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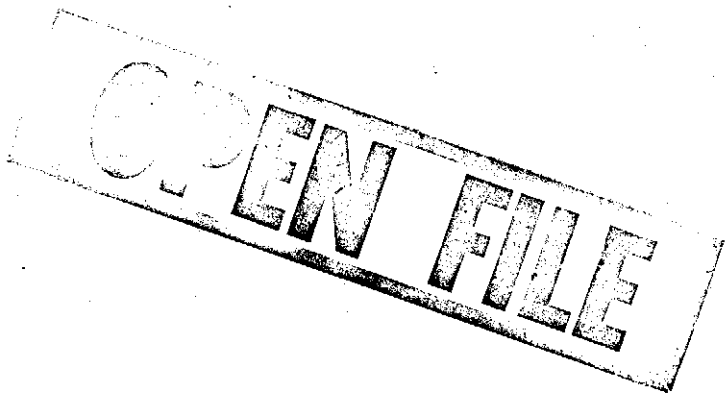
PROGRESS REPORT

QUEEN HILL JOINT VENTURE

E.L. 47/71 TASMANIA

QUARTER TO DECEMBER 31, 1979.



This report covers the
Aberfoyle quarter (to period 12)
ending November 20, 1979.

C.H. Young,
Project Geologist.

and

K.G. Palmer,
Chief Mine Geologist.

January 1980.

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INTRODUCTION

This report summarises work completed in the quarter ended November 20, 1979, and includes preparation and drafting through to December 31, 1979. Reported expenditure is for Aberfoyle quarter ending November 20, 1979.

During the quarter, the ore reserve and exploration drilling programme commenced and eight holes were completed for 2546.6 m, drilling is still in progress. Some discontinuity is evident within the main body of mineralisation. Five additional holes (1480 metres) are proposed to complete testing of this body on a 30 - 40 metre grid spacing.

To the south of the Queen Hill main body, exploration hole G46 intersected coarse grained >50% pyrite mineralisation over an interval of 10.8 m. Within this interval there is replacement mineralisation with some cassiterite. A further six exploration holes require completion and three new exploration holes (950 m) are planned to investigate ore potential adjacent to and below G46.

To help decide on the optimum sample size of drill core, a sampling investigation was conducted on HQ core from hole G45. The results of the investigation indicate that 3/4 NQ core/metre is the minimum sample required based on the fact that the bigger the sample the more representative it will be.

It is desirable to have complete XRF analysis for all the critical holes within the main body of mineralisation. However due to the possibility of disruption of the original core, oxidation of the pulps etc. there is a likelihood that further sampling and assaying by XRF would be unreliable. There is thus an obvious requirement to validate the original spectrographic assay values. This is being done by sampling and re-assaying holes G1 and G2 - the only holes in NQ core size.

Stream sediment sample results were plotted on 1:10,000 scale plans and on a 1:100,000 scale summary plan and are presented in this report.

Regional geological mapping of the St. Dizier area at 1:10,000 scale is in progress as initial follow-up of the stream sediment sampling programme. A geological report and drafted geological plans should be ready for presentation in the next quarterly report.

Detailed geological mapping of the grid area is not yet complete, due to the requirement for close geological supervision of the diamond drilling programme.

It is planned to conduct an orientation DIGHEM survey over the known Queen Hill mineralisation. A more extensive DIGHEM survey is planned for the north-western part of the licence area near the Heemskirk granite contact where stream sediment anomalies were recorded.

QUEEN HILL ORE RESERVE AND EXPLORATION DRILLING PROGRAMME

The drilling programme, designed to establish gross ore potential in the Queen Hill area commenced on 3.9.1979 with hole G45. This hole was completed in HQ core size to provide suitable bulk of material for the investigation of optimum sample size. Subsequent holes were completed in HQ, NQ and BQ core size as ground conditions, drill hole depth etc. dictated.

Geological understanding of the lithologies at Queen Hill has markedly improved with the availability of fresh drill core. A thorough petrological study is being conducted to help determine the nature of the host rock and ore controls. Petrological reports are appended, see Appendix A.

Cassiterite mineralisation occurs within an approximately 30 m thick sedimentary sequence consisting of carbonaceous siltstone, shale, chert, pyritic mudstone, pyritic dolomite, carbonaceous dolomite, dolomite and a sedimentary breccia with fragments of the above in varying proportions.

Cassiterite mineralisation has been identified in rocks variously described as: chloritic carbonaceous shale, carbonaceous dolomite, pyritic carbonaceous dolomite, cherty mudstone, quartz siderite rock, tuff and quartz sericite rock.

In hole G51B significant cassiterite mineralisation occurs in a volcanic tuff or quartz sericite rock adjacent to a clearly defined fault zone. This intersection appears to represent formation by a low temperature hydrothermal mechanism and possibly represents remobilisation.

In all other holes, cassiterite is restricted to rocks best described as impure dolomites, generally having indications of primary chemical formation with varying amounts of siderite and silica and occassionally with other impurities consisting of carbonaceous shale etc. When significant cassiterite is present the host in general appears to almost completely lose its bedded nature and the rock is netted with sulphide veinlets and fine stringers and segregations of silica, carbonate and fluorite.

Cassiterite mineralisation is very fine grained, average 20μ and textural relationships suggest that it may have been introduced very early, probably as the first metasomatic mineral.

The distribution of ore-grade cassiterite is not continuous in one horizon although it clearly favours the dolomite. It is apparent that the position of hydrothermal feeders is one of the key features in the distribution of ore.

Petrology and geochemical analysis has shown that the ultra fine grained pyritic mudstones are not associated with tin mineralisation hence such intervals, for instance part of G45 where pyrite content is >70%, do not contain cassiterite.

In G18, recognition that coarsely recrystallised siderite represents a dolomitic horizon and not, as previously thought, a siderite vein allows the G18 intersection (0.80% Sn over 12.81 m) to be included within the main body of mineralisation.

A summary of the ore reserve and exploration drilling programme is attached, together with a summary longitudinal section. These define the ore grade intersections achieved by drill holes G49, G51B, G52 and G53 and the discontinuity within the main body of mineralisation as shown by G45. Five additional ore reserve holes (1480) metres are proposed to complete testing of this body on a 30 - 40 metre grid spacing. The position of these holes is shown on the summary longitudinal section. At completion of this drilling

it is envisaged that the resource will be sufficiently defined to justify underground exploration and ore reserve definition.

Exploration hole G46 intersected coarse grained >50% pyrite mineralisation over an interval of 10.8 m. Within this interval there is metasomatic mineralisation with some cassiterite. Three exploration holes (950 m) are planned to investigate ore potential adjacent to and below G46. The position of the proposed holes is shown on the summary longitudinal projection.

A body of 1.5 - 2 million tonnes is the minimum in-ground requirement for the envisaged mining operation at Queen Hill. The main body of mineralisation appears to be below this tonneage and consequently, further exploration for additional ore sources and re-assessment of pre-existing data for Severn and Montana are now in progress.

All drill logs are appended, Appendix B, and cross sections at 1:500 scale are attached. All drill hole assay data is appended in a preliminary form. Analyses for soluble tin, copper, lead, zinc and sulphur and determination of S.G. by air pyknometer are not yet complete. Check assays for gold are proposed for the intersections in G45, G46, G49, G51B, G52 and G53.

Total Sn analysis is being conducted by XRF by COMLABS Pty. Ltd. of 305 South Road, Mile End South, S.A. 5031. Soluble Sn analysis is by AAS following HNO_3/HCL leach, Ag analysis is by AAS following aqua regia leach and Cu, Pb, Zn analysis is also by AAS following digestion in $HCLO_4$. All AAS analyses are conducted in the Aberfoyle Exploration Pty. Ltd. laboratory at 1 Greenhill Road, Wayville. S.A. 5034.

QUEEN HILL — Diamond Drilling Summary

D.H. No.	Co-ordinates North	East	Elevation	Mag Brg	Angle	Commence	Complete	Depth m	Cumulative metres	Section	GEOLOGY/MINERALISATION	RL of Intersection	Intersection
G45	(556) 1755.03	(360) 802.39	272.56	282.25	-60°	3. 9.79	21.9.79	257.95	257.95	3060	193.5 m - 243 m Dolomitic and carbonaceous siltstone host unit with coarse grained and stratiform pyrite mineralisation, including some barren carbonate zones. (Bedding at low angle to core axis).	70 to 108	180.75 - 243/0.1% Sn includes 193.75 - 195.75/ 0.79% Sn, 231-232/ 0.9% Sn and 239-243/ 0.49% Sn.
G46	1636.69	410.37	202.00	100.25	-44.5°	7. 9.79	8.10.79	302	559.95	2800	Fine grained >50% stratiform pyrite mineralisation between 246.9 m and 251.5 m. Coarse grained >50% pyrite mineralisation with a carbonate rich gangue between 262.5 m and 273.3 m, fine grained 30% stratiform pyrite to 282.4 m.	31.5 to 47	281.12-282.28/ 0.18 Sn includes 16 cm 0.84% Sn.
G47	1820.25	500.4	196.75	98.5	-65.5°	23. 9.79	7.10.79	471.4	1031.35	3000	Fine grained stratiform pyrite in part >50% 371.3 m to 379.3 m.	-132 to -128	No significant Sn mineralisation.
G48	1726.7	504.8	206.2	104.7	-46.9	9.10.79	17.10.79	207.95	1239.3	2920	Dolomitic and carbonaceous siltstone host unit, intersected between 91.85 and 207m. Fine grained stratiform pyrite av. 20% at 105.8 - 106.8, 109.9 - 111.6, 112 - 112.5 and 113 - 114.5 m. Also at 147.2 - 157.5 m.	117 to 120 and 132 to 134	No significant Sn mineralisation.
G49	1836.7	606.2	214.3	101.2	-42.7	11.10.79	26.10.79	206.2	1445.5	3060	Dolomitic and carbonaceous siltstone host unit intersected at 125.2 m. Fine grained metasomatised pyrite 15% 128.0 to 139.8 m. Coarse grained pyrite 40-50% from 139.8 to 156.8 m. Below 156.8 m 1-2 m wide coarse grained pyrite >30%, lode? intersections with variable amounts of stannite, Gn and Sph at 158.6, 173.2, 179.2, 190.2 and 199 m.	112 to 130	128-156.8/0.79% Sn, includes 128-139.8 1.59% Sn and 139.8 to 156 0.25% Sn.

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QUEEN HILL — Diamond Drilling Summary

D.H. No.	Co-ordinates North	East	Elev-ation	Mag Brg	Angle	Commence	Complete	Depth m	Cumulative metres	Section	GEOLOGY/MINERALISATION	RL of Intersection	Intersection
G50	1781.4	580.0	207.1	103.8	-56.1°	18.10.79	23.10.79	205.7	1651.2	3000	Dolomitic and carbonaceous host unit, intersected between 133 and 202 m. Fine grained stratiform pyrite av. 10% between 172 - 174.5 m.	68 to 70	No significant Sn mineralisation.
G51	1800.4	844.03	251.1	283.5	-63.25°	25.10.79	25.10.79	14	1665.2	3120	Hole abandoned due to incorrect collar angle.		
G51B	1800	844	251.1	283.5	-68°	26.10.79	8.11.79	277.4	1942.6	3120	Coarse grained 20-30% pyrite lodes to 1m.Between 221-223.4m 223.4-234.5 c.g. 20-30% pyrite in sideritic dolomite. 234.5-236.9 c.g.10% pyrite, 236.9 - 237.6 - .>50% pyrite, 237.6-253.8 20-25% pyrite, 253.8-254.5 5-10% pyrite, in volcanic tuff.	31 to 51.5	236.9-254.5 m 1.35 Sn, includes 236.9 245.5 0.49% Sn and 245.5-254.5 2.18% Sn
G52	2012.7	654.9	199.0	101.4	-44.8°	29.10.79	16.11.79	183.0	2125.6	3240	Coarse grained 10-60% pyrite in sideritic dolomite from 133.2 to 140.5 m.	~~100 to 103.5~~ 95.5 to 104	133.2 - 140.5 m
G53	1851.64	518.99	203.7	100.3	-53.5°	12.11.79	22.11.79	421.0	2546.6	3040	Dolomitic host unit, intersected between 242 and 265 . 65m. From 256.4 - 261.5 m, Py 15-20 as a nettwork of metasomatic veins, modifying f.g. pyritic dolomite.	4.5 to 8.5	256.4 - 261.4 m 5m

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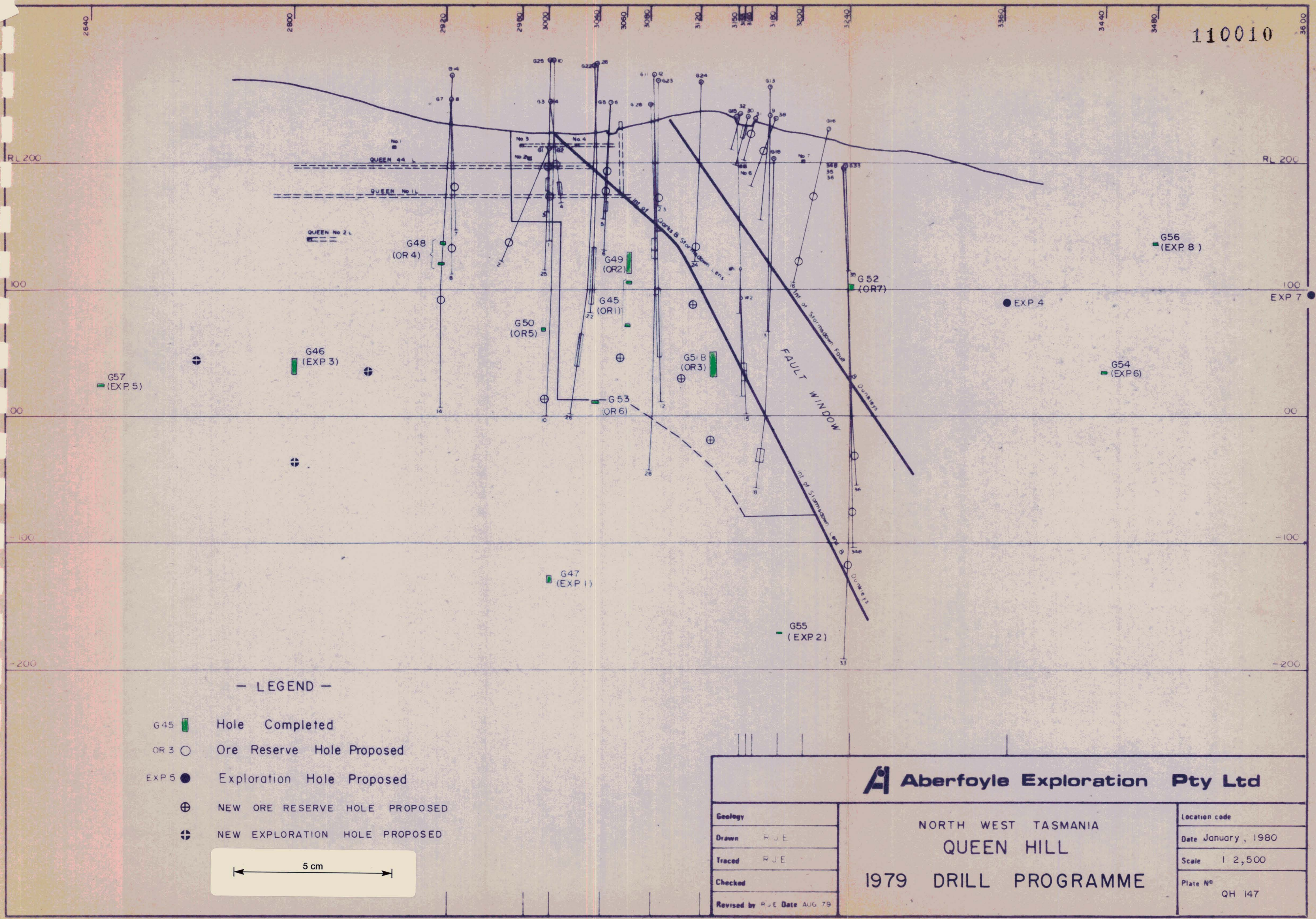

2640
2800
2920
2980
3000
3040
3060
3080
3120
3150
3180
3200
3240
3360
3440
3480
3600
RL 200
100
00
-100
-200
QUEEN 44 L
QUEEN No 1 L
QUEEN No 2 L
No 3
No 4
G48
(OR 4)
G49
(OR2)
G45
(OR1)
G50
(OR5)
G46
(EXP 3)
G57
(EXP. 5)
G51 B
(OR3)
G53
(OR 6)
G52
(OR7)
EXP 4
EXP 7
G56
(EXP 8)
G54
(EXP 6)
G47
(EXP 1)
G55
(EXP 2)
FAULT WINDOW
Int of Stormsdown Fault & Dunkeys
Int of Stormsdown Lens & Dunkeys
Int of Clarks & Stormsdown Lens
– LEGEND –
G45 Hole Completed
OR 3 Ore Reserve Hole Proposed
EXP 5 Exploration Hole Proposed
NEW ORE RESERVE HOLE PROPOSED
NEW EXPLORATION HOLE PROPOSED
5 cm
Aberfoyle Exploration Pty Ltd
Geology
Drawn RJE
Traced RJE
Checked
Revised by RJE Date AUG 79
NORTH WEST TASMANIA
QUEEN HILL
1979 DRILL PROGRAMME
Location code
Date January, 1980
Scale 1:2,500
Plate No QH 147

VARIANCE SAMPLING INVESTIGATION

In many cases it is assumed that half or quarter BQ core is an adequate core size for reliable sampling without consideration of the characteristics of the mineralisation and the variance such sampling incurs. If the variance incurred by inadequate sampling is high it may never be possible to economically define an indicated ore reserve from exploration drilling.

To help decide on the optimum sample size of drill core a sampling investigation was conducted on HQ core from hole G45.

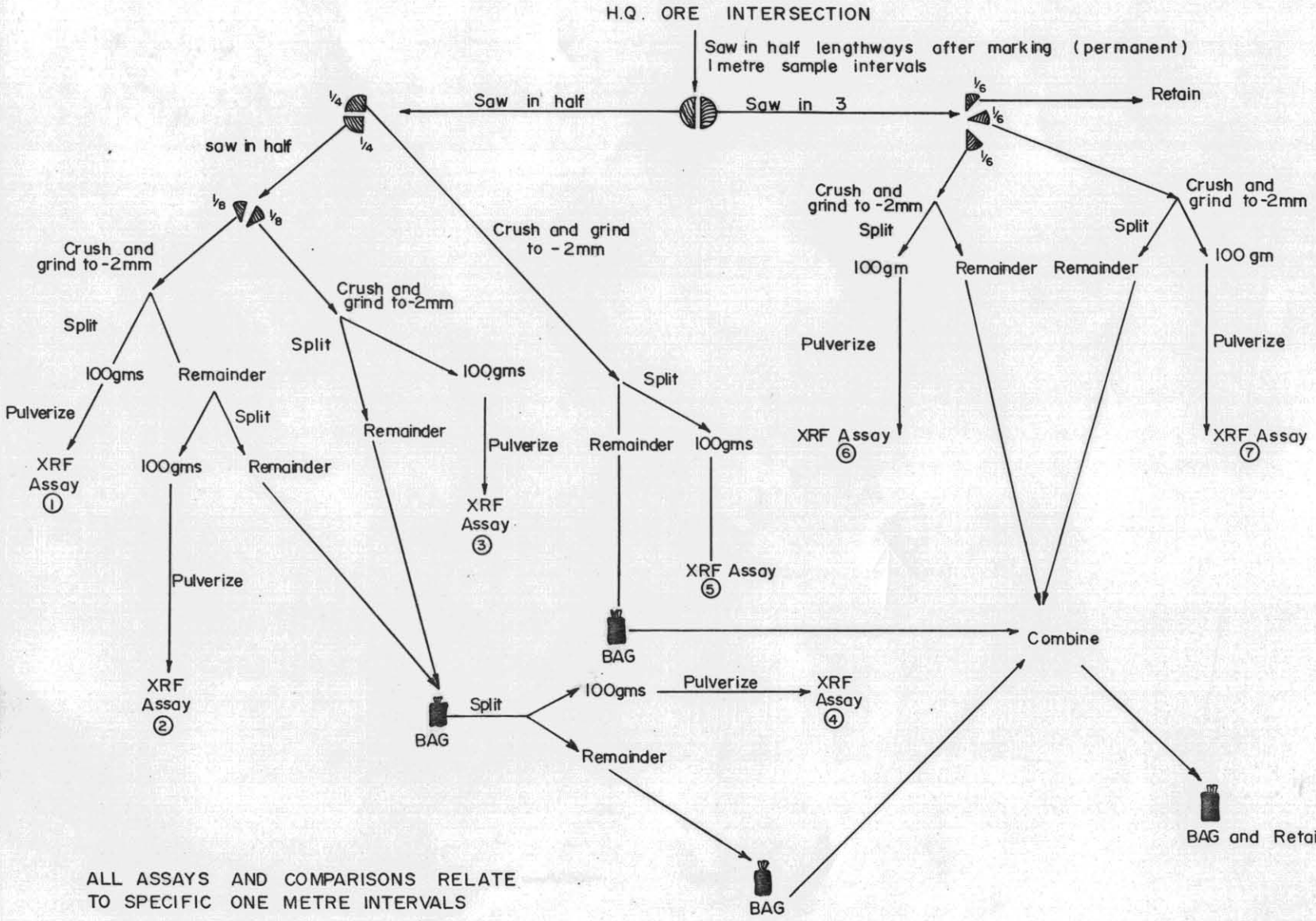
The various sawn fractions of core from the interval 184.75 - 196.75 m, i.e. samples representing 12 x 1 metre intervals were then processed according to the variance sampling flow diagram (Plate QH 143). The following modifications were made:

1. Size specification at which 100 gram split was taken

   The split was made at the first crushed residue the Aberfoyle Adelaide laboratory jaw crusher is capable of producing on a routine operating basis rather than -2 mm specified in the flow diagram. The size analysis of a typical sample of crushed residue is tabled below:

   Size Analysis of Typical Queen Hill Crushed Residue

Mesh Size (mm)	Percentage Retained
6.35 mm	1.93%
4.76 mm	7.83
1.676 mm	35.55
0.841 mm	14.71
0.420 mm	12.24
0.250 mm	4.24
0.177 mm	6.01
0.125 mm	4.68
0.074 mm	1.16
0.050 mm	2.20
0.050 mm	9.19
	99.96



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QUEEN HILL

Variance Sampling

Drawn: K.G.P.
Traced: R.J.E.
Checked:
Revised by: Date:

Location code:
Date: Aug. 1979
Scale: N.T.S.
Plate No QH 143

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2. Additional sample prepared

In addition to the samples specified in the flow diagram, a replicate aliquot of the pulverised residue of sample 1 was submitted for assay and designed Sample 1R. This should be an identical sample to sample 1 and was submitted as a measure of solely analytical variance.

Results of the programme are presented on Table 1.

The data in Table 1 was then assessed by calculating the relative percentage variance about the mean of two sets of analyses of core. The results are graphically plotted on Plate QH 149.

It was expected that the investigation would yield results which when plotted in graphical form would allow determination of the optimum core size for ore reserve drilling purposes. In such a case the comparisons between samples of the smallest core volume would yield the highest variance. In these results the smallest volume yielded the smallest variance.

It is considered that the low variance associated with the small core volume is partly a function of the nugget like distribution of the cassiterite and partly a function of the fact that the slices were from one single one quarter slice of HQ core. They were not random samples of the mineralisation.

The problem of non randomness of the samples applies to possibly all the samples. In the intermediate sample size (Samples Nos. 6 and 7) the higher variance may indicate that the two comparitive slices were not adjacent.

It is concluded that the sampling programme did not achieve the desired result. One point is clear however, the comparison of the two largest core samples (most likely to be the most representative) serves to illustrate a major problem in assessing the grade of the Queen Hill mineralisation. The average of the twelve analyses for each group of samples representing ¼ HQ core gives 0.4309% Sn for one and 0.2835% Sn for the other.

The grade quoted for G45 is selected from the interval whose average is the lowest.

G45 XRF Sn ASSAYS PPM

Drill intersection (metres)	Sample 1	Sample 1R	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7
184.75 - 185.75	390	430	380	410	440	370	430	610
185.75 - 186.75	3450	3550	3550	1850	1850	1600	1150	1050
186.75 - 187.75	630	670	510	260	360	800	410	710
187.75 - 188.75	1550	1600	1650	2700	2100	2000	1150	1800
188.75 - 189.75	2250	2250	2600	2250	2200	1500	1200	1500
189.75 - 190.75	890	910	1100	1450	1150	790	750	1100
190.75 - 191.75	1.02%	1.03%	1.08%	1.02%	1.05%	6700	1.08%	4200
191.75 - 192.75	2450	2400	2800	3600	2500	2900	5350	5200
192.75 - 193.75	1700	1700	1600	1550	1600	1150	910	1900
193.75 - 194.75	7300	7100	7400	9400	8300	7900	7700	8400
194.75 - 195.75	1.82%	1.83%	1.98%	1.93%	2.01%	7900	1.33%	9300
195.75 - 196.75	690	620	630	630	610	410	480	690

NOTE - Sample 5 is the "normal" sample on past practice and the Sample 5 results are the "official" results quoted for G45.

TABLE 1

Aberfoyle Exploration Pty Ltd

Drawn: K.G.P.
Traced: R.J.E.
Checked:
Revised by: Date:

QUEEN HILL

Relative % Variance vs Core Volume

Location code:
Date: January, 1980
Scale:
Plate No QH 149

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Such a variation shows that ¼ HQ (791cc/metre) core is inadequate for ore reserve estimation.

It is recommended that the ore reserve holes be drilled in NQ and every sample submitted for assay should be 3/4 of the core (1335cc/metre). The recommendation is based on the fact that the bigger the sample the more representative it will be.

QUEEN HILL CORE ANALYSES

In 1972, Ron Sale (Geochemist) carried out a systematic comparison of tin assays by Spectrometer Services (Emission spectrography), Amdel (XRF) and McPhar (XRF) on samples from G11 and G12. The conclusion was reached that there were sufficient misgivings about the emission spectrographic method generated by check analyses, and from discussion with informed chemists, that tin assays should be done solely by XRF.

Doubt about the spectrographic method included matrix effects, the small size and possible heterogeneity of the sample arced, and the interference effects of abnormally high copper.

Analytical techniques employed for the assays of critical holes at Queen Hill are listed below:

G1 Assays by Spectrometer Services in 1' intervals. No checks.

G3 Assays by Spectrometer Services in 1' intervals. No checks.

G4 Assays by Spectrometer Services in 1' intervals. No checks.

G6 Assays by Spectrometer Services in 1' intervals. No checks.

G11 Assayed by Spectrometer Services in 1' intervals. Amdel checks by XRF on interval 491'-505' were 1.45% Sn versus 1.52% Sn by Spectrometer Services - satisfactory result.

Random samples from G11 were also incorporated in the laboratory and method check programme instituted by R.V. Sale in early 1971.

G11 Wedge Assayed by Spectrometer Services in 1' intervals. Amdel checks by XRF on following intervals showed:

	% Sn Amdel	Spectrometer
476-480	1.30	1.61
483-488	0.27	1.06
498-504	1.10	1.36
507-515	1.71	1.60

Poor correlation 483 to 488 is possibly result of high Cu in sample 487-488 - 0.4% Cu. Any sample with high Cu is suspect in Spectrometer results (RVS pers. comm., also in files). This throws doubt on the average grade for this hole and perhaps others where there is significant Cu.

G12 Assays by Spectrometer Services in 1' intervals. Checks on composites by Amdel XRF, stannite Sn AAS and cassiterite Sn AAS as follows:

G12	Total Sn XRF	Stannite Sn AAS	Cassiterite Sn AAS	Spectrometer
580-585	1.80	0.01	1.67	1.59
592-596	0.54	0.21	0.27	0.67
599-602	3.05	0.05	2.97	3.26
611-617	6.25)	0.01	6.30)	6.13
617-622	0.29)	<0.01	0.28)	0.10
622-648	2.85) 2.39	<0.01	2.75) 2.33	3.00
648-662	0.62)	<0.01	0.57)	0.77
719-724	2.90)	<0.01	2.95)	3.08
724-728	0.29) 1.16	<0.01	0.25) 1.58	0.49
728-739	1.50)	<0.01	1.45)	1.67

Reasonable correlation at higher levels, poor comparison at levels <0.5% Sn.

G15 Assays by Spectrometer Services in 2', 3' and 4' intervals. No checks.

G18 Assays by Spectrometer Services in 3' and 4' intervals. No checks.

G22 Assays by Spectrometer Services in 3', 4' and 5' intervals. Random checks by XRF on two intervals and re assay by XRF, of pulps, reasonable correlation.

G26 XRF analyses throughout on 1 metre intervals.

The above holes will be used in the next ore reserve estimation and it is considered imperative to acquire the most reliable assays possible.

Samples from the critical holes stored in Adelaide consist of the following:

G1	Composite of pulps in paper bag
G3	Composite of pulps in paper bag
G4	Composite of pulps in paper bag
G6	Composite of pulps in paper bag
G11	146' - 467' pulps of 1' samples in paper bags
	491' - 526' pulps of 1' samples in paper bags
	491' - 526' crushed reject samples stored anaerobically in 1' intervals
G11W	460' - 488' pulps of 1' samples in paper bags
	488' - 527' pulps of 1' samples in paper bags
	460' - 488' crushed reject samples stored anaerobically in 1' intervals
G12	505' - 575' crushed reject samples stored anaerobically in 1' intervals
	578' - 744' crushed reject samples stored anaerobically in 1' intervals
	553' - 593' pulps of 1' samples in paper bags
	621' - 711' pulps of 1' samples in paper bags
	747' - 754' pulps of 1' samples in paper bags
G15	398' - 828' pulps of 2', 3', 4' samples in paper bags
	578' - 787' crushed reject samples stored anaerobically in 1' intervals
G18	458' - 497' pulps of 3', 4' samples in paper bags
G22	598' - 777' pulps of 3', 4', 5' samples in paper bags
G26	235' - 264' crushed reject samples stored anaerobically in 1 metre intervals

Recently Ron Sale did some XRF check analyses on pulverised pulps from early Queen Hill holes using Amdel and Comlabs. The results showed a fairly consistent 10% decrease in tin content over earlier Amdel XRF work. There is some suggestion that this may have resulted from oxidation in the paper bags. The conclusion is that pulverised pulps stored in paper bags should not be used in any future XRF assay programme.

As an alternative to assaying pulps, the analysis of crushed reject samples, whilst not greatly subject to errors resulting from oxidation, is nevertheless probably more erroneous than assay checks on oxidised pulps. For example if, say, 100 gm is split off for the spectrographic analysis from the original crushed sample, then depending on the mass of the original sample the crushed reject may represent anything from 10% to 90% by mass of the original sample and thus cannot be considered representative for purposes of ore reserve defenition.

Due to the possibility of disruption of the original core, oxidation of the pulps etc, there is a likelihood that further sampling and assaying by XRF would be unreliable. Thus, for the next ore reserve estimate the only values which can be practically used are those originally provided by Spectrometer Services.

There is, however, an obvious requirement to validate the spectrographic values as fully as possible. The only way this can be done is by re-sampling drill core with the attendent errors as noted above.

Only two holes; G1 and G2 are in NQ core size, all other critical holes are in BQ core size and further sampling is most unlikely to be reliable. Accordingly the ½ core residual of the G1 and G2 intersections will be sawn to provide samples for XRF analysis. Hopefully this data may help validate the original Spectroscopic values.

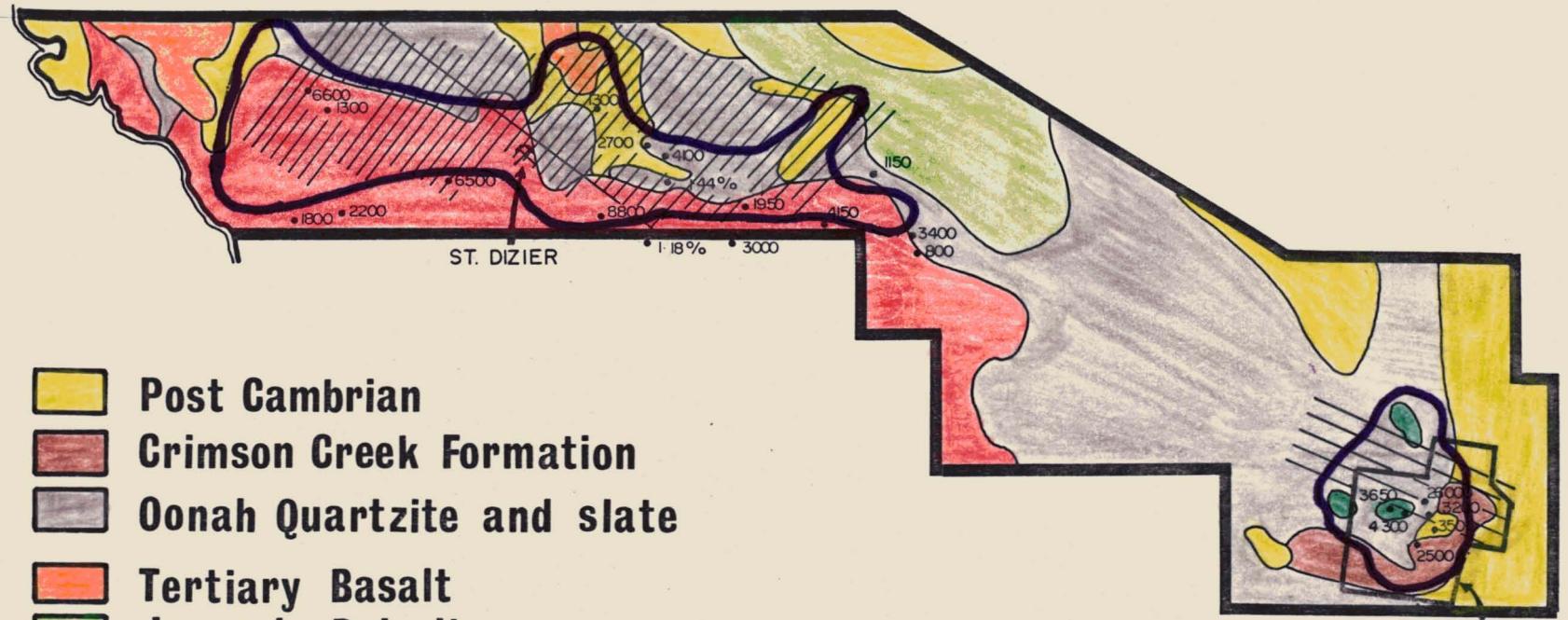
STREAM SEDIMENT SAMPLING PROGRAMME

The regional stream sediment programme was designed to assess the prospective catchment of the Heemskirk granite, which includes the St. Dizier area in the western part of the licence area.

Assay data for the elements Sn, W, Cu, Pb and Zn is plotted on 1:10,000 scale plans attached. Within the Heemskirk granite and the contact rocks in close proximity, Sn values are highly anomalous, ranging from 800 ppm to a maximum of 1.44%. These values are summarised on Plate QH 148. Initial follow-up of these anomalies is being conducted as part of the regional geological mapping programme.

E.L. 47/71

QUEEN HILL



Post Cambrian

Crimson Creek Formation

Oonah Quartzite and slate

Tertiary Basalt

Jurassic Dolerite

Devonian Granite

Cambrian Gabbro

Sn contour >100 ppm

• 1800 Stream sediment anomaly

Proposed DIGHEM flight lines

0 5 Km

5 cm

PLATE No. QH 148
Scale 1 : 125,000
Date : January, 1980

110020

REGIONAL GEOLOGICAL MAPPING PROGRAMME

Regional geological mapping of the north western part of the licence area, near the Heemskirk Granite is in progress. The mapping is being compiled at 1:10,000 scale. Ground control is based on air photos at 1:22,000 and 1:10,000 scale.

Initial assessment of the Rocky Creek area, where there are both Sn stream sediment and aeromagnetic anomalies, has indicated a sequence of pyritic shales and quartzites. Rock chip geochemical and petrological data is awaited.

In the St. Dizier area, very little exposure of magnetite skarn has been noted. Mapping is continuing.

DIGHEM SURVEY

In the Queen Hill area it is planned to conduct an orientation DIGHEM survey. The survey will consist of 5 lines, nominally 4 km long and spaced 250 metres apart. The lines will be centered on Queen Hill and extend in an approximate NW-SE orientation i.e. perpendicular to strike.

In the north-western part of the licence area, near the Heemskirk Granite contact, stream sediment anomalies require detailed follow-up. In this area there are known magnetite rich skarns within a dolomite bed near the granite contact. It is planned to cover this area with a DIGHEM survey consisting of 40 lines, 4 km long, spaced 250 metres apart. The lines will be oriented in an approximate NE-SW direction, perpendicular to the general strike.

The DIGHEM system is the most modern helicopter-borne EM system, a vast improvement over the McPhar system used in 1975.

Air photo mosaics have been prepared for flight line control and a summary plan showing the planned flight lines is enclosed. (Plate QH 148).

WORK PLANNED

The following summarises the work proposed for the licence area:

- Geological mapping of the Queen Hill grid extensions.
- Follow-up ground magnetics over the north-west anomaly and rock chip sampling of the Silver Stream area.
- Ore reserve and Exploration drilling at Queen Hill.
- Re-logging of core and reassessment of ore potential at Montana and Severn.
- Soil sampling of the favourable volcanic siltstone-dolomite contact zone.
- A comprehensive appraisal of the silver-lead vein mineralisation in the Zeehan district.

EXPENDITURE

Queen Hill Joint Venture Statement of Expenditure for the Aberfoyle quarter, Periods 9-12 (ending November 20, 1979).

Salaries and wages	$17,267
Contract drilling	132,756
other	2,220
Materials	14,375
Accommodation & Travel	6,418
Vehicles	3,019
Communications	492
Tenure & Legal	86
Equipment rent	315
Sundries	410
	177,357
Overhead @ 15%	26,604
	$203,961

REFERENCE

Young, C.H. (1979) Progress Report Queen Hill Joint Venture
E.L. 47/71 Tasmania.
Quarter to September 30, 1979.

SIGNED: _____

C.H. Young,
Project Geologist, Tasmania.

_____

K.G. Palmer,
Chief Mine Geologist.

ENDORSED: _____

K.R. Yates,
Manager - Outside Exploration.

APPENDIX A

PETROLOGICAL REPORTS

QUEEN HILL DIAMOND DRILL CORE

110025

REPORT CMS 79/9/28
REPORT CMS 79/9/40

This combined report incorporates two small batches of samples from Queen Hill submitted under order numbers 8606 and 2715, with sample numbers 138465-68, 138469 and 138476.

138 465 (P.S. 29358) G45 185m
This is a fairly massive sulphide rock, with quartz and carbonate. Sulphides include pyrite, sphalerite, galena and chalcopyrite, in approximate order of abundance (depending on choice of sample for the polished section).

Pyrite occurs as bands or beds of small, closely-packed crystals with interstitial gangue and occasional patches of sphalerite, stannite, galena. Sphalerite forms coarse masses, with minute chalcopyrite inclusions, galena patches and veinlets, and stannite masses up to several millimetres across and containing fine galena and chalcopyrite.

138 466 (T.S. 29359) G45 197.9 m
This is a siderite rock, passing into a cherty carbonaceous, pyritic siderite rock; the whole rock is diagenetically recrystallized, obliterating primary textures. Thus, the origin is not known, but is thought to be a primary chemical sediment of sideritic composition rather than, say, a limestone replaced by siderite.

The siderite rock consists simply of massive, fine-grained, interlocking patches of siderite, with textures typical of diagenetic recrystallization of a carbonate mud. It passes abruptly into a recrystallized cherty siderite rock with thin, parallel streaks of fine carbon with embedded syngenetic pyrite. This unit now consists of irregular small siderite patches with interstitial quartz (chert); it passes imperceptibly into a sideritic chert by an increase in quartz, containing fine wisps of sericite-illite.

There are occasional chert, pyrite and siderite nodules, especially at the junction of the two rock types, and are of contemporaneous origin.

The rock is cut by veins of quartz-pyrite-fibrous siderite, which are believed to be essentially re-mobilised primary rock components formed at a late diagenetic stage; the boundaries of the veins are gradational into the host-rock.

138 467 (T.S. 29360) G45 202·2 m
This is a pyritic siderite rock, with carbonaceous-pyritic laminations; it is thoroughly recrystallized, but delicate sedimentary features are well-preserved in places.

Part of the rock consists of fairly coarse, interlocking single crystals of siderite in which relict microgranular (primary) textures are preserved; there are discontinuous, thin, parallel streaks or "beds" of framboidal pyrite, originally more continuous, but disrupted during diagenetic recrystallization. Also, ultrafine syngenetic pyrite occurs throughout the siderite. There are occasional patches of quartz representing chert lenses/pellets.

This part is separated from a pyritic siderite rock by a thin bed consisting of carbonaceous matter, some recrystallized clay, and numerous thin, parallel streaks of syngenetic pyrite, clearly representing fine beds. The pyritic siderite rock on the other side (i.e. above or below) of the carbonaceous bed consists of coarse, subhedral siderite crystals with abundant interstitial and included framboidal pyrite. Diagenetic pyrite-siderite veins traverse the rock.

The textural evidence strongly suggests that the original rock consisted of fine siderite and syngenetic pyrite, finely banded (bedded), diagenetically recrystallized to the present lithology.

138 468 (T.S. 29361) G45 205·15 m
This pyritic siderite rock closely resembles 138467 in all respects; it is much more pyritic and contains only very thin carbonaceous parting-planes.

The siderite has diagenetically recrystallized to subhedral, coarse crystals with evidence of relict microgranular textures. The fine pyritic beds or laminations are closely-spaced (0.05-0.1 mm apart) and run right through the siderite crystals with little or no interruption.

The occurrence of primary sedimentary (non-clastic) siderite is well-authenticated, not only in sedimentary ironstones, but also with pyrite in the Green River Formation (evaporitic) in Wyoming. It is also formed by contemporaneous or diagenetic replacement of calcite, but it is considered that these rocks show strong evidence of primary formation.

138 469 (T.S. 29444) G45 211.0m

This is a finely-laminated, weakly pyritic dolomite rock, which passes abruptly into a strongly pyritic dolomite rock; the lithological features are closely comparable with those of 138467-68, the only difference being that in those rocks the carbonate is siderite, whereas here it is dolomite. Primary, sedimentary (non-clastic) dolomite is recorded from a number of occurrences; including the Green River Formation and modern deposits as in the Coorong, South Australia, essentially evaporite-type situations (see Deer, Howie & Zussman, "Rock Forming Minerals", vol. 5 Non-silicates, for further details).

The main portion of the rock consists principally of microcrystalline dolomite, very evenly sized (average 20-30 μ) and containing dispersed, and thin lines, of framboidal pyrite; laminations are mainly due to the distribution of pyrite, which has affected the crystallization (size) of the dolomite (generally finer in the pyritic laminae). The rock is cut by diagenetic veins of coarser dolomite; some of these contain quartz and pyrite crystals as well.

The main portion is separated from a highly pyritic lithology by a thin parting-plane of carbonaceous matter. The pyritic lithology consists of thin, closely-spaced, framboidal pyrite beds, dolomite and chert nodules, and a matrix of recrystallized dolomite. There are rare dolomite nodules containing pale sphalerite of syngenetic origin. Dolomite veinlets cut all components, including the sphalerite. The pyritic beds or streaks flow around the nodules (which are thus pene-contemporaneous).

138 476 (T.S., P.S. 29443) G45 195.75m

A thin-section was prepared of the coarse, pyritic portion of the rock; the polished section spans the contact of this rock with the finely-bedded pyrite rock.

The thin-section shows that the coarse, crudely banded rock is a pyritised, scoriaceous, volcanic glass, apparently originally a frothy lava (?flow-top), now completely silicified, but with well-preserved relict textures.

The rock now consists of microcrystalline quartz and minor sericite, in which numerous bubbles, vesicles, shards and flow-banded streaks are preserved (Photo 1, x30). Very abundant pyrite has developed throughout, as small crystals and aggregates; it was very probably introduced with the replacive quartz and sericite. The rock is cut by younger, thick veins of coarse siderite.

