1982

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	Sn	As	Wo3	Pb	Zn	Cu
25 W	20	<10	<10	30	20	<10
50	20	30	10	20	50	40
75	10	20	<10	20	70	180
1[illegible]	10	<10	<10	20	70	60
125	<10	<10	<10	30	60	40
150	<10	<10	<10	30	40	40
175	10	<10	<10	30	40	30
200	<10	<10	<10	20	30	30
225	<10	<10	<10	30	40	30
250	<10	10	<10	30	40	30
275	<10	<10	<10	30	40	40
300	10	30	20	20	60	40
325	<10	<10	<10	20	50	40
3[illegible]0	10	<10	<10	20	80	70
375	<10	<10	<10	20	30	20
400	<10	<10	<10	20	20	20
425	20	<10	<10	20	50	40
450	10	<10	<10	30	90	80
475	<10	<10	<10	30	60	50
500	<10	<10	<10	20	40	40
525	<10	<10	<10	20	50	120
550	<10	<10	<10	110	260	120
575	<10	<10	<10	20	70	80
600	<10	<10	<10	20	20	40
625	<10	<10	10	30	20	20
650	10	<10	10	30	80	100

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095.

743096

RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: Parsons Hood

Grid Line: Line 7

Date: April 1982

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	Sn	As	Wo3	Pb	Zn	Cu
675 W	10	<10	<10	30	60	80
700	<10	<10	<10	30	40	50

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096

RENISON LIMITED

743097

GEOCHEMICAL ASSAY RESULTS

Area: Parsons Hood

Grid Line: 7 East

Date: April 1982

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	Sn	As	WO3	Pb	Zn	Cu
25 E	<10	70	30	30	40	80
50	<10	<10	<10	20	50	50
75	<10	<10	<10	20	30	60
00	10	<10	<10	20	30	50
125	<10	<10	<10	20	50	70
150	<10	<10	<10	20	50	50
175	<10	<10	<10	30	50	50
200	10	10	<10	20	40	30

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097

RENISON LIMITED

743098

GEOCHEMICAL ASSAY RESULTS

Area: ..PARSONS Hood..........

Grid Line: ..Line 9 W..........

Date: ..April 1982..........

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	Sn	As	Wos.	Pb	Zn	Cu
25 W	<10	<10	<10	20	20	30
50	20	<10	<10	30	30	30

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743099

RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: Parsons Head

Grid Line: P.H. Line 9

Date: April 1982

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	Sn	As	WO_3	Pb	Zn	Cu
25 E	<10	<10	<10	20	20	40
50	<10	<10	<10	20	20	30

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099

RENISON LIMITED

743100

GEOCHEMICAL ASSAY RESULTS

Area: Parsons Hood

Grid Line: Line 11 W

Date: April 1982

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	Sn	As	WO3	Pb	Zn	Cu
25 W	<10	<10	10	20	90	40
50	10	<10	<10	30	30	30
75	<10	<10	<10	30	20	40
100	<10	<10	<10	30	40	80
125	<10	<10	<10	10	<10	<10
150	NO	SAMPLE				
175	<10	<10	<10	<10	<10	<10
200	<10	<10	<10	<10	<10	<10

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RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: ....Parsons Hood.....

Grid Line: Line 11 E..........

Date: ....April....1982.........

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	Sn	As	Wo3	Pb	Zn	Cu
25 E	<10	<10	10	30	40	90
50	<10	<10	<10	30	40	90
75	<10	<10	<10	30	30	70
100	<10	<10	<10	30	30	90
125	<10	<10	<10	30	40	50
150	<10	<10	10	20	30	50
175	10	<10	<10	30	40	80
200	10	<10	<10	30	40	60
225	<10	<10	<10	30	70	70
250	10	<10	<10	20	40	50
275	10	<10	<10	40	30	60
300	<10	<10	<10	10	10	<1

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101

743102

RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: PARSON HOOD

Grid Line: LINE 13 W

Date: 27/4/1982

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	Sn	As	Cu	Pb	Zn	WO_3
25W	<10	<10	10	10	20	<10
50	10	10	40	20	20	<10
75	30	60	110	20	40	<10
100	20	<10	<10	10	10	10
125	10	<10	<10	<10	10	20
150	20	<10	<10	10	10	<10
175	<10	<10	<10	<10	10	<10
200	<10	<10	20	10	10	<10
225	<10	<10	<10	10	20	<10
250	<10	<10	<10	10	10	<10

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RENISON LIMITED

743103

GEOCHEMICAL ASSAY RESULTS

Area: PARSON HOOD

Page 11 of 14

Grid Line: LINE 13 E

Date: 27/4/1982

	Sn	As	Cu	Pb	Zn	WO_3
25 E	<10	20	20	20	20	<10
50	10	<10	10	10	20	<10
75	20	<10	10	10	20	<10
100	10	30	20	20	30	<10
125	<10	10	30	20	20	<10
150	NO SAMPLE					
175	<10	<10	10	20	20	<10
200	<10	<10	<10	<10	10	<10
225	<10	<10	10	20	10	<10
250	<10	50	50	20	40	<10

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103

743104

RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: Parsons Hood

Grid Line: 19 BW

Date:

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	Sn	As	NO3	Pb	Zn	Cu	SSn
00	200	20	10	30	40	1100	-
25 S	<10	<10	<10	20	20	40	-
50	10	<10	<10	<10	<10	<10	-
[illegible]	<10	<10	<10	10	10	10	-
100	10	<10	<10	20	<10	20	-
125	10	<10	<10	30	60	90	-
150	<10	<10	<10	20	30	40	-
175	10	<10	<10	20	20	20	-
200	<10	<10	<10	10	<10	<10	-
225	<10	<10	<10	20	10	10	-
250	<10	<10	<10	<10	<10	<10	-
275	<10	<10	<10	10	<10	10	-
[illegible]00	<10	<10	<10	10	<10	<10	-
325	<10	<10	<10	10	<10	<10	-
350	10	<10	<10	10	10	10	-
375	40	20	<10	20	20	30	<50
400	40	60	<10	20	10	30	<50
425	10	<10	<10	20	10	10	-
450	<10	<10	<10	10	10	20	-
475	10	<10	<10	20	30	30	-
500	<10	<10	<10	10	10	<10	-
525	<10	<10	<10	20	20	20	-
550	20	<10	<10	30	20	30	-
575	<10	<10	<10	<10	<10	<10	-

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743105

RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: Parsons Hood

Grid Line: 2300 BW

Date: April 1982

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	Sn	As	Wo3	Pb	Zn	Cu	SSn
0 S	<10	<10	<10	30	20	10	-
25	40	<10	<10	30	30	20	<50
50	70	<10	<10	30	30	30	<50
75	<10	<10	<10	20	50	40	-
100	<10	<10	<10	20	20	10	-
125	<10	<10	<10	30	20	<10	-
150	30	<10	10	20	40	20	<50
175	<10	<10	<10	20	70	160	-
200	<10	<10	<10	20	20	10	-
225	<10	<10	<10	30	30	10	-
250	<10	<10	40	20	30	20	-
275	<10	70	<10	20	50	40	<50
300	<10	<10	<10	20	40	20	-
325	<10	<10	<10	20	20	20	-
350	<10	10	<10	70	40	10	<50
375	50	90	10	20	30	30	50
400	490	30	<10	30	190	600	<50
425	20	20	<10	20	190	110	<50
450	<10	<10	<10	20	50	20	<50
475	30	20	<10	30	30	20	<50
500	70	10	<10	40	30	20	<50
525	NO	SAMPLE					
550	<10	<10	<10	30	30	10	-
575	NO	SAMPLE					
600	<10	<10	<10	40	30	20	-
625	<10	20	<10	20	50	40	<50

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743106

RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: ....Parsons Hood.......

Grid Line: ...2300 BL.........

Date: ...April 1982..........

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	Sn	As	Wo3	Pb	Zn	Cu	SSn
650	20	<10	<10	30	40	30	-
675	50	30	<10	30	40	40	<50
700	30	10	<10	30	40	40	-
725	40	20	10	30	50	50	50
750	30	20	<10	30	50	40	-
775	<10	<10	<10	50	70	40	-

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743107

APPENDIX 5

Parsons Hood Infill Lines on Harman River Grid

- Magnetics Sheets

ORM NO. 79/269

RENISON LIMITED

743108

Ø
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Line 5

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 22/2/82 Operator: C. Furry Grid Location: Parson's Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
L5 B/L 23W	67252	10.00	No Base Station	
10E	63748			
20	64046			
30	65524			
40	63246			
50 E	65525			
60	65524			
70	62763			
80	66772			
90	66100			
100 E	66230			
110	62079			
120	62233			
130	63091			
140	62943			
150 E	62949			
160	63250			
170	62357			
180	63333			
190	63165			
200 E	62619			
210	62954			
220	62554			
230	61549			
240	63244			
250 E	62885			
260	62872			
270	59214			

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108

743109

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 22/2/82 **Operator:** C. Furry **Grid Location:** Parsons Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
L.5 280	61760		No Base	Station
290	65524			
300E	65524			
310	62814			
320	62043			
[illegible]30	62356			
340	62566			
350E	62728			
360	62937			
370	62569			
380	62482			
390	62390			
400 E	62365			
410	62292			
4[illegible]0	62239			
430	62229			
440	62281			
450 E	61999			
460	62160			
470	63515			
480	62297			
490	63268			
500 E	62481			
L.5 B/L 23W	66867			
10W	65525			
20	61532			
30	62663			
40	[illegible]			

FORM NO. 79/269

109

743110

③

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 22/2/82 Operator: C. Furry Grid Location: Parson's Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
50 W	64207		No Base Station	
60	62513			
70	62235			
80	62363			
90	62555			
100 W	63033			
110	63886			
120	64734			
130	63922			
140	64131			
150 W	63800			
160	63763			
170	64230			
180	63833			
190	64041			
200 W	63793			
210	63906			
220	63468			
230	63175			
240	62990			
250 W	62925			
260	62724			
270	62186			
280	61858			
290	61815			
300 W	61833			
310	62046			
320	62167			

ORM NO. 79/269 110

743111 ⑥

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 22/2/82 Operator: C. Furry Grid Location: Parson's Hood.

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
330	62112			
340	61825			
350W	61962			
360	62008			
370	61750			
380	62452			
390	63237			
400	65459			
410	62280			
420	63741			
430	62699			
440	65525			
450 W	65700			
460	62540			
470	60305			
480	62668			
490	62176			
500 W	62148			

FORM NO. 79/269

743112 0 111

RENISON LIMITED

Line 7

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 19/2/82 Operator: C. Furry Grid Location: Parson's Hood.

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
L.7 B/L	66036		No Base Station	
10E	60698			
20	61465			
30	59659			
40	59991			
50 E	61500			
[illegible]0	67855			
70	66227			
80	61990			
90	61850			
100 E	61897			
110	62000			
120	62085			
130	62106			
140	62103			
[illegible]0 E	62119			
160	62240			
170	62087			
180	62550			
190	63071			
200 E	62044			
L.7 B/L	66183			
10 W	64585			
20	62597			
30	62426			
40	62157			
50 W	61538			
60	60596			

FORM NO. 79/269

1.12

RENISON LIMITED

743113 ②

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 19/2/82 Operator: C. Furry Grid Location: Parsons Hood.

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
1.7 70 W	61509		No Base	Station
80	61804			
90	62021			
100W	62069			
110	62138			
[illegible]0	62211			
130	62298			
140	62581			
150W	62349			
160	62615			
170	62672			
180	62621			
190	62561			
200 W	62644			
210	62506			
220	62934			
230	63084			
240	63258			
250 W	62552			
260	62143			
270	62208			
280	62892			
290	62755			
300 W	61659			
310	61510			
320	61594			
330	61697			
340	6175			

FORM NO. 79/269 RENISON LIMITED 743114 ③

113.

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 19/2/82 **Operator:** C. Furry **Grid Location:** Parson's Hood.

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
L.7 350W	61800		No Base	Station
360W	61852			
370	61892			
380	61912			
390	61932			
400W	61941			
[illegible]10	61952			
420	61970			
430	61989			
440	62011			
450W	62019			
460	62076			
470	62140			
480	62200			
490	62233			
[illegible]0W	62315			
510	62493			
520	62462			
530	62502			
540	62750			
550W	62773			
560	62121			
570	62337			
580	61938			
590	61743			
600W	62204			
610	62724			
620	62627			

ORM NO. 79/269

114

743115

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

ate: 19/2/82 Operator: C. Furry Grid Location: Parsons Hood.

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
1.7630	63004		No Base	Station
640	62376			
650 W	62673			
660	62190			
670	62044			
6[illegible]0	62102			
690	62023			
700 W	62003			

FORM NO. 79/269

Line 9

RENISON LIMITED

*Non-repeatable readings

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PROTON MAGNETOMETER FIELD RECORDINGS

743116

Date: 2/3/82 Operator: C. Furry Grid Location: Parson's Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
50 W	61993		No Base	Station
40	61997			
30	64531 *			
20	64998 *			
10	62070			
B/L 19 at 1125S	62097			
[illegible]0 E	62122			
20	62255			
30	64011 *			
40	62164			
50 E	64526 *			
60	62526			
70	64863 *			
80	63773 *			
90	61995			
[illegible]0 E	61918			
110	61862			
120	61886			
130	61731			
140	62026			
150 E	62142			
160	61392			
170	61096			
180	61658			
190	63654 *			
200 E	59756 *			
210	62781 *			
220	63775			

FORM NO. 79/269

Line 9

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

* Non-repeatable reading

743117 116

Date: 2/3/82 Operator: C. Furry Grid Location: Parsons Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
230	62506		No Base	Station
240	60530			
250 E	62252			
260	62464			
270	63108			
[illegible]80	62895			
290	62944			
300 E	62008			
310	62046			
320	62298			
330	61988			
340	61988			
350 E	61797			
360	62000			
370	62174			
380	62198			
390	62175			
400 E	62154			
410	62144			
420	62129			
430	62148			
440	62126			
450	62142			
460	62160			
470	62170			
480	62139			
490	62106			
500	6211[illegible]			

FORM NO. 79/269

RENISON LIMITED

*Non-repeatable Readings

Line 9

PROTON MAGNETOMETER FIELD RECORDINGS

743118 117

Date: 2/3/82 Operator: C. Furry Grid Location: Parson's Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
510	62180		No Base	Station
520	62175			
530	62150			
540	62146			
550 E	62146			
560	62133			
570	62159			
580	62176			
590	62200			
600E	62194			
610	62142			
620	62149			
630	62174			
640	62167			
650 E	62147			
660	62163			
670	62168			
680	62151			
690	62189			
700 E	62164			

RM NO. 79/269

RENISON LIMITED

* Non-repeatable readings.

118

Line 11

PROTON MAGNETOMETER FIELD RECORDINGS

743119

ate: 2/3/82 Operator: C. Furry Grid Location: Parson's Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
Line 11 B/L	61838		No Base	Station
10E	64985 *			
20	62159			
30	62296			
40	62210			
[illegible]E	62293			
60	62244			
70	64836 *			
80	63257 *			
90	63621 *			
100E	62318			
110	62802 *			
120	62442			
130	63938 *			
14[illegible]	64004 *			
150E	64264 *			
160	63624 *			
170	62463 *			
180	64662 *			
190	62230			
200	62222			
210	62234			
220	62239			
230	62260			
240	62291			
250	62326			
260	62408			
270	62370			

FORM NO. 79/269

RENISON LIMITED

* Non-repeatable readings

Line 11

PROTON MAGNETOMETER FIELD RECORDINGS

743120119

Date: 2/3/82 Operator: C. Furry Grid Location: Parsons Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
280	64108 *		No Base	Station
290	62358			
300	62349			

FORM NO. 79/269

No Base Station

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

743121

120

LINE 11

Date: 13/2/82 Operator: Graeme Smith Grid Location: Parson's Flood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
BL 00	61762	2.39		
10W	61850			
20W	61897			
30W	61936			
40W	61986			
50W	62053			
60W	62916			
70W	63982			
80W	62515			
90W	62119			
100W	67838			
110W	65592			
120W	62114			
130W	62085			
140W	62114			
15[illegible]W	62109			
160W	62126			
170W	62145			
180W	62187			
190W	62205			
200W	62223	3.22		

ORM NO. 79/269

LINE 13

no B.S. 121

743122

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

ate: 13/2/82 Operator: Greene Smith Grid Location: Renison Head

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
250 W	62134	9.30		
240 W	62124			
230 W	62099			
220 W	62110			
210 W	62107			
200 W	62108			
190 W	62109			
180 W	62097			
170 W	62098			
160 W	62088			
150 W	62067			
140 W	62060			
130 W	62041			
120 W	62031			
110 W	62005			
00 W	62016			
90 W	62045			
80 W	61942			
70 W	61904			
60 W	61588			
50 W	61104			
40 W	63625			
30 W	62589			
20 W	62615			
10 W	62462			
BL00	62299	11.00		
10E	62586			
20E	62642			

FORM NO. 79/269

122

RENISON LIMITED

743123

PROTON MAGNETOMETER FIELD RECORDINGS

Date: Operator: Grid Location:

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
30E	61661			
40E	62500			
50E	62843			
60E	63042			
70E	63893			
80E	62123			
90E	61230			
100E	61365			
110E	61938			
120E	62259			
130E	62213			
140E	62189			
150E	62176			
160E	62181			
170E	62172			
180E	62181			
190E	62213			
200E	62268			
210E	62262			
220E	62273			
230E	62292			
240E	62313			
250E	62291			
E.O.L	E.O.L.	E.O.L		
BL13 (00)	62360	12·25		

NO BASE STATION.

FORM.NO. 79/269

RENISON LIMITED

743124

BASE LINK 19

123

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 13/2/82 Operator: Grace Smith Grid Location: Parsons Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
00S	61821	12:44 PM		
10S	61913			
20S	62773			
30S	62137			
40S	63460			
50S	64835			
60S	63783			
70S	61799			
80S	61671			
90S	61687			
100S	62496			
110S	62600			
120S	62553			
130S	62421			
140S	62388			
150S	62364			
160S	62400			
170S	62413			
180S	62465			
190S	62496			
200S	62362			
210S	61892			
220S	62472			
230S	62094			
240S	62204			
250S	62524			
260S	62084			
270S	61930			

FORM NO. 79/269

124 Base Line 19

RENISON LIMITED

743125

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 13/2/82 Operator: Grid Location: P.H.

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
280 S	62256			
290 S	62194			
300 S	62228			
310 S	62175			
320 S	61835			
330 S	62524			
340 S	63627			
350 S	63347			
360 S	62253			
370 S	63132			
380 S	61963			
390 S	62266			
400 S	61790	(NEAR I.P. Crew)		
410 S	61158			
420 S	60809			
43[illegible] S	61390			
440 S	63513			
450 S	63215			
460 S	62820			
470 S	63206			
480 S	61406			
490 S	62370			
500 S	60505			
510 S	62855			
520 S	59770			
530 S	62051			
540 S	60950			
550 S	62850			

FORM NO. 79/269

125 BL 19

RENISON LIMITED

743126

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 13/2/82 **Operator:** Graeme Smith **Grid Location:** PH

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
560S	61819			
570S	62204			
580S	61990			
590S	61886			
600S	61574			
610S	61316			
620S	61978			
630S	61330			
640S	61747			
650S	61762	2·39		

743127

FORM NO. 79/269

RENISON LIMITED

*Non-repeatable reading

Base line 1900 W

PROTON MAGNETOMETER FIELD RECORDINGS

126

Date: 2/3/82

Operator: C. Furry

Grid Location: Parson's Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
800S	62090		No Base	Station
790	62100			
780	62079			
770	62064			
760	62061			
750 S	62063			
740	64687 *			
730	62047			
720	64450 *			
710	64983 *			
700S	62118			
690	62145			
680	62099			
670	62049			
660	62068			
650 (B/L 2.11)	61838			

FORM NO. 79/269

RENISON LIMITED

* Non-repeatable readings

743128

Baseline 1900 W
127

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 2/3/82

Operator: C. Furry

Grid Location: Parsons Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
1080	62171		No Base	Station
1070	62152			
1060	62130			
1050 S	62104			
1040	62159			
1030	62146			
1020	62119			
1010	62095			
1000 S	62097			
990	62094			
980	62088			
970	62079			
960	62100			
950 S	62070			
940	63951			
930	62125			
920	62154			
910	62163			
900	62149			
890	62143			
880	62114			
870	62100			
860	62072			
850	62039			
840	62067			
830	62076			
820	62081			
810	64683 *			

FORM NO. 79/269

RENISON LIMITED

*Non-repeatable readings

743129

Base-line 1900 W

128

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 2/3/82 Operator: C. Furry Grid Location: Parsons Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
Junction with Line 8 at 1725W	62370	10·20am	No Base	Station
1350 S	64546 *			
1340	62441			
1330	62701			
1320	62836			
1310	63016			
1300 S	62561			
1290	62309			
1280	62306			
1270	62179			
1260	62317			
1250 S	62553			
1240	63111 *			
1230	64211			
1220	61927			
1210	62090			
1200 S	62292			
1190	62145			
1180	62116			
1170	62110			
1160	62093			
1150 S	62092			
1140	62102			
1130	63816 *			
1120	62176			
1110	62179			
1100	62187			
1090	62176			

FORM NO. 79/269

Base Line
129 23·00W

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

0

743130

Date: 19/2/82 Operator: C. Furry Grid Location: Parson's Hood

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
L.8 B/L 23W	61342	9.44	No Base	Station
10S	62331			
20S	65566			
30S	63772			
40S	61272			
50S	61633			
60S	59836			
70S	63993			
80S	66708			
90S	65781			
100S	65400			
110S	62850			
120S	59795			
130S	65523			
140S	65586			
150S	64763			
L.7 160S	66036			
170S	65587			
180S	64185			
190S	62700			
200S	65523			
210S	65523			
220S	65524			
230S	65523			
240S	62500			
250S	60700			
260S	63695			
270S	66037			

ORM NO. 79/269

130

②

743131

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 19/2/82 Operator: C. Furry Grid Location: Parsons Hood.

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
280S	64504		No Base	Station
290S	63272			
300S	64743			
310S	67550			
320S 'L.6	64493			
330S	64293			
340S	64358			
350S	63850			
360S	65328			
370S	62838			
380S	62097			
390S	63200			
400S	66956			
410S	60614			
420S	61712			
430S	62396			
440S	62616			
450S	61550			
460S	63825			
470S	62975			
480S	65296			
490S	65524			
500S	65524			
510S	58292			
520S	58154			
530S	66355			
540S	66650			
15 B/L	66610			

FORM NO. 79/269

131

③

743132

RENISON LIMITED

PROTON MAGNETOMETER FIELD RECORDINGS

Date: 19/2/82 **Operator:** **Grid Location:**

Grid Station	Gamma Reading	Time	Diurnal Correction	Corrected Reading
550S	66970			
560S	65550			
570S	65717			
580S	65524			
590S	65908			
600S	66250			
610S	63050			
620S	62946			
630S	65027			
640S	63750			
650S	64041			
660S	62194			
670S	61539			
680S	62342			
690S	62814			
700S	63303			
710S	63902			
720S	65000			
730S	64403			
740S	64988			
750S	64960			
760S	64362			
770S	64006			
End B/L 23W 775S	64005	4·05		

APPENDIX 6

Parsons Hood Infill Lines on Harman River Grid

a) Rock Chip Sample Descriptions
b) Rock Chip Sample Assay Results

PARSONS HOOD INFILL LINES ON HARMAN RIVER GRID

ROCK CHIP SAMPLE DESCRIPTIONS

SAMPLE NO.	DESCRIPTION	Assay	Pet.
28/1	Fine grained, dark to medium grey, tuffaceous hornfels.	-	x
28/2	Fine grained, medium grey, hornfelsed shale with minor cordierite (?).	-	-
28/5	Coarse grained, dark brown, garnet - magnetite skarn. Heavy.	x	x
29/1	Fine grained, grey cherty and silty rock with veins and blebs of sulphide.	x	x
[illegible]/2	Fine grained, dark grey siltstone with pyrite specks.	-	-
29/3	Fine grained, dark grey to brown garnet-magnetite skarn.	x	x
29/4	Fine grained, dark grey siltstone.	-	-
29/5	Coarsely crystalline, pink, garnet skarn.	x	x
29/6	Fine grained, grey to pink, well banded garnet - magnetite skarn.	x	x
29/7	Coarse grained, dark grey, tuffaceous hornfelsed greywacke.	-	x
29/8	Medium grained, medium grey, tuffaceous greywacke.	-	x
29/9	Medium grained, medium grey, tuffaceous greywacke.	-	-
29/10	Fine grained, dark grey hornfels.	-	x
29/11	Fine grained, dark grey hornfels.	-	-
29/12	Fine grained, medium to dark grey, banded cordierite (?) hornfels.	-	x
29/13	Coarse grained, medium brown - pink, garnet - magnetite skarn.	x	x
30/1	Fine grained, dark grey-purple, cordierite (?) hornfels.	-	-
30/2	Fine grained, dark grey-purple, cordierite (?) hornfels with pyrrhotite flecks.	-	x
30/3	Medium grained, grey cherty shale.	-	-
30/4	Medium grained, greyish-green tuff.	-	x
30/5	Fine grained, light grey-purple cherty tuff with black diopside veining.	-	-
30/6	Fine grained, pink to grey, cherty tuff with irregular black to dark green diopside veining.	-	x
30/7	Fine grained, pink to grey, cherty tuffaceous greywacke with irregular black to dark green diopside veining.	-	x
30/8	Fine grained, dark purple, cordierite (?) hornfels.	-	-
31/1	Fine grained, dark grey, shale.	-	x
31/2	Fine grained, grey, banded, tuffaceous shale.	x	-

SAMPLE NO.	DESCRIPTION	Assay	Pet
31/3	Fine grained, light pink-grey, cherty greywacke with greenish squashed pumice fragments.	-	x
31/4	Fine grained, medium grey-pink, chert with sulphide specks.	-	x
31/5	Coarse grained grey, gabbro.	x	x
31/6	Fine grained, dark grey, hornfelsed shale.	x	x
36/1	Fine grained, pink and grey banded, hornfelsed cherty greywacke, with minor sulphide specks.	x	x
36/2	Fine grained, dark brown, hornfelsed shale, with sulphide specks.	x	x
36/3	Fine grained, light and dark grey banded, cherty tuff with minor sulphide specks.	x	-
36/4	Fine grained, dark grey-purple, hornfels.	-	-
36/5	Very fine grained, medium grey chert with specks and bands of pyrrhotite.	-	-
36/6	Fine grained, dark grey-purple, banded, cordierite(?) hornfels.	-	x
36/7	Medium grained, dark grey hornfels.	-	-
36/8	Fine grained, dark grey, hornfels.	x	x

135 FORM NO. 81/90

743136

RENISON LIMITED

GEOCHEMICAL ASSAY RESULTS

Area: PARSONS HOOD
ROCK CHIP SAMPLES

Page of

Date: MAY 1982

	Sn	As	Cu	Pb	Zn	WO_3
28/5	230	100	10	10	50	<10
29/1	40	10	210	20	50	20
29/3	140	30	40	10	20	<10
29/5	160	70	10	10	60	<10
29/6	50	1020	20	20	150	<10
29/13	180	50	<10	10	140	<10
29/13 (REPEAT)	130	40	<10	10	170	<10
31/2	10	30	210	20	50	20
31/5	10	10	20	<10	50	10
31/6	10	40	140	<10	<10	20
36/1	130	280	20	10	20	40
36/2	40	40	130	20	30	20
36/3	20	30	40	10	<10	20
36/8	10	30	70	<10	<10	20

APPENDIX 7

Petrology Report by D. Cowan (Central Mineralogical Services)

REPORT CMS 82/5/15
Part 1

This report summarises petrological data on a priority suite of 20 rock and drill core samples from the total submission of 69 samples. Brief tabulated descriptions were prepared as several of the rocks are essentially similar. These incorporate data from stereobinocular and petrological microscopic examination of representative thin-sections and offcuts, together with specific mineralogical determinations where warranted (e.g. the brown silicate in ML 60/196.0 m), and include interpretative comments.

Summary

Mount Lindsay Drill Cores

With the exception of ML 60/186.8 m, which represents a spotted hornfels with a weak greisening overprint, these rocks are entirely metasomatic types, broadly skarns, developed in labile psammopelites. The characteristic assemblage, rather typical of Mount Lindsay contact-alteration zones, is hastingsite-phlogopite± quartz. A few rocks exhibit a late retrogressive alteration typified by development of carbonate and prehnite.

Cassiterite appears of strictly limited occurrence in these rocks, consistent with the generally high but variable proportion of acid soluble to total Sn. Within the limits of sampling variations it is likely that at least sone Sn is present as stanniferous sphene, and this may be supplemented by other forms of non-cassiterite Sn. Electron-probe micro-analyses, inconjunction with detailed mineragraphy, would be required to confirm the nature of tin mineralogy.

Parsons Hood Rock Chips

Lithologies are essentially quite similar to those of the Mount Lindsay cores, with a composite of variously contact-metamorphosed and metasomatised labile turbidites and subordinate hornfelsed carbonaceous pelites.

Relatively mildly altered greywackes are characterised by tremolitic or hornblende-rich assemblages in part of strictly contact-metamorphic origin ("hornblende hornfelses"). Higher grade zones assume a distinctly pyrometasomatic character, typically with diopsidic assemblages (with inferred Mg-metasomatism) and grading into garnet-bearing types. The meta-pelites similarly exhibit metasomatic development of anthophyllite-grunerite. These rocks, in general, appear unmineralised, although individual samples may warrant re-examination on the basis of assay data.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
ML 59 316.9 (T.S. 42033)	"Skarn". Fine-grained tremolite-actinolite with subordinate/variable hastingsite. Irregular zones of coarse hastingsite, minor phlogopite, disseminated pyrrhotite.	Relict laminated silty clastic fabric in fine-grained areas. Sporadic late calcite veinlets.	Traces magnetite, sphene, chalcopyrite, quartz.	Skarnised labile siltstone. Sulphide essentially restricted to crudely vein-like, coarser-grained hastingsite aggregates. No detectable cassiterite.
324.6	"Skarn". Hastingsite with subordinate/variable, closely intergrown phlogopite. Sporadic vugs, crude veins of quartz, fluorite, pyrrhotite.	Similar to 316.9 m, finer-grained with relatively marked relict banding.	Sphene, magnetite, minor trace chalcopyrite. Disseminated cassiterite (vugs, veinlets).	Close affinities with 316.9 m. Minor relatively phlogopitised pelitic bands. Cassiterite as inclusions, micro-inclusions in quartz, fluorite sized <10-50 μ, mean 10-15 μ.
335.7	"Skarn". Hastingsite with subordinate/variable phlogopite, spongy pyrrhotite disseminations, sporadic vugs of quartz; irregular late corrosive patches of poikilitic calcite, tremolite.	Similar to 316.9 m, 324.6 m, but with late poikilitic carbonate mottling.	Magnetite, traces sphene, ultrafine ?cassiterite, minor trace chalcopyrite.	Close affinities with 316.9 m and particularly 324.6 m. Late calcite patches with associated tremolitisation hastingsite. ?Cassiterite size < 15 μ, patchy inclusions in quartz.
341.6	"Skarn"/Vein-Quartz. Banded hastingsite-phlogopite rock with patchy poikilitic quartz, minor pyrrhotite, late calcite impregnations. Vein-quartz with included hastingsite, myriads of micro-inclusions.	Semi-banded, fine- to medium-grained skarn with essentially conformable vein-quartz.	Sphene, apatite micro-inclusions in quartz. Minor magnetite, minor traces chalcopyrite.	Vein-quartz similar to the ?cassiterite-bearing patches in 335.7 m, bu devoid of identifiable cassiterite. Host rock is typical of this zone (skarnised labile silty pelite).
343.7	"Skarn". Hastingsite with subordinate/variable phlogopite, conspicuous sphene, minor disseminations, discontinuous films of pyrrhotite.	Fine- to medium-grained, banded.	Fine-grained magnetite, ilmenite, traces quartz, minor late poikilitic carbonate.	Typical hastingsite-phlogopite rock representing a skarnised labile clastic sediment. No detectable cassiterite.
346.2	Skarn. Partly degraded (carbonated) grossular-andradite with closely intergrown vesuvianite, subordinate zoisitic epidote, minor actinolite, disseminated pyritised pyrrhotite.	Fine-grained, banded, with sporadic coarse poikilitic patches of garnet.	Fine to ultrafine sphene. Minor late chlorite.	Garnet-vesuvianite-zoisite skarn representing relatively high-grade metasomatised labile sediment. Late "retrograde" carbonate-chlorite-pyrite alteration.
ML 60 186.8	Spotted Hornfels. Microcrystalline quartz, ill-defined clays with abundant cordierite poikiloblasts. Frequent veinlets quartz, muscovite/phlogopite, pyrrhotite with sericitic replacement selvedges.	Spotted hornfelsic with relict pelitic bedding laminations; semi-concordant veinlets.	Ultrafine metasomatic schorl. Patchy pinite replacements of cordierite.	Cordierite-quartz-mica hornfels with pervasive "greisen-type" quartz-mica veinlets and associated retrograde sericitisation, pinitisation of cordierite.
196.0	Skarn. Poikilitic vesuvianite with sporadic aggregates of diopside, grossular-andradite, minor late vugs, veinlets, films of prehnite.	Fine- to medium-grained, vaguely banded with semi-mylonitic overprint. Locally vuggy vesuvianite.	Disseminated fine-grained pyrrhotite, minor traces of actinolite.	High-grade skarn. Weakly slickensided, subacicular crystal aggregate (greenish to brown) are sub- to euhedral (terminated tetragonal prisms) of vesuvianite.

Sample No.	Classification - Composition	Fabric	Accessories	Central Mineralogical Services Comments
ML 60 215.5	Altered Skarn. Prehnite aggregates with patchy corroded relics of diopside, vesuvianite, grossular-andradite. Patchy cloudy sideritic carbonate impregnations. Late laumontite veinlets.	Distinctly banded relict silty to fine sandy, turbidite-like.	Conspicuous fine-grained, extensively pyritised pyrrhotite. Minor adularia-prehnite veinlets.	Garnet-diopside-vesuvianite skarn (pyrometasomatised labile greywacke) withmarked retrograde prehnitisation late zeolite veining.
252.9 (T.S. 42042)	Altered Skarn. Prehnite and serpentinous chlorite with patchy corroded relict patches of more or less massive fine-grained diopside. Disseminations, spongy aggregates of pyrrhotite	Similar to 215.5 m, with irregular zones of prehnitisation. Minor prehnite veinlets.	Patchy impregnations of adularia. Ultrafine cloudy sphene. Minor traces chalcopyrite.	Close affinities with 215.5m. Diopsidised labile turbidite with retrogressive prehnite, chlorite, adularia assemblage.
P.Hood PH29/3 (T.S. 42046)	Skarn. Anorthite and microgranular hedenbergite in varying proportions with sporadic poikilitic grains, veinlets of garnet ("almandine"), fine-grained disseminated sphene.	Fine-grained, banded, with garnet, anorthite-healed microfractures. Vague relict silty clastic.	Minor quartz.	High-grade pyrometasomatised labile clastic sediment. Approximates to pyroxene-hornfels facies. Sphene pseudomorphs detrital opaques.
PH29/8 (T.S. 42050)	Tremolitised Greywacke. Tremolite-actinolite with minor closely intergrown phlogopite. Corroded relics of feldspar. Conspicuous leucoxenic semi-opaques, minor quartz.	Relict, slightly gritty medium sandy turbiditic with recognisable basic-intermediate lava clasts.	Clastic magnetite (corroded by cloudy secondary sphene).	Low-grade pyrometasomatic alteration of tuffaceous greywacke. Affinities with Crimson Creek Fm. labile turbidites.
PH 29/13 (T.S. 42053)	Skarn. Grossular-andradite with included fine-grained diopside; interspersed bands of massive microgranular diopside, irregular zones of poikilitic magnetite.	Banded, fine- to coarse-grained (garnet) Weakly microfractured.	Disseminated sphene.	Relatively featureless in terms of relict clastic features and thus possibly a skarnised carbonate facies.
PH 30/7 (T.S. 42057)	Skarnised Breccia. Clasts of variably diopsidised greywacke, massive diopside rock. Diopside matrix, veins with late intergranular aggregates, crosscutting veinlets of hastingsite.	Random angular clasts with relict silty to fine sandy turbiditic fabrics. Medium-coarse matrix.	Cloudy sphene (altered turbidite clasts).	Diopside-cemented breccia with late patchy aggregates, veinlets of hastingsite.
PH 31/3 (T.S. 42059)	Skarnised Greywacke. Extensively diopsidised turbidite in contact with more or less massive vein diopside with patchy interstitial hastingsite, prehnitised ?plagioclase.	Relict medium-grained turbiditic sandy clastic, irregular contact with medium-coarse vein.	Patchy relict feldspar, diopsidic lava clasts. Fine cloudy sphene (after clastic opaques).	Close affinities with PH 30/7, but diopside-veined rather than brecciated/diopside-healed.
PH 31/5 (T.S. 42061)	Hornfelsed Gabbro. Actinolite-stained plagioclase laths, extensively hornblende-pseudomorphed augite with a sparse felsic mesostasis, disseminated partly biotitised magnetite.	Gabbroic, with hornfelsed mesostasis, partly hornfelsed plagioclase laths.	Minor trace apatite (primary).	Hornblende-hornfels facies contact-altered gabbro. Relict corroded augite is weakly titaniferous; unusual for the Cambrian basics.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
P.Hood PH31/6 (T.S. 42062)	"Spotted Hornfels". Microcrystalline quartz, pervasive carbonaceous matter, frequent pale grunerite pseudomorphs of ?cordierite poikiloblasts, varying proportions kaolin-illite.	Spotted hornfelsic with contorted relict pelitic bedding ("shale-breccia").	Traces phlogopite, disseminations of pyritised pyrrhotite, metasomatic tourmaline ("elbaite").	Spotted hornfelsic carbonaceous pelite with a low-grade hydrotherma overprint postdating disharmonic (?slump) deformation. Affinities to ML 60/186.8 m.
PH 36/1 (T.S. 42063)	Skarnised Greywacke. Microcrystalline to fine poikilitic diopside, microcrystalline quartzofeldspathic material, pervasive ultrafine sphene. Frequent irregular diopside veins with minor quartz, plagioclase.	Contorted to diopside-healed, breccia-like. Relict silty to fine sandy turbiditic.	Traces phlogopite, minor very fine partly pyritised pyrrhotite disseminations.	Close affinities with PH 30/7 and 31/3. Deformation is pre- or early syn-contact alteration.
PH 36/4 (T.S. 42065)	Hornblende Hornfels. Pale brown hornblende with subordinate phlogopite. Pervasive partly recrystallized relict clastic quartz grains, ill-defined lava clasts, minor chert fragments. Sporadic amphibole veinlets.	Hornfelsic. Relict fine to medium sandy silty turbiditic.	Conspicuous relict clastic opaques (magnetite in part). Minor traces pyrrhotite.	Hornblende hornfels facies "metagreywacke". Affinities with PH 30/7 etc., but distinctly contact-metamorphic in comparison to the pyrometasomatic diopsidic assemblages.
PH 36/8 (T.S. 42067)	"Spotted Hornfels". Microcrystalline quartz, pervasive carbonaceous matter, more or less pervasive fine grunerite partly pseudomorphous after ?cordierite blasts, minor kaolin-illite.	Closely analogous to PH 31/6.	Disseminations pyritised pyrrhotite, traces phlogopite.	Altered pelite breccia (?slump breccia) with close affinities to PH 3 /6, and similarly reflecting post-hornfelsing metasomatic development of anthophyllite-grunerite.

