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HATFIELD E.L. 15/73

TASMANIA

PROGRESS REPORT

FOR THE PERIOD JUNE 1985 TO MAY 1986

VOLUME 1 TEXT

OPEN FILE

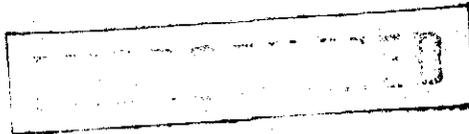
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004

1.

1. SUMMARY

The location of exploration activity on the Hatfield Licence (EL 15/73) for the period June 1985 to July 1986 is shown on Plate HT 86. Work included :

- * Completion of DDH Hat-4 to test for mineralisation in the Hellyer Ore Position adjacent to the Amoeba (UTEM Zone E) footwall alteration zone.
- * Completion of DDH HAT-5 to test for Hellyer Deposit stratigraphy on the western edge of the licence.
- * Mapping, trenching, geochemistry and geophysics to re-interpret the geology in the Mt. Charter dolerite area and to define a drill target.
- * Trenching at the Old Mill Site prospect and re-interpretation of geology and soil geochemistry to propose a drill target.
- * Completion of two costeans to test anomalous soil geochemistry north of the Amoeba zone.

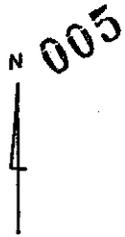
2. TENURE

The Hatfield Exploration Licence 15/73 was pegged on May 5, 1973, by Cominco Exploration Pty. Ltd. (Figure 1). The Exploration Licence was transferred from Cominco to Abminco N.L. on April 1, 1978; to Cleveland Tin Limited on March 28, 1979; and most recently to Aberfoyle Exploration Pty. Ltd. The licence is partly over private land owned by Associated Forest Holdings Pty. Ltd., who have a timber concession covering the entire licence area.

Revised conditions governing exploration licences applied by the Department of Mines from July 1, 1982, now require that exploration be completed on the Hatfield Licence by June 25, 1988. However, since the current licence area is only 65 sq. km., that is less than the maximum area permitted for a five year licence (125 sq. km.), then no reduction in area is required during this period.

The Hatfield Licence currently attracts an annual expenditure rate of \$500 per square kilometre and an annual fee fixed at \$25 per square kilometre.

This report describes exploration activity on the licence during the period June 1985 to May 1986.



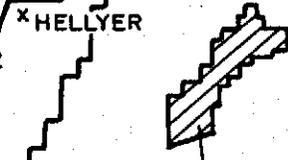
CLEVELAND E.L. 34/82



MACKINTOSH E.L. 2/70

HATFIELD E.L. 15/73

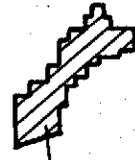
QUE RIVER MINE



MARIONOAK J.V. EL. 22/74



MACKINTOSH EAST J.V. E.L. 2/70



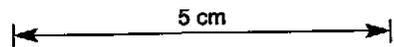
ROSEBERY ○

RENISON ○

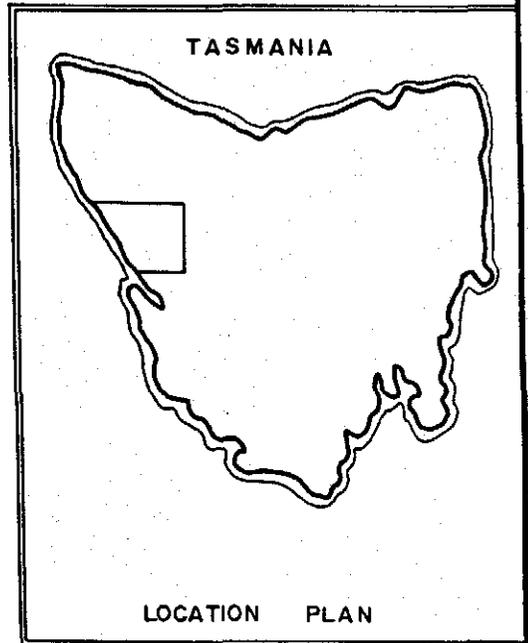
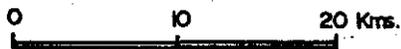
QUEEN HILL Consolidated Mineral Lease



MT. LYELL ○



Managed by J.V. partner



Aberfoyle Exploration Pty Ltd

Drawn: JRS
Traced: RJE/GLC
Checked:
Revised by: JRS Date: 15/10/85

NORTH WEST TASMANIA

EXPLORATION LICENCES

Location code:
Date: OCT. 1985
Scale: As shown
Plate No FIGURE 1

3. DIAMOND DRILLING

3.1 DDH HAT-4

3.1.1 Geology

HAT-4 was drilled to test the Hellyer Ore Position (HOP) adjacent to the Amoeba alteration zone. (Plate HT 86). This zone, discussed in detail in Hespe, 1984(1), is an area of quartz/sericite/pyrite and local chlorite alteration similar to the Hellyer footwall alteration zone. The Amoeba zone is in the core of an anticline from which the overlying HOP has been eroded, but preserved in the flanking synclines. Reworked massive sulphides in the HOP to the west of the Amoeba zone were the target of HAT-4.

A detailed log is included as Appendix 1. A petrological report is included as Appendix 2. A section of the hole is included as Plate HAT 78a. Refer Plate MAC 115 for legend. A summary log is as follows :

- | | |
|--|---|
| 0 - 156.9 | Black shale (Que River shale). Conformable contact to : |
| 156.9-202.4 | Basalt lava with peperitic interbeds of black shale (171.1-175.3). Conformable contact to : |
| 202.4-238.7 | Interbedded black shales, polymict sedimentary breccias and ash volcanoclastics. Conformable contact to : |
| 238.7-390.0 | Basalt lavas and lava breccias, relatively unaltered with prehnite-pumpellyite facies mineralogy preserved. |
| Units from 156.9 to 390.0 are correlated with the hangingwall basalt at Hellyer, and include sediments, as at Hellyer. | |
| 390.0-392.8 | Polymict volcanoclastic (Photo 355529) correlated with the HOP because of its stratigraphic position. Grades into : |
| 392.8-422.3 | Andesite lava breccia, weakly feldsparphyric. Obscure contact to : |
| 422.3-478.4 | Massive vesicular basalt lava, presumably the lower basalt. Faulted contact to : |
| 478.4-496.2 | Feldsparphyric andesite lava. |

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HAT 4

390.1



5 cm

008

4.

3.1.2 HAT-4 Geochemistry

Analyses of core grind samples from HAT-4 are shown in Table 1 and plotted in profile form on Plate HAT 78b.

Weakly anomalous Pb and Zn values occur in the sediments within the upper basalt, and are probably associated with syngenetic pyrite. This could represent distal exhalative mineralisation, slightly later than Hellyer. All other base metal anomalies, including those in the vicinity of the interpreted HOP at 389.5-392.8, are due to sulphides in calcite/quartz veins.

Figure 2 is a discrimination plot for rock composition based on empirical results from well known stratigraphy at Hellyer and Que River. Fields for basalt, andesite and dacite compositions derived from these data are shown on the plot. Basalts and andesites are clearly differentiated by Chromium content. Upper and lower basalts (position relative to the HOP) are differentiated by Zr/Ti ratio, but there is no evidence yet that this applies throughout the licence. Highly anomalous Zr/Ti ratios for andesites from 478.2 to 496.2 are attributed to intense pink silica/feldspar alteration, implying mobility of Zr or Ti, or both, during this phase of alteration.

3.1.3 Geophysics

Downhole E.M. was completed on HAT-4. A report is included as Appendix 3. No anomalous responses were detected.

3.1.4 Conclusions

The target Hellyer Ore Position was intersected between 390.0-392.8. It was not mineralised and no significant alteration was encountered. There was no downhole E.M. response indicating that conductive massive sulphides do not occur within a 100m radius of the hole.

3.2 DDH HAT-5

3.2.1 Geology

HAT-5 was drilled to test for the Hellyer Ore Position (HOP) and for stratigraphic information on the western edge of the Hatfield E.L. (Location see plate HT 86).

A detailed log is included as Appendix 4. Petrography is included in Appendix 5, and a section of the hole as plate HAT 79a. Refer Plate MAC 115 for legend. A summary log is as follows :

0 - 135.1	Que River shale. Flat dipping. Peperitic contact to :
135.1-181.5	Vesicular basalt lava. Sharp conformable contact to :

009

	DHID4	FROM4	TOTQ4	SAMPNO	SAMP	ROCK	ALTN	CUPPMR	PBPPMR	ZNPPMR	AGPPMR	AUPPMR	BAPPMR	ASPPMR	CRPPMR	NIPPMR	ZRPPMR	TIPPMR	ZRTIRT
7	HATD004	0.0	20.0	333258	CGRI	Shbk		85	55	75	1		698	10	110				
8	HATD004	20.0	40.0	333259	CGRI	Shbk		75	55	225	2		756	9	87				
9	HATD004	40.0	60.0	333260	CGRI	Shbk		90	45	115	1.5		913	3	84				
10	HATD004	60.0	80.0	333261	CGRI	Shbk		65	60	140	2		974	7	76				
11	HATD004	80.0	100.0	333262	CGRI	Shbk		65	35	125	1.5		1410	-2	101				
12	HATD004	100.0	120.0	333263	CGRI	Shbk		90	35	130	1.5		1090	12	79				
13	HATD004	120.0	140.0	333264	CGRI	Shbk		75	45	170	1		1080	5	75				
14	HATD004	140.0	156.8	333265	CGRI	Shbk		55	30	110	0.5	-0.008	1070	9	75	70	145	3050	0.047
15	HATD004	156.8	171.1	333266	CGRI	B1		70	15	65	1	-0.008	625	-2	668	175	98	1640	0.06
16	HATD004	171.1	175.2	333267	CGRI	Shbk		45	15	55	-0.5	-0.008	1190	-2	16	40	142	1260	0.113
17	HATD004	175.2	185.0	333268	CGRI	B1		100	20	70	1	-0.008	1130	-2	289	95	123	2760	0.045
18	HATD004	185.0	195.0	333269	CGRI	B1		125	20	80	1.5	-0.008	1310	-2	285	80	129	2850	0.045
19	HATD004	195.0	202.4	333270	CGRI	B1		120	20	100	0.5	-0.008	1130	-2	312	80	155	3060	0.051
20	HATD004	202.4	205.2	333271	CGRI	Shbk		55	50	160	1	-0.008	3700	9	-5	50	184	2160	0.085
21	HATD004	205.2	208.2	333272	CGRI	avc		45	100	190	-0.5	-0.008	729	-2	-5	40	220	1580	0.139
22	HATD004	208.2	215.4	333273	CGRI	B1		135	25	125	1	-0.008	1060	-2	511	125	150	3280	0.046
23	HATD004	215.4	219.6	333274	CGRI	Shbk		90	55	400	2	-0.008	382	12	111	110	134	3410	0.039
24	HATD004	219.6	226.3	333275	CGRI	B1		115	15	135	1	-0.008	318	-2	253	80	136	3130	0.043
25	HATD004	226.3	238.6	333276	CGRI	avc		80	70	135	1	-0.008	1040	12	51	65	182	3020	0.06
26	HATD004	238.6	248.0	333277	CGRI	Bvc		115	80	200	1.5	-0.008	1790	10	140	85	145	3420	0.042
27	HATD004	248.0	258.0	333278	CGRI	Bvc		115	135	365	1	-0.008	990	-2	217	85	147	3230	0.045
28	HATD004	258.0	268.0	333280	CGRI	B1		110	25	100	1	-0.008	614	-2	294	100	144	2870	0.05
29	HATD004	268.0	278.0	333281	CGRI	B1		100	30	70	1	-0.008	1140	-2	489	100	141	2780	0.051
30	HATD004	278.0	288.0	333282	CGRI	Bvc		125	20	110	1	-0.008	1680	-2	434	115	135	2540	0.053
31	HATD004	288.0	298.0	333283	CGRI	B1		85	20	65	1.5	-0.008	1010	-2	477	118	106	1910	0.055
32	HATD004	298.0	308.0	333284	CGRI	B1		95	20	90	1	-0.008	946	-2	528	125	116	2150	0.054
33	HATD004	308.0	318.0	333285	CGRI	B1		80	30	80	1	-0.008	1010	-2	544	120	112	2050	0.055
34	HATD004	318.0	328.0	333286	CGRI	B1		95	200	550	1	-0.008	672	-2	576	130	139	2790	0.05
35	HATD004	328.0	338.0	333287	CGRI	B1		90	95	135	1	-0.008	726	-2	561	135	135	2640	0.051
36	HATD004	338.0	348.0	333288	CGRI	B1		85	35	105	1.5	-0.008	886	-2	509	140	127	2440	0.052
37	HATD004	348.0	358.0	333289	CGRI	B1		130	50	150	1	-0.008	476	-2	661	160	149	2940	0.051
38	HATD004	358.0	368.0	333290	CGRI	B1		110	60	140	0.5	0.01	1060	-2	568	135	140	2610	0.054
39	HATD004	368.0	383.5	333291	CGRI	B1		105	90	310	0.5	-0.008	1070	-2	546	130	138	2660	0.052
40	HATD004	383.5	389.5	333292	CGRI	B1		100	560	2000	1	-0.008	807	-2	163	68	75	3520	0.03
41	HATD004	389.5	392.7	333293	CGRI	Bvc		55	30	340	0.5	-0.008	269	-2	63	35	146	2760	0.053
42	HATD004	392.7	402.0	333294	CGRI	A1		20	-5	70	0.5	-0.008	482	-2	-5	20	146	2790	0.052
43	HATD004	402.0	412.0	333295	CGRI	A1		10	5	90	0.5	-0.008	855	-2	-5	15	147	2740	0.053
44	HATD004	412.0	422.2	333296	CGRI	A1		15	5	110	1	-0.008	703	-2	-5	30	145	2640	0.055
45	HATD004	422.2	432.0	333297	CGRI	B1		90	225	530	1.5	-0.008	694	-2	382	110	118	3680	0.032
46	HATD004	432.0	442.0	333298	CGRI	B1		65	225	490	1	-0.008	555	-2	438	115	130	3520	0.037
47	HATD004	442.0	452.0	333299	CGRI	B1		70	415	625	1.5	-0.008	319	-2	463	120	115	3580	0.033
48	HATD004	452.0	462.0	333300	CGRI	B1		60	45	240	1	-0.008	143	-2	563	130	107	3220	0.033
49	HATD004	462.0	478.2	333301	CGRI	B1		30	35	270	1.5	-0.008	122	-2	829	165	120	3700	0.032
50	HATD004	478.2	488.2	333302	CGRI	A1		65	-5	70	-0.5	-0.008	574	-2	-5	25	245	2150	0.114
51	HATD004	488.2	496.2	333303	CGRI	A1		15	5	40	0.5	-0.008	1040	-2	-5	20	240	2090	0.115

NO. OF SAMPLES PER SITE

11/18/81

TABLE 1

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HOLE NO. : HAT-4

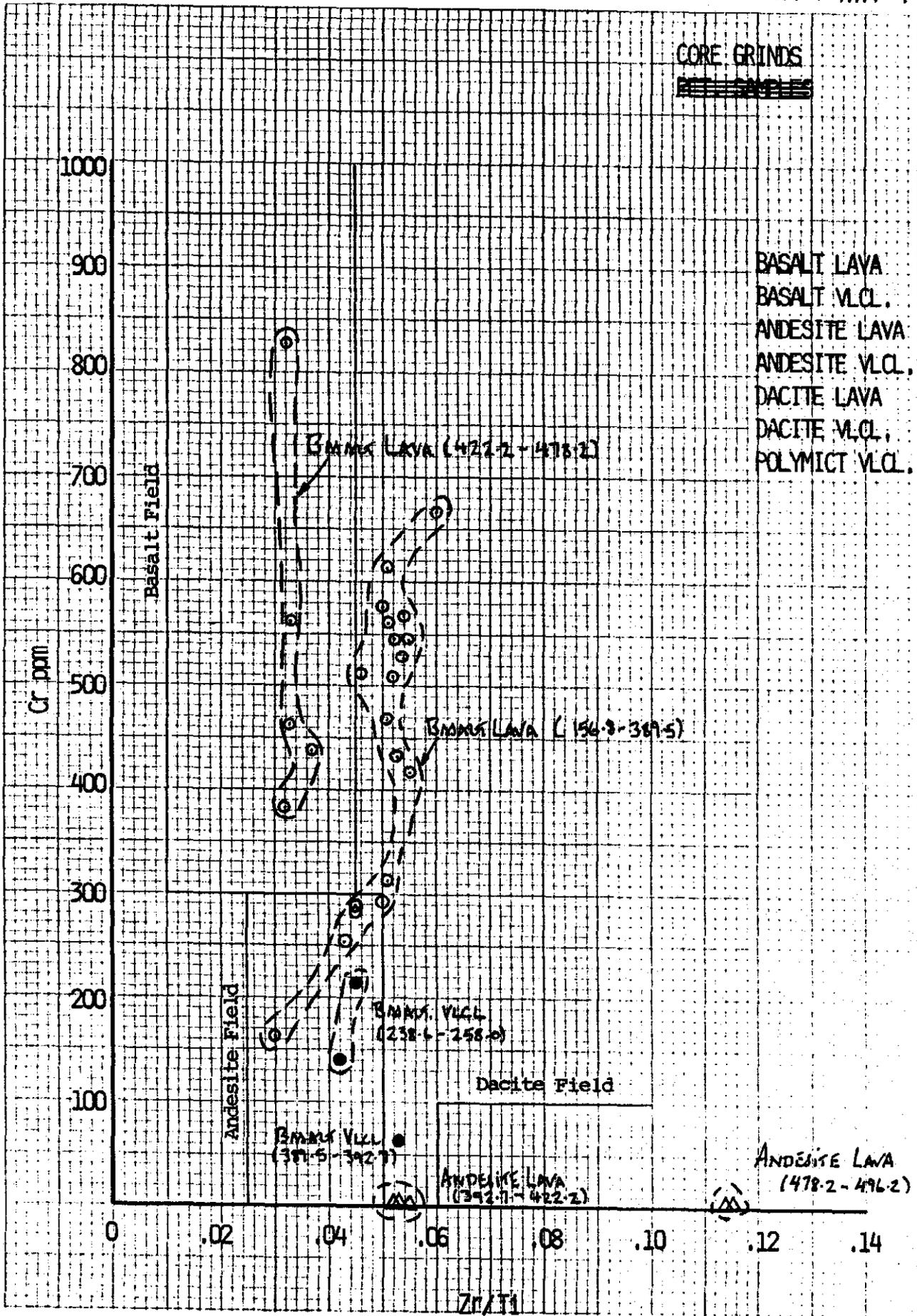


FIGURE 2

5.

- 181.5-208.6 Grey shales, shale breccia (Photo 355536), basaltic lapilli volcanoclastic (Photo 355537, 538) and black shale. This sequence is correlated with the Hellyer Ore Position. Sharp conformable contact to :
- 208.6-232.9 Feldsparphyric andesite lava breccia. (Photo 355539). Vein obscured contact to :
- 232.9-257.0 Andesitic volcanoclastic and lava. Conformable contact to :
- 257.0-420.1 Vesicular basalt lava. Interfingering, conformable contact to :
- 420.1-455.2 Micaceous sandstone, siltstone.

HAT-5 has intersected a complete section of the Que-Hellyer Volcanics (QHV) which are stratigraphically confined between the Que River Shales and a basal micaceous sandstone sequence which is exposed east of Que River mine. At HAT-5 the QHV are 280m thick. 300m of QHV have been drilled at Hellyer without reaching basement. Bedding to core axis angles in shale at the collar indicate a flat dip whereas a steep dip is interpreted in the sandstone. Contacts are all conformable so that folding is proposed to explain the change in dip. The thickness of QHV measured in HAT-5 therefore may be exaggerated.

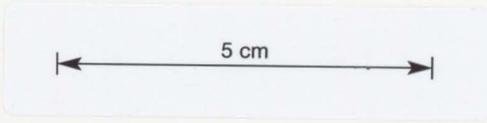
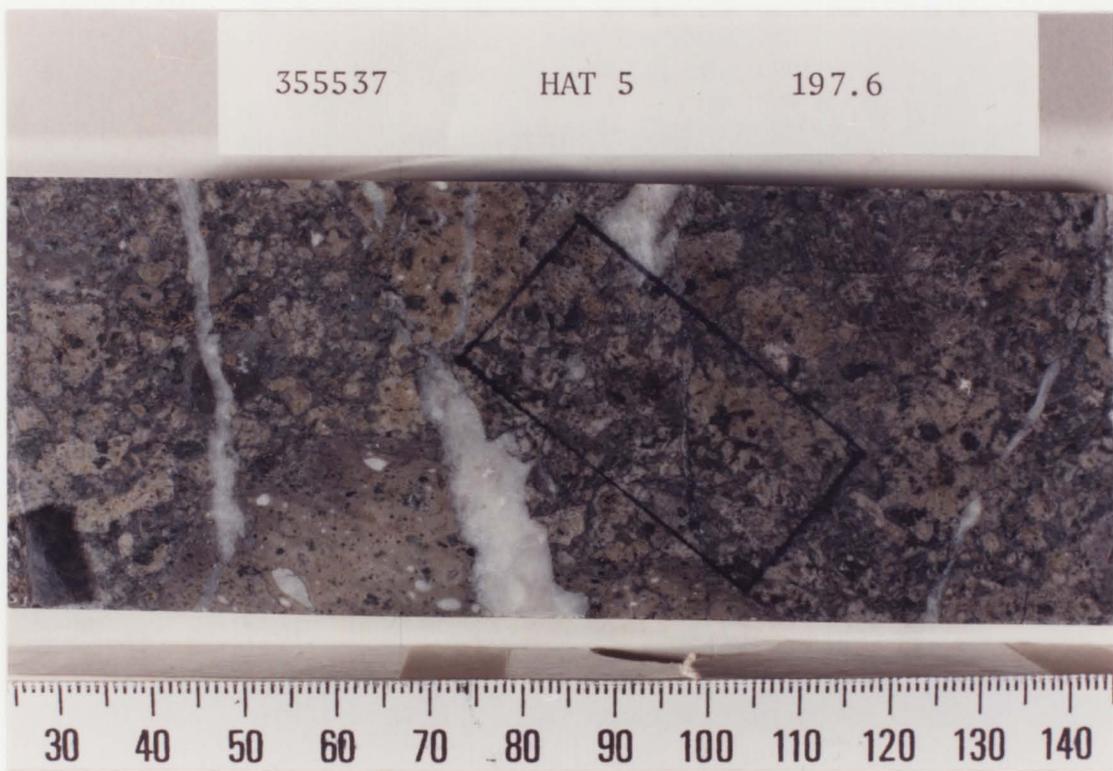
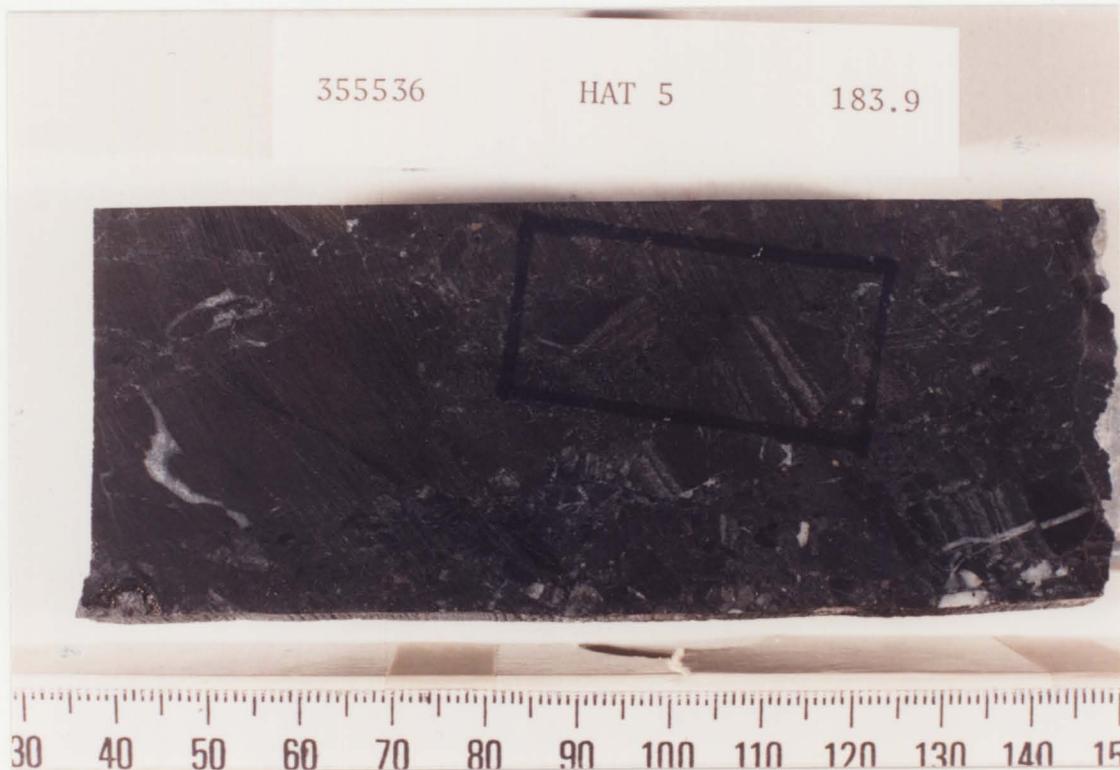
3.2.2 Geochemistry

Analyses of core grind samples from HAT-5 are shown in Table 2 and plotted in profile form on plate HAT 79b.

