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ANNUAL REPORT
EXPLORATION LICENCE 2/70

MACKINTOSH

TASMANIA

83 - 1939

For year ended

December 30, 1982

Distribution: Hawthorn
Burnie
Paringa
Dept. of Mines

J. R. Sise
Supervising Geologist
January 10, 1983.

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SUMMARY

This report details exploration conducted on the Mackintosh Exploration Licence 2/70, which encloses the Que River Mineral Leases, during the year ended December 30, 1982. The Statement of Expenditure is for the 1982 Aberfoyle Exploration budget year, commencing November 17, 1981 and ending November 15, 1982.

The exploration programme during the 1982 field season was primarily concerned with the completion of two diamond drill holes to test coincident I.P. geophysical and soil geochemical anomalies defined by earlier work. Both drill holes intersected only trace amounts of base metal mineralisation; this observation being confirmed by geochemical analysis of the core. Subsequent down-hole E.M. surveys failed to detect any conductors.

Summer field work currently in progress involves the cutting and rehabilitation of grid to facilitate a UTEM survey over prospective stratigraphy both north-east and south-east of the Que River Mine. It is planned to read approximately 48 km of grid on the Mackintosh Licence during this phase of the target definition programme. Concurrent field mapping and data evaluation is expected to aid in the selection of targets for drill testing in 1983-84.

INTRODUCTION

Exploration Licence 2/70 Mackintosh River covers an area of 232 sq. km. and was granted to Aberfoyle Tin N.L. on 19th January, 1970. The licence is now defined in two parts, the western part of 174 sq. kms. being to the east of the Murchison Highway and the eastern part of 57.85 sq. kms. to the immediate north-west of the Cradle Mountain-Lake St. Clair National Park (Plate Tas 27). The E.L. was transferred from Aberfoyle Tin N.L. to Abminco N.L. on 17th March, 1978. A further transfer to Cleveland Tin Limited occurred on 28th March, 1979. Work is managed by Aberfoyle Exploration Pty. Ltd. Since 6th February, 1970, the licence is the subject of a joint venture between Aberfoyle Limited and Paringa Mining & Exploration Co. Ltd. Current equities are Paringa 10% and Aberfoyle Limited 90%.

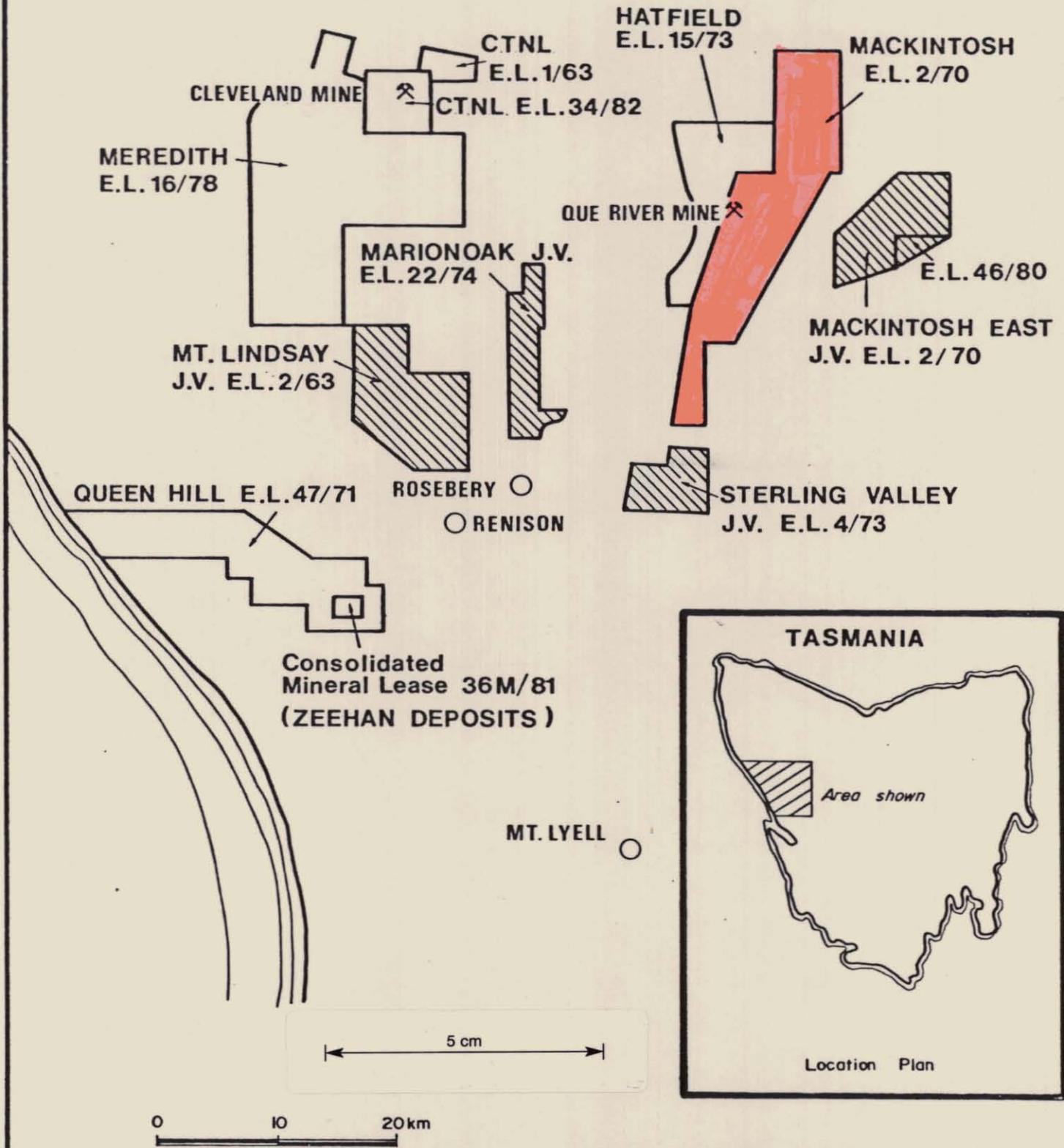
On 1st October, 1979, the eastern part of E.L. 2/70 described as Mackintosh East became the subject of a joint venture agreement between Peko-Wallsend Operations Ltd., Paringa Mining and Exploration Co. Ltd. and Cleveland Tin Limited. Current equities are Peko 40%, Paringa 10%, Aberfoyle 50%. The Joint Venture is managed by Geopeko - a division of Peko-Wallsend Operations Ltd. Geopeko report independently on E.L. 2/70 Mackintosh East. E.L. 46/80 was added to the Joint Venture area on 17th June, 1981 (Plate Tas 27).

