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Received				1 - AUG 1983
Answered				E & IL
DEPT. OF MINES				
REF. NO. 6742/83				

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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

West Coast Mines

EXPLORATION LICENCE NO. 1/62 MT. BLACK

Progress Report on Exploration Activity

21st November, 1982 to 3rd May, 1983

EZ Geology Dept.

Report No. 164 MD

I.J. Mathison,

I.R. McDonald,

May, 1983

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LIST OF PLANS

A2-504-0016	1:50,000	Work Completed 21.11.82-3.5.83.
A0-504-0193	1:5,000	Copper Soil Geochemistry Colebrook Hill
-0195	"	Zinc " " "
-0196	"	Arsenic " " "
-0192	"	Lead " " "
-0194	"	Tin " " "
-0197	"	Chrome " " "
A0-504-0231	"	Contoured Ground Magnetics, Colebrook Hill
-0322	"	Interpreted Geology, Colebrook Hill
-0317	"	Colebrook Hill Stacked EM Profiles
-0315	"	East Colebrook Dighem Anomalies
-0318	"	Ring River Stacked EM Profiles
-0323	"	An Interpretation of the Geology in the White Spur Area
A2-504-0324	1:50,000	The Relationship of the Rosebery & Hercules Alteration Zones to Landsatt Linears and Glacial cover areas.
A1-504-0311		CHP 238 Summary Sheet
-0312		CHP 236 Summary Sheet
-0314		CHP 237 Summary Sheet

1. INTRODUCTION

This report covers work on Exploration Licence No. 1/62 by Electrolytic Zinc Company of Australasia Limited between 21st November, 1982 and 3rd May, 1983.

The work was carried out on behalf of a Joint Venture between E.Z. and Getty Oil Development Co. Ltd., which was initiated in April, 1978. A description of the Licence and its history of tenure can be found in E.Z. Report No. 131 - "E.L. 1/62 Work Undertaken to 30th June, 1979".

2. PREVIOUS EXPLORATION

E.Z. Report No. 134 - "E.L. 1/62 Work Undertaken 30th June, 1979 to June, 1980" - in addition to detailing all activities carried out during 1979/80, also contains a detailed reference to all previous exploration undertaken since the granting of the E.L.

E.Z. Report No's 142 (1981), 144 (1981), 148 (1982) and 158 (1982) cover subsequent exploration to the commencement of this report.

3. ABBREVIATIONS

Standard symbols and terminology used on geological plans and sections are detailed on Plate 1 of E.Z. Report No. 142 - "Progress Report on Activity July, 1980 to June, 1981".

4. EXPLORATION UNDERTAKEN 21ST NOVEMBER, 1982 - 3RD MAY, 1983

(Refer to Plan A2-504-0016 "Work Completed 21.11.'82 - 3.5.'83")

4.1. East Colebrook

4.1.1. Work Completed

A grid consisting of east-west lines at 200m spacings was cut to assess the Dighem anomalies the Sn potential of the area, between line 5,371,000mN and the Murchison Highway. A total of 7.6km was cut and pegged at 20m slope corrected intervals.

Grid lines commenced at the eastern end of the relevant Colebrook Hill grid line and extended eastwards to approximately 5,377,000mN. For the purposes of this report, this new grid and the parts of the older Colebrook Grid east of approximately 375,600E will be included in East Colebrook. To assist access and to provide good rock exposure across the area the old drill track to NP 107 and the old tracks around this drill hole were cleaned up by bulldozer.

Geochemistry - Soil:

The new grid was soil sampled at 20m intervals using hand augers. At all sample locations an attempt was made to reach 'C' horizon. Samples were sieved to 2mm and the oversize retained. The residue was sent to Analabs, Burnie where the -80 mesh fraction was analysed for Cu, Pb, Zn, Ag, Fe, Mn, As, Sn and Cr by A.A.S techniques. Techniques used were the same as those earlier applied to the Ring River and Colebrook Hill samples.

Results obtained were transferred to data sheets, plotted onto 1:5,000 base plans and contoured.

Geochemistry - Power Auger:

A hand held power auger was used to collect 14 samples across part of line 5,372,200mN.

Geochemistry - Rock:

Several rock samples were submitted for geochemical analysis. Samples included unmineralised rock samples analysed to identify "background" geochemical levels and mineralised samples from road exposures and old mine workings.

Geophysics - Magnetics:

The new grid has been surveyed using Scintrex MP-2 proton precession magnetometers. Stations were read at 10m intervals and corrected for drift using the Mt. Read base station.

Results were plotted on existing line profiles and on the existing 1:5,000 base plan.

Geophysics - E.M.:

The new grid and eastern parts of the old grid were covered by a GENIE survey. A transmitter receiver separation of 100m was maintained while readings were taken every 20m. Results were plotted on line profiles and also on a 1:5,000 base plan as stacked profiles.

Petrology:

Six rock samples collected during field mapping were submitted for thin section examination and description.

Geology:

The new grid lines, the cleaned up tracks and several creeks have been geologically mapped. A geological interpretation has been produced.

Drill Hole Sampling:

No new diamond drill holes were drilled. A pyritic part of NP 107 was resampled and analysed for Cu, Pb, Zn, Cr, Ag, As, Sn and W.

4.1.2. Results Received

Geochemistry - Soil: (see Appendix F - Soil Data Sheets)

Results of soil geochemistry are contoured on the following plans:

Copper	AO-504-0193	Lead	AO-504-0192
Zinc	AO-504-0195	Tin	AO-504-0194
Arsenic	AO-504-0196	Chrome	AO-504-0197

Values from East Colebrook are much lower than those from Colebrook Hill to the west. Anomalous areas are small and isolated. Apparent means and anomalous levels are summarised below:

Cu \bar{M} ~20 ppm, several anomalous values 100-400 ppm.
Pb \bar{M} ~25 ppm, one anomalous value 450 ppm.
Zn \bar{M} ~40 ppm, several values 100-500 ppm.
Sn \bar{M} ~3 ppm, several values in the range 30-76 ppm are possibly anomalous.
As Generally very low, three values in the range 100-250 ppm are possibly anomalous.
Cr Range - 3.0%.

Geochemistry - Power Auger:

Power augering was attempted because many of the soil samples were not collected from the bedrock soil interface. The hand auger was stopped by a semi-consolidated gravel layer containing small quartz and quartzite pebbles. This layer also prevented penetration to bedrock by the power auger. Sample results are not yet available. Results are expected to be very similar to those of soil sampling.

Geochemistry - Rock: (See Appendix A)

Due to outcrop patterns and to the deep weathering of some units, many of the samples assayed were weakly mineralised or heavily iron stained. The majority of the remainder came from the Westcott Argillite unit or from dolomitic or gabbroic rocks associated with the basal contact of this unit. The following comments can be made:-

- a) Carbonate rich rocks of this area have elevated backgrounds of copper, zinc and sometimes chrome.
- b) Sample 53359 from the Stitt Quartzite contains chrome rich heavy minerals.

c) The highest tin and arsenic values were reported from thin quartz veins from the vicinity of Sn Anomaly 5.

d) Samples described as "fuchsitic" because of their content of apple green sericitic mica do not always contain high chrome.

Geophysic - Magnetics: (See 1:5,000 plan AO-504-0231)

The ground magnetic survey revealed no obvious magnetic anomalies. The most prominent feature is a large magnetic low centred around 5,371,900mN; 375,700mE.

Geophysics - E.M.: (See 1:5,000 scale Stacked Profiles AO-504-0317 and 1:5,000 scale Dighem Anomalies Plan AO-504-0315)

There is a close correlation between Dighem anomalies and GENIE conductors. The best defined GENIE anomalies are those corresponding to Dighem anomalies F, G and H and to Sn Anomaly 5.

Petrology: (See Appendix B)

Thin sections were prepared of altered gabbroic rocks, fuchsitic rocks, pyritic dolomitic siltstone and pyritic vein material from the East Colebrook Grid. In sample 53311 from an old adit, cassiterite and stannite associated with pyrite were identified in a brecciated quartzite. Sample 53313, a dolomitised marl, shows the high carbonate content of some siltstones of the Westcott Argillite while sample 48284, also from the Westcott Argillite contains felsic volcanic clasts and clastic martite and is similar to rocks of the Crimson Creek Formation.

Geology: (See Interpreted Geology 1:5,000 plan AO-504-0322)

An interpretative geological map and section along 5,371,000mN have been produced. Essentially an earlier sequence of quartzites, quartz wackes, siltstones and black shales is overlain unconformably by ther the fuchsitic Salisbury Conglomerate or the

dolomitic and volcanogenic wackes and siltstones of the Westcott Argillite. Thin basaltic or andesitic volcanic rocks and gabbroic rocks are associated with the unconformity and overlying rocks are frequently fuchsitic, chrome rich or dolomitic. Interpreted stratigraphic relationships are demonstrated in the table below.

<u>Colebrook Hill</u>		<u>East Colebrook</u>	
Ed	Dundas Group		
US	Ultramafic Intrusives		
Ecc	Crimson Creek Formation	Ewa	Westcott Argillite
		Env	Natone Volcanics
		Esc	Salisbury Conglomerate
?	Unconformity - thin basalt flows, and gabbroic intrusives?		
		Emc	Munro Creek Shale
		Esq	Stitt Quartzite
		Evw	Williamsford Volcanics

Drill Hole Sampling:

A pyritic and silicified zone of NP 107 correlates with a GENIE anomaly and part of Sn Anomaly 5 on line 5,370,800mN. This section 198-269' was resampled by quartering the core and analysed.

Results were:

<u>Depth</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ag</u>	<u>Mn</u>	<u>Cr</u>	<u>As</u>	<u>Fe</u>	<u>Sn</u>	<u>W</u>
198-205	70	45	65	0.5	3000	50	41	3.35%	160	X
-209	25	10	100	X	4400	120	6	10.5%	15	X
-222.5	450	145	45	1.5	5150	110	560	1.30%	140	X
-228	45	35	50	0.5	625	245	80	7400	80	X
-234	100	40	25	0.5	1400	75	130	9950	55	X
-254	40	80	660	0.5	3200	35	390	2.25%	25	X
-269	75	100	145	0.5	1250	45	24	1.85%	20	X

Anomaly Classification:

Following 1982-83 exploration 6 zones are considered geophysically and/or geochemically anomalous. The characteristics of these zones are summarised below.

- | <u>East Colebrook Grid</u> | - | <u>Anomaly Classification</u> |
|---|---|--|
| 1. <u>Name:</u> DIGHEM E | | <u>Centre:</u> 5,370,800mN 375,700mE |
| <u>Approximate Size:</u> 1.0 km long | | |
| <u>Geochemical Response:</u> | Poor correlation with scattered Sn highs and part of Sn Anomaly 5. | |
| <u>Geophysical Response (DIGHEM, GENIE, Magnetics):</u> | DIGHEM 4-3-4---3-3 with apparent helicopter magnetic correlation. Very small ground magnetic peak with 1000nT contrast on 5,370,500mN. Approximate correlation with GENIE conductors. | |
| <u>Known Mineralisation/Old Workings:</u> | Nil. | |
| <u>Geology:</u> | Close to mapped geological contact in part. Remainder in Munro Creek shales. | |
| <u>Comments:</u> | Possibly fault related. | |
| 2. <u>Name:</u> DIGHEM F | | <u>Centre:</u> 5,372,000mN • 375,600mE |
| <u>Approximate Size:</u> 900m long | | |
| <u>Geochemical Response:</u> | Approximate correlation with linear Sn soil geochemical anomaly 56-110 ppm Sn. | |
| <u>Geophysical Response (DIGHEM, GENIE, Magnetics):</u> | DIGHEM - numerous shallow responses. Strong GENIE response on all parts of DIGHEM anomaly covered. Magnetics indicate close to geological boundary. | |
| <u>Known Mineralisation/Old Workings:</u> | Nil. | |
| <u>Geology:</u> | Close to mapped geological boundary. | |
| <u>Comments:</u> | Interpreted fault zone. | |

3. Name: DIGHEM G Centre: 5,372,100mN 376,000mE
Approximate Size: 300m long.
Geochemical Response: - Tin value of 76 ppm 120m to the west may be related to this anomaly.
Geophysical Response:(GENIE, DIGHEM, Magnetics):
DIGHEM 1-1-X
Fair GENIE response on lines 5,372,000mN and 5,372,200mN.
Apparent 20nT direct helicopter magnetic response but no ground magnetic response.
Known Mineralisation/Old Workings: Nil.
Geology: Very poor outcrop.
Comments: Will be tested by new road.

4. Name: DIGHEM H Centre: 5,371,900mN 376,350mE
Approximate Size: 450m Long
Geochemical Response: Correlation of weakly anomalous Cu, Zn, As & Cr.
Geophysical Response (GENIE, DIGHEM, Magnetics):
DIGHEM 2-X-2-X. Strong response on 5,372,000mN tailing off to south.
Known Mineralisation/Old Workings: Nil.
Geology: Very poor outcrop
Comments: Will be tested by new road.

5. Name: DIGHEM I Centre: 5,371,000mN 375,800mE

Approximate Size: 150m Long.

Geochemical Response: Minor Sn soil geochemical response (60-72ppm).

Geophysical Response (GENIE, DIGHEM, Magnetics):

DIGHEM 1 - 1. Approximate GENIE correlation on lines
5,371,000mN and 5,370,800mN.

Known Mineralisation/Old Workings: Nil.

Geology: In Munro Creek Shales

Comments: No obvious cause of this anomaly.

6. Name: Sn Anomaly 5 Centre: 5,370,600mN 375,900mE

Approximate Size: 700m x 60m

Geochemical Response: Sn (50-500 ppm) in soil samples.

Geophysical Response (GENIE, DIGHEM, Magnetics):

Possible DIGHEM response X O X but not interpreted as connected
by DIGHEM. Approximate GENIE response on northern three lines.

Known Mineralisation/Old Workings: Nil.

Geology: In Munro Creek Shales.

Comments: NP 107 should have tested the northern extremity of this anomaly.

4.2. Ring River

4.2.1. Work Completed

Work during the last six months concentrated on the interpretation and modelling of the Ring River Magnetic Anomaly. The original magnetic interpretation and magnetic data were compared with geological models based on magnetic stratigraphic units and pyrrhotite mineralisation. Samples of magnetic tuff units detected in the bed of the River were field tested for susceptibility and remanence and the results used to guide magnetic modelling.

Dighem anomalies not already located by V.L.F. were covered by GENIE. In addition two profiles across the Ring River Magnetic Anomaly were covered.

4.2.2. Results Received

Geology: (See Figures 1 - 13 Appendix I)

Follow-up field work over the Ring River Magnetic Anomaly located a magnetic tuff unit in the bed of the Ring River and along the N.E. Dundas Tramway. A reinterpretation of the geology allowed a contour map of this horizon to be produced.

Rocks over the Ring River Magnetic Anomaly have been folded into a north trending anticline. This anticline is intersected by minor north-south faults and major north easterly trending faults.

The oldest rocks exposed in the area are dacitic-andesitic tuffs and reworked tuffs assigned to the Western Volcanics. These rocks are exposed where the Ring River bed cuts the hinge of the anticline. Some members of this unit are magnetic.

Overlying the volcanic rocks are volcanic wackes, greywackes and siltstones of the Western Argillites. These sediments have an acid-intermediate volcanic provenance. In other nearby areas the volcanic rocks and the sediments appear to interfinger.

Micaceous quartz wackes, quartz siltstones and black shales of the Stitt Quartzite conformably overlie the Western Argillites. Rocks of this unit exposed in the Ring River bed and in old workings contain extensive carbonate veining and thin carbonate units.

The Stitt Quartzite separates the older sediments and volcanics of acid-intermediate derivation from the volcanic wackes, lithic wackes, tuffaceous siltstones and siltstones of the Transition Series. This unit has a more basic volcanic source.

In the west, greywacke conglomerate, greywacke and laminated siltstone of the much younger Dundas Group are in fault contact with the older sediments.

The mineralisation of the Fahlore-Ring Valley Mine occurs along a faulted contact between Western Argillites and Stitt Quartzite. Mineralisation near the surface consists of tetrahedrite, chalcopyrite and pyrite in a siderite gangue. At depth the mineralisation changes to jamesonite, tetrahedrite, chalcopyrite and pyrrhotite in a quartz gangue. Approximately 3,000 tons of hand picked silver ores are reported to have been shipped from this mine.

In the sequence exposed around the Ring River Magnetic Anomaly, thin limestones have been mapped in rocks assigned to the Stitt Quartzite. Elsewhere, carbonate units occur within the Transition Series, the Western Argillites, as well as the Stitt Quartzite.

Geochemistry: (See Appendix A, Rock Sample Data)

Samples of mineralised material from the old workings in the vicinity of the Ring River Anomaly contain traces of tin only. Sn contents range from 3-150 ppm. The highest values were obtained from dump material from the northernmost adit of the Ring Valley - Fahlore Group. No association of tin with pyrrhotite was detected.

Magnetic Modelling: (See Appendix C Review and Further Review of the Ring River Magnetic Anomaly)

The Ring River Magnetic Anomaly is a large, approximately circular, magnetic feature centred near 374,300mE 5,367,200mN. On the ground it has a peak of 62,950nT above background of 62,500nT. The 62,800nT ground magnetic contour outlines an area with a radius of 350m.

Interpretation of the magnetic data (D. Leaman - Oct., 1982) indicated an upright, almost cylindrical source with a radius of 400m. This interpreted magnetic body is greater than 250m below the land surface and a depth extent of greater than 1.0-1.5km is suggested. A magnetic contrast of 0.002-0.004cgs is indicated.

In December, 1982 and January, 1983 magnetic tuff units were located in the bed of the Ring River and a geological model of the area was proposed. The shape of the top of the magnetic body of Leaman was found to approximate the shape of the interpreted stratigraphic horizon for the magnetic tuff units. A review of magnetic data concentrating on possible stratigraphic sources was requested.

The review (Leaman - Feb., 1983) allowed several conclusions to be made:-

1. The source of the anomaly lies to the south of the Ring River and is not exposed.
2. The magnetic tuff horizons exposed in the bed of Ring River do not contribute significantly to the observed anomaly.
3. No relatively shallow stratigraphic body is a likely source for the anomaly.
4. Relatively deep (>250m) stratigraphic sources crossfolded into a pinnacle south of the Ring River could yield the effect if the unit was quite thick (~250m) and consistently strongly magnetic (~0.005 cgs). No such stratigraphic unit is known in the area.

5. Modelling of deeper units reveals a lack of uniqueness. There are several depth - contrast solutions. However reduction in unit thickness or increase in depth below surface leads to a rapid escalation in implied magnetic contrast.
6. Leaman considers that an igneous source, whether as a plug, a deformed sheet or an aureole effect, is a more probable solution for the Ring River Anomaly given the depth - volume - contrast requirements.

A deep drill hole from the east as suggested by Leaman (February, 1983) was initially considered as a means of testing this anomaly. The contemplation of a deep drill hole prompted two pertinent questions:

- a) Could a "Renison" type series of stratabound pyrrhotite bodies produce the "Ring River Magnetic Anomaly"?
- and
- b) Would the drill hole initially contemplated adequately test for Renison type mineralisation?

Consequently, D. Leaman was requested to model several stratabound models based on a Renison model (see Leaman, March, 1983). He reported that such stratabound mineralisation could produce the Ring River Magnetic Anomaly but suggested a shift in target zone if such a model was preferred.

Geophysics - GENIE: (See 1:5,000 sheet AO-504-0318 Ring River Stacked E.M. Profiles)

All of the GENIE anomalies correspond to Grade 1 or Grade 2 Dighem anomalies. However, many of the possible grade and some Grade 1 Dighem anomalies have no corresponding GENIE anomaly.

Confirmed E.M. conductors are:

- a) 5,367,900 - 5,368,300mN around 375,450mE;
 - b) 5,364,500mN around 373,800mE;
- and
- c) 5,367,100 - 5,367,300mN around 374,000mE.

4.3. Colebrook Hill

4.3.1. Work Completed

During the last six months most work on Colebrook Hill was directed towards the interpretation of drilling results. The small amount of field work completed was restricted to the vicinity of drill holes CHP 228 and CHP 238.

Drilling:

At the end of the last reporting period chip and split sampling of the drilling had been completed. As results were received they were added to drill logs and summary sheets. Additional samples were collected for thin and polished section examination. Petrophysical measurements:- conductivity, magnetic susceptibility, remanance and chargeability were completed for drill hole CHP 238.

Geophysics - E.M.:

A down hole SIROTEM survey was completed on drill hole CHP 238. Two transmitter loops, each $(200m)^2$, were used in separate configurations. Down hole readings were taken every 5m.

Small GENIE surveys were completed around CHP 238 and along line 5,371,700mN over drill hole CHP 228.

All geophysical and geological data relevant to drill holes CHP 228 and CHP 238 were forwarded to consultants for interpretation.

Appraisal:

All geochemical, geophysical and geological data relating to Colebrook Hill was examined. A list of potential drilling targets has been prepared.

4.3.2. Results Received

Drilling: (See Appendix D Drill Logs, Appendix B Petrology and Drill Hole Summary Sheets A1-504-0311, 0312, 0314)

The geology and magnetic susceptibility of the three drill holes CHP 236, 237 and 238 were reported and discussed in the last six monthly report. Results discussed here relate to geochemical, petrophysical and petrological work performed on the drill core.

Geochemical results were generally low. The only significant tin results were reported from CHP 238. In this hole the interval 26.00-32.00m averaged 0.16% Sn. The high tin values are associated with bleached and iron stained wacke and siltstone. This interval is from the oxidised zone and recovery was poor (30%). Deeper down the hole the interval 91.00-92.00m reported 0.15% Sn. Here the tin is associated with pyrrhotite in mudstone and siltstone. Pyrrhotite as disseminated blebs, veinlets and veins make up approximately 10% of the rock.

Two samples from the interval 91.00-92.00m were selected to identify the mode of occurrence of the tin. Sample 53303 from 91.8m represents a thin (2cm) pyrrhotite + chalcopyrite + arsenopyrite vein through siltstone. Disseminated and veinlet pyrrhotite occurs in the siltstone. Very fine grained cassiterite was detected in the thinner pyrrhotite veinlets and in the country rock close to these veinlets. Cassiterite is limited to the margins of the larger vein. Sample 53304 from 91.1m contains no detectable cassiterite. This sample consists of pyrrhotite in a carbonate + magnetite vein.

Further petrological work was performed on samples from all drill holes to identify rock types and to suggest lithological correlations. The results are briefly summarised below.

CHP 236 (Samples 48261, 48262, 48263) - These are turbiditic labile siltstone and sandstone with affinities to Crimson Creek Formation. Conspicuous clastic magnetite occurs in 48262 and 48263. Rocks are slightly altered and contain minor metasomatic tremolite.

CHP 237 (Samples 48281, 48282, 48283) - The "granitic" rocks previously interpreted as intrusive rocks appear to be the products of differentiation of the ultramafic magma which have been xenolithically included in the ultramafic rocks. The similarity of the alteration in the rocks suggests that all the phases are petrogenetically related. No Devonian granitic intrusives are indicated.

CHP 238 (Samples 48264 to 48272) - Turbiditic labile siltstones and sandstones with associated basic minor intrusives which occur in the upper part of the hole exhibit typical Crimson Creek Formation characteristics. These rocks overlie pyritised siltstone, shale and dolomitised limestone with affinities with the Success Creek Group. A carbonate member of this group is reported to be very similar to the carbonate horizons of Renison.

Another group of samples from CHP 238 were tested for geophysical properties. Significant results were the high proportion of remanent magnetism in the more magnetic samples and the relatively high resistivity of all the samples (see report from D. Emerson attached to drill log.).

Attempts to find the actual direction of the remanent magnetism by orienting the structural features of the small core samples were not successful.

Geophysics: (See Appendix E . Colebrook Hill Geophysics and 1:5,000 plan A0-504-0317)

The GENIE profiles over drill holes CHP 228 and CHP 238 show good correlation with the V.L.F. profiles over the same area. The high amplitude response over CHP 228 is just another illustration of the high conductivity of many areas around the Colebrook Mine. Pleasing features of the GENIE response however, are the clarity of the anomaly and the absence of the high level of background noise which more or less obscured the responses to other electrical methods.

SIROTEM down hole surveys of CHP 228 and CHP 238 were interpreted (see Appendix E). Geophysical data from CHP 238 are in good agreement with the down hole geology. Sufficient disseminated and veinlet pyrrhotite was intersected to explain the magnetic and electromagnetic data.

In CHP 228, SIROTEM responses near the top of the hole and around 160m correlate with sulphide mineralisation in the drill hole. However the marked crossover at 115-130m down hole does not correspond to a sulphide zone in the drill hole. Hugh Rutter suggests that a significant body of massive sulphides lies below or possibly adjacent to the drill hole.

4.4. West Murchison

4.4.1. Work Completed

Gridding:

The remainder of the grid was cut and pegged at 20m slope corrected intervals. 2.7km were cut and 4.8km were pegged to complete the grid which comprised a 600m baseline and seven lines each 600m long.

Geology:

The baseline and seven grid lines totalling 4.8km were geologically mapped. The chips sieved from soil auger sampling were examined under the binocular microscope.

Geochemistry:

The seven grid lines were soil sampled by hand auger every 20m. A total of 212 samples were collected. This includes resampling of the original soil anomaly sites on line 5,369,500mN.

Nine stream sediment samples were collected where creeks crossed grid lines.

4.4.2 Results Received

Geology: (Refer to Fig. 1 sketch plan of the outcrop geology)

Two rock groups are distinguished on the grid.

- i) Owen Conglomerate
- ii) ?Tyndall Group

The Owen Conglomerate occupies the bulk of the grid and occurs predominantly as boulder scree, ranging in size up to very large blocks greater than 10m across. The lithologies encountered are quartz pebble and quartz cobble conglomerates, massive quartzites, and fine to medium grained quartz arenites, some of which are slightly micaceous. These rocks strike from north to north-east and dip at moderate (45°) to steep (75°) angles to the east. A north striking near vertical cleavage is observed in finer grained lithologies. Facing evidence indicates an east (right way up) facing. The most westerly definite outcrop of Owen occurs

on line 5,369,400mN at a grid easting of 382,590mE (this is about 5,369,380mN 382,540mE A.M.G.).

The second group of rocks is tentatively assigned to a correlate of the Tyndall Group of K. Corbett. Outcrops are limited to line 5,369,400mN between grid eastings 382,510 and 382,550E. Float in a creek on line 5,369,500N at 382,430E is the only other observed occurrence of this rock. The rock consists of a porphyritic volcanoclastic sediment containing feldspar crystals and rounded coarse grained quartz clasts in a weakly sericitised fine grained matrix. A strong vertical cleavage striking 360° obscures any bedding trace. This rock was previously described by C.M.S. as a "xenotuff". It is correlated with the Tyndall Group because of strong similarities to descriptions of Tyndall Group rocks given by K. Corbett.

The contact between the two groups can only be placed on line 5,369,400N. It has been interpreted as roughly following the contours along the side of Mt. Murchison. The western margin of the grid is therefore interpreted to be Tyndall Group covered by a layer of Owen Conglomerate scree which has shed down the very steep sides of Mt. Murchison.

Geochemistry - Soils: (Refer to Appendix F - Soil Sample Data Sheets)

The results received for the soil samples on the grid are almost all very low with typical values being 10 ppm Cu, 10 ppm Pb, 20 ppm Zn. The highest assaying sample, containing 110 ppm Pb and 165 ppm Zn, is one described as containing 60% organic material as opposed to the typical 5-20% organic content. This high organic content could easily explain the elevated values. Other weakly elevated values reported can all be explained by 8 horizon contamination or high organic material contents.

Most significantly, resampling failed, dramatically to duplicate the original soil anomaly. The original peak sample of 105 ppm Cu, 635 ppm Pb, 1350 ppm Zn, returned on resampling, values of

5 ppm Cu less than 5 ppm Pb and 5 ppm Zn. The mapped geology of Owen Conglomerate scree in the vicinity of the sample is consistent with the low values. Examination of the coarse fraction sieved from the soil samples over the original anomaly revealed only quartzite and quartz arenite rock fragments; quartz-rich sandy soil aggregates; and plant roots. This also is consistent with the low values.

Geochemistry - Streams: (Refer to Appendix G - Stream Sediment Sample Data Sheets)

Nine stream sediment samples were collected from the grid. All streams were very small, and, occurring so high on the mountain, have very short drainage trails. The results therefore are probably not very significant. The results received are all very low, consistent with the soil geochemistry and geology.

D of M	A.O.	C.G.	E.O.	D.S.M.E.
				Registrar
Received Answered	1 - AUG 1983			E & IL
DEPT: BF MINES				
REF. NO: 10742/83				

APPENDIX A

Rock Sample Data Sheets

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: Mt Black

LOCALITY: East Colebrook

COLLECTED BY: I.J. Matheson

DATE: Mar 83

Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)									
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Pb	Zn	Cu	Ag	As	Fe%	Mn	Sn	W
53349	5371160	376380		Pale grey green medium grained dolomitic limestone	Sdol				5	270	40	<0.5	5.65	890	<1	3		
									95									
53350	5371160	376385		Creamy white dolomite with network of green mineral + pyrite	Sdol py				30	225	430	<0.5	7.05	1850	<1	33		
									350									
53351	5371160	376390		Pale grey sheared dolomitic conglomerate - acid var chert in dol	Scor cb													
53352	537155	376390		Pale green grey medium grained dolomitic limestone - red rock gran min	Sdol				<5	180	210	0.5	5.05	1150	<1	12		
									275									
53353	5371220	376310		Dark grey coarse grained sheared gabbro	GB				<5	365	<5	<0.5	5.35	2000	<1	4		
									5300									
53354	5372200	376250		Brecciated purple wacke and fine grained dolomite - prom green min	Swt/Sdol				<5	150	<5	0.5	7.35	1150	<1	<1		
									80									
53355	5371140	376240		Pink grey very fine grained rock with pyrite	S				<5	150	105	<0.5	7.15	575	<1	5		
									35									
53356	5371240	376230		Dark grey sheared and brecciated siltstone and fine sandstone	Ssilt - Ssst bx				10	155	460	0.5	12.0	1150	<1	43		
									110									
53357	5371250	376110		Dark grey fine grained quartz breccia - pyritic	Sqr py				<5	20	10	0.5	1.20	135	<1	7		
									235									
53358	5371700	375630		Black indurated tuffaceous breccia of siltstone and sandstone	Ssilt - Ssst bx													
53359	5372375	376720		Pale grey medium grained lithic quartz wacke ~ 2% heavy minerals	Sqrwk				10	110	20	0.5	2.65	215	<1	12		
									2150									
53360	5372400	376600		Several samples of light grey quartz and quartz feldspar phytic tuffs	tArgf.													
53361	5372550	376460		Grey fine grained dolomitic limestone (from adit)	Sdol													
53362	5372550	376460		Grey cobble conglomerate - white chert, black mudstone, Fe-chert	Scor				<5	75	25	0.5	3.95	1000	<1	4		
									125									

549026

ROCK SAMPLE LEDGER

PROJECT: Mt Black

LOCALITY: East Colebrook

COLLECTED BY: I. J. Matheson

DATE: Jun 83 - Apr 83

Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)																
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Pb	Cr	Zn	Ni	Co	Mg	Al	Fe%	Mn	Cu	W	As				
53312	5371400	376470	Rock	Pale brown silicified acid tuff	tA si'd																				
53313	5371400 in Natone Creek	376490	"	Dark grey fine grained dolomitic arenite - dol. veins.	Sqr cb	T	Cowan	CN15 R3/1/3	Silt cb - dol'marl	25 45	160	115	<0.5	6.20	1250	<3			21						
53314	5371400 in Natone Creek	376490	"	Very pyritic grey sandstone. Pyrite euhedra and grains ~ 10%	Ssst py					55 80	70	2800	<0.5	2.05	200	4			21						
53315	5371400	376530		Crystal lithic tuff with ? fiamme to 1cm (ash flow)	aft A*																				
53338	5370780	375710		non wide oxidized and leached quartz carbonate vein	q. cb					35 310	70	225	<0.5	17.5	115	<1			2800						
53339	5370780	375930		White to pale grey fine grained quartz wacke - dressed sample	Sqwk																				
53340	5371020	375990		leached limonitic quartz vein	q lim					2000 45	100	605	0.5	27.0	100	220			5600						
53341	5371020	375990		Tectonic breccia with quartz and leached pyrite	bx					20 60	25	330	0.5	7.50	75	20			400						
53342	5371020	375940		Dark grey siltstone and fine grained lithic wacke	Sltk-Silt																				
53343	5370880	376090		Fine grained brecciated acid volcanic wacke	Svwk (q.f)																				
53344	5370920	376200		Pale brown very fine grained wacke with shale clasts	Sltk(q.f)																				
53345	5370880	376250		Very fine grained grey quartz wacke - diss. py and chlorite vltz	Sqwk					<5 110	165	20	<0.5	9.15	480	<1			56						
53346	5370910	376275		Sheared and limonite stained black siltstone	Silt lim																				
53347	5370920	376320		Dark grey green chloritized basic/intermediate volcanic	Ta					<5 30	90	160	0.5	6.75	285	<1			13						
53348	5371080	376390		Dark grey green chloritized reworked dacitic tuff.	wt'd tA d.g.f.																				

549027

Electrolytic Zinc Co. of A'asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: Mr Black

LOCALITY: East Colebrook

COLLECTED BY: I. J. Mathison

DATE: Dec 82 - Jan 83

Sample Number	A.M.G.Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)											
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Pb	Cu	Zn	Ni	Co	Ag	As	Fe%	Mn	Sn	W
48283	5372200	376830	Rock	Dark grey fine grained quartz sandstone on a soft cement-not carbonate.	Sq ar															
48284	5372200	376390	"	Purplish grey tuffaceous siltstone - fuchsite.	Ss lt.	T	Cowan	CMS 83/1/3	Swk g mg	25	145	90	0.5	6.90	130	<3	7		<10	
48285	5372200	375905	"	Dark grey fine grained micaceous quartz sandstone.	Sq ar mic															
48289	5371600	376640	"	Green grey fine to medium grained Pildspar phytic crystal tuff	xt Af															
48290	5371600	376620	"	Grey fine to medium grained quartz Pildspar crystal-lithic tuff	xt Af qf															
48291	5371600	376475	"	limonite-gossan with some cherty silica and quartz (?cb)	gos					80	250	20	<0.5	25.5	1.75%	35	220		<10	
53301	5371800	376180	"	Shaded dark grey volcanoclastic sandstone - rounded, ls var, lithic	Sq lar		Cowan	CMS 83/1/3	US sd	<5	90	80	<0.5	6.35	225	5	17		<10	
53302	5371800	376375	"	Green chlorite altered lithic tuff - sericitized	lt A sd															
53305	5371200	376465	"	Waterlain tuff - pelitic ash-coarser bands 1/8 with thin shale beds.	VS															
53306	5371200	376440	"	Dark grey fine grained quartz lithic arenite	Sq lar															
53307	5371180	376410	"	Brecciated and recrystallized dolomite	S dol					130	1500	135	<0.5	5.35	1500	<3	14		<10	
53308	5371200	376380	"	Oxidized medium grained rock with quartz and kaolinized Pildspar in shaly matrix																
53309	5371200	376365	"	" coarse grained.			Cowan	CMS 83/1/3	GB very altered	<5	160	100	<0.5	4.25	275	<3	<1		<10	
53310	5371400	376100	"	Blotchy grey and green sericitized acid tuff - now fuchsite	t A sd		"	"	i M sd	50	125	35	<0.5	4.40	235	<3	13		<10	
53311	5371400 (Small Adit)	376120	Dump	Pyrite veins and replacements in dark grey brecciated & silicified quartzite or acid tuff.	lt A sd py		"	"	q. py, cb (minor cassiterite & stannite)	20	35	805	<0.5	2.05	435	<3	550		<10	

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005

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: Mt Black

LOCALITY: Ring River Grid

COLLECTED BY: I. J. Matheson

DATE: Feb 83 -

Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)										
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Pb	Cr	Zn	Cu	Ag	Au	Fe%	Mn	Sn	W
53363	5367400	373680	Rock	Crumbley iron and manganese stained clay	gcs					80	85	50	0.5	3.75	8300	<1	3		
53365	5367400	374235	Rock	Clayey limonite	lim					35	610	325	1.0	12.5	9050	<1	91		
53365	5367400	374440	Oriented	Grey siltstone with thin beds fine grained sandstone (young's up)	Silt-Ssst														
53366	5367400	374280	Rock	Dark grey brecciated siltstone chloritized and carbonate veins	Silt					15	90	30	<0.5	6.75	2750	<1	11		
53368	5367000	374336		Green grey medium grained resorted dacitic tuff	resorted dacitic tuff														
53369	5367200	374426		Green grey chloritized lapilli tuff agglomerate	lpt. Adf														

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906

Electrolytic Zinc Co. of A'asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER
Rings Valley - Fahlore Mine and related workings

PROJECT: Mt Black
COLLECTED BY: I.J. Mathison

LOCALITY: Rings River Grid
DATE: Jan 83

Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section				Metal Content (p.p.m. unless specified)									
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Pb	Zn	Cu	Ag	Tl	Mn	Sn	As		
										Co	Ni	Co					W		
53331	5367460	374 270	Chip							155	530	80	2.5	11.5	6750	60	2.30		
	Adit just South NE Pundas farm									35							25		
53332	"	"	Chip							75	290	55	1.5	9.35	2400	35	220		
										55							<10		
53333	"	"	Chip							140	155	20	2.0	8.00	2050	35	63		
										30							10		
53334	5367500	374 270	Rock	Dark grey siltstone replaced by pyrite and quartz	Sst py q					355	120	225	6.0	20.0	1800	65	6000		
	Fahlore Adit just Sth River									85							<10		
53335	"	"	Vein	Pyrite	py					135	125	330	3.5	40.5	1250	35	1800		
										70							<10		
53336	"	"	Rock	Sandstone - dark grey carbonate rich	Sst cb					195	80	25	1.5	3.30	1700	7	160		
										5							<10		
53337	5367260	374 250	Dump	Galena in siderite	ga cb					46.1%	90	350	2985	8.15	6150	3	44		
	Adit under waterfall									<5							15		

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549030

007

Electrolytic Zinc Co. of A'asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

Ring Valley - Fahlore Mine and related units

PROJECT: Mt Black

LOCALITY: King River GARD

COLLECTED BY: I.J. Mathison

DATE: Jan '83

Sample Number	A.M.G.Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section				Metal Content (p.p.m. unless specified)							
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Pb	Zn	Cu	Ag	Fe%	Mn	Sn	As
53316	5367900	374250	Dump	Pyritic ore with tetrahedrite	py					2350	1050	0.81%	900	21.5	120	50	1000
				Ring Valley level 1 Adit.						155							<10
53317	"	"	Dump	Dark grey siltstone with pyrite veinlets and tetrahedrite	Silt py					1700	940	1.93%	4455	22.5	335	130	2450
										180							15
53318	"	"	Dump	Dark grey calcareous siltstone with carbonate veining and pyrite	Silt py cb					265	450	2.25	15.0	25.0	5.95%	10	230
										40							10
53319	"	"	Dump	Pyritic ore with tetrahedrite and black shale - fragments	py					2000	1650	4.73%	2280	28.5	975	150	2.0%
										35							<10
53320	"	"	Dump	pyritic ore with tetrahedrite and quartz	py qz					2750	225	1.01%	655	36.0	660	90	5.4%
										315							
53321	5367730	374250	Dump	Massive pyrrhotite	po					505	315	1.87%	203	59.5	100	35	850
				Ring Valley level 2 Adit.						1150							<10
53322	"	"	Dump	Pyrrhotite with quartz and tetrahedrite / jamesonite	po qz					430	180	1.850	45	42.0	1150	9	1600
										1050							<10
53323	"	"	Dump	Pyrrhotite rich ore with minor tetrahedrite-jamesonite	po					1400	140	1.100	311	31.0	980	40	2950
										685							<10
53324	5367700	374250	Dump	Brecciated black siltstone with carbonate and pyrite	Silt py cb					90	145	1.10	3.0	25.5	2.60%	15	1250
				Ring Valley Ore Bins						70							15
53325	5367620	374270	Dump	Pyritic grey quartz with minor brecciated black shale	Sbs py q					50	100	1.650	120	14.0	60	20	1000
				Fahlore Shaft.						95							<10
53326	"	"	Dump	Siderite and pyrite	py cb					245	520	2.68%	147	28.0	7.35%	25	660
										10							<10
53327	"	"	Dump	Pyritic grey quartzite	Sqtz py					770	105	2.150	350	21.0	210	25	1250
										215							<10
53328	"	"	Dump	Pyritic grey quartzite with tetrahedrite	Sqtz py					65	95	3.000	71	1.80	580	30	185
										70							<10
53329	5367260	374250	chip	Brecciated black shale and dark grey siltstone	Sbs-Silt					60	150	60	2.5	3.90	1.850	7	62
				Adit under waterfall.						30							<10
53330	5367260	374270	Vein	Dark grey siltstone with quartz carbonate veins	Silt py cb					130	1250	160	2.0	6.75	9050	6	95
				Adit east of waterfall.						45							<10

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549031

APPENDIX B

Petrology

Central Mineralogical Services



39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

ORDER				
ACCOUNT	10 FEB 1983			INDUSTRY
DEPT	ENG	GEOL	1	

The Manager
Attn. The Chief Geologist
Electrolytic Zinc Co. of
Australasia Ltd.
West Coast Mines
P.O. Box 21
ROSEBERY / TAS. 7470

7th February, 1983

REPORT CMS 93/1/3

YOUR REFERENCE: Order No. 900415
DATE RECEIVED: 11th January, 1983
SAMPLE NOS.: 11 Samples
SUBMITTED BY: I.J. Mathison
WORK REQUESTED: Petrology

H.W. Fander

H.W. Fander, B.Sc.

REPORT CMS 83/1/3

Nine samples of rock and diamond drill core were received for petrological examination and brief descriptions, and results are compiled in the attached tables. Two samples were included for mineralogical examination, and an additional polished section was prepared from sample 53311 to confirm the opaque mineralogy. Descriptions incorporate data from stereobinocular and petrological microscopic examination of representative sections and offcuts, and include interpretative comments.

Summary

Samples 43280, 43281, 43282, 48284, 53301, 53309 and 53310 represent an altered complex of basic (gabbroic, hypersthene gabbroic) to ultramafic ("peridotitic") igneous rocks, typically extensively altered and variably deformed. Overall, this suite exhibits analogies with, for example, the Hazlewood Creek basic-ultramafic complex. A minor "acid" differentiated component is present, but appears xenolithic, at least in part, exhibits differentiated basic characteristics, and is similarly altered, suggesting all of these phases are petrogenetically related, rather than representing a younger intrusive into the ultramafics. However, interpretation will be dependant on field relationships.

Samples 53303, 53304 and 53311 reflect vein-related or "mesothermal" sulphide mineralisation, locally with associated cassiterite. The pyrrhotite-arsenopyrite-chalcopyrite sulphide assemblage is consistent with Renison- or Cleveland-type mineralisation, although these may be more apparent should the sequence include metasomatised carbonate horizons.

D. Cowan, B. Sc.

549035 012

Sample No.	Classification - Composition	Fabric	Accessories	CENTRAL MINERALOGICAL SERVICES Comments
48280 (T.S. 45051)	Altered Gabbro. Prehnite-pseudomorphed plagioclase laths, subordinate actinolite-pseudomorphed pyroxene. Sporadic veinlets, films of fine granular diopside with minor associated adularia, albite, chlorite.	Relict subophitic gabbroic. Mildly re-stressed, diopside-healed fractures.	Disseminated leucoxenised opaques. Rare corroded relics of clinopyroxene.	Complexly altered gabbroic intrusive. Uralitised, saussuritized, subsequently diopside-veined/prehnitised grading into weak K-feldspathisation/chloritisation; then mildly stressed.
48281	Altered Gabbro. Prehnitised plagioclase, actinolite-pseudomorphed clinopyroxene and tremolite-pseudomorphed orthopyroxene. Disseminated prehnite-sphene-pseudomorphed opaques.	Analogous to 48280, but with relatively coarsely ophitic (uralitised) pyroxene.	Minor traces apatite (primary) and cloudy, poorly crystalline hydrogarnet (secondary).	Close affinities with 48280. In contrast the alteration pattern is consistent with a "noritic" gabbro (hypersthene gabbro or augite norite).
48282	Serpentinite. Antigorite and Mg-chlorite in varying proportions with minor brucite veinlets. Corroded zone or xenolith of sericite-saussurite-stained hornblende microgranodiorite.	Weakly sheared, vaguely mesh-textured serpentinite in irregular contact with mildly stressed "granite".	Minor traces magnetite (serpentinite), minor prehnite veinlets (microgranodiorite).	Serpentinised olivine pyroxenite or olivine-poor peridotite with a uralitised/saussurite-stained tectonic or xenolithic clast or pyroxene granodiorite with differentiated basic characteristics.
48284	Volcanic Psammopelite. Fine to semi-sericitic muscovite with varying proportions relict silt- to medium-sand-sized felsitic "rhyolitic" to intermediate lava clasts, quartz grains, conspicuous clastic opaques.	Poorly to moderately sorted, incipiently graded, massive to bedded, turbidite-like. Weakly sheared.	Sporadic pre-tectonic chlorite veinlets. Minor clastic chert, impure chert, pelite clasts.	Polymict lithic sandstone/sandy pelite with conspicuous partly martitised clastic magnetite, leucoxenic semi-opaques. No detectable fuchsite.
53301	Silicified Serpentinite. Microcrystalline and recrystallized chalcedonic quartz with more or less pervasive fine-grained chlorite, minor foliae of green, semi-sericitic muscovite. Patchy Fe-staining.	Stressed to sheared (phyllitic). Crudely banded. Patchy, ill-defined relict mesh-textures.	Conspicuous evenly disseminated relict primary chromite.	Thoroughly altered serpentinite as defined by vague relict textural features, chromite. The greenish mica appears weakly chromiferous (or vanadian) rather than strictly fuchsite.
53303 (P.S. 45056)	Chloritic(?) pelite vein with quartz and carbonate with sporadic veinlets and spongy to locally near-massive patches of sphalerite. Cassiterite is conspicuous throughout the host rock. Grain size is variable in the 5-150 μ range, with a mean about 30 μ . Impregnations in the host rock are relatively fine-grained. Vein-related disseminations grade into spongy semi-massive clusters in quartz-rich areas. Stannite was not observed.	pyrrhotite (to 5 mm diameter) with accessory traces of chalcopyrite and rare	related clusters of fine-grained arsenopyrite and impregnates individual areas of	
53304 (P.S. 45057)	Medium-grained carbonate rock with abundant quartz. Pyrrhotite and chalcopyrite are disseminated throughout as discrete to composite blebs and occasional coarser aggregates (to 1 mm). Arsenopyrite is thinly disseminated as single to clustered, sub- to euhedral grains. There is no detectable cassiterite.	variably poikilitic, granular to euhedral magnetite	discrete to composite blebs and occasional coarser clustered, sub- to euhedral grains.	
53309	Altered Gabbro. Sericite-stained/albitised plagioclase interspersed with vaguely pyroxene-pseudomorphous aggregates of kaolin, stained with degraded ("oxidised") carbonate.	Relict coarse-grained gabbroic. Sporadic sheared argillic fractures.	Minor weakly stressed quartz veinlets. Patchy corroded relics of chlorite.	Thoroughly altered, coarse-grained gabbroic intrusive. Extensively kaolinised chlorite probably retrograde after uralitic amphibole.

