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OPEN FILE

E.L. 2/63 AND E.L. 18/73.

76-1164.

MT. LINDSAY AREA

WESTERN TASMANIA

ANNUAL REPORT 1975-76

MICROFILMED

A.F. Ross
GEOLOGIST

MAY, 1976.

Copies to:
C.G.F.A. (1)
Cominco (2)
Tas. Mines Dept. (2)
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1. SUMMARY

During 1975-76, $98452 were spent (to April 27, 1976) on exploration in the Mt. Lindsay region.

Of this, $21,014 were spent on E.L. 18/73 and $77,438 on E.L. 2/63. Total expenditure to date is $415,312.

Exploration activity during the year was concentrated on the diamond drilling of geophysical and soil anomalies in the Mt. Lindsay mine area (E.L. 2/63) and the drilling of an anomalous zone within E.L. 18/73.

Encouraging tin, tungsten and copper values were obtained from altered carbonate zones adjacent to the Meredith Granite in the Mt. Lindsay mine area.

During 1976-77 it is planned to test the Mt. Lindsay mineralisation further by diamond drilling. A separate anomaly on E.L. 18/73 is to be similarly tested.

Expenditure of $122,000 is budgeted.

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2. INTRODUCTION

Since 1972, Renison Limited has carried out exploration for Devonian replacement deposits in the Pieman area, Western Tasmania.

Aerial geophysical surveys, together with geological mapping, outlined two areas (Misty Valley, Mt. Lindsay) which have been further investigated by ground geophysical, soil geochemical and geological mappping techniques during the years 1972-75.

The Mt. Lindsay area is a known tin producer. From 1911-30 120 tonnes tin concentrate were produced from stanniferous gossans adjacent to Tullock Creek. From 1963-70, Aberfoyle Limited explored the area and completed 29 diamond drill holes, outlining potential reserves of 208,000 tonnes of 0.83% Sn. Operations were restricted by poor access and were largely dependent on helicopter support.

By late summer, 1975, Renison established 4 WD vehicular access to the Mt. Lindsay mine area. Detailed surface exploration was completed on the Mt. Lindsay and Misty Valley grids by this stage. In October, 1975, proposals were outlined for diamond drilling on the Mt. Lindsay grid area during summer 1975-76.

This report reviews work undertaken during 1975-76 and the results of the completed drilling program. Proposals for further work during 1976-77 are outlined.

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3. LAND TENURE:

1. E.L. 18/73 has been explored since 27/7/73 under a Joint Venture agreement between Renison Limited and Consolidated Goldfields Australia Limited.

2. E.L. 2/63 (including Mineral Leases 62M/63, 63M/63)has been held since 1963 by Aberfoyle Limited. Since October, 1972, Renison Limited and C.G.F.A., Limited have explored the area under a Joint Venture agreement with Aberfoyle Limited and its associated companies.

On September 17, 1975 an area of 16.6 sq.kms., was relinquished from the licence. E.L. 2/63 comprises an area of 41.4 sq.kms.

The location of the Exploration Licences is shown on Map MLP6.

4. PREVIOUS WORK:

For a summary of previous work the reader is referred to Annual Report 1974-75. A bibliography of relevant literature is attached to this report, (1975-76).

5. EXPLORATION COMPLETED 1975-76:-

Exploration during summer 1975-76 involved the diamond drilling of targets which were outlined in previous field seasons. Refer to MLP8.

The following work was undertaken.

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5.1. Access Tracks: Bulldozing of access tracks began in late November and finished early January, 1976. Approximately 1200m of new access was created for drill site location. Existing tracks (except the Mt. Lindsay "Upper Road") were upgraded and cleared of obstacles (landslips, fallen trees etc.).

5.2. Diamond Drilling: Between 4/12/75 and 8/3/76, one hole was drilled in the Salmon Creek area (E.L. 18/73) and four holes were completed in the Mt. Lindsay mine area (E.L. 2/63).

(a) A total of 1819m was drilled, comprising 340m on E.L. 18/73 and 1479m on E.L. 2/63. All core is stored at Renison Bell.

(b) All drill core has been logged and selected intervals have been split and assayed for one or more of the following elements : Sn, Cu, W (as WO_3), Bi, Mo, Pb, Zn, Ag, Au, As, S.

(c) Twenty eight drill core samples have been described by a Mineralogical Consultant.

Results of the diamond drilling are discussed below.

5.3. Metallurgical Assessment: A 25m interval from ML D.D.H. 38 has been submitted to the Metallurgical Research Section, Renison Limited. Results of Metallurgical assessment are not available at the time of writing of this report.

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5.4. Aberfoyle Drill Core: During the year, core from 15 holes, drilled prior to 1970 by Aberfoyle Limited, was relocated at Renison Bell. Sampling and reassaying of this core are in progress at the time of writing of this report. Core from another 14 holes is presumed lost in the Mt. Lindsay area.

5.5. Surveying: All new tracks and drill holes were surveyed by stadia. Several Aberfoyle drill collars were located and surveyed. Pico Multi-Shot equipment was used in down-hole surveys.

5.6. Expenditure: A sum of $98452 was spent to April, 27, 1976. Total Expenditure for 1975-76 is estimated to be $118,000.

6. GENERAL GEOLOGY:

The regional geology is presented on Plan MLP22. The bedrock geology comprises a NW trending belt of Cambrian sediments, Volcanics and Ultrabasics intruded in the north by the Meredith Granite (Upper Devonian).

The oldest sequence in the area is tentatively correlated with the Oonah Formation (Lower Cambrian) and occurs along the SW boundary of the licence area. This sequence consists predominantly of interbedded quartzites, siltstones and shales. The Oonah Formation is overlain conformably by tuffs, basic volcanics and argillitic sediments of the Crimson Creek Formation (Upper Lower Cambrian to Early Middle Cambrian). The top of the Crimson Creek Formation is characterized by ultra-mafic/ophiolite? complexes of Cambrian age.

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Carbonate rich horizons appear within the Cambrian sediments, at least at two levels. These horizons, within the contact aureole of the stanniferous Meredith Granite, are regarded as potential host for replacement deposits.

1. The lower level occurs at the Oonah/Crimson Creek Formation boundary and is characterized by the presence of hematitic cherts (refer to Appendix 9).

2. The second carbonate rich sequence appears to lie approximately 2000m above the base of the Crimson Creek Formation. At Mt. Lindsay it hosts tin mineralisation.

The detailed stratigraphy and structure of the Crimson Creek Formation is not well established. Several steeply plunging folds have been established in marker horizons at the top of the Oonah Formation. Within the Crimson Creek Formation sediments are steeply dipping and locally overturned.

7. E.L. 18/73:

7.1. ML. D.D.H. 34

The results of this hole are presented on Profile MLP9; Appendix 4 contains the log, assays and petrological descriptions.

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ML. D.D.H. 34 tested an anomalous zone (high conductivity chargeability and magnetic anomalies associated with an As soil anomaly). Surface mapping has shown similarities between the sedimentary sequence at this level and the Renison mine area (Refer Appendix 9).

The IP anomaly in this area can be attributed to a 3m thick carbonaceous or graphitic shale unit containing trace amounts of pyrite, chalcopyrite and pyrrhotite. IP responses may also result from carbonaceous stylolitic material in a massive barren carbonate and from minor amounts of pyrite and pyrrhotite present in a shaley siltstone unit.

Magnetic anomalies are due to (a) magnetite rich dark cherts correlated with the Red Rock member and (b) sediments containing pyrrhotite.

The soils As anomaly is not easily explained although traces of arsenopyrite have been detected in the core.

7.2. CONCLUSIONS:

(a) Anomaly B (of MLP8) is explained by carbonaceous material, magnetic cherts and minor non-stanniferous sulphides.

(b) Massive carbonate horizons exist at this level but are barren in the area drilled.

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(c) The sedimentary sequence shows broad similarities to the Renison Mine Sequence.

8. E.L. 2/63:

8.1. MT. LINDSAY GEOLOGICAL OUTLINE:

Tin mineralisation is thought to have resulted from post magmatic, iron-rich hydrothermal solutions replacing favourable horizons within the Crimson Creek Formation, adjacent to the Meredith Granite. The mineral assemblages within these horizons are typical of contact pyrometasomatic deposits or skarns.

The local sedimentary sequence is overturned, strikes NW and dips steeply (70-80°) to the SW. Several anomalous zones have been delineated by surface work and are discussed in more detail in Annual Report 1974-75. Drilling has indicated three horizons which are either mineralised, skarniferous or carbonate rich.

eg., No. 2 Anomaly
Main Ore Zone
No. 1 Anomaly.

These horizons are interpreted as original carbonate rich sediments within a sequence of interbedded tuffaceous siltstones, shales, greywackes, minor conglomerates and basic lavas.

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Fine grained siliceous chemical sediments or cherts are often associated with the carbonate horizons. Sedimentary structures indicate NE facings, thus the No. 1 Anomaly zone is stratigraphically oldest. This sequence has undergone contact metamorphism and metasomatism with the local formation of fine to medium grained actinolite and chlorite rich hornfelses and cherts. Carbonates are altered to calc-silicate assemblages often with a characteristic banding, probably reflecting original compositional layering.

The Meredith Granite crops out to the NW. Drilling indicates the granite surface dips 35-40^{o} to the south. (Refer MLP7).

8.2. DIAMOND DRILLING RESULTS:

Four holes drilled in the Mt. Lindsay mine area either intersected known mineralised zones or tested anomalies on the suspected strike extensions of these zones.

The results of the holes are presented on Profiles MLP 10-13 and Longitudinal Projections MLP20, 21. Diamond drill logs, assays, and petrological descriptions are contained in Appendices 5-8.

Table 1 summarizes the results.

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TABLE 1.

HOLE NO.	INTERVAL	TRUE THICKNESS	GRADE	HORIZON	MINERALOGY	COMMENT
ML35	66-81m		0.01Sn<0.01Cu <0.01WO_3	No.1 Anomaly	Carbonate-chert-calc silicate assemblage Actinolite,diopside, garnet,trace pyrrhotite	Moderate magnetic,weak soils response.
	198-210m	9m.	0.26Sn,0.08Cu, 0.03 WO_3	Main Ore Zone	Phlogopite,actinolite-magnetite carbonate assemblage. Cassiterite pyrrhotite chalcopyrite, pyrite,arsenopyrite scheelite.	Strong magnetic, strong soils Cu As response.
	218-228m		0.10Sn	altered sediments		No IP carried over this section.
ML36	61-91m		<0.01Sn<0.05Cu <0.01WO_3	No.1 Anomaly	Carbonate-chert-calc silicates. Trace pyrrhotite	Magnetic As soils response. Weak IP response.
	272-316.5m containing 304-314	40m 9m	0.27Sn<0.05Cu 0.04 WO_3	MAIN ORE ZONE	Phlogopite-sericite-actinolite-magnetite quartz feldspar carbonate assemblages.Cassiterite	Probable magnetic response due to Main Lode. Other magnetite bearing sediments cause magnetite response.
	304-307.0	2.7	0.70Sn<0.05Cu 0.03WO_3		Pyrrhotite, ilmenite, chalcopyrite, bismuth, scheelite.	IP anomaly not coincident with soils response (Sn, Cu, Zn, As, W).
ML37	54-62.8m		<0.01Sn<0.01Cu <0.01WO_3	Part of Main Ore Zone?	Cherts, carbonate, siltstones. Trace pyrrhotite.	Low resistivity, poor chargeability, No soils or magnetic response.
	268.4-303 containing 270-277	6m	0.13Sn<0.01Cu <0.01 WO_3	No.2 Anomaly	Actinolite biotite-magnetite carbonate magnetite, pyrrhotite garnet epidote,scheelite, ilmenite,arsenopyrite, chalcopyrite,bismuth	Magnetic response, weak IP response with weak soils expression. Other minor magnetic peaks due to magnetite bearing hornfelses & basic lavas.
	291-295	4.5m	0.5Sn 0.05Cu 0.21 WO_3			
ML38	79-112m		<0.01Sn<0.05Cu <0.01WO_3	MAIN ORE ZONE or No.1 Anomaly?	Barren carbonate & chert beds,minor pyrrhotite.	
	252.8-399.1 containing 353-376m	120m 25m	0.79Sn,0.16Cu 0.04 WO_3	No.2 Anomaly? could include MAIN ORE HORIZON ie., two horizons may unite laterally	Carbonate magnetite quartz assemblages with carbonate, quartz, magnetite,adularia chlorite,tourmaline cassiterite pyrite fluorite, pyrrhotite, chalcopyrite, scheelite, wolframite,ilmenite, arsenopyrite & bismuth	Magnetic anomaly. Broad As anomaly not entirely explained. Poor response from soils over mineralisation (on line 6). Magnetic anomaly at 200s due to magnetic sediments or lavas.
	353-369m	16m	1.10Sn,0.12Cu, 0.05 WO_3			

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8.3. COMMENTS

(a) All carbonate horizons are prospective for Sn, WO_3 and Cu, although at this stage the No. 1 Anomaly Zone has proven to be barren.

(b) Potential reserves of 208,000 tonnes of 0.83Sn in the Main Ore Zone were indicated by Aberfoyle.

(c) Metalliferous minerals detected so far as major or trace constituents are: Cassiterite, Magnetite, Pyrrhotite, Pyrite, Scheelite, Wolframite, Chalcopyrite, Stannite, Bismuth, Galena, Sphalerite, Ilmenite, Hematite.

(d) Carbonate horizons appear to be persistent over a strike length of at least 1500m. Surface expression (magnetic, soils data) indicates the No. 2 & Main Ore Zones may have additional strike lengths of approximately 1000m.

(e) Although correlations between ML. D.D.H.37 and ML. D.D.H.38 are not clear at this stage, carbonates correlatable with the No. 2 anomaly horizon appear to thicken laterally away from the granite.

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(f) The assemblage quartz-magnetite-carbonate (low temperature skarn) in the mineralized zone of ML. D.D.H.38 is in contrast to the actinolite-magnetite assemblages (higher temperature skarn) of the Main Ore Zone and other No. 2 anomaly intersections. This may be due to temperature zoning effects parallel to the granite contact.

9. PROPOSED WORK 1976-77:

Results of diamond drilling have proved encouraging and further diamond drilling is justified to test the anomalous zones both along strike and dip.

By analogy with skarn type deposits elsewhere the following must be considered.

(a) Although developed within carbonate rich horizons, skarn deposits are irregular in shape and can occur at levels unrelated to granite contacts. In addition, the possibility exists of "blind" deposits occurring, without surface expression.

(b) Skarn silicate assemblages seem to be formed earlier than most of the metal ores and there can be much skarn that is barren of economic mineralisation.

A program of six diamond drill holes is recommended.

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9.1. E.L. 18/73.

PROPOSED HOLE ML. D.D.H.39. Refer Profile MLP14.

Collar: Line 12, 1300mN, Length: 300m Dip: -45° Bearing: Grid South.

This hole is designed to test a strong IP-conductivity anomaly coincident with strong magnetic and As geochemical anomalies. Access is very good and only a small amount of site development is required.

9.2. E.L. 2/63 Refer to Plan MLP8, Profiles MLP15-19, and Longitudinal Projections MLP 20, 21.

(a) ACCESS DEVELOPMENT. Approximately 3km of new track is planned for drill sites and access. It is proposed to extend the "Lower Road", via the possible strike extensions of the Main Ore & No. 2 Anomaly zones, to meet the Pieman Camp road at Salmon Creek.

(b) PROPOSED HOLE ML D.D.H.40. Refer MLP 15.

Collar: Line 11, 1980mN, Length: 300m, Dip: -55°, Bearing: Grid North.

This hole is designed to test the Main Ore Zone at RL2275. Only minor access development is required.

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(c) PROPOSED HOLE ML D.D.H.41. Refer MLP16.

Collar: Line 8, 2100mN, Length: 350m
Dip: -45°, Bearing: Grid North.

This hole will test the No. 2 anomaly and may' intersect the main ore zone.

(d) PROPOSED HOLE ML D.D.H.42. Refer MLP17.

Collar: Line 6.5, 50mS Length: 250m
Dip: -45° Bearing: Grid north.

This hole will test the No. 2 anomaly approximately 100 m above the ML D.D.H.38 intersection.

(e) PROPOSED HOLE ML D.D.H.43. Refer MLP18.

Collar: Line 6, 2000mN, Length: 350m
Dip: -45° Bearing: Grid north.
Target: No. 2 anomaly zone.

(f) PROPOSED HOLE ML D.D.H.44. Refer MLP 19.

Collar: Line 4.5, 350mS, Length: 400m
Dip: -45° Bearing: Grid north.
Target: No. 2 anomaly zone.

9.3. BUDGET:

Total to be drilled is 1950m comprising;

E.L. 18/73 300m
E.L. 2/63 1650m

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The proposed budget forms Appendix 2. A two rig operation is envisaged and should commence in late November.

Estimated expenditure is:- E.L. 2/63 $102,000
E.L.18/73 $ 20,000

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APPENDIX 1.

EXPENDITURE 1975-76 : TO APRIL 27, 1976.

	E.L. 18/73	E.L. 2/63
Salaries	6009	12650
Consumables	2000	2955
Vehicles	183	442
Diamond Drilling	12822	56670
Capital Equipment		286
Consultants		1593
Miscellaneous		2842
	$ 21014	$ 77438

TOTAL $ 98,452

PROPOSED EXPENDITURE 1976-77 E.L. 18/73

PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
SALARIES				500	1000	1500	500	500					4000
DIAMOND DRILLING						12000							12000
ACCESS ROADS					1000								1000
CONSUMABLES					500	250	250						1000
ASSAYING						500	500						1000
VEHICLES					200	200	100						500
CONSULTANTS								250	250				500
SUB-TOTAL				500	2700	14450	1350	750	250				$20,000

APPENDIX 2(a)

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PROPOSED EXPENDITURE 1976-77 E.L. 2/63

PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS.
SALARIES	500	500	500	500	1000	1000	2000	2000	1000	1000			10,000
DIAMOND DRILLING						10000	27000	27000					64,000
ACCESS ROADS					3000	10000	2000						15,000
CONSUMABLES					500	1000	500	500	500				3,000
ASSAYING							500	1000	1000				2,500
VEHICLES					200	300	300	300	200	200			1,500
CONSULTANTS									500	500			1,000
CONTINGENCIES									5000				5,000
SUB-TOTAL	500	500	500	500	4700	22300	32300	30800	8200	1700			$102,000

APPENDIX 2(b)

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APPENDIX 3.

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LIST OF ABERFOYLE DRILL CORE STORED AT RENISON LIMITED.

ML. D.D.H.	2/1	0 - 350'
	2/2	0 - 476'7"
	2/3	0 - 385'6"
	2/4	10-550'4"
	2/5	10-589'4"
	2/6	0-243'
	2/7	0-303'
	15	174'-302'
	16	130'-216'
	17	54'-91', 160-213'
	18	10-169'
	30	285-557'
	31	0-699'
	32	18-399'
	33	0-444'

[redacted]NISON LIMITED — DIAMOND DRILL [redacted]ORD

HOLE NUM.	M.L. 34	SURVEY Depth	SURVEY Bearing	SURVEY Dip	From — To	Distance D	VERTICAL D. Sin Dip	VERTICAL R.L.	HORIZONTAL D. Cos Dip	HORIZONTAL Prog. Total
PURPOSE	To test strong I.P. conductivity anomaly coincident with magnetic and arsenic anomalies.		Magnetic					2201.2		
		Collar 0	17.5	- 45	0-11	11	7.8	2193.4	7.8	7.8
		22.5	16.9	- 48	11-34	23	17.1	2176.3	15.4	23.2
LOCATION	MT. LINDSAY E.L. 18/73	46.5	16.3	- 51½	34-58	24	18.8	2157.5	14.9	38.1
		70.5	15.6	- 52	58-82	24	18.9	2138.6	14.8	52.9
COLLAR R.L.	2201.2	94.5	15.0	- 53	82-106	24	19.2	2119.4	14.4	67.3
		118.5	14.4	- 51	106-130	24	18.7	2100.7	15.1	82.4
CO-ORDINATES	30920.7 N 9399.9 E	142.5	13.7	- 46	130-154	24	17.3	2083.4	16.7	99.1
		166.5	13.1	- 45	154-178	24	17.0	2066.4	17.0	116.1
LENGTH	340m	190.5	12.5	- 43½	178-202	24	16.5	2049.9	17.4	133.5
		214.5	11.8	- 42½	202-226	24	16.2	2033.7	17.7	151.2
HOLE SIZE	0 - 99 NQ 99 - 340 BQ	238.5	11.2	- 40	226-250	24	15.4	2018.3	18.4	169.6
		262.5	10.6	- 40	250-274	24	15.4	2002.9	18.4	188.0
COMMENCED	4-12-75	286.5	9.9	- 37½	274-298	24	14.6	1988.3	19.0	207.0
		310.5	9.3	- 36	298-316	18	10.6	1977.7	14.6	221.6
COMPLETED	18-12-75	322.5	9.0	- 35	316-330	14	8.0	1969.7	11.5	233.1
		340.	8.5	-34½	330-340	10	5.9	1963.8	8.7	241.8
SIGNIFICANT CORE LOSS ZONES										
ORE ZONE GROUND CONDITIONS										
LOGGED BY	A. ROSS									
COMMENTS	Drilled with 10L. 15m NW casing left between 84m and 99m. HW cased to 72m.									

SUMMARY — ASSAY DATA

LODE NAME	FROM	TO	LENGTH (m.)	AVERAGE WEIGHTED ASSAYS Sn.	Cu.	As.	S.				

SUMMARY METALLURGICAL DATA COMPOSITE SAMPLE

LODE NAME	FROM	TO	Sn.	Cu.	As.	S	Cs_2F_3	Ag.	Bi		Sn - Rec.	Cu - Rec.	Carb.	Silic.	S.G.

029

APPENDIX 4

460030

DIAMOND DRILL RECORD

HOLE NUMBER: RL 34

LOGGED BY: A. ROSS

030

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
0	15.7	2.8	18	Core very broken. Poor recovery. White to light brown kaolin rich weathered rock. Fine grained and poorly bedded. Non calcareous. Grades into less weathered interval.	
15.7	27.0	2.0	18	Core very broken. Predominantly fresh rock with weathering on some broken surfaces and on joints. Dark grey to black indurated siliceous oolitic chert. Oolites av. 3mm and are commonly ellipsoidal. Individual oolites are dark grey. Non magnetic and non calcareous.	
27.0	46.5	2.3	12	Core still very broken. Friable or porous dark grey to light grey fine grained sandstone. Well bedded BCA 45°. Trace of pyrite and hematite on bedding and joint surfaces. Either a poorly compacted sandstone or weathered sandstone. At 42m BCA approaches 30°. Few silt layers occur at 42m - alternately grey and cream with laminae up to 5mm in thickness. Non calcareous and non magnetic.	
46.5	49.5			No recovery.	
49.5	73.5	2.4	10	Core very broken. Green and brown weathered massive fine grained sandstone. Non calcareous. Non magnetic.	
73.5	117.2	42.4	97	Massive indurated carbonate, grey with fine carbonaceous stylolites throughout. Irregular stylolites and depositional textures throughout. Several (1m) zones of actinolite/tremolite alteration occur. Trace of fine grained sulphide throughout - essentially barren. Oolitic texture from 82.7 to 83.0. Possible bedding BCA 50°. From 83.0 to 85.3 silicified carbonate breccia with carbonate infilling fragments. Trace amount of po present in carbonate veins and infillings from 86 to 91m. BCA 45° at 94m indicated by oolites. After 100m minor amount of oolitic fragments distributed throughout, often indicating bedding structures. Fine grained silicified fragments occur with carbonate cement. Grades into:	
117.2	119.5	2.3	100	Calcareous, dark grey, fine grained oolitic rock. Bedding well defined. BCA 20-30°. Dark mineral? present. Carbonate veins and tremolite/actinolite alteration common. Lower part of interval is calcite veined and contains large slumped fragments.	
119.5	122.4	2.9	100	Non calcareous, well bedded banded chert. BCA 40°. Contains minor amount of sulphide (1%) along bedding planes and in some veinlets. Colour light grey to green. Chlorite on bedding surfaces. Slightly magnetic due to po. Upper 1m of interval is veined by carbonate and alteration products. Core broken from 121.5 to 122.4.	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag

4600031

DIAMOND DRILL RECORD

HOLE NUMBER M. 34

LOGGED BY A. Ross

031

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
122.4	123.6	1.2	100	Light grey, predominantly massive, carbonate. Last 0.3m contains up to 5% po., irregularly distributed along veinlets.	
123.6	145.0	21.4	100	Predominantly dark grey and bleached, extremely well bedded banded cherts. BCA varies from 40° at start of interval to 30° at base. Same as previous banded chert. Originally well bedded siltstones but hornfelsed. Trace amount of po. throughout, hence slightly magnetic. Sulphide occurs on bedding surfaces. Non calcareous except for rare carbonate veinlets 127.4 to 132m and 142.0 to 144.0 (core very broken). Several po. containing carbonate veins throughout interval. Becoming calcareous from 144m, slumped and with more sulphides (po).	
145.0	151.4	14.4	100	Grades into conglomerate with minor bands of chert. Carbonate alteration to 147.7m and from 149.9 to 151.5m. Conglomerate is composed of green, brown, grey silicified fragments, which range from 2mm to 10cm. Some fragments are angular to subangular - breccia? Trace amount of po. present mainly in veinlets. Essentially non - magnetic except for po.	
151.4	159.3	7.9	100	Grades into predominantly massive, but otherwise well bedded dark grey to black fine grained chert. Minor zones of hematitic chert and conglomerate. Intensley magnetic. BCA at 35°. Hornfelsed texture with minor actinolite alteration. Minor carbonate veinlets.	RED ROCK.
159.3	160.4	1.1	100	Zone of actinolite alteration and brecciation. Silicified. Large veins of po.	
160.4	220.5	60.1	100	Interbedded med. grained tuffaceous siltstones and shales. Predominantly hornfelsed. Coloured grey to cream brown, well bedded cherts with *minor zones* of fragmental lapilli tuffs. Core broken throughout into 0.1-0.2m lengths. Several zones (1-2m in length) of carbonated material. Sulphides (po. and py.) occupy up to 5% of rock in some zones, occurring along bedding planes and in veinlets, often associated with carbonate/calcite veinlets. BCA varies from 15-30°. Slumping, microfaulting and brecciation common. Slightly to moderately magnetic depending on po. content.	
220.5	229.7	9.2	100	Grades into extremely well bedded hornfelsed siltstone or bedded chert. Fine to medium layers, Colour cream and grey alternating beds. Containing up to 5% sulphide (pyrrhotite). Rock has banded appearance. Magnetic due to po. Core moderately broken. BCA at 25°. Lower 1m of interval is calcareous - carbonate alteration zone	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag_2O_3	Au
165	166	<0.01		<0.01	0.004			<0.005	<0.01	<0.001
166		<0.01		<0.01	0.006			0.007	<0.01	0.001
167		<0.01		<0.01	0.030			0.007	0.01	0.001
168		<0.01		<0.01	0.003			0.007	<0.01	0.002
169		<0.01		<0.01	0.004			0.007	<0.01	0.002
170		<0.01		<0.01	0.006			0.005	<0.01	0.002
171	172	<0.01		<0.01	0.006			<0.005	<0.01	0.001
175	176	<0.01		<0.01	0.005			<0.005	<0.01	0.001
176		<0.01		<0.01	0.003			0.006	<0.01	<0.001
177		<0.01		<0.01	0.003			<0.005	<0.01	<0.001
178		<0.01		<0.01	0.006			<0.005	<0.01	0.001
179		<0.01		<0.01	0.006			<0.005	<0.01	0.001
180		<0.01		<0.01	0.006			<0.005	<0.01	0.003
181		<0.01		<0.01	0.024			<0.005	<0.01	<0.001
182		<0.01		<0.01	0.007			<0.005	<0.01	<0.001
183		<0.01		<0.01						
184		<0.01		<0.01						
185		<0.01		<0.01						
186		<0.01		<0.01	0.015			0.005	<0.01	<0.001
187	188	<0.01		<0.01	0.008			<0.005	<0.01	<0.001
192.5	193	<0.01		<0.01	0.021			0.007	<0.01	<0.001
193		<0.01		<0.01	0.009			0.007	<0.01	<0.001
194		<0.01		<0.01	0.016			0.007	<0.01	0.002
195		<0.01		<0.01	0.022			0.009	<0.01	0.002
196	197	<0.01		<0.01	0.018			0.008	<0.01	0.002
199.5	200	<0.01		<0.01	0.016			0.006	<0.01	0.002
200		<0.01		<0.01	0.024			0.005	<0.01	0.002
201		<0.01		<0.01	0.039			0.011	<0.01	0.002
202		<0.01		<0.01	0.021			<0.005	<0.01	0.002
203	204	<0.01		<0.01	0.007			0.005	<0.01	0.002
206.5	207	<0.01		<0.01	0.010			0.005	<0.01	0.002
207		<0.01		<0.01	0.011			0.005	<0.01	0.002
208		<0.01		<0.01	0.006			0.007	<0.01	0.002
209		<0.01		<0.01	0.008			0.007	<0.01	0.006
210		<0.01		<0.01	0.005			0.006	<0.01	0.003
211		<0.01		<0.01	0.005			0.007	<0.01	0.003
212		<0.01		<0.01	0.005			0.011	<0.01	0.003
213		<0.01		<0.01	0.006			0.009	<0.01	0.002
214		<0.01		<0.01	0.005			0.010	<0.01	0.002
215		<0.01		<0.01	0.010			0.011	<0.01	0.005
216		<0.01		<0.01	0.006			0.012	<0.01	0.002
217		<0.01		<0.01	0.005			0.012	<0.01	0.002
218		<0.01		<0.01	0.006			0.012	<0.01	0.002
219		<0.01		<0.01	0.008			0.012	<0.01	0.005
220		<0.01		<0.01	0.005			0.011	<0.01	0.002
221		<0.01		<0.01	0.007			0.010	<0.01	0.005
222		<0.01		<0.01	0.004			<0.005	<0.01	0.001
228	229	<0.01		<0.01	0.007			<0.005	<0.01	0.001