Revised conditions governing exploration licences applied by the Department of Mines from July 1, 1982, now stipulate that the maximum permitted area for a five year old licence be 125 sq. km. It is therefore required that the current licence area of 232 sq. km. be reduced to at least 125 sq. km. by December 30, 1984, and that exploration be completed during a further three year period, namely by December 30, 1987. The Mackintosh Licence currently attracts an annual expenditure commitment of \$500 per square kilometre and an annual fee fixed at \$25 per square kilometre.

The follow-up exploration during the six months to December 30, 1981, (Sise, 1982) was successful in delineating two targets, both defined by coincident I.P. geophysical and soil geochemical anomalies. The diamond drilling, geochemical sampling and geophysical logging of these two bore holes was the principal aim of the 1982 field programme and is detailed as follows:-

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Aberfoyle Exploration Pty Ltd

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Revised by:	Date:

NORTH WEST TASMANIA
EXPLORATION LICENCES

Location code:	K55
Date:	January, 1983
Scale:	As shown
Plate No:	Tas. 27

LOCATION

The two anomalous target areas are located three kilometres north-east of the Que River Mine. Summary plan (Plate Mac 70) indicates the disposition of the geochemical and geophysical contours with respect to the Mackintosh grid. Results of the I.P. survey and full soil geochemical values were presented in an earlier report (Sise, 1982) and are partially reproduced here in composite profile form for the two drill hole sections (Plates Mac 68 and 69).

ACCESS

Since no vehicle access into the proposed drill sites was in existence at the time, permission was obtained from the Department of Mines to construct a four wheel drive track to gain access. The location of the track is plotted on Plate Mac 70 commencing on the HEC transmission line track at 9560N, 4180E. As well as access, the track provided useful geological exposure in an area of generally poor outcrop.

Recent transmission line construction has provided additional access to the region north-east of the Que River Mine. A new formed road now commences at grid location 8300N, 4870E and passes immediately east of the MG1 drill site.

DIAMOND DRILLING PROGRAMME

The contract to complete two diamond drill holes was let to Associated Diamond Drillers who supplied a skid-mounted Mindrill 10L.

DDH MG1

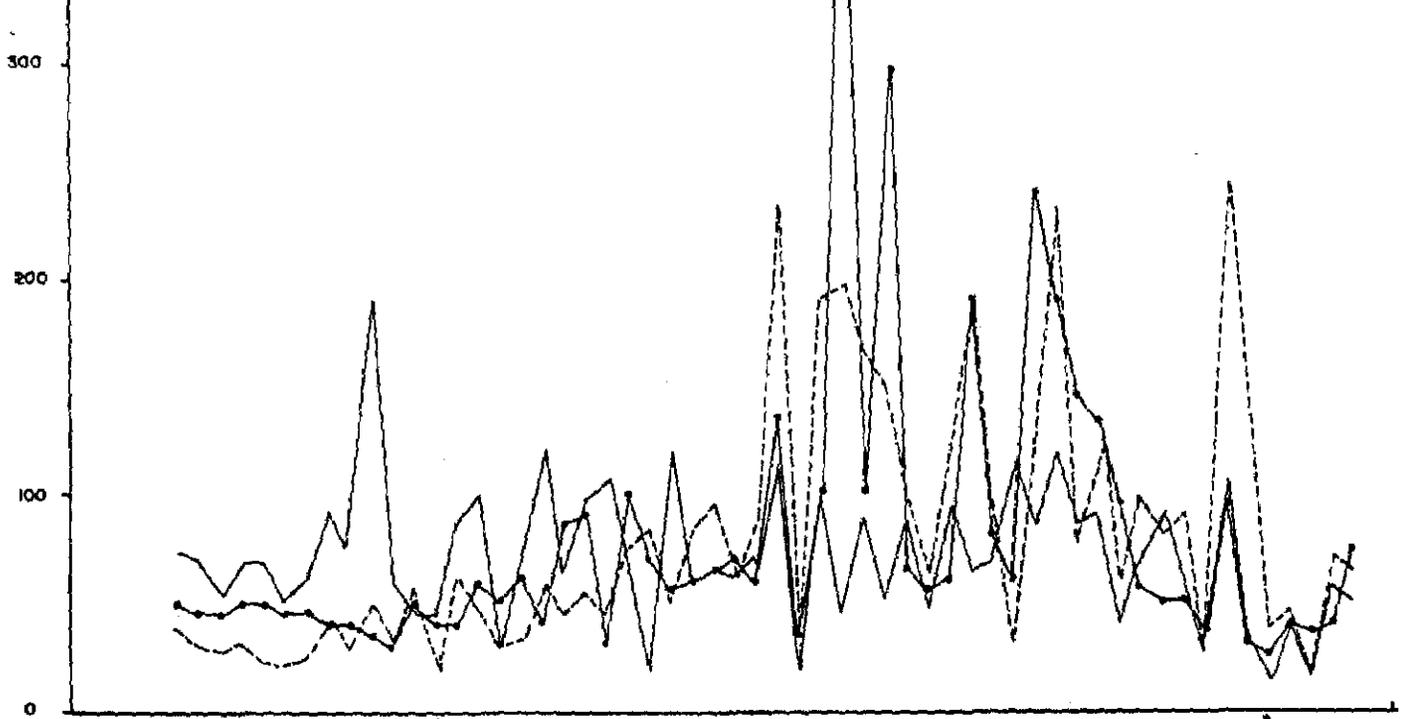
Exploration drill hole MG1 (Plate Mac 72), designed to test a coincident soil geochemical and I.P. geophysical anomaly with a depth to top of at least 50 metres, was positioned on line 10,200N at 5570E. The hole, which was depressed at 45° on an azimuth of 98° magnetic, was commenced on February 3 and completed on February 17, 1982, at a depth of 179.2 metres.