Anomalous Pb and Zn values in shale (0-100) and the lower basalt (257.3-277) are probably due to sulphides associated with calcite/quartz veining.

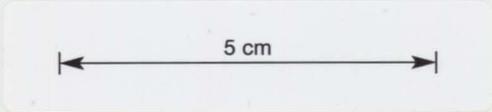
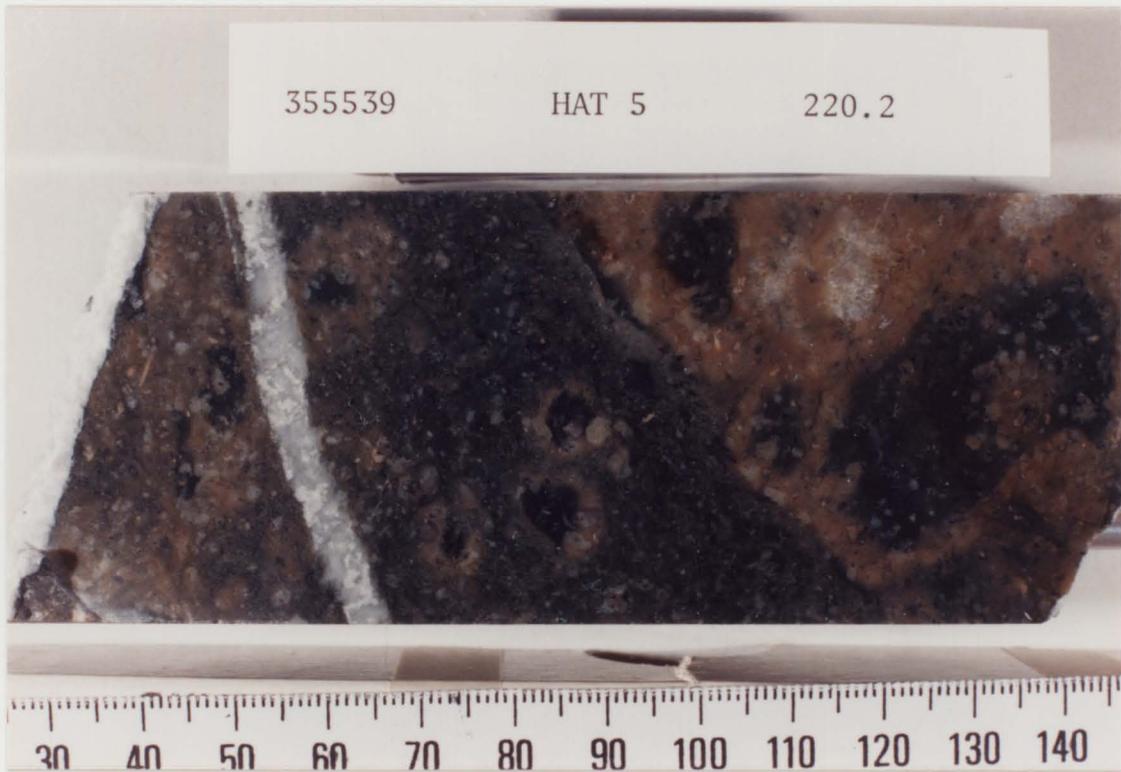
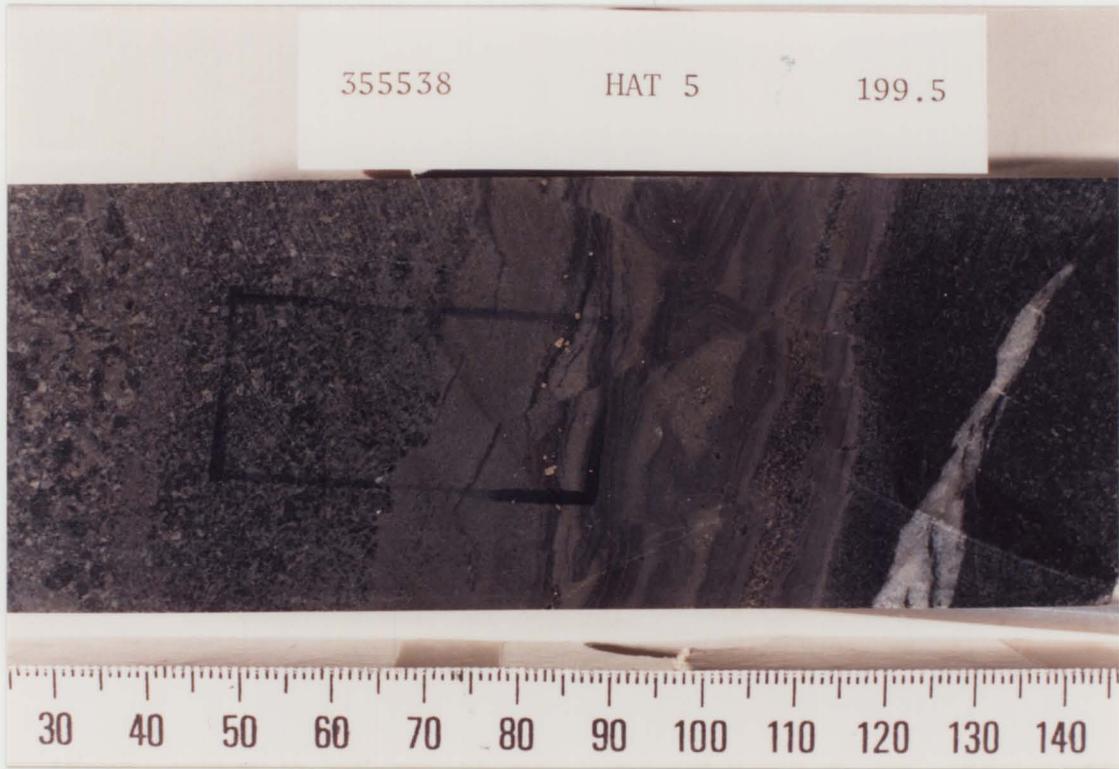
A rock composition discrimination plot is included in Figure 3. (Described in section 3.1.2). The lower basalts (257.0-420.1) are well grouped but with higher Zr/Ti ratios than at Hellyer. Zr/Ti ratios and Cr values for the upper basalt (135.1-181.5) are very erratic and have been affected by intense calcite/quartz veining. Note that the lower basalt in HAT-5 has Zr/Ti ratios closer to those of the upper basalt in HAT-4. Zr/Ti ratios of the andesites, which are confidently identified by their feldsparphyric texture (See photo 355539) are very high and, as suggested for such values in HAT-4, have been affected by mobility of Zr and Ti during silica/feldspar alteration.

The high Cr content of the mica sandstone is noteworthy. High Cr contents from sandstones to the east of Que River would support correlation with sandstones in this hole.



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923015



01A

WATER MONITORING SYSTEM REPORT

923016

DHID4	FROM4	TOT04	SAMPNO	SAMP	ROCK	ALTN	CUPPMR	PBPPMR	ZNPPMR	AGPPMR	AUPPMR	BAPPMR	ASPPMR	CRPPMR	NIPPMR	ZRPPMR	TIPPMR	ZRTIRT
HATD005	0.0	20.0	333778	CGRI	Shbk		65	230	1140	1		950	20					
HATD005	20.0	40.0	333779	CGRI	Shbk		75	80	320	1		900	15					
HATD005	40.0	60.0	333780	CGRI	Shbk		60	75	295	-0.5		910	15					
HATD005	60.0	80.0	333781	CGRI	Shbk		90	75	115	1		720	20					
HATD005	80.0	100.0	333782	CGRI	Shbk		60	105	240	0.5		740	15					
HATD005	100.0	120.0	333783	CGRI	Shbk		50	70	50	1		720	20					
HATD005	120.0	135.1	333784	CGRI	Shbk		40	65	40	1		820	20					
HATD005	135.1	145.0	333785	CGRI	B1		25	15	30	0.5	-0.008	240	5	340	70	50	1250	0.04
HATD005	145.0	155.8	333786	CGRI	B1		50	10	70	-0.5	-0.008	230	-2	480	120	80	2150	0.037
HATD005	155.8	160.2	333787	CGRI	B1		100	10	15	-0.5	-0.008	-10	-2	9	40	7	70	0.1
HATD005	160.2	170.2	333788	CGRI	B1		30	5	45	0.5	-0.008	140	-2	95	75	55	1650	0.033
HATD005	170.2	181.5	333789	CGRI	B1		85	5	80	0.5	-0.008	350	-2	180	85	70	2500	0.028
HATD005	181.5	184.1	333790	CGRI	Shbx		25	20	90	0.5	-0.008	210	20	120	90	150	3050	0.049
HATD005	184.1	186.4	333791	CGRI	Shbx		25	25	55	0.5	-0.008	120	8	45	55	55	1270	0.043
HATD005	186.4	191.0	333792	CGRI	Shbx		10	15	20	0.5	-0.008	25	-2	-5	40	20	390	0.051
HATD005	191.0	201.4	333793	CGRI	Bvc		35	15	75	0.5	-0.008	2200	-2	270	125	120	2600	0.046
HATD005	201.4	208.5	333794	CGRI	Shbk		55	30	55	0.5	-0.008	510	15	110	95	140	4250	0.033
HATD005	208.5	218.0	333795	CGRI	A1		20	25	65	0.5	-0.008	610	40	20	35	250	1600	0.156
HATD005	218.0	228.0	333796	CGRI	A1		30	25	150	-0.5	-0.008	420	3	-5	30	200	1250	0.16
HATD005	228.0	241.5	333797	CGRI	Yvc		25	35	40	0.5	-0.008	530	40	45	50	210	1550	0.135
HATD005	241.5	257.3	333798	CGRI	A1		65	15	55	0.5	-0.008	520	15	-5	30	210	980	0.214
HATD005	257.3	267.0	333799	CGRI	B1		65	150	455	0.5	-0.008	1650	2	580	180	170	2550	0.066
HATD005	267.0	277.0	333800	CGRI	B1		60	35	1765	0.5	-0.008	1500	3	570	175	150	2250	0.066
HATD005	277.0	287.0	333801	CGRI	B1		35	10	80	0.5	-0.008	260	4	390	130	110	1650	0.066
HATD005	287.0	297.0	333802	CGRI	B1		65	10	85	0.5	-0.008	340	-2	380	140	100	1600	0.062
HATD005	297.0	307.0	333803	CGRI	B1		70	25	160	-0.5	-0.008	230	2	510	155	130	2050	0.063
HATD005	307.0	316.0	333804	CGRI	B1		35	5	125	-0.5	-0.008	150	2	610	170	140	2450	0.057
HATD005	316.0	326.0	333806	CGRI	B1		20	20	85	-0.5	-0.008	40	-2	150	75	40	580	0.069
HATD005	326.0	336.0	333807	CGRI	B1		5	20	20	0.5	-0.008	-10	-2	-5	40	-5	50	0
HATD005	336.0	349.6	333808	CGRI	B1		5	15	70	-0.5	-0.008	30	-2	220	95	60	950	0.063
HATD005	349.6	359.0	333809	CGRI	B1		30	10	145	-0.5	-0.008	110	-2	570	155	150	2600	0.058
HATD005	359.0	369.0	333810	CGRI	B1		30	5	140	-0.5	-0.008	70	-2	550	165	140	2400	0.058
HATD005	369.0	379.0	333811	CGRI	B1		30	15	120	0.5	-0.008	75	-2	460	135	120	2050	0.059
HATD005	379.0	389.0	333812	CGRI	B1		35	15	115	0.5	-0.008	240	-2	430	135	130	1950	0.066
HATD005	389.0	399.0	333813	CGRI	B1		65	45	150	0.5	-0.008	370	-2	520	155	150	2300	0.065
HATD005	399.0	409.0	333814	CGRI	B1		55	15	125	-0.5	-0.008	490	-2	550	160	150	2500	0.06
HATD005	409.0	420.1	333815	CGRI	B1		55	70	120	-0.5	-0.008	350	-2	490	195	130	2200	0.059
HATD005	420.1	421.2	333816	CGRI	Ss		10	20	65	-0.5	-0.008	190	20	390	130	130	1700	0.076
HATD005	421.2	424.1	333817	CGRI	B1		35	35	215	0.5	-0.008	190	20	270	130	85	1650	0.052
HATD005	424.1	434.0	333818	CGRI	Ms		25	25	60	1	-0.008	360	20	260	125	180	2600	0.069
HATD005	434.0	444.0	333819	CGRI	Ms		15	15	45	0.5	-0.008	280	7	310	95	140	2400	0.066
HATD005	444.0	455.2	333820	CGRI	Ss		20	20	60	-0.5	-0.008	250	9	380	110	170	2300	0.074

TABLE 2

015

HOLE NO. : HAT-5

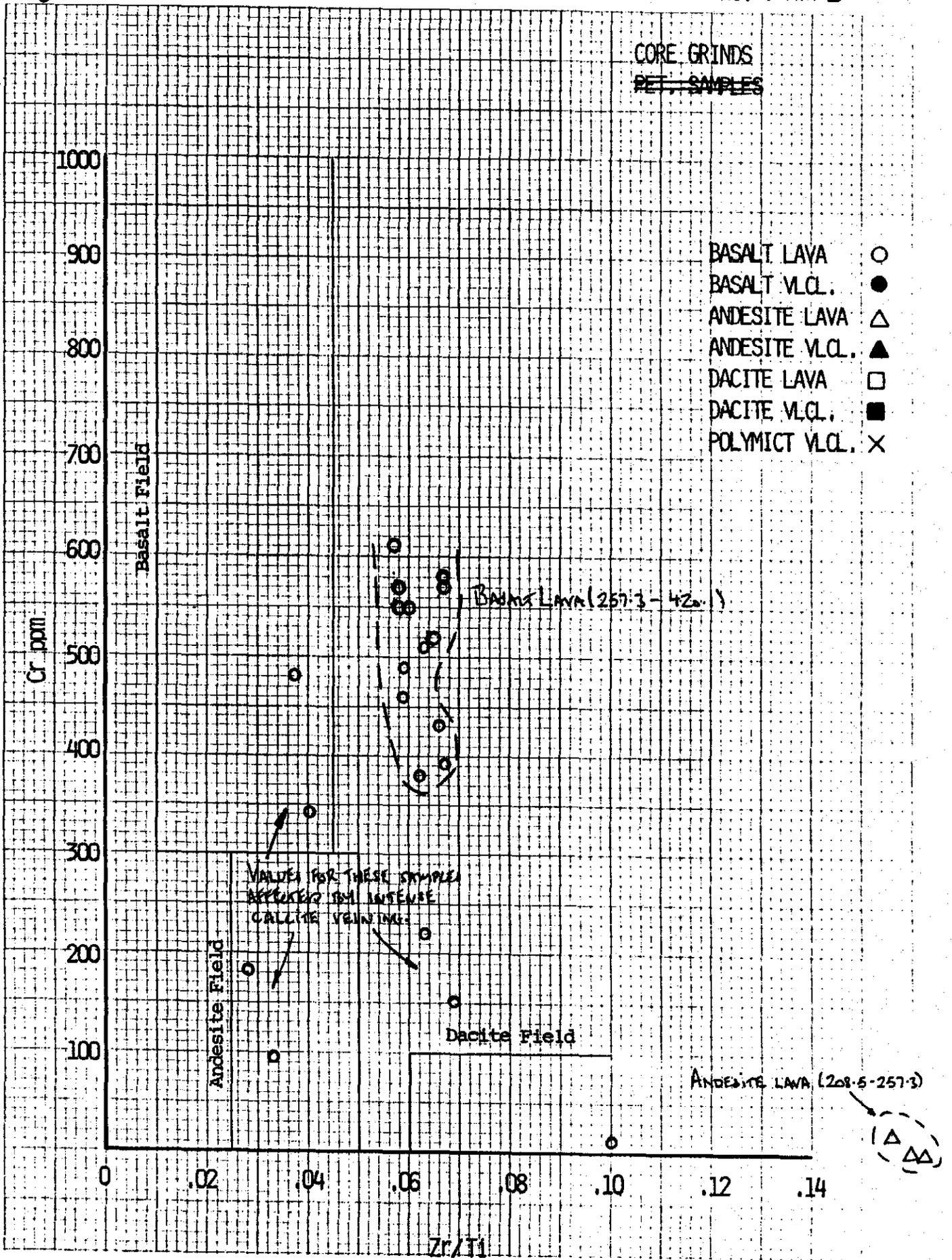


FIGURE 3

3.2.3 Geophysics

Downhole E.M. was completed in HAT-5. A report on the results is included as Appendix 3. No anomalous responses were detected.

3.2.4 Conclusions

HAT-5 is a significant hole because it has intersected a complete stratigraphic section of the Que-Hellyer Volcanics, and supports correlation of basal sandstone sequences on the eastern and western sides of the belt. A true thickness of around 200m is estimated for the QHV in this area. The Hellyer Ore Position was intersected in HAT-5, but is not mineralised and downhole E.M. results indicate that conductive massive sulphides do not occur within a 100m radius of the hole.

4. MT. CHARTER DOLERITE PROSPECT

4.1 Introduction

The Mt. Charter dolerite prospect is located on the Southern margin of the Mt. Charter dolerite intrusion, where a corridor of anomalous Pb and Zn stream sediment geochemistry was defined by surveys in the early 1970's (refer plate MAC116C, not included). These were followed up by reconnaissance soil sampling. Anomalous soil values to 1250 ppm Pb and 600 ppm Zn were detected but no further work was done.

The area was selected for prospect development because of the association of this corridor of anomalous geochemistry with a major fault, (the Mt. Charter fault, shown on Mines Department regional maps [Collins, 1981]) and the intersection of a mineralised horizon, stratigraphically equivalent to Hellyer, in DDH MAC-9. The horizon was interpreted to dip towards the fault. [Hespe 1984]. These associations suggested that either the fault was controlling post depositional base metal leakage from a blind deposit or that the fault may have been active during mineralisation analogous to the Jack Fault at Hellyer. An Exploration programme completed to support a proposed drill hole to test these concepts is described below.

4.2 Geology

Plates 148cc/148pp shows the current geological interpretation of the Mt. Charter area.

The Mica sandstone unit is correlated with a similar lithology on the eastern margin of the Que-Hellyer Volcanic (QHV) Belt (Mackintosh E.L.) where it is known to conformably underlie the QHV.

7.

Following deposition of the QHV and conformably overlying black shale, the sequence was folded around grid NNE trending axes as expressed by the anticlinal closure near MC-10. Subsequent cross folding developed a WNW plunging syncline whose axis is exposed at 4400N/3800E on Gordon's Hill Road.

The dolerite is interpreted to be a sill. Dolerites around the licence always occur in sediments, above the QHV, which are good hosts for sill like intrusives (e.g. the rhyolite sill in the Switchback area). Outcrops of black shale within the dolerite are either roof pendants or erosional windows. (Results of a gravity survey (See section 4.5) across the dolerite support the interpretation of a sheet rather than a vertical prism). The dolerite had been assigned a Jurassic age. (Collins 1981). However a recent K/Ar age date of 396 ± 10 my (Appendix 6) indicates a minimum Devonian age. High Cr content of the dolerite suggest that it may be comagmatic with the Cambrian QHV basalts, with the age date reset during Devonian orogeny.

Strong vertical foliation on the Mt. Charter fault in the 4300N/3200E and 3300E/4200N costeans indicated that the fault plane is vertical. Movement is interpreted to have upthrown the mica sandstone and cut off the southern limb of the syncline. Exposures of basalt along the fault from the Murchison Highway to the 4300N/3200E costean are interpreted to be severely dragged by vertical movement on the fault. The Mt. Charter fault may be a splay off the Henty Fault system. There is no evidence yet for activity on the fault during deposition of the Que-Hellyer volcanics.

Thus there is no evidence that the fault is an ore localising feature analagous to the Jack Fault. However the structural interpretation outlined above allows for a large area of the Hellyer Ore Position to occur below the dolerite, and strong base metal anomalies, (see section 4.3) potentially due to leakage from mineralisation on the HOP, are associated with the fault at surface.

4.3 Geochemistry

C-horizon soil sampling was completed over the Mt. Charter dolerite prospect grid (Plate HT 86). Samples were taken at 25m intervals and analysed for Cu, Pb, Zn, Ag, As, Ba, Cr. Selected results are presented here as 35mm colour photos of the original image processed format. (Figures 4-6). The relation of colour to element concentration is shown in Figure 4 for Pb. The colours have a range of (<5->380 ppm) for Zn and (<12 - >790 ppm) for Cr.

The high Cr values (Figure 6) outline the southern half of the dolerite and show strong contrast with mica sandstone and the inliers of shale.

018

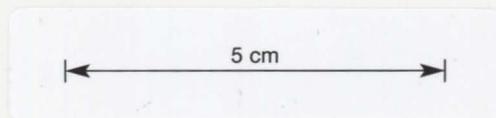
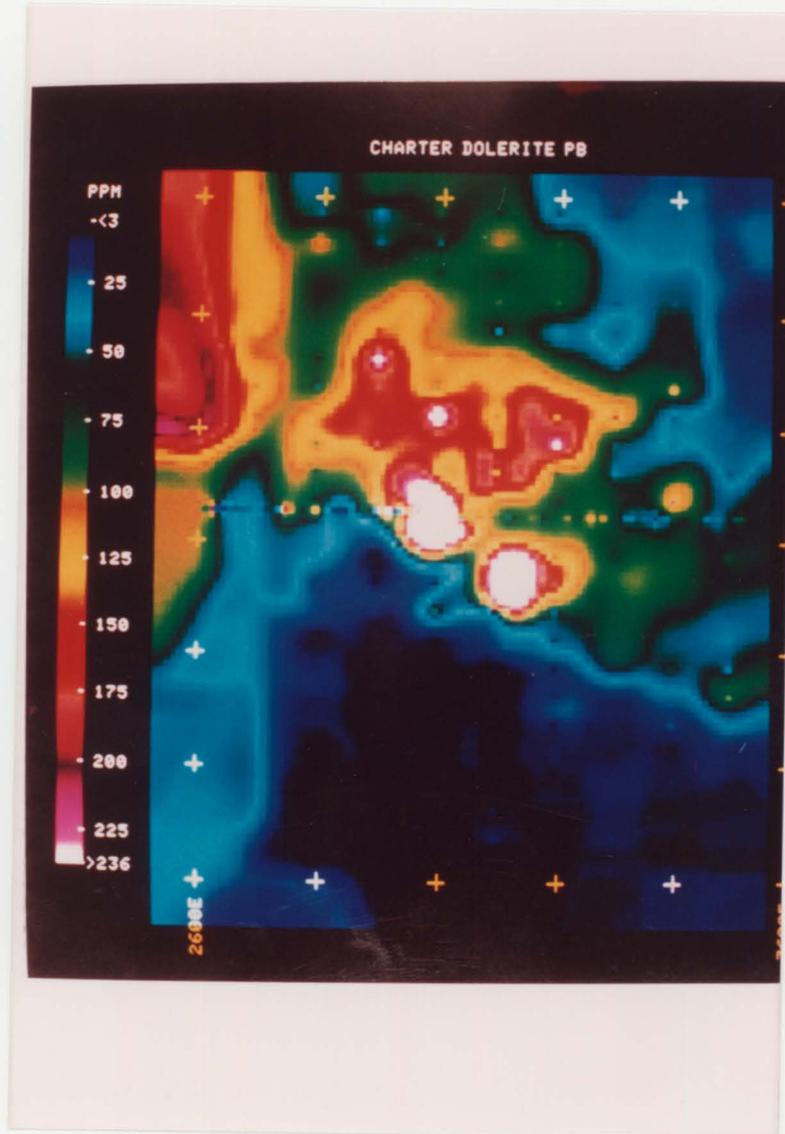