REPORT CMS 82/5/15
Part 2

Summary

Parsons Hood

These rocks are similar to those previously described (CMS 82/5/15 - Part 1), so that little special comment is warranted. The suite consists entirely of contact-metamorphosed and variably pyrometasomatised labile turbidites and subordinate spotted hornfelsic pelites. It includes garnetiferous skarns, representing relatively Mg-metasomatic facies, but lacks specifically mineralised or mineralising lithologies.

D.Cowan, B. Sc.

Central Mineralogical Services

Sample No.	Classification - Composition	Fabric	Accessories	Comments
P.Hood PH-28/1 (T.S. 42043)	"Metagreywacke". Relict framework of basic-intermediate lava clasts, minor feldspar, quartz grains. Matrix/veinlets of grunerite, minor phlogopite-biotite. Disseminated magnetite, minor pyrrhotite.	Weakly hornfelsed, silty, fine to medium, sandy, turbiditic.	Rare, extremely fine-grained ?chalcopyrite.	Contact-metamorphosed/metasomatised "tuffaceous greywacke"; Crimson Creek-type characteristics. Magnetite is (recrystallized) clastic.
PH-28/5	Skarn. Grossular-andradite with varying proportions of diopside, sideritic carbonate, disseminated magnetite, minor sphene, chloritised biotite.	Medium-grained, banded, granular, with faint relict bedding laminations.	Patchy Fe-staining (from oxidation of siderite).	Compositionally banded, medium-grained garnet-diopside-magnetite-siderite rock; distinctly contact-pyrometasomatic.
PH-29/1	Tremolitic Greywacke. Relict clastic and matrix quartzofeldspathic material, basic-intermediate lava clasts and varying proportions of fine-grained metasomatic tremolite. Disseminated pyrrhotite.	Slumped, millimetric-bedded, medium sandy to silty pelitic, turbidite-like. Tremolite veinlets.	Traces pyrite, minor traces diopside, phlogopite. Fine leucoxenic semi-opaques.	Close affinities with PH-28/1, 29/ etc. Strongly volcanomict ("tuffaceous") turbidite with contact-metamorphic/metasomatic tremolitisation.
PH-29/5	Skarn. Grossular-andradite with subordinate to minor diopside, disseminated magnetite. Sporadic late vugs of Fe-Mg chlorite and sphene.	Closely analogous to PH-28/5.	Minor extensively chloritised biotite. Traces ?vesuvianite (micro-inclusions in garnet).	Close affinities with PH-28/5, 29/1 etc. Locally marked relict bedding laminations defined by magnetite distribution. Possibly a skarnised labile pelite.
PH-29/6	Skarn. Diopside with subordinate grossular-andradite/fine-grained magnetite.	Fine-grained, granular, distinctly banded, crenulated to microfaulted.	Fine cloudy sphene, sparse chloritised ?phlogopite, traces sideritic carbonate.	Affinities with PH-28/5, 29/13 etc. but finer-grained, relatively banded. Displacive fractures are largely pre-pyrometasomatism.
PH-29/7	"Metagreywacke". Tremolite-actinolite with subordinate to minor diopside, varying proportions of corroded relict quartzofeldspathic detritus, basic-intermediate microcrystalline lava clasts.	Hornfelsic. Relict fine to medium, sandy, turbiditic. Minor actinolite veinlets.	Fine to ultrafine magnetite, cloudy sphene.	Close affinities with e.g. PH-28/1, 36/4; hornblende-hornfels facies contact-metamorphosed with apparently metasomatic accessory diopside (trend manganhedenbergite)
PH-29/10	"Metagreywacke". Tremolite-actinolite with subordinate/variable diopside, corroded relics of feldspar, lava clasts. Sporadic veins, veinlets of diopside.	Closely analogous to PH-29/7, relatively marked veining.	Fine to ultrafine magnetite, cloudy sphene.	Actinolitic metagreywacke similar to PH-29/7, but with relatively marked metasomatic diopside veining replacements.
PH-29/12	"Metagreywacke". Tremolite-actinolite with corroded relics of clastic microcrystalline lava clasts, albitic feldspar grains. Conspicuous ultrafine cloudy sphene (after clastic opaques).	Fine-grained, weakly hornfelsic. Relict well-sorted silty to fine sandy bedded clastic.	Traces fine to ultra-fine magnetite.	Relatively fine-grained "tuffaceous greywacke". Albite-epidote to low hornblende-hornfels facies contact alteration with no specific pyrometasomatic effects.

Central Mineralogical Services

Sample No.	Classification - Composition	Fabric	Accessories	Comments
P.Hood PH-30/2	"Metagreywacke". Fine to ultrafine actinolite with ill-defined closely intergrown diopside, corroded relics of silty to fine sandy feldspathic framework. Sporadic actinolite veinlets.	Fine-grained hornfelsic, relict weakly sand-parted silty clastic. Semi-brecciated,tremolite-healed.	Minor late quartz (-plagioclase-grunerite) veinlets. Disseminated very fine pyrrhotite.	Moderately pyrometasomatic, altered pelitic turbidite. Veinlets include very fine disseminated magnetite, pyrrhotite.
PH-30/4	Skarnised Greywacke. Diopside-hedenbergite with corroded relics of microcrystalline lava clasts, minor variably diopsidised clastic feldspar, impure chert fragments. Sporadic diopside veins.	Fine-grained diopside-veined, hornfelsic. Relict medium sandy turbidite-like.	Clastic magnetite, fine cloudy sphene (after Ti-opaques). Rare fine-grained ?arsenopyrite.	Extensively diopsidised labile greywacke. Area sectioned includes rare microscopic veinlets of prehnite, post-diopside and marginally replacive.
PH-30/6	Skarnised Greywacke. Diopsidised/saussuritised feldspatholithic framework and similarly altered matrix. Sporadic diopside veins, grading into diopside-hastingsite aggregates. Late prehnite veinlets.	Irregularly veined, medium sandy turbiditic, grading into hastingsitic breccia.	Fine cloudy sphene. Traces apatite (in diopsidic veins).	Affinities with e.g. PH 31/3 in terms of alteration pattern. Prehnite is late retrogressive with veinlets and discontinuous replacive selvedges.
PH-31/1	Spotted Hornfels. Interspersed bands of phlogopitic, psammitic and spotted pelitic hornfels. Sporadic quartz veinlets, late sericitic microfractures, sericitic replacements cordierite.	Hornfelsic to spotted hornfelsic. Disharmonically deformed/semi-brecciated.	Carbonaceous matter, relict detrital quartz and (minor) feldspar. Rare very fine pyrrhotite.	Affinities with PH-31/6, 36/8. Horn felsed, ?slump-brecciated shale/argillaceous fine sand intercalation. Cordierite largely retrogressed to kaolin, sericite.
PH-31/4	Skarnised Labile Pelite. Poikilitic scapolite clouded with included microcrystalline diopside. Sporadic discontinuous veinlets of diopside, scapolite (dipyre).	Medium-coarse poikiloblastic scapolite with fine included diopside outlining faint relict silty fabric.	Conspicuous ultrafine cloudy sphene (after clastic opaques).Minor traces pyrrhotite (in veinlets).	Scapolite-diopside rock representin a skarnised labile siltstone ("tuffaceous pelitic wacke"). Irregular veinlets are bedding-displacive.
PH-36/2	Skarnised Pelite. Microcrystalline quartz, ill-defined clays and varying proportions of microgranular diopside. Pervasive fine graphite; minor grunerite, patchydegraded ?garnet.	Sub- to lenticular, mildly slumped pelitic, with hornfelsic overprint, diopsidic veinlets.	Chloritised/weathered biotite aggregates.	Contact-metasomatically altered carbonaceous ?dolomitic pelite. Calc-silicate assemblage is ill-defined due to fine sizing and partial alteration,weathering effec
PH-36/6	Spotted Hornfels. Quartz and titaniferous biotite with frequent grunerite-pseudomorphed cordierite poikiloblasts. Minor relict clastic quartz, quartz veinlets.	Spotted hornfelsic. Relict laminated, silty to fine sandy slumped pelitic.	Sparse pinitised/degraded relics of cordierite.	Hornfelsed, subsequently moderately metasomatised quartzose silty to fine sandy pelite. Alteration analogous to PH-31/6, 36/8.

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APPENDIX 9

Report on Dipole-Dipole Survey, Parsons Hood Infill Lines on Harman River Grid, near Mt. Lindsay, Tasmania, by A. Howland-Rose, Scintrex Pty. Ltd., June, 1982.

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SCINTREX

REPORT ON
DETAILED DIPOLE-DIPOLE EIP SURVEYS
PARSONS HOOD AREA
NEAR ZEEHAN, TASMANIA
ON BEHALF OF
RENISON LIMITED

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SCINTREX

PRIVATE AND CONFIDENTIAL

REPORT ON
DETAILED DIPOLE-DIPOLE EIP SURVEYS
PARSONS HOOD AREA
NEAR ZEEHAN, TASMANIA
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JULY, 1982
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SCINTREX PTY. LTD.
GEOPHYSICAL CONSULTANTS AND CONTRACTORS

SUMMARY

Of the twenty-two or so dipole-dipole generated anomalies, some three stand out as being of possible economic interest when evaluated in conjunction with the soil geochemistry and magnetic field data. It is suggested that the anomaly at 2465W on line 6N be investigated by diamond drilling as a primary target, with one of the anomalies at 1750W on line 12N or 1887W on line 14N being considered for drilling as the second best target

DISCUSSION OF RESULTS

For each line the main features of the electrical geophysics is discussed and is followed by brief comments on the relationship with other geodata. Each line is separately discussed.

LINE 5

Three set-ups were surveyed using *a* = 25 metres dipole-dipole for *n* = 1 to 5. These were centred at 275W, 00 and 275E.

In the west, a sharp contact between resistive (5000 to 10,000 ohm-metres) rocks of low chargeability (5 millivolts/volt±) and less resistive rocks (250 ohm-metres ±) of high chargeability (50 millivolts/volt), was defined at about 050W. Between about 050W and 025E significantly lower resistivities from 2000 ohm-metres to as low as 250 ohm-metres were recorded from a zone of anomalously high chargeability whose background is 50 millivolts/volt. Within this region of high polarization, two distinct zones were defined. The section between 050W and the baseline (00) is characterised by lower resistivities of 1000 ohm-metres, with a significant section as low as 250 ohm-metres to the east (to 025E at depth). The zone west of 025W has 60 millivolts/volt values, and the zone east thereof twice that, with values to 176 millivolts/volt being recorded at 025E on *n* = 2. While high values of 75 millivolts/volt were obtained on the *n* = 1 spacings between 00 and 50E, the very high surface resistivities for *n* = 1 of over 5000 ohm-metres strongly suggest a "resistive" capping above the chargeable, relatively conductive body at depth. The depth to source is estimated to be 40 metres± at 025E. From a purely geophysical standpoint the anomaly is considered to be of primary interest. The decay form, ΔMn, is +12.5% which suggests a coarse grain size to the source.

A significant induced polarization response of 106 millivolts/volt was recorded at or just west of 050E. The interference pattern is seen for all readings on the eastern leg, and while the amplitude decreases to 77 millivolts/volt for *n* = 3, at *n* = 6 135 millivolts/volt was recorded. While the depth to source at 40E-50E is obviously less than 20 metres, the high readings at depth are considered to be due to a flat lying source between 100E and 200E (±50 metres). The near surface *n* values between 100E and 175E are a high 10,000 to 2000 ohm-metres, decreasing with depth. This, together with lower chargeabilities of less than 10 millivolts/volt near surface, implies a near surface resistive, low chargeability layer of the order of 75 metres±. Resistivities within the source are obviously much less than the apparent resistivities of 1000 to 3000 ohm-metres, but the source is still considered to be disseminated.

Moving east the chargeabilities remain well above normal until 350E is reached. Within this section the resistivity of less than 1000 ohm-metres observed between about 175E-200E and 250E are materially lower than seen to the east and west thereof. Within this zone a most significant anomaly of 141 millivolts/volt was recorded at 250E on the *n* = 2 reading, and lies within a zone of locally anomalously low resistivity of 150 to 400 ohm-metres centred at 237E±.

The next significant maximum moving east was defined centred at 287E. Here, readings of 74 millivolts/volt (*n* = 1) increased gradually to 88.5 millivolts/volt at *n* = 5. The accompanying resistivities while being always lower than background, are nevertheless high at 500 to 2000 ohm-metres, implying an essentially disseminated source. The maximum depth to source is less than 20 metres, while the decay form is near normal. The anomaly is of secondary/tertiary geophysical interest.

To the east, the resistivities increase moderately to 6000 to 10,000 ohm-metres(+), while chargeabilities decrease to 15 millivolts/volt(±), signifying a major rock type change, probably a quartz rich sedimentary or volcanic member.

The western set-up covered the line between 425W and 125W. Between 325W and 125W the chargeabilities remain normal to low-normal in amplitude, varying about 5 to 10 millivolts/volt. The resistivities remain within the 1000 to 3000 ohm-metres range for the most part. These characteristics were not observed on any of the sections reviewed above on the central and eastern set-ups, and thus the overall rock type must be unique.

The western flank of the set-up is highly anomalous. Readings of over 100 millivolts/volt but averaging 90 millivolts/volt were recorded from a source located between some point at or west of 450W and 400W. To the east a gradual fall-off in amplitude to normal values was observed over 50 to 75 metres, implying a gradual lessening of chargeable material. The accompanying resistivities show little material change in structure despite the significant induced polarization response, thus the source must be wholly disseminated in nature since the absolute resistivities observed are a high 3000 ohm-metres±. Decay forms observed within this source are slower than average with some ΔMn values being +8% to +10%. Thus, the grain size must be coarse. The geophysical interest of this source is secondary as the source may be coarse grained graphite (although it could equally well be coarse grained sulphides).

Comparison with other Geodata

The broad series of significant induced polarization anomalies which was mapped between 100W and 100E had significant magnetic field distortions up to 5000 gamma. Such amplitudes imply magnetite or magnetite plus pyrrhotite to be present within the eastern section of the source. A lesser 2000 gamma(±) response was recorded at 050W(±) within the western section where higher background tin values of 50 ppm were defined within the soils. Thus this series of anomalies remain of secondary(+) economic interest.

The significant induced polarization anomaly defined at 237E has a single slightly anomalous soil tin value at 175E(±). This would tend to increase the interest of this response.

LINE 6

Three 25 metre, $n = 1$ to 5 dipole-dipole set-ups were centred on this line at 2225W, 2500W and 2775W. This zone was previously covered by a reconnaissance gradient array survey and is described in Scintrex report TAS-074E dated June, 1980. The data is discussed from west to east.

The western set-up covered the line from 2875W to 2650W. The resistivity data is dominated by a low resistivity zone (200 ohm-metres±) extending from 2800W to 2750W and showing a significant 'double peak effect on higher n values. The anomaly is associated with some negative values in the data. This feature is purely generated by resistivity changes. On the original gradient data this feature was seen as a distinct resistivity minimum at 2760W within a broad chargeability low from 2600W to 2780W. The western section of the dipole-dipole data is characterised by high 2000 to 3000 ohm-metres resistivity and higher chargeabilities to 60 millivolts/volt. A gradual increase from the low backgrounds seen east of 2850W is indicated. While the source lies to the west of the surveyed line, the original gradient data indicated a narrow source (D1) at 2788W whose maximum depth was 20 metres, a second source (D2) centred at 2860W whose maximum depth was 40 metres, and a third source (D3) whose maximum depth was 35 metres. The dipole-dipole data did not individually resolve these sources, thus the inferred *gradual* increase in chargeable material is probably a multiple sourced-interbedded sequence of gradually increasing sulphide and/or graphite content.

Between *about* 2850W and 2550W the resistivities remain moderate (1000 to 5000 ohm-metres) while the chargeabilities remain low background. (With the exception of the above.)

Between 2400W and 2550W, significantly higher chargeabilities of up to 70 millivolts/volt were recorded. The most significant values were defined within this anomalous zone centred at about 2475W whose source is about 40 metres± wide. The accompanying resistivities at 200 to 300 ohm-metres are some 10% of the average background values outside the zone. The observed decay forms are only slightly slower than normal (ΔMn = 4%±). While the maximum depth to source is less than 25 metres at 2475W (±25 metres), the zone appears to increase in interest with depth as the highest amplitudes were defined on *n* = 3 and 4 centred between 2500W and 2525W (where the lowest resistivities were seen also).

On the junction of the central and eastern dipole set-ups, a broad, deep-seated induced polarization response was defined at 2312W. While anomalous values of 50 millivolts/volt(+) were recorded on *n* = 1, the values increase with increasing *n* values to reach over 110 millivolts/volt at *n* = 5 (below 2350W). The resistivity data shows an almost horizontal layering which may imply some shallow more conductive surface layer to be present, as the anomaly at depth is clearly associated with quite high resistivities. The decay form is one of the slowest recorded, reaching +18%, implying a coarse grained source to be present. Certainly the source is more significant with depth, being broader and more intense. The anomaly is of secondary geophysical interest. The most easterly anomaly located was defined to be off line at 2012W. The response shows high 70 millivolts/volt chargeabilities with slow decay forms of +6%, indicating a coarse grain size. The accompanying resistivities are lower than background, but still high in absolute terms. The original data shows this zone to be a significant 70 millivolts/volt response centred at 2050W and associated with a most significant resistivity low of 400 ohm-metres as against a 3000 ohm-metres background. The source is coarse grained chargeable material within a less resistive host.

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Comparison with other Geodata

The significant 130 millivolts/volt gradient array anomaly defined at 2465W and confirmed on the dipole-dipole data as an anomaly of secondary geophysical interest, is seen to be associated with a most significant soil geochemical anomaly of 400 ppm(+) *and* a magnetic field response of 3000 gamma. This target therefore is considered of primary economic interest. The anomaly centre is 2465W, while the depth to the top of the main target is not greater than 40 metres. The target itself is coarse grained and contained within a host more conductive than the enclosing rocks. The dip would appear steep, perhaps to the east(?)

The other anomalies on line 6 are downgraded in comparison.

LINE 7

Three a = 25, n = 1 to 5 set-ups were centred at 475W, 225W and 00 to cover the line between 575W and 075E. The data is described from west to east.

The western set-up shows a significant induced polarization response centred at about 562W. The source is certainly broad (50 to 80 metres) with respect to the dipole used (25 metres). Chargeabilities reach over 50 millivolts/volt for the n = 2 and 3 values, the form of which imply a sharp contact to the west, but a gradual fall-off in values at less than 45° to the east on the pseudo-section implies a shallower dip that 45° to the eastern contact. While the data suggests that the source of the anomaly comes within 20 metres of surface at 562W, it also implies the source has greater substance with depth. There is no correlation with the resistivity data which remains moderately high at 3000 to 5000 ohm-metres within and around the chargeable source. This suggests the source to be wholly disseminated. The decay form of ΔMn = +2% within the anomaly suggests a more or less normal decay form, and thus an 'average' grain size to the source. The response is considered of secondary geophysical interest.

To the immediate east of the anomaly a resistive feature was defined at about 475W-450W at a depth of the order of 50 to 75 metres. While the resistivity reaches 8000 ohm-metres, no distortion is visible in the chargeability data. However, this source may have influenced the form of the data to give an *apparent* shallow east dip. Between 450W and 300W (see below) moderate to low resistivities and background chargeabilities were recorded.

While the central set-up cannot be described as having any significant anomalies, there are a number of geological divisions which may be significant.

Firstly a contact between higher background induced polarization values of up to 20 millivolts/volt was defined west of about 275W. There is a clear *decrease* in amplitude with depth from 19 millivolts/volt(±) for *n* = 1 to 3 to as low as 6 millivolts/volt at *n* = 5. While "lower" resistivities of 1800 to 1000 ohm-metres were noted for *n* = 1, and higher values up to 5000 ohm-metres for higher *n* values, a horizontal zoning is not clear. An explanation would be of a resistive rock unit centred at 300W± whose intrinsic polarization is low (say 8 millivolts/volt±2 millivolts/volt) flanked by lower resistivity material which above and to the west, has higher chargeability, perhaps due to a disseminated halo. At this stage, however, no geophysical interest can be ascribed to this zone.

Between 275W and 125W(±), moderate resistivity and low background chargeabilities of 11 to 14 millivolts/volt were defined, probably from a quartz rich unit. The resistivity is distinctly layered between 200W and 075W. Near surface resistivities vary about the 3000 ohm-metres mark, while for *n* = 2 they decrease to 2300 ohm-metres±, after which they increase to 3000 to 4000 ohm-metres. This suggests *horizontal layering* over this section.

The western section of the eastern set-up shows moderate background chargeabilities of 18 millivolts/volt± and moderate resistivities. (See above) At about 00 a sharp increase in chargeability to 90 millivolts/volt at 25E/50E, and coincident decrease in resistivity to 500 ohm-metres(±) was defined. The source lies at, or close to surface at 50E ±25 metres, and shows a gradual decrease in chargeable material to the east and west of the centre. The decay form of +5% indicates a somewhat coarser grain size. The source which lies within 20 metres of surface is significantly less resistive than the enclosing rocks, but still cannot be described as being conductive as such. As the coarse grained chargeable source gives high chargeabilities of 90 millivolts/volt, the chargeable material itself almost certainly influences the conductivity observed. This portion of the anomaly is considered to be of primary/secondary geophysical interest. What is significant is that the most conductive section of the anomaly is displaced to the west of the most chargeable section by less than one dipole (25 metres). Thus the most conductive section may not be the most chargeable, presumably due to greater interconnection of sulphides (and/or graphite) within the conductor.

To the east of the above, the resistivities increase sharply to 1000 to 2000 ohm-metres at 50E/75E, however, at surface a 500 ohm-metres reading was observed at 62E for $n = 1$. The overall chargeability remains a high 40 to 55 millivolts/volt from the anomaly centre above to 075E due mainly to a double peak effect superimposed on the broad (75 metres to 90 metres) complex source. The eastern side is certainly disseminated in form for at least 25 to 40 metres east of the chargeable axis. Of interest is that these eastern marginal readings show a *fast* decay form of up to -15%, clearly indicating a dramatic change in grain size (or causative source) from that seen in the eastern sector of the anomaly. It would appear that the grain size in the east is fine. Overall the source comes close to surface, certainly within 20 metres. This eastern section of the anomaly is considered to be of secondary to tertiary geophysical interest.

Comparison with other Geodata

Strong narrow sourced magnetic field distortions of 5000 gamma(±) were defined at 00 and at 060E. As *slight* increases in tin values above background were also observed at and west of zero, both these anomalies are considered of possible economic interest. The anomaly at 025E± is considered of primary economic interest..

LINE 9N

Two set-ups were employed on this line centred at 450E and 200E. The line was covered from 100E to about 575E. As for all lines, the *a* spacing was 25 metres and the *n* values, 1 to 5. The traverse is described from west to east.

The western array is characterised by high chargeability backgrounds of 40 to 50 millivolts/volt and moderate to lower resistivities in the range 1500 ohm-metres to 250 ohm-metres. Superimposed on this anomalous background are a series of anomalies, the most significant of which was centred at 125E. On *n* = 2 the chargeability reaches 92.7 millivolts/volt and shows a typical interference pattern. A low accompanying resistivity of 64 ohm-metres was recorded coincident with the high chargeability, again associated with a double peak anomaly, albeit somewhat distorted. The decay form is slower than normal with ΔMn being about +7%, indicating a coarser than average grain size. The geophysical interest of this anomaly is primary to secondary.

Centred at 225E a 50%(±) increase above background was observed accompanied by resistivities of 700 ohm-metres+, twice to three times that observed below and on the flanks. The *n* = 1 values at 212E and 237E are 82 millivolts/volt and 70.5 millivolts/volt, the former showing a slow decay form (+4.5%) and the latter a fast decay (-7%). The source is a shallow, disseminated source within a unit of slightly higher resistivity than background. The anomaly is of tertiary geophysical interest.

Between about 275E and 375E the chargeability data is distinctly layered, being 25 millivolts/volt± on *n* = 1 and increasing to 50 millivolts/volt(±) at greater depths. This suggests either a significant cover or horizontal layering at depth. The resistivity data shows decreasing values from 2600 ohm-metres+ for *n* = 1 to 800 to 900 ohm-metres at depth. Thus the cover, if present, is of lower chargeability (20 millivolts/volt±) and higher resistivity (2600 ohm-metres+) than the underlying rocks. The higher chargebailities of 50 millivolts/volt at depth together with the low background resistivities are similar to the backgrounds seen to the west, and are only anomalous with respect to the overlying material. This zone is considered of secondary to tertiary interest only.

From 375E to 575E moderate background chargeabilities were recorded within the range 18 to 23 millivolts/volt. The accompanying resistivities varied about the 1200 ±200 ohm-metres level and as such are not anomalous.

Comparison with other Geodata

The additional geodata has not enabled the geophysical assets to be enhanced, thus all are downgraded.

LINE 11N

This line was surveyed between 50W and 175E using an a = 25 metres, n = 1 to 5 dipole-dipole technique.

The resistivity data shows a number of distinct rock units to be present. West of the baseline the resistivities recorded were a low background, generally less than 400 ohm-metres. The accompanying chargeabilities were more than twice background varying about the 50 millivolts/volt± level. Thus the rock type could be shales carrying some pyrite and/or graphite. Within this unit a most singificant increase in resistivity was noted at 62W on n = 3, with resistivities increasing almost 10 fold with increasing n values. The apparent chargeabilities fall to 35 millivolts/volt. This could represent an acid intrusive into these sediments or perhaps an infolded more acid sediment.

East of the baseline the chargeability shows a distinct layering, being semi-horizontal between 00 and 125E, and 45°± to the east thereof. The chargeability varies from 25 millivolts/volt ± near surface (n = 1) to 50 to 60 millivolts/volt at depth (n = 3 to 5). This "layering" is not mirrored on the resistivity data which shows a more complex pattern, but in general the resistivities are a moderate 2500 ohm-metres ±500 ohm-metres in the central section, and distinctly lower at depth as witnessed by the n = 5 values of 600 to 800 ohm-metres.
The far eastern section east of 175E shows very low background resistivities of 200 ohm-metres ±50 ohm-metres, perhaps indicating a steeply dipping change at about 175E, with lower resistivities and chargeabilities, rather than a dipping contact implied by the chargeability data alone. It is not at all clear whether the higher chargeabilities recorded at depth between 025E and 125E in particular

could be considered anomalous or not. Certainly they show significantly increased chargeabilities but may be formational and as such are of secondary to tertiary geophysical interest only. The normal($\pm$) decay forms observed indicate average grain size to the causative material.

Comparison with other Geodata

The low tin values recorded in the soils have not enhanced the interest of any features on this line.

LINE 12N

This line was surveyed from 1800W to 1600W using an *a* = 25 metres, *n* = 1 to 5 dipole-dipole array centred at 1700W. This section of the line was previously covered during the gradient array reconnaissance stage and is reported on in TAS-074E under anomaly C10.

The profile can be divided into two distinct sections, namely, east and west of 1725W. To the west a most significant conductor was defined at 1737W accompanied by chargeabilities of up to twice background. For *n* = 1 the values are 62 millivolts/volt and 32 ohm-metres. The depth to source at this point is less than 20 metres. The decay form is more or less normal. The source must also be narrower than the 25 metre dipole used as it is seen only on a single current dipole, also the *actual* resistivity would be considerably lower than the 32 ohm-metres recorded due to dilution. The gradient array data shows this feature to be centred at 1725W, and here it was seen as a significant 250 ohm-metres(±) low against a background of 1000 to 1500 ohm-metres to the east, and up to 20,000 ohm-metres to the west. Of interest is the chargeability within the zone on the gradient array was *depressed* below zero, presumably because the source was seen as an internal polarization anomaly which in turn implies a source extremely close to surface. This response is considered of prime geophysical interest. While dips are difficult to assess, this data would imply an east dip to the source.

To the east of 1725W a distinct layering was observed in both the chargeability and resistivity data. Near surface chargeabilities of 40 to 50 millivolts/volt increase to 60 to 80 millivolts/volt between 1700W and 1650W, but a most significant 200 millivolts/volt for *n* = 5 at 1612W was recorded. The resistivity data shows an extremely high 9500 ohm-metres centred at 1687W for $n = 1$ decreasing to 1000 to 2000 ohm-metres at depth and to the east. However, for the entire section between 1700W and 1500W significantly lower resistivities of 16 to 400 ohm-metres were recorded on the $n = 4$ and 5 values. This very clearly demonstrates a layering to be present. The surface layer varies in thickness between 50 metres(±) at 1700W to perhaps 75 metres (±) at 1600W. The surface layer, while being of lower chargeability than the material at depth, is still anomalously chargeable at 40 to 50 millivolts/volt. The decay forms vary by ±5% of normal within this zone, indicating a variety of grain sizes, however, the chargeable material must be disseminated in nature.

At depth, two significant anomalies occur within the chargeable less resistive zone. The higher chargeabilities of over 200 millivolts/volt were recorded for $n = 5$ at 1612W, but anomalous values of 100 millivolts/volt extend up to $n = 3$.

The depth to the top of the chargeable section is estimated to be about 40 to 50 metres at this point. The decay form is slow, implying a coarser grain size, while the low *apparent* resistivity of 177 ohm-metres certainly grossly overstates the actual resistivity which is probably less than 10% of this level. This zone is of primary geophysical interest.

A second zone of high interest was defined at 1700W. Here the resistivity falls to 16 ohm-metres at $n = 4$ and is accompanied by high chargeabilities of 60 to 70 millivolts/volt in the vicinity. The depth to source may be of the order of 60 to 70 metres but local inhomogeneity makes a more precise depth estimate difficult. The decay forms vary but on the whole imply a slightly coarser than normal grain size. The anomaly here is considered of primary geophysical interest. In this case the dipole-dipole data has given far superior interpretation on the layering and depth distribution of chargeable material than was seen on the reconnaissance gradient array.

Comparison with other Geodata

A significant increase in soil values to 40 ppm tin was defined at, and just west of 1750W. This feature correlates well with a gradient array anomaly of about 70 millivolts/volt centred at 1750W and a sharp contact between resistive rocks to the west and less resistive rocks to the east. The dipole-dipole implies the maximum depth to source to be no grater than 60 to 70 metres, and the source to be of fine/average grain size. A single reading of above 2500 gamma above the background was defined at about 1740W. This anomaly is considered to be of primary economic interest at 1750W. (The location is taken from the gradient array.)

LINE 13N

This line was surveyed between 100W and 100E by a set-up placed at 00.

The apparent resistivity data is dominated by a low resistivity feature centred on *n* = 1 at 037W. Here, a 44 ohm-metres value was obtained which contrasts with background values to the west of 500 ohm-metres(±) and to the east of 2500 ohm-metres(+). The apparent resistivities for *n* = 1 are 150 to 100 ohm-metres between 75W and 25W, the zone becomes much wider at depth. (This is not just a function of a double peak effect). The pseudo-section shows a shallower than 45° contrast with a marked resistivity high to the east which strongly suggests a shallow east dip to the source, providing that there is no complex folding or cover present.

The highest resistivities were recorded under the baseline from 025W to 075E where resistivities above 2500 ohm-metres were defined. Generally anomalous chargeabilities of above 50 millivolts/volt were defined within this zone, and these are mostly seen as fast decay forms, implying a fine grained chargeable source.

The background chargeabilities observed over the zone as a whole are anomalously high at 40 to 50 millivolts/volt. Within this zone a distinct high of 70 millivolts/volt was defined within 20 metres of surface at 025E. A distinct 'double peak' response has been generated from this essentially disseminated source whose apparent resistivity of 1350 ohm-metres, while being lower than background is nevertheless still resistive in absolute terms. The decay form is slighly slower than normal. This response is considered to be of secondary geophysical interest at best.

Higher readings for $n = 5$ at 112E (and above) imply a chargeable source at or east of 188E fairly close to surface. Since this is off the array, no detailed comments can be made at this stage.

Comparison with other Geodata

The magnetic field data shows distortions to 2000 gamma between 050W and 100E, while anomalous tin values at 075E± and 075W± were obtained down slope of, but not on the hill centred at about 040E. The dipole-dipole data implies the major source to lie within 20 metres of surface at 025E, but the whole section between 200E and 125W can be considered to be anomalous. It is suggested that this zone represents a strike extension of the more important sections seen on lines 12N and 14N, and as such is considered of better than secondary economic interest.

LINE 14N

This line was surveyed from 1800W to 2000W from a set-up placed at 1900W. This line was previously covered by reconnaissance gradient array.

The dipole-dipole data shows moderate resistivities of 2000 ohm-metres plus, west of 1960W, where a sharp change in apparent resistivities occurs to the east to 100 ohm-metres±. Then, east of 1850W resistivities decrease again to very low values of 10 to 20 ohm-metres. From 1800W to the eastern end of the array, higher surface resistivities of above 1000 ohm-metres apparently indicate a horizontal near surface resistor capping a low resistivity unit about 50 to 60 metres below.

The chargeability data shows a change between low chargeability background west of 1950W of 14 to 16 millivolts/volt to backgrounds twice this level to the east thereof. Within this background, $n = 1$ and 2 values reach 45 to 55 millivolts/volt between 1925W and 1850W. The accompanying resistivities of 130 ohm-metres(±) imply the sourc to be disseminated and to lie within a less resistive rock type. The maximum depth to source is 20 metres. The anomaly is considered to be of secondary geophysical interest only as seen on the dipole-dipole data, but when viewed on the gradient array (anomaly C-6) the anomaly was considered to be of primary interest.

A weak double peak anomaly was defined at 1812W where a 60 millivolts/volt response was recorded on $n = 1$. This zone lies on the contact between rocks of low resistivity (9 ohm-metres) to the west, and high resistivity of 3400 ohm-metres to the east. High chargeabilities for greater n values on the eastern leg of the double peak anomaly may in part be due to a double peak as such, but *may* also be due to chargeable material being close to the contact between the upper (resistive and lower (conductive) layers seen east of 1800W. The sole chargeability reading within the 3500 ohm-metres 'cap rock' at $n = 1$, 1788W, would imply the resistive layer to have low (20 millivolts/volt) background chargeability, and the lower resistivity material at depth to have higher chargeability in excess of 50 millivolts/volt. The geophysical interest of this response is considered to be secondary at best.

Comparison with other Geodata

The resistivity data suggests a major contact between a resistive rock unit to the west and a less resistive unit to the east at about 1960W. A comparison with line 12N, where the outcrop is known, suggests that this feature is associated with the eastern flank of the "Hornfelsed Tuffaceous Siltstone" unit. The gradient array data shows the chargeability peak to lie at about 1887W, while the dipole-dipole data suggests the source mineralisation extends from within 20 metres of surface to depth. The coarse grained source is associated with local magnetic field distortions at 1900W±25 metres. As the anomaly at 1887W is associated with high surface tin values of 200 ppm, this anomaly is obviously considered of primary economic interest.

CONCLUSIONS

1 When the magnetic field data and soil geochemistry are considered, one chargeability anomaly stands out as being of by far the most potential. This is situated on line 6N at 2465W. The maximum depth to the top of the source is about 40 metres while the host itself is considered to be disseminated or electrically discontinuous within a host less resistive than the enclosing rocks.. A slight east dip in inferred.

2 Two other targets present themselves as being of primary importance (both slightly less than (1) above). It is suggested that either the anomaly at 1750W on line 12N or 1887W on line 14N be considered as targets. In both cases magnetic field distortions, together with tin geochemistry have enhanced their interest. The dipole-dipole data suggests that sulphides (or graphite?) are within 20 metres of surface, with the main source at about 40 metres. The gradient data implies extension to depth and perhaps a steep easterly dip. While line 13N shows anomalous values also, no drilling is recommended on this line at this time.

3 An analysis of all the significant dipole-dipole generated anomalies is given below. The interest of each anomaly is assessed purely from an induced polarization point of view, and then assessed from an 'economic' point of view by biasing the data with the available geochemistry (and magnetics).

Significant Anomalies

R = resistive, L = low resistivity, C = conductive, K = contact
Py = primary, Sy = secondary, Ty = tertiary

Line	Station	Source Depth	Inferred Grain Size	Type	Geophysical Interest	Economic Interest
5N	025E	40m (±)	coarse	L	Py	Py(-)
5N	040E±	20m	average	R	Sy	Py
5N	100E-200E±	75m(±)	average	R	Sy	Sy(+)
5N	237E	45m(±)	coarse	L	Sy	Sy(+)
5N	287E	20m	average	L	Sy/Ty	
5N	450W-388W	25-35m(?)	coarse	R	Sy	Ty
6N	2850W-2950W	(See report TAS-074E page 25)			Sy/Ty	Ty
6N	2475W±25m	25-40m(+)	average/coarse	L	Sy	Py(+) (DH)
6N	2315W(±50m at depth)	25m	very coarse	R	Sy	Ty
6N	2050W	40m(-)	coarse	L	Sy	Ty
7N	562W	20m	average/coarse	R	Sy	Ty
7N	025E±))	20m	coarse	L (complex)	Py/Sy	Py
7N	075E±)	20m	fine	R	Sy/Ty	Sy
9N	125E	40m	coarse	L	Py/Sy	Sy
9N	225E	20m(-)	fine/coarse	R	Ty	Ty
9N	275E-400E	60-75m		L	Sy/Ty	Ty
11N	025E-125E	60m(±)		L	Sy/Ty	Ty
12N	1737W-1725W (1750W)	20m(-)	fine/average	C	Py	Py (DH)
12N	1612W	40-50m	coarse	C	Py	Sy
12N	1700W	60-70m	coarse/average	C	Py	Sy
13N	025E	20m	average	L	Sy(-)	Sy(+)
14N	1850W-1925W	20m(-)	average/coarse	L	Sy(Py)	Py (DH)
14N	1812W	20m(-)	coarse	K	Sy	

Respectfully submitted on behalf of:

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Geophysicist

DETAILS OF WORK CARRIED OUT

An $a = 25$ metres dipole - dipole array was used from $n = 1$ to 5. Three slices below the decay curve were read, with only one (M_3) being plotted. The sections of lines surveyed are set down below.

Line 5N	350W to 350E
Line 6N	2850W to 2125W
Line 7N	550W to 050E
Line 9N	100E to 550E
Line 11N	050W to 150E
Line 12N	1800W to 1600W
Line 13N	100W to 100E
Line 14N	2000W to 1800W

METHOD AND EQUIPMENT

The dipole-dipole array was employed in standard fashion with $a = 25$ metres and $n = 1$ to 5. The main features of the array are discussed in the attached appendix.