460032

DIAMOND DRILL RECORD

HOLE NUMBER ML 34

LOGGED BY A.Ross

032

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION	ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	WO_3 Au	Mo
				with minor amount of sulphide. Rock type essentially fine grained with minor fragmental well bedded layers. This and previous interval are interbedded tuffaceous		224	225	<0.01		<0.01	0.005			<0.005	<0.01	<0.001
						225	226	<0.01		<0.01	0.004			<0.005	<0.01	<0.001
				siltstones and mudstones with minor pebble conglomerate		226.5	227	<0.01		<0.01	0.008			<0.005	<0.01	<0.001
				component.		227		<0.01		<0.01	0.005			<0.005	<0.01	<0.001
						228		<0.01		<0.01	0.003			<0.005	<0.01	<0.001
229.7	232.4	2.7	100	Grades into well bedded fine grained black carbonaceous or graphitic shale containing up to 2% pyrite, minor		229		<0.01		<0.01	0.008			<0.005	<0.01	<0.001
						230		<0.01		<0.01	0.010			<0.005	<0.01	<0.001
				chalcopyrite and pyrrhotite. BCA at 45°. Very calcareous due to fine veinlets of carbonate which become thicker		231		<0.01		<0.01	0.009			<0.005	<0.01	<0.001
						232	233	<0.01		<0.01	0.007			<0.005	<0.01	<0.001
				further down the interval. Carbonate veining and brecciation increase. Core very broken.												
232.4	235.8	3.4	100	Very broken zone. Highly carbonate veined and brecciated												
				with carbonate infilling. Possible fault zone. Minor amount of sulphide. Original rock hornfelsed siltstone-												
				brown grey chert.												
235.8	247.0	11.2	100	Grades into massive to poorly bedded fine grained dark brown hornfelsed mudstone with occasional carbonate												
				veinlets and brecciation. Zones of alteration and brecciation throughout. Trace of sulphide.												
247.0	247.6	0.6	100	Very carbonate-rich zone. Calcareous greywacke or impure												
				carbonate. Colour grey green.												
247.6	250.2	2.6	100	Massive grey green mottled fine grained sandstone or greywacke. Possible bedding BCA 10°. Non calcareous, grades into:												
250.2	254.0	3.8	100	Massive to poorly bedded fine grained dark brown hornfelsed mudstone (chert) with carbonate veinlets and minor												
				carbonate/actinolite alteration. Core broken over part of interval. Similar to rock type in 235.8 to 247.0.												
254.0	264.8	10.8	100	Predominantly calcareous, massive to poorly bedded grey												
				green (mottled) greywacke. Fine to med. grained. BCA at 10°. Minor carbonate veinlets and minor brecciation.												
				0.1m massive po at end of interval.												
264.8	340.5	75.7	100	Monotonous interval of dark grey to black and green, slightly magnetic to moderately magnetic, predominantly												
				massive tuffaceous mudstones and minor fragmental volcanics, exhibiting flow textures. Minor slumping.												
				BCA at 30°. Trace sulphide only in carbonate veinlets and veins at 294.4m. From about 220m lithology becomes												
				brown green colour indicating increasing grade of metamorphism? 291.3 - 291.7m carbonate/tremolite vein.												
				Minor carbonate veins throughout.												
				END OF HOLE												

460033

DIAMOND DRILL RECORD

HOLE NUMBER ML 34

LOGGED BY A. Ross

033

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORM.	% Sn FROM	TO	TOTAL	As STAN.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag.	g/t WO_3
				PETROLOGICAL DESCRIPTIONS The following II descriptions refer to core samples from ML 34. They were presented by D. Cowan in Report CMS 76/4/2. ML. 34 99.7 m. WEAKLY CARBONACEOUS DOLOMITE BRECCIA Hand Specimen: Pale grey fine-grained dolomite, K stain negative, calcite stain negative. Microscopic: This is a fine-grained dolomite, incipiently carbonaceous and with carbonate-talc healed breccia textures. The rock consists essentially of irregular aggregated (500µ - 5mm +) of fine-grained semi-interlocking dolomite (mean 20µ) cemented and marginally replaced by coarser-grained carbonate (probably low Fe dolomite) with a little talc. Minor traces of illite and colourless near-isotropic Mg chlorite are present. Traces of carbonaceous (coaly) material occur in disseminated specks, rare discontinuous incipiently stylolitic films and in disrupted aggregates, probably diagenetic cavity fillings, within the coarser carbonate. The original sediment appears to have been pelletal or nodular with vague subovoid structures (1 - 2mm) persisting in places but recrystallised and featureless in terms of origin. Although only very weakly carbonaceous there are similarities with the 8370 carbonaceous dolomite. The breccia-healing carbonate and talc are of low temperature hydrothermal character. The rock carries rare very fine particles of pyrite. ML. 34 - 114.9 m. BRECCIATED METASOMATISED WEAKLY CARBONACEOUS DOLOMITE Hand Specimen: Grey brecciated dolomite, K stain negative, calcite stain negative. Microscopic: A brecciated and metasomatically altered dolomite weakly carbonaceous and essentially similar to 99.7m. The rock consists of microcrystalline semi-interlocking (mean 15 - 20µ) with sparsely disseminated flakes of Mg-chlorite or rarely illite. Carbonate is weakly stained with virtually submicroscopic ?carbonaceous material. There are sporadic carbonaceous stylolites and apart from being devoid of "nodular" features is near-identical with the 99.7m speciment. Brecciated areas are healed with relatively coarse-grained carbonate with patchy colourless fine semi-fibrous to weakly poikilitic tremolite and late cavity-filling cherty to granular quartz. These aggregates are weakly zoned with marginal carbonate (locally comb-structured) intermediate														

460034

DIAMOND DRILL RECORD

HOLE NUMBER: ML. 34

LOGGED BY: A. Ross

034

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORM.	% Sn. FROM	TO	TOTAL	As STAN.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	g/t WO$_3$
				BRECCIATED METASOMATISED WEAKLY CARBONACEOUS DOLOMITE ML. 34 - 114.9m cont.													
				tremolite and cores of carbonate (-quartz). Marginal portions of the host rock tend to be weakly impregnated with fine-grained pyrrhotite (max. 100µ, rare aggregates to 2mm). Rare 50 - 100µ particles of chalcopyrite are present. There is an incipient development of late (post-breccia) carbonaceous films.												
				ML. 34 - 117.7m. RECRYSTALLISED CARBONACEOUS DOLOMITE													
				Hand Specimen: Dark grey granular carbonaceous dolomite, K stain negative.													
				Microscopic: This is a recrystallised carbonaceous dolomite with relict nodular and ?oolitic microtextures. The rock consists largely of carbonate anhedra sized in the 250µ - 1mm range, sub-polygonal in shape within incipiently sutured grain boundaries. These features are weakly poikilitic with fine (< 50µ) inclusions of carbonaceous material, talc, chlorite and tremolite. Some have relict radial microstructures and several include near spherical carbonate grains (to 120µ) which probably represent recrystallised oolites. Carbonaceous matter is relatively abundant occurring mainly interstitially to the carbonate anhedra and tending to form subparallel films with fine kaolinitic material closely intergrown. The carbonaceous material is incipiently layered in its distribution as are the "oolites". Crudely vein-like patches of relatively clear carbonate occur sporadically. These are stressed, disrupt or locally displace carbonaceous films and heal semi-continuous discordant fractures. The rock is stained throughout with fine-grained pyrrhotite as single grains (< 10 - 100µ) and sporadic aggregates (to 2mm). Minor traces of chalcopyrite (to 100µ) pyrite (to 150µ), arsenopyrite (to 50µ) and marcasite (after pyrrhotite) are associated. Sphene is an accessory constituent as fine (5 - 30µ) an- to euhedral particles.												
				ML. 34 - 128.2m. PHLOGOPITISED LAMINATED SILTY SHALE													
				Hand Specimen: Dark grey laminated siltstone, K stain negative.													
				Microscopic: This is a weakly phlogopitised laminated silty shale reasonably correlated with the Renison Bell Member at least on the basis of petrological features. The rock is finely laminated on a 500µ - 1mm scale with a subtle alternation of shale and silty shale lamellae. It consists of incipiently recrystallised/orientated clay (now sericite) and splintery to angular quartz in varying proportions with minor traces of silt-sized clastic feldspar												

DIAMOND DRILL RECORD

HOLE NUMBER: ML. 34

LOGGED BY: A. Ross

035

INTERVAL (m) FROM	INTERVAL (m) TO	RECOVERY m	RECOVERY %	DESCRIPTION	FORM.	% Sn. FROM	% Sn. TO	% Sn. TOTAL	% Sn. As STAN.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag.	g/t WO$_3$
				PHLOGOPITISED LAMINATED SILTY SHALE ML. 34 - 128.2m. cont.													
				and white mica. Thinly disseminated detrital particles of (leucoxenic) semi-opaques, tourmaline and zircon are present. Fine aggregates (max. 200μ) of pyrrhotite and phlogopite are common throughout and are weakly layered in their distribution. These features, at least in part, replace diagenetic carbonate rhombs. Phlogopite is a reddish-brown variety similar to that at Renison. Very minor traces of chalcopyrite are associated.												
				ML. 34 - 145m. METASOMATISED LIMESTONE BRECCIA Hand Specimen: Grey altered limestone breccia, K stain negative, calcite stain positive.												
				Microscopic: This is a recrystallised and extensively altered limestone (?dolostone) breccia. The rock is very poorly sorted and in hand specimen frequent angular to platey fragments, with a fairly marked dimensional preferred orientation are seen. Where relatively fresh these features consist of microcrystalline dolomite with sporadic random chlorite and illite flakes (thus sim. eg. 99.7, 114.9m). Elsewhere they are extensively replaced by coarser-grained calcite frequently accompanied by diopside, tremolite talc and phlogopite with accessory fine-grained sphene. Vesuvianite is a minor trace constituent. The matrix is similarly altered but tends to consist of calcite with patchy kaolinillite. Locally coarse anhedral calcite crystals including talc pseudomorphs of dolomite rhombs are seen and there are frequent calcite (+ tremolite, diopside); veins penetrate the breccia fragments frequently in a "cross fracture" pattern. Fine-grained pyrrhotite (typically 50μ, spongy aggregates to 1 mm) is sparsely disseminated throughout the rock. Minor traces of pale (?nickelian) pyrite and rare chalcopyrite particles are present and ultrafine sphene is an accessory constituent.												
				ML. 34 - 147.3 m. METASOMATISED XENOLITHIC TUFF LAVA Hand Specimen: Grey altered ?breccia, K stain positive.												
				Microscopic: A fairly thoroughly altered rock recognisable as a strongly xenolithic trachytic tuff lava and more readily correlated with Red Rock than 145.0m. Clasts are poorly sorted (150μ-1cm +) generally angular or platey and comprise 50 - 60% of the rock. Many consist of subvitric/feldspar microlitic trachytic material variably devitrified and kaolinised. Accompanying these are extensively altered fragments of "limestone" now consisting of fine-grained												

460036

DIAMOND DRILL RECORD

HOLE NUMBER: ML. 34

LOGGED BY: A. ROSS

036

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORM.	% Sn. FROM	TO	TOTAL	AS STAN.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag.	% WO_3
				METASOMATISED XENOLITHIC TUFF LAVA ML. 34 - 147.3m. cont. tremolite, microgranular diopside and patchy carbonate with a little quartz and secondary albite. There are sporadic poorly defined fragments of carbonaceous sediment and and rare clasts of ortho-quartzite with a sparse late carbonate-tremolite cement. Fragments show a fairly strong dimensional preferred orientation parallelling the flow fabric in the lava matrix which carries occasional K-feldspar phenocrysts. Pyrrhotite is relatively common particularly in tremolitic portions of the rock where it occurs closely intergrown with the amphibole. Arsenopyrite occurs as rare euhedra (to 750u) with occasional inclusions of pyrrhotite. ML. 34 - 156.4m. FERRUGINOUS CHERT Hand Specimen: Grey-black fractured cherty rock, K stain negative, magnetic. Microscopic: This is a ferruginous chert, locally brecciated and metasomatised. Where relatively fresh the rock consists of microcrystalline cherty quartz pervasively stained with very fine hematite which imparts a reddish colouration to the hand specimen. The hematite is somewhat layered in its distribution and locally finely laminated. Here there is evidence of pre-consolidation brecciation healed with relatively clear chert. Elsewhere hematite has recrystallised to fine-grained magnetite (2 - 50u) and the rock is then grey. Where brecciated the rock consists of angular fragments of sem-massive fine-grained magnetite with a little interstitial quartz. The clasts are cemented with fine-grained quartz and pale green tremolite-actinolite with patchy Fe-carbonate. Deformation here is of a brittle type. Actinolite in part pseudomorphously replaces carbonate rhombs and veins intersecting earlier (diagenetic) quartz veinlets. Magnetite is subskeletal in habit and fairly even grained (mean 30 - 40u) where semi-massive. Minor fine-grained pyrite occurs associated with the quartz-tremolite-carbonate aggregates. ML. 34 - 167.2m. ALTERED SILTY SHALE Hand Specimen: Grey shale with disseminated and veinlet pyrrhotite, K stain negative. Microscopic: This is a silty shale with disseminated pyrrhotite. In terms of primary features the rock is fairly featureless, consisting of incipiently orientated ultrafine sericite with fine silt-sized clastic quartz particles more or less evenly disseminated throughout. There are vague pelletal features in places, but these are not common. The rock is essentially unbedded and is devoid of tangible pyroclastic features. There are frequent clots (to 300u) of fine-grained pyrrhotite with subordinate secondary sericite closely intergrown. These features appear to have replaced or nucleated on diagenetic																

460037

DIAMOND DRILL RECORD

HOLE NUMBER: ML 34

LOGGED BY: A. Ross

037

INTERVAL (m) FROM	INTERVAL (m) TO	RECOVERY m	RECOVERY %	DESCRIPTION	FORM.	% Sn. FROM	% Sn. TO	% Sn. TOTAL	% Sn. As STAN.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag.	% WO_3
				ALTERED SILTY SHALE ML. 34 - 167.2m. cont..													
				on diagenetic carbonate and rare chalcopyrite particles are associated. Stressed and disrupted quartz veins and disrupted veins and frequent discontinuous quartz veinlets are present. Some of these features are of early origin (diagenetic) and are intersected by discontinuous veinlets of pyrrhotite with disseminated white mica flakes. Others carry disseminated pyrrhotite and developed more or less contemporaneously with the pyrrhotite veinlets. Locally fragments of carbonaceous chert ?vein are seen enclosed in coarser vein quartz.												
				ML. 34 - 230.5m. CARBONACEOUS SHALE													
				Hand Specimen: Black carbonaceous shale with pyrrhotite veinlets, K stain negative.													
				Microscopic: This is a weakly altered strongly carbonaceous shale. The rock is semi-opaque consisting largely of carbonaceous material with subordinate "sericitic" kaolin which is weakly layered in its distrivution. Very fine silt-sized (mean 2 05u) detrital clay flakes are common and similarly sized clastic quartz grains are thinly dispersed throughout. These are locally finely laminated in their distribution; elsewhere the rock is essentially massive. It has undergone incipient (load-or burial-) metamorphism. Irregular, discontinuous veinlets of quartz with a little colourless near-isotropic chlorite and disseminated fine-grained pyrrhotite are common. These "grade" into discontinuous micriscopic "lenses" of similar composition and fabric which probably represent altered clay pellets. Minor traces of chalcopyrite are associated with the pyrrhotitic veinlets. These features are locally intersected/displaced by coarser (to 2mm) veins of pyrite with discontinuous selvedges of fine-grained marcasite. These features are in turn displaced by late microscopic veinlets of carbonate.												
				ML. 34 - 249.7m. METASOMATISED ?DOLOMITIC CHERT													
				Hand Specimen: Fractured, laminated, grey ?turbidite, K stain negative.													
				Microscopic: This is thoroughly altered finely laminated sediment thought to have been an impure (?dolomitic) chert although the evidence is sketchy. The rock consists largely of microcrystalline (mean about 5u) diopside with subordinate fine-grained carbonate, a little quartz and disseminated aggregates (to 200u) of tremolite-actinolite which are vaguely pseudomorphous after carbonate rhombs. The relict bedding lamination is poorly preserved in thin section but is more typical of a chert than an (impure) carbonate rock. The distinction is academic at this stage.												

DIAMOND DRILL RECORD

HOLE NUMBER: ML. 34

LOGGED BY: A. Ross

038

INTERVAL (m) FROM	INTERVAL (m) TO	RECOVERY m	RECOVERY %	DESCRIPTION	FORM.	% Sn. FROM	% Sn. TO	% Sn. TOTAL	% Sn. AS STAN	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag.	g/t WO3.
				METASOMATISED ?DOLOMITIC CHERT ML. 34 - 249.7m. cont. Thin semi-continuous tremolite-actinolite and diopsidic veinlets, sometimes with small displacements are intersected by sporadic veinlets of prehnite and by occasional coarser fracture veins of tremolite and carbonate (to 1mm). Fine-grained (mainly 20μ) pyrrhotite is common throughout the rock with traces of equally fine chalcopyrite. Locally spongy aggregates of pyrite and marcasite have developed from pyrrhotite aggregates. The tremolitic veins carry minor traces of pyrite pyrrhotite, ilmenite and sphene. ML. 34 - 321.8m. ALTERED SHALE BRECCIA Hand Specimen: Grey ? shale breccia, K stain negative. Microscopic: This is a weakly sheared and somewhat altered soft pebble conglomerate, or shale Breccia. Frequent platey to ovoid poorly sorted incipiently carbonaceous sedimentary rock fragments (shale, argillaceous siltstone, argillaceous chert) are present with these features sized in the 20μ - 3mm range and showing a fairly marked dimensional orientation. This appears to reflect shearing although there is only a weak tendency to development of a slatey cleavage. The "shale" fragments are accompanied by disseminated silt to medium sand sized clastic quartz grains. There are no tangible pyroclastic components. The matrix consists essentially of incipiently orientated sericitic material. Secondary fine-grained random red-brown phlogopite is more or less pervasive throughout the rock and this is accompanied by ultrafine flakes of ilmenite. Sporadic aggregates (to 700μ) of pyrite and marcasite have developed from pyrrhotite, traces of which persist, and the rock also carries minor fine-grained chalcopyrite. NOTES TO ACCOMPANY ML 34 DESCRIPTIONS The ML 34 specimens, on the basis of petrological features appear closely analogous to the Renison host rock sequence as suggested by L.A. Newnham (letter dated 1st April 1976). Particularly characteristic is the occurrence of carbonaceous illitic and chloritic "marbles" (ML 34 99.7, 114.9, 117.7, ?145 and ?429.7m) which in part are near-identical with the Renison carbonate lenses. Additionally there are two rocks 147.3 and 156.4m) reasonably correlated with Red Rock and 128.2m is very similar to typical Renison Bell Shale. This sequence is metasomatised to varying degrees with development of calc-silicate assemblages in the carbonate rocks and phlogopite in the argillaceous sediments. Pyrrhotite is semi-ubiquitous throughout. A significant feature is the development of sub-skeletal magnetite after hematite marginal to an altered zone at 156.4m (ferruginous chert). Magnetite of this type is characteristic of some of the Mt. Lindsay mine rocks. Its occurrence here in a "marginal" situation suggests much of the magnetite at Mount Lindsay represents recrystallised/reconstituted primary material.														

460039

[M]INISON LIMITED – DIAMOND DRILL R[E]ORD

HOLE NUMBER	M.L. 35	SURVEY Depth	SURVEY Bearing	SURVEY Dip	From – To	Distance D	VERTICAL D. Sin Dip	VERTICAL R.L.	HORIZONTAL D. Cos Dip	HORIZONTAL Prog. Total
								2462.7		
PURPOSE	To test Main Lode	0	43.4	-51	0 -15	15	11.7	2451.0	9.4	9.4
		30	43.0	-54	42	27	21.8	2429.2	15.9	25.3
LOCATION	MT. LINDSAY	54	42.7	-52½	66	24	19.0	2410.2	14.6	39.9
		78	42.4	-52½	90	24	19.0	2391.2	14.6	54.5
COLLAR R.L.	2462.7	102	42.1	-52	114	24	18.9	2372.3	14.8	69.3
		126	41.8	-51	138	24	18.7	2353.6	15.1	84.4
CO-ORDINATES	32039.4 N 10675.1 E	150	41.5	-50	162	24	18.4	2335.2	15.4	99.8
		174	41.2	-50	183	21	16.1	2319.1	13.5	113.3
LENGTH	282 m	192	41.0	-50	202	19	14.6	2304.5	12.2	125.5
		216	40.7	-50	282	80	61.3	2243.2	51.4	176.9
HOLE SIZE	0-69 NQ 69-282 BQ									
COMMENCED	7-1-76									
COMPLETED	23-1-76									
SIGNIFICANT CORE LOSS ZONES	Some core lost in broken zone from 195 – 209m.									
ORE ZONE GROUND CONDITIONS	H.W. Rocks very broken									
LOGGED BY	A. Ross									
COMMENTS	Drilled with 10L. Hit water between 185 ~ 210m and at granite contact. Cave in at 190m. HW cased to 57m.									

SUMMARY – ASSAY DATA

LODE NAME	FROM	TO	LENGTH (m.)	AVERAGE WEIGHTED ASSAYS Sn.	Cu.	As.	S.	Pb	Zn	Bi	Mo	WO_3
Main Ore Zone	198.0m	210.0m	12.0m.	0.26	0.086	0.23		0.002	0.010	0.03	0.002	0.03
		Estimated True Thickness	9.0m.									

SUMMARY METALLURGICAL DATA COMPOSITE SAMPLE

LODE NAME	FROM	TO	Sn.	Cu.	As.	S	$Ca F_2$	Ag.	Bi		Sn - Rec.	Cu - Rec.	Carb.	Silic.	S.G.

APPENDIX 5

039

460040

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 35

LOGGED BY A. Ross

040

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
0	21.0	4.1	19.5	Very broken, semi-fresh dark grey hornfelsed greywacke. Fine grained, massive. Non-calcareous and slightly magnetic. Minor brown clays.	
21.0	52.0	8.2	26.5	Orange-brown to red-brown weathered rock - mostly clay. Original bedding altered to kaolin rich layers. Core very broken.	
52.0	64.0	3.9	32.5	Still clay zone, but colour change from dark ferruginous browns to light cream brown colours. Minor amount of less weathered fragments of light grey, fine grained, well bedded hornfelsed siltstones. B.C.A. 55°. Grades into:	
64.0	72.8	6.3	71.6	Fresh rock. Light grey, light brown and green, interbedded carbonate and minor chert. Bleached appearance. Weakly magnetic due to fine disseminated po. B.C.A. av. 60°. Banding fairly regular. Calcareous. Microfractured and veined by calcite.	No. 1. ANOMALY
72.8	90.0	17.2	100	Light grey, light brown, light green, altered and highly siliceous interval of interbedded siltstones and medium grained greywackes. Weakly magnetic due to trace of po. 72.8 - 81.8m. Well bedded or banded, cherts and siliceous siltstones. Minor carbonate bands. Siderite bands. B.C.A. 45°. Trace po. Minor actinolite replacement of beds. Trace chp. 81.8 - 82.9m. Green to brown siliceous rock with large ovoids. Diagenetically compressed parallel to bedding. B.C.A. 50°. Large fragments of rounded pebbles - conglomerate ?. 82.9 - 90.0m. Light brown to cream siliceous siltstones, greywackes. Well bedded in places. Highly veined by epidote? Minor microfaulting and rare contorted bedding. Minor amount po. B.C.A. 55°. Rare siderite bands and carbonate veinlets.	
90.0	144.3	54.3	100	Dark grey to greenish black hornfelsed, fine grained sediments. Interbedded siltstones and minor greywackes. Minor basic lavas? Predominantly thick bedded. 90-98.8m. Light grey with minor brown colours. Actinolite veining and alteration. Trace sulphide in some veinlets. B.C.A. 45°. Weakly magnetic in places. Trace sulphide disseminated throughout and at base of this zone. 98.8 - 99.8m. Altered zone. Light to dark green and brown in colour. Minor amount py. B.C.A. 45°. 99.8 - 111.8m. Greenish black, predominantly massive, hornfelsed siltstone. B.C.A. 45° but locally can be 30° possibly due to cross bedding. Moderately to strongly magnetic from 101.0 to 109.6m. Chlorite rich joints. Very rare actinolite veinlets. 111.8 - 112.1m. Light green alteration zone. Irregular veinlets of calcite. 112.1 - 134.0m. Greenish black hornfelsed, thick bedded siltstones. Strongly magnetic from 115 to 134m. Minor	

ASSAYS

FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Mo	WO3
66	67	0.01		0.01	0.036			0.003	0.003	<0.01
67		0.02		<0.01	0.020			0.003	<0.002	<0.01
68		<0.01		<0.01	0.025			0.002	<0.002	<0.01
69		0.01		<0.01	0.019			0.001	<0.002	<0.01
70		<0.01		<0.01	0.005			0.002	<0.002	<0.01
71		0.01		<0.01	0.013			0.002	<0.002	<0.01
72		<0.01		<0.01	0.013			0.001	<0.002	<0.01
73		0.01		<0.01	0.020			0.001	<0.002	<0.01
74		<0.01		<0.01	0.011			0.001	<0.002	<0.01
75		<0.01		<0.01	0.011			0.001	<0.002	<0.01
76		0.02		<0.01	0.014			0.001	<0.002	<0.01
77		0.01		<0.01	0.020			0.001	<0.002	<0.01
78		0.05		<0.01	0.062			0.001	<0.002	<0.01
79		0.05		<0.01	0.032			0.004	<0.002	<0.01
80	81	<0.01		<0.01	0.013			0.001	<0.002	<0.01

460041

DIAMOND DRILL RECORD

HOLE NUMBER: M.L. 35

LOGGED BY: A. Ross

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				Microfractures and spotted zones throughout. B.C.A. 30°. Rare slumped contacts between fine siltstone and mudstone beds. Mud pellets occur. Core moderately broken from 125 to 130m with calcite on surfaces. Trace py. on chlorite rich joints. 134.0 - 144.3m. Essentially non-magnetic grey siltstones Predominantly massive. Veined by calcite, microfractured Minor zones medium grained greywacke. Trace po. in some veins and fractured zones. B.C.A. 35°. Cream alteration from 138.2 to 138.3 m.	
144.3	148.1	3.8	100	Light brown, cream to light green in colour. Zone of highly fractured, contorted, banded chert. Mildly magnetic due to trace po. throughout. Calcite veined. B.C.A. 60° at end of interval.	
148.1	180.0	31.9	100	Grades into interbedded siltstones and greywackes with minor fragmental zones. Minor actinolite alteration zones often with trace of sulphide (po. chp.). Essentially non-magnetic B.C.A. 45°. Brown, green and blue-grey colours. Minor spotted zones. Essentially thickbedded. Minor cross bedding. Some very broken zones 148.7 -151.5, 157.3 - 157.4, 160.9 - 165, 173.5 - 177.	
180.0	181.5	1.5	100	Altered zone. Colour cream with bleached appearance. Bedding still definite. B.C.A. 45°. Actinolite -po alteration from 181.2 - 181.5m.	
181.5	195.5	14.0	100	Dark grey sediments and spotted lavas? Similar to interval 148.1 -180.0m. More frequent microfracturing. Non-magnetic Core very broken from 189.5m. Becomes chlorite rich from 190m and also very fractured. B.C.A. 45°.	
195.5	209.0	12.6	~~100~~ 93	Core very broken. Core loss between 203 - 204, 207 - 210m Massive magnetic - actinolite skarn zone. Irregular veins of po. chp. minor asp. B.C.A. 45°. Minor veinlets calcite At 203.4, calcite rich brecciation zone - possibly fault. Struck water at this depth.	MAIN ORE ZONE
209.0	254.5	45.5	100	Less altered interval of cream to green brown bedded siliceous sediments. Abundant actiinolite veining and alteration. Zones of sulphide (po., chp., asp.) throughout. Less magnetite. Banded appearance. Occasional thick vein of sulphide. Rare carbonate band - essentially non-calcareous B.C.A. 's 40 - 60°. Quartz - tourmaline and fluorite veins encountered towards the base of interval, parallel to bedding.	
254.5	282.0	28.5	100	Coarse grained biotite granite. Minor tourmaline veinlets 45° to CA. Contact with sediments 30° to CA.	MEREDITH GRANITE