007

C HORIZON SOIL BEDCHEMISTRY

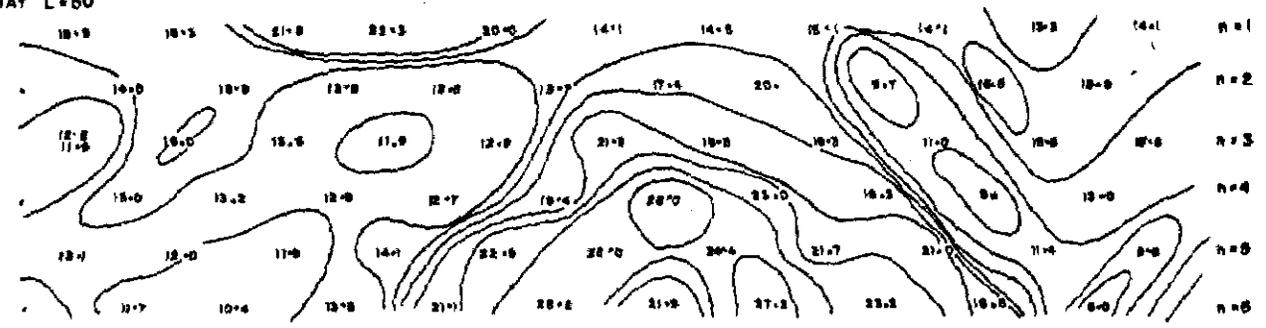
— Cu
 —●— Pb
 - - - Zn

610008



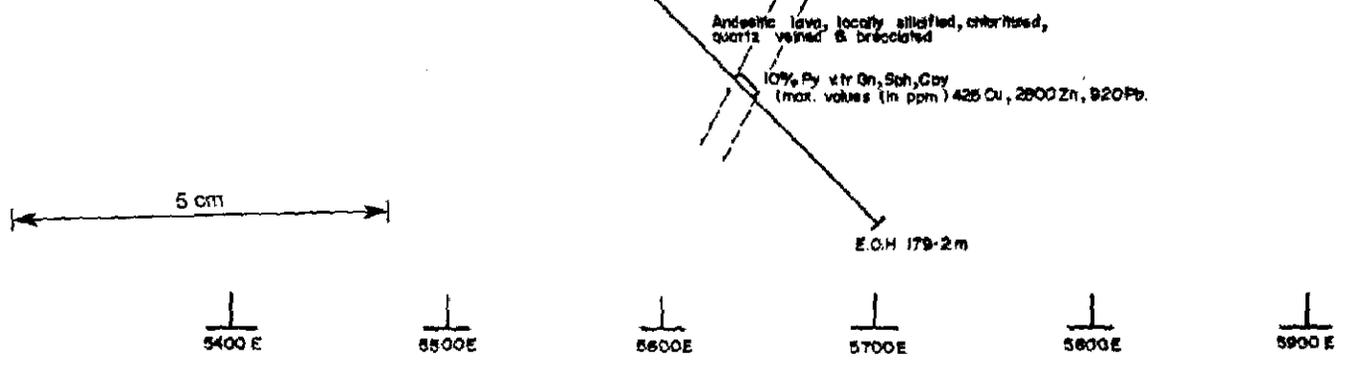
5400E 5500E 5600E 5700E 5800E 5900E

APPARENT CHARGEABILITY (mv/v)
 CONTOUR INTERVAL 2m sec
 DIPOLE - DIPOLE ARRAY L=50



W 5570 E - 45° 090° Az E

SUMMARY GEOLOGICAL CROSS-SECTION

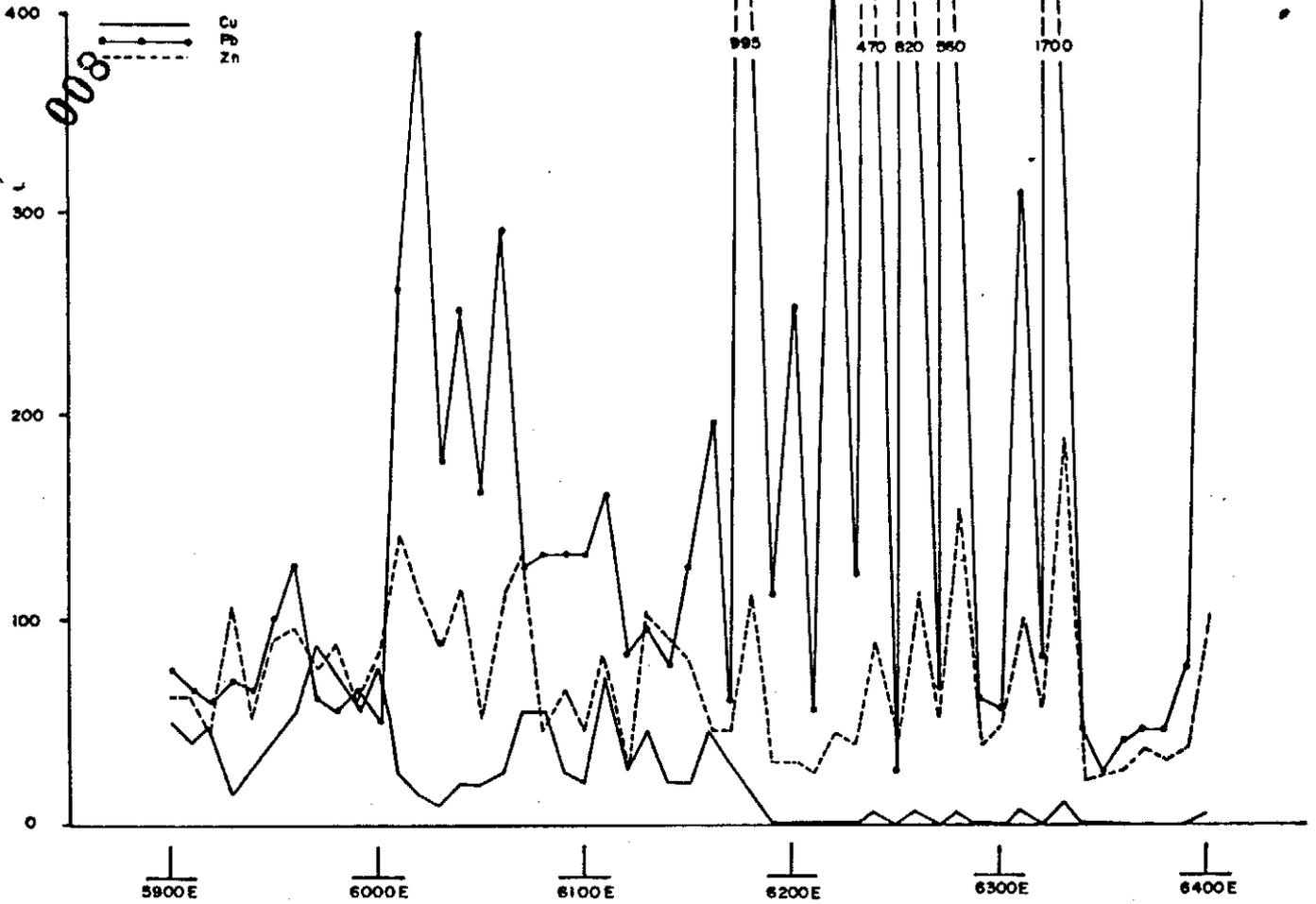


Aberfoyle Exploration Pty Ltd

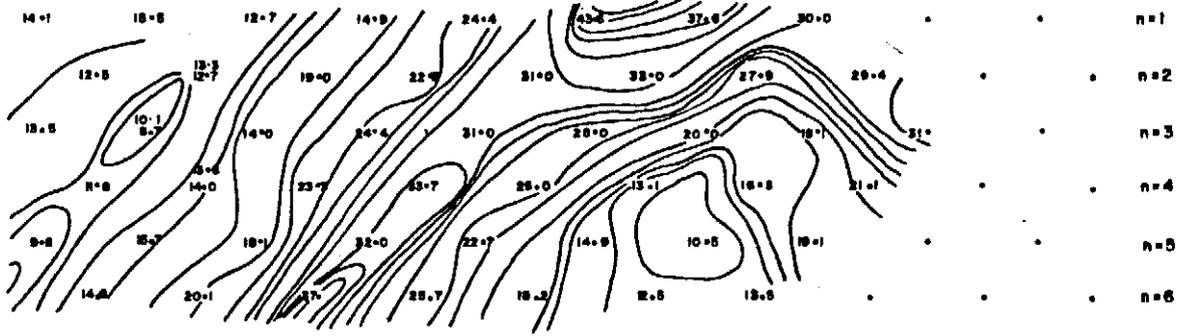
Drawn J.R.S.	NORTH WEST TASMANIA MACKINTOSH E.L. 2/70 NORTHERN ANOMALIES Line 10,200N	Location map:
Traced J.L.R.		Date February, 1982
Checked		Scale 1:2500

610009.