FIGURE 4

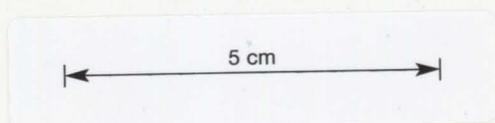
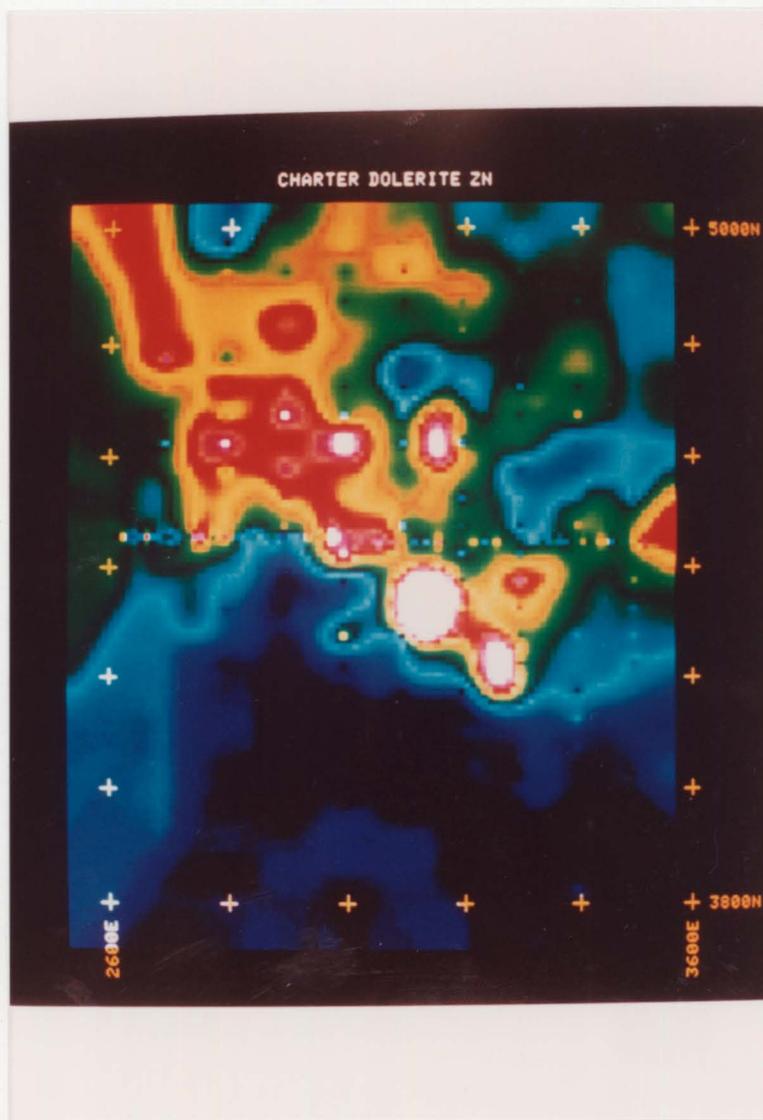
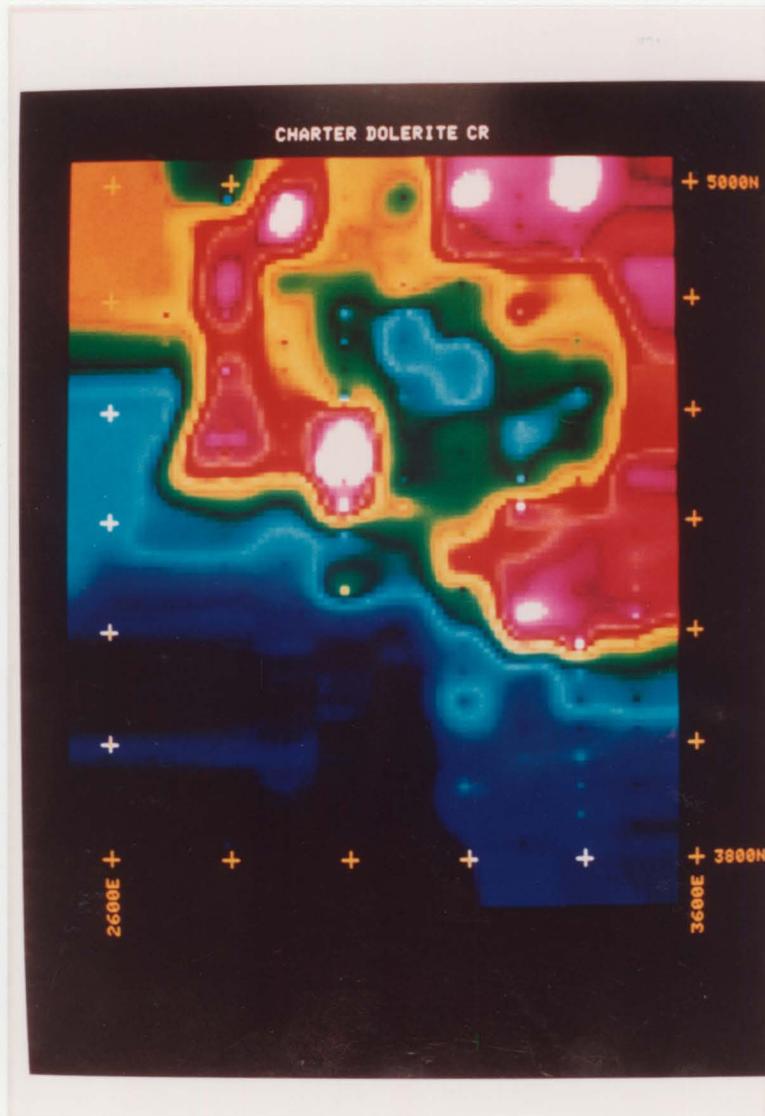


FIGURE 5

020

923022



5 cm

FIGURE 6

Pb (figure 4) and Zn (figure 5) values are highest (white) along the trace of the Mt. Charter fault. It is these anomalies that are interpreted to be due to leakage from the HOP.

4.4 UTEM Survey

A UTEM survey was completed over the Mt. Charter dolerite prospect grid shown in Plate HT 86. A written report on the survey is not yet available. A strong anomaly was detected, but it is attributed to the contrast between conductive shale and more resistive mica sandstone along the Mt. Charter fault. The shale is anomalously conductive around the dolerite perhaps due to thermal metamorphism. The anomaly character indicates that the contact with the mica sandstone, i.e. the Mt. Charter fault, is vertical.

4.5 Gravity Survey

Prior to recent work, the Mt. Charter dolerite was thought to be a vertical prism. This geometry would have eliminated prospective stratigraphy adjacent to the Mt. Charter fault. A gravity traverse was completed along the H.E.C. line (Location, Plate HT 86) for evidence that the dolerite might be a sill.

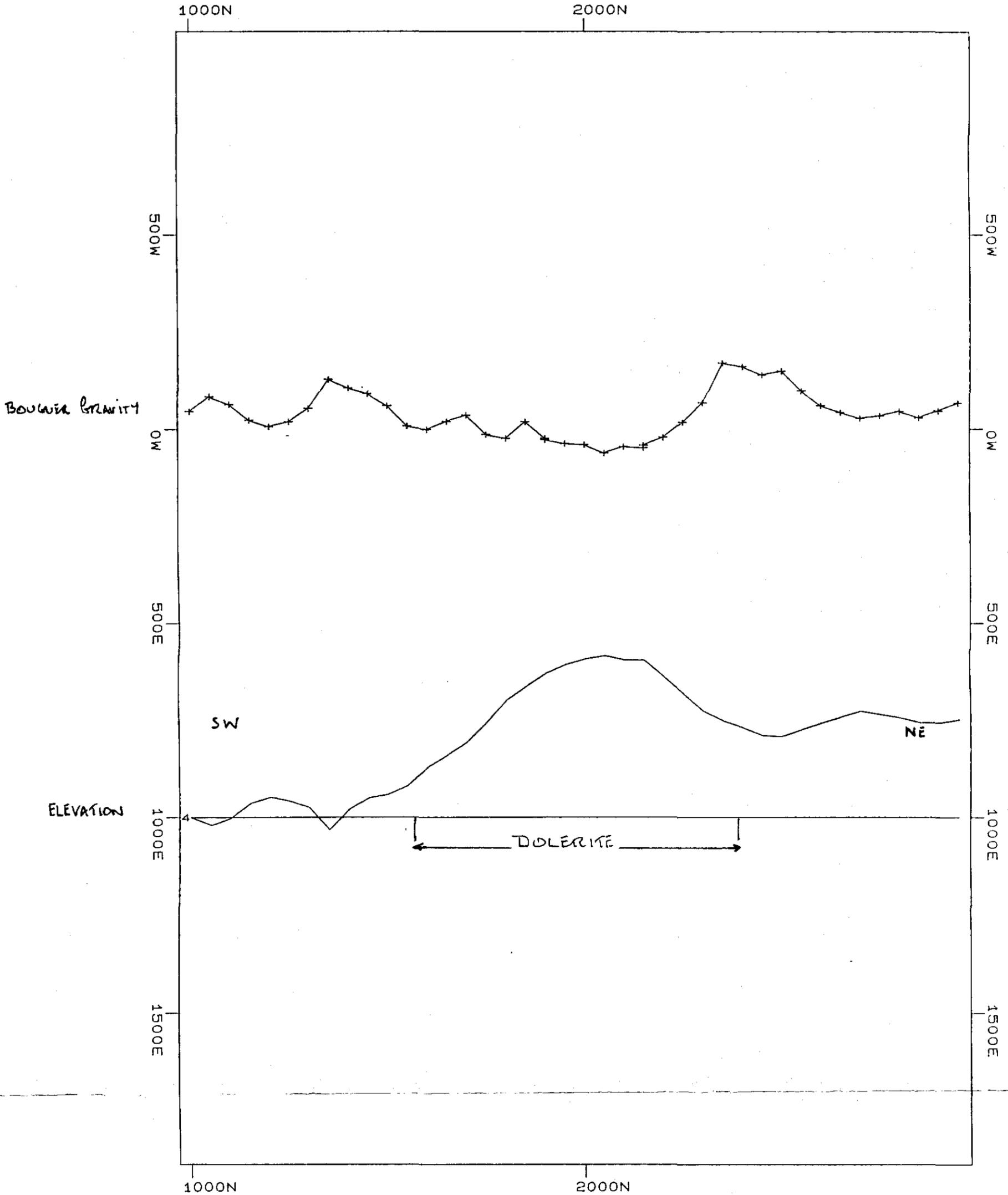
Data from the survey are included as Appendix 7. The Bouger gravity profile (Figure 7) is flat over the dolerite, but increases by 0.5 to 1.0 milligal over the Que-Hellyer Volcanics to the northeast. This feature could be explained by the proposed sill model. The gravity anomaly is attributed to the density contrast between shale and Que-Hellyer Volcanics, the denser dolerite being too thin to affect the profile. This interpretation is tentative as no reliable density data is available and the data has not been terrain corrected.

4.6 Conclusions, Recommendations

Recent work predicts that the Mt. Charter dolerite is a sill and is underlain by an extensive area of the stratigraphic position which hosts the Hellyer deposit. (The HOP). Strongly anomalous soil base metal geochemistry is associated with a major fault which would intersect the HOP and is interpreted as leakage up the fault from mineralisation on the HOP.

A vertical hole is recommended to test this concept as no UTEM anomaly was detected in the prospect area. Hole depth will have to be greater than 300m, which is considered to be the detection limit of UTEM for a Hellyer size deposit.

022



ABERFOYLE EXPLORATION PTY.LTD.
 MT. CHARTER, TASMANIA
 DOLERITE PROSPECT (JOB NO.607)
 Map scale is 1: 10000

BOUGUER Gravity : density 3.00 g/cm³

Gravity profile (Scale : 1cm = .50 mgal, base value is 1030.0 mgal)
 Elevation profile (Scale : 1cm = 20 m , base value is 450 m)
 Plotted on FRI., 22 NOV., 1985 by Solo Geophysics & Co. (Surveyed from 12/1/85)

5 cm

FIGURE 7

923024

023

5. OLD MILL SITE PROSPECT

5.1 Introduction

The Old Mill Site prospect is an area of strongly anomalous Pb/Zn soil geochemistry trending grid N.E. between 6500N and 8000N. (Plate HT 86). The area was named following a feasibility study of the site for a concentrator for Que River ore. DDH QR72 was drilled as part of the feasibility study and intersected strongly weathered basalt to end of hole. The area has been covered with UTEM and I.P. with no significant responses. Further electrical geophysics is not possible because of the high voltage powerlines which run the length of the zone.

5.2 Current Work

During the reporting period all soil geochemical data from the Mackintosh and Hatfield E.L.'s was re-appraised using image processing techniques. Images were produced at 1:10000 scale for Cu, Pb and Zn. The Cu results showed a strong correlation with known basalt. Extrapolation of this correlation indicated a major lobe of basalt in the Old Mill Site area. From the outcrop pattern of the basalt and its connection with basalts towards the Murchison Highway, known to lie conformably below Que River Shale and equivalent to the Hellyer basalt, the basalt in the Old Mill Site area is interpreted to lie in a south west plunging syncline. The geology of the area is shown on plate HT 86, and can be compared with Figure 8 which shows Pb soil geochemical contours of the Old Mill Site trend and the outline of the image processed Cu soil geochemistry at about the 90 ppm level.

In 1985 costeans were completed on 7200N and 6700N to expose the source of the Old Mill Site soil geochemical anomalies. (Plate HAT 77). Less than 1% fresh rock was exposed. High base metal values in channel samples confirmed the soil results but sulphides were not observed. High Cr values indicate the extent of basalt. Low Cr values occur at the western end of the 7200N/3400E costean and coincide with Cu values <90 ppm on the image processed results. The rock there is too weathered to determine if the low Cr values are due to andesite or low chrome basalt.

5.3 Conclusions, Recommendations

A diamond drill hole is proposed to test the Old Mill Site prospect based on the interpretation that the basalt is equivalent to the Hellyer hangingwall basalt and that the soil geochemical anomalies are due to remobilisation of metals from mineralisation on the underlying Hellyer Ore Position.

024

923026



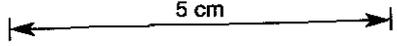
Image processing Cu soil Geochemistry contour (90 ppm)



Pb soil geochemistry contours (Hand contoured), 200 and 500 ppm.

8000 N

5 cm



7000 N

4000 E

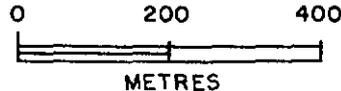


Fig 8

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

TASMANIA
 HATFIELD E.L. 15/73
 OLD MILL SITE PROSPECT
 Pb SOIL GEOCHEMISTRY CONTOURS AND
 IMAGE PROCESSES Cu SOIL GEOCHEMISTRY CONTOUR

Compiled: AMH

Drawn: AMH

Traced:

Checked:

Location Code:

Scale: 1:10000

Date: Dec. 1986

Plate No. HT 85

025

10.

6. NORTH AMOEBEA ZONE TRENCHES

The Amoeba Zone (Plate HT 86) is a linear zone of footwall style pyrite/sericite/quartz alteration between 6600N and 8100N. Scattered spot soil geochemical anomalies with peak values of 5400 ppm Zn and 3200 ppm Pb occur along strike to the north of the zone. There are no UTEM anomalies in this area. Two costeans were excavated on 8600N and 8700N to expose the source of these anomalies and investigate any association with the Amoeba Zone.

Costean plans are shown on plate HAT 81. Cr values, Zr/Ti ratios and petrology show that both costeans expose andesite. Alteration at the eastern end of the 8600N/4100E costean is weak and not comparable with that in the Amoeba Zone. Base metal values from costean channel samples are not anomalous.

Considering the area covered by the costeans, this implies that either the soil anomalies are spurious or very localised. The costeans have been inconclusive in locating the source of the soil anomalies or demonstrating any connection with the Amoeba Zone. The concept of exploring for continuation of the Amoeba trend remains attractive because of the analogy with the D-zone-Hellyer trend.

026

11.

REFERENCES

- HESPE A.M. 1984(1) "Exploration Licence 15/73 Tasmania. Report on Exploration, Dec. 26, 1982 to May 27 1984".
Report to Tasmania Department of Mines, June 1984.
by Aberfoyle Exploration Pty. Ltd.
- COLLINS PLF (Ed) 1981 "Geological Survey Explanatory Report, Sheet 44 Mackintosh". Tasmania Department of Mines, 1981.
- HESPE A.M. 1984(2) "Exploration Licence 15/73, Hatfield, Tasmania. Report on Exploration 28 May 1984 - 25 Dec. 1984". Report to Tasmania Department of Mines, 1984, Aberfoyle Exploration Pty. Ltd.

027

923029

APPENDIX 1

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD
 PROSPECT : _____

HOLE NO: NAT-D-004
 PAGE: 1 of 1
 LOGGED: AMH
 DATE: OCT 1995

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION								
2			NO RECOVERY									
4			BLACK SHALE	MASSIVE, FEATURELESS BLACK SLANES GRAPHITIC FRAGMENTS.		No veining!	WELL CRYSTALLISED PYRITE ON JOINT SURFACES	VERY BRONZE (700-800)			FROM 1000 START OF CORING	
6												
8												
10												
12												
14												
16												
18												
20												
22												
24												
26												
28												
30												
32												
34												
36												
38												
40												
42												

028

923030

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT : _____

HOLE NO : HAT-D-004

PAGE : 2 of

LOGGED : AMH

DATE : OCT 1983

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH	
			ROCK NAME	DESCRIPTION									
44			BLACK SHALE										
46													
48													
50													
52													
54													
56													
58													
60													
62													
64													
66													
68													
70													
72													
74													
76													
78													
80													
82													
84													

023

923031

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD
 PROSPECT : _____

HOLE NO: HAT-2-004
 PAGE: 3 of
 LOGGED: AMH
 DATE: OCT 1985

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION								
86			BLACK SHALE									
92												
94												
95.1												
95.4			BLACK SHALE	LIGHT GREY- DORK GREY WELL BANDING SILTSTONE TO FINE SANDSTONE BENCH AT 10° TO C.A. SHARP CONTACT AT 95.4								
96												
98												
100												
102												
104												
104.1												
104.6			POLYMIT SANDSTONE	LIGHT GREY POLYMIT SS. WITH 10% FRAGMENTS OF BLACK SHALE. GRADATIONAL CONTACT OVER 30m								
106												
108												
110			BLACK SHALE									
112												
114												
116												
118												
120												
122												
124												
126												
128												
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284												
286												
288												
290												
292												
294												
296												
298												
300												

030

Very dark
890

118-81 3mm FINE FLATTENED
 118.4 SILLS OF VERY FINE
 118.8 PYRITE IN LENS AT
 118.9 10° TO C.A.

923032

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD
 PROSPECT : _____

HOLE NO: HAT-D-004
 PAGE: 4 of
 LOGGED: AMH
 DATE: OCT 1985

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION								
128			BLACK SHALE			No Veining						
130												
132												
134												
136												
138												
140												
142												
144												
146												
148												
150												
152												
154												
156												
158			VEGETAL BENCH LAVA	LIGHT GREY - GREEN DULL VESICULAR BENCH VESICLES < 0.5cm, FLUORITE, NOT FILLED (POSSIBLE RAPID POSTERIOR WEATHERING OF BENCH FLUID 1987?)		BENCH WEATHERING CARBONATES						
160												
162			VEGETAL BENCH LAVA	TYPICAL UNALTERED DARK GREEN - GREY VESICULAR BENCH LAVA. TROCHONOLITHIC MASSIVE BUT WITH PORES (20%) OF GREY LUMES IN BENCH MAFIC VESICLES 0.1 to 10um. 0.2-2um FILLS.		IRREGULAR ALUM. LAMS. 2 UP TO 10um WID.						
164												
166												
168												
170												
172												
174												
176												
178												
180												

031

CONTACT MARKED BY INCREASING NUMBER OF INTERFACES
 148.2
 ZONE of MIXING BENCH LAVA WITH INTERFACES of FINELY LAMINATED SERPENTINISED DARK BLACK SHALE. DIVERGENCE 30° TO O.A.

SHARP CONTACT
 QUARTZ-PARALLEL TO SHALE-INTERFACIAL BENCHING

5% COLLOIDAL PYRITE ASSOC. WITH CHERT NODULES

REF 355523 153.7m; REF 355522-154.9
 DIFFERENT SITUATION. TRENCH BANDS OF DIVERGENT AREA, CARBONATES PYRITE AND PYRITE. TRENCH BANDS OF CARBONATES SILTY SHALE.

923033

PROJECT : HATFIELD

PROSPECT : _____

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

HOLE NO: HAT-2-004

PAGE: 5 of

LOGGED: AMH

DATE: Nov 1985

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH	
			ROCK NAME	DESCRIPTION		TYPE	INTENSITY							
170			VEVICULAR DARK LAVA.											
172			171-1 BLACK SLUG	BLACK TO DARK GREEN MASSIVE SLUGS			171-1 QUARTZ. LOW-DENSITY, AV. WIDTH 5-10MM							
174			172-2											
178			VEVICULAR BASALT LAVA.	GREY-GREEN VESICULAR BASALT LAVA. < 2% VOLL POROSITY GREY CHERT. VEICLESS 1MM TO 20MM, OR-CRIST FILLS.			172-3 IRREGULAR VEIN/TRENCH QTZ/CRIST. FINE (FOLDED) IN SOME VEINS.							
180														
182														
184														
186														
188														
190														
192														
194														
196														
198														
200														
202			202-4 BLACK SLUG	BLACK TO DARK GREY MASSIVE SHALE.			202-4 REGULAR QTZ/CRIST AV. WIDTH 1-2MM							
204														
206			205-6 ASH VOLCANICLASTIC	LIGHT GREY VARIABLY SANDY TO MOTTLED DARKENED BY VOLCANICLASTIC WITH EDGES OF SHALE REMNANTS TO 20MM. LATELY TO C.A.										
208														
210			209-3 VEVICULAR BASALT LAVA.				209-3 IRREGULAR QTZ/CRIST FACIENS VEINS							

032

923034

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD
 PROSPECT : _____

HOLE NO: 1145-2-004
 PAGE: 6 of
 LOGGED: AMH
 DATE: MAY 1985

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH	
			ROCK NAME	DESCRIPTION		TYPE	WIDTH							
212			VEHICULAR BOGUS LAVA.	DRIVE GREEN VEHICULAR BOGUS LAVA. 5% VESICULARITY. <1% CHUGS. 1mm-1cm ORICLASE PEGS ON VESICLES. REBILIAN KNIFE EVID. CONTACT			3							
214			216-2					216-2						
216			BLACK SHALE.	DARK GREEN BLACK SHALE, SOME LATERING AT 75 TO C.A. SHARP INTERPEN- ETRATION CONTACT			1							
218			219-6					219-6						
220			VEHICULAR BOGUS LAVA.	GREY- GREEN LEADY VESICULAR BOGUS LAVA. RARE CHUGS.			2							
222			226-3					226-3						
224			BLACK SHALE.	MEDIUM TO FAINTLY BANDING. BLACK TO DARK GREY. GEOCHRONOL OVER 0.5m			1							
226			232-5					232-5						
228			BLACK SHALE VEG.	ASTONISHING BAND (KIND) FINE LAMIN (1mm) OF DARK SHAPE. LIGHT GREEN AT 1/2m.										
230			234-7 Y.f. 1/2m					234-7						
232			ASH VOLCANIC LAVA.	FINE BANDING LIGHT TANK GRAY ASH VOLCANIC LAVA (CHUGS).										
234			238-7					238-7						
236			BOGUS MEDIUM LAPILLI VOLCANIC LAVA.	INTERNAL PENETRATING CONTACT OVER 2cm 0.5 TO 5cm ROUNDED TO SUB-ROUNDED PUMICE FRAGMENTS IN TRACHYLIC MATRIX FRAGMENT: matrix = 1:4 PUMICE IS PALE TO MEDIUM GREY. MATRIX DARK (GREEN) GREY. MATRIX IS STRONG BRECCIAS, WITH BRECCIA FRAGMENTS SURROUNDED BY WHITE BUNNY LAMINATE			1							
238														
240														
242														
244														
246														
248														
250														
252														

033

* FINEST SHALE BRECCIA.
 PR. 35524, 232-5, REP. LAMINATED
 ZONE WITHIN 232-5-233-5, 234-7-238-7
 TUFFACEOUS SILTSTONE. SIMILAR
 TO 35523, MORE TUFFACEOUS, COMMON
 GARNET. CONTAINS KALSHOFERITE,
 ILLITE, SERICITE, BRUCIITE,
 TRACHYLIC LAVA CLASTS, PYRITE,
 CARBONACEOUS MATERIAL,
 DOLOMITE.
 PR. 35526, 234-7, REP. 233-5-234-7
 TOLYMIC SEGMENTARY BRECCIA.
 CARBONACEOUS PYRITE SHALE
 MATRIX WITH CLASTS OF
 TRACHYLIC LAVA, GARNET, QUARTZ,
 PYRITE, CARBONACEOUS PELITE.