Energisation was effected by a Scintrex IPTA (Australian built) time domain induced polarization transmitter powered variously by an 8HP or 3HP Briggs and Stratton motor generator.

he resultant primary (resistivity) and secondary (chargeability) electric fields were measured using Scintrex IPR-8 time domain receivers on a two second programme measuring three separate slices under the decay curve as follows:

Slice 1	(M_1)	130 - 650 milliseconds
Slice 3	(M_3)	650 - 1170 milliseconds
Slice 5	(M_5)	1170 - 1430 milliseconds

(Note: each section of 520 milliseconds duration)

Each integration has been normalised with respect to the standard induced polarizatio decay curve established by Newmont Exploration Limited (Dolan and McLaughlin, 1967 "Considerations concerning measurement standards and design of IP equipment." - Proceedings of the Symposium on Induced Electrical Polarization, Berkely, University of California, pp. 2-31)

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APPENDIX

BRIEF SIMPLE COMMENTS ON THE GRADIENT, DIPOLE-DIPOLE AND POLE-DIPOLE ARRAYS AND ON DECAY FORM

INTRODUCTION

In the case of the surveys discussed in this report, it is important that the geologist can relate the geophysical data to the underlying geology if he is to make the best use of this data. It is the author's opinion that *only* the geologist will be able to relate the data to geology. For this reason brief, simple comments follow on the salient features of the gradient, dipole-dipole and pole-dipole arrays. These comments show how the data relates to the volume of underlying rock which influences it. Comments are also made on the decay form.

DISCUSSION

Gradient Array:- In this array both current electrodes are distant from the potential dipole. Figure 1 displays the salient features of the *primary* current flow and primary equipotential field generated during energisation and shows the influence of terrain on the current paths. From this diagram it can be seen that the *apparent resistivity* measurement is a summation of a volume of material normal to the local slope, *beneath* the surface and at *right angles* to the line.

The apparent resistivity will be *biased by* the influence of each current electrode, but the *relative* values of *adjacent* readings can be considered to be *reliable*. As each electrode is approached, the readings become *increasingly biased by* that electrode.

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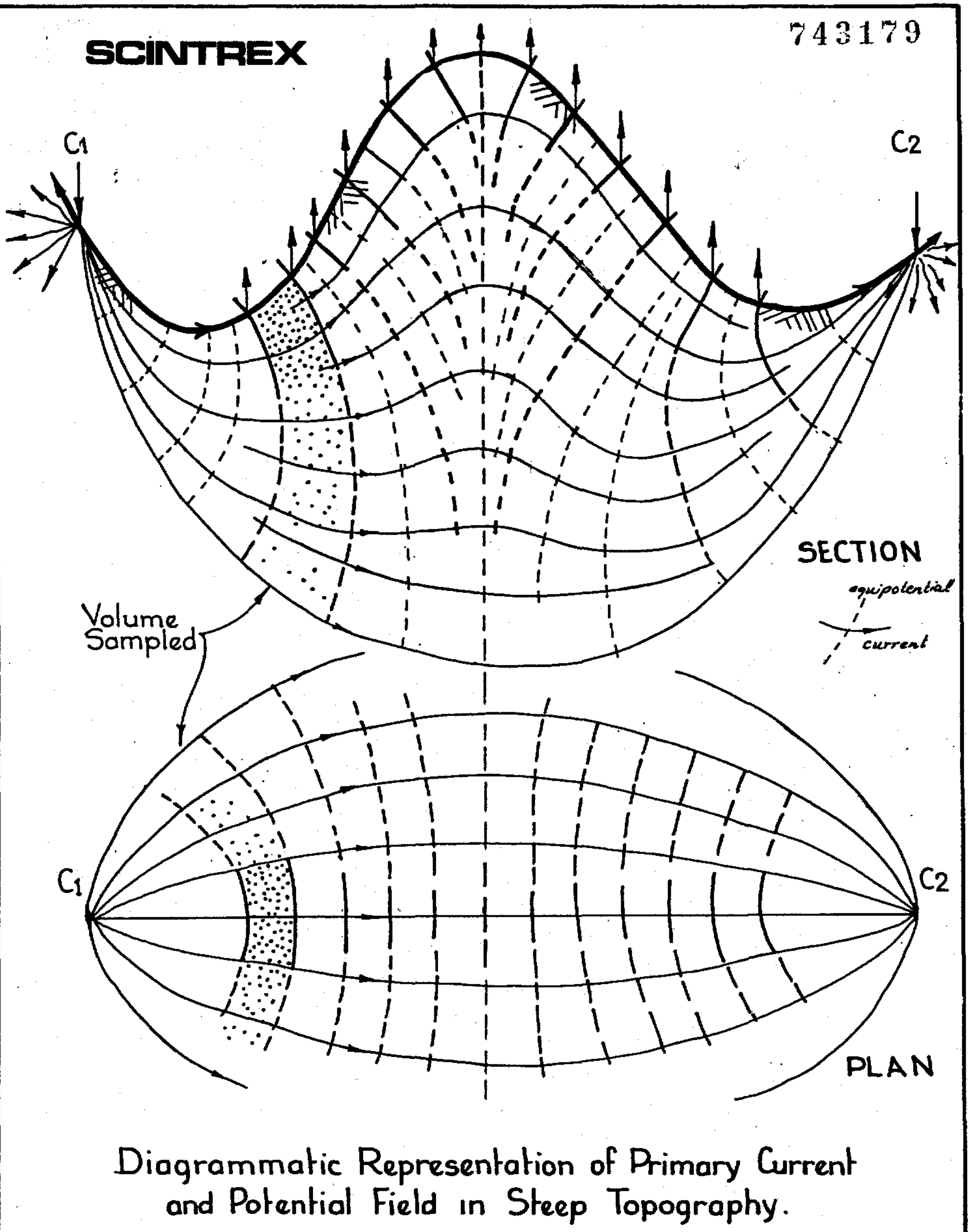

Diagrammatic Representation of Primary Current and Potential Field in Steep Topography.

FIGURE 1.

Note particularly that the *source volume* is *normal to slope* and not vertically beneath the potential dipole. Therefore all maximum depths refer to depths below surface *normal to the slope.*

Note also that the volume of material *closest to* the potential electrodes will influence the data most. It is difficult to easily quantify the complex relationship between the volume of material sampled and its distance from the potential dipole.

Figure 2 displays the secondary current pattern generated from the decay of induced polarization effect *within* a chargeable sulphide source, together with the equipotential field generated by that decay. Note that due to the necessarily curved nature of the current flow outside the body, the on-surface manifestation is *wider than* the *source width.* Note also that the volume sampled in the primary potential field (apparent resistivity ρa) is not necessarily the same volume as is the secondary potential field (apparent chargeability Ma). This is, of course, true for *any* array.

Dipole-Dipole:- In this array the current dipole is generally small, generally 20 to 100 metres. Figure 3 displays the current pattern in section and in plan for a dipole-dipole array. The equipotential P_1 and P_2 tap a volume as shown in this diagram whose characteristics are read on the $n = 1$ station and plotted as a single point midway between the transmitting dipole C_1 to C_2 and the potential dipole P_1 to P_2. As progressively higher n values are read, a deeper and wider volume of material is sampled, this always being plotted midway between the transmitting and receiving dipole, and at a deeper level in the pseudo-section presentation used in this report. It is *vital* to realise that this data point

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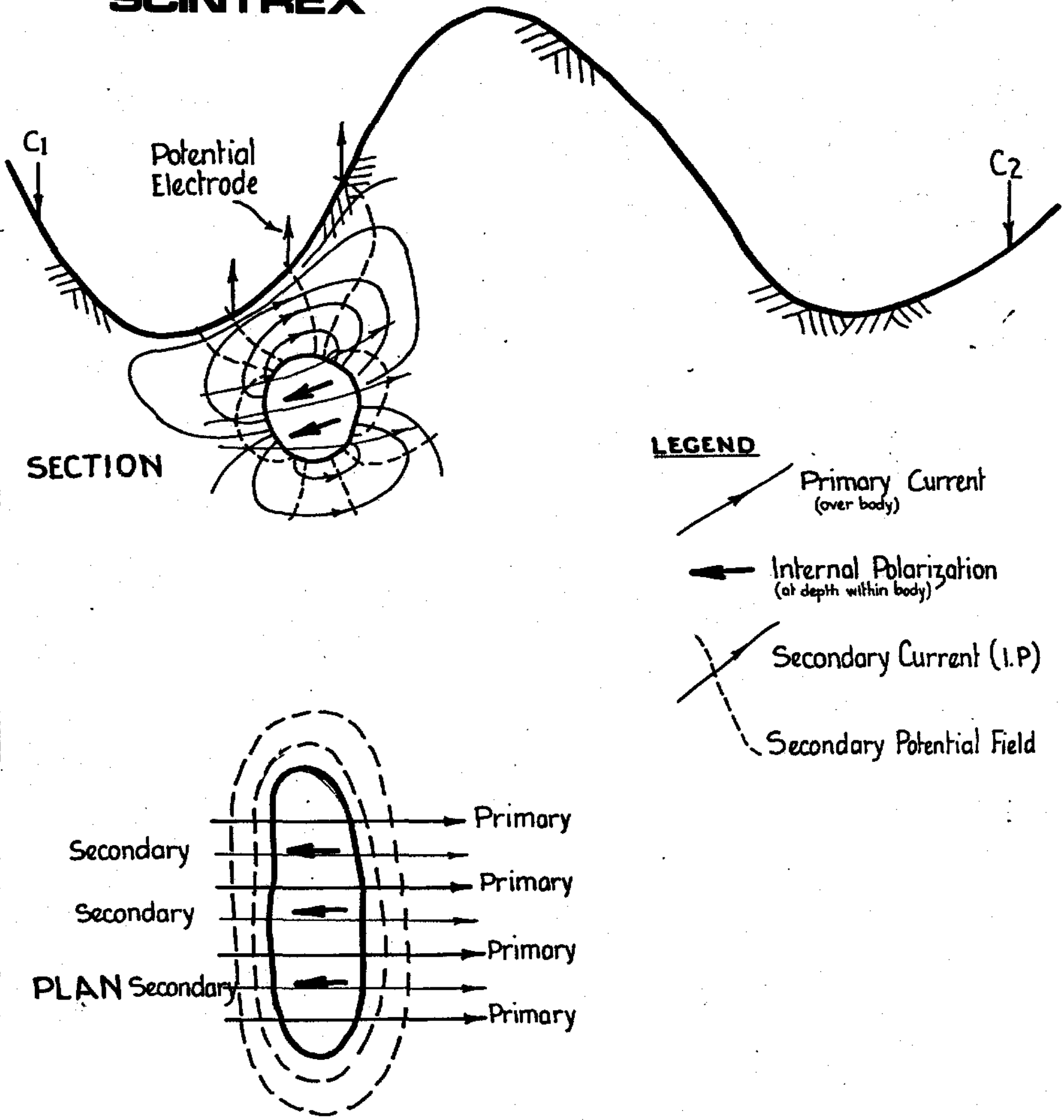

Diagrammatic representation of secondary current (I.P. effect) and secondary potential field in steep terrain.

FIGURE 2.

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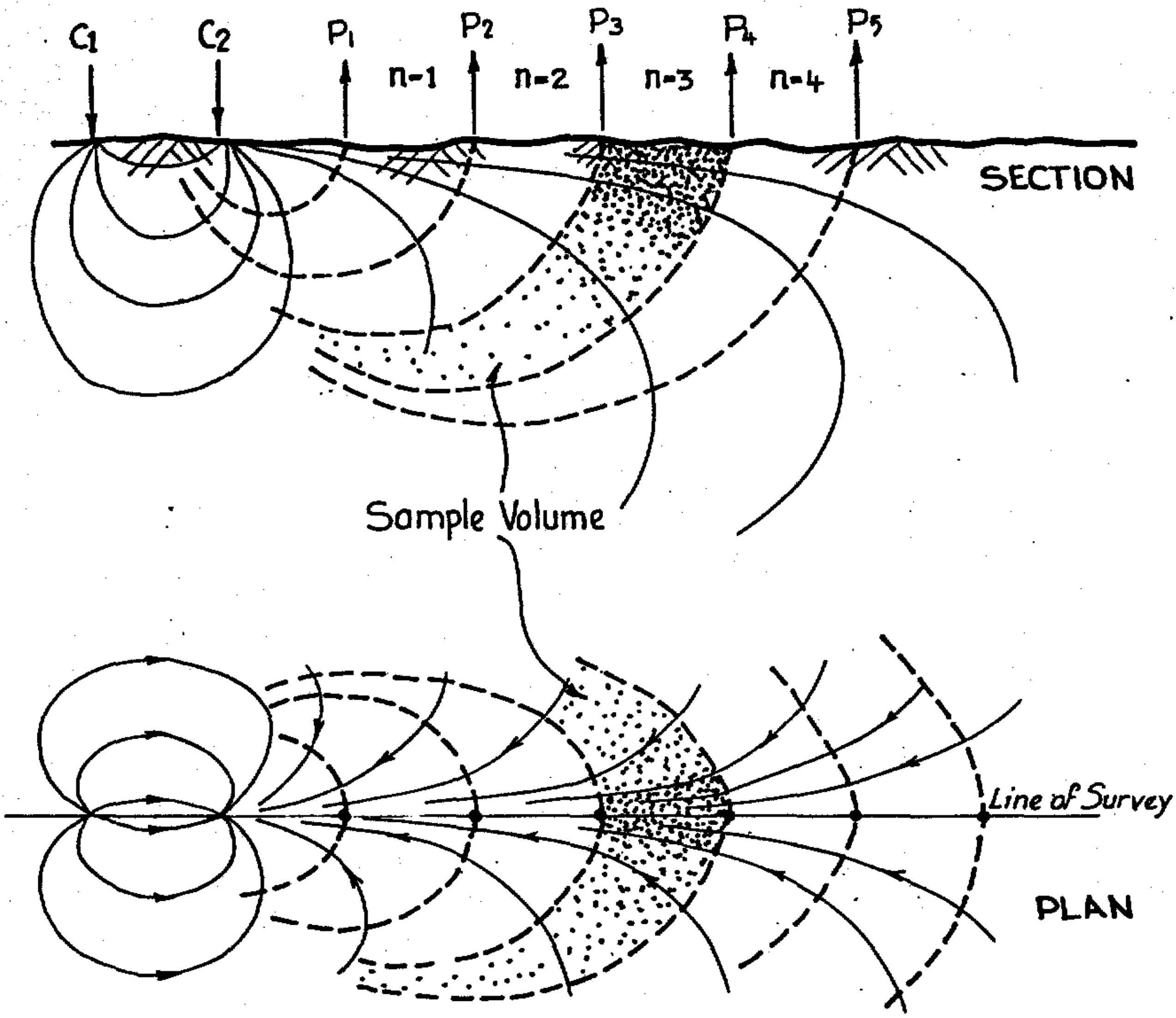


Dipole - Dipole Array
Primary current paths and equipotential field
Showing volumes sampled

FIGURE 3

does not represent the characteristics of the ground at the point plotted, but that of the *total volume* sampled.

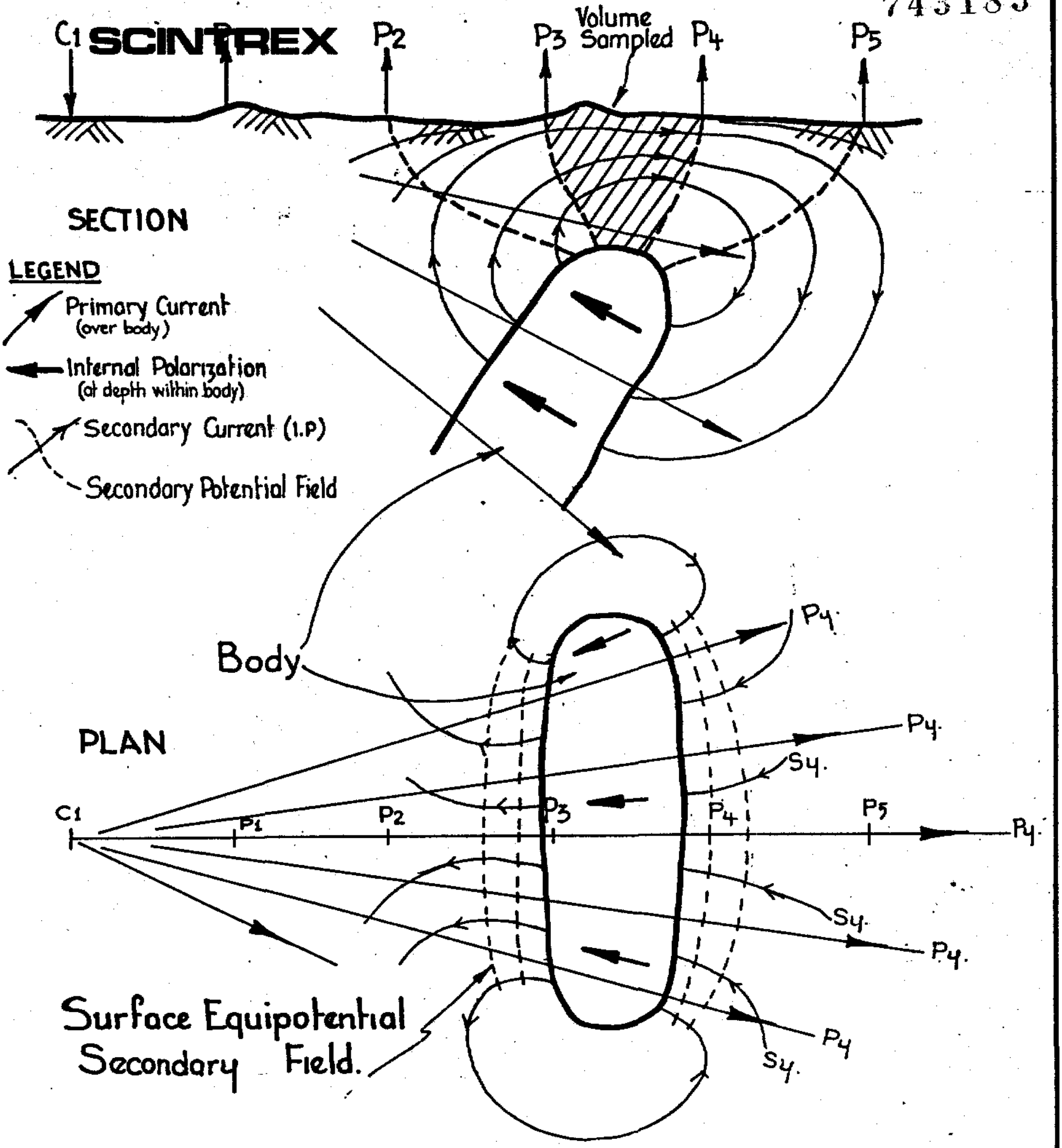
A further characteristic of the array is that where the effective spacing ($n \times a$) is greater than the depth to the source, a 'high' (or 'low', depending on characteristics) will occur as each of the dipoles (i.e. transmitting C_1 and C_2 and potential P_1 and P_2) pass over the source of that anomaly. The resultant 45° patterns on the pseudo-section DO NOT represent dip, or even depth extent, but merely represent a complex interference pattern over the source due to the potential and current dipoles. For a single source, this *double peak effect* can be recognised as it tends to have two maxima displaced by ($n \times a + w$) where w is the width of the source. For multiple bodies this is difficult if not impossible to resolve by dipole-dipole arrays alone.

The enclosed Figure 4 shows the discharge of the energy stored in the body. As can be seen, the area sampled in section is tapped between the equipotentials generated by the discharge of the stored energy. These will not necesssarily be of the same form as those for the resistivity data, although they are, for convenience, plotted in the same format as for resistivity. Again, it is vital to note that theyrepresent the volume sampled as shown in Figure 4, *and not* the characteristics of the point at which they are plotted. Double peaks also occur as each of the two sets of electrodes pass over a source, where $n \times a$ is greater than the depth to source. Where $n \times a$ is less than the depth to source, a single maximum will be produced midway between the energising and measuring dipoles $C_1/C_2$and P_1/P_2.

Pole-Dipole:- This array is similar in principle to the dipole-dipole array, except that a single electrode is placed 'close' to the potential dipole, with an 'infinite' electrode placed 10 × n × a away from the 'pole-dipole' set-up, and, where practical, at right angles to it. The enclosed Figure 5 shows the distribution of current flow in section and in plan, about the pole source C_1. The potential electrodes P_1 and P_2 tap off the volume between them, which is contained between spheres whose centres are the pole source. The primary current reading is normalised for the geometry and plotted in profile or pseudo-section format as per dipole-dipole, namely, midway between the closest potential and current dpoles, which in the pseudo-section format is 45° towards the pole source. The chargeability reading is generated in a similar fashion to that described for dipole-dipole (Figure 4).

As with the dipole-dipole array, a double peak will result when $n \times a$ is greater than the depth to source, however, with pole-dipole it will be asymmetric. This will be true for both major resistivity features as well as for chargeability features. An example of this asymmetry for different depth to spacing arrays is shown for the three-array. (The three-array is a pole-dipole array when $n = 1$ and the a spacing is varied.)

The Choice Between Arrays:- Even after some thirty years of active use of gradient, dipole-dipole and pole-dipole arrays, controversy still reigns as to the relative merit of the various arrays. Much depends on the object of the programme, the terrain, the type of source sought, the type and complexity of the overburden/oxidation. Table 1 shows a comparison between arrays which may be helpful, taken from a fairly recent Canadian Geological Survey publication. In resistive mountainous terrain the author prefers the gradient array as the prime reconnaissance method due to the high productivity (2 to 5 times that for



Current path and secondary equipotential field due to discharge of stored energy (I.P. effect) in the case of Pole-Dipole or Dipole-Dipole.

FIGURE 4.

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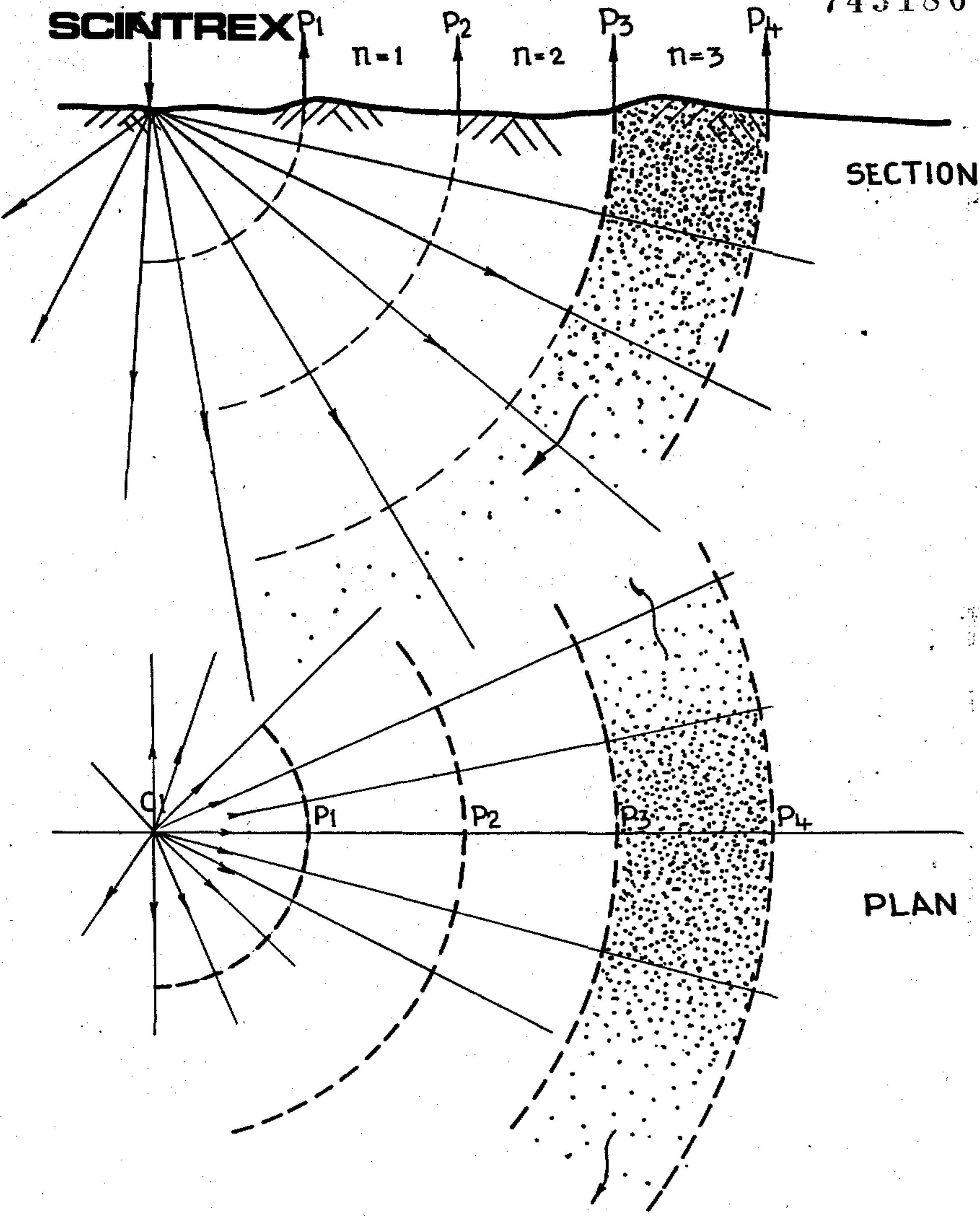

Current Path and Primary Equipotential Field from Pole-Dipole Array

FIGURE 5

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SPHERE RESPONSE THREE ELECTRODE ARRAY

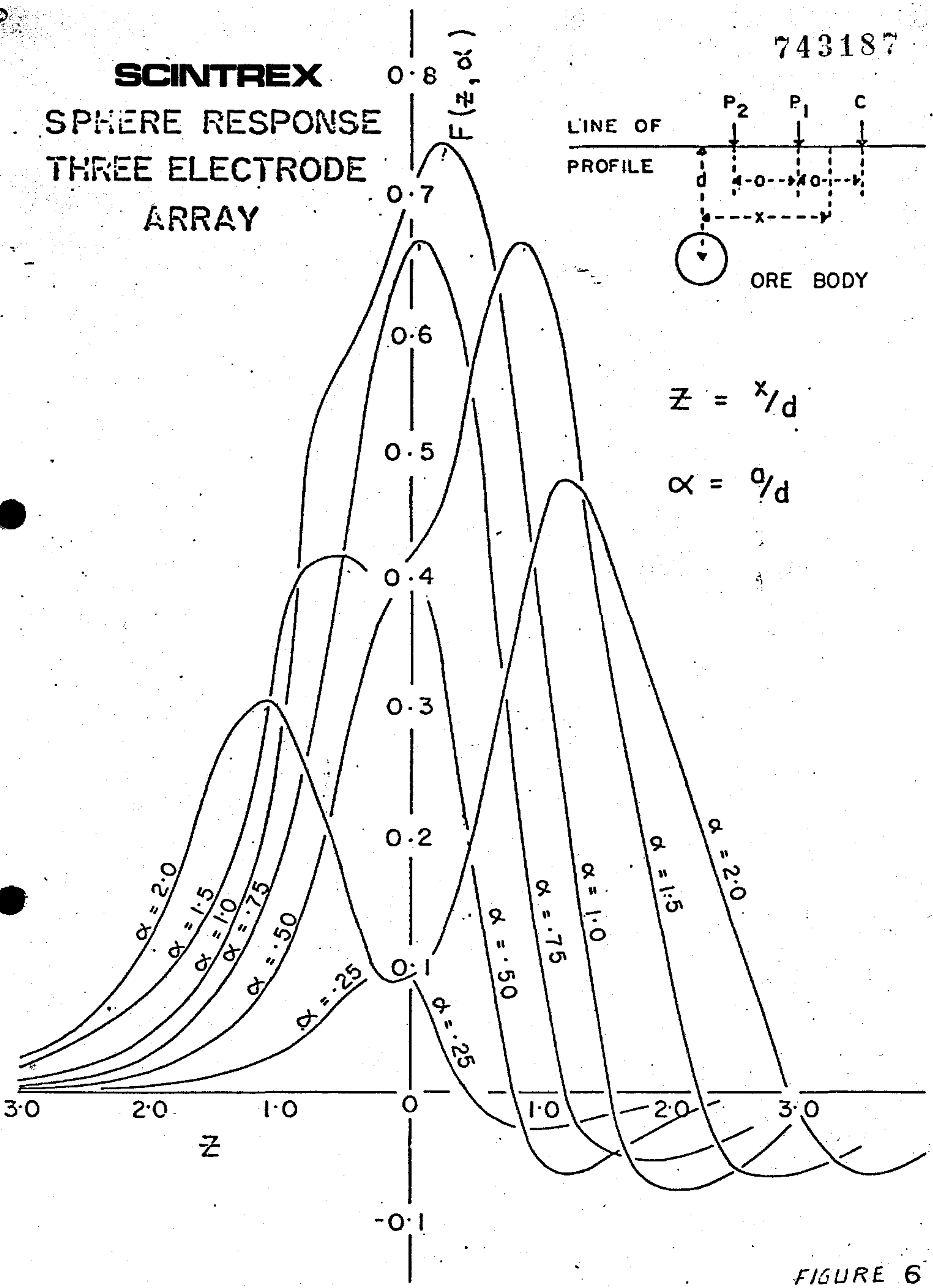

FIGURE 6

dipole-dipole), but this should be followed-up by detailed dipole-dipole or pole-dipole surveys as the gradient array, while giving 'maximum depths', cannot give 'minimum depths' as moving source arrays can. Similarly pole- or dipole-dipole surveys which have complex or muliptle sources can very often be resolved by use of limited gradient array detail. While pole-dipole is more efficient to apply in mountainous terrain, it tends to yield asymmetric double peak anomalies, however, to the trained observer, this is no disadvantage.

Brief Comments on Decay Form:- In most surveys three 'slices' of the decay form for the induced polarization reponse are acquired for each station as shown in Figure 7. While six slices are capable of being measured (M_1 to M_6), they are normally combined into pairs $M_1 + M_2 = M_1$ etc. as shown in Figure 7(C). Each of the slices M_1 to M_6 is normalised for a 'normal' decay form such that should the decay form be 'normal' $M_1 = M_3 = M_5$. Thus the operator can immediately recognise any anomalous decay forms which may arise from one of two major sources. Firstly the type of the source can influence the decay form. Coarse grained efficient sources such as sulphides show *slow* decay forms, magnetic and fine grained sulphides often show *fast* decay forms. This can be shown as $\Delta M = M_5 - M_1$, where positive ΔM infers *slow* decay form and negative ΔM *fast* decay form. A superior parameter is ΔMn where

$$\Delta Mn = \frac{M_5 - M_1}{M_3} \times 100 \text{ (in percent)}$$

which is essentially ΔM normalised for the amplitude of the decay. ΔM and ΔMn are merely short hand ways to profile changes in decay form and are essentially qualitative and relative.

Decay forms can also demonstrate the presence of electromagnetic coupling as Figure 7 shows. This is a regional effect as shown on Figure 7(b). This will

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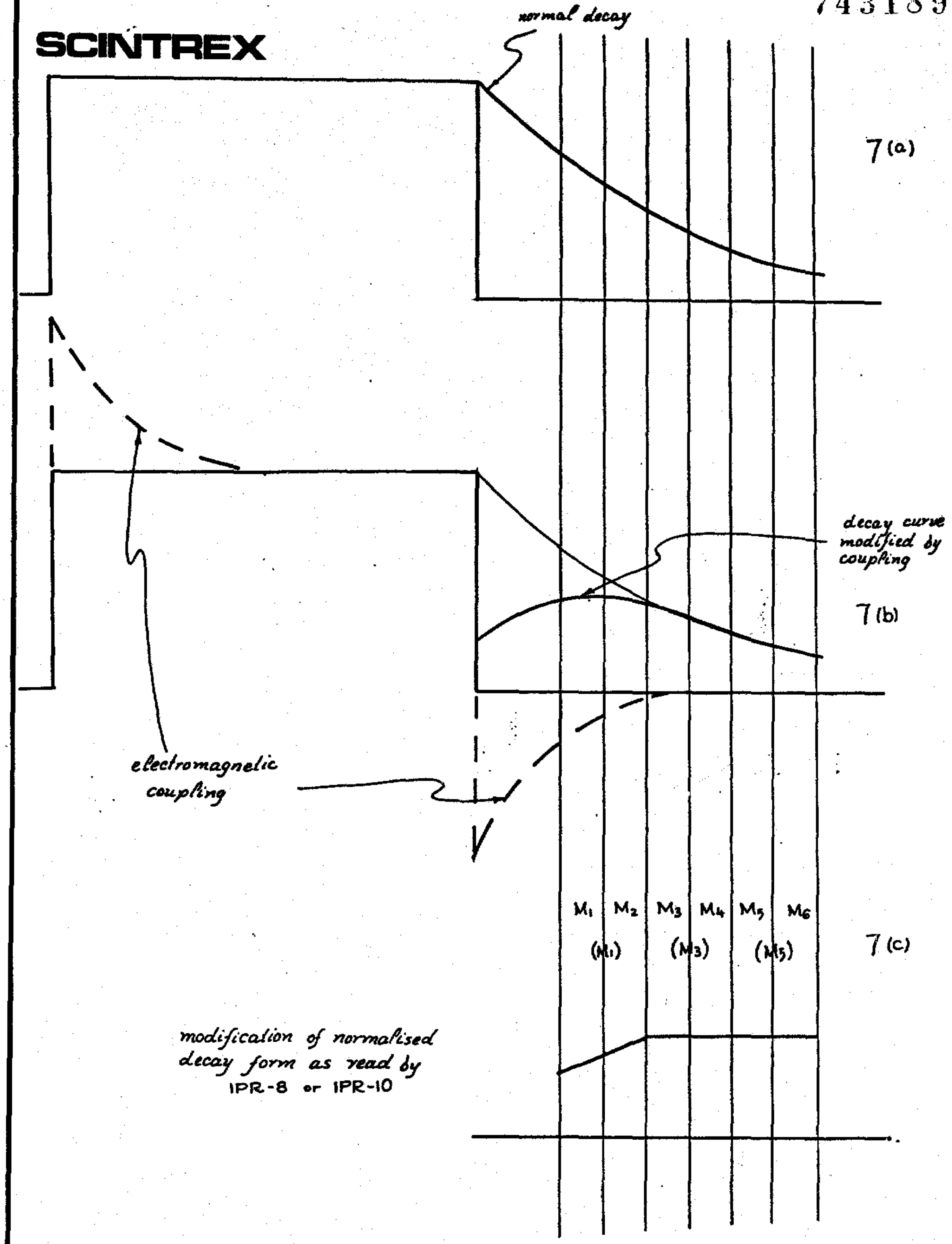

EFFECTS OF ELECTROMAGNETIC COUPLING ON IPR-8/10

Fig. 7

produce a normalised M_1 smaller than either M_3 or M_5.

Conclusion:- The above comments are indeed simplistic, and should be considered as a guide only. The author would be pleased to supply references on additional reading on any of the points commented upon.

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TABLE 1

(Table 3.1)

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[illegible]mparison of IP Survey Electrode Arrays

(after Sumner, 1972)

	Advantages	Disadvantages	Survey Speed	Signal to-Noise	EM Coupling Rejection
Parallel Field Arrays Wenner	Anomalies symmetrical Synchronous detector possible Many case histories available	Requires more wire: larger field crew Poor resolution Unfavourable in capacitive coupling situations	Fair	Good	Fair
Schlumberger	Symmetrical array Synchronous detection possible Fewer men required Works well in layered earth Type curves available	Less horizontal resolution Unsuitable for horizontal profiling Capacitive coupling possible	Fair	Fair	Fair
Gradient	Map interpretation easier Less masking by conductive overburden Penetration good: safer Communications easier Can use two or more receivers Less topographic effect Data easily contoured in plan Useful where difficulty in making good current contacts	Poor resolution with depth Poor in low resistivity areas Geometric factor varies complexly	Good	Fair	Poor
[illegible]ial-About-a-Point [illegible]ree-Array	Good reconnaissance array Fairly good resolution	Asymmetrical More wire needed	Fair	Good	Good
Pole-Dipole, Collinear	Good resolution Good subsurface coverage	Asymmetrical Asymmetrical	Fair	Fair	Fair
Perpendicular Three-Array, Pole-Dipole, Pole-Pole	Virtually eliminates EM coupling	More wire needed	Fair to Poor	Fair	Very Good
Pole-Pole (Two-Array)	Smaller crew needed Less wire needed than for some arrays Good penetration in nonconductive overburden	Susceptible to masking by conductive over-burden	Good	Fair	Poor
PDR (Potential Drop Ratio)	Sensitive to lateral variations "Common mode" noise rejection	Complex interpretation	Fair	Good	Fair
Dipole Field Array					
Dipole-Dipole Collinear	Symmetrical, good resolution Good penetration Less survey wire needed	Slow unless equipment is portable Resistivity topographic effects Interpretation somewhat involved	Fair	Poor	Fair
Dipole-Dipole, Parallel	Special use for EM coupling interpretation	Not used for routine surveying	Poor	Poor	Fair
Down-the-Hole Arrays					
Azimuthal Array (One Potential Electrode Down the Hole)	Fair for exploration purposes Useful in finding the best search direction	Interpretation complex Negative anomalies Strong geometric effects Mainly measures changes in resistivity	Fair	Good	Good
[illegible]dial Array (One Current Electrode Down the Hole, mise-à-la-masse)	Good for exploration purposes Useful in finding the best search direction Hole need not stay open	Interpretation complex Negative anomalies Not good for obtaining rock properties	Fair	Good	Good
In-Hole Arrays (More than One Electrode in the Hole)	Good for obtaining rock properties Good for assaying Interpretation simple	Current densities may be too large Possible capacitive coupling problems Not designed for exploration purposes Special equipment, expensive	Good	Fair	Good

Extract from: Geological Survey of Canada - Paper 75-31 "Borehole Geophysics Applied to Metallic Mineral Prospecting: A Review"

SCINTREX

PERSONNEL AND TIMING

The field work was carried out variously under Scintrex party leaders, R. Bennett and P. List, between 17th - 18th February, and on 19th, 21st, 24th, 28th February as well as 1st to 6th March, 1982.

Field assistants included G. Kennedy, S. Dunmill, K. Brown, W. Tressler, S. Gibbons.

743193

82-1797
Vol 1 (of 4)

RENISON LIMITED

LOCALITY MAP

GEOLOGIST : L. A. MARTIN
DRAUGHTSMAN : F. A. Colson
DATE : July 1982
REVISIONS :
SCALE 1 50,000 METRES
MAP 1:1,000,000
1000 0 1000 2000

2657

DRAWING No.
FIG.1

2657

SEDIMENTARY ROCKS

Quaternary

Qra	Recent Alluvium

Tertiary

Tg	Tertiary Gravels

Devonian

Db	Bell Shale
Df	Florence Quartzite

Silurian

Undiff Amber Shale	Sa / Sas	Siliceous Sandstone member
	Sal	Limestone member
	Sc	Crotty Quartzite

Ordovician

Θg	Gordon Limestone
Θm ?	Moina ? Sandstone

Cambrian

Upper Dundas Group ≡ Huskisson Formation Upper Cambrian	€dh	€d	Dundas Group (undiff)
		€dc	Conglomerates
		€ds	Black Fossiliferous Pyritic Shale
Middle Cambrian		€c	Crimson Creek Formation

Pre - Cambrian

p€o	Oonah Quartzite and Schist.