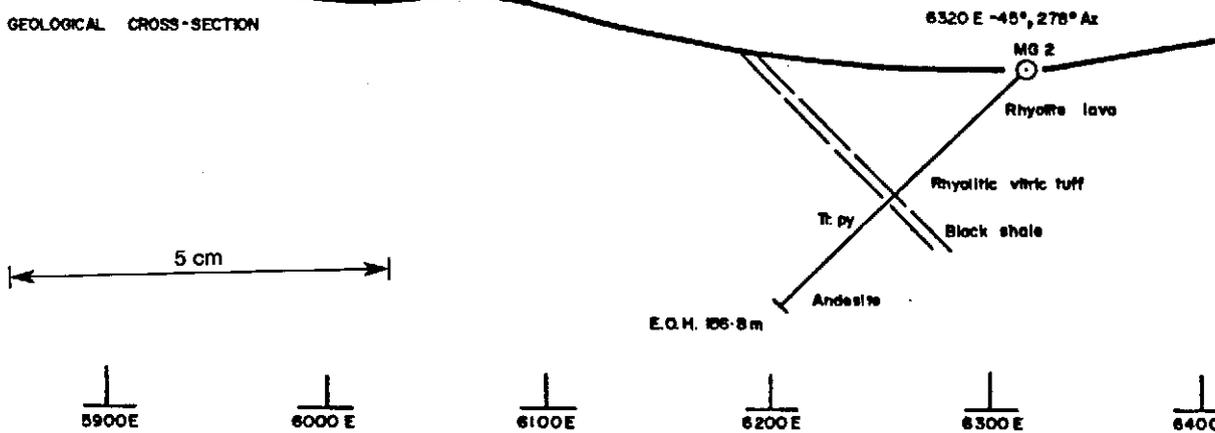
C HORIZON SOIL GEOCHEMISTRY



APPARENT CHARGEABILITY (mv/v)
 CONTOUR INTERVAL 2 m sec
 DIPOLE - DIPOLE ARRAY L = 50



SUMMARY GEOLOGICAL CROSS-SECTION



Aberfoyle Exploration Pty Ltd

Drawn: J.R.S.
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 Checked:

NORTH WEST TASMANIA
 MACKINTOSH E.L. 2/70
 NORTHERN ANOMALIES Line 10.200N

Location code:
 Date: February, 1982
 Scale: 1: 2500

From the collar to 85.40 metres a variably vesicular andesitic lava with local brecciation and silicification was intersected. From 85.40 to 123.50 metres a predominantly textural change to a sheared and altered leuco-andesitic agglomerate was observed. This unit is composed of variably sericite-calcite-pyrite stained intermediate lava clasts with a sandy matrix of sericitic lava clasts and minor feldspar. From 123.50 to end of the hole an andesitic lava with pervasive chlorite-sericite-calcite alteration persisted.

Visible mineralisation is mostly confined to the interval between 84.50 and 96.40 metres where disseminated pyrite (up to 10%) is developed along with pink quartz and calcite as interclast cavity infillings. Only trace flecks of chalcopyrite, galena and sphalerite were recorded.

The 12m interval 85.40 to 97.40 metres was split and analysed for copper, lead and zinc. The maximum values returned were 425 ppm Cu, 920 ppm Pb, and 2800 ppm Zn.

As a further check all core was ground in five metre lengths and analysed, but with no significant results. (Drill log, petrological descriptions and complete geochemical results are appended).

The presence of significant concentrations of pyrite over the interval 84.50 to 96.40 metres is sufficient to explain the geophysical anomaly, with the low order soil geochemical anomaly reflecting the trace base metal values in the drill core.

DDH MG2

Exploration drill hole MG2 (Plate Mac 73), positioned on line 10200N at 6320E and depressed at 45° on an azimuth of 278° magnetic, was commenced on February 23 and completed on March 5, 1982. The target was a 400 metre long erratic lead anomaly with less pronounced zinc and copper geochemistry. The geophysical response is anomalous in the fact that it is not consistent with the observed geology and may represent a concealed conductor at depth (Plate Mac 69).

A devitrified spherulitic rhyolite, moderately sericite-chlorite altered, was intersected between the top of the drill hole and 63.47 metres. From 63.47 to 84.25 metres a change to rhyolitic crystal tuff verging on pelitic ash was observed with sparse radiolaria and trace carbonaceous matter indicative of subaqueous conditions. An interval of sheared black graphitic cherty shale between 84.25 and 88.21 metres was followed down the hole by scoriaceous vesicular andesite with rare cherty interbeds. A gradational change from 133.70 metres introduced a dolomitised, poorly sorted andesitic lithic-crystal tuff with disseminated clasts of green hydromuscovite and vugs of chalcedony. This unit was present at the end of the hole (156.80m).

Mineralisation in the form of disseminated pyrite is rare and restricted to the black shale and cherty interbeds in the adjacent volcanic units.

Analyses of 5 metre core grid samples for the entire hole were universally low in copper, lead and zinc, as expected from the visible content of the drill core. A peak value of 85 ppm Cu, 125 ppm Pb and 525 ppm Zn was recorded from the weakly pyritic black shale. (Drill log, petrological descriptions and geochemical results are appended).

Although a significant amount of alteration and shearing is evident in the drill core, the lack of mineralisation fails to explain the source of the surface geochemical anomaly (up to 0.17% Pb), the homogeneous lead isotope values (reported in Sise, 1982), and to a lesser degree the inconsistent geophysical response. Attempts to resolve these problems will continue with the on-going exploration programme.

DOWN-HOLE E.M. SURVEY

Both drill holes MG1 and MG2 were read by down-hole E.M. during October 1982. No conductors were detected with the resultant profiles producing straight lines.

CONCLUSIONS

The objective of the 1981-82 summer field season on the Mackintosh Licence was to test by diamond drilling two coincident geophysical and geochemical anomalies. This programme was completed, but without significant tenable success. The new lithological information gained, as well as the unresolved anomalies tested by DDH MG2, will be studied in future exploration programmes.