Minute, well-formed crystals (1-15 μ, mostly < 10 μ) are scattered through the replacive quartz; they could well be cassiterite, but this would need to be proved by electron-probe microanalysis, since, from the available observations, they could equally well be rutile. (Photo 2, x 300, showing scoriaceous lava textures, and minute crystals with high relief, in centre of picture.)

The polished section was prepared so as to include the fine pyritic rock and the coarser material, and the contact between the two types.

The fine pyritic rock is composed of small, closely-packed, evenly sized pyrite framboids set in cherty quartz; it is finely-banded and is folded; there are layers, lenses and pods of coarsely-crystalline pyrite containing undisturbed thin beds of framboids. The folding is quite intricate and suggests soft-sediment folding with minor disruption where folding was tight. There are also veins of pyrite-galena-quartz-carbonate, which are conformable in places, transgressive in others, and are thus slightly younger.

The coarser rock contains some framboidal pyrite embedded in quartz, but is mostly coarse pyrite, with associated and included patches of galena. Some of the coarse pyrite is almost certainly recrystallized framboidal material. The contact between the two rocks is sharp and is defined by veins of "fibrous" quartz.However, there is no brecciation; the break is clean, and may well represent disruption accompanying folding of a soft (i.e. semi-consolidated) sediment. The implication is that the coarse and fine pyritic lithologies are much more closely related than the macroscopic features suggest, perhaps essentially the same unit, representing pyritic muds and intercalated altered, pyritised volcanics.

H.W. Fander, M. Sc.

110029

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 1st November, 1979

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
138472
Mineralised Siderite Rock

Job No. CMS 79/10/37 Date Received: 19.10.1979

Reference Verbal request - C. Young

Sample No. 138472

Nature of Sample: D.D. Core G18 300 m

DESCRIPTION **SECTION No.** 29738

a. Hand Specimen:

Dark, coarsely-crystalline carbonate rock with sulphides.

b. Microscopic:

This is a very coarsely-crystalline siderite rock, containing ultrafine carbonaceous matter, as well as fluorite and coarser sulphides.

The dominant component is siderite, as coarse, but irregularly-shaped, interlocking crystals up to several millimetres in size; however, these large crystals contain relict textures indicating originally much finer material, very probably sedimentary, diagenetically recrystallized. Fluorite was introduced subsequently, partly replacing the siderite, as patches up to 5 mm across enclosing remnants of siderite (in optical continuity with unreplaced grains); the relict textures are partly preserved by the ultrafine carbon.

Very fine topaz (< 10 μ grains) has developed in siderite near the fluorite-sulphide patches, as perfectly-formed crystals, accompanied by small, doubly-terminated quartz crystals and an ultrafine, unidentified fibrous mineral (?tremolite); these minerals were detected by acid-treating the carbonate and examining the residue.

Sulphides introduced with fluorite, topaz and quartz include pyrrhotite, pyrite, and chalcopyrite; the pyrrhotite is severely altered to pyrite/marcasite. Minor magnetite accompanies the sulphides.

Rocks 138468, 138469. As requested, X-ray identifications were carried out to positively establish the carbonate species. 138468 is composed of siderite; 138469 consists of dolomite. Both carbonates are regarded as primary, i.e. as non-clastic sediments, as mentioned in the previous report.

H.W. Fander, M. Sc.

REPORT CMS 79/11/13

Queen Hill Drill Core Samples 230504 - 230510

Seven core samples were received and were thin-sectioned and petrologically described.

G46 236.35 m

230 504 (T.S. 29873) K-feldspar stain test negative.
Two volcanic rocks occur in this specimen; one is a lava, the other a tuff, and they are separated by a zone or vein of carbonate.

The lava is highly scoriaceous and may well represent a flow-top (with overlying tuff); it is thoroughly altered, with argillised feldspar phenocrysts, and may well have been of andesitic composition. Fine, radiating quench-textures are preserved, and the irregular, interconnected amygdales are filled with quartz and sericite.

The tuff consists of silicified fragments of pumice and lava (?andesite, as above), and may have been welded; its original composition is not known. It resembles the tuffs previously described.

The intervening zone probably represents both rock types, extensively replaced by carbonate and opaline silica, with patches of mosaic quartz and carbonaceous matter (hard, dense black materialresembling anthracite). There are dendrites of dense white ?clay pigmented with leucoxene, and irregular patches of chalcedony. The carbonate is probably siderite.

230 505 (T.S. 29874) G46 249.7 m
This is a pyritic dolomite rock or dolostone, and is autobrecciated (i.e. brecciated prior to lithification); it is regarded as essentially of chemical formation, and is unrelated to 230 504.

The rock consists chiefly of microcrystalline dolomite, distinctly layered and with variable grainsize and pyrite content; in fact, the more pyritic layers are finer-grained, probably because the pyrite acted as nuclei for the crystallization of many, but small dolomite crystals during diagenesis. Pyrite-free layers are distinctly coarser. Some layers contain pyrite in the form of lenses or diffuse patches of very fine, framboidal grains. The layers were fragmented before lithification, so that there are pyrite-rich patches and slabs incorporated in coarser, non-pyritic dolomite. In addition, the whole rock is cut by diagenetic dolomite veins. Ptygmatic veinlets of quartz and pyrite also traverse the rock.

230 506 (T.S. 29875) G46 273.8 m
A strongly banded rock, with alternating layers of tuff and carbonaceous siltstone/shale; there is good graded bedding and facings can be determined, but the specimen itself is not orientated, and thus the facing cannot be interpreted.

The siltstone/shale bands consist of clay, fine quartz, carbonaceous matter and pyrite; the tuff bands are composed of altered lithic and vitric fragments, intercalated carbonaceous shale, and pyrite. Some of the pyrite is very probably syngenetic, some is recrystallized and some may be introduced (or perhaps migrated during diagenesis).

The lithology is one of subaqueously deposited rocks in a reducing environment; the silt/shale bands could be tuffaceous, but are not recognisable as such, i.e. they could be fine ash, alternating with coarser tuff. Very little coarser quartz occurs, suggesting an "intermediate" volcanic source, but this is speculative.

230 507 (T.S. 29876) G48 181.4 m
This is an autobrecciated carbonaceous dolomite with minor pyrite; it is cut by younger, post-lithification quartz-dolomite veins.

The rock consists of small and large (0.2 mm - 5.0 mm), angular, sub-angular and subrounded fragments of microcrystalline dolomite (average grainsize is 0.05 mm), containing wisps and grains of carbon; the fragments are separated by fine dolomite intergrown with carbonaceous matter. Alternatively, this fabric can be described as microcrystalline dolomite penetrated by a network of fine carbonaceous veinlets. In either case, the formation of the fabric occurred before lithification and was accompanied by minor displacement/rotation of fragments.

The rock is cut by straight veins of coarse euhedral quartz and dolomite, younger than the autobrecciation.

This rock may be correlated with 230 505, both in terms of its composition and its formation, though it is carbonaceous rather than pyritic.

230 508 (T.S. 29877) G49 130.1 m
This is a very well-mineralised carbonate rock with fluorite and sulphides; relationships between the various minerals are somewhat confused and are far from clear.

The main mineral present is coarsely-crystalline sideritic carbonate, as interlocking plates which may have formed from smaller grains, though the evidence is much more nebulous than in previous samples. Some plates are densely crowded with fine, pale cassiterite crystals (5-40 μ), and vein-like zones of such composites occur; these appear pinkish-brown in hand specimen. More complex patches are also present in which colourless fluorite forms the host, with fine carbonate and cassiterite inclusions. The cassiterite-rich "zones" do not appear to be related to any other feature, but are cut by various veins of quartz, sericite,

and sulphides; some of these contain a dark, microgranular, (?manganiferous) carbonate. Small sphalerite grains are seen.

The evidence from this rock suggests that the original rock may have been a pyritic, carbonaceous dolomite (i.e. similar to 230505, 230507), which was sideritised and mineralised; the alternative interpretation is that the cassiterite was syngenetic in the original carbonate rock, which was recrystallized and veined to its present form.

230 509 (T.S. 29878) G49 134.5 m
This is a well-mineralised, extensively metasomatised (replaced) rock, whose present mineral assemblage is broadly similar to that of 230508.

Little of the original rock has survived, but relict patches suggest that it was a cherty mudstone or argillaceous chert; there are vague intergrowths of fine quartz and illite-sericite. Throughout the rock, shapeless patches of ultrafine quartz/fluorite intergrowths have replaced the original rock, and parts of the rock consist of large interlocking, poikiloblastic crystals of siderite, which appears to be younger than the fluorite/quartz (but may be more or less contemporaneous).

Cassiterite occurs throughout the rock as small subhedral to euhedral pale crystals (5-50 μ), and also inzones of densely clustered crystals; the textural relationships suggest that cassiterite was introduced early, probably as the first metasomatic mineral, followed by fluorite, quartz and siderite; it is embedded in all these. The distribution of the cassiterite is not specifically related to that of any of the other introduced minerals. Pyrite veins cut the rock.

The petrological evidence in this rock and the previous one, taken as a whole, suggests a Renison- or Cleveland-style metasomatic-hydrothermal mineralisation of favourable beds (chemical sediments, mainly carbonates, and ?volcanics).

230 510 (T.S. 29879) G49 138.4 m
This is a quartz-siderite rock with scattered minor sulphides and cassiterite.

Much of the quartz is microcrystalline, and it is believed that the original rock was an impure chert with minor clay (now sericite), which was partly replaced by siderite; the sulphides (sphalerite, galena, pyrite/pyrrhotite, ?chalcopyrite) in turn seem to replace the carbonate.

The cassiterite occurs as small rounded to euhedral crystals (5-50 μ), scattered fairly randomly through the rock, singly and in small clusters, embedded in all other minerals, but not preferentially in any one mineral; the inference is that it was introduced at an early stage, followed by carbonate and sulphides. It is believed that, if the original rock was a chert, it would have been fairly unreactive and impenetrable, hence less well-mineralised by cassiterite than a carbonate rock or argillite. The sulphides are closely associated with the siderite, indicating a later phase of (probably) low-temperature/ lower energy mineralisation. Perhaps the whole style of mineralisation is marginal to a more intense phase.

H.W. Fander, M. Sc.

110034

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 28th November, 1979

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
138 885
Autobrecciated Pyritic Chert

Job No. CMS 79/11/19 Date Received: 15.11.1979

Order No. 2741

Sample No. 138885

Nature of Sample: D.D. Core G46 249.15 m

DESCRIPTION **SECTION No.** 29909

a. Hand Specimen:

Dark, fine-grained, siliceous pyritic rock.

b. Microscopic:

This is a brecciated, extensively recrystallized pyritic chert, in contact with an argillite; textural features suggest that it may have been brecciated prior to lithification (cp. autobrecciated dolomites).

Relict angular fragments of ultrafine chert occur in places; the rock was evidently finely laminated, with thin, closely-spaced pyrite layers. The fragments are fairly haphazardly set in clear, microcrystalline quartz with fine pyrite. There are large masses of dense pyrite with embedded chert layers. Elsewhere, pyrite bands are intergrown with coarser quartz.

It is evident that the rock was squeezed and deformed whilst still "plastic"; the silica recrystallized at an early stage to mosaic quartz (and fibrous chalcedony in places), whereas the pyrite retained much of its primary character. It consists of minute crystals and framboids, as single crystals (1 μ upwards) and framboids (5-50 μ, average 25 μ), and larger, coalesced masses; recrystallization was minimal, no more than would be expected during diagenesis.

Irregular, replacive carbonate crystals occur sporadically and sparingly.

The argillite is also contorted and deformed; only a very thin band occurs along the edge of the specimen.

H.W. Fander, M. Sc.

110035

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 28th November, 1979

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
230 511
Quartz-Siderite-Pyrite Rock

Job No. CMS 79/11/19 Date Received: 15.11. 1979

Reference Order No. 2741

Sample No. 230511

Nature of Sample: D.D. Core G46 269.05 m

DESCRIPTION **SECTION No.** 29910

a. Hand Specimen:

Dark carbonate rock with coarse pyrite.

b. Microscopic:

This is a fairly coarsely-crystalline quartz-siderite-pyrite rock; the evidence suggests that it formed partly from a carbonaceous, argillaceous chert or similar rock.

The main component is quartz, as haphazardly distributed and randomly-orientated euhedral crystals, generally containing abundant small carbonaceous inclusions; some are orientated, and stylolitic carbonaceous veins are also included, and are all features inherited from the primary rock. Some quartz crystals contain matted-fibrous crystals of a mineral too fine to identify (possibly apatite). There are wisps and contorted lenses of dark, carbonaceous clay, and aggregates of sericite; coarsely-crystalline siderite is common and, like the quartz, contains carbonaceous inclusions.

The major sulphide is pyrite, as generally relatively coarse, euhedral crystals, singly and in clusters forming veinlike masses and shapeless clumps. Traces of fine (< 50 μ) pyrrhotite and chalcopyrite are seen. The pyrite may have formed from syngenetic pyrite by recrystallization, but there is no actual evidence of this. No cassiterite was seen.

The rock formed partly from the pre-existing (presumed pyritic, carbonaceous, argillaceous chert) rock and partly from minerals introduced metasomatically-hydrothermally.

H.W. Fander, M. Sc.

REPORT CMS 79/11/29

Queen Hill Core Samples 230514 - 230518

Five drill core samples were received for petrology; thin and polished sections were prepared and are described below.

230 514 (G 4 / 58.5 m) (T.S., P.S. 29948)

This sample now consists dominantly of massive, coarse siderite, as interlocking crystals, with pyrite; however, there is reasonable evidence that it has largely replaced a pre-existing rock thought to have been volcanic, possibly pyroclastic and resembling previously described silicified tuffs.

Small relict patches of quartz with circular (?vesicular) textures and fine leucoxene (white - cp. previous rocks, e.g. 230504 and others) are embedded in siderite, but occur very sporadically; small quartz crystals and grains are common and probably represent other remnants of the silicified rock.

Cloudy small cassiterite crystals are scattered through the rock; a few are up to 100 μ in length, but most are granular and < 30 μ across; they are embedded in siderite and thus presumably pre-date that mineral.

Pyrite is the main sulphide, as small and large euhedral crystals, distinctly anisotropic (suggesting low-temperature formation), with associated and included traces of fine chalcopyrite and galena. Rutile was also identified in polished section.

230 515 (G 13 / 197.5 m) (T.S., P.S. 29949)

The generally banded fabric of this rock, and the absence of relict minerals/textures, suggest that it is in fact a vein. Cassiterite is relatively abundant, but is fine-grained, cloudy and generally poorly-defined.

The major components are siderite, fluorite, and illite-sericite, with pyrite, quartz veinlets and cassiterite. The major minerals occur as crude, more or less subparallel bands; interlocking, fairly coarse siderite forms the bulk of the rock, with irregular small patches of colourless fluorite and aggregates of fine illite also forming more or less continuous, thinner bands. Quartz forms veins and occasional strongly banded cavity-fillings with chalcedony and fine carbonate.

The cassiterite occurs fairly haphazardly, as individual small crystals (< 50 μ) and aggregates/clusters, in siderite, fluorite and illite-sericite, though dominantly in siderite. Some of the clusters are quite extensive, forming zones of crystal-swarms, which appear to pre-date the other minerals.

Euhedral, anisotropic pyrite is the dominant sulphide; traces of pyrrhotite and chalcopyrite also occur, andpatches of stannite up to 300 μ across are associated with pyrite, embedded in siderite.

230 516 (G 51B / 230.3 m) (T.S., P.S. 29950)

This is a quartzose, pyritic rock with few relict features, but in places there are vague textures suggestive of a volcanic, probably tuffaceous derivation, with a bedded fabric.

The rock now consists of microcrystalline quartz, abundant granular to euhedral pyrite, and patches of ultrafine, matted-fibrous, pale tourmaline; small, colourless fluorite patches are interspersed, and there are aggregates of a ?phosphate mineral. Isolated small (< 20 μ) cassiterite crystals were detected. The vague vesicular textures preserved in quartz are accentuated by ultrafine leucoxene pigmentation.

Pyrite forms featureless patches of subhedral crystals, occasionally containing < 20 μ chalcopyrite inclusions. Rutile is relatively conspicuous and is an opaque variety (hence not identified in thin-section).

230 517 (G 51B / 240.2 m) (T.S., P.S. 29951)

This is a mineralised quartz-sericite rock, with minor pyrite and fluorite; there is little real indication of its origin, but vague bedding and clastic textures suggest a possible pyroclastic derivation, taking into account the present composition.

The main components are pseudomorphous and irregular aggregates of fine sericite and microcrystalline quartz, both separate and intergrown; these aggregates are bedded, and could represent altered volcanic material. Fluorite and apatite patches are randomly scattered through the rock, and small euhedral pyrite crystals occur sporadically.

Cassiterite is well-defined, as good euhedral crystals, 5 μ to 80 μ in size, as individuals and clusters, forming vague zones more or less along the general bedding-orientation; the cassiterite is unrelated to the younger siderite-quartz veinlets, though these also tend to run more or less in the same orientation. It would seem that cassiterite, pyrite, fluorite and apatite were introduced when the rock was sericitised.

In polished section it is seen that some of the cassiterite is associated and intergrown with rutile. Pyrite occurs as scattered small crystals showing zonal growth-textures; no other sulphides were seen.

230 518 (G 51B / 242.1 m) (T.S., P.S. 29952)

The spherical to ovoid textures shown by pyrite are almost certainly pseudomorphous, but there is no indication that they represent vesicle-fillings; whilst this is a logical and feasible interpretation, other possibilities (such as nodular textures) cannot be ruled out.

The rock consists of quartz, pyrite and siderite; the pyrite forms well-defined, ovoid, granular patches, and some of the quartz also shows vague spherical-ovoid development, though most is finely and randomly intergrown with siderite; in places, there are quartz-apatite intergrowths. The rock is cut by wide and narrow veins of siderite.

Cassiterite is present in traces only, as < 20 μ grains, sparsely scattered through the rock, cloudy and poorly-defined.

The pyrite patches consist of aggregates of small granular crystals; these are distinctly anisotropic, but otherwise devoid of relict textures or other features. Anisotropic pyrite is commonly seen in low-temperature situations and is due to lattice defects (non-stoichiometric composition) or to the presence of other ions (e.g. As). Thus, anisotropic pyrite tends to support a low-temperature hydrothermal formation, explaining the generally poor, fine-grained development of the cassiterite.

H.W. Fander, M. Sc.

REPORT CMS 79/12/24

Queen Hill Samples 138886 - 138891

The six drill core samples received were all examined in thin- and polished section and are described below.

138 886 (T.S., P.S. 30333) G 49 150.3 m
This is a siliceous, pyritic rock composed of various forms of SiO_2 and pyrite cr-ystals; it shows virtually no relict features and there are no indications of volcanic material.

Much of the rock consists of microcrystalline quartz typical of cherts, and the whole rock may in fact be a chert breccia, even though breccia fabric is vague, because the other forms of SiO_2 have obliterated any relict features. Evidently, there were open cavities at some stage and were filled with fibrous-radiating chalcedony; patches of clear mosaic quartz also occur. Matted masses of exceedingly fine, fibrous ?apatite are present in the microcrystalline quartz.

Pyrite has formed as individual euhedral crystals and as larger masses; no other sulphides were seen. Minor fracturing has occurred, with introduction of quartz veinlets carrying carbonaceous material. No cassiterite was detected.

138 887 (T.S., P.S. 30334) G53 257.0 m
This is a well-mineralised, finely--banded rock of obscure origin; it is thoroughly altered, and it is difficult to distinguish primary and introduced components.

The fine banding is believed to be primary (i.e. inherited from the primary rock) and, in broad terms, this suggests a sedimentary origin; the indications are that the rock may hav-e been a chloritic shale. Most of the chlorite is now incorporated in patches of siderite, but small patches occur and consist of pale chlorite flakes with fine carbonaceous matter and numerous cassiterite crystals (1-15 μ), as well as small pyrite lenses.

The main minerals present are interlocking patches and lenses of siderite, and streaks or discontinuous layers of fine pyrite, with interspersed irregular patches of colourless fluorite. Small cassiterite crystals, seldom exceeding 30 μ (except for clusters up to 50-60 μ) and mostly 10-20 μ, are embedded in the siderite and the fluorite. The cassiterite tends to occur as thin stringers parallel to the banding (?bedding) in which the grains are closely-packed; these streaks or stringers continue through (and are incorporated in) the siderite, inferring that the cassiterite formed prior to siderite.

The rock is cut by pyrite veins, and by clear quartz flanked by carbonate (siderite), which is probably recrystallized.

Textural relationships indicate that cassiterite formed early in a chloritic, carbonaceous shale host, and it is not inconceivable that it may have been syngenetic; fluorite and siderite largely replaced the host rock. Much of the pyrite was also of early (?syngenetic) formation, but the veins are clearly younger; they also contain traces of chalcopyrite.

138 888 (T.S., P.S. 30335) G53 258.0 m
This is a well-mineralised quartz-carbonate-pyrite rock, with little evidence of the nature of the original material replaced by the present assemblage. However, the rock appears to have been a black carbonaceous dolomite (or even shale, but less likely).

The textural evidence suggests that the original rock was perhaps a carbonaceous dolomite with black carbonaceous shale intercalations; the rock was brecciated, the more massive dolomite yielding competently, producing angular fragments, and the shaly bands, being incompetent, yielding plastically and producing deformed, contorted streaks of black material. These are embedded in an intergrowth of normal vein quartz (i.e. with normal optical properties), coarse siderite, and pyrite.

Cassiterite occurs sporadically, in siderite and to a small extent in quartz, as very small (< 30 μ), but generally well-formed crystals; though patchily distributed, the patches tend to consist of swarms of small crystals, loosely clustered and comprising very numerous individuals. The occurrence of cassiterite as inclusions indicates that it was already present when they formed and was thus inherited.

The pyrite in the intergrowths forming the host is euhedral and is intergrown with pyrrhotite (mostly pyritised) and traces of chalcopyrite; it contains cassiterite inclusions, whereas the pyrite, which conforms with the banding (in relict rock fragments), is devoid of cassiterite. The polished section also shows a layered/banded distribution of cassiterite, as in 138 887.

138 889 (T.S., P.S. 30336) G53 260.5 m
This well-mineralised rock is extensively altered and modified, making interpretation difficult; it is believed to have been a chert originally, successively brecciated, mineralised, metasomatised.

Portion of the specimen consists of faintly bedded, recrystallized chert with siderite patches and rhombs. It was brecciated, and cut by zones or veins of fine, pale chlorite with associated apatite and tourmaline needles, and carrying numerous small cassiterite crystals. These veins were subsequently extensively replaced by siderite and pyrite-pyrrhotite. Coarse quartz veins also formed at some stage, but their exact paragenesis is not known. Younger pyrite-siderite veinlets cut the whole rock.

Cassiterite is virtually confined to the chloritic zones, occurring as granular to euhedral crystals up to 80 μ in size, but generally < 40 μ, embedded in chlorite and in the replacive minerals.

The pyrrhotite forms coarse patches of stressed, granular aggregates, partly pyritised, full of silicate inclusions and cassiterite, as well as being intergrown with siderite.

138 890 (T.S., P.S. 30337) G45 194.3 m
This rock resembles 138 886, and also appears to contain no cassiterite; evidence of the chert origin is clearer than in the other rock.

The major component is microcrystalline quartz, typical of crystallized chert, with patchesof slightly coarser quartz associated with carbonaceous matter; there are also irregular patches of zonally developed fibrous chalcedony, which merge into the remainder of the rock; it is believed that the chert was disturbed before lithification (ie. probably whilst in gel form), and then crystallized, in patches, to fibrous chalcedony. This mechanism of partial fluidisation and cr-ystallization best explains the various textures present.

Pyrite, in massive form and as euhedral crystals, occurs with vein quartz, fibrous-matted, ultrafine apatite and traces of fine carbonate, representing a younger phase, perhaps closely following the fluidisation-crystallization of the host rock. Other sulphides are associated with these pyrite-quartz veins and include stannite, chalcopyrite, galena, and tetrahedrite, generally as small inclusions in pyrite.

138 891 (T.S., P.S. 30338) G47 400.9 m
This mineralised, vein-type rock shows marked concentric zoning, which can be regarded as crustiform banding; this fabric, combined with the mineral assemblage, suggests the vein-type origin.

The overall greenish colour of the rock is due to small patches and zones of ultrafine, matted-fibrous tourmaline; this type of tourmaline seems to be associated with a low-energy situation, where coarser, well-defined crystals could not form, i.e. low-temperature hydrothermal formation. The tourmaline is impregnated with, and embedded in, interlocking patches of siderite (which thus acquires a greenish colour) forming bulbous masses and concentric zones alternating with sulphide zones. Quartz-sulphide veins cut the rock, and are themselves cut by younger quartz veins and chlorite veinlets.

Shreds and bands of fine carbonaceous/?dolomitic material are embedded in the minerals described above and represent fragments of black shale and carbonaceous dolomite, probably a breccia in which the vein-material formed.

The cassiterite is granular, cloudy, poorly-defined and fine-grained, suggesting formation under low-energy conditions. Grains range from < 3 μ to about 30 μ in size, and are closely associated with sulphides, especially arsenopyrite, and also with the carbonaceous rock fragments; this may be significant and suggests that cassiterite was already present in the rock fragments before being incorporated in the vein, or that it was deposited in/on the fragments at an early stage in the veining process.

Apart from euhedral pyrite and arsenopyrite, the rock also contains traces of chalcopyrite in association. The pyrite contains inclusions of cassiterite incorporated during formation. It is interesting to observe that pyrite and arsenopyrite are not directly associated, and arsenopyrite may have formed earlier, perhaps in association with cassiterite.

H.W. Fander, M. Sc.

APPENDIX B

QUEEN HILL

DIAMOND DRILL LOGS

AND ASSAY DATA

Cominco

DRILL HOLE RECORD

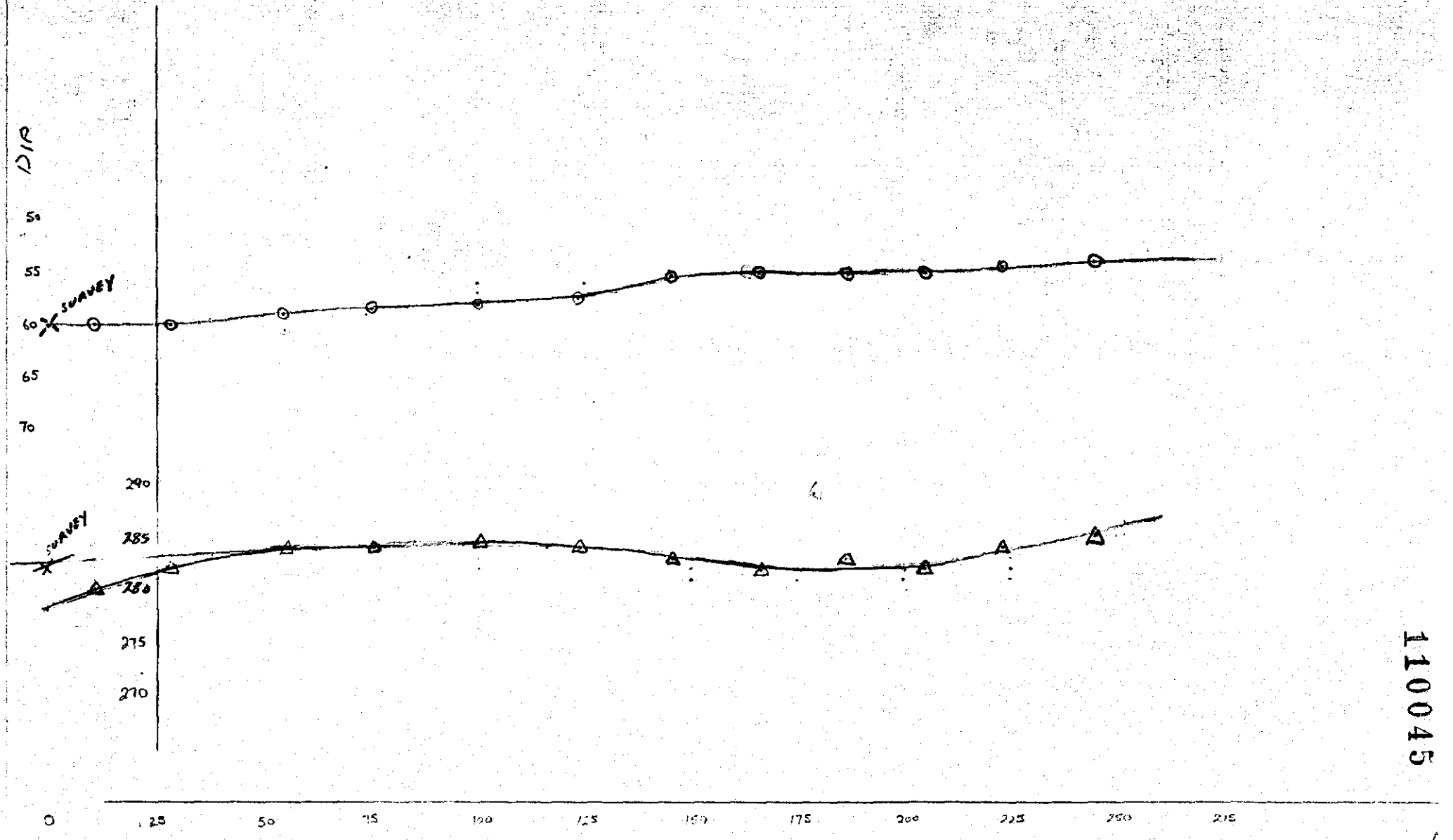
Location QUEEN HILL | Property E.L. 47/71 | District TASMANIA | Alt./R.L. 272.56 | Hole No G45

Commenced 3-9-79 | Completed 21-9-79 | Core size HQ | Co-ordinate 1752N 806E | Date 23.9.79

Objective TO DEFINE ORE RESERVE POTENTIAL SECTION 3060, 80 RL. | % Recovery 97.8% | Bearing (M) 283° | Grid bearing (M) -11.25° | Logged C.H. YOUNG | Dip -60°

SURVEY DATA				GRAPH DERIVED DATA						REMARKS
DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE	DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE	FOLLOWING CAMERA CALIBRATION CORRECTED BEARING:-
0	59°51'	282.25	SURVEYOR	0	60	282.25	1755.03	802.89	272.56	282.25
10m	60°	280°	EASTMAN SINGLE SHOT	25	60	281.5	1760.42	791.12	250.91	286.5
28m	60°	282°	"	50	59	284	1766.55	780.02	229.37	289
55.4m	59.5°	284°	"	75	58.5	284.25	1773.12	768.83	208.00	289.25
76m	58.5°	284°	"	100	58	284.5	1779.82	757.51	186.74	289.5
100.4m	58°	284.5°	"	125	57	284	1786.64	745.94	165.65	289
124m	57.5°	284°	"	150	55.25	283	1793.60	733.88	144.89	288.5
145.4m	55.5°	283°	"	175	55	282	1800.58	721.42	124.38	287.5
166m	55°	282°	"	200	55	282	1807.48	708.84	103.90	287.5
187m	55°	283°	"	225	54.5	284	1814.64	696.32	83.48	289.5
220m	55.5°	284°	"	250	54	286	1822.32	683.90	63.19	291.5
240m	56°	285°	"	257.95	54	286.25	1824.88	679.96	56.72	291.75
STOPPED HOLE		257.95								

110044


DIP
50
55
60
65
70
SURVEY
290
285
280
275
270
SURVEY
0
25
50
75
100
125
150
175
200
225
250
275
ALTITUDE
DIP
AZIMUTH

1100457

G45

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

SAMPLE 5. PAGE 1 OF 5

PROGRAM PROGRAMMER DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
645	173·75										
	174·75	1450	<5	30	3700	40		1·0			138401
	175·75	630	<5	85	25500	75		2·5			407
	176·75	1550	<5	50	80	46		1·5			408
	177·75	700	150	350	125	240		4·0			409
	178·75	1100	<5	155	80	60		3·0			410
	179·75	580	<5	80	80	70		2·0			411
	180·75	750	195	405	65	65		5·0			412
	181·75	750	5	65	105	85		2·0			413
	182·75	550	<5	40	155	45		2·0			414
	183·75	30	<5	25	175	35		2·0			415
	184·75	780	5	30	20	155		1·0			138416

110046

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

SAMPLE 5

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G45	184·75										
	185·75	370	<5	25	30	60		2·5			138402
	186·75	1600	800	1300	365	1150		26·0			138512
	187·75	800	320	590	195	100		4·0			317
	188·75	2000	520	1700	540000	3550		86·0			322
	189·75	1550	650	1265	855	540		10·0			330
	190·75	790	35	20	200	115		1·5			335
	191·75	6700	15	20	25	100		5·0			340
	192·75	2900	15	30	70	115		5·0			345
	193·75	1150	15	75	35	305		4·0			350
	194·75	7900	2800	7500	650	2400		205·0			355
	195·75	7900	150	955	225000	2120		135·0			360
	196·75	410	25	155	140	900		75·0			365
	197·75	135	40	25	40	170		9·0			370
	198·75	80	<5	5	30	45		1·0			375
	199·75	40	20	10	100	65		1·5			380
	200·75	115	20	30	1130	1020		11·0			385
	201·75	200	20	15	70	130		6·0			390
	202·75	120	<5	30	70	315		15·0			138395

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

SAMPLE 5

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD	SAMPLE No.
G45	202·75									
	203·75	32	<5	30	30	210		15·5		138400
	204·75	24	<5	20	60	150		11·0		138421
	205·75	200	<5	25	80	190		12·5		138327
	206·75	80	<5	30	150	305		15·5		138553
	207·75	65	<5	35	340	575		19·0		138558
	208·75	48	<5	15	30	150		7·5		138563
	209·75	200	<5	15	45	40		<1·0		138568
	210·75	10	<5	10	3900	725		2·0		138573
	211·75	4	<5	35	315	220		2·5		138578
	212·75	10	<5	15	215	270		2·5		138583
	213·75	12	<5	15	30	295		3·5		138588
	214·75	16	<5	25	470	410		6·5		138593
	215·75	40	<5	30	1070	500		8·0		138598
	216·75	110	<5	25	1500	710		5·0		211877
	217·75	20	<5	10	815	185		1·0		211882
	218·75	22	<5	15	120	675		3·0		211887
	219·75	22	<5	60	2300	1050		4·0		211892
	220·75	36	<5	20	55	350		5·0		211897
	221·75	140	<5	15	170	375		2·5		211902

110048

Note: Intervals not analysed should be recorded -such that a complete hole is itemised.
For any section not analysed, a value -5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
S45	221·75										
	222·75		75	<5	20	280	310	4·5			211907
	223·75		110	<5	30	170	425	9·5			211912
	224·75		250	<5	45	820	1760	15·5			211917

1100449

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G45	224·90										
	226·00		70	15	40	7350	1380		8·5		211924
	227·00		90	<5	15	200	340		4·0		211923
	228·00		60	<5	10	30	70		<1·0		211924
	229·00		40	15	5	35	60		<1·0		211925
	230·00		32	25	30	5800	2100		7·0		211926
	231·00		60	55	25	1500	700		5·5		211927
	232·00	9000		55	40	105	395		2·5		211928
	233·00	100		5	25	45	175		5·5		211929
	234·00	140		40	20	45	90		3·0		211930
	235·00	70		20	30	25	155		9·5		211931
	236·00	260		25	25	60	175		8·0		211932
	237·00	105		<5	20	590	640		5·0		211933
	238·00	34		<5	10	1330	970		0·0		211934
	239·00	26		<5	35	20	640		9·0		211935
	240·00	2500		<5	30	10	175		7·0		211936
	241·00	9600		40	125	290	650		4·0		211937
	242·00	2600		45	125	250	310		3·5		211938
	243·00	38		15	45	160	95		<1·0		211939
	244·00	240		15	50	1300	325		1·5		211940

110050

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº G45 Page Nº 1.

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

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

110051

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
0.75		Q Light grey fine to medium grained locally micaceous quartzite. The rock varys from massive to well bedded. Minor, grey coloured siltstone bands to 10cm are noted.	BROKEN CORE						Pyrite rare to absent.
0.50		Bedding: 3.6m. 40° C.A.							
0.30	5.0	7.7m 45° C.A.							
0.10		10.0m 45° C.A.							
1.1		17.2m 25° C.A.							
		15.1m 45° C.A.							
		22.6m 50° C.A.							
		Fractures generally at 10°-30° to C.A.							
		Cleavage 10.1m sub parallel to C.A.							
1.6	8.2	10.4m 10° to C.A.							
		Light grey medium grained quartzite as above. In this unit are a few angular pebbles of fine grained quartzite							
1.0	9.8 10.0	Light grey quartzite as above 8.2m.							
1.0									
0.40									
1.9	12.3								
0.2		Grey to dark grey medium grained quartzite							
1.40		13.8-14.0m the rock is locally silicified.							
0.10	15.0	When dark grey, the rock has a mottled appearance, possibly due to tourmaline?							
0.8									
0.6		Siltstone beds. 22.6-22.9m							
2.2		25.2-25.4m							
								18.7	Pyrite 1-3% as fine veins (to 2mm) and as fracture film coatings.
2.9	20.0							20.8	Pyrite 3-5% as veins and breccia matrix. generally 1-3mm wide. Galena 2-3% locally 20% as breccia-vein to 2cm
2.0								22.6	Pyrite trace only.
1.4	25.0								

5 cm

ABERFOYLE DIAMOND DRILL LOG HOLE No G45 Page No 2

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization 10052 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
0.60		Grey to dark grey Quartzite as above. Siltstone, shale beds become more frequent towards the contact at 34.2 m.							Pyrite trace as above.
1.0		Siltstone 27.0 – 28.2 m. 29.5 – 29.9 m 30.4 – 31.8 m.							
2.6	30	Bedding in siltstone 28.0 m 35° CA. 31.6 m 40° CA.							
2.6		31.5 – 32.2 m irregular quartz veins and minor brecciation near fault zone.							
1.0		34.0 m bedding 85° to core axis. CONTACT 50° CA.							
3.1	34.2 35	DS Dark grey to black shale with grey quartzite beds up to 10cm. Average 1 cm. Fine white mica is developed in the shales indicating the formation of slate. The quartzite beds are thinly laminated reflecting quiet good bedding but are strongly contorted and broken due to soft sediment deformation. Occasionally brecciated due to faulting. 34.2 m is also the first appearance of contorted quartzite beds. Bedding is at various core angles representing small scale folding and soft sediment deformation features. Cleavage tends to parallel bedding.							
3.0	40							39.2	10m Py 5 as minor veins and disseminations.
3.0								40.9	2 cm Py 10 associated with minor quartz/carbonate vein.
3.0	45							42.4	1 cm oper sol. cavity with calcite crystals
								43.0	1cm Py 15 associated with carb.
								42.4	vein. Minor fault zone. Pyrite 1-2 as minor veinlets and small aggregates representing deformed syngenetic horizons.
								45.5	Pyrite trace only.
3.0								48.9 m	Pyrite 1-2% as above 45.5m (1cm Py 30, syngenetic bed at 48.9 m)
	50							49.75	8mm carb vein with Pyrite 10.

5 cm

ABERFOYLE DIAMOND DRILL LOG HOLE No G45 Page No 3

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault, Vein; c carbonate, q quartz

Mineralization 110053

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Grey to black shales and slates with grey quartzite beds to 3 cm, (contorted) as above.							Pyrite 1-2% as above.
		51.5 – 52.4 The rock is highly contorted possibly due to tectonic activity (faulting etc) Similarly from 54.0 to 55.5 m. Numerous small (2-3 mm) quartz veinlets are also common.						51.7 m.	1 cm Py 30. Large fragment of syngenetic pyrite. disrupted bed.
3.05								54.0.	Pyrite 2-3% as small veins and dissemenations some disrupted beds.
	55							55.1	1 cm Pyrite 20, Galena 10 vein. Fr. Siderite 45° to C.A.
								56.2.	3 mm Siderite veinlet.
2.95								56.7	Pyrite 5-10% as above
								56.8	20 cm Py 50, fr Siderite, vein
								57.7	Pyrite 20-40% as veins, aggregates and dissemenations, some disrupted beds. (fragments.)
	58.5	FAULT ZONE 45° C.A. PUG, SHEARED AND BROKEN CORE, SULPHIDE VEINS. (graphitic)						58.5	Pyrite, coarse euhedral cryatals are common.
2.4	59.4							59.5	Pyrite 5-10% as above.
	60	60.0 – 60.6 m. Fractured quartzite.						60	1 cm Siderite vein.
		61.0 – 63.6 m highly contorted, probably due to faulting (as above) Note. Siderite veining in quartzite is cut by late fractures. Note graphite is common on fault zones.							Pyrite 2-3% as above
2.8								62.1	8 cm Py 5-10, quartz vein.
0.5			BROKEN CORE						
								64.4	Pyrite 3-5% as veins, dissemenations aggregates and fragments, disrupted syngenetic beds.
	65							65.5	
2.7								66.7	Pyrite 2-3% as above Pyrite 1-2% as above. coarse euhedral cryatals are common.
								68.1	3 mm. Py 20, Gn 10, Siderite 20 veinlet.
3.0									
	70								
3.05		5 cm							
		74.5 – 76.8 m. The core is highly contorted and dark coloured. (graphitic) possibly due to faulting.						74.5	Pyrite 2-3% locally 5% as veins, disseminations and disrupted beds.
3.0	75								

DIAMOND DRILL LOG — G45 — NO 4

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110054

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
		Dark grey to black shales and slates with quartzite beds up to 20 cm. contorted. (as above).			Pyrite 2-3% locally 5% as above.
				76.4	Pyrite 2-3% as veins, disseminations and aggregates. Coarse euhedral crystals.
3.0		5 cm		77.3	2 cm Py 30, Sedenti 20. vein.
	80			80.4	10 cm Py 20 associated ± q vein. Coarse euhedral crystals.
3.0				80.8	Pyrite 5-10% as irregular veins.
				81.5	Pyrite 2-3% as above.
		82.2 - 83.6 m highly contorted with numerous small 1-5 mm quartz veins. Possibly due to tectonic activity			
3.0				83.4	Pyrite 5-10% associated with quartz veins
				83.6	Pyrite 2-3% as above.
	85				
0.2				85.45	5 cm Pyrite 20% as irregular veins
2.4				86.6	Pyrite 5% as irregular veins with euhedral crystals. Some disseminations and aggregates.
0.2					
1.5	89.2	FAULT ZONE — PUG, SHEARED AND BROKEN CORE. 60° C.A.		87.2	Pyrite 1-2 locally 5% in the fault zone.
	90	Some sulphide veining			
	90.5			90.5	Pyrite 1-2% as disseminations and disrupted syngenetic material
3.05					
				93.0	Pyrite 2-3% as above, minor veinlets associated with siderite are noted.
3.05	95	94.5 - 98.0 m highly contorted. Numerous small quartz veinlets 2-3 mm. Possibly due to tectonic activity.		94.5	Pyrite 2-3% locally 5% as above.
	95.8				
	96.1	FAULT ZONE — Pug and sheared core — 80° C.A.			
	97.2				
3.0	97.6	FAULT ZONE — Pug, sheared and broken core. 55° C.A.			
		97.8 - 100.0 m. highly contorted, faulty tectonic. Numerous minor quartz veins			
1.1	100			100.00.	