IGNEOUS ROCKS

Tb	Tertiary Basalt
Dm	Devonian Meredith Granite
D?a	Devonian ? Acid Intrusives
€s	Upper Cambrian Serpentinites, and Mafic-ultra-mafic complexes
€g	Cambrian Basic or Gabbroic Rocks

SYMBOLS

- 20° Dip and Strike of Bedding (Facing known)
- 20° Dip and Strike of Bedding (Facing unknown)
- 20° Dip and Strike of Composition Banding
- 20° Dip and Strike of Cleavage, undifferentiated
- 50° Axial Plane of small anticline.
- Anticlinal, Synclinal Axis
- Observed outcrop.
- Fossil locality.
- Interpreted Boundary.
- Fault, approximate position
- Compositional layering in Ultra-mafic.
- Cleavage; parting; shear.

DATA SOURCE:

Data presented is a compilation of:
- Renison Mapping
- AV Brown (1980's) - Mines Department
- Photogeological interpretation by P R Boshier

Merton Hill Grid Lines

Merton Hill proposed Grid Lines

5 cm

CORINNA D/3	CORINNA D/4
ZEEHAN B/1	ZEEHAN B/2

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RENISON LIMITED 743194

CORINNA D/4. 2658

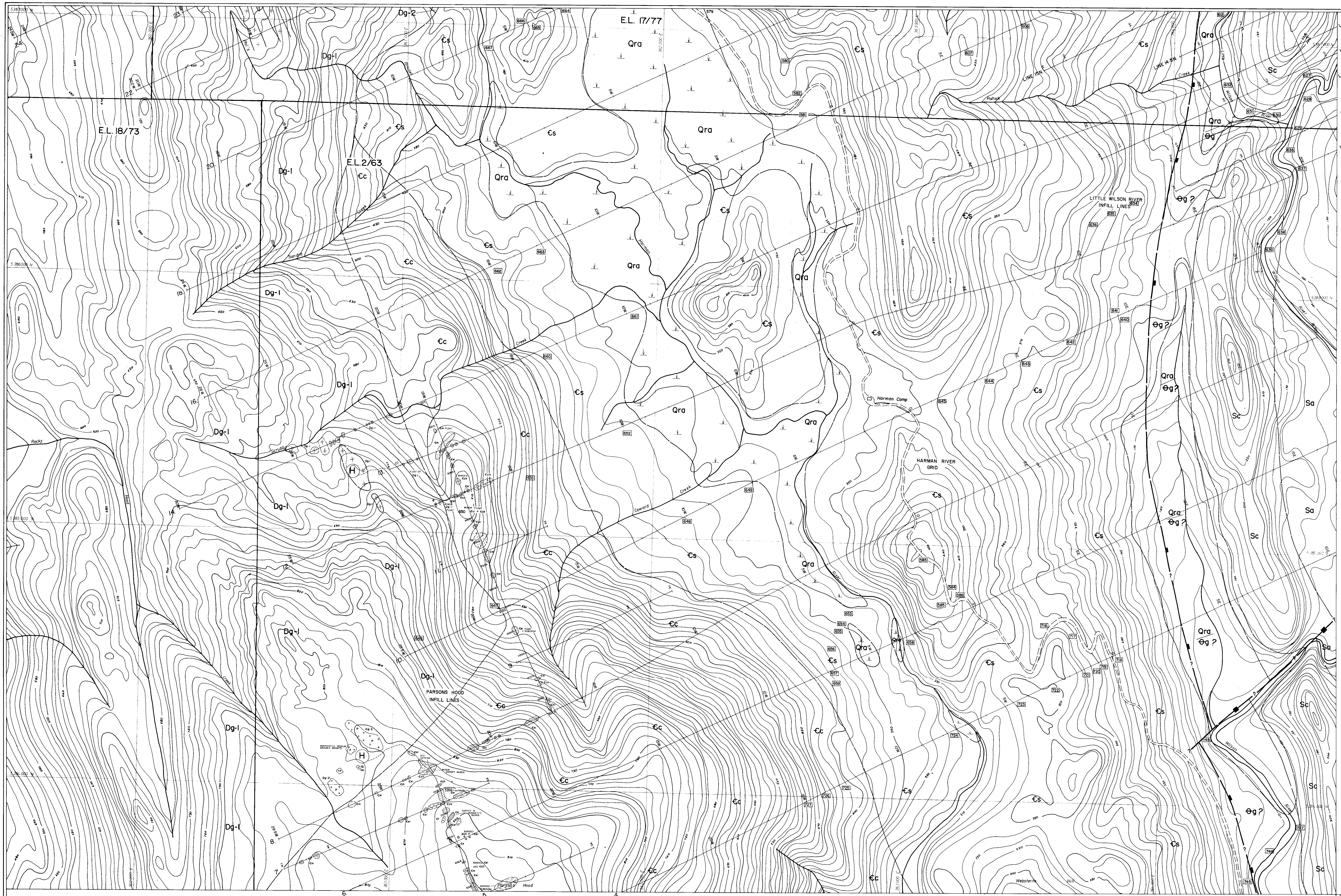
INTERPRETATIVE AND FACTUAL GEOLOGY PLAN.

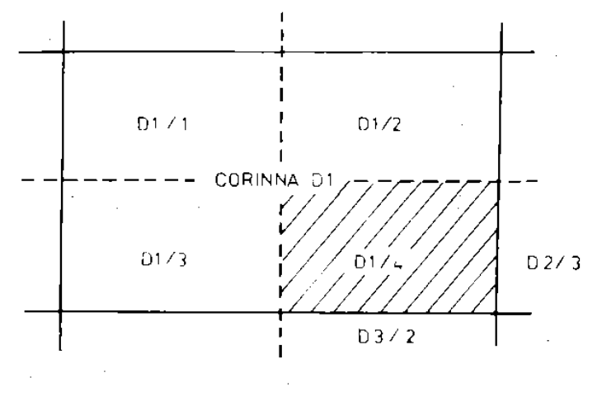
SCALE. 1: 10,000 METRES.

200 0 200 400 600

DRAWN	L A M
TRACED	T G.D.S.
DATE	March 1982
SCALE	1:10,000
DRAWING No.	

COMPILED BY
L.A MARTIN
Fig 2





743195

5 cm

SEDIMENTARY ROCKS

Quaternary
- Qra Recent Alluvium
- Tg Tertiary Gravels

Devonian
- Db Bell Shale
- Df Florence Quartzite

Silurian
- Undiff Amber Shale Sa: Sas Siliceous Sandstone member; Sal Limestone member
- Sc Crotty Quartzite

Ordovician
- Og Gordon Limestone
- Om? Moina ? Sandstone

Cambrian
- Upper Cambrian: €dh Dundas Group (undiff)
- Middle Cambrian, Crimson Ck Formation €c:
  - €m Tuffaceous Sandstones
  - €ch Chert
  - €st Tuffaceous Siltstones / Shales
  - €k Skarn
  - €h Hornfels
  - €t Tuff

Pre-Cambrian
- p€o Oonah Quartzite and schist

IGNEOUS ROCKS

- Tb. Tertiary Basalt
- Dm Dg-1 Coarse to very coarse Adamellite
- Dm Dg-2 Quartz Porphyry and fine grained Porphyritic Granite with wide spread Quartz Tourmaline Alteration
- Dm Dgm Microgranite Microgranite Dykes
- D?a Devonian ? Acid Intrusives
- €s Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes
- €g Cambrian Basic or Gabbroic Rocks

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage, parting, shear
- Dyke

DATA SOURCE

Data presented is a compilation of:
- Renison Mapping
- A.V. Brown (1980's) - Mines Dept.
- Photogeological interpretation by P.R. Boshier

82-1797
(Vol 1 of 4)

RENISON LIMITED

2659

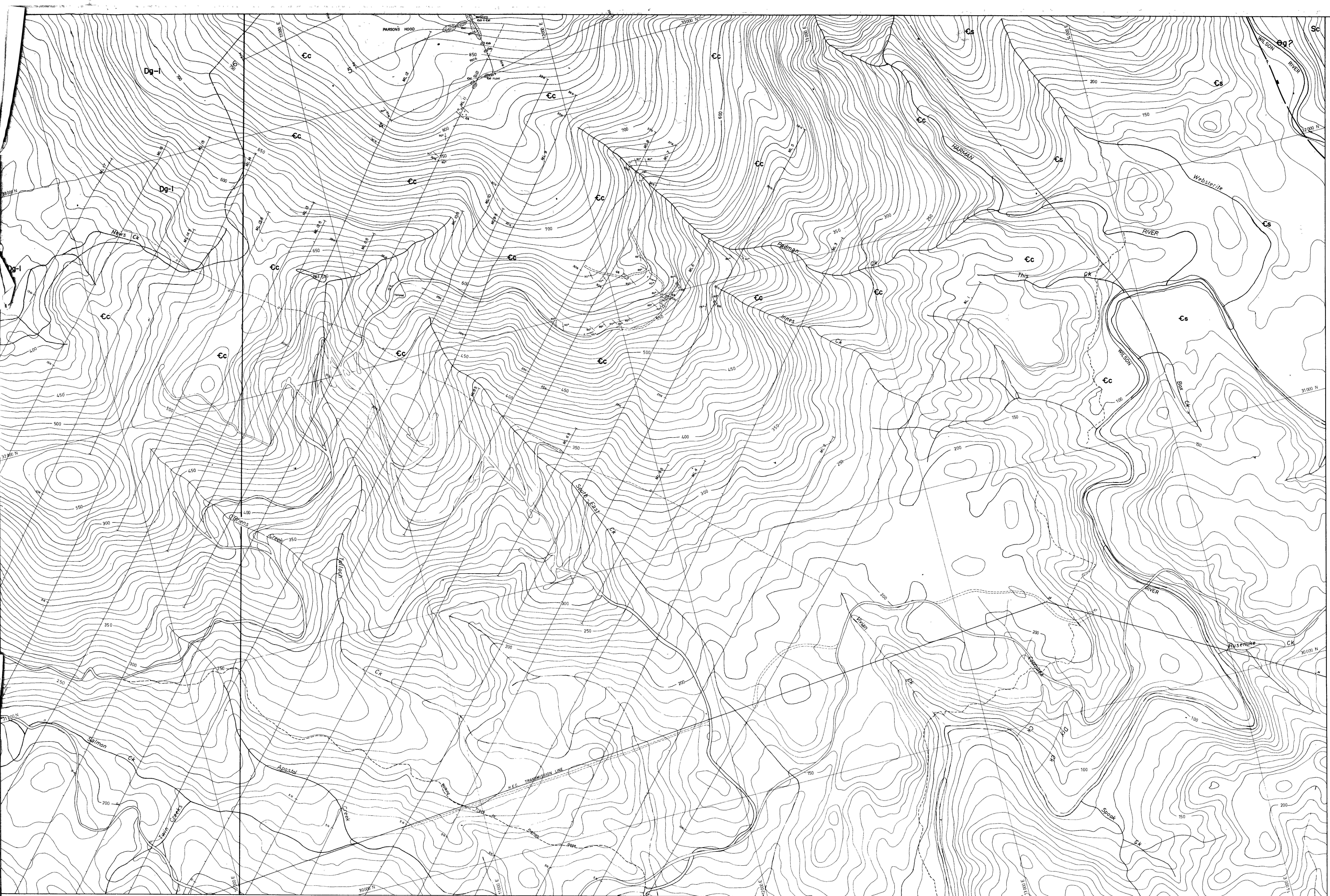
CORINNA D1/4

INTERPRETATIVE AND FACTUAL GEOLOGY PLAN

GEOLOGIST : L. Martin
DRAUGHTSMAN : T.G.D.S.
DATE : July, 1982.
REVISIONS :

SCALE · 1:5000 METRES
100 0 100 200

DRAWING No.
FIG. 3a.)



743196

5 cm

SEDIMENTARY ROCKS

Quaternary
Qra Recent Alluvium
Tg Tertiary Gravels

Devonian
Db Bell Shale
Df Florence Quartzite

Silurian
Undiff Amber Shale Sa — Sas Siliceous Sandstone member; Sal Limestone member
Sc Crotty Quartzite

Ordovician
Og Gordon Limestone
Om? Moina ? Sandstone

Cambrian
Upper Cambrian
€dh Dundas Group (undiff)
Middle Cambrian
Crimson Ck Formation €c
€m Tuffaceous Sandstones
€ch Chert
€st Tuffaceous Siltstones / Shales
€k Skarn
€h Hornfels
€t Tuff

Pre-Cambrian
p€o Oonah Quartzite and schist

IGNEOUS ROCKS

Tb Tertiary Basalt
Dm Dg-1 Coarse to very coarse Adamellite
Dm Dg-2 Quartz Porphyry and fine grained Porphyritic Granite with wide spread Quartz Tourmaline Alteration
Dm Dgm Microgranite Microgranite Dykes
D?a Devonian ? Acid Intrusives
€s Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes
€g Cambrian Basic or Gabbroic Rocks

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage undifferentiated
- Axial Plane of small anticline
- Anticlinal Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage, parting shear
- Dyke

DATA SOURCE

Data presented is a compilation of
- Renison Mapping
- A V Brown (1980's) - Mines Dept
- Photogeological interpretation by P.R Boshier

H.E.C SHEETS
STATE 1 31680 PLAN
CORINNA D3/2

CORINNA D1/4	CORINNA D2/3
CORINNA D3/2	CORINNA D4/1

82-1797
CVol 1 of 4)

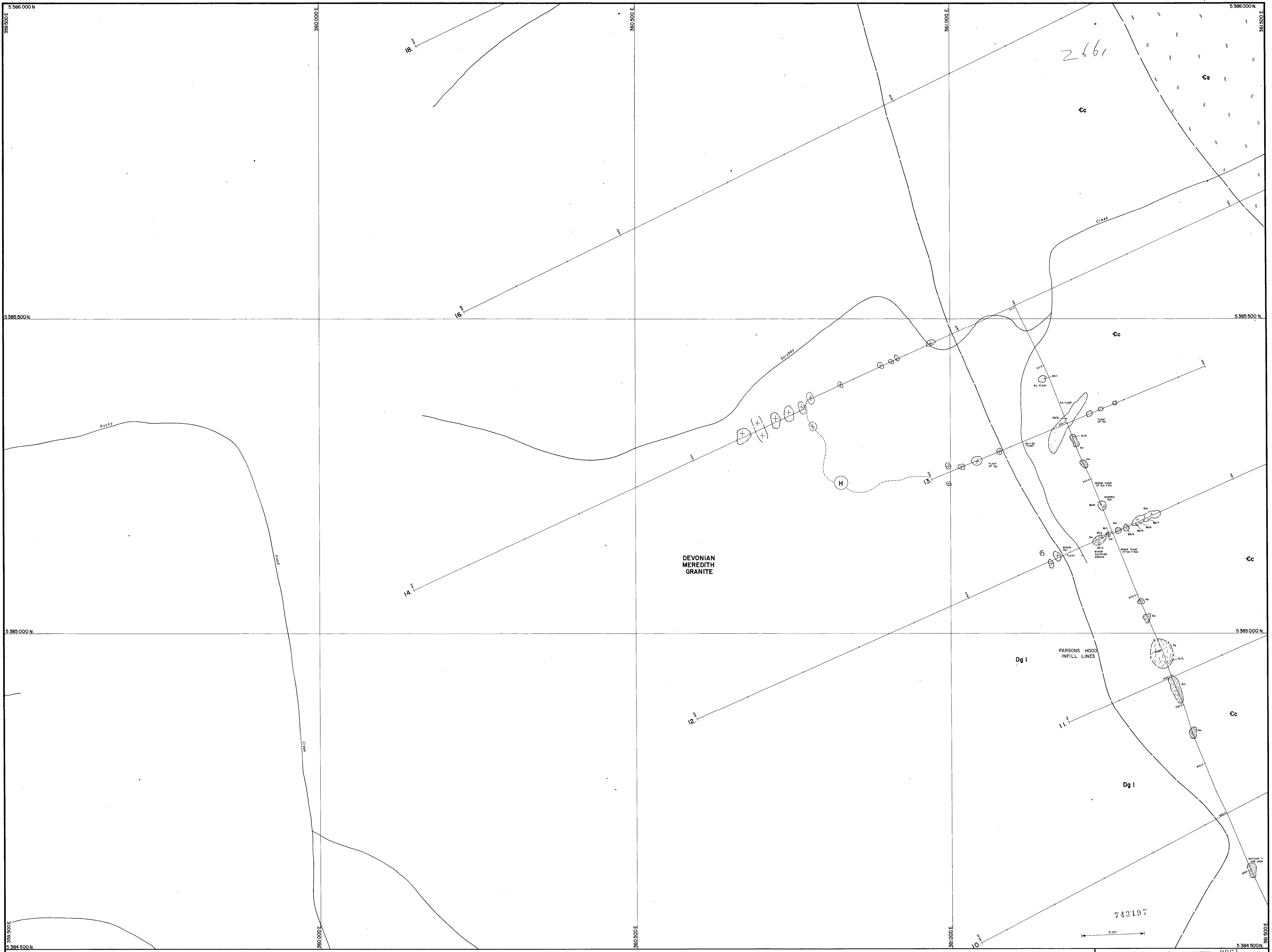
RENISON LIMITED

CORINNA D3/2 2660

INTERPRETATIVE AND FACTUAL GEOLOGY PLAN

GEOLOGIST - L. Martin
DRAUGHTSMAN T.G.D.S.
DATE July, 1982.
SCALE 1 5000 METRES
100 0 100 200
REVISIONS
DRAWING No FIG. 3 b)

2661



743197

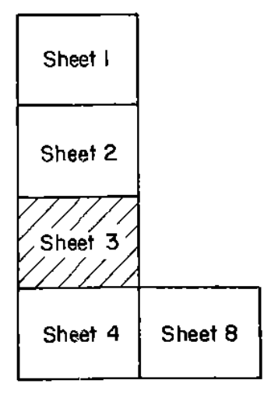
LEGEND

CAMBRIAN
CRIMSON CREEK FORMATION

€m	Tuffaceous sandstones
€ch	Chert
€st	Tuffaceous siltstones / shales
€k	Skarn
€h	Hornfels
€t	Tuff

CAMBRIAN
INTRUSIVES

€g	Gabbro
€s	Altrabasic complex



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RENISON LIMITED 2661

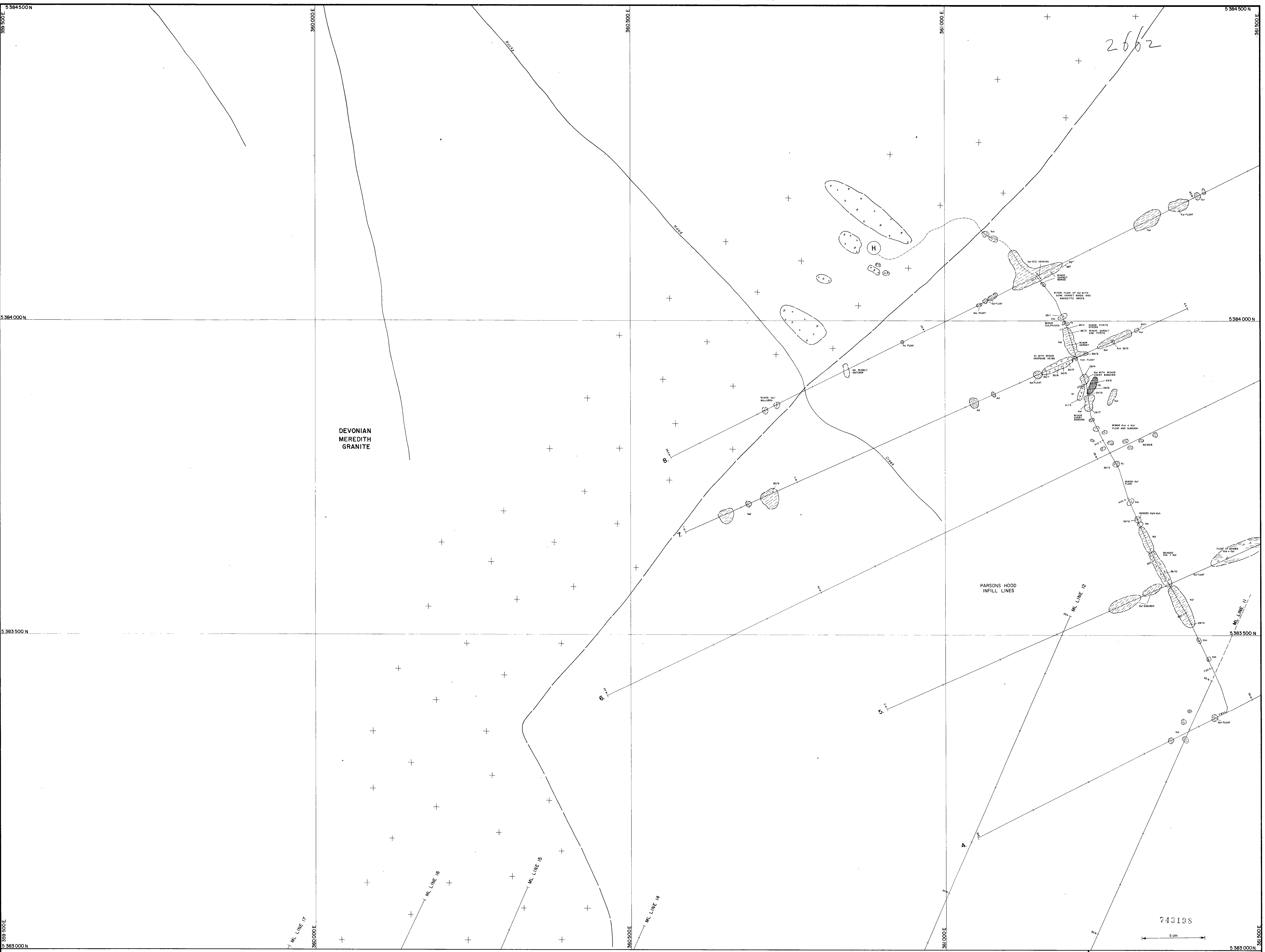
PARSONS HOOD INFILL LINES - SHEET 3

GEOLOGY PLAN

GEOLOGIST : L Martin
DRAUGHTSMAN : T G D S
DATE : June 1982
REVISIONS :

SCALE 1:2000 METRES
40 20 0 20 40 60 80

DRAWING No
FIG 4 a)



743198

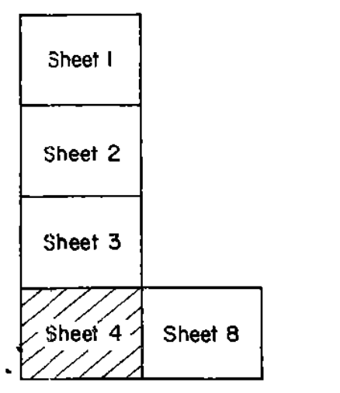
LEGEND

CAMBRIAN
CRIMSON CREEK FORMATION

⁙	€m	Tuffaceous sandstones
Y	€ch	Chert
▨	€st	Tuffaceous siltstones / shales
▩	€k	Skarn
☐	€h	Hornfels
V	€t	Tuff

CAMBRIAN
INTRUSIVES

⁄	€g	Gabbro
″	€s	Altrabasic complex



82-1797 (Vol 1 of 4).

RENISON LIMITED 2662

PARSONS HOOD INFILL LINES - SHEET 4

GEOLOGY PLAN

GEOLOGIST	: L Martin
DRAUGHTSMAN	: T G D S
DATE	: June 1982
REVISIONS	:

SCALE · 1 2000 METRES
40 20 0 20 40 60 80

DRAWING No
FIG 4 b)

2663

LEGEND

CAMBRIAN
CRIMSON CREEK FORMATION

€m	Tuffaceous sandstones
€ch	Chert
€st	Tuffaceous siltstones / shales
€k	Skarn
€h	Hornfels
€t	Tuff

CAMBRIAN
INTRUSIVES

€g	Gabbro
€s	Altrabasic complex

Sheet 1	
Sheet 2	
Sheet 3	Sheet 7
Sheet 4	Sheet 8

82-1797 (Vol 1 of 4)

RENISON LIMITED 2663

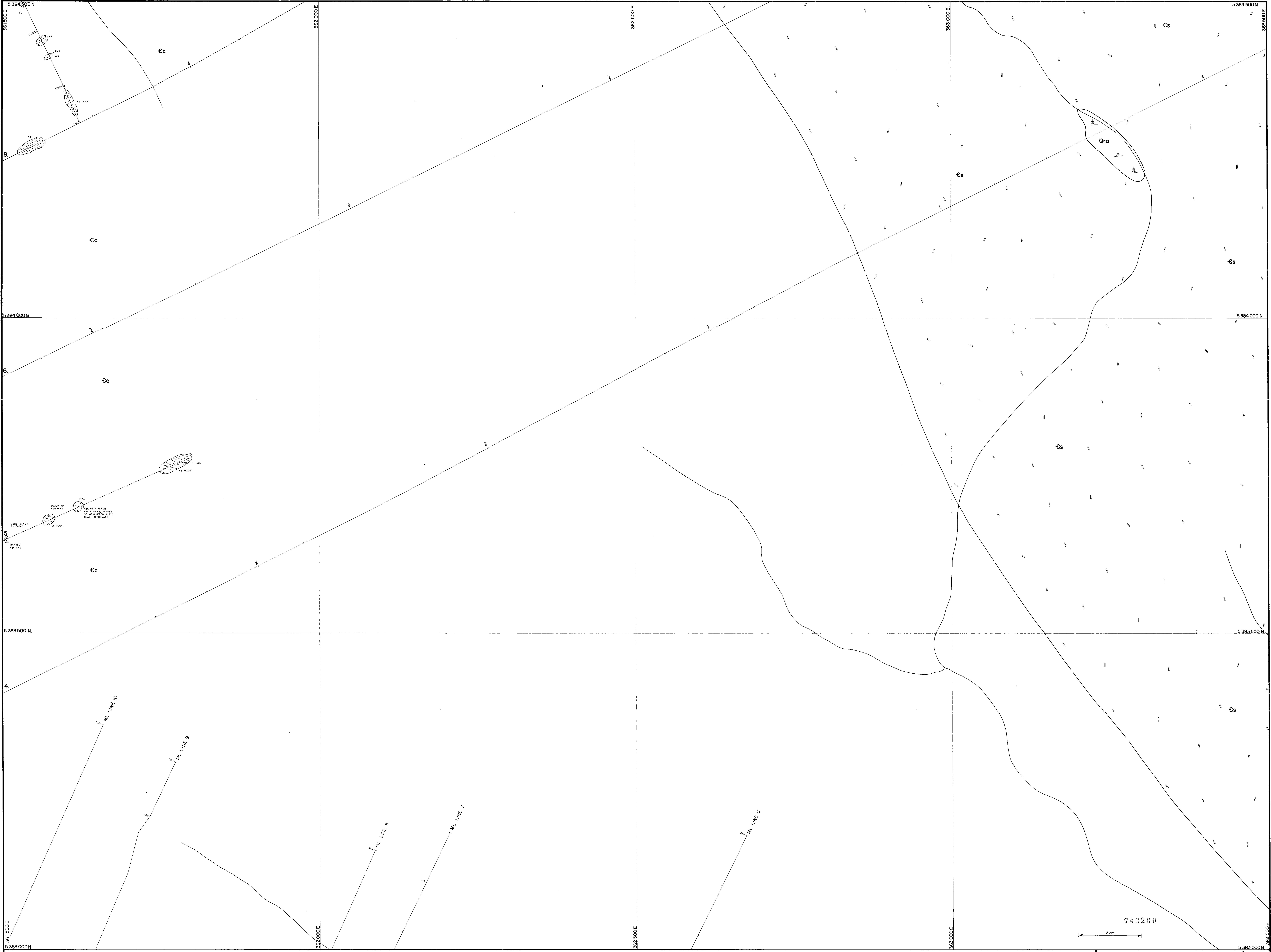
PARSONS HOOD INFILL LINES - SHEET 7

GEOLOGY PLAN

GEOLOGIST L Martin
DRAUGHTSMAN TGDS
DATE June 1982
REVISIONS

SCALE · 1:2000 METRES
40 20 0 20 40 60 80

DRAWING No.
FIG 4c)



743200

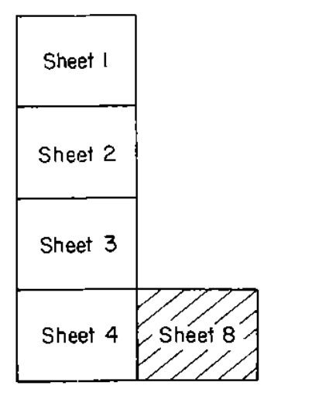
LEGEND

CAMBRIAN
CRIMSON CREEK FORMATION

	€m	Tuffaceous sandstones
	€ch	Chert
▨	€st	Tuffaceous siltstones / shales
▩	€k	Skarn
	€h	Hornfels
	€t	Tuff

CAMBRIAN
INTRUSIVES

	€g	Gabbro
	€s	Altrabasic complex



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RENISON LIMITED

2664

PARSONS HOOD INFILL LINES - SHEET 8

GEOLOGY PLAN

GEOLOGIST	L Martin
DRAUGHTSMAN	TGDS
DATE	June 1982
REVISIONS	:

SCALE 1:2000 METRES
40 20 0 20 40 60 80

DRAWING No.
FIG 4 d)

J of M	A.O.	C.G.	E.O.	D.S.M.E.

Received Answered 26 JUL 1982

DEPT OF MINES

REF. No: 5694/82

743201

5 cm

82-1797
(Vol 2/4)

RENISON LIMITED

2665

CORINNA D1/4

SOIL GEOCHEMISTRY - TIN
(p.p.m.)

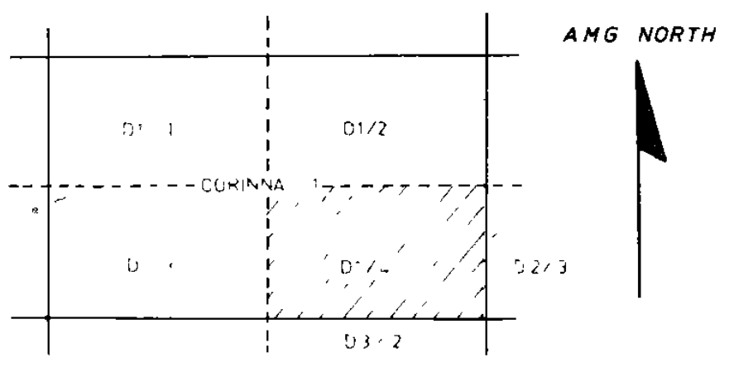
GEOLOGIST	A.R. & L.M	SCALE 1 5000 METRES	
DRAUGHTSMAN	T.G.D.S.	100 0 100 200	
DATE	May 1982		
REVISIONS		DRAWING No.	~~FIG~~ 5a 1)

LEGEND

☐ >1000 p.p.m. ☐ 500 - 1000 p.p.m ☐ 100 - 500 p.p.m. ☐ 25 - 100 p.p.m. ☐ 10 - 25 p.p.m. ☐ <10 p.p.m.

┼──┼ Grid Line and 100m pegs

– No soil sample



743202

5 cm

LEGEND

☐ >50ppm ☐ 20-50p.p.m. ☐ 10 20p.p m ☐ <10p.p.m

+———+ Grid Line and 100m pegs

\- No soil sample

82-1797
(Vol 2/4)

RENISON LIMITED

2666

CORINNA D1/4

SOIL GEOCHEMISTRY - ARSENIC
(p.p.m.)

GEOLOGIST	A.R. & L.M.	SCALE 1 5000 METRES
DRAUGHTSMAN	F.C. & T.G.D.S.	100 0 100 200
DATE	May 1982	
REVISIONS		DRAWING No FIG. 5a-2

LEGEND

▭ >50ppm ▭ 20-50ppm ▭ 10-20ppm

82-1797 (Vol 2/4)

RENISON LIMITED 2667

CORINNA D1/4

SOIL GEOCHEMISTRY – TUNGSTEN (p.p.m.)

GEOLOGIST	L.M.	SCALE 1 5000 METRES
DRAUGHTSMAN	T.G.D.S	100 0 100 200
DATE	May 1982	
REVISIONS		DRAWING No FIG 5a 3)

LEGEND

▭ >100 p.p.m ▭ 50 - 100 p.p.m ▭ 20 - 50 p.p.m. ▭ <20 p.p.m

+——+ Grid Line and 100m pegs

\- No soil sample

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(Vol 2/4).

RENISON LIMITED 2668

CORINNA D1/4

SOIL GEOCHEMISTRY - COPPER
(p.p.m.)

GEOLOGIST	A.R. & L.M.	SCALE 1 5000 METRES
DRAUGHTSMAN	F.C. & T.G D.S	100 0 100 200
DATE	May 1982	
REVISIONS		DRAWING No FIG 5a 4)

743205

LEGEND

☐ >100 p.p.m ☐ 50 - 100 p.p.m ☐ 20 - 50 p.p.m ☐ <20 p.p.m

Grid Line and 100m pegs

\- No soil sample

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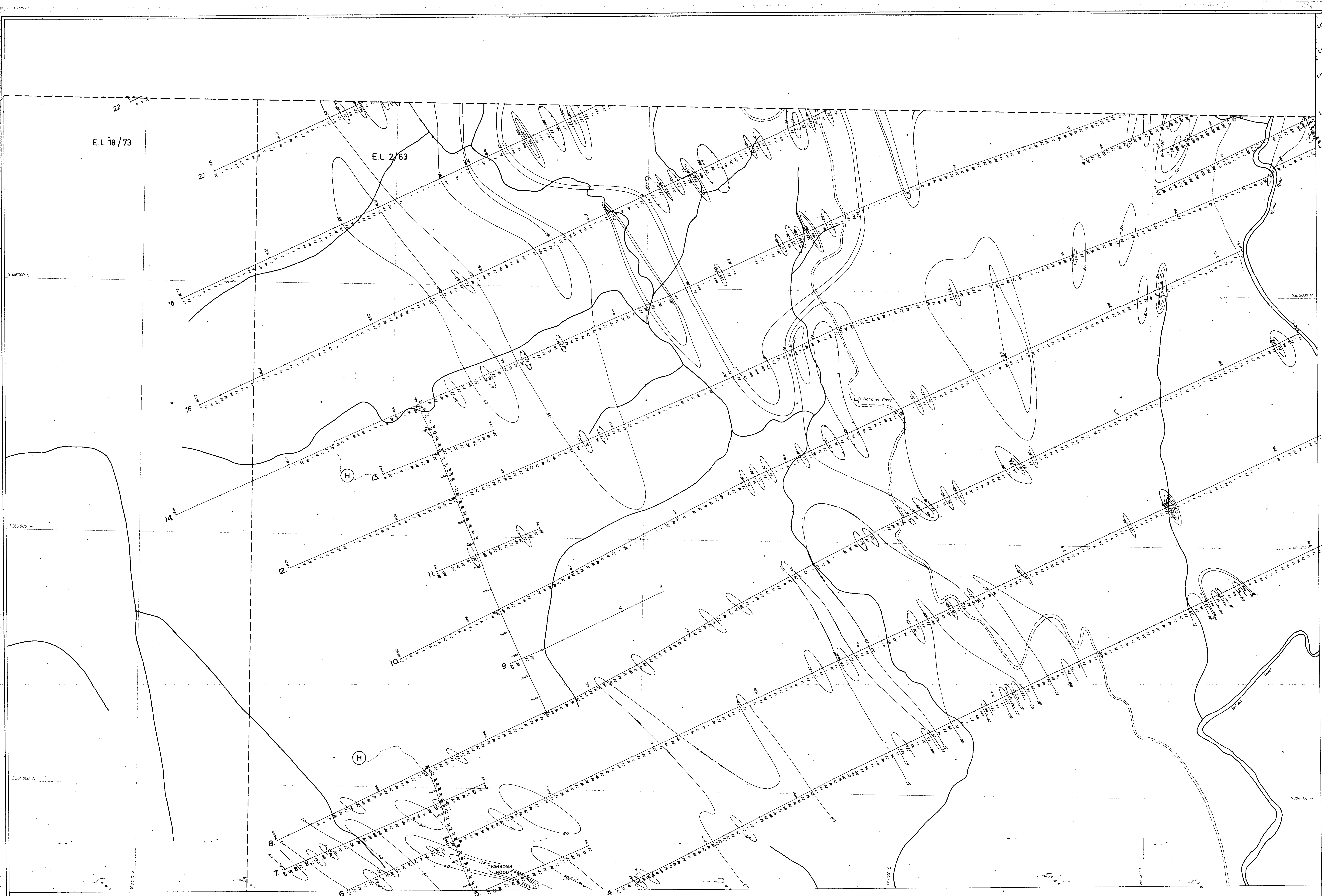
RENISON LIMITED 2669

CORINNA D1/4

SOIL GEOCHEMISTRY - LEAD (p.p.m.)

GEOLOGIST A.R. & L.M.
DRAUGHTSMAN F.C. & T.G.D.S.
DATE May 1982
REVISIONS
SCALE 1 5000 METRES
100 0 100 200
DRAWING No
FIG. 5a 5)

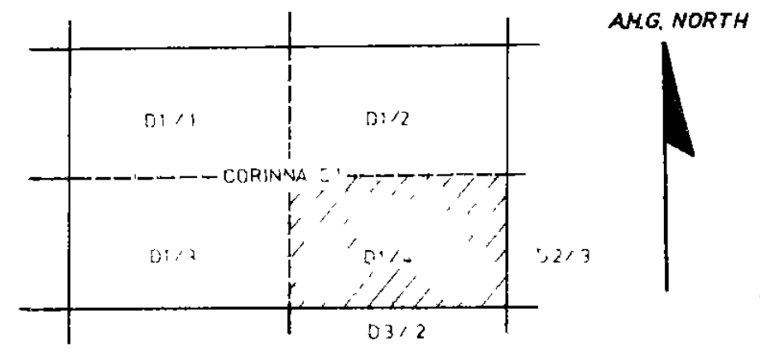


LEGEND

☐ >300 p.p.m ☐ 200 - 300 p.p.m ☐ 100 - 200 p.p.m. ☐ 50 - 100 p.p.m ☐ <50 p.p.m.

Grid Line and 100m pegs.

– No soil sample.



743206

5 cm

82-1797
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RENISON LIMITED 2679

CORINNA D1/4

SOIL GEOCHEMISTRY - ZINC
(p.p.m.)

GEOLOGIST A.R & L.M.
DRAUGHTSMAN F.C. & T.G.D.S.
DATE May 1982
REVISIONS

SCALE 1 5000 METRES
100 0 100 200

DRAWING No
FIG 5a 6)

KEY

Strong Anomaly (>100 p p m)

Weak Anomaly (>50 p p m)

Road & Walking Track

2000N Grid Line & Sample Locality

5, <5, 10, 50 Original Sample Value with Resampling Values at 0 3, 0 6, 0 9 m Depth respectively

5/10 Original Sample Value with Duplicate Sample

CORINNA D1/3	CORINNA D1/4
CORINNA D3/1	CORINNA D3/2
CORINNA D3/3	CORINNA D3/4

82-1797.
CVol 2(4)

RENISON LIMITED 2671

CORINNA D3/2

GEOCHEMICAL SAMPLING / Sn

SCALE. 1:5000 METRES
100 0 100 200 300

DRAWN	L M
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1 5000
DRAWING No.	
Fig 5 & 1)	

KEY

Strong Anomaly (>100 p p m)

Weak Anomaly (>50 p p m)

Road & Walking Track

2000N Grid Line & Sample Locality

5 <5, 10, 50 Original Sample Value with Resampling Values at 0 3, 0 6, 0 9m Depth respectively

5/10 Original Sample Value with Duplicate Sample

AM

N

CORINNA D1/3	CORINNA D1/4
CORINNA D3/1	CORINNA D3/2
CORINNA D3/3	CORINNA D3/4

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RENISON LIMITED 2672

CORINNA D3/2.