WORK PROPOSED

During the 1982-83 summer season it is planned to conduct a deep penetration E.M. survey (UTEM) over prospective stratigraphy both north-east and south-west of the Que River Mine. To facilitate this survey a considerable number of grid lines will be cut or rehabilitated with approximately 48 kilometres of grid being read. (Fig. 1).

In conjunction with this survey, all new grid lines will be mapped and soil samples collected. New road access north of the Que River Mine, which could not be mapped last summer due to the need to stay clear of felling and clearing operations for the HEC transmission lines, will be mapped this season.

There is now available a substantial amount of data on the Que River environment which requires compilation and evaluation and which may ultimately be applied in the search for more ore.

A budget of \$91,440 has been proposed for the Aberfoyle year ending November 14, 1983 to fund the above programmes.

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Hatfield
E.L. 15/73

Mackintosh
E.L. 2/70

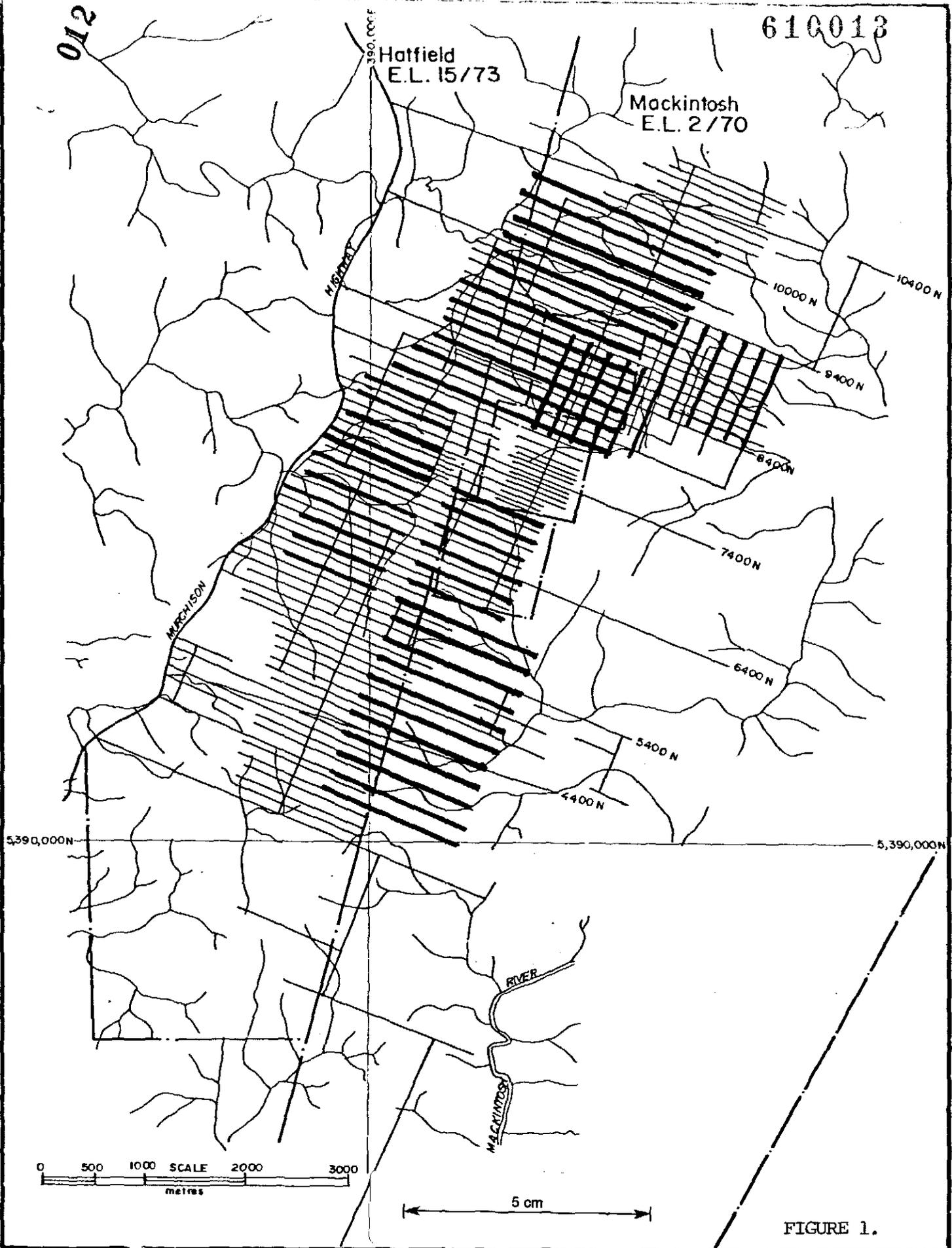


FIGURE 1.

 **Aberfoyle Exploration Pty Ltd**

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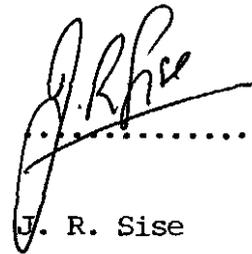
NORTH WEST TASMANIA
 Mackintosh West / Hatfield Licence Areas
 LINES TO BE READ BY UTEM - 1983

Location code:	
Date:	May, 1981
Scale:	1:50,000
Plate No	

REFERENCES

Sise, J.R. (1982): Interim Report, Exploration Licence 2/70, Mackintosh, Tasmania. For 6 months ending December 30, 1981.

ISSUED BY:



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J. R. Sise
Supervising Geologist

APPENDIX 1

STATEMENT OF EXPENDITURE

The Statement of Expenditure for the Mackintosh Exploration Licence 2/70 pertains to the 1982 Aberfoyle Exploration budget year, commencing November 17, 1981 and ending November 15, 1982.

015

ACCOUNT	PAYMENTS YTD
MACKINTOSH WEST EL 2/70 CONTROL (JV - PARINGA)	

SUNDRIES	
... ACCOMMODATION/TRAVEL	420.00
... BUDGET	0.00
SUNDRIES	-----
	420.00
GEOLOGY	
... SALARIES	
... WAGES	5913.00
... CONTRACTORS	170.00
... MATERIALS	152.50
... ACCOMMODATION/TRAVEL	375.63
... FUEL	1059.84
... COMMUNICATIONS	105.10
... SUNDRIES	805.98
... FREIGHT	81.32
... VEHICLE EXPENSES	71.62
... BUDGET	835.00
	0.00
GEOLOGY	-----
	9569.99
SURVEY	
... SALARIES	
... WAGES	599.00
... MATERIALS	296.00
... ACCOMMODATION/TRAVEL	277.88
... FUEL	14.26
... VEHICLE EXPENSES	36.80
... BUDGET	75.00
	0.00
SURVEY	-----
	1298.94
GEOPHYSICS	
... SALARIES	
... WAGES	3683.00
... CONTRACTORS	4001.00
... MATERIALS	4193.95
... ACCOMMODATION/TRAVEL	1559.64
... FUEL	1641.78
... COMMUNICATIONS	292.75
... EQUIPMENT USE	0.40
... SUNDRIES	339.38
... VEHICLE EXPENSES	75.00
... BUDGET	900.17
	0.00