923035

ABERFOYLE EXPLORATION DIAMOND DRILL LOG

PROJECT : HARTFIELD
PROSPECT : _____

HOLE NO: NAT-2-004
PAGE: 7 of
LOGGED: AMH
DATE: Nov 1965

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION		TYPE	INTENSITY						
254			Basalt Medium Lapped Vacuillated				1						
256													
258													
262													
264													
266													
268			266-1 Vesicular Basalt Lava.	GREEN-GREY VESICULAR BASALT LAVA. <1% CHERT FRAGMENTS. ZONES OF STRONG HYDRATION EX. VERY MINOR JIL-SIL FRAGMENTS SUBROUNDED BY QZ/CARB.									
270													
272													
274													
276													
278			277-4 Basalt Medium Lapped Vell.	As for 238-7-266-1									
280													
282													
284													
286			285-0 Basalt Breccia	GREEN-GREEN, INTENSIVELY BRECCIATED, VERY MINOR FRAGMENTS OF WOL - VESICULAR STARS IN QZ/ CARB MATRIX. [LARGE "TUMBLE" FRAGMENTS AS IN 238-7- 266-1									
288													
290													
292													
294													

034

2774-285.0
PER 355526; 261.3; PER 238-7-266-1;
ANDRETTIC BRECCIA (LAVA BRECCIA).
DARKER CLASTS ARE CHLORITE/
CARBONATE STAINED, LIGHTER
CLASTS ARE ALBITE/CHLORITE
ALTERED. BUT OF SOME
ORIGINAL COMPOSITION.
TRACES OF LITHIUMITE.

923036

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT : _____

HOLE NO: HAT-D-004

PAGE: 8 of

LOGGED: AMM

DATE: NOV 1980

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION								
294			Basalt Breccia									
296												
300												
302												
304												
306												
308												
310												
312												
314												
316												
317.2												
320			Vesicular Basalt Lava.	Typical green-grey massive vesicular basalt. Vesicles relatively small ($< 10\text{mm}$). Darker fillos 2% chromite fillos vesicles common								
322												
324												
326												
328												
330												
332												
334												
336												

035

REF 355627, 278-2, REP 2650-317-2.
BRECCIATED BASALT FLW BRECCIATED
SCORIAEUS BASALS WITH LOW
CALCITE MICROMORPHIC MINERALISATION
TRACE OF CHROMITE.

Gradational/inter
mixt change
over 3.0m

317-2

Residual zone to
1.0m breccias vein

923037

ABERFOYLE EXPLORATION DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT : _____

HOLE NO : HAF-D-004
 PAGE : 9 of
 LOGGED : AmH
 DATE : Nov 1985

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH	
			ROCK NAME	DESCRIPTION									
332			Vesicular Basalt Lava.										
340													
342													
344													
346													
348													
350													
352													
354													
356													
358													
360													
362													
364													
366													
368													
370													
372													
374													
376													
378													
380													

353.6
 No ORICARB VESICLES, VERY LITTLE
 QTZ CARB. VEINING IN THIS SECTION

353.6
 SCATTERED 1-2cm
 VEINS + FEW < 0.5cm

TR. 35552, 3627. REP. 353.6-380.0
 ALTERED BASALT. OLIVINE LAVA.
 OLIVINE PRESERVED PSEUDO-
 MORPHS BY ADULT, OLIVINE.
 DISSEMINATED CRYSTALS.

036

923038

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT : _____

HOLE NO: HAT-7-004

PAGE: 10 of

LOGGED: ARM

DATE: NOV 1985

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH	
			ROCK NAME	DESCRIPTION									
380			VESICULAR BANK LAVA										
382													
384													
386													
388													
390													
392			POLYHEDR FINE L. V.L.C.	Pale green weakly laminated bank of ash vulc. non-laminated fine lapped breccia matrix of very abundant dark green chlorite in pale matrix		1mm - 5mm Qtz/Calc veins							
394			ANDESITE LAVA BRECCIA										
396													
398													
400													
402													
404													
406													
408													
410													
412													
414													
416													
418													
420													

037

BRECCIA ZONES MAY
BE INTERCALATIONS OF
FOLIOLAR UNIT.

PE 35552, 390-1, 390-0-392.8 (100%)
SEDIMENTARY SAND BRECCIA. FINE
MATRIX WITH CLASTS OF LEUCANDRITE,
ALBITE, PLAG, QTZ, SERPENTINE
PELLE, CARBONACEOUS TRITE

PE 35552, 391-2, 392.0-392.8 (100%)
ANDESITE BRECCIA OR LEUCANDRITE
DOLITE LITHIC TYPE CLASTS OF
PLAGIOCLASE PORPH. LAVA VAGABOND
ALBITE/SERPENTINE. ANDRITO

PE 35553, 401-5, 392.8-422.2
ANDESITE BRECCIA (LAVA BRECCIA)
CALC/ALBITE/CALCITE ACT. ANDERITE
LAVA CLASTS IN CORROSIVE
CHERT MATRIX.

923039

APPENDIX 2

041

SAMPLE NO: 355523
LOCATION: DDH HAT 4/153.9m
REPRESENTATIVE OF: Laminated zones within 148.2 - 156.9
REMARKS: Finely banded mudstone in shale sequence. Any volcanic characteristics? What is the composition of the lighter layers?

SAMPLE NO: 355524
LOCATION: DDH HAT 4/232.6
REPRESENTATIVE OF: Laminated zones within 232.5 - 233.5 and 234.7 - 238.7.
REMARKS: Similar to previous sample.

SAMPLE NO: 355525
LOCATION: DDH HAT 4/234.1
REPRESENTATIVE OF: 233.5 - 234.7
REMARKS: Polymict shale breccia. Are pyrite fragments re-worked?

SAMPLE NO: 355526
LOCATION: DDH HAT 4/261.3
REPRESENTATIVE OF: 238.7 - 266.1, 277.4 - 285.0
REMARKS: Basaltic volcanoclastic with vesicular "pumice" fragments to 4 cm. Are the paler grey fragments pumiceous?

SAMPLE NO: 355527
LOCATION: DDH HAT 4/298.2
REPRESENTATIVE OF: 285.0 - 317.2
REMARKS: Intensely brecciated basalt, quartz/carbonate matrix.

SAMPLE NO: 355528
LOCATION: DDH HAT 4/390.1
REPRESENTATIVE OF: 390.0 - 392.8 (ASH VLCL SECTION)
REMARKS: Basaltic fine lapilli volcanoclastic in the interpreted Hellyer Ore Position.

SAMPLE NO: 355530
LOCATION: DDH HAT 4/391.2
REPRESENTATIVE OF: 390.0 - 392.8 (LAPILLI BRECCIA SECTION)
REMARKS: Compare with 355531. Are dark green (1 cm size) fragments of the same composition in both samples?

SAMPLE NO: 355531
LOCATION: DDH HAT 4/401.5
REPRESENTATIVE OF: 392.8 - 422.3
REMARKS: Considered to be a non-feldsparphyric andesite lava breccia.

042

-2-

SAMPLE NO: 355532
LOCATION: DDH HAT 4/493.2
REPRESENTATIVE OF: 478.4 - 496.2
REMARKS: Typical feldsparphyric andesite lava breccia with pink feldspar/silica matrix. Compare with 355532.

043

923045

Central Mineralogical Services



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

Mr. A.M. Hesse
Project Geologist
Aberfoyle Exploration Pty. Ltd.
P.O. Box 952
BURNIE / TAS. 7320

23 DEC RECD

19th December, 1985

REPORT CMS 85/11/35
Part 1

YOUR REFERENCE:	Letter dated 25.11.1985
DATE RECEIVED:	26th November, 1985
SAMPLE NOS.:	HAT 4 - 10 Samples
SUBMITTED BY:	A.M. Hesse
WORK REQUESTED:	Petrology

H.W. Fander

H.W. Fander, M. Sc.

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

044

REPORT CMS 85/11/35
Part 1

Nine drill core samples from DDH-HAT 4 and an additional sample labelled HAT 4/362.7 m were received for routine petrological examination. Representative thin-sections were prepared and examined together with respective offcuts, with stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite comprises variably altered and incipiently sheared basic to intermediate volcanics, with subordinate tuffaceous sediments represented by samples HAT 4/153.9 m and 232.6 m.

Volcanics are dominantly andesitic to leuco-andesitic/trend trachytic types within limits imposed by the generally marked alteration and consequent obliteration of primary compositional detail.

The shallower drilled sequence comprises the sediments, "polymict" breccia, and relatively felsic volcanics. Basal zones comprise andesitic breccias, complexed by secondary brecciation effects, but characterised by perlitic-textured lava clasts. A strongly altered pyroxenic basaltic scoriaceous lava (HAT 4/298.2 m, 362.7 m), analogous to the Hellyer basaltic andesite/andesitic basalt facies, appears to represent a distinct "break" in the sequence.

Alteration is generally chloritic, although locally complexed by fracture-controlled quartz-albite-sericite assemblages and generally by carbonate veining. The basalt, in part, exhibits a complex albite-pumpellyite-chlorite-epidote assemblage. This sequence as a whole is weakly pyritic, with a syngenetic pyrite component concentrated in the tuffaceous sediments.

D. Cowan, B. Sc.

045

Sample No.	Classification - Composition	Fabric	Accessories	Comments
HAT 4 53.9m 355523 (T.S. 55084)	<u>Carbonaceous Pelite</u> . Fine to semi-sericitic and silt-sized detrital white mica with semi-pervasive carbonaceous matter, disseminated to locally conspicuous pyrite. Interspersed lenses of sericitised feldspar, sericitic	Silty shale-parted siltstone "grading" into silt-parted carbonaceous shale. Incipient high-angle discordantly	Conspicuous clastic leucoxenitic semi-opaques. Minor late clots, films of kaolin and sideritic carbonate.	Planar to locally transcurrent-bedded, sericitised reworked tuffaceous siltstone (pale), with partings, interbeds of carbonaceous silty shale. Minor tuffaceous sandy interbeds.
232.6m 355524	<u>Tuffaceous Psammopelite</u> . Kaolin-illite with varying proportions of silt- to medium sand-sized sericitic feldspar, argillised "trachytic" lava clasts. Sporadic carbonaceous shaly partings. Minor dolomite; disseminated to conspicuous	Siltstone-, shale-parted, poorly sorted (silty fine to medium), sandy clastic. Incipiently sheared.	Clastic leucoxenitic semi-opaques. Sporadic late discordant, mildly displacive calcite veinlets.	Affinities with 153.9 m, coarser-grained and relatively tuffaceous in comparison. Mildly reworked volcanic component is leuco-andesitic/trachytic. Includes rare radiolaria.
234.1m 355525	<u>Breccia</u> . Random clasts of variably calcite-chlorite-stained "trachytic" lava, silt- to fine sand-sized albite, minor quartz grains in a carbonaceous, pyritic shale matrix, with conspicuous fine silt-sized clastic	Slump breccia-like, with randomly sorted clasts; very incipiently sheared, massive (unbanded) matrix.	Sporadic clasts of carbonaceous pelite, semi-massive pyrite, rare biotite flakes. x. Minor late calcite	Carbonaceous, pyritic pelite-matrixed sedimentary breccia characteristics. Coarser pyrite aggregates are of clastic origin, pyrite pelite- and altered lava-derived.
261.3m 355526	<u>Andesitic Breccia</u> . Interspersed clasts of chloritic/carbonate-stained, chlorite-amygdales, weakly chlorite-amygdales (paler) lava. Sporadic coarse amygdaloides, films of quartz, albite, chlorite.	Variably moulded, sub-trachytic-textured clasts; patchy lithic fragmental matrix.	Leucoxenised opaques, minor pyrite (partly in amygdaloides); minor traces of chromite.	Flow-marginal breccia characteristics. Subtle differential alteration appears to partly reflect variations in primary crystallinity. Paler types are weakly perlitic.
298.2m 355527 (T.S. 55088)	<u>Brecciated Basalt</u> . Clasts of strongly albite-pumpellyite-chlorite(+ quartz, epidote) amygdaloid, strongly augite-porphyrific basalt with extensively albitised groundmass. Matrix, veinlets of calcite with interspersed aggregates of albite.	Random millimetric to centimetric single and composite clasts. Mildly stressed matrix.	Traces of chromite, ultrafine pyrite. Minor quartz, pumpellyite, epidote in matrix.	Primarily a partly flow-brecciated scoriaceous basalt. Extensively albite-chlorite-pumpellyite-epidote-altered, closely fractured/calcite-healed.
362.7m 355528 (T.S. 55106)	<u>Altered Basalt</u> . Frequent augite, relatively minor chloritic microcrystalline quartz, pseudomorphed olivine phenocrysts in a groundmass of albitised/saussuritised plagioclase laths; chloritic mesostasis.	Strongly porphyritic, basaltic, weakly chlorite-amygdales.	Disseminated chromite, traces of pyrite, conspicuous leucoxenitic semi-opaques.	Close compositional affinities with 298.2 m. Primarily a ?glass-mesostasised lava. Extensively "saussurite"-altered.
390.1m 355528 (T.S. 55089)	<u>"Breccia"</u> . Clasts of extensively sericite/cryptocrystalline quartz altered leuco-andesitic lava. Frequent albitised plagioclase subordinate quartz grains, minor sericitic pelite, carbonaceous pelite clasts. Ill-defined sericitic matrix.	Massive to incipiently bedded, poorly sorted, angular sandy clastic.	Minor clots of calcite. Clastic leucoxenitic semi-opaques. Minor traces of pyrite. Rare radiolaria.	Sedimentary (?slump) breccia characteristics; dominated by mildly reworked leuco-andesitic/dacitic components. Finer detail obscured by sericitic alteration.
391.2m 355530	<u>Andesitic "Breccia"</u> . Clasts of variously albitised to sericite-, sericite-chlorite-stained and semi-selectively chloritised/albitised, plagioclase-porphyrific lava. Sparse leuco-xenic sericite-chlorite matrix.	Random variably moulded clasts; variously trachytic to perlitic-textured. Mildly sheared.	Traces of chromite, minor clots, films of cloudy calcite. Traces phenocrystal quartz.	Leuco-andesitic/dacitic, lapilli-grade lithic tuff. Differential alteration of clasts reflects primary crystallinity variations. Perlitic types relatively albitised.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
HAT 4 401.5m 355531	Andesitic "Breccia". Clasts of variably chloritic, albitised lava (similar to 391.2 m), with varying proportions of calcite. Corrosive matrix of cherty microcrystalline quartz with interspersed clots of calcite.	Analogous to 391.2 m, but irregularly cherty quartz-veined/replaced	Patchy sericite. Conspicuous fine leucoxenised opaques, rare ultrafine pyrite.	Affinities with 391.2 m. In contrast, this rock is dominated by relatively homogeneous, perlitic, weakly porphyritic clasts; may represent a brecciated lava.
493.2m 355532 (T.S. 55092)	Andesitic "Breccia". Clasts of chloritic/variably silicified and sericite-carbonate-stained, weakly porphyritic lava. Corrosive matrix of microcrystalline quartz with subordinate intergrown albite, minor sericite.	Perlitic, massive to flow-structured/flow-brecciated clasts, randomly sized, angular, extensively corroded.	Leucoxenised opaques.	Brecciated, silicified/albitised andesitic flow breccia. Close affinities with 401.5 m. Quartz-albite-sericite(-carbonate) alteration is fracture-controlled, overprints chloritic alteration.

0-047

APPENDIX 3

048

ABERFOYLE EXPLORATION

(Internal Report)

DOWNHOLE ELECTROMAGNETICS ON THE MACKINTOSH
HATFIELD LICENCES TO DECEMBER 1985

(ABRIDGED)

Distribution

Aberfoyle Hawthorn (2)
John Sise, Burnie
Dave Wallace, Que River

Tom Eadie
Geophysicist

049

It is very disappointing that no conductor was detected in the DHEM, particularly because a UTEM feature was part of the reason for the drill hole. However it should be understood that 1) the UTEM anomaly was very subtle, 2) it was suspected that the data was influenced by a nearby HEC transmission line (Eadie, 1985) and 3) a hole in the general area was necessary for geological reasons anyway. The conclusion is that the surface UTEM anomaly must have been an artifact of the HEC transmission line.

3) Mac 6

This hole was drilled to test the stratigraphic relationship between the dacite and basalt and to test the P/Q lens position on the eastern dacite contact.

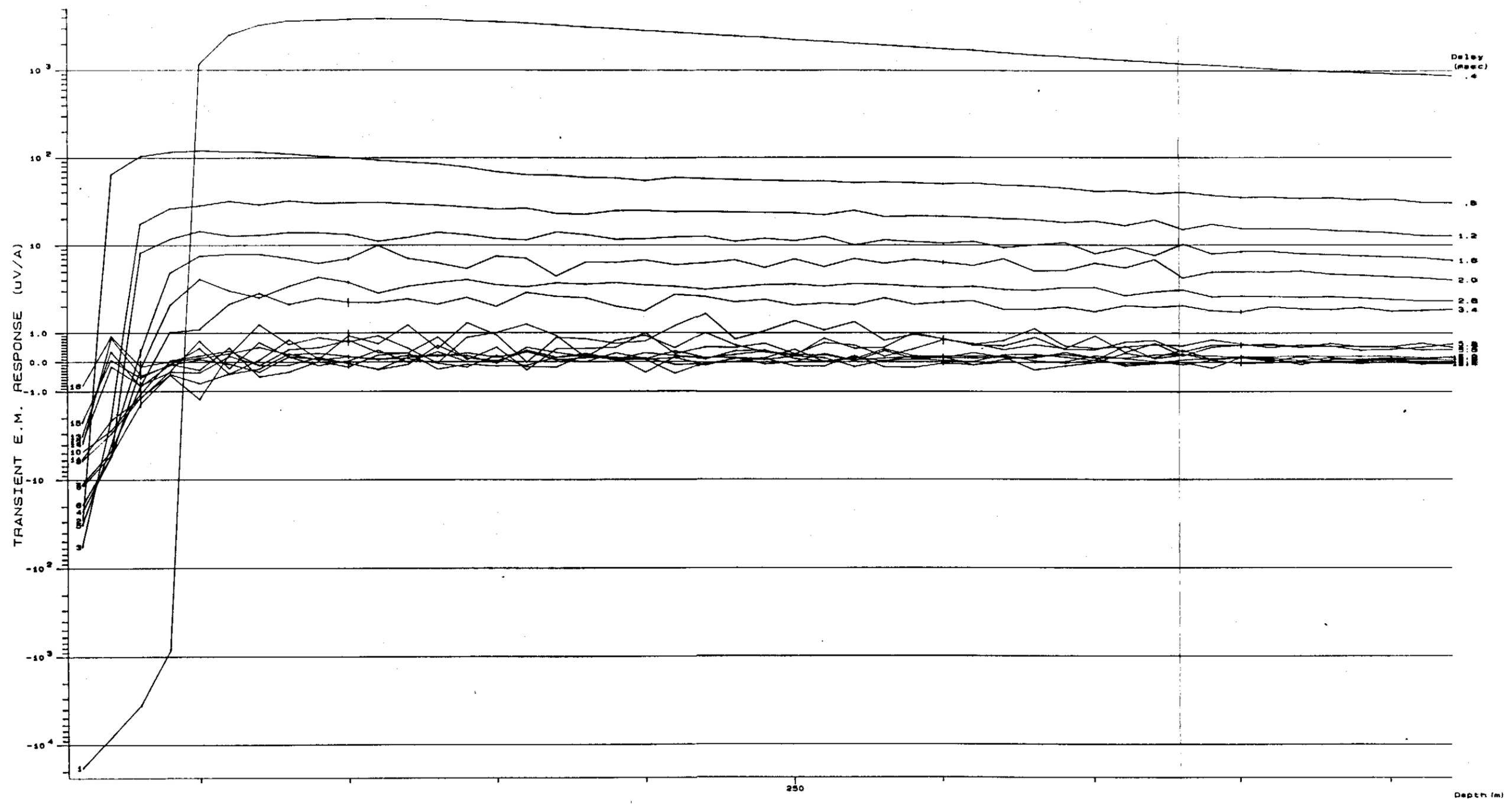
There is no strong EM response in the Sirotem data (figure 23) suggesting that there are no substantial massive sulphide deposits within 75-100 metres of the drill hole. There is a weak response near 230 metres, indicating that the fault zone or the altered lavas are slightly more conductive than the surrounding rock.

4) Hat 4

This hole was drilled to locate the Hellyer ore position adjacent to the inferred hydrothermal vent system (Amoeba Zone) at a depth below the detection limit of the UTEM system. Aside from initial disturbances from casing at the top of the hole, the results are completely flat, indicating that there is no substantial conductive mineralisation within about 100 metres (figure 24).

5) Hat 5

Hat 5 was drilled to locate the inferred Hellyer ore position in an area of relatively flat-lying stratigraphy at the western limit of the Hatfield licence. A possible ore position was intersected at about 200m with no sulphide mineralisation. The downhole EM results (figure 25) show clearly that there are no conductive sulphide bodies in the vicinity. The only anomaly is from about 0 to 150 metres, which is typical of the weak response from a black shale unit.

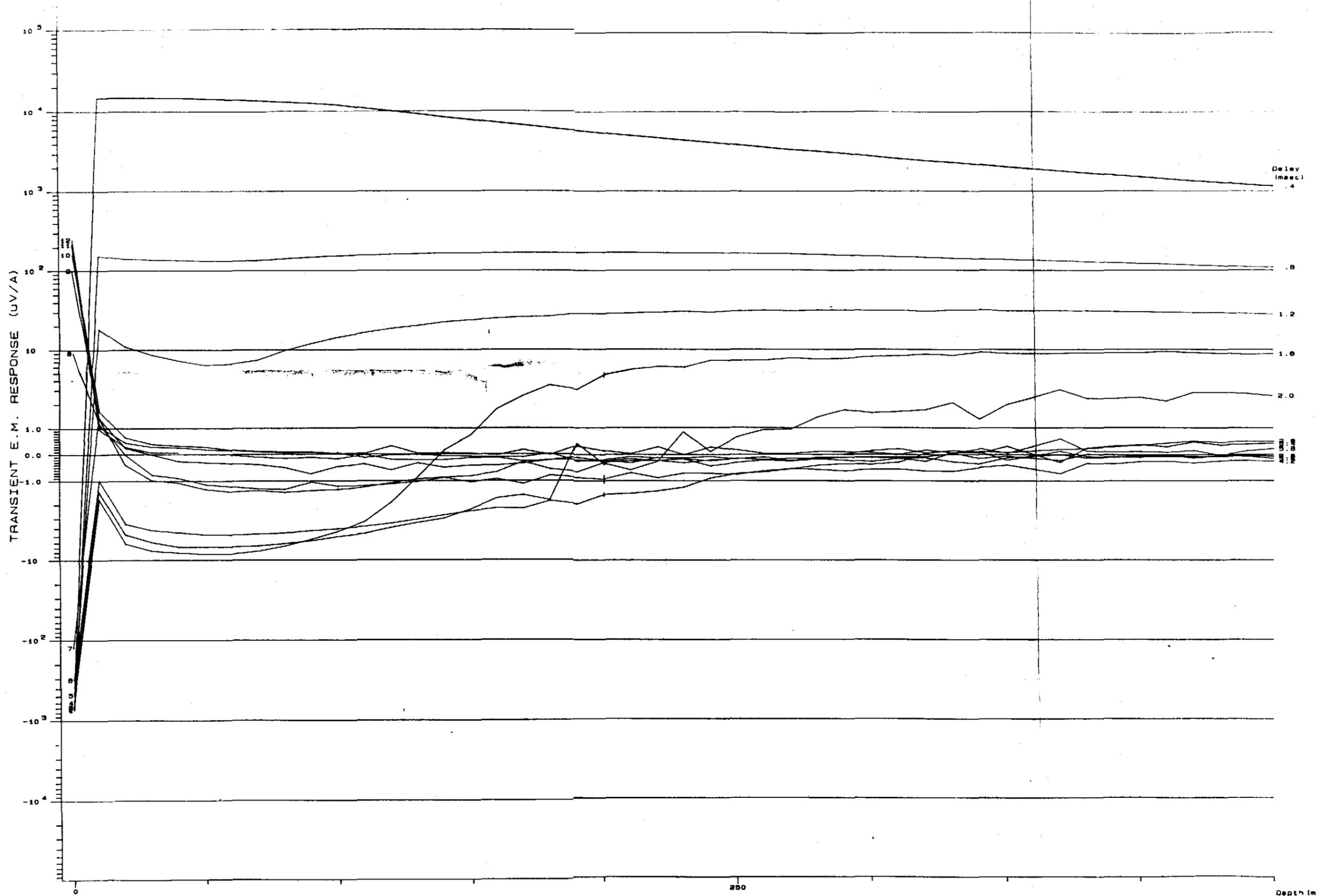


ABERFOYLE EXPLORATION PTY. LTD.
 QUE RIVER (JOB NO. 808A)
 QUE RIVER, TASMANIA
 DRILL HOLE HAT-4 LOOP 1
 SIROTEM Survey by SOLO Geophysics & Co. 2/10/85
 SOLO hole ref.524 Reading interval 10.0 m
 SCALE 1 : 1000 Loop size : 200 m
 LOOP configuration : Drill hole
 Plotted : 11:18 AM 17/ 1/88
 FIG.24

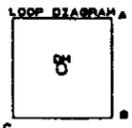


5 cm

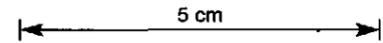
050



ABERFOYLE EXPLORATION PTY. LTD.
 HATFIELD
 TASMANIA 807B
 HAT-5 LOOP B2/57/20C
 SIRTEM Survey by SOLO Geophysics & Co. 14/11/85
 SOLO hole ref.533 Reading interval 10.0 m
 SCALE 1 : 1000 Loop size : 200 m
 LOOP configuration : Drill hole
 Plotted : 1:18 PM 10/12/85
 FIG. 25



A - (2500N, 2800E)
 B - (2500N, 2800E)
 C - (2500N, 2800E)
 D - (2514N, 2874E)



SOLO

051

923054

052

APPENDIX 4

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : _____

PROSPECT : _____

HOLE NO: **HAT 5**
 PAGE: **2** of **11**
 LOGGED: **AMH**
 DATE: **NOV 85**

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION		TYPE	BIT SAM						
44													
46													
48													
50													
52													
54													
56													
58													
60													
62													
64													
66													
68													
70													
72													
74													
76													
78													
80													
82													
84													

54.6, 56.7 fine grained black, clay, silica

58.0

siliceous (M) veins
to 0.5cm + patches

59.0
F
siliceous + quartz
veins (M)
KUBBLE

76.5
F
granite
KUBBLE 25°C

REMARKS
ACT

923056

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HARTFIELD

PROSPECT : _____

HOLE NO: RAF-5

PAGE: 3 of

LOGGED: AmH

DATE: NOV 88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION								
0			BLACK SHALE	85-2 1mm FINE LAMIN 75°C.A.								
10				90-4 1mm-1cm LAMIN OF QUARTZ + PYRITE 70°C.A.								
20				95-0 " " " " 75°C.A.								
30				95-4 1mm F. LAMIN. 75°C.A.								
40				96-2 1mm-1cm QUARTZ LAMIN. 70°C.A.								
50				100-5 1mm QUARTZ LAMIN. 70°C.A.								
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70												
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0.55

TR 365533, 7th. REP. 850 - 1000m
 CARBONACEOUS PELITIC BANDS
 VARIABLY MICACEOUS/CARBONACEOUS
 TOLANITIC/QUARTZOSE/MICACEOUS;
 PELITIC. MINOR CLASTIC
 QZ/MICA SANDSTONE BANDS
 FINE PYRITE COMMON

84-0 1m. SHALE RUBBLE
 10°C.A.