ASSAYS

FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Mo	WO_3
196	197	0.07		0.19	0.030	0.002	0.009	0.008	<0.002	0.03
197		0.03		0.45	0.038	0.002	0.011	0.008	<0.002	0.01
198		0.38		0.15	0.027	0.002	0.013	0.011	<0.002	0.03
199	199.5	0.10		0.22	0.025	0.002	0.022	0.014	<0.002	0.02
199.5	200	0.27		0.07	0.060	0.002	0.012	0.043	<0.002	0.02
200	201	0.29		0.10	0.068	0.003	0.010	0.043	<0.002	0.08
201		0.23		0.04	0.053	0.002	0.010	0.030	<0.002	0.02
202		0.07		0.40	0.050	0.002	0.009	0.023	0.002	0.01
203		0.53		0.26	0.370	0.002	0.010	0.017	0.003	0.03
204		0.51		0.03	0.080	0.002	0.008	0.009	0.002	0.03
205		0.20		0.45	0.814	0.002	0.009	0.029	0.002	0.01
206		0.14		1.01	0.070	0.002	0.011	0.055	0.003	0.02
207	210	0.14		0.02	0.037	0.001	0.014	0.005	0.003	0.04
208	211	0.05		<0.01	0.027			0.002	<0.002	0.01
209	212	0.06		0.02	0.038			0.003	<0.002	0.01
212	213	0.07		<0.01	0.037			0.041	<0.002	0.01
213	214	0.08		<0.01	0.026			0.044	<0.002	0.01
214	215	0.06		0.01	0.072			0.021	<0.002	0.01

041

460042

DIAMOND DRILL RECORD

HOLE NUMBER: M.L. 35

LOGGED BY: A. Ross

042

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				From 256.0 to 256.4 is sediment xenolith. Massive pyrrhotite - fluorite (minor chalcopy.) from 256.4 to 256.6m.	
				Minor amount pyrrhotite and arsenopyrite disseminated in granite to about 258m.	
				Minor alteration of feldspars to pinite.	
				END OF HOLE.	
				The following 4 descriptions were presented by D. COWAN in Report CMS 76/4/2.	
				ML. 35 - 78.2m ACTINOLITE-DIOPSIDE-GARNET SKARN	
				Hand Specimen: Grey-green weakly layered ?skarn, disseminated pyrrhotite, K stain negative.	
				Microscopic: This is a weakly layered metasomatic actinolite-diopside-garnet rock or skarn. Portion of the rock is layered on a millimetric scale and the remainder is massive. The layered area comprises a 3.5mm + band of microgranular diopside and actinolite partly enclosed in poikilitic hydrogarnet (to 100u) "grading" into a 4mm band of microgranular diopside (mean 10u) with discontinuous core and selvedge zones of fine-grained actinolite. Both bands contain around 5% of fine interstitial to coarse strongly poikilitic (to 750u) pyrrhotite. The massive area consists largely of random semi-ragged actinolite (trend hastingsite mean 150 - 200u). Irregular patches of carbonate occur interstitially and traces of sphene and diopside are present. Occasional clusters of hydrogarnet are seen as 100u inclusions in actinolite. Pyrrhotite is relatively common as anhedral grains (from 25u) and weakly poikilitic aggregates (to 2mm) closely intergrown with actinolite. Ilmenite, marginally altered to sphene is a semi-pervasive accessory component partly as inclusions in pyrrhotite. In polished section occasional corroded pyrite crystals and rare blebs of bismuth (to 50u) are seen included in pyrrhotite. Occasional discreet patches of chalcopyrite (max. 150u) are present. Pyrrhotite itself is extensively pyritised.	
				ML. 35 - 203.5m. PHLOGOPITE-ACTINOLITE-MAGNETITE ROCK	
				Hand Specimen: Grey magnetite-rich ?skarn, K stain negative, weakly fluorescent.	
				Microscopic: This is a phlogopite-actinolite-magnetite rock. The main constituent is fine-grained random greenish-yellow phlogopite which developed at least in part by replacement of granular to semi-ragged actinolite. Relics of actinolite are disseminated throughout in single grains and aggregates up to 5mm diameter and the amphibole was at least crudely	

ASSAYS

FROM	TO	Sn	S	As	Cu	Pb	Zn	Sr	Mo	WO_3
215	216	0.07		<0.01	0.041			0.029	<0.002	0.02
216		0.06		<0.01	0.022			0.023	<0.002	0.01
217		0.06		<0.01	0.019			0.010	<0.002	0.01
218		0.06		0.02	0.044			0.005	0.002	0.03
219		0.10		0.08	0.039			0.011	0.002	0.06
220		0.10		0.09	0.030			0.013	0.002	0.02
221		0.08		0.07	0.046			0.014	0.002	0.02
222		0.14		0.03	0.130			0.014	0.002	0.03
223		0.19		0.11	0.069			0.005	0.002	
224		0.10		0.03	0.049			0.007	0.002	
225		0.09		0.03	0.074			0.007	0.002	0.02
226		<0.01		3.16	0.085			0.070	0.003	0.01
227		0.14		0.21	0.044			0.025	0.004	0.07
228		0.14		0.29	0.032			0.031	0.003	0.02
229		0.04		0.05	0.054			0.010	0.003	0.05
230		0.01		0.01	0.060			0.010	0.002	0.14
231		0.02		0.17	0.035			0.015	<0.002	0.03
232		0.03		<0.01	0.039			0.006	<0.002	0.03
233		0.04		<0.01	0.040			0.006	<0.002	
234		0.01		<0.01	0.034			0.006	0.003	0.01
235		0.02		<0.01	0.045			0.008	0.002	0.01
236		0.01		<0.01	0.005			0.002	0.002	
237		0.01		<0.01	0.029			0.002	0.002	
238		0.01		<0.01	0.048			0.004	<0.002	
239		0.01		<0.01	0.061			0.004	0.002	
240		0.02		0.07	0.028			0.004	0.003	0.02
241		0.06		0.03	0.042			0.005	0.003	0.01
242		0.06		0.07	0.057			0.006	<0.002	0.01
243		0.01		<0.01	0.058			0.003	<0.002	
244		0.02		0.04	0.056			0.005	<0.002	0.01
245		0.01		<0.01	0.065			0.004	<0.002	<0.01
246		0.01		0.08	0.095			0.005	<0.002	<0.01
247		0.03		0.15	0.035			0.005	<0.002	<0.010
248		0.01		<0.01	0.062			0.005	0.002	<0.010
249		0.01		0.07	0.033			0.006	0.002	<0.010
250		0.02		0.25	0.085			0.120	<0.002	<0.010
251		0.01		<0.01	0.044			0.005	0.002	<0.010
252		0.03		0.05	0.021			0.005	0.002	<0.010
253		0.01		<0.01	0.043			0.005	0.002	<0.010
254		0.02		<0.01	0.006			0.002	0.002	<0.010
255		0.01		<0.01	0.002			0.002	0.003	<0.010
256		<0.01		<0.01	0.029			0.001	0.003	0.010
257		<0.01		1.48	0.003			0.038	0.003	<0.010
258		<0.01		<0.01	0.001			0.001	0.001	<0.010
259		<0.01		<0.01	0.001			0.002	<0.001	<0.010
260		<0.01		<0.01	0.001			0.004	<0.001	<0.010
261		<0.01		<0.01	0.001			0.001	<0.001	<0.010
262		<0.01		<0.01	0.001			<0.001	0.004	<0.010
263		<0.01		<0.01	0.001			<0.001	0.001	<0.010
264		<0.01		<0.01	0.001			<0.001	0.001	<0.010
265		<0.01		<0.01	0.001			<0.001	<0.001	<0.010
266		<0.01		<0.01	0.001			<0.001	0.001	<0.010

460043

DIAMOND DRILL RECORD

HOLE NUMBER M.L.35

LOGGED BY A. Ross

043

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				layered in its distribution. Magnetite is a semi-pervasive accessory to major constituent, weakly layered, comprising up to 50% of the rock and typically enclosed in phlogopite. Minor traces of Fe-carbonate are present. Scheelite is seen in thinly disseminated anhedral grains (to 200μ) and spongy interstitial aggregates (to 600u). Magnetite to granular slightly poikilitic and fairly coarse grained (to 500u). Subordinate pyrrhotite is closely intergrown and partly included as blebs up to 100μ diameter. Minor traces of chalcopyrite are also included in magnetite. Pyrrhotite is extensively pyritised. The secondary pyrite has recrystallised to fine mosaic-textured aggregates with minor included pyrrhotite, chalcopyrite or rarely bismuth (max. 20u). Magnetite and pyrite tend to be microfractured and are locally displaced by phlogopite-healed fractures.	
				ML. 35 - 203.9m. PHLOGOPITE ROCK	
				Hand Specimen: Grey phlogopite rock with magnetite, pyrrhotite, K stain negative.	
				Microscopic: This is a phlogopite rock with disseminated magnetite and segregations of pyrrhotite and carbonate with abundant cassiterite. The rock consists largely of random yellow-green phlogopite which, in the basis of habit, appears to have developed in part by replacement of amphibole (?actinolite, similar to 203.5m). An- to euhedral, weakly layered magnetite (to 250μ) is disseminated throughout and minor interstitial carbonate is present. Elsewhere the rock consists largely of pyritised pyrrhotite, fairly coarse-grained and crudely layered. Here phlogopite is the main interstitial phase but carbonate grains (to 300u) of cassiterite. Fluorite and prehnite are accessory constituents and marginal portions of the rock carry rare strongly poikilitic cassiterite grains (to 200μ) with phlogopite inclusions. The carbonate is leached in places and a little secondary colloform fluorite is seen. Chalcopyrite is locally abundant forming irregular masses several millimetres across. Magnetite, pyritised pyrrhotite and cassiterite are closely associated and these phases are microfractured and locally granulated with some fracture healed with chalcopyrite films. Most of the cassiterite is discreet or loosely included in the sulphide aggregates.	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	B	Mo	WO3
267	268	<0.01		<0.01	0.004			0.004	<0.001	<0.010
268		<0.01		<0.01	0.001			0.001	<0.001	<0.010
269		<0.01		<0.01	0.002			<0.001	<0.001	0.01
270		<0.01		<0.01	0.001			<0.001	<0.001	<0.001
271		<0.01		<0.01	0.004			<0.001	<0.001	<0.001
272		<0.01		<0.01	0.001			0.001	<0.001	<0.001
273		<0.01		<0.01	0.001			0.001	<0.001	<0.010
274		<0.01		<0.01	0.001			0.002	0.001	<0.010
275		<0.01		<0.01	0.001			0.002	<0.001	<0.010
276		<0.01		<0.01	0.001			<0.001	0.001	<0.010
277		<0.01		<0.01	0.001			<0.001	0.001	<0.010
278		<0.01		<0.01	0.001			<0.001	0.001	<0.010
279		<0.01		<0.01	0.001			<0.001	0.002	<0.010
280		<0.01		<0.01	0.001			<0.001	<0.001	<0.010
281	282	<0.01		<0.01	<0.001			<0.001	<0.001	<0.010

460044

DIAMOND DRILL RECORD

HOLE NUMBER: ML 35.

LOGGED BY: A. Ross

044

INTERVAL (m) FROM	INTERVAL (m) TO	RECOVERY m	RECOVERY %	DESCRIPTION	FORM.	% Sn. FROM	% Sn. TO	% Sn. TOTAL	% Sn. As STAN.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi	g/t Ag	g/t WO$_3$
				ML 35. 209.9m. PHLOGOPITE-MAGNETITE ROCK Hand Specimen: Grey phlogopite-magnetite rock, K stain negative. Microscopic: A phlogopite-magnetite rock rather similar to the 203.5m specimen. Frequent corroded relics of actinolite (trend hastingsite) are disseminated throughout the relatively coarse-grained random yellow-green phlogopite and these confirm the interpretation of the phlogopite rocks as altered actinolite rocks. In places semi-ragged blue-green hastingsite occurs enclosed in/corroded by pale tremolitic amphibole. Magnetite occurs disseminated throughout the rock generally as fine (< 100u) weakly poikilitic grains, but in places as semi-massive aggregates (to 1cm+) intergrown with semi-lustre mottled calcite. Minor traces of diopside and rare subhedral hydro-garnets are present, typically intergrown with actinolite. Spongy aggregates of pyrrhotite and pyrite (after pyrrhotite) with traces of chalcopyrite and rare poikilitic grains of arsenopyrite are associated with the magnetite aggregates and are sparsely disseminated throughout the remainder of the rock. A single 150u particle of cassiterite was seen enclosed in phlogopite marginal to semi-massive magnetite. An unusual feature is the presence of a secondary covellite-like mineral pseudomorphing phlogopite.												

460045

R[redacted]SON LIMITED – DIAMOND DRILL REC[redacted]

HOLE NUMBER	ML 36
PURPOSE	To test Main Lode.
LOCATION	MT. LINDSAY
COLLAR R.L.	2426.0
CO-ORDINATES	31762.0 N 10939.1 E
LENGTH	439m
HOLE SIZE	0 - 66 NQ 66 - 439 BQ
COMMENCED	25-1-76
COMPLETED	20-2-76
SIGNIFICANT CORE LOSS ZONES	
ORE ZONE GROUND CONDITIONS	
LOGGED BY	A. ROSS
COMMENTS	Drilled with 10L. Making water from 351m. By end of hole, water flowing ½m out of rods. Hole caved in from 40m when casing pulled.

SURVEY Depth	SURVEY Bearing	SURVEY Dip	From – To	Distance D	VERTICAL D. Sin Dip	VERTICAL R.L.	HORIZONTAL D. Cos Dip	HORIZONTAL Prog. Total
						2426.0		
0	40.9	- 53	0-9	9	7.2	2418.8	5.4	5.4
19	40.3	- 52½	9-31	22	17.5	2401.3	13.4	18.8
43	39.7	- 54	31-55	24	19.4	2381.9	14.1	32.9
67	38.8	- 55	55-79	24	19.7	2362.2	13.8	46.7
91	38.2	- 54	79-103	24	19.4	2342.8	14.1	60.8
115	37.9	- 54	103-127	24	19.4	2323.4	14.1	74.9
139	36.7	- 53	127-151	24	19.2	2304.2	14.4	89.3
163	36.1	- 52	151-175	24	18.9	2285.3	14.8	104.1
187	35.1	- 52	175-199	24	18.9	2266.4	14.8	118.9
211	34.5	- 51	199-223	24	18.7	2247.7	15.1	134.0
235	33.8	- 50	223-244	21	16.1	2231.6	13.5	147.5
253	33.3	- 47½	244-265	21	15.5	2216.1	14.2	161.7
277	32.4	- 47	265-289	24	17.6	2198.5	16.4	178.1
295	32.0	- 47	289-311	22	16.1	2182.4	15.0	193.1
330	30.9	- 45½	311-348	37	26.4	2156.0	25.9	219.0
336	26.9	- 45	348-375	27	19.1	2136.9	19.1	238.1
384	24.4	- 45	375-393	18	12.7	2124.2	12.7	250.8
402	21.9	- 43	393-411	18	12.3	2111.9	13.2	264.0
420	19.4	- 44	411-425	14	9.7	2102.2	10.1	274.1
431	16.9	- 45	425-439	14	9.9	2092.3	9.9	284.0

SUMMARY – ASSAY DATA

	LODE NAME	FROM	TO	LENGTH (m.)	AVERAGE WEIGHTED ASSAYS Sn.	Cu.	As.	S.	Pb	Zn	Mo	Bi	WO_3
	MAIN LODE	272	316.5	44.5 m.	Generally a weakly mineralised carbonate horizon, with mineralisation best								
		Estimated True Thickness		40.0 m	developed from 306-312m.								
containing		304.0	314.0	10.m	0.27	<0.05	0.04				0.002	0.008	0.04
		Estimated	True Thickness	9.0m									
OR		304.0	307.0	3.0m	0.70	<0.05	0.01		0.004	0.005	0.001	0.008	0.03
		Estimated True Thickness		2.7m.									

SUMMARY METALLURGICAL DATA COMPOSITE SAMPLE

LODE NAME	FROM	TO	Sn.	Cu.	As.	S	CaF_2	Ag.	Si		Sn - Rec.	Cu - Rec.	Carb.	Silic.	S.G.

045

APPENDIX 6

460046

DIAMOND DRILL RECORD

HOLE NUMBER ML 36

LOGGED BY A. ROSS

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
0	22.0	6.0	22.3	Reddish brown clay. Poor recovery.	
22.0	61.0	15.0	38.5	Core very broken. Weathered sediments. Red brown clay grading into semifresh grey - cream siltstone.	
61.0	90.1	29.1	100	Blue grey to grey carbonate interbedded with light brown to cream chert bands. Interval is well bedded. BCA's 60-70°. Trace of sulphide on some bedding planes. Non calcareous bands are highly siliceous. Minor bleaching, microfaulting and fracturing. Minor development of calc-silicates.	No. 1 ANOMALY CARBONATE
90.1	135.4	45.3	100	Dark grey to black, massive to thick bedded siltstones with rare chert bands. Non magnetic. BCA's 30-50°. Thin quartz-actinolite veins, some containing trace of po, py. Core not broken. Chlorite developed on joints. Siltstone is not as indurated as in other holes. Minor amount of sulphide (py) present in veinlets lower in this interval. Alteration is more intense towards bottom of the interval.	
135.4	152.5	17.1	100	Grades into: cream to light grey well bedded cherts and hornfelsed siltstones. Containing up to 2% sulphides (mainly py, minor po). Non magnetic apart from grains of po. Fracturing and vein type brecciation common. Non-calcareous, highly siliceous. Minor interval of black chert containing sulphide at base of this sequence. BCA's 45-50°.	
152.5	272.0	119.5	100	Sequence of interbedded siltstones, tuffaceous siltstones and greywackes with very minor bands of chert. Colours predominantly dark grey, dark brown grading to lighter cream and brown banded colours at base of the interval. BCA's 50-70° averaged 55-60°. Bedding well developed but with minor slumped zones. Non magnetic. 152.5 - 160m. Zone of cream and green brown alteration. Minor veining, some with trace of pyrite. Fine to medium grained tuff siltstones. 160-211m. Grey to dark brown massive to well bedded siltstones and tuff greywackes. Some slumped bedding. Tuff horizons contain mud pellets. Minor microfracturing and veining occur (quartz-actinolite). Trace sulphide only. Some tuff horizons very coarse grained. Minor to rare actinolite alteration of some beds. 211-226m brown to grey and brownish green colours. Essentially fine to medium grained siltstone and tuff siltstones. Alteration more pronounced with development of spots in some beds. Veined and brecciated zones	

ASSAYS FROM	TO	Sn	S	As	Cu	WO3	Zn	Pb	Ag	Mo
65	66	<0.01		<0.01	<0.05	<0.01				
66		0.01		"	"	<0.01				
67		<0.01		"	"	<0.01				
68		0.01		"	"	<0.01				
69		<0.01		"	"	<0.01				
70		<0.01		<0.01	<0.05	<0.01				
71		"		"	"	<0.01				
72		0.01		"	"	<0.01				
73		<0.01		"	"	<0.01				
74		"		"	"	<0.01				
75		"		"	"	<0.01				
76		<0.01		<0.01	<0.05	<0.01		<0.01		<0.01
77		"		"	"	<0.01				
78		"		"	"	<0.01				
79		"		"	"	<0.01				
80		"		"	"	<0.01				
81		"		"	"	<0.01				
82		"		"	"	<0.01				
83		"		"	"	<0.01				
84		"		"	"	<0.01				
85		"		"	"	<0.01				
86		"		"	"	<0.01				
87		"		"	"	<0.01				
88		"		"	"	<0.01				
89		"		"	"	<0.01				
90		"		"	"	<0.01				
91		0.01		"	"	<0.01				
92		<0.01		"	"	<0.01				
93	94	"		"	"	<0.01				
129	130	"		"	"	<0.01				
130		"		"	"	<0.01				
131		"		"	"	<0.01				
132		"		"	"	<0.01				
133		"		"	"	<0.01				
134		"		"	"	<0.01		0.002		0.002
135		"		"	"	<0.01		0.002		0.002
136		"		"	"	<0.01		0.002		0.002
137		"		"	"	<0.01		0.002		0.002
138		"		"	"	<0.01		0.003		0.002
139		0.01		"	"	<0.01		0.003		0.002
140		<0.01		"	"	<0.01		0.003		<0.001
141		0.01		"	"	<0.01		0.003		<0.001
142		<0.01		"	"	<0.01		0.003		<0.001
143		"		"	"	<0.01		0.002		<0.001
144		"		"	"	<0.01		0.002		<0.001
145		"		"	"	<0.01		0.002		<0.001
146		"		"	"	<0.01		0.004		<0.001
147		"		"	"	<0.01		0.003		<0.001
148		"		"	"	<0.01		0.003		<0.001
149		"		"	"	<0.01		0.003		<0.001
150		"		"	"	<0.01		0.004		<0.001
151		"		"	"	<0.01		0.004		<0.001
152	1525	"		"	"	<0.01		0.003		0.003

DIAMOND DRILL RECORD

HOLE NUMBER: ML 36

LOGGED BY A. Ross

047

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				containing actinolite - quartz - sulphide (py and po) occur. 226-232m spotted brown and grey siltstones. Core highly broken with development of calcite veinlets in brecciated altered zones. Trace to nil sulphides. 232 - 263.5m Brown to brownish green and grey siltstones with veinlets of calcite very common. Spotting ubiquitous. Minor chert bands. Core very broken towards bottom of this zone. 263.5 - 272m Well bedded and banded brown green to cream siltstones and cherts containing minor sulphides. Common alteration typical prior to carbonate horizon. Minor calcite veining in brecciation zones.	
272.0	316.5	44.5	100	Massive carbonate horizon containing sulphide minerals and calc-silicate assemblage. Colour light grey to light brown-green. Well bedded with banded appearance. Ore minerals are pyrite, pyrrhotite, chalcopyrite, magnetite, arsenopyrite. Highly calcareous, weakly magnetic due to pyrrhotite and bands of magnetite. Minor banded chert zones. Tourmaline developed lower in this interval. BCA's 50-60° at start then 70-80° lower in interval. Mineralisation best developed from 306-312m.	MAIN LODE
316.5	330.0	14.5	100	Altered sequence of well bedded and banded cherts and silicified siltstones. Colours cream, brown, green. Actinolite alteration and veins throughout with minor sulphides (po, py, trace chp) in bands or with calcite veins. BCA'S vary 60° to 20-30° at base of interval. Microfaulting and fracturing with sulphide veinlets very common. Non calcareous. Grades into:	
330.0	356.1	26.1	100	Dark brown, predominantly massive, tuffaceous siltstone with rare medium grained beds. Minor bedded horizons. Non-magnetic, non-calcareous. Greenish alteration zones. Microfracturing and veinlets of actinolite and minor calcite. BCA's 30-35°. Where definite bedding seen. Bedding often irregular, almost slumped. Minor zones of massive dark green spotted basic lava or gabbro?	
356.1	363.7	7.6	100	Massive dark green highly fractured spotted basic lava or gabbro? Non magnetic. Fracturing and irregular veinlets could be flow top breccias.	
363.7	363.9	0.2	100	Granitoid vein. Reddish alteration of feldspars. Medium grained.	

ASSAYS FROM	TO	Sn	S	As	Cu	WO_3	Pb / Zn	Bi	Mo (ppm)	Sn (ppm)
272		0.01		0.04	<0.05	0.08		0.008	0.002	
273		0.02		0.04	"	0.09		0.007	0.002	
274		0.02		0.11	"	0.01		0.009	<0.001	
275		0.02		0.05	"	0.01		0.006	<0.001	
276		<0.01		<0.01	"	<0.01		0.003	<0.001	
277		"		0.01	"	0.04		0.007	0.001	
278		0.01		0.02	"	0.02		0.003	<0.001	
279		0.02		0.10	"	<0.01		0.007	<0.001	
280		0.02		0.03	"	<0.01		0.008	0.001	
281		0.02		0.03	"	<0.01		0.007	<0.001	
282		0.01		0.02	"	0.01		0.005	<0.001	
283		0.02		0.05	"	0.08		0.007	<0.001	
284		0.02		0.03	"	<0.01		0.006	0.001	
285		<0.01		<0.01	"	<0.01		0.004	<0.001	
286		0.01		"	"	<0.01		0.004	<0.001	
287		0.02		"	"	0.01		0.005	<0.001	
288		0.01		"	"	0.01		0.005	<0.001	
289		<0.01		"	"	<0.01		0.006	0.002	
290		0.02		0.03	"	0.01		0.007	<0.001	
291		0.04		0.05	"	0.01		0.007	<0.001	
292		0.02		0.01	"	<0.01		0.007	<0.001	
293		<0.01		0.02	"	0.02		0.007	<0.001	
294		0.04		0.07	"	0.05		0.007	<0.001	
295		0.04		0.05	"	0.03		0.006	<0.001	
296		0.02		0.03	"	0.03		0.007	<0.001	
297		0.02		0.01	"	0.07		0.007	0.002	
298		0.04		0.03	"	0.03		0.007	<0.001	
299		0.03		0.02	"	0.03		0.007	<0.001	
300		0.04		0.02	"	0.02		0.007	<0.001	
301		0.03		0.01	"	<0.01		0.009	0.002	
302		0.04		0.04	"	0.11		0.008	0.010	
303		0.02		0.02	"	0.04		0.007	0.003	
304		0.29		<0.01	"	0.01	0.356 / 0.006	0.007	0.001	0.005
305		1.56		"	"	0.03	0.154 / 0.004	0.005	0.001	0.004
306		0.24		0.03	"	0.02	0.105	0.012	0.001	0.003
307		0.04		0.03	"	0.15		0.009	0.003	
308		0.09		0.02	"	0.02		0.005	0.003	
309		0.22		0.03	0.05	0.04		0.005	0.003	
310		0.05		0.19	<0.05	0.01		0.021	<0.001	
311		0.02		0.03	"	0.05		0.006	0.003	
312		0.05		0.03	0.06	<0.01		0.008	<0.001	
313		0.11		0.02	<0.05	0.07		0.011	0.001	
314		0.03		0.01	"	<0.01		0.004	<0.001	
315		0.02		<0.01	"	<0.01		0.003	0.001	
316		0.04		"	"	<0.01		0.006	<0.001	
317		<0.01		"	"	<0.01		0.002	0.001	
318		"		"	"	<0.01		0.002	0.001	
319		0.04		"	"	<0.01		0.002	0.001	
320		0.02		"	"	<0.01		0.002	0.001	
321		<0.01		"	"	<0.01		0.004	<0.001	
322		0.01		"	"	<0.01		0.003	<0.001	
323		0.02		"	"	0.08		0.004	<0.001	

460048

DIAMOND DRILL RECORD

HOLE NUMBER: RL 36

LOGGED BY: A Ross

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
363.9	365.1	1.2	100	Dark green microfractured spotted rock. Massive or weakly bedded? Basic lava with silt layers. Non magnetic.	
365.1	365.15	0.05	100	Reddish medium grained granitoid vein.	
365.15	371.0	5.85	100	Dark green to dark brown, predominantly massive, interbedded siltstone and spotted rock (basic lava). BCA's 40-45° in tuff siltstone. Moderate to strong magnetic zones 366.5 - 369m. Microfracturing throughout. Chlorite on joints.	
371.0	374.7	3.7	100	White granitoid dyke. Medium to coarse grained biotite granite. Veinlets of dark fine grained mineral (biotite?) at 45° to CA.	
374.7	393.1	18.4	100	Dark brown to black, fine to meduim grained, predominantly massive with minor poorly bedded zones of siltstone. Minor basic lava zones. Hornfelsed. Core well jointed and broken. Chlorite rich. Moderately magnetic from 379.9 to 393. Core has speckled appearance and grain size approaches - medium size in tuff zones. BCA's 30-40°. Minor actinolite alteration and veinlets. Veinlets of reddish mineral (rhodocrosite) at 385m.	
393.1	398.6	5.5	100	Coarse grained leuco-granite dyke, biotite rich granite. Minor alteration to sericite. Upper contact 30° to CA. Reddish colour to 394m. Minor sediment xenolith from 394.0 to 394.05m.	
398.6	413.1	14.5	100	Zone of dark brown hornfelsed sediments. Definite bedding. BCA at 45°. Zones of actinolite alteration and minor quartz veining. Spotting of sediments from 407.5m. Non-magnetic. Quartz vein 410-410.1m. Medium to coarse grained granite vein 411.3 to 412.3m.	
413.1	439.0	25.9	100	Coarse grained biotite granite.	GRANITE
				END OF HOLE	