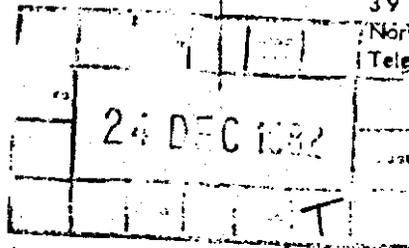
549036 013

Sample No.	Classification - Composition	Fabric	Accessories	CENTRAL MINERALOGICAL SERVICES Comments
53310	Altered Microgabbro. Sericite with subordinate relict primary and amphibole-pseudomorphous quartz with disseminated leucogenised opaques. Minor chlorite veinlets; patchy Fe-staining.	Vague relict medium-grained "doleritic", confused by relatively marked shearing.	Minor films, clots of green hydromuscovite.	Thoroughly altered, medium-grained basic intrusive. Relict primary quartz consistent with a "quartz dolerite" or granophyric basic differentiate.
53311	Quartz-Pyrite-Carbonate Rock. Quartz with semi-pervasive veinlets, crude bands of Fe-sulphide and sideritic carbonate. Disseminated films, clots of talc. More or less pervasive relics carbonaceous matter. Minor vein-quartz.	Relict, weakly bedded, medium sandy elastic. Intersecting network of veinlets postdates vein-quartz.	Relict detrital pelite clasts, thinly disseminated detrital apatite, weakly overgrown schorl.	Silicified carbonaceous lithic sandstone or protoquartzite, minor quartz veins, talc veinlets. Overprinted with a siderite-pyrite vein/alteration assemblage.
53311 OPAQUES	Polished section examination confirms the bulk subordinate pyrite has been introduced with siderite and "grading" into pyritic carbonate. Secondary pyrite aggregates, and isolated chalcopyrite are present.	of pyrite to be secondary after pyrrhotite, as siderite, forming granular to euhedral grains and veinlets. Rare cassiterite subhedra (to 125 μ) are randomly disseminated throughout grains are marginally corroded/replaced by films of stannite. Minor traces of	ary after pyrrhotite, as siderite subhedra (to 125 μ) are randomly disseminated throughout grains are marginally corroded/replaced by films of stannite. Minor traces of	microcrystalline spongy aggregates. clusters mantling the pyritised
53313 (T.S. 45061)	Dolomitic Pelite. Kaolin-illite and microcrystalline dolomite in near-equant proportions with more or less pervasive ultrafine pyrite, pervasive leucogenitic TiO ₂ stainings. Minor dolomite veinlets.	Finely lenticularly laminated to weakly bonded, semi-massive with a low-angle discordant slaty cleavage.	Carbonaceous matter.	Strictly an impure dolomite (dolomitised impure limestone), syngenetic pyritic. Weakly re-crystallized/sheared.

Central Mineralogical Services



39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659



The Manager
Attn. Chief Geologist
Electrolytic Zinc Co. of
Australasia Ltd.
P.O. Box 21
ROSEBERY / TAS. 7470

22nd December, 1982

REPORT CMS 82/11/37

YOUR REFERENCE: Order No. 900403
DATE RECEIVED: 29th November, 1982
SAMPLE NOS.: 12 Samples
SUBMITTED BY: I.J. Mathison
WORK REQUESTED: Petrology

H.W. Fander
H.W. Fander, M. Sc.

REPORT CMS 82/11/37

Twelve samples of diamond drill core from Colebrook Hill were received for brief petrological description, and results are compiled in the attached tables. Descriptions incorporate data from carbonate staining tests, where relevant, microscopic (stereobinocular, petrological) examination of representative thin-sections and offcuts, and include interpretative comments. Two polished sections were prepared from designated samples (48268, 48272) to confirm the opaque mineralogy.

Summary

The bulk of this suite (samples 48261 to 48269 incl.) can be classified as labile psammopelites. These rocks exhibit Crimson Creek Formation characteristics, with essentially turbiditic fabrics and distinctly basic-intermediate volcanomict framework components. Also characteristic are conspicuous fine detrital opaques, with notable concentrations of clastic magnetite in 48262 and 48263. These rocks exhibit a low-grade chloritic alteration assemblage and sporadic calcite veinlets (+ adularia, quartz, chlorite, pyrite). A few samples exhibit incipient development of contact-metasomatic tremolite-actinolite. This group includes two similarly altered basic intrusives.

Samples 48270 to 48272 inclusive are correlated with the Success Creek Group on petrological grounds. This sequence includes carbonaceous shale, partly dolomitised and siderite-veined limestone and a similarly altered quartzose siltstone.

Whilst there are analogies with the alteration pattern developed at Renison, the assemblages in general reflect a relatively low metasomatic grade. Similarly, there are contrasts with the classical axinitic metasomatised zones on Colebrook Hill.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES				
Sample No.	Classification - Composition	Fabric	Accessories	Comments
CHP 236 41.50m (T.S. 44701)	48261 Labile Siltstone. Framework of ankerite-chlorite-altered indeterminate lithic clasts, subordinate splintery to angular albite, minor quartz, carbonate-stained chlorite matrix. Minor calcite-adularia veinlets.	Massive to laminated, incipiently graded siltstone. Turbidite-like with irregular veinlets.	Conspicuous clastic leucoxenic semi-opaques. Minor trace "syngenetic" and veinlet pyrite.	Crimson Creek Formation affinities. Marginally altered with low-grade chlorite-carbonate assemblage and late calcite-adularia veinlets.
CHP 236 63.50m	48262 Labile Sandstone. Framework of montmorillonitic-chloritic basic lava clasts, subordinate albitised plagioclase, minor quartz grains. Leucoxene-stained chloritic matrix with minor metasomatic clots of tremolite, carbonate.	Massive, turbidite-like silty fine sandstone. Minor late films of calcite, chlorite, adularia.	Conspicuous clastic magnetite. Rare ultrafine pyrite.	Incipiently contact-tremolitized "tuffaceous greywacke", Crimson Creek Fm. Magnetite relatively abundant in comparison to 48261, as discrete clastic particles and included in clastic lava clasts.
CHP 236 72.00m	48263 Labile Sandstone. Framework closely analogous to 48262, but slightly finer-grained, relatively chloritised. Leucoxenic chlorite matrix. Sporadic adularia-chlorite-calcite and quartz-chlorite-pyrite veinlets.	Similar to 48262, banded on fine millimetric scale. Quartz-rich veinlets transect adularia veinlets.	Conspicuous clastic magnetite. Minor traces metasomatic tremolite.	Close affinities with 48261 and particularly 48262. Main contrast is the relatively complex late vein assemblage with pyritic quartz (-chlorite-calcite) displacing
CHP 238 64.00m	48264 Altered Microgabbro. Saussuritic, albitised plagioclase laths, subordinate cloudy ankeritic carbonate-pseudomorphed pyroxene. Chlorite mesostasis. Disseminated leucoxenised opaques. Sporadic calcite veins.	Weakly subophitic "doleritic". Mildly stressed.	Minor traces very fine to ultrafine pyrrhotite.	Medium-scale adularia veinlets. basic intrusive. Alteration closely analogous to 48261 and this tends to confirm this dolerite as Cambrian.
238 73.00m	48365 Labile Sandstone. Framework of extensively chloritised, weakly ankeritic carbonate stained lava clasts, subordinate albitised feldspar, minor quartz. Chlorite matrix. Minor chlorite-calcite(-quartz) veinlets.	Turbidite-like silty fine sandstone. Weakly bedded. Mildly sheared.	Clastic opaques, leucoxenic semi-opaques. Rare clots Fe-sulphide (pyrrhotite) in calcite-chlorite veinlets.	Chloritised/weakly carbonated "tuffaceous greywacke" with affinities to 48261, 48262, 48263 and (te) similarly correlated with Crimson Creek Fm. Shearing postdates veinlets.
238 84.00m	48266 Labile Psammopelite. Framework of thoroughly ankeritised lava clasts, minor albite, quartz, with chlorite matrix. Sporadic chlorite films with fine disseminated pyrrhotite. Late calcite veins.	Alternation of fine to medium turbiditic sandstone, siltstone. Mildly sheared.	Leucoxenic semi-opaques. Minor traces chalcopyrite in pyrrhotite films. Patchy pyritisation pyrrhotite.	Relatively carbonated labile turbidite with minor chlorite vein-related pyrrhotite, pyritised marginal to subsequent calcite veins. Crimson Creek Fm. characteristics.
238 87.00m	48267 Altered Microgabbro. Saussuritic albitised plagioclase laths, subordinate chloritised pyroxene, chlorite mesostasis, disseminated leucoxenised opaques. Films of carbonaceous matter. Minor quartz veinlets.	Microfractured to sheared, granulated "doleritic". Analogous to 48264.	Sporadic chlorite-calcite films, veinlets.	Close affinities with 48264. Carbonaceous matter introduced along microfractures and in quartz veinlets, not uncommon in Crimson Creek Fm. altered "dolerites".
238 98.20m	48268 Labile Siltstone. Chloritised/kaolinised and weakly carbonate-stained lava clasts, albite, minor quartz grains with a leucoxene-stained argillic matrix. More or less pervasive fine-grained pyrrhotite disseminations.	Massive, turbidite-like, slightly sandy siltstone. Weakly sheared.	Minor calcite veinlets.	Affinities with 48261 etc. and similarly exhibiting typical Crimson Creek fm. characteristics. Pyrrhotite possibly a low alteration grade replacement of syngenetic pyrite.

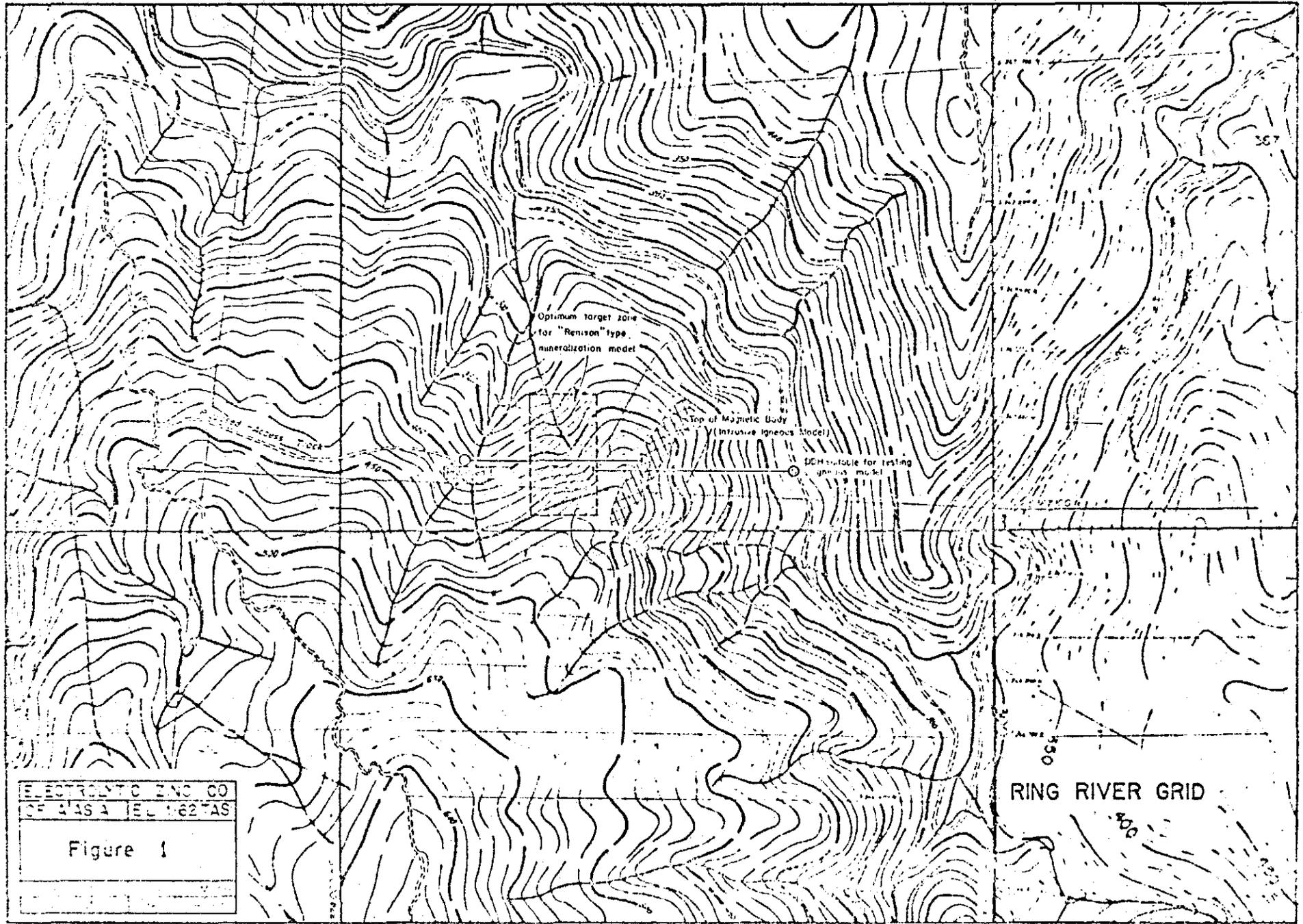
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CENTRAL MINERALOGICAL SERVICES

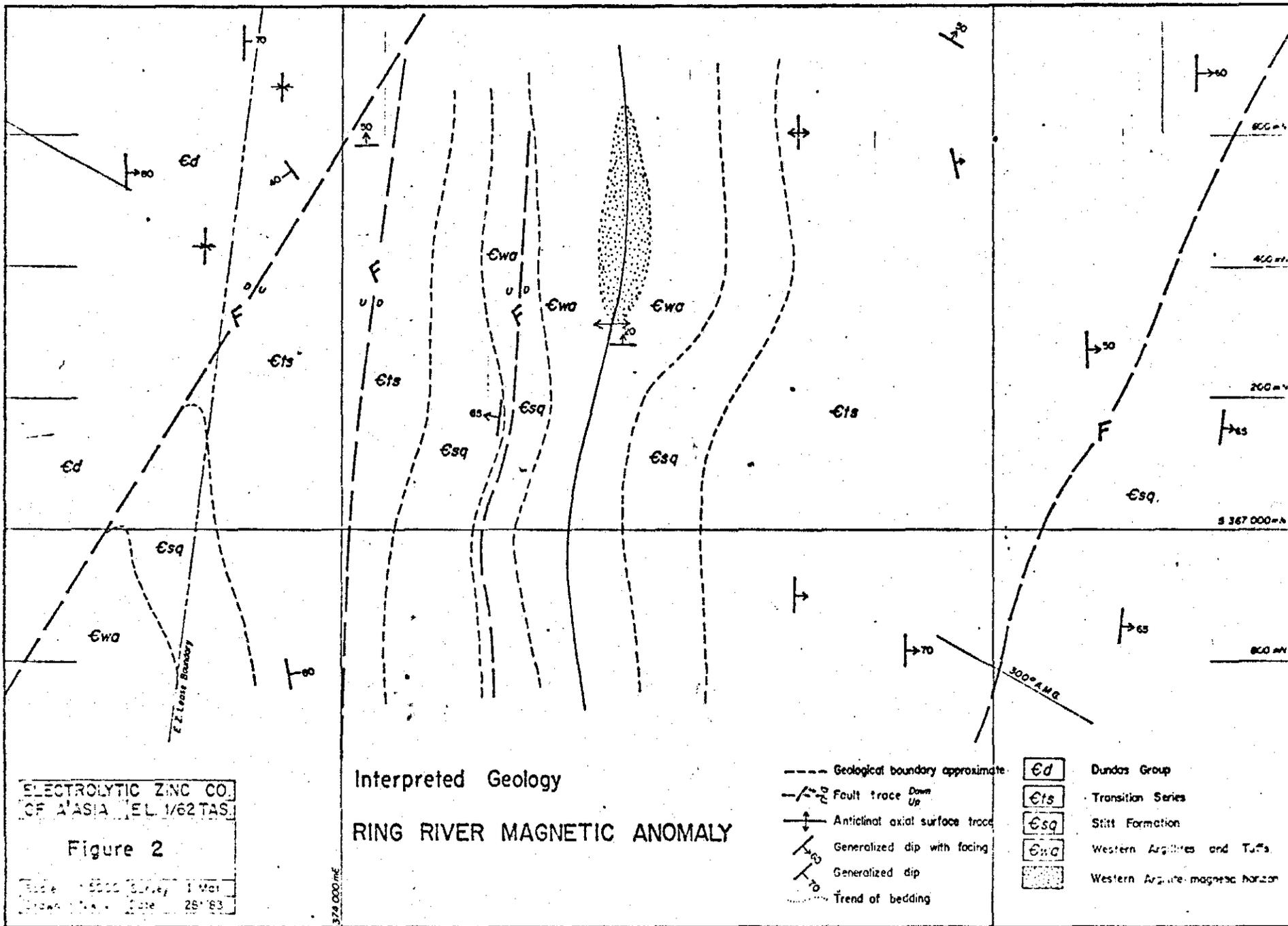
Sample No.	Classification - Composition	Fabric	Accessories	Comments
48268 (P.S. 44708) OPAQUES	Disseminated clots, crudely lenticular, fine-grained aggregates of pyrrhotite with very minor (< 20 μ) of chalcopyrite. Rare sub- to euhedral, fine-grained pyrite appears to represent relict Fe-sulphide. There is no detectable cassiterite.			intergrown microscopic blebs of accessory syngenetic
48269 238 136-80	Labile Sandstone. Framework of carbonate-chlorite pseudomorphed lithic clasts, minor corroded feldspar, quartz grains. Chlorite matrix. Minor calcite films.	Relict medium-grained, turbiditic sandy clastic. Weakly sheared.	Fine to ultrafine relict clastic opaques, leucoxenic semi-opaques. Rare fine-grained pyrrhotite.	Thoroughly chloritised/carbonated labile greywacke with affinities to 48261, etc.
48270 238 168-20	Shale Breccia. Lensoid clasts of variably carbonaceous shale, slightly quartzose silty shale, carbonaceous shale matrix. Sporadic concordant to discordant veins, veinlets, clots of sideritic carbonate; chlorite veinlets.	Soft-pebble conglomerate-like (slump breccia), confused by subsequent mild shearing/tectonic brecciation.	Minor quartz, fine-grained pyrrhotite in carbonate veins, veinlets.	Success Creek Group affinities, but poorly diagnostic. Concordant carbonate veins possibly replace of dolomite interbeds. Detail obscured by subsequent stress effects.
48271 238 152-50	Talc-Carbonate Rock. Microcrystalline calcite, extensively replaced by dolomite. Sporadic impregnations, vugs of sideritic carbonate, talc. Disseminated clots, crudely stylolitic films of carbonaceous matter.	Relict vuggy limestone, breccia-like. Semi-pervasive late discontinuous films of calcite.	Minor traces extremely fine-grained pyrrhotite in sparry vug-filling sideritic carbonate.	Partly dolomitised impure limestone breccia with weak but variable sideritic carbonate alteration. Close affinities with the Renison carbonate horizons.
48272 238 219-70 (P.S. 44712)	Pyritic Siltstone. Framework of silt- to fine sand-sized subangular quartz, subordinate ill-defined sericitised feldspar, minor muscovite. Sericite-quartz matrix with clots of carbonate, conspicuous fine-grained bedded pyrite.	Sub- to millimetric scale, laminated, well-sorted, fine sandy, coarse siltstone. Mildly hornfelsed.	Minor crosscutting veinlets, impregnations sideritic carbonate. Carbonaceous matter, detrital schorl.	Success Creek Group, carbonaceous, pyritic, quartzose (subarkosic) siltstone with mild, vein-related sideritic carbonate alteration post-dating mild hornfelsing. Weakly
48272 (P.S. 44712) OPAQUES	Disseminated to semi-massive, fine-grained pyrite recrystallized syngenetic character; enhanced by rare relict framboids in the matrix. Traces of secondary microcrystalline pyrite, with rarely associated marcasite, are interspersed and represent degraded pyrrhotite. Sideritic carbonate and locally persists as micro-inclusions in the vein carbonates. There is no detectable cassiterite.	ite (mean 40 μ) with a distinctly banded distribution and of shale-parted.		

APPENDIX C

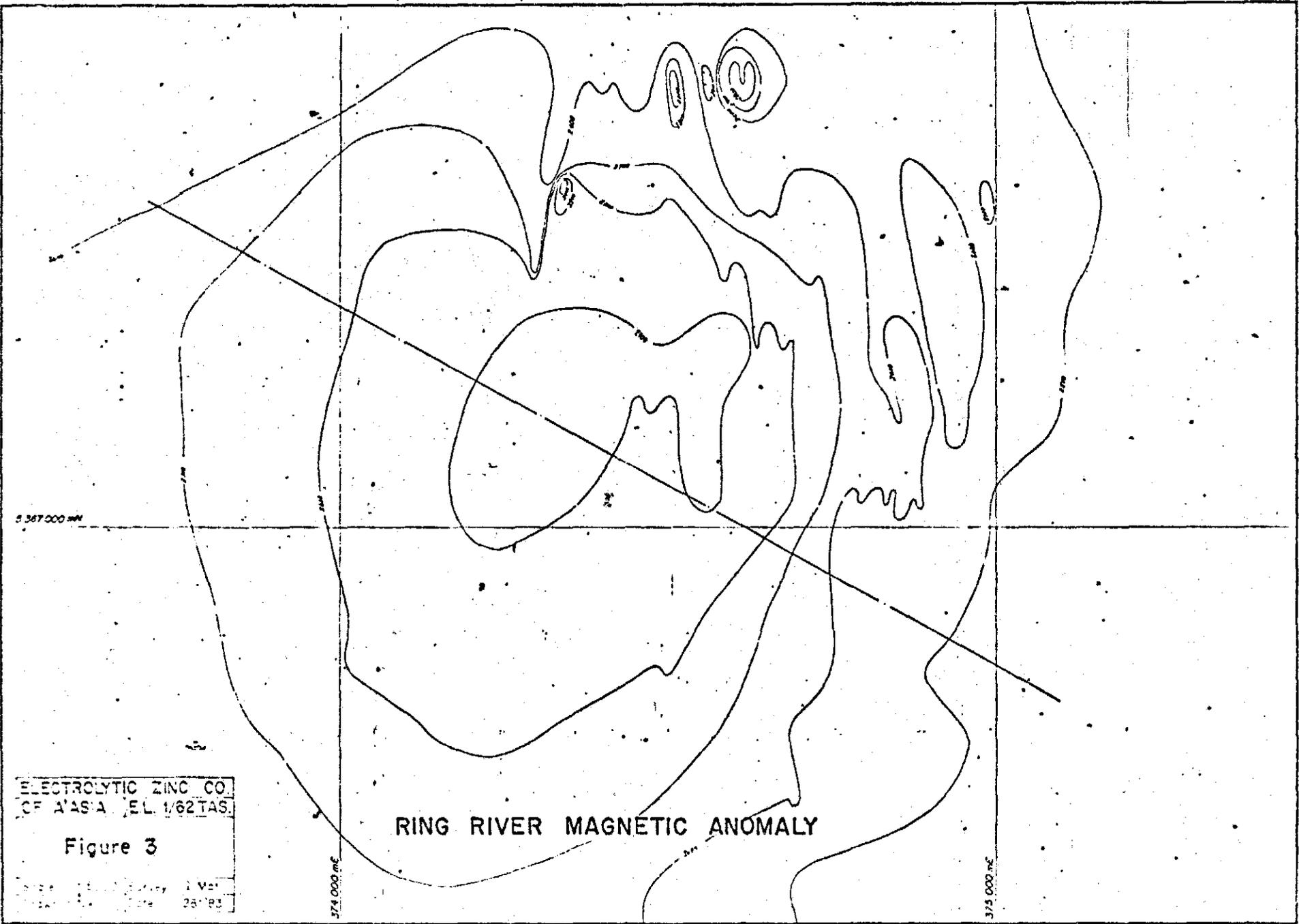
Geological and Magnetic Interpretation of the
Ring River Area.



549042 019



549043 020



ELECTROLYTIC ZINC CO.
OF TASIA, EL. 162 TAS.

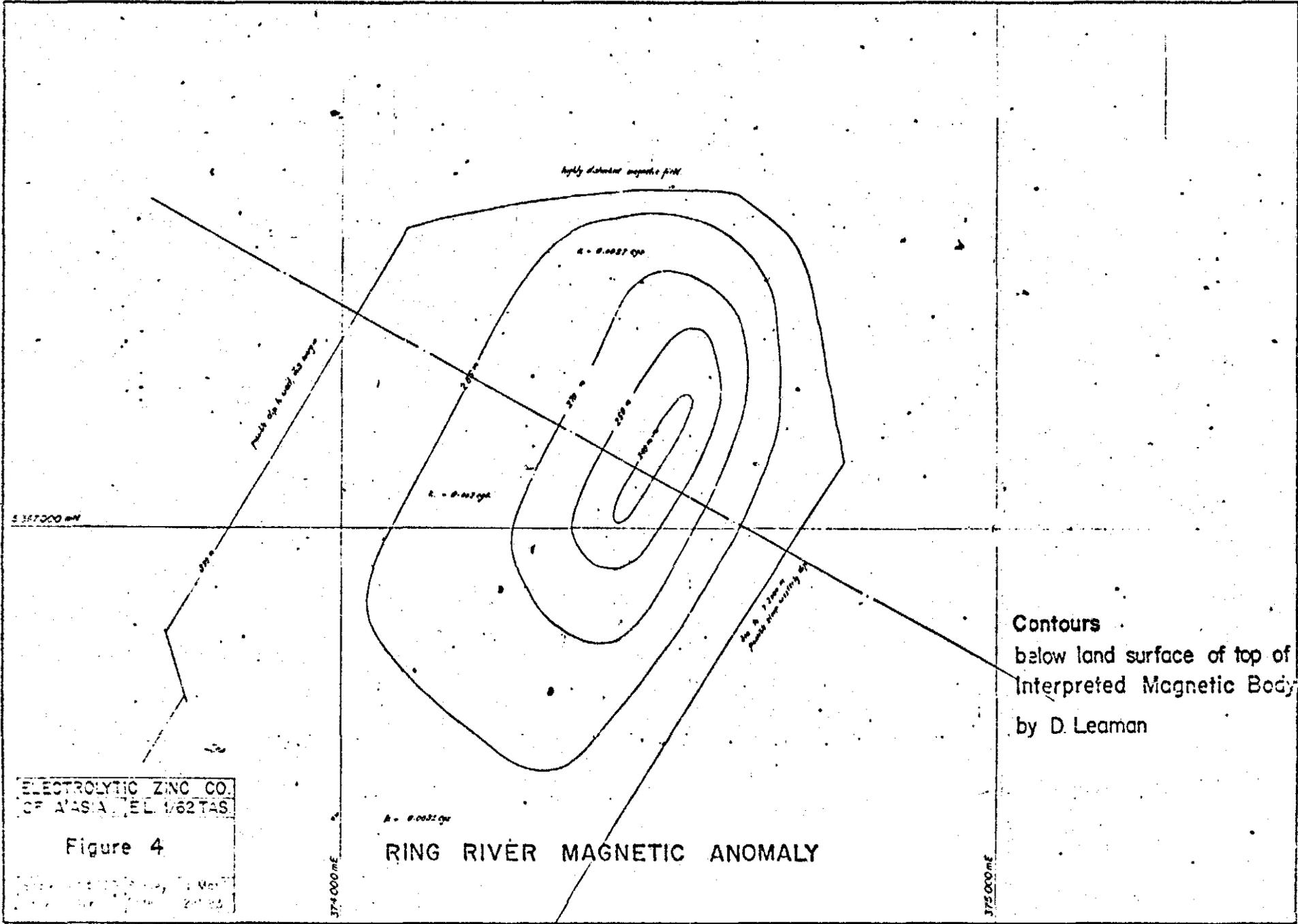
Figure 3

Scale 1:50,000
Date 28/1/83

RING RIVER MAGNETIC ANOMALY

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021

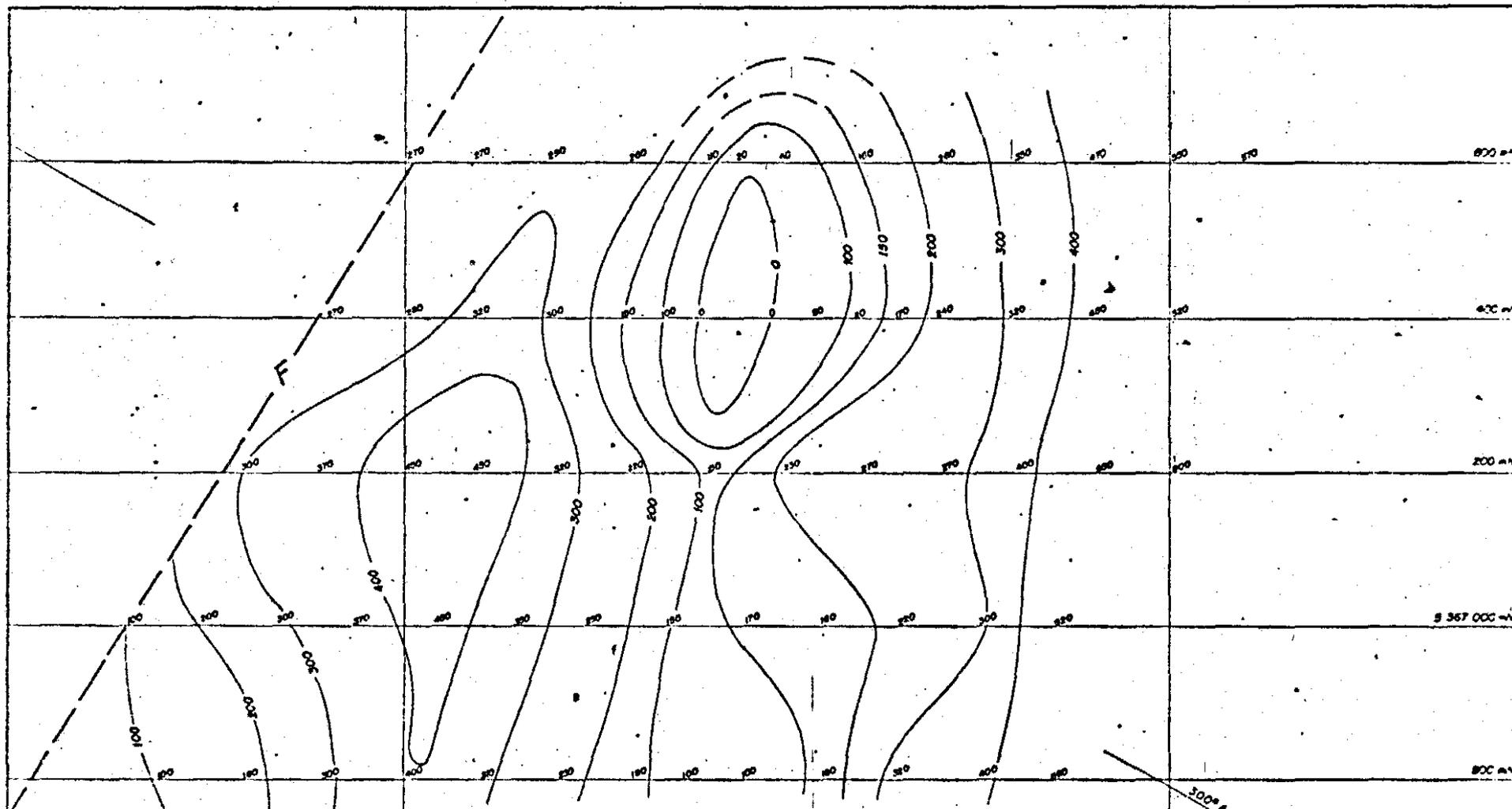


Contours
below land surface of top of
Interpreted Magnetic Body
by D. Leaman

ELECTROLYTIC ZINC CO.
OF ASIA (P) LTD.

Figure 4

RING RIVER MAGNETIC ANOMALY

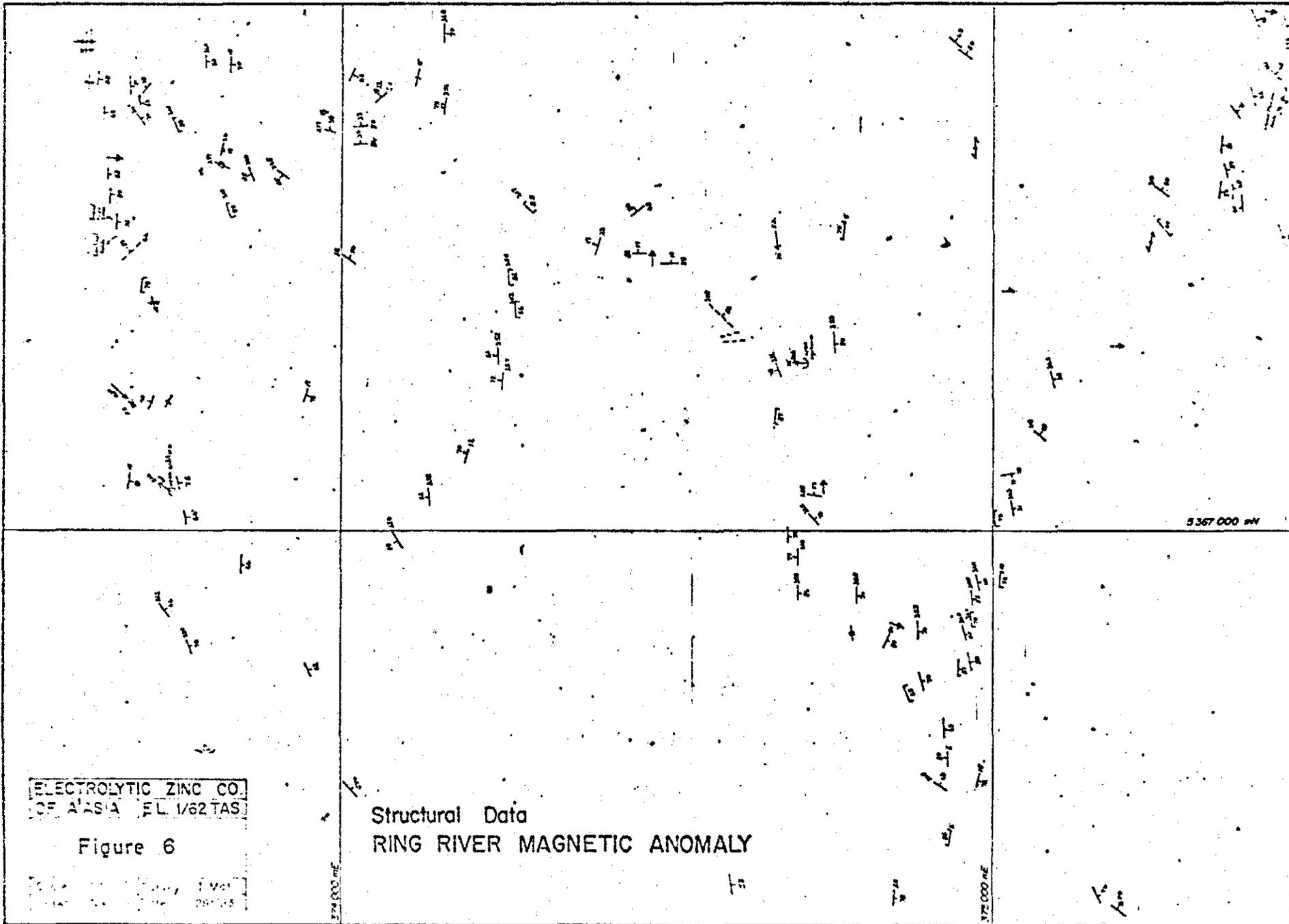


Contours of top of interpreted magnetic horizon
relative to land surface

RING RIVER MAGNETIC ANOMALY

- Procedure followed:
1. Geology interpreted,
 2. Cross sections taken every 200m,
 3. Reference horizon with known magnetic rates outlined,
 4. Geology of this horizon smoothed,
 5. Depth below land surface measured, plotted and contoured.

ELECTROLYTIC ZINC CO.
OF ASIA, EL 1/62 TAS.
Figure 5
Scale 1:50,000
1 Met
200 M

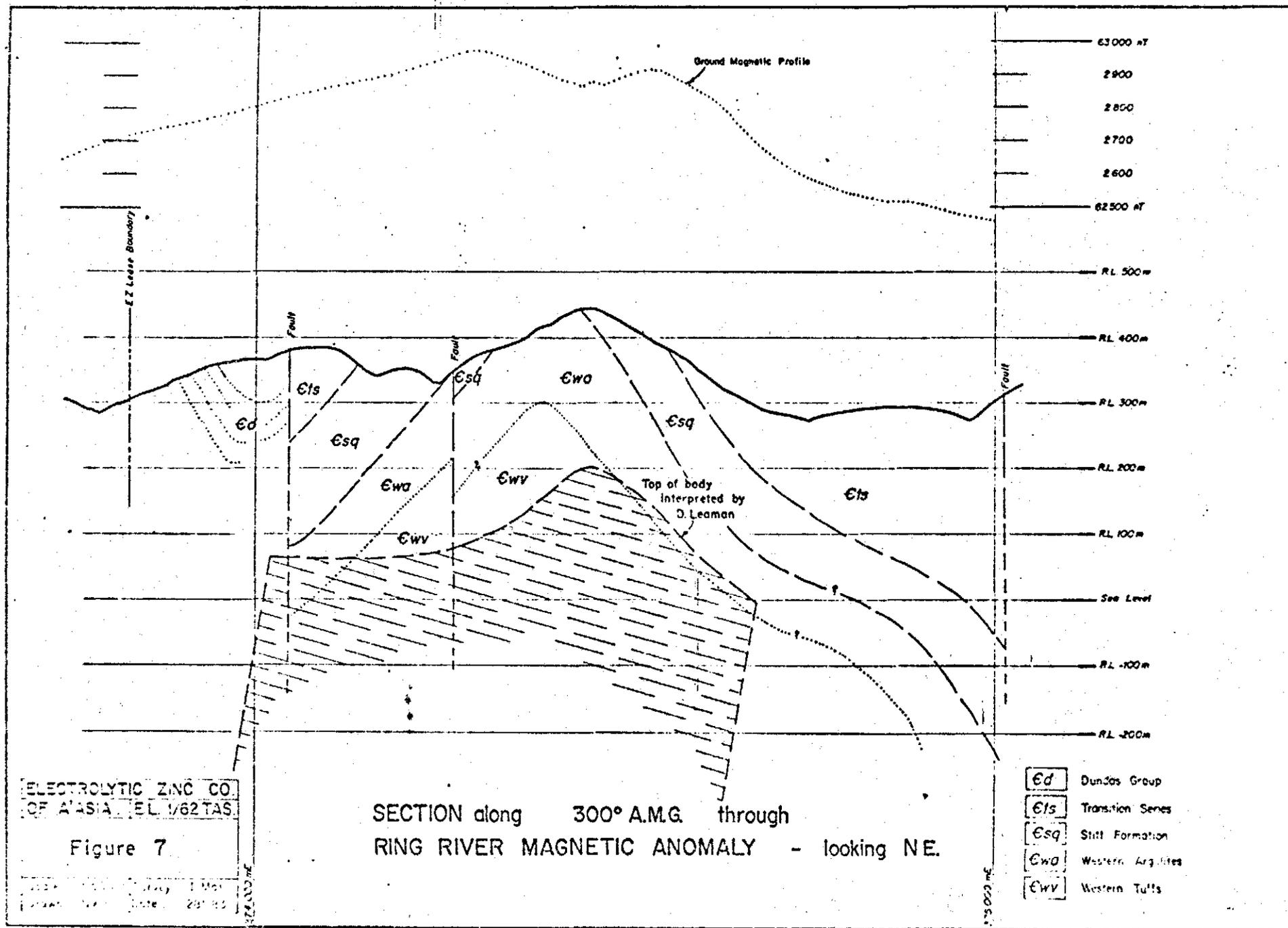


ELECTROLYTIC ZINC CO.
OF ASIA EL 1/62 TAS

Figure 6

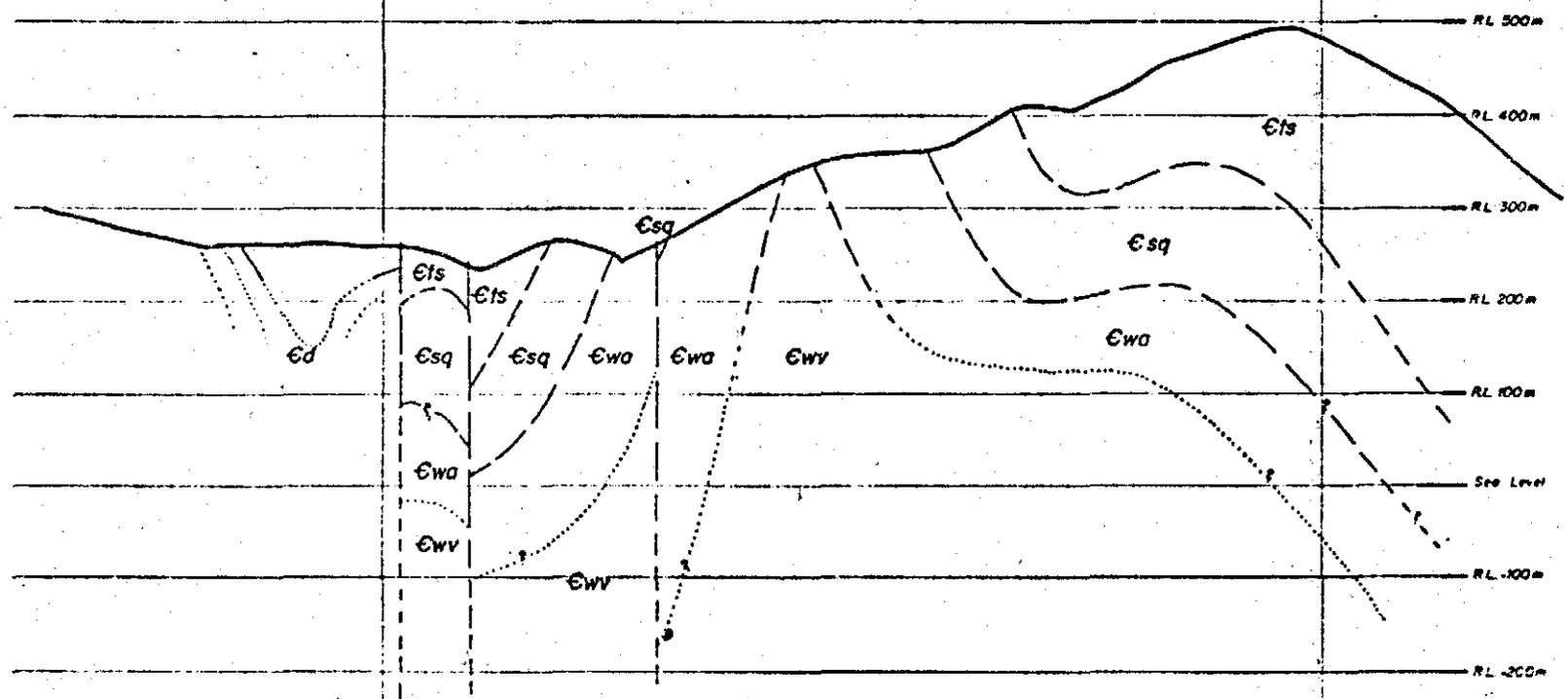
Structural Data
RING RIVER MAGNETIC ANOMALY

5367 000 mV



549048

025



ELECTROLYTIC ZINC CO.
OF AUSTRALIA, EL. 1/62 TAS.

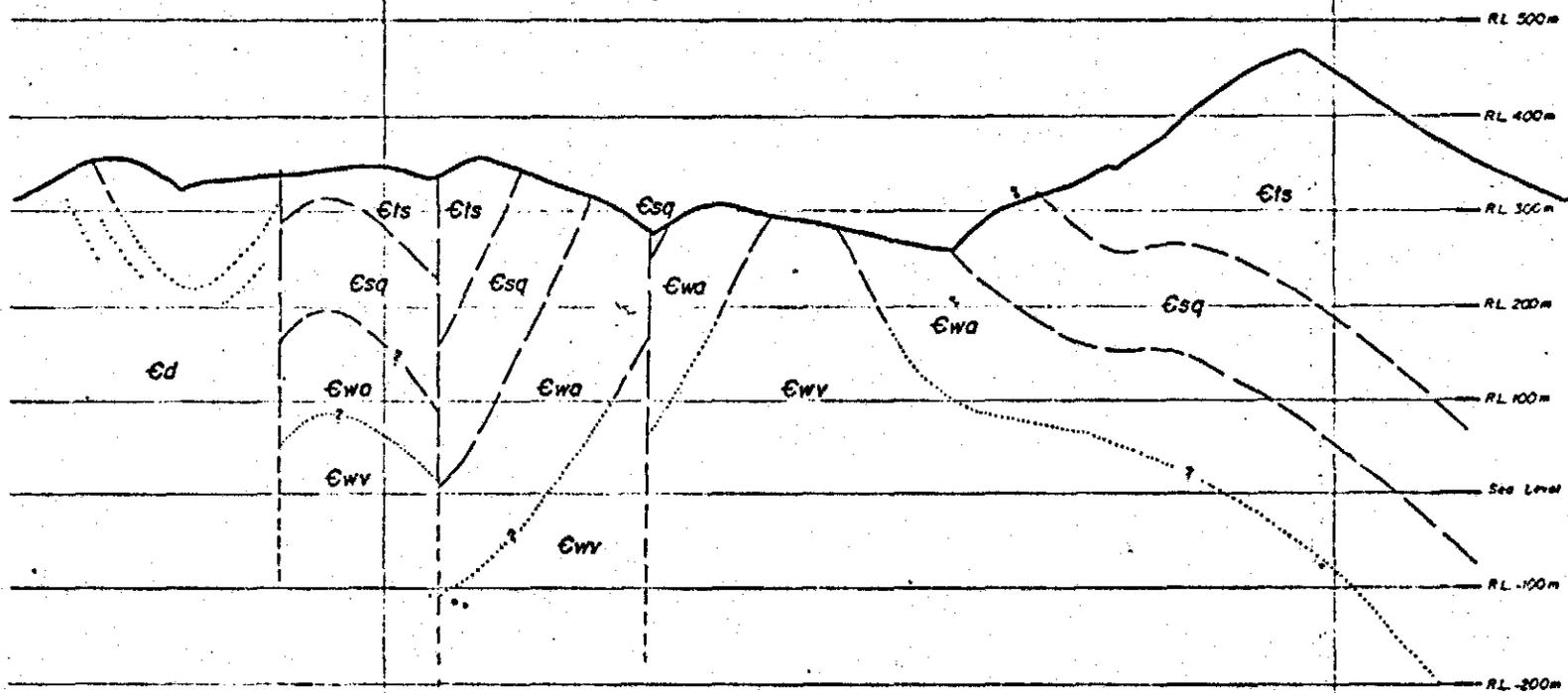
Figure 8

Scale 1:5000 Survey 1 Mar
Drawn by Date 28/63

SECTION along 5 367 600 mN through
RING RIVER MAGNETIC ANOMALY - looking N.