GEOCHEMICAL SAMPLING / As

SCALE. 1:5000 METRES

100 0 100 200 300

DRAWN	L M
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1 5000
DRAWING No.	
FIG 5 & 2)	

743209

KEY

Road & Walking Track.

2000N Grid Line & Sample Locality.

5, <5, 10, 50 Original Sample Value with Resampling Values at 0·3, 0·6, 0·9 m. Depth respectively.

5/10 Original Sample Value with Duplicate Sample.

◯ Strong Anomaly (>50 p.p.m.)

◌ Weak Anomaly (>30 p.p.m.)

CORINNA D1/3	CORINNA D1/4
CORINNA D3/1	CORINNA D3/2
CORINNA D3/3	CORINNA D3/4

82-1797
CVol 2/4)

RENISON LIMITED

CORINNA D3/2.

GEOCHEMICAL SAMPLING / WO_3

SCALE. 1:5000 METRES
100 0 100 200 300

DRAWN	L.M.
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:5000
DRAWING No.	

~~2673~~

FIG. 5 & 3.)

KEY

○ Strong Anomaly. (>200 p.p.m.)

◌ Weak Anomaly. (>100 p.p.m.)

Road & Walking Track.

2000N Grid Line & Sample Locality.

5, <5, 10, 50 Original Sample Value with Resampling Values at 0·3, 0·6, 0·9m. Depth respectively.

5/10 Original Sample Value with Duplicate Sample.

CORINNA D1/3	CORINNA D1/4
CORINNA D3/1	CORINNA D3/2
CORINNA D3/3	CORINNA D3/4

82-1797 (Vol 2/4)

RENISON LIMITED 2674

CORINNA D3/2.

GEOCHEMICAL SAMPLING / Cu.

SCALE. 1:5000 METRES
100 0 100 200 300

DRAWN	L.M.
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:5000
DRAWING No.	

FIG. 5(b. 4.)

KEY

⬭ Strong Anomaly (>200 p.p.m.)

⬭ Weak Anomaly (>100 p.p.m.)

Road & Walking Track

2000N Grid Line & Sample Locality.

5, <5, 10, 50 Original Sample Value with Resampling Values at 0·3, 0·6, 0·9 m. Depth respectively.

5/10 Original Sample Value with Duplicate Sample.

A.M.

N

CORINNA D1/3	CORINNA D1/4
CORINNA D3/1	▨ CORINNA D3/2
CORINNA D3/3	CORINNA D3/4

82-1797
(Vol 2/4)

RENISON LIMITED

CORINNA D3/2.

GEOCHEMICAL SAMPLING / Pb.
2675

SCALE. 1:5000 METRES
100 0 100 200 300

DRAWN	L.M.
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:5000
DRAWING No.	
FIG 54.5)	

KEY

Road & Walking Track.

Grid Line & Sample Locality.

Original Sample Value with Resampling Values at 0·3,0 6,0·9m. Depth respectively.

Original Sample Value with Duplicate Sample.

Strong Anomaly. (>200 p.p.m.)

Weak Anomaly. (>100 p.p.m.)

CORINNA D1/3	CORINNA D1/4
CORINNA D3/1	CORINNA D3/2
CORINNA D3/3	CORINNA D3/4

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(Vol 2/4)

RENISON LIMITED

CORINNA D3/2.

GEOCHEMICAL SAMPLING / Zn.

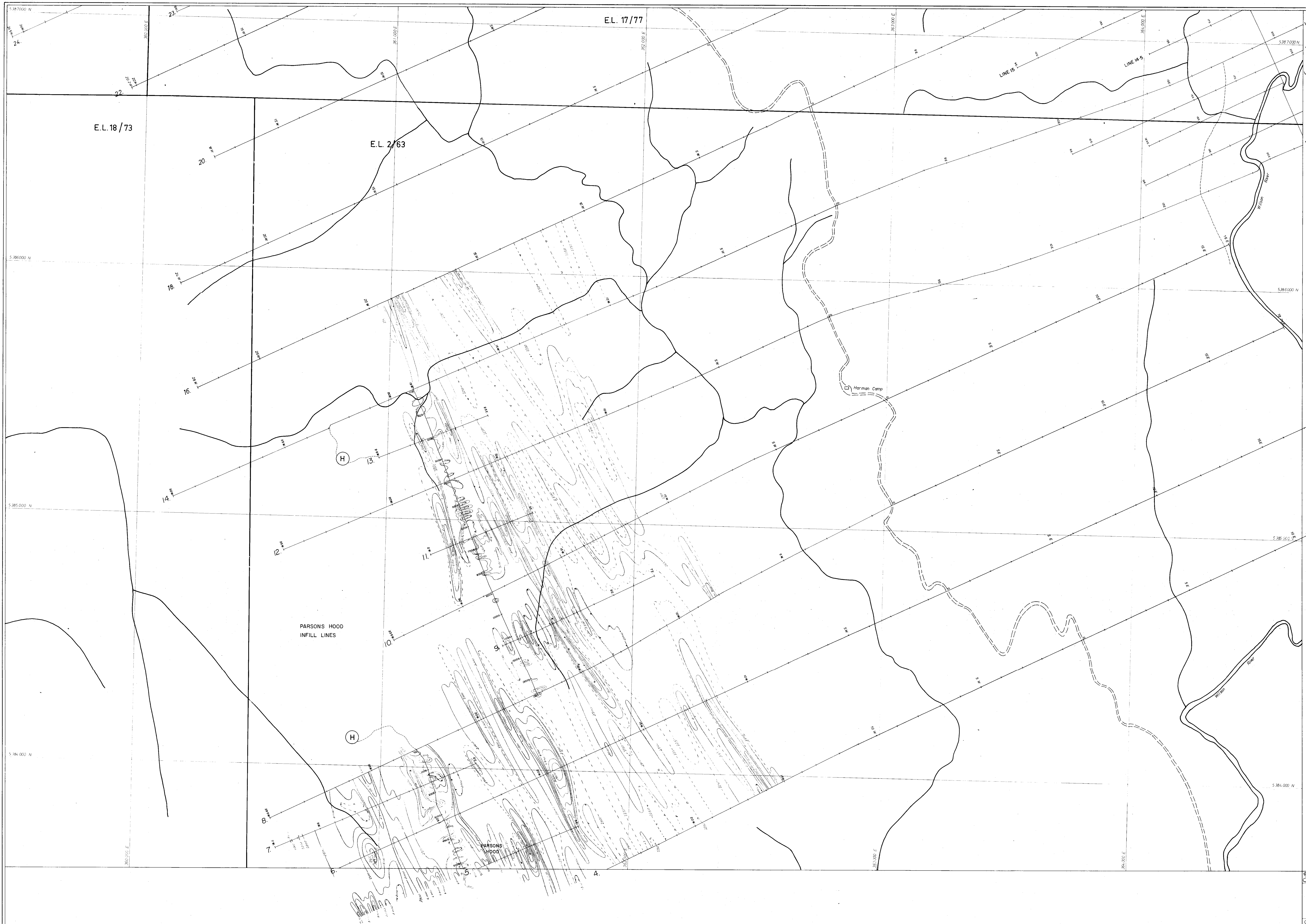
2676

SCALE. 1:5000 METRES

100 0 100 200 300

DRAWN	L.M.
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:5000
DRAWING No.	

FIG. 56. 6.)



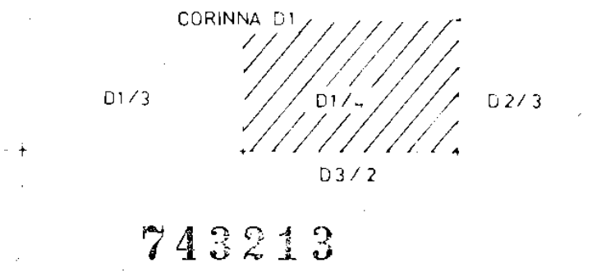
LEGEND

☐	>65000 γ
☐	63000 - 65000 γ
☐	61500 - 63000 γ
☐	<61500 γ

NOTE

1. *For total magnetic field add add 60,000 gammas to all values*
2. *Irregular contour interval*

5 cm



743213

COMPILED BY
SCINTREX

FEBRUARY 1982

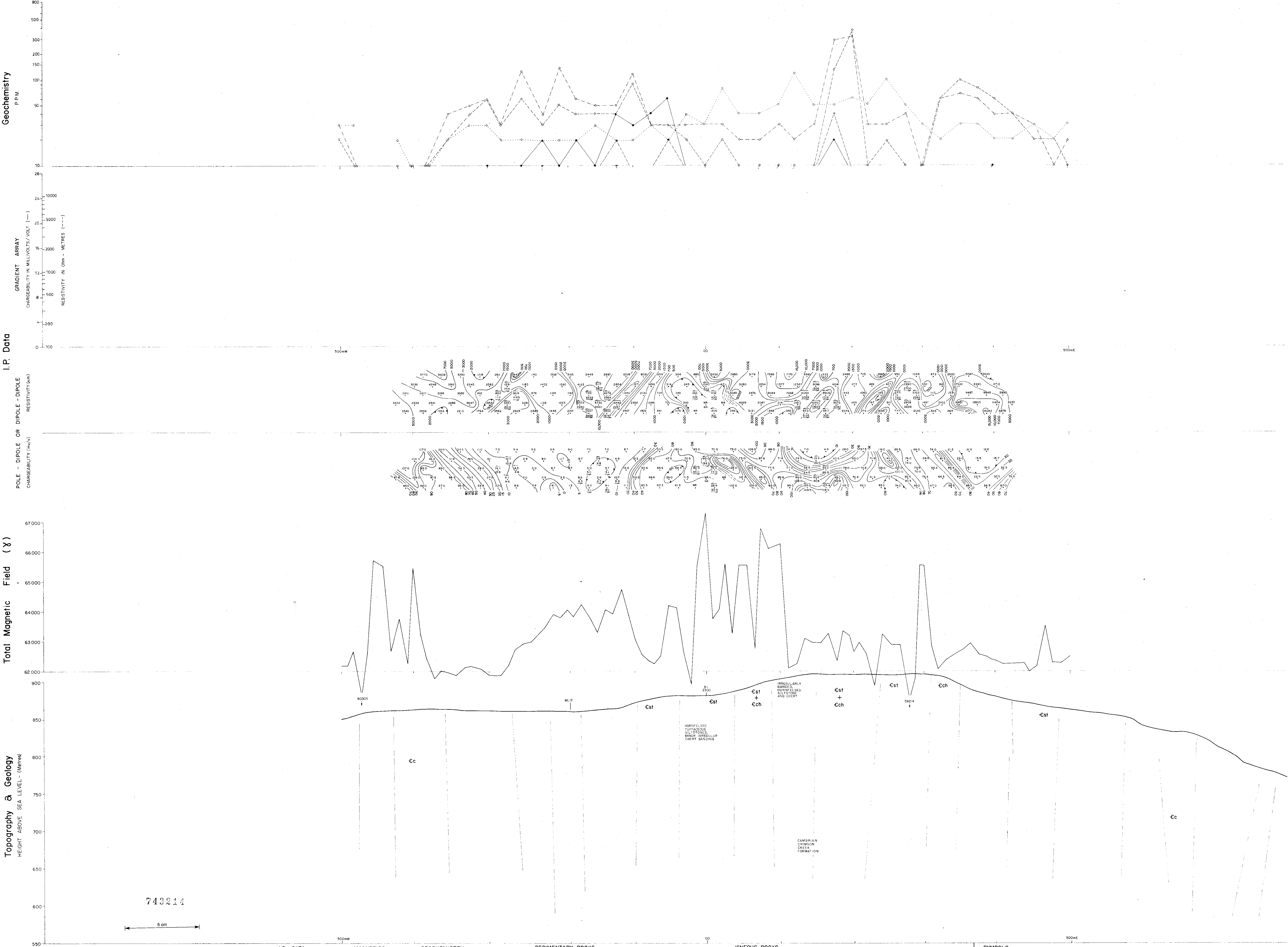
82-1797
C(Vol 2/4)

RENISON LIMITED 2677

CORINNA D1/4

TOTAL MAGNETIC FIELD CONTOUR PLAN

GEOLOGIST	L. Martin	SCALE 1 5000 METRES	
DRAUGHTSMAN		100 0 100 200	
DATE	July 1982		
REVISIONS		DRAWING No	FIG. 6



743214

82-1797
(Vol 2/4)

RENISON LIMITED 2678

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES

LINE 5

SECTION LOOKING NORTH
SCALE 1:2000 METRES
40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000
DRAWING No.	
FIG. 7a.)	

I.P. DATA

- CHARGEABILITY
- RESISTIVITY
- $\overleftarrow{420}$ Left hand array
- $\overrightarrow{430}$ Right hand array

MAGNETICS

- 5000 γ SCALE
- 1000 γ SCALE

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian
€st	Tuffaceous siltstones/shales
€ch	Chert

IGNEOUS ROCKS

Devonian

Dm	Dg-1	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage, undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage: parting: shear
- Dyke

743215

82-1797 (Vol 2/4)

RENISON LIMITED 2679

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES

LINE 6

SECTION LOOKING NORTH

SCALE 1:2000 METRES

40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000
DRAWING No.	

I.P. DATA

CHARGEABILITY

RESISTIVITY

420 Left hand array
430 Right hand array

MAGNETICS

5000 γ SCALE

1000 γ SCALE

GEOCHEMISTRY

Sn
Cu
Pb
Zn
As
WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian
€st	Tuffaceous Siltstones / Shales

IGNEOUS ROCKS

Devonian

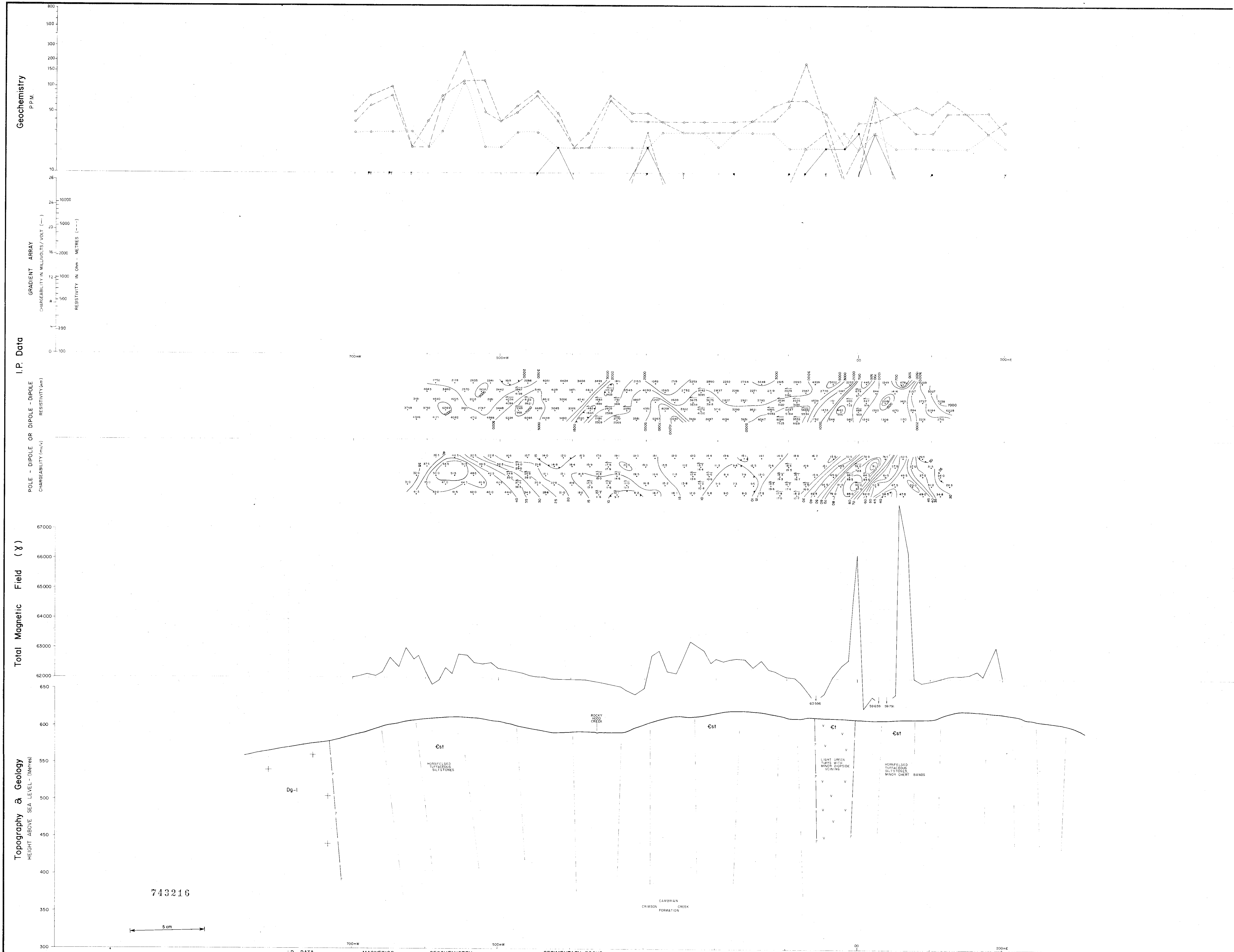
Dm	Dg-1	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
	D?a	Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

Dip and Strike of Bedding (Facing known)
Dip and Strike of Bedding (Facing unknown)
Dip and Strike of Composition Banding
Dip and Strike of Cleavage, undifferentiated
Axial Plane of small anticline
Anticlinal, Synclinal Axis
Dip and Strike of Jointing
Dip and Strike of Foliation
Observed outcrop
Fossil locality
Interpreted Boundary
Fault, approximate position
Compositional layering in Ultra-mafic
Cleavage: parting: shear
Dyke



82-1797
(Vol 2/4)

RENISON LIMITED 2680

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES
LINE 7

SECTION LOOKING NORTH

SCALE 1:2000 METRES

40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000
DRAWING No.	FIG. 7c.)

I.P. DATA

- CHARGEABILITY
- RESISTIVITY
- 420 Left hand array
- 430 Right hand array

MAGNETICS

- 5000 γ SCALE
- 1000 γ SCALE

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- WO$_3$

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian
€st	Tuffaceous siltstones/shales
€t	Tuff

IGNEOUS ROCKS

Devonian

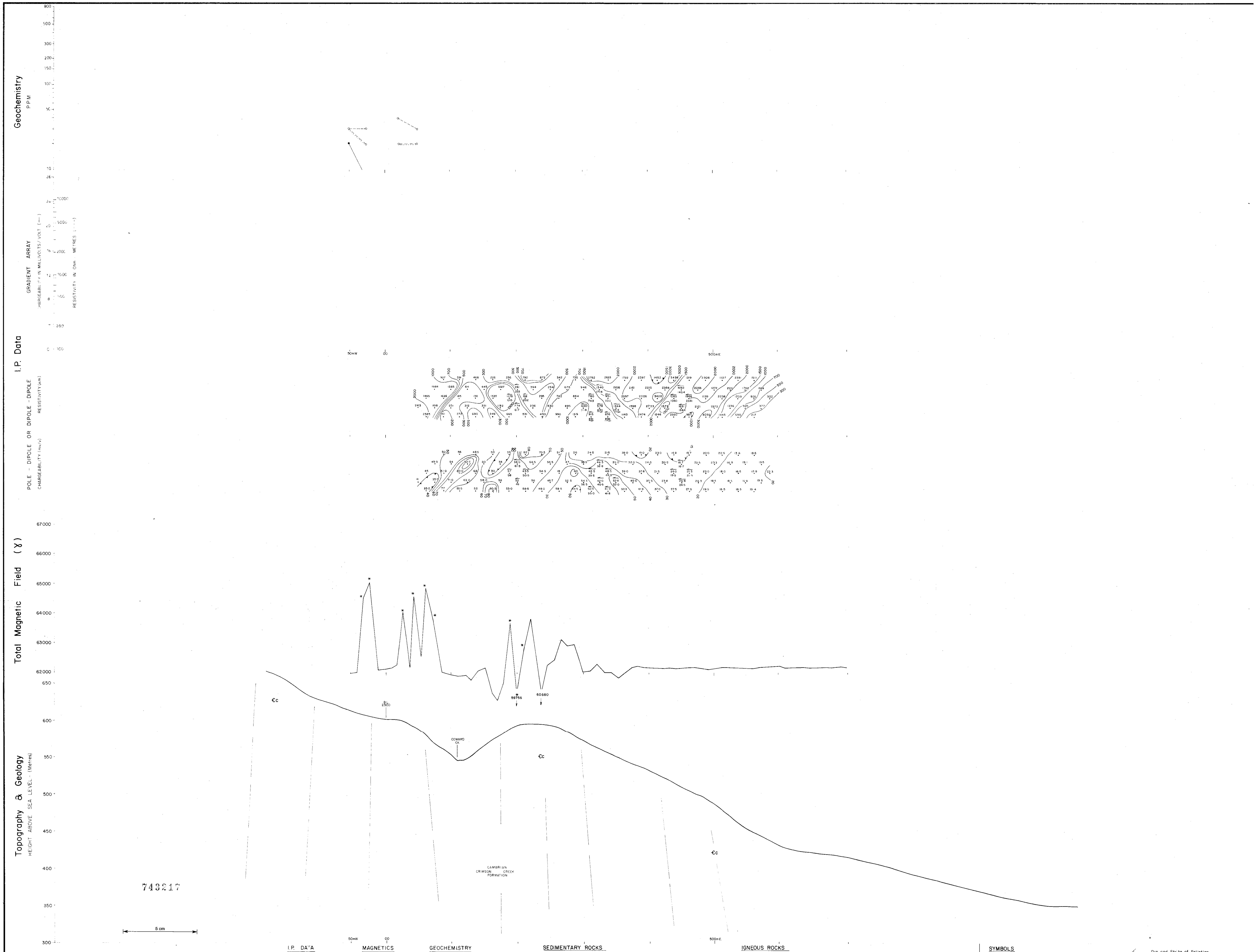
Dm	Dg-1	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage, undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage: parting: shear
- Dyke



743217

82-1797 CVol 2/4 RENISON LIMITED 2681

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES

LINE 9

SECTION LOOKING NORTH

SCALE 1:2000 METRES

40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000

DRAWING No.

FIG. 7 d.)

I.P. DATA

- CHARGEABILITY
- RESISTIVITY
- 420 Left hand array
- 430 Right hand array

MAGNETICS

- 5000 γ SCALE
- 1000 γ SCALE
- * Non-repeatable readings

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian

IGNEOUS ROCKS

Devonian

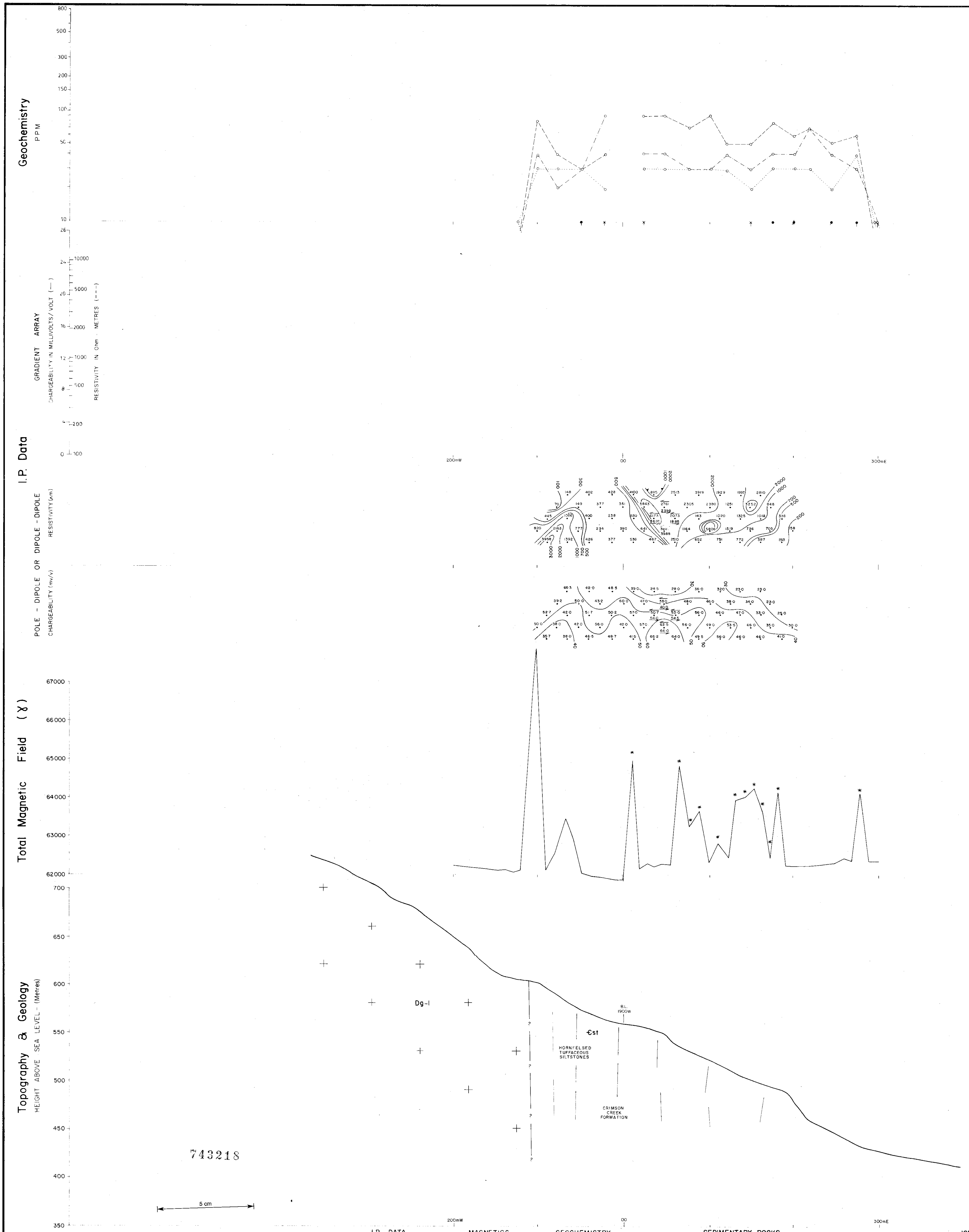
Dm	Dg-1	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage, undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage: parting: shear
- Dyke



743218

82-1797
CVol 2/4.

RENISON LIMITED

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES
LINE 11

SECTION LOOKING NORTH 2682

SCALE 1:2000 METRES
40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000

DRAWING No.

F.G. 7e.)

I.P. DATA

- CHARGEABILITY
- RESISTIVITY
- ←420 430→ Left hand array / Right hand array

MAGNETICS

- 5000 γ SCALE
- 1000 γ SCALE
- * Non-repeatable readings

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian
€st	Tuffaceous Siltstones/Shales

IGNEOUS ROCKS

Devonian

Dm	Dg-I	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage, undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage: parting: shear
- Dyke

743219

82-1797 (Vol 2/4)

RENISON LIMITED

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES
LINE 12 2683
SECTION LOOKING NORTH
SCALE 1:2000 METRES
40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000
DRAWING No.	FIG 7f)

I.P. DATA

- CHARGEABILITY
- RESISTIVITY
- 420 Left hand array
- 430 Right hand array

MAGNETICS

- 5000 γ SCALE
- 1000 γ SCALE

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian
€ch	Chert
€st	Tuffaceous Silstones/Shales

IGNEOUS ROCKS

Devonian

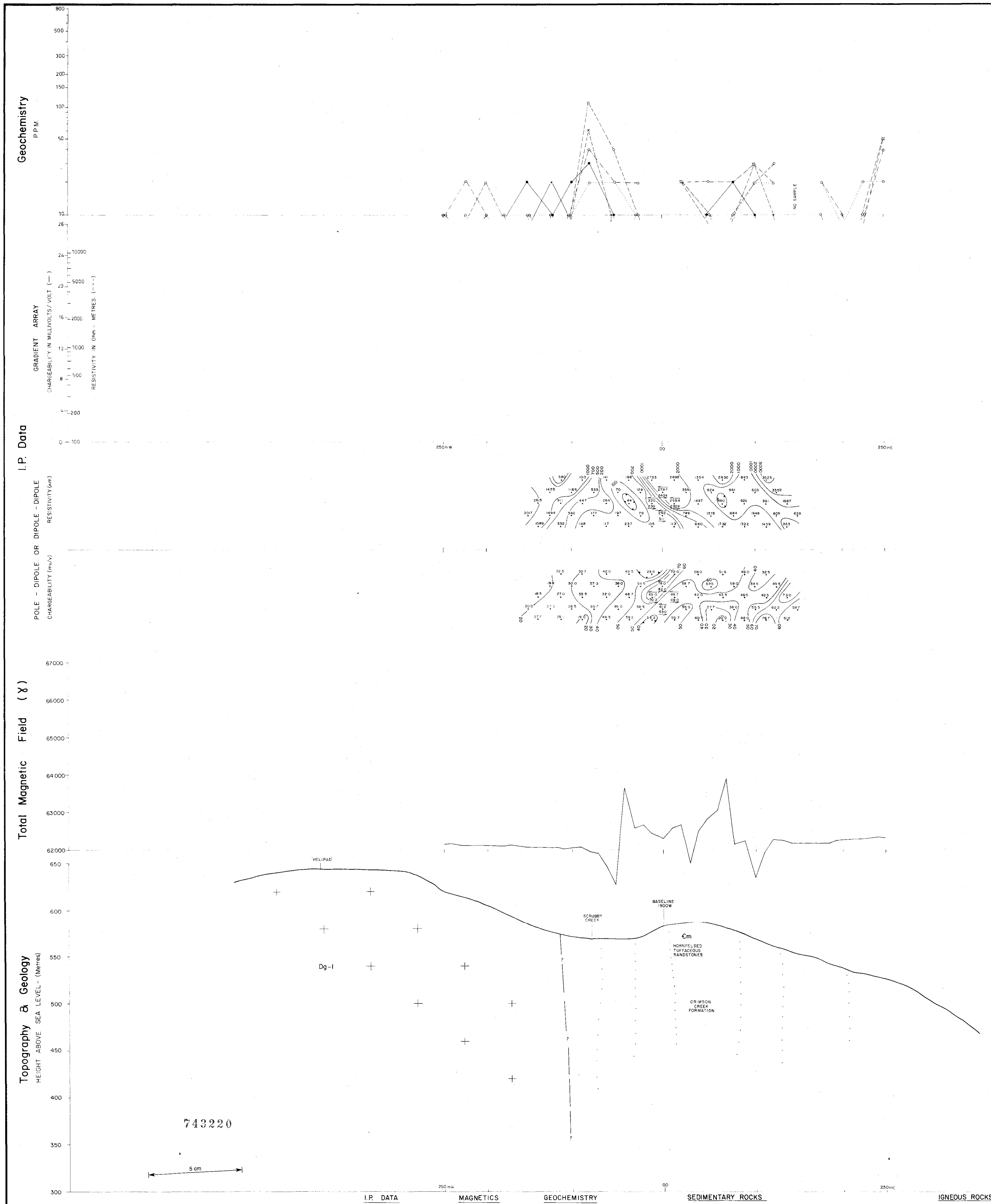
Dm	Dg-1	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage, undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage: parting: shear
- Dyke



743220

82-1797 (Vol 2/4)

RENISON LIMITED

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES

LINE 13

2684

SECTION LOOKING NORTH

SCALE 1:2000 METRES
40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000
DRAWING No.	
FIG 7 g.)	

I.P. DATA

∼	CHARGEABILITY
⋯	RESISTIVITY
$\frac{420}{430}$	Left hand array Right hand array

MAGNETICS

∼	5000 γ SCALE
⋯	1000 γ SCALE

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian
€m	Tuffaceous Sandstones

IGNEOUS ROCKS

Devonian

Dm	Dg-1	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage, undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage: parting: shear
- Dyke

743221

82-1797
(Vol 2/4)

RENISON LIMITED

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES
LINE 14

2685

SECTION LOOKING NORTH

SCALE 1:2000 METRES
40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000
DRAWING No.	

FIG 7 h)

I.P. DATA

CHARGEABILITY

RESISTIVITY

$\overleftarrow{420}$ Left hand array

$\overrightarrow{430}$ Right hand array

MAGNETICS

5000 γ SCALE

1000 γ SCALE

GEOCHEMISTRY

Sn

Cu

Pb

Zn

As

WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

Ꞓc	Crimson Creek Formation Middle Cambrian

IGNEOUS ROCKS

Devonian

Dm	Dg-I	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

Ꞓs	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
Ꞓg	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

Dip and Strike of Bedding (Facing known)
Dip and Strike of Bedding (Facing unknown)
Dip and Strike of Composition Banding
Dip and Strike of Cleavage, undifferentiated
Axial Plane of small anticline
Anticlinal, Synclinal Axis
Dip and Strike of Jointing
Dip and Strike of Foliation
Observed outcrop
Fossil locality
Interpreted Boundary
Fault, approximate position
Compositional layering in Ultra-mafic
Cleavage: parting: shear
Dyke

82-1797 (Vol 2/4)

RENISON LIMITED

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES
BASE LINE 19·0W 2686
SECTION LOOKING EAST
SCALE 1:2000 METRES
40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000
DRAWING No.	
FIG. 7 i)	

I.P. DATA
- CHARGEABILITY
- RESISTIVITY

MAGNETICS
- 5000 γ SCALE
- 1000 γ SCALE

* Non-repeatable Readings

GEOCHEMISTRY
- Sn
- Cu
- Pb
- Zn
- As
- WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian
€st	Tuffaceous Siltstones/Shales
€ch	Chert
€m	Tuffaceous Sandstones

IGNEOUS ROCKS

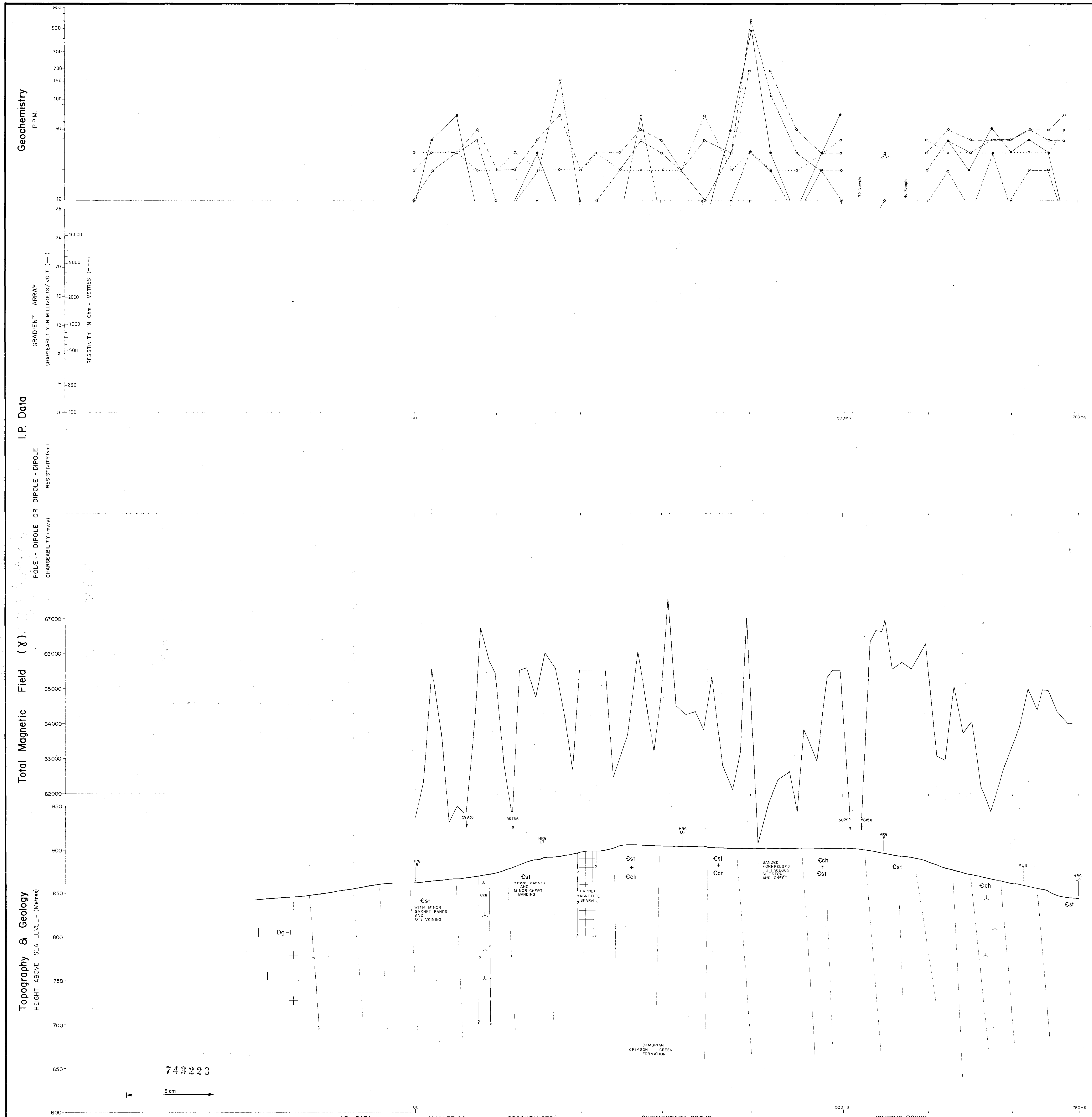
Devonian

Dm	Dg-1	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS
- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage, undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage: parting: shear
- Dyke



I.P. DATA

- CHARGEABILITY
- RESISTIVITY

MAGNETICS

- 5000 γ SCALE
- 1000 γ SCALE

GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- WO_3

SEDIMENTARY ROCKS

Quarternary

Qra	Recent Alluvium

Cambrian

€c	Crimson Creek Formation Middle Cambrian
€ch	Chert
€st	Tuffaceous Siltstones / Shales

IGNEOUS ROCKS

Devonian

Dm	Dg-1	Coarse to very coarse Adamellite
	Dg-2	Quartz porphyry and fine grained Porphyritic Granite
	Dgm	Microgranite; Microgranite Dykes
	▦	Tourmalinised Granite
D?a		Devonian ? acid Intrusives

Cambrian

€s	Upper Cambrian Serpentinites and Mafic-ultra-mafic complexes.
€g	Cambrian Basic or Gabbroic Rocks.