ASSAYS FROM	TO	Sn	S	As	Cu	WO_3	Zn	Bi	Mo
324		<0.01		0.03	<0.05	<0.01		0.002	0.001
325		"		<0.01	"	<0.01		0.001	0.001
326		0.01		"	"	<0.01		0.001	0.002
327		<0.01		"	"	<0.01		0.002	0.001
328		0.01		"	"	<0.01		0.001	0.003
329		<0.01		"	"	<0.01		0.001	0.002
330		"		"	"	<0.01			
331		"		"	0.11	0.03		0.001	0.002
332		0.01		"	<0.05	0.02		0.002	0.003
333		<0.01		"	"	<0.01		0.002	0.003
334	335	0.01		"	"	<0.01		0.002	<0.001

DIAMOND DRILL RECORD

HOLE NUMBER ML. 36

LOGGED BY A. Ross

049

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORM.	% Sn. FROM	TO	TOTAL	As STAN.	% Cu.	% As	% S.	% Pb	% Zn	% Bi.	g/t Ag	g/t WO₃
				The following 2 descriptions were presented by D. COWAN in Report CMG 76/4/2													
				ML. 36 - 304.2m. PHLOGOPITE-SERICITE-QUARTZ ROCK WITH CASSITERITE.													
				Hand Specimen: Grey weakly layered pyrrhotite-rich rock, K stain positive.													
				Microscopic: This is a weakly layered phlogopite-sericite-quartz rock with abundant pyrrhotite.													
				The rock consists largely of very fine random red-brown phlogopite-sericite aggregates stained throughout with corroded fine-grained carbonate and with (5 - 30%) pyrrhotite. Strongly poikilitic quartz crystals (mean 100μ, partly bi-pyramidal) are common in places and are layered in their distribution. There are sporadic poikilitic orthoclase anhedra (to 1mm+). Coarse poikilitic carbonate anhedra (to 3mm) occur in places within a 1cm band of semi-massive pyrrhotite. Accessory phases are apatite, topaz, chlorite and magnetite which occurs mainly as 100μ sub-skeletal inclusions in carbonate. There is little evidence of the original rock type although it was probably a highly impure dolomite or alternatively a carbonate-altered "tuff". Cassiterite is sparsely present as incipiently clustered 50 - 400μ grains enclosed in the semi-massive pyrrhotite. Ilmenite and chalcopyrite are accessory opaque phases. Rare particles of bismuth (< 5 - 40μ) occur as partial inclusions in pyrrhotite.												
				ML. 36 - 305.7m. PHLOGOPITE-SERICITE ROCK WITH CASSITERITE													
				Hand Specimen: Grey weakly layered phlogopitic rock with pyrrhotite, K stain positive.													
				Microscopic: This is an incipiently layered phlogopite-sericite rock essentially similar and closely related to 304.2m. Frequent extensively to completely sericitised, lath-like grains (50 - 400μ) of K-feldspar and a vague relict fragmental fabric suggest this rock was a felsic pyroclastic and tend to confirm the previous specimen (ie. 304.2m) as such. However, at this stage it consists largely of random fine-grained phlogopite and sericite with disseminated clots of Fe-carbonate and poikilitic aggregates (to 1cm) of pyrrhotite. Sporadic patches of poikilitic quartz, clear poikilitic orthoclase and accessory traces of topaz and apatite are present. There are occasional late veinlets and irregular aggregates (to 5mm+) of carbonate and quartz. Cassiterite is relatively abundant as single subhedral grains (30 - 400μ, mean 200 - 250μ) and aggregates (to 600μ). A few particles are enclosed in phlogopite-sericite but the majority occur associated with pyrrhotite as partial to complete inclusions. The coarser grains are microfractured and locally cassiterite grains are intersected by quartz-carbonate veinlets. Rare grains of scheelite (to 500μ) accompany the												

460650

DIAMOND DRILL RECORD

HOLE NUMBER ML 36

LOGGED BY A. Ross

050

INTERVAL (m) FROM	INTERVAL (m) TO	RECOVERY m	RECOVERY %	DESCRIPTION	FORM.	% Sn. FROM	% Sn. TO	% Sn. TOTAL	% Sn. As STAN.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g t Ag	g t MO.
				cassiterite. Chalcopyrite and rutile are minor accessory opaque phases.													
				Notes to accompany ML35 – ML37 descriptions													
				As with earlier specimens (CMS 76/3/19) the Mount Lindsay rocks are altered virtually beyond recognition of the primary rock types. Briefly these rocks can be considered as variable altered (phlogopitised) skarns with actinolite/hastingsite-magnetite(-diopside-garnet) assemblages and as such they differ from the CMS 76/3/19 suite with its lower temperature carbonate-rich assemblages. A few rocks retain a relict primary layering, no doubt primarily sedimentary. One or two can be considered as metasomatised impure cherts. A few (specifically the ML 36 "Main Lode" intersection) show relict igneous (?fragmental) features. The majority are best considered simply as altered carbonate rocks.												
				Clearly a phase of phlogopite-sericite alteration (loosely, greisening) is imprinted over an earlier pyrometasomatic phase which carries the same accessory constituents (excluding tourmaline), and particularly the patchy cassiterite, as seen in the earlier suite. Sulphides and bismuth are more abundant but cassiterite is relatively sparse although, again, this may reflect sampling.												

ENISON LIMITED – DIAMOND DRILL ORD

HOLE NUMBER	M.L. 37	SURVEY Depth	SURVEY Bearing	SURVEY Dip	From – To	Distance D	VERTICAL D. Sin Dip	VERTICAL R.L.	HORIZONTAL D. Cos Dip	HORIZONTAL Prog. Total
PURPOSE	To test No.2 Anomaly							2461.0		
		0	37.9	-45	0-22	22	15.6	2445.4	15.6	15.6
		45	-	-46	57	35	25.2	2420.2	24.3	39.9
LOCATION	MT. LINDSAY	69	-	-44	81	24	16.7	2403.5	17.3	57.2
		93	38.9	-43	129	48	32.7	2370.8	35.1	92.3
COLLAR R.L.	2461.0	165	36.9	-40	174	45	28.9	2341.9	34.5	126.8
		183	-	-40	195	21	13.5	2328.4	16.1	142.9
CO-ORDINATES	31764.3 N 11196.5 E	207	-	-40	225	30	19.3	2309.1	23.0	165.9
		243	-	-38	252	27	16.6	2292.5	21.3	187.2
LENGTH	349.5 m	261	-	-37	279	27	16.2	2276.3	21.6	208.8
		297	-	-38	306	27	16.6	2259.7	21.3	230.1
HOLE SIZE	0 - 69 NQ 69 - 349.5 BQ	315	36.9	-38	324	18	11.1	2248.6	14.2	244.3
		333	41.9	-38	339	15	9.2	2239.4	11.8	256.1
COMMENCED	14-1-76	345	44.9	-38	350	11	6.8	2232.6	8.7	264.8
COMPLETED	9-2-76									
SIGNIFICANT CORE LOSS ZONES										
ORE ZONE GROUND CONDITIONS										
LOGGED BY	A. ROSS									
COMMENTS	Drilled with F30 Truck Mounted Rig. HQ cased to 55m.									

SUMMARY – ASSAY DATA

LODE NAME	FROM	TO	LENGTH (m.)	AVERAGE WEIGHTED ASSAYS Sn.	Cu.	As.	S.	Bi	Mo	WO_3	Pb	
No. 2 Anomaly	268.4	303	34.6m.									Zn
Values over the full mineralised zone were generally low, but there were two intervals with above average Sn and WO_3 values.												
"H.W. Tin Zone"	270.0	277.0	7.0m.	0.13	<0.01	<0.01		<0.01	<0.01	<0.01		
	Estimated True Thickness		6.0m.									
"F.W. Tungsten Zone"	291.0m	296.0m	5.0m	0.05	0.05	0.49		0.033	<0.01	0.21	0.003	0.014
	Estimated True Thickness		4.5m									

SUMMARY METALLURGICAL DATA COMPOSITE SAMPLE

LODE NAME	FROM	TO	Sn.	Cu.	As.	S	CaF_2	Ag.	Bi		Sn - Rec.	Cu - Rec.	Carb.	Silic.	S.G.

APPENDIX 7

460052

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 37

LOGGED BY A. Ross

052

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
0	54.0	15	27.8	Yellowish brown clays. Poor recovery. Often with kaolinitic bands in some fragments, possibly indicative of bedding. Grades into:	
54.0	82.8	28.8	100	Well bedded interval of blue-grey cherts, grey carbonate and minor brown to black tuffaceous siltstones and mudstones. B.C.A. av. 45°. Contains minor amount of po. as disseminations and in veins. Slightly magnetic in places. Lithologies are fine to medium grained. Bedding thickness ranges from laminae to thick. Micro-faulting and fracturing throughout. Predominantly undisturbed bedding but minor slumped layers occur. Actinolite? alteration more common towards base of interval. Non-calcareous zones are highly siliceous. Grades into:	MAIN LODE ?
82.8	115.4	32.6	100	Dark grey, non-magnetic vitric greywacke tuff and siltstones. Predominantly massive with minor bedded zones. Trace sulphide only. Very siliceous hornfels. Chlorite on joints. Fine to medium grained but below 92.2m fragments become coarser. Bedding becomes better defined by lithic fragments and laminae in siltstones. B.C.A. 40° at 85m. B.C.A. 45° at 96m. Siliceous pebble conglomerate? at 96.3m. indicates way up is down the hole. B.C.A. 45° at 104m. Still dark grey massive to thick bedded sequence of vitric greywacke and minor pebble conglomerate. Few broken zones. Non-calcareous. Distinctive conchoidal fracture when broken.	
115.4	121.4	6.0	100	Dark grey medium grained vitric greywacke tuff. Massive and similar to above sequence but this lithology is moderately magnetic. Chloritic alteration. Minor siltstone layers. Some actinolite veins. Non-calcareous, highly siliceous.	
121.4	124.4	3.0	100	Very broken zone with change to non-magnetic medium grained vitric greywacke. Veins of pink mineral, possibly rhodochrosite, and minor calcite on broken surfaces. Minor 0.2m interval of magnetic greywacke. Possibly fault zone.	
124.4	128.7	4.3	100	Non-magnetic dark grey fine grained thick bedded siltstone and minor tuff greywacke. B.C.A. 40° at 124.5m. Minor veins of calcite and actinolite. Chloritic and actinolitic alteration. Grades into:	
128.7	204.0	75.3	100	Dark grey well-bedded fine grained detrital siliceous siltstones and minor medium grained layers of feldspathic greywackes. Non-calcareous. Moderately magnetic. B.C.A. 60 at 133m. Hornsfelsed and chlorite rich. Minor mud pellets and blobs occur in silt sized intervals. Rare actinolite veinlets. B.C.A. 65° at 200m. Some siltstone bands are laminated. Actinolite veins contain trace chp. and py. Towards base of interval B.C.A.'s 60 - 70°.	

ASSAYS

FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Mo	WO3
56	57	<0.01		<0.01	0.003			0.002	<0.001	<0.010
57		<0.01		<0.01	0.009			0.003	0.001	<0.010
58		<0.01		<0.01	0.008			0.003	<0.001	<0.010
59		<0.01		<0.01	0.009			0.003	0.002	<0.010
60		<0.01		<0.01	0.010			0.004	<0.001	<0.010
61		<0.01		<0.01	0.006			0.004	<0.001	<0.010
62		<0.01		<0.01	0.011			0.002	<0.001	<0.010
63		<0.01		<0.01	0.009			0.003	<0.001	<0.010
64		<0.01		<0.01	0.010			0.002	<0.001	<0.010
65		<0.01		<0.01	0.012			0.002	<0.001	<0.010
66		<0.01		<0.01	0.012			0.002	0.002	<0.010
67		<0.01		<0.01	0.008			0.005	0.002	<0.010
68		<0.01		<0.01	0.012			0.002	0.001	<0.010
69		<0.01		<0.01	0.009			0.003	0.002	<0.010
70		<0.01		<0.01	0.008			0.003	0.002	<0.010
71		<0.01		<0.01	0.010			0.002	0.002	<0.010
72		<0.01		<0.01	0.012			0.003	0.003	<0.010
73		<0.01		<0.01	0.007			0.003	0.003	<0.010
74		<0.01		<0.01	0.013			0.002	0.003	<0.010
75		<0.01		<0.01	0.011			0.002	0.003	<0.010
76		<0.01		<0.01	0.010			0.002	0.002	<0.010
77		<0.01		<0.01	0.013			0.003	0.002	<0.010
78		<0.01		<0.01	0.020			0.001	0.005	<0.010
79		<0.01		<0.01	0.021			0.003	0.003	<0.010
80		<0.01		<0.01	0.010			0.003	<0.001	<0.010
81		<0.01		<0.01	0.004			0.003	<0.001	<0.010
82	85'	<0.01		<0.01	0.013			0.003	<0.001	<0.010

460053

DIAMOND DRILL RECORD

HOLE NUMBER: M.L. 37

LOGGED BY: A. Ross

053

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				Sedimentary conditions very stable – no slumping. Some spotting of siltstones due perhaps to contact mm. effect.	
204.0	214.5	10.5	100	Non-magnetic interval of well bedded siltstones with large calcite-actinolite veins. Minor feldspathic vitric greywacke. Colour blue-grey. Crossbedding indicates way up is ddown the hole. Bedding is thick. B.C.A.'s 60 – 70°. Grades into:	
214.5	268.4	43.9	100	Interbedded non-magnetic feldspathic greywackes and minor mudstones. Siliceous. Colours are various mottled greys, browns, greens, white/cream indicative of alteration before No. 2 anomaly carbonate. Alteration has produced biotite, actinolite rich zones with blotchy effects not confined to bedding. Bedding is well-defined although lithologies are massive tuffs. B.C.A.'s vary from 60° at start to 90° just before No.2 carbonate. Well bedded in minor zones, although slumping very noticeable from 223 to 231m. Fractured veinlets of po. and py. in last metre of interval.	
268.4	303.0	34.6	100	Banded interval of mineralisation consisting of magnetite pyrrhotite – pyrite– chalcopyrite – arsenopyrite. Dominant non-metallic minerals are actinolite, tourmaline, calcite, ~~diopside~~ epidote. Skarnised and metasomatised carbonate sediment. B.C.A.'s vary 90° to 60°. Non- mineralised zones occur and are bedded cherts, green brown in colour. Most mineralisation is bedded. Rare quartz – fluorite – chalcopyrite veins.	No. 2 Anomaly
303.0	307.1	4.1	100	Highly altered and tourmalinised carbonate and tuff siltstones. Veined by tourmaline and quartz – fluorite veins. Banded appearance. B.C.A.'s 65 – 90°. Grades into:	
307.1	318.0	10.9	100	Slightly less altered tuff, siltstone sequence. Tourmalinised and veined by quartz /fluorite. Textures indicate slumping. Non-calcareous. Non-magnetic. Bedding orientation confused by veining and alteration. Colours predominantly brown.	
318.0	349.5	31.5	100	Grades into tuff siltstone sequence which is less altered but still veined by quartz-tourmaline. B.C.A.'s av. 50° but shallow to 20°. Core very broken. Some zones are slightly magnetic. Severely microfaulted. Wellbedded siltstone layers. Fragmental tuffs rare. Two large granite veins 344.6 – 344.7m; 347.3 – 347.6m.	
				END OF HOLE	

ASSAYS

FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Mo_2	WO_3
268.5	269	0.06		<0.01	<0.01			<0.01	<0.01	<0.01
269		0.09		"	"			"	"	"
270		0.10		0.01	0.013			"	"	"
271		0.20		<0.01	0.01			"	"	"
272		0.08		"	<0.01			"	"	"
273		0.10		"	"			"	"	"
274		0.11		0.01	"			"	"	"
275		0.08		<0.01	"			"	"	"
276		0.24		"	"			"	"	0.01
277		0.09		"	0.026			"	"	0.01
278		0.06		0.01	<0.01			"	"	<0.01
279		0.07		"	0.028			"	"	0.01
280		0.09		<0.01	<0.01			"	"	<0.01
281		0.09		"	0.01			"	"	0.01
282		0.09		0.01	<0.01			"	"	<0.01
283		0.10		<0.01	"			"	"	"
284		0.09		0.01	0.40			0.02	"	0.05
285		0.05		<0.01	<0.01			<0.01	"	0.01
286		0.12		0.01	0.017			"	"	0.01
287		0.10		0.02	0.036			0.02	"	0.01
288		0.07		0.02	0.056	0.002	0.011	0.07	"	0.05
289		0.02		0.13	0.10	0.012	0.013	0.06	"	0.04
290		0.04		0.05	0.05	0.003	0.016	0.21	"	0.04
291		0.04		0.02	0.07	0.003	0.016	0.010	"	0.18
292		0.03		0.02	0.03	0.003	0.014	<0.007	"	0.17
293		0.02		0.92	0.05	0.003	0.015	0.082	"	0.32
294		0.06		0.51	0.03	0.003	0.016	0.21	"	0.06
295		0.12		0.97	0.09	0.003	0.011	0.042	"	0.31
296		0.04		0.03	0.06	0.003	0.024	0.28	"	0.08
297		0.04		<0.01	0.05	0.004	0.018	0.037	"	0.03
298		0.05		"	0.04	0.002	0.017	0.028	"	0.07
299		0.06		"	0.05	0.003	0.017	0.02	0.002	0.03
300		0.01		"	0.03	0.002	0.012	<0.01	"	0.04
301		0.04		"	0.04	0.002	0.019	"	"	0.02
302	303	0.04		"	0.04	0.002	0.016	0.02	"	0.08

460054

DIAMOND DRILL RECORD

HOLE NUMBER ML 37

LOGGED BY A. Ross

NWPS

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORM.	% Sn. FROM	TO	TOTAL	AS STAN.	% Cu.	% As.	% S.	% Pb.	% Zn.	% Bi.	g:t Ag.	g:t WO3
				The following 2 descriptions were presented by D. COWAN in report cms 76/4/2.													
				ML. 37 - 295.6m. HASTINGSIDE-ACTINOLITE-BIOTITE ROCK													
				Hand Specimen: Grey-green weakly layered ?actinolite rock with pyrrhotite, K stain negative.													
				Microscopic: This is a layered hastingsite-actinolite-biotite rock with disseminated pyrrhotite. Much of the rock consists of semi-massive random semi-ragged hastingsite with a little interstitial biotite, carbonate and disseminated crudely layered pyrrhotite and magnetite. This portion of the rock has a more or less continuous 1 - 2mm biotite-rich "selvedge" against a 1 to 1.5cm band of fine-grained tremolite-actinolite with disseminated clots of biotite and relatively abundant (5 - 50%) fine-grained magnetite with a little pyrrhotite. The remainder consists of a 3.5mm + band of biotite and disseminated to semi-massive magnetite. Minor traces of fluorite are present throughout the various bands. Accessory silicate components are quartz, pinkish skeletal garnet and very fine eipdote-clinozoisite in addition to rare <100u grains of scheelite. No cassiterite was seen. Ilmenite is relatively common and locally closely intergrown with magnetite. There are occasional coarse strongly poikilitic arsenopyrite crystals with magnetite inclusions. Minor chalcopyrite (< 50u) is seen enclosed in pyrrhotire or rarely magnetite. Two< 20u particles of bismuth were observed as inclusions in magnetite.												
				ML. 37 - 295.7m. ACTINOLITE-HASTINGSITE-MAGNETITE ROCK													
				Hand Specimen: Grey metasomatised ?chert, disseminated pyrrhotite, arsenopyrite, K stain negative.													
				Microscope: This is a finely layered actinolite-hastingsite-magnetite rock. General features are very similar to 295.6m, tge rock consisting in places of random hastingsite and elsewhere mainly of very fine-grained tremolite-actinolite. It is laminated particularly with respect to the distribution of magnetite, locally on a microscale, and it is suspected may have been a ferruginous (?sideritic) chert. Small clots of phlogopite and pale actinolite are common throughout and appear to represent altered diagenetic carbonate rhombs (shapes not wholly diagnostic). Occasional coarse strongly poikilitic hydrogarnets (to 3mm) are seen in hastingsitic portions of the rock. Small (mainly <200u) patches of fluorite are disseminated throughout. Traces of fine-grained scheelite occur as (< 200u particles disseminated throughout a 3mm wide biotite vein which displaces the relict layering. Coarse poikilitic arsenopyrite subhedra (to 4mm) are common in places. These are accompanied by relatively coarse anto subhedral magnetite, partly as inclusions, and subordinate pyrrhotite. Bismuth is present in significant amounts as irregular particles (to 100u) interstitial to hastingsite and finer (mainly <20u) particles enclosed in magnetite and arsenopyrite. Chalcopyrite ilmenite, galena and bismuthite are minor accessory constituents and more or less random in their distribution.												

[redacted]ENISON LIMITED – DIAMOND DRILL [redacted]ORD

HOLE NUMBER	M.L. 38	SURVEY Depth	SURVEY Bearing	SURVEY Dip	From – To	Distance D	VERTICAL D. Sin Dip	VERTICAL R.L.	HORIZONTAL D. Cos Dip	HORIZONTAL Prog. Total
PURPOSE	To test strong magnetic and arsenic anomalies along strike from mine area.							2353.1		
		0	37.4	-50	0-13	13	10	2343.1	8.4	8.4
		5	–	-50	33	20	14.6	2328.5	13.6	22.0
LOCATION	MT. LINDSAY	21	36.6	-47	60	27	19.6	2308.9	18.6	40.6
		45	35.8	-46½	90	30	21.6	2287.3	20.8	61.4
COLLAR R.L.	2353.1	75	34.7	-46	117	27	18.8	2268.5	19.4	80.8
		105	33.6	-44	141	24	16.5	2252.0	17.4	98.2
CO-ORDINATES	31318.0 N 11482.6 E	129	32.7	-43½	165	24	16.4	2235.6	17.6	115.8
		153	31.9	-43	189	24	16.1	2219.5	17.8	133.6
LENGTH	408.5 m	177	31.0	-42	213	24	15.7	2203.8	18.1	151.7
		201	30.1	-41	249	36	23.4	2180.4	27.4	179.1
HOLE SIZE	0-12 NQ 12 - 408.5 BQ	225	29.3	-40½	282	33	20.3	2160.1	26.0	205.1
		273	27.5	-38	303	21	12.5	2147.6	16.9	222.0
COMMENCED	12-2-76	291	26.9	-36½	327	24	14.1	2133.5	19.4	241.4
		315	–	-36	351	24	13.9	2119.6	19.5	260.9
COMPLETED	8-3-76	339	–	-35½	372	21	12.0	2107.6	17.2	278.1
		363	–	-35	390	18	10.3	2097.3	14.7	292.8
SIGNIFICANT CORE LOSS ZONES		381	–	-35	408	18	10.3	2087.0	14.7	307.5
		399	27.9	-35						
ORE ZONE GROUND CONDITIONS		405	–	-35						
		408	–	-35						
LOGGED BY	A.Ross									
COMMENTS	Drilled with F30 Truck Mounted Rig. NQ casing left in hole.									

SUMMARY – ASSAY DATA

LODE NAME	FROM	TO	LENGTH (m.)	AVERAGE WEIGHTED ASSAYS Sn.	Cu.	As.	S.	Sn as Stannite	B_i	Mo	WO_3
	353m	376m	23m	0.79	0.16	0.20	1.59	0.008	0.02	0.001	0.04
	Estimated	True Thickness	23m.								
	353	369	16.0m	1.10	0.12	0.21	1.26	0.01	0.014	0.001	0.05
	Estimated	True thickness	14.5m								

SUMMARY METALLURGICAL DATA COMPOSITE SAMPLE

LODE NAME	FROM	TO	Sn.	Cu.	As.	S	Ca P_2	Ag.	Bi		Sn - Rec.	Cu - Rec.	Conc.	Silic.	S.G.

APPENDIX 8

460056

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 38

LOGGED BY A. ROSS

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
0	46.2	43.9	95	Weathered rock grading to fresh rock at 3m. Dark green to black sequence of interbedded siltstones and feldspathic greywackes. Hornsfelsed. Thick but well bedded. B.C.A. average 80 - 75°. Non-magnetic. Actinolite veinlets and alteration throughout. From 25.5 - 33.0m intense actinolite veining at 30° to CA. Core very broken from 0 - 10m. Broken from 33 - 39 m. Typical black hornfels with conchoidal fracturing. Highly indurated. Trace py. on joints.	
46.2	48.2	2.0	100	Highly laminated or banded chert. Trace amount po. Colours brown to light green. Sulphide on bedding planes. May be altered carbonate. Minor amount of dark green to black tuffaceous greywacke. At base of interval are large (>1cm.) green ovoids in cream chert. Diagenetic texture - ovoids compressed on bottom layer. Way up is down the hole. Could be marker horizon.	
48.2	67.4	19.2	100	Dark green to black interbedded hornsfelsed siltstones and feldspathic greywackes. Fractured zone 50.0 -57.7m. Fault? B.C.A. av. 50° after this zone. Core very broken 50-57.5m., with actinolite veining, fracturing and alteration. Trace sulphide in some veinlets. Rare quartz actinolite veins. Non-magnetic after 57.5m, core less broken and less actinolite alteration. B.C.A.'s av. 50°. Load casts and mud pellets in greywacke beds.	
67.4	68.7	1.3	100	Highly altered, actinolite, fractured or brecciated zone containing vein of pyrrhotite at 10° to CA (minor py.,chp.) Magnetic due to po.	
68.7	84.6	15.9	100	Dark green to black, predominantly massive, siltstones and greywackes. Non-magnetic. Core broken only moderately. Minor veinlets of actinolite occur. B.C.A.45° where definite. Microfracturing of bedding frequent. 79.5 - 80.1m. Light grey to green brecciated chert zone. Quartz-actinolite veins. Trace po. After 80.1m actinolite veining common in black siltstone and greywacke beds.	
84.6	92.6	8.0	100	Light grey to cream massive carbonate with minor bedded chert zones. Bedding often contorted or brecciated. Microfracturing common. Calcareous zones fine grained and massive. Siliceous zones are bleached and mottled with relict pebble grains. B.C.A. 45°. Bleached bands are 10° to CA and contain significant pyrrhotite. Minor black to grey calcareous hornfels as well. Pyrrhotite zones are moderately to strongly magnetic.	
92.6	112.4	19.8	100	Grades into non-calcareous, fragmented chert with significant pyrrhotite (disseminated along bedding and as blobs throughout - syngenetic?) Moderate to strongly magnetic. Colours dark cream brown to black.	

ASSAYS

FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag
79.4	80.0	<0.01		<0.01	<0.05				
80	81	<0.01		<0.01	<0.05				
81		<0.01		<0.01	<0.05				
82		0.02		<0.01	<0.05				
83		<0.01		<0.01	<0.05				
84		<0.01		<0.01	<0.05				
85		<0.01		<0.01	<0.05				
86		<0.01		<0.01	<0.05				
87		0.01		<0.01	<0.05				
88		<0.01		<0.01	<0.05				
89		<0.01		<0.01	<0.05				
90		<0.01		<0.01	<0.05				
91		<0.01		<0.01	<0.05				
92		<0.01		<0.01	<0.05				
93		<0.01		<0.01	<0.05				
94		<0.01		<0.01	<0.05				
95		<0.01		<0.01	<0.05				
96		<0.01		<0.01	<0.05				
97		0.04		<0.01	<0.05				
98		<0.01		<0.01	<0.05				
99	100	<0.01		<0.01	<0.05				

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 38

LOGGED BY A. Ross

057

INTERVAL (m) FROM	INTERVAL (m) TO	RECOVERY m	RECOVERY %	DESCRIPTION	FORMATION
				Bedding highly irregular and contorted. Perhaps flow banding. Fragments reach cobble size. B.C.A. av. 45°. Veinlets and blobs of po. common. Could be zone of primary volcanic fragments and turbidite. Microfracturing and distortion of bedding typical. Non-calcareous except for minor zones of quartz-actinolite-calcite veining from 110.2 to 111.1m and from 111.6 to 112.6m.	
112.4	126.8	14.4	100	Grades into greenish black interbedded greywackes and minor tuffaceous siltstones. Hornsfelsed. Minor actinolite veinlet alteration. Non-magnetic except for trace po. in some veinlets. B.C.A. av. 45°. Medium to coarse grained tuff greywackes with minor pebble zones. Speckled (white) texture in some zones. Minor banded chert with trace pyrrhotite from 122.4 to 123.0m . Predominantly massive Microfracturing with actinolite veinlets (trace po.) towards base of interval.	
126.8	134.1	7.3	100	Grades into well bedded of banded chert. Colours brown to black, predominantly light brown. Significant pyrrhotite mineralisation developed on bedding planes and as blebs. Some blebs seem to have bedding or compositional layering wrapping around them. Slightly to moderately magnetic. Minor grey hornsfelsed siltstone. B.C.A. 55-70°. (70° at end of interval). Minor calcareous zones av. .2m in this interval.	
134.1	153.0	18.9	100	Dark grey to greenish black tuffaceous greywackes with minor pebble conglomerates and siltstones. Predominantly massive or thick bedded. Veinlets of quartz-actinolite common(trace pyrrhotite). Microfracturing common. B.C.A.'s 70 - 75°. Essentially non-magnetic and non-calcareous. Hornsfelsed. From 148.0 to 150.2m is a zone of quartz actinolite alteration veining and fracturing. Below 149m bedding is often slumped. Some lithologies could be basic lavas.	
153.0	169.6	16.6	100	Zone of intensely broken core. Lithologies are micro-fractured to the extreme. From 153 - 158.4m possible flow top breccia. Colour is lighter green than before. Rest of interval is black-green hornfels, fine to medium grained sediment. Non-magnetic Irregular calcite veinlets are common at 163m and from 168.5 to 169.6m.	
169.6	252.8	83.2	100	Dark greenish black sequence of interbedded siltstones, tuffaceous greywackes and minor basic lavas? Predominantly thick bedded with quartz actinolite veining common. B.C.A. av. 45°, but ranges from 30 to 60°. Moderate to strongly magnetic from 173.3 to 231.6m. Otherwise, non-magnetic. Core broken only moderately in places. Microfracturing developed in basic lavas.	