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110055

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	105	Grey to black shale and slate with beds of grey quartzite from 2mm to 30 cm. Contorted – as above. 101.3–102.4 highly contorted due to tectonic movement. The rock is fairly competent. Bedding is at various angles to core axis due to soft sediment deformation and small scale folding. Cleavage tends to parallel bedding						100.0	Pyrite 2-3% as minor veins and dissaminations.
3.0								103.3	Pyrite +2% as above locally 3% including accumulations of disrupted syngenetic beds.
3.0	110							109.1	Pyrite 1cm, 15% associated with quartz vein.
3.0								113.3	2cm Pyrite 15% as disrupted syngenetic beds.
3.0	115	5 cm						114.	1cm Pyrite 30% vein.
3.0								119.6	1cm Pyrite 50% vein. 50°CA.
3.0	120	120.1–121.5. Highly contorted, as above.							
3.0		124.3–124.8 highly contorted as above.						124.3	2cm pyrite 30% associated with quartz vein at 35° C.A
	125								

ABERFOYLE DIAMOND DRILL LOG HOLE No G45 Page No 6

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault, Vein (F; c carbonate, q quartz)

Mineralization 110056

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

CORE REC'D	DEPTH m	GEOLOGY
3.0		Grey-black shales and slate with beds of grey quartzite, contorted. (as above).
3.0	130	129.4 - 130.6 m. Highly contorted, with minor brecciation - local tectonic activity.
3.0		
3.0	135	134.7 - 135.8 highly contorted, as above. Minor quartz veinlets to 1 cm are common.
3.0		
3.0	140	
		5 cm
3.0		
3.0	145	145.6 - 148.4 Bedding sub-parallel to core axis. Flame structures give facing but not applicable. Fine muscovite mica is well developed in the quartzite.
3.0		
3.0	150	

VISUAL LOG: TRACE | COMMON | ABUNDANT | MASSIVE

DEPTH m	MINERALIZATION
	Pyrite 1-2% locally 3% as above.
127.6	1 cm aggregate Pyrite 15% vein?
133.1	1 cm Pyrite 20% as locally disrupted syngenetic bed.
137.4	Minor Chlorite 15% with 2 cm quartz vein.
139.3	2 cm Pyrite 25%, Siderite 5% with quartz vein, 30° CA.
143.4	1 cm Pyrite 20% as disrupted syngenetic beds.
144.6	1 cm Pyrite 50% 35° to core axis.
148	2 cm Pyrite 30% as vein 45° CA.
148.3	1 cm Pyrite 20% as vein.
149.0	Siderite 10% associated with
149.2	quartz vein. 10 cm Gn Tn & small Si vein.

ABERFOYLE DIAMOND DRILL LOG HOLE N- G45 Page No 7

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110057

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Grey to black shales and slates with grey quartzite beds, locally contorted. (as above). The beds are sub-parallel to core axis.							Pyrite 1-2% locally 3% as above.
3.0	152.4							152.4	1 cm siderite vein.
		Q Grey quartzite medium grained quartzite with fine muscovite mica. The rock is fractured, healed with qtz veins.							
	154.1							154.1	10 cm Pyrite 10% as veins, dissemination and aggregates. Siderite 5% 40° to core axis.
3.0	155	QS Grey to black shales, slates with beds of laminated quartzite from 1mm to 3cm. The rock is locally contorted and exhibits soft sediment depositional - deformation features. Bedding is at various core angles and cleavage tends to be parallel to bedding.						156.8	Py 15% as irregular veins with 1-3 mm qtz-py veinlets.
								157.1	Pyrite 1%-2% as irregular veins, dissemination and aggregates. Locally 3% as disrupted syngenetic beds.
3.0	160								
3.0	162.2	FAULT ZONE 80% Pug, sheared and broken core. 30°-40° to C.A.						161.9	Pyrite 10% locally 60% as irregular veins with minor qtz-py veinlets to 3 mm
								162.2	Pyrite 1-2% locally 3% as above 161.9 m.
2.8	164.3								
	165							165.2	Pyrite 10-15% locally 30% associated with qtz-py veins to 3 mm in fault zone.
	165.3	FAULT ZONE 60% Pug, Sheared and broken core 30°-40° to CORE AXIS						166.2	
	166.2								Pyrite 3% as irregular veins to 3 mm and disseminations.
3.05									
								169.3	1 cm Pyrite 50% vein 25° to C.A.
	170							169.8	1 cm Siderite 30% vein.
3.05		5 cm							
								173.4	5 cm Pyrite 10% as irregular veins, Fracturing minor breccia. Siderite 5%-some green mica? Fuchsite?
3.0								173.8	→ 1 cm Pyrite 40% vein.
	175								

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault (F), Vein (c carbonate, q quartz)

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

110058

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE / COMMON / ABUNDANT / MASSIVE	DEPTH m	MINERALIZATION
3.0		Grey to black shales and slates with grey quartzite beds - generally contorted and brecciated (depositional)			175.1	Pyrite 3% as above.
					175.7	> 1 cm Pyrite 50% on vein.
						1 cm Pyrite 30% on vein.
					176.4	5 cm Pyrite 40% Siderite 10% vein
					176.5	2 cm Pyrite 40% vein.
					177	Pyrite 5-7% locally 70% as veins to 7 cm. some qtz veins
					177.7	Pyrite 3% as above
		178.0 - 179.3 m. Highly contorted, brecciated - presulting from tectonic activity.			178.5	3 cm Pyrite 40% on vein.
					178.6	1 cm Pyrite 40% on vein.
					179.2	1 cm Pyrite 50% on vein 30° C.A.
					179.6	4 cm Pyrite 40% on veins
3.0	180				180.0	4 cm Pyrite 20%, Siderite 20% veins
					180.2	3 cm Pyrite 50% on vein
					181.2	Pyrite 30% locally 60% - quartz and siderite, veins.
					181.5	Pyrite 3% as above.
3.0		5 cm			182.3	3 cm. Pyrite 20% - quartz siderite veins
3.0	185	185.7 - 189.5 m. The rock is heavily veined with quartz and pyrite and includes some fault gouge material.			185.6	Pyrite 10%, Siderite 2-3% as veins with quartz in fault zone
					186.2	10 cm Pyrite 60% vein.
					186.5	Pyrite 10-15% as coarse euhedral crystals in veins and aggregates in quartz veins Minor Siderite 2%.
1.8	188.25	FAULT ZONE 40% Pug, sheared and broken core. 45° to C.A. some quartz veining and massive sulphides (Pyrite).			188.25	
	189.30				188.5	Pyrite 60% as veins of coarse euhedral crystals. SPHALERITE + CHALCOPYRITE.
					189.3	20 cm Stannite 15% galena 2% * 138466. Petrography
2.5	190	191.3. Disturbed bedding t.g. sulphides, part of Stormadown lens?				Pyrite 2-3% as veins and disseminations.
		191.7. Grey clast 8 mm bed? 45° C.A.				
	191.3	GRADATIONAL CONTACT. BEDDED SYNGENETIC PYRITE.			191.3	Pyrite 10-35% on disturbed t.g. Syngenetic material and coarse euhedral crystals in veins
1.3		192.0 - 192.3 The rock is highly disturbed at 20° to C.A. Possibly part of a fault zone.			192	Pyrite 30-40% as veins and aggregates of coarse grained euhedral crystals in quartz veins - minor Siderite 5%
		192.3 - 194.7. quartz - pyrite - galena "lode" (Stormadown lode?). quartz is white to grey in colour commonly chalcedonic (V. hard)			194.2	15 cm Pyrite 20% galena 35%.
3.0	195	194.7. fault contact with bedded Stormadown lens at 70° to C.A. Well bedded massive v. fine grained pyrite - grey clast 3 cm wide at 30° to C.A. at 194.8 m.			194.4	Siderite 5%
					194.7	5 cm Pyrite 10% galena 20% v. fine grained bedded syngenetic pyrite - massive. > 50% (60-70) 195.75, 138476. PYRITISED VOLCANIC GLASS and FINELY BANDED PYRITIC ROCK.
2.9	197.0	Bedding subparallel to core axis at 198 m. Sharp contact to pyritic, siderite rich siltstone? Then at 197.5 contact sub-parallel to C.A. to Siderite with carbonate horizon			197	Pyrite 2-3% as veins and disseminations.
					198.1	Pyrite 1-2% as irregular veins.
		* 197.9 138466. Sample for petrology. SIDERITE ROCK Diagenetically recrystallized obliterating primary textures. (Dolomite).			197.8	10 cm Pyrite 60% as bedded syngenetic material
	200				197.9	

ABERFOYLE DIAMOND DRILL LOG HOLE N° G 45 Page No 9

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein; c carbonate, q quartz

Mineralization 110059

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
2.9	200.7	* 200.3. Cross bedding in core // C.A. 201.0 m numerous siderite veins to 1cm. Pyrite - siderite (recrystallised) after impure carbonate horizon? The rock has a delicate fabric outlined by fine grained pyrite - this may represent original bedding. Bedding generally sub-parallel to C.A.		201.2	FROM 198.9 Pyrite 10-3% as irregular veins and dissemination of syngenetic origin. Pyrite 30% as above. The fine grained syngenetic material is essential to siderite crystals. Necessary veins of coarse grained secondary pyrite can be formed.
3.05	205	* 202.20 and 205.15 Samples for petrology. 138467 PYRITIC SIDERITE ROCK. 138468 PYRITIC DOLOMITE. Graphite is common on fracture surfaces.			
3.05	208.2	208.2m. Minor siderite cemented breccia sub parallel to core axis.		208.2	
3.0	210	Light grey fine grained - bedded dolomite siderite horizon. (Outlines with HCl only when scratched). Bedding is 10° - 20° to core axis. 211.0 m, 138469. PYRITIC DOLOMITE ROCK.		210.4	Pyrite 2-3% as irregular veins and fine grained disseminations. 15cm Pyrite 30% in pyrite siltstone horizon 25° C.A.
3.0	211.6	CONTACT 25° C.A. Dark grey pyrite rich bedded carbonate - siltstone horizon. Minor siderite crystals. Pyrite is ultra-fine syngenetic. Bedding is well developed 20°-30° CA. 214.1. Dolomite bed, 10 cm. at 30° CA, Broken by depositional slumping. 214.6 3cm sedimentary breccia. - some pyrite fragments. - 25° CA.		211.6	Pyrite 15-20% as ultra-fine disseminations in bedded horizon. Minor secondary veins of coarse euhedral pyrite.
3.0	215			214.4	Pyrite 40-50% as above
	216				
3.0	218	As above, pyritic - carbonate - siltstone? Siderite crystals are well defined in the rock as recrystallised or dolomite? Here are numerous <3cm carbonate veinlets 218 m bedding 25° CA. 221 m bedding 25° C.A.		216.4	Pyrite 20-30% as above.
	219.6			218.2	Pyrite 5-10% as irregular veins and disseminations
	220	As above. Grey pyritic dolomite strongly re-crystallised, crystals to 3mm.		218.6	Pyrite 15% as veins and fine disseminations.
1.0		221.7. bedded (relict) at 30° C.A.		219.6	Pyrite 10-15% as ultra-fine disseminations and minor irregular veins.
2.2	223.2	The rock is no longer strongly crystallised.		222	Pyrite 20% as above.
		223.6. Sedimentary breccia, 10cm wide at 30° to C.A. - Fragments irregular to sub-rounded up to 5 cm.		222.6	Pyrite 10% as above.
0.9	225	224.9 apparently after dolomite 50 cm CAVITY		223.2	Pyrite 20% as above.

5 cm

ABERFOYLE **DIAMOND DRILL LOG** HOLE No G45 Page No 10

Feature Bedding Foliation Fragment (size & shape) Shearing Fault Vein (c carbonate, q quartz)

Mineralization 110060

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
50cm core loss 3.0	225.4	FAULT ZONE CAVITY Fe Crystallised DOLOMITE as above. Pyrite as matrix to carbonate crystals. 225.8 - 8cm sodium stony and textural breccia. Fragments of pyrite, carbonate dolomite, chlorite, Fine Si. recem to 1 cm. Below 226.3 to 229.1 the rock is grey, bedded re-crystallised dolomite, numerous small sedenite veins up to 3mm m. 25° CA.						225.8	Pyrite 2% as above 224.9m. as disseminations and within fine grained syngenetic
1.3	229.1	FOSSILE FOAT CONTACT. MIXED & Carbonate						226.8	Pyrite 1% - 2% as very small irregular veins and
3.0	230	Grey lightly disrupted (sedimentary breccia) of ultra-fine grained pyritic sediment and re-crystallised dolomite. Fragments are generally 3mm to 6cm in size - subrounded. They consist of the rock types noted above and black shale (siltstone), quartz. The matrix is essentially carbonate, minor silica. 230-232.2. Fracture perpendicular to C.A. possibly reflecting shear zone.						229.1	Pyrite 5-15% as disseminations aggregates, fragments and small irregular veins.
2.9	232.2	234.3 - 234.8. Fine grained pyrite - carbonate horizon. Bedded 30° CA.						234	Pyrite 20-30% as ultra fine grained bedded horizons and fragments in sedimentary breccia.
2.9	235								
C.3	238.4	Below 238.4m the rock is less disrupted, fine bedded sediment of massive ultra fine pyrite and black siltstone. There are some fragments of pyrite, black siltstone and amygdaloidal FAULT LODE? Massive coarse grained pyrite with a chalcedonic silica matrix, locally brecciated 45° to CA (not bedding) volcanics. There is also evidence of facing up hole. ie Volcanic fragments, black siltstone fragment and pyrite fragments						238.15	Pyrite 60% as ultra-fine grained bedded material. Slightly contorted - 30° CA.
3.0	240							240	Pyrite 60-70% as medium to coarse euhedral crystals and aggregates.
	241.35							241.35	Pyrite 30% as veins and aggregates of syngenetic material.
	242.35							241.6	Pyrite 5% - 15% as fine grained disseminations and irregular veins
3.0	243	Vb. Light grey Spilitic tuff agglomerate becomes grey green below 243m. Fragments are irregular to sub-rounded from 3mm to 5cm. They consist of amygdaloidal andesite? Amygdules are filled with dark green celadite. The matrix is fine grained and siliceous. The rock is locally brecciated from 242.85 to 244.3m. ie flow top breccia?						242.55	Pyrite 3-5% as disseminations and irregular veinlets
								243.5	
								243.8	Pyrite 10% as above and as fragments
								244.4	Pyrite 1% - 2% as above
3.0	245	There is a vague orientation of fragments at about 30° to C A.						245	Pyrite trace only as irregular veins and aggregates. 10 cm pyrite 10% as replaced fragment.
3.0	248.3	At 248.3m. Cusps in fragments indicate pyroclastic origin of this volcanic unit.							
	250								

5 cm

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº G45 Page No 11

Feature Bedding Foliation Fragment size & shape Shearing Fault F Vein c carbonate q quartz

Mineralization 110061

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Grey-green ophilitic tuff-agglomerate as above. with several chlorite replacing feldspar? - filling vesicles.						250 +	Pyrite trace only as above. 2cm carbonate vein with sphalerite 1-5%?
3.0	255	below 253m the rock is coarser. - Agglomerate. with some subrounded fragments up to 15cm							
1.3		256.5 - 256.65 · Carbonate vein · 20° T.A.							
1.15	257.8 257.95 EOH	FAULT ZONE Peg and broken core.							

5 cm

Cominco

DRILL HOLE RECORD

Location Queen Hill | Property EL 47/71 | District TASMANIA | Alt./R.L. 202 | Hole No G46

Commenced 7/9/79 | Completed 8·10·79 | Core size HQ / NQ / BQ | Co-ordinate 1636·7N / 410.4E | Date 1·11·79

Objective Exploration hole designed to test favourable volcanic contact, section 2800, RL. 150 | % Recovery 92·18 | Bearing (M) 100·25° | Grid bearing (M) -11.25° | Logged J. TAYLOR / S. RICHARDSON | Dip -44·5°

SURVEY DATA

DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE
15·7	44·75	NOT VALID	EASTMAN
43·1	43·75	102,5°	"
71 m	43·25	103,5°	"
100 m	43°	102°	"
136°	41°	101°	"
178°	39°	102°	"
200 m	39°	104°	"
233 m	38°	102°	"
266 m	36°	104°	"
299 m	34,75°	103,5°	"

GRAPH DERIVED DATA

DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE
0	44·5	198.75	1636.69	410.37	202.00
25	44·5	96·75	1630.87	427.22	184.48
50	43·5	96·75	1625.30	444.32	167.11
75	43·5	96·25	1619.76	461.59	149.90
100	43	95·75	1614.34	478.97	132.77
125	41·5	95·5	1608.96	496.68	115.97
150	40	95·5	1603.50	514.81	99.65
175	39	96·25	1597.82	533.24	83.75
200	38·5	96·25	1591.94	551.83	68.10
225	38	96·5	1585.98	570.54	52.62
250	37	97	1579.85	589.40	37.40
275	35·5	97	1573.54	608.55	22.62
300	34·5	96·5	1567.21	628.02	8.28

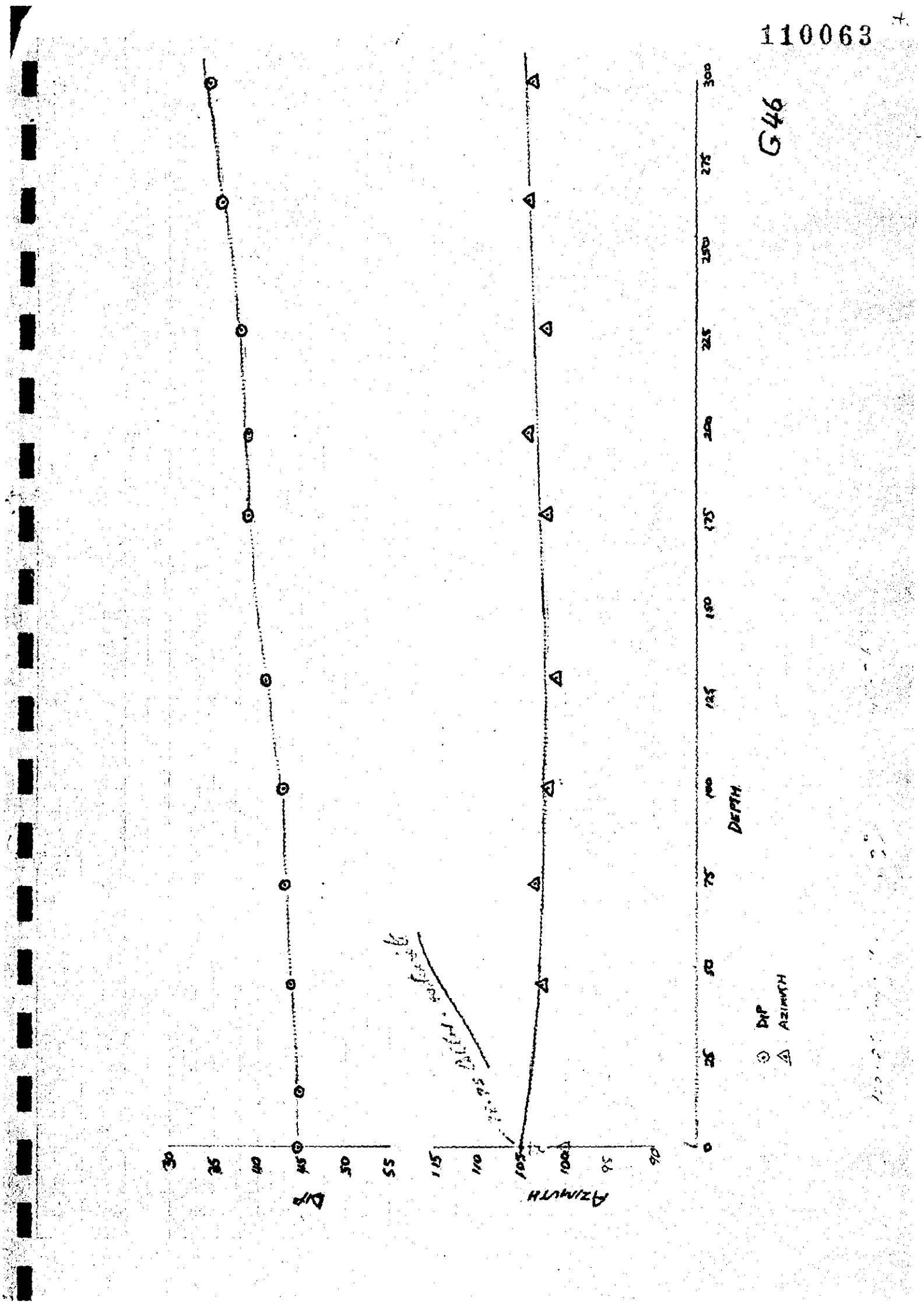
REMARKS

Volcanic contact was intersected approximately 100 m further EAST than expected. Intersection achieved at RL. 50.

10062

110063

G46


DIP
30
35
40
45
50
55
AZIMUTH
90
95
100
105
110
115
DEPTH
0
25
50
75
100
125
150
175
200
225
250
275
300
DIP
AZIMUTH

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value -5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM PROGRAMMER DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD	SAMPLE No.
G46	244·88									
	245·88	70	<5	75	10000	3010		6·5		211941
	246·88	16	<5	15	525	240		1·5		211942
	247·43	14	<5	50	290	500		10·5		211943
	248·10	20	5	35	5500	1130		6·0		211944
	249·10	18	<5	60	180	625		9·0		211945
	250·10	<4	<5	40	140	270		4·0		211946
	250·60	10	<5	55	65	365		9·5		211947
	250·90	10	5	50	395	545		8·0		211948
	251·90	4	5	20	115	130		2·0		211949
	252·90	8	10	10	195	75		<1·0		211950
	253·90	<4	<5	20	40	35		<1·0		211951
	264·88									
	265·88	570	<5	60	155	245		1·5		211952
	266·88	890	25	45	100	345		2·5		211953
	267·88	130	15	55	85	225		1·0		211954
	268·88	1100	15	145	25	225		1·0		211955
	269·88	85	40	65	25	180		1·0		211956

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G46	269·88										
	270·88	95	15	110	135	210		< 1·0			211957
	271·88	140	< 5	175	20	190		< 1·0			211958
	272·88	140	5	110	45	255		1·0			211959
	273·40	180	5	35	50	285		< 1·0			211960
	274·40	75	15	39	120	365		6·5			211961
	275·40	40	< 5	50	160	230		3·5			211962
	276·40	36	25	55	1070	660		11·0			211963
	277·40	330	5	30	65	200		5·0			211964
	278·40	65	< 5	55	75	230		11·0			211965
	278·85	150	< 5	45	35	140		7·5			211966
	279·40	2000	5	130	40	120		< 1·0			211967
	279·80	90	5	35	80	115		5·0			211968
	280·20	50	20	15	900	195		1·0			211969
	281·12	80	< 5	35	60	205		8·5			211970
	281·28	8400	< 5	105	540	1050		1·5			211971
	282·20	880	5	85	60	560		14·0			211972
	283·30	850	< 5	100	170	350		3·5			211973
	284·30	330	5	290	205	1140		7·5			211974

110065

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM PROGRAMMER DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G46	284·30										
	285·30	630	<5	45	315	330		1·5			238035
	286·30	650	<5	35	105	45		<1·0			238036
	287·30	330	15	30	185	75		<1·0			238037
	288·30	2050	10	55	150	240		1·5			238038
	289·30	550	5	35	150	150		<1·0			238039
	290·30	70	15	25	175	175		<1·0			238040
	290·80	150	<5	75	340	710		2·0			238041
	291·80	210	10	70	130	400		3·0			238042
	292·80	240	<5	25	40	240		2·5			238043
	293·80	230	15	20	55	75		<1·0			238044
	294·80	6	<5	20	25	55		<1·0			238045
	295·80	270	5	45	65	170		1·0			238046
	296·00	650	40	55	80	175		<1·0			238047
	297·00	270	15	110	100	1560		6·0			238048
	298·00	100	<5	25	30	570		<1·0			238049
	298·55	95	10	25	40	530		1·5			238050
	299·50	160	5	15	40	180		<1·0			238051
	300·20	26	15	25	35	145		1·5			238052
	301·20	22	10	15	30	30		<1·0			238053

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
646	301·20										
	302·00		<5		35	40		<1·0			238054

11006

G46 110068

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY
0.32		VOLCANICS : VT
N/C		The Cambrian Volcanics are green - grey-brown texturally variable pyroclastics with very minor (?)lava flows. Near surface the volcanics weather to a brownish clay which at depth reverts to a silicified siderite rich complex extrusive volcanic facies.
0.4		
0.9	5	The volcanics vary from a medium tuff to a fine agglomerate. It is difficult to establish what represents a flow and what is undoubtedly a pyroclastic in places, hence the volcanics have been left largely undifferentiated.
N/C		
0.26		Vesicle elongation parallels primary layering which in turn reflects the cleavage - it is unknown whether the cleavage represents a primary compaction foliation or is a deformation feature.
0.1		The size, shape and abundance of vesicles varies dramatically and indeed defines the often diffuse fragment boundaries. Vesicles are filled with either chlorite, cryptocrystalline silica siderite or pyrite. (± po. gh.)
0.06	10	Extremely thin (~1mm) veins of quartz, siderite or quartz and siderite occur throughout the volcanics
1.0		F
0.37		F F
0.3		
N/C	15	
0.6		
0.6		
	17.4	FAULT ZONE : BROKEN CORE AND BROWN VOLC. CLAY PREDOMINANTLY AGGLOMERATIC
0.25		
	17.9	
0.4		F
0.6		F
	19.0	FAULT ZONE : (PREDOMINANTLY AGGLOMERATIC) CHARACTERISED BY BROKEN CORE, SLICKENSIDES AND BROWN CLAY FROM DECRADED VOLC. MATERIAL
0.7	20	
0.8	20.6	
1.35		
0.35		
0.1	25	

VISUAL LOG: CAVE & SURFACE DEBRIS; BROKEN CORE; BROKEN CORE

TRACE | COMMON | ABUNDANT | MASSIVE

DEPTH m	MINERALIZATION

5 cm

Feature : Bedding, Foliation, Fragment - size & shape 0% | Shearing, Fault, Vein | c carbonate, q quartz

Mineralization : 110069 | Trace 1-5% | Common 5-15% | Abundant 15-60% | Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
0.3	25.0	FAULT ZONE : ABUNDANT BROKEN CORE, AND CLAY REPRESENTING DEGRADED VOLCANIC MATERIAL	BROKEN CORE		
0.3					
0.65	26.35				
		Gypsum vein with minor ptz.			
0.6	27.2	FAULT ZONE : BROKEN CORE AND CLAY.	BROKEN CORE		
0.6	28.3	CHERT VEIN			
1.1		SIDERITE AND QUARTZ VEIN.			
0.3	30				
1.7		VOLCANICS AS PREVIOUSLY DESCRIBED FOR THIS 25M SECTION.			
0.4					
1.6		5 cm			
0.7					
0.4	35	MINOR SLICKENSIDES			
1.7		MASSIVE SIDERITE			SIDERITE AND QUARTZ VESICLE FILL AND VEIN MATERIAL OCCURS ABUNDANTLY THROUGHOUT THIS 25M SECTION OF CAMBRIAN VOLCANICS.
0.25	36.8	FAULT ZONE - POSSIBLE SMALL FISSURE LODE - : PYRITE / SPHALERITE / SIDERITE / + QUARTZ / VEIN MATERIAL WITHIN PALE GREEN, ALTERED UNDIFFERENTIATED VOLCANIC MATERIAL	BROKEN CORE		
1.4	37.9				
1.5	40	$FeSO_4$ (AFTER SIDERITE) + QUARTZ VEINS			
1.0		GREY - GREEN TEXTURALLY DIVERSE MEDIUM TO COARSE TUFFS AND FINE AGGLOMERATES.			
1.0					
1.0		MASSIVE SIDERITE			
1.9	45	MASSIVE SIDERITE			
1.1		VERY MINOR PYRITE			
		QTZ. VEIN		47.6	~10% COMBINED SULPHIDE OVER A 20CM INTERVAL. Cn, Py, Sph
		SIDERITE RICH VEIN WITH QTZ., GALENA, PYRITE, SPHALERITE AND $FeSO_4$		47.8	
		SIDERITE / QUARTZ VEIN			
	50				

Feature : Bedding, Foliation, Fragment - size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization : 110070

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
1.8		25M OF VOLCANICS. - IDENTICAL IN ALL RESPECTS TO THE PREVIOUS 50 M. DISPLAYING SIMILAR TEXTURES, COMPOSITION AND DIVERSITY. EXTREMELY FRESH CHLORITIC, BARREN VOLCANICS.			
1.3					
2.3	55				
0.6					
3.1					
0.7					SIDERITE RICH ZONE : THIN VEINS (~3mm) AND VESICLES OF SIDERITE. 5% 5PH. OVER 3CM AT 60.2M.
2.1	60				MINOR SIDERITE, 5PH, GA VEINS
3.0				62.9	SIDERITE RICH ZONE : SIDERITE, GA, 5PH. VEIN OVER 10 CM AT 62.9 M. GALENA APPROACHES 15% OVER 10 CM
				63.0	
				63.2	TRACE PY. AT 63.2M
				63.35	
2.3	65				NUMEROUS SMALL SIDERITE AND SIDERITE + QUARTZ VEINS
2.3	70				
2.9		5 cm			
1.3	75	SMALL FAULT AT LOW ANGLE TO CORE AXIS — BROKEN CORE AND CLAY	F		

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110071

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
1.3 CONT'D.					
1.5		STRONGLY SILICIFIED PORTION			
3.0				78.6	TRACE GA. ASSOCIATED WITH SMALL SIDERITE VEIN
		PRIMARY LAYERING APPROX. // CORE AXIS — GRAPHITIC BANDS ARE COMMON. THIN SIDERITE VEIN // CORE AXIS. THIN QUARTZ / SIDERITE VEIN AT 30° TO CORE AXIS		79.95	TRACE GA. AND SPH. ASSOCIATED WITH SIDERITE / QUARTZ VEIN
2.9	80				
3.0		GRAPHITIC CLEAVAGE SURFACE. QUARTZ AND SIDERITE VEIN		84.6	TRACE GALENA
	85			85.7	TOTAL SULPHIDE CONTENT IS RECORDED IN THE VISUAL LOG.
3.0		A NARROW VEIN 2-3 CM WIDE RUNS APPROXIMATELY // CORE AXIS — IT CONSISTS OF SIDERITE, GALENA, SPHALERITE AND PYRITE. (WITH MINOR QUARTZ.) => NARROW FISSURE VEIN. THE SULPHIDES HAVE ADOPTED A LAYER NATURE. THE VEIN CONSISTS OF LENTICULAR BANDS OF PY, GA, SPH AND SIDERITE WITH MINE CLOTS AND DISSEMINATIONS IRREGULARLY DISPERSED THROUGHOUT. GRAPHITIC CLEAVAGE PLANES ARE NOT UNCOMMON OVER THE LENGTH OF THIS VEIN. THE VEIN IS EITHER // OR AT A LOW ANGLE TO THE PRIMARY LAYERING.		87.6 88.0	GALENA 10% SIDERITE 50-60% PYRITE 5-8% SPHALERITE 2-5% COUNTRY ROCK ~15%
				88.3	GALENA ~10% PYRITE 10-15% SPHALERITE 5-10% SIDERITE 50-60% COUNTRY ROCK ~5%
3.0	90	5 cm		90.2 90.3 90.5	
3.0					
3.0	95	THIS ~25M SECTION OF CORE IS STILL WITHIN THE CONFINES OF THE GREEN / GREY SILICIFIED FINE TO COARSE TUFFS AND FINE TO MEDIUM AGGLOMERATIC CAMBRIAN VOLCANICS. ALTHOUGH TEXTURALLY DIVERSE, THE VOLCANICS APPEAR TO BE COMPOSITIONALLY CONSISTENT. SMALL ZONES OF WHAT APPEARS TO BE A NON-VESICULATED BASIC → INTERMEDIATE FELSIC (?) FLOW ARE OBSERVED SPORADICALLY. SUCH ZONES ARE IN CONTRAST TO THE NORMAL CHLORITIC, STRONGLY VESICULATED, GLASSY FRAGMENTAL.		94.9 95.2 95.5 95.95	TRACE GALENA 1-2% SPHALERITE ~5% SIDERITE 5-10% PYRITE 30-40% COUNTRY ROCK
3.0					
3.0	99.3	HOMOGENEOUS, NON-VESICULATED, FINE GRAINED LAVA. GREY / GREEN VOLCANIC WITH NUMEROUS SMALL VEINS OF SIDERITE, PYRITE AND QUARTZ (RESP.)		99.6	
	100				

ABEMI...

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110072

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0 CONT'D	100.1	GREEN - BROWN, MEDIUM TO COARSE INTERNALLY CHAOTIC TUFFS CONSISTING OF A HAPHAZZARD COLLECTION OF STRONGLY VESICULATED AND GENERALLY LENTICULAR (BASIC - INTERMEDIATE?) FRAGMENTS OF VOLCANIC GLASS. ABUNDANT SMALL VEINS AND DISSEMINATIONS OF GALENA + PYRITE		100.4	40% GALENA - 10% PYRITE OVER 40 CM. 5-10% PYRITE - 2-3% SPH. OVER 40 CM.
				101.4	
3.0				103.3	~5% PYRITE + TRACE GA. OVER 40 CM
				103.7	
		MINERALIZED FISSURE VEIN SUB-// CORE AXIS		104	~30% COMBINED SULPHIDE OVER 60 CM. PYRITE 25-30% SPH. 3-5%
	105			104.6	SIDERITE ~15-20%
3.0	105.6	GREEN, HOMOGENEOUS FINE GRAINED, NON VESIC. (?) BASIC - INTERMEDIATE LAVA FLOW. DISSECTED BY NUMEROUS THIN VEINS OF - QUARTZ - QUARTZ, PY, SPH, GA. - SIDERITE - QUARTZ SIDERITE V. MINOR DISSEMINATIONS OF PY, GA, SPH SCATTERED THROUGHOUT.			MINOR THIN QUARTZ / PY / SPH. VEINS ~30° TO CORE AXIS
				108	
3.0				108.3	PYRITE 30-40% SPHALERITE ~20% SIDERITE ~10% GALENA ~5%
				109.7 109.8 109.9	
	110 110.2				
		FAULT BRECCIA WITH VOLCANIC FRAGMENTS AND SIDERITIC MATRIX.		110.7 110.8	TRACE GA. ASSOC. WITH SIDERITE VEIN
				111.2 111.3 111.4 111.5	
3.0		GREEN-GREY MEDIUM TO COARSE TUFFS AND FINE AGGLOMERATES. HEAVILY VESICULATED AND OFTEN FLATTENED FRAGMENTS. THE VOLCANICS CONSIST PREDOMINANTLY OF CHLORITE, CRYPTO-CRYSTALLINE SILICA AND SIDERITE.			SIDERITE ~60% SPHALERITE ~5% PYRITE ~5% TRACE GALENA.
				112.1	
					SPORADIC DISSEMINATIONS OF PY AND GA. (TRACE) ARE NOT UNCOMMON THROUGHOUT THIS 25M SECTION OF VOLCANICS
3.0	115				ALL OF THE MINERALIZED VEINS INTERSECTED IN THIS 25M SECTION ARE VIRTUALLY // THE CORE AXIS. TRUTH WIDTH IS ESTIMATED AT ~5CM
		5 cm			
3.0	120		F F		TRACE GALENA
3.0					
	125				

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110073

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	125	VOLCANICS — AS BEFORE							SPORADIC DISSEMINATIONS (<1%) OF GALENA AND PYRITE OCCUR PREDOMINANTLY IN THE HETEROGENEOUS TUFF/AGGLOMERATE UNIT.
3.0	130								
3.0	130.9	GREEN - GREY HOMOGENEOUS FINE GRAINED UNIFORMLY VESICULATED (?) LAVA.							
	133.7								VERY THIN (1MM) GALENA VEIN
3.0	135	VOLCANICS : IDENTICAL TO PREVIOUS TUFFACEOUS AND AGGLOMERATIC SECTION. NUMEROUS MINOR SIDERITE VEINS ARE COMMON.						136.0 136.1	PYRITE - OFTEN ASSOCIATED WITH VESICLE FILLING CRYPTOCRYSTALLINE SILICA.
3.0	140								THIN SIDERITE VEINS AND MINOR GA. + PY. DISSEMINATIONS OCCUR SPORADICALLY THROUGHOUT.
3.0	141.7	A DISTINCTIVE GREY - GREEN UNIT OF VERY UNIFORM FINE TO MEDIUM GRAINED STRONGLY CHLORITIC TUFFS. THE TUFFS CONSIST OF STRONGLY VESICULATED FRAGMENTS AND DIFFER FROM THE OTHER TUFFACEOUS VOLCANICS IN THEIR LACK OF DIVERSITY IN FRAGMENT SIZE AND VESICLE SIZE AND INTENSITY. THE FRAGMENTS COMPRISING THIS TUFF ARE BOTH TEXTURALLY AND COMPOSITIONALLY UNIFORM AND THE VESICULATION BORDERS ON MICROSCOPIC.							
3.0	145	COARSELY CRYSTALLINE SIDERITE VEIN →							
3.0	150	5 cm							

ABERFOYLE DIAMOND DRILL LOG G46 7

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

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

110074

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0 CONT'D	150	VOLCANICS - AS DESCRIBED ON PREVIOUS PAGE			
3.0					
	155				
2.8	156.2	MODERATELY BROKEN CORE MAY BE DUE TO MINOR FAULTS OR THE INTENSELY FOLDED NATURE OF PERVASIVE AND OFTEN GRAPHITIC CLEAVAGE IN THIS ZONE. F F			
1.4		TEXTURALLY AND COMPOSITIONALLY INHOMOGENOUS MEDIUM TO COARSE TUFF. F			
1.2	160	F			TRACE PYRITE
3.0	162.2	IDENTICAL TO VOLCANICS IN SECTION BETWEEN 141.7 AND 156.2 M. F			
3.0	165	5 cm			SIDERITE AND GALENA VEIN ~5% GALENA OVER 10 CM.
3.0	169.4	GREY, INHOMOGENEOUS, INTERNALLY CHAOTIC, SIDERITE RICH MEDIUM TO COARSE TUFF.			
	170	PYRITE, GALENA, SIDERITE VEIN.		170.8	EXTREMELY FINE GRAINED PYRITE, THE PREDOMINANT SULPHIDE, OCCURS WITH SUBORDINATE (TRACE) SPH. AND GN. THE TOTAL SULPHIDE CONTENT DOES NOT EXCEED 20%.
3.0				171.9	
		F		172.7	
		QUARTZ-SIDERITE PY. VEIN. F WITH MINOR GA.		172.8	
	173.3	F			
		FAULT ZONE		173.7	THE PYRITE CONTENT RANGES FROM 15-20% IN THE INTERVAL 173.9 TO 174.2 M.
1.4	173.8			173.9	
		VERY LOW ANGLE TO CORE AXIS: F(?)		174.2	
	174.5				
1.5	175			174.7	

ABERFOYLE — DIAMOND DRILL LOG — 646 8

Feature: Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110075

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
1.5 CONT'D.	175	MODERATELY MINERALIZED HOMOGENEOUS GREY-GREEN MEDIUM TUFFS. MINUTELY VESICULATED UNIFORM FRAGMENT SIZE AND TYPE.		175.3	<1% DISSEMINATIONS OF PY AND GA OVER 50 CM BEGINNING AT 170M.
1.7	176.6 / 177	FAULT ZONE :	B.C.		EXTREMELY FINE GRAINED PYRITE WITH SUBORDINATE COARSE PY. AND GA / SPH DISSEMINATIONS.
1.0		SPH, SIDERITE VEIN WITHIN FINELY PYRITIC TUFF. F		178 / 178.7	THE FINE PY. APPROACHES 10% BETWEEN 178 AND 178.7M. THE COARSE PY AND GA / SPH GENERALLY OCCUR IN ASSOCIATION WITH SIDERITE VEINS.
1.0	179.6	FAULT ZONE :			
0.2	180	STRONGLY BROKEN CORE, WITH CLAY REPRESENTING DEGRADED VOLCANICS. THE CORE IS VERY WEAKLY CONSOLIDATED IN THESE FAULT BONES. NO OBVIOUS INCREASE IN VEINS, SLICKENSIDES OR CLEAVAGE INTENSITY IS NOTED.	BROKEN CORE	180	SIDERITE VEIN MATERIAL.
0.9	182.5 / 182.8	FAULT ZONE : EXTREMELY BROKEN CORE AND CLAY.	BROKEN CORE	182.5 / 182.7	QUARTZ, SIDERITE, GA. SPH. VEIN.
1.7	183.8	THICK SIDERITE VEINS OFTEN WITH TRACE GALENA. ~ <1%. VERY MINOR FAULT BRECCIA WITH SIDERITIC MATRIX FILL.		185.7 / 186.0 / 186.4 / 186.7 / 186.9	PYRITE (VERY FINE GRAINED) APPROACHES 50% OVER 40 CM. GALENA VEIN — 50% GA. OVER 2 CM. MINOR DISSEMINATED GA. AND SPH. ALSO OCCUR OVER THIS 1.1M MINERALIZED SECTION.
3.0	185				
0.7	188.3	FAULT ZONE BROKEN CORE AND DEGRADED VOLCANIC CLAY => GREY POWDER WITH MINOR ROCK FRAGS.	BROKEN CORE		
0.8	190				
0.5	190.5	GREY, MEDIUM TO COARSE TUFFS AND FINE AGGLOMERATES. GREAT TEXTURAL AND COMPOSITIONAL DIVERSITY IN FRAGMENTS. ABUNDANT THIN SIDERITE VEINS AND RARE PY. VEINS. RARE DISSEMINATIONS OF PY, GA AND SPH. ARE PRESENT. COARSELY VESICULATED (?) FLOWS ARE TOO THIN TO WARRANT DIFFERENTIATION.			
3.0					
3.0	195				
3.0					
	200				

5 cm

ABERFOYLE

DIAMOND DRILL LOG

HOLE No. G46 Page No 9

Feature. Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110076

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	200	25M SECTION OF VOLCANICS AS PREVIOUSLY DESCRIBED.							
3.0		SIDERITE VEIN. ~1CM THICK.							
3.0	205								
3.0									
3.0	210								
3.0									PYRITE - VERY FINE GRAINED. <1% DISSEMINATIONS OF PY. OCCUR THROUGHOUT THIS 25M SECTION.
3.0	215								
3.0									
3.0	220								
3.0								222.3 222.5	PYRITE, QUARTZ VEINS ~2MM THICK
3.0	225								

5 cm

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110077

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG (TRACE / COMMON / ABUNDANT / MASSIVE)	DEPTH m	MINERALIZATION
3.0 CONT'D	225	NOTE: AN APPROXIMATELY 1M SECTION OF GREY-GREEN MEDIUM GRAINED TUFFS, COMMENCING AT 229.9 M IS SEEN TO CONTAIN A FEW STRONGLY PYRITIC FRAGMENTS. THESE FRAGMENTS ARE IDENTICAL TO THE FINELY VESICULATED VOLCANIC MATERIAL WHICH IS CHARACTERISTIC OF THIS ENTIRE 1M INTERVAL, EXCEPT THAT VERY FINE PYRITE (?- SYNGENETIC) HAS BEEN INTRODUCED. THE SULPHIDE CONTENT RENDERS THESE FRAGMENTS OPTICALLY DISTINCT, BUT STILL UNDOUBTEDLY VOLCANIC.			<1% DISSEMINATIONS OF PY, GA. AND SPHALERITE OCCUR THROUGHOUT THIS 25 M SECTION OF THE VOLCANICS.
3.0		SUCH AN OBSERVATION, ALTHOUGH FAR FROM CONCLUSIVE, IMPLIES THAT YOUNGING IS UP THE HOLE => OVERTURNED SEQUENCE.			
3.0	230	SIDERITE VEIN QUARTZ / PY. VEIN			TRACE PYRITE
3.0	235			233.8	THIN VEINS AND MINOR DISSEMINATIONS OF PREDOM. PY. (WITH MINOR GA. AND SPH.) COMPRISE A 2-3 % TOTAL SULPHIDE CONTENT FROM 233.8 TO 238.95 M
3.0		* Lithology 230-004 - dendritic clay 236.35 M SILVER METALLIC MINERAL WITH DENDRITIC GROWTH PATTERN, ASSOCIATED WITH THE MICROCRYSTALLINE QUARTZ VEIN. — ? SIDERITE VEIN 237.65M LARGE FRAGMENT OF SPHEROIDAL RHYOLITE. — ? (FLOW BANDED)			THE FOLLOWING 35CM CONTAINS 25-30 % TOTAL PYRITE CONTENT. ITS OCCURS AS BANDS OF FINE GRAINED 'WISPY' (?) SYNGENETIC PY. // PRIMARY LAYERING.
		SIDERITE VEIN		238.95	
	240	MANY OF THE VOLCANIC FRAGMENTS IN THIS 25 M SECTION APPEAR TO CONTAIN SYNGENETIC PY. (EXTREMELY FINE GRAINED) OFTEN JUST THE PERIPHERAL ZONES OF THE FRAGMENTS ARE AFFECTED, SOMETIMES ONLY THE VESICLES OF CERTAIN FRAGMENTS! NONE-THE-LESS, A VOLCANOGENIC SULPHIDE EVENT IS INDICATED BY THIS STYLE OF MINERALIZATION.			FINELY PYRITIC FRAGMENTS OF VESICULATED VOLCANIC COMPRISE THE ~5% SULPHIDE CONTENT BETWEEN 242.7M AND 244.2M
		5 cm			THE FOLLOWING 20 CM REPRESENTS A LOCAL INCREASE IN THE PY. CONTENT TO ~ 10 %.
	245				
	246.25	246.25 - 246.7m - brecciated and variably silicified dolomitic siltstone. First syngenetic pyrite is brecciated by silica introduction at 246.7m.		246.55	246.3m Trace V.f.g. syn. py.
		246.88m - 250.87m - V.f.g. bedded to massive syngenetic pyrite (pyritic siltstone) assoc. w. black impure chert and grey silicified dolomitic? siltstone. The siltstones are brecciated and veined by qtz. and carbonate, which may be introduced or derived from the carbonate rich siltstones.		247.43	60% v.f.g. syn. pyrite assoc. w. black chert.
		244.15 TS No 132536 PYRITIC CHERT 244.7 TS No. 230505 PYRITIC DOLOCHITE		248.1	10% py. trace res. sp. & gal in sil. dol? siltstone.
				249.46	248.3m 50% syn. py. - bedding at many ∠'s ⇒ slumping.
	250			250	