- Ed** Dundas Group
- Ets** Transition Series
- Esq** Stiff Formation
- Ewa** Western Argillites
- Ewv** Western Tuffs

549049
026



ELECTROLYTIC ZINC CO.
OF ALABAMA, EL 1/62 TAS.

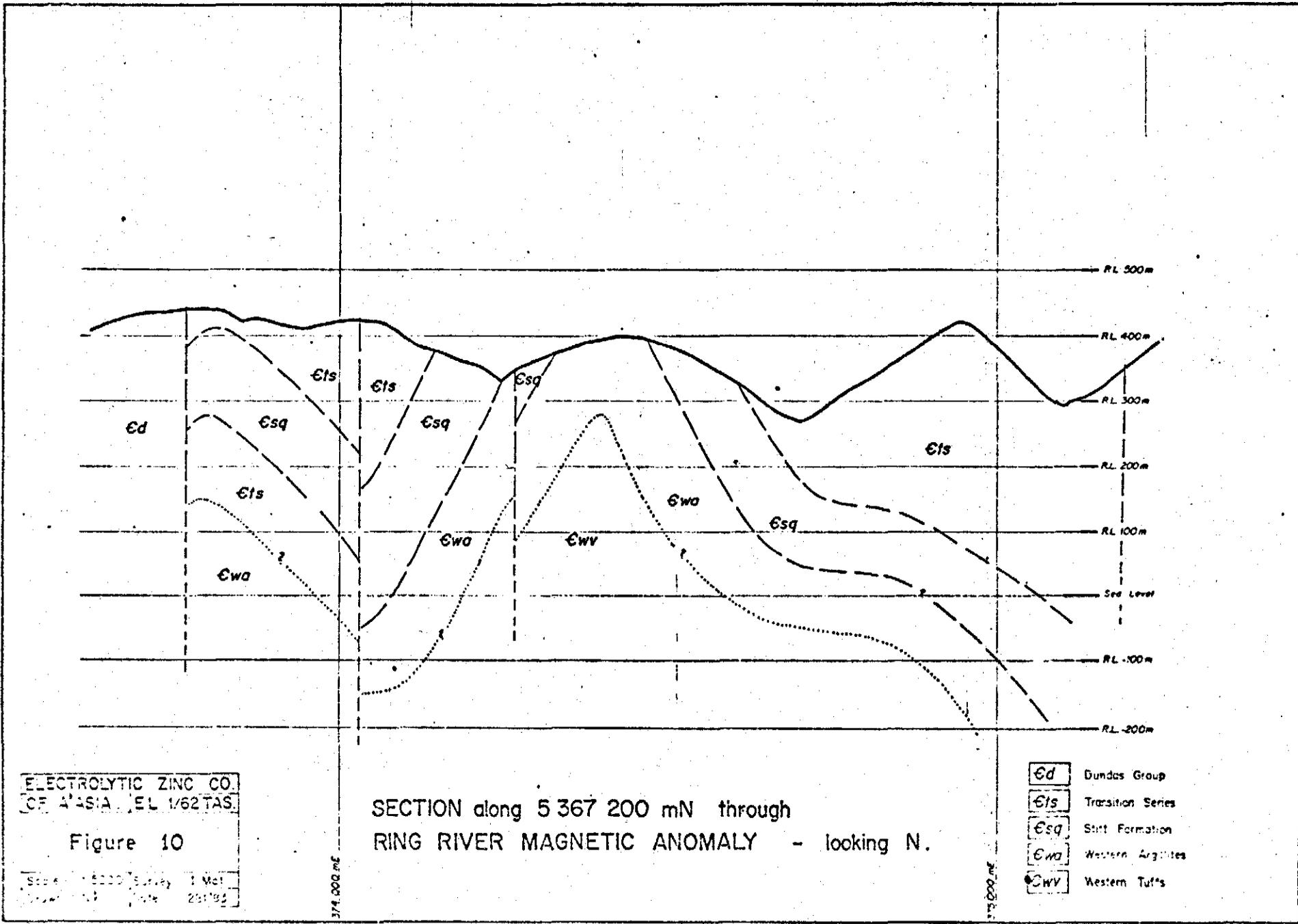
Figure 9

Scale 1:5000 Survey 1 Mar
Date 24 '83

SECTION along 5 367 400 mN through
RING RIVER MAGNETIC ANOMALY - looking N.

- Ed** Dundas Group
- Ets** Transition Series
- Esq** Stitt Formation
- Ewa** Western Argillites
- Ewv** Western Tuffs

549050
027



ELECTROLYTIC ZINC CO.
OF ASIA, EL 1/62 TAS.

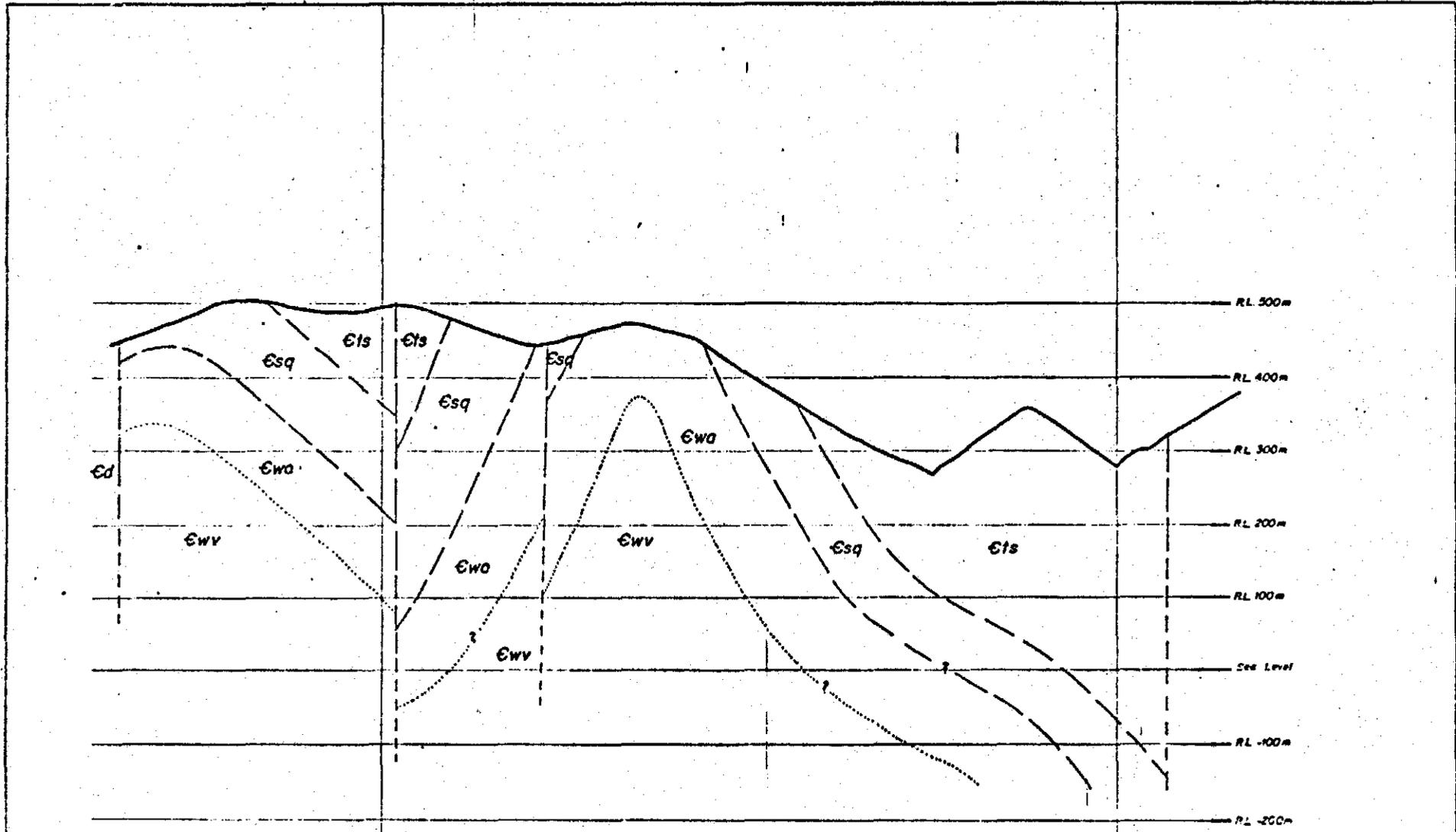
Figure 10

Scale 1:5000 Survey 1 Met
Date 29/1/85

SECTION along 5 367 200 mN through
RING RIVER MAGNETIC ANOMALY - looking N.

- Ed** Dundas Group
- Ets** Transition Series
- Esq** Sturt Formation
- Ewa** Western Argillites
- Ewv** Western Tuffs

540051 028



ELECTROLYTIC ZINC CO.
OF ASIA, EL 1/62 TAS.

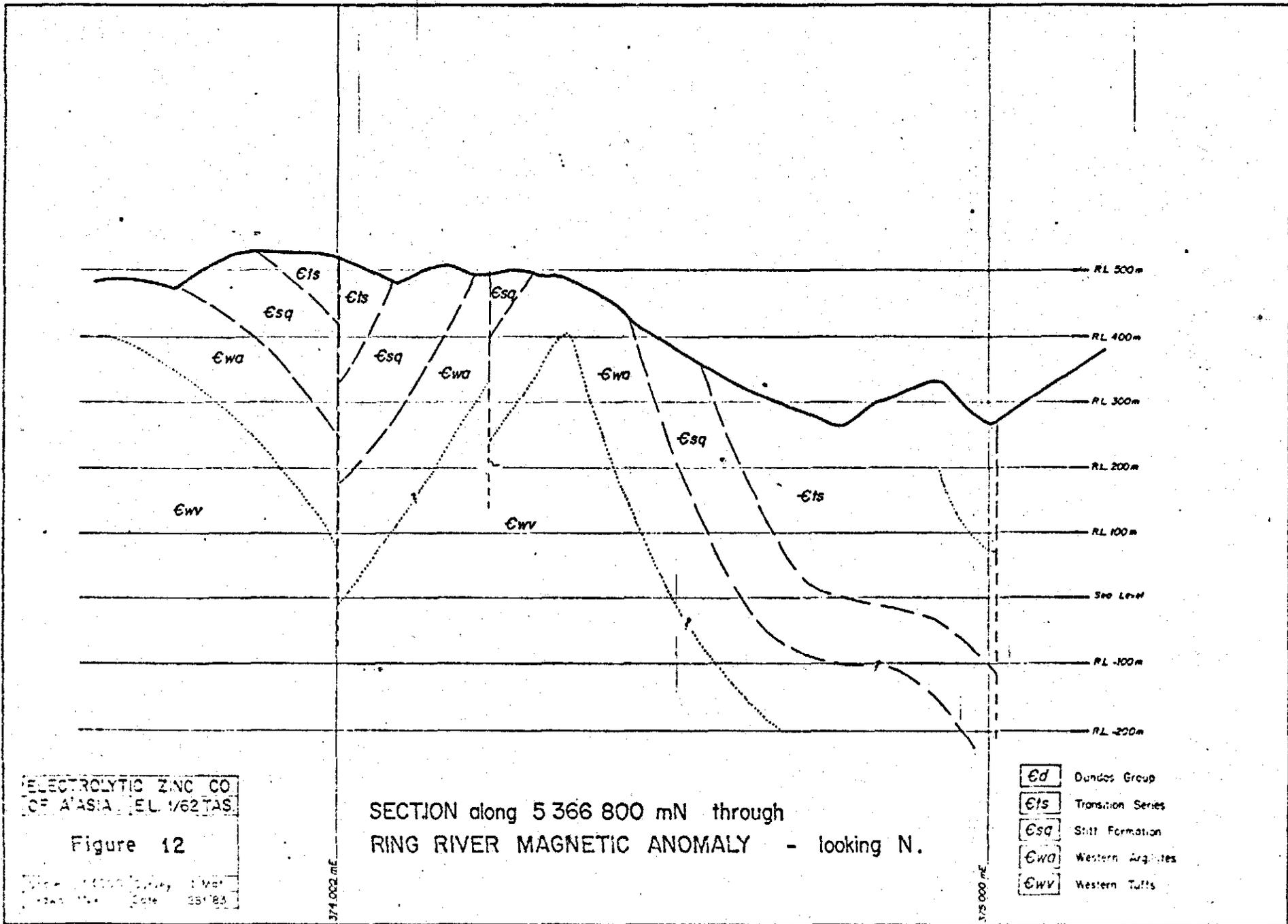
Figure 11

Scale 1:5000
Date 06/63

SECTION along 5 367 000 mN through
RING RIVER MAGNETIC ANOMALY - looking N.

- Ed** Dundas Group
- Ets** Transition Series
- Esq** Salt Formation
- Ewa** Western Argillies
- Ewv** Western Tuffs

549052
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ELECTROLYTIC ZINC CO.
OF AUSTRALIA, EL 1/62 TAS

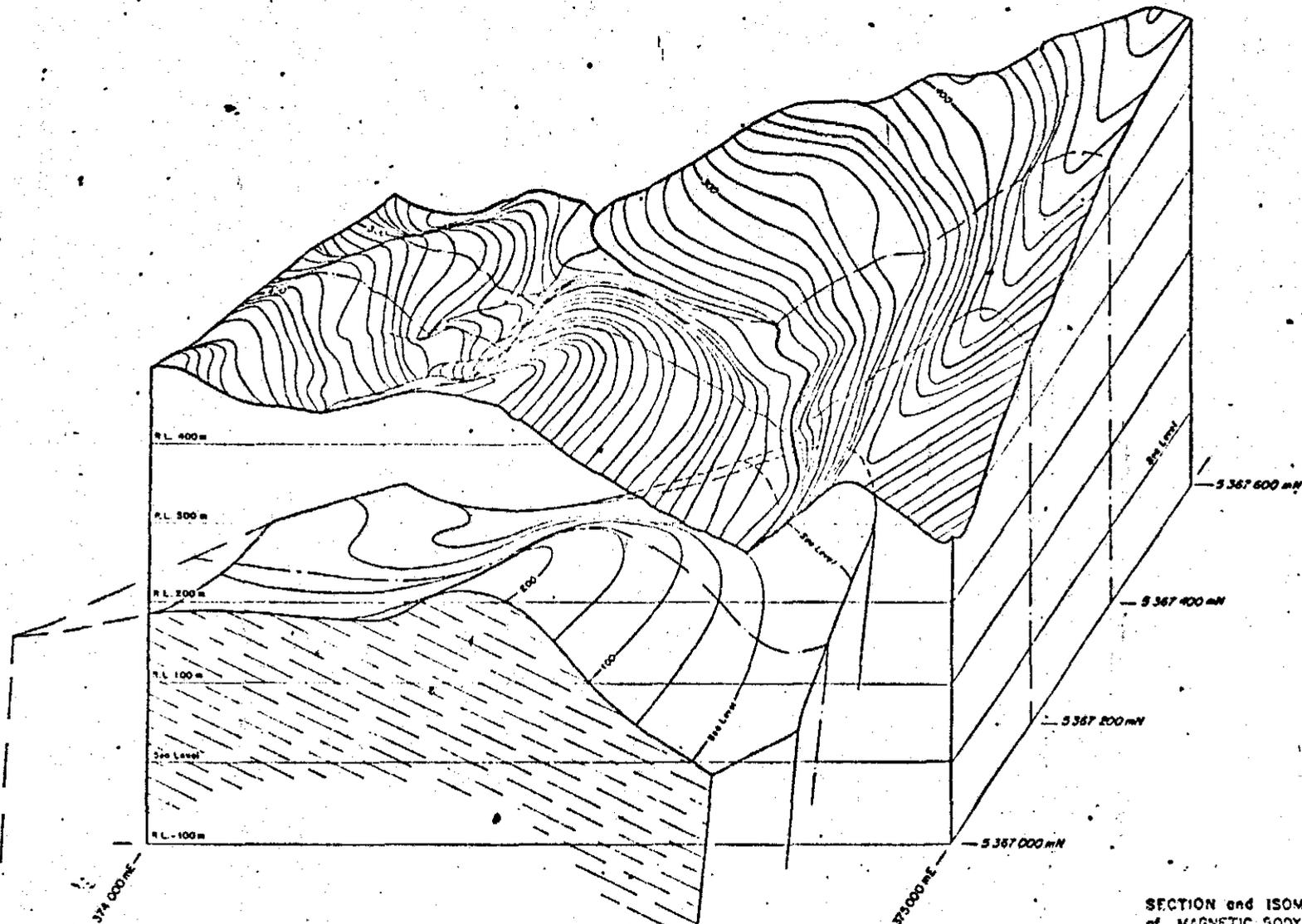
Figure 12

Scale 1:50000
Date 25/83

SECTION along 5 366 800 mN through
RING RIVER MAGNETIC ANOMALY - looking N.

- Ed** Dundas Group
- Ets** Transition Series
- Esq** Stiff Formation
- Ewa** Western Argillites
- Cwv** Western Tuffs

549053
030



ELECTROLYTIC ZINC CO
OF ALASKA, EL 1/62 TAS

Figure 13

Scale 1:5000 Survey 1 Mile
1962-63

ISOMETRIC VIEW of
RING RIVER MAGNETIC ANOMALY - looking N.

SECTION and ISOMETRIC VIEW
of MAGNETIC BODY relative to
topography as interpreted by
D. Legman.

 Interpreted Magnetic Body

LEAMAN GEOPHYSICS

Survey Review, Specification, Reduction, Interpretation
Wide Experience Most Methods
Gravity, Magnetics & Specialty

Registered Office:

11 VERONICA ST., BELLERIVE, TAS.

All Correspondence to:

G.P.O. BOX 320 D, HOBART, TAS. 7001.

TELEPHONE: (002) 44 2239

549055

032

REVIEW:

RING RIVER MAGNETIC ANOMALY

for

ELECTROLYTIC ZINC CO. A/ASIA. LTD.

by

D.E. LEAMAN

LEAMAN GEOPHYSICS

INTRODUCTION:

The Ring River magnetic anomaly, a roughly circular feature centred near 374300mE - 5367200mN, was the subject of a previous interpretation report by Leaman Geophysics (dated October, 1982). Several conclusions were made concerning the source.---

- a) it lay at a depth of at least 240 to 300 metres with
- b) a magnetic contrast of about 0.003 cgs.
- c) the shallowest portion lay near a fold axis.
- d) if the source were solid (pluglike) no reliable deductions about marginal dips were possible.
- e) topographic effects probably modify the field data and affect the interpretation.

An adequate geological explanation was not immediately evident and a number of options were listed. Subsequent field work in the region has defined magnetic tuff horizons in the bed of the Ring River. These happen to lie in the fold core. As a result the Electrolytic Zinc Co. requested a review of the original data and interpretation in order to

- i) check if the magnetic tuff horizon or any similar horizon could produce the anomaly, and/or
- ii) if the magnetic field is significantly shaped by such horizons to remodel the residual effects.

The following geological and magnetic data were provided:

"The Western Tuffs and Argillites are the oldest rocks exposed in the area of the Ring River Magnetic Anomaly. These consist of dacitic-andesitic tuffs which are frequently reworked, volcanoclastic sediments - grey wacke and siltstone, and grey shales. Tuffs exposed in the bed of the Ring River are magnetic.

The Stitt Formation conformably overlies the Westcott Argillites. It contains quartz rich sandstones and micaceous siltstones with interbedded black shales. Limestone and dolomite units have been mapped. Magnetic susceptibility of rocks of this unit are very low.

The Transition Series conformably overlies the Stitt Formation. It consists of grey wacke, siltstone and volcanic wacke and arenite. On Colebrook Hill to the north this unit is irregularly magnetic because of disseminated pyrrhotite. In the Ring River Area - no magnetic members of this unit have been detected.

On Colebrook Hill the Transition Series is overlain by the Crimson Creek Formation. This unit consists of volcanic wacke and siltstone. Coarser units commonly contain clastic magnetite. This unit has not been mapped in the Ring River Magnetic Area.

The Dundas Group unconformably overlies the above mentioned unit. The grey wackes, siltstones and conglomerates of this unit are non magnetic.

Easement rocks exposed at Moores Pimple 2.5 km to the south are also non magnetic."

Sample measurements indicate a susceptibility range of 0.001 to 0.0035 cgs and a magnetisation of 0.00013 to 0.0004 Oe.

The topography of the region is shown in Figure 1 and an EZ interpretation of the geology in Figure 2 (to be compared with Figure 14 original report).

DISCUSSION:

The area has high relief, as shown in Figure 1. In consequence it is possible to suggest that the magnetic tuffs observed at 574430, 450 and 540mE in a fold core represent the anomaly source since a number of source characteristics are concordant. The deduced contrast is comparable with the observed properties, the depth to the unit could easily be about 250 to 300 metres for much of the area given the topography and the source pinnacle undoubtedly lies close to the fold axis. This simple, attractive solution is, however, not supported by a detailed examination of the profiles or a modelling of representative stratigraphic forms. The reader is referred to the original (October) report for reproductions of profiles.

Several aspects of the magnetic field in the Ring River region must be noted. The background field is about 62500nT and the anomaly is terminated relatively abruptly to north and east. The character and position of the anomaly indicates that the source is south of the Ring River and not exposed. Peak values were not noted in the region of lines 5367400 or 5367500mN. Line 500mN, which could be expected to reflect the effects of the tuff horizon, is erratic and atypical. This indicates that any simple, shallow stratigraphic source of the type suggested is not a valid solution for the primary anomaly.

This was confirmed by two series of models. The first sequence was based on a structural model provided by EZ, Rosebery. The model is shown in Figure 3. The contours indicate the depth to the top of the Western Argillite magnetic horizon relative to the land surface. Modelling on this basis allows much of the topographic effect to be accounted. The model was derived by a five stage process: geology interpreted, sections drawn every 200m from 5366800 to 5367600mN, reference horizon located, horizon shape smoothed and depths below surface measured and contoured. The second sequence was based on a modified view generated by the writer (Figure 4) in view of the inadequacy of the original EZ concept. The second model was intended to test the effect of plunge variations and a generally shallower, smoothed depth to the horizon when all faults are considered. A sample section, 5367300mN, is included in Figure 6. Model 2 was designed to evaluate whether a thin, widely spread unit could account for the anomaly. This is an essential test since many forms, as a function of area-depth-contrast, can theoretically yield a given anomaly.

Each form was modelled using various unit thicknesses. This meant that the base of the unit was spatially defined for each case. In every case the basal surface was also used as an

upper limit calculation, mated with a set of deeper surfaces, to allow review of the possible effects of deeper horizons. A selection of results for an exposed horizon is shown in Figures 5 and 6. The two lines shown are representative of the set of nine calculated. Profiles are shown for unit thicknesses of 50 and 200m. Neither model type, nor any reasonable unit thickness can account for the observed profiles. Only line 500mN carries any comparable character (compare model for 300mN). This shows that the tuffs are relatively thin and generally inconsequential. Figures 5 and 6 show that while it is possible to match parts of the anomaly (e.g. alternate model, t=200m, 5366900 east) it is not possible to approximate the overall form. On every profile, irrespective of contrast or unit thickness assumptions, at least half of the anomaly is wholly unaccounted. There is no feasible geological explanation using folded, shallow, argillite source concepts. Two other comments must be made. Only line 5367500 carries any indication of tuff-sourced anomalies and it is most unlikely, given the exposure-contrast observations in the river, that the horizon exposed has any significant magnetic thickness. The models of course presume a bulk average contrast ($k=0.0025$ cgs). Review of all other profiles shows that this type of shallow source has contributed little to the observed field. Similar gross conclusions were suspected after inspection of the observed profiles and the interpreted geology. If the lower part of the Western Argillite is consistently magnetic, as implied by any stratigraphic model in a small area, then uplift of the unit to the east of 575000mE and depression beneath the Dundas Group to the west should have two dimensionally modified the field. No such systematic relationship is observed between the magnetic field and the major faults. This suggests a deep or non-stratigraphic source for the main anomaly. Thus there is no case for residual re-modelling free of shallow effects due to tuffs. The problem remains as originally defined.

Modelling of deeper units, using the basal interfaces of the above models, was more revealing. A lack of uniqueness was observed (there are several possible depth-contrast solutions) and it is possible to account for the observed field provided the top of the source unit is at least 200 to 250m deep. High contrasts are implied, however. If the unit is 250m thick the contrast, for a body no shallower than 200 to 250m, is about 0.005 cgs. Reduction of unit thickness or increase in unit depth leads to a rapid escalation in contrast implied. The shape of the upper surface of a folded unit at 250m is not significantly different from the top of the plug form presented in the original interpretation and no additional representation is justified here. However the eastern margin must dip steeply east while the western side of the structure is more complex but with shallower dips overall.

Several conclusions are possible as a result of this review:

1. The magnetic horizons of the Western Argillite exposed in the bed of the Ring River do not contribute significantly to the observed anomaly. Only local effects near line 500mN can be ascribed to the tuff beds.
2. The form of the anomaly and its geographic location in relation to the interpreted structure suggests that no relatively shallow stratigraphic source is likely.

3. Relatively deep (>250m) stratigraphic sources cross-folded into a pinnacle south of the Ring River could yield the effect but this solution cannot be accepted unless reasonable thicknesses of the section can be shown to be quite strongly magnetic (e.g. 250m at 0.005 cgs). No sedimentary unit in the Lower Cambrian is definitely known to possess these bulk properties, although the anomaly pattern over Lower Cambrian and Upper Precambrian rocks is often disturbed and is yet not satisfactorily explained. If the source is deeper than 250m then a greater unit thickness or contrast is implied. High contrasts make sedimentary solutions unlikely. The indicated minimum source depth range, uncontrolled, is 200 to 300m. The close relationship between fold axis and deduced source pinnacle, the source is off-set very slightly to the east between the primary fold and a parasitic structure, does suggest a stratigraphic source - unless an igneous body has been moulded during deformation.
4. A metamorphic aureole could yield an equivalent quasi-stratigraphic band of moderate contrast.
5. An igneous source, whether as a plug, a deformed sheet or an aureole effect, is a more probable solution for the Ring River anomaly given the depth-volume-contrast requirements.

The anomaly and the interpretation could be most easily tested by a hole bearing 260° true with 70° dip from the track near 374680E, 5367200N. If the source is of economic interest and can be identified a single control point might well allow a reliable re-evaluation of the entire anomaly if necessary.

Report submitted on behalf of
Leaman Geophysics
by

D. Leaman

Dr. D. E. Leaman F.Sc. Ph.D.
M.Aus.I.K.M., M.H.I.C.A.

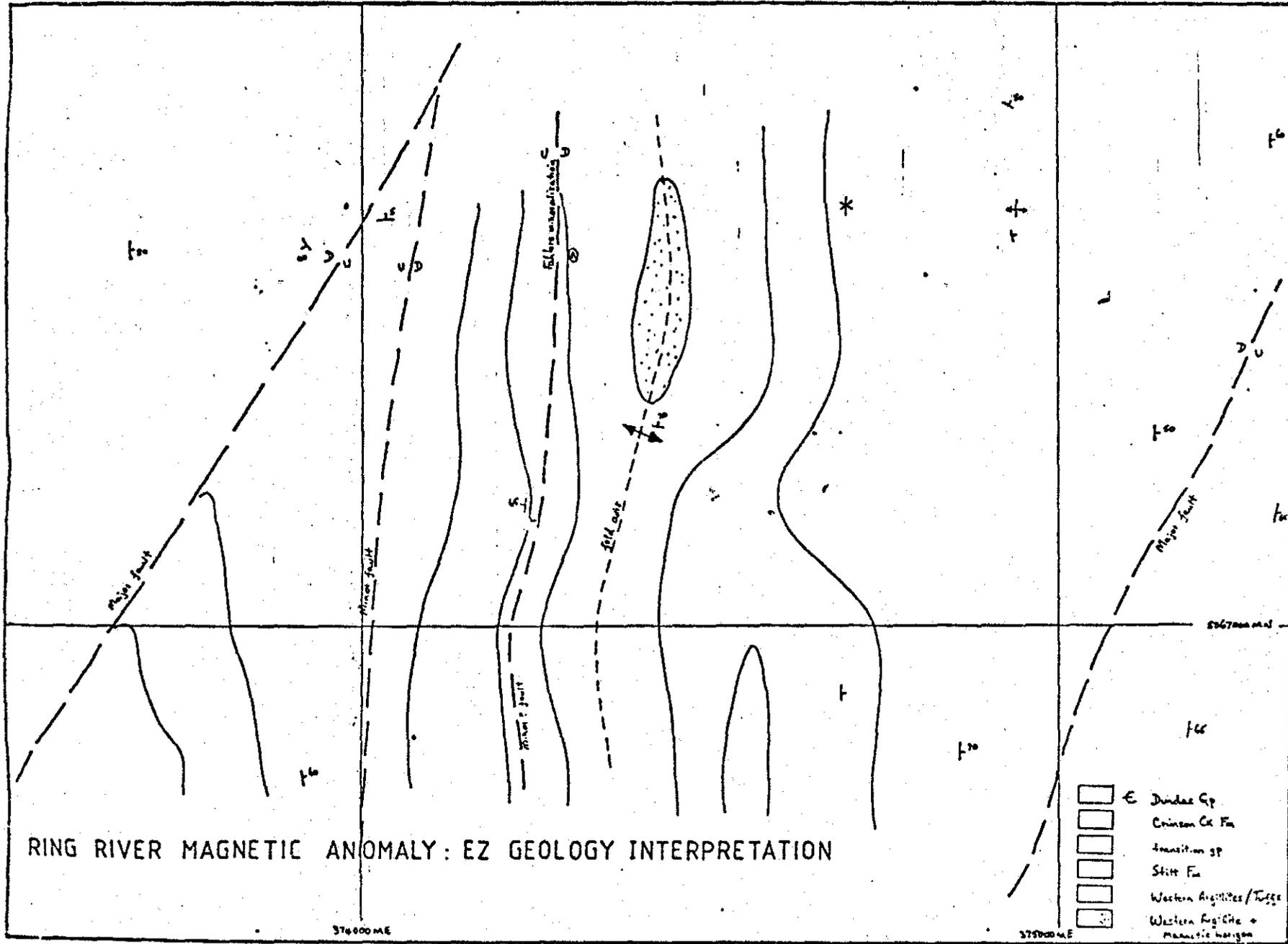
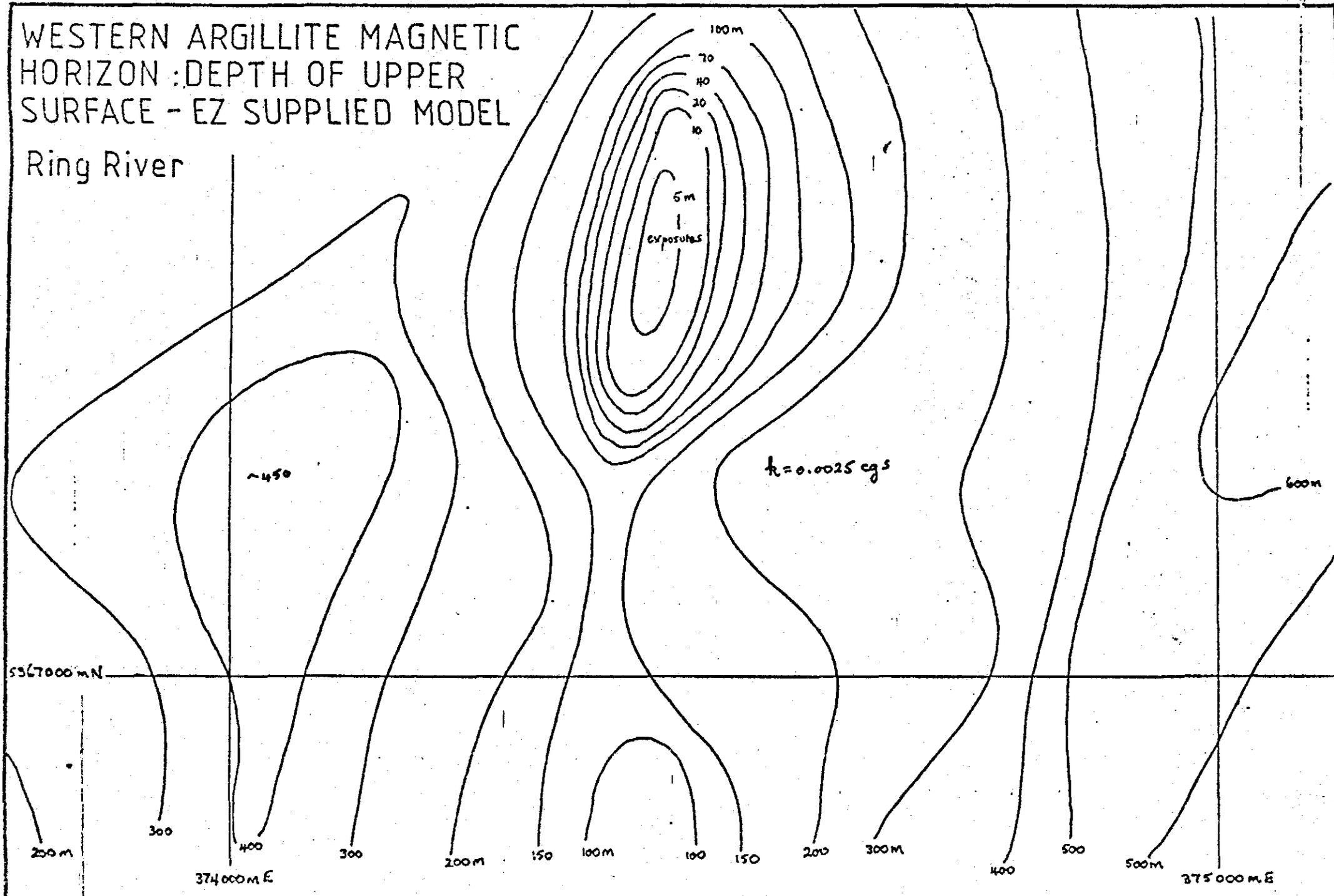


Figure 2

WESTERN ARGILLITE MAGNETIC
HORIZON : DEPTH OF UPPER
SURFACE - EZ SUPPLIED MODEL

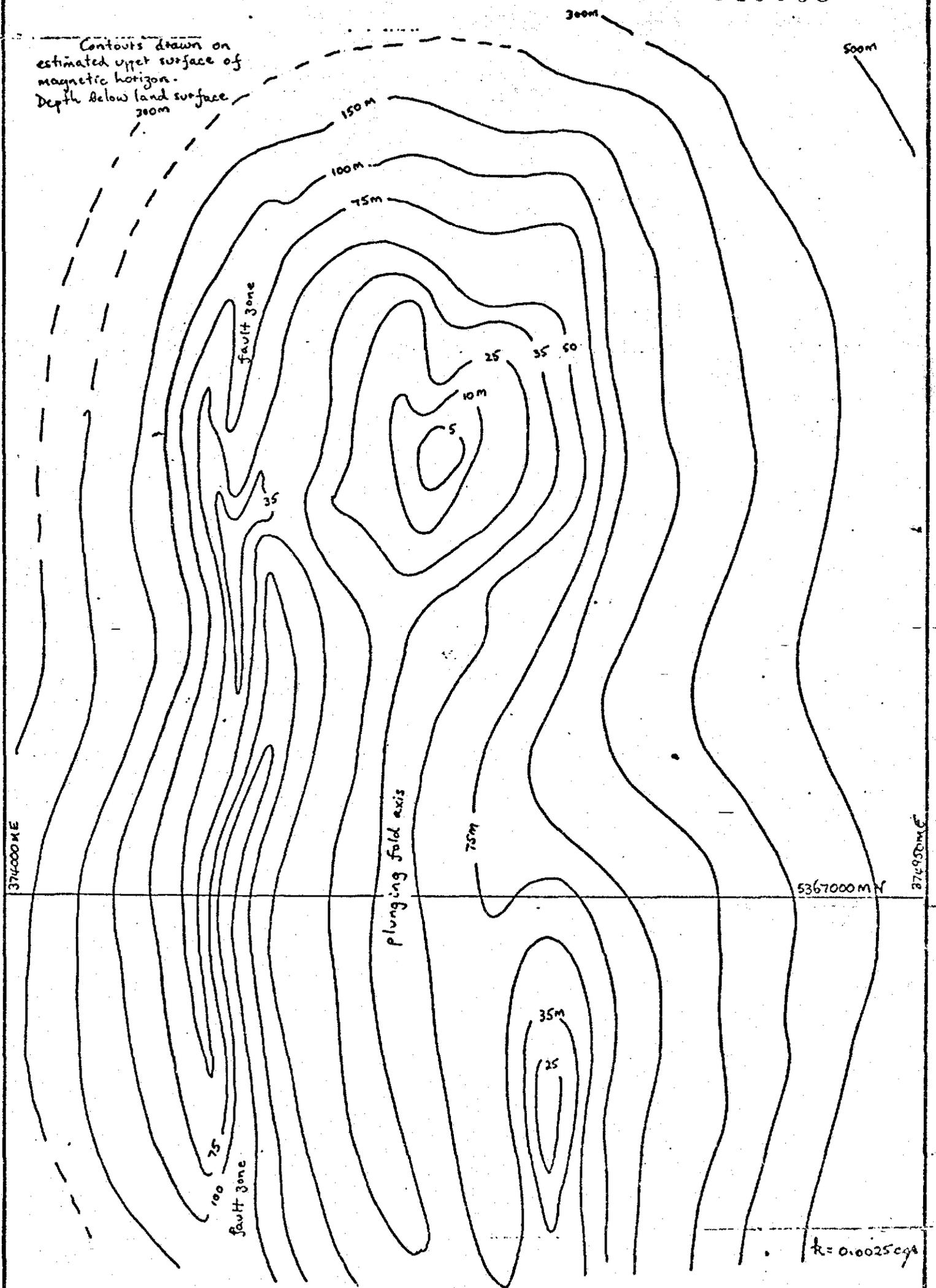
Ring River



549062 042

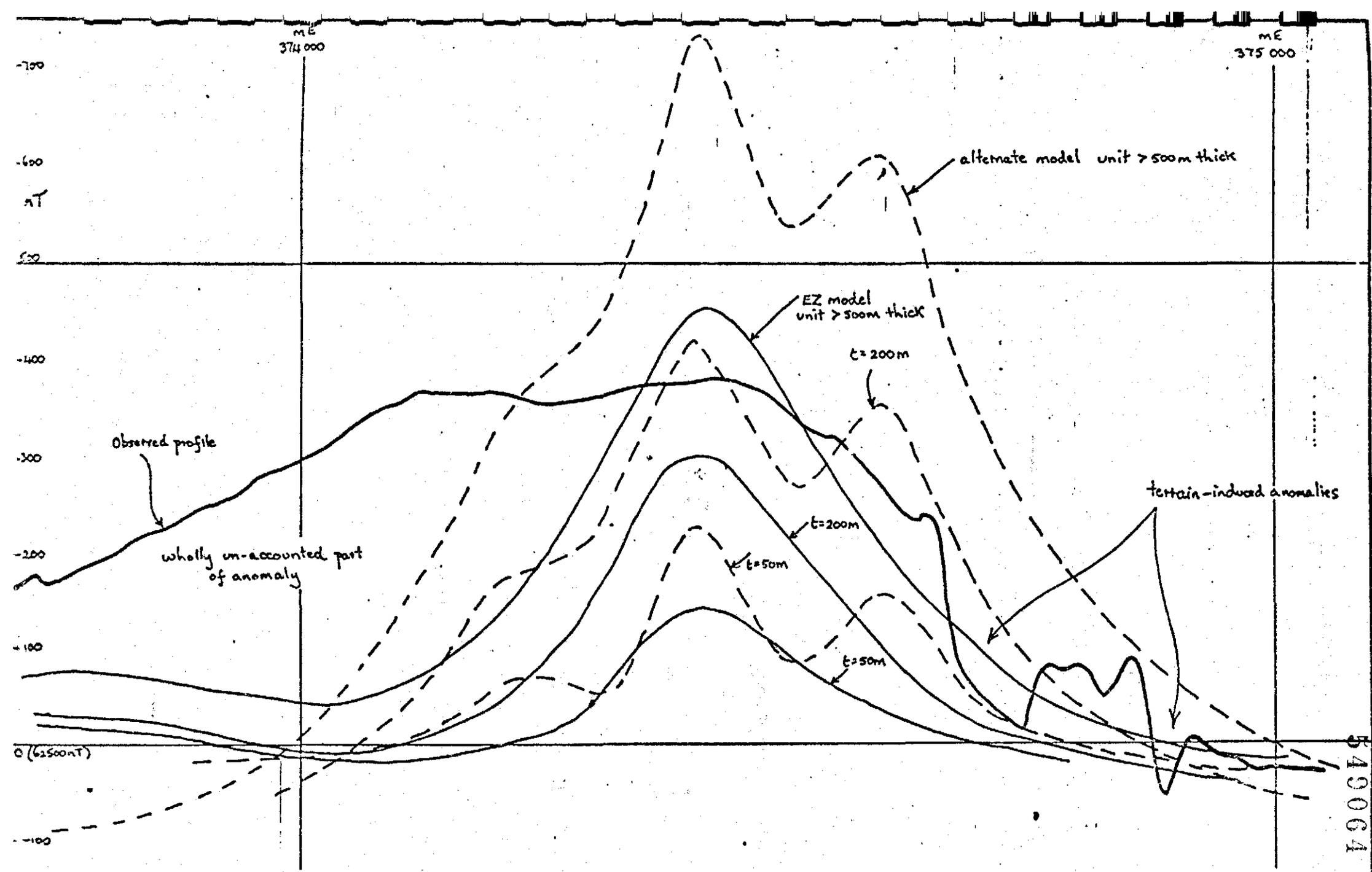
Figure 3

Contours drawn on estimated upper surface of magnetic horizon. Depth below land surface 200m



ALTERNATE MODEL WESTERN ARGILLITE HORIZON

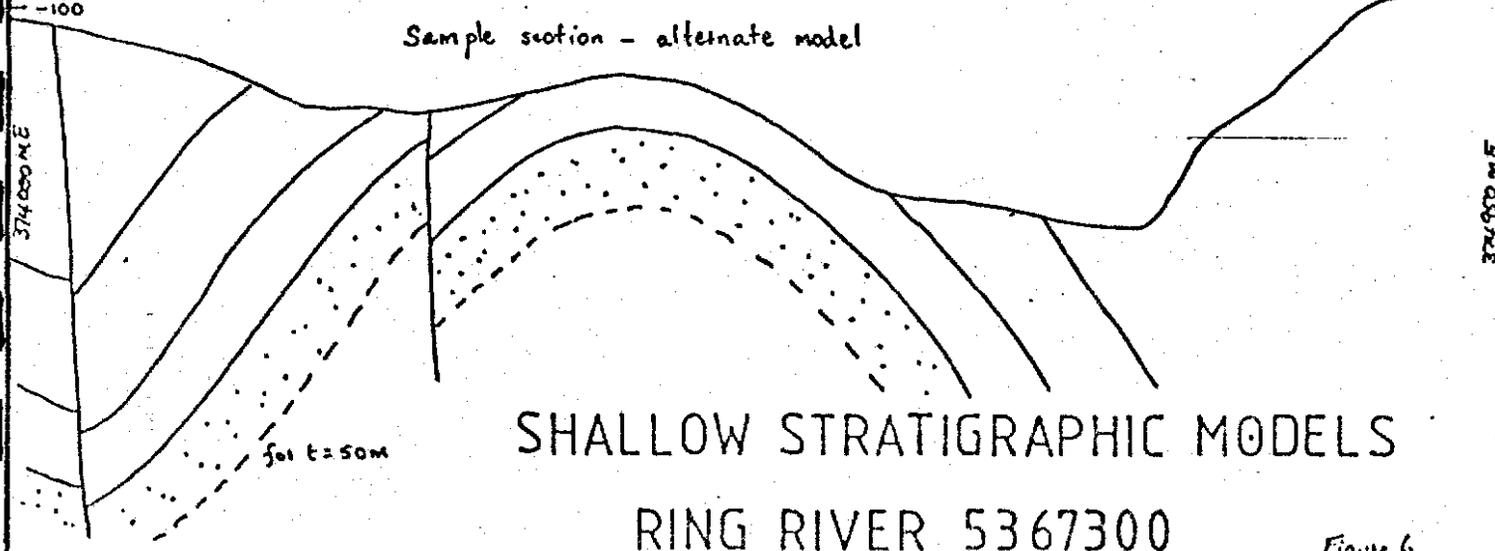
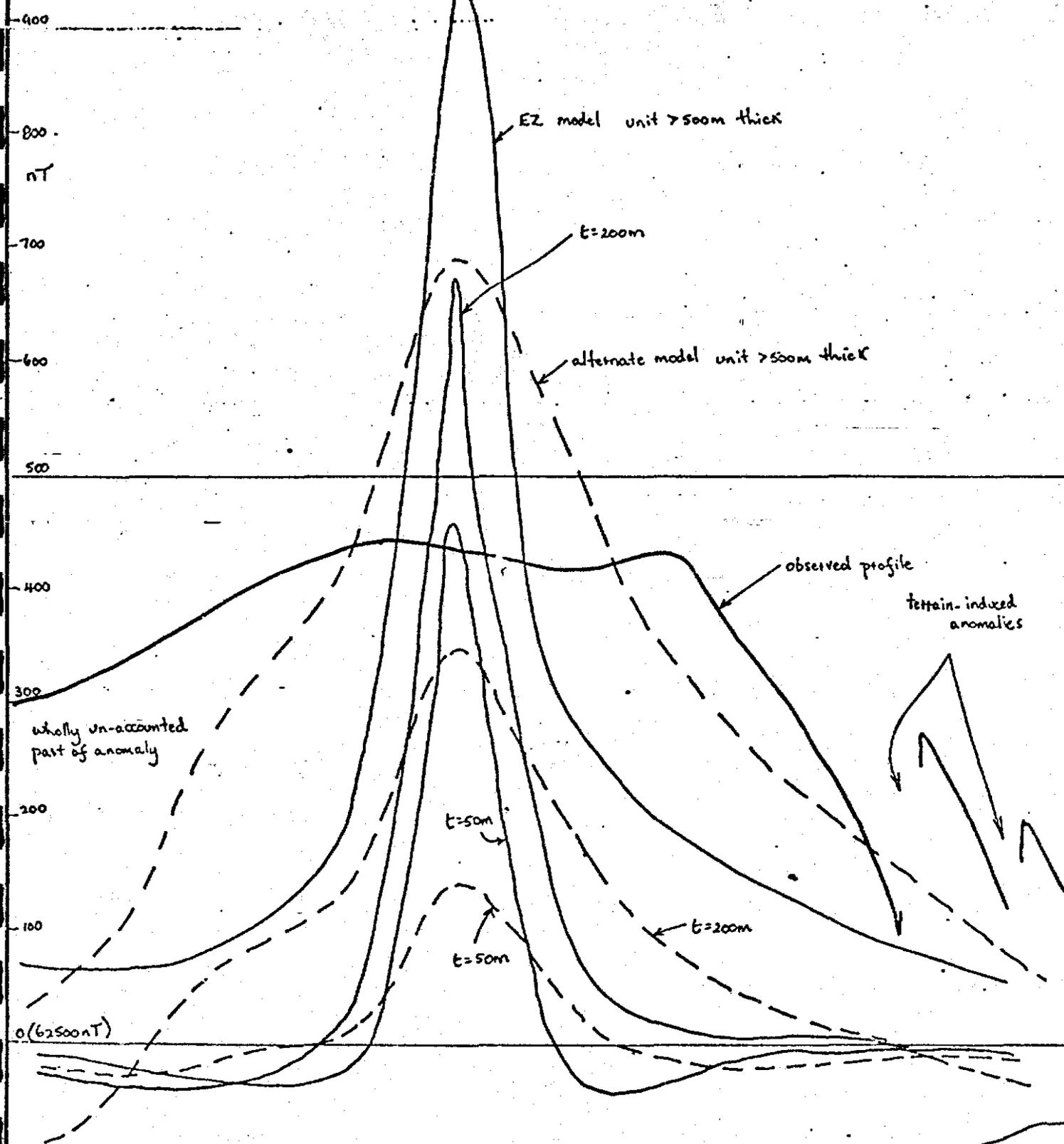
Figure 4



SHALLOW STRATIGRAPHIC MODELS - RING RIVER 5366900

Figure 5

549064 040



SHALLOW STRATIGRAPHIC MODELS
RING RIVER 5367300

Figure 6

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FURTHER REVIEW:
RING RIVER MAGNETIC ANOMALY.

for
ELECTROLYTIC ZINC CO. A/ASIA LTD.

by
D.E. LEAMAN
LEAMAN GEOPHYSICS

March 1983

INTRODUCTION:

The Ring River magnetic anomaly has been the subject of two previous reports; evaluation (Leaman, 1982) and review (Leaman, 1983). The first examined the analytic implications of the magnetic field and offered an 'igneous' plug-form solution. The review report considered the possibility of folded magnetic tuff as a solution. It was concluded in accord with the 'igneous' solution, that no exposed unit acted as a significant part of the source which must lie at depths in excess of 200 metres. It was shown, however, that an appropriate, folded stratigraphic unit could yield the anomaly; the depth deduced for such a unit being dependent on both its thickness and contrast. In the absence of any controlling data, either in respect of depth to upper surface, source contrast or source type, it is not possible to separate alternatives.