87-0 1m. SHALE RUBBLE

94-0 2m. SHALE RUBBLE +
 Pyrite

923057

ABERFOYLE EXPLORATION DIAMOND DRILL LOG

PROJECT : HATFIELD
PROSPECT : _____

HOLE NO: HATDOOS
PAGE: 7 of 11
LOGGED: AMH
DATE: NOV 85

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION		TYPE	WIDTH						
128			Black Sand										
134			Basalt Lava	135-1 Pegmatitic content with 2-7m flow with quartz veins.			2						
136			Basalt Lava	137-4 Tuffaceous green to grey massive vesicular basalt lava.			5						
142							3						
148							5						
154							3						
160													
166													
172													
178													
184													
190													
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ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD
 PROSPECT : _____

HOLE NO: HAT-5
 PAGE: 5 of 11
 LOGGED: AMH
 DATE: NOV 85

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION		VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION	TYPE	WIDTH	TYPE	WIDTH						
170			BASALT LAVA.		TRAVELINE; BUFF FERRUGINOUS MAT; TRACE PUCHONITE.									
172														
174														
176														
178														
180														
182			181-5 GREY SHALE	MEDIUM COEST SHALE WITH BRECCIA AND LATERAL ZONES										
184														
186														
188														
190			190-8 BASALTIC TUFFACT FINE LAPILLI VOLCANICLACOLIC	GREEN TO GREEN-GREY VOLCANICLACOLIC OF PEGMATITICALLY 2-8mm. FRAGMENTARY WITH PNEC COEST VOLCANIC (PUMICE) FRAGMENTARY TO 50mm. RARE ANGIULAR FRAGMENTARY OF SHALE. APPROX. 5% MAFIC FRAGMENTARY. MAX 10cm (at 191.62)	SHARP CONTACTS, VERY IRREGULAR ON SCALE OF 10cm									
192														
194														
196														
198														
200														
202			201-5 BLACK SHALE	TYPICAL DULL BLACK MIMING OILS RIVER TYPE SHALE. FINE (1mm) AT TOP CONTACTS SWAMPY, VERY FINE FINE STRATIG LAYERING ON LOWER CONTACT (55°C A)	SHARP CONTACTS, REGULAR ON SCALE OF 10cm									
204														
206														
208														
210			208 b ANDSITITE LAVA BRECCIA											

057

PER 355535; 179m; REP 172-174-4
 ALTERED BASALT. SIMILAR TO 355534. MORE CHLORITE MAT.

PER 355536; 183m; REP BRECCIA ZONE WITHIN 181-6-190-8
 TYPICAL BRECCIA. CLASTS OF CARBONACEOUS MICRITIC LAVA SHALE; ARGILLIC SILTSTONE; TUFFACEOUS SANDSTONE; IN MATRIX OF QTZ/CALC. BRECCIA.

COMMON BRECCIA WITH SHALE BRECCIA HAT-4/253-5 AND 2307

ROTATION OF FRAGMENTS BY QTZ/CALC. - SHOWN BY EVIDENT PRIMING LAYERING IN STRONGEST FRAGMENT.

PER 355537; 176m; REP 170-177
 SCORIAEUS BRECCIA. CLASTS OF: TUFFICE (PEEN SERIACICUS AND); ANTH. BONES; MINOR CARBONACEOUS TUFFICE FELTS. (MAJOR SILTSTONE MATRIX). PUMICEOUS BASALTIC LITHIC TUFF.

PER 355538; 175m; REP 170-8-201-5
 PEGMATITIC TUFF. BASALTIC FRAGMENTARY LITHIC IN A TUFF/SILTSTONE ALTERED PYRITIC MAT TUFF.

HELLER OR POSITION?

923059

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Unfield

PROSPECT : _____

HOLE NO: A45 D 002
 PAGE: 6 of 11
 LOGGED: AMH
 DATE: NOV 85

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION		VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION	TYPE	INTENSITY	TYPE	INTENSITY						
218			ANDESITE LAVA BRECCIA	CLAS: STRONGLY FELDSPATHIC, GREY BLACK ANDESITE, THOSE BOUNDARIES, RANDOM SHADE DUE TO ALTERATION PROGRESSING FROM MATRIX. (FELDSPATHS IN ROCK MATRIX HIGHLIGHT THAT THIS MAY BE A PSEUDO-BRECCIA TEXTURE DUE TO INTENSE SELECTIVE ALTERATION.) MATRIX: PINK-BROWN FELDSPATH/SILICA WITH EMINENT PHENOCRYSTALS. FELDSPATH PHENOCRYSTS, VERY DRAFT AND UP TO 5mm LONG.	CLAS: CHLORITE? 4 MATTEN INTENSE TINK- BROWN FELDSPATH/SILICA ALTERATION. PHENOCRYSTS - YELLOW- GREEN ILLITE									
220														
222														
224														
226														
228														
230														
232														
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058

218.8 ONCE FLOODED
 REPEATED BY GRIND.
 PET 36649, 220.2, REP. 208.6-232.9
 DUCTILE TUFF LAVA
 ALBITE/SERICITE/CHLORITE ALTERED
 DUCTILE CLASTIC LAVA.
 QTZ + FINE PHENOCRYSTS, FELDSPATH
 GROUNDMASS,
 QTZ + SILICATE VEINLES.

QTZ/CARB FLOODING IS
 ASSOCIATED WITH FACIES.
 HAS SOME
 LITHOLOGICAL CONTRAST AND
 VEINING STYLE, IN TUFF

(LITHOLOGICAL CONTRAST)
 PET 36550, 238.3, REP. 232.9-241.5
 SUPERFICIAL MARLY COARSEN
 VOLCANIC MASH CONTAINING
 LEUCANDRITIC/DIABASE, SUPERFICIAL
 AND FELTIC STAINING COMPONENTS.

PET. 36554, 244.0, REP. 241.5-257.0
 ANDESITE MASHIVE LAVA.
 SERICITE MATERIAL FELDSPATH
 PHENOCRYSTS IN SERICITE/BASALT
 MATRIX.

923060

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HOTFIELD
 PROSPECT : _____

HOLE NO: HAF-D-005
 PAGE: 7 of 11
 LOGGED: AMH
 DATE: NOV 1985

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION		TYPE	ACTIVITY						
254													
256													
258			257-0	Flow top BRECCIA?	257-0		3		257-5				
260			BANDS LAVA.	GREY-GREEN WEAKLY VERGULATED BANDS LAVA. IRREGULAR GREY-BLACK CHYAS ZONES AT CONTACT. MASSIVE, NON-PORPHYRATIC. THICK BANDS.									
262													
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266													
268													
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272													
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284													
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288													
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294													

059

923061

PROJECT : HAFFIELD
 PROSPECT : _____

ABERFOYLE EXPLORATION DIAMOND DRILL LOG

HOLE NO: HAF 0005
 PAGE: 9 of 4
 LOGGED: AMH
 DATE: NOV 85

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH	
			ROCK NAME	DESCRIPTION									
338						337.4							
340													
342						343.1							
344						ORTHOCLASE FLOORS	5						
346													
348						349.5							
350						IRREGULAR ORTHOCLASE VEINS, PATCHES	3-4						
352													
354													
356													
358													
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362													
364													
366													
368													
370													
372													
374													
376													
378													

061

343.1 Zone
 F CHL + ORTHOCLASE
 RUBBLE SUBSTRATE
 TO C.A.

349.5
 F 0.4% RUBBLE
 ORTHOCLASE, KIN-
 TANGITE TO C.A.

373.5
 F 0.4% RUBBLE + ORTHOCLASE
 KIN- TANGITE TO C.A.

PEL. 35580, 370, 372, 257.0 - 42.1
 AMPHIBOLITE BASALT.
 ALBITE/CHLORITE (ORTHOCLASE) AL
 BASALT. DISSEMINATED CHLORITE.

923063

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD
 PROSPECT : _____

HOLE NO: HAF 2006
 PAGE: 10 of 11
 LOGGED: KMH
 DATE: NOV 85

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY		ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			ROCK NAME	DESCRIPTION								
350			Basalt Lava									
352												
354												
356												
358												
360												
362												
364												
366												
368												
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422												
424												
426												

062

Basalt Lava

SAL 2
 BRECCIA (HYALOCLASTIC) ZONE. VERY
 ANOMALOUS ELONGATE BASALT CLASTS IN
 GREEN CHERT MATRIX.

HOL 6

20m QUANTIFIED
 VEIN OBSERVED

F: 200m, SERICITE
 20% RUBBLE; 20% C.A.

F: 100m, SERICITE
 20% RUBBLE; 40% C.A.

923064

ABERFOYLE EXPLORATION DIAMOND DRILL LOG

PROJECT : HARTFIELD
PROSPECT : _____

HOLE NO: H45 D 000
PAGE: 11 of 11
LOGGED: PMH
DATE: NOV 85

DEPTH	DRILL RUNS CORE LOSS	LITHOLOGY		ALTERATION		VEINING		MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH	
		ROCK NAME	DESCRIPTION	TYPE	INTENSITY	TYPE	INTENSITY							
422		Sandstone Basal	LIGHT GREY MASSIVE TO FINELY Banded sandstone. G.O.C.A.	NEI-2 FERRUGINOUS (COMPLETELY AC. OF SANDSTONE)	3	ACTIVE 423-3 (parting)	4					<p style="text-align: center; font-size: 2em;">030</p> <p>421.2 - 424.2 IF THIS IS EARTH THEN CONTINUES TO PEPPERING & CONTAMINATED</p> <p>REF. 355543, 422.0, REP. 421.2 - 424.1</p> <p>AMYGDALOIDAL BRASS STRONGLY SERICITISED CHLORITIC BRASS.</p> <p>REF. 355544, 427.3, REP. 422.0 - 420.7</p> <p>Carbonaceous Pelite. DETACHED MUSCOVITE, CARBONACEOUS MATERIAL, PYRITE, DOLOMITE, CLASTIC QUARTZ.</p>		
424		425-0 Sandstone		424-1 ASIC. WITH										
426		Mudstone	DARK GREY SERICITE MUDSTONE WITH BITS IRREGULAR BLACK AND LAYERED INTERBEDS OF GREY SAND- STONE. PRODUCTION OF SANDSTONE INCREASES TOWARDS ISOLN. LATERAL AT 10°-20° TO C.A.											
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923065

APPENDIX 5

SAMPLE NO: 355533
LOCATION: DDH HAT-5/97.4
REPRESENTATIVE OF: Banded Black Shale, 85.0 - 100.0
REMARKS: Describe composition and texture of light and dark bands in shale.

SAMPLE NO: 355534
LOCATION: DDH HAT-5/167.3
REPRESENTATIVE OF: 167.2 - 174.4
REMARKS: Strongly quartz carbonate altered basalt. Compare with 355535.

SAMPLE NO: 355535
LOCATION: HAT-5/171.8
REPRESENTATIVE OF: 167.2 - 174.4
REMARKS: Less altered example of 355534.

SAMPLE NO: 355536
LOCATION: HAT-5/183.9
REPRESENTATIVE OF: Breccia zone within 181.5 - 190.8
REMARKS: Shale breccia with rotated fragments. Are pyrite particles detrital?

SAMPLE NO: 355537
LOCATION: HAT-5/197.6
REPRESENTATIVE OF: 197.0 - 197.7
REMARKS: Basaltic polymict lapilli volcanoclastic. Includes pyrite and shale fragments.

SAMPLE NO: 355538
LOCATION: HAT-5/199.5
REPRESENTATIVE OF: 190.8 - 201.5
REMARKS: Band of grey siltstone ^{SURROUNDED} summarised by basaltic volcanoclastic similar to 355537.

SAMPLE NO: 355539
LOCATION: HAT-5/220.2
REPRESENTATIVE OF: 208.6 - 232.9
REMARKS: Andesite lava. Pseudo-breccia texture due to selective alteration of andesite by pink feldspar/silica.

SAMPLE NO: 355540
LOCATION: HAT-5/238.3
REPRESENTATIVE OF: 232.9 - 241.5
REMARKS: Similar to 355537, 38 but probably andesitic. Contains pyrite and possibly shale fragments.

SAMPLE NO: 355541
LOCATION: HAT-5/249.0
REPRESENTATIVE OF: 241.5 - 257.0
REMARKS: Totally illite/silica/feldspar altered andesite.

SAMPLE NO: 355542
LOCATION: HAT-5/367.8
REPRESENTATIVE OF: 257.0 - 420.1
REMARKS: Typical Hellyer area basalt.

SAMPLE NO: 355543
LOCATION: HAT-5/422.0
REPRESENTATIVE OF: 421.2 - 424.1
REMARKS: An altered example of 355545.

SAMPLE NO: 355544
LOCATION: HAT-5/427.3
REPRESENTATIVE OF: 425.0 - 440.7, mudstone in 440.7 - 455.2
REMARKS: Sericitic mudstone.

SAMPLE NO: 355545
LOCATION: HAT-5/448.8
REPRESENTATIVE OF: 440.7 - 455.2
REMARKS: Grey sandstone. Any detrital muscovite?

067

Central Mineralogical Services



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

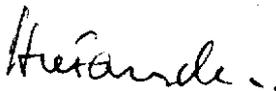
Mr. A.M. Hesse
Project Geologist
Aberfoyle Exploration Pty. Ltd.
P.O. Box 952
BURNIE / TAS. 7320

20th December, 1985

REPORT CMS 85/11/35
Part 2

YOUR REFERENCE:	Letter dated 25.11.1985
DATE RECEIVED:	26th November, 1985
SAMPLE NOS.:	HAT 5 - 13 Samples
SUBMITTED BY:	A.M. Hesse
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 85/11/35
Part 2

Thirteen drill core samples from DDH-HAT 5 were received for routine petrological examination. Representative thin-sections were prepared and examined together with the respective offcuts, with stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite comprises mainly extensively altered basic to intermediate volcanics with subordinate carbonaceous psammopelitic sediments.

Volcanics range from basaltic through andesitic to dacitic in terms of relict and inferred primary compositional features, and include lavas, scoriaceous breccias and psammopelitic tuffs, with the latter group partly intercalated with carbonaceous ashy sediments (199.5 m) and "grading" into lithic tuffaceous scoriaceous breccias (197.6 m).

This sediment/basalt/basaltic tuff sequence overlies (as drilled) a composite group of dacitic to andesitic tuff, tuff lava and carbonaceous pelite-intraclastic breccia. This group (samples 220.2 m, 238.3 m, 249.0 m) in turn overlies typical "Hellyer-type" pyroxenic basalts (367.8 m, 422.0 m) and carbonaceous psammopelites (427.3 m, 448.8 m).

Alteration is more or less pervasive in the volcanics, with basic types relatively albitic and/or sericite-carbonate-chlorite-altered and intermediate to felsic types relatively sericitised. Shearing effects are rather incipient. Carbonaceous sediments are typically syngenetic-pyritic.

D. Cowan, B. Sc.

0069

Sample No.	Classification - Composition	Fabric	Accessories	Comments
HAT 5 97.4 m 355533 (T.S. 55093)	<u>Carbonaceous Pelite</u> . Interbands of variably micaceous-silty carbonaceous shale and variably dolomitic quartzose-micaceous silty shale "grading" into argillaceous siltstone. Minor micaceous fine quartzose sandstone interbeds.	Submillimetric-scale alternation of silt-parted shale, shale-parted siltstone, with incipiently graded sandstone units.	Conspicuous fine to ultrafine pyrite. Minor clastic feldspar, leucoxene, sericitic pelite and sericitic lava clasts.	Pale (quartzose, micaceous silty/fine sandy) units are incipiently reworked tuffaceous, variably dolomitic and pyritic. Includes minor dolomite-quartz-chlorite veinlets.
67.3m 355534	<u>Altered Basalt</u> . Sparse calcite-quartz-pseudomorphed feldspars and sericite-quartz-calcite pseudomorphed pyroxene phenocrysts in a groundmass of albitised plagioclase laths with a sparse sericite-chlorite-calcite mesostasis.	Weakly porphyritic, weakly flow-structured, basaltic/trend medium-grained. Incipiently stressed.	Leucoxenised opaques, minor traces chromite. Disseminated pyrite. Minor calcite amygdales.	Albitised, weakly amygdaloidal, weakly porphyritic basalt with accessory secondary quartz, sericite, calcite and pyrite.
71.8m 355535	<u>Altered Basalt</u> . Calcite-sericite-pseudomorphed feldspar and chlorite-sericite-pseudomorphed pyroxene phenocrysts in a groundmass of sericitised/calcitised plagioclase laths with a chlorite mesostasis, chlorite-quartz micro-amygdales.	Similar to 167.3 m, relatively porphyritic and (micro-)amygdaloidal fine-grained.	Leucoxenised opaques, minor traces of chromite, thinly disseminated to locally conspicuous pyrite.	Affinities with 167.3 m; finer-grained, pervasively thoroughly sericite-carbonate-chlorite(-quartz, pyrite) altered in comparison.
183.9m 355536	<u>Breccia</u> . Clasts of carbonaceous, micaceous-quartzose silty shale with interbands, clasts of arkosic siltstone, tuffaceous fine sandstone. Sparse matrix of fine to microcrystalline quartz, chlorite and locally carbonate. Pervasive carbonaceous microfractures.	Random, angular, submillimetric to centimetric clasts. Interline clast cavity-filling matrix.	Conspicuous fine to ultrafine "syngenetic" pyrite in clasts.	Refractured quartz-chlorite-carbonate-matrixed tectonic breccia characteristics. Variably tuffaceous psammopelite. represented as clasts, is similar to HAT 4/232.6 m.
197.6m 355537	<u>Scoriaceous Breccia</u> . Clasts of pervasively sericite-carbonate-albite-altered pumice and variably amygdaloidal "basaltic" lava. Minor clasts of carbonaceous pyritic pelite. Sparse sericitic albite matrix. Patchy silicified zones.	Random, angular to irregular, sub-millimetric-scale clasts. Interclast cavity-filling to corrosive matrix.	Sideritic carbonate veinlets. Minor chlorite, very fine pyrite. Leucoxenised opaques, traces chromite.	Pumiceous "basaltic" lithic tuff characteristics. Finer detail obscured by marked and pervasive albite-sericite-carbonate(-quartz-chlorite-pyrite) alteration.
99.5m 355538	<u>Psammopelitic Tuff</u> . Altered scoriaceous "basaltic" fragmental (sim. 197.6 m, finer-grained) grading into a pervasively quartz-albite-sericite-chlorite-altered psammitic tuff with carbonaceous, pyritic pelitic ashy partings.	Obscured by clast-corrosive alteration, but essentially semi-graded/pelite-parted, variably sorted angular	Leucoxenised opaques, rare chromite. sandy clastic.	Psammitic-grade pumiceous lithic tuff grades into psammopelitic pyritic carbonaceous ash. Finer primary compositional detail obscured, but clear affinities with 197.6 m.
220.2m 355539	<u>Dacitic Tuff Lava</u> . Sericitic/albitised plagioclase, subordinate quartz phenocrysts in a pervasively sericite-chlorite-stained feldspathic groundmass. Minor quartz-siderite and late siderite veinlets.	Porphyritic/trend glomeroporphyritic, microfelsitic, with sporadic cognate xenolithic lava clasts.	Leucoxenised opaques. Minor leucoxenic albite-pseudomorphed amphibole phenocrysts. Traces of pyrite.	Albite-sericite-chlorite-altered dacitic clastic lava (tuff lava). Colour-mottling reflects semi-antipathetic distribution of sericite and chlorite.
238.3m 355540	<u>"Xenotuff"</u> . Sericitised feldspar-porphyrific lava clasts, subordinate sericitised feldspar grains, chalcedonic radiolaria and spicule fragments, carbonaceous pelite clasts with a sericite/cherty quartz matrix.	Randomly sorted, angular sandy clastic. Relatively sheared/crudely phyllitic.	Leucoxenised opaques, disseminated fine to ultrafine pyrite.	Textural detail obscured by shearing effects. Composite of leuco-andesitic/dacitic, tuffaceous and pelitic sedimentary components. Sedimentary (?slump) breccia characteristics.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
HAT 5 249.0m 355541	<u>Andesite</u> . Sericite-pseudomorphed feldspar phenocrysts/clusters and minor leucoxenic sericitic quartz-pseudomorphed amphibole in a matrix of sericite and subordinate to minor quartz.	Porphyritic/trend glomeroporphyritic; microfelsitic, mildly sheared.	Leucoxenised opaques, fine to ultrafine pyrite. Minor weakly chloritic quartz veinlets.	Similarities with 220.2 m, but is devoid of relict phenocrystal quartz and is "leuco-andesitic" in comparison. Primarily a massive lava. 070
367.8m 355542	<u>Amygdaloidal Basalt</u> . Microcrystalline quartz (+ chlorite, carbonate)-pseudomorphed pyroxene, minor albitised plagioclase phenocrysts in a groundmass of chlorite-mesostasised albitised plagioclase microlaths. Sporadic chlorite	Porphyritic, weakly amygdaloidal, basaltic. amygdales.	Leucoxenised opaques, disseminated chromite, minor ankeritic carbonate-quartz veinlets, minor traces pyrite.	Pervasively albite-chlorite(-quartz-carbonate)-altered "andesitic basalt". Relatively chromiferous; analogous to the Hellyer pyroxenic basalts, but relatively altered.
422.0m 355543	<u>Amygdaloidal Basalt</u> . Minor quartz-chlorite-pseudomorphed pyroxene phenocrysts, frequent quartz micro-amygdales in a thoroughly sericitised/weakly chloritic groundmass. Sporadic chloritic quartz- and late sericite-quartz veinlets.	Microamygdaloidal, weakly porphyritic basaltic, mildly stressed.	Leucoxenised opaques, chromite, traces of pyrite. Minor chloritic sericite veinlets.	Affinities with 367.8 m, relatively amygdaloidal, weakly porphyritic, thoroughly sericitised. Chloritic sericite and quartz veinlets are stressed, predate carbonate-quartz-veinlets.
427.3m 355544	<u>Carbonaceous Pelite</u> . Semi-sericitic and fine silt-sized detrital muscovite with pervasive carbonaceous matter, varying proportions of silt-sized clastic quartz.	Laminated silty pelite with minor slumped silty/fine sandy interbeds. Incipiently cleaved; microfractured.	Conspicuous ultrafine pyrite, minor dolomite. Sporadic irregular sideritic carbonate veinlets.	Carbonaceous, pyritic, incipiently dolomitic quartzose-micaceous silty shale. No tangible tuffaceous features. Mildly slumped, incipiently sheared and microfractured.
448.8m 355545 (T.S. 55105)	<u>Protoquartzite</u> . Framework of subangular quartz grains, relatively minor carbonaceous sericitic pelite clasts, minor muscovite flakes, chlorite pellets, chert clasts. Overgrowth quartz/intergranular sericite-chlorite cement.	Well-sorted, weakly bedded fine sandstone. Weakly sheared/recrystallized.	Minor clastic leucoxenic semi-opaques, traces syngenetic pyrite, minor quartz veinlets.	Mildly stressed/incipiently recrystallized lithic protoquartzite. Pelite clasts are strictly low-grade regional metapelite-derived. No tangible tuffaceous features.