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein; c carbonate, q quartz

Mineralization 110078 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE / COMMON / ABUNDANT / MASSIVE	DEPTH m	MINERALIZATION
	250.9	250.9 - 253.7m Silicified and brecciated dolomitic? siltstone with minor syngenetic pyrite. Rock is Dk. grey to cream grey. Brecciation is associated with silica introduction. Minor carbonate veins may be sweated from the rock or the calcareous nature of the rock may be due to carbonate introduction				5 cm
1.25						
1.85	253.7	253.7m - 255 m Black shale - with rare pyrite and grey siltstone clasts to 1cm. Bedding 10° to 30° to CA.				254.4 .5cm bed of v.f.g syn. py.
3.0	255	255.0m - 255.9m Grey dolomitic? siltstone. Much veining by qtz. and carbonate. Rock shows coarse recrystalization of carbonate?			255	
	255.9	255.9m - 265.82m. Black carbonaceous shale. This rock is strongly veined by qtz, pyrite ± siderite veins from <1mm to 2cm thick. These veins have random orientations and are occasionaly stock work in nature. Graphitic slickenslides on several surfaces around faults. From about 260m the rock becomes less graphitic and grades into a very fine grained black siltstone. The rock often does not contain bedding, but does show rounded to angular pyritic fragments to 3cm.	F F F	256.1 257.0 257.8		256.2 - 256.7m 10% py as m.g. to c.g. disseminations 257.10m - 265.8m 2-3% py. as randomly oriented veinlets assoc. w. qtz, siderite and rarely chlorite. Also 1% py. as v.f.g to c.g. subhedral to anhedral grains disseminated in black shale and siltstone 259m - 20% py. as rextal. c.g and veinlets assoc. w. qtz. 259.85 & 259.95 - 50% py assoc. w siderite vein. (2cm thick) 260.85 - 0% f.g. py. assoc. w. siderite vein 1cm thick 261.1m - 10% cg. rextalized py. assoc. w. c.g. siderite 261.6 - 10% py assoc w. qtz. vein 263.5 - syn. py. fragment 3cm. 265.55m - 40% py. assoc. w. qtz in vein.
3.0	260				260	
3.0						
3.0	265				265	
3.0		265.82m - 273.40m Massive medium to coarse grained Pyrite The rock in this interval is composed of 40-80% medium to c.g. rextalized pyrite. The pyrite forms a meshwork in which patches of black chert, dk.grey and cream siderite are found. The carbonate is dominant over the chert in general. Possible relict bedding occurs at 267.4m. at 45° to C.A. The pyrite is intimately assoc. w. the carbonate. * T/S 269.05 No. 230511. quartz-siderite-pyrite rock. - originally carbonaceous - argillaceous - siliceous dolomite? T/S.				265.82m - 273.4m - massive m.g. to c.g. rextallized py. Average 60-70% over the whole interval. Assoc. w. siderite (coarse xtal) and lesser black chert. 269.2 - 40% py. as stock work in dk grey carbonate & minor chert matrix. 270.1m - 40% py. as diss. grains & veins assoc w. siderite? & black chert. 271.5 - 20% py. as veins & blebs assoc. w. v.c.g. carbonate. (Impure siderite?) 272.6 - 272.7 - 5% py. as blebs & grains in dk grey sid? sid layer at 20° to C.A. ⇒ bedding? 273.4 - 273.55 - 5% py as f.g. diss. 273.55 - 274.4 - 40% py. as v.f.g. pyritic siltstone. Very finely laminated pyrite and siltstone, py. also as f. to c.g., rextalized
.6						
2.4	270				270	
3.0		273.4 - 274.4m Black siltstone and Bedded pyritic Siltstone * T/S 273.8 No 230516. CARBONACEOUS SILTSTONE (SUB ADJACENT) ALIGNMENT OF LAMINATION After a silicified gradational contact with the unit above, 12cm of black siltstone gives way to bedded v.f.g. pyritic siltstone. Bedding is defined				
	275				275	

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization Trace 1–5% · Common 5–15% · Abundant 15–60% · Massive >60%

110079

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3·0		by variations in the pyrite content of the beds. Bedding is at 45° to c.A. Soft sediment deformation is evident in minor intervals. 274·4 – 275·5m – weakly pyritic grey siltstone. This unit shows soft sediment def, bedding is at 45° to c.A. Sericite is the main mineral.			and disseminated through the unit. 2–5% locally 20% 274·4 – 275·5m – 10% v.f.g. pyrite in siltstone also minor rextal.? m.g. py.
3·0		275·5m – 282·2 Bedded Pyritic Siltstone with Rextalized Pyrite. This interval consists of thinly laminated pyritic siltstone. Bedding is defined by variations in pyrite content. Individual beds range from <1mm to 2cm thick. As well as the v.f.g. syn. py. f.g. to c.g. rextalized py. occurs. Bands of this style of py. often follow bedding ⇒ rextall. syn. py. 276·35m – 276·8m – black siltstone with minor py. 278·85 – 279·4 – mineralized fault zone? Qtz, carb. & bracciated siltstone assoc. w. c.g. (rext?) py. Zone cuts bedding at angle at 278·85, 45° to c.A. Grades into country rock at 279·4m. 279·8m – 280·2m – unmineralized brecciated & veined by siderite, dolomitic? siltstone. lt. grey. 280·2 – 281·13m – pyritic siltstone with much stratiform rextal py. & rextal. py in veins. 281·13 – 281·27m – lt. gray dolomitic siltstone veined by qtz & containing blebs of py. 281·27m – 282·2m – bedded pyritic siltstone with contorted (slumped?) bedding.	F.Z. MINERALIZED F.Z. MINERALIZED F.Z.	280	275·5 – 282·2 m – Py. in 2 styles. 1) Syn. py. – v.f.g. bedded py. siltstone. 50–60%. 30–40% over the entire interval. 2) Rextal py. – f. to c.g. py often following bedding but also as blebs & veinlets. 278·85m – 279·40m – 30% c.g. rext. py. assoc w. qtz & carb. in a fault zone? 279·4 – 279·8m – 15% py. as v.f.g. bedded py. siltstone & f.g to c.g. diss. grains and blebs and veinlets. 280·2m – 281·13 & 281·27 – 282·2 30–40% py. as v.f.g. syn. py in py. siltstone & unoriented py. veinlets & disseminated rextal. blebs & grains. veins – <5% py.) blebs & diss. grains – 10%. 281·13 – 281·27m – 5% py. as c.g. & blebs & veinlets assoc. w. qtz veins.
3·0	280				
		282·2m – 283·8m Mineralized Fault Zone. From 282·2m massive f. to c. xtaline py. as bands 35° to c.A. and unoriented veinlets within a zone of qtz veining. These py. & qtz veins break up the country rock, which until 282·9 is pyritic siltstone but then becomes grey green spilitic? lithic tuff. A large (40cm) siderite vein probably marks the main fracture.	F.Z.	285	283·4 – 283·8 siderite vein 282·25 – 10 cm 60% py. vein 282·3 – 282·9 – 2–3% py as syn py. siltstone and as veinlets to 1cm. Syn. Py. 1% veinlets 5%. 282·9 – 283·05m – 10% Py. as f. to c.g. disseminated qtz veined volc. 283·05 – 283·4m – trace diss. py. 284·2 – 284·35 – trace py. assoc w. qtz vein.
	285				
		Please See next page			
	290			290	
	295			295	
	300			300	

5 cm

ABERFOYLE DIAMOND DRILL LOG G46 12B

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110080

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	275	5 cm							
3.0	280	COARSELY CRYSTALLINE SIDERITE VEIN.							
3.0		POSSIBLE FAULT ZONE : BROKEN CORE AND MINOR CLAY F	B.C.						
3.0	285	F							WEAKLY VEINIFORM PYRITE CONCENTRATIONS OCCUR SPORADICALLY THROUGHOUT THE VOLCANICS. CONCENTRATIONS APPROACH 15-20% OVER 20 CM.
3.0	290	QUARTZ VEINATED FAULT BRECCIA ALONG VOLC./SED. CONTACT.						290.8 M	APPROXIMATELY 10% PY. OVER 5.4M COMMENCING AT 290.8 M. THE PY. OCCURS AS INTERBEDS OF VERY FINE GRAINED SYNGENETIC MATERIAL.
3.0		FINE GRAINED, OFTEN CONTORTED BLACK SHALE. STRONG CLEAVAGE AND ABUNDANT QUARTZ VEINS. GRAPHITIC IN PLACES. F UPPER AND LOWER CONTACT ZONES ARE CHARACTERISTICALLY BRECCIATED, QUARTZ VEINATED AND SIDERITE RICH. F THE BEDDING IS // TO CORE AXIS OVER ~ 10CM AT 294.8M. ALTHOUGH CONTORTED IN PLACES BEDDING IS GENERALLY AT A LOW ANGLE TO CORE AXIS.							
3.0	295	BRECCIA - QTZ AND SIDERITE RICH INDICATING VOLC/SED. CONTACT. F MODERATELY FAULTED THROUGHOUT. SEVERAL SMALL CLAY-RICH BREAKS IN THE CORE INDICATE THE SUPPOSED FAULTS	BROKEN CORE					296.2 M.	~ 40-50 % PYRITE OVER THE 2.1 M INTERVAL.
3.0		STRONGLY PYRITIC VOLCANICS. A TUFFACEOUS VOLC. REPLACED BY MODERATE TO COARSELY CRYSTALLINE PY.						298.3 M.	
		FINE GRAINED, BLACK CARBONACEOUS SHALES. CONTAINS NUMEROUS FINE GRAINED PYRITIC BANDS. STRONGLY CONTORTED. QUARTZ VEINS ARE COMMON F							MINOR BEDDED SYNGENETIC PY. ~5% VERY FINE GRAINED.
3.0	300	STRONGLY MINERALIZED VOLCANICS: MODERATE TO COARSELY CRYSTALLINE PYRITE REPLACING A TUFFACEOUS VOLCANIC.						299.5 M.	50-60% PYRITE OVER 0.7 M.

ABERFOYLE — DIAMOND DRILL LOG

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110081

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0 CONT'D	300	FINE GRAINED CONTORTED PYRITIC BLACK SHALES. STRONG FOLDED CLEAVAGE. ALTERNATING BANDS OF ABUNDANT FINE GRAINED PYRITE AND CARBONACEOUS MATERIAL. E.O.H →							~ 5% PYRITE OVER REMAINING PORTION OF HOLE. IT OCCURS AS VERY FINE GRAINED SYNGENETIC PYRITE.
	305								

5 cm

Cominco

DRILL HOLE RECORD

Location QUEEN HILL | Property QUEEN HILL | District ZEEHAN | Alt./R.L. 196.4 | Hole Nº G47

Commenced 23-9-79 | Completed 7-10-79 | Core size HQ NQ, BQ | Co-ordinate 1820.3N 500.4E | Date 2-11-79

Objective POTENTIAL FOR STRATIFORM MINERALISATION BENEATH RL100 | % Recovery 96% | Bearing (M) 098.5° m | Grid bearing (M) -11.25° | Logged S. RICHARDSON | Dip -65°.

SURVEY DATA

DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE
19m	65.5°	103.5°	EASTMAN S/SHOT
24m	65 66°	103°	"
46m	64.75°	104.5°	"
0m	-65.5°	98.5°	THEODOLITE
79m	65°	102°	EASTMAN S/SHOT
112m	65°	100°	"
136.4m	64.75°	99.5°	"
167m	64.5°	96	"
200m	65	96	"
244.4	62.5°	94.5	"
268m	60°	92	"
295.4	58.5°	92.5	"
331	55.5°	89°	"
361	52°	87°	"
397	50.75°	86.5°	"
448	48.75°	89°	"
	EOH	471.4 m	

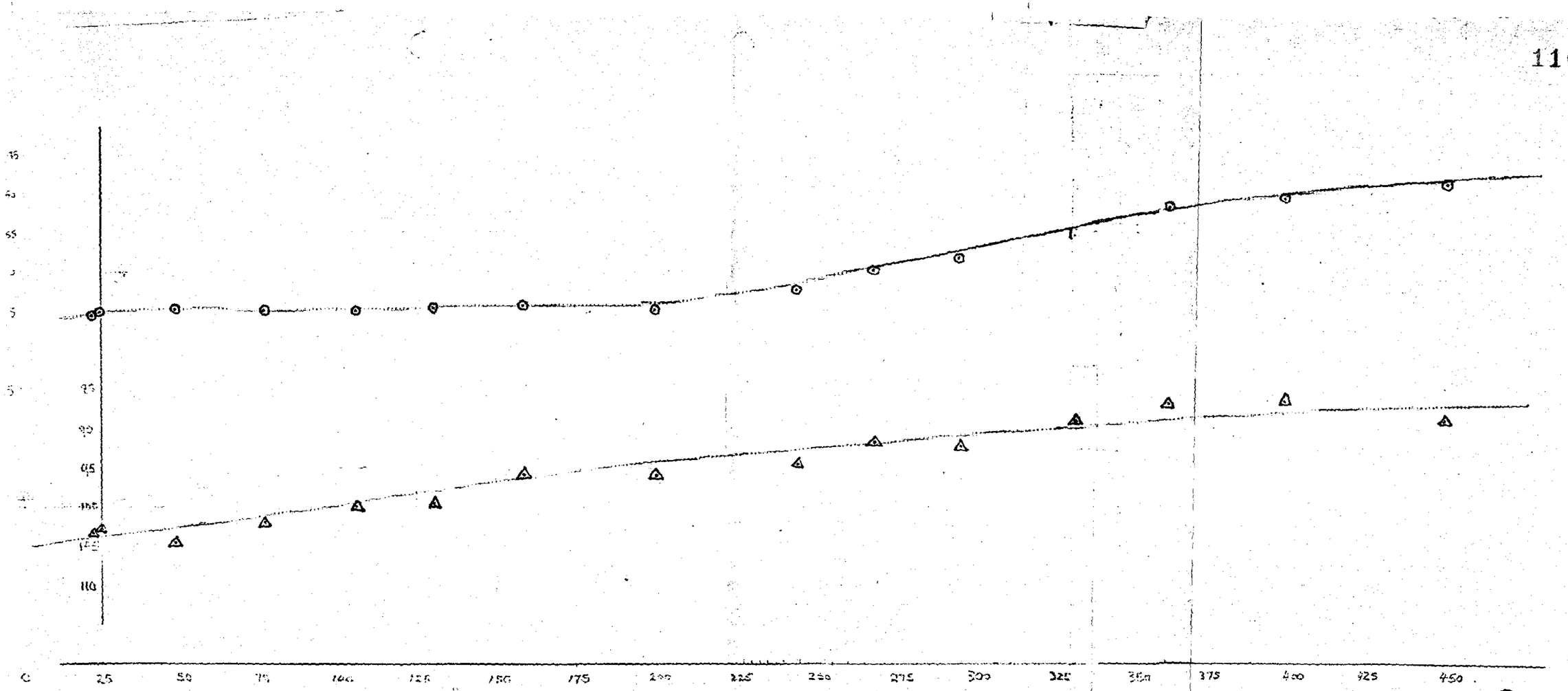
GRAPH DERIVED DATA

DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE
0	65.5	098.5	1820.41	499.93	196.75
25	65	099.5	1816.79	509.75	174.05
50	65	098	1813.17	519.68	151.39
75	65	096.5	1809.82	529.69	128.73
100	65	095.5	1806.69	539.78	106.07
125	65	093.5	1803.82	549.95	83.42
150	65	092	1801.27	560.20	60.76
175	65	091	1798.93	570.51	38.10
200	64.5	089.5	1796.81	580.96	15.49
225	63	089	1794.80	591.83	-6.93
250	61	088	1792.81	603.39	-29.00
275	59	087	1790.91	615.75	-50.65
300	57	086	1789.13	628.87	-71.85
325	55	085	1787.49	642.75	-92.57
350	53.5	083.5	1786.09	657.29	-112.86
375	51	083.0	1784.90	672.54	-132.62
400	50	082	1783.86	688.41	-151.91
425	49	081.5	1783.01	704.62	-170.92
450	48	081	1782.29	721.17	-189.64
475	47.5	081	1781.63	737.97	-208.15

REMARKS

110082

110083



G47

△ AZIMUTH

ALTITUDE

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD	SAMPLE No.
G47	359·95									
	360·95	16	<5	55	2800	290		<1·0		211975
	361·95	14	<5	45	1450	365		2·0		211976
	362·50	16	<5	20	545	350		1·5		211977
	363·20	16	<5	35	160	425		4·0		211978
	364·20	6	<5	20	100	175		2·0		211979
	365·20	8	<5	40	235	300		3·0		211980
	366·20	16	<5	30	165	185		4·5		211981
	367·20	4	<5	30	160	220		1·5		211982
	368·85	−5·00								
	369·85	16	<5	40	260	280		4·5		211983
	370·85	6	<5	50	520	350		6·0		211984
	371·20	340	<5	55	1500	1440		5·5		211985
	371·55	120	<5	125	3650	8500		31·5		211986
	371·90	16	15	50	875	825		26·5		211987
	372·90	20	<5	125	260	470		4·0		211988
	373·90	16	15	150	200	815		6·5		211989
	374·30	55	60	80	975	1070		11·5		211990

1100

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G47	374·30										
	375·30	34	25	25	235	250		1·0			211991
	375·70	6	<5	30	90	145		1·5			211992
	376·70	6	5	75	310	430		3·5			211993
	377·70	10	<5	20	325	170		1·0			211994
	378·70	6	<5	100	75	640		2·0			211995
	379·70	8	<5	95	260	540		2·5			211996
	380·70	28	<5	45	550	210		1·0			211997

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PAGE 1 OF 1

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
647	399·70										
	400·70	320	10	55	400	230		2·0			238055
	401·20	35000	55	300	165	230		4·5			238056
	401·70	15300	15	160	325	145		2·5			238057
	402·00	350	<5	105	14000	10200		3·5			238058
	402·25	46	<5	55	8900	2160		3·5			238059
	402·90	44	<5	60	2950	1530		8·5			238060
	403·50	290	15	165	10600	1800		7·5			238061
	404·50	160	15	80	200	85		<1·0			238062
	405·70										
	406·20	360	15	75	605	105		2·5			238063

Fracture Bedding Coring Mineralization

Foliation Fault F

Fragment size & shape Vein c carbonate q quartz

110087

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.5	0	0m - .75m No core - rubble.							
.45		.75m - 8.5m Oxidized sericitic and chloritic lithic tuffs. see 8.5m to m for description.							
.4	5								
1.0									
.4									
1.8	8.5	BASE OF OXIDATION							
2.4	10	8.5m - 30.50 m Sericitic and chloritic lithic tuff. This is a sequence of lt. grey to grey green to purple lithic tuffs. The lithic component is comprised of amygdaloidal fragments from 3mm to >10 cm, (av 1-3cm). They are irregular angular to sub rounded and are grey green in colour. The matrix of the fragments is composed of v.f.g. sericite-chlorite with the amygdules being dominantly filled with dark green chlorite and to a lesser extent quartz or siderite. Occasional inward crystal growth can be seen eg quartz with carbonate forming centre of the vesicle. Amygdules vary from <1mm to 1cm (av. 2mm).							
3.0	15								
2.5		17.7m - 18.35m possible pumiceous tuff. indicated by bedded (20° to C.A.) vesicular rock with no fragments.							
2.7	20	The fragmental component forms 50 - 80 % of the rock. Fragments presumably range in size to large blocks as the core occasionaly intersects up to 50cm of amygdaloidal volcanics which have irregular boundaries often following the boundaries of fractured vesicles. These boundaries are the margins of blocks.							
3.1	25	The matrix of the tuff appears identical in colour and composition							

5 cm

ure — Bedding — Cleavage — Mineralization — Trace 1-5% Common 5-15% Abundant 15-60% Massive >60%

Foliation — Fault — F — c carbonate q quartz

Fragment size & shape — Vein

110088

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.95		to that of the fragments ie sericite-chlorite and lt. grey green. 22.4 m – 22.50m and 23.10 m to 24.05m grey to purple grey lava? or large blocks. 24.05m to 27.80m – volcanic agglomerate. The rock now contains amygdaloidal fragments >5cm in size. 27.80m to 28.10m – bedded pumiceous tuff, bedding 20° to c.A.							
3.0	30	30.05m – lt grey green sericitic > chloritic lithic tuff. The tuff in this interval is a sequence of uniform lithic tuffs showing a poor bedding fabric at 20–30° to c.A. In general the tuff is composed of >90% of angular to well rounded, generally subrounded, amygdaloidal fragments. These range from 1mm to 5cm but the vast majority of fragments av. .5cm to 1.5cm. Smaller fragments are generally weakly amygdaloidal. In several places in this interval large irregular fragments av. 5cm exist within the uniform lithic tuff. The ground mass of the tuff is f.g. sericite-chlorite. Fragments are often only visible as "ghosts."							
3.0									
3.0	35								
3.0									
3.0	40								
2.95									
2.4	45								
1.5									
1.5									
	50								

5 cm

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein, c carbonate, q quartz

Mineralization — 110089

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG (TRACE / COMMON / ABUNDANT / MASSIVE)	DEPTH m	MINERALIZATION
3.0		5 cm			
3.0	55		c	55	pyrite > galena (20:1) assoc with c.g. siderite vein. pyrite c.g. > galena f.g.
3.0					
3.0	60			60	
3.0		From 64.5 to 65.3m the lithic tuff is dk. grey in colour.			
3.0	63.5				
		Broken core and pug ⇒ Fault zone	F.Z.		
.6	64.7 65			65	
		Broken core ⇒ Fault zone	F.Z.		
2.0	66.1	65.3m to Rock returns to lithic tuff and minor agglomerate as for 8.5m - 30.5m			≈68m - rare f.g. euhedral pyrite assoc. w. fine siderite > qtz. veins.
2.8		Broken core ⇒ Fault zone		68.8 69.1	
		67-73m several lt. grey subrounded chert clasts. (to 4cm)	F	69.7	
	70		F	70	
		70.65 Fault 20° to C.A.		70.65	
2.95		From 71.3m the tuff becomes increasingly silicified reaching a maximum at 72.8m			
		Fault zone 30° to C.A. 73.0 to 73.15m			
3.0	75			75	

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive > 60%

110090

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG (TRACE / COMMON / ABUNDANT / MASSIVE)	DEPTH m	MINERALIZATION
		Bedding – defined by l.c. of incipient fragments at 30° to c.A.			
3.0			c		
		Slicken slides on vein surface 45° to c.A.			78.9m & 80.7m f.g. pyrite and minor galena assoc. with qtz-siderite veins at 35° to c.A.
	80			80	
3.0		82.4m – rounded siltstone fragment 3cm.			
3.0					
	85			85	
3.0					
		88.2 – 88.4 m – Fault zone	q F2		
3.0	90	91.2 m – rounded grey chert fragment 4cm.		90	
		91.8m – 92.7m – silicified lithic tuff.			
3.0		94.4m – 95.1m – " "			
	95			95	
2.5					
2.5		5 cm			
	100			100	

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

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

110091

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG (TRACE / COMMON / ABUNDANT / MASSIVE)	DEPTH m	MINERALIZATION
3.0		Lithology as above – lithic tuff with minor block size material (>5cm up to 40 cm?)	qk		Trace pyrite in qtz-siderite vein 20° to c.A.
3.0	105			105	
3.0					
3.0	110	111.50–111.55 m – Fault breccia – healed.	FZ	110	111.5 – Trace pyrite assoc. w. Fault breccia.
		111.55 to 111.70 m – Broken core ⇒ Fault zone			Trace f.g. pyrite assoc. w. siderite in fault zone at 111.6 m
3.0					
3.0	115	5 cm		115	
3.0		118.80 m – Fault at 90° to c.A.	F		
3.0	120	119.3 – 120.0 m – Fault ∥ to c.A.	F	120	
		From about 119.40 m the tuff becomes increasingly silicified, reaching a maximum about 121.0 m. Silicification remains moderate to intense until 130.0 m.			
3.0		The lithology in this interval is as above although the colour is generally lt. grey.			
	125			125	

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110092

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0			V						
3.0									
	130	Fault at 90° to c.A.	F					130	
		Lithology - Lithic tuffs as for 8.5m to 30.5m.							
3.0									
			F						
		133.0 - Fracture 30° to c.A. (slight mov.)							
		133.6 à 133.7 - Fractures (no movement) 20° to c.A. Talc? on surface.							
3.0									
	135							135	
.2									
1.6									
		5 cm							
3.0									
	140		F					140	
		140.4 m Fault 30° to c.A. Slicken slides 45° to c.A.							
1.0									
		142.4 - 143.1m Broken core ⇒ Fault zone 10 - 20° to c.A.							pyrite assoc. w. qtz veining at 142.7 m (2cm thick)
2.9									
	145							145	
3.0									
		147.0 - Fault with slickenslides 45° to c.A.	F						
			qc						
								149.6	
	150	149.6 - 150.0 Fault zone indicated by broken core						150	

Feature Bedding / Foliation / Fragment (size & shape) — Shearing / Fault / Vein (c carbonate, q quartz)

Mineralization 110093 — Trace 1-5% / Common 5-15% / Abundant 15-60% / Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Lithology - grey lithic tuffs as above with minor agglomeratic material.	lk						
3.0		153.2 Fault - broken core	F						
1.0	155	Broken core ⇒ Fault zone	F					155	
	156.3								
	155.5	Broken core ⇒ Fault zone	F						
	156.7		F						
1.1									
	157.05	Broken core ⇒ Fault zone							
	157.30								
2.8									
		159.15m - Fault 25° to c.A. Slicken slides on fault plane 30-45° to c.A.	F						
	160							160	
3.1		5 cm							
3.0	165							165	
		166.8m - Fault 45° to c.A.	F						
3.0									
	170							170	
	170.4	Grey green vesicular lava. Vesicles to 1cm filled with chlorite ± qtz.							
3.0	171.3								
3.0									
	175							175	

Feature — Bedding, Foliation, Fragment (size & shape) — Cleaving, Fault, Vein (c carbonate, q quartz)

Mineralization — 110094 — Trace, Common 5–15%, Abundant 15–60%, Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
2·75	177·0	176·5 – 177 siderite & qtz veining assoc. with fault zone logged below Broken core ⇒ Fault Zone. Zone associated with siderite & qtz veining	TRACE COMMON ABUNDANT MASSIVE		176·5 – 177·0 m trace pyrite resinous sphalerite & galena with siderite & qtz veining
	178·4				
3·0	180	178·1 – Lithology reverts to grey green lithic tuffs as for			
3·0					
	185	5 cm			
3·0					
		187·05m – Fault at 45° to c.A.	F		
3·0					
	190	190·4 – crude bedding 15° to c.A.			
3·0					
		192·65 – 199·1 Grey green vesicular lavas with interbedded tuffs. Lavas? typically with chilled margins to approx. 1m thick are interbedded with f.g. and lithic tuffs. Lavas? with vesicles from <1mm to 1cm thick. Boundaries of flows? vary from 55° to 80° to c.A.			
3·0	195				
3·0					
	200				

cature

Foliation
Fragment size & shape
Fault
Vein
c carbonate
q quartz

mineralization

110095

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Fault at 202.25m. - broken core	F						
		202.3m - 206.5m Lt. grey lithic tuff.							
3.0	205	The tuff in this interval is a uniform lt. grey colour with individual lithic fragments being less pronounced in outline than previously. They are generally finer grained and better sorted than previously.						205	
3.0		206.5m - 208.4m grey green lithic tuff as for 8.5 - 30.5m							
1.5		208.4 - 209.9 m Lt grey lithic tuff as for 202.3m - 206.5m.	F.2					209.0	
1.4	210	209.9 - Lithic tuff as for 8.5 - 30.5m						209.9 210	
		211.9 - 212.1 - Fault zone at low angle to c.A.	F.2						
3.0	213	Broken core ⇒ F.2 (at 20° to c.A.)							
	213.7								
3.0	215	5 cm						215	
		218.20m - 218.60m - silicified lithic tuff.							
3.0		219.4 - bedding 35° to c.A.							
	220		F.2					220	
3.0	221.05 221.35	Broken core ⇒ F.2. at low angle to c.A.							
		221.55 - Fault							
		221.85 - Fault at 20° to c.A.							
		219.6m - 228.4m Grey green vesicular lava breccias? with minor lithic tuff. From 219.6m there is a dramatic increase in the size of							
	225							225	

G47 10

Foliation
Fragment size & shape Qo
Vein
c carbonate
q quartz

110096

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Fragmental component of the rock. Irregular angular to subrounded grey green sericitic and chloritic vesicular lava fragments and lava flows?							
2.9	229.4								
	229.2								
2.2	230	Broken core and pug ⇒ fault zone unknown angle to C.A.	FAULT ZONE					230	
.3	232.4								
3.0		228.4 -- 257.2 Grey green sericitic lithic tuff- as for 8.5m - 30.5m From 225.4m to 235.8 well sorted grey green lithic tuff, most fragments are between 3mm and 8mm.							
	235							235	
3.0		From 235.8m to about 243.0m the tuff is poorly sorted, vesicular fragments to 4cm (av 1cm) forming the bulk of the rock.							
3.0	240	From 240.9 to 242.2m a single fault runs // to C.A.	F					240	
3.0		From 243.0 to 257.20 the lithic tuff is generally uniform in texture as for 228.4 - 235.3							
3.0	245							245	
		247.1 to 248.0m a fault runs // to C.A.	F						
3.0	250	5 cm						250	

Foliation ⁄ Fault —F— c carbonate q quartz
Fragment size & shape ⌀ Vein

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

Hole 10097

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		250.2m Fault 45° to C.A.							
1.1									
		253.1 - 254.2m - Fault 10° to C.A	F						
3.0	255							255	
3.0		257.2m - 273.5m Grey vesicular lavas and lava breccias Vesicular lavas to >1m. show definite brecciation in numerous areas, most of the interval is represented by massive grey green sericitic and chloritic lavas. Vesicles to 1cm (av. 2mm.) are infilled by chlorite ± qtz. The contact with the underlying tuffs is knife sharp and at 60° to C.A. Vesicles become smaller towards this contact, representing a chilled margin?							
3.0	260		F 260.1 F 260.4					260	
3.0									
3.0	265							265	
3.0		5 cm							
3.0	270							270	
	270.1	Fault zone at 15° to C.A.						270.1	
		270.7 Fault at low angle to C.A.	F						
3.0									
		273.5 - 290.28 Grey green lithic tuff with minor agglomerate							
	275							275	

Foliation
Fragment size & shape
Fault
Vein
c carbonate
q quartz

110098

Common 5–15%
Abundant 15–60%
Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3·0		The tuff in this interval is generally very poorly sorted with vesicular lava fragments ranging from 1mm to 10cm.							
3·0	280	These are within a sericite chlorite qtz carbonate groundmass						280	
3·0		From about 283 m to 290 m the tuff is more chloritic than previously most vesicles having filled by chlorite.							
3·0	285							285	
3·0		290 m Bedding 20° to c.A.							
3·0	290	cream grey vesicular lava flow?						290	
	291·2	291.2m – 296.9m Volcanic agglomerate – vesicular lava fragments and blocks.							
2·93									
	295							295	
3·0								296·6 296·7	
	300	5 cm						300	

Feature Bedding, Foliation, Fragment size & shape; Cleaving, Fault, Vein; c carbonate, q quartz

Mineralization 110099

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		300.0m – 300.75 Lt. grey sericitic vesicular lava. Contacts 45° to c.A.							
3.0									
3.0	305							305	
3.0		307.3m – 317.8m Lt grey to grey green sericitic lavas. Vesicles filled with chlorite or qtz. Minor lavas brec...							
3.0	310	310.1m fault ~25° to c.A. ... tuff. 310.5 bedding in tuff 25° to c.A. Individual flows to 2 m., often with chilled margins.	f					310	
3.0									
3.0	315							315	
3.0		317.8m – 354.8m Grey green lithic tuff with minor ... carbonate. Lithology is as before. Typical sericitic and chloritic tuff as described for 8.5 – 30.5 m.							
3.0	320							320	
3.0									
	325							325	

5 cm

...ture ...ing ...ing ...mineralization

Foliation Fault F
Fragment Vein c carbonate q quartz
size & shape

110100

Trace
Common 5–15%
Abundant 15–60%
Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Lithology as above.							
		5 cm							
3.0	330							330	
3.0									
	335							335	
3.0		From about 337m the tuff fines to 340m then coarsens to 341m							
3.0	340							340	
3.0		342 bedding 30° to c.A.							
3.0	345							345	
3.0		348m – bedding 30° to c.A.	F					346.3	
		349.2 slickensides on fault plane 45° to c.A.	F					349.2	
	350							350	

Foliation / Fault F
Fragment size & shape / Vein c carbonate q quartz

110101

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0		5 cm			
3.0	355	354.8m - 358.15m. From 354.8m the tuff takes on a white generally streaked appearance. The rock consists of grey green sericitic lava fragments within a white sericite ? carbonate matrix. The matrix stains blue with alazarin red S. indicating Fe-carbonate within the matrix. This is presumably an alteration feature. The lower 1m. of this unit is interbedded with lt. grey siltstone	F	354.9 355	358.15 - 358.6 - Tr. res. sp. assoc. w. qtz veinlets. Tr. f. to c.g. py asso wt. qtz. veinlets.
3.0	357.3 357.7	Broken core ⇒ Fault zone at ? ∠ to C.A.	F		
3.0	360	358.15 - Sediment - Volc. contact. 358.15 - 358.6m - lt. grey bedded silicic siltstone bedding 45° to C.A. Minor qtz veinlets. 358.6 - 361.45m - Cream grey to med. grey weakly to moderately silicified dolomitic ? siltstone. The rock has been extensively veined by cream coloured siderite in veins av. 3mm and in blebs up to 2cm. Thin unoriented qtz veins are also present but less dominant than siderite. Where less intensively silicified the rock stains blue ⇒ Dolomitic ?? 361.45 - 361.55 - 5cm thick band of pyritic breccia as described below. 361.55 - 361.95 - Black chert > minor silicified siltstone.		360	
3.0	365	361.95 - 362.5 - Pyritic sed. breccia. The rock in this interval consists of subrounded to angular pyrite, black shale, and silicified calcareous and sideritic fragments. These range from <1mm to 3cm. The matrix is calcareous → eff. w. acid. 362.5m - 363.6m - Pyritic siltstone with minor sedimentary breccia. Slumped well bedded pyritic siltstone. From 363.2m - 363.9 the rock is ext veined & broken by the intro of qtz, calcite > siderite veinlets. 362.3 - tectonic breccia.	qv 30cm qv 10cm F F F	361.95 362.5 362.7 362.85 363.2 363.7 365 365.4	361.95 - 362.5 - 10% py as fragments & v.f.g. in matrix of sed. btec. 362.5 - 362.7m - 50% syn. v.f.g py 362.7 - 362.85 - 5% syn. py. 362.85 - 363.2m - 15-20% syn. py. in slumped py. siltstone. 363.2 - 363.7 5-10% syn. py. in py. si.s. 363.95 - 364.2 - trace syn. py. in py. si.s. 364.9 - 365.6 - 5% v.f.g. syn. py. in bedded py. siltstone
2.9	370	363.95m - 371.9m Lt. grey to dk. grey. dolomitic siltstone - occ. pyritic. This interval shows ext. veining, causing brecciation locally, by white to cream siderite. Veins to 2cm. Bedding 40° to C.A. Where pyritic the dolomitic siltstone is moderately silicified. 366.3m - Fault: rock in vicinity is broken > calc. 367.8m " " " " 10cm of cong. mark the contact with the unit below.	F	370	366.3 - 366.6 - to 5% syn py. in py. siltstone. 368.85 - 369.55m - up to 5% syn. v.f.g py. in bedded py. siltstone. 370.5 - 370.85 - 10% syn. py. in py. siltstone. Minor rextal py.
3.0	371.9	371.9 - 374.28m. Pyritic Siltstone. This is a dark grey. brown bedded pyritic siltstone Bedding varies from 30-40° to C.A. Within the pyritic siltstone matrix, there are grey angular to well rounded massive siltstone fragments (<1%). The rock is weakly veined by thin <1cm. veins of siderite.			371.2 - 371.55m - 30% syn. py. in py. siltstone. 371.9m - 374.28 - 30-40% py. a v.f.g syn. py. in the siltstone. Also as 1-5% blebs & veinlets of, gen. conformable to bedding, rextal.? py. Veinlet av. 1mm blebs <1cm.
3.0	374.28 375	374.28m - 375.67 V.f.g. grey to black well bedded siltstone. Minor syn. py. Bedding 50-80° to C.A.		375	374.28 - 375.67m - 2-3% syn. py. as wisps & dis. in grey to black bedded siltstone.

Foliation / Fault / Fragment (size & shape) / Vein / c carbonate / q quartz

Mineralization — Trace / Common 5–15% / Abundant 15–60% / Massive > 60%

110102

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0	375.67	375.67 – 377.2m Pyritic siltstone. Pyritic siltstone as previously with siltstone and pyrite fragments to 2cm – 1–2%. Bedding 45° to 0° to c.A. gen. low			375.67 – 376.9m 30–40% syn. py. v.f.g. as py. siltstone. and as py. frag. (sed) in the unit. minor rexst. f. to c.g. x blebs.
		377.35 – 377.75m Dk. grey siltstone – ext. veined w. siderite			376.9 – 377.2m 5–10% syn. py. in slumped siltstone.
		377.75m – 379.65m Pyritic siltstone interbedded w. black and grey siltstone. Bedding where evident is at a very low angle to c.A., ie 0–30° or 5–10°.			377.75 – 379.4m – 50% v.f.g. syn. py in py. siltstone
.30	379.65				378.4m – 378.6m – 5% syn. py as gry. siltstone crosses at low angle to c.A.
	380	Black siltstone w. minor syn. py. as py. siltstone laminae.		380	378.6m – 379.4m – 10–15% v.f.g. syn. py interbedd with grey siltstone.
2.9	380.65	Zone of extensive veining & brecciation by qtz. Country rock is siltstone.		380.65	379.4m – 379.65m – 5% syn. py as bands 1cm to 2cm thick interbedded with black locally silicified sst.
	381.55	Grey green sericitic lithic tuff. Vesicular lava? fragments (sericitic), vesicles infilled by chlorite, in sericitic groundmass.		381.55	
	383.3 383.6	FAULT ZONE. Broken Core – Poss 35° to c.A.			
3.0	383.8	383.8 – 392.25m Dk. grey Impure Dolomitic siltstone. This interval is composed of generally massive weakly carbonate bearing siltstone. The rock is extensively veined and brecciated by siderite veins to 1cm thick, av 2mm. These are unoriented and locally may make up 30% of the rock.			
	385			385	
3.0					
3.0		5 cm			
	390			390	
	392.25	392.25 – 393.9m Lt Grey Dolomitic sandstone. Contains angular fragments of dk grey siltstone to 2cm. Av. 2mm. Bedding 30° to c.A. Numerous unoriented siderite veins			
3.0	393.9				393.85m – 394m – 10% py. as veins & diss. assoc. w. py.
		393.9m – 400.0m med grey to Black massive Siltstone. Grey to black occ. dol? massive siltstone. Ext. veining by siderite.			
	395			395 395.2	
	396.65 394.05	FAULT ZONE Broken core & pug			
3.0		398.6m – injection of mobile sed into black siltstone?			398.4m – 1cm 10% py. in vein assoc. w. siderite
	400			400	

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110103 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60% ⇒ Py >50%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
	400·7	Contorted Black shale - contains lt. grey irreg. qtzite frag. Extr. veining by qtz + sid			
2·0		Grey Green sericitic lithic tuff with thin interbeds of black shale. The sericitic volcs. have been replaced + permeated by f.g to c.g. py. Minor thin laminations of py. siltstone are assoc. w. the shale bands.		401·2 401·7 402·0 402·26 402·4	400·7m - 401·2m - 65% c.g. to mass. py. in "bands" // to Si / So to 5mm thick. Assoc w. minor sid. + Arspy. 401·2m - 401·7m - 10-15% v.f. to c.g. py in sericitic lithic tuff as dissem. 401·7m - 402·0m - 10-15% py as next. syn. py. in py. siltstone. 402·0 - 402·25m - 15% py a f.g. diss. rep. sericitic volc. 402·25 - 402·4 - 20% bedded syn py. 402·4 - 403·35m - ± - 30% v.f.g. bedded syn py in py siltstone, aft rest. 403·35 - 403·6m - 10-15% aft rest. syn py. and as blebs 403·6 - 403·7 - 1-5% syn py as blebs and bands. 405·70m - 406·20m - 2-3% f.g. py. as irreg veins + infilling gen lge. vesicles (> 4mm)
·7	402·4	Pyritic Siltstone or v.f. to f. pyritic tuff. The boundary with the intervals above + below is entirely gradational. The top of the int. cont. py. siltstone w. poss. volc. frag to 1cm. The bot. 1m grades fm. Py. Silt. to py tuff? to sericitic volc.			
3·0	403·5 405	Grey Green Sericitic Lithic Tuff Lithology is lithic tuff w. fragmental comp. comprising vesic. to non. vesic. lava frag. Vesicles locally may be filled with pyrite. Tuff is slightly chloritic near upper contact.		405	
1·8+					py veinw 1cm at 407·8m
		DROPPED CORE TRAY Lithology is sericitic lithic tuff. and lavas.			
	410			410	
		5 cm			
	415			415	
	416·7	FAULT ZONE Lithology in fault zone is pred. ser. lithic tuff but bands of black carbonaceous shale occur. The contacts with these are not sharp with vesic. lava fragments occuring in a transitional shaly zone on one or both sides of the shale.			416·6m - 416·7m - 10cm 30% py in vein w. siderite
2·2					
	420			420	
1·0			Siderite		
1·2					423m - 30cm py. blebs + veinlets in chloritic? lithic tuff
1·8					
	425			425	

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

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

110104

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
1.0		425.0 - 426.2m Black carbonaceous Shale. Mainly as pug & fragments.							
	426.2								
1.0									
	427.6								
	428.05	FAULT ZONE - Lithology - sericitic lithic tuff.							
1.8	4	Black carbonaceous shale - mainly fault pug.							
	429.5								
.9	430							430	
3.0									
		5 cm							
2.0	435							435	
		435.75m - Fault indicated broken core. 80° to CA ?	F						
2.5									
	438.5								
	438.9	Cream Grey sericitic vesicular lava.							
3.0									
	440	440.2m - Fault.	F					440	
2.0									
1.5	444.9	Lt. Grey Impure Dol. Sandstone - Tuffaceous ?							
	444.7								
	445	2 Grey green sericitic lavas sep. by 10cm of lt grey dol? sandstone in middle of the two.						445	
	446								
3.0		Lithic Tuff as above. - matrix more chloritic							
		448.1 m - Fault. - broken core.	F 5-6 10cm					448.6	
3.0									
	450	Lithic fragments often v. weakly vesicular						450	

ABERFOYLE DIAMOND DRILL LOG G47 19

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein, c carbonate, q quartz

Mineralization 110105 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
		Lithology - as above - sericitic & chloritic lithic tuff. Some fragments not vesiculated	q 2cm		450.4 - 5cm 2% py as diss in volc. 451.15m - mass. py (100%) in py. vein adj. to 2cm. qtz vein
3.0					
	455			455	
3.0		456.1m - rounded black siltstone fragment 10cm.			
3.0					
	460			460	461m - 2cm 10% p as blebs in volc.
3.0					
3.0	465			465	
3.0					
2.0	470		Sil 10cm qtz 10cm	469.7 470	469.5 - 469.55 - 10% py. as blebs & veinlets in volc. 470.15m - 470.35m - 10-15% py as f-c.g. & blebs assoc w. qtz and sil veining 471 - 471.1 - 5-10% py as f-c.g. & blebs assoc. w. q & sil vein
		END OF HOLE 471.4 m			
	475	5 cm		475	

Cominco

DRILL HOLE RECORD

Location QUEEN HILL | Property QUEEN HILL | District ZEEHAN | Alt./R.L. 206·16 | Hole No G48

Commenced 9/10/79 | Completed 17/10/79 | Core size HQ/NQ/ | Co-ordinate 1726·7N 504·8E | Date 31-10-79

Objective QUEEN HILL LENS 100, 130, RL 140, STORMSDOWN 190 LENS RL 120, CLARKES LODE. | % Recovery 92% | Bearing (M) 104° | Grid bearing (M) -11·25° | Logged S.R. | Dip -45°

SURVEY DATA

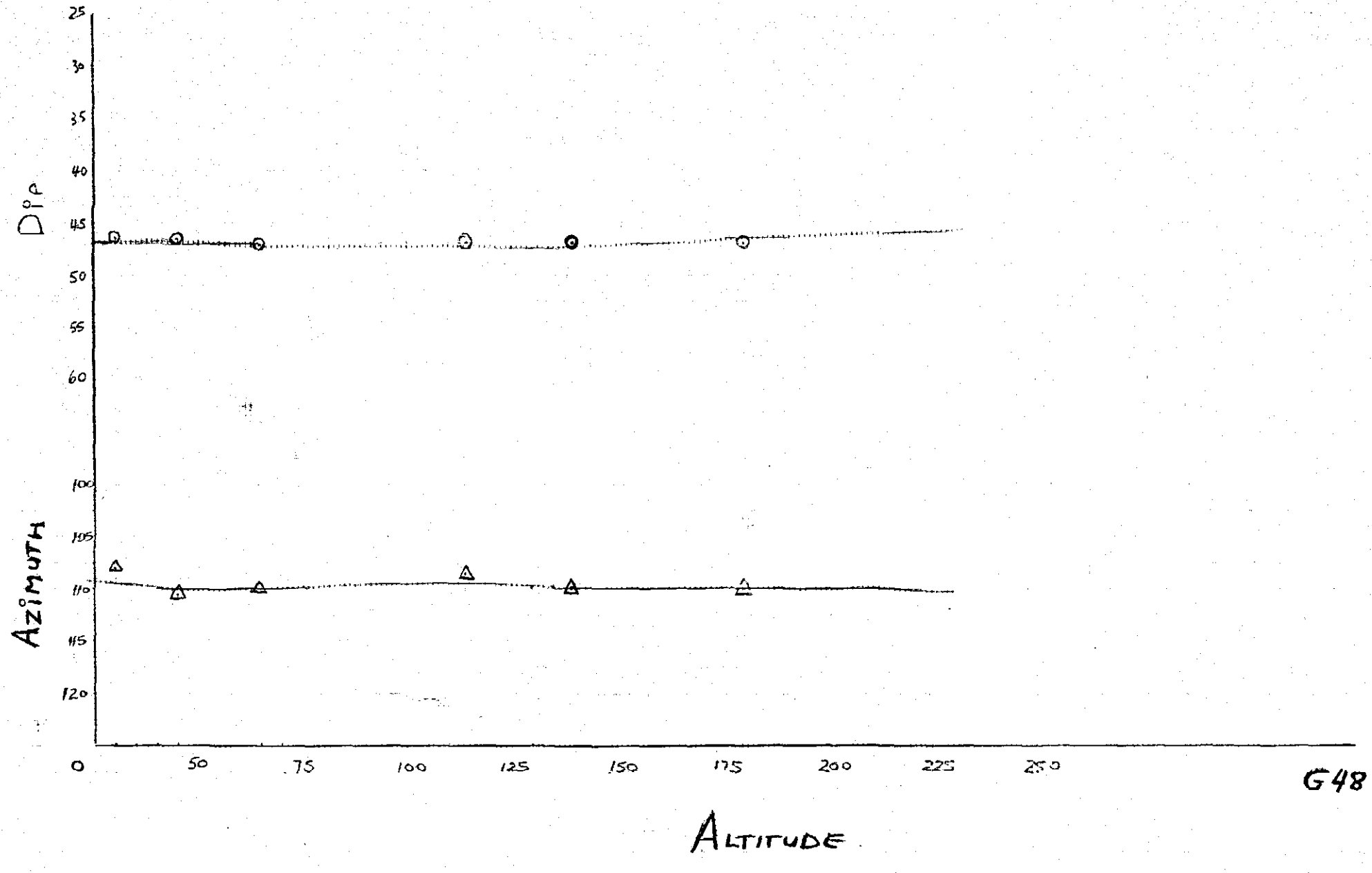
DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE
30m	46,5°	108°	EASTMAN
45 m	46,5°	110,25	"
72,9m	47°	110	"
114,9m	47°	108,5	"
138,9m	47°	110°	"
180,9m	47°	110	"
EOH 207,9 m.			