ASSAYS

FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Mo	WO_3
100	101	<0.01		<0.01	<0.05					
101		<0.01		<0.01	<0.05					
102		<0.01		<0.01	<0.05					
103	104	<0.01		<0.01	<0.05					
104		<0.01		<0.01	<0.05					
105		<0.01		<0.01	<0.05					
106		<0.01		<0.01	<0.05					
107		<0.01		<0.01	<0.05					
108		<0.01		<0.01	<0.05					
109		<0.01		<0.01	<0.05					
110		<0.01		<0.01	<0.05					
111	112	<0.01		<0.01	<0.05					
250	251	<0.01		<0.01	<0.05			0.002	0.001	<0.01
251		<0.01		<0.01	<0.05			<0.001	<0.001	<0.01
252		<0.01		<0.01	<0.05			0.001	0.001	<0.01
253		0.01		<0.01	<0.05			0.004	0.001	<0.01
254		<0.01		<0.01	<0.05			0.004	0.001	<0.01
255		<0.01		<0.01	<0.05			0.005	0.001	<0.01
256		<0.01		<0.01	<0.05			0.005	0.001	<0.01
257		0.01		<0.01	<0.05			0.005	0.001	<0.01
258		<0.01		<0.01	<0.05			0.005	0.002	<0.01
259		<0.01		<0.01	<0.05			0.004	0.001	<0.01
260		<0.01		<0.01	<0.05			0.005	0.001	<0.01
261		<0.01		<0.01	<0.05			0.005	0.001	<0.01
262		<0.01		<0.01	<0.05			0.005	0.001	<0.01
263		<0.01		<0.01	<0.05			0.005	0.002	<0.01
264		<0.01		<0.01	<0.05			0.005	0.002	<0.01
265		<0.01		<0.01	<0.05			0.005	0.001	
266	267	<0.01		<0.01	<0.05			0.004	0.001	

460058

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 38

LOGGED BY A.Ross

058.

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				Trace sulphide rare in greywackes and quartz actinolite veins. Reddish carbonate mineral (rhodochrosite) developed on joints and as veinlets from 210.6 to 210.8, 214 to 227.6m. From 231 to 246m microfracturing and veining common. Altered basic lavas? Black spotted zones (.1m) common. From 246m core becomes browner in colour with irregular veinlets of actinolite developed.	
252.8	253.2	0.4	100	Bleached cream-grey-green banded chert with trace pyrrhotite in veinlets and on bedding. B.C.A. av. 45°. Minor calcareous bands.	
253.2	280.3	27.1	100	Grades into carbonate interval. 253.2 - 253.6m Siderite rich zone. 253.6 - 277.0m Grey carbonate with minor green to grey chert bands. Veined by irregular calcite veinlets. B.C.A. 80-85°. Irregular banding throughout. Mildly magnetic due to finely disseminated pyrrhotite. Fluorite vein 269.7m. 277.0 - 281.5m. Essentially siderite rich brown and grey carbonate with minor bedded cherts. B.C.A. 80°. Minor disseminated pyrrhotite.	
280.3	282.6	2.3	100	Light green (epidote?) siliceous brecciation zone. Fragments highly brecciated. Minor amount of sulphide. Calcareous to 281.5m. Fault?	
282.6	290.5	7.9	100	Less brecciated, bedded sediments. Highly bleached green and cream, black and grey banded cherts, siltstones and minor hornsfelsed greywacke layers. B.C.A. av. 50°. Trace po. in veinlets and on bedding planes. 288.7 - 289m. Calcareous siderite zone. Interval is weakly to moderately magnetic due to po. minor slumping of silt/greywacke layers with occurrence of mud pellets. Microfaulted and fractured.	
290.5	319.0	29.0	100	Carbonate sequence, consisting of grey altered carbonate and siderite rich zones. Minor banded chert. Weakly to moderately magnetic due to trace of pyrrhotite. 290.5 - 297.0m Banded brownish and white, siderite rich grey carbonate and banded chert. B.C.A. av. 55°. 297.0 - 299.6m Grey carbonate, minor chert. Large vein of calcite. Highly irregular textures and banding. B.C.A. av. 60°. 299.6 - 302.2m. Siderite rich zone and grey carbonate. 302.2 - 313.6m. Grey carbonate and minor bedded chert. 313.6 - 319.m Siderite rich zone, minor grey carbonate and minor chert.	
319.0	337.9	18.9	100	Highly altered siliceous zone of banded cherts, siltstones, and greywackes. Carbonate (siderite) zone 324.6 -325.1m. Otherwise, non-calcareous. Colours cream, light green, brown bleached appearance. Microfracturing and actinolite brecciation zones occur.	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag_2Mo	WO_3
267	268	<0.01		<0.01	<0.05			0.004	0.002	
268		<0.01		<0.01	<0.05			0.004	0.001	
269		0.01		<0.01	<0.05			0.004	0.001	
270		<0.01		<0.01	<0.05			0.004	0.002	
271		<0.01		<0.01	<0.05			0.004	0.001	
272		<0.01		<0.01	<0.05			0.005	<0.001	
273		<0.01		<0.01	<0.05			0.005	<0.001	
274		<0.01		<0.01	<0.05			0.004	<0.001	
275		<0.01		<0.01	<0.05			0.004	<0.001	
276		<0.01		<0.01	<0.05			0.004	<0.001	
277		0.01		<0.01	<0.05			0.004	<0.001	
278		0.03		<0.01	<0.05			0.005	0.002	
279		0.01		<0.01	<0.05			0.003	0.001	
280		0.01		<0.01	0.05			0.003	0.001	
281	282	<0.01		<0.01	<0.05			0.003	0.002	
289	290	<0.01		<0.01	<0.05			0.002	0.003	
290		<0.01		<0.01	<0.05			0.003	0.003	
291		0.02		<0.01	<0.05			0.003	0.003	
292		<0.01		<0.01	<0.05			0.003	0.003	
293		0.02		<0.01	<0.05			0.003	0.001	
294		0.01		<0.01	<0.05			0.004	0.001	
295		0.02		<0.01	<0.05			0.003	0.001	
296		0.01		<0.01	<0.05			0.004	0.001	
297		<0.01		<0.01	<0.05			0.005	0.001	
298		<0.01		<0.01	<0.05			0.004	0.001	
299		0.02		<0.01	<0.05			0.004	0.001	
300		0.02		<0.01	<0.05			0.004	0.001	
301		0.04		<0.01	<0.05			0.003	0.001	
302		<0.01		<0.01	<0.05			0.004	<0.001	
303		<0.01		<0.01	<0.05			0.005	0.001	
304		<0.01		<0.01	<0.05			0.004	0.001	
305		<0.01		<0.01	<0.05			0.003	0.002	
306		<0.01		<0.01	<0.05			0.004	0.001	
307	308	<0.01		<0.01	<0.05			0.004	0.001	
308		"		"	"			0.005	0.002	
309		"		"	"			0.005	0.002	
310		"		"	"			0.004	0.001	
311		"		"	"			0.005	0.001	
312		"		"	"			0.004	0.002	
313		"		"	"			0.004	0.003	
314		0.02		"	"			0.006	0.003	
315		0.02		"	"			0.004	0.001	
316		0.04		"	"			0.005	0.001	
317		0.02		"	"			0.005	0.002	
318		0.03		0.02	"			0.005	0.003	
319		<0.01		<0.01	"			0.002	0.002	
320		"		"	"			0.002	0.002	
321		"		"	"			0.001	0.001	
322		"		"	"			0.002	0.002	
323		"		"	"			0.003	0.001	
324	325	0.01		"	"			0.006	0.001	

460059

DIAMOND DRILL RECORD

HOLE NUMBER N.L. 38

LOGGED BY A. Ross

INTERVAL (m) FROM	TO	m	RECOVERY %	DESCRIPTION	FORMATION
				319.0 - 320.3m. Banded chert. B.C.A. av. 60°.	
				320.3 - 324.1m. Siltstones, chert - less banded.	
				324.1 - 324.6m. Banded chert, grey to brown colours.	
				324.6 - 325.1m. Siderite rich carbonate zone.	
				325.1 - 326.2m. Brown to grey banded chert. B.C.A. 40°.	
				326.2 - 337.9m. Less altered thick bedded tuff siltstones, and greywackes with minor pebble zones? Minor bands of chert, zones of brecciation, rich in epidote, occur. B.C.A.'s 30-40°. Trace pyrrhotite throughout. Essentially non-magnetic and non-calcareous.	
337.9	383.8	45.9	100	Carbonate zone. 337.9 - 349.0m Siderite rich zone with minor bedded chert and siltstones. Calcareous. Slightly magnetic. B.C.A. 30-40°. 349.0 - 352.6m. Grey carbonate. Irregular banding and veining. B.C.A. 50-60°. 352.6 - 377.6m. Magnetite - actinolite skarn zone with abundant veins of chalcopyrite. Highly magnetic. Sulphides seen: chalcopyrite, pyrrhotite, pyrite (marcasite), arsenopyrite. Minor laminated siltstone beds. B.C.A. 75-80°. Irregular veins of sulphide. 377.6 - 383.8m. Unmineralised siderite rich zone and grey carbonate with bedded cherts, siltstones. B.C.A.'s 70°.	
383.8	388.1	4.3	100	Banded, light green and grey chert. Minor brecciation. Minor amount pyrrhotite. Rare calcite veinlets. Grades into:	
388.1	409.5	20.4	100	Dark green to black interbedded siltstones and medium grained greywackes. Minor basic lavas. Non-magnetic except for 402.3 - 402.8m zone. Non-calcareous except for minor carbonate veinlets. B.CA. 60 - 70°. Core very broken. From 398 to 402.3, veins of rhodochrosite and calcite are common. Spotting of sediments common. No sulphide except for trace pyrrhotite in some actinolite veins.	
				END OF HOLE	
				[Petrological Descriptions Follow]	

ASSAYS FROM	TO	Sn	S	As	Cu	Sn as Stannite	Zn	B	Mo	WO_3
339	340	0.01		<0.01	<0.05			0.005	0.002	0.24
340		"		"	"			0.004	0.003	<0.01
341		<0.01		"	"			0.004	0.002	<0.01
342		0.01		"	"			0.003	0.002	0.02
343		0.01		"	"			0.003	0.002	<0.01
344		0.02		"	"			0.003	0.002	<0.01
345		0.01		"	"			0.003	0.001	<0.01
346		0.01		"	"			0.002	0.002	0.01
347		0.01		0.01	"			0.003	0.002	<0.01
348		0.02		<0.01	"			0.003	0.002	0.01
349		<0.01		"	"			0.005	0.002	0.01
350		"		"	"			0.005	0.002	0.01
351		"		"	"			0.005	0.002	0.01
352		0.27		"	"			0.006	0.002	0.01
353		1.10	0.45	0.05	0.11	0.030		0.862	0.001	0.01
354		0.63	2.37	<0.01	0.36	0.037		0.618	0.001	<0.01
355		0.23	3.55	0.02	0.55	0.012		0.004	0.001	
356		1.43	1.90	<0.01	0.25	<0.003		0.004	0.001	0.05
357		0.81	1.51	0.19	0.08	0.005		0.028	0.001	0.15
358		0.79	0.65	0.05	<0.05	0.005		0.006	0.001	0.01
359		2.20	0.19	0.09	"	0.003		0.005	0.001	0.01
360		0.83	0.50	0.15	"	<0.003		0.005	0.001	0.10
361		1.22	0.67	<0.01	"	<0.003		0.005	0.001	<0.01
362		0.35	0.22	"	"	<0.003		0.007	0.001	0.01
363		2.31	0.93	"	0.08	0.013		0.005	0.001	0.16
364		2.35	0.55	0.30	<0.05	0.003		0.009	0.001	0.05
365		0.09	1.13	1.42	"	0.005		0.044	0.001	0.16
366		0.06	3.68	1.04	0.14	0.005		0.009	0.001	0.09
367		1.23	1.69	<0.01	<0.05	0.013		0.004	0.001	0.01
368		1.99	0.21	"	"	0.015		0.004	0.001	0.01
369		0.10	4.41	0.05	0.24	0.013		0.010	0.002	0.02
370		0.02	2.92	0.63	0.81	0.007		0.005	0.002	0.04
371		0.01	1.98	0.03	0.39	0.005		0.040	0.001	0.03
372		0.04	0.96	0.01	0.15	0.005		0.028	0.002	0.03
373		0.01	1.73	0.22	0.06	<0.003		0.044	0.002	0.01
374		0.85	1.29	0.79	0.20	<0.003		0.024	0.002	0.01
375		0.40	1.26	0.04	<0.05	<0.003		0.024	0.002	0.01
376		0.21	2.49	0.01	"	<0.003		0.007	0.002	0.01
377		0.54	1.72	<0.01	"	0.005		0.004	0.001	<0.01
378		0.01		<0.01	"			0.004	0.001	"
379		0.01		0.01	"			0.004	0.001	"
380		0.01		<0.01	"			0.003	0.001	"
381		0.01		"	"			0.004	0.001	"
382		0.01		"	"			0.004	0.001	"
383		0.02		"	"			0.004	0.001	0.02
384		0.01		"	"			0.004	0.001	<0.02
385		<0.01		"	"			0.002	0.001	"
386		"		"	0.06			0.002	0.001	"
387	388	"		"	<0.05			0.002	0.001	"

Gold & Silver Assays next page

DIAMOND DRILL RECORD

HOLE NUMBER: M.L. 38

LOGGED BY: A. Ross.

060

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				PETROLOGICAL DESCRIPTIONS	
				The following 9 descriptions refer to core samples from the mineralised interval 353 - 369m. They were presented by D. Cowan in Report CMS 76/3/19.	
				M.L. 38, 353.2m CARBONATE - MAGNETITE ROCK	
				Hand Specimen: Dark grey fine-grained magnetite-rich ore, K stain positive, non fluorescent.	
				Microscopic: This is a carbonate - magnetite rock with traces of sulphide but no detectable cassiterite. As such it appears to be non-representative of the 353-354m assay interval.	
				Spongy skeletal to euhedral-poikilitic magnetite crystals (mean 100 μ) comprise 40 - 45% of the rock. Outlines are typically euhedral although some of these features consist simply of thin opaque films around cores of carbonate or less commonly chlorite. They are enclosed in anhedral semi-interlocking carbonate ranging up to about 1.5mm diameter and weakly lustre mottled in places.	
				Carbonate is a Fe-rich (sideritic) variety generally but irregular patches of Fe-dolomite occur partly as corroded relics within sideritic carbonate or at the cores of skeletal magnetite. These areas include traces of ?authigenic adularia. Accessories elsewhere are chlorite, quartz and very fine brown schorl. Occasional discontinuous carbonate veins with patchy quartz and isotropic chlorite are present and these contain vare particles (to 100 μ) of a cloudy virtually opaque phase which is conceivably cassiterite but lacks diagnostic optical character.	
				No cassiterite was seen in polished section. Irregular patches of pyrrhotite occur intergrown with magnetite and carbonate. These contain frequent corroded particles of pyrite and aggregate shapes in places indicate replacement of pyrite euhedra (50 -500 μ). Minor traces of ilmenite are seen as $<20\mu$ flakes in carbonate enclosed in magnetite and rare $<50\mu$ particles of chalcopyrite occur included in carbonate or rarely magnetite.	
				M.L. 38 - 355.3m QUARTZ - CARBONATE CHLORITE ROCK WITH CASSITERITE	
				Hand specimen: Grey quartz-carbonate rock with disseminated sulphide, K stain negative, non-fluorescent.	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag	Au
									g/t	g/t
			Fire assaying by Mt Lyell M & R Co.							
355	356								1.8	0.1
359	360								0.1	Nil
364	365								1.4	<0.1
370	371								7.9	0.1

460061

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 38

LOGGED BY: A. Ross

061

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				Microscopic: A quartz - carbonate rock, chloritic in places and with disseminated Fe-sulphide and minor traces of cassiterite.	
				Quartz occurs as aggregates of anhedral to subhedral grains (mean 200μ) clouded with ultrafine inclusions of tourmaline (mainly $<10\mu$) and interspersed with irregular aggregates of anhedral Fe-carbonate (similar to 353.2m) which are locally corroded/replaced by yellow-brown chlorite (possibly stibpnomelane, too fine for positive identification). More massive areas of carbonate occur sporadically. These are crudely vein-like, stressed, and carry disseminated patches of fluorite up to 1mm diameter. Rutile is a trace/accessory phase as ultrafine acicular inclusions in carbonate; quartz includes minor traces of apatite.	
				Occasional coarse, spongy aggregates of pyrite are present. Pyrite is microfractured and frequently strongly poikolitic with abundant inclusions (mean 10μ) of tourmaline and sporadic grains (to 150μ) of magnetite, ilmenite (extensively leucoxenised) or rarely chalcopyrite ($<20\mu$), cassiterite (max. 100μ) or pyrrhotite. Pyrite-interstitial or marginal carbonate-quartz aggregates carry sparsely disseminated patches (to 100μ) of stannite frequently rimmed with chalcopyrite. Rare cassiterite particles (max. 300μ) are seen enclosed in quartz and carbonate elsewhere in the rock.	
				M.L. 38 - 357.2m MAGNETITE - RICH CASSITERITE ORE	
				Hand specimen: Dark grey magnetite - ore, K stain negative, patchy scheelite fluorescence.	
				Microscopic: This is a fine-grained semi-massive magnetite-ore with relatively abundant cassiterite.	
				Roughly 75% of the area sectioned consists of virtually massive magnetite aggregates with a mean grainsize about 75μ and carrying traces of interstitial chlorite, carbonate quartz and disseminated generally angular grains of brown cassiterite (mainly $<50\mu$, max. 250μ). Also included are rare interstitial particles of chalcopyrite.	
				Magnetite aggregates are incipiently layered in places with respect to grainsize and distribution of the interstitial silicates. These aggregates are extensively brecciated and healed with Fe-carbonate with subordinate quartz and a little chlorite. The quartz-carbonate aggregates carry about 50% of the cassiterite present in the section mainly as euhedral grains sized from 50μ to 1mm, usually enclosed in carbonate or less commonly quartz. They also include occasional coarse (to 2mm) patches of scheelite and sporadic interstitial	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag

460062

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 38

LOGGED BY A. Ross

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION	ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	B	Ag
				patches of chalcopyrite with disseminated pyrite anhedra and traces of pyrrhotite.											
				Coarser cassiterite grains are frequently colour-zoned with brown cores and colourless margins. A late phase of stress is evident in stressed carbonate and discontinuous carbonate -healed microfractures.											
				M.L. 38 - 359.2m METASOMATISED ?TUFFACEOUS ARGILLITE/ ?SIDERITIC DOLOMITE WITH CASSITERITE											
				Hand Specimen: Grey weakly banded magnetite-rich ore, K stain weakly positive, non-fluorescent.											
				Microscopic: This is a cassiterite-rich carbonate-magnetite rock similar in several respects to the 353.2m sample and clearly a metasomatised sediment.											
				The original rock appears to have been a chemical sediment laminated on a millimetric scale and essentially an inter-calation of impure argillite and a carbonate facies (?"sideritic" dolomite) with patchy, very fine, authigenic adularia. There is a vague suggestion of a tuffaceous component (?shards) in places and elsewhere relict colloform textures are seen.											
				The rock now consists largely of anhedral semi-interlocking Fe-carbonate aggregates, studded throughout with quartz and fine skeletal magnetite (similar to 353.2m) and with accessory amounts of chlorite, phlogopite and rare tourmaline. Apart from the presence of relict argillaceous and finer grained carbonate laminae, general features are very similar to 353.2m.											
				Cassiterite is abundant as subhedral grains (25 - 100μ) and particularly as coarse poikilitic anhedra (to 500μ) closely intergrown with carbonate. Rarely, fine cassiterite occurs at the core of skeletal magnetite, but despite a fairly close spatial relationship, the two phases generally show little tendency to form intergrowths. Total cassiterite content is 5 - 10%. Minor traces of pyrite and chalcopyrite are present.											
				M.L. 38 - 359.8m METASOMATISED, FRACTURED IMPURE CHERT											
				Hand Specimen: Carbonate-healed fractured magnetite-ore, K stain positive, weakly fluorescent.											
				Microscopic: This is a metasomatised fractured and quartz-carbonate-healed impure chert.											

DIAMOND DRILL RECORD

HOLE NUMBER M.L.38

LOGGED BY A. Ross

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION.	FORMATION
				Where relatively fresh the rock consists essentially of cherty microcrystalline quartz more or less pervasively stained with ultrafine carbonate and Fe-Mg chlorite and carrying disseminated skeletal to euhedral magnetite (mean 25μ). Elsewhere it is extensively replaced by fine to coarse semi-lustre mottled carbonate (probably Fe-dolomite) and anhedral quartz, particularly in areas adjacent to the carbonate - quartz veins. Locally the rock is reduced to clusters of magnetite grains included in coarse carbonate.	
				Minor traces of tourmaline occur included in carbonate and quartz. The quartz-carbonate veins carry rare grains (to 100μ) of scheelite, rare coarse ilmenite flakes, traces of fluorite and rare ultrafine particles of galena.	
				A single grain of cassiterite (about 60μ diameter) was observed intergrown with carbonate at the core of a skeletal magnetite crystal.	
				M.L. 38-363.6m FELDSPATHIC CARBONATE MAGNETITE ROCK WITH CASSITERITE	
				Hand Specimen: Dark grey magnetite-carbonate rock, K stain positive, non fluorescent.	
				Microscopic: This is a feldspathic carbonate-magnetite rock, with less than 1% disseminated cassiterite.	
				A vague, locally deformed relict layering is present and the rock is interpreted as a metasomatised chemical sediment by analogy, for example, with 359.2m. It consists largely of coarse (mean 500μ) anhedral-interlocking strongly poikilitic Fe-carbonate with cloudy K-feldspar (?adularia) closely intergrown. Fe-Mg chlorite and quartz more or less pervasive accessory components and ultrafine tourmaline and phlogopite inclusions are common in carbonate and feldspar.	
				Typical skeletal to euhedral magnetite (mean 100μ) comprises about 15% of the rock and is weakly layered in its distribution. Skeletal grains usually have cores of chlorite and carbonate but not infrequently feldspar. Crudely vein-like aggregates of near massive carbonate occur sporadically and "grade" into aggregates of coarse-grained quartz with frequent tourmaline inclusions.	
				Cassiterite is seen as disseminated grains (<50 - 100μ) and aggregates up to 500μ diameter. The distribution is irregular although incipiently layered. Most of the grains are enclosed in carbonate, less commonly quartz. There are very few magnetite-cassiterite intergrowths.	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag

063

460064

DIAMOND DRILL RECORD

HOLE NUMBER M.L.38

LOGGED BY: A. Ross

INTERVAL (m) FROM	INTERVAL (m) TO	RECOVERY m	RECOVERY %	DESCRIPTION	FORMATION	ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zr	B	Ag
				Sporadic spongy aggregates of pyrite are present, generally closely intergrown with magnetite with a little associated chalcopyrite.											
				M.L.38-364.6m QUARTZ - CARBONATE - MAGNETITE ROCK WITH CASSITERITE											
				Hand Specimen: Dark grey magnetite ore, K stain positive, non fluorescent.											
				Microscopic : This is a relatively coarse-grined quartz-carbonate-magnetite rock with abundant cassiterite.											
				The rock consists largely of coarse (to 2mm+) anhedral/interlocking Fe-carbonate more or less pervasively stained with very fine tourmaline inclusions and with disseminated skeletal magnetite crystals. Elsewhere it consists essentially of spongy magnetite aggregates enclosing abundant coarse an- to subhedral colour-zoned cassiterite (mean 100μ) and grading into quartz-carbonate-magnetite aggregates with sparsely disseminated cassiterite.											
				Occasional coarse quartz subhedra (to 2mm aggregates to 5mm) are present with abundant included tourmaline and fairly frequent included cassiterite euhedra (mean 150μ) with sporadic magnetite. Chlorite is a semi-pervasive accessory constituent and small clusters of adularia crystals occur sporadically.											
				Cassiterite shows are rare inclusions of magnetite, but while these two phases are closely associated spatially, they generally form discrete grains and show a minimal degree of intergrowths on a microscale. Minor traces of chalcopyrite occur, partly as <20μ inclusions in magnetite and rare coarse blades of ilmenite are present.											
				M.L. 38- 365.1m CARBONATE - QUARTZ - ADULARIA VEIN WITH ARSENOPYRITE, FLUORITE											
				Hand Specimen: Grey carbonate rock with arsenopyrite, K stain positive, non fluorescent.											
				Microscopic: This is a layered carbonate-quartz-adularia rock, clearly portion of a vein and with disseminated arsenopyrite and fluorite.											
				The rock consists largely of coarse anhedral/interlocking to euhedral carbonate, somewhat stressed and tending to form crude bands up to 1 cm. wide. These are interspersed with bands of an- to subhedral quartz (mean 200-250μ) clouded with											

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 38

LOGGED BY A. Ross

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				very fine tourmaline inclusions. Occasional bipyramidal quartz grains are seen enclosed in carbonate. Adularia crystals, clear in places but often clouded with inclusions of phlogopite tourmaline and carbonate are disseminated throughout and somewhat layered in their distribution. Weakly poikilitic fluorite crystals up to 2.5mm in diameter occur disseminated throughout a coarse semi-lustre mottled band of carbonate.	
				Conspicuous coarse-grained locally microfractured arsenopyrite crystals are disseminated throughout. These features include frequent silicate particles and disseminated <100μ grains of chalcopyrite, pyrrhotite, ilmenite, wolframite, and rarely cassiterite. Fairly frequent particles of bismuth, (mainly <20μ max. about 50μ) also occur as inclusions in arsenopyrite or intergrown with chalcopyrite in proximity to arsenopyrite crystals. Thinly disseminated pyrite crystals are present.	
				M.L. 38 - 369.0m VESUVIANITE - CARBONATE ROCK	
				Hand Specimen: Grey coarse-grained ?skarn, K stain weakly positive, non fluorescent.	
				Microscopic: This is a coarse-grained vesuvianite - carbonate rock with disseminated sphene.	
				The rock consists simply of an- to euhedral-prismatic vesuvianite with a mean grain-size about 500μ as single grains and granular to subradiating aggregates embedded in coarse-grained anhedral lustre mottled carbonate. Vesuvianite is somewhat stressed and the carbonate (dolomitic) clearly recrystallised.	
				Occasional cloudy anhedral grains of K-feldspar are seen and there are rare aggregates of carbonate-replacive talc. Sphene occurs sparsely disseminated semi-acicular and locally radiating aggregates locally enclosed in vesuvianite, elsewhere in carbonate. Traces of chlorite are present partly associated with talc and elsewhere as an incipient alteration of vesuvianite.	
				No cassiterite was detected.	
				GENERAL SUMMARY BY D. COWAN	
				The majority of these specimens can be termed carbonate-magnetite rocks. A few are clearly metasomatised laminated (chemical) sediments but most are devoid of tangible evidence of the primary rock type. There is one vein (365.1m) and one skarn (or vesuvianite-carbonate rock, 369.0m).	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag

065

460066

DIAMOND DRILL RECORD

HOLE NUMBER M.L. 39

LOGGED BY: A. Ross

INTERVAL (m) FROM	TO	RECOVERY m	%	DESCRIPTION	FORMATION
				Typical mineralogy comprises carbonate quartz and magnetite + adularia chlorite, tourmaline (brown schorl, trend dravite) with patchy cassiterite, pyrite, fluorite, pyrrhotite and traces of chalcopyrite, scheelite, wolframite and ilmenite. Arsenopyrite and native bismuth characterise the vein. The skarn carries accessory sphene. Stannite was observed only in the 355.3m specimen where it appears to encompass a significant proportion of the tin value although amounts seen are minor overall.	
				Carbonate is mainly a Fe-rich variety but patchy dolomite-ankerite is seen as relict and vein material.	
				Cassiterite is patchy to the extent that some specimens are clearly non-representative of their respective assay intervals, some containing much more and others decidedly less cassiterite than would be expected from the Sn-values. In places this is marked to the extent that there are obvious discrepancies between thin and polished sections cut from different areas of the same piece of core.	
				When compared with the Renison situation there are some obvious contrasts:	
				(i) Abundant magnetite as against pyrrhotite.	
				(ii) Generally coarse cassiterite. Few grains are <50µ in diameter; grains in excess of 1mm are seen occasionally and modal grainsize is in the 100 - 200µ range.	
				(iii) A general paucity of "heavy" phases apart from cassiterite and magnetite.	
				(iv) A virtually complete absence of Ca-Fe silicates.	
				Points (ii) and (iii) are probably manifestations of sampling centred on ore grade rather than host rock material. With this in mind it appears that magnetic prospecting should prove to be a very useful exploration tool.	