Some limits in absurdio can be suggested. Unfortunately no such limit can be applied to the 'igneous' solution since a very large volume of low contrast material is indistinguishable from a lesser volume of variable to high contrast material within the implied depth range for the upper surface of the body (225 - 400 m). Any sedimentary solution is quite different since thick source units have to be identified and the properties leading to the anomaly are unlikely to be restricted to a very small part of the province. Such a solution becomes less likely as the implied contrast is increased; especially where the thickness is substantial. The review showed that at 250 m depth such a unit would need to be about 250 m thick and possess the exceptional (for a sedimentary rock) contrast of 0.005 cgs. At greater depths an increase in thickness (same contrast) or contrast (same thickness) is required. Both seem improbable. At lesser depths any reasonable structural form would yield short wavelength features which are unsupported by actual observations south of 5367400N. Exposed tuffs source local anomalies only.

These thoughts have led EZ Rosebery staff to question whether stratibound mineralisation of the Renison type could produce the localised Ring River magnetic feature. This report examines the possibility that the anomaly is directly related to mineralisation rather than gross structural features.

DISCUSSION:

The proposition for test: pyrrhotite-based mineralisation.

- What is the effect on the magnetic field of
- a) three thin, high contrast units folded into the alternate structural form as proposed in the review report, with
 - b) contrast: 0.015 cgs, reflecting pyrrhotite, and
 - c) each unit 15-20 m thick separated by 40-60 m of unmineralised host:

It is likely that any such mineralisation would be somewhat patchy, variable and localised and the modelling has allowed for this. This is in accord with the character of the anomaly and stresses a weakness in the simple stratigraphic solution based on the current interpretation of the structure. The EZ, or alternative, structural propositions discussed in the review (Leaman, 1983) are relatively two dimensional even after allowing for the effects of a northerly plunge. Unless complex cross-folding is present, and has led to a variable plunge across the area, no stratigraphic source could yield a virtual point anomaly. This observation should be considered in association with the thickness-contrast deductions summarised above while noting that realistic profiles can be generated over the anomaly pinnacle (but not the extremities).

Modelling techniques for the appraisal are specialised and the sources were carefully conceived then defined to maintain calculation precision and concept fidelity. The bodies modelled are very thin in relation to their depth and lateral extent and non-planar. All computations use three dimensional assumptions and algorithms.

Three styles of model have been tested.

1. Strictly as per proposition; 3 x 20 m units separated by 50 m.
2. As per proposition but in a closed structural form with limits comparable to the analytic boundaries described in the original evaluation (Leaman, 1982).
3. As per proposition but with a systematic reduction in contrast away from the fold axis. This option leads to very complex, extended computation and difficult specification.

These models can be considered to include the case of a group of discrete bodies (100-120 m radius, 15 m thick, $k=0.015$ cgs) whether present as stratibound/replacement units or structurally-controlled, dilatatory bodies. Clearly it is not possible with available control to separate the multitude of possible property shape-contrast options. The object of the modelling has been to assess possible general solutions and locate the source concentration.

The models, using the contrast specified, have shown that all three styles can generate the required anomaly amplitude and approximate wavelength provided the three magnetic units lie in the depth range 200 to 400 m and it is unlikely that the upper unit is deeper than 225 to 250 m. If the units are deeper then they must be thicker or more numerous than specified. An increase in bulk contrast would be very difficult to justify.

The anomaly matches are improved if variations of source extent or contrast are allowed and the entire anomaly is examined as was done in the original evaluation. Model styles 2 and 3 lead to results comparable to the plug solution. The implications of style 3 are clearly quite significant and are applicable if there is no evidence for a southerly plunge in the south of the area.

Model style 1 is comparable to a simple stratigraphic solution (as described by Leaman, 1983) with a body around 160 m thick and an average contrast of about 0.006 cgs. However, the banded

nature of the sources leads to some critical deviations, depending on particular three dimensional field-source aspect interactions, with respect to the source-anomaly position relationship. These shifts are particularly evident for styles 2 and 3 where the source centre lies some 150 m west of the 'igneous' plug pinnacle/fold axis zone. The above discussion neglects any impact remanent magnetisation may have on source position shifts.

When the anomaly is assessed in the manner of model styles 2 and 3 the heart of the source (or source array) appears to lie on an extension of the Fahlore Mines mineralised zone rather than on the fold axis. The form of the anomaly then suggests that most of the source lies west of the fold axis in the west-dipping limb of the fold (locally thicker units or more of them)(see Figure 6, Leaman 1983 for structural section). The rapid attenuation of anomalies to the east may then reflect a thinning in this direction. As a consequence the drill hole proposed in the review report may not be ideally located to test this option for two reasons; the inclination may be too steep and it may be too far east, leading to an undershoot of the target zone - especially if patchy or thinned eastward. The suggested hole is only adequate to test plug, aureole or major stratigraphic sources.

Using the presumptions outlined above the source is centred at 200-250 m minimum depth at 374300-400mE, 5367100-200mN. Siting of an appropriate drill hole to adequately test the slightly divergent target zones, depending on preferred target type or origin, may be difficult in view of access problems.

REFERENCES:

- Leaman, D.E., 1982: Evaluation: Magnetic anomalies Ring River and Colebrook Hill. Report for EZ Co. Rosebery by Leaman Geophysics October.
- Leaman, D.E., 1983: Review: Ring River magnetic anomaly. Report for EZ Co. Rosebery by Leaman Geophysics, February.

Report submitted on behalf of
Leaman Geophysics
by

D. E. Leaman

Dr. D. E. Leaman B.Sc. Ph.D.
M.Aus.I.P.G., F.I.P.G.

APPENDIX D

Drill Logs CHP 236
 CHP 237
 CHP 238

Sampling Data, Analytical Results,
Petrophysical Data (CHP 238)

ELECTROLYTIC ZINC CO. OF ASIA LTD. ROSEBERY - TASMANIA		DIAMOND DRILL CORE RECORD					01 HOLE No. (197) CHP 238 1 of 5				
LOCATION	Colebrook Hill	TOTAL DEPTH	230m	03		02					
OBJECTIVE	To test coincident magnetic, E.M., and E.I.P. anomalies.	HOLESIZE	HQ -12m NQ-63m BQ-	8-12 Metre	13-16 Direction	17-18-21 Dip.	8-12 Metre	13-16 Direction	17-18-21 Dip.	ORE DIP. (8-11)	45°
RESULT	Geophysical anomalies due to disseminated and veinlet pyrrhotite. Low grade Sn mineralisation intersected.	COMMENCED	8.11.82	77	080°	41°				COLLAR DIP. (12-15)	087° AMG
		COMPLETED	18.11.82	128	089°	37°				R.L. (20-23)	480.1
		LOGGED BY	I.J. Mathison	179	094°	30°				CO-ORDS. 5,371,022.9N 374,974.6E	
				230	096°	26°				LOCATION	Colebrook Hill

METRE		ROCK DESCRIPTION	MINERALISATION	04										CORE REC'D	
FROM	TO			SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag-g/t	44-49 Au-g/t	50-55 Fe%	RUN
0	12.0	Non core drilling												0	-
12.0	26.2	Oxidised pale brown, fine grained clayey wacke with rare thin siltstone bands. Core rubbly in places. cba 30												12.0	NR
														14.0	0.2
														17.0	0.5
														20.0	2.1
														23.0	1.0
														26.0	1.4
26.2	32.0	Rubbly, iron stained, bleached fine grained wacke and indurated grey siltstone, thin limonite coatings on fractures.												29.0	0.5
														32.0	2.2
														35.0	1.2
														38.0	2.0
														40.0	0.1
														41.0	-
														44.0	-
32.0	38.0	Oxidised pale brown, fine grained clayey wacke - often rubbly												47.0	-
														50.0	-
														53.0	-
														56.0	-
														59.0	-
														62.0	-
														63.0	-
42.3	43.4	Gray, fine grained, siliceous wacke. Sparse thin carbonate veins.												65.0	-
														68.0	-
														71.0	-
43.4	54.0	Gray and dark grey "Crackle breccia" formed by soft sediment brecciation of wacke and siltstone with rehealing by quartz-carbonate veinlets. 30cm massive quartz-carbonate after 48.5	Irregular thin pyrite veins 46.4-46.8. 5cm magnetite with minor pyrrhotite at 52.8											74.0	-
														77.0	-
														80.0	-
														83.0	-
														86.0	-
														89.0	-
54.0	58.0	Green grey and gray fine grained wacke and siltstone. Minor irregular quartz-carbonate veining.												92.0	0.10
														95.0	-
														98.0	-
														101	-
58.0	62.4	Dark gray and gray fine grained wacke.	~5% pyrrhotite as thin blebs along bedding and as veinlets.											104	-
														107	-
														110	-
														113	-

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ELECTROLYTIC ZINC CO OF ASIA LTD
ROSEBERY - TASMANIA

DIAMOND DRILL CORE RECORD

HOLE No. CHP 238 3 of 6

A 11241

METRE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D		
FROM	TO							Sample Length	20-25 Pt%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	RUN	SHORT	
		90.8 Sample for thin section (53303) 91.1 Sample for thin section (53304)															
91.3	98.0	Green grey mudstone, siltstone & fine grained wacke. Good evidence of uphole (west) facing from grading and scour and fill	~10% pyrrhotite in veins, veinlets and disseminated 2cm pyrrhotite+chalcopyrite +arsenopyrite at 91.8														
98.0	104.6	Dark grey to green grey medium grained lithic wacke to mudstone-laminated in places 98.2 Sample for thin section (48268)	3cm pyrrhotite & chalcopyrite at 100.8. Minor disseminated & veinlet pyrrhotite														
104.6	107.4	Dark grey and green grey disturbed siltstone and mudstone - only rarely calcareous.	~10% pyrrhotite as veinlets & disseminated.														
107.4	115.8	Pale green grey lithic wacke to mudstone bedding often disturbed by soft sediment deformation. Good uphole (west) facing at 111.2 - mudstone fragments at base of coarse lithic wacke.	~5% pyrrhotite in veinlets and blebs - increasing to end with minor pyrite.														
115.8	118.2	Dark green grey foliated medium grained volcanic arenite with calcareous cement. Grains are well sorted and rounded. Numerous thin carbonate veins.	Minor pyrrhotite & pyrite in veins.														
118.2	128.0	Green grey medium grained lithic wacke to siltstone. Bedding often disturbed by soft sediment deformation. 20cm carbonate breccia with 20cm volcanic arenite at 120.5	<5% pyrrhotite disseminated and in veinlets.														
128.0	133.0	Dark grey fine grained wacke. Minor carbonate veining.															
133.0	135.5	Green grey siltstone - laminated in places - some soft sediment deformation.															

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ELECTROLYTIC ZINC CO OF A'ASIA LTD
ROSEBERY - TASMANIA

DIAMOND DRILL CORE RECORD

HOLE No. CHP 238 4 of 6

A 11241

METRE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D		
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	REUN	SHORT	
135.5	137.8	Dark grey, medium grained, foliated, volcanic arenite - rounded basic volcanic fragments in carbonate cement. 136.8 Sample for thin section (48269)															
137.8	142.2	Dark grey and green grey fine grained wacke and siltstone. Quartz carbonate veins with patches of chloritization common.	Minor pyrrhotite and trace chalcopyrite in quartz-carbonate veins.														
142.2	144.6	Greenish grey intensely veined wacke. Vein material disrupted by deformation.															
144.6	149.7	Greenish grey fine grained wacke to siltstone. Irregular quartz carbonate veins. cba 50	Minor pyrite in quartz carbonate veins.														
148.7	153.1	Dark grey, medium grained volcanic wacke to siltstone. Grading indicates down-hole (east) facing.	Minor blebs of pyrrhotite														
153.1	158.8	Dark grey, very disrupted, sheared and intensely veined calcareous siltstone 156-157 thin medium grained carbonate bed.	153.2-153.5 ~30% pyrrhotite with minor chalcopyrite in chloritic carbonate veins														
158.8	171.0	Dark grey and green grey soft sediment slump breccia of wacke and siltstone fragments. Some early carbonate veins also disrupted. Carbonate veins common. 168.2 Sample for thin section (48270)	Rare pyrrhotite blebs and veinlets														
171.0	175.0	Dark grey mudstone with some thin limestone and wacke units - patches of intense carbonate veining and replacement. Grading indicates uphole (west) facing.	~20% pyrrhotite as massive replacements, veinlets and bedded disseminations														
175.0	182.2	Pale grey stylolitic limestone - bedded with thin muddy bands in places. 182.5 Sample for thin section (48271)	10-20% pyrrhotite in veinlets start to 177.2 & 185.5 to end. Irregular magnetite veinlets & disseminated magnetite 177.3-177.8														

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ELECTROLYTIC ZINC CO OF ASIA LTD
ROSEBERRY - TASMANIA

DIAMOND DRILL CORE RECORD

HOLE No. CHP 238 5 of 6

A 11241

METRE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D		
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag -g/t	44-49 Au -g/t	50-55 Fe%	FUN	SHORT	
185.2	187.0	Contorted and brecciated mudstone - dark grey & grey green	~20% pyrrhotite in veins & replacements														
187.0	191.5	Cycles of grey wacke to dark grey shale - cycles 40-50cm. Numerous pyritic beds - many replaced & remobilised as pyrrhotite. Consistent uphole facing	5cm pyrite 188.5 1cm pyrite 188.8 & 189.8 1cm pyrrhotite 190.7, 190.8 & 191.2														
191.5	193.0	Brecciated and veined wacke and shale	~20% pyrrhotite in coarse sediments & veinlets.														
193.0	200.0	Cycles of grey fine grained wacke to black shale with 1-5cm pyrite or pyrrhotite beds every 50cm approx. cba 70. Consistent uphole facing. Bedding plane cleavage.	Pyrite beds & pyrrhotite bands - average one every 50cm.														
200.0	205.0	Grey fine grained wacke to black shale - laminated and with bedding plane cleavage	2cm pyrrhotite 202.8 5cm pyrite 205.0 Other thin bands 204.5														
205.0	107.0	Brecciated black shale, minor limestone and siltstone. Fracture system at 30 to core.	~20% pyrrhotite & pyrite as blocks, veins & patches.														
207.0	215.5	Black shale & siltstone with contorted laminations & disrupted bedding. No bedding plane cleavage.															
215.5	221.5	Black shale, siltstone & grey fine grained wacke. 219.7 Sample for thin section (48272)	~10% pyrrhotite & minor pyrite pyrite as veins, replacements & thin beds. 20cm pyrite bed at 219.5 in fine grained wacke.														
221.5	225.4	Grey fine grained wacke to black shale with bedding plane cleavage. cba 60	3cm pyrrhotite 223.4 1cm " 223.1 2cm " 225.1														
225.4	230	Slumped fine grained wacke, siltstone & black shale															
	ECH																

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ELECTROLYTIC ZINC CO OF ASIA LTD
ROSEBERY - TASMANIA

DIAMOND DRILL CORE RECORD

HOLE No. CHP 238 6 of 6

A 1121

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D		
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	RUN	SHORT	
		<u>SAMPLES FOR PETROPHYSICAL MEASUREMENTS</u>															
		48273	84.1m														
		48274	93.0m														
		48275	102.0m														
		48276	154.0m														
		48277	179.0m														
		48278	187.0m														
		48279	218.5m														
		<u>Refer to Report by D. Emerson</u>															
		<u>Samples 48264 - 272 described in C.M.S. Report 82/11/37</u>															
		<u>Samples 53303 - 04 described in C.M.S. Report 82/1/3</u>															

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CRP 238

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S = Sawn core
G = Grind or chip

Sample No.	From	To	Core Rec'd	Sample Length	Assay Data per ppm									
					Cu	Pb	Zn	Fe%	Mn	Cr	Ag	As	Sn	W
G46381	12.00	17.00		5.00	130	25	370	11.0	1200	100	1.0	17	X	8
392	17.00	20.00		3.00	395	90	500	10.5	1400	45	1.5	100	26	X
393	20.00	23.00		3.00	140	20	290	9.55	860	95	X	6	X	X
394	23.00	26.00		3.00	150	60	345	9.00	850	75	1.0	11	X	X
S46385	26.00	29.00		3.00	765	25	305	13.0	4350	90	X	540	1160	
385	29.00	32.00		3.00	235	20	470	25.0	1.50%	75	X	75	2040	
G46387	32.00	35.00		3.00	130	40	230	8.55	1750	60	1.0	8	39	13
388	35.00	38.00		3.00	115	55	300	8.00	1050	55	1.0	X	X	13
389	38.00	43.00		5.00	165	110	560	7.80	1050	160	X	X	X	X
46390	43.00	48.00		5.00	50	115	350	3.45	1300	50	0.5	8	X	8
391	48.00	53.00		5.00	30	60	200	2.45	1900	35	0.5	11	X	X
392	53.00	58.00		5.00	105	35	150	7.55	1950	60	1.0	21	4	10
S46393	58.00	59.00		1.00	205	170	125	8.30	3150	65	X	101	135	
394	59.00	60.00		1.00	280	60	105	8.65	1350	100	1.0	105	38	
395	60.00	61.00		1.00	130	45	135	5.90	2300	95	X	36	8	
396	61.00	62.00		1.00	170	35	115	8.85	5500	55	1.5	130	37	
397	62.00	63.00		1.00	100	50	440	6.50	2000	50	1.0	31	X	
398	63.00	64.00		1.00	130	30	165	6.50	1700	65	0.5	8	X	
399	64.00	65.00		1.00	120	10	145	7.75	2150	70	0.5	101	14	
46400	65.00	66.00		1.00	130	10	125	7.65	2700	80	X	22	X	
S2201	66.00	67.00		1.00	125	20	150	8.25	4400	150	X	101	31	
G52202	67.00	71.00		4.00	80	35	145	7.40	1350	290	0.5	5	X	9
S 203	71.00	72.00		1.00	70	5	125	6.95	1900	245	1.0	28	X	
204	72.00	73.00		1.00	195	5	170	8.65	2650	145	0.5	170	140	
205	73.00	74.00		1.00	130	5	120	6.75	1950	110	1.5	19	5	
206	74.00	75.00		1.00	210	10	105	7.70	2200	145	1.0	40	14	
207	75.00	76.00		1.00	70	15	120	7.20	2350	285	1.0	46	X	
208	76.00	77.00		1.00	140	15	130	8.25	2050	100	X	98	103	
209	77.00	78.00		1.00	100	15	300	7.50	1300	105	0.5	5	X	
S2210	78.00	79.00		1.00	110	60	910	6.35	1950	180	0.5	X	X	
211	79.00	80.00		1.00	125	70	680	6.05	1800	230	X	7	X	
212	80.00	81.00		1.00	125	265	1350	6.60	820	120	0.5	X	X	
213	81.00	82.00		1.00	100	15	330	7.45	1350	155	1.0	X	X	
214	82.00	83.00		1.00	110	85	360	6.95	1900	150	0.5	X	X	
215	83.00	84.00		1.00	75	20	165	6.40	2100	315	1.5	12	X	
216	84.00	85.00		1.00	90	40	225	7.15	1400	330	0.5	X	X	
217	85.00	86.00		1.00	70	70	195	7.40	1500	290	1.0	19	X	
218	86.00	87.00		1.00	115	30	160	6.50	1550	90	0.5	18	X	
219	87.00	88.00		1.00	160	15	155	8.20	2000	65	1.0	47	9	

540077

055

CMP 238 2 of 4

S = Sawn core
G = Grind or chip

Sample No.	From	To	Core Rec'd	Sample Length	Assay Data per ppm									
					Cu	Pb	Zn	Fe%	Mn	Cr	Ag	As	Sn	W
S52220	88.00	89.00		1.00	85	20	150	4.85	1050	55	X	5	X	
221	89.00	90.00		1.00	60	20	315	4.75	910	55	X	X	X	
222	90.00	91.00		1.00	60	20	95	3.60	1850	30	X	3	X	
223	91.00	92.00		1.00	510	10	100	15.00	9150	65	1.0	5900	1540	
224	92.00	93.00		1.00	140	10	175	8.15	1450	70	1.5	78	40	
225	93.00	94.00		1.00	100	35	155	6.35	1400	75	1.5	16	X	
226	94.00	95.00		1.00	130	40	760	7.55	1400	80	1.5	320	8	
227	95.00	96.00		1.00	125	20	160	7.45	995	80	1.5	10	X	
228	96.00	97.00		1.00	110	10	155	2.20	1300	165	0.5	9	X	
229	97.00	98.00		1.00	125	20	135	7.50	1050	155	1.0	130	X	
S2230	98.00	99.00		1.00	120	15	130	7.30	1000	165	0.5	5	X	
231	99.00	100.00		1.00	125	10	130	7.95	1050	255	0.5	12	X	
232	100.00	101.00		1.00	235	X	140	9.05	2850	170	1.0	33	183	
233	101.00	102.00		1.00	120	5	150	7.95	1025	75	X	8	X	
234	102.00	103.00		1.00	105	X	140	7.95	980	50	X	4	X	
235	103.00	104.00		1.00	95	X	130	8.40	1050	55	X	9	X	
236	104.00	105.00		1.00	120	X	110	7.50	1250	45	X	9	X	
237	105.00	106.00		1.00	105	10	145	4.20	1055	55	X	X	X	
238	106.00	107.00		1.00	105	15	180	4.40	1200	35	X	X	X	
239	107.00	108.00		1.00	100	10	165	5.15	1250	30	X	6	X	
S2240	108.00	109.00		1.00	120	10	125	6.65	1100	95	X	4	X	
241	109.00	110.00		1.00	120	X	220	8.25	1150	110	X	X	X	
242	110.00	111.00		1.00	90	15	140	7.20	1700	195	X	6	X	
243	111.00	112.00		1.00	95	15	125	7.00	1750	255	1.0	7	X	
244	112.00	113.00		1.00	95	15	135	7.15	1350	125	1.0	3	5	
245	113.00	114.00		1.00	125	70	525	5.05	775	50	1.5	X	X	
246	114.00	115.00		1.00	130	295	895	4.75	795	45	0.5	8	X	
247	115.00	116.00		1.00	140	230	1600	5.75	965	100	1.5	X	X	
G52248	116.00	119.00		3.00	80	10	175	7.40	1450	330	1.0	13	X	X
249	119.00	124.00		5.00	95	40	190	7.20	1650	145	0.5	7	X	23
S2250	124.00	129.00		5.00	115	85	270	8.35	1350	110	1.0	X	X	27
251	129.00	134.00		5.00	120	25	210	8.30	1500	145	0.5	23	X	8
252	134.00	139.00		5.00	85	50	265	7.55	1600	320	1.0	10	X	7
253	139.00	144.00		5.00	75	25	160	9.25	4000	155	1.5	18	5	X
254	144.00	149.00		5.00	135	85	330	8.00	1200	125	1.0	7	X	X
255	149.00	153.00		4.00	70	15	145	6.80	1400	60	1.0	6	X	21
S52256	153.00	154.00		1.00	175	15	195	8.40	3950	30	1.5	99	33	
257	154.00	155.00		1.00	35	20	80	6.40	2500	30	X	15	17	
258	155.00	156.00		1.00	10	15	65	4.85	1.00%	20	0.5	3	X	
259	156.00	157.00		1.00	115	10	75	5.55	3050	35	1.5	35	10	
S2260	157.00	158.00		1.00	40	10	85	8.00	2000	70	2.0	41	X	

540078

CHP 239

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S = Sawn core
G = Grind or chip

Sample No.	Core		Sample Length	Assay Data per ppm									
	From	To		Core Rec'd	Cu	Pb	Zn	Fe%	Mn	Cr	Ag	As	Sn
552051	158.00	159.00	1.00	35	10	75	6.40	1700	45	0.5	25	5	
252	159.00	160.00	1.00	60	10	70	6.10	1150	40	X	46	X	
253	160.00	161.00	1.00	25	5	95	6.70	1650	50	1.5	17	X	
254	161.00	162.00	1.00	15	5	75	5.25	1400	40	1.5	17	X	
255	162.00	163.00	1.00	60	10	70	4.15	715	65	1.5	19	X	
256	163.00	164.00	1.00	60	10	75	4.65	845	50	1.0	12	X	
257	164.00	165.00	1.00	75	15	90	6.65	1750	90	1.5	35	7	
258	165.00	166.00	1.00	145	10	80	5.00	995	75	1.5	30	X	
259	166.00	167.00	1.00	90	5	80	5.25	985	25	0.5	19	X	
52270	167.00	168.00	1.00	100	10	80	5.05	1200	65	1.0	20	X	
271	168.00	169.00	1.00	25	15	60	4.70	1150	40	1.0	19	6	
272	169.00	170.00	1.00	30	10	60	4.30	1150	40	1.0	39	X	
273	170.00	171.00	1.00	30	10	55	5.40	1300	45	1.5	51	10	
274	171.00	172.00	1.00	270	15	55	7.15	4000	20	1.0	160	24	
275	172.00	173.00	1.00	60	25	45	2.95	1350	80	1.5	29	7	
276	173.00	174.00	1.00	80	25	20	1.50	135	75	1.5	29	17	
277	174.00	175.00	1.00	85	40	30	1.75	160	50	1.5	26	72	
278	175.00	176.00	1.00	20	20	90	1.61	905	50	1.0	17	X	
279	176.00	177.00	1.00	10	25	35	1.50	3000	10	1.0	X	X	
52280	177.00	178.00	1.00	10	10	35	15.0	2.20%	X	X	8	12	
281	178.00	179.00	1.00	5	10	25	1.85	2650	5	X	3	X	
282	179.00	180.00	1.00	5	10	30	1.65	2750	5	X	5	X	
283	180.00	181.00	1.00	5	20	75	1.70	2550	5	0.5	X	X	
284	181.00	182.00	1.00	5	20	180	1.55	3650	X	X	4	X	
285	182.00	183.00	1.00	5	10	45	1.25	2700	X	X	4	X	
286	183.00	184.00	1.00	5	5	30	1.15	2500	5	X	X	X	
287	184.00	185.00	1.00	5	20	35	1.50	2700	X	X	X	X	
288	185.00	186.00	1.00	15	15	30	2.50	3100	X	X	4	X	
289	186.00	187.00	1.00	85	10	30	3.60	1350	10	X	11	19	
52290	187.00	188.00	1.00	25	10	55	1.50	235	15	X	19	X	
291	188.00	189.00	1.00	25	20	45	1.95	840	10	X	31	X	
292	189.00	190.00	1.00	20	10	35	2.55	660	10	X	19	X	
293	190.00	191.00	1.00	25	10	25	2.55	595	20	X	13	X	
294	191.00	192.00	1.00	20	5	25	2.15	560	15	X	15	X	
295	192.00	193.00	1.00	35	5	30	2.85	950	10	X	11	8	
296	193.00	194.00	1.00	40	5	25	2.45	470	15	X	20	6	
297	194.00	195.00	1.00	40	5	30	3.30	985	20	X	12	10	
298	195.00	196.00	1.00	80	10	20	3.10	425	20	X	4	14	
299	196.00	197.00	1.00	155	10	20	3.65	730	20	X	1700	21	
52300	197.00	198.00	1.00	35	5	25	2.90	765	20	X	21	7	
53201	198.00	199.00	1.00	30	15	30	2.80	570	20	X	19	X	
202	199.00	200.00	1.00	40	20	30	1.90	605	20	0.5	17	X	
203	200.00	201.00	1.00	30	5	30	2.80	575	15	X	35	X	
204	201.00	202.00	1.00	30	15	30	2.90	440	30	X	19	X	

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Sample No.	From	To	Core Rec'd	Sample Length	Assay Data per ppm									W	S = Sewn core G = Grind or chip
					Cu	Pb	Zn	Fe%	Mn	Cr	Ag	As	Sn		
553205	202.00	203.00		1.00	25	15	25	3.20	550	20	X	24	X		
205	203.00	204.00		1.00	25	10	30	2.60	440	15	X	19	X		
207	204.00	205.00		1.00	20	15	30	3.00	710	20	X	13	X		
208	205.00	206.00		1.00	20	25	35	3.40	1300	20	X	12	X		
209	206.00	207.00		1.00	45	20	25	1.75	1200	25	X	19	X		
53210	207.00	208.00		1.00	20	5	25	2.45	470	20	X	22	X		
211	208.00	209.00		1.00	20	10	35	3.20	755	20	X	17	X		
212	209.00	210.00		1.00	25	10	25	2.85	430	20	X	15	6		
213	210.00	211.00		1.00	50	15	40	3.50	575	40	X	105	4		
214	211.00	212.00		1.00	30	10	20	2.05	315	30	X	33	10		
215	212.00	213.00		1.00	25	10	25	2.15	340	25	X	19	X		
216	213.00	214.00		1.00	25	15	35	3.30	650	25	X	4	X		
217	214.00	215.00		1.00	25	30	75	3.25	1000	25	0.5	15	5		
218	215.00	216.00		1.00	25	5	25	2.10	365	20	X	19	X		
219	216.00	217.00		1.00	35	15	40	2.90	800	30	X	160	X		
53220	217.00	218.00		1.00	45	25	45	3.10	1250	30	X	72	X		
221	218.00	219.00		1.00	30	25	35	2.70	710	25	0.5	31	X		
222	219.00	220.00		1.00	25	20	25	2.15	575	20	X	29	X		
223	220.00	221.00		1.00	40	25	25	2.85	875	30	X	7	X		
224	221.00	222.00		1.00	55	25	25	3.10	950	25	0.5	450	14		
225	222.00	223.00		1.00	40	10	25	3.10	665	30	0.5	21	7		
225	223.00	224.00		1.00	50	15	30	3.00	425	25	0.5	13	X		
227	224.00	225.00		1.00	25	15	30	2.60	715	30	0.5	18	X		
228	225.00	226.00		1.00	25	15	25	2.70	570	20	0.5	13	X		
53229	226.00	230.00		4.00	20	15	45	2.35	515	30	X	9	X		X

PHYSICAL PROPERTIES

Sample	k cgs x 10 ⁻⁶	\bar{J}	NRM Azimuth°	Incl°	Q _n	DBD gms/cc	P _a %	$\rho_{0.1}$ ohm m	$\sigma_{0.1}$ S/M	PFE 0.1-1.0 Hz
48273 (84.10)	230	(a) 964 (b) 2,782	354	-37 -17	.7	2.84 2.72	0.3 0.3	2617	3.82 x 10 ⁻⁴	0
-4 (93.00)	1100	(a) 18,915 (b) 6,167	226	-33 -57	28	2.81 2.84	0.9 0.3	1546	6.47 x 10 ⁻⁴	25
-5 (102.00)	150	(a) 95 (b) 92	042	-41 -44	1	2.80 2.82	0.5 0.7	1678	5.96 x 10 ⁻⁴	0
-6 (164.00)	140	(a) 21 (b) 36	(104) <	-4 -46?	0.2	2.80 2.79	0.15 2.4	2445	4.09 x 10 ⁻⁴	0
-7 (179.00)	100	(a) 2 (b) 0.4	128	-35 -42	0.03	2.88 2.84	0.3 0.4	3296	3.03 x 10 ⁻⁴	0
-8 (187.00)	290	(a) 2,900 (b) 189	106	-69 -48	16	2.78 2.72	1.2 0.6	731	1.37 x 10 ⁻³	18%
48279 (218.50)	280	(a) 446 (b) 350	037	-61 -33	2.5	2.79 2.77	1.2 1.4	324	3.09 x 10 ⁻³	17% (1-10 Hz)

- Notes:
1. k: is magnetic volume susceptibility in cgs x 10⁻⁶, all samples are weakly susceptible except No. 48274 which is moderately susceptible and also strongly remanently magnetized.
 2. NRM: remanence data given as \bar{J} in μ gauss i.e. $\text{emu} \times 10^{-6}$ (magnitude) and inclination. All inclinations are positive w.r.t. core markings but really negative i.e. the magnetization is pointing uphole; the absolute azimuth is not known because of lack of orientation in the x-y plane.
 3. Q_n: Koenigsberger Ratio: the ratio of remanent to induced (k/\bar{F}) magnetization \bar{F} is taken as 0.625 gauss (62500 nT) rounded figure cited.
 4. DBD is dry bulk density and P_a is apparent porosity - two pieces of each sample were measured.
 5. $\rho_{0.1}$ is the 0.1 Hz (\approx DC) resistivity for water saturated cores as supplied. $\sigma_{0.1}$ is the conductivity in siemens/metre.
 6. PFE is percent frequency effect ($\rho_{0.1} - \rho_{1.0}$)/($\rho_{1.0}$) in the frequency domain. A rough rule of thumb is that 1% PFE \approx 5 mv sec/volt chargeability (m.secs) \approx -5% m.rad. phase shift.
 7. The electrical properties obtain for the blocks submitted - it should be remembered that inhomogenities and jointing (if present) will affect in situ resistivities - generally rendering them less than those measured in the lab. See the attached sheet for computation of in situ resistivities in jointed ground.

ELECTROLYTIC ZINC CO. OF AUSTRALIA LTD. ROSEBERRY - TASMANIA										DIAMOND DRILL CORE RECORD										01 HOLE No. (3-7) CHP 237 1 of 3	
LOCATION Colebrook Hill			TOTAL DEPTH 122'			03 8-12 Metre		13-16 Direction		17-18-21 Dip.		8-12		13-16 Direction		17-18-21 Dip.		02 ORE DIP. (8-11)		59°	
OBJECTIVE To test a magnetic anomaly occurring east of main serpentinite outcrop.			HOLE SIZE HQ-15 NQ-47 BQ-			62		7278°		60.5°								COLLAR DIP. (12-15)		270° AMG	
RESULT Magnetic anomaly due to serpentinite. No significant mineralisation.			COMMENCED 30.10.82			122		7285°		61°								R.L. (20 23)		397.1	
			COMPLETED 6.11.82															CO ORDS. 5,370,823.17 374,564.2C		LOCATION Colebrook Hill	
METRE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	04		CORE REC'D	ASSAY DATA							CORE REC'D						
FROM	TO				8-13 FROM	14-19 TO		Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	Run	Short					
0	15.0	Non core drilling																15.00	NR		
15.0	25.0	Rubbly, oxidised, pale brown medium grained volcanic wacke and minor siltstone.																17.00	1.80		
25.0	26.0																	20.00	1.20		
26.0	31.0	Oxidised reddish brown medium grained volcanic wacke and siltstone.																23.00	1.20		
31.0	32.5	Oxidised grey and pale brown siltstone - sheared and brecciated in places cba 60°																23.30	-		
32.5	41.0	Brown and yellow talcose clay - some massive talc.																25.00	1.10		
41.0	44.0	Oxidised and leached talc - silica alteration of serpentinite																29.00	-		
44.0	47.0	No recovery - ?as above																32.00	0.20		
47.0	50.6	Partially oxidised and brecciated and rehealed serpentinite (weakly magnetic)																35.00	2.20		
50.6	52.5	Yellow green clay = altered serpentinite																38.00	2.40		
52.5	53.5	Pale yellow green porcellanous serpentinite with no regular shearing direction. Weakly magnetic.																39.00	1.20		
53.5	54.0	Medium granular apple green serpentinite with disseminated subhedral magnetite and veinlets of fibrous magnetite.																41.00	1.00		
54.0	74.0	Porcellanous apple green intensely sheared serpentinite. Disseminated and veinlet magnetite.																42.70	0.50		
																		44.00	1.20		
																		47.00	3.00		
																		50.00	0.90		
																		53.00	1.40		
																		55.30	-		
																		57.40	0.20		
																		59.00	-		
																		62.00	-		
																		65.00	-		
																		68.00	0.50		
																		70.80	-		
																		74.00	0.40		
																		77.00	0.20		
																		79.30	0.60		
																		81.50	0.8		
																		83.00	-		
																		86.00	-		
																		89.00	-		
																		92.00	-		
																		95.00	1.00		
																		98.00	-		
																		101	-		
																		104	0.5		
																		107	-		
																		110	-		

CUP 237

S = Sawn core
G = Grind or chip

Sample No.	From	To	Core Rec'd	Sample Length	Assay Data per ppm									
					Cu	Pb	Zn	Fe%	Mn	Cr	Ag	As	Sn	W
G 43599	15.00	17.00		2.00	260	290	165	8.70	265	375	0.5	50	B	17
43599	17.00	20.00		3.00	240	115	185	7.90	850	140	X	27	X	15
591	20.00	23.00		3.00	275	715	305	10.0	1800	230	X	39	X	X
592	23.00	26.00		3.00	190	145	290	9.20	1000	130	X	15	X	X
593	26.00	29.00		3.00	180	190	205	9.35	1600	110	0.5	31	X	6
594	29.00	32.00		3.00	250	140	210	7.55	1150	115	1.0	60	5	7
595	32.00	35.00		3.00	65	15	845	6.35	3600	4000	X	290	X	X
596	35.00	39.00		3.00	150	645	675	6.65	4750	1050	X	180	23	4
597	38.00	41.00		3.00	65	15	460	5.55	655	5600	0.5	92	X	X
598	41.00	47.00		6.00	5	10	430	3.85	2100	2750	X	56	X	X
599	47.00	50.00		3.00	5	10	115	3.30	990	2000	1.0	X	X	X
43600	50.00	53.00		3.00	5	5	120	3.95	645	2100	0.5	4	X	9
45590	53.00	55.30		2.30	X	5	70	4.15	805	1150	0.5	6	X	6
591	55.30	57.60		2.30	X	5	70	5.75	800	2200	X	8	X	X
592	57.60	60.00		2.40	X	5	75	5.85	625	2100	X	X	X	X
593	60.00	63.00		3.00	X	5	60	4.35	530	1400	1.0	X	X	7
594	63.00	65.00		2.00	X	X	55	3.30	325	1300	X X	X	X	X
595	65.00	68.00		3.00	5	5	80	3.75	430	1000	X	5	X	4
596	68.00	70.80		2.80	10	20	60	3.05	625	1150	1.0	X	X	9
597	70.80	74.00		3.20	10	5	55	2.95	530	560	1.0	X	X	5
598	74.00	77.00		3.00	5	10	60	2.95	365	560	0.5	X	X	X
599	77.00	79.30		2.30	X	5	50	2.50	885	400	0.5	X	X	X
45600	79.30	82.00		2.70	5	15	60	3.35	340	1050	0.5	X	X	X
45298	82.00	86.00		4.00	10	10	80	3.65	550	1350	0.5	X	X	5
299	86.00	90.00		4.00	5	5	95	6.95	390	2850	X	X	X	X
45300	90.00	92.50		2.50	5	X	100	4.90	310	1800	X	4	X	15
45693	93.50	97.00		3.50	15	15	90	5.25	390	1350	X	4	X	5
694	97.00	101.00		4.00	5	10	85	4.65	700	1200	X	X	X	11
695	101.00	104.00		3.00	5	X	80	1.45	1900	280	X	8	X	15
696	104.00	107.00		3.00	2	5	75	2.90	330	1250	X	6	X	X
697	107.00	110.00		3.00	X	X	70	3.05	385	1030	X	1	X	10
698	110.00	114.00		4.00	5	10	55	2.30	335	585	X	X	X	X
699	114.00	118.00		4.00	X	X	80	3.60	305	1850	X	1	X	11
45700	118.00	122.00		4.00	5	5	85	5.80	450	1750	X	X	X	X

EOH

METRE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE RECD	ASSAY DATA							CORE RECD	
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	HUN	SHORT
0	15.0	Non core drilling												15.00	NR	
15.0	19.5	Oxidised, yellow brown, medium grained volcanic wacke-rubbly and clayey in places.												17.00	1.10	
19.5	22.9	Partially oxidised, yellow brown to dark grey, fine grained volcanic wacke with some siltstone beds. cba 40												19.30	0.60	
22.9	25.0	Partially oxidised, yellow brown to dark grey medium-coarse grained volcanic wacke with numerous lithic fragments to 1cm	Minor disseminated pyrrhotite and thin pyrite coatings on fracture surfaces.											20.00	-	
25.0	28.5	Dark grey, thin bedded siltstone and fine medium grained volcanic arenite. Graded bedding and scour and fill give down hole (west) facing. cba 50	Thin heavy mineral concentrations at base of some arenite bands.											22.10	0.20	
28.5	36.0	Dark grey, fine to medium grained volcanic wacke with rare, thin siltstone beds. Siltstone fragments to 2mm in coarser units. Some thin irregular quartz-carbonate veining.	Very minor pyrrhotite in narrow breccia zone at 29.3 rehealed with quartz carbonate.											23.00	0.30	
36.0	40.1	Dark grey, fine to medium grained volcanic arenite with some siltstone beds. Arenites contain numerous pale green lithic fragments 2-4mm. Scattered, irregular quartz carbonate veins. Core broken and oxidised around 37.0												24.40	0.50	
40.1	43.7	Dark grey, medium grained volcanic arenite with lithic fragments as above. Some laminated siltstone. Core brecciated and rehealed with 5 cm quartz at 40.2, 40.5, 40.7 and 42.1. cba 40												26.00	0.20	
		41.0 Sample for thin section (4R261)												29.00	-	
														32.00	-	
														35.00	0.20	
														37.70	-	
														38.00	0.10	
														39.00	-	
														48.50	-	
														50.30	-	
														53.00	-	
														55.00	-	
														59.00	-	
														61.00	-	
														64.00	0.10	
														67.90	-	
														71.00	-	
														74.00	-	
														77.00	-	
														80.00	-	
														83.00	-	
														86.00	-	
														89.00	-	
														92.00	-	
														94.00	-	
														97.90	-	
														100.00	-	
														119.00	-	
														600	-	

549089

METRE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D	
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	RUN	SHORT
115.9	117.8	Dark grey, fine grained volcanic wacke and disrupted siltstone. 20cm breccia with quartz at 117.6. cbs 30	Minor pyrite and trace chalcopyrite associated with quartz veins and veinlets.													
117.8	119.0	Dark purplish grey fine to medium grained volcanic wacke. Common irregular cross-cutting quartz veinlets. cbs 35 <u>Samples 48261 - 48263 described in CMS Report 82/11/37</u>	Minor pyrite in quartz veins at 118.0													

A11241

HOLE No. CHP 236 4 of 4

ELECTROLYTIC ZINC CO OF ASIA LTD
ROSEBERY - TASMANIA

DIAMOND DRILL CORE RECORD

CHP 236

Sample No.	From	To	Core Rec'd	Sample Length	Assay Data per ppm									S = Sawm Core G = Grind or Chip U
					Cu	Pb	Zn	Ag	Fe%	Mn	Cr	As	Sn	
G 43558	15.00	17.00		2.00	130	60	435	X	9.00	1300	70	6	X	16
559	17.00	19.30		2.30	140	5	270	X	10.5	1150	80	4	X	10
560	19.30	20.00		0.70	130	5	180	X	9.45	1150	65	14	X	27
561	20.00	23.00		3.00	145	10	195	X	9.35	1300	75	14	X	6
562	23.00	24.40		1.40	135	20	245	X	8.65	1550	75	9	X	31
563	24.40	25.00		1.60	125	15	260	X	8.10	965	105	19	X	21
564	25.00	31.00		5.00	135	10	200	X	8.90	1450	70	13	X	8
565	31.00	36.00		5.00	115	20	230	X	8.80	1450	65	X	X	18
566	36.00	41.00		5.00	110	30	260	0.5	8.50	1350	60	5	X	16
567	41.00	45.00		4.00	100	30	250	X	8.15	1450	65	12	X	X
568	45.00	50.00		5.00	340	25	185	0.5	9.00	2150	55	400	6	19
569	50.00	55.00		5.00	95	10	170	X	8.50	1400	70	4	X	4
43570	55.00	60.00		5.00	85	30	175	X	8.75	1600	85	X	X	X
571	60.00	63.00		3.00	125	150	260	X	8.90	1400	110	X	X	21
572	63.00	66.00		3.00	120	30	230	X	8.40	1350	105	X	X	19
S 573	66.00	67.00		1.00	205	25	145	2.0	9.80	2000	95	31	23	14
G 574	67.00	72.00		5.00	130	25	200	X	8.65	1250	105	5	X	16
575	72.00	77.00		5.00	105	35	245	X	8.65	1200	120	X	5	17
576	77.00	82.00		5.00	125		230	X	8.20	1200	105	X	X	14
577	82.00	87.00		5.00	125	50	210	0.5	8.35	1250	110	7	X	20
578	87.00	92.00		5.00	130	15	185	X	8.15	1300	105	X	X	X
579	92.00	96.00		4.00	155	20	200	X	9.00	1550	120	7	7	X
43580	96.00	98.00		2.00	1240	15	185	X	8.90	1300	100	4	X	11
S 581	98.00	99.00		1.00	115	10	160	X	8.85	1300	125	18	X	19
582	99.00	100.00		1.00	85	10	180	X	8.05	1200	110	47	X	X
G 583	100.00	105.00		5.00	150	10	205	X	9.15	1300	110	6	X	8
584	105.00	110.00		5.00	115	10	200	X	9.00	1350	170	5	10	11
585	110.00	113.00		3.00	285	20	200	X	9.50	1200	100	5	X	4
586	113.00	115.00		2.00	185	20	225	X	9.30	1100	115	6	X	9
587	115.00	116.00		1.00	275	25	215	X	10.0	1300	90	5	18	4
588	116.00	119.00		3.00	165	25	305	0.5	11.5	1450	130	3	5	12

EOH

APPENDIX E

Colebrook Hill Geophysics



549092 069:

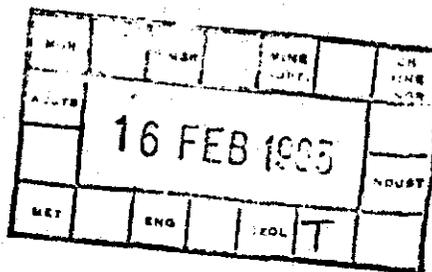
GEOPHYSICAL EXPLORATION CONSULTANTS PTY. LTD.