SYMBOLS

- Dip and Strike of Bedding (Facing known)
- Dip and Strike of Bedding (Facing unknown)
- Dip and Strike of Composition Banding
- Dip and Strike of Cleavage, undifferentiated
- Axial Plane of small anticline
- Anticlinal, Synclinal Axis
- Dip and Strike of Jointing
- Dip and Strike of Foliation
- Observed outcrop
- Fossil locality
- Interpreted Boundary
- Fault, approximate position
- Compositional layering in Ultra-mafic
- Cleavage: parting: shear
- Dyke

82-1797 (Vol 2/4)

RENISON LIMITED

E.L. 2/63 - MT. LINDSAY AREA
PARSONS HOOD INFILL LINES
BASELINE 2300W
SECTION LOOKING EAST

2687

SCALE 1:2000 METRES
40 0 40 80 120

DRAWN	L. Martin
TRACED	T.G.D.S.
DATE	May 1982
SCALE	1:2000

DRAWING No.
FIG 7 J)

2688

NO. 2. ANOMALY

31m. x 0·08% Sn; 0·04% SSn; 0·06% Cu; 0·02% WO_3; 2g/t Ag; 0·006% Bi; <0·1% As; <0·01% Pb; 0·016% Zn.

	%Sn	%SSn	%Cu	%WO_3	g/t Ag	% Bi
316·62	0·09	0·05	0·04	0·01	1	0·009
	0·11	0·08	0·01	<0·01	1	0·009
	0·13	0·08	0·01	0·01	1	0·005
	0·08	0·05	0·06	0·01	3	0·008
	0·08	0·07	0·07	0·01	2	0·001
	0·11	0·06	0·11	0·16	3	0·003
	0·12	0·06	0·17	0·08	3	0·006
	0·11	0·06	0·11	0·04	3	0·003
	0·19	0·06	0·06	0·36	4	0·002
	0·11	0·08	0·13	0·01	4	0·011
	0·11	0·06	0·04	0·01	4	0·008
	0·10	0·05	0·03	0·01	4	0·007
	0·07	0·05	0·03	<0·01	2	0·008
	0·07	0·06	0·02	"	4	0·008
	0·09	0·08	0·04	"	2	0·008
	0·08	0·07	0·11	"	3	0·010
	0·09	0·06	0·08	"	3	0·007
	0·12	0·03	0·04	"	4	0·010
	0·02	<0·01	0·02	"	2	0·007
	0·24	0·01	0·10	0·01	<1	0·010
	0·04	0·01	0·04	0·01	1	0·007
	0·08	0·01	0·10	0·03	1	0·012
	0·07	0·02	0·08	0·02	1	0·012
	0·10	0·02	0·06	0·02	1	0·006
	0·07	0·01	0·03	0·01	<1	0·005
	0·06	0·02	0·09	0·07	2	0·007
	0·03	0·02	0·03	<0·01	<1	0·006
	0·07	0·05	0·05	0·01	3	0·004
	0·04	0·03	0·05	<0·01	3	0·004
	<0·01	0·02	0·02	"	1	0·001
347·5	0·05	0·05	0·04	"	2	0·004

743224

5 cm

I.P DATA

- Chargeability
- Resistivity

MAGNETICS

- 5000 γ Scale
- 1000 γ Scale

SOIL GEOCHEMISTRY

- Sn
- Cu
- Pb
- Zn
- As
- W

Section looking N.W.

NOTE: Distances slope, not horizontal

LEGEND

- VOLCANICLASTIC SEDIMENTS
  - Strongly magnetic zones
  - Non magnetic zones
- CHERT
- MOTTLED ZONES
- CARBONATE ZONE
  - Minor chert and calc-silicates
- CALC SILICATES
- CLAY
  - Weathered carbonate and / or calc-silicates
- SKARN MINERALISATION
  - Magnetite, pyrrhotite and phlogopite
- FAULT ZONE
- MEREDITH GRANITE

82-1797
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RENISON LIMITED 2688

E.L. 2/63 MT. LINDSAY LINE PROFILE
LINE M.L.7
SHOWING D.D.H. 50, 51, 55, 58 & 59.

TRENDING 043·5° RMG, LOOKING WEST

GEOLOGIST :	L.Martin
DRAUGHTSMAN :	T.G.D.S.
DATE :	JUNE 1982
REVISIONS :	

SCALE 1:1000 METRES

DRAWING No. FIG 8a.)

2689

743225

5 cm

I.P. DATA

〜 Chargeability

- - - Resistivity

MAGNETICS

〜 5000 γ Scale

- - - 1000 γ Scale

SOIL GEOCHEMISTRY

Sn

Cu

Pb

Zn

As

W

LEGEND

VOLCANICLASTIC SEDIMENTS
Strongly magnetic zones
Non magnetic zones

CHERT

MOTTLED ZONES

CARBONATE ZONE
Minor chert and calc - silicates

CALC SILICATES

CLAY
Weathered carbonate and / or calc - silicates

SKARN MINERALISATION
Magnetite, pyrrhotite and phlogopite

FAULT ZONE

MEREDITH GRANITE

Section looking N.W.

NOTE: Distances slope, not horizontal

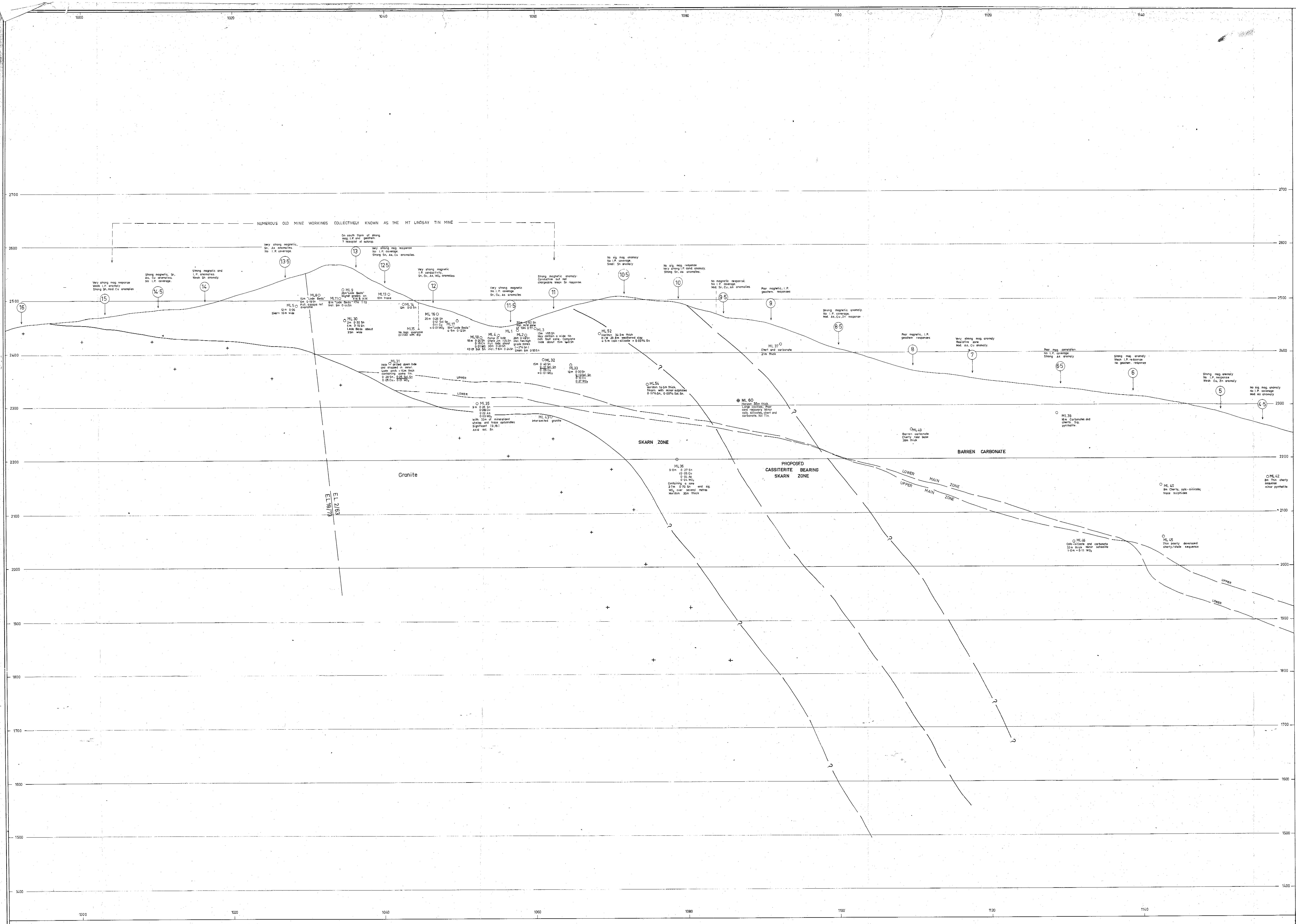
Geology & Topography projection from 25mE. of profile section.

82-1797 (Vol 3/4)

RENISON LIMITED 2689

E.L. 2/63 MT. LINDSAY LINE PROFILE
LINE M.L.9·5
SHOWING D.D.H. M.L. 19 & 60
TRENDING 038·5° RMG, LOOKING NORTH-WEST

GEOLOGIST : L.Martin
DRAUGHTSMAN : T.G.D.S.
DATE : June, 1982
SCALE 1:1000 METRES
REVISIONS :
DRAWING No. FIG. 8 b.)



1. Surface shown is projected outcrop position of main ore zone.
2. Positions where traverse lines cross outcrop are shown thus: ⑨↓

   Geophysical and geochemical responses obtained on traverse lines across the outcrop position are also shown.
3. ○ ML 33
   Centre of ore zone diamond drill hole intersection point.

   Thicknesses shown are estimated true thicknesses.
4. ML 1 to ML 33 were drilled by Aberfoyle between 1962-69 and all data relating to these holes should be regarded as approximate only.

FOR AN OREBODY 10 m WIDE

A SQUARE THIS BIG ON THIS

PROJECTION WOULD REPRESENT

1,000,000 tonnes

TONNAGE POTENTIAL GUIDE

5 cm

1. Projection plane runs grid N.W.-S.E. and looks N.E.
2. Grid and R.L. systems used are Renison Mine systems.
3. Projection limits and section lines correspond to those of the Mt. Lindsay 1:2000 base plan M 16.

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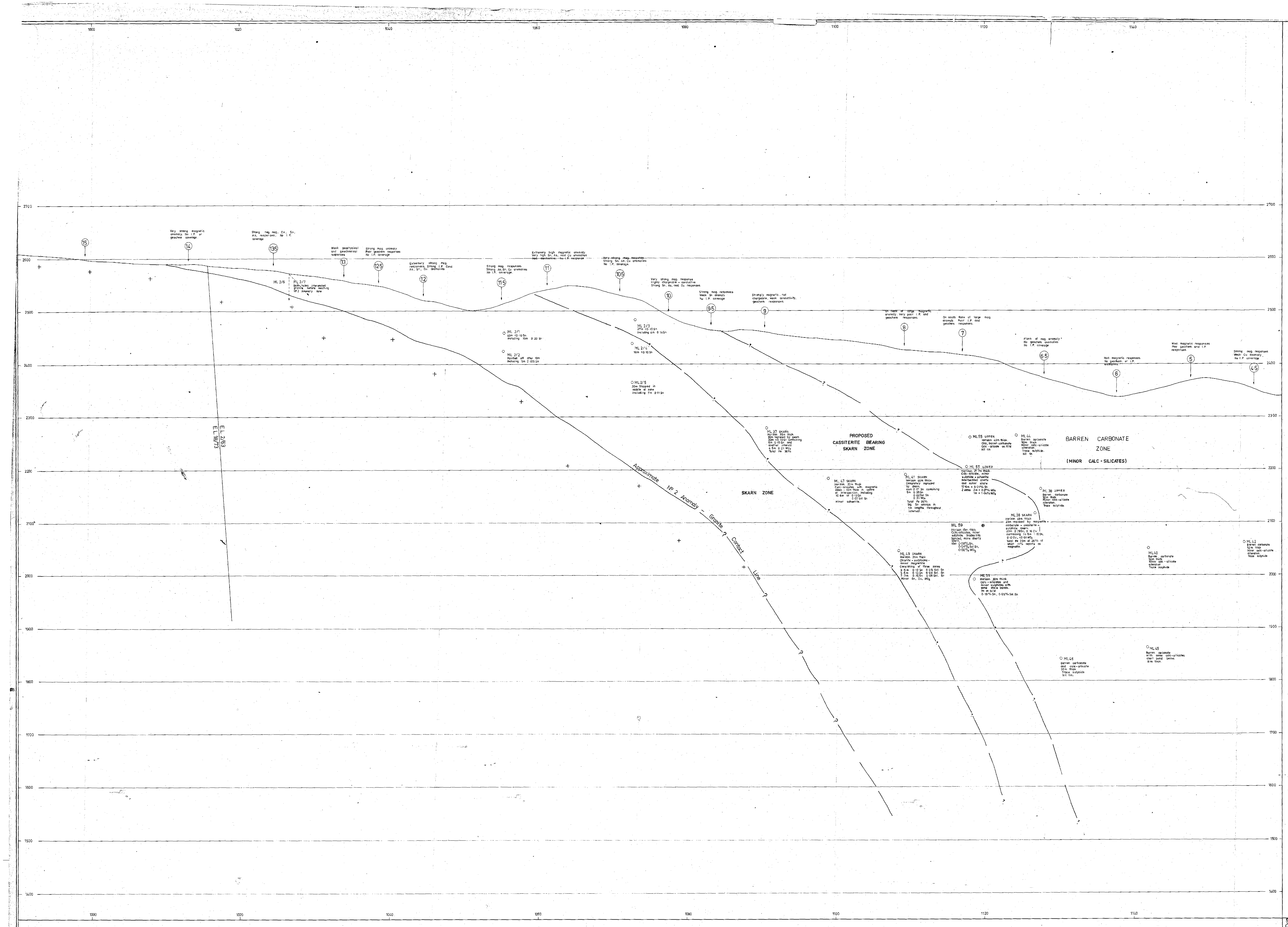
RENISON LIMITED 2690

743226

MT LINDSAY PROJECT
MAIN ORE ZONE
LONGITUDINAL PROJECTION

GEOLOGIST	: R.R. Schellekens	SCALE 1:2000 METRES 40 0 40 80
DRAUGHTSMAN	: J.M. Matthews	
DATE	: July 1979	
REVISIONS	: Geology revised by L.A. Martin JUNE 1982.	DRAWING No. FIG. 9.)

2690



1. Surface shown is projected outcrop position of Nº 2 Anomaly zone.
2. Positions where traverse lines cross outcrop are shown thus: ⑨

   Geophysical and geochemical responses obtained on traverse lines across the outcrop position are also shown.
3. ○ ML 33

   Centre of ore zone diamond drill hole intersection point

   Thicknesses shown are estimated true thicknesses.
4. Holes ML 2/1 to 2/7 were drilled by Aberfoyle in 1968-69.

   Complete assays are not available.

743227

FOR AN OREBODY **30 m** WIDE

A SQUARE THIS BIG ON THIS

PROJECTION WOULD REPRESENT

2,000,000 tonnes

TONNAGE POTENTIAL GUIDE

5 cm

2691

1. Projection plane runs grid N.W.–S.E. and looks N.E.
2. Grid and R.L. systems used are Renison Mine systems.
3. Projection limits and section lines correspond to those of the Mt. Lindsay 1:2000 base plan M16.

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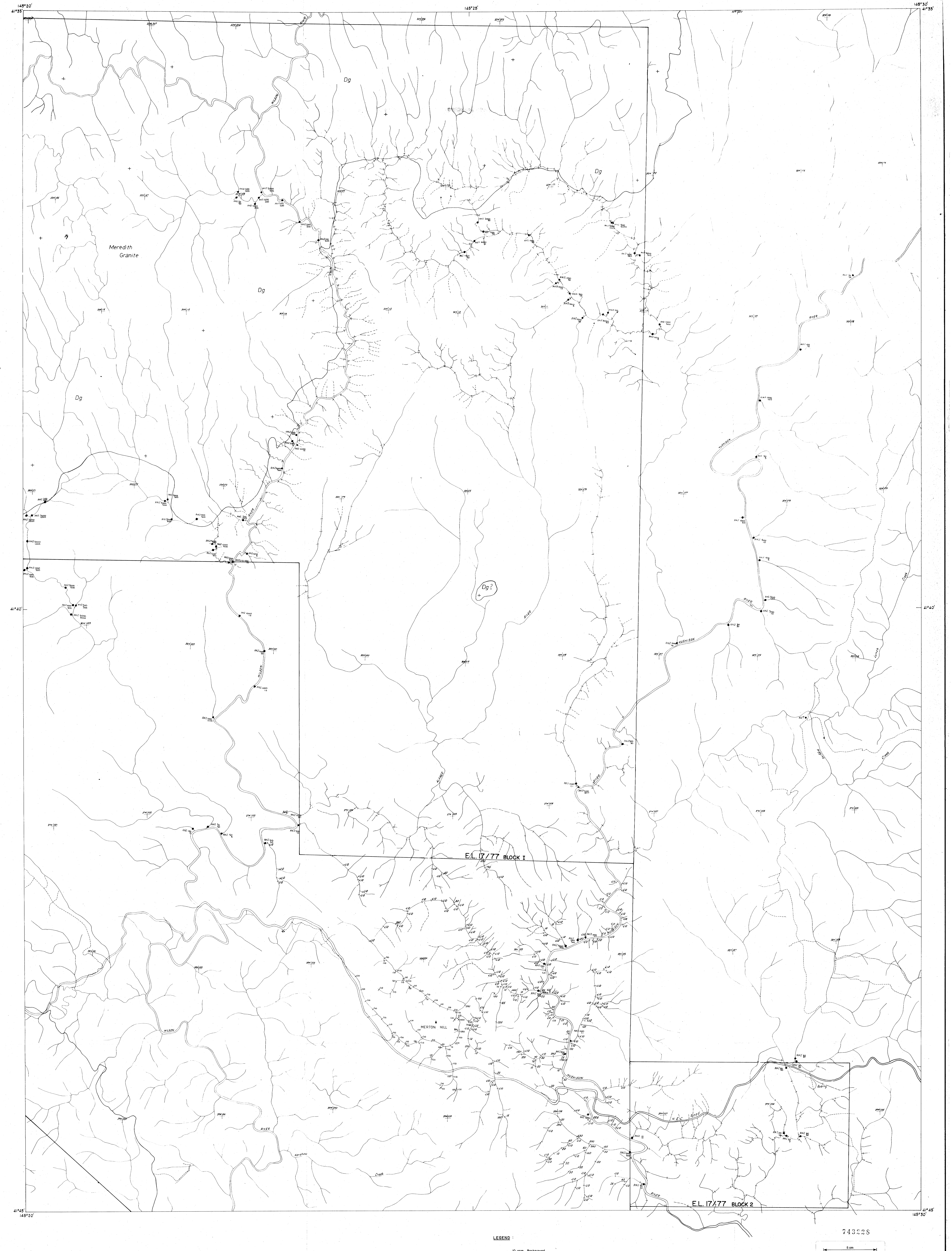
C(Vol 3(4)

RENISON LIMITED 2691

MT. LINDSAY PROJECT
Nº 2 ANOMALY
LONGITUDINAL PROJECTION

GEOLOGIST	: R.R. Schellekens	SCALE 1:2000 METRES 40 0 40 80
DRAUGHTSMAN	: J.M. Matthews	
DATE	: July 1979	
REVISIONS	: Geology revised by L.A. Martin JUNE 1982.	DRAWING No. FIG. 10.)

2692



743228

5 cm

LEGEND :

10 ppm Background

☐ >60 ppm Sn - Slightly anomalous.

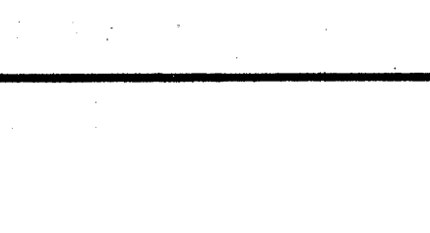
☐ >120 ppm Sn - Highly anomalous.

—┼— Wilson River - Stream Sediment Sampling - Renison Ltd. (1981, 1982)
P - Panned Sample

—┼— MH Merton Hill Orientation Survey - Renison Ltd. (1980)

—●— A.N.Z. Exploration Pty. Ltd. - Stream Sediment Sampling (1976)

ANZ x - Panned Sample
y - Stream Sediment Sample



N

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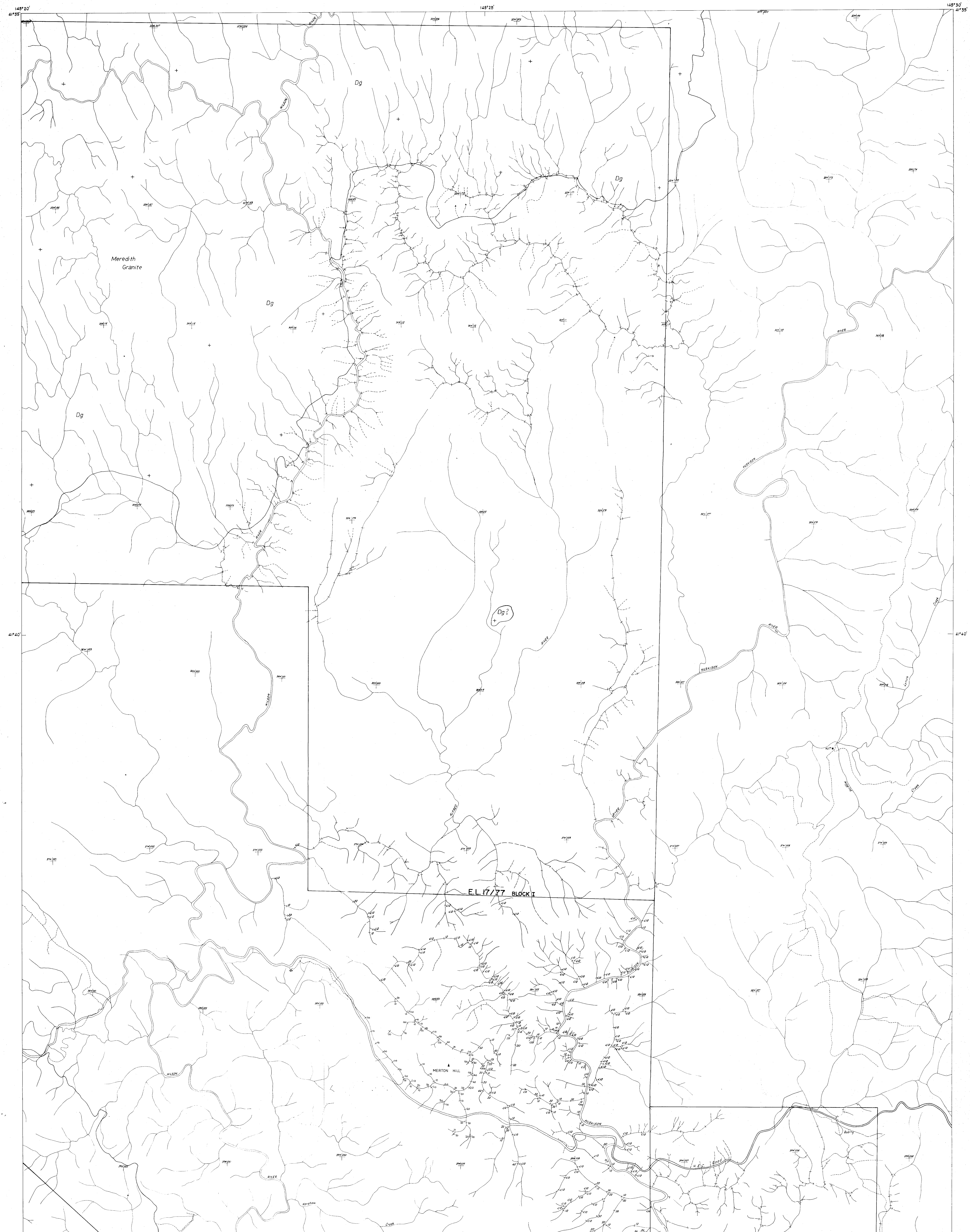
RENISON LIMITED 2692

MEREDITH GRANITE AREA

STREAM SEDIMENT SAMPLING - p.p.m. Sn

GEOLOGIST : L. MARTIN	SCALE 1: 15,000 METRES (Approximate) 200 0 200 400 600
DRAUGHTSMAN : E.V. & T.G.D.S.	
DATE : April 1982	
REVISIONS :	DRAWING No. WR 203 FIG. (1a)

2693



743229

LEGEND:

10 ppm Background

☐ > 30 ppm As - Moderately anomalous.

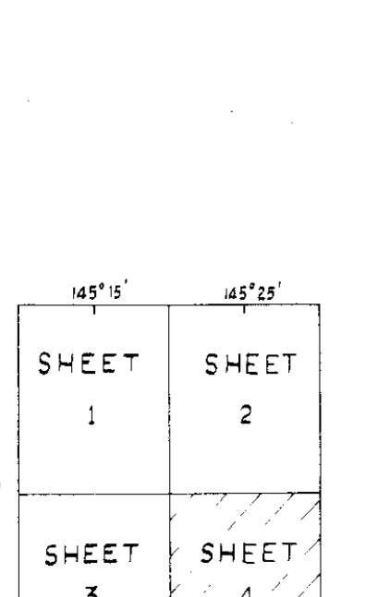
☐ ≥ 50 ppm As - Highly anomalous.

—+— Wilson River - Stream Sediment Sampling - Renison Ltd. (1981,1982)
P-Panned Sample

—+ MH Merton Hill Orientation Survey - Renison Ltd (1980)

—●— A.N.Z. Exploration Pty. Ltd. - Stream Sediment Sampling (1976)

ANZ
x - Panned Sample
y - Stream Sediment Sample



5 cm

82-1797
CVol 3/4

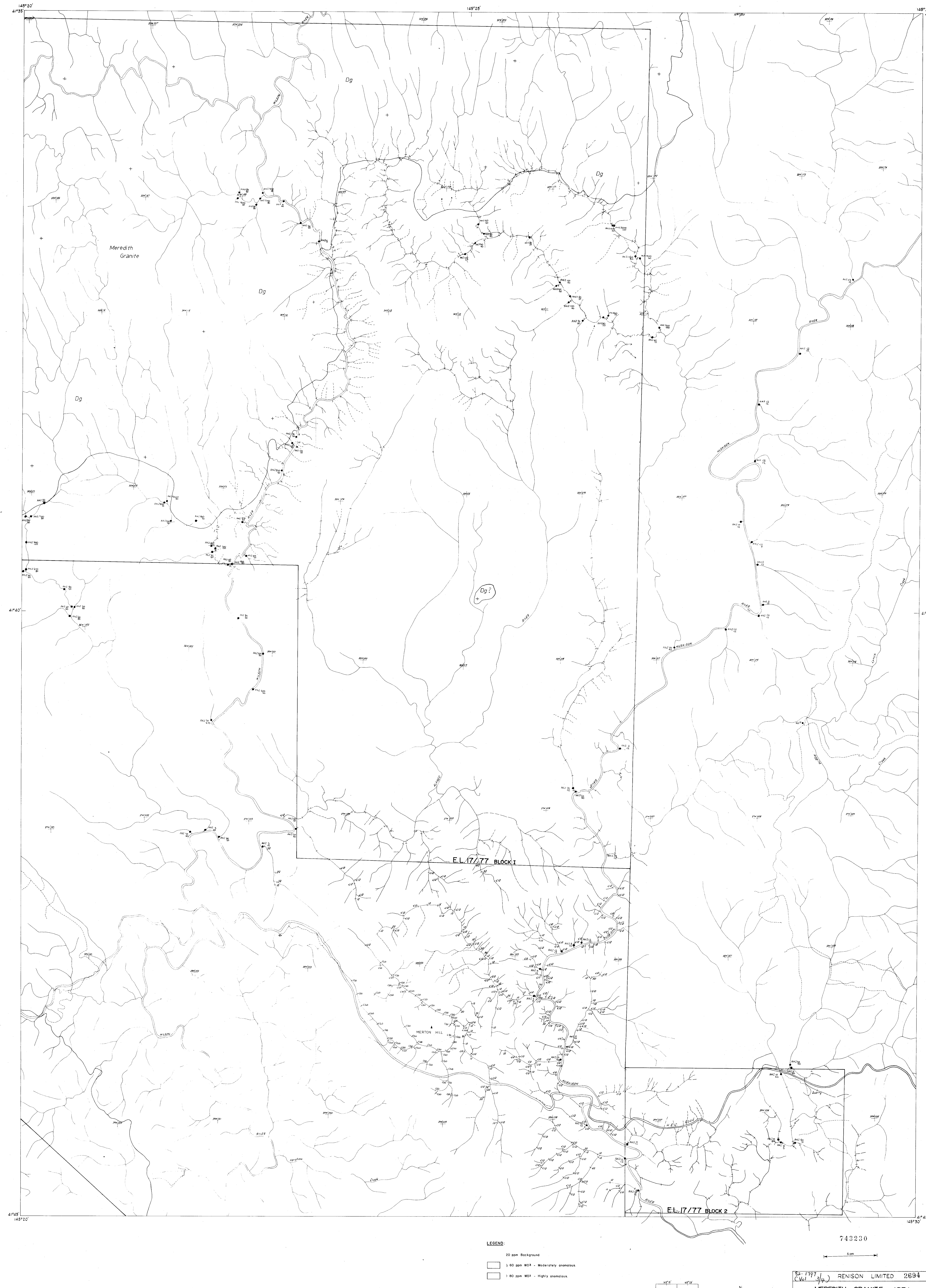
RENISON LIMITED 2693

MEREDITH GRANITE AREA

STREAM SEDIMENT SAMPLING – p.p.m As

GEOLOGIST	: L. MARTIN	SCALE 1:15,000 METRES (Approximate) 200 0 200 400 600
DRAUGHTSMAN	: E.V. & T.G.D.S.	
DATE	: April 1982	
REVISIONS	:	DRAWING No. WR 207 FIG. 11(6.)

2694



743230

5 cm

LEGEND:

20 ppm Background

☐ ⩾ 60 ppm WO3 - Moderately anomalous.

☐ ⩾ 80 ppm WO3 - Highly anomalous.

Wilson River - Stream Sediment Sampling - Renison Ltd. (1981, 1982) P-Panned Sample

MH Merton Hill Orientation Survey - Renison Ltd. (1980)

A.N.Z. Exploration Pty. Ltd. - Stream Sediment Sampling (1976)

ANZ x - Panned Sample
y - Stream Sediment Sample

145°15'	145°25'
SHEET 1	SHEET 2
SHEET 3	SHEET 4

41°35'

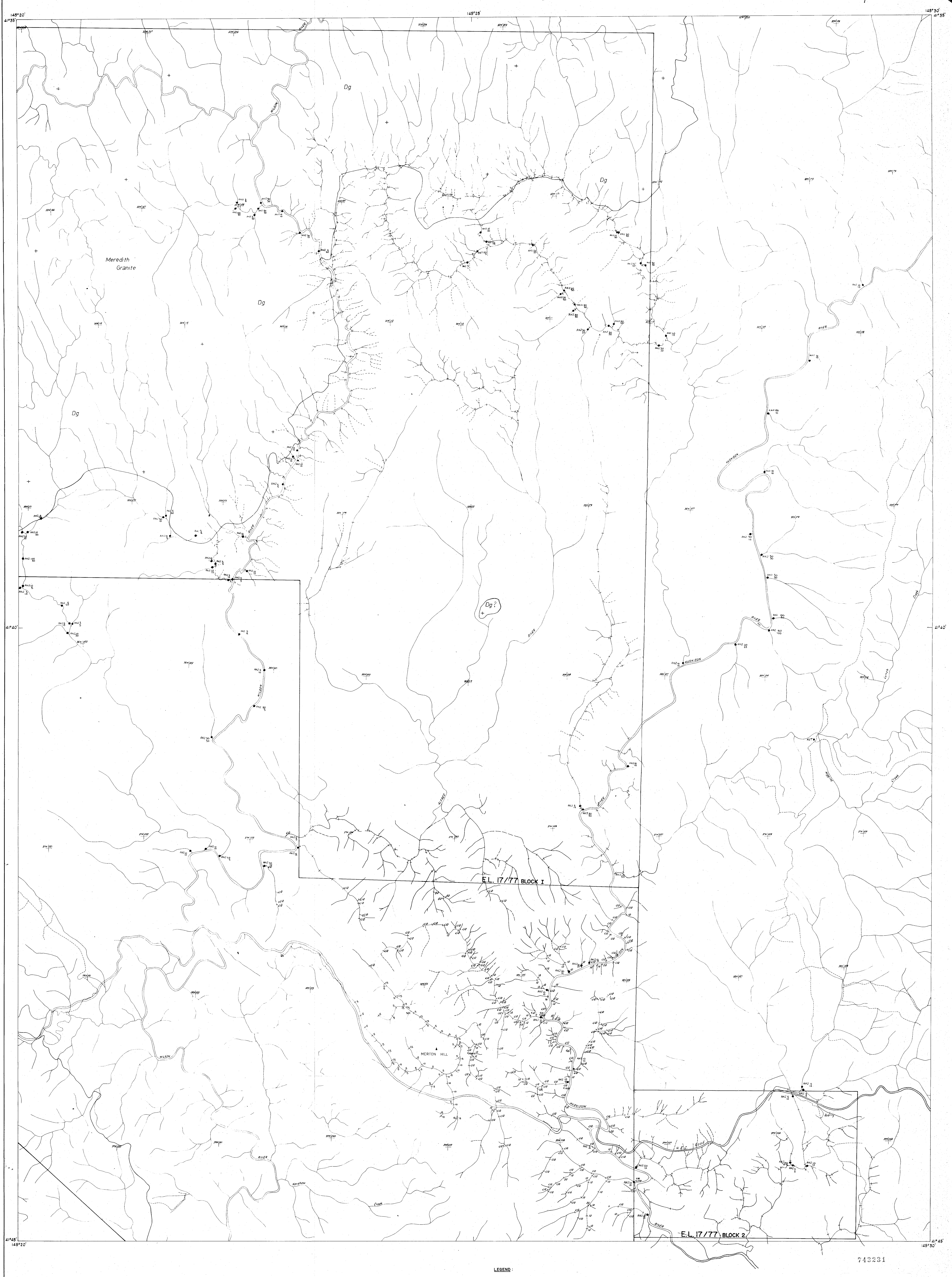
N

82-1797 (Vol 3/4) RENISON LIMITED 2694

MEREDITH GRANITE AREA
STREAM SEDIMENT SAMPLING - p.p.m WO³

GEOLOGIST : L. MARTIN
DRAUGHTSMAN : E.V. & T.G.D.S.
DATE : April 1982
REVISIONS :
SCALE 1:15,000 METRES (Approximate) 200 0 200 400 600
DRAWING No. WR 208 FIG 11 c.)

2695



743231

LEGEND:

5 ppm Background

☐ > 10 ppm Cu - Moderately anomalous.

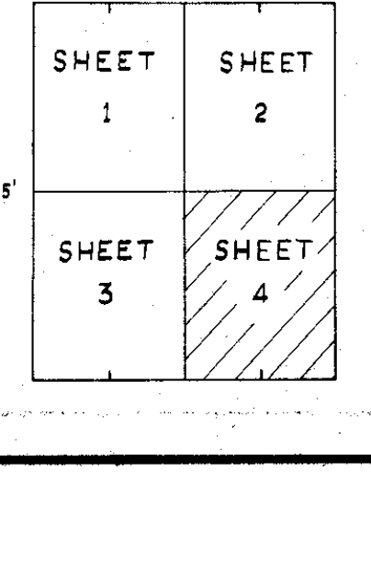
☐ ≥ 30 ppm Cu - Highly anomalous.

Wilson River - Stream Sediment Sampling - Renison Ltd. (1981, 1982)
P - Panned Sample

MH Merton Hill Orientation Survey - Renison Ltd. (1980)

●— A.N.Z. Exploration Pty. Ltd. - Stream Sediment Sampling (1976)

ANZ · x - Panned Sample
y - Stream Sediment Sample



5 cm

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RENISON LIMITED 2695

MEREDITH GRANITE AREA

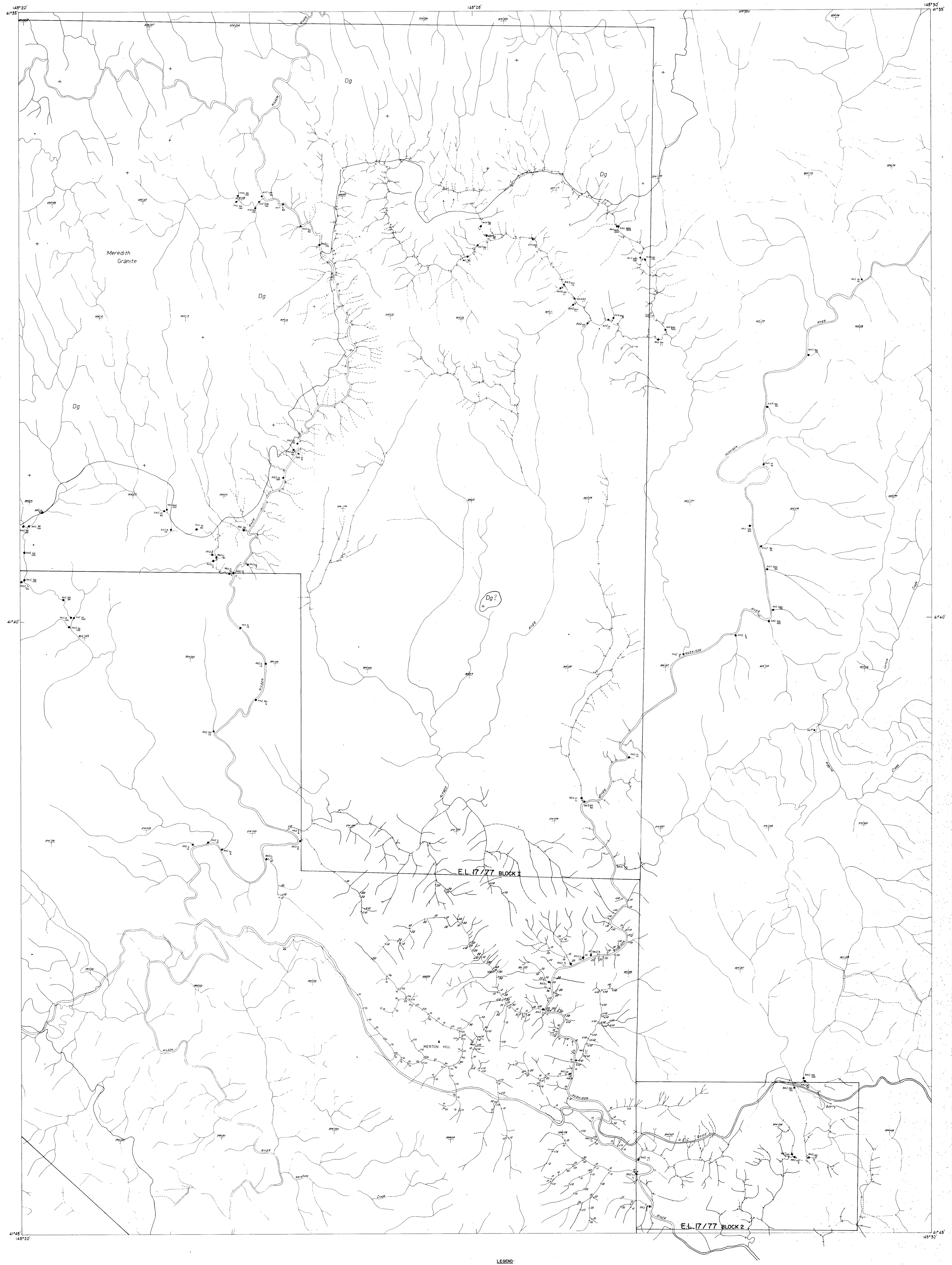
STREAM SEDIMENT SAMPLING – p.p.m Cu

GEOLOGIST : L. MARTIN
DRAUGHTSMAN : E.V. & T.G.D.S.
DATE : April 1982
REVISIONS :

SCALE 1:15,000 METRES (Approximate)
200 0 200 400 600

DRAWING No.
WR 204
FIG. 11 d.)