610016

ACCOUNT	PAYMENTS YTD
GEOPHYSICS	16687.07
GEOCHEMISTRY	
... SALARIES	906.00
... WAGES	134.00
... CONTRACTORS	248.50
... MATERIALS	7.25
... ACCOMMODATION/TRAVEL	69.44
... BUDGET	0.00
GEOCHEMISTRY	1365.19
DIAMOND DRILLING	
... SALARIES	795.00
... WAGES	1642.00
... CONTRACTORS	22001.02
... MATERIALS	2818.76
... ACCOMMODATION/TRAVEL	1239.74
... FUEL	542.95
... COMMUNICATIONS	250.00
... SUNDRIES	101.58
... FREIGHT	98.84
... VEHICLE EXPENSES	1436.00
... BUDGET	0.00
DIAMOND DRILLING	30925.89
ASSAYS	
... WAGES	369.00
... CONTRACTORS	509.50
... FUEL	58.23
... VEHICLE EXPENSES	125.00
... BUDGET	0.00
ASSAYS	1061.73
ACCESS	
... SALARIES	1028.00
... WAGES	562.00
... CONTRACTORS	4927.50
... MATERIALS	250.00
... ACCOMMODATION/TRAVEL	24.46
... FUEL	127.51
... COMMUNICATIONS	1.60
... EQUIPMENT USE	762.50
... VEHICLE EXPENSES	400.00
... BUDGET	0.00

016

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ACCOUNT	PAYMENTS YTD
ACCESS	8083.57
TENURE	
... SALARIES	772.00
... MATERIALS	5.75
... TENEMENT COSTS	4483.84
... BUDGET	0.00
TENURE	5261.59
... IRECT COSTS	74673.97
INDIRECT COSTS	
... ADMINISTRATION	11201.02
... BUDGET	0.00
INDIRECT COSTS	11201.02
... OTAL PROJECT COSTS	85874.99

017

610018

018

APPENDIX 11

DRILL LOGS AND ASSAY RESULTS

DDH'S MG1 AND MG2

Feature

Bedding



Shearing



Foliation



Fault



Fragment



Vein



size B shape

c carbonate
q quartz

Mineralization

Trace 1-5%

Common 5-15%

Abundant 15-60%

Massive > 60%

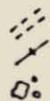
CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
Less than 4.0 metres recovered	5.0	HX core Extremely weathered, orange, very soft and broken <u>Vesicular andesitic lava</u> . Vesicles occasionally evident. Minor quartz-veining.							
	10.0								
	13.50								
	15.0	HQ core Extremely weathered, orange <u>vesicular andesitic lava</u> . Occasional manganiferous staining on fracture surface.							
	0.6								
	0.6								
	1.0								
	20.0								
	21.30	Orange mud, unconsolidated							
	23.30								
	1.7	Very badly broken weathered pale green-brown <u>ve sicular Andesitic lava</u> .							
	25.0								

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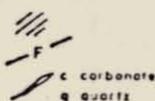
610021

Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



Mineralization

Trace 1-5%
Common 5-15%
Abundant 15-60%
Massive > 60%

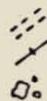
CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	0.7	Very broken pale green Andesite as before							
	1.4	Extremely weathered orange-brown andesitic lava.							
	1.0								
	1.8								
	1.1								
	2.0								
	30.0								
	34.20								
	1.3	Badly broken weathered pale green Vesicular Andesitic Lava.							
	1.5	Vesicles occasionally filled with pinkish quartz.							
	1.5	Fracture surfaces are generally coated with manganese or Fe-staining.							
	2.3								
	40.0								
	1.8								
	1.5								
	45.0								
	2.8								
	3.0								
	50.0								

021

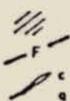
610022

Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



c carbonate
q quartz

Mineralization

Trace 1-5%
Common 5-15%
Abundant 15-60%
Massive > 60%

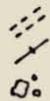
CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Badly broken, weathered Andesite as before							
3.0	52.50	Slightly weathered, compact and hard dark green <u>Vesicular Andesitic Lava</u> . Vesicles to 5cm are generally ovoid and filled with white carbonate (zeolite). Occasional splashes of pink quartz in cavities and vesicles. Core is occasionally leached and porous.							
3.10	55.0								
2.98	59.10	Dark green silicified and weakly locally brecciated <u>Vesicular Andesitic Lava</u> .							
3.0	60.0	60.65 Core broken and weathered vesicle fill often leached out. 62.14							Trace pyrite (< 1%) as coarse splashes and vesicle fill
		Minor pink quartz.							
2.85	63.80	Weathered and leached, green-brown, broken, <u>Vesicular Andesitic Lava</u> .							
2.75	65.0	65.50 Slightly fresher Vesicular Andesite. Common Fe-staining on fracture surface and in cavities. 67.10							
2.2	70.0	START NQ CORING 70.50m							
2.10	70.80	Dark green massive <u>Andesitic lava</u> . Rarely vesicular. Minor local silica-cemented brecciation. Common fine quartz veinlets.							
2.10	75.0								

022

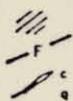
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Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



c carbonate
q quartz

Mineralization

Trace 1-5%
Common 5-15%
Abundant 15-60%
Massive > 60%

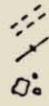
CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Dark green, chloritic, f-mg Andesitic lava. Rare vesicules. Minor local silica cemented brecciation.							Trace Fe Ox staining on fractures. Very minor Py.
	3.0	78.30-79.80m - heavily brecciated zone. White silica matrix							
	80								
	3.0								
	83.2								
	3.0								
	85								
	2.0	85.40 Altered Agglomerate: Variably sericite-calcite-pyrite-stained felsic intermediate lava clasts with a sandy matrix of sericitic lava clasts, minor feldspar. Rock has been variably brecciated and flooded with pinkish-brown silica-pyrite 88.40-89.70 - less silicified and altered andesitic agglomerate, minor Fe Ox						85.4	f.g. dissem py (10) developed in part as interclast cavity-fillings. Tr cpy, sph specks
	3.0								
	90.0								
	2.6								
	95.0								
	3.0								
	96.40								
		Dark green <u>Andesitic agglomerate.</u>						96.4	Trace f.g. py in breccia matrix
	100								

023

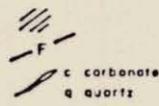
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Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