GRAPH DERIVED DATA

DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE
0	46,5	104,5	1729.31	504.37	205.96
25	46,5	103,25	1720.00	519.95	187.83
50	47,0	104,0	1712.79	535.48	169.62
75	47,25	103,75	1705.56	550.87	151.29
100	47,25	103,5	1698.42	566.25	132.92
125	47,5	103,5	1691.34	581.62	114.51
150	47,25	104,0	1684.19	596.96	96.11
175	46,5	104,0	1676.90	612.40	77.86
200	46,25	104,0	1699.54	628.00	59.75
225	46,0	104,25	1662.12	643.64	41.72

REMARKS

H10106


Dip
25
30
35
40
45
50
55
60
Azimuth
100
105
110
115
120
0
50
75
100
125
150
175
200
225
250
Altitude

G48

110101

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G48	102·90										
	103·10	126	20	140	153000	3400		4·5			238001
	103·60	22	<5	65	12000	695		5·0			238002
	104·70	12	<5	15	4600	925		2·0			238003
	104·90	<0·05?	600	1890	870000	196000		875·0			238004
	105·80	38	<5	105	41000	12500		10·0			238005
	106·80	16	<5	45	1050	3650		10·0			238006
	107·80	<4	<5	20	450	90		1·0			238007
	108·80	20	<5	25	800	4700		3·0			238008
	109·90	<4	<5	20	3200	2250		1·0			238009
	110·90	6	<5	45	1000	2700		<1·0			238010
	111·60	<4	<5	40	250	2900		<1·0			238011
	112·00	<4	<5	20	1000	1150		<1·0			238012
	112·50	<4	<5	25	2350	1400		<1·0			238013
	113·00	4	<5	20	2700	600		<1·0			238014
	114·00	10	<5	35	1100	2550		3·0			238015
	114·60	<4	<5	40	400	3200		5·0			238016
	144·00										
	145·00	50	<5	15	57000	2000		3·5			238017

Note:- Sample No. 238004, high Zn and Pb make Sn determination less accurate.

110108

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD	SAMPLE No.
G48	145·00									
	145·25	32	<5	25	7600	1775		3·0		238018
	146·25	36	<5	35	2000	1120		9·0		238019
	147·25	<4	<5	10	65	65		<1·0		238020
	148·25	14	<5	40	95	445		6·5		238021
	149·25	75	<5	70	255	370		1·5		238022
	150·05	23	<5	30	500	525		4·0		238023
	150·90	4	<5	35	80	545		<1·0		238024
	151·20	<4	<5	25	30	150		<1·0		238025
	152·20	14	<5	35	40	85		<1·0		238026
	153·20	14	<5	35	25	130		<1·0		238027
	154·40	8	5	25	40	140		<1·0		238028
	155·40	38	<5	10	45	105		<1·0		238029
	155·95	60	<5	15	80	70		<1·0		238030
	156·95	<4	<5	45	55	195		<1·0		238031
	157·50	20	<5	40	45	320		<1·0		238032
	158·50	12	<5	25	135	135		<1·0		238033
	114·60									
	115·60	<4	<5	10	20	50		<1·0		238034

ABERFOYLE

DIAMOND DRILL LOG

HOLE NO C48 Page No 1

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110110

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
·4		0-18m <u>weathered Vesicular lithic Tuff.</u> Brown to grey green highly weathered lithic tuffs? of the unit described below. Core is puggy and badly broken.							
1·5	5	5 cm						5	
1·0									
·75	10							10	
2·0									
2·5	15							15	
	18·0	APPROX. BASE OF OXIDATION 18- <u>Grey green sericitic medium to Coarse Tuff with minor lithic component.</u> The tuff in this interval is composed of med. to c.g. generally vesicular lava fragments in a grey green sericitic groundmass. The fragments are also grey green and sericitic but the vesicles are generally dk. green and chloritic. The size range of 99% of the fragments is between <1mm. and ·75cm. However the rock has a variable but generally small component of large (1cm to 4cm) irregular vesicular lava fragments. Although the matrix of the tuff appears dominantly sericitic, there is a significant quantity of iron rich carbonate within the rock as revealed by staining.								
2·0	20							20	
1·75									
	25							25	

Feature Bedding Foliation Fragment size & shape | Shearing Fault Vein | c carbonate q quartz

Mineralization 110111 | Trace 1-5% | Common 5-15% | Abundant 15-60% | Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG (TRACE / COMMON / ABUNDANT / MASSIVE)	DEPTH m	MINERALIZATION
1.3		This carbonate alteration is so extensive in minor intervals that the tuff takes on a white colour and will effervese when rock powder is reacted with HCl. eg 29.0m.			
1.0		The rock is weakly to moderately veined by white to cream siderite veins and veinlets. These are generally unoriented.			
1.0					
1.4	30	5 cm		30	
2.0					
		NQ AT 33.0m			
.9					
3.0	35	34.9m - Low angle (<10°) fault ⇒ broken core.	F	35	
		The lower sections of this interval show good bedding at 45° to c.A.			
3.0	38.2	38.0 - Fault pug.	F		
		38.2m - 47.15m. Interbedded vesicular lavas & lava breccias			
	40	lt. grey sericitic ± sericite carbonate vesicular lavas to 1.2m. Dominantly lt. grey vesicular lava breccias, gen carb. rich (Fe-calcite?). Lavas brecciated & invaded by groundmass of same composition		40	
3.0					
2.9	45			45	
	45.9	FAULT ZONE Broken core & pug.			
.75	46.6				
	47.15				47.1m 1cm k.f.g. syn. py.
2.0		47.15m, Grey green sericitic lithic tuff and minor agglomerate. From the boundary with the unit above fine to agglomerate size lithic fragments in a sericite carbonate groundmass make up the rock.			
3.0	50			50	

ABERFOYLE

DIAMOND DRILL LOG

HOLE NO 648 Page No 3

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110112

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		The tuff in this interval is notable for the fact that it contains a large percentage of vesicular lava clasts over 3-4cm in size. These are further notable for being often well rounded to subrounded, although many are still irregular and angular. Siderite veins ≤1cm occur evenly in the interval - usually ≈45° to C.A.							
No core Block For 6m.									
6.0	55							55	
3.0	60							60	
3.0		5 cm							
3.0	65	Fracture 15° to C.A. at 65.7m.	15° F					65 / 65.7	
3.0									
	70 / 70.2	spilitic? lava showing brecciation in several localities.						70	
3.0	71.4	sericitic lithic tuff. as described prev.	sid vein						
	72.3	72.3 - 76.95 spilitic? lava and lava breccia.							
.6	73.4	Broken core & assoc. sid. vein => Fault Zone	c F						73.05m 5cm massive sp. assoc. w sid. veining. Abundant py also.
	73.8	74.05 - Fault evidenced by pyg. 25° to C.A.	F						
	75							75	

ABERFOYLE DIAMOND DRILL LOG HOLE No. G48 Page No 4

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

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

110113

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.0		In the lava breccias, locally have inter fragment matrix completely altered to siderite as well as extensive alteration of lava fragments. Vesicles are often siderite infilled.							
3.0	76.95	Grey sericitic lithic tuff. Bedding v. low angle to // to c.A.							
	79.8 80	Grey sericitic vesicular lava.						80	
3.0	80.5	Grey sericitic lithic tuff > minor agglomerate							
	81.25	Greysericitic vesicular lavas and lava breccias and minor lithic tuff. Lava flows to 1m+ vesicular, vesicles infilled by carbonate.							
1.4									
1.8									
	84.75 85	FAULT ZONE Broken core > pug. possibly low angle to c.A. as evidenced by fault planes.						85	
Block Missing 1.5									5 cm
	88.8		sd/sem					89.2	
2.2	90							90	
2.3	92.1	FAULT ZONE Broken Core > pug							
	93.7								
1.0		92.0m - Volc. sed contact. 92.0m - 102.3m Black Carbonaceous shale. The contact with the volcanics above is at a low angle, 25°, and appears to be conformable.							
2.0	95	The rock in this interval to 99 m is a very uniform black graphitic shale. Graphite is well developed on fracture surfaces. No veining by qtz or siderite occurs in this interval (92-99m)						95	
3.0		From 99m the rock becomes less uniform, with qtz > siderite veinlets becoming apparent. The rock also becomes weakly pyritic with bedded pyrite. This fabric allows the highly contorted nature of the rock to be seen. From 99m a small percentage of pyrite > qtzite (grey) clasts							≈96.5m - 102.3m - ≈1% of syn. py. as v.f. diss grains and wisps and bands. Minor syn. py. clasts.
	100							100	

ABERFOYLE — DIAMOND DRILL LOG — 3

Feature: Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization: Trace 1–5%, Common 5–15%, Abundant 15–60%, Massive >60%

110114

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3·0		to 1cm occur. 99·05m–99·25m grey sericitic c.g. (spilitic?) tuff. 99·75–99·95 are grey·green sericitic > chloritic c.g. tuff.		100·25 100·40 101·1 101·4 102·0	100·1 – 2cm syn py. 30–40% py.
	102·3	Alt. Sed. Breccia. This rock shows total alteration or text. to c.g. cream grey siderite. Ghosts of original sed. or volc. frag. to 4cm. can be seen			103·0 m – 1cm mas. sp. assoc. w sid. vein.
	102·95	Black carbonaceous shale as for 99–102·3m.			
3·0	103·6	Lt. grey. gen massive dol.?? siltstone. The rock has been extensively veined & brecciated by v. thin ? veins.			104·8m – 12cm 40% gal & 5% sp. assoc. w. sid vein.
	105 105·1	Black bedded siltstone – bedding // to c.A.		105	
3·0	105·75	Pyritic Siltstone – Interval begins w. 30cm of brecc. w py. fragments to 1cm. Rest. is pysiltstone w bedding 30° // to C.A. Siltstone > qtz. frag to 10cm = 5–10%.			105·75 – 106·05 – 30% py. as rext. py frag. to 1cm., angular. Rare py. siltst. frag. 106·05m – 108·8m – 20–30% syn. py. in py. siltstone. Minor f–c.g. text py and minor py. fragments.
	106·8	Grey v.f.g. bedded siltstone > minor py. siltstone			
3·0		Bedding in this interval is very feint but varies from 45° to 0° to C.A., possibly due to sed. structures. Py. siltstone bands to 10cm.			107·9 – 108·1 m – 2·3% py. as diss. fg. and in thin (≈1mm) disoriented veinlets.
	108·45	Sed. breccia & micro-breccia with pyritic siltstone and black bedded siltstone. Bedding 10–40° to C.A.			108·1 – 108·2 m – 20% v.f.g syn. py in py. siltstone and as rext. aggreg. to 5cm.
3·0		Pyritic siltstone – Massive to well bedded py. si.s. Av. 3–4% of rounded to angular lt. gry. to dk. gry. si.s. fragments to 4cm. Minor syn. py. frag. to 2cm. Bedding 25–30° to C.A.		110	109·2m – 2cm 40% v.f.g. syn. py in py. si. st. 109·4 – 109·5 – 10% v.f.g. syn. py. 109·65 – 109·8 – " " 109·9m – 111·60m – 30–40% syn. py. as py. siltstone. 1–5% rext. syn. py as irreg. f–c.g. & veinlets & blebs.
	111·60	Black Siltstone – Bedding 23° to C.A.			
	112·0	Pyritic siltstone – Description as for 109·9–111·6m			112·0 – 112·5m – 20% syn. v.f.g. py in py. siltstone.
	112·5	Dk. grey bedded siltstone – Bedding from 20 to ~40° to C.A.			
3·0	113·0	Pyritic Siltstone. – As described previously except more evidence of sed. def. 113·9m – lt. grey brec. siltstone bed – 7cm.			
	114·6	Lt. grey. brecciated dolomitic? siltstone.		115	
	115	The rock is veined & brecciated by dk. grey green chloritic? veinlets gen. ≈ 1mm. thick although areas of this material can be .5mm across where brecciation is extensive. Stains deep blue – effv.			
3·0	116·4	Bedded black siltstone containing flattened & elongate qtzite. frag. (lt. gry) Bedding 15° to C.A.			
	117·1	Cream grey variably brecciated & veined Dolomitic Siltstone with interbeds of dk. grey contorted siltstone.			
3·0		The dolomitic rock is weakly to extensively veined by siderite and chloritic? veinlets. The black siltstones are up to 25 cm. thick and gen. show evidence of soft. sed slumping.			
	120			120	
	120·62	Black massive to bedded siltstone (silicified)			
3·0		Bedding where observed is at ≈ 30° to C.A. Minor sed breccia composed of dolomitic fragments. Intervals at low angle to C.A. Weakly to extensively silicified			
		5 cm			
	125			125	

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110115 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG (TRACE / COMMON / ABUNDANT / MASSIVE)	DEPTH m	MINERALIZATION
		Lithology – as above.			
3.0	125.9	Cream grey dolomitic? siltstone – Interval is extensively veined & brecciated by v. thin chloritic veinlets. Also much thin siderite veining. Also qtz blebs.			
	127.2	Black siltstone – Bedding 20° to c.A.			
	127.7	Cream grey recrallized Dolomite – minor brecciation.			
3.0	128.4	Med grey bedded siltstone – Bedding ~45° to c.A. Minor soft. sed. def.	qtz 20cm		128.6 – 15 cm py 15% assoc. w. qtz vein.
	130			130	
3.0	131.3	Cream grey brecciated Dolomite? The interclast area of this breccia is occupied by qtz & dk. green chlorite. Brecciation is in the form of very fine qtz chlorite veinlets cutting the rock and patches filling interclast areas. clasts <1mm to >5cm.			131.6 – 10cm 5-10% py diss. grains 131.9 – 2cm m.g. gal. assoc. w. chloritic veinlets & diss in surrounding rock.
	133.4	Black bedded Siltstone – Bedding 0-10° to CA. Weakly contorted poss. due to s.s. def.	q ~15cm	134.5	
3.0	134.45	Cream grey Dolomites? & recrystalized dolomites (gen. brecciated). The rock in this interval is a f. to coarsely xtaline Fe carbonate rock which is extensively brecciated by chlorite? & carbonate veinlets & inter-"clast" material.			
3.0	135			135	
	139.0	FAULT ZONE – Broken core & pug.			
2.8	139.5				
	140			140	
2.9		5 cm			
	145			145	145–145.45m – 5-10% v.f.g. syn py as py. siltstone interbedded w. the country rock. 145.85m – 146.65m – <5% v.f.g. syn. py. as finely laminated py. siltstone interbeds.
3.0		Grey v.f.g. dol?? siltstone with minor syn. py. as pyritic siltstone. The siltstone shows extensive brecciation & microveining as previously. Bedding is gen. not present but occurs at low angle to c.A. Wispy discont. bedding ≈ pos s.s. def.			
	147.25	Pyritic Siltstone V.f.g. laminated to massive brown pyritic siltstone. Contains clasts to 4cm (av. 5cm) of grey siltstone & pyrite. Bedding 30-40° to c.A. F-c.g. rextal py. of tend to follow bedding. 147.75 – 147.9m – grey siltstone. Minor intervals eg. 148.05 – 148.35m of m.g. clastic rock; qtz frag?			147.25m – 147.75m – 20% v.f.g. syn py. as pyritic siltstone. minor f-c.g. rextal syn. py. 147.9 – 148.7 – 30% v.f.g. syn. py. in py. siltstone. Minor rext. py. 148.7m – 149.0m – 2% py. as c.g. assoc w. qtz & sid. veining of grey siltstone 149.0 – 149.75m – 30-40% v.f.g. syn py & minor rext. syn? py in veinlets often // to bedding
3.0	150			150	

ABERFOYLE DIAMOND DRILL LOG HOLE No GL48 Page No 7

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110116 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0		11th frag, pyritic frag. w. wisps & bands of bedded v.f.-c.g. py. occur. 153.2m Youngging up hole – cross bedding??? 150.9 – 151.2m Pyritic Jarenite? pyritic fragments & matrix w. qtz frag. sand size. 1 chert frag. rounded 1cm. 150.7 – Bedding 40° to c.A. 153.0m – Bedding 50° to c.A.			149.9–150.05m – 5-10% py. as v.f.g. syn-dy in py. siltstone. 150.05–150.9m – 20% bedded v.f.g. syn dy. siltstone minor rext. py. to c.g. 150.9–151.2m – 5-10% py. as matrix & f-c.g. rext. frag. in arenite? 151.2m – 152.7m – 25% v.f.g. syn. py. siltstone minor rextal py.; f-c.g. above with grey dol? siltstone bed crossing core 10° to 0° to c.A. 153.0–154.4m 15-25% syn. py in py siltstone. well bedded.
	154.4		F	154.4	
3.0	155	Med. Grey. Dol. Siltstone – The rock in this interval is a weakly brecciated and sid. veined siltstone		155	
	155.95	Pyritic Siltstone – Brown v.f. laminated pyritic siltstone. So/Si 40–45° to c.A. Minor unoriented siderite ± py. veinlets. Minor m.g. clastic rock – m.g. qtz, py & rock frag. Also minor siltstone frag to 3cm			155.95m – 156.5m – 2-3% v.f.g. py. dis. in py. siltstone. Also minor rext. py. in veinlets & diss. 156.5m – 156.9m – 20-30% v.f.g. syn. py. in py. siltstone – laminated. 156.9m – 157.1m – 2-3% v.f.g. diss py. 157.1m – 157.5m – 20% v.f.g. syn. py. in py siltstone. Minor rext. py in veinlets oft // to So/Si.
3.0	157.5	Lt. grey. Dolomitic Siltstone – occ. brecciated Minor brecciation caused by irreg. sid veins. Most brecciation prior to veining			
		159.0m – Broken Core ⇒ Fault.	F		
		159.4m – 159.7m – Fault zone at x° to c.A.	F		
	160	159.7m – 160m – Qtz-Sid-Py vein. unknown & to c.A		160	
	161	Recrystallized dolomitic siltstone – boundary at & to Si/So & is gradational. Carbonate xtals to .3mm			161 – 161.65m – to 5% of v.f.g. syn py. in py. siltstone
3.0		Dk. grey brown mod. silicified weakly pyritic mas. to bedded siltstone Bedding av. 45° to c.A. Minor intervals of soft sed slumping & brecciation. Numerous v. fine unoriented qtz veinlets.			161.80m – 162.05m – 1-2% v.f.g. syn. py. 162.05m – 162.35m – 10-15% v.f.g. syn. py. & py. siltstone. 162.65–162.9 5-7% v.f.g. bedded syn py.
	162.9	Recrystallized Dol? siltstone – composed of sid. xtals. to .5cm. Py. (pres. syn.) is interstitial to these xtals. Minor discont. veins of sid. Relict bedding 45° to c.A. Qtz-sid. vein 20cm at 164.1m.	CAVITY 20cm Qtz	162.9 163.4 164.1	162.9m – 164.1m – 2-5% py. interstitial to sid. xtals. Trace gal. 164.1 Tr. chalc in qtz-sid vein.
2.5	164.5				
	165	Cream grey weakly rextal. Dol. siltstone. – Rock is weakly to extensively brecciated. Carbonate xtals to 1mm. Brecciation is sed. 164.5–166.2m – unit.		165	
	166.1 166.2	FAULT ZONE Broken core ⇒ F.Z. Carbonate on shear surfaces. 50° to c.A.?			166.2m – 167.15m – 1-2% v.f.g. syn. py. diss. in siltstone. 167.15m – 167.95m – 15-20% v.f.g. syn py. diss. in py. siltstone. 167.95m – 168.9m – 5-10% v.f.g. syn. py. diss. in py. siltstone. 168.9 – 173.3m – 0-3% py. as v.f.g. syn. py. in py. siltstone
2.8	167.0	166.2m – 178.3m – Grey bedded weakly pyritic & dol? Siltstones w. minor sed breccias. Bedding 30–45° to c.A. The siltstone is variably pyritic and contains v.f. to f. syn. py. The py. often appears elongate // to Si/So. in apparently uniform siltstone.			
	169.0 169.3	FAULT ZONE Broken core & sid. veining			
3.0	170	Py. sed. breccia composed of gen. highly elongate sed. py. clasts., rafted off angular siltstone frag., rounded grey siltstone frag., at 169.0m (10cm) & 171.25m (5cm)		170	
		Numerous minor intervals of tectonic breccia assoc. w. sid. veining (unoriented) from 171.8m to 173.1m.			
			F	172.7	173.3m – 174.1m – 5-10% syn. py in bedded py. siltstone
3.0		5 cm			174.35m – 175.9. – 5-10% syn. py in py. siltstone.
	175			175	

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110117 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE / COMMON / ABUNDANT / MASSIVE	DEPTH m	MINERALIZATION
2.1						175.90m - 178.3m - 2-5% syn. py as lam. py. siltstone.
.8						
	178.3	178.3m - 182.5m Lt. gray massive to bedded dolomitic? siltstone and dolomitic breccia. The majority of the rock in this interval is brecciated. Tectonic brecciation caused by the introduction of siderite veins is minor compared to sed. brecciation which occurs on all scales. Fragments, often subrounded, are matrix supported.				
3.0	180				180	
3.0	182.6	FAULT ZONE Broken core & pug. ⇒ F.2.				
	183.2	182.6m - 204.25m Dk. gray to Black Finely bedded siltstones The rock in this interval is a very uniform sequence of occasionally very weakly pyritic or weakly carbonaceous bedded siltstones. Staining indicates a small carbonate content. Bedding 25-50° to C.A.				
3.0	185				185	
3.0			188.5m F		188.8	189.3m - 192.7m - 1-2% v-f-g. syn. py. diss. in finely laminated siltstone.
	190				190	
3.0						
	193.25	FAULT ZONE Broken core & pug				
	193.9					
3.0	195				195	195.0 2cm v.f.g. syn. py. siltstone 10% py.
			F F		196.0 196.2	
3.0			F			
	200	5 cm			200	

ABERFOYLE

DIAMOND DRILL LOG

HOLE No 648 Page No 9

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110118

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0									
3.0	204.25	contorted Black shales with grnite frag.							
2.0	205	Typically black carbonaceous shale with grey grnite frag. to 2cm. (av. 5cm). The rock is highly contorted and veined by carbonate. Interval also contains black bedded siltstone bedding at low to to C.A. Typically 10°.						205	
1.5			c-15cm					207.1	
		END OF HOLE - 207.9m							
	210							210	
	215							215	
	220							220	
	225							225	

5 cm

Comineo

DRILL HOLE RECORD

Location QUEEN HILL
Property QUEEN HILL
District ZEEHAN
Alt./R.L. 214·3
Hole No G49
Co-ordinate 1836·7N 606·2E
Date 8-11-79
Commenced 11-10-79
Completed 26-10-79
Core size HQ/NQ/BQ
Bearing (M) 101°
Logged S. RICHARDSON
Objective QUEEN HILL LENS RL 135
STORMSDOWN LENS RL 125
% Recovery 93%
Grid bearing (M) -11·25°
Dip -43°.

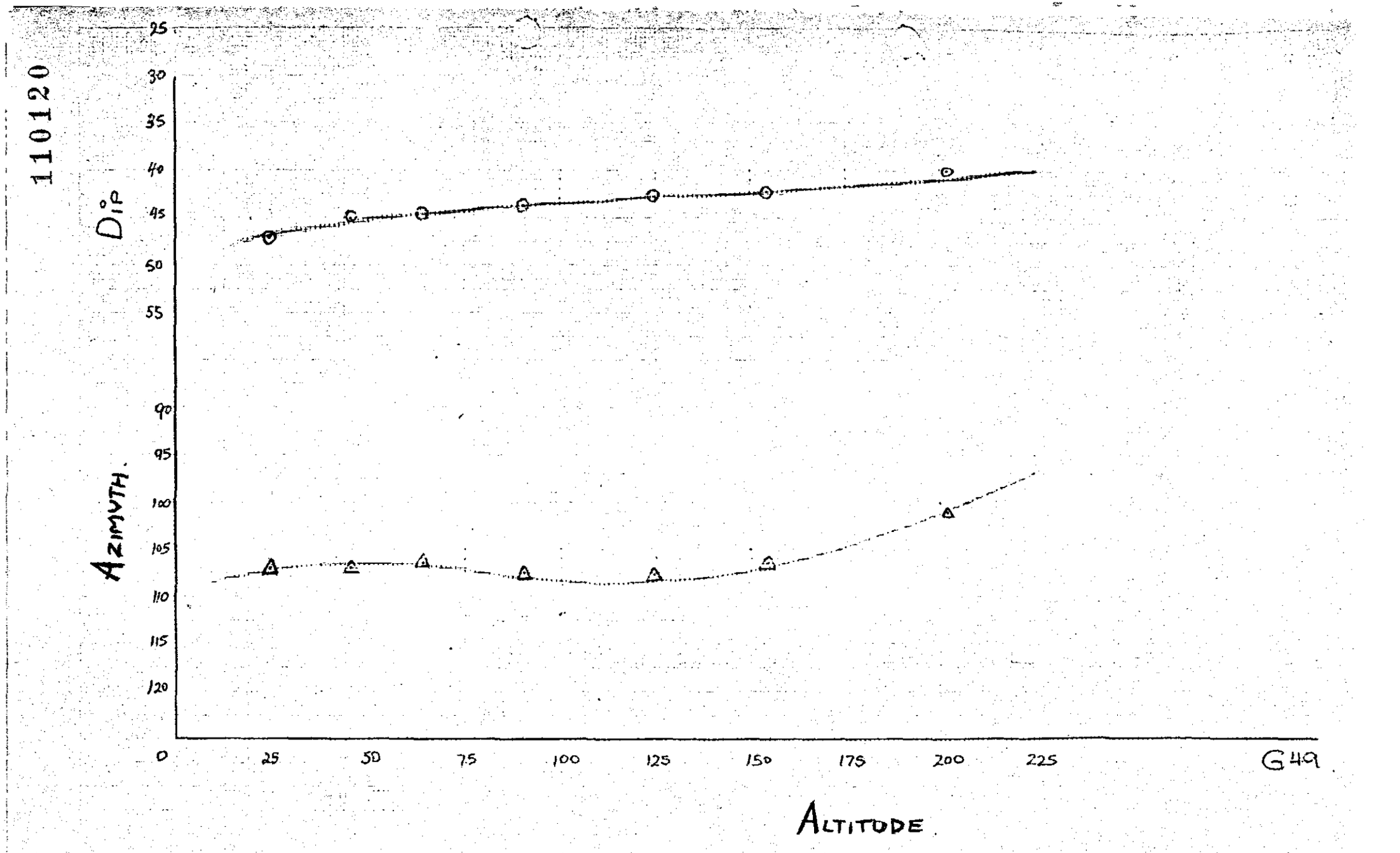
SURVEY DATA

DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE
24m	44°	107°	EASTMAN
46m	45°	107°	"
64m	44·75°	106·5°	"
91m	43·75°	107·5°	"
124m	42·75°	107·75°	"
154m	42·25°	106·5°	"
202m	40°	101°	"
	E.O.H 206m		

GRAPH DERIVED DATA

DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE
0	42·74	101·16	1836·73	606·20	214·28
25	46·75	101·00	1829·98	622·61	196·69
50	45·25	100 25	1823·51	638·71	178·69
75	44·25	101·00	1816·90	655·17	161·08
100	43 5	102·00	1809·93	671·78	143·74
125	42·75	101·75	1802·76	688·55	126·65
150	42·25	100·75	1795·70	705·55	109·74
175	41 75	98·25	1789·11	722·91	93·00
200	41·00	94·75	1783·38	740·75	76·46
225	40·00	90·25	1778·86	759·20	60·23

REMARKS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G49
ALTITUDE

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G49	114·35										
	115·35	360	15	25	1060	125		<1·0			238064
	116·35	6400	15	35	35	95		<1·0			238065
	117·35	4700	40	40	40	120		1·0			238066
	118·35	1200	25	20	55	70		<1·0			238067
	119·35	700	<5	20	50	95		<1·0			238068
	120·35	630	<5	15	60	50		<1·0			238069
	121·35	4400	25	25	200	85		<1·0			238070
	122·35	380	25	10	55	55		<1·0			238071
	123·35	1120	10	20	245	120		1·0			238072
	124·35	60	20	20	55	70		<1·0			238073
	125·05	32	5	25	45	45		<1·0			238074
	126·05	85	20	15	100	60		<1·0			238075
	126·70	1200	40	70	245	410		4·0			238076
	126·90	80	25	30	215	250		1·5			238077
	127·60	1200	50	70	55	175		2·0			238078
	128·00	75	15	15	1755	110		<1·0			238079
	129·00	6450	85	80	6400	2010		14·0			238080
	130·00	11700	115	105	22400	5200		25·5			238081
	130·80	24500	115	60	3500	620		7·0			238082

110121

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G49											
	131·80	32000	140	55	2550	395		5·0			238083
	132·80	23000	155	85	2030	800		6·5			238084
	133·80	27500	145	65	3500	1380		10·5			238085
	134·80	21000	95	60	4260	1520		8·0			238086
	135·80	17000	115	125	203000	7100		17·0			238087
	136·00	19600	950	1450	120000	17000		100·0			238088
	136·80	6000	11400	1930	192000	41250		675·0			238089
	137·30	6350	395	640	83500	36590		475·0			238090
	137·80	10500	80	160	34500	14250		32·0			238091
	138·80	7850	115	195	35000	17250		40·0			238092
	139·80	4150	65	100	16500	5000		17·0			238093
	140·80	260	<5	40	100	135		2·0			238094
	141·00	750	270	345	120	135		4·5			238095
	141·50	680	175	340	27000	16600		31·0			238096
	141·80	1150	115	190	130	220		8·0			238097
	142·20	950	185	265	620	345		7·5			238098
	142·80	1450	230	610	53500	23250		50·0			238099
	143·80	2150	660	830	640	1200		28·0			238100
	144·80	6700	3125	4820	1020	1650		110·0			238101

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
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It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
649	144·80										
	145·80	1330	8000	9250	2270	4100		325·0			238102
	146·80	140	65	50	285	625		7·0			238103
	147·80	380	55	70	125	1500		13·0			238104
	148·80	300	45	55	520	1680		11·5			238105
	149·80	1150	390	400	900	810		20·0			238106
	150·80	170	25	40	85	405		3·5			238107
	151·80	3050	1000	1220	315	300		15·5			238108

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD	SAMPLE No.
G49										
	152·80	9200	7000	6800	985	650		100·0		238109
	153·80	650	180	315	345	100		5·0		238110
	154·80	430	135	160	270	220		4·0		238111
	155·80	480	300	295	625	850		10·5		238112
	156·15	2200	230	250	220	525		3·5		238113
	156·80	3100	50	35	80	215		3·0		238114
	157·80	1050	80	50	145	555		4·5		238115
	158·70	400	130	445	765	4800		38·0		238116
	158·80	200	30	1530	600	21600		500·0		238117
	159·15	1300	95	1200	32502	46000		1150·0		238118
	159·80	580	180	260	23000	3680		54·0		238119
	160·80	2800	255	700	140000	37500		550·0		238120

110124

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD	SAMPLE No.
S49	160·80	-5·0								
	160·80	490	35	60	625	730		6·5		238121
	162·80	90	50	105	175	200		6·5		238122
	163·70	60	50	70	155	155		3·0		238123
	163·80	50	35	20	105	70		<1·0		238124
	164·80	38	25	60	420	80		1·5		238125
	164·90	65	65	25	740	365		1·0		238126
	165·35	170	50	55	80	85		1·0		238127
	165·80	100	25	50	115	200		1·0		238128
	166·80	115	<20	30	120	40		<1·0		238129
	172·40	-5								
	173·40	880	50	70	230	140		3·0		238130
	174·30	7700	50	305	640	1930		10·0		238131
	174·40	4900	40	85	485	1100		4·5		238132
	175·40	2200	80	60	280	900		13·0		238133
	176·40	1450	40	45	1380	850		2·5		238134
CORE LOSS	176·80	9800	25	45	225	355		2·0		238135
CORE LOSS	177·40	10300	25	45	270	2100		4·5		238136
	178·40	6200	<20	20	65	1520		3·5		238137

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM PROGRAMMER DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
649											
	179·25	1650									238138
	179·40	2400									238139
	180·40	1800									238140
	181·00	19000									238141
	181·40	2700									238142
	182·40	1600									238143
	183·40	19500									238144
	184·40	4400									238145
	184·80	1150									238146
	185·40	2300									238147
	186·40	650									238148
	187·40	370									238149
	188·40	4600									238150
	189·40	4650									238151
	190·40	1650									238152
	191·10	3300									238153
	191·40	1000									238154
	192·40	12200									238155
	193·40	9700									238156

110126

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G49	193·40										
	194·20	4500									238157
	194·40		450								238158
	195·40		3800								238159
	196·40		5150								238160
	197·40		250								238161
	198·40		800								238162
	199·40		750								238163
	199·50		520								238164
	200·40	15800									238165
	201·40		1350								238166

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
649	201·40	−5·00									
	202·40	190									238162
	203·40	1900									238163
	204·40	1950									238169
	205·40	650									238120
	206·20	470									238171

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110129

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
.5		0-20 m Weathered Sericitic Lithic Tuff. Colour orange brown to grey green For description of unoxidized rock see interval below.							
.3									
.5									
.5		5 cm							
.7	5							5	
.5									
.8									
.5									
.4									
1.5	10							10	
.4									
.5									
.6									
.8									
1.3									
1.5	15							15	
2.5									
2.0	20	Base of Oxidation. Lt. Grey Green Sericitic Lithic Tuff. The rock consists of grey green sericitic vesicular lava fragments to 5cm. (av. 1cm.) within a f.g. matrix of similar colour and composition. The fragments are generally irregular and angular and make up 60-80% of the rock. The vesicles are usually filled with dk. green chlorite & occ. siderite. The rock matrix forms up to 40% and is sympathetic in colour with the fragmental component; from cream grey but usually grey green.						20	
1.4									
2.9	25							25	

ABERFOYLE DIAMOND DRILL LOG G49 2

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault (F), Vein (c carbonate, q quartz)

Mineralization 110130 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE / COMMON / ABUNDANT / MASSIVE	DEPTH m	MINERALIZATION
	30	The rock shows the variable effects of sericite chlorite carbonate alteration which is reflected in the colour. cream grey – carbonate alt. ext. grey green – dom. sericite dk green – much chlorite All of the above minerals are present to varying degrees.			30	
1·3						
1·2						
1·3		5 cm				
1·3						
·5						
1·0						
1·2	35				35	
·5						
2·0						
2·0	40	FAULT ZONE – 41·15 – 41·35m. – Broken core & pug.			40	
2·3		From about 44m to 48m the tuff is dk. green and chloritic in nature in contrast to its more common sericitic nature.				
3·0	45				45	44·95 – 5-10% py in qtz vein 2cm. thick
·8		From 48·35m to 48·75m the tuff is silicified and contains accompanying pyrite min.				48·35 – 48·75m – 10% F-c.g. anhed py. assoc. w. silic. lith tuff.
2·1	50				50	

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110131

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		50.4 – bedding // to c.A. Lithology – as above. 51.3–51.5 – qtz, py. sid vein	20 q/p/sid						51.3–51.5 – 20% c.g. py. assoc. w. qtz, sid vein.
									52.4m–52.5m – 5-10% py. in sil. lith. tuff. & qtz vein
3.0	55	55.4 – bedding 45° to c.A.	2cm q/sid.					54.3 55	
		From 56.2 to 58.2 the tuff is pale cream with extensive carbonate alteration.	sid 2cm 75cm						56.15m – 2-3% sp. in cream sid vein. 1.5cm thick. 56.3 – 5% sp. in sid vein. .75 cm thick
3.0		58.2m – Broken weathered core = Fault.	F						
3.0	60							60	60.5 – trace py assoc. w qtz–sid veins 1 cm thick (2 of)
		5 cm							
3.0	65							65	
3.0									
3.0	70							70	
3.0									73.25-73.6m trace py as veinlets in lithic tuff.
	75							75	

ABERFOYLE

DIAMOND DRILL LOG

Hole No 449 Page No 4

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110132

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3·0		lithology – as above – sericitic > chloritic lithic tuff.							
3·0	80							80	
3·0									
3·0	85							85	
3·0									
3·0	90							90	89·4 m – ·5cm py vein
3·0		Chlorite flecks in matrix locally							
3·0	95							95	
3·0									
3·0	100							100	

5 cm

ABERFOYLE DIAMOND DRILL LOG Hole No G49 Page No 5

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110133 — Trace 1-5% Common 5-15% Abundant 15-60% Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG (TRACE / COMMON / ABUNDANT / MASSIVE)	DEPTH m	MINERALIZATION
3.0	105	Lithology – as above – grey green sericitic lithic tuff. Lava fragments – av 1cm – 60-70% of the rock. Weak foliation often defined by the p.o. of the elongate clasts.	Sid 1cm	105 / 106.7	
3.0	110	5 cm	Sid 10cm	110 / 110.5	
3.0			2 Sid 3cm	115.5	
2.95	115		4 Sid 2cm	115	115.35m – 10% py. assoc. w. qtz-sid vein 2 cm thick. 115.6m – 116.08m – 1-3% py. as blebs often replacing vesicles. 116.08 – 116.5m – 15-20% 116.95m – 117.05m – 10% as blebs & veinlets rep? tuff matrix. 117.05m – 117.65m – 1-2% py. as blebs & veinlets in tuff. 118.45m to 118.55m – 10-15% py. as meshwork in tuff. (fine veinlets & blebs) 119.2 – 119.3 – 5-10% py. as blebs & f-c.g. diss. in volc.
3.0	120	Strong fab. def. by p.o. of inequant (flattened?) clasts. 50° to c.A.		120	120.8m – 120.92m – 10-15% py blebs veinlets & grains diss in tuff. 121.2 – 121.42m – 10-15% py as blebs veinlets & grains in tuff 122.2m – 122.8m – 1-2% py as diss. & meshworks in tuff. 122.8m – 123.1m – py – 4-5% & pyrr 4-5% rep. coarse vesicles 123.1 – 123.65m – 1% py & wisps, veins & grains in tuff. 124.2 – 124.95m – 1% py repl lithl fragments & as diss. & veinlets.
3.0	124.95 125	124.75m lithic frag. being rep. by py.		125	

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, ~~Massive > 60%~~ Py > 50%