ASSAYS FROM	TO	Sn	S	As	Cu	Pb	Zn	Bi	Ag

066

460067

067

APPENDIX 9

460068

A LOWER CAMBRIAN MARKER SEQUENCE IN THE RENISON - MT. LINDSAY AREA

by L.A. Newnham
Renison Limited

ABSTRACT

A thin "marker" sequence of carbonates and hematitic cherts overlying lower Cambrian siltstones and shales and underlying a thick sequence of argillitic sediments and tuffs has recently been traced from the Renison Mine area to the Mt. Lindsay Mine area.

Whilst it is useful as a mapping tool in otherwise monotonous and confusing unfossiliferous formations, the economic potential of this "marker" sequence is also considerable in areas where it is readily accessible to mineralised hydrothermal solutions emanating from the underlying Devonian granite.

Techniques for the more detailed mapping of this sequence are slowly being developed and applied in more extensive areas around Renison.

Paper presented at the Geol. Soc. of Australia, Tas. Div., West Coast Symposium on Lower Palaeozoic Geology of Western Tasmania, 20th September, 1975.

GENERAL STRATIGRAPHY

Exploration by Renison over the past few years has succeeded in tracing a thin sequence of lower Cambrian hematitic cherts, sandstones, and carbonates from south of the Renison Mine to west of the Mt. Lindsay Mine, a total distance of 20 kms.

This sequence, which generally averages 100-150m thick, is sufficiently diagnostic to be regarded as a "marker sequence".

A rough trace of the sequence is shown on Figure 1.

It is overlain conformably by the very thick Crimson Creek Formation tuffs and argillitic sediments and underlain conformably by the equally thick Oonah Formation (?) shales, sandstones and siltstones. Both these formations are regarded as lower Cambrian. The use of the term Oonah Formation as applied to those rocks beneath the marker sequence is problematical as it is visually quite different to the so called Oonah Formation elsewhere.

The marker sequence in four locations is discussed below. These locations are shown on Figure 1 as A,B,C,D and in Figure 2 in Columnar form.

In the South Renison area (A), the marker sequence consists of an upper blood-red chert, separated from a lower hematitic chert and sandstone (Red Rock Member) by a dolomitic carbonate.

In the Crimson Creek area (B), the marker sequence is thinner and the upper chert is apparently absent. However, north of the Pieman River in the Misty Valley (C) and Salmon Creek (D) areas, the upper chert reappears. In these two areas, the lower chert, (equated with the Red Rock Member) becomes strongly nodular with nodules generally in the 3-10 mm size range.

The amount and purity of the carbonate component in the marker sequence in these four locations is difficult to determine because of the poor surface expression of carbonates in this environment. However, there would appear to be many rapid

.../2

changes, probably local facies variations.

The lithology and depositional environment of the marker sequence is not yet well understood, largely due to the lack of suitable reliable data, but it would appear that this sequence of cherts and carbonates was deposited in a calm, shallow near shore shelf or lagoonal environment where the changing nature of a mature foreland was responsible for varying influxes of hematitic and siliceous material and carbonate rich waters.

ECONOMIC SIGNIFICANCE

The marker sequence has no direct syngenetic metallogenic significance but it is economically important from two other points of view:

Firstly, it is proving a very useful tool in problems of stratigraphic interpretation, associated with areas which would otherwise be extremely difficult to understand.

Secondly, the sequence generally appears to be associated with an overall depositionally quiet environment in which many carbonate beds have formed. These carbonates in turn have the potential to readily host metalliferous Devonian replacement deposits. There is normally at least one carbonate developed within the marker sequence and several immediately below it.

MAPPING METHODS

To date, this marker sequence has only been located in dense forest areas. Normally its outcrop is very poor and easily missed, even by detailed mapping.

More often than not, its presence is only recognised after access roads or diamond drill holes have been completed. Creek exposures of the chert members is usually reasonable, whilst the Red Rock

.../3

Member or Lower Chert usually forms ridges.

In areas of almost nil outcrop, geochemical and magnetic surveys are useful in tracing the sequence as shown graphically in Figure 4. The general Oonah – Crimson Creek Formation boundary can be well defined geochemically in the soils, and then the presence of the marker sequence can be determined by the low order but characteristic magnetic signatures of the hematitic chert units. The steeper the units, the easier this is to do.

FUTURE STUDIES

Detailed mapping projects are currently in progress on the west flank of the Renison Anticline where the marker sequence is now known to exist. (See Figure 3). Drilling programs in the Mt. Lindsay and Crimson Creek areas in the next year should greatly assist in better defining the sequence, and thereby generally increase the understanding of the lower Cambrian stratigraphy in the Renison-Zeehan-Mt. Lindsay area.

071

460072

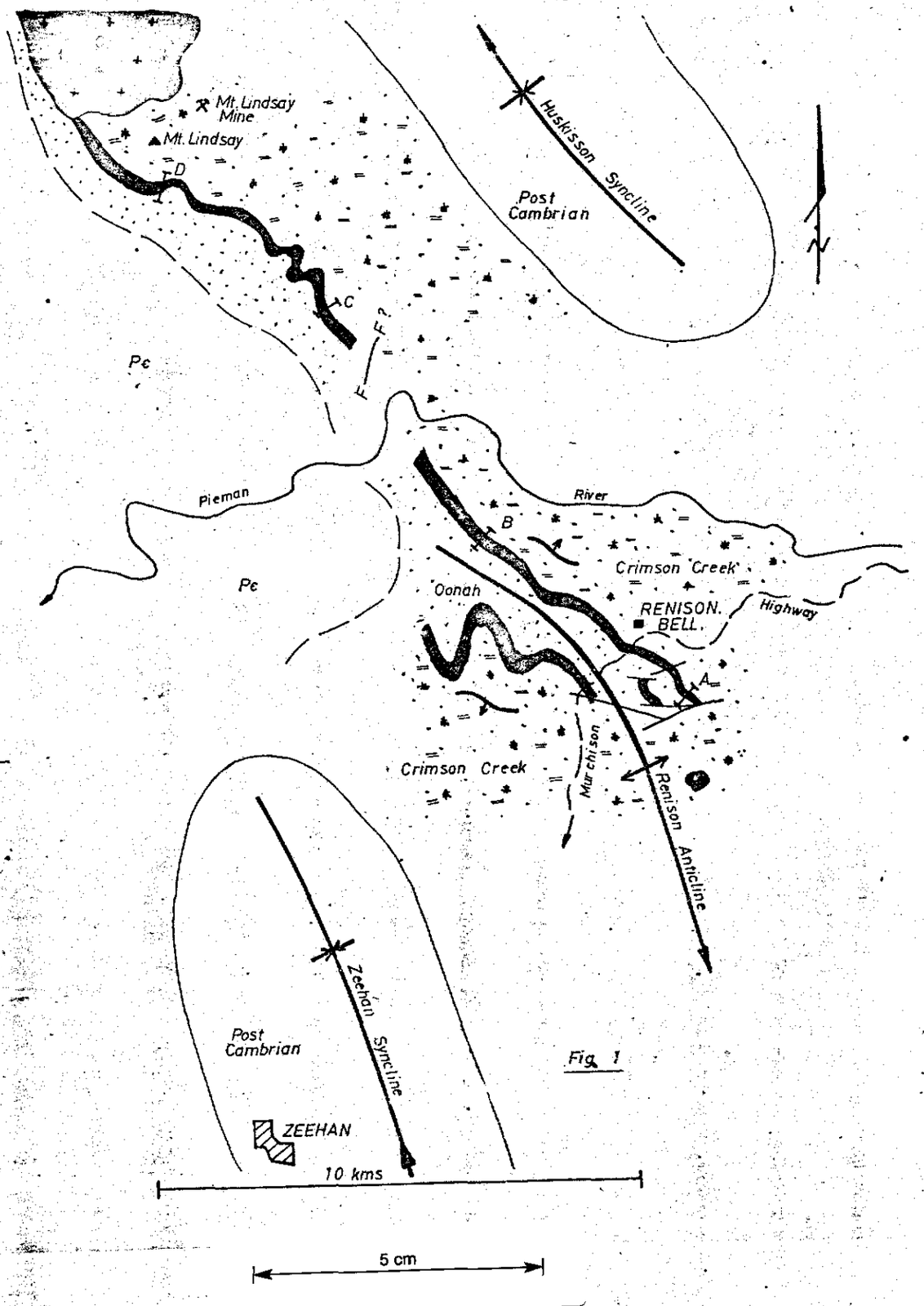


Fig. 1

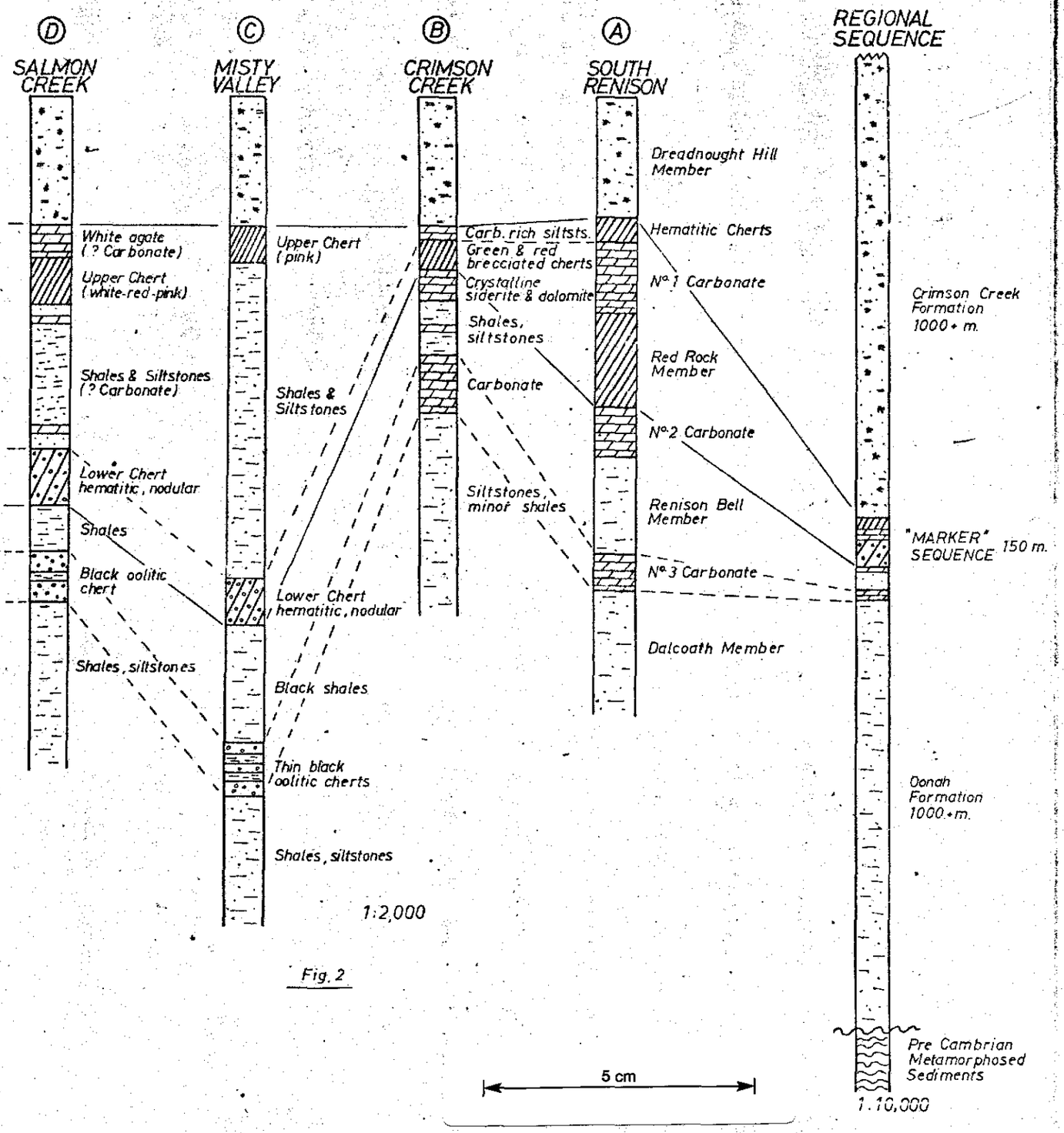
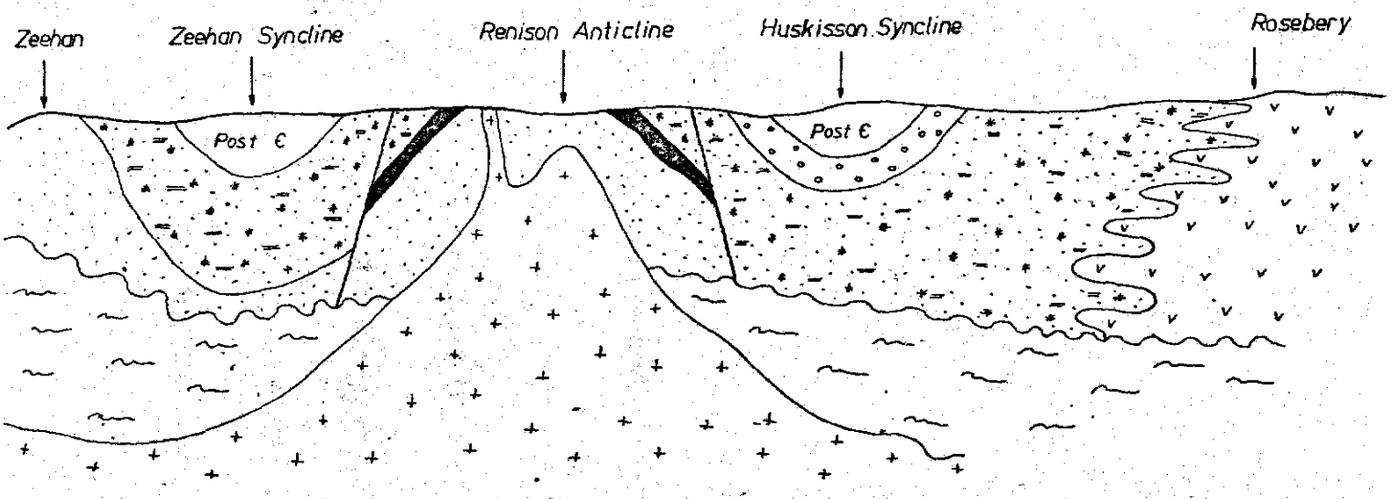

D
SALMON CREEK
C
MISTY VALLEY
B
CRIMSON CREEK
A
SOUTH RENISON
REGIONAL SEQUENCE
White agate (? Carbonate)
Upper Chert (white-red-pink)
Shales & Siltstones (? Carbonate)
Lower Chert hematitic, nodular
Shales
Black oolitic chert
Shales, siltstones
Upper Chert (pink)
Shales & Siltstones
Lower Chert hematitic, nodular
Black shales
Thin black oolitic cherts
Shales, siltstones
Carb. rich siltsts.
Green & red brecciated cherts
Crystalline siderite & dolomite
Shales, siltstones
Carbonate
Siltstones, minor shales
Dreadnought Hill Member
Hematitic Cherts
N°1 Carbonate
Red Rock Member
N°2 Carbonate
Renison Bell Member
N°3 Carbonate
Dalcoath Member
Crimson Creek Formation 1000+ m.
"MARKER" SEQUENCE 150 m.
Oonah Formation 1000+m.
Pre Cambrian Metamorphosed Sediments
1:2,000
5 cm
1:10,000

Fig. 2



RENISON AREA
GENERALISED NE-SW SECTION

Fig. 3

10 kms

Dundas Formation
Mt.Read Volcanics
Crimson Creek Formation
Oonah Formation
Precambrian
Granite

5 cm

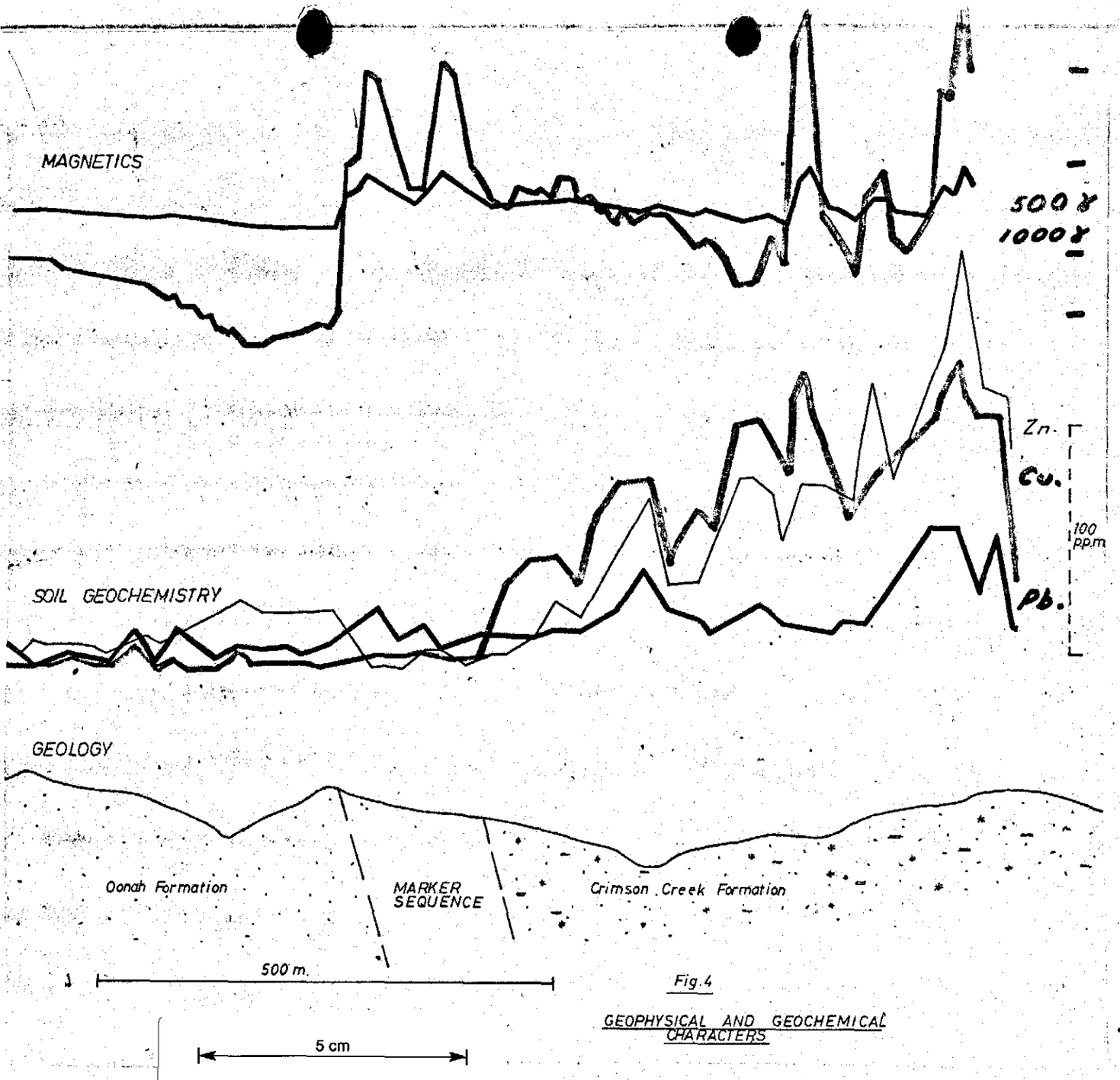


Fig. 4

GEOPHYSICAL AND GEOCHEMICAL CHARACTERS

1958

460076

76-1164

KEY

	Permian & Younger.	Pє	Precambrian Units.
D+S	Devonian & Silurian Sediments.	єb	Cambrian Basic & Ultrabasic Intrusives.
Os	Ordovician Sediments.	Dg.	Devonian Granite Intrusives.
є	Cambrian Sediments & Volcanics.	┼┼┼┼	Traverse Line Systems.

RENISON LIMITED

LOCALITY MAP

GEOLOGIST	: A.F. Ross
DRAUGHTSMAN	: F. Coulson
DATE	: April '76
REVISIONS	:

SCALE 1:50,000 METRES
MAP 1:1,000,000 METRES

DRAWING No. MLP 6

5 cm

1958

1959

1959

1959

BASE LINE

REFERENCE PLANE

APPROX. GRANITE O/C

MAIN ORE ZONE OUTCROP

No. 2 ANOMALY

PROPOSED ML 39

PROPOSED ML 40

PROPOSED ML 41

PROPOSED ML 42

PROPOSED ML 43

PROPOSED ML 44

EL 2653
EL 18/7/73
BOUNDARY

MAIN ORE ZONE OUTCROP

GRANITE OUTCROP

MAIN ORE ZONE F.W. CONTOURS.

"TOP OF GRANITE" R.L CONTOURS.

GRANITE – MAIN ORE ZONE CONTACT LINE

No. 2 ANOMALY OUTCROP

No. 2 ANOMALY F.W. CONTOURS.

GRANITE – No. 2 ANOMALY CONTACT LINE.

NOTE: 1 Grid used is the Renison Mine Grid.
Magnetic North is 25°53' east of Grid North.
Aberfoyle Grid North is 30° east of current Grid North.

2 R.L. System used is same as the Renison Mine System.
(ie) R.L. = M.S.L. + 200m.

460077

TRACK

DIAMOND DRILL HOLE COLLAR and dip projection
(N.B. ML 1 – 23 , ML 2/1 – 2/7 drilled by Aberfoyle 1962 – 65.
ML 25 – 38 drilled by Renison Limited 1975 – 76.)

GRID LINE Pegs every 50m.
Soil sampling interval 25m.
Ground proton magnetic survey interval 10m.

SURFACE WORKINGS and ADITS

ABERFOYLE HUTS and RUINS

MINING LEASE BOUNDARY

RENISON LIMITED

MT. LINDSAY PROJECT

MAIN ORE ZONE AND No. 2 ANOMALY

STRUCTURAL CONTOUR MAP

GEOLOGIST	: A.F.R.
DRAUGHTSMAN	: J.M.M.
DATE	: MARCH, 1976
REVISIONS	:

SCALE 1:2000 METRES

40 0 40 80

DRAWING No. MLP 7

8 cm

1959

Strong

Moderate

Significant I.P. Responses.
Generally with coincident Magnetic Responses.

Strong Geochemical Responses.

Moderate Geochemical Responses.

ROADS CONSTRUCTED BETWEEN 1973 - 75

ROADS CONSTRUCTED BETWEEN 1975 - 76

ROADS PROPOSED 1976 - 77

DRILL HOLES COMPLETED PRIOR TO 75-76 BY ABERFOYLE.

DRILL HOLES COMPLETED 1975 - 76 BY RENISON

DRILL HOLES PROPOSED 1976 - 77

KEY

Road & Walking Track

Grid Line & Sample Locality.

Aberfoyle Drill Hole.

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

RENISON LIMITED

MT. LINDSAY PROJECT
WORK COMPLETED 1975-76
WORK PROPOSED 1976-77

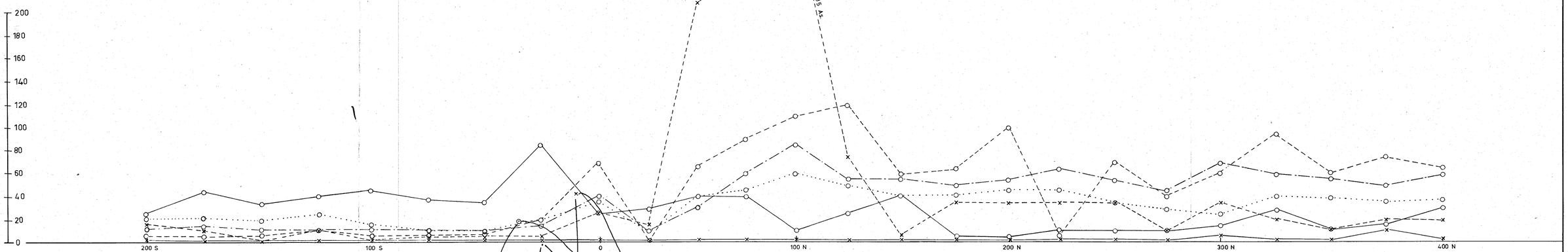
SCALE. 1:5000 METRES
100 0 100 200 300

DRAWN	L.A.N.
TRACED	J.M.M.
DATE	April '76
SCALE	1:5000
DRAWING No.	
MLP 8	

1960

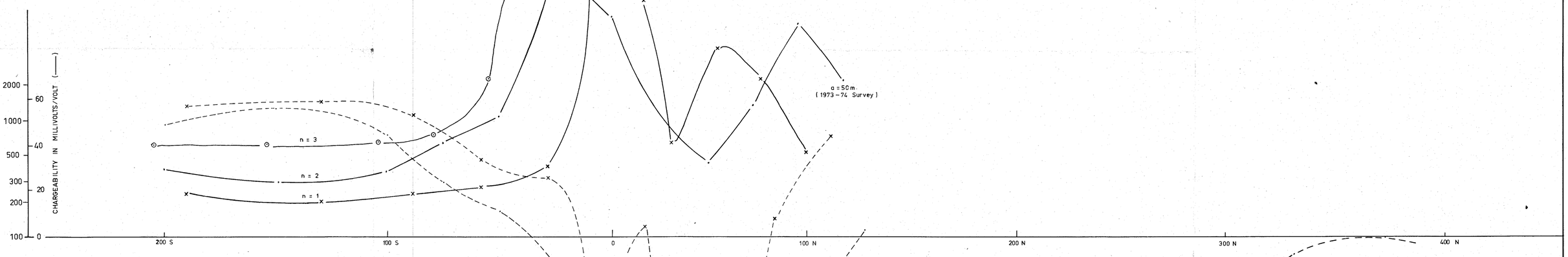
Geochemistry

P.P.M.



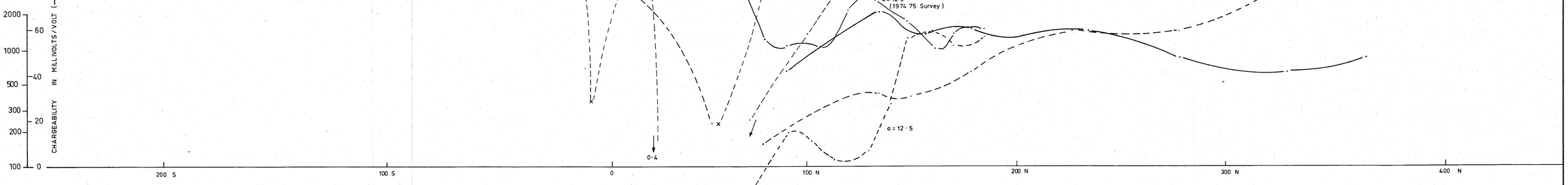
M.I.P. & E.I.P. Data

RESISTIVITY IN Ohm METRES (- - -)
CHARGEABILITY IN MILLIVOLTS/VOLT (——)

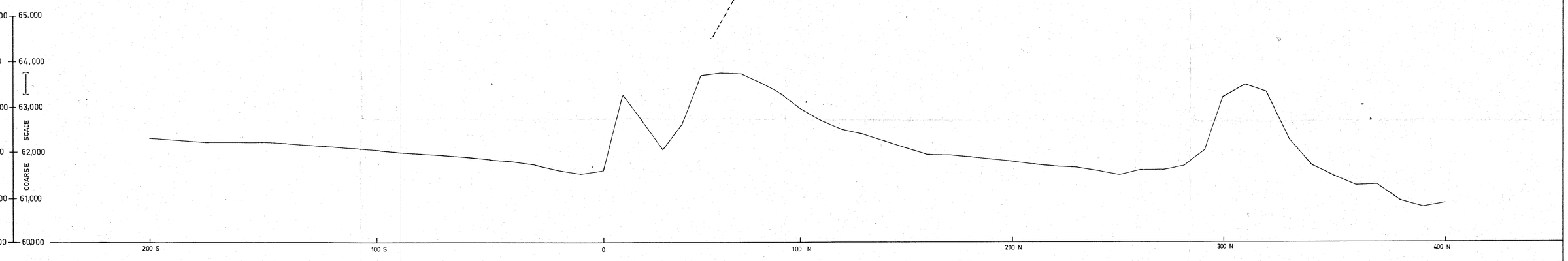


I.P. Data

RESISTIVITY IN Ohm METRES (- - -)
CHARGEABILITY IN MILLIVOLTS/VOLT (——)



Total Magnetic Field (δ)



Topography & Geology

HEIGHT ABOVE SEA LEVEL + 2000 m

5 cm

460079

76 - 116H

RENISON LIMITED	
E.L.18/73 MT. LINDSAY GRID. DRILL HOLE ML 34, LINE ML13	
GEOLOGIST : A.F. ROSS	SCALE 1:1000 METRES 20 0 20 40
DRAUGHTSMAN : J. M. MATTHEWS	
DATE : APRIL, 1976	
REVISIONS :	DRAWING No. MLP 9

I.P
CHARGEABILITY
RESISTIVITY

MAGNETICS
5000 δ SCALE
1000 δ SCALE

GEOCHEMISTRY
Sn
Cu
Pb
Zn
As
W

SECTION LOOKING N.W.