923073

071

APPENDIX 6

072



The Australian
Mineral Development
Laboratories

Flemington Street, Frewville,
South Australia 5063
Phone Adelaide (08) 79 1662
Telex AA82520

Please address all
correspondence to
P.O. Box 114 Eastwood
SA 5063
In reply quote:

amdel

06 SEP 1985

3 September 1985

GS 3/43/3/0

Aberfoyle Exploration Pty. Ltd.,
P.O. Box 952,
BURNIE, TAS. 7320

ATT: MR. A.M. HESPE

REPORT G 6436/86

YOUR REFERENCE:	Letter dated 23 August 1985
IDENTIFICATION:	Mt. Charter dolerite SAMPLE LOCATION
MATERIAL:	Rock 4750N/3560E
LOCALITY:	Hatfield
DATE RECEIVED:	26 August 1985
WORK REQUIRED:	Evaluation of suitability for K-Ar dating

Investigation and Report by: Dr Alan W Webb
Chief - Geological Services Section: Dr Keith J Henley

Keith Henley

for Dr William G Spencer
Manager,
Mineral & Materials Sciences Division

bp

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Townsville
Queensland 4814
Telephone (077) 75 1377

073

EVALUATION OF SUITABILITY FOR K-Ar DATING

1. INTRODUCTION

One sample of dolerite from the Hatfield Licence was received from Mr. A.M. Hespe, Aberfoyle Exploration Pty. Ltd., with a request to determine its suitability for K-Ar dating.

2. RECOMMENDATIONS

A thin section (TSC45852) was prepared and examined. The feldspars show moderate to extensive alteration, and patches of pale green chlorite, with some calcite, are common. The only fresh primary mineral remaining is pyroxene which occurs as equidimensional grains, frequently interlocked as segregations.

Pyroxene frequently gives reliable K-Ar age determinations but because of its low K content, any extraneous ^{40}Ar present produces an age in excess of the true age. This usually occurs in rocks that have formed during or have undergone a period of metamorphism. Pyroxenes from the Jurassic dolerites of Tasmania have not shown this phenomenon. Thus, if the main object in determining the age of this dolerite is to distinguish a possible Cambrian from a Jurassic age, K-Ar dating of the pyroxene should provide an answer.

923076

03 OCT REC'D



074

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amdel

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1 October 1985

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P.O. Box 114 Eastwood
SA 5063
In reply quote:

GS 3/43/3/0

Aberfoyle Exploration Pty Ltd
PO Box 952
BURNIE TAS 7320

ATT: Mr. A. Hesper

REPORT G 6436/86 Part II (Final)

YOUR REFERENCE:	Order No. 6050
MATERIAL:	Rock
LOCALITY:	Mt Charter
DATE RECEIVED:	26 August 1985
WORK REQUIRED:	K-Ar Geochronology

Investigation and Report by: Dr. Alan Webb
Chief - Geological Services Section: Dr. Keith J. Henley

Keith Henley

for Dr. William G. Spencer
Manager,
Mineral & Materials Sciences Division

jh

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075

K-Ar DATING OF MT CHARTER DOLERITE

1. INTRODUCTION

One sample of dolerite was examined for suitability for geochronology and recommendations were made in AMDEL report G 6436/86. After further discussion by telephone with Mr. Hespe it was decided to proceed with the separation of pyroxene from the Mt Charter dolerite and to carry out K-Ar dating on the mineral concentrate. A clean pyroxene concentrate was prepared and analysed for K and radiogenic ^{40}Ar .

2. RESULTS

The K and Ar analyses and calculated K-Ar age are listed in Table 1. The date of 396 Ma is early Devonian. The Mt Charter dolerite is therefore much older than the Jurassic dolerites but apparently younger than the anticipated age of Cambrian.

However, the K-Ar system of the pyroxene may have been influenced by the Devonian orogenic activity in Western Tasmania and the date may be the result of updating during this orogeny. A Cambrian age of emplacement, therefore, cannot be ruled out on the basis of this single age determination.

076

TABLE 1: POTASSIUM-ARGON RESULTS

Sample	%K	$^{40}\text{Ar}^*$ ($\times 10^{-11}$ moles/g)	$^{40}\text{Ar}^*/^{40}\text{Ar}$ Total	Age [†]
Mt Charter Dolerite Pyroxene	0.0711 0.0708	5.4570	0.731	396 \pm 10

* Denotes radiogenic ^{40}Ar .

† Age in Ma with error limits given for the analytical uncertainty at one standard deviation.

Constants: $^{40}\text{K} = 0.01167$ atom %
 $\lambda\beta = 4.962 \times 10^{-10} \text{y}^{-1}$
 $\lambda\epsilon = 0.581 \times 10^{-10} \text{y}^{-1}$

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APPENDIX 7

078

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GRAVITY STATIONS

<u>No.</u>	<u>North</u>	<u>East</u>	<u>RL</u>
1	3772	3170	449.78
2	3818	3188	445.70
3	3865	3205	449.69
4	3913	3225	457.13
5	3960	3243	460.39
6	4009	3253	458.08
7	4058	3246	454.66
8	4107	3265	443.53
9	4133	3303	454.00
10	4174	3332	459.91
11	4221	3345	461.72
12	4268	3359	466.34
13	4308	3387	475.58
14	4358	3391	481.85
15	4402	3404	488.36
16	4421	3452	498.61
17	4461	3482	510.16
18	4510	3493	517.37
19	4557	3505	524.05
20	4602	3524	529.65
21	4651	3549	531.59
22	4699	3562	533.27
23	4749	3563	530.84
24	4800	3558	522.21
25	4849	3554	513.48
26	4898	3550	504.47
27	4943	3571	499.43
28	4999	3593	495.71
29	5051	3599	491.69
30	5098	3614	491.11
31	5141	3647	494.71
32	5190	3665	498.09
33	5237	3683	501.35
34	5272	3716	504.47
35	5305	3756	502.09
36	5349	3773	500.87
37	5396	3790	498.25
38	5440	3810	498.19
39	5486	3829	500.00

Hatfield EL. 15/73 Tasmania

Mt. Charter Dolomite

Gravity Survey - Coordinates (Mine Grid).

Replaces original Appendix 7 -

letter from Tony Neape of 25/8/67.

Processed for : ABERFOYLE EXPLORATION PTY.LTD.

Location : MT. CHARTER, TASMANIA

SOLO GEOPHYSICS & Co.

** Line ID 4 **

Grid : DOLERITE PROSPECT (JOB NO.607)

No	STATION ID	GRID NORTH	GRID EAST	ELEVATION	LOOP No.	RPTS	BOUGUER GRAVITY (gms/cc)									
							2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3
1	000010	1000	1000	449.78	1		-1231.81	-1233.70	-1235.58	-1237.47	-1239.35	-1241.24	-1243.12	-1245.01	-1246.89	-1248.78
2	000011	1050	1000	445.70	1		-1231.68	-1233.54	-1235.41	-1237.28	-1239.15	-1241.02	-1242.88	-1244.75	-1246.62	-1248.49
3	000012	1100	1000	449.69	1		-1231.66	-1233.55	-1235.43	-1237.32	-1239.20	-1241.09	-1242.97	-1244.86	-1246.74	-1248.63
4	000013	1150	1000	457.13	1		-1231.68	-1233.60	-1235.51	-1237.43	-1239.34	-1241.26	-1243.18	-1245.09	-1247.01	-1248.92
5	000014	1200	1000	464.39	1		-1231.67	-1233.60	-1235.53	-1237.46	-1239.37	-1241.32	-1243.25	-1245.16	-1247.11	-1249.03
6	000015	1250	1000	458.08	2		-1231.62	-1233.54	-1235.46	-1237.38	-1239.30	-1241.22	-1243.14	-1245.06	-1246.98	-1248.90
7	000016	1300	1000	454.66	2		-1231.49	-1233.40	-1235.30	-1237.21	-1239.12	-1241.02	-1242.93	-1244.83	-1246.71	-1248.64
8	000017	1350	1000	443.53	2		-1231.32	-1233.18	-1235.04	-1236.90	-1238.76	-1240.62	-1242.47	-1244.33	-1246.19	-1248.05
9	000018	1400	1000	454.00	2		-1231.18	-1233.09	-1234.99	-1236.89	-1238.79	-1240.70	-1242.60	-1244.50	-1246.41	-1248.31
10	000019	1450	1000	459.91	2		-1231.10	-1233.03	-1234.96	-1236.89	-1238.81	-1240.74	-1242.67	-1244.60	-1246.52	-1248.45
11	000020	1500	1000	461.72	2		-1231.19	-1233.13	-1235.06	-1237.00	-1238.93	-1240.87	-1242.80	-1244.74	-1246.67	-1248.61
12	000021	1550	1000	466.34	2		-1231.33	-1233.28	-1235.24	-1237.19	-1239.15	-1241.10	-1243.06	-1245.01	-1246.96	-1248.92
13	000022	1600	1000	475.58	2		-1231.15	-1233.14	-1235.14	-1237.13	-1239.12	-1241.12	-1243.11	-1245.10	-1247.10	-1249.07
14	000023	1650	1000	481.85	2		-1230.89	-1232.91	-1234.93	-1236.95	-1238.96	-1240.98	-1243.00	-1245.02	-1247.04	-1249.06
15	000024	1700	1000	483.36	2		-1230.64	-1232.68	-1234.73	-1236.78	-1238.82	-1240.87	-1242.92	-1244.96	-1247.01	-1249.06
16	000025	1750	1000	498.61	2		-1230.64	-1232.73	-1234.82	-1236.91	-1239.00	-1241.09	-1243.18	-1245.27	-1247.36	-1249.45
17	000026	1800	1000	510.16	2		-1230.42	-1232.56	-1234.69	-1236.83	-1238.97	-1241.11	-1243.25	-1245.38	-1247.52	-1249.66
18	000027	1850	1000	517.37	2		-1230.03	-1232.19	-1234.36	-1236.53	-1238.70	-1240.87	-1243.04	-1245.20	-1247.37	-1249.54
19	000028	1900	1000	524.05	2		-1230.07	-1232.26	-1234.46	-1236.65	-1238.85	-1241.05	-1243.24	-1245.44	-1247.64	-1249.83
20	000028	1900	1000	524.05	3	****	-1230.08	-1232.28	-1234.48	-1236.67	-1238.87	-1241.06	-1243.26	-1245.46	-1247.65	-1249.85
21	000029	1950	1000	529.65	2		-1230.01	-1232.22	-1234.44	-1236.65	-1238.87	-1241.08	-1243.30	-1245.52	-1247.73	-1249.95
22	000030	2000	1000	531.59	2		-1229.93	-1232.16	-1234.39	-1236.61	-1238.84	-1241.07	-1243.30	-1245.52	-1247.75	-1249.98
23	000031	2050	1000	533.27	2		-1229.97	-1232.21	-1234.44	-1236.68	-1238.91	-1241.15	-1243.36	-1245.62	-1247.85	-1249.97
24	000032	2100	1000	530.84	2		-1229.91	-1232.14	-1234.36	-1236.59	-1238.81	-1241.04	-1243.26	-1245.49	-1247.71	-1249.94
25	000032	2100	1000	530.84	3	****	-1229.93	-1232.15	-1234.38	-1236.60	-1238.83	-1241.05	-1243.28	-1245.50	-1247.73	-1249.95
26	000032	2100	1000	530.84	3	****	-1229.90	-1232.12	-1234.35	-1236.57	-1238.80	-1241.02	-1243.24	-1245.47	-1247.69	-1249.92
27	000033	2150	1000	532.21	3		-1229.94	-1232.13	-1234.36	-1236.51	-1238.70	-1240.89	-1243.08	-1245.26	-1247.45	-1249.64
28	000034	2200	1000	513.48	3		-1229.91	-1232.06	-1234.21	-1236.36	-1238.52	-1240.67	-1242.82	-1244.97	-1247.12	-1249.27
29	000035	2250	1000	504.47	3		-1229.81	-1231.93	-1234.04	-1236.15	-1238.27	-1240.38	-1242.50	-1244.61	-1246.73	-1248.84
30	000036	2300	1000	499.43	3		-1229.38	-1231.47	-1233.56	-1235.66	-1237.75	-1239.84	-1241.94	-1244.03	-1246.12	-1248.22
31	000037	2350	1000	495.71	3		-1229.47	-1231.55	-1233.63	-1235.70	-1237.78	-1239.86	-1241.94	-1244.01	-1246.09	-1248.17
32	000038	2400	1000	491.69	3		-1229.63	-1231.69	-1233.75	-1235.82	-1237.88	-1239.94	-1242.00	-1244.06	-1246.12	-1248.18
33	000039	2450	1000	491.11	3		-1229.57	-1231.63	-1233.68	-1235.74	-1237.80	-1239.86	-1241.92	-1243.97	-1246.03	-1248.09
34	000040	2500	1000	494.71	3		-1229.72	-1231.79	-1233.86	-1235.94	-1238.01	-1240.08	-1242.16	-1244.23	-1246.30	-1248.38
35	000041	2550	1000	498.09	3		-1229.86	-1231.89	-1233.96	-1236.07	-1238.15	-1240.24	-1242.33	-1244.42	-1246.50	-1248.59
36	000042	2600	1000	501.35	3		-1229.79	-1231.89	-1233.99	-1236.10	-1238.20	-1240.30	-1242.40	-1244.50	-1246.60	-1248.70
37	000043	2650	1000	504.47	3		-1229.73	-1231.89	-1234.00	-1236.12	-1238.23	-1240.35	-1242.46	-1244.56	-1246.67	-1248.78
38	000044	2700	1000	502.09	3		-1229.75	-1231.86	-1233.97	-1236.07	-1238.18	-1240.29	-1242.39	-1244.50	-1246.60	-1248.71
39	000045	2750	1000	500.37	3		-1229.70	-1231.80	-1233.91	-1236.00	-1238.10	-1240.20	-1242.30	-1244.39	-1246.49	-1248.59
40	000046	2800	1000	498.25	3		-1229.81	-1231.90	-1233.98	-1236.07	-1238.16	-1240.25	-1242.34	-1244.43	-1246.51	-1248.60
41	000047	2850	1000	498.17	3		-1229.69	-1231.78	-1233.84	-1235.95	-1238.01	-1240.13	-1242.22	-1244.31	-1246.40	-1248.48
42	000048	2900	1000	500.00	3		-1229.52	-1231.62	-1233.71	-1235.81	-1237.90	-1240.00	-1242.10	-1244.19	-1246.29	-1248.38

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TASMANIA

PROGRESS REPORT

FOR THE PERIOD JUNE 1985 TO MAY 1986

VOLUME 2 PLATES

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ENDORSED : D B WALLACE
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4	\$\$\$	000 0	LLL	000 0
5	\$\$\$	000 0	LLL	000 0
6	\$\$\$	000 0	LLL	000 0
7	\$ \$\$\$	000 0	LLL	000 0
8	\$\$\$\$\$\$	000000	LLLLLLLL	000000

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APPX 7 (CONTINUED)

15	GGGG	EEEE	000	PPPP	HH	H	YY	Y	SS	II	CCCC	SS	
16	GG	EE	00	0 PP	PH	H	YY	Y	SS	S II	CC	SS S	
17	GG	EEEE	00	0 PPPP	HHHHH		YY		SS	II	CC	SS	
18	GG	GGG	EE	00	0 PP	HH	H	YY		SS	II	CC	SS
19	GG	GG	EE	00	0 PP	HH	H	YY	S	SS	II	CC	S SS
20	GGGGG	EEEE	000	PP	HH	H	YY		SSS	II	CCCC	SSS	

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923083

***** DATA REDUCTION PARAMETERS *****

Client : ABERFOYLE EXPLORATION PTY.LTD.

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Time zone is 55.00

Grid rotation is 42.50 degrees

The Known Point of 41.6248 degrees Latitude and 145.5589 degrees Longitude is located at 1000 Northing and 1000 Easting - Current grid coordinates (METERS) or 5391000.00 Northing and 388285.00 Easting - Mercator coordinates

The Base Station observed gravity values are :

BASE	OBSERVED GRAVITY (mgals)
2	980175.190

Computed on 3:01 PM FRI., 3 JULY, 1987 Revision 0

1880

923084

Loop catalog

LOOP	DATE	METER	OPERATOR	COVERAGE
1	131185	35	B.RAU	LINE 1000E STNS. 10-14
2	131185	35	B.RAU	LINE 1000E STNS. 15-32
3	131185	35	B.RAU	LINE 1000E STNS. 32-48

082

923085

Location : MT. CHARTER, TASMANIA

** Loop No. 1 **

Grid : DOLERITE PROSPECT (JOB NO.607)

Coverage : LINE 1000E

STNS. 10-14

Loop time : .72 Drift rate : -.044 Gravimeter # 35 Operator : B.RAU

Loop drift : -.031 Time zone : 55.00 Calib. Factor : 1.0464 Date : 131185

LINE ID	STAT. ID	GRID NORTH	GRID EAST	MERC. NORTH	MERC. EAST	METER READ.	TIME	ELEVAT. (METERS)	OBSERV. GRAV.	THEORY. GRAVITY	BOUGUER 2.10	BOUGUER 2.30	BOUGUER 2.40	BOUGUER 2.67
Base # 2						3647.13	1038		980175.19					
4	000014	1200	1000	5391150	388418	3646.97	1051	460.39	978999.84	980325.35	-1224.0	-1227.8	-1229.7	-1234.9
4	000013	1150	1000	5391112	388385	3647.62	1054	457.13	979000.52	980325.38	-1224.0	-1227.8	-1229.8	-1234.9
4	000012	1100	1000	5391075	388351	3649.11	1100	449.69	979002.09	980325.41	-1224.1	-1227.9	-1229.8	-1234.9
4	000011	1050	1000	5391037	388318	3649.90	1105	445.70	979002.92	980325.44	-1224.2	-1227.9	-1229.8	-1234.9
4	000010	1000	1000	5391000	388285	3649.00	1112	449.78	979001.98	980325.47	-1224.3	-1228.0	-1229.9	-1235.0

Base # 2 3647.10 1121 980175.19

5 points printed

Computed on 3:01 PM FRI., 3 JULY, 1987

Revision : 0

880

923086

Location : MT. CHARTER, TASMANIA

Grid : DOLERITE PROSPECT (JOB NO.607)

Coverage : LINE 1000E

STNS. 15-32

Loop time : 2.05 Drift rate : -.041 Gravimeter # 35 Operator : B.RAU

Loop drift : -.084 Time zone : 55.00 Calib. Factor : 1.0464 Date : 131185

LINE ID	STAT. ID	GRID NORTH	GRID EAST	MERC. NORTH	MERC. EAST	METER READ.	TIME	ELEVAT. (METERS)	OBSERV. GRAV.	THEORET. GRAVITY	BOUGUER GRAVITY	2.10	2.30	2.40	2.67
Base # 2						3647.10	1121		980175.19						
4	000015	1250	1000	5391187	388451	3647.41	1126	458.08	979000.33	980325.32	-1223.9	-1227.8	-1229.7	-1234.9	
4	000016	1300	1000	5391224	388484	3648.17	1131	454.66	979001.13	980325.29	-1223.9	-1227.7	-1229.6	-1234.7	
4	000017	1350	1000	5391262	388517	3650.47	1137	443.53	979003.54	980325.26	-1223.9	-1227.6	-1229.5	-1234.5	
4	000018	1400	1000	5391299	388551	3648.53	1143	454.00	979001.51	980325.23	-1223.6	-1227.4	-1229.3	-1234.4	
4	000019	1450	1000	5391336	388584	3647.42	1152	459.91	979000.36	980325.20	-1223.4	-1227.2	-1229.2	-1234.4	
4	000020	1500	1000	5391374	388617	3646.95	1156	461.72	978999.87	980325.17	-1223.5	-1227.3	-1229.3	-1234.5	
4	000021	1550	1000	5391411	388650	3645.89	1200	466.34	978998.76	980325.14	-1223.5	-1227.4	-1229.4	-1234.7	
4	000022	1600	1000	5391449	388683	3644.23	1204	475.58	978997.03	980325.11	-1223.2	-1227.2	-1229.2	-1234.5	
4	000023	1650	1000	5391486	388717	3643.23	1208	481.85	978995.98	980325.08	-1222.8	-1226.8	-1228.9	-1234.3	
4	000024	1700	1000	5391523	388750	3642.17	1212	488.36	978994.88	980325.05	-1222.4	-1226.5	-1228.6	-1234.1	
4	000025	1750	1000	5391561	388783	3640.14	1216	498.61	978992.75	980325.02	-1222.3	-1226.5	-1228.5	-1234.2	
4	000026	1800	1000	5391598	388816	3638.07	1220	510.16	978990.59	980324.99	-1221.9	-1226.1	-1228.3	-1234.1	
4	000027	1850	1000	5391636	388849	3637.01	1223	517.37	978989.48	980324.96	-1221.4	-1225.7	-1227.9	-1233.7	
4	000028	1900	1000	5391673	388883	3635.64	1227	524.05	978988.05	980324.93	-1221.3	-1225.7	-1227.9	-1233.8	
4	000029	1950	1000	5391710	388916	3634.77	1230	528.65	978987.14	980324.90	-1221.1	-1225.6	-1227.8	-1233.8	
4	000030	2000	1000	5391748	388949	3634.24	1233	531.59	978986.59	980324.87	-1221.0	-1225.5	-1227.7	-1233.7	
4	000031	2050	1000	5391785	388982	3633.84	1237	533.27	978986.18	980324.84	-1221.0	-1225.5	-1227.7	-1233.8	
4	000032	2100	1000	5391822	389015	3634.34	1241	530.84	978986.70	980324.81	-1221.0	-1225.5	-1227.7	-1233.7	

Base # 2 3647.02 1324 980175.19

18 points printed Computed on 3:01 PM FRI.. 3 JULY, 1987 Revision : 0

084

Location : MT. CHARTER, TASMANIA

Grid : DOLERITE PROSPECT (JOB NO.607)

Coverage : LINE 1000E

STNS. 32-48

Loop time : 2.30 Drift rate : .027 Gravimeter # 35 Operator : B.RAU

Loop drift : .063 Time zone : 55.00 Calib. Factor : 1.0464 Date : 131185

LINE ID	STAT. ID	GRID NORTH	GRID EAST	MERC. NORTH	MERC. EAST	METER READ.	TIME	ELEVAT. (METERS)	OBSERV. GRAV.	THEORET. GRAVITY	BOUGUER GRAVITY	2.10	2.30	2.40	2.67
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Base # 2						3647.02	1324			980175.19					
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4	000032	2100	1000	5391822	389015	3634.31	1355	530.84	978986.69	980324.81	-1221.0	-1225.5	-1227.7	-1233.7
4	000033	2150	1000	5391860	389049	3635.95	1400	522.21	978988.40	980324.78	-1221.2	-1225.6	-1227.8	-1233.7
4	000034	2200	1000	5391897	389082	3637.66	1405	513.48	978990.19	980324.75	-1221.3	-1225.6	-1227.8	-1233.6
4	000035	2250	1000	5391935	389115	3639.48	1411	504.47	978992.09	980324.72	-1221.4	-1225.6	-1227.7	-1233.4
4	000036	2300	1000	5391972	389148	3640.85	1416	499.43	978993.52	980324.69	-1221.0	-1225.2	-1227.3	-1232.9
4	000037	2350	1000	5392009	389181	3641.46	1420	495.71	978994.16	980324.67	-1221.2	-1225.3	-1227.4	-1233.0
4	000038	2400	1000	5392047	389215	3642.06	1423	491.69	978994.78	980324.64	-1221.4	-1225.5	-1227.6	-1233.1
4	000039	2450	1000	5392084	389248	3642.21	1427	491.11	978994.94	980324.61	-1221.3	-1225.5	-1227.5	-1233.1
4	000040	2500	1000	5392122	389281	3641.34	1430	494.71	978994.03	980324.58	-1221.4	-1225.6	-1227.6	-1233.2
4	000041	2550	1000	5392159	389314	3640.57	1435	498.09	978993.22	980324.55	-1221.5	-1225.6	-1227.7	-1233.4
4	000042	2600	1000	5392196	389347	3639.92	1439	501.35	978992.54	980324.52	-1221.4	-1225.6	-1227.7	-1233.4
4	000043	2650	1000	5392234	389381	3639.30	1442	504.47	978991.89	980324.49	-1221.3	-1225.5	-1227.7	-1233.4
4	000044	2700	1000	5392271	389414	3639.66	1445	502.59	978992.26	980324.46	-1221.3	-1225.5	-1227.6	-1233.3
4	000045	2750	1000	5392308	389447	3640.02	1449	500.87	978992.64	980324.43	-1221.3	-1225.5	-1227.6	-1233.3
4	000046	2800	1000	5392346	389480	3640.40	1452	498.25	978993.03	980324.40	-1221.5	-1225.6	-1227.7	-1233.4
4	000047	2850	1000	5392383	389513	3640.50	1459	498.19	978993.13	980324.37	-1221.3	-1225.5	-1227.6	-1233.2
4	000048	2900	1000	5392421	389547	3640.28	1502	500.00	978992.90	980324.34	-1221.1	-1225.3	-1227.4	-1233.1
4	000032	2100	1000	5391822	389015	3634.38	1522	530.84	978986.72	980324.81	-1221.0	-1225.4	-1227.7	-1233.7
4	000028	1900	1000	5391673	388883	3635.64	1528	524.05	978988.04	980324.93	-1221.3	-1225.7	-1227.9	-1233.8