110134

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
	125.44	Fine grained grey green sericitic tuff.			
		Dk. grey to black bedded siltstone - bedding 45° to C.A. 125.8 - small scale D, fold			
3.0	126.04	Replaced Dolomite? - Py, qtz, Sid replacing grey dol. Py-20% Qtz-0% Sid-40% see below.			126.04m-126.7m - 20% py. rep dol? and as veinlets & blebs assoc w. qtz & siderite.
	126.7	Grey Bedded Siltstone -			
	126.9	Replaced Dolomite? Py, qtz, sid, rep. grey dol? py-15-20% qtz-20% Sid-6%.			126.9-127.6 - 15-20% py. as blebs replacing dol? . & as diss & veinlets
	127.6	Black Bedded Siltstone. - 45° to C.A.			
	127.98	Variably Replaced & Pyritized Dolomitic? Siltstones.	F	128.4	127.98m-130.6m - 15-20% py. as v.f.g. diss. & veinlets & blebs rep. spillitic? volc. Tr. v.f.g to f.g sp. & ga.
3.0	130	The host rock in this mineralized interval is grey dolomitic? siltstone. This has generally been weakly to moderately replaced by pyrite siderite & qtz. The interval is weakly to extensively silicified. Bedding is still clearly evident in many places. Av. 35° to C.A.		130	
		129-132m - many solution cavities to 2-3cm.		130.6	130.6-131.0m - 2-3% py. (v.f.g) in grey.
		Evidence of bedding can be found all the way to 135.2m. At 135.3m a distinct contact with a "clastic" unit below. Probable vesic. volc fragments & clastic component distinguish it from this unit.		131.0	131.0-131.8m - 10-15% py as v.f.g diss & in veinlets & blebs in
3.0		Locally the dolomites may be brecciated		131.8	131.8-135.25m - 20-30% py. as v.f.g. diss. & veinlets & blebs of f.g. massive py. to 5cm. Host rock is
					Trace sp. as v.f.g. and rare veinlets. Occ. cassiterite evident eg 134.4m (T.S) as pinkish v.f.g. as diss. & veins.
	135			135	
	135.3	Fissure lode assoc. w. fault breccia? Sp. Ga.		135.3	135.9m - 10cm mas. py. vein (100% Py)
3.0		Vein running at v. low angle to C.A. Assoc. with brecciated dolomite?	Ga Sp 3cm+	136.0	136.0m-137.3m - Ga, Sp veinat v. low angle to c.A. Ga-50% Sp-50% over whole vein. more sp. rich at upper end. Av 25% of int.
					135.3m-137.4m - (exc. sp, ga. vein) 5-7% py. as f.g. diss. veinlets 1% Sp. as f.g. diss grains.
	137.4	Highly Silicified & Variably pyritized gen. Brecciated Dolomitic? Siltstone. The mineralization and accompanying silicification of the original rock in this interval has resulted in the destruction of much of the original texture. Particularly toward the base of the interval.		137.4	137.4m-135.2m - 15-25% py. as f. to c.g. diss.) as veinlets & rext. blebs. Sp. 2-3% locally 5% as f.g. diss.
3.0				138.2	138.2-139.15m - py. 10-15% as diss. rext. blebs & veinlets. Sp. - 2-3% locally 10-15%, as f.g. diss oft. assoc. w gal Gal-1% as blebs assoc. w. Sp
				139.15	139.15-140.05m - py - 50-70% as c.g. rext. masses & veins assoc. w. qtz. & siderite (cream pink). Trc. flourite
	139.8				140.05-140.60m - py. 10-15% as c.g. to f.g. subhedral in cryptocryst. silica.
	140	139.8-141.0 Replaced acid volc. (scoria?) - Rock composed pred. of cryptocrystalline silica py. Py. f. to c.g. rext. Qtz. clr grey to white.		140	
				140.6	140.6-140.8m - py-50% as above.
				140.8	140.8m-141.0m - py 10-15% as above.
	141.0			141.0	141.0-141.5m - py. 5% - blebs & diss. 1% red brn. sp. fg. diss. Occ. 20%.
3.0		However in the less extensively mineralized areas relict textures of bedded dolomites but more commonly brecciated dolomites remain. They are no longer calcareous due to the extensive silicification. These relict textures are identical to those observed in the large amount of brecciated dolomite (un mineralized) seen in G48.		141.5	141.5-142.2m - py. 40% as c.g. subhedral rext. masses to several cm. Interstial rock ess. baffen.
				142.2	142.2m-143.4m - py. 10-12% as f. to c.g. diss & rext. blebs. Sp-2-3% as f.g. diss. Ga. - 1-2% as f.g. diss. assoc. w. sp.
				143.4	143.4-143.9m - py. 25% as rext. blebs & masses to 4cm.
1.8				143.9	143.9-144.4m - 50-60% py. as c.g. rext. masses w. interst. qtz. Ars py. up to 20%
				144.4	
	145	Below 143m relict textures are rare due to extensive mineralization. Here the rock is essentialy c.g. rext. py in a qtz matrix. Dolomitic textures occur evenly throughout the intersection		145	144.4-145.6m - py. 25-30% as f. to c.g. rext. blebs & masses. (145.1-10cm 10% Stn.) Trc. Ars. py.
1.0				145.6	145.6-146.4 - py. 5% as f. to c.g. diss. & thin veinlets in silicified ?
		Flourite is occasionaly assoc. w. the pyrite.		146.4	146.4-146.6m - py. 60% c.g. rext. diss. assoc. w. qtz.
				146.6	146.65m-147.0m - 30-40% py. as f. to c.g rext grains. diss. & in clusters.
3.1				147	147.0-147.55 - 10-15% py. as veinlets, diss f. to c.g. & blebs to 2cm.
				147.55	147.55-147.9m - 40% py. as clusters of C. rext. grains. Assoc. w. siderite c.g.
				147.9	147.9-148.9m - 12-15% py. as f. to c.g rext. diss. grains & clusters.
				148.9	148.9-149.45m - 30-40% py. as f. to c.g rext. diss & clusters of grains, oft subhedral.
		5 cm		149.45	
	150			150	

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110135 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0				151.8	149.45m - 151.8m - 20% py. as f. to c.g. anhed. to subhed. gr. diss. & in clusters Rep. dol. frag. in brecc. sed. (dol?)
3.0	155			153.2	151.8 - 153.2m - 40% py. f. to c.g. gen sub. py diss. & clustered together. Trace. stn.
2.1	156.15	156.15 - 163.7 Black Siltstone Adjacent to the intersection above, this unit has been extensively veined by qtz ± py. The interval contains two bands of 5cm of bedded py. siltstone. Throughout the unit py. siltstone clasts av. 4mm. are found; <1%.		154.85 155	153.2 - 154.85m - 15-20% py - as above. good rep. text. of brecc. dol. sist.
.25		157.95m - Fault. Broken core may ⇒ F.Z for 15cm either side.		157.95	154.85 - 155.95m - 5-10% py as above. locally 100% (155.3)
2.2	160	Si/So. - meandering 0-45° to c.A.		159.15	155.95m - 156.15m - 1-3% py as f. to c.g. diss & veinlets.
		158.65 - 158.85 - sideritic rock? being rep. by qz.		160	156.15 - 158.6m - 3-5% py. as syn. blebs and wisps. Also as veinlets, unoriented., occ. assoc w. qtz.
		161.0m - Fault at 30° to c.A.		161	158.65 - 10cm 50% py in qtz vein
3.0	163.7			162.0	158.7 - 159.15m - 15-20% f.g gal. rep. sid rock & assoc w. sid veining
		Cream Grey Dolomite - weakly brecciated w. dk. black green chlorite? in thin veinlets bet. frag. Rock has 3-4% py, as v.f. to c.g. rep?		165	159.15m - 162.0m - 1-2% py as syn blebs, diss, & thin veinlets.
3.0	165 165.35	Grey to Black Siltstones w. thin Dolomite Interbeds. Generally well bedded 25-40° to c.A. Cream grey dolomitic siltstone interbeds to 30cm thick. Minor intervals eg 170.0 (30cm) of contorted bedded siltstone & sed poss. Major Dolomite bed 166.75 - 167.05m			160.0m - 20cm f.g. gal. 30% in vein w. sid. Trace. sp.
		5 cm			162.05 - 5cm bedded syn. py. siltst. 30% py as v.f.g in laminations
3.0	170			170	162.2 - 163.7 - 1% py as v.f.g dis. & py. siltstone fragments.
					163.7 - 164.9 - 2-5% py as v.f.g. diss in dol? siltstone.
					164.9 - 165.35m - 10% py. as c.g. in veins assoc. w. sid. & 2% v.f.g. diss in dol. siltstone.
3.0					171.35 - 171.5 - 35% bedded syn. py in py. siltstone.
2.2	173.4 174.3 175	Qtz + py. veining black shale. Shale 20% Qtz+py 80% of Interval. Veins, blebs patches & veinlets of py & Qtz. Pyritic Siltstone. Syn. pyritic siltstone. Py. gen rest. along bedding & cleavage. So/s1. 25 - 30° to c.A		175	173.4m - 174.3 - 25-30% py. as c.g. in veins & veinlets assoc w. qtz. in black shale. 174.3 - 176.8 - 30-35% py. as v.f.g. py. siltstone w. mod rest. along bedding / cleavage planes.

G44 8

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110136

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
.50		174.4-178 FAULT ZONE - Broken core & fug ⇒ possible fault zone.			
.25	176.8	Black carbonaceous & pyritic siltstone - Black graphitic siltstone-shale containing qtzite. frag. and much qtz veining.			176.8m-179.25m - 1-3% py. as v.f.g. syn py. in black shale. Also as f-c.g. (rext?) grains assoc. w. white qtz. veinlets. Also as flatten py siltstone frag.
.6	178	minor syn py as wisps & beds. Some thin py. veinlets assoc. w. qtz. Qtzite frag. are flattened in S1/S0.	F	178.4	
.5	179.25	Zone of extensive vein pyrite assoc. with qtz. in black shale. Essentially sulphide rock w. f-to.c.g. py. to 80% assoc. w. qtz & minor siderite.		179.25 / 179.75 / 180	179.25m-179.75 - 12-15% py as f-to.c.g diss & blebs in qtz. Remaining black shale host. 179.25-181.0m - 45-50% py. as above.
3.0	180				
	181	Black shale w. qtzite fragments - often contorted w irregular grey qtzite frag. to 4cm. S1/S0 ~0-40° to c.A.		181.0	181-184.8m - 1-2% py as f.g. syn. py. laminae & wisps & diss in black shale. Also syn. py. clasts to 2cm. Rare thin <5cm py veins. 181.9 - 1cm 20% py in vein w. sid. 184.1 - 1.5cm 70% py in vein assoc w. sid, 20° to c.A.
3.0					
	184.8			184.8	
	185	Black siltstone grading to bedded pyritic siltstone. The interval begins with 2m of black uniform siltstone and grades into contorted black pyritic siltstone & then into well laminated bedded pyritic siltstone by 189.4m. Bedding is constant at 45° to c.A.		185	
.1		5 cm			
3.0				186.4	
					186.8 - 5cm 80% py. in vein w qtz. 186.4-189.4m - 10-12% py. as syn. py. beds & wisps in sil. siltstone Also f.g. diss & veinlets. 187.75 - 80% py - 3cm in vein w sid 188.3 - 5cm 50% py in qtz vein
				189.4	
3.0	190			190	189.4-190.35m - 10-15% v.f.g. syn py. in py. siltstone - well laminated. Minor c.g. assoc w. qtz veinlets & as py. veinlets
				190.35	
				190.8	190.35-190.85m 25-30% py as veinlets & meshwork in black silicic siltstone.
	191.1			191.1	190.8-191.1m - 2-3% py as thin veinlets
		Sulphide & quartz rock. C.G to massive pyrite assoc. w. qtz. as blebs & veins Remnants of country rock indicate a zone of extensive veining by qtz & py.		191.4	191.1-191.4m - 10-12% py as c.g. & veinlets assoc. w. qtz veins. 191.4-192.2m - 70% py as c.g. assoc. w. qtz & sid.
3.0				192.2	192.2-194.2m - 35-40% py. as f.to c.g as clusters & veins assoc w. vein qtz in black silicic siltst one host.
	194.2			194.2	194.2-196.1m - 10-15% py. as f.to c.g. in veinlets & veins, unoriented, to 1cm av .2-.3cm.
	195	194.2 - 206.2m (EOH) Black shale with grey qtzite frag. (contorted). The interval is extensively veined by py veinlets & veins assoc. w. qtz. As well as numerous veins qtz occurs as secondary blebs. Subrounded to angular grey qtzite fragments to 5cm (av 1cm) are often flattened in S0/S1. S1/S0 varies from 90° to 20° (av. 30°) to c.A.		195	
3.0				196.1	196.1-196.7m - 1-2% py. as syn py. in black silicic siltstone.
				196.7	196.7-199.5m - 5-7% py. as f.to c.g. in veinlets av .2cm thick & syn py. diss in black shale. veins to 1cm.
3.0					
	199.8	Sulphide Rock, = Pyrite vein assoc w. qtz. contains minor sp & stn.		199.5	199.5-200.4m - 70-80% py as c.g. assoc. w. vein qtz. Tr. stn. & sp.
	200			200	

ABERFOYLE — DIAMOND DRILL LOG

444 4

Feature

Bedding
Foliation
Fragment (size & shape)
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110137

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	200.4	lithology - as above black shale with grey granite clasts. (usually contorted)						200.4	
								201.5	201.5-201.7 - 99% py as c.g. in vein boundary 45° to c.a.
3.0	205							205	200.4-206.2 (EOH) - py 1-2% as v.f.g. diss & as wispy bedded py. Also as minor f to c.g in thin unoriented py. vein lets av 2-3 m.m. thick assoc. w. qtz ± sid.
	206.2	END OF HOLE							
		5 cm							
	210							210	
	215							215	
	220							220	
	225							225	

ABERFOYLE

DRILL HOLE RECORD

Location QUEEN HILL Property QUEEN HILL District ZEEHAN Bearing (M) 103·8 Hole No G 50

Commenced 18/10/79 Completed 22/10/79 % Recovery 94% Grid bearing (M) -11·25° Date 23/10/79

Objective QUEEN HILL LENS RL 100
STORMSDOWN LENS RL 75

Core size HW/HQ/NQ Logged S. RICHARDSON

Co-ordinates 5361781·35N 360580·00E Dip 56·1° Alt./R.L. 207·1

SURVEY DATA				GRAPH DERIVED DATA			CALCULATED CO-ORDINATES			REMARKS
DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE	DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE	
33M	57°	107°	EASTMAN	0M	56·16°	103·77°	1781·35	580.00	207·10	
73 M	57°	106°	"	25	56·75	103·89	1775.60	592. 50	186.25	
117·8M	56·75°	106·5°	"	50	57·0	104·14	1769. 67	604. 84	165. 31	
147·2M	56°	106·5°	"	75	57·0	104·14	1763. 84	617. 15	144. 34	
199·2M	51°	111·5°	"	100	56·75	104·39	1757.97	629. 47	123. 40	
	EOH	205·2	M	125	56·5	104·58	1751. 99	641. 85	102. 52	
				150	56·0	105·27	1745. 86	654. 31	81. 73	
				175	54·0	106·89	1739. 27	667. 04	61. 26	
				200	50·75	110·08	1731. 71	680. 27	41. 46	
				225	46·5	114·77	1795. 84	584. 30	172. 73	

110138

ABERFOYLE

DRILL HOLE RECORD

Location QUEEN HILL **Property** QUEEN HILL **District** ZEEHAN **Bearing (M)** 103·8 **Hole No** G 50

Commenced 18/10/79 **Completed** 22/10/79 **% Recovery** 94% **Grid bearing (M)** 12° **Date** 23/10/79

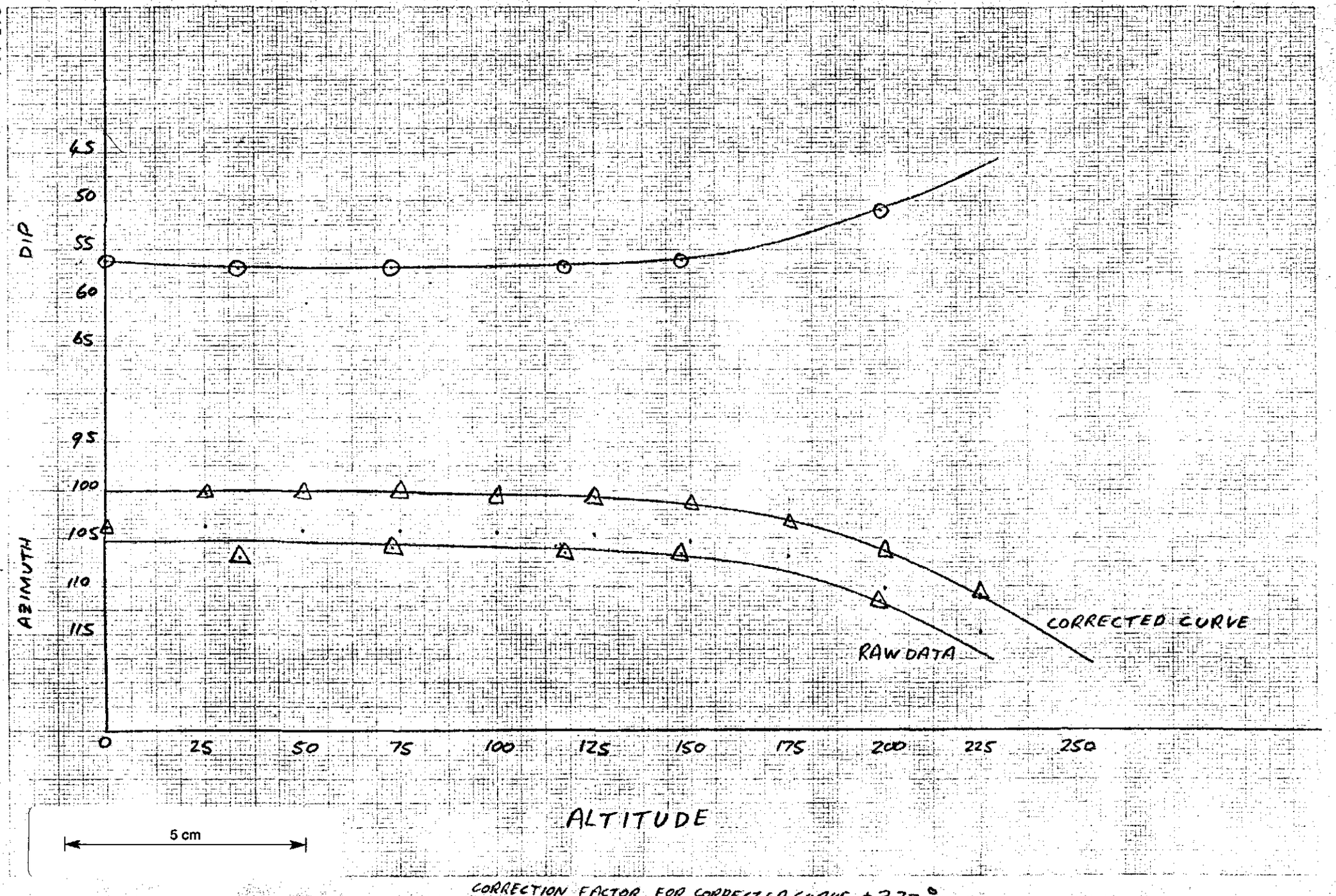
Objective QUEEN HILL LENS RL 100
STORMSDOWN LENS RL 75

Core size HW/HQ/NQ **Logged** S. RICHARDSON

Co-ordinates 536781·35N 360580·00E **Dip** 56·1° **Alt./R.L.** 207·1

SURVEY DATA				GRAPH DERIVED DATA			CALCULATED CO-ORDINATES			REMARKS
DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE	DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE	
33M	57°	107°	EASTMAN	0M	56·16°	103·77°	536781·35	360580·00	207·10	
73 M	57°	106°	"	25	56·75	103·89	1780·91	593·81	186·26	
117·8M	56·75°	106·5°	"	50	57·0	104·14	1780·43	607·46	165·33	
147·2M	56°	106·5°	"	75	57·0	104·14	1779·92	621·07	144·36	
199·2M	51°	111·5°	"	100	56·75	104·39	1779·38	634·72	123·42	
	EOH	205·2M		125	56·5	104·58	1778·78	648·46	102·55	
				150	56·0	105·27	1778·07	662·33	81·76	
				175	54·0	106·89	1777·05	676·63	61·28	
				200	50·75	110·08	1775·32	691·78	41·49	
				225	46·5	114·77	1772·32	708·00	22·74	

110139



CORRECTION FACTOR FOR CORRECTED CURVE +3.77°

1101140

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PAGE 1 OF 1

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G50	136·20	−5·00									
	137·20	<4									238172
	137·95	12									238173
	138·20	10									238174
	139·20	10									238175
	141·30	−5·00									
	142·10	<4									
	142·30	<4									238176
	142·60	4									238177
	143·30	6									238178
	144·05	4									238179
	144·30	6									238180
	144·60	<4									238181
											238182

1101411

110142

ABERFOYLE DIAMOND DRILL LOG HOLE Nº C50 Page Nº 1

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
No core	5	No core until approx 9 m. as rig set up on tailings pile.						5	
.4	10	oxidized broken & puggy sericitic lithic tuff. Description — see below.						10	
2.7	≈11.5	BASE OF OXIDATION Lt. Grey Green Sericitic Lithic Tuff and Fine Agglomerate This rock is composed of sericitic vesicular lava fragments with an irregular and angular shape. They range fm a few m.m's to several centimetres in size. Tuff matrix is of identical composition to the fragments. Fragments 60-80% of rock. The rock is generally isotropic but occasionally a weak fabric is present defined by the pretered orientation of lapilli fragments and elongate vesicles. This may be a primary compaction layering or due to deformation. Fragments commonly show cusp boundaries ⇒ solid when deposited.							
3.0	15							15	
3.0	20							20	
2.5									
3.5	25	5 cm						25	

ABERFOYLE DIAMOND DRILL LOG G50 Page 2

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110143 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Lithology – as above							
3.0									
3.0	30							30	
1.7									
.7		← CHANGE TO NQ							
3.1	35							35	
		From 37.5m on there is a general fining of the fragmental component.							
3.1									
		39.40 – FAULT ⇒ broken core. assoc. w. sid veining.	F						
	40							40	
3.1									
3.1	45							45	
3.1		From about 48m the lithic fragmental component decreases so the rock becomes a m.g. sericitic tuff. This rock type persists to approx 53.5m.							
		5 cm							
	50							50	

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº 490

Feature

Bedding
Foliation
Fragment (size & shape)
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110144

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Lithology - as above.							
3.0		51.3 - 52.3 - FAULT - at v. low angle (10°) to C.A. causing 1m broken core.	F						
3.0	55							55	
3.0									
3.0	60	59.6m - 10 cm brecciation caused by siderite veining.						60	
3.0									
3.0	65							65	
3.0									
3.0	70	5 cm						70	
3.0		73.1 - 76.0 m - silicified lithic tuff. Pervasive silica flooding has silicified the matrix. However, many vesicular fragments are unaffected.							
3.0	75							75	

ABERFOYLE DIAMOND DRILL LOG HOLE NO 950 Page No 4

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault (F), Vein (c carbonate, q quartz)

Mineralization 110145

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	76	lithology - as above - siderite rich lithic tuff.							
3.0									
	80							80	
3.0									
3.0									
	85							85	
3.0									
2.8	89.8								
	90	FAULT ZONE Broken core - weathered volc.						90	90.1 - 1cm - 20% py in sid vein
.3		90.3m - Black siltstone frag.? in breccia, siderite.							91.0 - Trace gal. (1%) in siderite assoc. w. fault zone.
	92.5								
2.3									
	93.6	93.6m - Fault - broken core 45° to c.A?	F						
	95							95	
1.5									
3.0									
	100							100	

5 cm

ABERFOYLE DIAMOND DRILL LOG HOLE No G50 Page No 5

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110146

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.2	101.85 102.05	Lithology - as above - seiricitic lithic tuff. FAULT ZONE - Broken core							
3.1		102.8m - Broken core => Fault 103.0 - " " " 104.0 - Broken core => Fault.	F F F					102.8	
3.0	105							105	
3.0	110							110	
3.0		113 m - 20 cm - silicified lithic tuff.							
3.1	115	5 cm						115	
3.4	120	120.2 - 20 cm qtz. veinlets at 20° to c.A.						120	
3.0		123.7 - 2cm qtz vein 80° to c.A	qtz						
3.0	125							125	

ABERFOYLE DIAMOND DRILL LOG ... G50 ... 6

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

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

110147

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Lithology – as above.							
2.0		5 cm							
3.1	130	Possible vesicular lava. – c. vesicles filled w. siderite & occ. py. Much f. veining by siderite.						130	130.1 – 10cm – py – 20% as veinlets & rep vesicles in vesic. vol. 130.2 – 130.7m – 1-2% py. as veinlets & diss in vole.
	130.7								
	132.15	Black silicic Siltstone							
.9	132.35	Tuff ? silty ? matrix. 132.35 – 132.47 – sid, sp & ga. in vein							132.35 – 132.47 – 12cm – 5% sp, 1% ga, in fissure lode w. sid.
	133.1	Black Silicic. Siltstone. – Massive black siltstone veined in several places by qtz.							
3.0	135	cream to Dk. Grey Dolomitic Siltstones						135	
3.0		The Dolomites in this interval are typically massive to poorly bedded. They are often brecciated. This brecciation into fragments from <1mm. to sev. cms. is intimately associated with the pervassive veining of the rock by thin to very thin (av. 1mm or less) veins of black to dk grey material. This is distinct from the post dating siderite and qtz. veining which is observed. The subrounded nature of some of the fragments => a possible breaking up of a soft sediment.						137.2	137.2 – 137.65m – 1-2% py. as vein low angle to C.A. – meandering with spotty crystalization text.
								137.9	
								138.45	138.45m – 20cm – 1% py as irreg blebs in sil. dol. brec.
1.5	140	The rocks in this interval appear to have been weakly to moderately silicified.						140	
								140.65	140.65 – 1cm – 15% py. assoc w. qtz veinlet.
1.5		Unsuccessful orientation 142.2.m.						141.3	141.3 – 142.1 – 1-2% py. as v.f.g. diss (rep??) in dol. siltstone and as v. thin veinlets in same
								142.1	
1.5								142.6	142.6 – 144.05m – 5-7% py. as v.f.g. diss, blebs & minor veinlets in silicified dol. siltstone
		144.2m – 5cm sid vein	sid					144.05	
1.4	144.6	contact ~ 20° to C.A.						144.5	144.5m – 1cm – 5% py as diss blebs
	145	144.6m – 150.5m Black Carbonaceous Siltstone & Shale.						145	144.6 – 150.5 – 1-2% v.f.g. syn. py. as diss, wisps, beds, bands // to So / Si. Also as syn py. frag. usually rounded to 3cm. Elongate // to Si/So.
2.9		A well bedded & highly schistose (toward the bottom of the interval) siltstone. Bedding is clearly revealed by wisps, beds, and bands of v.f.g. syn. pyrite. The fabric So/Si is at a very low angle to C.A., 25 to 5° (av 10-15°). This causes the more schistose rock to break up when drilled.							
1.0									
.9	150							150	

ABERFOYLE **DIAMOND DRILL LOG** **HOLE Nº** G 50 Page Nº 7

Feature Bedding, Foliation, Fragment size & shape; Shearing, Fault, Vein (c carbonate, q quartz)

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

110148

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	150·5								
3·1		Interbedded Black, Dk Grey, & Lt. Grey siltstones (occ. contorted). 150·5 – 165·5m This interval contains siltstones of varying colour from lt. grey to black which are interbedded on all scales. Banded siltstones which are typically contorted from what may be soft sed deformation, result from interbedding on a scale of several mms. On a larger scale colour changes result from interbedding over several or many cms. This interval may represent the transitional zone between the black massive siltstones above and the lt grey v.f.g v. well bedded siltstones below.							
3·1	155							155	
3·1		5 cm							
	160							160	
2·3	161·3 161·7 162·0 162·4	FAULT ZONE – Broken core – 60° to C.A. FAULT ZONE – Broken Core							
1·0									
2·2	165							165	165·6m – rext. syn? py. mass 3cm across.
3·0	166·5	166·5m – 179·3 Lt. Grey to Med Grey bedded siltstones w. minor dolomite The siltstone in this interval is gen. lt. grey and well to superbly laminated. It is occasionally brecciated in intervals to 20cm wide. Si/So varies from 20 to 40 to C.A., average 35°. The brecciation appears to be sed. but is often assoc. w. Dk. grey thin veinlets of an unknown material. 168.55 – 5 cm sid vein w.sp. – 40° to C.A. 167.2 – 30 cm. dol. siltstone								166·5 – 170·5 – to 1% v.f.g. diss. py. 168·55 – 5cm sp – 10%, py 60% assoc. w. sid vein 170·5 – 174·2m – 2% v.f.g. syn py as diss, wisps & fine laminae in v. well bedded fine siltstone.
3·0	170							170	
3·0								171·4	
3·0	175							175	

ABERFOYLE

DIAMOND DRILL LOG

HOLE NO 950 Page NO 8.

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110149

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0					
3.0	179.3	179.3 - 190.05m Interbedded Black to Lt. Grey Siltstones In this interval the sediments revert back to an interbedded mixture of grey to black siltstones often showing evidence, such as rafting of fragments, of soft + sed. def.		180	179.3 - 190.05 - up to 1% v.f.g. syn. py. diss. in bedded Siltstones.
3.0	180				
3.0		183.8m - 30cm of dolomite veined & alt. by unknown black material (chloritic?)			
3.0	185	Numerous lt. grey well bedded siltstones contain disseminated syn.? py.		185	
3.0					
3.0	190	190.05 - 197.7m Black Siltstone The rock in this interval is a black massive to bedded weakly pyritic siltstone. Graphite occasionally on cleavage planes.	F	190	190.05m - 197.7m - 1-2% v.f.g syn. py. diss & in wisps & beds in black siltstone; also as minor py. frag.
1.5				193.2	
1.5	195	5 cm		195	
1.1					
1.5					
1.3	197.7	Pyritic Siltstone & brecciated Dolomite Bedded pyritic siltstone containing clasts to 3cm of grey siltstone. 198 - 198.4 - brecciated dolomite Si/So = 0-25° to c.A.			197.7 - 198 & 198.4 - 199.6m - 20-30% py. as v.f.g. py. in py. siltstone. Minor f to c.g. recr. py along bedding 198 - 198.4 - Trace - 1-2% as f.g. diss. in dol. breccia.
2.0	199.6 200			200	

ABERFOYLE — DIAMOND DRILL LOG — HOLE No G50 — Sheet No 4

Feature

Bedding
Foliation
Fragment (size & shape)
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110150

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		199.6 - 205.2 m (EOH) Black locally siliceous Siltstone. Description as for 190.05 - 199.6m. From about 200 m the core is broken. This is probably due to si/so being close to c.A. and breaking up during drilling. Rock may be locally pyritic, cont. syn py. as diss. and minor py. frag to 2cm.							199.6 - 205.2 (E.O.H) - py. 1% as v.f.g. syn. py diss. & syn. py. frag to 2cm.
2.0									
1.2	205	END OF HOLE - 205.2 m.						205	
	210							210	
	215							215	
	220							220	
	225							225	

5 cm

ABERFOYLE EXPLORATION

DRILL HOLE RECORD

Location QUEEN HILL | Property QUEEN HILL | District ZEEHAN | Alt./R.L. 250.56 | Hole No G51B

Commenced 24-10-79 | Completed 8-11-79 | Core size HQ, NQ, BQ | Co-ordinate 799-5N, 846-5E | Date 26-11-79

Objective STORMSDOWN LENS RL95 | % Recovery 87 | Bearing (M) 284° | Logged S.R.

QH. LENS RL80 | Grid bearing (M) -11-25° | Dip -68.3

SECTION 3120

SURVEY DATA

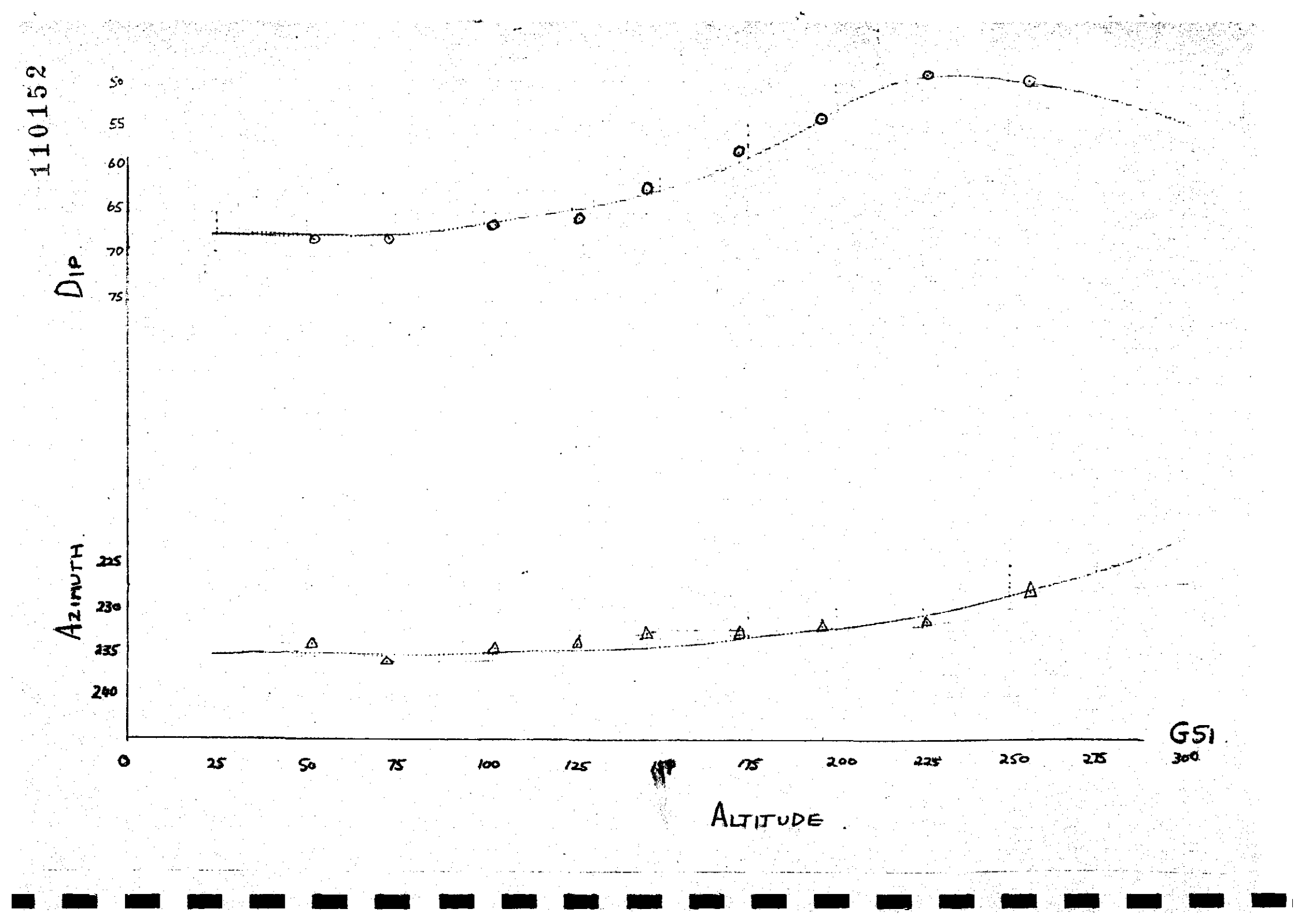
DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE
51.4	68.3	284	EASTMAN
73	67.8	286	"
103	66.3	284.5	"
127	65.75	284	"
147	62.25	283	"
172.5	58	283	"
196.5	54	282	"
226.4	48.75	281.5	"
256	49.25	278	"
	EOH	272.4	

GRAPH DERIVED DATA

DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE
0	68.3	284.0	1799.50	846.50	250.56
25	67.5	283.9	1803.50	837.99	227.39
50	67.5	283.9	1807.57	829.33	204.30
75	67.5	283.9	1811.63	820.67	181.20
100	66.3	283.9	1815.80	811.79	158.21
125	64.5	283.7	1820.21	802.35	135.49
150	62.5	283.4	1824.88	792.22	113.12
175	58.5	282.7	1829.94	781.00	91.87
200	53.0	282.2	1835.57	768.13	70.73
225	49.0	281.4	1841.72	753.66	51.31
250	49.3	279.2	1842.72	738.44	32.41
275	51.0	275.9	1852.88	723.28	13.23
300	54.0	271.9	1856.87	708.61	-6.60

REMARKS

G51 - INCORRECTLY COLLARED AT -68° DIP.
HOLE ABAND. AT 144m.


110152
50
55
60
65
70
75
DIP
225
230
235
240
AZIMUTH
G51
0
25
50
75
100
125
150
175
200
225
250
275
300
ALTITUDE

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G51	217·50										
	218·50	1150									238183
	219·50	1450									238184
	220·50	65									238185
	221·50	650									238186
	222·20	36									238187
	222·50	40									238188
	223·50	7800									238189
	224·50	540									238190
	225·50	2200									238191
	226·50	2750									238192
	226·70	250									238193
	226·97	4850									238194
	227·50	1300									238195
	228·50	2050									238196
	228·95	3700									238197
	229·50	550									238198
	230·05	1550									238199
	230·50	440									238200
	231·50	670									238201

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G51											
	232·50	520									238202
	233·50	1600									238203
	234·50	2500									238204
	235·50	780									238205
	236·50	1050									238206
	236·90	1100									238207
	237·50	5300									238208
	238·50	1800									238209
	239·50	1650									238210
	240·50	7550									238211
	241·50	4500									238212
	242·50	4700									238213
	243·50	3250									238214
	244·50	5500									238215
	245·50	9850									238216
	246·50	22900									238217
	247·50	26400									238218
	248·50	21000									238219
	249·50	16200									238220

11054

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD	SAMPLE No.
G51	249·50	-5·00								
	250·50	9900								238221
	251·50	37200								238222
	252·50	19900								238223
	253·50	26000								238224
	254·50	16500								238225
	255·50	330								238226
	256·50	320								238227
	257·15	-5·00								
	258·15	70								238228
	259·15	60								238229
	260·15	280								238230
	260·40	-5·00								
	261·40	1200								
	262·15	12600								238231
	262·40	65								238232
	263·40	200								238233
	264·40	2100								238234
										238235

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G51	264·40	-5·00									
	265·40	1350									238236
	265·70	920									238237

110156

G51 1

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110157

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
·4		0-59·9 White to Dark Grey Generally Massive Quartzite This is a fine to med. grained generally massive quartzite. The rock may become locally micaceous and in such intervals grades into a qtz. phyllite. The qtzite. is well sorted and generally pure.							Generally < 1% f.g. py. in thin veinlets. (unoriented)
·3	5	The ground is extremely broken to approx. 68 m.						5	
·3	10							10	
·7	15	← CHANGE TO NQ.						15	
·4									
·9									
·2									
·9	20							20	
·6									
1·3									
1·9									

5 cm

G51 NO2

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110158

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Lithology - as above.							
		Core is badly broken through entire interval.							
·1		S_1/S_0? - 32m - 40°							
·4		37m - 45°							
1·7		43 - 45°							
		49m - 45°							
1·0	30							30	
1·2		5 cm							
1·0									
1·0	35							35	
1·1									
·7									
1·1									
1·2	40							40	39.4 - <1cm py in sol.conv. in qtzite
1·6									
·5									
1·2	45							45	44.7m - 44.9m - 1% py as diss. v.f.g. & in ·5cm vein // to c.A.
1·5									
·15	47	Qtz. Schist - qtz & muscovite? ⇒ good cleavage in this interval.							
·6	48								
·8									48.7m - 50.0m - 1% py as fine veinlets, unoriented.
1·0	50							50	

ABERFOYLE DIAMOND DRILL LOG HOLE No. G51 p. 3

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110159 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
·2									
·6									
1·5	55							55	Approx 56m – 59·9m – 1-2% py. as fine unoriented veinlets, Distinct from thin white qtz. veinlets.
	55·5	silty interval							
	55·5								
·7									
1·2									
·5									
1·0									
	60							60	
·4		59·9m – 223·45							59·9 – 61·0m – 5-10% py as veins assoc. w. qtz & solin cavities.
1·2		QS Black carbonaceous shales w. interbedded Grey Qtzite Bands & Fragments. This dark grey to black often graphitic siltstone-shale contains beds to 10cm of grey, often finely laminated, quartzite. Cleavage is generally parallel to bedding. The grey qtzite laminae, which reflect bedding are generally strongly contorted and broken. This may be due to 1) Soft sed. Def. 2) Transposition during D1							61·0 – ≈63m – 1% py. as fine veinlets in black shale.
·5									
·5	65							65	
·6									
·7									
		Ground Improves →							
2·5									
	70	69·8 – 20cm grey qtzite						70	
		71m – small scale D2? folding axes 90° to c.A.							
1·8		71·7m – So/S1 – 80° to c.A. – younging – in form of graded beds. Younging down hole (ie to W.)							
1·7									
1·3	75	5 cm						75	

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110160 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Lithology - As above - black shales & siltstone with grey qtzite bands (av. 5-1cm) and fragments. Often contorted.							
1.5		S_0/S_1 - 45° to C.A.							
		Ground beginning to improve, with zones to couple of metres of broken core							
1.5		76.2m - 20 cm qtzite							
		78.0m - 25cm grey qtzite.							
2.5	80							80	
		81.0 m - possible x-bedded rock - younging down hole - ie to W.							
2.0		5 cm							
NQ BQ 1.4	85	85m - S_0/S_1 - 40° to C.A.						85	
3.0		...							
		86.3m - 87.3m - Rock contains intervals to 10 cm of fine conglomerate composed of bedded fine grey siltstones. 86.9m - coarse xtalline carbonate frag. containing sph. qz.							
3.0	90							89.5	89.5m - 3cm 10% Py assoc. w. qtz.
		90.9m - 10cm qtz vein w. 10% Py.	10cm					90	89.5 - 90.8m - 1% Py as f.g roc.g. diss. & in veinlets assoc. w. qtz.
		90.85 - Fault - broken core						90.8 / 90.9	90.8 - 90.9 - 30% Py. as f. to c.g. in veinlets assoc. w. qtz.
								91.45	90.9 - 91.0 - 10 cm 10% Py in qtz vein
3.0								91.75	91.0 - 91.45m - 5-7% Py as f.g. diss.
								92.85	91.45 - 91.75 Py 50% as f.g. assoc. w. q veins.
			5 cm S1					93.4	91.75 - 92.85 - Py 10 f.g. & veinlets
1.2	94.9 95 95.3	Grey Quartzite Interval - m.g. massive						95	93.4 - 3cm sulf vein 2-3 Cm Py 20.
		95.3- Lt. Grey to Dk. Grey interbedded Siltstone & Quartzite.							
1.4		The rocks in this interval are distinguishable from the previous interval by the fact that grey qtzite. fragments are less common and the rock no longer shows the contorted nature as before.						97.8	
			3cm q/z						
2.9		The rock is characteristically composed of dk. grey to black siltstone bands to 20cm interbedded w. grey quartzite bands to 10cm (av. 5cm). The quartzites are							
	100							100	

ABERFOYLE — DIAMOND DRILL LOG

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110161

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
1.0		often very finely laminated.							
1.8									
2.1	105							105	
.7	105.7	Ground is broken - may be related in part to faulting.						105.9	105.9 - 107.5m - 1-2% py as f.g. blebs in qtz veins. Tr. gal.
1.0								107.5	107.5 - 108.3m - 30-50% py. assoc. w. qtz. veins.
1.1	108.4 / 108.9	FAULT ZONE - Broken core						108.3 / 108.4 / 108.9 / 109.2	108.4 - 108.9m - 40-50% py assoc. w. qtz & sid veins. Also ∝ 1% Aspy. and tr. Stn. 108.9 - 109.2 - 1% py. assoc. w. qtz veinlets.
2.4	109.7 / 110							110	
3.0	115	Si/So 90° to C.A.						115	
3.0		117.5m - Fault ?° to c.A.	F					117.5	
3.0	120	Si/So 60° to c.A						120	
3.0		122.7m - Fault 80° to c.A.	F					122.7	
	125							125	

5 cm

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein; c carbonate, q quartz

Mineralization 110162 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0	125.1	Lt. Grey Fine Grained Quartzite Generally massive - minor bedded.			
	127.05	127.1m - Fault - 70° to c.A.		127.1	
2.6	128.4	Lt. Grey Massive Qtzite - numerous thin white unoriented qtz. veinlets.			
3.0	129.7 130	Med Grey Generally Uniform Schistose Siltstone This is a massive to weakly bedded interval of . S1/S0 av. 45 to 60° to c.A.		130	very rare wisps of syn. py.
3.2	134.2 135	Lt. Grey Massive Quartzite - Whole interval is extensively veined by qtz veinlets & blebs. Rare thin <1cm siderite veins.	qtz	135	
3.1	136.1	136.65m - sid, py 2.5cm. Interbedded black siltstones & grey quartzites. (often contorted)	sid py		
3.1	140		py py qtz py	140 140.4	139.15m - 3cm py vein . 30° to c.A 139.9 - 1cm py vein 30° to c.A 140.4 - .5cm py. vein. assoc. w. qtz vein . 10° to c. A.
			py	142.85	142.4 - 142.7 m - 10% Py. in Py qtzite & Py vein - 5cm . 40° to c.A.
3.0	145			143.8 145	143.8 - 149.0m - 1% py as py. frag . (rep.?) but mainly as py. qtzite bands. f.g. py.
3.0				149.0	
	150			150	

5 cm

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110163

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0		Lithology – as above – interbedded dk. grey siltstones & lt. grey f. to m.g. qtzites. Siltstones also contain subrounded to rounded qtzite frag.; 0–40% of rock			
3.0	155	5 cm		155	
3.0		158.1 – Fault	F		
2.0			py		159.15 – 5cm py. vein 45° to c.A
3.0	160	py veinlets at 160.45m – cross cut qtz veinlets	py	160 160.65 160.85	159.75 – 1cm pyvein. 160.05m – 1cm py. vein. 160.05–160.65m – 2–3% py. as f.g diss in qtzite beds. & as wisps & thin veinlets assoc. w. qtz & trce. ga. 160.05–160.85m – 5–10% py as veinlets.
.8				163.2	≈1% py. v. thin veinlets & rare (poss. rep?) blebs & rounded frag. assoc. w. grey qtzite.
2.3	165			164.4 165	
.6					up to 1% py. as wisps & veinlets, gen 45–50° to c.A.
3.0				168.5	168.5–169.7m – Py <1%, syn?
3.0	170	169.7–170.0m – Interval of subrounded to angular syn pyritic fragments in very weakly pyritic siltstone. 1 possible vesicular volc. frag.–rep. 171.4m – 10 cm py. siltstone – poss. rext. blebs.		170 171.4	169.7–170.0m – 2–5% py as syn? py. frag. in minor interval of v. weakly py. siltstone. 171.4 – 10–15% syn py in py siltst. minor rext.
3.0					
	175			174.7 175	Py/sid vein 1cm.