Suite 106, 104 Mount Street, Heidelberg, Victoria 3084

Telephone (03) 459 0533

14 February 1983

The Manager,
West Coast Mines,
E.Z. Company of Australasia Ltd.,
P.O. Box 21,
ROSEBERY, TASMANIA 7470



Attention: Mr. J. H. A. Mill

Dear Sir,

Drill hole CHP 238 - Geophysical Data

The geophysical and geological data associated with this drill hole correlates very well.

Firstly, the Dighem data: the anomaly is very weak and does not indicate a massive conductor, i.e. 25% sulphides or more. But its association with a magnetic anomaly increases its relevance, particularly in this area of Tasmania.

The ground geophysical profiles provide more information. The GENIE EM profile provides a clear anomaly between 374980E and 375120E which confirms the reality of the Dighem response. Without knowing the frequencies which were used for this survey, it is not possible to say anything other than it is an anomaly; the source is about 140m wide, probably vertical, and relatively shallow.

There is a corresponding VLF anomaly, but this technique quite often produces a multitude of anomalies in any survey area and it would have been unusual if there was not an anomaly from what is such a shallow source.

The ground magnetic data clearly defines a 600 nT anomaly which correlates directly with that shown by the airborne survey. An approximate interpretation gives a body also of 140m in width indicating a coincidence of magnetic and conductive material.

The IP profile is unusual in that there is a preponderance of non-readings. The zone of low resistivity is extensive and far beyond the limits of the EM response. The changeability figures are high, but again are very extensive and do not define a particular anomalous body.

The drill hole is ideally sited to test both the EM and magnetic response.

.../2

The measurements of magnetic susceptibility divide the drill section into four major zones:

0 - 55m	:	predominantly non-magnetic
55m - 116m	:	500×10^{-6} CGS units
116m - 188m	:	200×10^{-6} CGS units
188m - 230m	:	300×10^{-6} CGS units.

The zone between 55m and 116m has a sufficient average magnetic susceptibility to cause the surface magnetic anomaly. The drill log indicates up to 10%pyrrhotite within this interval which is sufficient to cause the magnetic susceptibility; and the conductivity is sufficient to cause the surface EM response.

The downhole Sirotem data indicates a broad anomalous feature between 60m and 120m which again, correlates with the drill log, and the core measurements. The first profile, with the transmitting loop west of the drill-hole, shows a sharp cross-over at 65m in channels 2, 4 and 6: the later channels are less responsive indicating only a moderate conductivity to the rock. The cross-over at 120m migrates down the drill-hole at the later time channels indicating an extension of the conductive zone with depth. The second down-hole Sirotem profile, which has the transmitting loop to the east, shows a sign reversal which is expected. The anomaly is not so well defined because of the relationship between the loop and the dip of the body which results in a poor electromagnetic coupling.

The two Sirotem profiles suggest an easterly dip to the conductive body.

The rock property measurements tend to confirm the comments above. The resistivity measurements may not be meaningful in their absolute values because the samples will have changed their petrography and lost moisture. The samples from 187.0m and 218.5m are surprisingly low: there is no Sirotem response at these depths.

In summary, the drill hole has intersected rocks with adequate anomalous physical properties to explain the response on the surface.

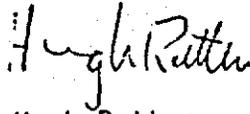
Although the mineralised intersection does not contain exceptional amounts of tin, copper, zinc or lead, there is no geophysical limit which says that the horizon will not improve with depth, or a long strike: this becomes a geological assessment. The horizon can be followed along strike with magnetics or EM, if it remains close to the surface. If the zone plunges then a more powerful EM system is recommended. The UTEM, wide loop EM system would be appropriate.

It is rather difficult to be more specific without seeing the existing geophysics of the area. Obviously, the area is very prospective and requires a careful analysis of every exploration technique.

Finally, the zone between 25m and 31m appears to be interesting from the viewpoint of its tin and magnetite content. Perhaps it broadens with depth?

I hope you find these comments useful and if I can be of further assistance with the geophysical data interpretation please contact me in Melbourne.

Yours sincerely,



Hugh Rutter
Consultant Geophysicist

Encs.


GEOPHYSICAL EXPLORATION CONSULTANTS PTY. LTD.

Suite 106, 104 Mount Street, Heidelberg, Victoria 3084

Telephone (03) 459 0533

April 27, 1983

Ian Mathison,
 Electrolytic Zinc Co. of Australasia,
 West Coast Mines,
ROSEBERRY 7470
 TASMANIA.

					CH MINE ENGR
				29 APR 1983	
					HOUSE

Dear Ian,

Thank you for allowing me use the drillhole Sirotem data for demonstration purposes; I will ensure the location is removed but acknowledge the source of the data as from E.Z.

The data from CHP 22^a is interesting and I offer the following comments

1. The Dighem response from the co-axial coils is very strong and is probably enhanced because the high conductivity in the zone which also forms a topographic hill. To some degree the same applies to the co-planar coil response. The "difference curves" remove this background effect to some degree but the ground conductivity still tends to "spread" the response. The conversion to apparent resistivity indicates an earth of less than one ohm.metre.
2. The VLF traverse produces a distinctive response between 375000E and 375050E. But if the ground resistivity is as low as 1 ohm metre, the skin depth of a plane wave of 17-4KHz(Japan) is less than 4 metres. If the resistivity is 10 ohm.metres and we allow optimistic exploration to twice the skin depth then effective exploration is still less than 25m.

cont/...2

Therefore the VLF anomaly cannot be caused by a conductor extending down dip from the old mine workings.

3. Both the airborne and ground magnetic anomalies can be explained by the amount of magnetic mineral intersected in the drill hole.
4. The down hole Sirotem profiles are the most interesting of all the geophysical data, although they do bring up some unexplained effects.

Firstly the data from Loop 1 which is west of CHP 228 and down dip. On first glance the profile is most confusing, partly because of the general high conductivity in the ground, and partly because of the many anomalous effects. The first response is at 20m, where the rapid decay indicates a small stringer of disseminated mineralisation. This is followed by a sharp cross over of the data profiles at 25m. Channels 1-10 show a "low" and it is not until channel 11 that the data goes negative. This is because of the interaction of the primary and secondary fields. Channel 1 is measuring predominately primary field. Channels 2 onwards to 10 measure primary plus an increasing proportion of the secondary (remember that the secondary field will be in the opposite direction, and in this case will lower the primary field readings). At channel 11 (8.6 williseconds) the decaying secondary field is far stronger than the primary with the result that the measured data is negative.

Therefore massive mineralisation should be seen in the drill core near 25m.

Further down the hole the Sirotem readings become more positive indicating that the mass causing the response at 25m is of limited extent.

This zone is probably the cause of the Dighem and VLF anomalies.

cont/...3

Between 50m and 80m there is a zone of moderately high conductivity, but not sufficiently high to indicate mineralisation: this is probably a rock response.

The next major effect is at 115m where there is a clear cross over in nearly all the channels. Channels 6-9 change sign before the depth 115m: channels 10-17 change within the distance 115m - 120m: and from there on the cross over migrates down the drill hole. This may indicate a disseminated zone of minerals around a core of massive mineralisation. The lack of sharpness also suggests that the conductor has not been intersected and lies below the drill hole. The data remains predominately negative for the rest of the profile suggesting a conductor of considerable extent.

The anomaly at 160m is masked to some extent by the previous conductor but indicates a zone of weak mineralisation, intersected by, or very close to the drillhole.

The data from Loop 2 indicates similar conductive features. This loop is east of the conductor seen at depth (115m) in the drillhole and I would have expected the corresponding response to have the reverse polarity that recorded by Loop 1. The reversal of sign is seen quite clearly in the data from CHP 238. The ^{exploration} exploration for the overall similar polarity of Loop 1 and Loop 2 data may be caused by the dip of the rocks and current channelling; or perhaps an error in the field operations. However the message is the same: there is a significant conductive body below (or perhaps adjacent?) drillhole CHP 223 at the drilled depth of 115m to 130m.

I recommend that you consider another drillhole to test this possibility. The top of the target on Line 5371700N has an easting of 375065E to 375075E at a vertical depth of about 120m.

I also suggest you consider an EM technique, such as UTEM which will explore for conductors at depths of 100m or more, in the conductive conditions of Colebrook Hill.

549098

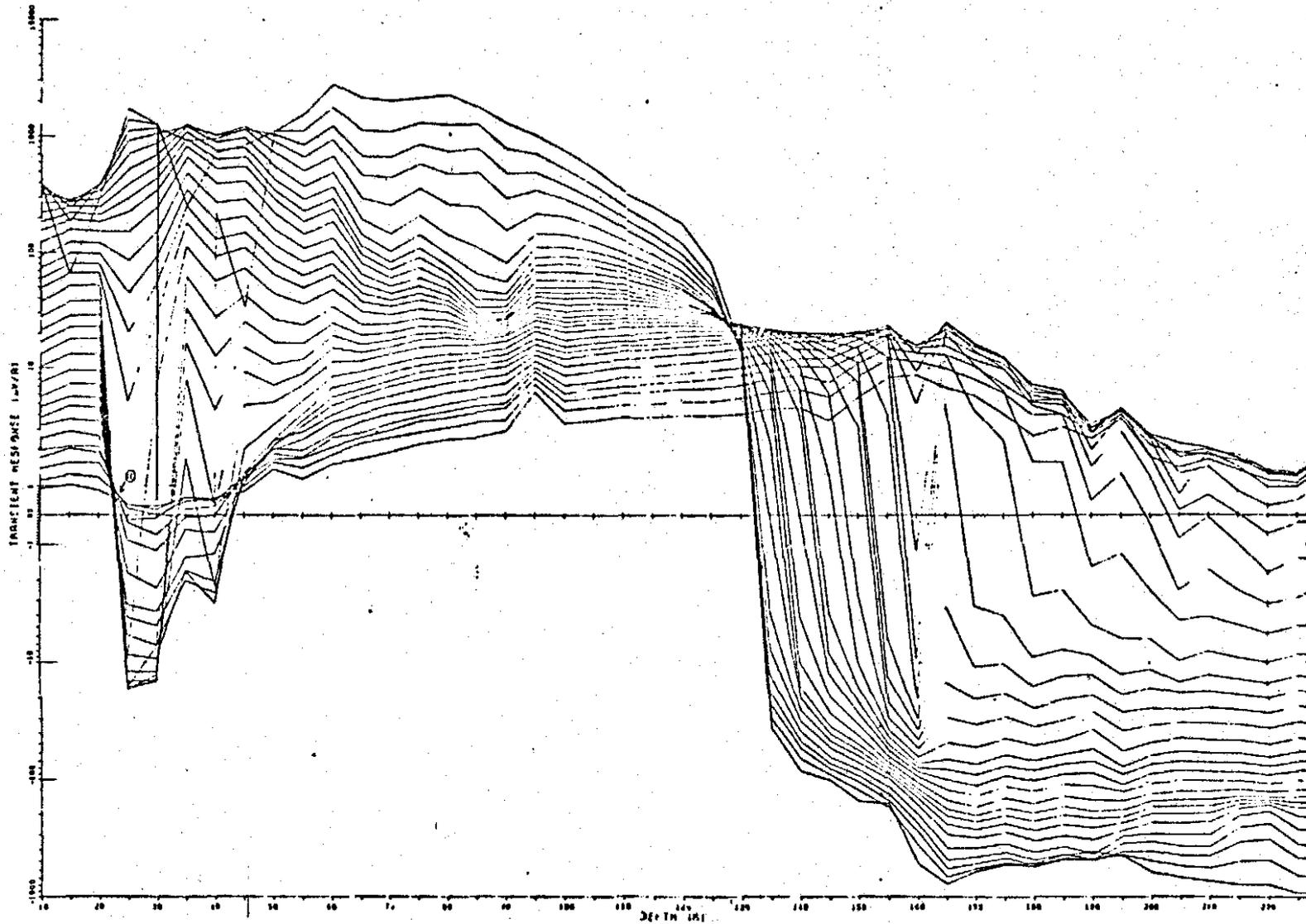
I hope you find these comments useful and that you will consider using the services of G.E.C. again when geophysics is involved.

Yours sincerely,



HUGH RUTTER
Consultant Geophysicist.

HR/bg

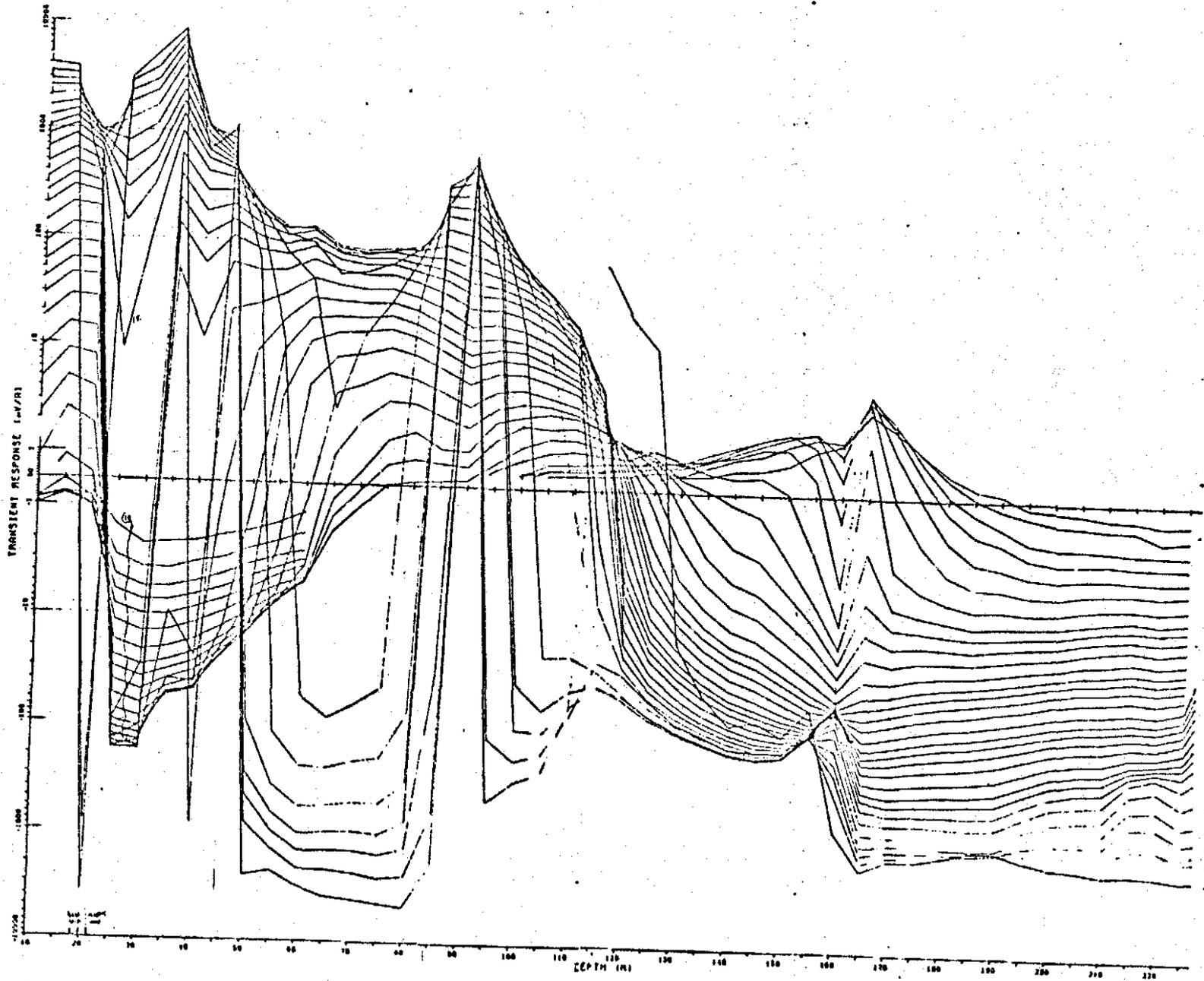


INSTRUMENT - SINGIER
 CONFIGURATION 1200K SOURCE TRANSMITTER L&N,
 JAILL W&L SURVEY
 WINDING INTERVAL 50
 27' 1/2" 1100 20' 10" 27' 1/2" 1100 10' 10"
 TRANSIENT E.M. PROFILE
 13M-1281173P 26. EASTPACT COLLEENNA HILL

SCHEDULE 101/01
 DATE 1 18-11/82
 NAME A. ROZEMONT, IRL.

549099

076



INSTRUMENT: STARTER
 CONFIGURATION: SOURCE TRANSMITTER LOOP,
 DRILL HOLE SURVEY
 HEATING INTERVAL: 5m
 ELECTRO: ITC ZINC CO. OF HUSTHALMSEN LTD.
 TRANSMIT: E.M. PROFILE
 DDH-220 HLODF 3A, PROSPECT COLEBRIDGE HILL

SCALE: 1:1500
 DATE: 1/19/67
 REP: HOLLAND, TMS.

JECUEX
 PIR LTD

549100 077

APPENDIX F

Soil Sample Data Sheets

GEOCHEMICAL SAMPLE DATA SHEET

549103

080

Project : M.T. BLACK Material : SOILS Size Fraction Analysed : -80#
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANALABS
 Grid Name : COLEBROOK HILL Sampled By : G.B. + R.C. Method : A.A.S.
 Nominal Grid Azimuth : AMG. E/W. LINES Date : NOV. '82

SAMPLE NUMBER	Sample Location Data			Sample Composition Data					Geology	METAL CONTENT (ppm, unless specified)									
	Grid Line No.	NORTHING	EASTING	DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag
51966	372400	375900	1040	0.25	GYBK	1040	1040				110	X	5	X		1000	15	2	X
67		920		0.30	BK	6015	1510				120	10	5	X		2000	5	3	1
68		940		0.25	GYBK	2525	4010				100	15	15	X		1000	15	1	2
69		960		0.15	BK	1060	1020				20	15	20	X		1000	10	2	2
70		980		0.20	LTBR		3070				5	X	X	X		350	15	1	2
71	376000			0.10	LTGYBR	3010	1050				110	15	15	X		1750	50	5	2
72		020		0.35	CR	2550	25				5	X	5	X		400	10	5	14
73		040		0.30	CRBR	5025	25				5	X	X	X		2000	10	1	14
74		060		0.15	YLOR	7020	10	TRACK			20	15	10	X		1100	15	1	9
75		080		0.65	GY		7030				5	X	5	X		500	15	X	15
76		100		0.20	CRBR	1020	5020				55	X	5	X		1950	15	2	15
77		120		0.30	CR	7020	10				35	X	X	X		350	15	3	3
78		140		0.35	CR	1020	70				20	15	X	X		1000	20	3	3
79		160		0.35	CR		2080				20	X	X	X		700	20	5	4
80		180		0.35	CRWH		2080				5	10	X	0.15		1000	15	12	14
81		200		0.25		3070		ROAD			5	15	15	0.15		450	15	12	11
51982	376220			0.15	BRCR		2080	ROAD			5	15	20	X		1550	10	5	2

GEOCHEMICAL SAMPLE DATA SHEET

Project : MT. BLACK Material : SOILS Size Fraction Analysed : - 80 #
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANALABS
 Grid Name : COLEBROOK HILL Sampled By : GB. + RC. Method : A.A.S.
 National Grid Azimuth : AMG. E/W. LINES. Date : NOV. '82

SAMPLE NUMBER	Site Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm, unless specified)											
	Grid Line No.	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frgs.		Organic	Contam.	Cu	Pb	Zn	As	Cd	Fe	Mn	Ag	Sn	C
	Grid Reading	NORTHING	EASTING																			
41097	376420	53	3	0.35	CRBR	20	30	50				X	5	10	(1.0)		100	15	X	11		
98	400	53	3	0.20	LTBR	30	30	40				5	15	25	X		100	10	X	11		
99	380	53	3	0.20	BRKR	50	10	20	20			X	10	10	X		100	15	X	4		
41100	376360	53	3	0.15	DKGYBR	20		0				10	30	10	X		100	20	B	2		
50883	376340	53	3	0.30	GYBK	20	40	20	20			10	10	20	X		100	35	H	11		
984	1320	53	3	0.30	CR	60	20	20				5	5	10	X		100	100	B	12		
985	300	53	3	0.15	CR LTYGY	60	10	20				5	5	10	X		100	35	B	11		
986	280	53	3	0.30	CRGY	80	10	10				10	X	10	X		100	20	X	12		
987	260	53	3	0.20	WHCR	10	20	70				10	X	10	X		100	20	X	13		
988	240	53	3	0.45	CRWH	50	20	30				10	5	10	X		100	30	H	10		
989	220	53	3	0.15	CRGY	50	30	20				10	X	5	X		100	25	X	10		
990	200	53	3	0.55	LTBR CR	15	50					10	5	10	X		100	15	R	15		
991	180	53	3	1.05	YLOR	90	5	5				15	X	10	X		100	10	H	X		
992	160	53	3	0.55	YLOR	80	10	10				10	10	15	X		100	15	H	11		
993	140	53	3	0.45	DRBR	50	25	25				15	20	25	X		100	140	H	X		
994	120	53	3	0.25	GYBR	50	20	30		TRAM		10	5	10	X		100	20	B	11		
995	100	53	3	0.30	GY	10	50	40				5	X	5	X		100	100	X	19		
996	080	53	3	0.10	DKBR		5	95				15	20	25	X		100	150	H	12		
997	060	53	3	0.15	GYDKBR	40	10	10	40			10	15	20	X		100	70	H	11		
998	040	53	3	0.25	GYBR	30	5	60				10	5	10	X		100	25	X	11		
999	020	53	3	0.25	BR	10	10	80				10	X	15	X		100	20	X	11		
51000	376000	53	3	0.15	BRBK		10	90				10	5	15	X		100	115	H	X		
51059	375980	53	3	0.05	BK		30	70				10	20	30	X		100	100	H	11		
60	960	53	3	0.10	BK		50	30	20			10	10	20	X		100	100	B	X	11	
61	940	53	3	0.35	BRWH	10	10	70	10			5	X	15	X		100	100	H	12		
51062	375920	53	3	0.15	BRBK		25	570				10	10	20	X		100	145	H	11		

GEOCHEMICAL SAMPLE DATA SHEET

54910083

Project : M.T. BLACK Material : SOILS Size Fraction Analysed : - 80#
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANALABS
 Grid Name : COLEBROOK HILL Sampled By : G.B. + R.C. Method : A.A.S.
 Nominal Grid Azimuth : A.M.G. E.I.V. LINES Date : NOV '82

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm. unless specified)									
	Grid Line No	AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frag.	Organic		Contam.	Cu	Pb	Zn	Ag	Au	Fe %	Mn	As	Sn
	Grid Easting	NORTHING	EASTING																	
45879	376980			0	01 LTGY		2080			ROAD	X	X	15	X		11400	5	2	2	
880	960			0	02 LTGY		1030			QUARRY	X		5	X		11600	5	3	2	
881	940			0	02 DKGY		8020			QUARRY	X		5	X		13700	110	3	3	
882	920			0	02 LTBR		8020			QUARRY	X		25	X		11600	20	12	0	
883	900			0	03 GY		8020			QUARRY	X		5	X		11050	20	17	13	
884	880			0	05 BRBK	5	5	555		QUARRY	50	450	115	X		17300	365	16	8	
885	860			0	20 BRBK	80	10				10	140	55	X		13450	130	7	6	
886	840			0	50 BR		2080				10	25	115	X		12250	1015	11	8	
887	820			0	40 DKBR	50	50			CREEK	55	1115	110	X		11300	2050	118	2	
888	800			0	25 RDBR	30	70			SOFT	5	15	20	X		11500	135	5	4	
889	780			0	30 RGY	30	60	20			X	5	110	X		14200	115	1	1	
890	760			0	50 LTBRGY		2080				X	5	25	X		11200	20	2	1	
891	740			0	40 BRGY		2080				5	20	30	X		11550	20	5	3	
892	720			0	20 BRGY	30	20	50			5	5	110	X		15800	20	2	2	
893	700			0	50 LTGY	10	30	60			X	5	5	X		14000	110	2	2	
894	680			0	30 BRGY	60	10	30			X	X	5	X		15000	110	17	2	
895	660			0	35 GYBK	70	20	10			2	110	20	X		18000	110	3	2	
896	640			0	25 LTGY	40	15	40	5		X	5	5	X		13000	5	X	X	
897	620			0	20 LTGY	30	40	30			X	5	10	X		13000	5	2	1	
898	600			0	25 LT DKBR	60	10	20	10		X	X	5	0.5		12500	5	11	2	
899	580	A/B		0	20 DKBR	20		80			110	5	115	0.5		12000	15	7	X	
45900	560			0	20 DKGYBK	70	20	10			5	X	110	0.5		11000	5	5	11	
41091	376540			0	25 CRGY	60	20	20			X	X	5	10.5		2000	15		X	
92	520			0	30 CRDKBR	60	20	20			X	X	10	X		11000	110	5	11	
93	500			0	20 CR	60	20	20			X	X	15	X		11000	15	X	11	
94	480	A/B		0	20 BR	20	5	15	70		X	5	20	X		7000	5	X	X	
95	460			0	75 LTOR	50	20	50			5	10	110	0.5		21500	25	6	X	
96	376140	A/B		0	20 DKBR		2080				X	5	110	0.5		11000	15	5	11	

GEOCHEMICAL SAMPLE DATA SHEET

549107084

Project : M.T. BLACK Material : SOILS Size Fraction Analysed : -80#
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANALABS
 Grid Name : COLEBROOK HILL Sampled By : E.B. T. R.C. Method : A.A.S.
 Nominal Grid Azimuth : A.M.G. E/W LINES Date : NOV. 82

SAMPLE NUMBER	Site Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm, unless specified)										
	Grid Line No.	Grid Reading	NORTHING	EASTING	DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	Ag	Au	Fe %	Mn	As	Sn
52391	372000	377040			0	45BKGY		20	10	70			X	X	110	X		1150	110	X	11
92		020			0	15DKBR		15	30	540			X		110	X		1050	110	X	12
93	377000				0	20LTBRBK		10	30	60			X	X	5	X		1540	15	X	X
94	376980				0	15 BK		50	40	5	5		X	X	115	0.5		1450	15	X	X
95		960			0	15 BK		40	30	30			5		20	X		1050	110	X	12
96		940			0	20 BKGY		60	20	20			X		5	0.5		300	120	X	12
97		920			0	20 BKGY		20	70	10			X	X	5	X		200	110	X	4
98		900			0	30LTGYBR		80	10	10			5		X	X		300	110	X	17
99		880			0	15 BK		80	10	10			10		25	X		350	110	X	11
52400	376860				0	35BRBK		80	10	10			5		X	X		1400	125	X	7
46505	376840				0	25CRDKBR		20	80	1			X		100	X		1750	30	X	11
06		820			0	15LTGYRD		10	60	30	TRAM		X	X	110	X		1250	115	X	12
07		800			0	15WHRDGR		5	5	5	SONK		5		15	X		1350	120	X	110
08		780			0	25LTBRGY		50	20	20	10		X		20	10.5		750	100	100	11
09		760			0	30LTBRGY		80	10	10			X		125	X		1200	40	100	9
10		740			0	30DKBR		70	10	20			5		115	X		1250	50	100	X
11		720			0	50 OR		95	5				15		25	X		3000	100	100	14
12		700			1	00CRGN		50	50				35		5	X		7050	110	X	X
13		680			0	15RDGR		30	20	50			X		25	10.5		1700	115	X	11
14		660			0	35 CR		10	10	80			X	X	110	10.5		1550	115	X	12
15		640			0	35CRBR		20	10	70			X		110	0.5		1050	115	X	11
16		620			0	10DKBR		80	10	10	FRACK		X		110	X		1100	25	100	11
17		600			0	30LTGY		10	30	20			X		15	10.5		1200	110	100	15
18		580			0	30 CR		30	30	40			X	X	110	11.0		1300	110	X	16
19		560			0	20CRBR		40	30	20	10		X	X	110	10.5		1100	110	100	11
20		540			0	20CRBR		20	30	10	10		5		X	X		1100	110	X	11
21		520			0	40CRBR		90	10				15		X	X		7000	40	110	X
46522	376530				0	30CRBR		10	20	70			10		X	X		1100	115	100	X

GEOCHEMICAL SAMPLE DATA SHEET

Project : MT. BLACK Material : SOILS Size Fraction Analyzed : -80#
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANALABS
 Grid Name : COLEBROOK HILL Sampled By : G.B. + R.C. Method : A.A.S.
 Name of Grid Azimuth : A.M.G. E/W LINES Date : NOV. '82

SAMPLE NUMBER	Grid Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm. unless specified)										
	Grid Line No.	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frag.	Organic		Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sn	C
	Grid Easting	NORTHING	EASTING																			
46523	376400	53	3	1	0.30	CR	10	70	20				X	X	5	10.5		400	5	X	1	
524	460	53	3		0.10	OR	40	20	20	20			10	5	15	X		1000	15	6	X	
25	470	53	3		0.15	CR	80	10	10				X	X	10	X		2050	10	2	1	
26	420	53	3		0.15	BR BK	10	60	30				10	25	40	X		8800	95	9	X	
27	400	53	3		0.40	DK BR	80	20					20	15	60	X		2170	95	43	5	
28	390	53	3		1.00	CR	20	80					20	5	70	X		545	80	20	1	
29	360	53	3		0.10	BR GY BR	15	52	20	50			5	10	30	X		5250	70	3	1	
530	340	53	3		0.20	GY CR BR	60	10	10	20			5	15	15	X		550	1135	11	4	
31	320	53	3		0.35	CR GY BR	20	10	60	10			400	X	10	X		1000	10	X	10	
32	300	53	3		0.30	GY CR	20	40	40				415	X	5	X		350	5	X	18	
33	280	53	3		0.20	GY BR	10	20	70				20	X	10	X		1650	5	X	3	
34	260	53	3		0.35	BR GY	30	40	30				35	5	15	X		650	35	12	1	
35	240	53	3		0.30	BR	30	40	30	CR BK			35	25	25	X		1165	160	15	13	
36	220	53	3		0.35	LT BR	80	20					35	35	25	X		1700	119	12	5	
37	200	53	3		0.30	LT GY	20	80					15	X	5	X		300	15	2	28	
38	180	53	3		0.15	LT GY BR	30	30	40				10	10	10	0.5		1200	40	X	20	
39	160	53	3		0.10	BR BR GY	30	10	30	30			25	15	35	X		1200	25	3	26	
540	140	53	3		0.35	BR CR GY	30	40	20				20	10	15	X		8250	30	9	15	
41	120	53	3		0.35	CR GY	40	30	30				15	5	10	X		2250	30	3	9	
42	100	53	3		0.30	GY CR	20	20	60				10	5	10	X		1250	20	11	7	
43	060	53	3		0.25	DK GY BR	55	20	20	5			5	X	10	X		1000	10	X	7	
44	060	53	3		0.35	GY	40	60					5	X	10	X		600	15	X	6	
45	040	53	3		0.40	GY	20	20	60				5	X	10	X		400	10	X	6	
46	020	53	3		0.35	GY BR YL	10	30	60				10	X	10	X		750	115	X	3	
47	376000	53	3		0.30	GY BR	30	30	10				5	X	10	X		1130	10	1	7	
48	375920	53	3		0.10	GY BR BK	20	40	40				10	10	15	X		550	20	2	76	
49	360	53	3		0.30	GY BR BK	40	25	30	5			5	X	5	X		820	10	2	3	
550	340	53	3		0.30	GY BK	40	40	20				X	5	10	X		550	115	11	1	
51	320	53	3		0.60	GY BK	20	50	30				X	15	10	X		3800	115	X	1	
24552	377900	53	3		0.10	BR BK BK	5	95					1	X	30	X		700	20	X	1	

GEOCHEMICAL SAMPLE DATA SHEET

Project : MT. BLACK Material : SOILS Size Fraction Analysed : -80#
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANALABS
 Grid Name : COLEBROOK HILL Sampled By : G.B. J. R.C. Method :
 Nominal Grid Azimuth : A.M.G. E/W LINES Date : NOV. '82

SAMP. NO. NUMBER	Stake Location Data				Stake Composition Data						METAL CONTENT (ppm. unless specified)											
	Grid Line No.	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frgs.	Organic	Contam.	Geology	Cu	Pb	Zn	Ag	Au	Fe %	Mn	As	S _n	Cr
	Grid Easting	NORTHING	EASTING																			
46553	375880	53	3		0.30	GYBR	30	30	40				X	5	5	X		1400	5	X	12	12
54	860	53	3		0.10	GYBRBK	30	30	40				10	40	35	X		1600	40	11	2	10
55	840	53	3		0.10	BKBRGY	20	60	15	5			5	5	115	X		1150	30	7	6	10
56	820	53	3		0.45	BLGY	40	20	40				5	5	115	X		2700	40	2	3	15
57	800	53	3		0.35	GYBL		40	60				5	10	10	X		2550	20	X	4	70
58	780	53	3		0.30	GYBL	60		40				10	5	10	X		2000	30	2	17	12
59	760	53	3		0.45	ORGYBR	90		10				20	5	10	X		9200	35	9	5	12
560	740	53	3		0.35	WHGY		80	20				5	X	5	X		2250	15	3	6	12
61	720	53	3		0.25	DKGYBR	40	30	30				10	X	10	X		1150	15	11	2	12
62	700	53	3		0.25	DKBRGY	10	40	30	20			10	X	10	X		1050	20	2	5	10
63	680	53	3		0.20	BRDKBR		50	20	30			10	10	20	X		750	25	3	7	10
64	660	53	3		0.20	GYBL	10	30	60				10	X	10	X		1600	25	3	3	15
65	640	53	3		0.45	BR	20	20	60				10	X	10	X		1250	45	13	36	25
66	620	53	3		0.65	OR	60	10	30				120	15	100	X		10000	800	60	16	175
46567	375600	53	3		0.40	ORAD	70	20	10				130	20	105	0.5		725%	375	75	26	140

GEOCHEMICAL SAMPLE DATA SHEET

Project : INT. BLACK Material : SOILS Size Fraction Analysed : - 80#
 Locality : COLEBROOK Sample Method : AUGER Analysed By : AYMARS
 Grid Name : COLEBROOK HILL Sampled By : G.B. R.C. Method : A.A.S.
 Horizontal Grid Azimuth : A.M.G. E/W LINES Date : NOV. 82

Site Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm, unless specified)										
Grid Line No.	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	Ag	Au	Fe %	Mn	As	Sn
SAMPLE NUMBER	371800																			
41226	37560	53	3	0.20	GYBR	50	10	40			35	X	5	10	5		1750	170	X	13
27	840	53	3	0.25	GYBR	50	10	40			30	X	X	10	5		1650	115	X	10
28	820	53	3	0.10	DK BR	30	30	0.30			75	185	10	5			3200	185	X	10
29	800	53	3	0.25	YLR	55	10				20	10	5	X			11250	120	X	11
230	760	53	3	0.30	CRBR	50	0	40			40	5	10	X			11450	115	X	12
31	760	53	3	0.20	GYBR	40	10	50			15	5	5	10	5		1450	115	X	35
32	740	53	3	0.30	GYBR	50	0	45			15	X	X	X			11050	115	X	115
33	720	53	3	0.20	GYBR	50	0	50			15	X	X	X			11050	130	X	113
34	700	53	3	0.20	DK BR	30	20	0.10			30	10	20	X			11240	120	X	11
35	680	53	3	0.25	BRGYBR	30	20	50			15	5	5	X			1450	115	X	9
41235	37560	53	3	0.20	GYBR	30	10	60			15	5	10	10	5		1450	120	X	12

GEOCHEMICAL SAMPLE DATA SHEET

549111 088

Project : MT. BLACK Material : SOILS Size Fraction Analysed : -80 μ
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANALABS
 Grid Name : COLEBROOK HILL Sampled By : G.B. + R.C. Method : A.A.S.
 Nominal Grid Azimuth : AMG...E/W. LINES Date : NOV. 82

SAMPLE NUMBER	Site Location Data				Soil Composition Data					Geology	METAL CONTENT (ppm. unless specified)										
	Grid Line No.	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Ba	Cr
	Grid Easting	NORTHING	EASTING	DEPTH																	
46598	376420	53	3	0.350	RRD	80	510	5			70	5	65	10.5		16.50%	1225	3	X	11	
99	400	53	3	0.400	RRD	80	20				90	5	105	10.5		11.5%	700	5	X	11	
46600	376380	53	3	0.600	RRDCR	85	10	5			110	25	215	10.5		13.5%	755	7	X	26	
91201	376360	53	3	0.450	RRD	65	530				30	X	85	10.5		3.10%	1380	34	X	12	
202	340	53	3	0.550	RRR	90	5	5			44	15	525	X		30.15%	2100	120	11	18	
03	320	53	3	0.250	RRR	75	5	5	15		24	20	1145	11.0		14.6%	1010	110	X	18	
04	300	53	3	0.20	RR	80	510	5			30	30	185	11.0		11.5%	2100	35	3	16	
05	280	53	3	0.20	GYDKR	85	5	5	5		10	5	20	X		26.70	120	13	11	11	
06	260	53	3	0.150	RRR	80	510	5			10	20	40	X		3.70	480	4	2	11	
07	240	53	3	0.20	GYR	20	30	20			5	X	10	X		4.60	30	X	2	11	
08	220	53	3	0.20	RR	65	525	5			10	10	15	X		2.10	40	X	11	1	
09	200	53	3	0.450	RRR	90	5	5	5		24	10	20	X		2.70%	24	2	X	10	
210	180	53	3	0.150	GYLRR	70	520	5			10	5	10	X		1.8%	24	2	9	7	
11	160	53	3	0.20	GYDKR	70	10	20			10	15	15	X		5.00	25	1	11	1	
12	140	53	3	0.10	GYDKR	45	10	5			10	15	15	X		1.70	35	2	X	1	
13	120	53	3	0.10	RRR	75	510	5			10	15	20	X		2.50	40	X	X	1	
14	100	53	3	0.10	RRGYR	45	10	40	5		10	25	15	X		11.5%	130	X	11	1	
15	080	53	3	0.10		45	525	25			20	20	25	X		2.45%	75	3	1	2	
16	060	53	3	0.20	GY	70	10	20			10	15	10	X		2.40%	215	15	B	1	
17	040	53	3	0.30	GYR	70	10	15	5		15	15	115	X		1.6%	20	2	29	2	
18	020	53	3	0.15	GYR	55	10	30	5		15	20	20	X		1.10%	215	1	B	2	
19	37600	53	3	0.20	GYR	55	10	10	5		10	15	115	X		1.3%	20	3	13	3	
20	37500	53	3	0.10	RRR	50	10	30	5		10	15	115	X		1.70%	20	3	11	11	
21	90	53	3	0.15	GYR	55	10	10	5		10	10	5	X		1.90	100	X	11	1	
22	90	53	3	0.15	GYR	55	10	30	5		10	15	5	10.5		1.5%	100	X	2	1	
23	90	53	3	0.20	GYR	50	10	30			5	X	X	X		3.00	100	X	15	1	
24	90	53	3	0.10	RRR	55	10	30	5		10	X	10	10.5		1.00	105	X	X	1	
25	90	53	3	0.15	RRR	55	10	30	5		10	15	15	X		1.80	105	2	11	1	

Project : MT. BLACK Material : SOILS Size Fraction Analysed : - 80#
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANALABS
 Grid Name : COLEBROOK HILL Sampled By : G.B. T.R.C. Method : A.A.S.
 Nominal Grid Azimuth : AMG. E/W. LINES Date : NOV. '82

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm, unless specified)											
	Grid Line No.	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frags.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sn	Cd
	Grid Easting	NORTHING	EASTING																			
46568	377020	53	3	0.15	BR	40	50	5	5			5	X	20	X		45	10	10	10	10	10
69	377000	53	3	0.10	BR	40	40	10	10			10	X	20	X		40	5	10	10	10	10
570	376980	53	3	0.20	BR	50	30	5	10			5	X	10	10	5	30	10	10	10	10	10
71	960	53	3	0.15	BR	60	20	5	15			10	X	30	10	5	30	10	10	10	10	10
72	940	53	3	0.25	BR	30	30	30	10			10	X	20	X		40	10	10	10	10	10
73	920	53	3	0.20	CR	30	30	30	5			10	X	15	10	5	45	10	10	10	10	10
74	900	53	3	0.20	YBR	20	30	50				5	X	10	X		40	10	10	10	10	10
75	880	53	3	0.15	BRGY	15	20	60	5			10	X	15	10	5	50	10	10	10	10	10
76	860	53	3	0.20	YCR	5	2	70				5	X	10	X		30	10	10	10	10	10
77	840	53	3	0.15	BR	20	25	50	5			10	X	10	10	5	10	10	10	10	10	10
78	820	53	3	0.20	CRGY	50	30	40				5	X	5	10	5	10	10	10	10	10	10
79	800	53	3	0.10	DRGY	30	20	50				15	5	20	X		10	10	10	10	10	10
580	780	53	3	0.15	DRGY	20	30	50				5	X	10	X		30	10	10	10	10	10
81	760	53	3	0.10	ORBR	65	10	10	15	TRAM		25	25	45	X		30	10	10	10	10	10
82	740	53	3	0.80	CR	90	5	5				X	X	X	X		40	10	10	10	10	10
83	720	53	3	0.15	BR	60	10			CREEK		30	X	15	X		10	10	10	10	10	10
84	700	53	3	0.75	ORBR	50	30	20		CREEK		15	25	35	X		10	10	10	10	10	10
85	680	53	3	0.30	GLTBR	70	10	20		CREEK		10	X	10	X		10	10	10	10	10	10
86	660	53	3	0.20	GLTBR	60	10	30				10	X	10	X		20	10	10	10	10	10
87	640	53	3	0.20	TBR	20	20	60				10	X	10	10	5	30	10	10	10	10	10
88	620	53	3	0.70	CRBR	30	70					5	X	5	10	5	10	10	10	10	10	10
89	600	53	3	0.20	CRLTBR	10	30	60				5	X	5	10	5	40	10	10	10	10	10
590	580	53	3	0.30	CRLTBR	60	10	30				5	X	5	10	5	10	10	10	10	10	10
91	560	53	3	0.40	CRGY	30	30	40				5	X	5	X		40	10	10	10	10	10
92	540	53	3	0.30	CRBRPK	30	20	50				5	X	10	X		30	10	10	10	10	10
93	520	53	3	0.35	ORCR	90	5	5				15	X	10	X		10	10	10	10	10	10
94	500	53	3	1.10	OR	90	10					10	X	10	X		10	10	10	10	10	10
95	480	53	3	0.55	ORPK	50	20	30				10	X	10	X		10	10	10	10	10	10
96	460	53	3	1.30	CRLTBR	95	5					10	X	10	X		20	10	10	10	10	10
97	370	100	53	0.30	CRRD	70	15	15				10	X	10	10	5	40	10	10	10	10	10

Project : **MT. BLACK** Material : **SOILS** Size Fraction Analysed : **- 80 #**
 Locality : **COLEBROOK** Sample Method : **AUGER** Analysed By : **ANALABS**
 Grid Name : **COLEBROOK HILL** Sampled By : **G.B.T.R.C.** Method : **A.A.S.**
 Nominal Grid Azimuth : **AMG...E/W LINES** Date : **NOV...82**

SAMPLE NUMBER	Site Location Data				Soil Composition Data				Geology	METAL CONTENT (ppm, unless specified)											
	Grid Line No	AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sb	Cd
	Grid Easting	NORTHING	EASTING																		
51983	376793	53	31	0.50	BREGY	20	30	50		ROAD	5	20	35			1700	135				
984	780	53	31	0.20	ARCR	20	20	60			12	15	20	0.5		1150	130				
85	760	53	2	0.60	BR	60	10	30			10	20	20			4470	1120				
86	740	53	3	0.40	BRDKBR	50	10	40			5	15	15			11050	130				
87	720	53	Poss. B	0.40	DKBR	50	10	20			5	5	10			1250	115				
88	700	53	3	0.15	GYCA	20	20	60			5	5	5			1050	125				
89	680	53	3	0.90	CRBRGN	30	5	5		SOAK	12	20	15			530	75				
990	660	53	3	0.55	GNBR	100					10	25	10			840	155				
91	640	53	3	0.45	BR	40	50				10	15	15			3000	135				
92	620	53	3	0.60	BKBR	65	10	25			10	10	30	0.5		2150	70				
93	600	53	3	0.80	BREGY	80	15	5			5	10	5	0.5		1550	30				
94	520	53	3	1.00	BREGY	70	20	10			5	10	5	0.5		1750	20				
95	500	53	3	1.10	OR	50	50				15	30	20	0.5		1800	175				
96	540	53	3	0.15	BRDKBR	80	10	5			5	10	5			11250	45				
97	520	53	3		OR	90		5			25	25	20			11000	115				
98	500	53	3	0.20	GYLTBR	50	10	40			20	25	110	0.5		2000	175				
99	480	53	3	0.15	BR	45	10	40			12	25	20			4000	235				
52000	460	53	3	0.15	CRLTBR	95		5			20	15	15			3000	140				
		53	3																		
		53	3																		
		53	3																		
52377	376440	53	3	0.55	GNBR	80	10	10			40	40	125			5000	245				30
78	420	53	3	0.75	GRBR	50	20	30			10	15	15			7000	245				25
79	400	53	3	0.10	BKBR	30	30	30			20	10	10			2045	115				23
80	380	53	2	0.15	BRDKBR	45	10	30		15 CREEK	30	30	170			3000	130				21
81	360	53	3	0.20	CRCR	85	5	5			10	25	10			4000	110				22
82	340	53	3	0.10	CRBRBR	70		30			35	10	10			3000	125				22
83	320	53	3	0.15	GYM	40	10	50			10	15	10			2000	115				22
84	300	53	3	0.30	GY	65	10	25			10	15	15	0.5		1800	145				22
52309	376210	53	3	0.60	CRBRGN	55	5	40			20	15	15			1000	120				22