Base # 2						3647.08	1542			980175.19					
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19 points printed Computed on 3:01 PM FRI., 3 JULY, 1987 Revision : 0

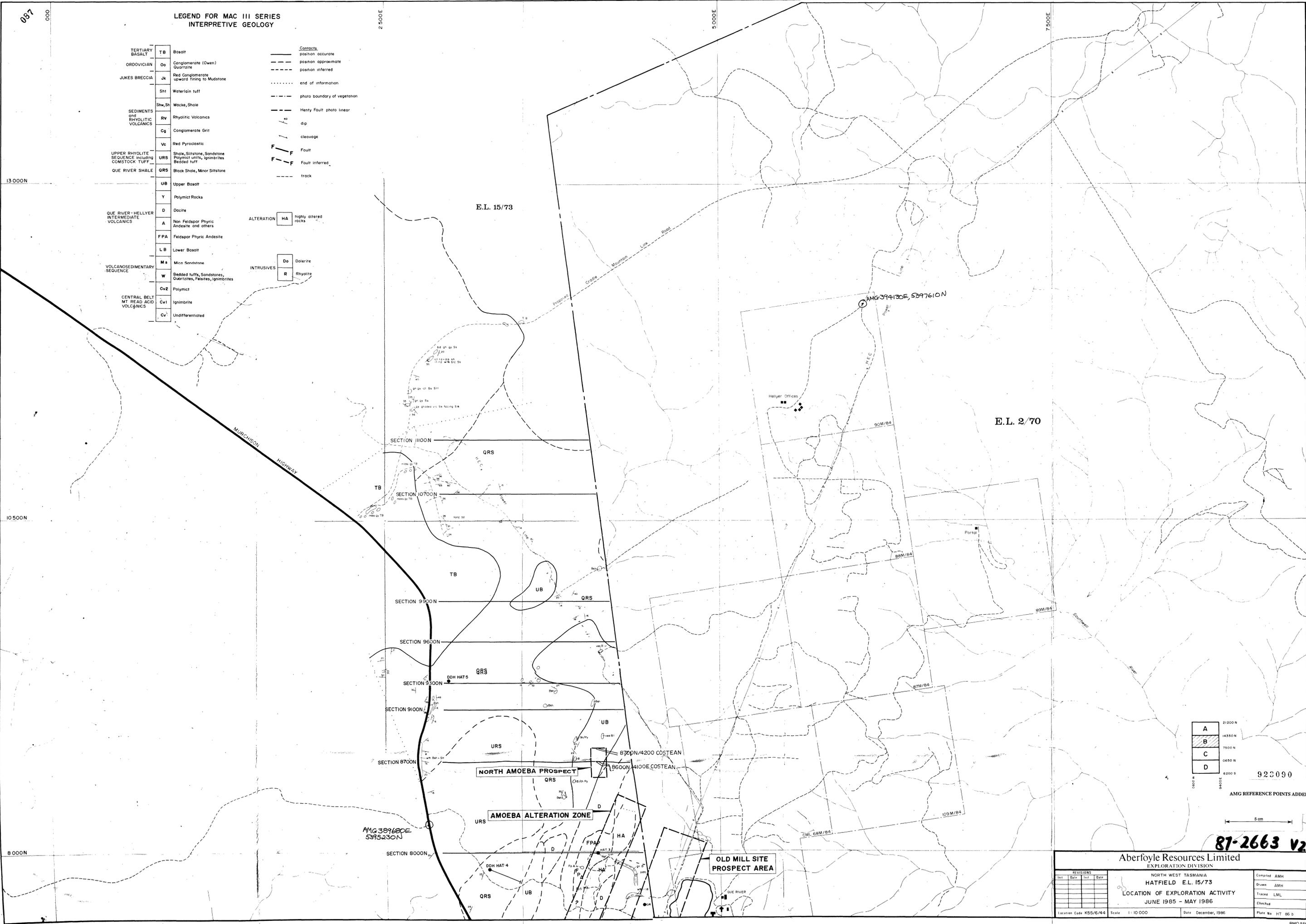
Total points printed for current selection - 42

1080

923088

LEGEND FOR MAC III SERIES
INTERPRETIVE GEOLOGY

TERTIARY BASALT	TB	Basalt	Contacts	—	position accurate
ORDOVICIAN	Oo	Conglomerate (Owen) Quartzite	- - -	position approximate	
JUKES BRECCIA	Jk	Red Conglomerate upward fining to Mudstone	position inferred	
	Sh	Waterlain tuff	end of information	
SEDIMENTS and RHYOLITIC VOLCANICS	Shw, Sh	Wacke, Shale	- - -	photo boundary of vegetation	
	RV	Rhyolitic Volcanics	- - -	Henty Fault photo linear	
	Cg	Conglomerate Grit	— / —	dip	
	Vc	Red Pyroclastic	— / —	cleavage	
UPPER RHYOLITE SEQUENCE including CONSTOCK TUFF	URS	Shale, Siltstone, Sandstone Polymict units, Ignimbrites Bedded tuff	F / F	Fault	
QUE RIVER SHALE	QRS	Black Shale, Minor Siltstone	F / F	Fault inferred	
	UB	Upper Basalt	—	track	
	Y	Polymict Rocks			
QUE RIVER - HELLYER INTERMEDIATE VOLCANICS	D	Dacite			
	A	Non Feldspar Phyric Andesite and others	HA	highly altered rocks	
	FPA	Feldspar Phyric Andesite			
	LB	Lower Basalt			
VOLCANOSEDIMENTARY SEQUENCE	Ma	Mica Sandstone	Do	Dolerite	
	W	Bedded tuffs, Sandstones, Quartzites, Pelites, Ignimbrites	R	Rhyolite	
	Cv2	Polymict			
CENTRAL BELT MT READ ACID VOLCANICS	Cv1	Ignimbrite			
	Cv'	Undifferentiated			



A	21200 N
B	14350 N
C	15000 N
D	0650 N
	6200 S

923090
AMG REFERENCE POINTS ADDED

5 cm
87-2663 v2

Aberfoyle Resources Limited
EXPLORATION DIVISION

NORTH WEST TASMANIA
HATFIELD E.L. 15/73
LOCATION OF EXPLORATION ACTIVITY
JUNE 1985 - MAY 1986

REVISIONS		
Int.	Date	By

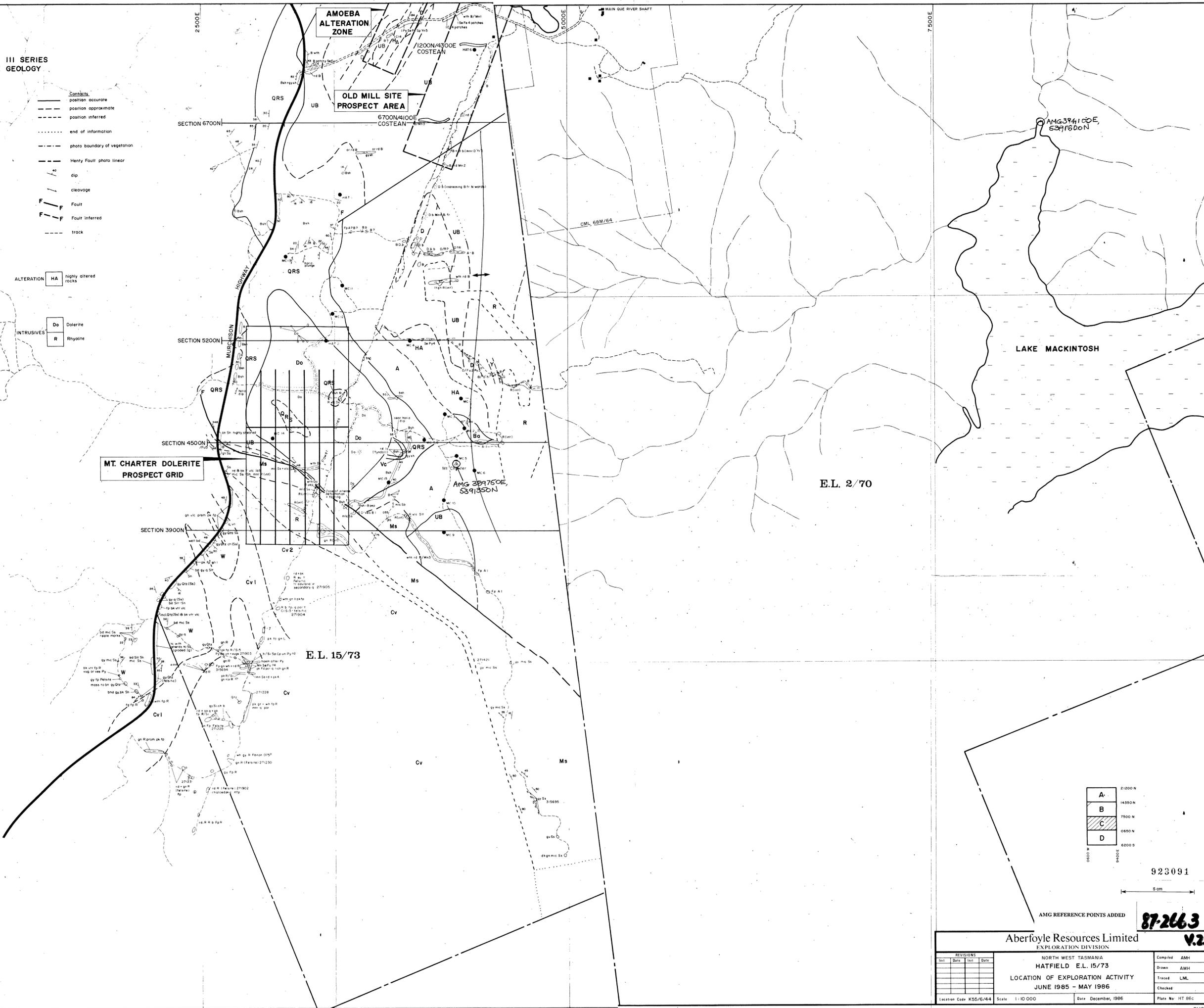
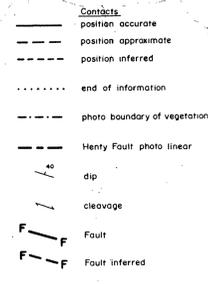
Location Code: K55/6/44 Scale: 1:10 000 Date: December, 1986 Plate No: HT 86 b

Compiled: AMH
Drawn: AMH
Traced: LML
Checked:

RMO 556

LEGEND FOR MAC III SERIES
INTERPRETIVE GEOLOGY

TERTIARY BASALT	TB	Basalt
ORDOVICIAN	Oo	Conglomerate (Owen) Quartzite
JUKES BRECCIA	Jk	Red Conglomerate upward fining to Mudstone
	Sh	Waterlain tuff
SEDIMENTS and RHYOLITIC VOLCANICS	Shw, Sh	Wacke, Shale
	RV	Rhyolitic Volcanics
	Cg	Conglomerate Grit
	Vc	Red Pyroclastic
UPPER RHYOLITE SEQUENCE including COMSTOCK TUFF	URS	Shale, Siltstone, Sandstone Polymict units, Ignimbrites Bedded tuff
QUE RIVER SHALE	QRS	Black Shale, Minor Siltstone
	UB	Upper Basalt
	Y	Polymict Rocks
QUE RIVER - HELLER INTERMEDIATE VOLCANICS	D	Dacite
	A	Non Feldspar Phryic Andesite and others
	FPA	Feldspar Phryic Andesite
	LB	Lower Basalt
VOLCANOSEDIMENTARY SEQUENCE	Ms	Mica Sandstone
	W	Bedded tuffs, Sandstones, Quartzites, Felstones, Ignimbrites
	Cv2	Polymict
	Cv1	Ignimbrite
	Cv	Undifferentiated



088

5 500N

3 000N

MT. CHARTER DOLERITE
PROSPECT GRID

AMOeba
ALTERATION
ZONE

OLD MILL SITE
PROSPECT AREA

E.L. 2/70

E.L. 15/73

A	21200 N
B	14350 N
C	7500 N
D	6650 N

923091
5 cm

AMG REFERENCE POINTS ADDED

87-2663
V.2

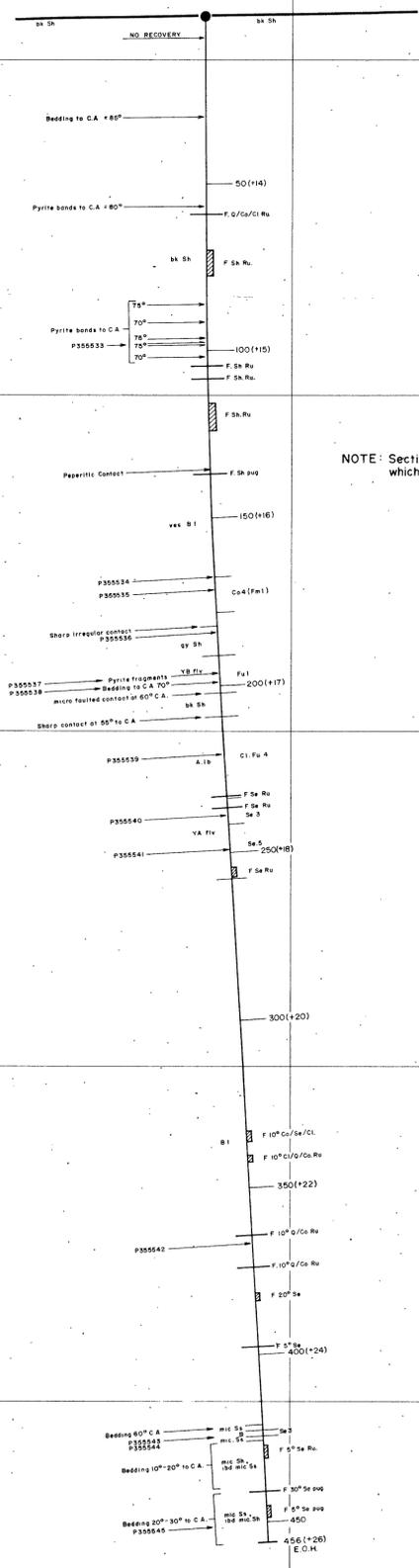
Aberfoyle Resources Limited EXPLORATION DIVISION		Compiled AMH
NORTH WEST TASMANIA HATFIELD E.L. 15/73		Drawn AMH
LOCATION OF EXPLORATION ACTIVITY JUNE 1985 - MAY 1986		Traced LML
		Checked
Location Code K55/6/44	Scale 1:10 000	Date December, 1986
		Plate No. HT 86c

2800E

3000E

3200E

HAT5
9313 9N
2973 9E
613 4 RL



600 R.L.

500

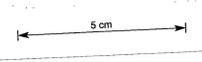
400

300

200

NOTE: Section below shale is flooded with Q/Co veins which may be related to a fault subparallel to the hole.

923094



A Aberfoyle Exploration Pty Ltd

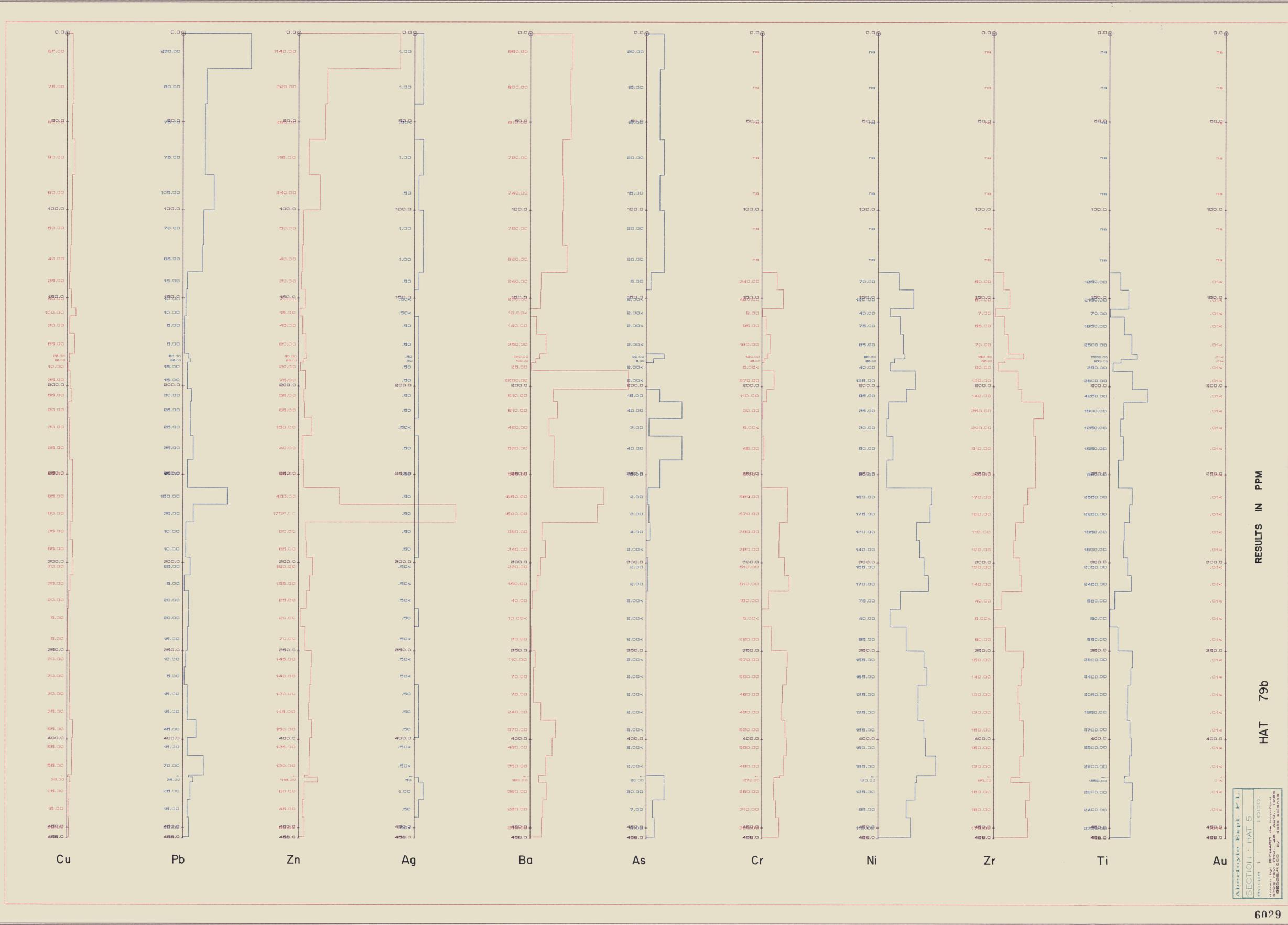
REVISIONS			
Init	Date	Init	Date

NORTH WEST TASMANIA
HATFIELD E.L. 15/73
SECTION 9300N
DDH - HAT - D - 005

Location: Code Scale: 1:1000 Date: April, 1986

Compiled: AMH
Drawn: AMH
Traced: TN
Checked: Plate No: HAT 79a

87-2663 V.2 RMO 555



Aberfoyle Expl. P.L.
SECTION: HAT 5
Scale 1:1000.
drawn by: RICHARD A. BENTON
checked by: J. J. BENTON

RESULTS IN PPM

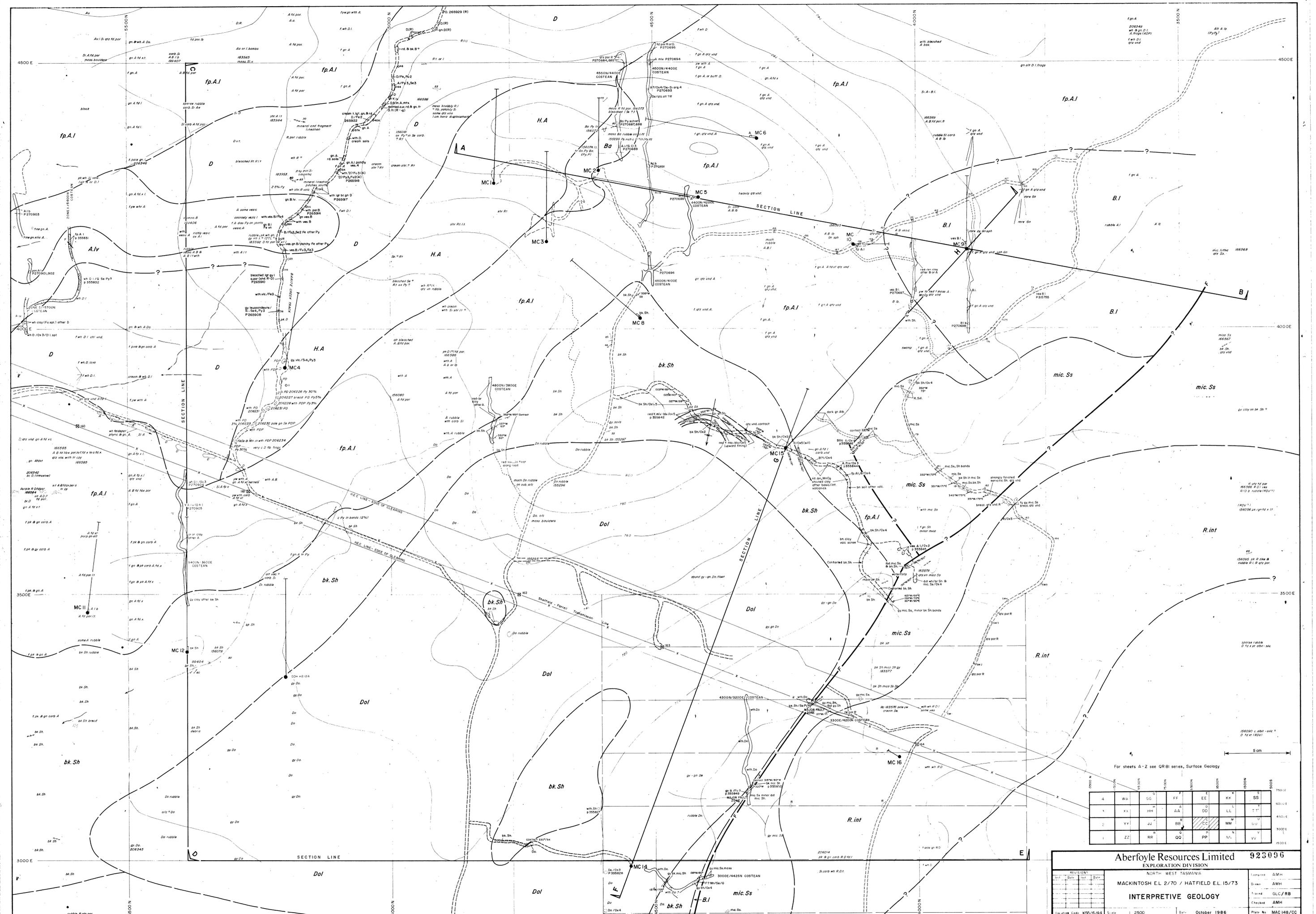
HAT 79b

87-2663 V.2.