Mineralization

Trace 1-5%
Common 5-15%
Abundant 15-60%
Massive > 60%

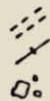
CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.1		Dark green brecciated andesitic lava quartz-veined and locally silicified with irregular pinkish silicification.							
3.1		Epidote common in pinkish silicified brecciated zones.							
	130								
3.3									
	135	Fault Broken core Chloritic Slickensides							Trace pyrite
	2,95								
	140								
2.5		Fault (pug) Fault (pug zone)							
	145								
3.15		146.70 - needle like dark red crystals in quartz pod							
	150								

025

610026

Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



Mineralization

Trace 1-5%
Common 5-15%
Abundant 15-60%
Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Dark green and pinkish brown brecciated Andesitic lava. Rarely vesicular. Local small scale brecciation accompanied by silification and epidote alteration. Pinkish silica common. Common irregular quartz veinlets to 1 cm							
	155								
	3.0								
		Fault - puggy zone							
	3.1								
	160								
	3.08	Fault zone 50 cm of pug 40° to C.A.							
		Zone pug Minor pug 5 cm pug							
	3.40								
	165	165 to 172 metres - "dark red mineral occurs assoc. with quartz in veinlets, gashes and pods."							
	2.70								
	170	As above with conspicuous very fine leucoxenised opaques							
	3.0								
	3.05								172.00 minor coarse galena in 1 cm quartz-chlorite veinlet
	175								

026

610027

Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



c carbonate
q quartz

Mineralization

Trace 1-5%
Common 5-15%
Abundant 15-60%
Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.4		Andesitic lava with pervasive chlorite-sericite - calcite (quartz) alteration assemblage. Flow-oriented feldspar microlites							No detectable sulphides
1.8		179.20 END OF HOLE							
	180								

027

610028

030

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
 For any section not analysed, a value -5.00 should be entered in the relevant assay columns.
 It is not necessary to record a zero.

PAGE 2 OF 2

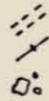
PROGRAM															PROGRAMMER															DATE 10/8/82																																																																																																																							
HOLE IDENT.															DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)															ASSAY															grammes per Tonne															SAMPLE No.																																																																																									
															SNT															STANNITE															COPPER															ZINC															LEAD															TUNGSTEN															SILVER															GOLD																													
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																																																																						
MSI															100.00															-5.00															-5.00															-5.00																																																																																									
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															179.20																														185															375															55																																													265035																													

CORE GRINDING - ANALABS

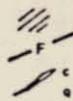
610031

Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



c carbonate
q quartz

Mineralization

Trace 1-5%
Common 5-15%
Abundant 15-60%
Massive > 60%

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		<u>NX CORE</u> Pale green-brown, massive, fine grained <u>Devitrified Spherulitic Rhyolite</u> Diss. relict-quartz, subordinate sericitic albite phenocrysts to 2mm in a sericite- stained ground mass of felsitic anhedral quartz, albite							
	1.0								
	1.4	<u>HQ CORE</u>							
	5	5.40							
	2.0	Dark green, siliceous, chloritic altered sodic rhyolite							Minor Fe-Oxide on fracture surfaces
	8.40								
	3.3	Pale green, siliceous, altered <u>Rhyolite</u> . Alteration is sericite-carbonate-quartz (epidote), with chloritic wisps and vein- lets. Abundant quartz veinlets contain- ing masses of fine chlorite (irregular angles of C.A.)							
	10								
	2.9								
	15								
	3.0								
	20								
	3.0								
	20								
	0.73	21.00							
	0.80	<u>NQ CORE</u> Pale green and green-grey, fine grained, equigranular, massive <u>Rhyolite</u> . Lithology is very monotonous. Weakly flow-structured with semi-banded phenocryst distribution.							
	2.5								
	25								

032

610033

Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



Mineralization

Trace 1-5%
Common 5-15%
Abundant 15-60%
Massive > 60%

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		As before							
	3.12								
	2.8								
	30								
	3.0								
	2.5								
	35								
	3.1								
	40								
	3.2	Badly broken							
		Fe-stained and broken. Highly silicified and intensely sericitized. Relict quartz crystals recognisable.							
	3.0	Badly broken							
	45	42.5-47.0: Common Fe-Oxide on fracture surfaces							
	3.0	Badly broken							
	50								

033

610034

Feature

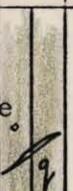
Bedding 
 Foliation 
 Fragment 
 also B shape

Shearing 
 Fault 
 Vein 

c carbonate
 q quartz

Mineralization

Trace 1-5%
 Common 5-15%
 Abundant 15-60%
 Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	3.2	51.90 Sharp alteration change Pink-brown, siliceous, Fe-stained, sericite carbonate-silica altered Rhyolite. Chlorite and quartz veinlets common.							Common Fe-staining
	2.9								
	1.5	56.30 Pale green-brown rhyolitic lava, strongly silicified, minor Fe-staining							
	2.9								
	2.4								
	2.0	63.47 10 cm pug zone							
	3.0	64.5 Pinkish-grey, silic, hard and compact, interbedded fine and coarse tuffs. Occ. apparently graded. Common fine carbonate veinlets.							Chert fragments
	3.0	66.0m grading indicates facing 66.8m grading other way 66.0-66.5: Interbedded Chert							
	3.0								
	3.11								

C. 034

610035

Feature: Bedding (dashed lines), Foliation (solid lines), Fragment size & shape (circles), Shearing (diagonal lines), Fault (line with 'F'), Vein (line with 'V'), Mineralization: Trace (1-5%), Common (5-15%), Abundant (15-60%), Massive (>60%)

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	3.08	As before: Amygdaloidal andesitic to scoriaceous breccia with disseminated clasts of green hydromuscovite-illite (-) 101.30 to 101.60 metres							
	3.02	Second stage a brecciation represented by brecciation of initial black rock flour and cementing of breccia with quartz. Patchy pyrite blebs in quartz.							
	105	104.80 - 105.80 Deformed zone - rock flour 40%, frags. of andesite are small and highly deformed							
	3.00								
	110								
	3.05	4cm carbonate quartz vein							
	3.02	114.20 - 115 Deformed zone - fragment size decreased, rock flour 20%							
	1.20								
	1.90	116.70 - 117.80 Deformed zone							
	3.01	118.64							
	120								
	3.19								
	3.03								
	125								

036

610037

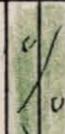
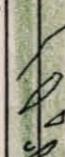
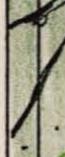
Feature

Bedding 
 Foliation 
 Fragment size & shape 

Shearing 
 Fault 
 Vein 
 c carbonate
 q quartz

Mineralization

Trace 1-5%
 Common 5-15%
 Abundant 15-60%
 Massive > 60%

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	2.99	Pale green massive vesicular andesite lava (breccia)							
	3.02	127.70 Zone of greater brecciation - rock flour average 20% fragments generally less than 10cm and visibly sheared and/or flattened.							
	3.00								
	2.99	135 Gradational change to thoroughly dolomitised, poorly sorted Andesitic lithic-crystal tuff. Dolomite with subordinate microcrystalline quartz, disseminated flecks of hydro-muscovite-illite, vugs of chalcedony, carbonate. Minor ill-defined dolomitised bivalve fossils.							
	3.03	139.5m - Minor brecciation caused by late stage carbonate veining.							
	3.0	140 140.0: 1cm interbed of impure, pyritic chert							
	3.0								
	3.30	145							
	3.10	150							