1961

Geochemistry

P.P.M.

200 180 160 140 120 100 80 60 40 20 0

275 Sn
275 Cu
325 Sn
235 As
380 As
325 Cu
510 Sn
300 Cu

M.I.P. & E.I.P. Data

RESISTIVITY IN Ohm METRES (– – –)
CHARGEABILITY IN MILLIVOLTS/VOLT (——)

2000 1000 500 300 200 100
60 40 20 0

I.P. Data

RESISTIVITY IN Ohm METRES (– – –)
CHARGEABILITY IN MILLIVOLTS/VOLT (——)

2000 1000 500 300 200 100
60 40 20 0

Total Magnetic Field (δ)

(– – –) SCALE FINE: 63,000 800 600 400 200 62,000
(——) SCALE COARSE: 65,000 64,000 63,000 62,000 61,000 60,000

400 S 300 S 200 S 100 S 0 100 N 200 N

TULLOCK CK.

Topography & Geology

HEIGHT ABOVE SEA LEVEL + 2000 m

2550 2500 2450 2400 2350 2300 2250 2200 2150 2100

BASE LINE

MINE ROAD
TULLOCK CREEK
MINE ROAD
MT. LINDSAY OPEN CUT

Dark gray hornfeled gwke.
Clay zone ? Weathered carbonate.
Interbeded carbonate and chert.
0·01 Sn
<0·01 Cu, As
Hornfelsed siltstones and gwke. Minor carb & chert zones Minor pyr. & po. mod. mag. zone.
Strong mag. zone.
Contorted banded chert.
Siltstones & gwke Altered in places with minor sulphides.
MAIN ORE ZONE
Magnetite actinolite sulphide skarn assemblage.
Core very broken with some core loss.
Highly altered sediments with mod sulphides and tourmaline & fluorite.
Contained 9·0 m (true width)
0·26 Sn
0·08 Cu
0·23 As
0·03 Bi
0·03 WO_3
10m 0·10 Sn.
MEREDITH GRANITE
Tin values in granite and adjacent sediments <0·01 Sn
ML35

460080

400 S 300 S 200 S 100 S 0 100 N 200 N

5 cm

76-1164

RENISON LIMITED	
E.L. 2/63 MT. LINDSAY GRID. DRILL HOLE ML 35, LINE ML 11·5	
GEOLOGIST : A.F. ROSS	SCALE 1:1000 METRES 20 0 20 40
DRAUGHTSMAN : J. M. MATTHEWS	
DATE : APRIL, 1976	
REVISIONS :	DRAWING No. MLP 10

I.P
CHARGEABILITY
RESISTIVITY

MAGNETICS
5000 δ SCALE
1000 δ SCALE

GEOCHEMISTRY
Sn
Cu
Pb
Zn
As
W

SECTION LOOKING N.W.

NOTE: The hole data has been projected 75 m south onto line 11·5

1962

Geochemistry

P.P.M.

200 180 160 140 120 100 80 60 40 20 0

1130 Sn. 315 Sn.

1800 N 1900 N 2000 N 2100 N 2200 N 2300 N 2400 N

M.I.P. & E.I.P Data

RESISTIVITY IN Ohm METRES (– – –) 2000 1000 500 300 200 100

CHARGEABILITY IN MILLIVOLTS/VOLT (——) 60 40 20 0

I.P. Data

RESISTIVITY IN Ohm METRES (– – –) 2000 1000 500 300 200 100

CHARGEABILITY IN MILLIVOLTS/VOLT (——) 60 40 20 0

1800 N 1900 N 2000 N 2100 N 2200 N 2300 N 2400 N

Total Magnetic Field (δ)

(– – –) FINE SCALE 800 600 400 200

(——) COARSE SCALE 65,000 64,000 63,000 62,000 61,000 60,000

1800 N 1900 N 2000 N 2100 N 2200 N 2300 N 2400 N

Topography & Geology

HEIGHT ABOVE SEA LEVEL + 2000 m

2550 2500 2450 2400 2350 2300 2250 2200 2150 2100

LOWER ROAD — No. 1 ANOMALY — MAIN LODE — TRACK — BASELINE — No. 2 ANOMALY

Clay

Weathered clayey siltstones

Carbonate & minor chert Trace sulphide

Darksiltstones - minor sulphides

Light gray cherts 2% Sulphides

Siltstones, tuffs, graywacke, minor cherts.

Widespread alteration & minor sulphides

Massive carbonate with sulphides & calc - silicates magnetite

Zone of strongest mineralisation

MAIN LODE

Cherts variable B.C.A.

10 m 0·27 Sn
< 0·05 Cu
0·04 As
0·02 Mo
0·08 Bi
0·04 WO_3

containing
3 0 m 0·70 Sn
< 0·05 Cu
0·01 As

Tuffaceous siltstones again with variable, "slumped" bedding

Basic lava ? gabbro

Granite vein

Lava ?

Granite

Siltstones

Granite

Dark siltstones

Granite dyke.

Dark hornfelsed seds.

ML 36

1800 N 1900 N 2000 N 2100 N 2200 N 2300 N 2400 N

460081

5 cm

76-1164

RENISON LIMITED	
E.L. 2/63 MT. LINDSAY GRID. DRILL HOLE ML 36, LINE ML10	
GEOLOGIST : A.F. ROSS	SCALE 1:1000 METRES 20 0 20 40
DRAUGHTSMAN : J. M. MATTHEWS	
DATE : APRIL, 1976	
REVISIONS :	DRAWING No. MLP 11

I.P
- CHARGEABILITY
- RESISTIVITY

MAGNETICS
- 5000 δ SCALE
- 1000 δ SCALE

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

SECTION LOOKING N.W.

NOTE: END OF HOLE PROJECTED 50 m SOUTH ONTO LINE 10.

1963

Geochemistry

P.P.M

500 Zn

380 Zn

200 180 160 140 120 100 80 60 40 20 0

2000 N 2100 N 2200 N 2300 N 2400 N 2500 N 2600 N

M.I.P. & E.I.P. Data

RESISTIVITY IN Ohm METRES (– – –)

CHARGEABILITY IN MILLIVOLTS/VOLT (——)

2000 1000 500 300 200 100

60 40 20 0

I.P. Data

RESISTIVITY IN Ohm METRES (– – –)

CHARGEABILITY IN MILLIVOLTS/VOLT (——)

2000 1000 500 300 200 100

60 40 20 0

2000 N 2100 N 2200 N 2300 N 2400 N 2500 N 2600 N

Total Magnetic Field (γ)

(– – –) SCALE FINE

(——) SCALE COARSE

63,000 800 600 400 200 62,000

65,000 64,000 63,000 62,000 61,000 60,000

2000 2100 2200 N 2300 N 2400 N 2500 N 2600 N

Topography & Geology

HEIGHT ABOVE SEA LEVEL + 2000 m

2550 2500 2450 2400 2350 2300 2250 2200 2150

No. 1 ANOMALY

BASELINE

SOUTH EAST CREEK

No. 2 ANOMALY

Yellow – brown clays

Blue-gy cherts, gy carbonates, tuffaceous siltst. minor Po

Dark gray graywacke tuffs and siltstones
Hornfelsed in part

This interval assayed
0·01 Sn
As
Bi
Mo
WO_3
and <0·02 Cu

Mod magnetic g'wke tuffs

Very broken tuffaceous gwke
? Faulting

Siltstones & graywacke tuffaceous in part. Mod. magnetic
Hornfelsed chloritic in part
Actinolite veins fairly common

Siltstones, feldspathic gwke, minor mudstone. Extensively altered – actinolite, biotite, calcite veining, etc.

Banded magnetite – pyrr – pyr – ccp – arsenopy with actinolite-tour., siderite in cherts.

7·0m (E.T.T. 6·0m)
0·13 Sn
<0·01 Cu
As
Bi
Mo
WO_3

Highly altered, tourmalinised carbonate

No. 2 ANOMALY ZONE

Tuffaceous – siltst. Sequence with qtz.– fluorite.

Less altered tuffaceous siltst.

Two granite veins.

5·0m (E.T.T. 4·5m)
0·21 WO_3
0·49 As
0·033 Bi
0·014 Zn
0·05 Sn
0·05 Cu
<0·01 Mo

ML 37

2000 N 2100 N 2200 N 2300 N 2400 N 2500 2600 N

460082

5 cm

76-1164

RENISON LIMITED

E.L. 2/63
MT. LINDSAY GRID.
DRILL HOLE ML 37, LINE ML9

GEOLOGIST : A.F. ROSS
DRAUGHTSMAN : J. M. MATTHEWS
DATE : APRIL, 1976

SCALE 1 1000 METRES
20 0 20 40

REVISIONS

DRAWING No
MLP 12

I.P
CHARGEABILITY
RESISTIVITY

MAGNETICS
5000 γ SCALE
1000 γ SCALE

GEOCHEMISTRY
Sn
Cu
Pb
Zn
As
W

SECTION LOOKING N.W.

1964

Geochemistry

P.P.M.

300 As.
595 As.
275 As.

200
180
160
140
120
100
80
60
40
20
0

400 S | 300 S | 200 S | 100 S | 0 | 100 N | 200 N

M.I.P. & E.I.P. Data

RESISTIVITY IN Ohm METRES (– – –)
CHARGEABILITY IN MILLIVOLTS/VOLT (——)

2000 | 1000 | 500 | 300 | 200 | 100
60 | 40 | 20 | 0

I.P. Data

RESISTIVITY IN Ohm METRES (– – –)
CHARGEABILITY IN MILLIVOLTS/VOLT (——)

2000 | 1000 | 500 | 300 | 200 | 100
60 | 40 | 20 | 0

Total Magnetic Field (δ)

FINE SCALE (– – –): 800 | 600 | 400 | 200
COARSE SCALE (——): 65.000 | 64.000 | 63,000 | 62,000 | 61,000 | 60.000

63000 | 62,000

400 S | 300 S | 200 S | 100 S | 0 | 100 N | 200 N

Topography & Geology

HEIGHT ABOVE SEA LEVEL 2000 m

2500 | 2450 | 2400 | 2350 | 2300 | 2250 | 2200 | 2150 | 2100 | 2050

No. 2 ANOMALY

BASELINE

SOUTH EAST CREEK

Hornfelsed sltst. & g'wke

Banded chert

Hornfelsed sltst & g'wke

Altered & mineralised breccia zone

sltst. & g'wke

Carbonate some Po.

Fragmented chert with sig. Po

? MAIN ORE ZONE ?

Dark hornfelsed g'wke & sltst.

Chert with Po

Hornfelsed and altered g'wke & sltst.

Intensely broken & brecciated zone

Dark siltsts, g'wke & basic lavas ?
Magnetic in parts
Minor sulphides.

79m – 112m
<0·01 Sn, As
<0·05 Cu

Sidenitic carbonate.
Minor chert and dissem pyrrhotite.

Brecciated zone.
?Fault?

Cherts, sltst, g'wke.

Carbonates, minor chert & pyrrhotite.

250m – 325m
<0·05 Sn, Cu, As,
<0·01 Bi, Mo.

Strongly altered cherts & sltst.
Minor carb
Trace Po.

Siderite rich carbonate

339m – 350m
<0·05 Sn, Cu, As
<0·01 Bi, Mo.

Magnetite – actinolite – sulphide cassiterite "Skarn" Zone

350

Siderite rich carbonate.

Banded cherts minor pyrr. & brecciation

23m (E.T.T.)
0·79 Sn, 0·16 Cu
Containing: 14·5m (E.T.T.)
1·10 Sn, 0·12 Cu

378

Dark sltsts. & g'wkes.
Minor carb.
Tr. sulphides.

No. 2 ANOMALY ZONE

ML 38

378m – 388m
<0·05 Sn, Cu, As.
<0·01 Bi, Mo.

PROPOSED HOLE ML 42.

350 m

378 m

0% Sn

0% Cu

1:500

460083

400 S | 300 S | 200 S | 100 S | 0 | 100 N | 200 N

5 cm

76-1164

RENISON LIMITED

E.L. 2/63
MT. LINDSAY GRID.
DRILL HOLE ML 38, LINE 6·5

GEOLOGIST : A.F. ROSS	SCALE 1:1000 METRES
DRAUGHTSMAN : J. M. MATTHEWS	20 0 20 40
DATE : APRIL, 1976	
REVISIONS :	DRAWING No. MLP 13

I.P
CHARGEABILITY
RESISTIVITY

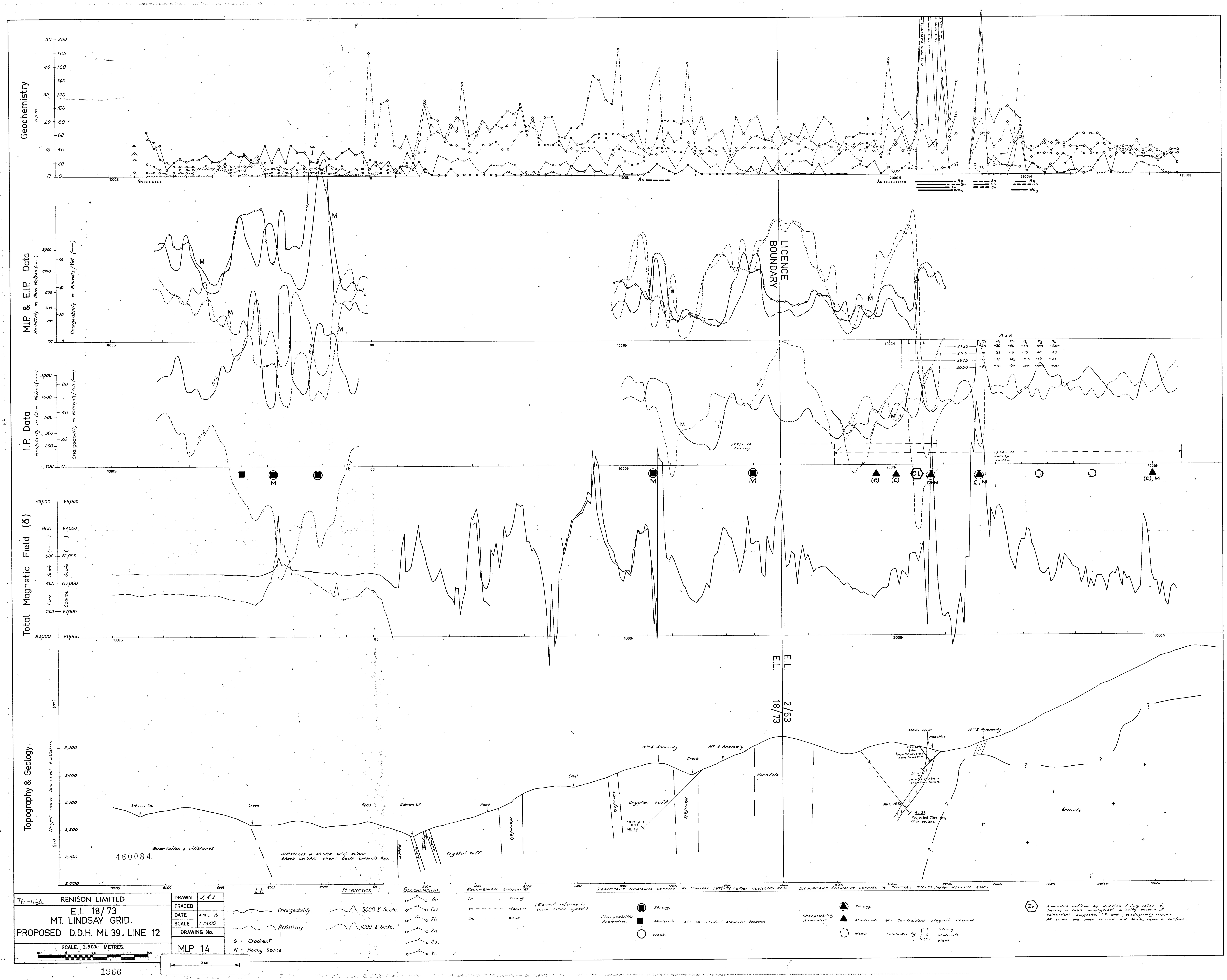
MAGNETICS
5000 δ SCALE
1000 δ SCALE

GEOCHEMISTRY
Sn
Cu
Pb
Zn
As
W

SECTION LOOKING N.W.

NOTE: END OF HOLE PROJECTED 70m S.E. ONTO LINE 6·5.

1965



Geochemistry
p.p.m.
M.I.P. & E.I.P. Data
Resistivity in Ohm-Metres (----)
Chargeability in Millivolts/Volt (——)
I.P. Data
Total Magnetic Field (γ)
Fine Scale (----)
Coarse Scale (——)
Topography & Geology.
Height above Sea Level + 2000 m.
LICENCE BOUNDARY
E.L. 2/63
E.L. 18/73
M.I.P.
2125
2100
2075
2050
1973-74 Survey
1974-75 Survey
Salmon Ck.
Creek
Road
Salmon CK.
Crystal tuff
Hornfels
Proposed Hole ML 39
No 4 Anomaly
No 3 Anomaly
Main Lode
Blazeline
No 2 Anomaly
ML 35
Projected 70m. Nth. onto section.
Granite
Quartzites & siltstones
Siltstones & shales with minor black oolitic chert beds towards top.
460084
I.P.
Chargeability
Resistivity
G - Gradient
M - Moving Source
Magnetics
5000 γ Scale
1000 γ Scale
Geochemistry
Sn
Cu
Pb
Zn
As
W.
Geochemical Anomalies
Sn. Strong
Sn. Medium
Sn. Weak
(Element referred to shown beside symbol.)
Significant Anomalies defined by Scintrex 1973-74 (after Howland-Rose)
Chargeability Anomalies.
Strong
Moderate. M = Co-incident Magnetic Response.
Weak
Significant Anomalies defined by Scintrex 1974-75 (after Howland-Rose)
Strong
Moderate. M = Co-incident Magnetic Response.
Weak
Conductivity S Strong, C Moderate, (C) Weak
Anomalies defined by J. Irvine (July 1976) as having a high geophysical priority because of coincident magnetic, I.P. and conductivity response. All zones are near vertical and some near to surface.
76-1164
RENISON LIMITED
E.L. 18/73
MT. LINDSAY GRID.
PROPOSED D.D.H. ML 39, LINE 12
DRAWN
TRACED
DATE APRIL '76
SCALE 1:5000
DRAWING No.
MLP 14
SCALE. 1:5000 METRES.
5 cm
1966

RENISON LIMITED	DRAWN	R.R.S.
E.L. 18/73	TRACED	
MT. LINDSAY GRID	DATE	APRIL '76
PROPOSED D.D.H. ML 40, LINE 11	SCALE	1:5000
SCALE. 1:5000 METRES.	DRAWING No.	MLP 15

I.P.
Chargeability.
Resistivity
G = Gradient
M = Moving Source.

MAGNETICS.
5000 γ Scale
1000 γ Scale.

GEOCHEMISTRY.
Sn
Cu.
Pb
Zn.
As.
W.

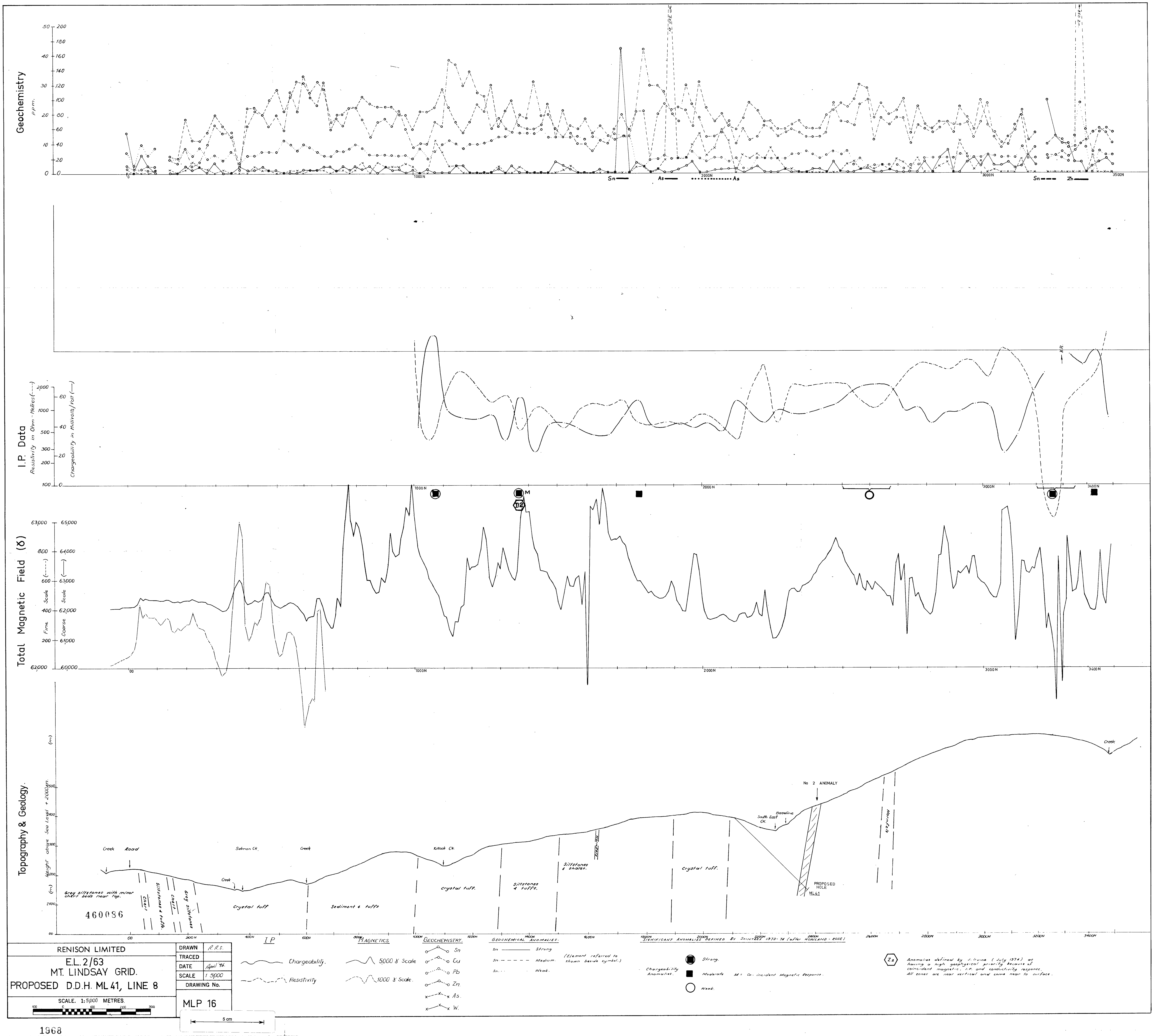
GEOCHEMICAL ANOMALIES.
Strong.
Medium.
Weak.
(Element referred to shown beside symbol)

SIGNIFICANT ANOMALIES DEFINED BY SCINTREX 1973-74 (after Hoschke - Rose).
Chargeability Anomalies.
Strong.
Moderate. SF = Co-incident Magnetic Response
Weak.

Anomalies defined by ... (July 1974) as having a high geophysical priority because of coincident magnetic, I.P. and conductivity response. All zones are near vertical and come near to surface.

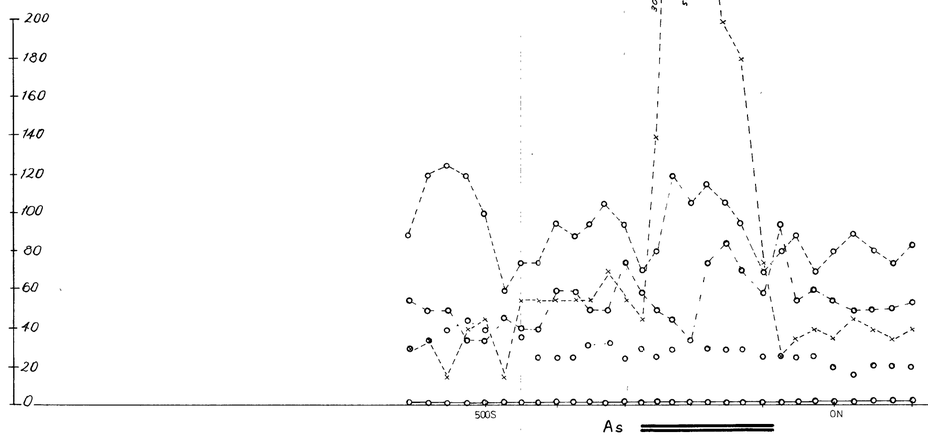
5 cm

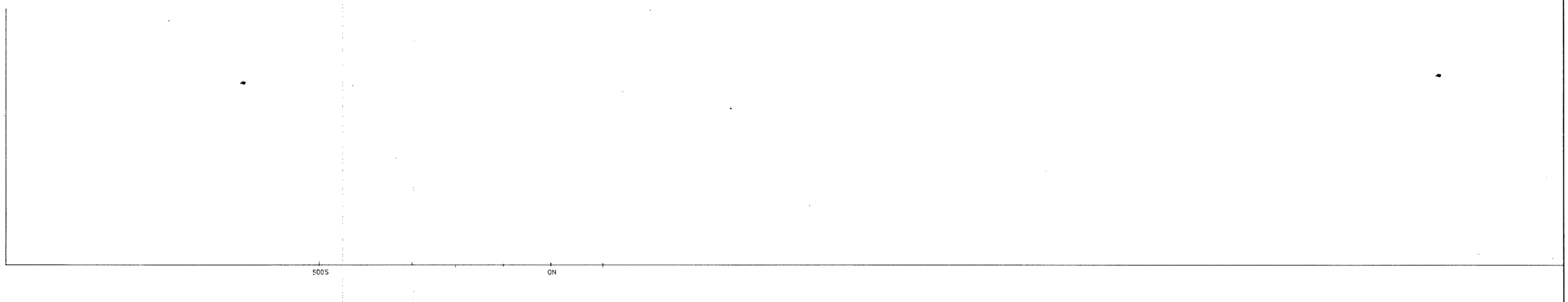
1967


Geochemistry ppm.
I.P. Data
Resistivity in Ohm - Metres (----)
Chargeability in Millivolts/Volt (——)
Total Magnetic Field (γ)
Fine Scale (----)
Coarse Scale (——)
Topography & Geology.
Height above Sea Level + 2000m. (m)
Creek
Road
Salmon Ck.
Killock Ck.
South East Ck.
Baseline
No 2 ANOMALY
PROPOSED HOLE
ML 41
Grey siltstones with minor chert beds near top.
Chert
Siltstones & tuffs
Chert
Grey siltstones
Crystal tuff
Sediment & tuffs
Crystal tuff.
Siltstones & tuffs.
Siltstones & shales.
Crystal tuff.
460086
RENISON LIMITED
E.L. 2/63
MT. LINDSAY GRID.
PROPOSED D.D.H. ML 41, LINE 8
DRAWN R.R.S.
TRACED
DATE April '76.
SCALE 1:5000
DRAWING No.
MLP 16
SCALE. 1:5000 METRES.
5 cm
I.P
Chargeability.
Resistivity
MAGNETICS
5000 γ Scale
1000 γ Scale
GEOCHEMISTRY.
Sn
Cu
Pb
Zn.
As.
W.
GEOCHEMICAL ANOMALIES.
Sn —— Strong
Sn - - - - Medium.
Sn.... Weak.
(Element referred to shown beside symbol.)
SIGNIFICANT ANOMALIES DEFINED BY SCINTREX 1973-74 (after HOWLAND - ROSE)
Chargeability Anomalies.
Strong.
Moderate M: Co-incident Magnetic Response.
Weak.
Anomalies defined by J. Irvine (July 1974) as having a high geophysical priority because of coincident magnetic, I.P. and conductivity response. All zones are near vertical and come near to surface.
1968

Geochemistry

ppm.