GEOCHEMICAL SAMPLE DATA SHEET

Project : MIT. BLACK Material : SOILS Size Fraction Analyzed : 80#
 Locality : COLEBROOK Sample Method : AUGER Analysed By : ANAKABS
 Grid Name : COLEBROOK HILL Sampled By : G.B. & R.C. Method : A.A.S.
 Magnetic Grid Azimuth : A.M.G. E/W LINES Date : NOV. 1982

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm, unless specified)											
	Grid Line No.	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sn	Cd
	Grid Easting	NORTHING	EASTING	DEPTH																		
52531	376280	53	31	0	20 CRDKBR	75	10	10	5			20	30	25	X		1750	5	X	11	14	
32	260	53	31	0	15 GYBR	40	20	40				X	5	15	X		550	5	30	17	12	
33	240	53	31	0	20 GYBR	35	15	50				5	5	10	X		450	5	X	18	14	
34	1220	53	31	0	15 GYBRBK	30	20	50				5	X	15	0	5	750	5	11	3	10	
35	200	53	31	0	70 ORBR	90		10				49	5	70	X		5125	25	37	5	142	
36	1180	53	31	0	20 GYBROR	20	10	15				5	15	45	0	5	3500	125	4	6	46	
37	1160	53	31	0	40 ORBR	65	5	25	5			70	15	75	0	5	5100	195	44	10	91	
38	140	53	31	0	40 ORGYBR	95		5				25	X	25	X		3125	115	12	3	14	
39	120	53	31	0	55 GY	50	10	20				5	15	10	0	5	11350	5	X	19	11	
540	100	53	31	0	20 GYBR	70	15	15				5	10	15	X		11000	5	X	5	11	
41	080	53	31	0	20 GYBR	60	10	20				5	10	15	X		750	5	X	14	11	
42	060	53	31	0	30 BR	70	10	15	5			X	X	15	X		350	5	X	18	11	
43	040	53	31	0	40 GYBR	60	10	20				5	X	20	X		450	5	X	2	11	
44	020	53	31	0	20 GYBR	50	10	20				5	5	15	X		550	5	X	2	11	
45	376000	53	31	0	25 GYBRBK	60	5	25	10			5	5	15	X		850	5	X	1	11	
46	375720	53	31	0	15 BRBK	60	10	5	25			20	50	50	X		1150	110	X	23	11	
47	260	53	31	0	15 GYBR	40	10	50				5	5	10	X		1250	5	X	1	11	
48	940	53	31	0	20 GYBRBK	70	15	15				15	70	35	0	5	900	10	5	2	11	
49	920	53	31	0	55 BRGY	70		20				5	15	15	0	5	500	5	X	12	11	
550	900	53	31	0	20 BRGY	50		50				5	5	15	X		850	5	X	14	11	
51	880	53	31	0	30 GYDKBR	60		5	15			5	X	14	X		1050	5	X	14	11	
52	860	53	31	0	40 GYBR	45	5	50				5	X	15	X		800	10	12	11	11	
53	840	53	31	0	10 GYBR	50	10	40				5	5	10	X		750	20	X	13	11	
54	820	53	31	0	30 GYBR	40		60				5	10	15	X		1750	30	X	10	11	
55	800	53	31	0	50 GYBR	50	5	15				5	X	10	X		1200	20	X	5	11	
56	780	53	31	0	40 BRBK	60	10	20	5			10	10	20	X		1250	45	X	13	11	
57	760	53	31	0	30 GYBR	60	15	25				5	5	10	X		1050	45	X	10	11	
58	740	53	31	0	25 GYBR	55		40	5			10	10	15	X		1750	75	X	2	11	
59	720	53	31	0	50 GYBR	45		50				5	5	15	X		1500	55	X	2	11	
5760	375720	53	31	0	20 GYBR	75	5	20				5	5	15	X		2050	15	X	2	11	

GEOCHEMICAL SAMPLE DATA SHEET

Project : MT. BLACK Material : SOILS Size Fraction Analyzed : -80#
 Locality : SOLEBROOK Sample Method : AUGER Analyzed By : ANALABS
 Grid Name : SOLEBROOK HILL Sampled By : G.B. + RC Method : A-A-S
 Nominal Grid Azimuth : AMG E/W LINES Date : NOV. 1972

SAMPLE NUMBER	Site Location Data				Sample Composition Data				Geology	METAL CONTENT (ppm. unless specified)												
	Grid Line No.	Grid Easting	NORTHING	EASTING	DEPTH	COLOUR	Clay	Sand		Rock Frag.	Organic	Contam.	Cu	Pb	Zn	Al	Au	Fe %	Mn	As	Sr	C
510	371600		AMG CO-ORDINATES																			
52501	376800				0.60	GYBR	30	20	50			X	110	25	10.5		11000	25	X			
02	860				0.40	LTGYBR	20	25	60			X	X	115	10.5		10500	30	X	X		
03	810				0.30	GYBR	20	10	70			X	X	115	10.5		8000	15	X	X		
04	820				0.25	GYBR	40	20	40			X	X	110	10.5		7000	11.5	11			
05	800				0.20	LTGYBR	20	20	60			X	X	110	10.5		11000	11.0	X			
06	780				0.20	LTGYBR	40	40	20			X	X	110	10.5		5000	11.5	X		3	
07	760				0.20	GYBR	30	20	50			X	X	110	10.5		11350	11.0	X		2	
08	740				0.65	CR	30	10	60			115	100	70	10.5		5.05%	710	80	X	10	
09	720				0.80	CR	35	15	50			55	155	70	10.5		2.15%	1000	75	X	15	
11	680				0.20	CR	20	20	60			5	X	115	10.5		11700	11.5	X			
12	660				0.15	CR	80	10	10			5	15	25	10.5		31100	2.5	1	X		
13	640				0.25	GYBR	30	10	60			X	5	115	10.5		11350	11.0	X	X		
14	620				0.40	CR BR CR	95		5			25	10	45	10.5		3.30%	115	64	X	2	
15	600				0.45	DIS BR	70	10	10	10		110	90	335	11.0		1.30%	11400	113	X	8	
16	580				0.05	LT BR	40		60	CREEK		115	115	115	115		115	115	115	115	115	
17	560				0.15	LT BR	80		20			115	25	410	10.5		7900	1170	4	X	4	
18	540				0.40	LT CR	65	10	20	5		110	110	305	10.5		3.175%	1100	8	2	7	
19	520				0.10	DK BR	30	10	20	30		115	25	115	10.5		3.100%	1120	5	X	7	
520	500				0.10	DK BR	70		30			30	310	70	11.0		5.3%	100	71	X	50	
21	480				0.60	OR	80	10	10			115	25	1110	10.5		10.5%	1165	77	2	2	
22	460				0.15	BR	20	10	70			110	X	1145	10.5		2.80%	1180	200	5	3.0	
23	440				0.15	BR	55	20	20	5		20	115	100	10.5		4.00%	2110	117	X	73	
24	420				0.20	BR	65	30		SOAK		20	20	20	10.5		3.170%	1035	17	X	14	
25	400				0.35	BR	20	10	70			75	5	185	10.5		3.125%	55	3	X	11	
26	380				0.60	BR RD BR	60	25	15			40	115	1130	10.5		2.550%	1145	11	X	30	
27	360				0.55	OR BR	90		10			110	20	140	10.5		5.30%	201	65	4	12	
28	340				0.65	CR	75	20	5			50	110	175	10.5		5.30%	170	24	X	26	
29	320				0.55	CR BR	50	10				115	115	1110	10.5		7.25%	1430	20	5	9	
30	300				0.55	CR BR		10				35	5	114	10.5		2.80%	5	14	8	16	
31	280				1.40	CR	25		5			44	110	125	10.5		4.115%	115	32	18	5	

GEOCHEMICAL SAMPLE DATA SHEET

Project :
 Locality : COLEBROOK
 Grid Name : COLEBROOK
 Nominal Grid Azimuth :
 Material : SOIL
 Sample Method : AUGER
 Sampled By : P. DORNEY
 Date : 3-7-82
 Size Fraction Analysed :
 Analysed By :
 Method :

SAMPLE NUMBER	Site Location Data				Soil Composition Data						Geology	METAL CONTENT (ppm. unless specified)										
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Silt	Rock Frag.	Organic		Contam.	Cu	Pb	Zn	Al	Au	Fe %	Mn	As	Sn	C
	Grid Easting	NORTHING	EASTING	DEPTH																		
52353	375700	53	3	0.60	GY	80	15	5				10	X	15	10.5		14000	2.5	X	X	1	
354	870	53	3	0.30	GY	70	10	10				X	X	15	X		11800	1.5	X	X	2	
355	820	53	3	0.80	GY	80	20					5	5	10	X		11800	1.0	X		3	
356	840	53	3	0.30	GYBR	70	25	5				5	X	15	X		12500	1.5	X	X	10	
357	860	53	3	0.75	GY	80	10	10				10	X	20	X		13100	1.5	44	2	5	
358	880	53	3	0.30	GYBK	70	20	10				5	X	15	X		13000	1.5	44	4	4	
359	900	53	3	0.55	GY	60	20	20				X	X	10	X		128100	1.5	X	116	5	
360	920	53	3	0.60	GY	20	60	20				5	X	15	X		11900	1.0	X	2	11	
361	940	53	3	0.65	GYYL	60						X	X	10	X		120350	1.0	X	113	1	
362	960	53	3	0.25	GYBR	30	40	10	20			15	X	25	X		13450	2.0	X	X	11	
363	980	53	3	0.40	GY							X	X	15	X		12100	1.5	X	X	5	
364	376000	53	3	0.50	GY	10	60	25				X	X	10	X		11600	1.0	X	X	2	
365	020	53	3	0.30	GYGN	40	60					5	X	10	X		1700	1.0	3	X	1	
366	040	53	3	0.70	YL	90	10					30	X	20	X		5.10%	2.0	113	X	11	
367	060	53	3	0.55	YL	30	5.5					40	X	40	X		3.75%	1.0	6	X	10	
368	080	53	3	0.55	YLOR	40	60					15	X	15	X		2.75%	1.5	9	X	4	
369	100	53	3	0.30	GYBR	50	30	10				20	X	20	X		1.13%	1.5	113	4	3	
370	120	53	3	0.40	GYBR	70	30					5	X	15	0.5		13700	1.5	X	X	20	
371	140	53	3	0.60	GY	60	40					X	X	15	0.5		11500	1.0	X	X	8	
52372	376160	53	3	0.50	GY	10	50	40				5	X	15	X		11400	1.0	X	X	12	

GEOCHEMICAL SAMPLE DATA SHEET

54911096

Project : Material : SOIL Size Fraction Analysed :
 Locality : COLEBROOK Sample Method : AUGER Analysed By :
 Grid Name : COLEBROOK Sampled By : P. DORNEY Method :
 Nominal Grid Azimuth : Date : 1-7-82

SAMP. NO.	Site Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm. unless specified)									
	Grid Line No	Grid Easting	NORTHING	EASTING	DEPTH	COLOUR	Clay	Sand	Rock Frag.	Organic		Contam.	Cu	Pb	Zn	Ag	Au	Fe %	Mn	As	S _n
52301	375	640			0.80	GYL	50	40	10			5	X	15	X		150	20	5	34	
302		640			0.70	GYL	70	30				15	5	25	X		1150	20	113	4	
303		680			0.60	GY	80	20				5	X	15	X		2750	20	3	51	
304		700	B		0.40	GY	40	40	20			5	X	15	X		2000	25	6	27	
305		720			0.70	GY	60	30	10			5		15	X		18250	20	X	5	
306		740			0.30	GY	60	30	10			35	5	40	X		4500	20	X	2	
52307	375	760			0.65	GY	80	20				10	X	20	X		4100	15	X	1	

Project :
 Locality : COLEBROOK
 Grid Name : COLEBROOK
 Nominal Grid Azimuth :

Material : SOIL
 Sample Method : AUGER
 Sampled By : P. DORNEY
 Date : 2-7-82

Size Fraction Analysed :
 Analysed By :
 Method :

SAMPLE NUMBER	Sample Location Data				Sample Composition Data				Geology	METAL CONTENT (ppm, unless specified)											
	Grid Line No	Grid Easting	NORTHING	EASTING	DEPTH	COLOUR	Clay	Sand		Rock Frag.	Organic	Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sn
52309	371100N	376740E	53	3	0.45	GY	60	20	20			5	X	15	X		16.95%	5	13	9	3
303		140E	53	3	0.35	GY	50	40	10			5	X	10	X		11.50%	110	19	1131	1
310		120E	53	3	0.45	GY OR GR	60	20	20			20	X	25	X		23.00%	110	8	110.5	4
311		100E	53	3	0.45	GY	50	30	20			X	X	110	X		11.30%	110	X	14	2
312		090E	53	3	0.70	GY	40	20	40			X	X	115	X		11.25%	110	X	26	4
313		060E	53	3	0.50	GY	30	50	20			X	X	110	X		11.00%	110	X	6	1
314		040E	53	3	0.75	GY OR GR	30	30	20			5	X	115	X		11.80%	115	X	6	12
315		020E	53	3	0.95	YL GR	40	50	10			45	X	245	X		5.35%	1245	9	11	4
316	376000E		53	3	0.70	OR GR	70	20	10			1150	X	35	X		11.15%	150	24	910	16
317	375900E		53	3	1.10	YL GR	40	40	20			1130	40	345	10	5	210.0%	370	96	2205	
318		060E	53	3	0.55	OR	50	15				115	20	70	X		8.10%	45	100	14	4
319		040E	53	3	0.85	YL GR	70	20	10			5	10	115	X		5.50%	110	112	4	1
320		020E	53	3	1.00	OR	90	5	5			115	45	115	X		11.80%	110	113	1	1
321		000E	53	3	0.55	GY	70	25	5			X	45	110	X		11.50%	115	14	2	11
322		080E	53	3	0.75	OR GR	70	25	5			10	115	115	0.5		21.05%	115	117	11	1
323		060E	53	3	0.60	GY	70	20	10			5	5	115	X		2.5%	115	4	2	1
324		040E	53	3	0.80	YL GR	35	5				25	115	20	X		11.95%	20	8	X	11
325		020E	53	3	0.65	YL GR	50	30	10			110	X	115	X		11.60%	20	6	2	1
326		000E	53	3	0.90	OR GR	20	10				25	30	115	X		3.55%	20	13	3	11
327		080E	53	3	1.05	BR GR	70	20	10			115	X	25	X		11.20%	20	13	2	40
328		060E	53	3	0.40	GY	10	40	50			5	X	115	X		21.0%	210	X	8	190
329		040E	53	3	0.40		10	40	50			5	X	110	X		11.50%	115	X	8	102
330		020E	53	3	0.35	GY	30	50	20			5	X	110	10.5		11.25%	115	X	20	70
331		000E	53	3	0.25	GY OR GR	60	20	15			5	X	110	X		3.40%	115	4	145	5
332		080E	53	3	0.25	GR OR GR	50	15				X	X	110	X		21.0%	115	2	113	3
52335	375460E		53	3	0.85	OR	80	20				50	X	25	X		6.55%	45	115	4	2

GEOCHEMICAL SAMPLE DATA SHEET

Project : Material : SOIL Site Fraction Analysed :
 Locality : COLEBROOK Sample Method : AUGER Analysed By :
 Grid Name : COLEBROOK Sampled By : P. DORNEY Method :
 Nominal Grid Azimuth : Date : 4-7-82

SAMPLE NUMBER	Sample Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm. unless specified)									
	Grid Line No.	AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frags.	Organic	Contam.		Cu	Pb	Zn	Al	Au	Fe %	Mn	As	Sb	Cd
	Grid Easting	NORTHING	EASTING																		
52434	374340	53	3	0.65	YL	90	5	5			35	X	150	X		31.50%	165	4	13	4	
425	32053	53	3	0.80	YL	20	10				65	15	115	0.5		6.55%	112.5	11	2	2	
426	30653	53	3	0.52	YL	85	5	10	CK		55	15	110.5	X		6.185%	102.0	11.5	1	13	
427	28053	53	3	0.65	YL	25	15				70	10	110.0	X		6.10%	112.5	10	1	11	
428	26053	53	3	0.80	YL	80	20				100	10	110	X		7.13%	120.0	10	1	11	
429	24053	53	3	0.10	YL	30	10	60	LK		160	35	265	X		9.105%	1135.0	104	650	600	
52500	374220	53	3	0.45	YL	100					50	25	165	X		4.11%	112.5	40	12	25	
		53	3																		
		53	3																		
		53	3																		
52374	374200	53	3	0.25	YL	80	20				95	5	20	0.5		9.10%	112.5	34	47	13	
375	180	53	3	0.65	YL	95	5				35	10	55	X		5.135%	110	35	24	28	
376	160	53	3		YL	90	10				35	X	55	X		4.125%	100	20	37	21	

GEOCHEMICAL SAMPLE DATA SHEET

549123 100

Project: Material: **SOIL**
 Location: **COLE BROOK** Sample Method: **AUGER**
 Grid Name: **COLE BROOK** Sampled By: **P. DORNEY**
 Nominal Grid Azimuth: Date: **2-7-82**
 Size Fraction Analysed:
 Analysed By:
 Method:

SAMPLE NUMBER	Site Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm unless specified)												
	Grid Line No	Grid Easting	NORTHING	EASTING	DEPTH	COLOUR	Clay	Sand	Rock Frag.	Organic		Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sn	C		
52334	376900	376120	53	53	0.80	OR	80	10	10			30		X	45		X			5.65	10	114	13	12
335		100	53	53	0.65	YLR	80	10	10			25	25	30		X				2.60	30	213	28	110
336		000	53	53	0.60	OR	20	60	20			X	X	5		X				3.00	5	11	24	12
337		000	53	53	0.70	CRHR	10	60	30			110		X	115		X			2.65	115	13	9	21
338		040	53	53		OR	10	30	60			X	X	5		X				10.50	10	X	8	4
339		020	53	53	0.50	GY		55	35	10		5		X	20		X			1.80	10	2	9	7
340	376000	53	53		0.60	CR	30	30	40			X	X	10		X				1.90	115	2	54	17
341	375300	53	53		0.50	GY		50	30			5		X	15		X			2.80	20	X	25	14
342		960	53	53	0.50	CR	20	60	20			X	X	10		X				1.60	115	X	13	6
343		940	53	"B"	0.30	CRHR	10	30		60		20	10	45	0.5	15	50	45		15.50	45	X	10	65
344		920	53	"B"	0.30	CRHR	10	10	70	10		5		X	115		X			4.05	30	X	4	30
345		900	53		0.45	CR	40	30	50			5		X	115	0.5				1.40	115	X	98	8
346		880	53		0.30	CR	40	10	50	30		X	X	10	0.5					1.40	115	X	39	6
347		860	53		0.45	GY		50	35			X	X	15		X				2.20	115	X	7	12
348		840	53		0.40	GY	30	20	45	5		5		X	115		X			2.40	115	X	X	4
349		820	53		0.50	GYHR	50	20	15			5		X	25		X			3.55	30	X	X	41
350	375800	53	53		0.40	CR	20	30	15			5		X	115		X			11.50	2.5	X	3	8
351		780	53		0.45	GYHR	60	25	15			10		X	115		X			2.10	2.5	X	5	18
52352	375760	53	53		0.15	DIRTY						15		X	115		X			40.50	35	X	16	1

GEOCHEMICAL SAMPLE DATA SHEET

Project :
 Location : COLEBROOK
 Grid Name : COLEBROOK
 Horizontal Grid Azimuth :
 Material : SOIL
 Sample Method : AUGER
 Sampled By : P. DORNEY
 Date : 2-7-82
 Size Fraction Analysed :
 Analysed By :
 Method :

SAMPLE NUMBER	Sonic Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm, unless specified)											
	Grid Line No.	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	Ag	Au	Fe %	Mn	As	Sn	Cr
	Grid Easting	NORTHING	EASTING																			
52474	374360	"A"	3		0.05	BR	10		90			25	105	1100	X		21.50%	159.50	7		2	115
475	37053	"B/C"	3		0.30	BR	95		5			120	5	260	X		17.01%	152.50	10		11	2.3
476	32053		3		0.45	BF						5	X	1100	X		3.25%	250	13		1	28.5
477	30053		3		1.10	YL	80	20				50	115	95	X		16.35%	1100	23		X	60
478	28053		3		0.50	BF	90	10				45	100	80	X		5.10%	40	20		X	15
479	26053		3		0.85	YL	100					50	130	85	X	5	4.10%	125	19		X	4
480	24053		3		0.90	YL	90	10				55	115	50	X		8.10%	130	21		X	13
481	22053		3		1.00	YL	90	10				80	110	75	X		7.25%	65	12		11	21
482	20053		3		0.65	YL	90	10				100	110	90	X		14.10%	145	14		X	9
483	18053		3		0.90	CR	85	15				90	30	55	X		3.55%	155	8		X	7
484	16053		3		0.55	YL	75	25				100	5	135	X		7.20%	245	7		11	61
485	14053		3		0.55	CR	80	20				40	110	50	X		5.15%	55	5		7	15
52486	374120	"B/C"	3			BR	60	20	20			50	25	70	X		4.00%	55	7		X	18

GEOCHEMICAL SAMPLE DATA SHEET

Project : Material : SOIL Size Fraction Analysed :
 Location : COLEBROOK Sample Method : AUGER Analysed By :
 Grid Name : COLEBROOK Sampled By : P. DORNEY Method :
 Nominal Grid Azimuth : Date : 24-6-82

SAMPLE NUMBER	Grid Location Data			Sample Composition Data					Geology	METAL CONTENT (ppm, unless specified)											
	Grid Line No	NORTHING	EASTING	DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sr	Cr
52412	376000	"B/C"	3	1.70	BF	100					35	25	1160	X		4.25%	290		3	3	2
413	0600	"B/L"	3	1.70	YL	100					30	40	1105	X		3.75%	360		5	X	1
414	0400		3	0.60	WH	95	5				15	30	75	X		1.85%	200		3	2	2
415	0200		3	0.55	BS	65	5	30	CK		35	30	1150	X		3.75%	215		12	10	3
416	376000		3	0.20	LT BR	75	5	20			5	5	115	0.5		11.00	20		X	52	6
417	375300		3	0.20	GY	80	10	10			X	X	110	X		11.50	15		X	10	4
418	3600		3	0.40	MH						5	5	20	X		17.00	115		X	25	12
419	3400	"B/C"	3	0.20	BR	85	5	10			5	5	20	X		16.00	140		5	11	18
420	3200		3	1.10	YL	100					15	X	115	X		2.25%	110		17	X	11
52421	375200	"B/C"	3	0.45	MH	70	5	20	5		5	X	110	0.5		2.50	115		X	9	13

GEOCHEMICAL SAMPLE DATA SHEET

549130107

Project :
 Locality : COLE BROOK
 Grid Name : COLEBROCK
 Horizontal Grid Azimuth :
 Material : SOIL
 Sample Method : AUGER
 Sampled By : P. DORNEY
 Date : 2-7-82
 Size Fraction Analysed :
 Analysed By :
 Method :

SAMPLE NUMBER	Sample Location Data				Sample Composition Data				Geology	METAL CONTENT (ppm. unless specified)												
	Grid Easting	NORTHING	EASTING	DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sn	C	
52452	374060	35	"B/C"	31	0.20	BR	70	20	10			110	30	340	10	5	118	10%	1320	17	13	10.4
453	340	53	"B/C"	31	0.45	DKBR	80	10	10			110	15	260	X		6	10.5%	130	50	13	10.3
454	320	53		31	0.30	DKBR	65	30				110	X	300	X		118	15%	34	50	24	X 10.3
455	300	53		31	0.90	YL	90	10				230	50	430	X		112	10%	131	15	114	X 10.5
456	280	53		31	0.75	YL	90	10				75	35	120	X		7	20%	110	15	113	X 10.30
457	260	53		31	0.50	CR	100					105	115	1180	X		9	13.5%	120	15	17	X 10.3
458	240	53		31	1.35	GR	80	20				75	55	1215	X		7	17%	113	20	18	X 10.2
459	220	53	"B/C"	31	1.35	YL	100					50	75	155	X		5	15%	110	20	17	X 10.2
460	200	53	"B/C"	31	1.60	YL	100					30	50	35	X		4	10%	110	20	21	X 10.2
461	180	53	"B/C"	31	0.60	YL	100					10	30	25	X		2	17.5%	115	25	17	X 10.2
462	160	53	"B/C"	31	0.30	YL	100					25	15	35	X		3	10.5%	115	25	17	X 10.24
52463	374140	53		31	0.80	YL	100					30	15	140	X		2	14%	115	25	17	X 10.5

GEOCHEMICAL SAMPLE DATA SHEET

549132

109

Project :
 Locality : COLEBROOK
 Grid Name : COLEBROOK
 Nominal Grid Azimuth :

Material : S.O.I.A.
 Sample Method : AUGER
 Sampled By : P. DORNEY
 Date : 2-5-6-82

Size Fraction Analyzed :
 Analyzed By :
 Method :

SAMPLE NUMBER	Sample Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm, unless specified)										
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frag.	Organic		Contam.	Cu	Pb	Zn	Ag	Au	Fe %	Mn	As	S _n	C
	Grid Easting	NORTHING	EASTING	DEPTH																		
52432	376100				LTER	90	10					110	35	35	X		17050	105	6	113		
433	080	"B/C"		1.65	GN	100						25	45	160	X		200%	330	57	2		
434	080	"B/C"		1.70	GN	100						30	45	140	X		240%	405	6	5		
435	040	"B/C"		1.60	LR	100						20	40	90	X		155%	230	3	2		
436	020	"B/C"		1.60	YL	100						30	55	110	X		210%	230	8	3		
437	376000			0.45	YL	100						15	40	110	X		180%	225	4	X		
438	375900			0.55	DK BR	70	10	20				5	30	35	X		4300	45	3	113		
439	940	"B/C"		0.30	BR	60	10	10				5	5	20	X		2000	35	2	43	0	
440	940	"B/C"		0.45	WH	60	20					5	110	110	O.F.		3700	35	X	28	4	
52441	375920	"B/C"		0.65	BR	90	10					X	X	110	X		900	110	2	60	17	

GEOCHEMICAL SAMPLE DATA SHEET

Project : Material : SOIL Size Fraction Analysed :
 Locality : COLEBROOK Sample Method : AUGER Analysed By :
 Grid Name : COLEBROOK Sampled By : P. DORNEY Method :
 Horizontal Grid Azimuth : Date : 25-6-82

SAMPLE NO	Sample Location Data				Sample Composition Data				Geology	METAL CONTENT (ppm, unless specified)										
	Grid Line No	AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe %	Mn	Ag	Sr
52442	370300N				YL	80	15				45	35	75	X		31207	120	18	7	
443	00053	"B"		0:30	BR	50	20	15		CK										
444	04053	"B/C"		1:05	GN	100					5	5	30	X	13550	445	3	2	1	
445	102053	"B/C"		0:30	LTBR	90	5		5		5	10	30	X	2450	140	2	11	11	
446	376000			0:70	YL	85	5	10			15	40	90	X	31057	1250	12	3		
447	375950	"B/C"		1:00	LTYL	100					20	25	90	X	21207	235	8	X		
448	98053	"B/C"		0:20	LTBR	70	20	10			5	X	25	X	10850	115	X	66	1	
449	94053			0:35	WH	40	20	40			5	X	10	X	10800	15	X	92	1	
450	92053			0:60	WH	50	10	40			X	X	15	X	11150	20	X	128	1	
52451	375400			0:30	WH	40	10	50			5	X	15	X	21400	25	X	100	3	

Project : Mt. Black. E.L. 1/62.
Locality :
Grid Name : West Murchison.
Magnetic Grid Azimuth : A.M.G.

Material : Soil Samples.
Sample Method : Hand Shell Auger
Sampled By : C.M. B.M.
Date : *Jan. 1980. DEC. 1982.

Size Fraction Analysed : -80*
Analysed By : Analabs
Method : A.A.S.

Comparison of Jan 1980 and Dec. 1982 Sampling.

SAMPLE NUMBER	Sample Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm unless specified)										
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frag.	Organic		Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ag	Sn	W
	369500N	NORTHING	EASTING	Grid Easting																		
52139	382800	53	3	0.20	DK BR	75	20		5			X	X	X	X		2850	15	X	X		
52140	780	53	3	0.45	LT BR	75	20		5			X	X	5	X		2000	15	X	X		
52141	760	53	3	0.25	DK BR	75	10		15			5	X	10	X		600	X	X	X		
52142	740	53	3	0.25	CR BR	90	5		5			5	X	15	X		5450	20	X	X		
52143	720	53	3	0.25	BR	85	10		5			5	X	10	X		9350	55	X	X		
53268	382700	53	3	0.35	DK BR BR	80	10		5	5		5	X	5	X		1950	10	X	X		
*32894		53	3	0.35	DK BR	40			60	Bkbr		10	5	63	5		1050	15				
53267	680	53	3	0.35	DK BR	60	10	20	10			5	10	10	X		5300	40	X	X		
*32895		53	3	0.25	BR	40			60	Bkbr		40	25	45			3800	60				
53266	660	53	3	0.20	BR	50	25		5	20		X	20	10	X		3100	25	X	X		
*32896		53	3	0.20	BRGY	60			30			15	10	16			1700	20				
53265	640	53	3	0.40	DK BR	55	15	20	10			5	10	10	X		3100	25	X	X		
*32897		53	3	0.30	LT BR	55			40	Bkbr		5	35	30			600	15				
53264	620	53	3	0.20	GY BR	60	10	20	10			X	20	5	X		2300	30	X	X		
*32898		53	3	0.15	GY	50	20		30			5	35	50			1250	15				
53263	382600	53	3	0.35	BR	75	10		5	10		5	10	5	X		4900	30	X	X		
*32899		53	3	0.45	GY	80			20			X	15	10			1000	5				
53262	580	53	3	0.20	LT BR WH	60	40					X	20	5	X		1550	5	X	X		
*32900		53	3	0.20	LT GR	40			15	25		X	10	10			1600	5				
53261	560	53	3	0.60	GY BR	65	20	10	5			5	20	5	X		2650	20	X	X		
*32901		53	3	0.40	GY BR	40			30	Bkbr		X	10	10			1000	5				
53260	540	53	3	0.60	LT BR GY	30	30	40				X	5	10	X		3000	25	X	X		
*32902		53	3	0.40	WH	50	10		10			X	5	10			1200	5				
53259	382520	53	3	0.40	GY BR	55	30	10	5			X	10	15	X		2800	20	X	X		
*32903		53	3	0.45	LT BR	50	10		30			5	5	10			1550	15				

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GEOCHEMICAL SAMPLE DATA SHEET

549137

Project : Mt. BLACK J.V. R.A/62 Material : Soil Samples Nom. C horizon Size Fraction Analysed : -80"
 Locality : Sample Method : Hand shell Auger Analysed By : Analabs
 Grid Name : West Murchison Sampled By : G.B. P.R.C. Method : A.A.S.
 Nominal Grid Azimuth : A.M.G. Date : Nov. 1982

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm. unless specified)											
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frags.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ag	Sn	W
	3692100N	Grid Easting	NORTHING	EASTING																		
52031	382400	53		3	0.30	DK BR	40		60			25	110	165	0.5		1800	20	11		X	
30	420	53		3	0.30	DK BR BR	70		30			10	5	10	X		5600	25	X		X	
29	420	53		3	0.50	DK BR BR	80	10	10			5	X	5	0.5		5700	40	X		X	
28	460	53		3	0.50	CR BR	10	30	60			5	X	8	X		3350	25	X		X	
27	480	53		3	0.30	DK BR	30	30	40			10	X	10	X		6500	50	X		X	
26	500	53		3	0.30	CA GY BR	10	60	30			5	5	5	X		3150	20	X		X	
25	520	53		3	0.40	GY BR	70	10	20			10	X	10	X		5950	35	X		X	
24	540	53		3	0.55	DK BR CR	40	20	20	20		10	5	15	X		4050	25	X		J	
23	560	53		3	0.30	DK BR	70		30	A+B		55	55	130	X		2750	25	15		5	
22	580	53		3	0.30	CR BR GY	40	20	40			10	5	10	0.5		5850	35	X		X	
21	600	53		3	0.40	CR GY BR	80	10	10			10	20	15	X		5650	30	X		X	
52020	620	53		3	0.30	DK BR BR	70	10	20			15	5	15	X		1250	80	X		2	
19	640	53		3	0.40	LT GY BR	70	10	20	50 A+B		5	10	10	X		3300	20	X		X	
18	660	53		3	0.50	GY BR	20	20	40	20		10	5	10	X		7150	45	X		2	
17	680	53		3	0.40	LT BR GY	10	70	20			5	X	10	X		3550	20	X		X	
16	700	53		3	0.40	BR	80	5	10	5		10	5	5	X		7000	40	X		X	
15	720	53		3	0.30	BR	70	10	15	5		10	X	5	X		6350	55	J		X	
14	740	53		3	0.45	LT BR GY	85	5	5	5		5	X	10	X		4400	15	X		X	
13	760	53		3	0.30	BR	85	5	5	5		10	X	5	X		5900	30	X		X	
12	780	53		3	0.15	BR	85		5	10		15	10	10	X		1200	70	J		X	
11	800	53		3	0.60	LT BR	75	5	15	5		5	10	5	X		2700	15	X		X	
52010	820	53		3	0.15	DA BR	90	5	5	B?		50	55	140	X		1900	15	17		5	
09	840	53		3	0.45	GR BR BR	35	30	30	5		10	10	5	X		6100	30	X		X	
08	860	53		3	0.25	GY BR	60	10	25	5		10	10	5	X		4050	20	X		X	
07	890	53		3	0.45	BR	75	10	10	5		10	5	5	X		6150	30	X		X	
06	900	53		3	0.35	GY BR	65	20	10	5		15	5	5	X		2950	15	X		X	
05	920	53		3	0.30	BR	75	10	10	5		25	X	10	X		5650	30	X		X	
04	940	53		3	0.45	GY BR	30	20	50			25	10	10	X		6100	25	X		X	
03	960	53		3	0.25	BR	20	15	60	5		40	15	15	X		8350	45	X		2	
52002	382950	53		3	0.45	GY BR	20	30	45	5		50	5	10	X		3400	30	X		2	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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GEOCHEMICAL SAMPLE DATA SHEET

549139

Project : Mt. Black IV. E.A. 1/6A. Material : Soil Samples. Nom. C horizon. Size Fraction Analysed: -80"
 Locality : Sample Method : Hand Shell Auger. Analysed By : Analaba
 Grid Name : West Murchison. Sampled By : G.B. PRC. Method : A.A.S.
 Nominal Grid Azimuth : A.M.G. Date : Dec. 1982.

SAMPLE NUMBER	Sample Location Data			Sample Composition Data						Geology	METAL CONTENT (ppm, unless specified)										
	Grid Line No	AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frag.	Organic		Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ag	Sn	W
	369300N	NORTHING	EASTING																		
52564	382440	53	3	0.30	CR BR	10	80	10				5	5	10	X	3450	20	X	X		
65	460	53	3	0.55	GY BR CA	50	30	20				5	5	30	X	7050	30		X		
66	480	53	3	0.45	DK BR	45	30	5	20			5	X	10	X	4250	25	X	X		
67	500	53	3	0.15	CR GY	50			50			5	X	10	X	3000	20	X	X		
68	520	53	3	0.25	LT DK BR	20			50	80		5	10	10	X	7600	45	X	X		
69	540	53	3	0.45	DK BR GY	50			20			X	5	10	X	2600	15	X	X		
52570	560	53	3	0.15	DK BR	70			30			5	X	10	X	5600	30	X	X		
71	590	53	3	0.20	DK BR	50			50			5	15	35	X	1850	15	X			
72	600	53	3	0.45	GY	70	10	15	5			X	5	5	X	2100	10	X	X		
73	620	53	3	0.30	DK BR	60	20		20			X	X	5	X	1750	5	X	X		
74	640	53	3	0.45	DK BR BR	50			50	A+B		X	10	15	X	2150	10	X	X		
75	660	53	3	0.20	DK GY BR	80	10		10			5	10	5	X	2350	15	X	X		
76	680	53	3	0.30	DK BR GY	40	5	50	5			X	X	5	X	2300	10	X	X		
52577	700	53	3	0.30	DK BR GY	25	15	50	10			5	15	15	X	3750	20	X	X		
53251	720	53	3	0.20	BR GY	80			20			5	5	10	0.5	2250	15	X	X		
53250	740	53	3	0.15	GY BR	65	5	5	25			5	10	15	X	5350	40	X	X		
41	760	53	3	0.20	BR GY	40	5	50	5			5	10	10	X	5100	60	X	X		
43	780	53	3	0.30	DK BR	80	5	15				5	5	35	0.5	2050	10	X	X		
47	800	53	3	0.50	BR GY	40	5	50	5			5	10	15	X	6700	35	X	X		
43	820	53	3	0.50	BR	55	10	30	5			5	X	5	X	3300	25	X	X		
45	840	53	3	0.40	BR GY	70	5	20	5			X	X	X	X	3450	25	X	X		
44	860	53	3	0.50	BR	50	10	35	5			5	5	10	X	3500	30	X	X		
43	880	53	3	0.20	BR	65	10	15	10			X	5	5	X	2950	35	X	X		
42	900	53	3	0.40	GY BR	60	15	20	5			X	5	10	X	2600	20	X	X		
47	920	53	3	0.40	LT BR	80	5	10	5			X	5	15	X	3350	30	10	X		
53240	940	53	3	0.40	LT BR BR	60	10	20	10			X	X	5	X	2700	25	X	X		
39	960	53	3	0.20	BR	50	15	25	10			5	5	10	X	2800	60	X	X		
38	980	53	3	0.15	GY BR							X	X	10	X	2850	40		X		
53257	993000	53	3	0.55	BR	65	15	10	10			5	5	10	X	3100	230	X	X		

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GEOCHEMICAL SAMPLE DATA SHEET

549140

Project : *Mc. BLACK J.V. E-1/62* Material : *Soil Samples* Size Fraction Analysed : *-80"*
 Locality : Sample Method : *Hand Shell Auger* Analysed By : *Analabs*
 Grid Name : *West. Murchison* Sampled By : *G.B. P.A.C.* Method : *A.A.S.*
 Nominal Grid Azimuth : *AMG* Date : *Dec. 1982*

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm. unless specified)											
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frags.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ag	Sn	W
	Grid Easting	NORTHING	EASTING	CLAY																		
52579	332420	53		3	0.20	DK BR	60	10	5	2.5	B	5	10	2.5	X		2300	20	X	X		
79	440	53		3	0.40	DK BR	65	5	5	2.5		5	5	1.5	X		4150	2.5	X			
52580	490	53		3	0.10	GY BR	70	10	20			5	5	2.5	X		5350	30	X	X		
81	490	53		3	0.60	LT BR GY	50	20	30			5	X	4.0	X		7150	3.5		X		
82	500	53		3	0.15	DK BR	70	5	10	1.5		5	1.5	3.0	X		9250	5.5	X	X		
83	520	53		3	0.45	LT BR GY	60	10	2.5	5	CK	X	X	1.0	X		2600	1.5	X	X		
84	540	53		3	0.40	BR GY	75	10	10	5		5	1.0	1.5	X		5350	2.5	X	X		
85	560	53		3	0.45	BR	60	10	2.5	5		X	X	5	X		3200	1.5	X	X		
86	580	53		3	0.35	BR BK	80			2.0	B	5	4.0	4.5	X		1100	5	X	X		
87	600	53		3	0.30	DK BR	75		5	2.0	CK	3.0	7.5	12.5	X		5650	8.0	3	X		
88	620	53		3	0.40	DK BR	85			1.5	B	1.5	1.5	3.5	X		2550	7.5	2	X		
89	640	53		3	0.20	DK BR BR	80	5	5	1.0		4.0	3.0	6.5	0.5		4700	3.0	1	1		
52590	660	53		3	0.45	DK BR BR	85	5	5	5		1.0	2.0	4.0	X		2550	5.0	2	X		
91	680	53		3	0.15	DK BR	75	5	5	1.5		1.0	2.5	2.5	0.5		3500	2.5	X	X		
92	700	53		3	0.30	DK BR	65		1.5	2.0		1.0	5.0	2.5	X		1400	2.0	X	X		
93	720	53		3	0.15	BR GY	70	5	1.0	1.5	B	1.0	4.5	2.0	X		4650	7.5	X	X		
94	740	53		3	0.40	GY BR	55	40	5			5	1.0	5	X		2200	1.5	X	X		
95	760	53		3	0.25	BR	60	10	1.5	1.5		2.5	5	2.0	X		4750	6.0	X	X		
96	780	53		3	0.20	BR	50	10	2.5	1.0		5	5	2.0	0.5		2400	1.5	X	X		
97	800	53		3	0.30	BR	75	5	10	1.0		5	5	1.0	X		2680	3.0	X	X		
98	820	53		3	0.50	BR	75	10	5	1.0		5	5	5	X		2800	2.0	X	X		
52599	840	53		3	0.15	DK BR	70	5	5	2.0		1.0	5	1.5	X		7150	6.5	1	X		
52600	860	53		3	0.20	DK BR	75	10	5	1.0	S.P.A.K	5	5	1.0	X		4050	2.5	1	X		
53230	880	53		3	0.45	BR	55	10	2.0	1.0		1.0	X	1.5	X		2800	2.5	X	X		
31	900	53		3	0.45	BR	70	10	1.5	5		5	5	5	X		3100	2.0	X	X		
32	920	53		3	0.35	BR	70	10	1.5	5		5	5	1.0	X		2650	2.0	X	X		
33	940	53		3	0.35	GY BR	60	30	5	5		X	5	5	X		2550	1.5	X	X		
34	960	53		3	0.45	BR GY	55	10	2.0	1.5		5	5	2.5	X		7050	3.0	4	X		
35	980	53		3	0.20	BR	60	10	2.0	1.0		1.0	1.0	2.5	X		5600	3.0	X	X		
53236	990	53		3	0.30	BR	80	5	5	1.0		5	5	1.5	X		3200	6.5	X	X		

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GEOCHEMICAL SAMPLE DATA SHEET

549141

Project : MG BLACKTIE L/162
 Locality :
 Grid Name : West Murchison
 Nominal Grid Azimuth : A79
 Material : Soil Samples
 Sample Method : Hand shell Auger
 Sampled By : G.B. B.M.
 Date : Jan 1983 Dec 1982
 Size Fraction Analysed : -80"
 Analysed By : Analabs
 Method : A.A.S.

SAMPLE NUMBER	Sample Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm unless specified)										
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Snd	Rock Frags.	Organic		Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ag	Sn	W
	369500N	Grid Easting	NORTHING	EASTING																		
53253	382	200	53	3	0.15	GY BR	60	10	15	15		5	10	20	0.5		3300	35	X	X		
54		220	53	3	0.40	DK BR GY	55	25	10	10		5	10	20	X		3600	30	X	X		
55		440	53	3	0.25	GY BR WH	55	20	25			5	10	25	X		4550	35	X	X		
56		460	53	3	0.20	BR	35	10	50	5		5	5	25	X		4350	35	X	X		
57		480	53	3	0.35	GY BR	60	20	20			X	5	5	X		1900	15	X	X		
58		500	53	3	0.45	GY BR	40	45	15			X	5	5	X		2100	15	X	X		
59		520	53	3	0.40	GY BR	55	30	10	5		X	10	15	X		2600	20	X	X		
53260		540	53	3	0.60	LT BR GY	30	30	40			X	5	10	X		3000	25	X	X		
61		560	53	3	0.60	GY BR	65	20	10	5		5	20	5	X		2650	20	X	X		
62		580	53	3	0.30	LT BR WH	60	40				X	20	5	X		1550	5	X	X		
63		600	53	3	0.35	BR	75	10	5	10		5	10	5	X		4900	30	X	X		
64		620	53	3	0.20	GY BR	60	10	20	10		X	20	5	X		2300	30	X	X		
65		640	53	3	0.40	DK BR	55	15	20	10		5	10	10	X		3100	25	X	X		
66		660	53	3	0.20	BR	50	25	5	20		X	20	10	X		3100	25	X	X		
67		680	53	3	0.35	DK BR	60	10	20	10		5	10	10	X		5300	40	X	X		
53264		700	53	3	0.35	DK BR BR	80	10	5	5		5	X	5	X		1950	10	X	X		
52143		720	53	3	0.25	BR	85	10		5		5	X	10	X		9350	55	X	X		
42		740	53	3	0.25	CR BR	90	5		5		5	X	15	X		5450	20	X	X		
41		760	53	3	0.25	DK BR	75	10		15		5	X	10	X		600	X	X	X		
52140		780	53	3	0.45	LT BR	75	20		5		X	X	5	X		2000	15	X	X		
39		800	53	3	0.20	DK BR	75	20		5		X	X	X	X		2850	15	X	X		
38		820	53	3	0.35	BR	65	20	10	8 c.k		5	X	5	X		4000	20	X	X		
37		840	53	3	0.15	BR	75	15	5	5		5	5	5	X		3000	15	X	X		
36		860	53	3	0.20	BR	80	15	5			X	X	10	X		4450	25	X	X		
35		880	53	3	0.15	BR	70	20		10		5	5	10	X		6450	40	X	X		
34		900	53	3	0.35	LT BR	40	70	5	5		X	X	10	X		3450	10	X	X		
33		920	53	3	0.30	LT BR	30	60	5	5		X	X	5	X		2300	10	X	X		
32		940	53	3	0.45	LT BR	45	50	5			5	10	10	X		3650	15	X	X		
52131	382	960	53	3	0.25	DK BR	35	5		60 A+B		5	20	45	X		1300	10	X	X		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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GEOCHEMICAL SAMPLE DATA SHEET

549142

Project : ~~W. Mt. Black J.V.~~ E.L./62 Material : Soil Samples Size Fraction Analysed: -80"
 Locality : Sample Method : Hand Shell Auger Analysed By : Analabs
 Grid Name : West Murchison. Sampled By : B.M. Method : A.A.S.
 Nominal Grid Azimuth : A.M.G. Date : Dec. 1982.