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110164 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.9		Lithology – as above – grey to black shales w. interbeds of grey qtzite and contorted beds or fragments.						175.28	
								176	
								179	179.0 – Py 30%, Ser. chlor. 70% vein 20° to CA 2cm.
3.0	180							179.4	179.4m – 5cm py 90% sil 10% vein mineral sericite?
								180	
								180.4	180.4m – 180.55m – py 20%, qtz 80% in veinlets Assoc. w. f.z. below?
	181.0	FAULT ZONE – Broken core in lower 2/3 of zone. Upper ⅓ is healed							
3.0	181.5								
									183.05 – 183.4 m – 20% py in c.xtal sil rock w. rext. py. blebs.
	185							185	
3.0									
								187.7	10cm vein py 50%, qtz 50% 60° to c.A.
3.0									
	190							190	
2.6		192.9m – Fault – broken core	F					192.9	
2.2									
	194.9								
	195	FAULT ZONE – Broken Core						195	
	195.2								
1.1									
3.0									
	200							200	

5 cm

DRILL LOG

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein; c carbonate, q quartz

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110165

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	201.95 / 201.45	FAULT ZONE – Broken core Lithology – as above – DK grey to black shale–siltstone with thin grey qtzite interbeds & fragments – often contorted.						202.9 / 203.05	202.9 - 203.05m - 1% py as veinlets
2.5								203.8 / 204.0	203.8 - 4cm py vein 50° to c.A. 203.8 - 204m - py thin veinlets 5-7%
		204.7m - Fault - Broken core. 30° to c.A.	F					204.6 / 205	204.6m - py - 1.5cm vein.
1.0	205								
2.3									206.3m - py 1cm vein 30° to c.A
3.0	210							209.5 / 210	209.5m - py. vein 25° to c.A. 1cm
3.0									
2.0	215							215	215.9m - py. vein 1cm 75° to c.A.
.9		5 cm							
3.0		218.9m - 10cm Fault Breccia? 219.90 - 10cm Fault Breccia.						219.1 / 219.5 / 220	219.10m - 1.5cm py. 90 - ser. or chl. 10% 45° to c.A. 219.5 - 1 cm py vein 45° to c.A.
3.0	220							221 / 221.3 / 222.2 / 222.55	219.8 - 221.0m - 2-3% py as fine veins & blebs gen // to c.A. 221 - 221.3 - 15% py as fine veins // to c.A. 221.3 - 222.2 - 1% py as veins & blebs. Low & to c.A. 222.4 - 35cm py vein. 40° to c.A?
		222.7 - 223.45 - much qtz & py veining.							222.65 & 222.7 - 2cm py vein. 222.7 - 223.45m - py - 20-30% as veins & blebs assoc. w. qtz. Str 1 & locally 10%
		223.45 - 5cm qtz vein							223.45 - 225.4m - 40-50% py as stockwork of fine veins & pods veins to 10cm assoc w qtz.
3.0	225	Extensively Veined & silicified pyritic siltstone The host rock in this interval appears to be a strongly silicified pyritic siltstone. V.f.g. py defines a foliation, poss SD. This rock has						225	225.0 - 10cm 10% str.

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110166

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
		been veined by py & qtz ± stannite. These range from py. veins to 10cm to thin stockworks.		225.4	15% py. v.f.g. syn py. as dis & wisps also thin veinlets. 10% : 5%. 40-50% py. as vein stockwork assoc. w. qtz.
2.8	226.7	Qtz-Siderite Sulphide Rock - Rock consists of a white to grey siliceous matrix containing variable amounts of cream siderite as c.g. & vein to 5cm. Siderite to 15%. Py and oc. ga. as f. to c.g & blebs & assoc w. vein qtz are the sides. 227.4 & 228.65 m - Faults - Broken core.	F F	226.7 22.97 22.6 228.95	Ga - 30% as f. to c.g. & py 20% in Sil. & Sid. matrix. Py. 60-70% as c.g. vein material assoc. w. vein qtz. Py. 20-30% as f. to c.g. diss. in Sil. matrix. Minor syn. py. in frag. within vein qtz. Tr. gal. as thin veins assoc w. Sid.
	228.95	Veined & Silicified Pyritic Siltstone - Extensive veining by py. (av 3mm thick) Larger veins assoc w. Sid. Host rock weakly to moderately py. siltstone			Py. 20-30% as veins (av 3mm) unoriented. to 5cm. assoc w. qtz. & Sid.
3.0	230	Qtz-Siderite Sulphide Rock - Py. as f. to c.g & c. xtal. blebs sit within a lt grey siliceous matrix. This matrix contains a variable amount of cream sid. as f to c.g. ,to 40% av 2-3%. Relict vesicular volc. frag. indicate a possible volcanic origin for this rock. Sulphide constitutes 30-90% av 60%.	Sid 80cm Sil	230	230.05 - 234.4 m - 30-90%, av 60% py. as f. to c.g. diss & as c. xtal blebs in siliceous matrix. Tr. gn as f. to c.g. often assoc w. sid.
3.0		The lower 30 cm of this interval is siderite rich, matrix & vein (causing brecciation). Relict fragments in this interval may contain syn. py.) py siltstone?	Sid 10cm Sid	234.2	10-15% py f.g. diss. & tr. f.g. ga. rep. frag.
	234.5 235	Replaced vesicular lithic tuff fragments in a grey silicified silty matrix. - Vesicular frag. from ≈1mm to 2cm (av 1cm) are variably replaced by py. Fabric defined by po. of inequant frag. is at ≈ 10° to C.A.		235	10-15% py as replacement of 1m to 2cm vesicular fragments in tuff unit. Rep variable from moderate to total.
3.0	236.9	Pyritic Volcanics - This is a uniform sequence of altered pyritic vesicular volcs. The rocks are carbonate rich and contain ample relict textures indicative of a basic volcs. Pyrite occurs as blebs & diss. and commonly infills vesicles. Purple flourite as blebs & veinlets occurs in trace amounts. The rock may be locally silicified		237.55	Py. 80-90% replacing lithic tuff? 237.55 - 253.7m - 30-40% py. as infilling vesicles & f to c.g. diss. & blebs. F.g. blebs of pink cassit. in trace amounts. Also. tr. Arsenopy.
3.0	240	5 cm		240	
3.0	245	244.7 - 254.75 The core is locally sheared and has a leached appearance. - Numerous soln cavities.		245	
3.0	246.7	246.9 - Broken core ⇒ Fault. 247.6 - " " " 246.7 - 251.4m - Zone of many soln. cavities puggy core, possibly associated to faulting and soln. activity.	F F		
3.0	250	F.Z. → 60° to C.A.? F.Z. →		248.8 249.1 249.5 249.7 250	

Feature — Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110167

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0	251.4			253.7 / 253.95	5-10% py as blebs rep. vole? 1-2% py as f.g. diss.
3.0	254.75 / 255	Grey green basic tuff agglomerate. The dying out of mineralization coincides with a darkening in colour of the tuff. The boundary between unmineralized & mineralized volcs. is sharp.		255	
				256.3	Trace pyrit. rep. sid. vesicles
3.0			py vein	257.1	2cm py vein. 10° to c.A.
		Extremely siderite rich lithic tuff - blebs and f. to c.g. Assoc. w. diss. py.		258.15	1-2% f.g. py. diss. in usually sid. rich lithic tuff. Occ. rep. lithic fragments. <1% f.g. diss sp.
				259.15	
	260	260.2 - 2cm sid vein 70° to c.A. 260.7 - 1cm " " 50° "	sid. sid.	260	
3.0			c	261.65 / 261.8	Pyritic volcs - trpy. occur around these veins. 2cm py 50% Cu 1% in sid vein 5cm 5cm py 60% Cu 1% in sid vein.
			q vein	262.6	262.05 - 5cm py 20% as blebs in tuff.
3.0			py	264.15	5cm py 60% assoc w sid vein
	265			265 / 265.3 / 265.7	265.3 - 10cm py 2-3% as py rep. vesicles in vole.
3.0					
3.0					
3.0	270			270	
	275			275	

5 cm

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110168

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
30		Lithology - as above grey green sericitic siderite rich lithic tuffs (basic?)							No Sulphides
		END OF HOLE 277.4 m.							
	280							280	
	285							285	
	290							290	
	295							295	
	300							300	

5 cm

Commco

DRILL HOLE RECORD

Location QUEEN HILL | Property Queen Hill | District Zeehan | Alt./R.L. 199. m. | Hole No G52

Commenced 29-10-79 | Completed 16-11-79 | Core size HQ 63.4mm NQ 47.6mm | Co-ordinate 2012.73N 654.88E | Date 4.12.79

Objective TO EVALUATE STRUCTURAL CONCEPT FOR REPETITION OF STORMDOWN LENS | % Recovery 63.0% | Bearing (M) 101.42° | Logged C.H. Young

Grid bearing (M) -11.25° | Dip -44.82°

SURVEY DATA

DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE
21 m	46.4°	102°	EASTMAN
58 m	46°	100.25°	"
77 m	46°	100.75°	"
			"
140 m	45°	103°	"
170 m	45°	101°	"
	EOH	183 m	

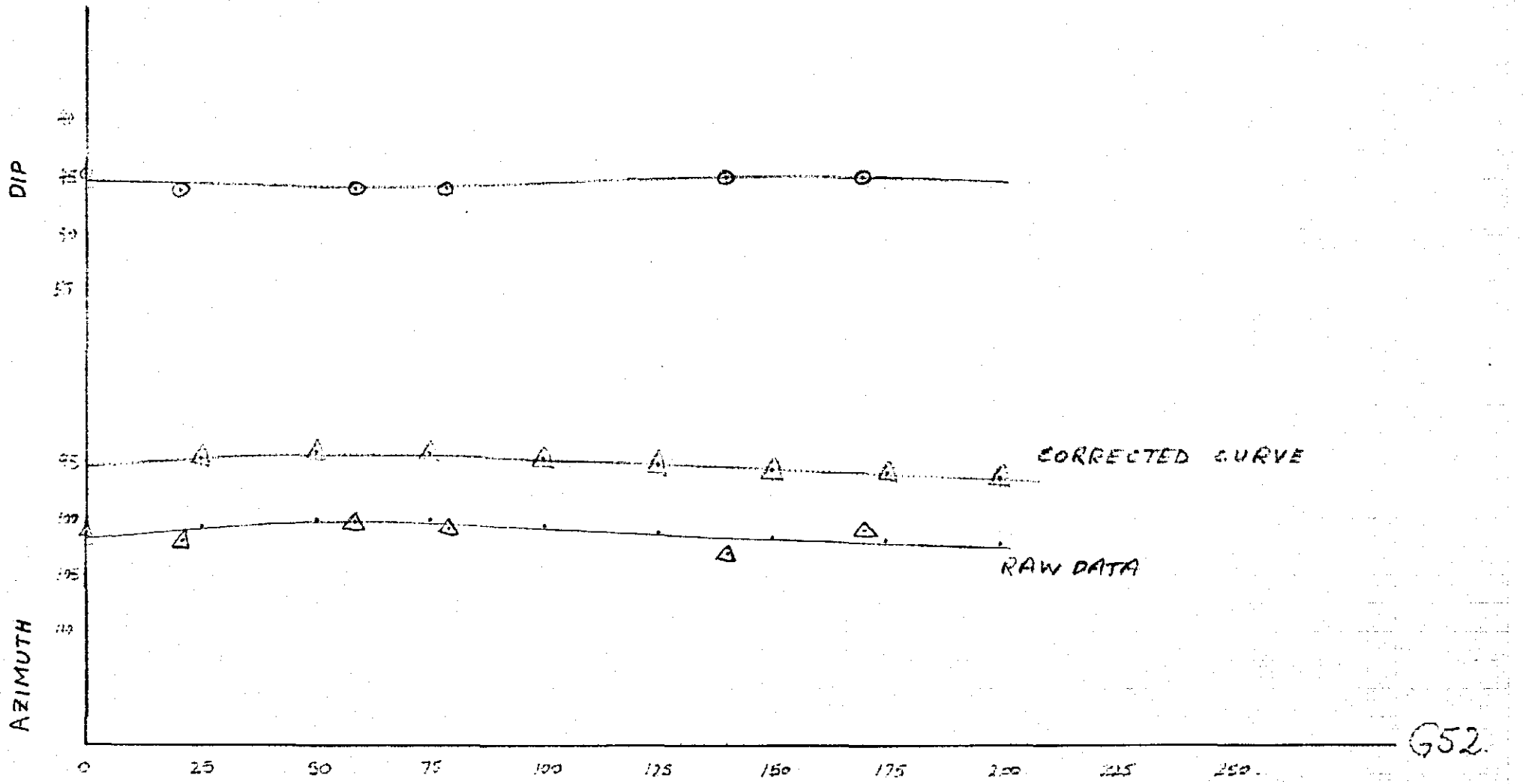
GRAPH DERIVED DATA

DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE
0	44.82	101.42	2012.73	654.88	199.00
25	45.5	100.79	2006.03	671.19	181.28
50	45.75	100.29	1999.54	687.41	163.40
70	45.75	100.29	1993.13	703.62	145.48
100	45.5	100.79	1986.64	719.85	127.60
125	45.0	101.17	1979.98	736.14	109.85
150	45.0	101.67	1973.16	752.45	92.17
175	45.0	101.92	1966.24	768.71	74.49
200	45.25	102.23	1959.26	784.91	56.77

REMARKS

Severly broken ground and significant core loss down to 94.7m.

69TOT



G52.

CORRECTION FACTOR
FOR CORRECTED CURVE +5.92°

1101170

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G52	34·00	-5·00									
	35·00	3250									238242
	36·00	460									238243
	36·50	155									238244
	37·00	65									238245
	50·80	-500									
	51·80	530									238246
	52·80	770									238247
	53·20	490									238248
	53·60	3150									238249
	53·80	1550									238250
	54·10	2800									238251
	54·80	6400									238252
	55·80	1500									238253
	56·80	800									238254

110171

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD	SAMPLE No.
G52	61·00	-5·00								
	62·00		580							
	63·00		95							238523
	64·00		90							238524
	65·00		12							238525
NO	66·00	-5·00								238526
CORE	67·00	-5·00								
	68·00		>4							
	69·00		4							238529
	70·00		>4							238530
	71·00		>4							238531
	72·00		55							238532
	73·00		12							238533
	74·00		22							238534
										238535

110172

Note : Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G52	132·10	-5·00									
	133·20	165									238255
	134·20	1900									238256
	135·20	11000									238257
	136·20	12000									238258
	137·20	2150									238259
	138·20	230									238260
	139·20	2950									238261
	140·20	32000									238262
	140·50	9900									238263
	141·20	175									238264

110173

ABERFOYLE **DIAMOND DRILL LOG** HOLE No. 6 bal Page No. 1

Feature Bedding Foliation Fragment (size & shape) Shearing Fault Vein (c carbonate, q quartz)

Mineralization 110174

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		NO CORE							
0.3	2.0	VT Light brown to buff coloured, deeply weathered andesitic? tuff agglomerate	BROKEN CORE						No obvious sulphides.
0.4		The rock is soft and broken. Fragments are not obvious but have irregular outlines, from 0.5 to 5 cm. - Occasionally vesicular. The matrix appears to be of similar composition.							
0.2	5								
0.5									
0.5									
0.5									
0.3	10	5 cm							
0.8									
1.4		Between 12 and 15 m the rock is not so deeply weathered, grey green in colour, carbonate fills vesicles.							
1.0	15	Below 15 m the rock is deeply weathered, probably due to trough weathering down fault zones.							
HQ/NQ 0.4								17.2	5cm Py, Gn vein 30° C.A. Py 50%, Gn 10%
0.6									
0.7									
	20								
1.1		Foliation 30° C.A.							
0.1									
		23-26 m cave material.	BROKEN CORE						
0.2	25								

ABERFOYLE **DIAMOND DRILL LOG** HOLE Nº 052 Page Nº 2

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110175

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Broken core and down hole cave material (volcanic), as above	CAVE MATERIAL						No obvious sulphide mineralization
N/C									
N/C									
0.2	30	Below 31.0 m. The rock is less shattered, grey in colour, tuff agglomerate. carbonate as veinlets to 2 mm is common. 33.00. Siderite vein 10 cm at 5°-10° to C.A. Local brecciation of core.	BROKEN CORE						
0.3									
0.2								32.0	Pyrite, trace, as disseminations.
0.8									
0.3	34	S. Local sedimentary breccia - siderite, tuff and syngenetic pyrite fragments to 1 cm						34.0	Pyrite 5-8% as veins, dissemination and fragment of syngenetic material.
0.5	35	VF Grey fine tuff - pyritic. fragments often pumiceous, to 1 cm in length. at 37.0 m - minor quartzite unit						35.0	Pyrite 1-3% as disseminations. 2 cm Py. vein.
0.9								36.0	
0.1	37.0	Below 36.5 m. The rock is badly broken, essentially down hole cave.	DOWN HOLE CAVE MATERIAL					37.0	Pyrite, trace only. Minor disseminations of brown sphalerite are noted associated with small quartz veins.
N/C									
0.4	40	Dark grey shale and quartzite, locally brecciated. Quartzite predominates.							
N/C									
N/C									
0.1									
0.1									
0.2	45	5 cm							
0.5	47.1	VF. Grey fine grained tuff. Generally brecciated by quartz-carbonate veins to 3 mm.	F						
0.4	49.0	QS. Grey quartzite and shales. locally graphitic.	F						
0.3	50								

ABERFOYLE — DIAMOND DRILL LOG — HOLE N

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110176 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Qs. as above.							
0.4		53.6 - 54.1 Grey quartzite						51.8	Pyrite 1% as aggregates fine grained material and local veins.
0.1								53	
0.2								53.4	Pyrite 30-40% as above.
0.35		Note Probable fault zone 36 to 56.0						53.6	Pyrite 2%, Sph 1%, Gn 5, vein
0.5	55							54	Pyrite 1-2% on disseminations.
								54.8	Sph 20, Gn 5, Py 15. Cobs vein 20° CA
									Pyrite 5% as veins and disseminations.
0.1		VT Weathered light buff coloured lithic tuff. Fragments are irregular in outline to 2 cm. The matrix is sericite rich, white clays. Kaolinite is common. Foliation 65° C.A						56.0	Pyrite rare.
1.0	60								
	60.4	FAULT ZONE. 1W6, SHEARED AND BROKEN CORE							
0.3	60.7	CONTACT APPROXIMATE						60.7	
0.2									
0.4		Q light grey Quartzite Fine to medium grained quartzite. Foliation 70° C.A.	V. BROKEN CORE						Pyrite 1-2% as disseminations of very fine euhedral crystals and irregular veins.
	62.0	CONTACT APPROXIMATE						62.0	
0.3		Dol. Light grey to buff coloured Dolomite slightly recrystallized.							
0.2									
	64.0	CONTACT APPROXIMATE						64.0	
0.1	65	Ch. Black Chert. - cut by numerous 1-2 mm quartz veinlets. Solution Cavities. - ?	V. BROKEN CORE					65.1	Pyrite 3-5% as disseminations and irregular veins and networks. Trace Sph, Gn 15 cm Py 3% fine grained
	66	* Due to major core loss contact position is not known. Approx Pyrite veinlets Pyrite 50% - 60% very fine grained.						66.0	Pyrite 50-60% as very fine grained banded. Minor brecciated veinlets.
	67.0							67.0	
0.25		Grey Quartzite - minor pyritic veinlets Lala.	BROKEN CORE						Pyrite 1-2, locally 30% where there are beds of v. fine grained sulphide.
0.3		Core loss is severe. - rock types identified consist of quartzite and pyritic veinlets - essentially a sulphide rock. 70.0 m Local silicified fault breccia.						69.0	
	70							70.0	Pyrite 50-60% as very fine grained, bedded material.
NQ 0.2	71.3	CONTACT APPROXIMATE						71.3	
BQ 0.7		Dol. Grey dolomite - fine grained, locally siliceous. Cut by a network of quartz and carbonate veins to 2 mm wide. Rock is occasionally dark grey in colour carbonaceous.	BROKEN CORE						Pyrite 1-2% as disseminations and veins.
2.6		Note Probable fault zone 62.0 - 67.0						73.0	Pyrite 5% as veins and disseminations.
0.30	75							74.6	

* NOTE MAJOR CORE LOSS

5 cm

ABERFOYLE **DIAMOND DRILL LOG** **HOLE No** 652 Page No 4

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110177 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
1.8		Grey "dirty" dolomite as above. Fine grained, bedded.	c	75.5	Pyrite 2-5% as above. Pyrite 5% locally 3% as very fine grained bedded, syngenetic.
0.3				76.9 / 77.6	Py 10. fine grained bedded.
0.8	78.00	Light grey locally re-crystallised sedimentary breccia of DOLOMITE	BROKEN CORE	78.3	Pyrite 3% locally 5% as locally re-mobilised fine grained syngenetic material.
0.4	80	Fragments are sub-rounded to angular from 1mm to 1cm.			
1.5	81.00	Light buff to cream coloured re-mobilised carbonate. Siderite Vein in offer[illegible] but probably re-crystallised dolomite			
1.5	82.5	Light grey dolomite intensely fractured and locally brecciated by carbonate, cut by an intense network of carbonate veins.		82.5	Pyrite 1-3% as above
N/C	84.	FAULT ZONE. CORE LOSS. QS. PUG AND BROKEN CORE		84.0	Pyrite 1-2% as disseminations
0.1	85	85.0. quartz and minor sphalerite in rubble. suggests vein	q	85.0	Py 10, Sph 5 in q vein (est 10cm)
0.2		Most of the rubble appears to be quartzite. Suggest a shale quartzite sequence. Thus fault contact at 84.0m.			
0.1	90	90.0 m. Broken quartz - siderite pyrite rubble suggests vein.		90.0	Py 15 in q vein. c.g. Tr Sph to 3% Sph. (est 10cm)
		92.6. Grey shale and quartzite, intensely brecciated.			
	94.7 / 95	END ZONE OF SEVERELY BROKEN CORE. Below the fault zone the rock is still broken and disrupted down to 97.6m.			5 cm
	97.9			97.6 / 97.9	Pyrite 10%, Sph 3%, carbonate vein sub/parallel to core axis true width est. - 3cm.
	100	S. Black carbonaceous siltstone. Broken fragments of syngenetic pyrite to 2cm are relatively common		98.7 / 99.8	97.9. Pyrite 3-5% as fragments & [illegible] syngenetic [illegible]

* NOTE SEVERE CORE LOSS

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº B52 Page Nº 5

Feature Bedding Foliation Fragment size & shape Shearing Fault F Vein c carbonate q quartz

Mineralization 110178 Trace 1-5% Common 5-15% Abundant 15-60% Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3·0	100·3	Black Siltstone as above.						100·3	98-100·8. Pyrite 5-15% as, Sph 6% veins & Semi wide 10° CA.
		VT. Grey-green lithic tuff. Locally carbonated grain fragments generally 1-3 mm. Foliation 30° CA. Cliffon 10% 1 fragment are organic in outline up to 3 cm.							Pyrite rare.
3·0									
	105								
3·0	105·1 105·9	105·7. 30 cm fragment of green colour andesite. The rock is now a grey green carb, ser. Altic. 108.2 m. 15 cm fragment as above.							
3·0	110	5 cm							
3·0									
	114·2								
3·0	115 115·3	Fine Tuff. Fragments usually less than 2 mm. - Sandy grey, weathered appearance, light brown in colour. grey-green lithic tuff locally carbonated and sericitic.							
3·0	118·6	S. Black Carbonaceous Siltstone						118·6	Pyrite 1-2 as fine dissemination and small fragments of sig organic material.
	120	Fine grained carbonaceous siltstone Foliation 30°-40° to core axis.						120·1	Pyrite 20 3 cm vein, 30° CA. with quartz
1·3								122	1 cm Py 20 vein
								122·4	Pyrite 15% 15 cm vein 40° to CA. with quartz
1·7								122·9 123·2	Py 10 massive with quartz veining
2·0									Pyrite 1-2% as disseminations and small fragments of fine grained organic material.
	125								

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110179

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
1.0		Black carbonaceous siltstone, as above							Pyrite 1-2% as above.
0.6		Bedding 30° C.A							
2.0	127	Below 127m the rock is a grey siltstone, less carbonaceous than above.							
0.4								128.6	10cm Py 5% as syngenetic blebs and disseminations.
1.0	130	130.0 Bedding 50° CA.							
1.8	130.2	QS. GRADATIONAL CONTACT. Grey shale and quartzite bands. Quartzite up to 2cm in width. Locally disrupted.							
1.9	132.2	CONTACT 35° CA.						133.0	5cm Py 15, Sph 5, vein 30° CA.
1.1		Dol. Light grey to buff recrystallised dolomite Replaced by medium grained pyrite down to 136.2m. Local silica and carbonate - siderite gangue.						133.2	Pyrite 15% as m. grained aggregates
	135							133.7	Pyrite 40% locally 60% as m. grained aggregates replacing dolomite
3.0		Below 136.2. The rock is buff recrystallised dolomite.	C					136.1	Pyrite 20% as above.
								136.2	Pyrite 3-5%, Sph rare as disseminations, m grained
3.0	140							139.2	Pyrite 20-40% with Sph .2-3% as Tr. as m. grained replacements.
	140.5	S Grey-Black Pyritic Siltstone Pyrite as beds and fragments	C					140.5	Pyrite 3% as b.g. beds and fragments of beds.
3.0	141.4	Dol Light grey to buff coloured - m. crystallised and highly brecciated Dolomite Breccia fragments to 2 cm.						141.4	Pyrite Trace, Sph rare.
	143	S. Black Pyritic siltstone Pyrite occurs as disseminations, thin (to 2mm) beds of b.g. syngenetic material and as fragments. Bedding ± 70° C.A.	C					143	Pyrite 3% as fine grained syngenetic material and fragments of same. Some aggregates and disseminations.
3.0	145	145.4 m. 20cm m. crystallised dolomite							
		5 cm							
3.0	148.6	CONTACT 60° C.A.						148.6	Pyrite 1-2% as disseminations aggregates and irregular veins
		QS. Grey to black shale and quartzite Locally contorted due to soft sediment deformation							
	150								

ABERFOYLE **DIAMOND DRILL LOG** HOLE NO 652 Page No 7

Feature Bedding Foliation Fragment size & shape | Shearing Fault Vein | F c carbonate q quartz

Mineralization 110180

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
1.8		QS. as above.						151	Pyrite 1-2% as above. Pyrite trace as very fine dissemination and fine (< 1mm veins) Rare fragments of syngenetic pyrite.
1.2									
3.0	155								
		5 cm							
3.0								158.3	3 cm Py 70% vein 45° CA.
	158.8							158.8	15 cm Py 30% vein 30° CA.
3.0	160	Q Grey Quartzite Relatively massive grey medium grained quartzite - fine muscovite mica is common.							
	160.8								
3.0		QS. Grey to black shale and grey quartzite - contorted and disrupted due to local depositional slumping							
3.0	165								
3.0		167.3 - 169.5 Slumped and brecciated shale, quartzite and dolomite. The dolomite appears to be fragments in the QS. rock. Locally brecciated. Carbonate veining intense						167.3	Pyrite 5% as disrupted beds of v. fine grained syngenetic.
								167.9	Pyrite trace as above
								168.2	Pyrite 5% as above
3.0	170							169.0	Pyrite trace as above.
		172.3 - 173.2 Siltstone with muscovite mica. Mquartzite bands.							
3.0		Below 174.7 the rock is dark grey to black and carbonaceous.						174.4	Pyrite 15% as veins in grained.
	175							174.7	Pyrite trace as above

ABERFOYLE

DIAMOND DRILL LOG

HOLE A' 652 Page No 6'.

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110181

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		175.6 1cm disrupted 1-2 pyrite band and 5cm recrystallized dolomite. 175.8 - 176.9. Chaotic textures - deformed						175.6	Pyrite trace as above. 1cm by 30° to c.a. bed.
3.0		177.8 - 179.7. quartz vein at 30° to C.A. vein is to 3cm. Minor mineralization. Below 179.7 the rock is relatively Chaotic.						177.8	Pyrite 5% over 10cm as disseminations in qtz.
								178.2	Pyrite 3-5% vein and dissemination
								179.2	
								179.7	10cm by 20 to 20 as vein. 30° C.A. Pyrite trace, as above.
	180								
3.0									
	183	EOH.							
	185								

5 cm

ABERFOYLE

DRILL HOLE RECORD

Location QUEEN HILL Property QUEEN HILL District ZEEHAN Bearing (M) 100·39° Hole No GS3

Commenced 12/11/79 Completed 22/11/79 % Recovery 94 % Grid bearing (M) -11·25° Date 6-12-79

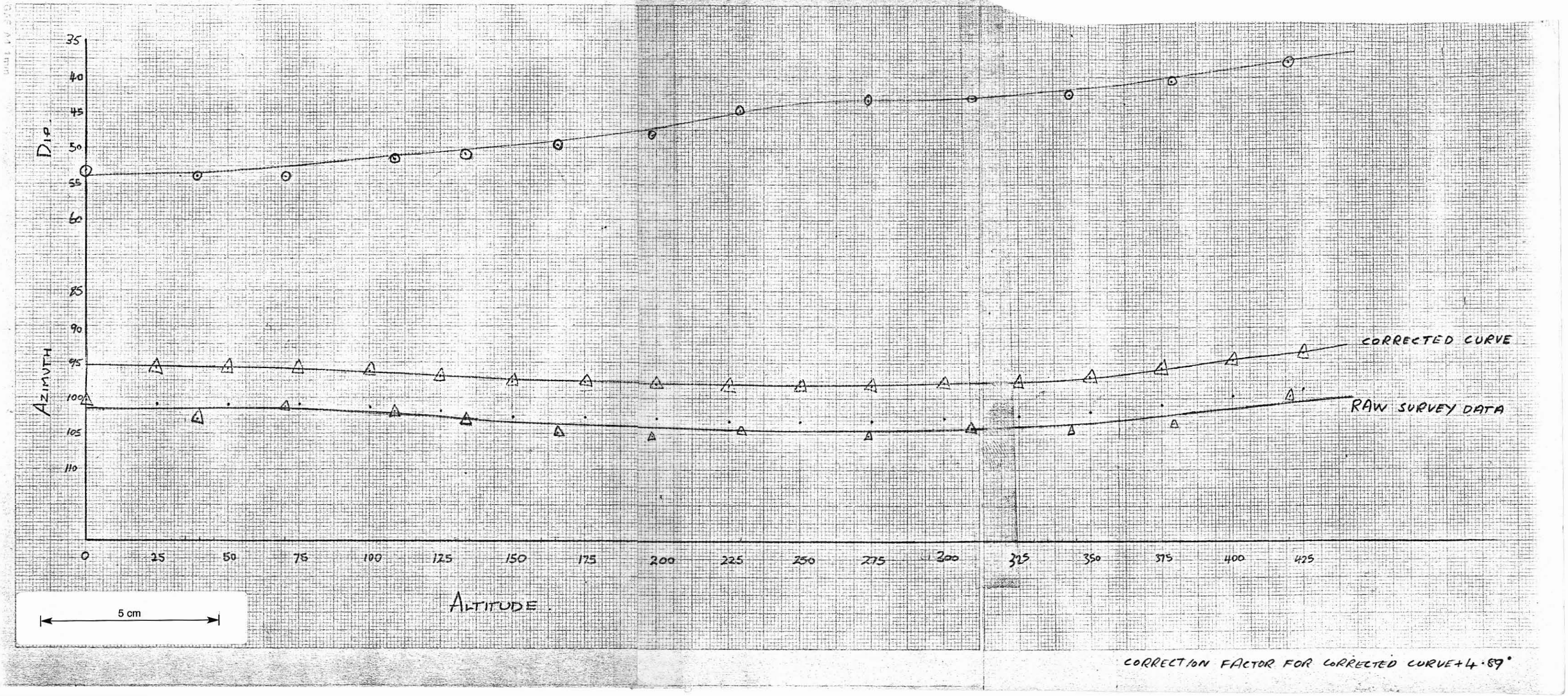
Objective ORE RESERVE HOLE SECTION 3040 RL 10 Core size HW/HQ/NQ/BQ Logged S. RICHARDSON

Co-ordinates 5361851·64N 360518·99E Dip 53·27° Alt./R.L. 203·74

SURVEY DATA				GRAPH DERIVED DATA			CALCULATED CO-ORDINATES			REMARKS
DEPTH	DIP	BEARING(M)	INSTRUMENT TYPE	DEPTH	DIP	BEARING(M)	NORTHING	EASTING	ALTITUDE	
39M	54°	103°	EASTMAN	0M.	53·27°	100·39°	1851·64	518·99	203·74	
70M	54°	101·5°	"	25	53·5	100·89	1846·08	532.82	183.67	
108M	51·8°	102°	"	50	53·25	100·89	1840.46	546.63	163.60	
133M	51°	103°	"	75	52·5	100·89	1834.78	560.59	143.66	
166M	50·25°	105°	"	100	51·5	101·26	1828.92	574.83	123.96	
198M	48·25°	105·25°	"	125	50·5	101·89	1822.81	589.32	104.53	
229·3	44·75°	104·5°	"	150	49·75	102·64	1816.42	604.01	85.34	
274M	43·25°	105·5°	"	175	48·5	102·76	1809.79	618.96	66.43	
310M	43°	104·5°	"	200	47·25	102·89	1802.94	634.26	47.88	
341M	42·5°	104·5°	"	225	45·25	103·08	1795.85	650.00	29 81	
379M	40·5°	103·5°	"	250	43·50	103·07	1788.49	666.27	12.32	
421M	38°	99·75°	"	275	43·0	103·01	1780.99	682.87	-4.81	
	EOH	421M		300	43·0	102·76	1773.51	699.55	-21.86	
				325	42·5	102·45	1766.07	716.34	-38.83	
				350	41·5	101·89	1758.68	733.38	-55.56	
				375	40·25	100·76	1751.42	750.82	-71.92	
				400	38·75	99·64	1744.38	768.76	-87.84	
				425	37·5	98·51	1737.56	787.20	-103.28	

11182

110183



CORRECTION FACTOR FOR CORRECTED CURVE + 4·89°

Note: Intervals *not analysed* should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
G53	238·40	-5·00									
	239·00	55									238476
	239·40	1·32%									477
	240·40	1·03%									478
	241·18	1800									479
	241·40	6									480
	242·00	10									481
	242·40	50									482
	243·40	18									483
	244·40	14									484
	244·72	6									485
	245·40	105									486
	246·00	135									487
	246·40	145									488
	247·40	850									489
	248·40	75									490
	249·00	14									491
	249·40	1650									492
	249·60	90									493
	250·40	125									494

110184

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
653	250·65	2·50%									23849
	250·85	1200									496
	251·40	1·45%									497
	252·40	2000									498
	253·10	150									499
	253·40	85									500
	253·90	75									501
	254·40	310									502
	255·40	75									503
	256·40	330									504
	257·40	3·49%									505
	258·40	1·84%									506
	259·40	2·35%									507
	259·60	1·85%									508
	260·40	8300									509
	260·70	1·83%									510
	261·40	3·45%									511
	261·50	3·40%									512
	262·00	2·71%									513
	262·40	3500									514

110185

Note: Intervals not analysed should be recorded such that a complete hole is itemised.
For any section not analysed, a value −5·00 should be entered in the relevant assay columns.
It is not necessary to record a zero.

PROGRAM | PROGRAMMER | DATE

HOLE IDENT.	DISTANCE FROM COLLAR TO BOTTOM OF SAMPLE (metres)	ASSAY ppm SNT	ASSAY ppm STANNITE	ASSAY ppm COPPER	ASSAY ppm ZINC	ASSAY ppm LEAD	ASSAY ppm TUNGSTEN	grammes per Tonne SILVER	grammes per Tonne GOLD		SAMPLE No.
653	263·40										238515
	264·40										238516
	265·40										238517
	265·65										238518
	266·25										238519
	266·40										238520
	267·40										238521

110186

ABERFOYLE

DIAMOND DRILL LOG

HOLE No 653

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110187

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
HW HQ ·8 ·3 ·4 ·6 ·7 1·7 1·0 2·0 1·7 ·6 1·7 ·3 ·3 ·4 ·2 1·3 1·0 2·7	5 10 15 19·7 20 25	Grey green to brown oxidized vesicular volcanics. Extreme weathered nature does not allow lithological differentiation. Presumably same lithology as below 5 cm BASE OF OXIDATION Grey green basic to intermediate tuff-agglomerate The rock is composed of vesicular lava fragments with an irregular & angular habit from a few mm. to several centimetres in size. These make up to 60-80 % of the rock. Rock is generally isotropic but a weak vesicle elongation fabric may be present.						5 10 15 20 25	

ABERFOYLE

DIAMOND DRILL LOG

HOLE NO 6093 Page No 2

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110188

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
HQ / NQ									
1.4									
1.1									
1.9	30							30	
3.0	31.3	FAULT ZONE Broken core & pug							
1.2	32.8								
3.0	35							35	
	35.5	Grey green vesicular lava? strong fabric defined by p.o. of elongate vesicles 25 to 30° to C.A.							
	37.2		C 25° F					37.4 37.6	
	37.9	FAULT - Low ∠ 37.6m							
3.0		Purple lithic tuff-agglomerate The tuff in this interval shows a distinctive colouration. The vesicular fragments are purple in colour. The vesicles are filled by dk green chlorite and lesser cream siderite. The purple may be due to iron chlorite? The matrix is dk green with blebs of cream siderite.						40	
3.0	40								
3.0	45	5 cm						45	
3.0	47.1	Grey green sericitic tuff-agglomerate as previously							
	50							50	

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº 453 Page No 3

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110189

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

CORE REC'D	DEPTH m	GEOLOGY
3·0	53·5	Purple - Green tuff agglomerate. As previously - purple tuff & fine agglomerate fragments in dk green tuffaceous matrix
3·0	55	
3·0	57·1	
·6		← 59·0 Tuff is cream in colour & siderite rich
3·0	60	← 60·3
·9	61·9	PAINT ZONE Broken core
2·0	62·3	From about 60·3m the bulk of the tuff becomes a dark green colour. This may reflect an increase in chlorite content. Many of the larger vesicular fragments are purple in colour w. most vesicles filled by dk. green chlorite
3·0	65	
3·0	70	
3·0		
3·0	75	

VISUAL LOG — TRACE — COMMON — ABUNDANT — MASSIVE

DEPTH m: 55 · 59·25 · 60 · 65 · 70 · 75

MINERALIZATION

5cm py 5%, sp 5% in sid vein.

5 cm

ABERFOYLE

DIAMOND DRILL LOG

HOLE No 653 Page No 4

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110190

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Lithology – as previously – green sericitic & chloritic lithic tuff & fine agglomerate.							
3.0									
3.0	80	81.6m – Fault assoc. w. sid veining. 40° to c.A.?	F					80	
3.0	85							85	
3.0		5 cm							
3.0	90							90	
2.9	92.0	93.2 > 93.4 – Faults – broken core at unknown ∠ to c.A. Assoc. w. minor siderite.	F F						
3.0	95	95.3 – Fault – broken core	F					95	
3.0		From ≈ 92.0m to ≈ 105.0m the tuff exhibits a mottled texture due to extensive carbonate (siderite) introduction. Fragments often show a zoned nature with carbonate rich centres (or vice-versa) and sericite-chlorite rich boundaries. The matrix is also very carbonate rich with blebs, wisps & veins of siderite							
	100							100	

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110191

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Lithology – as previously – grey green sericitic carbonate rich lithic tuff agglomerate							100.1 – 1cm wide zone 20° to C.A containing f.g. diss. py. 20%
3.0	105							105	
1.7		107.3 – 30 cm vesicular lava?							
NQ / BQ 1.3									
3.0	110							110	
3.0		This interval shows a general fining of the tuff with the average size of the fragments decreasing to .5cm.							
3.0	115							115	
3.0		5 cm							
3.0	120							120	
3.0		122.8 – Distinctive tuff band 10° to C.A. = So.	30° to C.A. Silt 3 cm					123.8	
	125							125	

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº 453 Page Nº 6

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110192 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0	126.3								
2.9		129.4 - Fault - broken core						130	
3.0	130								
3.0		133.3 - Fracture at v. low angle to c.A.							
			Sid 2.5cm	45° to c.A.				134.15	
3.0	135							135	
		5 cm							
3.0		Vesicular lavia - ext. siderite rich - cream colour.							
3.0	140	Approx 140m the rock loses its agglomeratic size material to become a lithic tuff.						140	
		142.4m - Fault - broken core and pug.						142.4	
3.0		142.75 - Fault - broken core, at 20° to c.A.							
	145							145	
		145.3m - Fault broken core, at 35° to c.A.						145.6	
								145.9	≈1% py as wisps & blebs diss. in tuff.
3.0									
								147.4	5cm trace (1%) sp & gn as m.g. assoc w. sid veinlets.
			Sid 1cm	40° to c.A.				148.0	
			Sid 1.5cm	35° to c.A.				148.35	
3.0									
	150							150	

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº 953 Page Nº 7

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110193

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Lithology - sericitic and chloritic lithic tuff; fragments vesicular lava.							
1·1								152·1	
		FAULT ZONE - V. Low ∠ to C.A.	F.Z.					152·5	
2·0									
	155							155	
3·0									
3·0									
	160							160	
		FAult - broken core	F F/4					160·95	·5cm qy. vein 45° to C.A. assoc. w. fault!
3·0									
3·0								165	
	165								
3·0									
		45° to C.A.	4/15cm 2cm					168·95	
3·0	170							170	
3·0									
			5 cm						
	175							175	

ABERFOYLE

DIAMOND DRILL LOG

G53

Page No 8

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

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

110194

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3·0		45° to c.A.						176·0	
		Lithology - as previously - sericitic and chloritic lithic tuff							
3·0	180							180	
3·0									
3·0	185							185	
3·0									
3·0	190							190	
		45° to c.A.						191·9	
3·0	195	45-50° to c.A.						194·6 195	
2·0									
	200							200	

5 cm

ABERFOYLE

DIAMOND DRILL LOG

HOLE NO 453

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110195

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3.0		Lithology - as previously - grey green sericitic and chloritic lithic tuff with very minor fine agglomerate material							
3.0	205							205	
								205.35	
								205.7	
2.7		205.7 - Fault a//to c.A.						206.0	
								207.0	
1.6									
1.5	210							210	
3.0									
3.0	215							215	
3.0									
3.0	220							220	
3.0		5 cm							
3.0	224.5	It grey vesicular lava ??							
	225							225	

ABERFOYLE

DIAMOND DRILL LOG

HOLE No. G53

Page No. 10

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110196

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

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	225.5								
3.0		5 cm							
3.0	230	Fault - broken core						230	
3.0								232.3	
3.0	235.0	Sericitic - chloritic agglomeratic tuff 235.0 marks a sudden increase in the agglomeratic component of the rock. Frag. are still vesiculent volcs.						235	
3.0	239.0	239.3 - bleb 1cm purple flourite Grey green v.f.g. sericitic tuff or tuffaceous silt?							
3.0	240 240.1 240.45	FAULT ZONE ? Graphitic fault breccia? on either side of sid. vein Lt. grey foliated fine lithic tuff - Highly sericitic rock with 80% non vesicular fragments.						240 240.3	7cm sid vein 50° to c.A. assoc. w. minor sp. on margins Py to 1% as blebs & veinlets
	241.18	Silicified grey siltstone - occ. weakly pyritic, gen. massive							Py to 1% as blebs & veinlets
3.0	242.0	Sedimentary breccia w. interbedded silicified siltstone & at 244.1 - fine tuff? Intervals to 50 cm of sed. brecc. w. often elongate angular to rounded syn py frag. and c.xtal sid frag & siltstone frags, all from 1mm to 7-8cm av 1-3cm. Variably silicified dol? siltstone intervals to 30cm. Breccia has c.xtal carb (sid) matrix.						243.0	Py 5-10% as v.f.g. syn py. Frag & wisps. Rare weakly rep. dol? frag. 243-244.72 - to 1% Py. as veinlets & rare syn py.
3.0	244.72 245	Bedded to massive variably silicified pyritic siltstone & dolomite So 45° to c.A. minor rext. py. dol. at bottom of interval. 245.4 - Fault assoc w fault breccia a v. low & to c.A.						245 245.4	20% Py as v.f.g. syn py in Py siltstone & py. dol. (silic) 245-246.0 - 1-5% py as syn. py. diss.
	246.0 246.4	Bedded Siderite Rock - c.xtalline - So 45° to c.A.						246.0 246.4 246.7	No Sulphide Py 5-7% syn pytiss. in py dol (sid)
	247.4	Grey rext. pyritic sideritic dolomite? - f to c.xtal and needle like cream sid rext. from py. dol or sid. rock.							Py 20-25% (60) f.g. diss. in sid. py. dol. assoc. w. green soapy sericite
3.0	248.45 249.0 249.6 250	Pyritic scoriceous volc. assoc. w minor sil. siltstone agate-form cryptoxtaline silica assoc. w. py and sil. & brecciated grey siltstone. Assoc. blebs of lt green sericite. Grey rext. pyritic sideritic dol? Silicified bedded pyritic siltstone - So 45° to c.A. Grey rext. pyritic sideritic dolomite? w. minor py siltstone interbeds 45° to c.A.						247.4 247.8 248.45 249.0 249.6 250	50% (80) Py f.g. diss in sil. rock Py 15-20% as f.g. diss. blebs & veinlets in silica rock. Py 15-20% v.f.g. diss in rext carb rock. syngenetic pyrite. Py 25-40% v.f.g. bedded syn. py in Py siltstone. Py 15-20% v.f.g. diss. syn. py.