037

610038

Feature Bedding Shearing Mineralization Trace 1-5%
 Foliation Fault Common 5-15%
 Fragment size & shape Vein Abundant 15-60%
 Massive > 60%
 C carbonate
 Q quartz

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		As before							
3.10									
3.10	155	153.80 Deformed zone - breccia cement is pale grey and very siliceous. Fragments generally not apparently vesicular.							
		END OF HOLE 156.80							

C. 038

610039

APPENDIX 111

PETROLOGICAL DESCRIPTIONS

<u>SAMPLE NO.</u>	<u>DRILL HOLE</u>	<u>DEPTH (m)</u>
237667	MG1	87.0
237668	MG1	178.8
237669	MG2	20.85
237670	MG2	80.0
237671	MG2	90.3
237672	MG2	140.0

042

610043

Central Mineralogical Services



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

Mr. J.R. Sise
Project Geologist - TAS.
Aberfoyle Exploration Pty. Ltd.
P.O. Box 952
BURNIE / TAS. 7320

15th July, 1982

REPORT CMS 82/6/4

YOUR REFERENCE: Order No. 5267
DATE RECEIVED: 4th June, 1982
SAMPLE NOS.: 237667 - 237676
SUBMITTED BY: J.R. Sise
WORK REQUESTED: Petrology

Copy to:
The Chief Geologist
Aberfoyle Exploration Pty. Ltd.
144, Camberwell Road
HAWTHORN EAST / VIC. 3123


H.W. Fander, M. Sc.

REPORT CMS 82/6/4

043

Ten samples of drill core from DDH's MG 1, MG 2 and HA 1 were received for petrological examination. All ten samples can be categorised as thoroughly altered intermediate to acid volcanics. Primary compositional and textural details are obscured to the extent that detailed descriptions were considered unwarranted, and thus brief descriptions were prepared in tabulated form.

Summary

On the basis of relict textural and vague relict compositional features, these rocks range from andesitic through leuco- andesitic to dacitic and rhyolitic. Rhyolitic types are restricted to MG 2, where they overlie andesites. All three drill holes reflect composite sequences of lavas and fragmental rocks. MG 2 includes thin, partly fragmented interbeds of pyritic impure chert within the lower (andesitic fragmental) zones.

As evident in the various descriptions, alteration is both marked and pervasive. Individual rocks may be semi-preferentially chloritised or carbonated, but the bulk exhibit composite sericite(± kaolin)-chlorite-carbonate±quartz and pyrite assemblages.

Primary compositional detail is largely obscured. Whilst the distinction between andesites and rhyolites is readily made, the distinction between leucocratic (i.e. ferromag silicate-poor) andesites and dacites is tenuous. In previously described Que River volcanics this distinction was largely made on the relative abundance of altered ferromags, and it is understood (C.H. Young, pers. comm.) that this was subsequently supported by results of bulk chemical analyses. On this basis, only the MG 2/140.0 m sample (237672) with abundant ferromags, albeit thoroughly carbonated, can be considered as strictly andesitic.

D. Cowan, B. Sc.

Sample	Classification - Composition	Fabric	Accessories	Central Mineralogical Service Comments
7667 S. 414)	Altered Agglomerate. Variably sericite-calcite-pyrite-stained felsic intermediate lava clasts with a sandy matrix of sericitic lava clasts, minor feldspar, sericite-cemented, variably pyritic.	Angular-subangular megacrysts with moderately sorted medium sandy matrix. Sheared.	Minor quartz-sericite-carbonate veinlets. Minor traces chalcopyrite.	Leuco-andesitic/dacitic tuffaceous sand-cemented agglomerate. Pyrite developed in part as intercrystal cavity-fillings. Finer details obscured by shearing effects.
7668	Altered "Trachyandesite". Disseminated albitised/muscovitised plagioclase, minor chloritised amphibole phenocrysts in chlorite-sericite-stained felsic groundmass. Sporadic calcite(-sericite-quartz) veinlets.	Subtrachytic with flow-orientated (sericitised) feldspar microlites. Moderately stressed/sheared.	Conspicuous very fine leucoxenised opaques.	Leuco-andesitic/trachyandesitic lava with pervasive chlorite-sericite-calcite(-quartz) alteration assemblage. No detectable sulphide.
7669	Devitrified Rhyolite. Disseminated relict quartz, subordinate sericitic albite phenocrysts in a pervasively sericite-stained groundmass of felsitic anhedral quartz, spherulitic albite.	Weakly flow-structured with semi-banded phenocryst distribution. Pervasively felsitic/spherulitic. Unstressed.	Traces chlorite, chloritised biotite (groundmass). Disseminated leucoxenitic semi-opaques.	Devitrified, moderately sericite-chlorite-altered sodic rhyolite. Texturally homogeneous and devoid of stress effects.
7670	Rhyolitic Tuff. Sericite with disseminated clots, spongy aggregates, films, of sideritic carbonate. Thinly disseminated splintery to subangular clastic quartz, ill-defined lithic clasts.	Pervasive vague, but diagnostic shaly microtextures. Very incipiently sheared.	Sparse radiolaria, sericitised lava and pumice clasts. Traces carbonaceous matter, pyrite.	Thoroughly sericitised/siderite-stained rhyolitic vitric(-crystal) tuff. Subaqueous characteristics verges on pelitic ash and may represent a useful marker horizon.
7671	Altered ?Andesite/Pyritic Chert. Sericite with subordinate/variable calcite, grading into dolomite; minor quartz, disseminated pyrite./Cherty quartz with silt-sized clastic muscovite, abundant pyrite.	Amygdaloidal "andesitic" to scoriaceous breccia-like, with pyritic chert interbed. Sheared.	Traces carbonaceous matter (in chert, minor stainings in scoriaceous breccia). Minor quartz grains (breccia).	Composite of "leuco-andesitic" amygdaloidal lava, scoriaceous ? flow breccia with crumpled pyrite. Impure chert as lcm interbed and minor clasts, amygdale fillings.
672	Andesitic Tuff. Dolomite with subordinate microcrystalline quartz, disseminated clots of green hydromuscovite, vugs of chalcedony, carbonate; minor pyrite. Interbed of impure, incipiently pyritic chert.	Poorly sorted, weakly bedded, angular to subangular fragmental (lithic-crystal tuff).	Minor ill-defined dolomitised bivalve fossils.	Thoroughly dolomitised, poorly sorted "psammitic" tuff. Distinctly andesitic in contrast to the leuco-andesitic types (237667, 237668, 237671).

50 044

610045