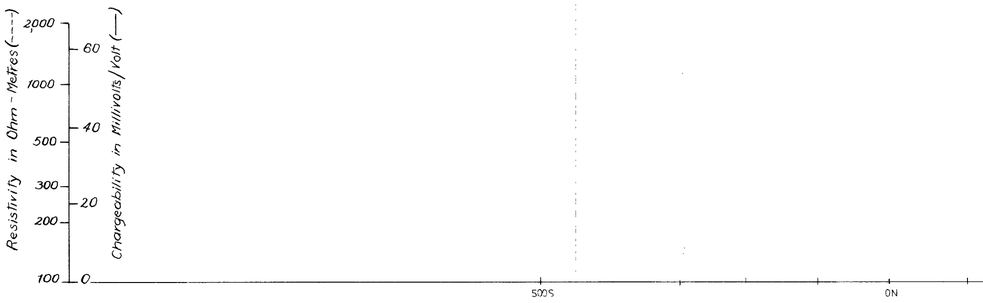




I.P. Data

Resistivity in Ohm - Metres (----)

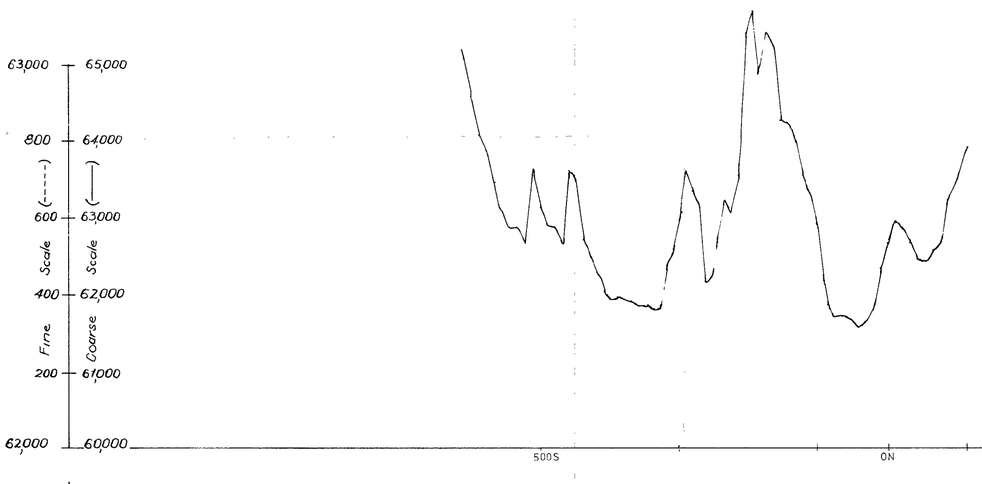
Chargeability in Millivolts/Volt (——)



Total Magnetic Field (δ)

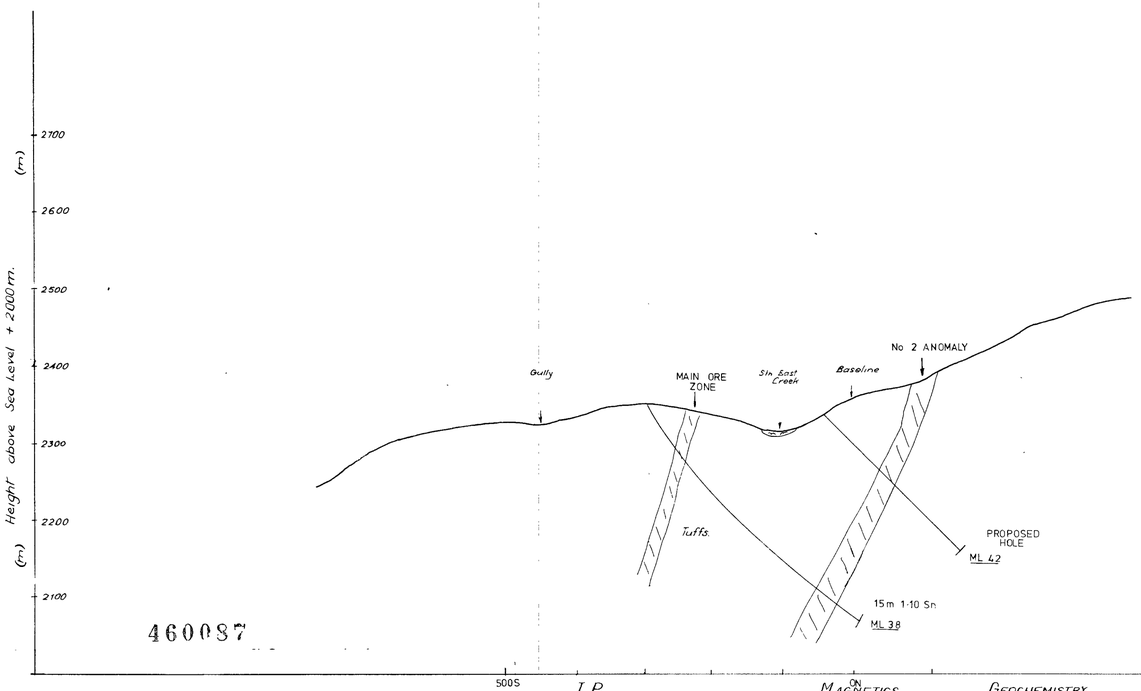
(----) Scale Fine

(——) Scale Coarse



Topography & Geology.

Height above Sea Level + 2000 m. (m)



460087

RENISON LIMITED	
E.L. 2/63. 76-1164	
MT. LINDSAY GRID	
PROPOSED D.D.H. ML42, LINE 6·5	
SCALE. 1:5000 METRES. 100 0 100 200 300	

DRAWN	K.R.S
TRACED	
DATE	APRIL '76
SCALE	1 5000
DRAWING No.	MLP 17

5 cm

IP

Chargeability.

Resistivity

MAGNETICS

5,000 δ Scale

1000 δ Scale.

GEOCHEMISTRY.

Sn

Cu.

Pb

Zn.

As.

W.

GEOCHEMICAL ANOMALIES

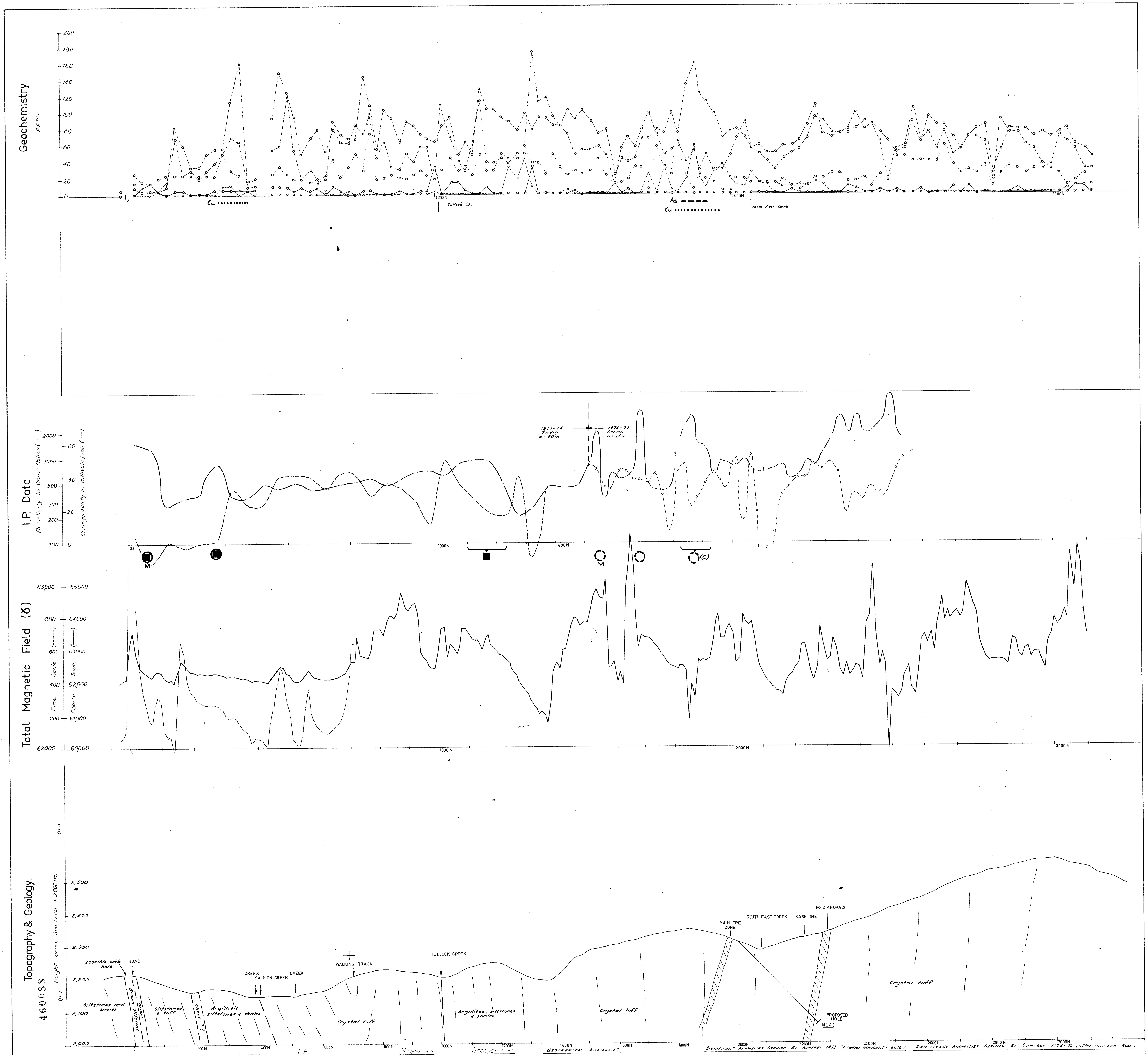
Sn ———— Strong

Sn – – – – Medium

Sn . . . Weak

(Element referred to shown beside symbol.)

1969



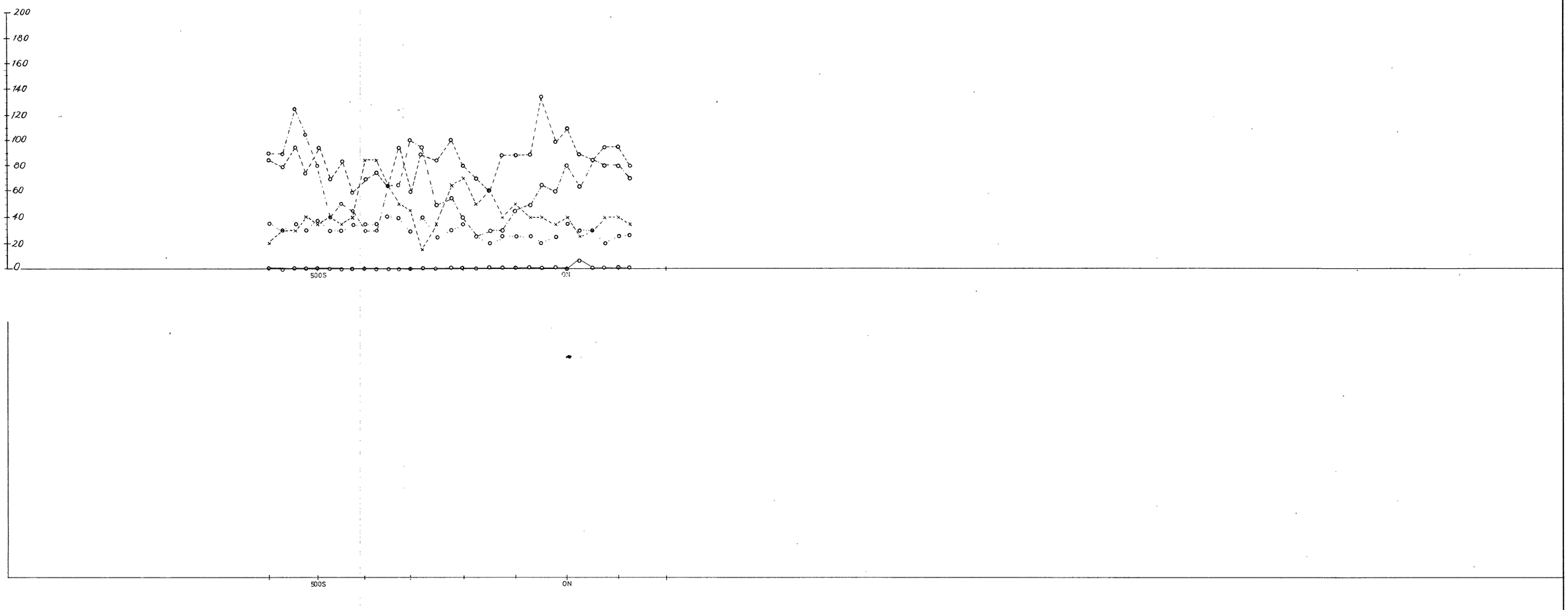
RENISON LIMITED 76-1164	DRAWN: R.R.S
E.L. 2/63.	TRACED:
MT. LINDSAY GRID	DATE: APRIL '76
PROPOSED D.D.H. ML 43, LINE 6	SCALE: 1:5000
SCALE. 1:5,000 METRES.	DRAWING No. MLP 18

5 cm

1970

Geochemistry

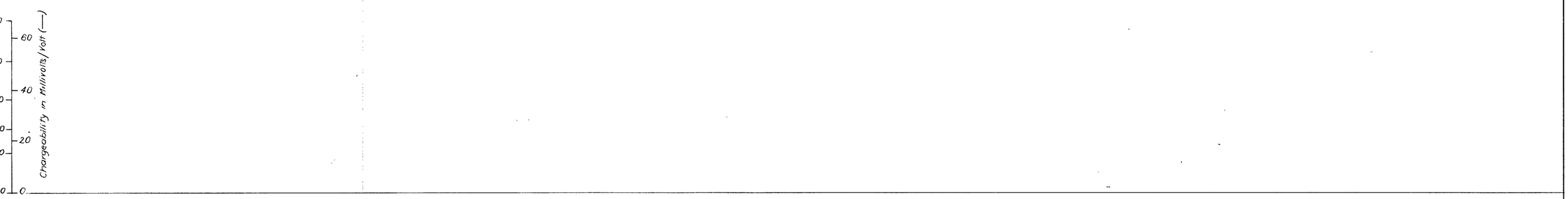
ppm.



I.P. Data

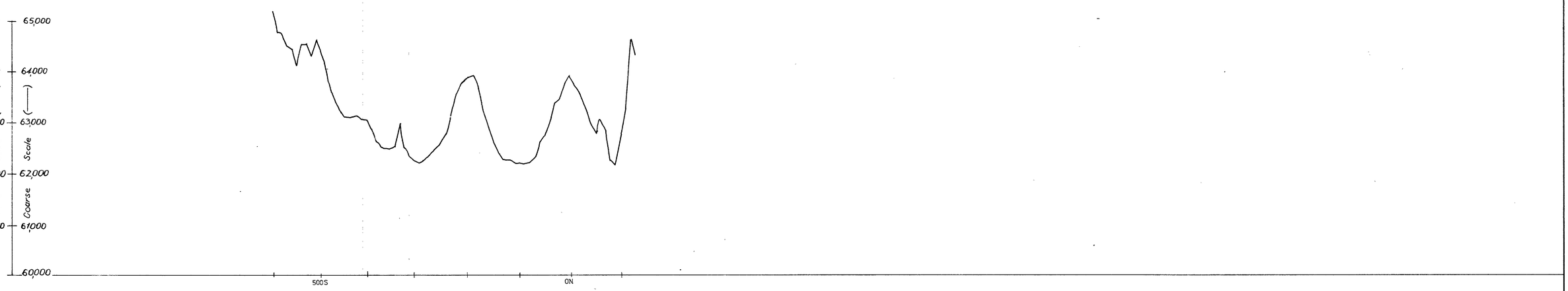
Resistivity in Ohm - Metres (----)

Chargeability in Millivolts/Volt (——)



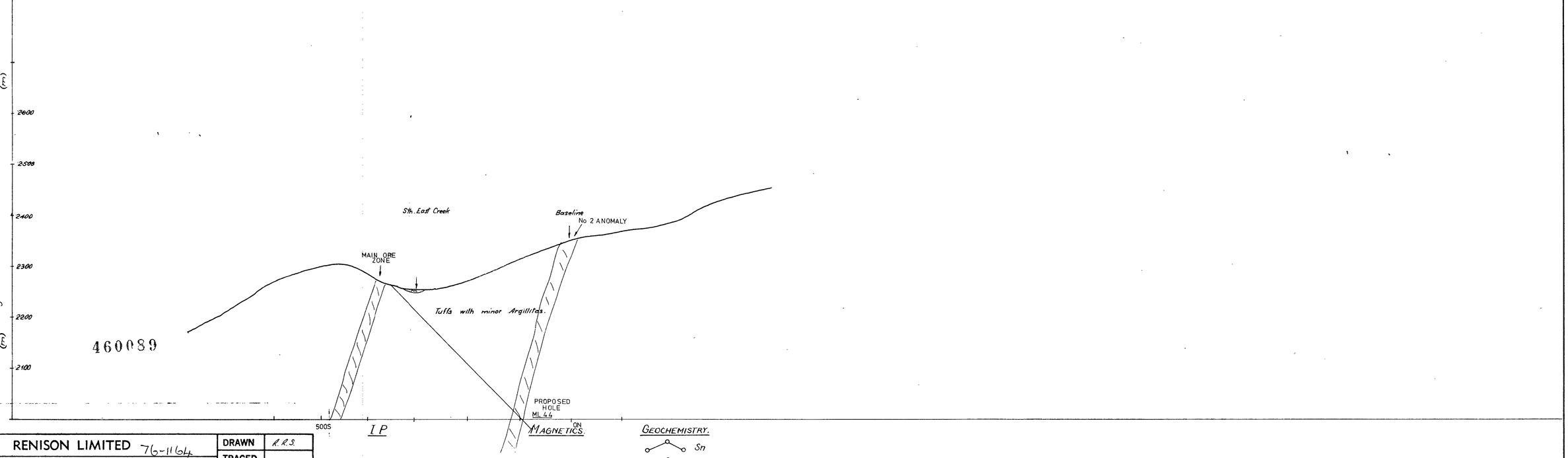
Total Magnetic Field (δ)

Fine Scale (----) Coarse Scale (——)



Topography & Geology.

Height above Sea Level + 2000 m. (m)



GEOCHEMISTRY.

Sn
Cu.
Pb
Zn.
As.
W.

Chargeability.

Resistivity.

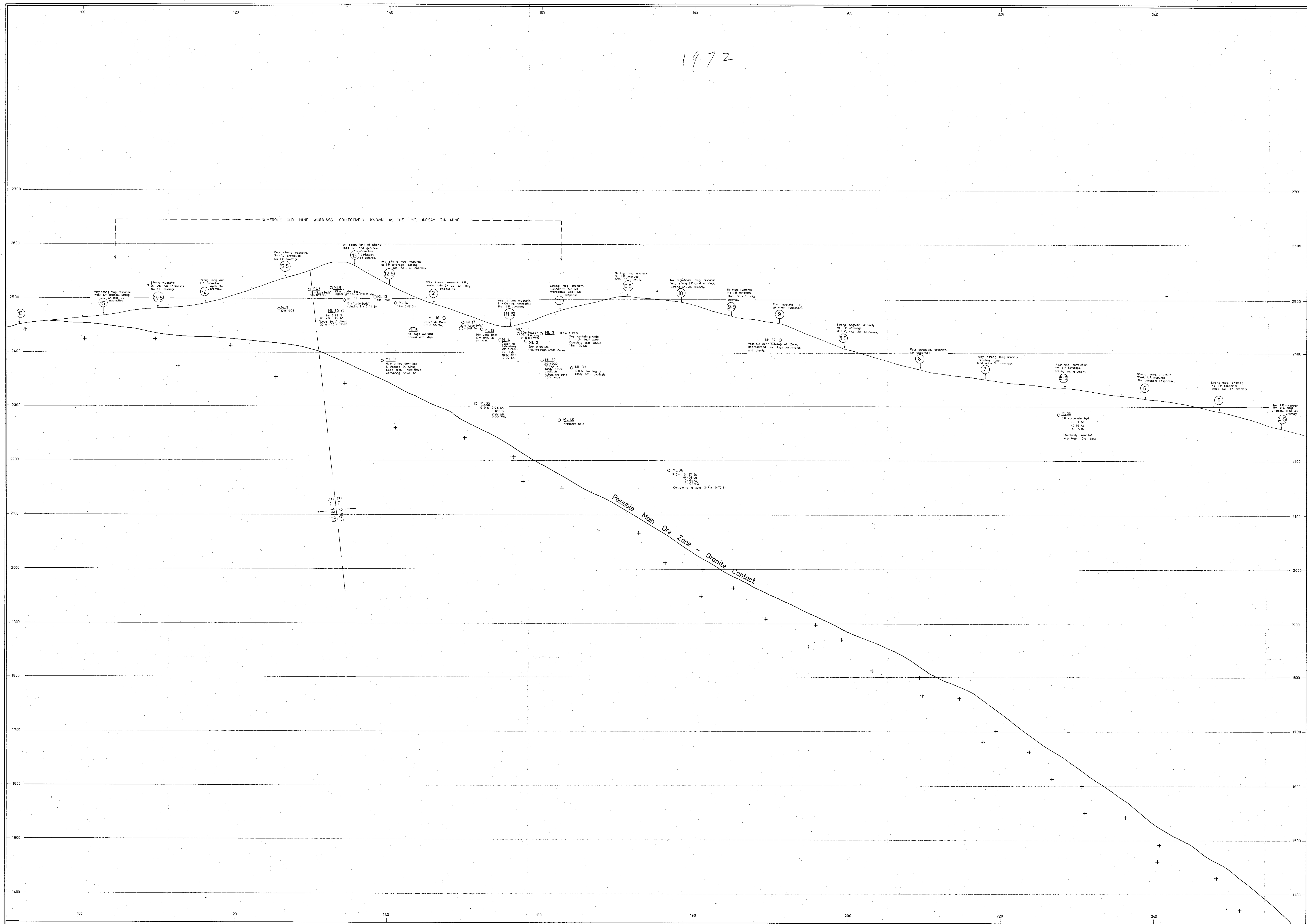
5,000 γ Scale

1000 γ Scale.

RENISON LIMITED 76-1164	
E.L. 2/63. MT. LINDSAY GRID. PROPOSED D.D.H. ML 44, LINE 4·5	
SCALE. 1:5,000 METRES. 100 0 100 200 300	
DRAWN	K.R.S.
TRACED	
DATE	APRIL, 1976
SCALE	1:5000
DRAWING No.	MLP 19

5 cm

1971



1. SURFACE SHOWN IS PROJECTED OUTCROP POSITION OF MAIN ORE ZONE.

2. POSITIONS WHERE TRAVERSE LINES CROSS OUTCROP ARE SHOWN THUS: (6)

GEOPHYSICAL & GEOCHEMICAL RESPONSES OBTAINED ON TRAVERSE LINES ACROSS THE OUTCROP POSITION ARE ALSO SHOWN.

3. O ML 33
CENTRE OF ORE ZONE DIAMOND DRILL HOLE INTERSECTION POINT

THICKNESSES SHOWN ARE ESTIMATED TRUE THICKNESSES.

4. ML's 1 – 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

460090

5 cm

1971

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 – S 16.

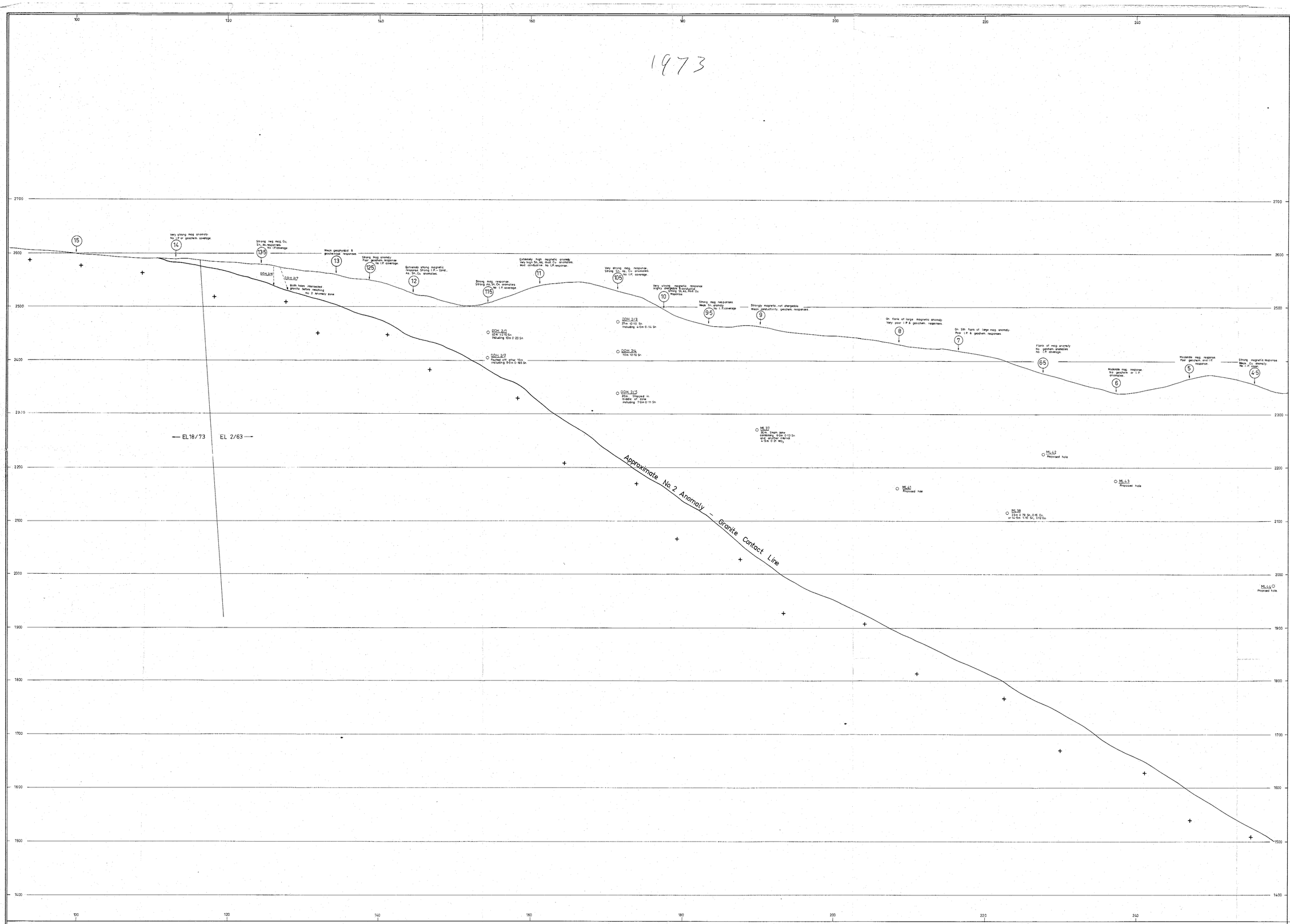
RENISON LIMITED 76-1164

MT LINDSAY PROJECT
MAIN ORE ZONE
LONGITUDINAL PROJECTION

GEOLOGIST	: L.A. NEWNHAM	SCALE · 1:2000 METRES
DRAUGHTSMAN	: J.J. MATTHEWS	40 0 40 80
DATE	: APRIL, 1976	
REVISIONS	:	DRAWING No. MLP 20

1972

1973



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 – S 16.

1. SURFACE SHOWN IS PROJECTED OUTCROP POSITION OF No. 2 ANOMALY ZONE.
2. POSITIONS WHERE TRAVERSE LINES CROSS OUTCROP ARE SHOWN THUS: (7)
   GEOPHYSICAL & GEOCHEMICAL RESPONSES OBTAINED ON TRAVERSE LINES ACROSS THE OUTCROP POSITION ARE ALSO SHOWN.
3. ML 23 ○ CENTRE OF ORE ZONE DIAMOND DRILL HOLE INTERSECTION POINT.
   THICKNESSES SHOWN ARE ESTIMATED TRUE THICKNESSES
4. HOLES D.D.H. 2/1 – 2/7 WERE DRILLED BY ABERFOYLE IN 1968 69 COMPLETE ASSAYS ARE NOT AVAILABLE.

FOR AN OREBODY 15m WIDE
A SQUARE THIS BIG ON THIS PROJECTION WOULD REPRESENT
1,000,000 tonnes

"TONNAGE POTENTIAL" GUIDE

460091

6 cm

RENISON LIMITED -76-1164-

MT. LINDSAY PROJECT
No. 2 ANOMALY
LONGITUDINAL PROJECTION

GEOLOGIST : I.A. NEWMAN	SCALE-1:2000 METRES
DRAUGHTSMAN : J. M. MATTHEWS	40 0 40 80
DATE : APRIL 1976	
REVISIONS :	DRAWING No. MLP 21

1973

LOWER CAMBRIAN ?

OONAH FORMATION.

Pq	Massive Quartzite.
Ps	Siltstones.
Psh	Shales, often graphitic & slumped.
Pm	Mudstones, siltstones.

MIDDLE CAMBRIAN ?

CRIMSON CREEK FORMATION.

€c	Chert	€m	Fine Clastic sediments, some tuffs
€cl	Lower Chert.	€g	Mainly tuffs, some fine clastic sediments
€s	Siltstones	€	Cambrian Undifferentiated
€cu	Upper Chert.	€h	Hornfels

TERTIARY

Alluvium.

INTRUSIVES.

Devonian granite.

Cambrian, gabbro.

Cambrian, Ultramafic

KEY.

Strike & dip of beds.

Anticline Syncline showing plunge.

Inferred fault.

Mt. Lindsay Mine Anomalies (After Aberfoyle).

Aberfoyle D.D.H.

Traverse lines.

Note: Mapping mainly by R.R. Schellekens 1972 – 1974.

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

N

5 cm

RENISON LIMITED 76-1164

E.L.18/73, E.L.2/63.

INTERPRETATIVE GEOLOGY.

SCALE. 1:10,000 METRES

200 0 200 400 600

DRAWN	L.A.N.
TRACED	R.J.P.
DATE	APRIL, '76
SCALE	1:10,000.
DRAWING No.	
MLP 22	

460092 1974