ABERFOYLE DIAMOND DRILL LOG HOLE No. G53 11

Feature Bedding, Foliation, Fragment (size & shape); Shearing, Fault, Vein; F, c carbonate, q quartz

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

110197

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.0	250.65	Pyritic siltstone - bedded 45° to c.A.		250.65	Py 50% v.f.g. bedded syn. py. minor rext. py
	250.95	Rext. py. sideritic dolomite? with minor interbedded siltstone - Rock is variably textalized. numerous thin unoriented siderite veins.		250.85	Py 1-2% vein & diss.
				251.45	Py 50-60% v.f.g. syn py. & text py & blebs minor flourite.
				251.75	Py 10-15% syn. py. diss in sid. dol.
				252.95	Py 20-30 bedded syn py.
	253.1	Cream rext. brecciated dolomite - fractured texture caused by network of black undiff. veinlets		253.1	Py << 1%
3.0	253.9	Rext. pyritic sideritic dolomite? - w. minor interbedded py siltstone.			Py 3-5% f.g. syn. py diss in sid. dol
				254.7	Py 30-40% v.f.g. bedded syn. py. Rare rext. & veins.
	255			255	Py 10-15% f.g. diss. & rare beds. all syn.
3.0	256.4	Replaced Dolomitic Siltstone 20cm. f. cong. 256.4 does not mark a drastic change in lithology but rather the start of replacement mineralization. F.g. dissem. wisps, blebs and a network of veinlets of py. Bedded syn. py occ. Presumed bedding fabric often o or very low & to c.A.		256.4	Py 20-30% f.g. diss & assoc. w. qtz sid. veinlets
				256.65	Py 10-15% as blebs & veinlets in f. cong. Fine tuff frag?
				256.80	256.8 - 259.6 - 30-40% Py. as f.g. & blebs rep. dolomitic siltstone Also assoc. w. sid. & qtz veins, to 5%.
				257.75	
3.0	259.6	FAULT ZONE - Broken core and qtz veining 259.75 q-20cm; 259.95 q-20 cm; 260.05 q-5 cm; 260.15 q-8cm		259.6	
	260			260	Py 5-10 (30) as py. veins & blebs in a zone of extensive qtz veinming; now mainly broken core.
	260.7			260.7	Py 50-60 (90) rep? dol. - soln con. Pyrhot. 5 (60) as blebs in most mass side
	261.5	261.5-262.0 - Lt grey green f.g. tuff?		261.5	Py 5-10 as thin veinlets, diss & in qtz veins.
	262.0	FAULT ZONE = Broken core			
1.9		Grey sericitic siltstone - lt. grey siltstone entirely within the fault zone. Quartz vein of unknown width marks the end of the interval and the end of the fault zone.		262.3	Py 2-3 as veins assoc w qtz. and siderite. locally 20% as veins eg 20 cm 262.3 - 262.5.
				262.5	
.5	265			265	
.2	265.65			265.3	Py 5-10 as diss in cm? qz. vein
		Lt. grey green brecciated f.g. tuff?			Py 1-2% as f.g. diss & blebs
.5	266.35	Lt Grey green sericitic lithic tuff - weakly vesicular fragments av. 5cm.			
1.9					267.4 Py - 10-15% f.g. diss.
	267.8	Interbedded brecciated siderite rock and lt. grey green tuffaceous volcs. Sedr sed? breec. of sid rock. in volc env.?			
2.7	269.9			270	
	270	269.9 - 287.5m Black carbonaceous shale and siltstone - Massive to weakly bedded weakly pyritic shale & minor siltstone The rock contains numerous syn. py. frag, rounded to angular av 1cm. Occasional thin lt. grey siltstone beds are present. Lt. grey siltstone frag. av. 1cm, rounded to subrounded are also present. Py. as v.f.g. diss & wisps.		270.9	FAULT ZONE assoc w qz. vein. ~5% py in qz vein.
				271.2	
1.9				271.6	
				273.8	
				274.2	
	275			275	

5 cm

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110198 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.2	275.5	FAULT ZONE – 274.2 – 275.5 – Broken black shale							
		Bedding where present av. 30° to c.A.							
3.0		5 cm							
2.5	279.9 280 280.2	FAULT ZONE – Broken core						280	
	281.85	FAULT ZONE – Broken core							
3.1	282.35	284.5–284.9 – extensive qtz & siderite veining	q/c						
.3	284.9 285	FAULT ZONE – Broken core assoc. w. extensive qtz. and siderite veining.						285	
.5		286–286.4 – q & sid veins	q/c						
1.9	287.5	Lt. grey siltstone Si 45° to c.A.							
	288.3	Black carbonaceous shale – weak syn py.							Py to 1% as wisps syn py.
	288.65	Interbedded Black and lt grey siltstone						288.65	Py vein – 4 cm 45° to c.A.
.8		Alternating beds av. 1 cm thick. Si/So 50° to c.A.							
.5	290							290	289.7–289.95m – c.g. py in vein assoc w. siderite.
	290.4	290.3 – 2cm q/sid							
.9		Light to med grey siltstone							
.3		291.3 – 10 cm sid vein.							
		291.5m – 5cm sid vein.							
		292.2 – 20 cm sid vein							
2.5		292.5 – 2 cm sid vein							
		Massive to well bedded siltstone often showing local soft sed brecciation. Also contains occ. rounded siltstone clasts to 2cm.							
	295							295	
3.0									
	297.80	10 cm dol at base	py sid						297.85 – 1cm py & sid vein py 30%
	298.25	Massive Black Carbonaceous Shale							
	299.75	Light Grey Siltstone – shows s.sed breccc.							
3.0		Black Carbonaceous Shale – Very weak bedding indicated by wisps of syn. py. Si/So ~35° to c.A.							<1% syn py. as wisps & syn. blebs.
	300							300	

ABERFOYLE

DIAMOND DRILL LOG

G53 — 13

Feature: Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization: Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

110199

CORE REC'D	DEPTH m	GEOLOGY
	300.5	Light to dark grey massive dolomite and recrystalized sideritic dolomite. Interval begins with dark grey massive dolomite extensively veined by a stockwork of siderite veinlets. At about 302.0 m the rock grades to a coarsely text. cream grey sideritic dol? The stockworks become less pronounced. 303.8 - 11 cm black shale
3.0	304.2	Dark grey weakly pyritic siltstone - well bedded weakly contorted siltstone. Bedding - very low to to C.A. av. 15°.
3.0	305	305.9 - Grey green sericitic and chloritic basic? Vesicular dykes.
	307.6	Grey green vesicular lava
3.0	308.5	Lava breccia ?
	310	
	310.6	Grey green vesicular lava and minor lava breccia?
3.0	311.6	Vesicular tuff? - not possible (?) to distinguish individual fragments.
	313.9	Grey green vesicular lava
3.0	314.55 315	305.9 - The interval is composed predominantly of lt. to dk. grey green sericitic ± chloritic lithic tuff of probable basic composition. Fragments comprise the bulk of the rock but are often difficult to distinguish from the matrix of the same composition. The top of the interval from 305.9 - 311.6 appears to be dominated by lava and lava breccia.
3.0	320	5 cm
3.0	323.85	Lt. grey vesicular lava.
	324.45	
	325	

VISUAL LOG — TRACE — COMMON — ABUNDANT — MASSIVE

DEPTH m	MINERALIZATION
	300.0 - 30 cm Py 40 assoc w sid ven. to C.A.
304.2	Py 1-2 % as v.f.g. syn-Py. diss and as wisps
305	
305.9	
310	
315	
320	
325	

ABERFOYLE

DIAMOND DRILL LOG

HOLE No. G53 — 14

Feature

Bedding
Foliation
Fragment (size & shape)
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization 110200

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
		Lithology - as previously - lithic tuff, and minor lava breccia? in vicinity of flows.						326.65	
3.0	327.5								
	327.9	Dk green grey vesic. lava?							
3.0	330							329.9 330	Py vein 1cm - 20° to c.A.
	330.95	Dark grey green to cream grey vesicular lava. vesicles filled with chlorite > siderite.							
3.0	333.1	Tuff agglomerate? or lava breccia?							
	333.9	Lt. grey green vesicular lava							
	334.7	Lithic tuff.						335	
	335	Lt. grey green weakly brecciated lava (vesicular)							
3.0	335.8								
	336.4	← 20 cm vesicular lava							
		Dark grey green fine lithic tuff. Fragments as previously but av. size .4 cm.						338.0	10cm-Py 60% assoc. w. qtz in vein.
3.0									
	340							340	
	340.35	V. Finely vesiculated dk gray green lava							
3.0	342.75								
		lithic tuff.							
3.0	345							345	
	345.9								
	346.3	Grey green coarsely vesiculated lava							
		lithic tuff and f to c.g. tuff.						347.5	Py 20% - 1cm qtz vein
3.0									
		5 cm							
	350							350	

ABERFOYLE

DIAMOND DRILL LOG

HOLE No. G53 Page No. 15

Feature

Bedding
Foliation
Fragment size & shape
Shearing
Fault
Vein
c carbonate
q quartz

Mineralization

110201

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

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3·0		Lithology – as previously – fg. to c.g tuff and lithic tuff.							
3·0	355							355 355·5	
		Fault – 10° to c.A. – Broken core.							
3·0									
3·0	360	Fault – broken core						359·5 360	
3·0		5 cm							
3·0	365							365	
3·0	370							370	
3·0		Fault – assoc. w. fld vein 90° to c.A.						371·7	
3·0	373·9 374·25 375	Vesicular lava.						375	

ABERFOYLE

DIAMOND DRILL LOG

HOLE NO 653 Page No 16

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization 110202 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive >60%

CORE REC'D	DEPTH m	GEOLOGY	MINERALIZATION
2.9			
2.7	379.63 380	Black siltstone – dark grey to black weakly pyritic siltstone. Local thin qtzite (grey f.g.) beds.	<1% v.f.g. syn. py. as wisps and diss in siltstone + minor qtzite bands.
	381.8	Lt. grey green lithic tuff – non vesic. frag	
	382.1 382.15	FAULT ZONE – 382.15 – 393.7m	
.4		Black shale w. minor grey qtzite fragments.	
.5	383.5	383.5 – 401.65m	
1.7	385	Light to dark grey green lithic tuff and tuff agglomerate. Differentiation of the volcs. is made difficult by broken core. Lithic tuff dominates with the matrix being black and silty through much of the interval, esp. toward the basal contact. Pres. influence of two environments. Fragments appear non-vesicular but relict vesicles indicate this appearance is due to very extensive carbonate alteration (siderite). This alteration begins at about 394 metres and carries through to the base of the interval.	
1.2			
2.2	390		
2.9			
.6	393.7		
2.9	395		
3.0			
	400		

VISUAL LOG: TRACE, COMMON, ABUNDANT, MASSIVE; BROKEN CORE

DEPTH m: 380, 385, 390, 395, 400

5 cm

DIAMOND DRILL LOG

G53

17

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein; c carbonate, q quartz

Mineralization 110203 — Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY
3.0	401.65	Black siltstone — contains syn. py. frag. to 1cm and grey qtzite frag. (minor) av. 4cm.
3.0	405	
	406.2	QS Black Siltstone and Interbedded Grey Qtzite
		FAULT ZONE — Broken core & pug.
.7		
.6	410	
.5		
1.0		
.8		
	414.8	
	415	Black siltstone and shale containing either qtzite fragments or fractured beds near the top of the interval but grading into interbedded qtzite - grey f.g. - and siltstone near the bottom of the hole. Si/So generally at low to to C.A.
3.0		
3.0	420	
	421.0	END OF HOLE
	425	

VISUAL LOG — TRACE / COMMON / ABUNDANT / MASSIVE — BROKEN — CORE

DEPTH m: 405, 410, 415, 420, 425

MINERALIZATION

5 cm

DDH G46

RL 200

100

Queen Intermediate Level

Queen 44 L

Queen No.1 L

Queen No. 2 L

110204

Aberfoyle Exploration Pty Ltd		
Geology: C.H.Y.	NORTH WEST TASMANIA	Location code:
Drawn: R.J.E.	QUEEN HILL E.L. 47/71	Date: August, 1979
Traced: R.J.E.	CROSS SECTION 2800	Scale: 1:500
Checked:		Plate No: QH129/2800
Revised by: R.J.E. Date: 29//80		

80-1412

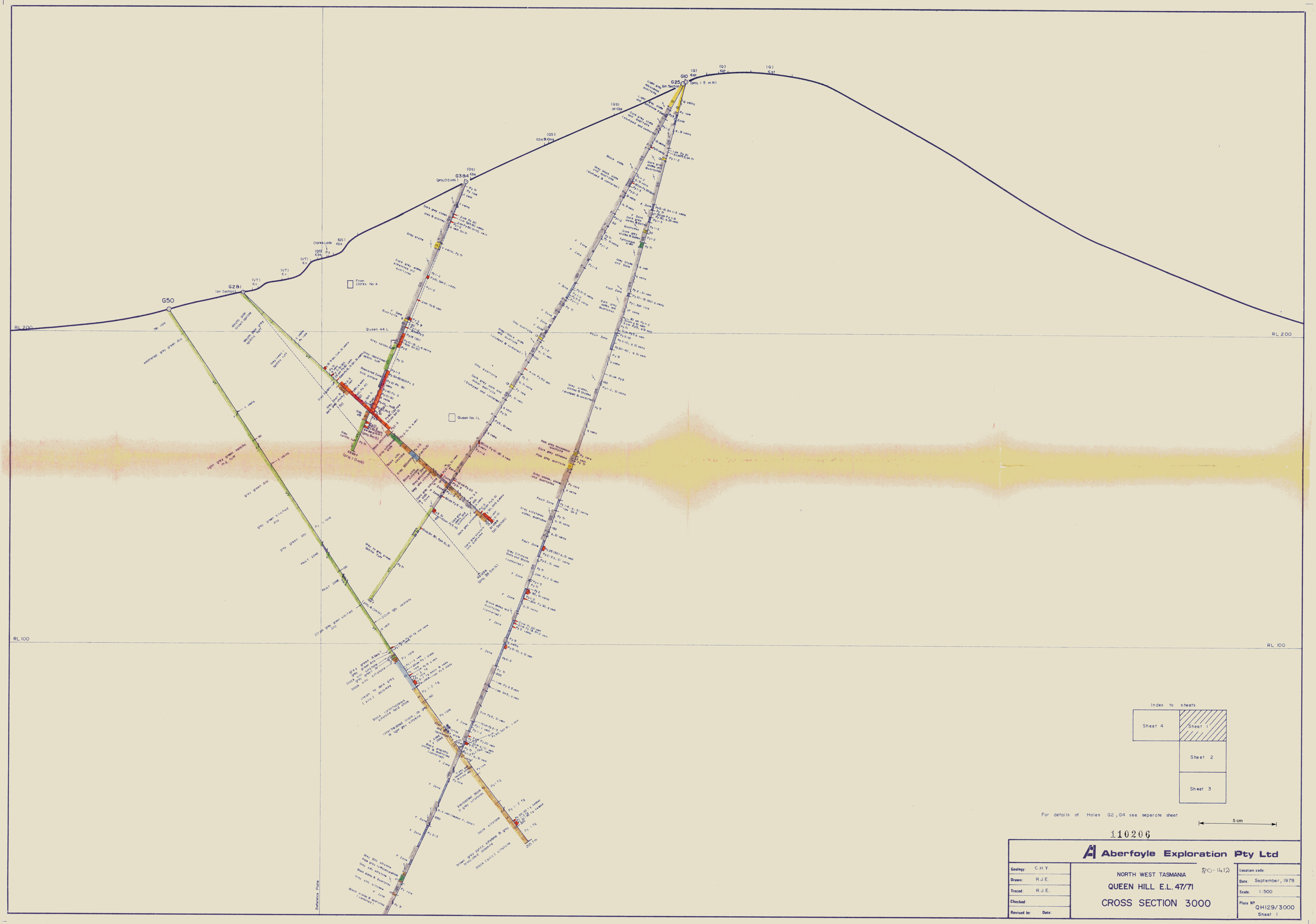
5 cm

110205

Aberfoyle Exploration Pty Ltd

Geology: C.H.Y.	NORTH WEST TASMANIA	Location code:
Drawn: R.J.E.	QUEEN HILL E.L. 47/71	Date: September, 1978
Traced: R.J.E.	CROSS SECTION 2920	Scale: 1: 500
Checked:		Plate Nº QH129/2920
Revised by: Date:		

80-1412



Index to sheets

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	Sheet 2
	Sheet 3

For details of Holes G2, G4 see seperate sheet

5 cm

110206

Aberfoyle Exploration Pty Ltd

Geology: C.H.Y.	NORTH WEST TASMANIA
Drawn: R.J.E.	QUEEN HILL E.L. 47/71
Traced: R.J.E.	CROSS SECTION 3000
Checked:	
Revised by: Date:	

80-1412

Location code:
Date: September, 1978
Scale: 1:500
Plate No QH129/3000 Sheet 1

RL 00

RL -100

RL -200

Reference Plane

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Sheet 2

Sheet 3

5 cm

110207

Aberfoyle Exploration Pty Ltd

Geology C.H.Y.	NORTH WEST TASMANIA 80-1412	Location code	
Drawn R.J.E.	QUEEN HILL E.L. 47/71	Date September, 1979	
Traced R.J.E.	CROSS SECTION 3000	Scale 1:500	
Checked		Plate No QH129/3000 Sheet 2	
Revised by R.J.E Date 29/1/80			

RL-200

RL-300

RL-400

Reference Plane

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Sheet 2

Sheet 3

5 cm

110208

Aberfoyle Exploration Pty Ltd

Geology C.H.Y.	NORTH WEST TASMANIA 80-1412.		Location code
Drawn R.J.E.	QUEEN HILL E.L. 47/71		Date November, 1979
Traced R.J.E.			Scale 1:500
Checked	CROSS SECTION 3000		Plate No. QH129/3000 Sheet 3
Revised by R.J.E. Date 29/1/80			

Aberfoyle Exploration Pty Ltd

Geology:	C.H.Y.
Drawn:	R.J.E.
Traced:	R.J.E.
Checked:	
Revised by: R.J.E.	Date: 29/1/80

80-1412

NORTH WEST TASMANIA

QUEEN HILL E.L. 47/71

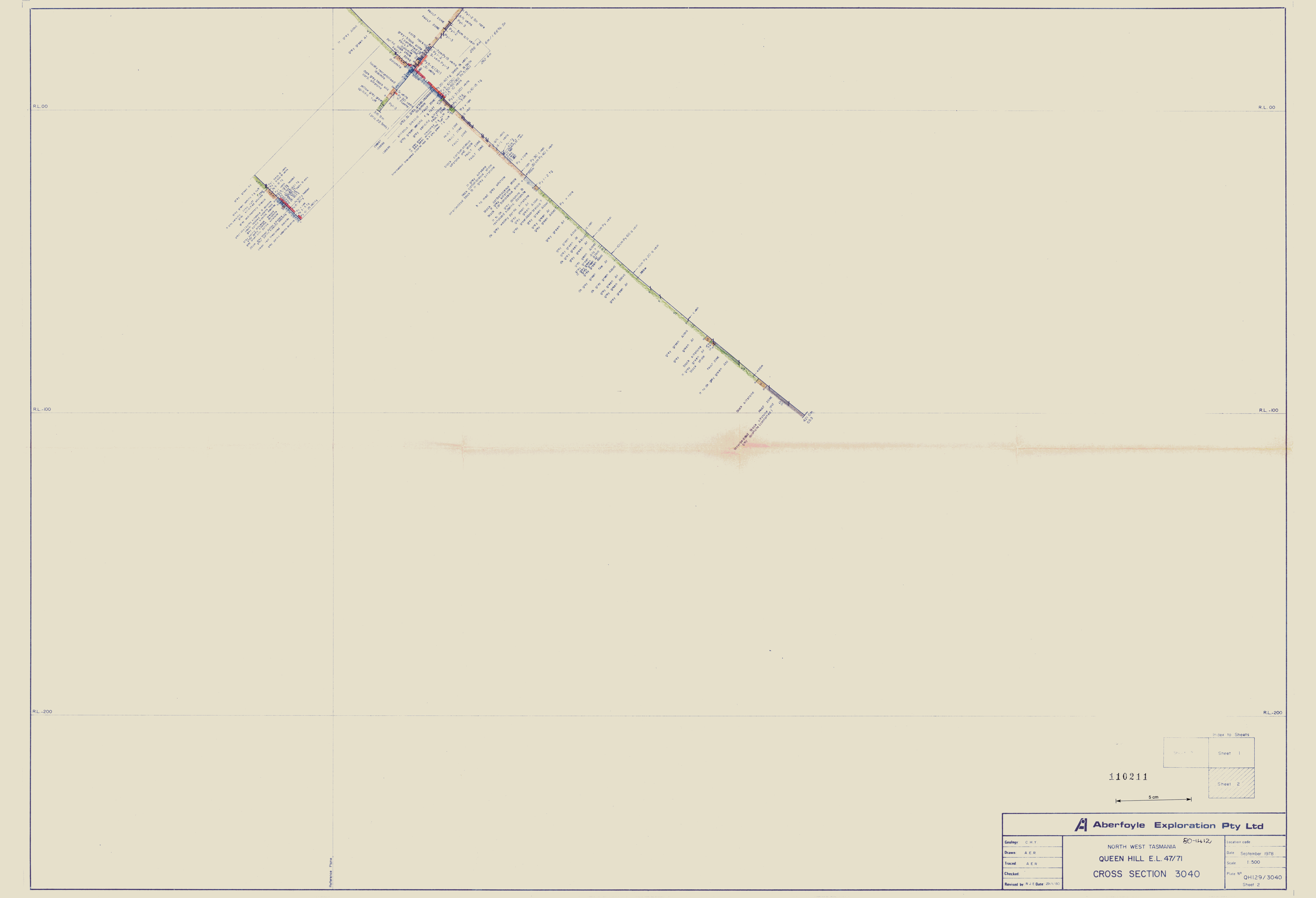
CROSS SECTION 3000

Location code:	
Date:	November, 1979
Scale:	1: 500
Plate Nº	QH129/3000 Sheet 4

110210

Aberfoyle Exploration Pty Ltd

Geology: C.H.Y.	NORTH WEST TASMANIA 80-1412	Location code:
Drawn: A.E.R.	QUEEN HILL E.L. 47/71	Date: September 1978
Traced: A.E.R.	CROSS SECTION 3040	Scale: 1:500
Checked:		Plate Nº QH129/3040 Sheet 1
Revised by: R.J.E. Date: 29/1/80		



Index to Sheets

Sheet 1

Sheet 2

110211

5 cm

Aberfoyle Exploration Pty Ltd

Geology: C.H.Y.	NORTH WEST TASMANIA 80-11-12	Location code:
Drawn: A.E.R.	QUEEN HILL E.L. 47/71	Date: September 1978
Traced: A.E.R.	CROSS SECTION 3040	Scale: 1:500
Checked:		Plate No: QH129/3040 Sheet 2
Revised by: R.J.E. Date: 29/1/80		

DDH G53
R.L.200
R.L.200
R.L.100
R.L.100
Index to sheets
Sheet 3
Sheet 1
Sheet 2
110212
5 cm
Aberfoyle Exploration Pty Ltd
Geology: C.H.Y.
Drawn: R.J.E.
Traced: R.J.E.
Checked:
Revised by: R.J.E. Date: 29/1/80
NORTH WEST TASMANIA
80-1412
QUEEN HILL E.L. 47/71
CROSS SECTION 3040
Location code:
Date: January, 1980
Scale: 1: 500
Plate Nº QH129/3040
Sheet 3

Aberfoyle Exploration Pty Ltd

Geology: C.H.Y.	NORTH WEST TASMANIA 80-1412	Location code:
Drawn: R.J.E.	QUEEN HILL E.L.47/71	Date: August, 1979
Traced: R.J.E.		Scale: 1 : 500
Checked:	CROSS SECTION 3060	Plate Nº
Revised by: C.H.Y. Date: 25/1/80		QH 129 / 3060

G24
(pro 15m N)

Taylors Lode

G51

PAYNES OPEN CUT

R.L. 200

R.L. 100

(QS) €bs End Dunkleys No.5 Adit

Reference Plane

110214

5 cm

Aberfoyle Exploration Pty Ltd	
Geology: C.H.Y.	NORTH WEST TASMANIA
Drawn: A.E.R.	QUEEN HILL E.L.47/71
Traced: A.E.R.	CROSS SECTION 3120
Checked:	
Revised by: R.J.E Date: 29/1/80	
80-1412	
Location code:	
Date: September 1978	
Scale: 1:500	
Plate No QH129/3120	

Road Py?

Taylors Lode Py

Road €bs (QS)

From Add 13 (QS) €bs

DDH G 52

G36, 34b, 35, 33 (proj. 9.5m N)

R.L. 200

R.L. 100

Reference Plane

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Sheet 1

Sheet 2

110215

5 cm

Aberfoyle Exploration Pty Ltd			
Geology: C.H.Y.	NORTH WEST TASMANIA	80-1412	Location code:
Drawn: R.J.E.	QUEEN HILL E.L.47/71		Date: September, 1978
Traced: R.J.E.	CROSS SECTION 3240		Scale: 1:500
Checked:			Plate No QH129/3240 Sheet 1
Revised by: Date:			

E.L. 47/71

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201154/32,<10,5,5,5
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211189/20,10,<2,5,<2
211186/1150, 15,<2, 10, 2
211187/130,<10,<2, 10, 5
211188/130,10,<2, 10,5
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211144/48,10,<2,5,2
211164/310,15,<2,5,2
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211150/210,30,<2,5, 2
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230239/28,<10,<2, 10, 5
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230244/20,<10, 2, 15, 10
230251/10, 15, 2, 10, 5
230250/8,<10,<2, 5, 5
230249/70, 15, <2, 5, 5
230245/46, 15, 2, 15, 10
230248/10, 10, <2, 10, 5
230247/10, 25, <2, 10, 15
230246/55, 25, <2, 10, 5

Eureka Ck.
Heemskirk River
N. Cabin
Falls
Pinny Ck.

347 000E
348 000E
349 000E
350 000E
351 000E
352 000E
353 000E
354 000E
355 000E
5370000N
9000N
8000N
7000N
6000N
5365000N

Sample location and number, Sn, W, Cu, Pb, Zn (Mo, As) in p.p.m.

Base sheet enlarged from 1:31,680 Tasmanian Lands Dept. Topo.

STATE G.N. M.N.
11.3°
Magnetic north correct 1979 — Moves easterly by 0.2° in three years.

5 cm

339/370	347/370	355/370
339/365	347/365	355/365
339/360	347/360	355/360

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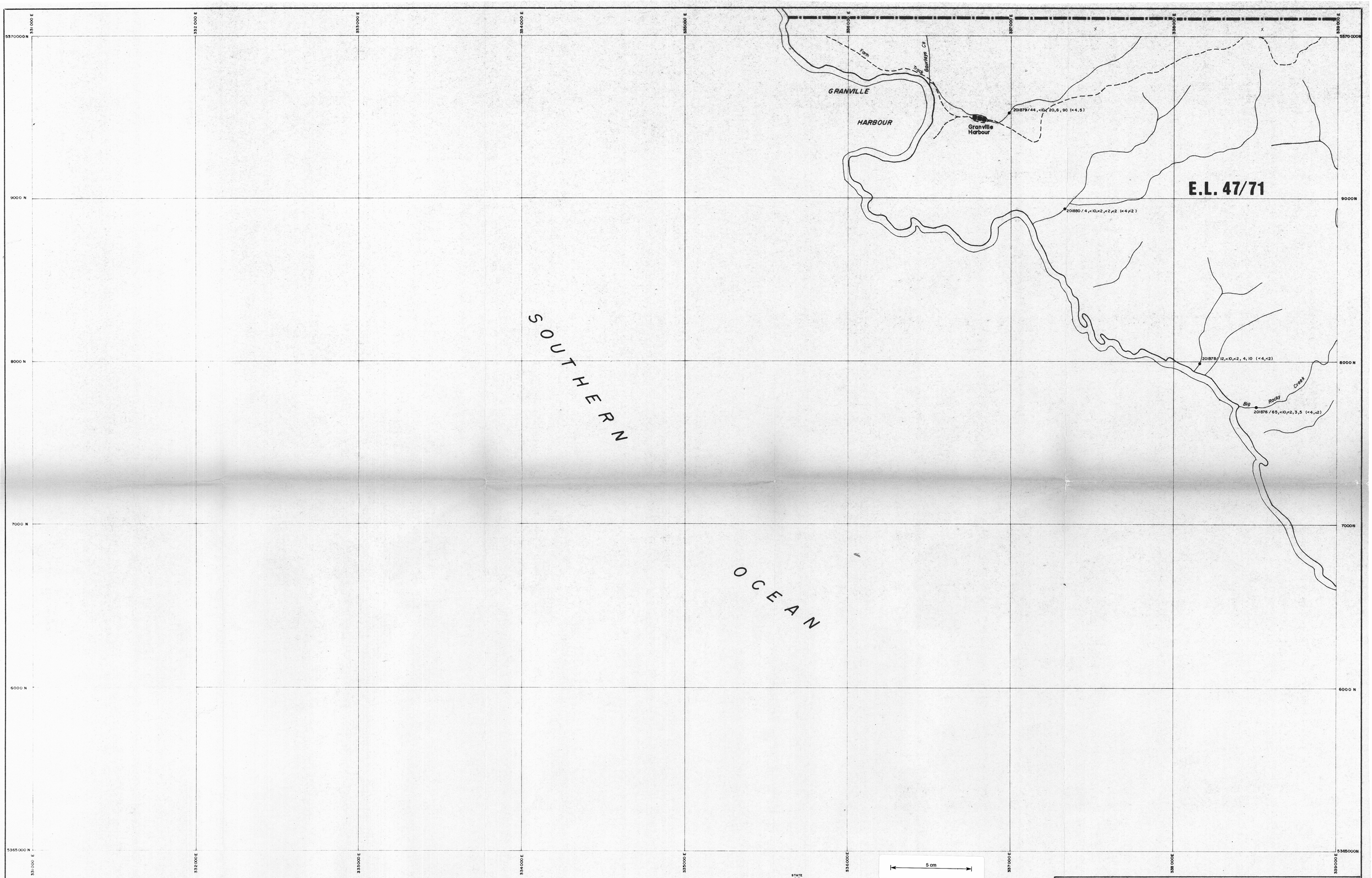
110216

Aberfoyle Exploration

Geology	
Drawn R.J.E.	
Traced L.E.D.	
Checked	
Revised by Date	

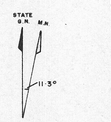
NORTH WEST TASMANIA 80-11-12
ZEEHAN AREA
QUEEN HILL E.L. 47/71
STREAM SEDIMENT SAMPLING
LOCATIONS & ASSAY RESULTS

Location code	
Date OCT. 1979	
Scale 1:10 000	
Plate No	QH146-347/365



Sample location and number, Sn, W, Cu, Pb, Zn (Mo, As) in p.p.m.

Base sheet enlarged from 1:31,680 Tasmanian Lands Dept. Topo.



Magnetic north correct 1979 — moves easterly by 0.2° in three years.

5 cm

323/370	331/370	339/370
323/365	331/360	339/365
323/360	331/360	339/360

Aberfoyle Exploration 110217

80-1141R

NORTH WEST TASMANIA

ZEEHAN AREA

QUEEN HILL E.L. 47/71

STREAM SEDIMENT SAMPLING

LOCATIONS & ASSAY RESULTS

Geology	
Drawn: R.J.E.	Location code:
Traced: L.E.D.	Date: OCT. 1979
Checked:	Scale: 1:10,000
Revised by: Date:	Plate No: QH146-331/365

E.L. 47/71

Mt Heemskirk

211193/120, 10, <2, 5, 2
211192/16, 15, 42, 10, 5
211194/4, 15, 5, 15, 10
230232/80, 10, <2, 5, 2
211195/4, 50, <2, 10, 5
230230/10, 10, <2, 5, 5
230226/12, <10, <2, 20, 10
230231/16, 10, <2, 10, 2
230227/12, 10, <2, 5, 2
211175/60, 45, <2, 25, 35
211176/95, 25, <2, 20, 105
211177/55, 40, <2, 25, 75
230228/28, 15, <2, 20, 5
230229/60, 10, 2, 10, 5

Granville Harbour Road

Forrowar Creek

Packers Creek

Cumberland Creek

△Mt Agnew

Sample location and number, Sn, W, Cu, Pb, Zn (Mo, As) in p.p.m.

Base sheet enlarged from 1:31,680 Tasmanian Lands Dept. Topo.

STATE G N MA

11 3°

Magnetic north correct 1979 – Moves easterly by 0·2° in three years.

5 cm

339/365	347/365	355/360
339/360	347/360	355/360
339/355	347/355	355/355

Index to adjoining sheets

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Aberfoyle Exploration

Geology	
Drawn R.J.E.	
Traced L.E.D.	
Checked	
Revised by Date	

NORTH WEST TASMANIA 80-1412

ZEEHAN AREA

QUEEN HILL E.L. 47/71

STREAM SEDIMENT SAMPLING

LOCATIONS & ASSAY RESULTS

Location code	
Date	OCT. 1979
Scale	1:10 000
Plate No	QH 146-347/360

339000 E | 340000 E | 341000 E | 342000 E | 343000 E | 344000 E | 345000 E | 346000 E | 347000 E

5370 000 N | 9000 N | 8000 N | 7000 N | 6000 N | 5365000N

201885/80, <10, 5, 3, 55 (<4, <2)
201884/36, <10, ROCKY 5, 4, 25 (<4, <2)
BIG
201886/700, <10, 2, 6, 15 (<4, 2)
Creek
201890/50, <10, 10, 11, 40 (<4, 2)
201887/110, <10, <2, <2, <2 (<4, <2)
201888/6000, 45, <2, 42, 2 (<4, <2)
201889/40, <10, <2, <2, <2, (<4, <2)
201702/30, <10, <2, <2, <2 (<4, <2)
201707/130, <10, <2, <2, 5 (<4, <2)
201708/6, <10, <2, 3, <2 (<4, <2)
201710/55, <40, <2, <2, <2 (<4, <2)
201701/28, <10, 2, <2, <2 (<4, 2)
201980/1300, 35, <2, 20, 5 (<4, 9)
201981/440, 15, <2, 19, 5 (<4, 8)
201982/24, 15, <2, 9, 5 (<4, 2)
201983/490, 25, <2, 16, 5 (<4, <2)
201984/320, 25, <2, 10, 2 (<4, 3)
201985/130, <10, <2, 8, 5 (<4, <2)
201883/520, 10, 5, 4, 10 (<4, 2)
201882/55, <10, <2, 8, <2 (<4, <2)
201881/370, <10, <2, <2, 5 (<4, <2)
201877/260, 25, <2, 13, 15 (<4, <2)
201875/85, 15, <2, 6, 2 (<4, <2)
201871/260, 15, <2, 12, 2 (<4, <2)
201872/1900, 65, 2, 19, 5 (<4, <2)
201873/2200, 90, 2, 22, 5 (<4, <2)
201874/55, 15, <2, 5, 2 (<4, <2)
201281/50, <10, <2, <2, <2 (<4, 3)
201282/150, <10, <2, <2, <2 (<4, <2)
201288/520, 10, <2, 4, 2 (<4, <2)
201153/1300, 15, <2, 12, 5 (<4, <2)
DONNELLYS LOOKOUT
TASMAN RIVER
211159/36, 10, 2, 5, 2
211155/34, 10, 2, 5, 5
201160/720, 10, 5, 5, 5
201166/48, <10, 5, 5, 2
201165/8, 15, 5, 5, 2
201172/860, 15, <2, 5, 10
201173/2700, 25, <2, 5, 5
201168/70, 10, <2, 10, 2
201171/160, 10, 2, 5, 5
201167/18, <10, 5, 5, 5
201170/4100, 40, 5, 10, 5
201169/65, 10, 5, 10, 5
Pawleys
Mill Creeks
201287/20, 15, <2, 2, <4 (<4, <2)
201286/22, 25, <2, 4, <2 (<4, 3)
201285/540, 10, <2, 7, 2 (<4, <2)
201176/2650, 15, 100, 45, 15
201175/144%, 120, 5, 15, 5
201174/130, 15, 60, 30, 20
201177/60, 10, 5, 5, 2
211141/40, <10, <2, 5, <2
201273/42, 15, 2, 10, 5 (<4, 2)
201276/170, 20, <2, 14, <2 (<4, 2)
201275/6500, 180, <2, 42, 5 (<4, 7)
201274/440, 40, <2, 20, <2 (<4, <2)
201283/55, 20, <2, 7, <2 (<4, 2)
201284/255, 25, 2, 6, 2 (<4, 20)
Dixon Cr.
E.L. 47/71
201277/170, 25, <2, 16, <2 (<4, <2)
201278/65, 20, <2, 18, <2 (<4, <2)
211156/120, 20, 5, 10, 5
211152/270, 15, 13, 5, 10
211158/8800, 35, 5, 10, 5
211154/221, 25, <2, 10, 10
211158/1500, 55, <2, 15, 20
211157/800, 50, <2, 10, 10
211155/1189, 75, 5, 15, 15
211151/3800, 35, 10, 25, 15
211159/3600, 170, <2, 15, 20
St. Dixon Creek
201280/200, <10, <2, 22, 5 (<4, <2)
201279/160, 25, <2, 18, 5 (<4, 2)
RIVER
TASMAN
Foster Creek
NORTH HEEMSKIRK SPUR

Base sheet enlarged from 1:31,680 Tasmanian Lands Dept. Topo.

Sample location and number, Sn, W, Cu, Pb, Zn (Mo, As) in p.p.m.

STATE G.N. M.N.
11.3°
Magnetic north correct 1979 – moves easterly by 0.2° in three years.

5 cm

331/370	339/370	347/370
331/365	339/365	347/365
331/360	339/360	347/360

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Aberfoyle Exploration

Geology	
Drawn	R.J.E.
Traced	L.E.D.
Checked	
Revised by	Date

NORTH WEST TASMANIA
ZEEHAN AREA
QUEEN HILL E.L. 47/71
STREAM SEDIMENT SAMPLING
LOCATIONS & ASSAY RESULTS

80-1412

Location code	
Date	OCT. 1979
Scale	1:10 000
Plate No	QH146-339/365

SURFACE GEOLOGY REFERENCE

Derwent Colour Pencil No.		
3	€qt	Massive light grey - buff quartzite
70	€mq	Flaggy micaceous quartzites in thin (< ½") beds
57	€st	Siltstones, carbonaceous in part } locally tuffaceous
68	€bs	Black shales and slates } locally tuffaceous
47	€vt	Spilitic tuff
	€va	Spilitic agglomerate
	€v	Spilitic lavas

py — Quartz pyrite, massive pyrite lodes

(py) — Bedded, disseminated, stringers, veins and clots

Outcrop boundary

F — Fault

Strike and dip

Schistosity with dip

Joint with dip

Minor folding showing plunge and trend

Fold axis showing plunge and trend

Diamond drill hole, collar location accurate

Diamond drill hole, collar location not accurate

Shaft

Pits or trenches

Adits

2200 — Topographical contours and interval

Road

Cleared area

5 cm

DRILL HOLE REFERENCE

3	Q	Massive quartzite
70	Qs	Thinly bedded quartzites / shales & slates
36	C	Chert
33	D	Dolomite
59	S	Siltstones (calcareous), (pyritic mudstone)
63	Sh	Black shale
46	Ts	Tuffaceous shale
47	Vt	Spilitic tuff
	Vb	Spilitic lava
12		Py ≥ 5% as veins
20		Py heavily disseminated to massive ≥ 10%
21		Po with or without Py, dissem to massive
22		Gn and/or Sph and/or Stn with or without Py as veins

ALTERATION

Sericite rich, locally sericitic	ser (ser)
Chlorite rich, locally chloritic	chlor (chlor)
Carbonate rich, locally carbonated	carb (carb)
Silicified, locally silicified	silic (silic)
Vesicular, amygdaloidal	vesic
Probable original character	siliceous
Bedding	
Cleavage, foliation	
Fault, unmeasured orientation	
Fault, measured orientation	
Fault Zone, unmeasured orientation	
Fault Zone, measured orientation	
Recrystallisation	
Sedimentary breccia	

Drill hole trace

Py 5(50)	Pyrite 5%, locally 50%
Py 5-10	Pyrite 5-10%
Gn 2	Galena 2%
Sph 5	Sphalerite 5%
Cpy 15	Chalcopyrite 15%
Ba 5	Barite 5%
q vein	quartz vein
c vein	carbonate vein
Si vein	Siderite vein

Drill hole trace

ROCK TYPES illustrated by code and colour on left side of drill hole plots

Contact shown thus

Internal variations shown

1:500 SURFACE GEOLOGY INDEX TO SHEETS

360000E

04/25	08/25	12/25
04/22	08/22	12/22
00/20	04/20	08/20
00/17	04/17	08/17
00/15	04/15	08/15
04/12	08/12	
04/10		

5361000N

Geology traced from early Cominco drawings 7A-H dated March, 1972

Topography was traced from enlarged 1:1000 sheets supplied by Renison Ltd
Geological data has been traced on a "best fit" basis

110220

Aberfoyle Exploration Pty Ltd

Geology	
Drawn	R J E
Traced	
Checked	
Revised by	Date

NORTH WEST TASMANIA

80-12-12

QUEEN HILL

Geological Legend

To accompany 1:500 Surface Geology & Cross Sections

Location code	
Date	February, 1979
Scale	
Plate No	QH 138