SAMPLE NUMBER	Sample Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm unless specified)										
	Grid Line No		AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frags.	Organic		Contam.	Cu	Pb	Zn	Ag	Au	Fe	Mn	As	Sn	W
	Grid Easting	NORTHING	EASTING																			
52094	382	420	53		0.30	LTBRWH	75	20	5			X		X	10		X	2750	20	X	X	
93		440	53		0.30	LTBR	50	50			CK	X		B	5		X	2450	20	X	X	
92		460	53		0.25	WH	10	70	15	5		X		X	0.5			4150	35	1	X	
52091		480	53		0.20	LTBRBR	20	65	15			X		X	10	0.5		2100	15	1	X	
52088		500	53		0.30	BR	10	70	10			X		X	5		X	3050	25	X	X	
87		520	53		0.25	LTBR	30	50	10	10	CK	X		X	5		X	1500	10	X	X	
86		540	53		0.25	LTBR	55	40	5			X		X	5		X	2650	20	X	X	
85		560	53		0.30	WH		90	10			X		X	5	0.5		3650	20	X	X	
84		580	53		0.45	LTBRWH	10	70	20			S		X	5		X	3350	45	X	X	
83		600	53		0.30	DKLTBR	50	40		10		S		S	10	0.5		2050	20	X	X	
82		620	53		0.50	DKBR	45	30	5	10	B+C	S		X	15		X	3400	30	X	X	
81		640	53		0.25		15	60	15	10	A+B	S		25	25		X	3250	30	X	X	
52060		680	53		0.45	LTBRWH	60	30	5	5		S		S	5		X	3250	20	X	X	
79		680	53		0.25	BR	65	30	5			S		X	5		X	4050	30	X	X	
52058		700	53		0.15	DKBR	25	5		70	A+B	10		S	5		X	8500	55	X	X	
52100		720	53		0.20	BR	80	15	5			S		S	15		X	2500	15	X	X	
9		740	53		0.30	LTBR	55	30	5	10		S		X	25		X	4150	30	X	X	
48		760	53		0.30	BR	75	5		20		S		S	15		X	550	5	X	X	
27		780	53		0.30	DKBR	85	5		10	A+B	S		35	35		X	500	10	X	X	
26		800	53		0.20	DKBR	75	15	5	5		X		S	5		X	3250	25	X	X	
25		820	53		0.25	BR	65	20	15			X		20	10		X	2300	20	X	X	
24		840	53		0.30	BR	60	20		20		X		X	5		X	4000	35	X	X	
23		860	53		0.25	BR	85	5		10		S		X	5		X	3000	15	1	X	
22		880	53		0.45	LTBR	75	15	10			X		S	5		X	2400	10	X	X	
21		900	53		0.35	DKBR	80	15		5		S		S	25	0.5		2100	40	X	X	
52120		920	53		0.25	BR	80	15		5		X		X	5	0.5		3700	25	X	X	
19		940	53		0.25	DKBR	90	5		5		S		X	5		X	2550	35	X	X	
18		960	53		0.35	BR	55	30	10	5		X		X	10		X	2800	15	X	X	
17	382	980	53		0.25	DKBR	50	20				S		S	15		X	5300	35	X	X	
52115	383	3000	53		0.20	DKBR	70	15	10	5		X		X	5		X	2550	15	X	X	

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GEOCHEMICAL SAMPLE DATA SHEET

549144

Project : Mt. Black J.V. E-41/62 Material : Soil Samples Size Fraction Analysed: -80*
 Locality : Sample Method : Hand Shell Auger Analysed By : Analabs
 Grid Name : West Murchison. Sampled By : B.M. Method : A.A.S.
 Nominal Grid Azimuth : A.M.H. Date : DEC. 1982.

SAMPLE NUMBER	Sample Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm unless specified)										
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frags.	Organic		Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ag	Sn	W
	369700N	Grid Easting	NORTHING	EASTING																		
52062	382420	53		3	0.15	LT BR	50	40	5	5		10	15	15	0.5		5200	35				
61	440	53		3	0.20	LT BR	30	60	5	5		10	15	15		X	8450	60			X	
52066	430	53		3	0.25	BR	70	10	5	5	CK	10	10	10		X	5250	35			X	
59	480	53		3	0.25	LT BR WH	5	90	5	5	CK	10	5	10		X	6700	40			X	
58	500	53		3	0.20	LT BR	15	70	10	5		10		10		X	3650	25			X	
57	520	53		3	0.35	LT BR WH	60	35		5		20	10	20	0.5		7300	50			X	
56	540	53		3		LT DK BR	45	30	20	5		10	5	25		X	5750	40			X	
55	560	53		3	0.30	BR	60	35		5		10		10		X	7900	55			X	
54	580	53		3	0.25	BR	75	20		5		5		5		X	3250	25			X	
53	600	53		3	0.30	GN	75	20	5			10		10		X	6000	40			X	
52	620	53		3	0.50	BR	50	30	10	10		5		5	0.5		6300	40			X	
51	640	53		3	0.35	BR	65	30	5			5		15		X	4300	30			X	
52050	660	53		3	0.40	LT BR	60	40				5		10		X	5350	30			X	
49	680	53		3	0.50	BR	80	15	5			5		10		X	3200	25			X	
52048	700	53		3	0.40	LT DK BR	40	40	15	5		5		10		X	4600	30			X	
52114	720	53		3		DL BR	80	10	10			15	25	40		X	8350	60			X	
13	740	53		3	0.30	BR	65	20	15			5		10		X	5600	35			X	
13	760	53		3	0.45	DK BR	60	20	20			5		15		X	7050	45			X	
11	780	53		3	0.55	BR	60	40				5		5		X	2800	25			X	
52110	800	53		3	0.55	DK BR	35	5	60	A+B		5	35	45		X	1250	20			X	
09	820	53		3	0.20	DK BR	40	10	50	A+B		X		5		X	4900	35			X	
08	840	53		3	0.30	LT BR WH	10	90				X		5		X	1800	15			X	
07	860	53		3	0.35	BR	65	30	5			4		10		X	1700	15			X	
06	880	53		3	0.20	GY BR	65	30		5		5		5		X	3050	25			X	
05	900	53		3	0.30	BR	50	40	5	5		5		10		X	3550	25			X	
04	920	53		3	0.20	DK BR	20	70	10			10		15		X	5550	40			X	
03	940	53		3	0.25	BR	75	15	10			5		15		X	4700	30			X	
02	960	53		3	0.30	BR	35	50	15			10		5		X	4800	25			X	
521101	352980	53		3	0.20		35	5	60			10		X		X	5800	40			X	
52096	353000	53		3	0.55	LT BR BR	20	70	10	DK		5		5		X	2750	25			X	

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GEOCHEMICAL SAMPLE DATA SHEET

549146

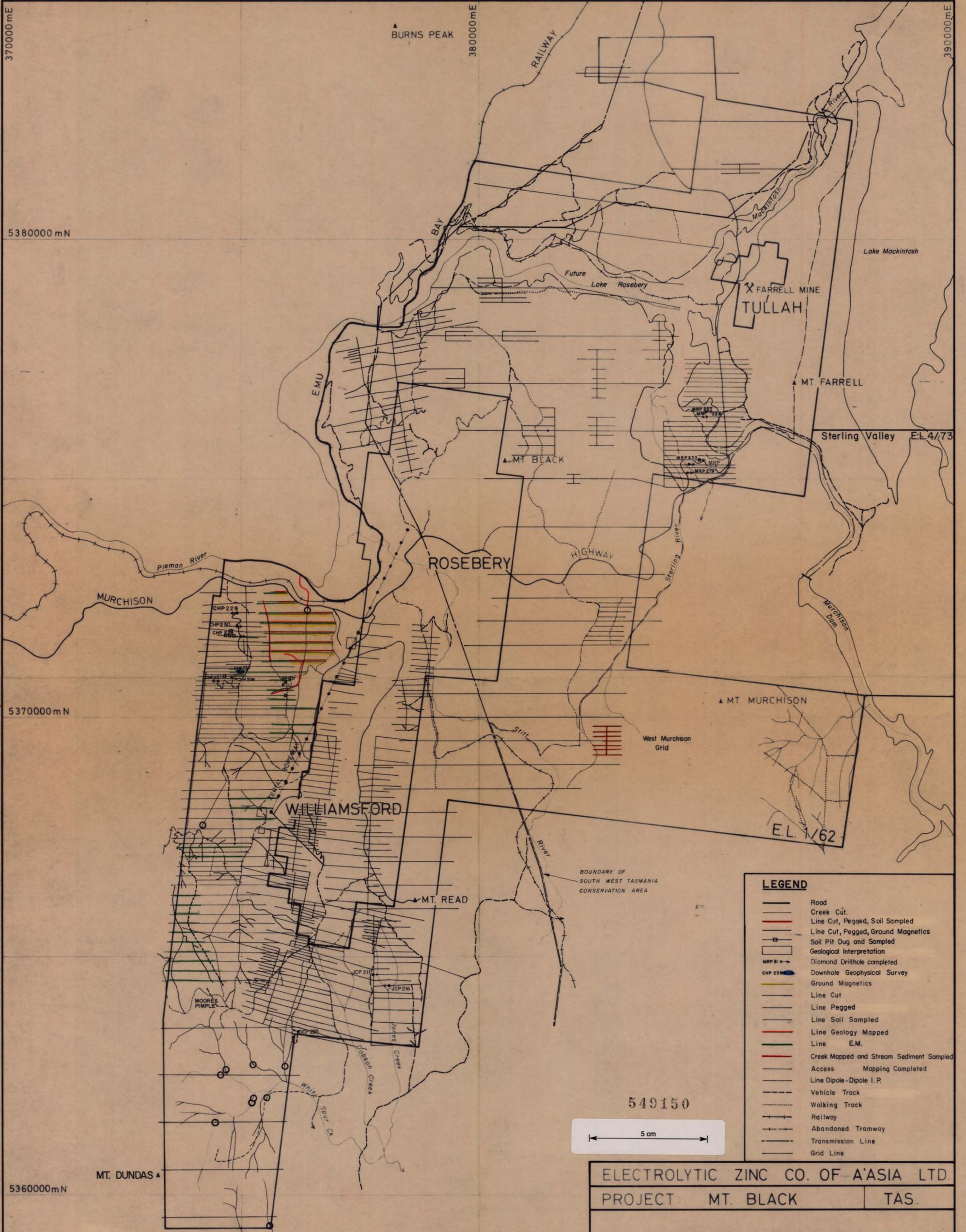
Project : Mt. BLACK IV... EA/62 Material : Soil Samples Size Fraction Analysed: -80*
 Locality : Sample Method : Hand shell Auger Analysed By : Analabs
 Grid Name : West Murchison Sampled By : Method : A.A.S.
 Nominal Grid Azimuth : A.M.G. Date :

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm unless specified)											
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frags.		Organic	Contam	Cu	Pb	Zn	As	Au	Fe	Mn	Ag	Sn	W
	Grid Easting	NORTHING	EASTING																			
52032	382400	53	3	0.20	LT BR WH	25	70	5				5		5	0.5		5350	45		X		
33	420	53	3	0.40	LT BR BR	30	60	10				5		5		X	4150	35		X		
34	440	53	3	0.60	BR WH		85	15				5		5		X	5600	45		I	A	
35	460	53	3	0.40	BR	25	60	15				10		X		X	5600	45		A	A	
36	480	53	3	0.25	BR	30	55	15				5		X		X	6000	45		I	A	
37	500	53	3	0.35	BR WH	20	60	15				10		X		X	4100	35		A	A	
38	520	53	3	0.50	BR WH	10	80	10				5		X		X	4100	30		X	A	
39	540	53	3	0.15	LT BR CR	30	65		5			5		5	0.5		3550	35		X	A	
52040	560	53	3		BR WH	15	75	5	5			5		X		X	4850	35		A	X	
41	580	53	3	0.15	LT BR CR	25	55	20				10	25	40		X	5600	50		X	I	
42	600	53	3	0.20	BR	15	75	5	5			5		X		X	3550	30		I	A	
43	620	53	3	0.45	BR	15	70	10	5			5		X		X	4150	30		I	A	
44	640	53	3	0.25	LT BR		90	5				5		X	0.5		2400	15		X	A	
45	660	53	3	0.40	BR	10	80	10				5		X		X	4750	35		A	A	
46	680	53	3	0.45	BR	80	15		5			5		X		X	2350	15		X	A	
52047	700	53	3	0.50	BR BR	70	25	5				5		X	0.5		4050	30		X	A	
52077	720	53	3	0.55	BR	50	40	10				5		X		X	3950	25		X	A	
76	740	53	3	0.35	BR	85	10		5			5		X		X	3050	20		X	X	
75	760	53	3	0.20	WH BR	25	70	5				5		X		X	4200	30		X	X	
74	780	53	3	0.20	DK BR	50	40		10			5		X		X	3050	25		X	X	
73	800	53	3	0.35	BR	30	60	5	5			5		X		X	2900	20		X	A	
72	820	53	3	0.30	BR	40	60					5		5		X	2050	15		X	A	
71	840	53	3	0.15	LT BR	75	20		5			5	20	5	0.5		4650	35		X	A	
52070	860	53	3	0.20	LT BR	35	50	15				5		5		X	3050	25		X	X	
69	880	53	3	0.30	BR	55	20		25	A+B		15	70	35		X	1050	130		X	A	
68	900	53	3	0.45	GY WH	10	75	15		CK		5	20	10		X	3600	25		X	I	
67	920	53	3	0.20	LT BR	35	60		5			10	25	10	0.5		3350	30		X	A	
66	940	53	3	0.25		60	20		20	B		20	125	130	0.5		1500	40		2	A	
65	960	53	3	0.30	BR	40	50	5	5			5	20	10		X	6000	40		A	A	
52064	382930	53	3	0.25	BR	70	20		10			10	25	15	0.5		5900	40		I	A	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

APPENDIX G

Stream Sediment Sample Data Sheets



LEGEND

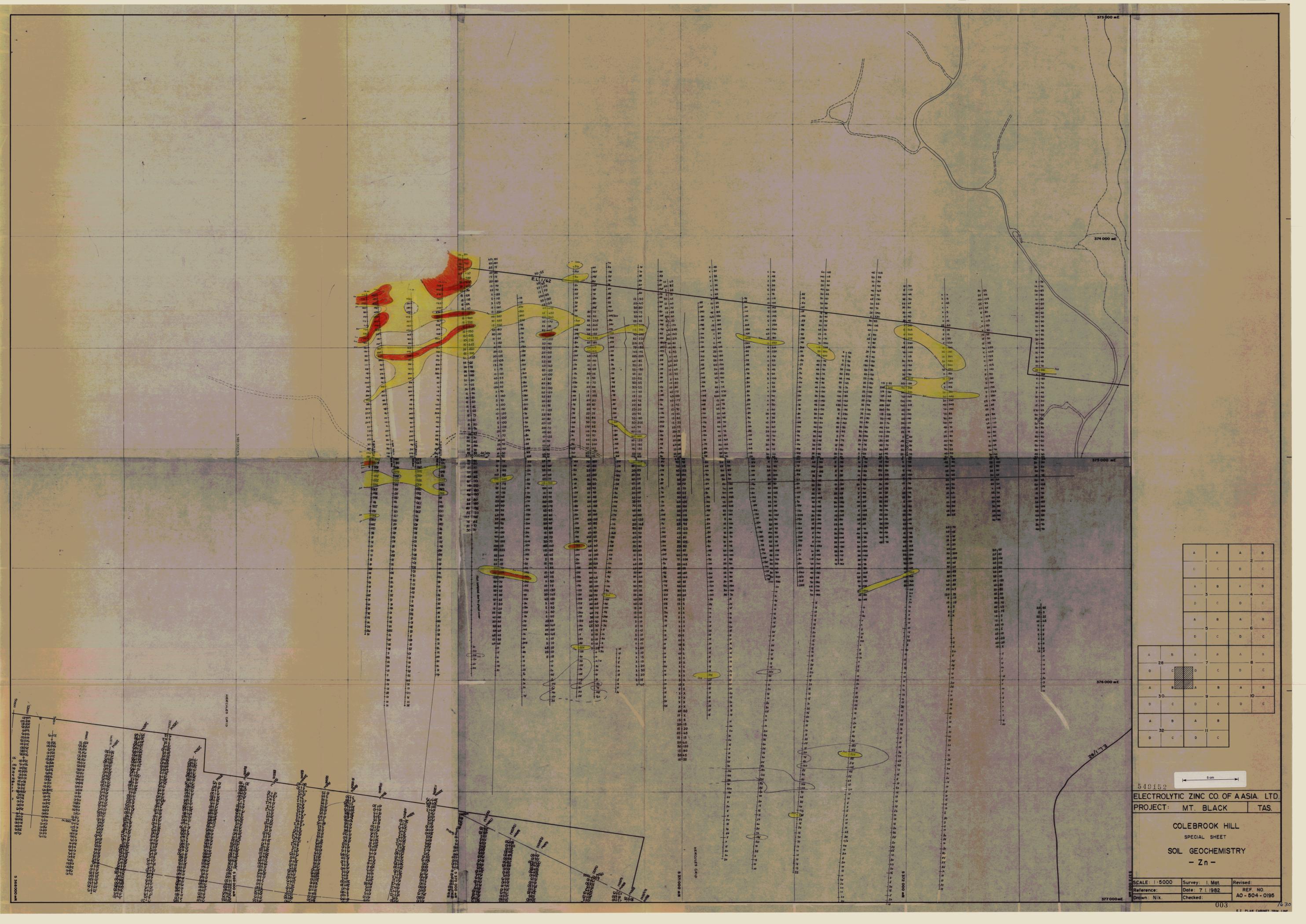
- Road
- Creek Cut
- Line Cut, Pegged, Soil Sampled
- Line Cut, Pegged, Ground Magnetics
- Soil Pit Dug and Sampled
- Geological Interpretation
- MRP 21 → Diamond Drillhole completed
- CHP 238 ↓ Downhole Geophysical Survey
- Ground Magnetics
- Line Cut
- Line Pegged
- Line Soil Sampled
- Line Geology Mapped
- Line E.M.
- Creek Mapped and Stream Sediment Sampled
- Access Mapping Completed
- Line Dipole-Dipole I.P.
- - - Vehicle Track
- ... Walking Track
- +— Railway
- +— Abandoned Tramway
- Transmission Line
- Grid Line

549150

5 cm

ELECTROLYTIC ZINC CO. OF ASIA LTD.		
PROJECT: MT. BLACK	TAS.	
WORK COMPLETED DURING		
21. 11. 1982 — 3. 5. 1983		

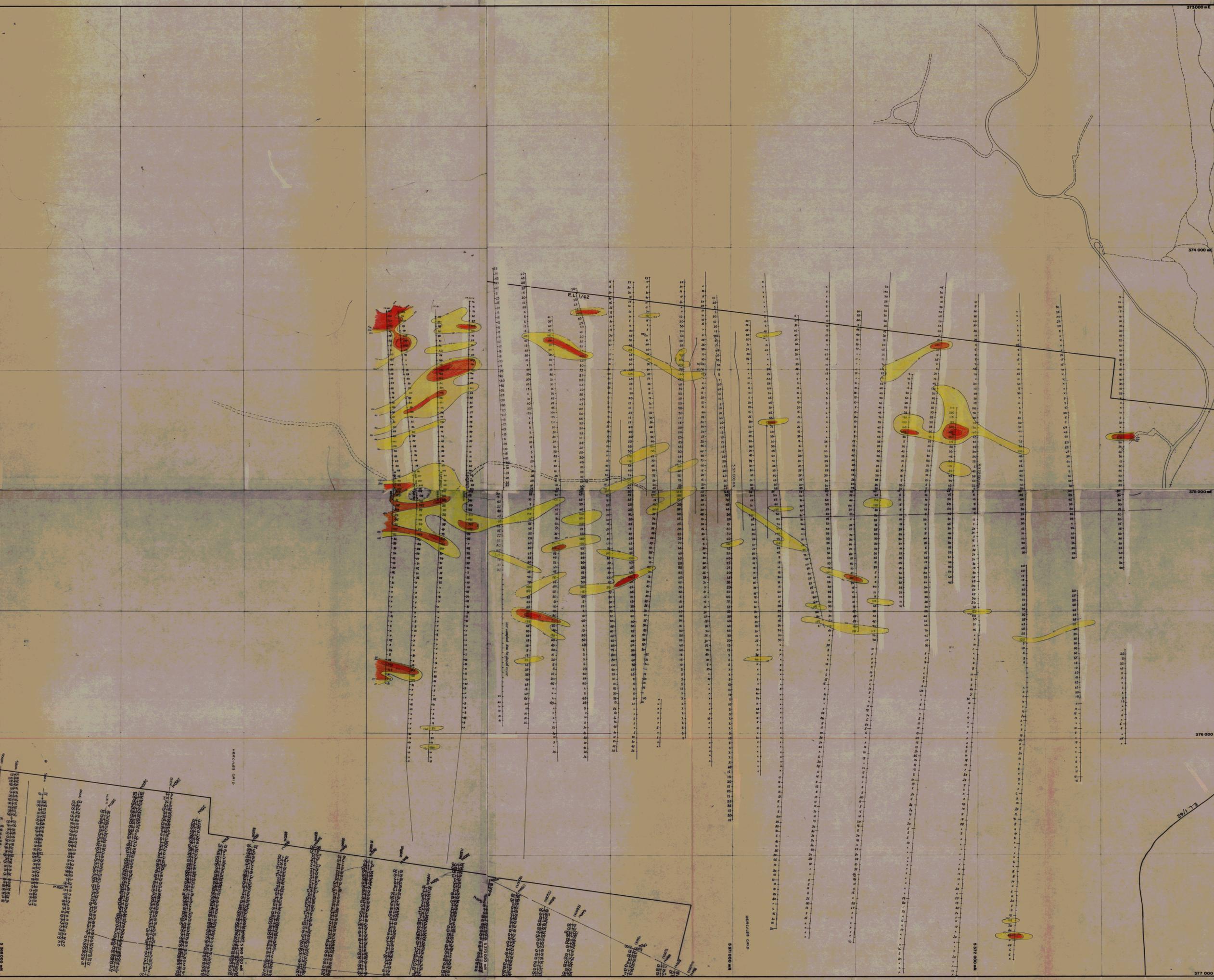
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DATE: 29. 5. 80	DRAWN: R.P.T.	A2 - 504 - 0016



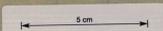
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D	C	D	C
A	B	A	B
5	C	A	B
D	C	D	C
A	B	A	B
28	C	D	C
A	B	A	B
30	C	D	C
D	C	D	C
A	B	A	B
32	C	D	C
D	C	D	C

549152
 ELECTROLYTIC ZINC CO. OF AASIA, LTD.
 PROJECT: MT. BLACK TAS.
 COLEBROOK HILL
 SPECIAL SHEET
 SOIL GEOCHEMISTRY
 - Zn -
 SCALE: 1:5000 Survey: 1. Mat. Revised:
 Reference: Date: 7.1.1982 REF. NO.
 Drawn: Nik. Checked: AD-504-0195
 003

HERCULES CAMP
 375 000 ME
 376 000 ME
 377 000 ME
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 500 000 ME



A	B	A	B
D	C	D	C
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D	C	D	C
A	B	A	B
5		6	
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28		7	
D	C	D	C
A	B	A	B
30		9	
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A	B	A	B
32		11	
D	C	D	C



ELECTROLYTIC ZINC CO. OF A ASIA, LTD.
 PROJECT: MT. BLACK | TAS.
 COLEBROOK HILL
 SPECIAL SHEET
 SOIL GEOCHEMISTRY
 - Pb -
 549154
 SCALE: 1:5000 Survey: L. Mat Revised:
 Reference: Date: 7.1.1982 REF. NO.
 Drawn: NIK. Checked: AD-504-0192

MERCATOR GRID
 MERCATOR CARD
 528000 mN
 529000 mN
 530000 mN
 531000 mN
 532000 mN
 373000 mE
 374000 mE
 375000 mE
 376000 mE
 377000 mE

373 000 m E

374 000 m E

375 000 m E

376 000 m E

377 000 m E

476 E

50 E

5000000 N

5000000 N

5000000 N

5000000 N

5000000 N

A	B	A	B
D	C	D	C
A	B	A	B
3			
D	C	D	C
A	B	A	B
5			
D	C	D	C
A	B	A	B
28			
D	C	D	C
A	B	A	B
30			
D	C	D	C
A	B	A	B
32			
D	C	D	C

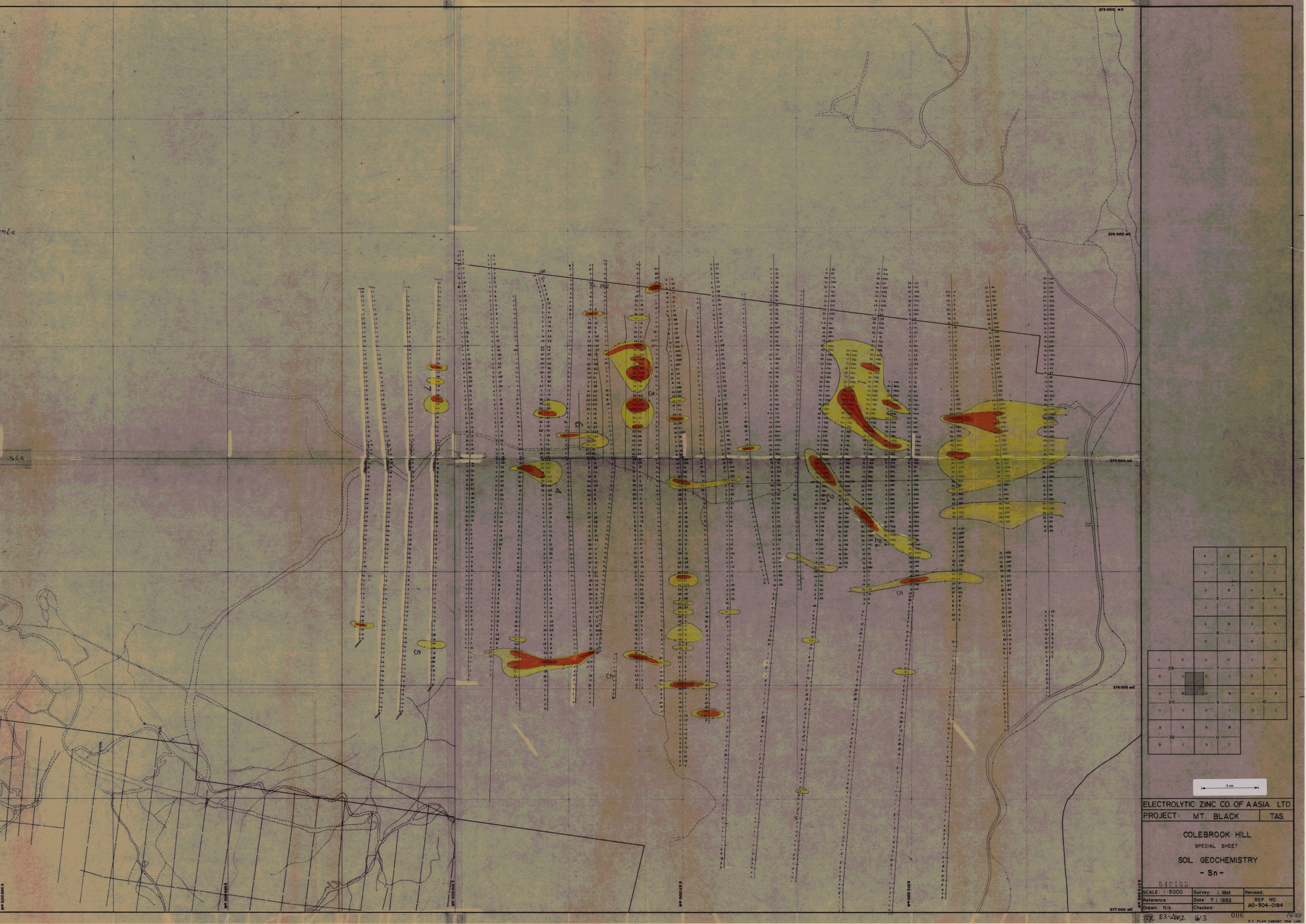
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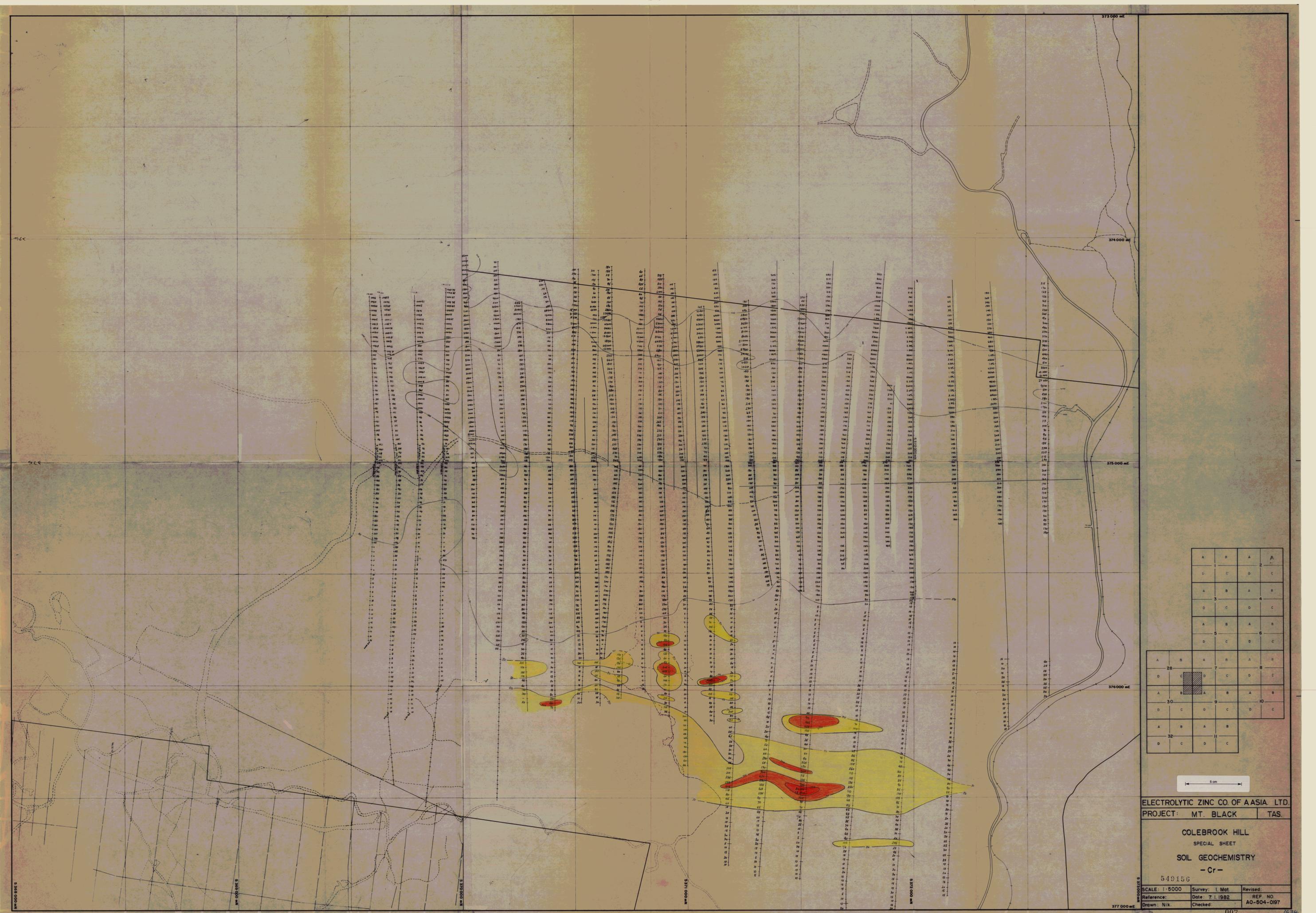
ELECTROLYTIC ZINC CO. OF A.SIA. LTD.
PROJECT: MT. BLACK TAS.

COLEBROOK HILL
SPECIAL SHEET
SOIL GEOCHEMISTRY
- Sn -

549155
SCALE: 1:5000 Survey: 1 Mat Revised:
Reference: Date: 7/1982 REF NO
Drawn: Nik Checked: AO-504-0194

FOR 83-2002 W/3 006 1633
E.T. PLAN CABINET TRIM LINE

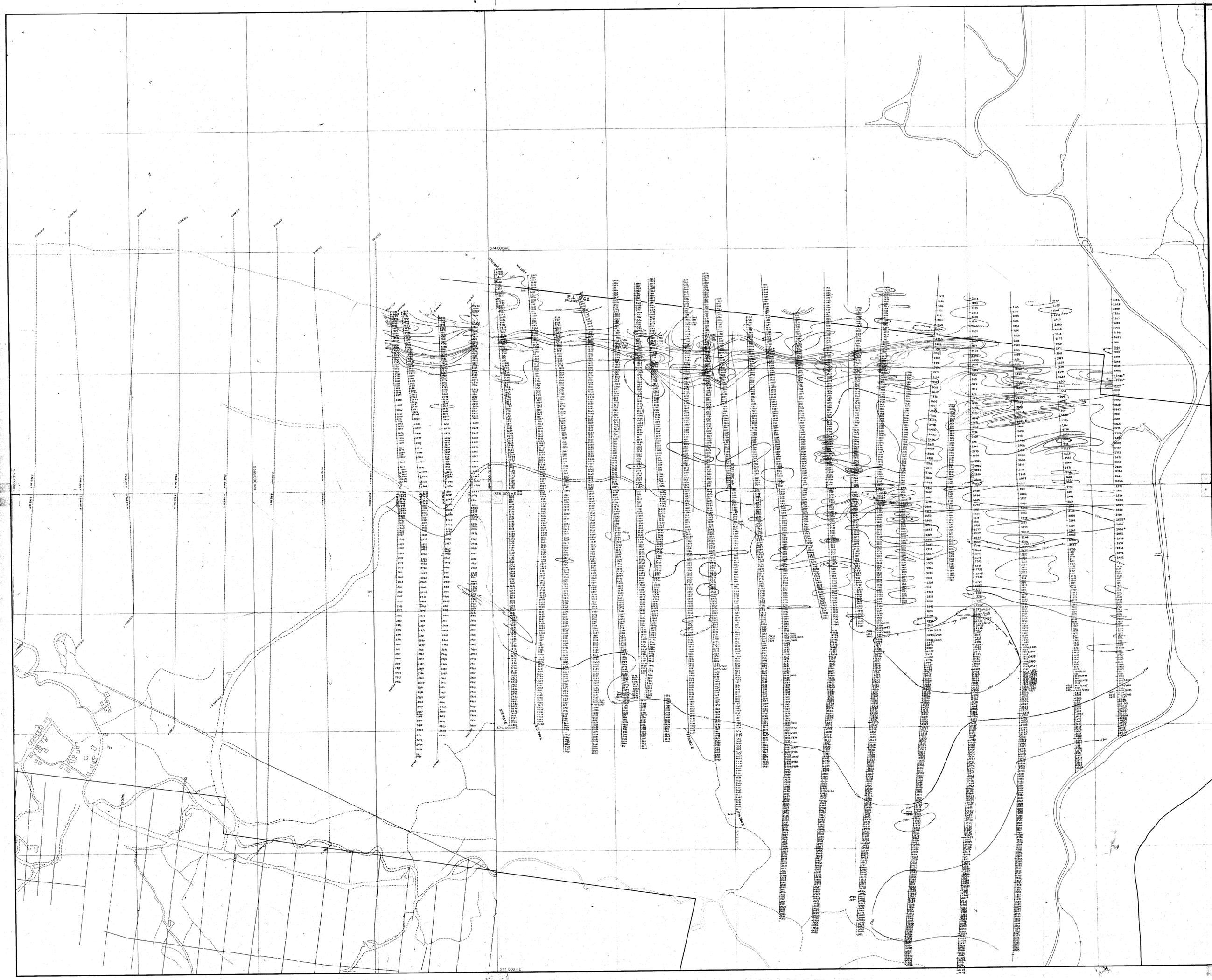




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D	C	D	C
3	A	A	B
D	C	D	C
A	B	A	B
D	C	D	C
28	7	B	C
A	B	A	B
D	C	D	C
30	9	A	B
A	B	A	B
D	C	D	C
32	11	B	C
D	C	D	C

5 cm

ELECTROLYTIC ZINC CO. OF AASIA LTD.
 PROJECT: MT. BLACK TAS.
 COLEBROOK HILL
 SPECIAL SHEET
 SOIL GEOCHEMISTRY
 - Cr -
 54915G
 SCALE: 1:5000 Survey: 1 Met. Revised:
 Reference: Date: 7.1.1982 REF NO.
 Drawn: Nik. Checked: AO-504-0197
 007



A	B	A	B
D	C	D	C
A	B	A	B
D	C	D	C
A	B	A	B
D	C	D	C
A	B	A	B
D	C	D	C
A	B	A	B
D	C	D	C



ELECTROLYTIC ZINC CO. OF ASIA, LTD
 PROJECT: MT. BLACK TAS.
 COLEBROOK HILL
 SPECIAL SHEET
 GROUND MAGNETICS
 549157
 SCALE: 1:5000 Survey: I. Mat. Revised:
 Reference: Date: 12.5.1982 REF. NO.
 Drawn: Nik Checked: AC-504-0231

- **E4** Dundas Group
- **E14** Mt. Read Volcanics
- **E17** Norseon Volcanics
- **E20** Crimson Creek Formation
- **E21** Westcott Agillite
- **E22** Salisbury Conglomerate
- **E23** Shift Quartzite
- **E24** Muna Creek Shale
- **E25** Williamsford Volcanics

Greywacke on laminated grey and dark grey siltstone, greywacke conglomerate.
 Rhyolite lens and pyroclastics.
 Rhyolite tuffs.
 Dark green and grey volcanic waste and purple and grey siltstone. Minor siltstone units near base.
 Purple, green and grey siltstone with interbedded quartz (redox waste and detrital sandstone).
 Rhyolite conglomerate with interbedded sandstone.
 Grey quartzites and quartzite with thin interbedded dark grey shale and siltstone.
 Dark grey shale and siltstone with thin interbedded quartzites. Some local shale lenses.
 Andesitic, dacitic and rhyolite tuffs.

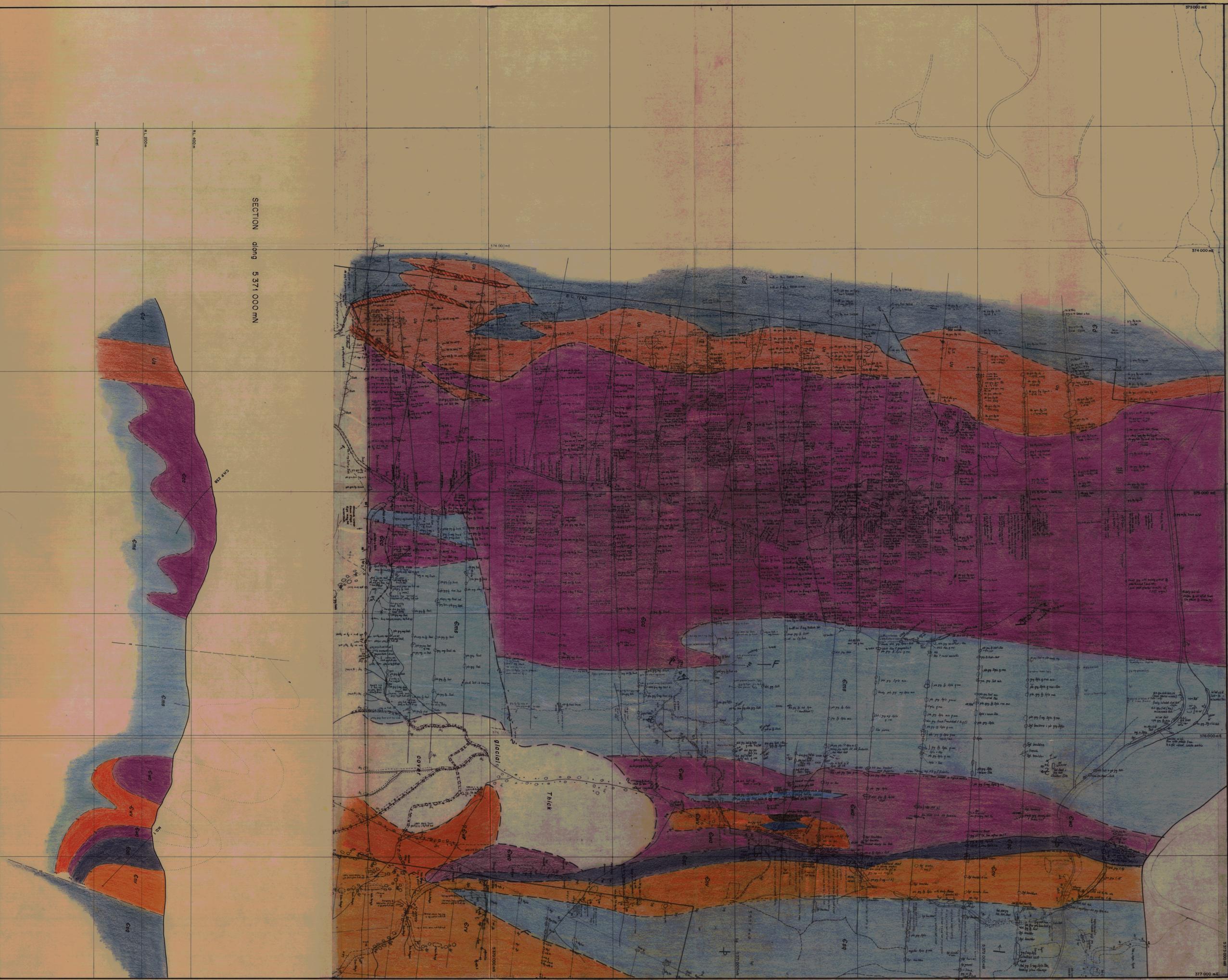
- Generalized dip direction with facing
- Geological boundary
- Inferred fault
- Carbonate unit
- Serpentinized ultra mafic rock
- Siltstone conglomerate
- Siltstone
- Intrusive gabbro

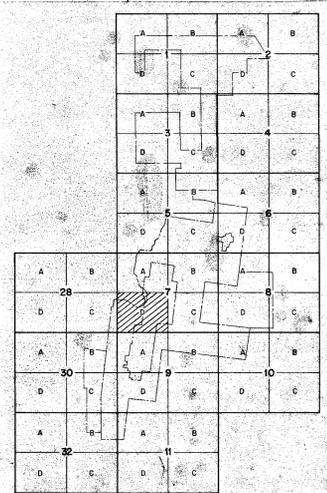
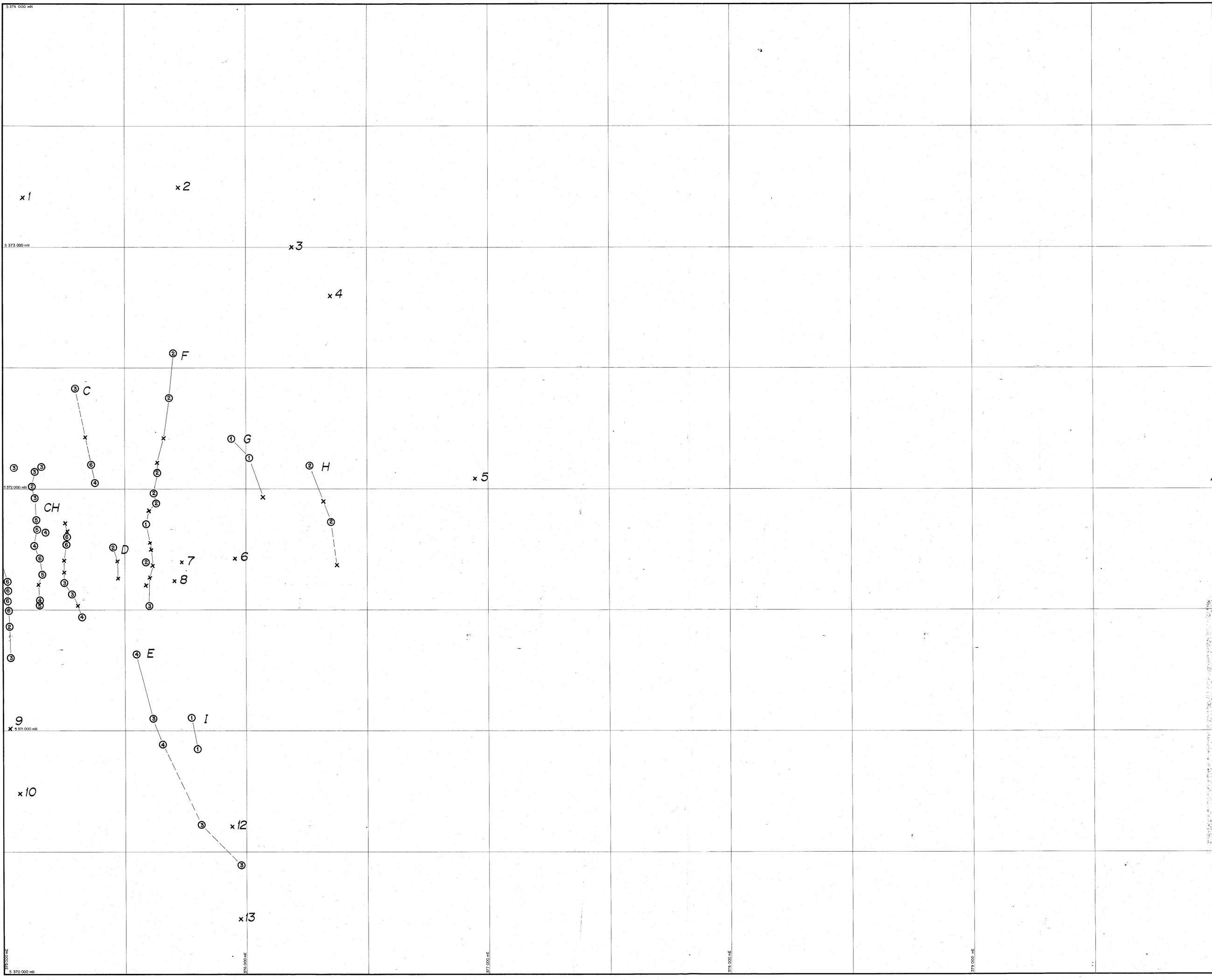
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A	B	A	B
D	C	D	C
A	B	A	B
D	C	D	C

549158
 ELECTROLYTIC ZINC CO OF ASIA LTD
 PROJECT MT. BLACK TAS.
 COLEBROOK HILL
 GEOLOGY
 - INTERPRETATION -
 SPECIAL SHEET

SCALE 1:5000 Survey 1.Met. Revised:
 Reference Date 9.5.1983 REF NO
 Drawn Nik Checked AO-504-0322

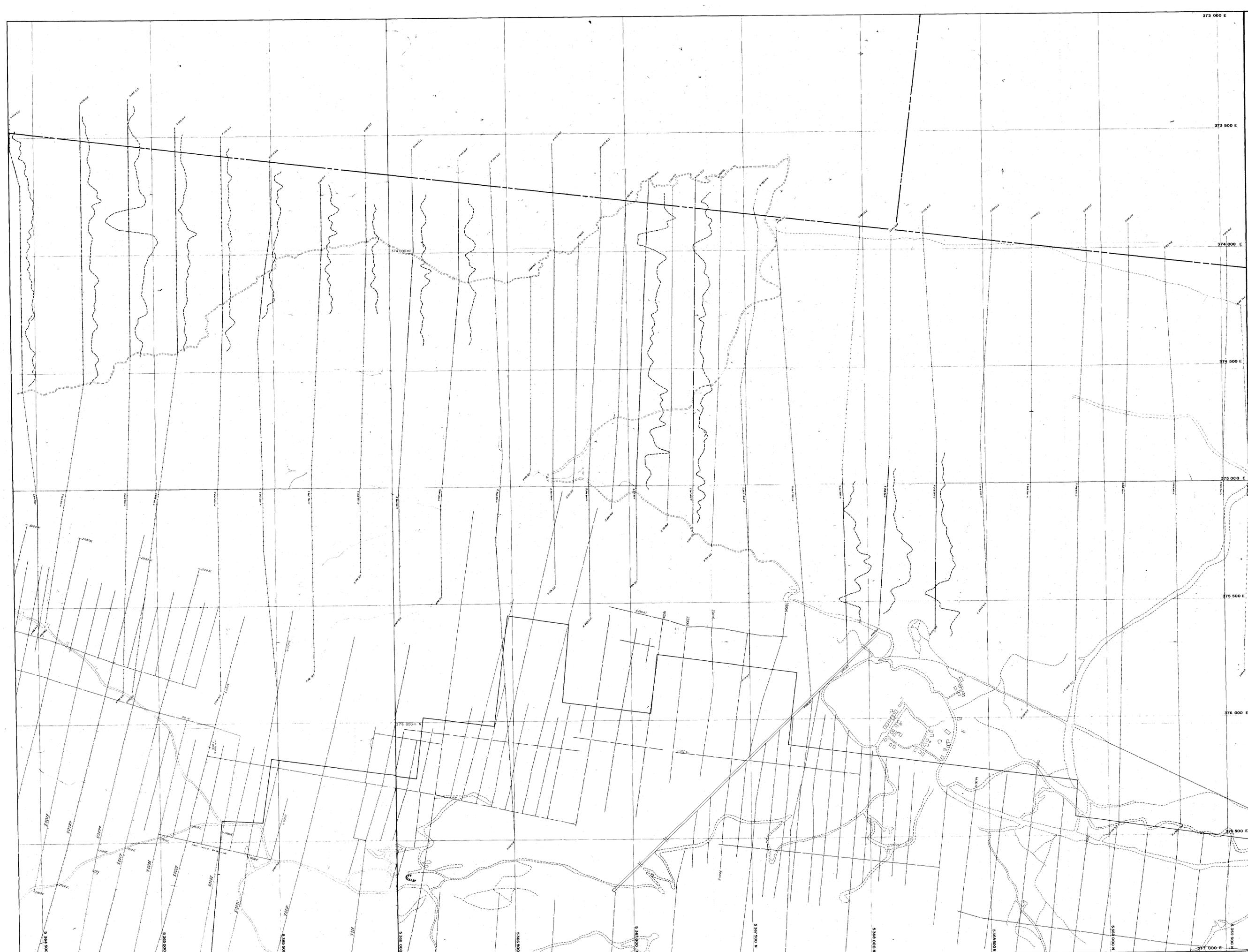
SECTION along 5 371 000 MN





ELECTROLYTIC ZINC CO. OF ASIA LTD
 PROJECT: MT BLACK, TAS.
 549160
 East Colebrook Hill
 DIGHEM ANOMALIES

SCALE: 1:5000 Survey: Dighem Revised:
 Reference: Date: 22.12.1982 Ref. No.
 Drawn: Nik Checked: AO - 504 - 036



A	B	A	B		
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D	C	D	C		
A	B	A	B		
3			4		
D	C	D	C		
A	B	A	B		
5			6		
D	C	D	C		
A	B	A	B	A	B
7				8	
D	C	D	C	D	C
A	B	A	B	A	B
9				10	
D	C	D	C	D	C
A	B	A	B		
11					
D	C	D	C		

ELECTROLYTIC ZINC CO OF ASIA, LTD.
PROJECT: MT BLACK EL. 1/62 TAS

54916 RING RIVER
SPECIAL SHEET
STACKED E.M. PROFILES
G.E.N.I.E. 945 Hz with 105 Hz reference frequency,
Scale 1cm=5%, Rx-Tx = 100m.