2697



LEGEND:

10 ppm Background

▭ > 30 ppm Pb - Moderately anomalous

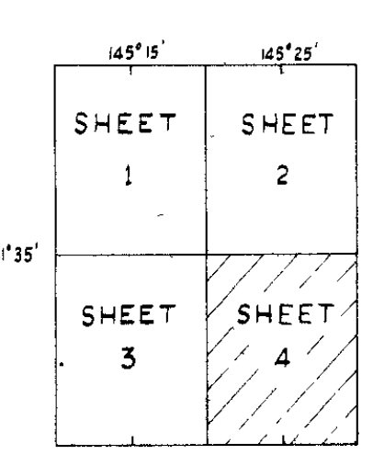
▭ > 50 ppm Pb - Highly anomalous

Wilson River - Stream Sediment Sampling - Renison Ltd (1981,1982)
P-Panned Sample

MH Merton Hill Orientation Survey - Renison Ltd (1980)

● ANZ Exploration Pty Ltd - Stream Sediment Sampling (1976)

ANZ x - Panned Sample
y - Stream Sediment Sample



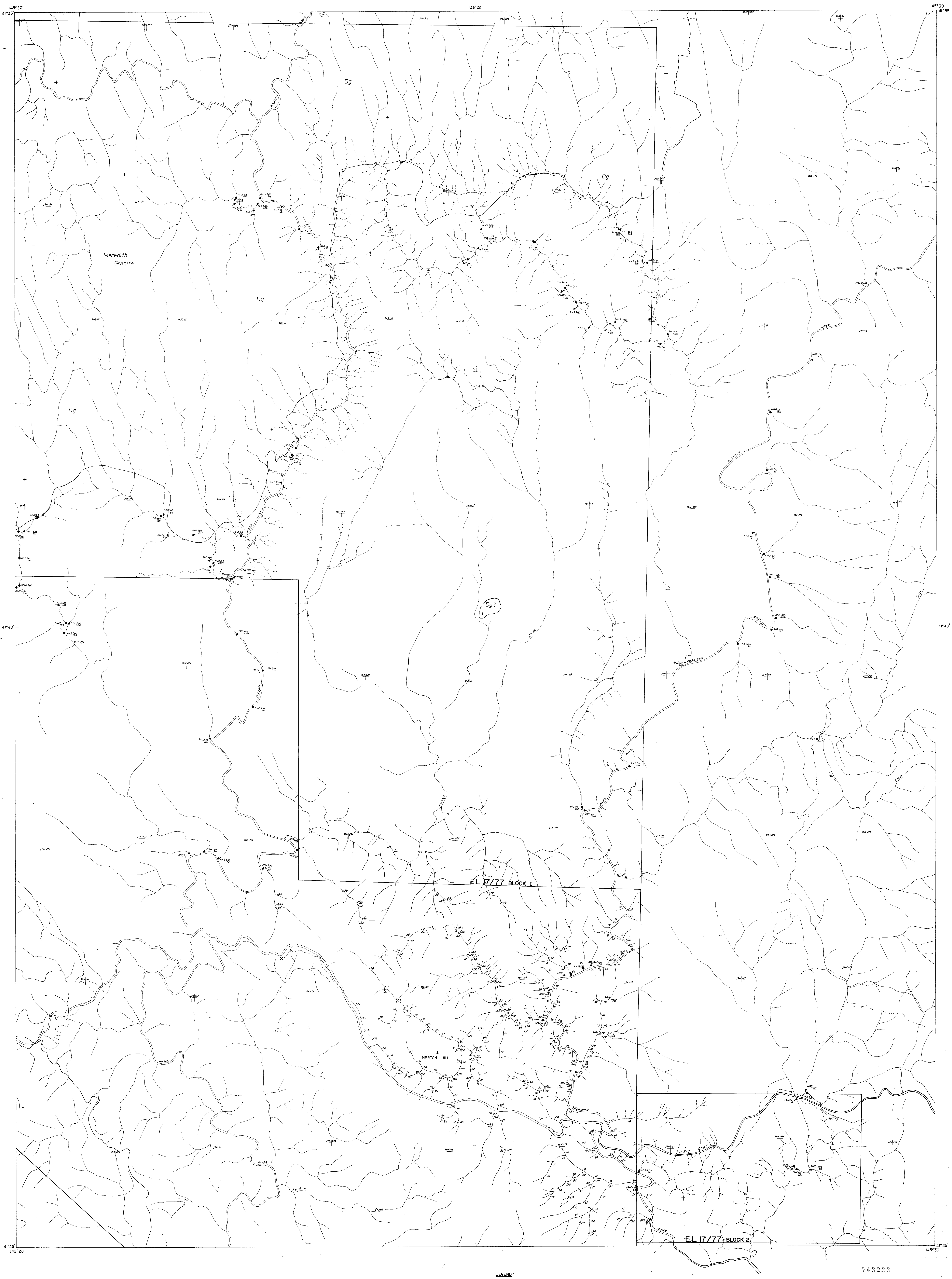
743232

82-1797 (Vol 3/4) RENISON LIMITED 2697

MEREDITH GRANITE AREA
STREAM SEDIMENT SAMPLING – p.p.m Pb

GEOLOGIST : L MARTIN
DRAUGHTSMAN : E.V & T.G.D.S
DATE April 1982
SCALE 1:15,000 METRES (Approximate) 200 0 200 400 600
REVISIONS
DRAWING No. WR 208
FIG. 11 e.)

2696



743233

5 cm

LEGEND:

15 ppm Background

☐ > 60 ppm Zn - Moderately anomalous.

☐ > 100 ppm Zn - Highly anomalous.

Wilson River - Stream Sediment Sampling - Renison Ltd (1981, 1982)
P-Panned Sample

MH Merton Hill Orientation Survey - Renison Ltd (1980)

● ANZ Exploration Pty Ltd. - Stream Sediment Sampling (1976)

ANZ x - Panned Sample
y - Stream Sediment Sample

145°15'	145°25'
SHEET 1	SHEET 2
SHEET 3	SHEET 4

41°35'

N

82-179 7/
(Vol 3/4)

RENISON LIMITED 2696

MEREDITH GRANITE AREA

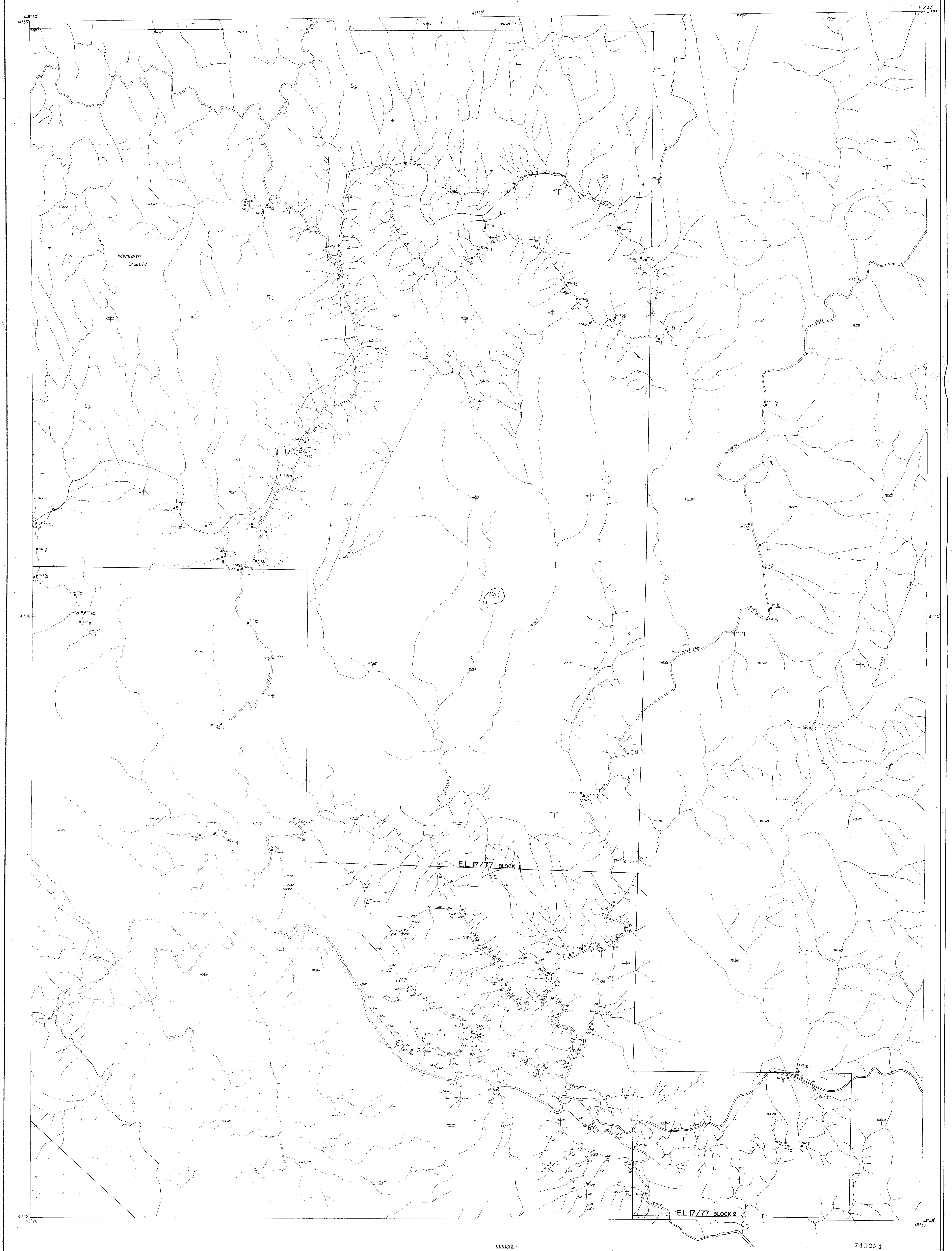
STREAM SEDIMENT SAMPLING – p.p.m Zn

GEOLOGIST : L. MARTIN
DRAUGHTSMAN : E.V. & T.G.D.S.
DATE : April 1982
REVISIONS :

SCALE 1:15,000 METRES (Approximate) 200 0 200 400 600

DRAWING No. WR 206
FIG. 11 (.)

2698



LEGEND:

10 ppm Background

☐ ≯ 50 ppm Ni - Moderately anomalous.

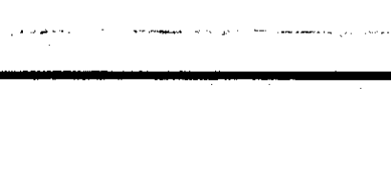
☐ ≯ 100 ppm Ni - Highly anomalous.

—┼— Wilson River - Stream Sediment Sampling - Renison Ltd. (1981,1982)
P - Panned Sample

—┼MH— Merton Hill Orientation Survey - Renison Ltd. (1980)

—●— A.N.Z. Exploration Pty. Ltd. - Stream Sediment Sampling (1976)

ANZ
x - Panned Sample
y - Stream Sediment Sample



743234

5 cm

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RENISON LIMITED 2698

MEREDITH GRANITE AREA

STREAM SEDIMENT SAMPLING – p.p.m Ni

GEOLOGIST : L. MARTIN
DRAUGHTSMAN : E.V. & T.G.D.S.
DATE : April 1982
REVISIONS :

SCALE 1:15,000 METRES (Approximate)
200 0 200 400 600

DRAWING No.
WR 209
Fig. 11 g.)

743235

of M A.O. C.G. E.O. D.S.M.E.
d
swered 26 JUL 1982
E & IL
No: 5094/82

A SUMMARY REPORT ON THE 1982 GEOPHYSICAL SURVEYS OVER THE PARSON'S HOOD INFILL LINES, HARMAN RIVER GRID, E.L. 2/63

for

RENISON LIMITED

by

MITRE GEOPHYSICS PTY. LTD.

RN/MG82/07
July, 1982

MITRE GEOPHYSICS P^TY L^TD
MINERAL EXPLORATION AND ENGINEERING CONSULTANTS
BUGGS LANE ELLIOTT TASMANIA 7325 PHONE 004-363143

A SUMMARY REPORT ON THE 1982 GEOPHYSICAL SURVEYS OVER THE PARSON'S HOOD INFILL LINES, HARMAN RIVER GRID, E.L. 2/63

for

RENISON LIMITED

by

Dr. J.R. BISHOP

RN/MG82/07
July, 1982

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The 1982 Dipole-Dipole IP Survey	5
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FIGURES

1. Locality Plan (1:50,000).
2. Gradient Array IP chargeability contours (1:5000).
3. Gradient Array IP resistivity contours (1:5000).
4. Dipole-dipole IP coverage (1:10,000).
5. Dipole-dipole IP data; line 5 (25E).
6. Dipole-dipole IP data; line 5 (250E).
7. Dipole-dipole IP data; line 5 (2500W).
8. Dipole-dipole IP data; line 9 (125E).
9. Dipole-dipole IP data; line 12 (1600W).

Figures referred to but not included in this report

A. Composite Profile, Harman River Grid, Line 4 (1:5000).
B. Composite Profile, Parson's Hood Grid, Line 5 (1:2000)
C. Composite Profile, Parson's Hood Grid, Line 6 (1:2000)
D. Composite Profile, Parson's Hood Grid, Line 7 (1:2000).
E. Composite Profile, Harman River Grid, Line 8 (1:5000)
F. Composite Profile, Parson's Hood Grid, Line 9 (1:2000)
G. Composite Profile, Harman River Grid, Line 10 (1:5000)
H. Composite Profile, Parson's Hood Grid, Line 11 (1:2000)
I. Composite Profile, Parson's Hood Grid, Line 12 (1:2000)
J. Composite Profile, Parson's Hood Grid, Line 13 (1:2000)
K. Composite Profile, Parson's Hood Grid, Line 14 (1:2000)
L. Magnetic contour plan of the Parson's Hood Grid (1:5000).

ABSTRACT

Several strong gradient array IP and magnetic anomalies were defined by (1980) surveys of the Harman River Grid. For both surveys, the broad responses, persisting for several hundreds of metres, were indicative of formational features. Near Parson's Hood, anomalous tin values were detected in residual soils and in 1982, the Parson's Hood infill lines were cut and the area surveyed by dipole-dipole IP and magnetics.

The (1982) IP defined several anomalies with high chargeabilities (up to 100-200 mV/V) and some areas of low resistivity (less than 20 ohm-m; not necessarily associated with the high chargeabilities) were also defined. The magnetics generally confirmed the large responses (several thousands of gammas) of the Harman River Grid survey but also detected some anomalies with shorter strike length on the infill lines.

Skarns are the expected type of mineralisation: while these should be both chargeable and magnetic, experience in nearby areas in a similar geological environment (e.g. Mt. Lindsay) has shown that responses over mineralisation may be (much) smaller than anomalies generated by graphitic shales and magnetic cherts, etc. Thus other parameters such as geochemistry are required to help distinguish geophysical anomalies due to mineralisation from those due to geologic noise.

The project geologist (L. Martin) has chosen two drill targets: line 6 (2500W) and line 12 (1600W). The former has moderate chargeability-resistivity responses but associated with the IP are good magnetic and geochemical anomalies. The second site, line 12 (1600W), has very high chargeabilities deep in the pseudosection (200mV/V at n = 5) with an ill-defined resistivity response. There is no magnetic anomaly over the area, but 100m.-150m. to the west there is a strong magnetic anomaly with near coincident geochemical (tin and base metal) anomalies. A broad skarn zone with differentiated magnetic and sulphide bearing zones has been suggested. The IP anomaly indicates a deep source, but is poorly defined. A further dipole-dipole IP survey is recommended, using a larger dipole spacing (e.g. 60m.). Similarly, the magnetic anomaly is poorly defined, being a single-point anomaly. It is recommended

that a more detailed magnetic survey be carried out (both along line and between lines) since a quantitative interpretation may assist the drill hole siting (this latter suggestion also applies to line 6 (2500W)).

There remain several geophysically anomalous areas both within and without the Parson's Hood Grid which do not have associated geochemical responses, but which otherwise appear worthy of follow up. It is recommended that an EM survey be conducted over such areas (and including, for comparative purposes, those anomalies to be drilled). Such a survey would be unlikely to find a deposit belonging to the range of sulphide-poor, iron oxide-rich skarns, but should detect the more prospective (?) massive sulphide (Renison-style) deposits (presumably at depth, since there is no geochemical response).

INTRODUCTION

Parson's Hood Grid is a more detailed area in the south-western corner of the Harman River Grid. It consists of a number of short intermediate lines plus the western ends of the original Harman River Grid lines between lines 4 and 14. The area is close to the contact between the Meredith Granite and the Crimson Creek Formation (see Figure 1).

The 1982 geophysical surveys consisted of magnetics and dipole-dipole IP which were located over high amplitude IP anomalies, defined in 1980 by a gradient array IP survey over the Harman River Grid.

EXPLORATION TARGET AND GEOLOGIC SETTING

A tin or tin-tungsten skarn deposit is the expected style of mineralisation. The host rock for any such deposit at Parson's Hood is the Crimson Creek Formation. Blissett (1962) described this as consisting of a "thick series of purple and green mudstone, greywacke and slate" in the Pieman River area. And as quartzites and siltstones overlain by mudstone, greywacke and calcareous shale, near the Wilson River (to the south east of Parson's Hood). On the Harman River Grid composite profiles, the Formation near the granite contact has been described as "hornfelsed, volcaniclastic sediments, minor gabbro".

Renison Ltd. has looked for similar mineralisation elsewhere in the Crimson Creek and other Cambrian sediments and the experiences obtained there should be helpful in gaining a better understanding of the potential of the Parson's Hood Grid. One such area is at the Mt. Lindsay Mine where a quartz-pyrrhotite-pyrite-magnetite-pyroxene-cassiterite lode occurs within Cambrian sediments about 1 km. from the contact with the Meredith Granite. Schellekens and Newnham (1974) noted that sulphide mineralisation is widespread, "particularly in the 1-2 km. wide metamorphic aureole surrounding the Meredith Granite." They noted that several rock types were magnetic and that the magnetite content generally increased towards the granite. Also there were several occurrences of graphitic shales.

IP and magnetic surveys have been carried out over most of the Mt. Lindsay Grid, and as might be expected from the above description, a large number of anomalies were recorded by both techniques. An examination of some of the Mt. Lindsay composite profiles (lines 10, 10.5, 11, 11.5, 12 and 14) shows that targets with good geochemical responses (Sn, As and base metals) were due to mineralisation, while those with only geophysical responses were usually due to graphitic shales and magnetic cherts. Thus at Mt. Lindsay, geochemical anomalies were good discriminators of the geophysical anomalies. Further, some geophysical anomalies over known mineralised zones are not as strong as elsewhere on the grid, e.g. the IP responses over the 'Main Lode' and 'No. 2 Anomaly' on line 11 are quite insignificant compared with those on the rest of the line (both zones have good geochemical anomalies).

Good IP responses might not be expected over magnetite rich skarns and from concise descriptions on the composite profiles, it seems that at least some of the mineralisation falls into this category. (Kwak and Askins (1981) have suggested that magnetite rich skarns will occur close (<250m.) to the granite contact, while sulphide rich ones will occur further away (>700m.). They also suggest that only the latter are potentially economic. However near the Mt. Lindsay Mine, which has an indicated tonnage of about 200,000 tonnes of .8% Sn, both types apparently occur adjacent to, and along strike from, each other (Roberts, pers. comm.)).

Similarly large IP and magnetic anomalies (chargeabilities up to 200mV/V, resistivities of less than 50 ohm-m and magnetic responses of several thousands of gammas) have been recorded on the nearby Misty Valley and Harman River Grids. From the Mt. Lindsay experience (and generally speaking), a geophysical target has a much greater potential if there is also a good geochemical response. However a lack of such response (and the Parson's Hood Grid has weaker geochemical anomalies than the Mt. Lindsay Grid) would not preclude drilling, and nor would a proliferation of responses assist drill siting. Thus in some areas geophysics may become the dominant, or even sole, factor for selection of targets; in which case, a combination of good responses (electrical and magnetic) is a good criterion. In the areas mentioned above, there are several examples of such anomalies: it is suggested in the Conclusions that the EM technique may prove a useful discriminant for these anomalies and for target selection and definition generally.

PREVIOUS GEOPHYSICS

The Harman River Grid was surveyed by gradient array IP and magnetics in February 1980, at a 400m. line, and 25m. station spacing. The results have been presented as chargeability and resistivity contours at 1:5000 scale and as profiles at 1:2000 (Howland-Rose, 1980). The profiles are also on Renison's 1:5000 composite profiles, together with the magnetic data.

The gradient array IP survey defined a number of strong chargeability/ resistivity anomalies (Figures 2 and 3). In the Parson's Hood area, Howland-Rose (1980) defined two anomalous zones, 'C' and 'D' (D to the west of C, see Figure 2): each zone consists of a number of chargeability highs. Zone D, defined on line 4 only, has several peaks greater than 50 mV/V, with a maximum value, at 33.5W, of ~180mV/V (see Figure A). This peak has an associated resistivity low (down to 400 ohm-m), but elsewhere resistivities are between 1000 and 10,000 ohm-m. Zone C was defined between lines 18N and 4N, although no individual anomalies have been labelled on the southernmost line (chargeabilities up to 110mV/V and resistivities as low as 30 ohm-m). On line 6, a zone some 600m. wide has been labelled 'C15'; within this zone are several chargeability peaks greater than 100mV/V on a background of about 50mV/V, with corresponding resistivity lows down to a minimum of 200 ohm-m, but typically around 1000 ohm-m. East of C15, an unlabelled anomaly reached 300mV/V with resistivity less than 10 ohm-m. This area (13W to 14.4W) is only partly defined, since low signals, caused by the highly conductive ground, prevented any readings. Similar responses, labelled and unlabelled, occur on the lines to the north: the results from lines 4 to 14 are shown in Figures A to K.

Thus the survey defined some unusually large chargeability anomalies: zone D was generally resistive, but many responses within zone C had associated resistivity lows. The broad width of the anomalies and their persistence over many hundreds of metres indicates a formational feature. Nevertheless, the areas of very high chargeabilities and very low resistivities are excellent geophysical targets, particularly where there are also coincident magnetic responses.

THE 1982 DIPOLE-DIPOLE IP SURVEY

Scintrex carried out dipole-dipole IP surveys over 8 lines in Feb-March 1982 on the Parson's Hood area (survey no. Tas-097). A 25m. dipole spacing was used, reading to n=5. The intervals of complete coverage (i.e. intervals covered by readings from n=1 to n=5) are indicated in Figure 4 which shows that the grid is in two parts: one area covered by lines 5, 6 and 7, the other by lines 9 and 11 to 14.

The surveys on lines 5 to 7 have defined several anomalous zones, some of which have anomalous (low) resistivities (e.g. the 'base line' zone: L5 (00); L6 (25W); L7 (00), with some resistivities less than 200 ohm-m), while others are associated with high resistivities (e.g. the chargeability responses on the western ends of lines 5 and 6, with resistivities greater than 2000 ohm-m). The very broad areas of high chargeabilities, persisting for several hundreds of metres, reinforces the formational appearance of the gradient array data.

The pseudosections of lines 9 to 14 show a similarly high range of chargeabilities (though none exceed 100mV/V) and low resistivities (including one wide area of less than 40 ohm-m on line 14N). The distribution of these responses is even less well-defined than for lines 5 to 7. That is, there are no anomalies of definite shape to which may be attributed simple causative bodies; rather, the responses suggest broad variations of sulphide (?graphite) content within the rocks (hence the generally high values; most of the sampled area being chargeable, rather than the more usual case of a small target within a non-chargeable host).

MAGNETICS

The Parson's Hood infill lines were surveyed by magnetometer at a 10m. station spacing, and the results, incorporating the original Harman River Grid data, have been contoured by Scintrex (at an irregular interval) on a 1:5000 scale map (Figure L). The extra detail has largely confirmed the earlier survey, although some highs of limited strike length have been defined on all the intermediate lines.

DISCUSSION

The 1980 gradient array IP survey defined a series of very chargeable zones, some of low resistivity, within the Crimson Creek Formation close to the Meredith Granite contact. Magnetics over the Crimson Creek sediments were generally noisy (with variations of up to several thousand gammas) and several IP anomalies have coincident magnetic highs. Geochemistry was mostly poor with anomalous tin often less than 50 ppm: there were no areas with geochem zones comparable to those defined on the Mt. Lindsay Grid.

Dipole-dipole IP surveys were carried out on eight lines near the granite contact where there were coincident geochem and IP/resistivity responses and/or coincident magnetics and IP/resistivity. The more promising of the anomalies defined by this survey are shown in Figures 5 to 9: there are two anomalies from Line 5 and one each from lines 6, 9 and 12. These anomalies are briefly described below.

(1) Line 5, (25E):

This 100+mV/V anomaly has associated low resistivities (of less than 500 ohm-m) with lower values (less than 250 ohm-m) 50m. to the west. There are however three data points around the anomaly which could not be read because of the conductive conditions. The anomaly is part of a zone which extends for at least 400m. to the north, to line 7. The zone's highest chargeabilities are on line 5 and from the pseudosections, the source here may be buried. Within 100m. (downhill) of the anomaly are soil tin values of around 40 ppm (on a background of less than 10 ppm) and there are several magnetic highs (of 3000+ gammas) between 00 and 100E.

(2) Line 5 (250E):

This 100+mV/V anomaly has an associated zone, of restricted extent, of low resistivities (minimum value, less than 150 ohm-m). The chargeability source is apparently shallower than that for 5 (25E). The magnetics are noisy (variations of several hundreds of gammas) but amplitudes are low for the area (all less than 63000 gammas) and no substantial body is indicated except for one response of 65,500 gammas at 300mE, where a very shallow source is indicated. On the geochem profiles, there is a one station Sn high of about 20 ppm at 135mE with high (300+) Cu and Zn at 200mE.

(3) Line 6 (2500W):

The IP amplitude of this anomaly at 70+mV/V is much lower than the 'geologic noise' level, however there is a well defined near-coincident resistivity low of less than 200 ohm-m (see Figure 7) and a related magnetic anomaly of over 500 gammas. But perhaps most importantly (recalling the Mt. Lindsay profiles), there is also a strong well-defined tin response in the soil assays, from 2625W to 2500W (the latter being nearly 500 ppm). This anomaly, on a rating of the four factors, geochem, resistivity, chargeability and magnetics, is the only one which scores strongly on all four. (An anomaly at line 7 (00), is perhaps next with much weaker geochem and resistivity anomalies.) The project geologist (L. Martin) proposes to drill this anomaly and possible drill sites are shown in Figure 7. However it is appreciated that other factors (including topography) will also influence the drill siting (see Recommendations).

(4) <u>Line 9 (125E)</u>:

Compared with (1) and (2) described above, this 90+mV/V has an overall much lower magnitude and it is also restricted in size, however it has a well-defined resistivity low which is coincident with the chargeability, thus providing a clearly defined target (see Figure 8). The magnetics above 125E are relatively flat, although 50m. to the east and west, 2000 gamma highs indicate shallow magnetic sources. There is no geochem data.

(5) <u>Line 12 (1600W)</u>:

This anomaly has by far the highest chargeability reading, thought to be greater than 200 mV/V (no accurate measurement could be made for this, and two other readings), and this was read at n=5. However the resistivity pseudosection shows little correspondence with the chargeabilities (see Figure 9), hence the metal factor anomaly is poor, despite the single high value; in fact the metal factor results strongly reflect the very low resistivities about 150m. to the west of 1600W. Despite the very rugged topography, neither the western resistivity low, nor the lack of a low at 1600W appear to be due to topographic effects.*

This is an interesting target because it is deep-seated, however the magnetic data does not reinforce the IP; there are only minor variations around the flat background so well defined over the granite; no deep-seated magnetic source is indicated (although the broad low is interesting; several skarns at Mt. Lindsay show negative magnetic responses). It is also possible that the chargeability response is due to composite responses from very shallow sources detected by the gradient array survey at 1550W and 1675W. Anomaly 12 (1600W) is not a well defined IP target, nevertheless the area has been chosen as a drilling site since there are reasonable tin and base metal assays (50 ppm) a little over 100m. to the west and

---

* Significant topographic changes (i.e. slopes $>10^{\circ}$) can cause large changes in resistivities: topographic lows, giving rise to resistivity lows and topographic highs to higher resistivities. For example, Fox et al (1980) show a (model) example of a valley with 30° slopes (such as occur at Parson's Hood), in a uniform earth of 100 ohm-m giving a resistivity anomaly of 40 ohm-m, with flanking resistivities of 170+ ohm-m.

with these is a good, near-coincident magnetic anomaly of 2000+ gammas: it is intended to test the IP, magnetic and geochemical responses with the one hole. To verify and better define the IP anomaly, a survey with a larger dipole spacing (e.g. 60m.) should be undertaken. A quantitative interpretation of more detailed magnetic measurements might also assist the drill siting.

CONCLUSIONS AND RECOMMENDATIONS

The Harman River Grid gradient array IP survey produced a plethora of anomalies. A follow up dipole-dipole survey was carried out over a limited area near the granite contact, where there were some (moderate) geochemical anomalies. The survey defined four targets sufficiently well to site drill holes (L5 (25E), L5 (250E), L6 (2500W), L9 (125E)), however these are not necessarily the most prospective areas. Mineralisation in similar environments (e.g. Mt. Lindsay) has shown that the IP responses may be 'lost' in the background noise: that is amplitude is not a sufficient criterion for target selection. Coincidence with magnetics should provide better grounds for drilling but again, the magnetics are very variable and mineralisation, if similar to Mt. Lindsay, may not stand out above the noisy background. Thus there are two factors working against the identification of any ore deposit responses; for both magnetic and electric surveys these are:

(i) the large numbers of anomalies generated within the host rocks and

(ii) the fact that responses due to potentially economic mineralisation may be smaller than the background levels.

That is, both target and host are chargeable and magnetic and hence IP and magnetic surveys do not (readily) discriminate between them. Therefore other parameters should be sought which are, if possible, peculiar to the mineralisation. Geochemistry is the obvious parameter and the combination of coincident or associated (within 120m.) IP, magnetic and geochemical anomalies has resulted in two proposed drill holes: line 6 (2500W) and line 12 (1600-1700W).

For deeply buried mineralisation, no geochemical response would be expected, and the IP and magnetic responses would be reduced. For such bodies, parameters such as conductivity or density might help to distinguish genuine targets from geologic noise. Before elaborating on these techniques, some further discussion of their target is given below.

The ideal exploration target is a large Renison-style deposit, where massive pyrrhotite has replaced thick carbonate beds. From this occurrence there is presumably a scale down through narrow replacement or fault bounded massive sulphides to (?) disseminated sulphides (assuming some relationship between tin grade and percent sulphide). There is also a range of skarns, poor in sulphides, but which may nevertheless contain significant tin or tungsten (Taylor, 1979). (We may include in the latter category sphalerite-rich skarns since sphalerite is not conductive or chargeable). All four geophysical methods (IP, magnetics, gravity and EM) would respond to the first group, with EM and gravity in particular having decreasing amplitudes down the scale of deposit. EM and possibly IP would not respond to the second group.

Thus gravity and EM surveys may be used as quite specific techniques for high grade ore: the former is expensive and is not often used (in Tasmania) in a regional sense. (However the method is used in detailed surveys to test particular areas for massive sulphides.) The same does not apply to the EM technique which is commonly used on a regional basis. And apart from the deep deposits which might not be so obvious as IP or magnetic anomalies in the Parson's Hood environment, EM methods should readily detect narrow veins of massive sulphides which may go undetected by IP or magnetic surveys in this environment. This is not to suggest that there will not be 'false' EM anomalies, that is responses due to conductors other than mineralisation: both the gradient array and dipole-dipole resistivity results show large areas of conductive (non-chargeable) zones (possibly zones of clayey alteration or weathering, Martin, (pers. comm.)) and graphitic shales are likely. However from an EM survey I would expect fewer and more specific responses than has occurred from either the IP or magnetic surveys.

To better define the targets for the two proposed drill holes, it is recommended that more detailed magnetic measurements be made (both along line and between lines) and, over anomaly 12 (1600W), a dipole-dipole survey using 60m. dipoles: the EM survey suggested above would also be appropriate.

It is suggested that the area of interest be extended to the east and north to form the following eastern boundaries: L4 (10W); L6 (6W);

L8 (5W); L12 (10W); L14 (13W); L16 (14W). Within this area there are a number of good IP and magnetic anomalies defined by the original Harmon River Grid surveys. Since there are no zones of geochemical responses, any prospective target should be deep (say greater than 50m.) and a deep looking EM survey is recommended.

J R Bishop

J.R. Bishop
July, 1982

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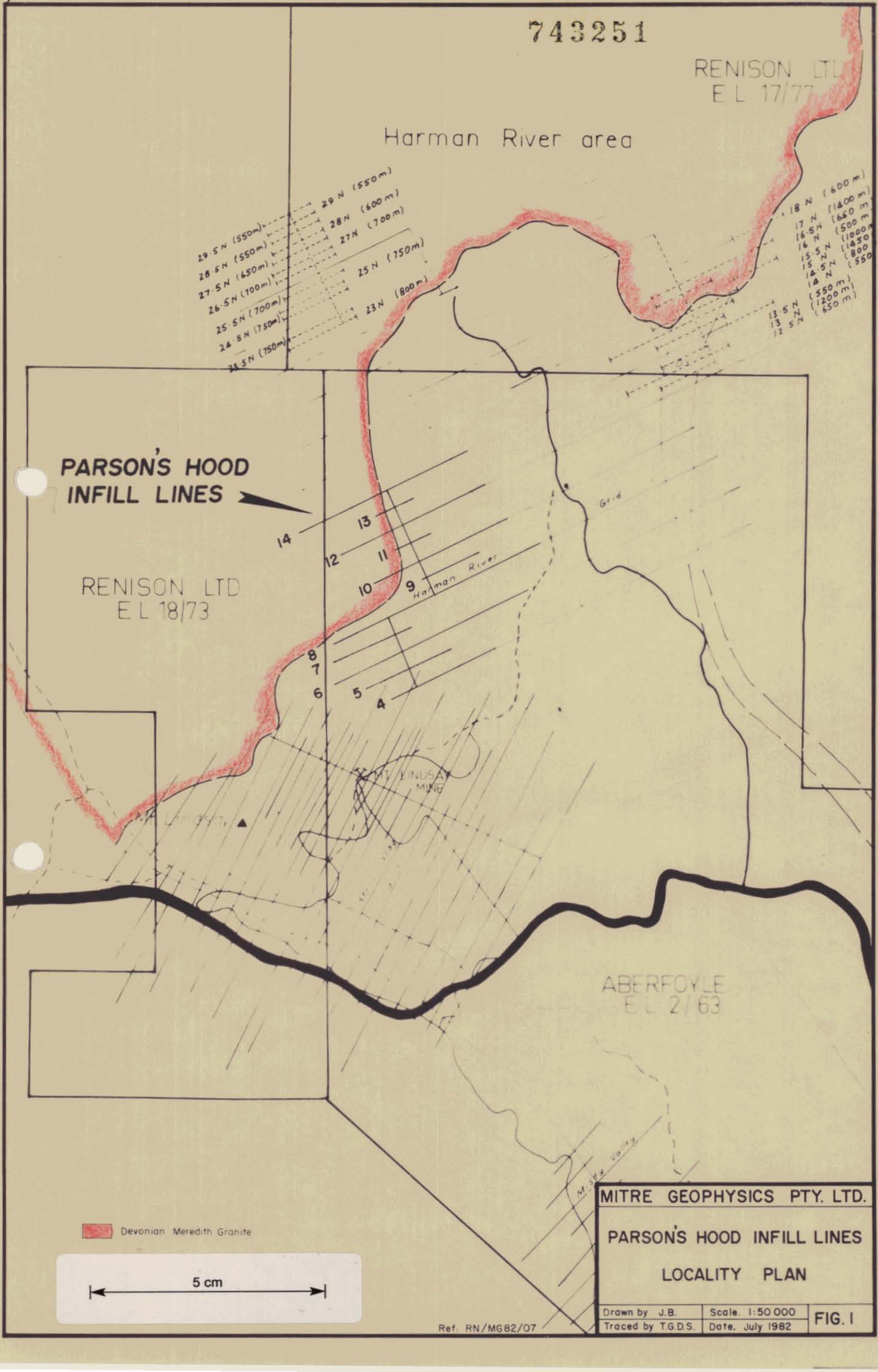
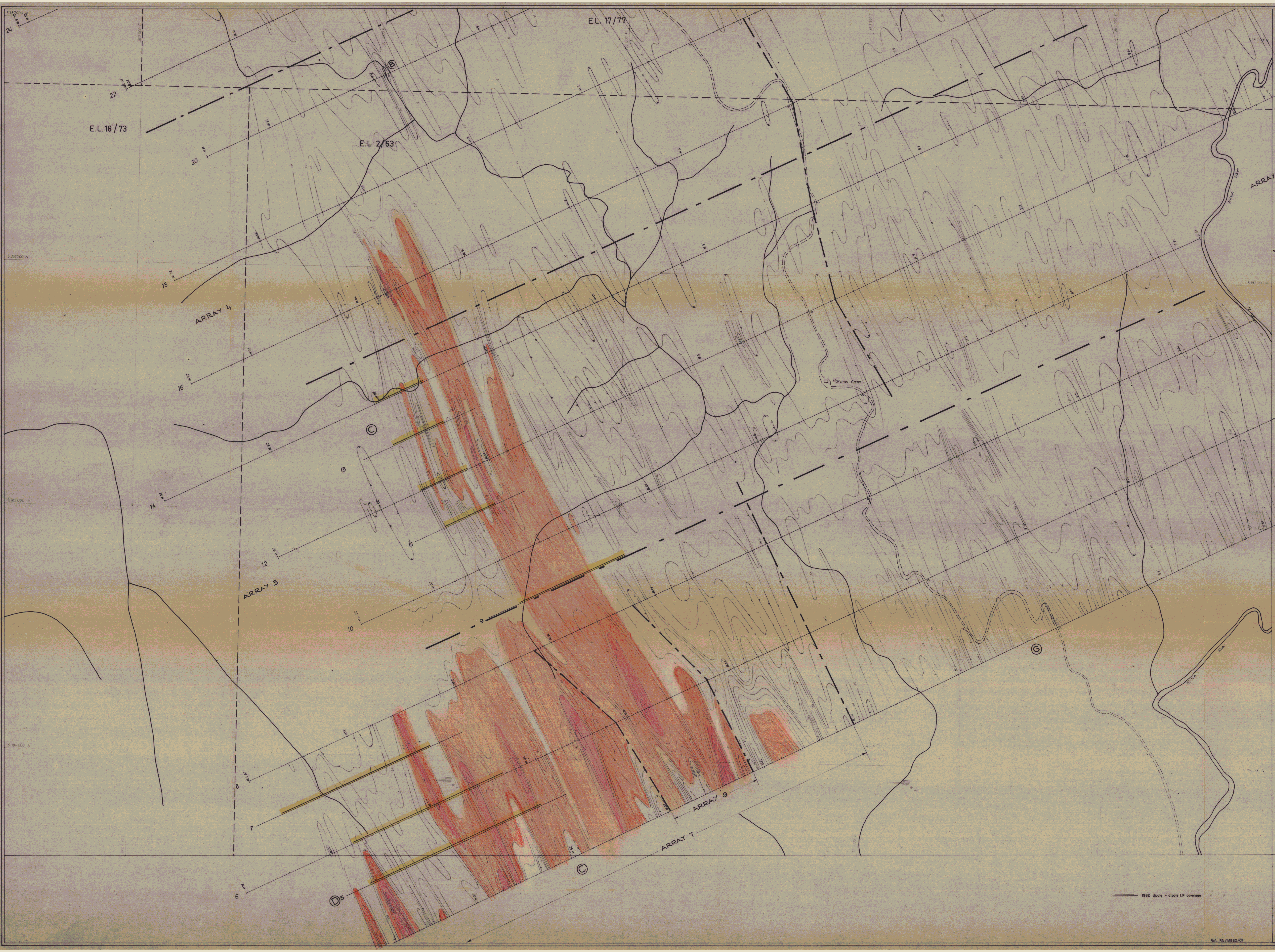


MITRE GEOPHYSICS PTY. LTD.