5 cm

92305

6029



For sheets A-Z see GR81 series, Surface Geology

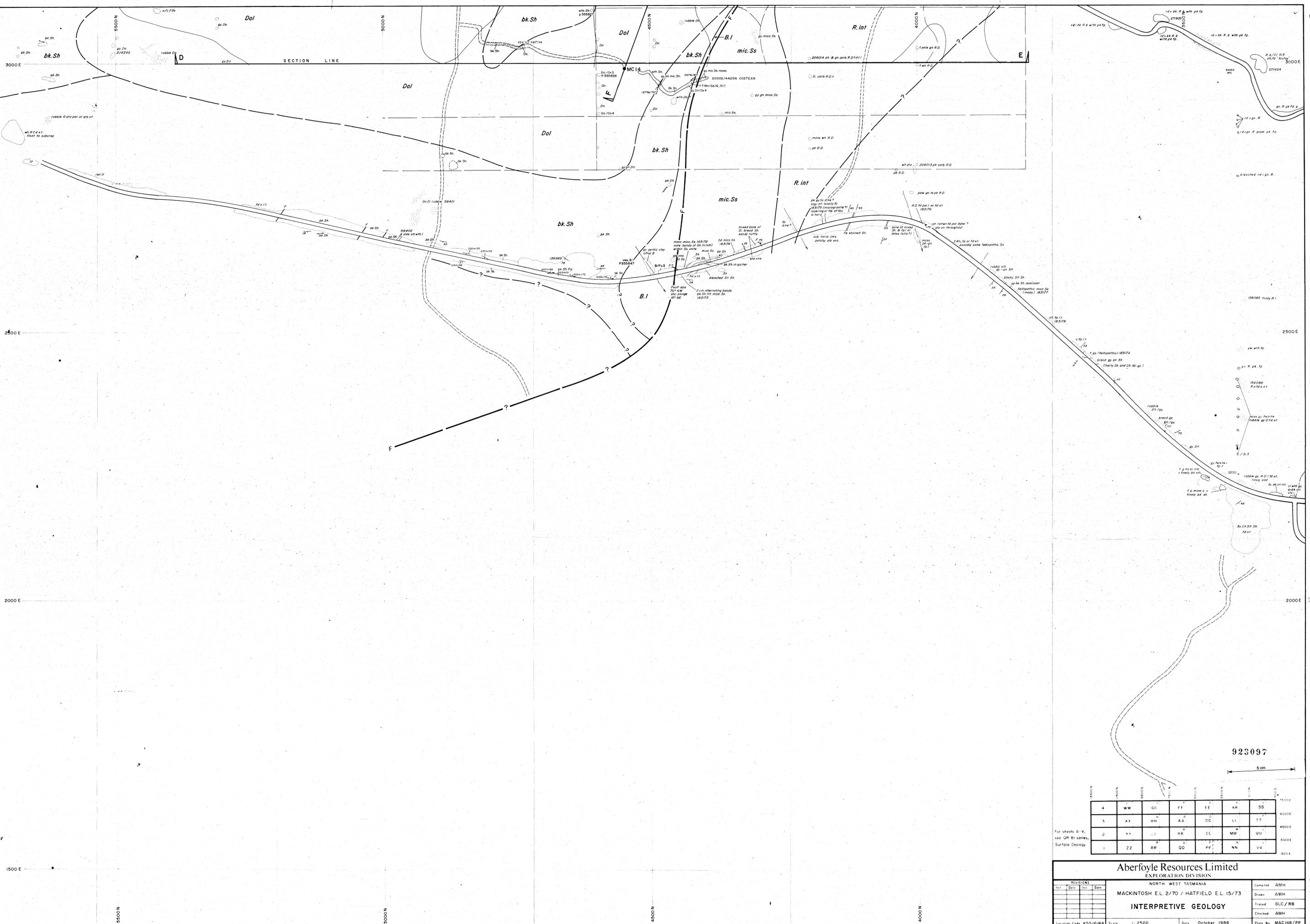
4	WA	GG	FF	EE	KK	SS
3	XX	HH	AA	DD	LL	TT
2	YY	JJ	BB	CC	MM	UU
1	ZZ	RR	QQ	PP	NN	VV

Aberfoyle Resources Limited 923096
 EXPLORATION DIVISION
 NORTH WEST TASMANIA
 MACKINTOSH EL. 2/70 / HATFIELD EL. 15/73
INTERPRETIVE GEOLOGY

Author	AMH
Drawn	AMH
Traced	GLC/RB
Checked	AMH

Revision table:
 1. Date: 1986.10.01, Description: Initial
 2. Date: 1986.10.01, Description: Final
 3. Date: 1986.10.01, Description: Final

Scale: 1:2500
 Date: October 1986
 Plate No: MAC148/CC



4	WW	GC	FF	EE	KK	SS
3	XY	HH	AA	DD	LL	TT
2	YY		RR	CC	MM	UU
1	ZZ	RR	QQ	PP	NN	VV

For sheets A-V,
see QR B1 series,
Surface Geology

Aberfoyle Resources Limited
EXPLORATION DIVISION

NORTH WEST TASMANIA

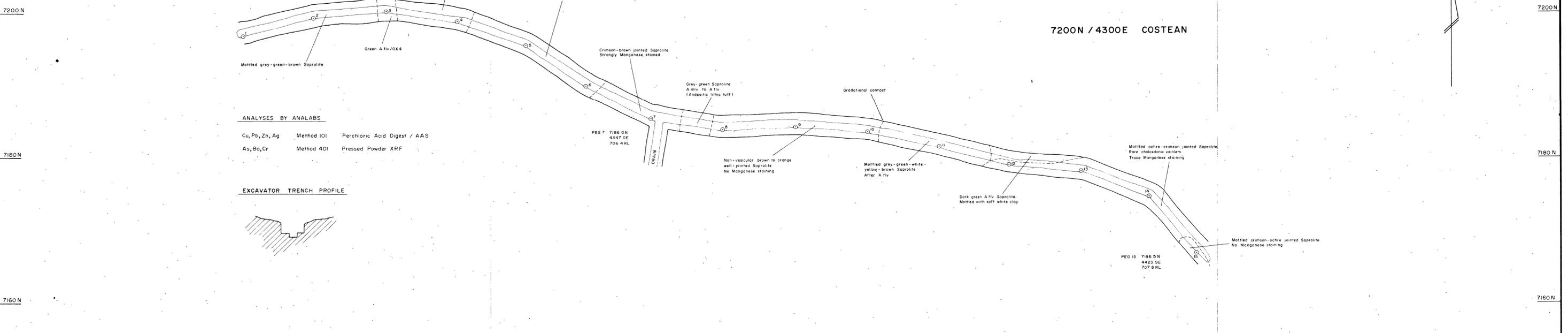
MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73

INTERPRETIVE GEOLOGY

Location Code: K55/6/44 Scale: 1:2500 Date: October 1986 Plate No: MAC148/PP

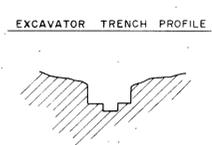
Revised	Drawn	Checked	Completed

	4300 E				4350 E				4400 E				4450 E	
Cu	70	55	50	40	100	80	120	95	140	100	105	95	55	
Pb	235	390	430	30	500	100	135	305	180	115	155	1000	180	
Zn	250	140	160	205	500	310	615	170	690	520	280	240	125	
Ag	X	X	X	X	X	X	X	X	X	X	X	X	X	
As	6	X	2	7	20	6	7	44	15	7	96	65	24	
Ba	243	326	155	157	302	275	244	791	214	319	789	799	714	
Cr	31	8	17	31	X	X	X	258	132	257	291	350	330	
	355266	355267	355268	355269	355270	355271	355272	355273	N S	355274	355275	355276	355277	355278

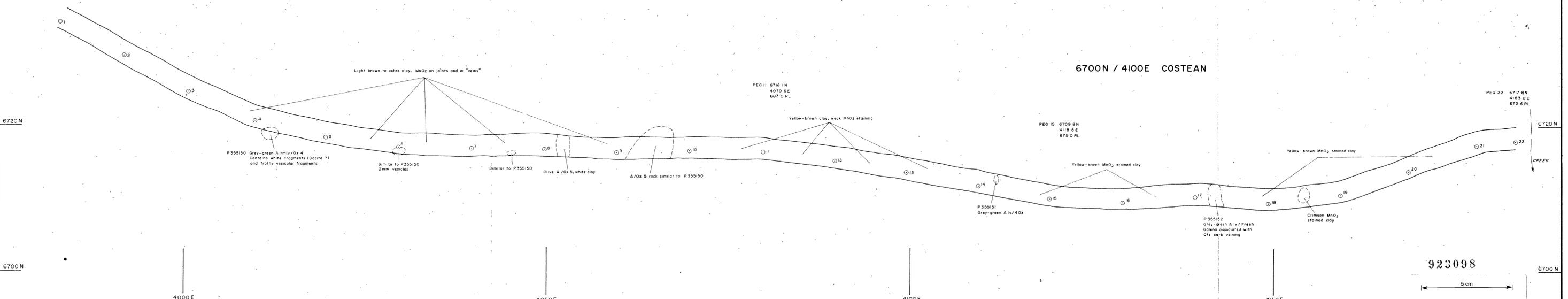


ANALYSES BY ANALABS

Cu, Pb, Zn, Ag Method 101 Perchloric Acid Digest / AAS
 As, Ba, Cr Method 401 Pressed Powder XRF



Cu	165	185	270	265	160	180	235	190	220	195	200	220	175	165	185	195	210	200	200	195	215
Pb	1550	1500	2800	1950	1250	915	915	400	730	50	70	235	140	190	405	195	1650	760	260	610	600
Zn	335	235	700	845	300	370	1000	390	470	200	190	310	375	415	600	500	1150	580	510	410	750
Ag	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
As	9	12	7	3	19	13	20	9	7	8	X	X	X	X	X	12	5	X	3	5	2
Ba	478	616	873	861	452	331	939	1310	1690	748	850	580	601	490	706	1000	758	859	952	644	1140
Cr	868	921	929	701	778	784	1190	1220	1290	1060	1050	998	1020	995	684	648	891	499	584	479	578
	355441	355442	355443	355444	355445	355446	355447	355448	355449	355450	355451	355452	355453	355454	355455	355456	355457	355458	355459	355460	355461

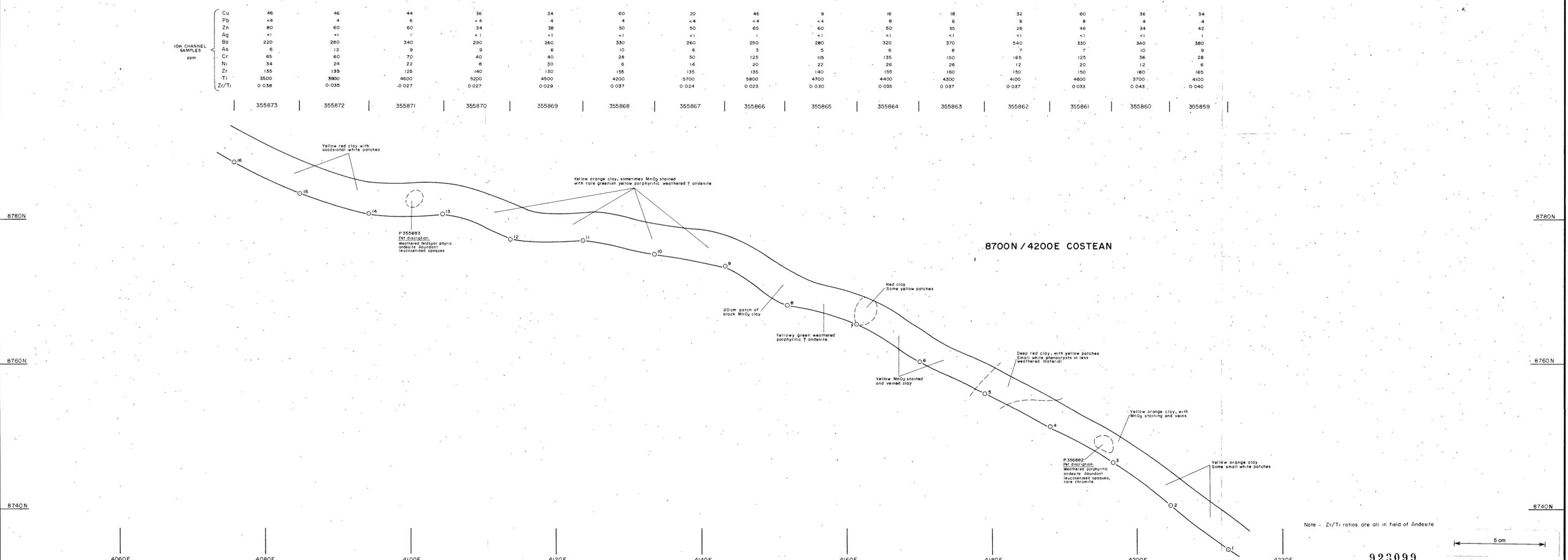
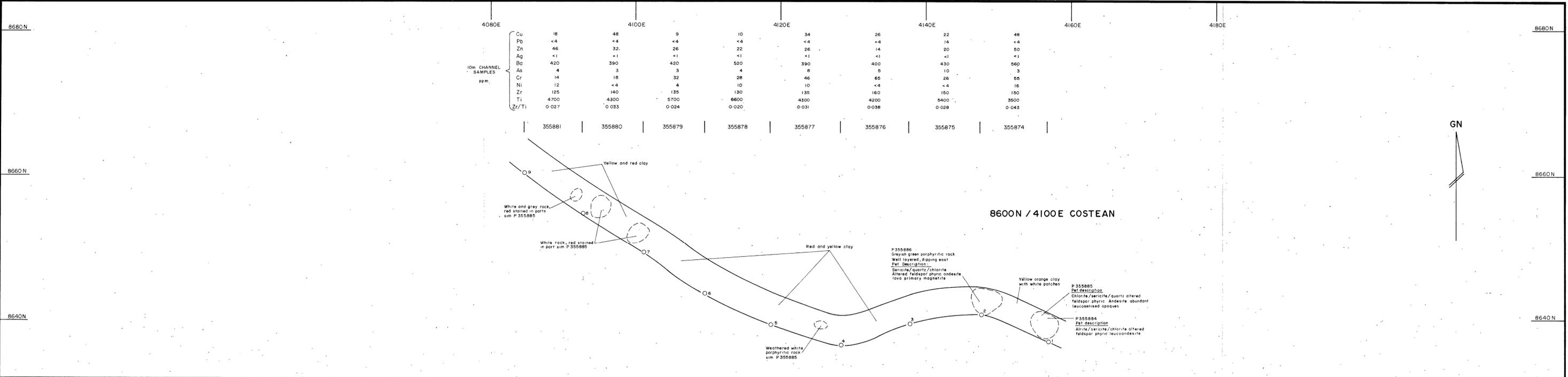


Aberfoyle Exploration Pty Ltd

NORTH WEST TASMANIA
 HATFIELD E.L.15/73
 OLD MILL SITE PROSPECT
 7200N/4300E, 6700N/4100E COSTEANS

Compiled: AMH
 Drawn: AMH
 Traced: GLC
 Checked: AMH

Location Code: K55/6/44 Scale: 1:250 Date: December, 1985 Plate No: HAT 77



Note - Zr/Ti ratios are all in field of Andesite

5 cm

923099

A Aberfoyle Exploration Pty Ltd		NORTH WEST TASMANIA		Compiled: PH
		HATFIELD E.L.15/73		Drawn: PH
8600N/4100E, 8700N/4200E COSTEANS		Traced: TN		Checked:
Location Code:		Scale: 1:250		Date: Feb, 1986
Date:		Date:		Plate No: HAT 81

CUMULATIVE BASE INFORMATION

BASE DATE NORTHING EASTING STATION ID TIE COMMENTS

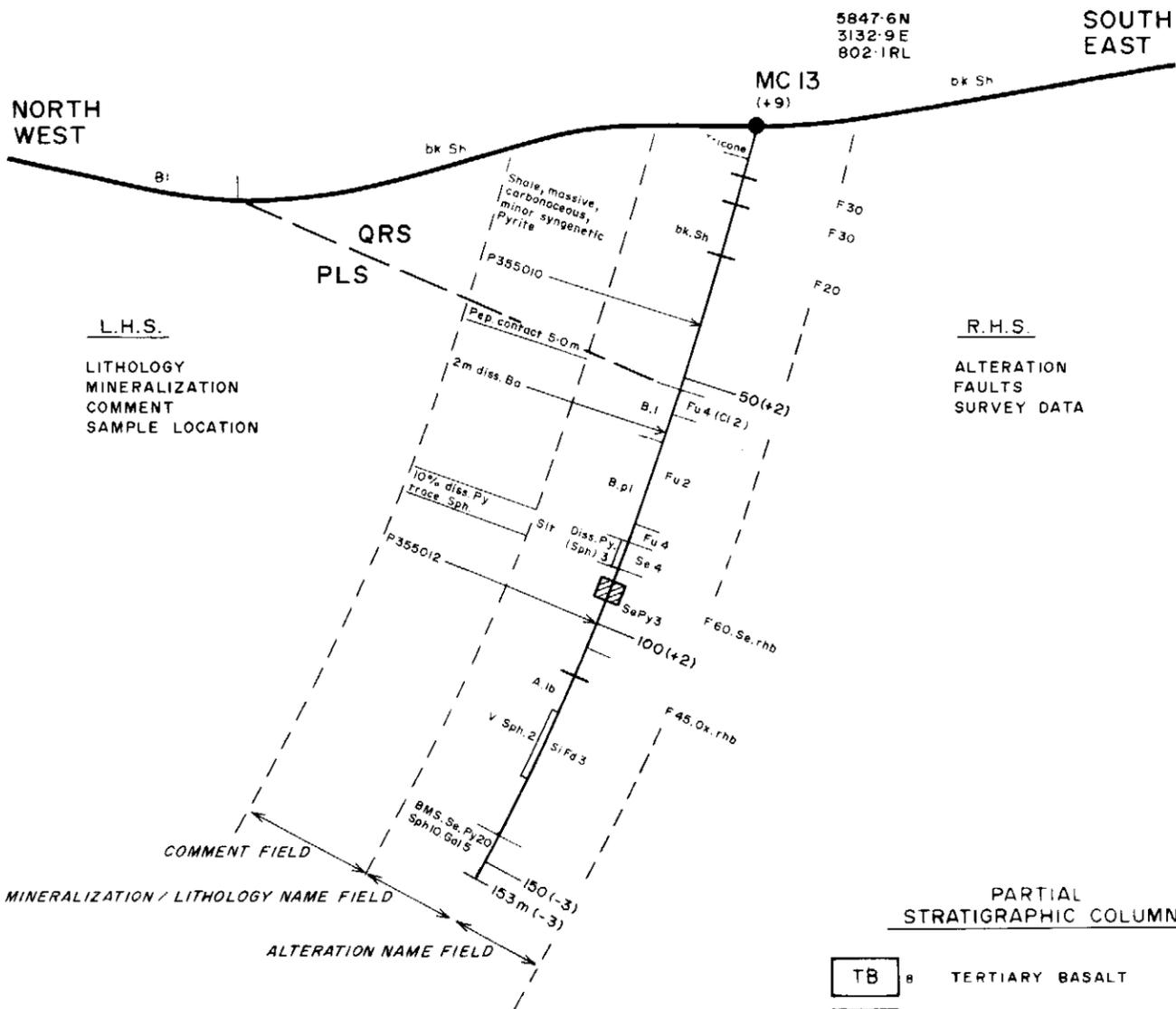
2 161185 5391140 388420 1 CAMERA BASE TEST HOLES

TIE INFORMATION

Base	Gravity	Time
1	3649.78	1108
1	3649.75	1143
2	3647.20	1201
1	3649.73	1221
2	3647.18	1240

980

923089



- MC 13 (+9)** DDH number, DDH collar distance behind (+), in front (-) of section (1:35/100, 60)
- 5847-6 N 3132-9 E 802-1 RL** Survey pick-up of collar (1:60)
- 50(+2)** Downhole fiducial, 50m interval for 1:1000 section (1:25/60)
- Lithology, alteration boundary - DDH and surface (1:18/1)
- DDH to surface correlation (1:35/1)
- B.pl** Lithology abbreviation classification, colour on adjoining table (1:50)
- QRS** Stratigraphic classification (1:100)
- Fu 4 (Cl 2)** Alteration composition, intensity Subordinate alteration type in brackets (1:50)
- F60.Se.rhb** Fault zone, angle to core axis, gouge composition (1:35/50)
- F45.Ox.rhb** Fault, angle to core axis, gouge composition (1:35/50)
- Diss.Py (Sph) 3** Low grade mineralization disseminated, composition, intensity. Minor sulphides in brackets (1:18/50)
- v.Sph (Py) 2** Low grade mineralization vein, composition, intensity. Minor sulphides in brackets (1:18/50)
- P355010** Petrology sample location, specify other sample type eg. Pb isotope (1:50)
- BMS.Se.Py20 Sph.10.Gal.5** High grade mineralization, composition, visual estimate (1:50)

- PARTIAL STRATIGRAPHIC COLUMN**
- TB** 8 TERTIARY BASALT
 - JD** 32 JURASSIC DOLERITE
 - OCG** 20 ORDOVICIAN SILICICLASTICS
 - URS** 65 UPPER RHYOLITIC SEQUENCE
 - QRS** 68 QUE RIVER SHALE
 - MGW** 71 MT. CHARTER MICACEOUS GREYWACKE
 - HBS** 45 HELLYER BASALT SEQUENCE
 - HVS** 56 HANGINGWALL VOLCANICLASTIC SEQUENCE
 - SWB** 56 SWITCHBACK VOLCANICLASTIC SEQUENCE
 - HMS** 21 HELLYER MINERALISED SEQUENCE
 - FPS** 48 ANDESITE FELDSPAR PHYRIC SEQUENCE

VOLCANICS

- R 1 R 1b** 26 Rhyolite lava, lava breccia
- R av R 1v R bv R xv** 25 Rhyolite volcanoclastic
- YR av YR 1v YR bv** 68 Rhyolitic Polymict volcanoclastic
- D 1 D 1b** 63 Dacite lava, lava breccia
- D av D 1v D bv D xv** 64 Dacite volcanoclastic
- YD av YD 1v YD bv** 66 Dacitic Polymict volcanoclastic
- A fp 1 A fp 1b** 48 Andesite feldsparphyric lava, lava breccia
- A 1 A 1b** 41 Andesite lava, lava breccia
- A av A 1v A bv A xv** 44 Andesite volcanoclastic
- YA av YA 1v YA bv** 40 Andesitic Polymict volcanoclastic
- B 1 B 1v** 45 Basalt lava, lava breccia
- B pl** 50 Basalt pillow lava
- B av B 1v B bv B xv** 49 Basalt volcanoclastic
- YB av YB 1v YB bv** 42 Basaltic Polymict volcanoclastic
- Y av Y 1v Y bv** 58 Polymict rock
- av** 52 Ash volcanoclastics (composition not determined)

SEDIMENTS

- Ss Gw** 71 Sandstone, micaceous Greywacke
- Sh** 68 Shale, black (carbonaceous, pyritic)
- Sst** 69 Siltstone, tuffaceous Siltstone

SULPHIDES, SULPHATES

- BMS** 21 Base Metal Sulphide rock
- MPy** 29 Massive pyrite rock
- GSP** 23 Glassy silica, colloform pyrite rock
- Ba** 22 Barite

POST CAMBRIAN ROCKS

- TB** 8 Tertiary Basalt
- JD** 32 Jurassic Dolerite
- OCG** 20 Ordovician Siliciclastics

ALTERATION ROCK TYPES

- HA** 6 Highly altered rock
- Qll** 18 Quillite
- Q-lv Q-bv** 17 Quillite fragmental

ALTERATION

- Si** 2 Silica
- SiFd** 13 Silica Feldspar
- SiFdCl** 14 Silica Feldspar Chlorite
- Cl** 47 Chlorite
- ClCo** 41 Chlorite Carbonate
- SeCl** 30 Sericite Chlorite
- SePy** 39 Sericite Pyrite
- Se** 38 Sericite
- Fu** 46 Fuchsite
- Il** 19 Illite

INTENSITY SCALE

- 1 Trace
- 2 Weak
- 3 Moderate
- 4 Strong
- 5 Extreme

ALL LINEWORK AND LETTERING SHOWN AT ACTUAL SIZE (LINE THICKNESS / LEROY LETTER SIZE)
NOTE: GEOPHYSICAL AND GEOCHEMICAL DATA ARE SHOWN ON OVERLAYS

87-2663 V2

Aberfoyle Exploration Pty Ltd

<p style="font-size: 0.8em;">REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="font-size: 0.7em;">Int</th> <th style="font-size: 0.7em;">Date</th> <th style="font-size: 0.7em;">Int</th> <th style="font-size: 0.7em;">Date</th> </tr> <tr> <td style="font-size: 0.7em;">GLC</td> <td style="font-size: 0.7em;">12-85</td> <td style="font-size: 0.7em;">+</td> <td style="font-size: 0.7em;">+</td> </tr> </table>	Int	Date	Int	Date	GLC	12-85	+	+	<p style="font-size: 0.8em;">NORTH WEST TASMANIA</p> <p style="font-size: 0.8em;">MACKINTOSH E.L.2/70, HATFIELD E.L.15/73</p> <p style="font-weight: bold; font-size: 1.2em;">GEOLOGICAL LEGEND</p> <p style="font-weight: bold; font-size: 1.2em;">1:1000 SCALE DDH SECTIONS</p>	<p style="font-size: 0.8em;">Completed</p> <p style="font-size: 0.8em;">AMH</p> <hr/> <p style="font-size: 0.8em;">Drawn</p> <p style="font-size: 0.8em;">AMH</p> <hr/> <p style="font-size: 0.8em;">Traced</p> <p style="font-size: 0.8em;">GLC</p> <hr/> <p style="font-size: 0.8em;">Checked</p> <p style="font-size: 0.8em;">AMH</p> <hr/> <p style="font-size: 0.8em;">Plate No</p> <p style="font-size: 0.8em;">MAC 115</p>
Int	Date	Int	Date							
GLC	12-85	+	+							
Location Code K55/6/44	Scale	Date	November, 1985							

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