SCALE	1:5000	Survey	1 Mat.	Revised
Reference		Date	14.2.1983	REF NO
Drawn	Nik	Checked		AO-504-0318

379 000 ME

LEGEND

-  Glacial Scree Cover
-  Permian Tillite
-  Sediments - mainly volcanoclastic
-  Tuffs - some reworked
-  Massive Lavas
-  Unclassified Pyroclastics - mainly ignimbritic ashflows
-  Quartz (sericite) Schists
-  Areas of Cleavage development
-  Dolerite Intrusives
-  Faults

376 000 ME

377 000 ME

378 000 ME

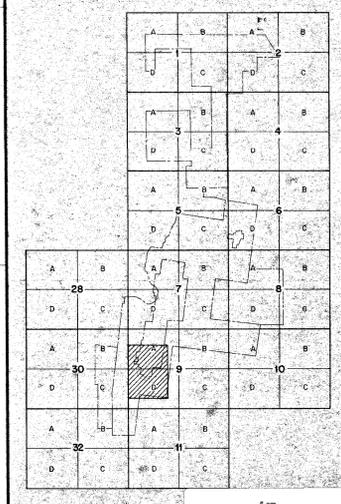
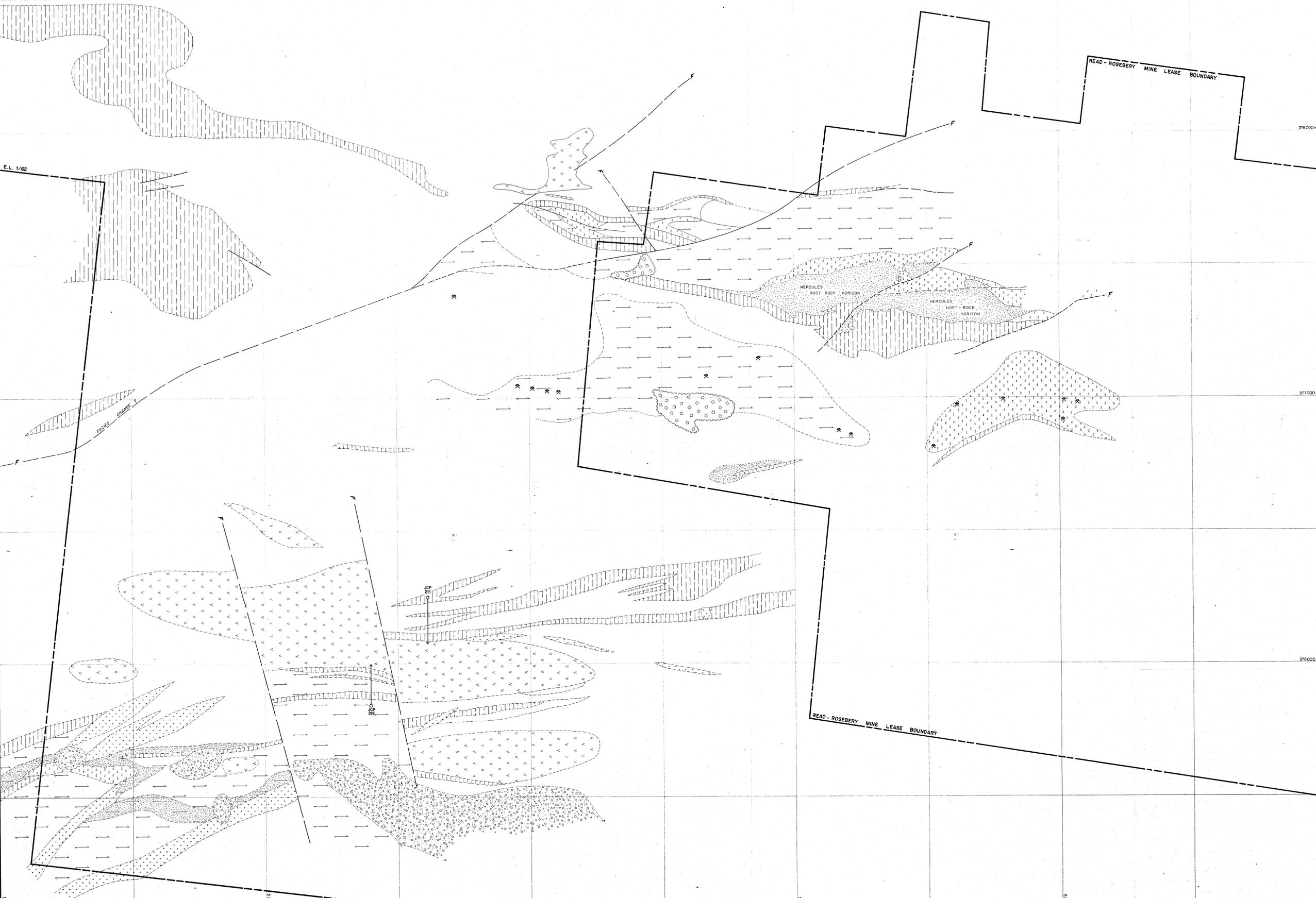
379 000 ME

E.L. 1/62

E.L. 1/62

READ - ROSEBERY MINE LEASE BOUNDARY

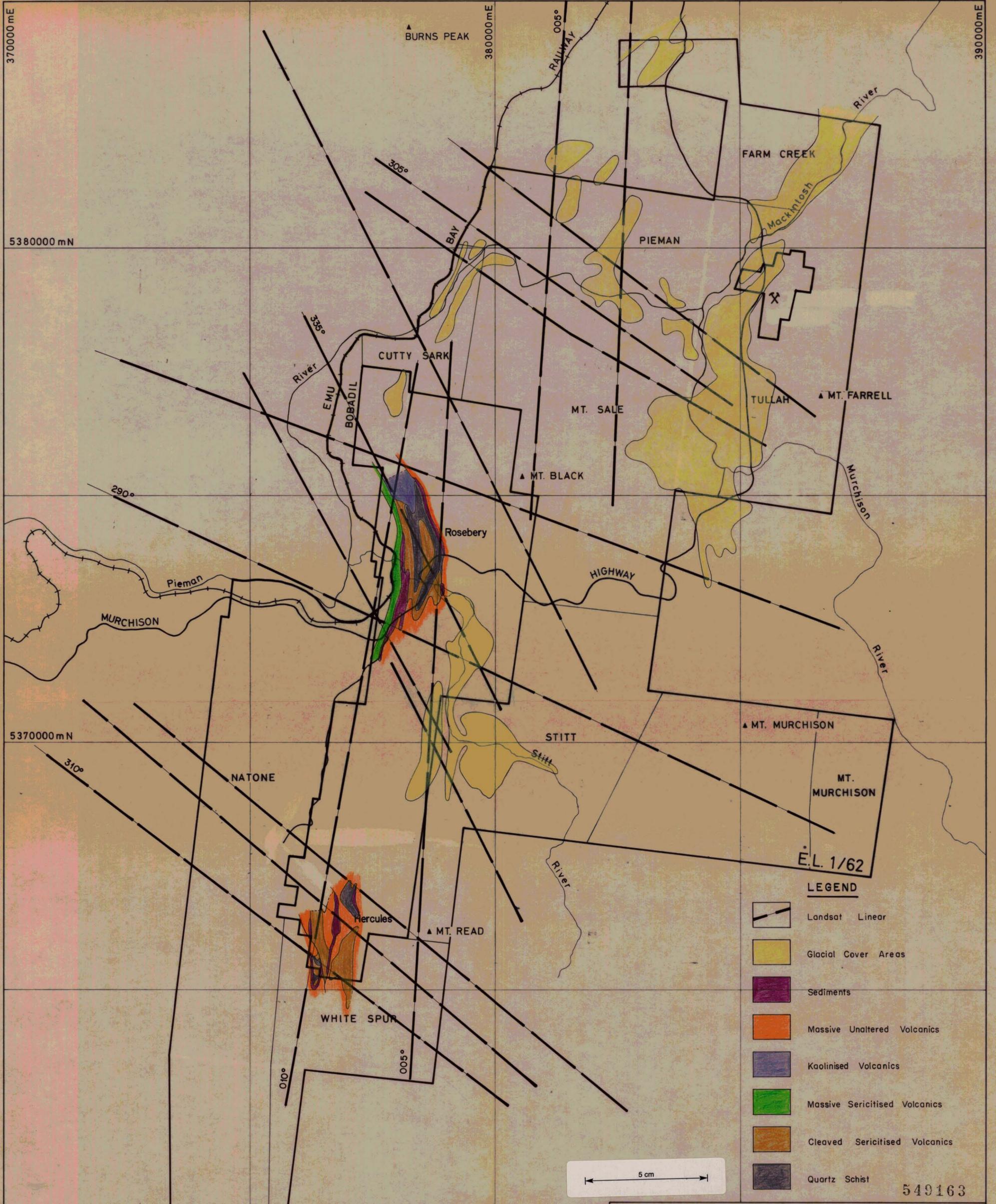
READ - ROSEBERY MINE LEASE BOUNDARY



ELECTROLYTIC ZINC CO. OF ASIA LTD.
 PROJECT: MT. BLACK E.L. 1/62, TAS.

549162
 AN INTERPRETATION
 of the
 GEOLOGY
 in the
 WHITE SPUR AREA

SCALE : 1:5000	Survey : I.R.M.F.D.	Revised:
Reference :	Date : May 1983	Ref. No.
Drawn : Nik	Checked :	AO-504-0323



LEGEND

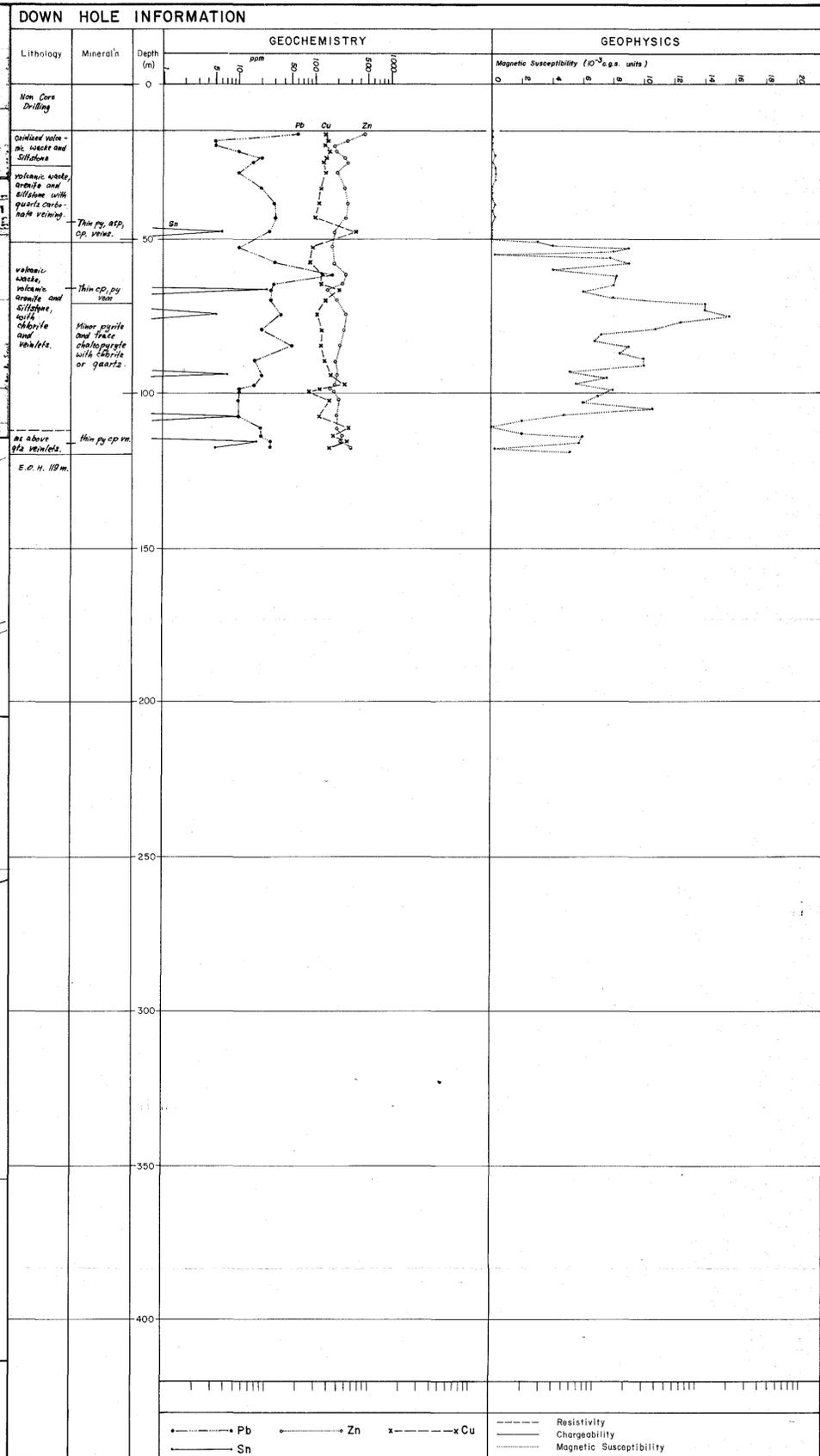
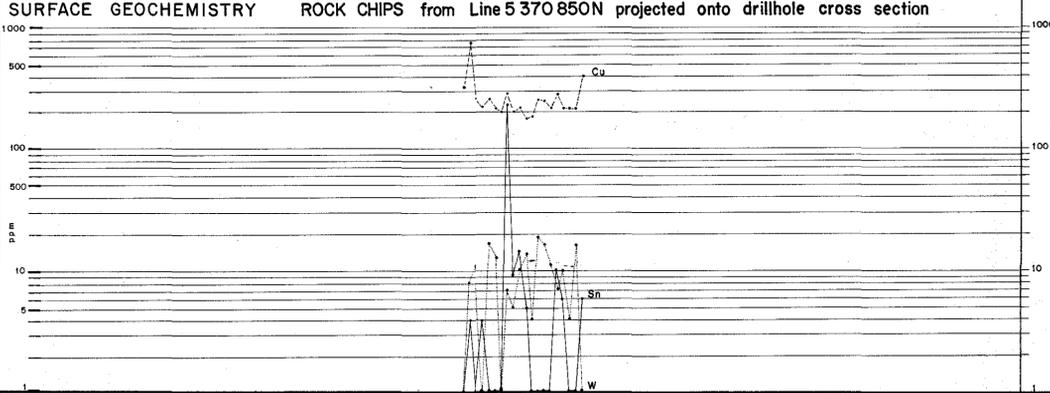
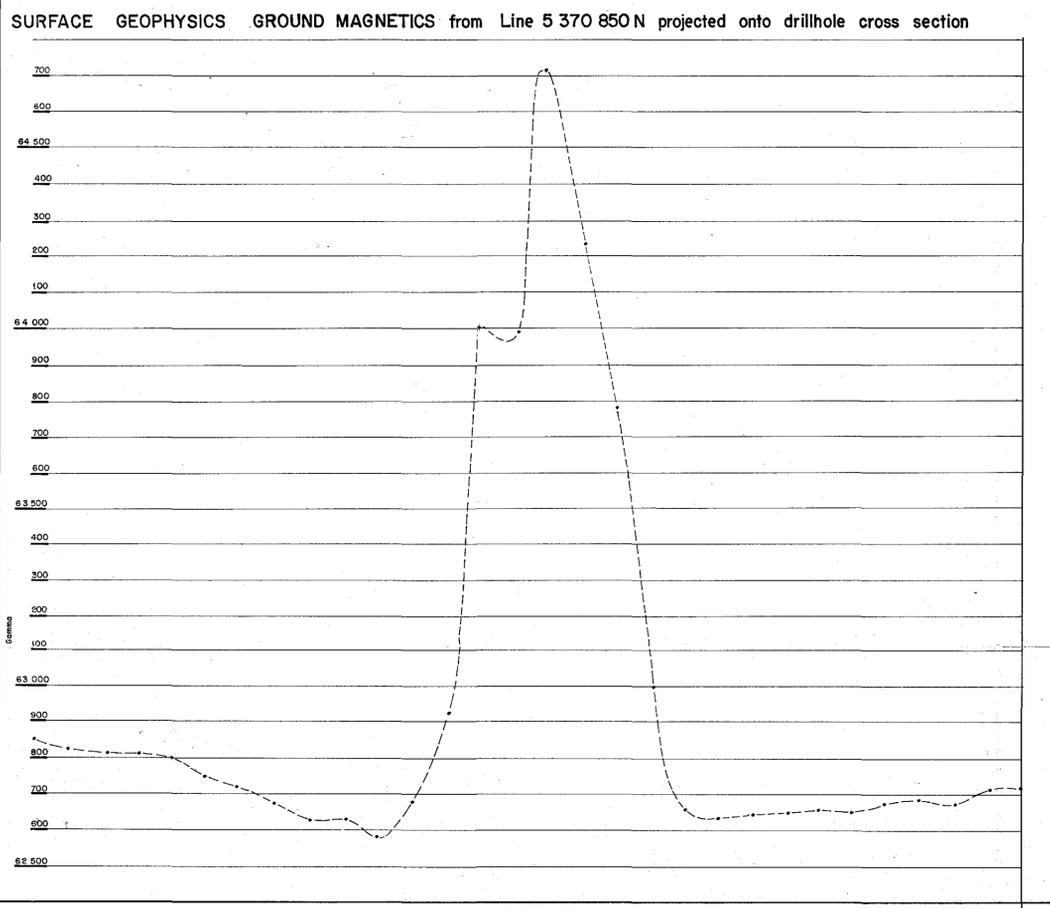
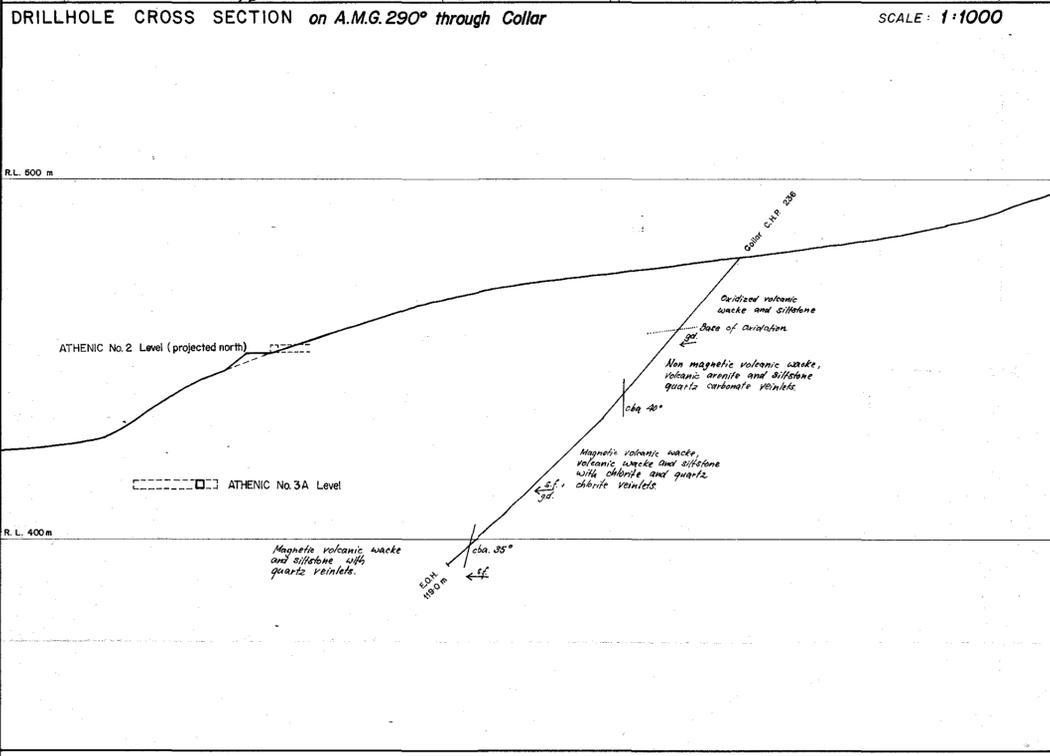
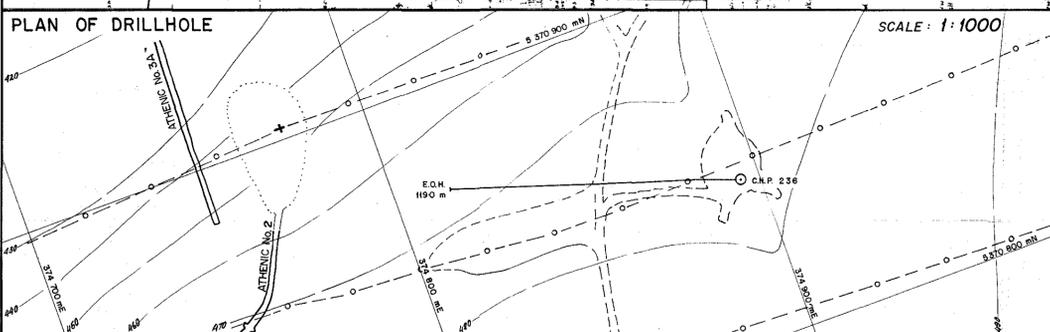
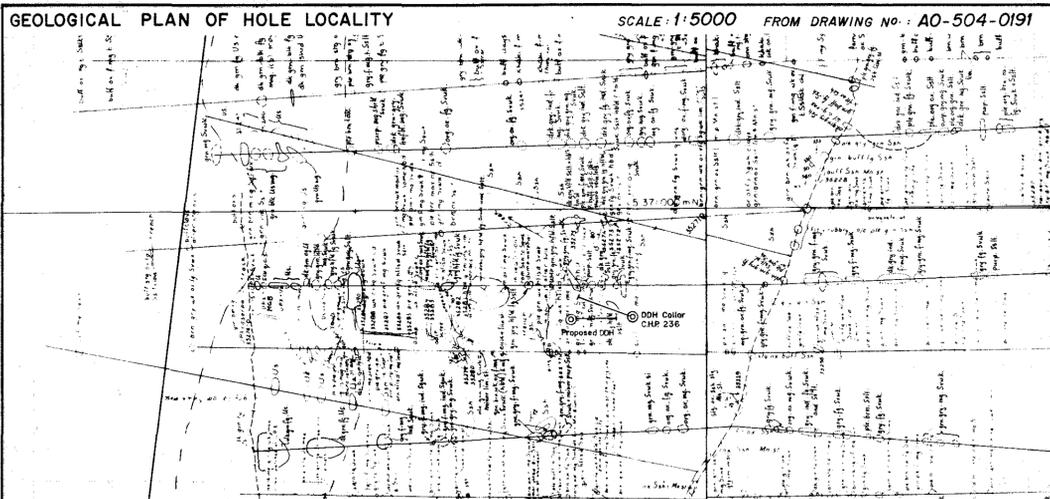
- Landsat Linear
- Glacial Cover Areas
- Sediments
- Massive Unaltered Volcanics
- Kaolinised Volcanics
- Massive Sericitised Volcanics
- Cleaved Sericitised Volcanics
- Quartz Schist

549163

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
 PROJECT: MT. BLACK TAS.

The Relationship of the Rosebery and
 Hercules Alteration Zones to Landsat
 Linears and Glacial Cover Areas.

SCALE 1 : 50,000	REFERENCE NO.
REFERENCE :	A2 - 504 - 0324
DATE : 17. 5.1983	TRACED : Nik
SURVEY : I.McD.	



SUMMARY OF COMPLETED HOLE				SPECIFICATIONS OF PROPOSED HOLE			
CO-ORDINATES	NORTHING	EASTING	R. L.	CO-ORDINATES	NORTHING	EASTING	R. L.
LOCAL GRID	5 370 875 N	374 895 E		LOCAL GRID	5 370 850 N	374 815 E	473 m
A.M.G.	5 370 843.8 N	374 896.3 E	466.0 m	A.M.G.			
AZIMUTH: 290° A.M.G. DIP: 48°	TOTAL DEPTH: 119 m.		AZIMUTH: 090° A.M.G. DIP: 50°	DESIGNED DEPTH: 120 m			
COMMENCEMENT DATE: 22.10.1982	COMPLETION DATE: 29.10.1982		ESTIMATED COMMENCEMENT:				

INTERNAL SURVEY INFORMATION						ANTICIPATED GEOLOGY			
DEPTH	AZIMUTH	DIP	DEPTH	AZIMUTH	DIP	DEPTH	LITHOLOGY	DEPTH	NATURE OF TARGET AND ANTICIPATED DEPTH
41 m	287°	48°				0-120 m	Incipiently hornfelsed volcanic wackes and siltstones	60-90 m	Pyrrhotite replacement containing cassiterite and possibly arsenopyrite.
77 m	288°	43.5°							
119 m	288°	41°							
HOLE SIZE	FROM	TO	HOLE SIZE	FROM	TO				
NQ	0	15 m	BQ	36	119 m				
NQ	15	36 m							

DRILLED GEOLOGY (SUMMARISED)			
DEPTH	LITHOLOGY	DEPTH	MINERALISATION AND SIGNIFICANT ASSAYS
0-15 m	Non core drilling		
15-25.0 m	Oxidized and partially oxidized coarse-medium grained volcanic wackes and siltstone.	23.0-26.0	1% Disseminated pyrite
26.0 m	Base of Oxidation		
26.0-50.3 m	Dark gray to green gray fine to medium grained volcanic wackes, andesite and siltstone. Basalt brecciated, reworked with quartz carbonate veins. Consistent sheet fragments.	45-50 m	1 cm Quartz + chalcopyrite vein
		45-40 m	2 cm quartz + arsenopyrite + pyrite vein
50.3-111.9 m	Dark green gray to green gray fine to coarse grained volcanic wackes, volcanic andesite and siltstone with common chlorite veinlets, arsenites and nodules, distinctly magnetic. Occasional sheet fragments.	66-80 m	3 cm quartz + magnetite + pyrite + chalcopyrite
		71.0-100.0	very minor pyrite and trace arsenopyrite in chlorite nodules
		107-20	Several large pyrite crystals
111.9-119.0 m	Fine to medium grained volcanic wackes and oxidized siltstone beds + quartz veins and veinlets.	112.0-119.0	Minor pyrite and trace chalcopyrite associated with quartz.

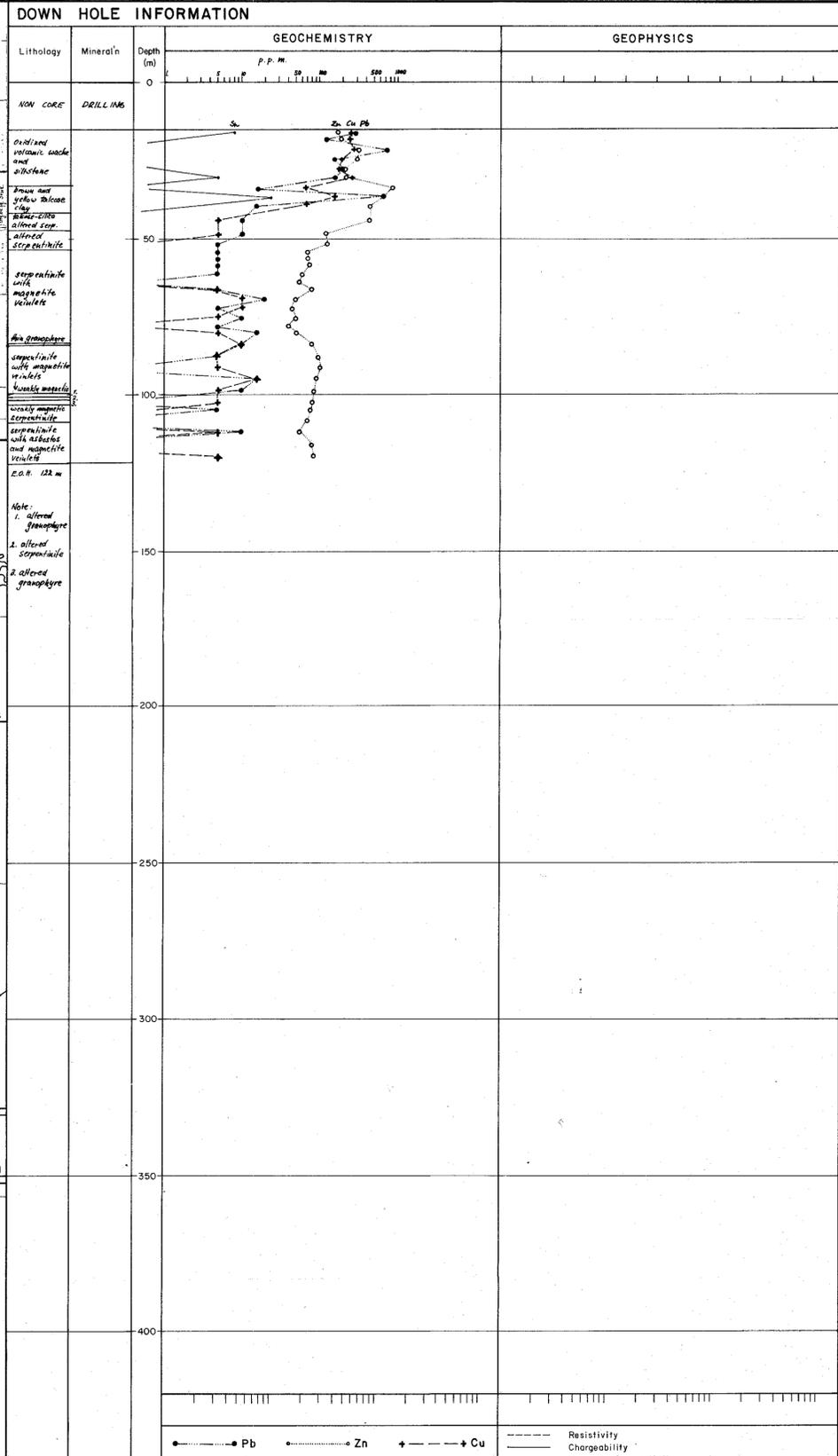
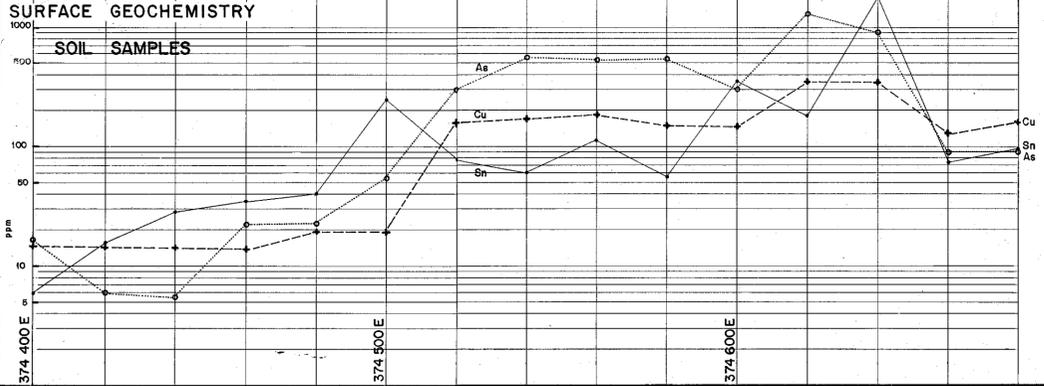
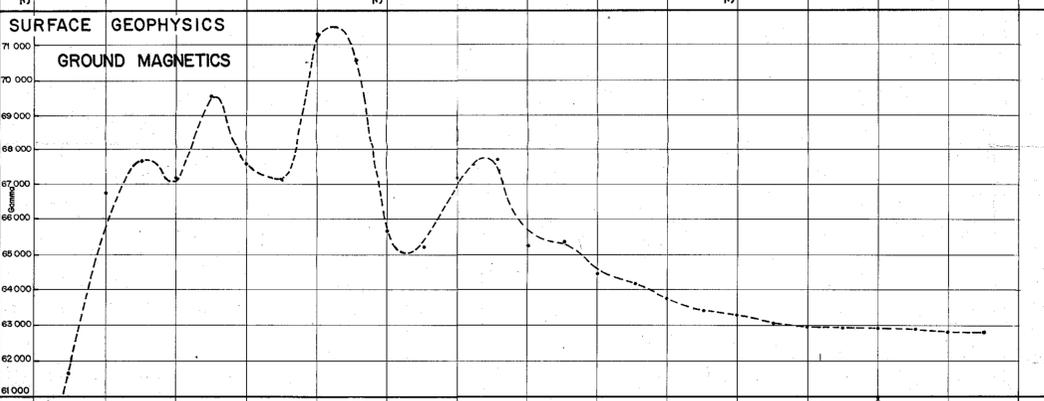
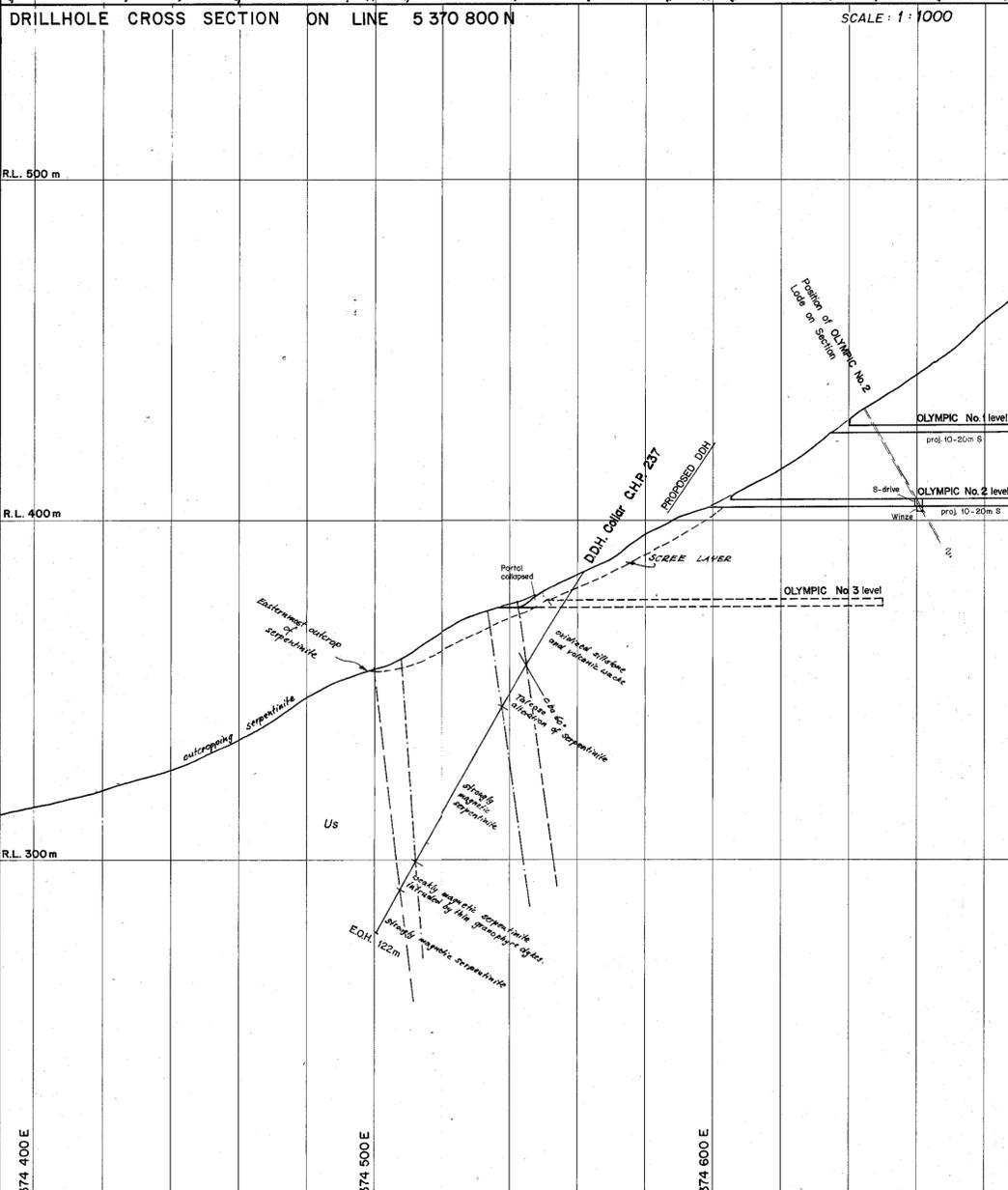
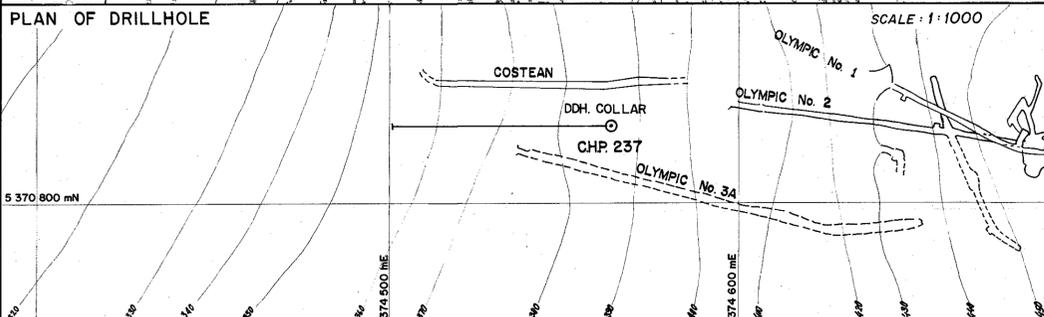
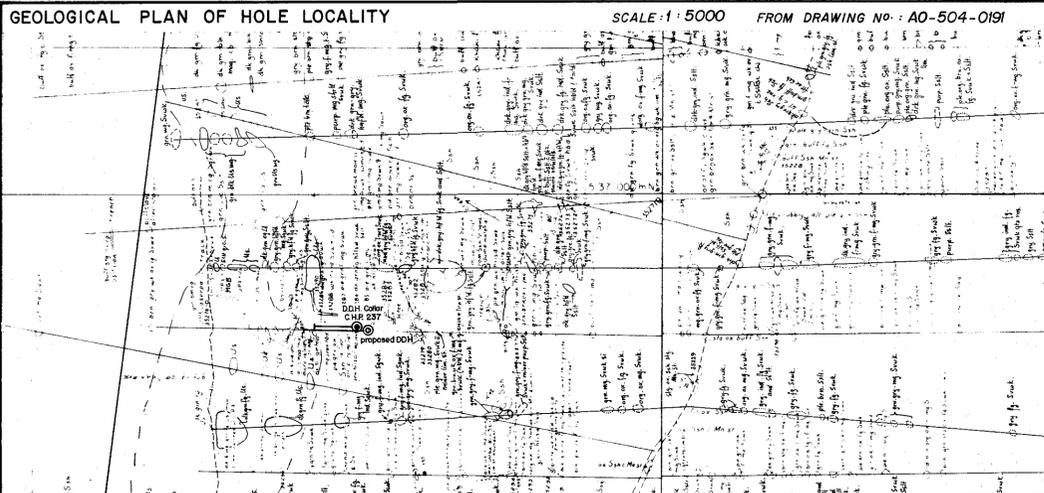
DESIGNED BY: I. J. Mathison DATE: 30. 8. 1982

AIM OF HOLE:
To test a magnetic anomaly in the vicinity of known tin mineralisation.

NOTES:

LOGGED BY: I. J. Mathison DATE: Nov. '82

SAMPLE DATA					ELECTROLYTIC ZINC CO. OF ASIA LTD.		
SAMPLED INTERVAL	SAMPLE NUMBERS	SAMPLE TYPE	ELEMENTS DETERMINED	LAB. METHOD	PROJECT: MT. BLACK	TAS.	
15.00 - 44.00	43558 - 43572	GRIND or CHIP	Cu, Pb, Zn Fe, Mn, Ag, Cr, As.	A.A.S.	SPECIFICATIONS AND SUMMARY OF RESULTS		
64.00 - 67.00	43573	SPLIT					
67.00 - 78.00	43574 - 43580	GRIND or CHIP					
78.00 - 100.00	43581 - 43582	SPLIT					
100.00 - 115.00	43583 - 43586	GRIND or CHIP					
115.00 - 116.00	43587	SPLIT	Sn, W.	X.R.F.	EXPLORATION DIAMOND DRILL HOLE No. C.H.P. 236		
116.00 - 119.00	43588	GRIND or CHIP					
41.25	48261	Thin Section	See C.M.S. Report 82/11/37		549165		
61.80	48262						
72.00	48263						
NOTES:					SCALE: As shown	Survey: I. J. Mat.	Revised:
					Reference:	Date: 16. 11. 1982	REF. No.
					Drawn: Nik	Checked:	A1 - 504 - 0312



SUMMARY OF COMPLETED HOLE				SPECIFICATIONS OF PROPOSED HOLE			
CO-ORDINATES	NORTHING	EASTING	R.L.	CO-ORDINATES	NORTHING	EASTING	R.L.
LOCAL GRID	5 370 812 N	374 562 E		LOCAL GRID	5 370 800 N	374 580 E	395 m
A.M.G.	5 370 823.1 N	374 564.2 E	378.1 m	A.M.G.			
AZIMUTH: 270° A.M.G.	DIP: 58°	TOTAL DEPTH: 122 m		AZIMUTH: 270° nom. A.M.G.	DIP: 55°	DESIGNED DEPTH: 150 m	
COMMENCEMENT DATE: 30.10.1982	COMPLETION DATE: 6.11.1982	ESTIMATED COMMENCEMENT:					

INTERNAL SURVEY INFORMATION						ANTICIPATED GEOLOGY			
DEPTH	AZIMUTH	DIP	DEPTH	AZIMUTH	DIP	DEPTH	LITHOLOGY	DEPTH	NATURE OF TARGET AND ANTICIPATED DEPTH
62 m	? 278°AMG?	60.5°				C-100m	Slightly hornfelsed volcanic wackes and siltstones	100-130m	Pyrrhotite replacement of altered ultra mafic
122 m	? 285°AMG?	61°				100-130m	Carbonatized ultra mafics		
						130-150m	Serpentinized ultra mafics		

HOLE SIZE		FROM	TO	HOLE SIZE	FROM	TO
HQ		0 m	15 m	BQ	47 m	122 m
NQ		15 m	47 m			

DRILLED GEOLOGY (SUMMARISED)	
DEPTH	LITHOLOGY
0-15.0	Non Core Drilling.
15.0-32.5	Oxidized volcanic wacke and siltstone.
32.5-47.0	Clay and talc-silica alteration of serpentinite - Fault Zone?
47.0-53.5	Partially oxidized serpentinite.
53.5-59.9	Serpentinite with disseminated veinlet magnetite.
59.9-89.3	Thin altered granophyre serpentinite - irregular fibrous magnetite veins.
89.3-108.2	Thin silicified granophyre dyke intruding weakly magnetic serpentinite.
108.2-122.0	Serpentinite - disseminated magnetite veins and irregular arborescent veinlets.

SAMPLE DATA				
SAMPLED INTERVAL	SAMPLE NUMBERS	SAMPLE TYPE	ELEMENTS DETERMINED	LAB. METHOD
15.0 m - 122.0 m	43589 - 45700	GROUND or CHIP	Cu, Pb, Zn, Ag, Fe, Cr, Mn	AAS
			As	AAS
			Sn	XRF
			W	XRF
100-60	48280	Thin Sections		
101-60	48281			
106-00	48282			

ELECTROLYTIC ZINC CO. OF ASIA LTD.		
PROJECT: MT. BLACK	TAS.	
SPECIFICATIONS AND SUMMARY OF RESULTS		
EXPLORATION DIAMOND DRILL HOLE No. CHP 237		
549166		
SCALE: As shown	Survey: I. Mat.	Revised:
Reference:	Date: 1.12.1982	REF. No.
Drawn: Nik	Checked:	A1-504-0314