PARSON'S HOOD INFILL LINES

LOCALITY PLAN

Drawn by J.B.	Scale. 1:50 000	FIG. I
Traced by T.G.D.S.	Date. July 1982	



☐ >100 MILLIVOLTS PER VOLT
☐ 80 -100
☐ 60 - 80
☐ 40 - 60
☐ 20 - 40
☐ <20

Legend

ARRAY 1. - Electrodes at 2400W + 2100E on 24N
3 - 200W + 3000E on 18N
4 - 2400W + 3000E on 18N
5. - 2500W + 700E on 12N
6 - 300W + 2900E on 12N
7. - 3400W + 200W on 6N
8. - 1000W + 2200E on 6N
9. - 2100W + 500W on 6N
10. - 100E + 1000E on 20N

743252

5 cm

A.M.G. NORTH

1982 dipole - dipole I.P. coverage

SURVEYED & COMPILED BY
SCINTREX
JAN - FEB - 1980
Job Nº TAS - 074 - E

82-1797
CVol 4/4

RENISON LIMITED 2699

CORINNA D1/4

GRADIENT ARRAY EIP SURVEY
CHARGEABILITY CONTOUR MAP

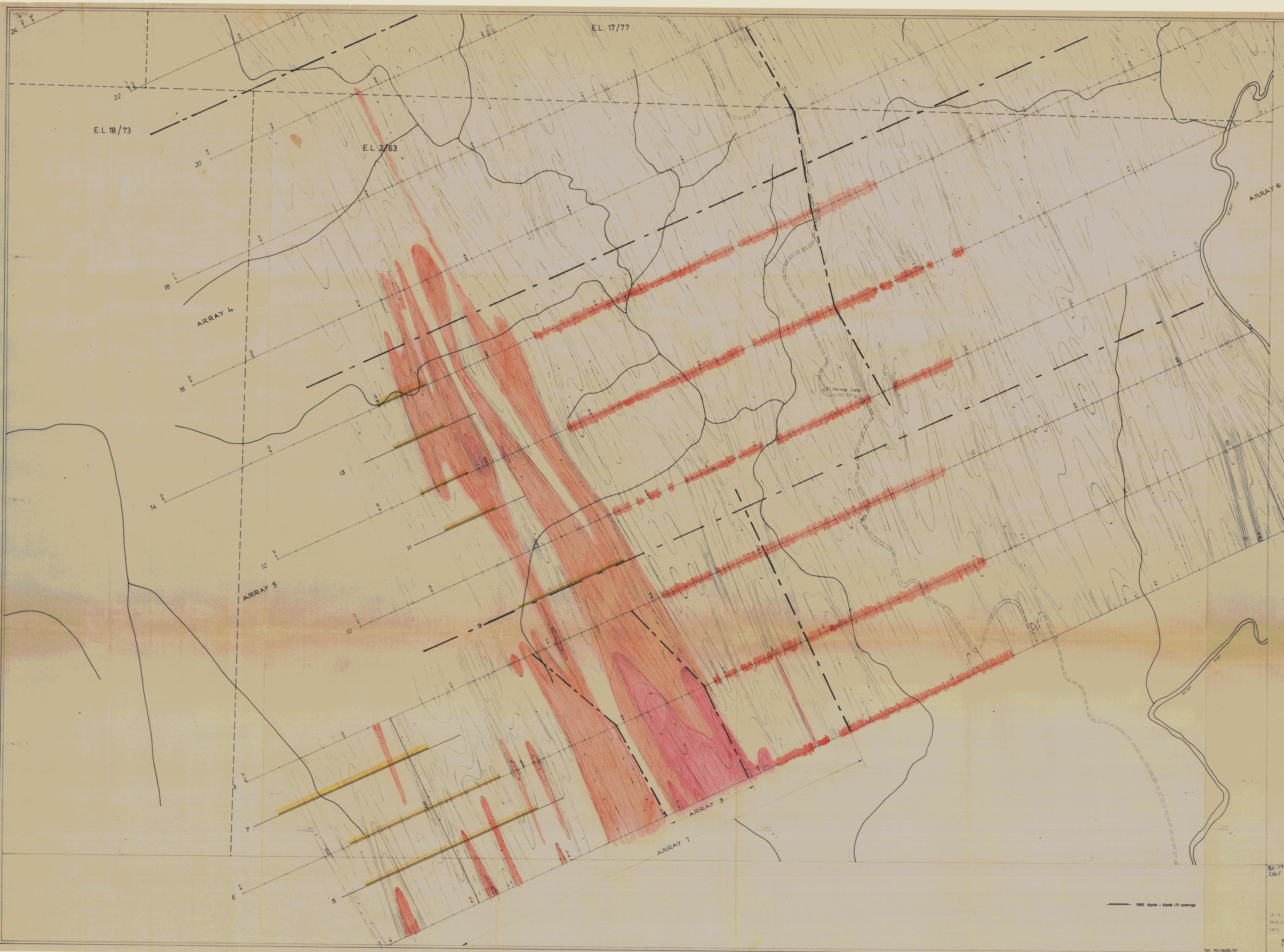
GEOLOGIST
DRAUGHTSMAN
DATE

SCALE 1:5000 METRES
100 0 100 200

Dipole - dipole I.P. coverage indicated
(intermediate lines idealised)

DRAWING No.
FIG. 2

Ref. RN/MG82/07



☐ <1000 OHM-METRES
☐ 1000-3000
☐ 3000-10000
☐ >10000

Legend

ARRAY 1. - Electrodes at 2400W + 2100E on 24N
3 - 200W + 3000E on 18N
4 - 2400W + 3000E on 18N
5 - 2500W + 700E on 12N
6 - 300W + 2900E on 12N
7 - 3400W + 200W on 6N
8 - 1000W + 2200E on 6N
9. - 2100W + 500W on 6N
10 - 100E + 1000E on 20N

743253

1982 dipole - dipole I.P. coverage

SURVEYED & COMPILED BY
SCINTREX

JAN - FEB - 1980
Job N° TAS - 074 - E

Ref: RN/MG82/07

82-1797/
CVol 4/4.

RENISON LIMITED

2700

CORINNA D1/4

GRADIENT ARRAY EIP SURVEY
RESISTIVITY CONTOUR MAP

GEOLOGIST
DRAUGHTSMAN
DATE

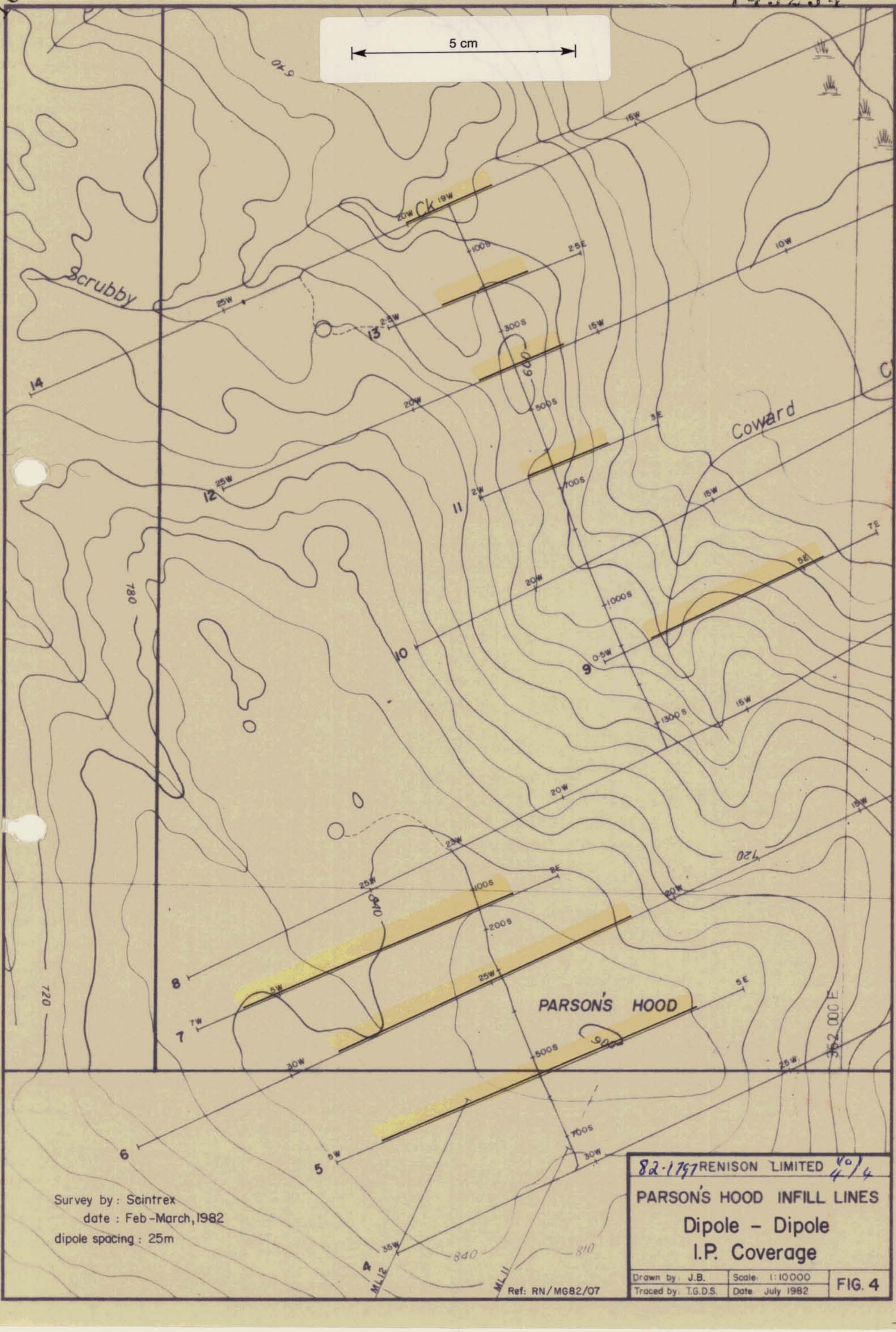
SCALE 1:5000 METRES

Dipole - dipole I.P. coverage indicated
(intermediate lines idealised)

DRAWING N°
FIG. 3

016

743254



Survey by: Scintrex
date: Feb-March, 1982
dipole spacing: 25m

Ref: RN/MG82/07

82·1797 RENISON LIMITED Vol 4/4

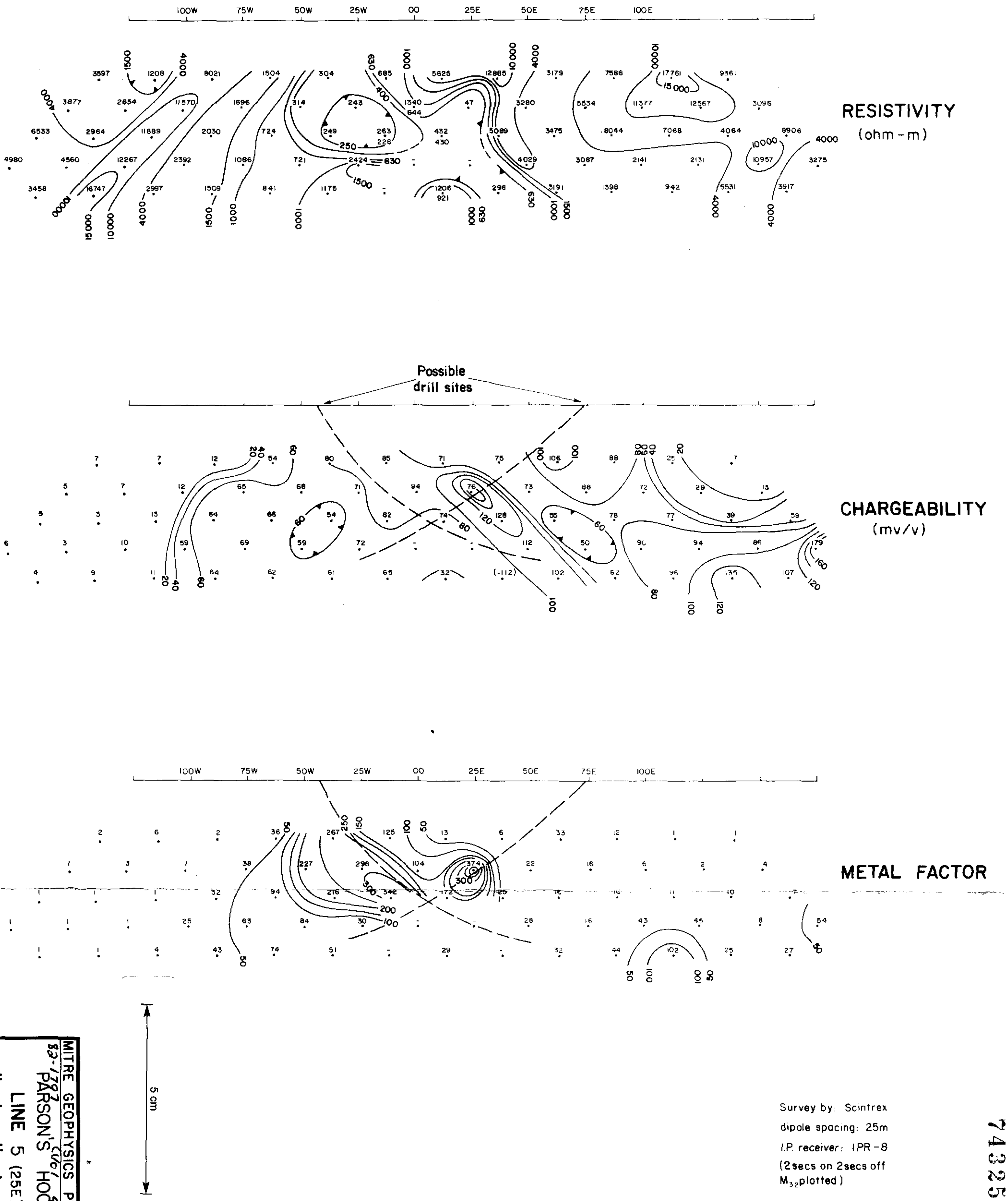
PARSON'S HOOD INFILL LINES

Dipole - Dipole
I.P. Coverage

Drawn by: J.B.	Scale: 1:10000	FIG. 4
Traced by: T.G.D.S.	Date: July 1982	

017

LINE: 5 (25E)



Ref. RN/MG82/07

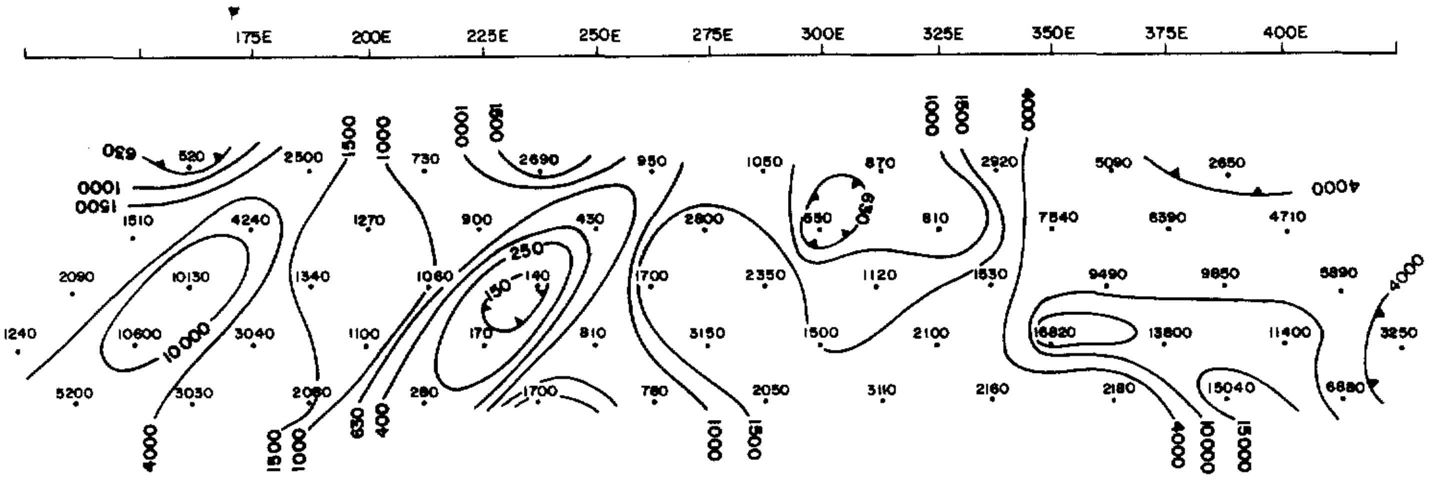
MITRE GEOPHYSICS PTY. LTD.
82-1797 (1/c/4/4)
PARSON'S HOOD
LINE 5 (25E)
dipole - dipole I.P.
Drawn: J.B.
Traced: T.G.D.S.
Scale: 1:1667
Date: JULY 1982
FIG. 5

Survey by: Scintrex
dipole spacing: 25m
I.P. receiver: IPR-8
(2secs on 2secs off
M_{32} plotted)

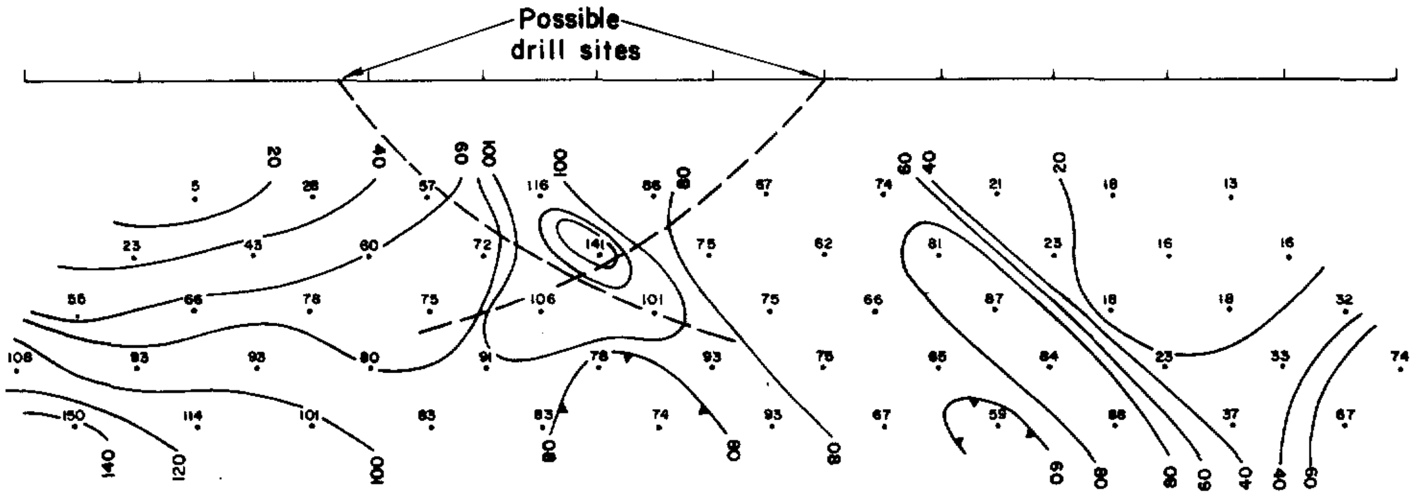
74325

018

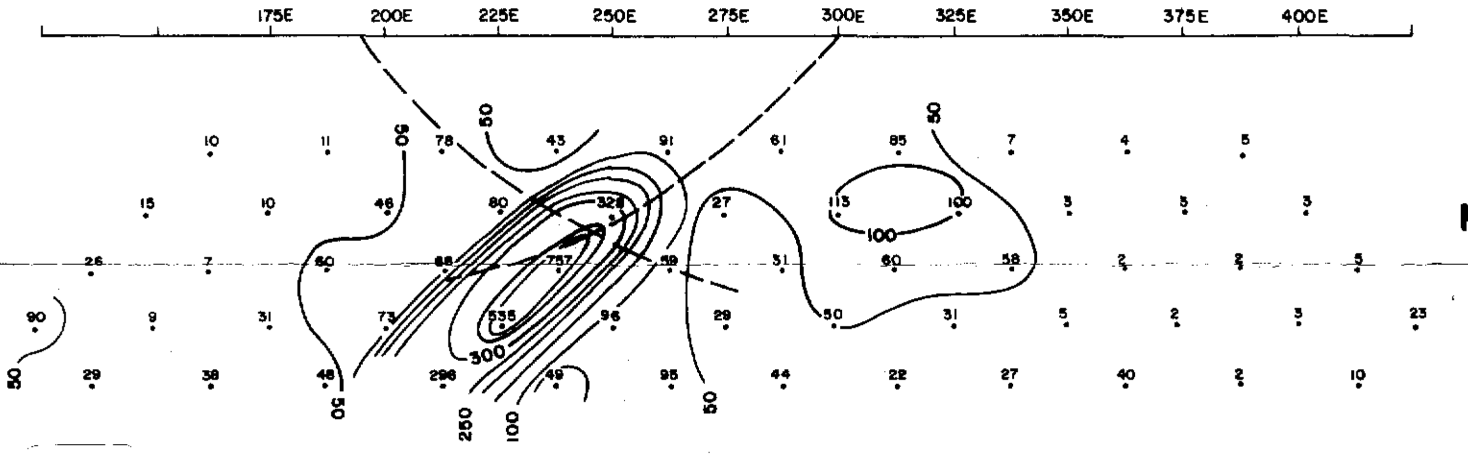
LINE: 5 (250E)



RESISTIVITY
(ohm-m)



CHARGEABILITY
(mv/v)



METAL FACTOR

Ref: RN/MG82/07

5 cm

Survey by: Scintrex
dipole spacing: 25m
I.P. receiver: IPR-8
(2secs on 2secs off
M_{32} plotted)

743256

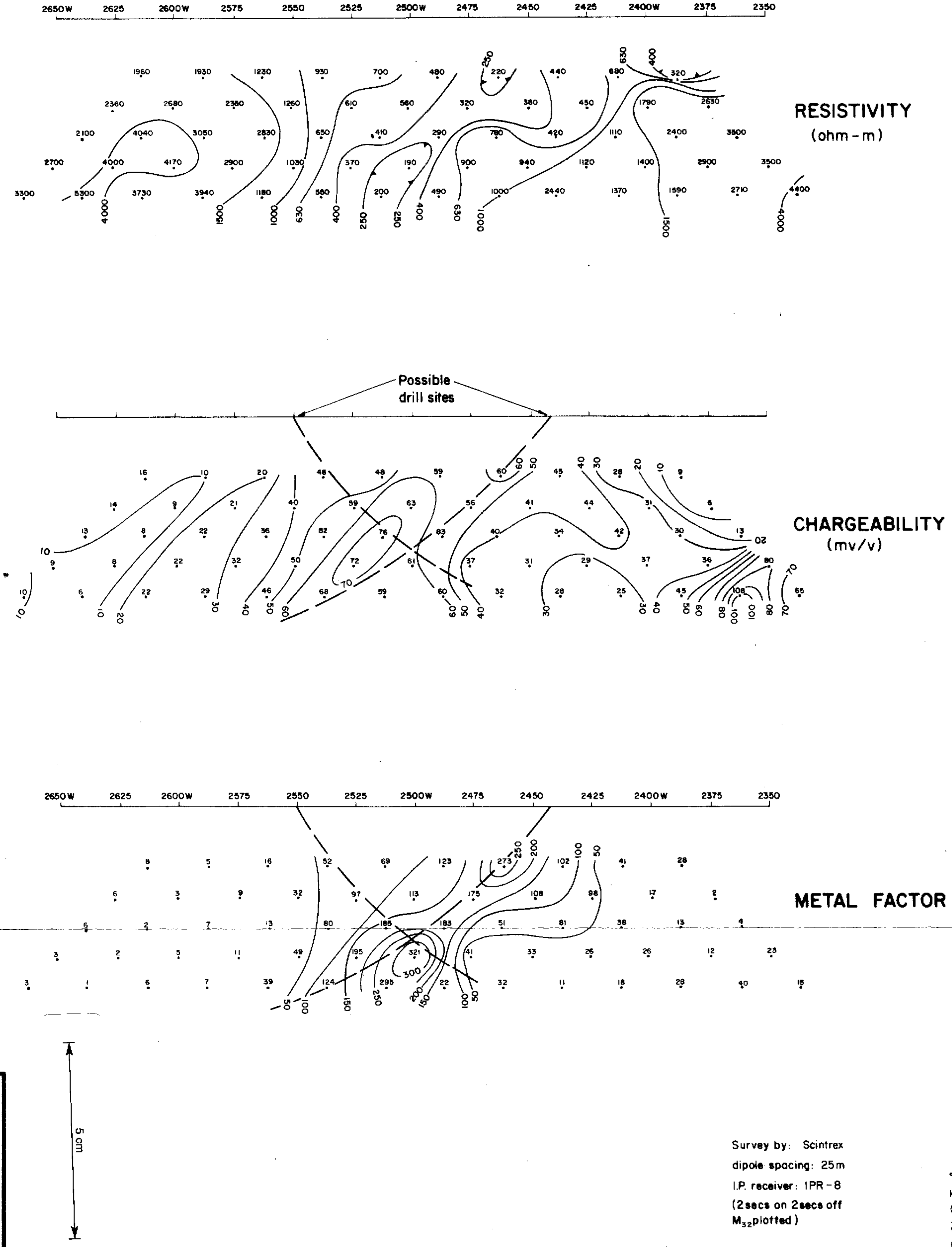
MITRE GEOPHYSICS PTY. LTD.
82-1797
Vol
4/4
PARSON'S HOOD
LINE 5 (250E)
dipole-dipole I.P.

Drawn: J.B.	Scale: 1:1667
Traced: T.G.D.S.	Date: JULY 1982

FIG. 6

019

LINE: 6 (2500W)



MITRE GEOPHYSICS PTY. LTD.

PARSON'S HOOD

83-179 C\p/ LINE 6 (2500W)

4/4 dipole - dipole I.P.

Drawn: J.B. | Scale: 1:1667 | FIG 7

Survey by: Scintrex

dipole spacing: 25m

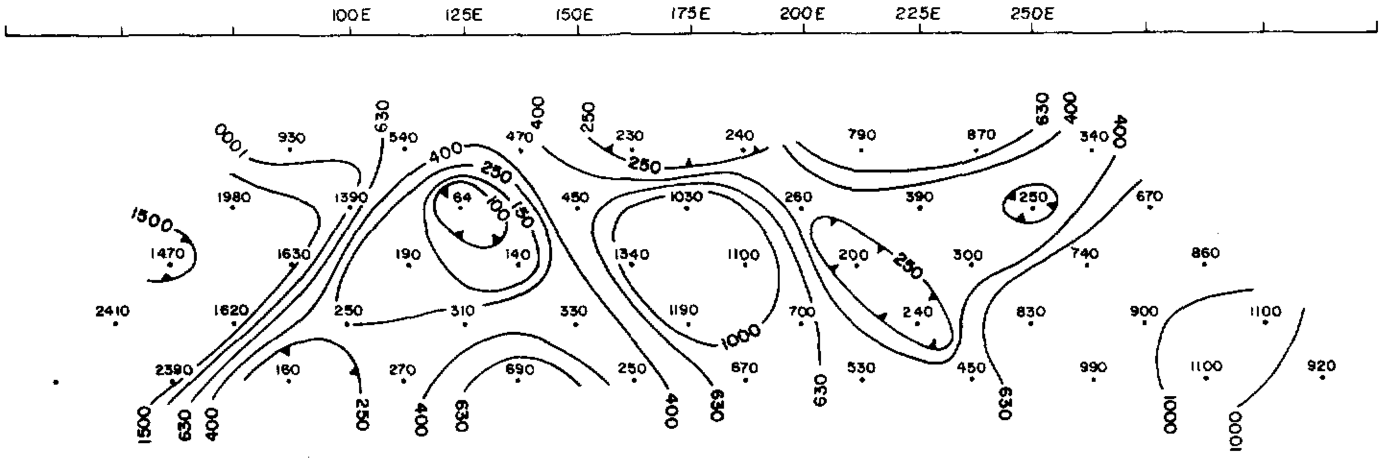
I.P. receiver: IPR-8

(2secs on 2secs off

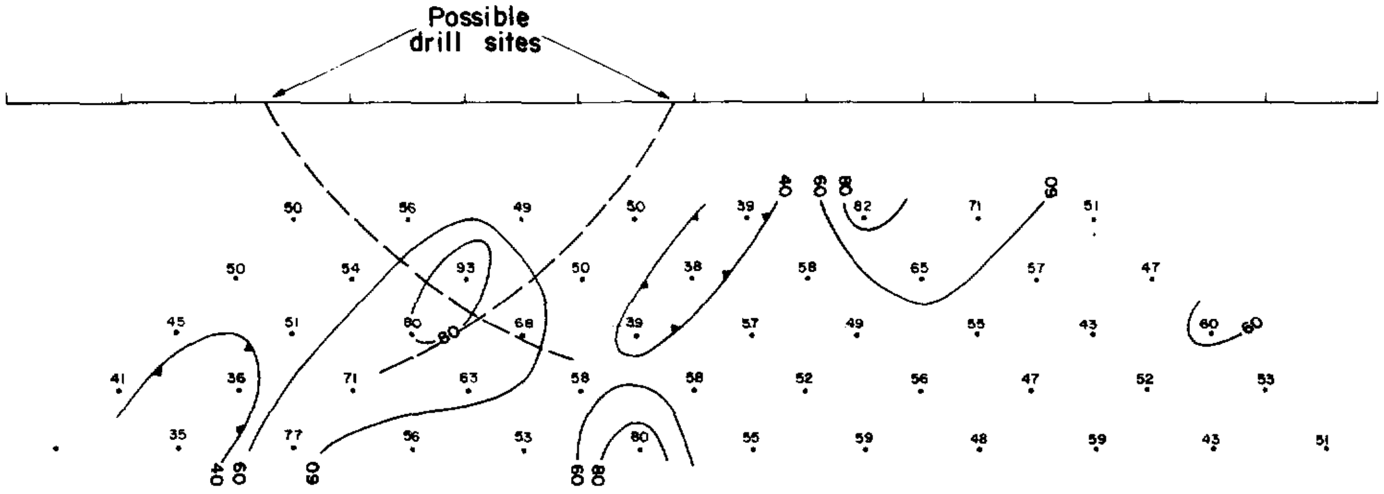
M_{32} plotted)

74325

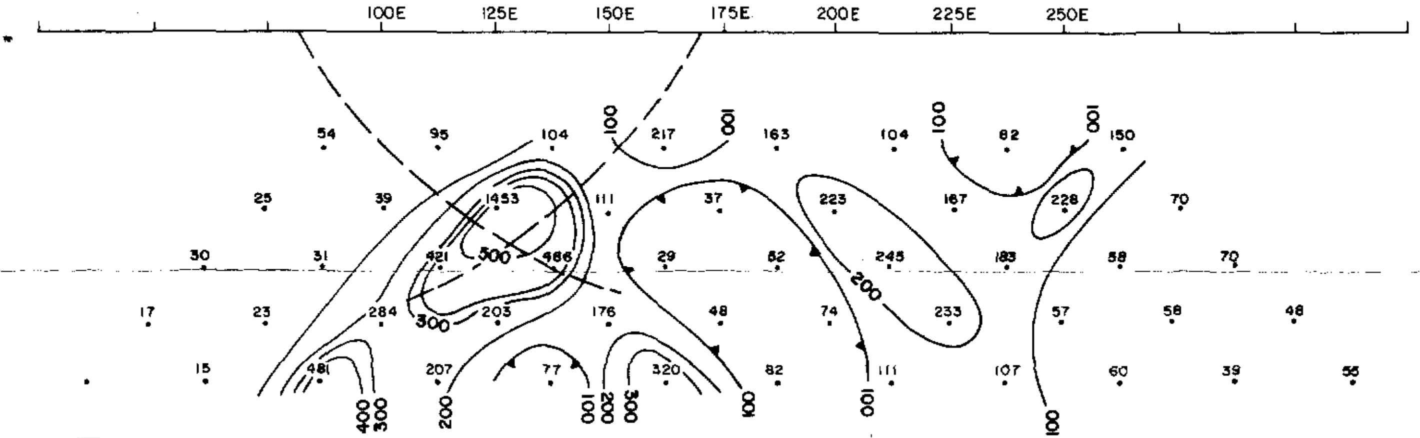
LINE: 9 (125E)



RESISTIVITY
(ohm-m)



CHARGEABILITY
(mv/v)



METAL FACTOR

5 cm

Survey by: Scintrex
dipole spacing: 25m
I.P. receiver: IPR-8
(2secs on 2secs off
M_{32} plotted)

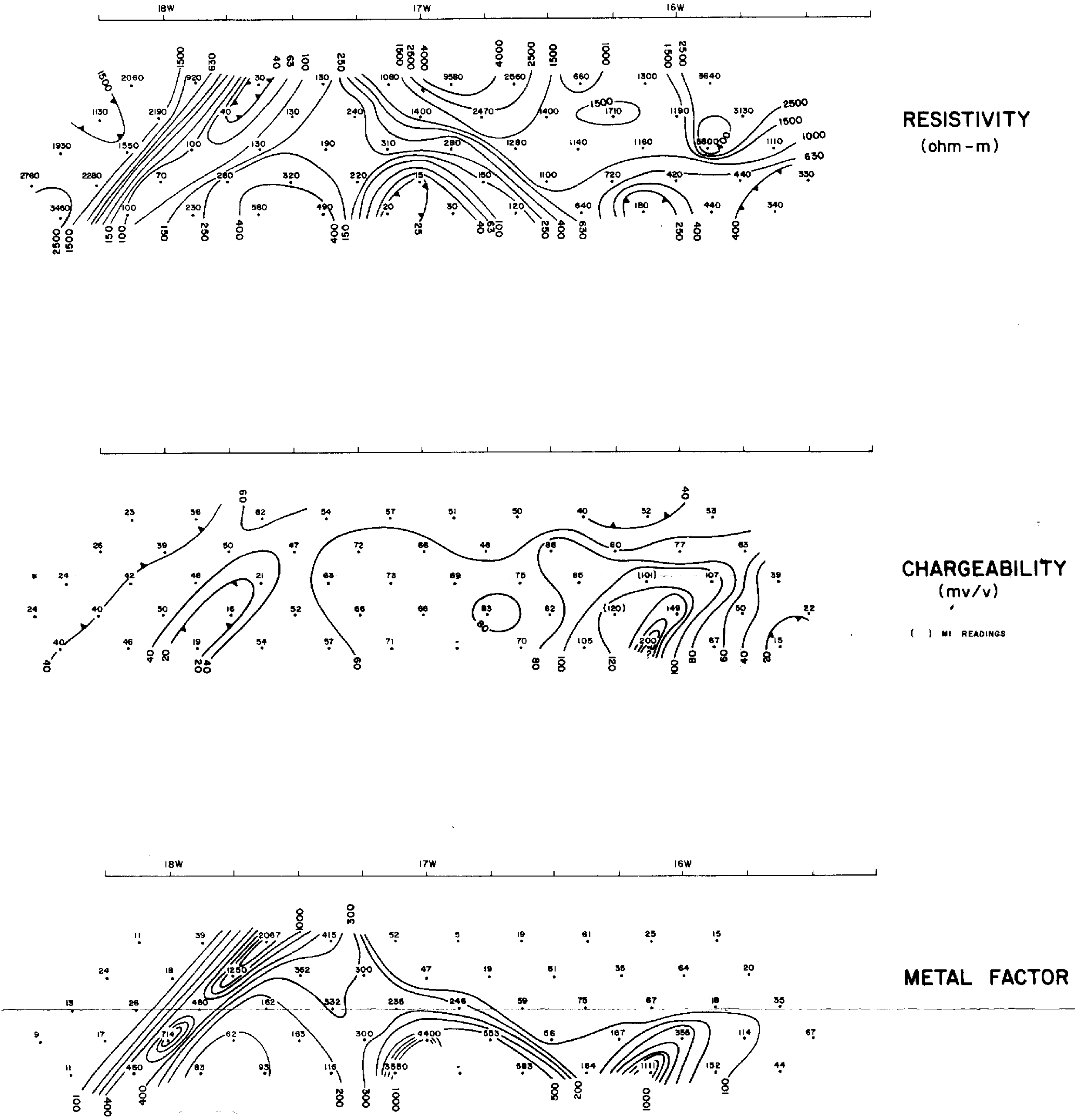
Ref. RN/MG82/07

MITRE GEOPHYSICS PTY. LTD.
PARSON'S HOOD
82-1797
Vol 4/4
LINE 9 (125E)
dipole-dipole I.P.
Drawn: J.B.
Traced: TG DS
Scale: 1:1667
Date: JULY 1982
FIG.8

743258

721

LINE: 12 (1600W)



5cm

Survey by: Scintrex
dipole spacing: 25m
I.P. receiver: IPR-8
(2secs on 2secs off
M_{32} plotted)

743259

MITRE GEOPHYSICS PTY. LTD.

82-1797
CVol
4/4

PARSON'S HOOD
LINE 12 (1600W)
dipole-dipole I.P.

Drawn: J.B.	Scale: 1:1667	FIG. 9
Traced: TCDS	Date: JULY 1975	