MBD. 38

EPTH	INTERVAL	DEPTH from-to : ROCK UNIT (capital letters, underlined) / Depth : Description and notes (indented about 10 mm)	POINTER	GRAPHIC LOG	POINTER	MINERALISATION	ASSAYS AVAILABLE	BULKED ASSAYS

FOR ABBREVIATIONS SEE "FIELD GEOLOGIST'S MANUAL", D.A. BERKMAN & W.R. RYALL (ED), MONOGRAPH No.9 AUSTRALAS. INST. MIN. METALL. - 1976

028502

INTERVAL	DEPTH from-to : ROCK UNIT / Depth : Description and notes	GRAPHIC LOG	MINERALISATION
0-4.0 (4.0m)	0-4.0 TRICONE DRILLED - NO CORE.		
4.0-22.4 (18.4m)	4.0-22.4 DOLOMITE SULPHIDE LODE Mottled greens - talc and serpentinite with bronze coloured po. Some minergranular grey quartz and small patches (?) tremolite/actinolite Overall texture is weakly banded, po alternating with talc/serpentinite etc in somewhat irregular bands, some cross cutting fracturing/veining.	4|6|7 7|6|4	po. Py, chromite, trace arsen in varying proportions and abundance. 0-7.5, 60-70% 7.5-11.0, 20%. 11.0-12.2, 90% 12.2-17.4, 10% 17.4-22.4, 30-40%
22.4-76.9 (54.5)	22.4-76.9 THINLY BEDDED GREY SILTSTONES, MASSIVE QUARTZITES. Siltstones mid grey, occasionally brownish grey, and quartzose or darker grey and clay rich, faintly sericitic in places. Well bedded, with frequent brecciated intervals and minor folding/contortion. The quartzites are massive and occasionally well bedded, sometimes alternating with quartzose siltstones. Hard and thick brownish greys, brecciated, with dark dendritic staining about fractures. Some thin dark grey silty shale laminae occur rarely in siltstones. 27-38.4 Rare thin 'tuffaceous' beds < 2 cm. Core is well fractured and broken. 40° →	10|11	22.4-38.4 py, finely dissem in qtzites, in veinlets + stringers with qtz 1-2% 38.4-54.7 Py, qtz as above 1% 54.7-76.9 As above, 2%, locally 7%
76.9-79.0	76.9-79.0 QUARTZ FELSPAR PORPHYRY. qtz 3-5%, weathered.	1	trace Py (weathered)
79.0-129.5 (50.5m)	79.0-129.5 THINLY BEDDED SILTSTONES AND SANDSTONES, QUARTZITES. 50° → As for 22.4-76.9, quartzites decrease with depth, some rare thin black shale beds appear with depth. Not so brecciated as above, but well fractured to 115 m. Clay rich siltstones are faintly greenish and sericitic.	10|11|S	79.0-114.6 py, dissem and as blebs, in veinlets with qtz and rare cassiterite. 1-2% 114.6-129.5 py, dissem, veining with qtz, CO_3, marcasite, sp and cassiterite. Some rare large blebs po. 7%.
129.5-143.6 (14.1)	129.5-143.6 THINLY BEDDED SILTSTONES SHALES AND SANDSTONES. Mid grey quartzose siltstones & sandstones, clay rich siltstones dark green greys, minor shales (almost black and carbonaceous). Many beds < 2cm thick, weakly brecciated.	10	129.5-143.6 py, qtz, CO_3, as veinlets and stringers, some dissem py. 2-3%.
143.6-164.1 (20.6)	143.6-164.1 QUARTZ FELSPAR PORPHYRY. 40° → Matrix fine grained and pale grey. Fractured and stained brownish grey by weathering. Qtz - subhedral rounded turbid grains to 6 mm, 15% Felspar - altered, some removed by weathering? 7-10% 45° →	1	Py, marcasite, as fine grained aggregates (marcasite as rims around py). Rare grains cassiterite. Veinlet concentrations (some removed by weathering), average 10%.
164.1-172.5 (7.6m)	164.1-172.5 THINLY BEDDED SILTSTONES As for 129.5-143.6.	10	164.1-172.5 As for 129.5-143.6.
	172.5m END OF HOLE.		

5 cm

AFTER TYPING THIS SIZED FORM WILL BE PHOTO-REDUCED TO A4 SIZE

FIELD COPY - COPY TO BE SENT TO MELBOURNE FOR TYPING

METALS EXPLORATION LTD.
EXPLORATION DEPARTMENT

SUMMARY DRILL LOG
Scale (1:1000), 1:500, 1:250 (when reduced to A4)

Prepared by: G. BROADBENT
Date: 1.4.80.

HOLE No. MBD 38
Sheet of

REPORT No. 028503

METALS EXPLORATION LTD.
& SUBSIDIARY COMPANIES

MINERAL EXPLORATION
DIAMOND DRILL LOG

MBD.38

Prospect, area, project or mine. MOUNT BISCHOFF

HOLE No. MBD 38

COLLAR LOCATION

Rectangular space co-ordinates

Grid name	Planar co-ordinates N	Planar co-ordinates E	Elevation
(1) MBJV	2164.69 N	1300.15 E	678.37
(2)	N	E	
(3) Aust. Map Grid PRECISE / APPROX.	mE	mN	m A.H.D.

W.C. Bearing from collar

	magnetic
180°	grid (1)
	grid (2)
	grid (3)
	true

1:250 000 Sheet No. BURNIE SK 55-3

1:100 000 Sheet No. HELLYER 8015

State TASMANIA

Mineral Tenement EL 13/79.

Holder METALS EXPLORATION LTD

Cadastral location and details
CROWN LAND/ PRIVATE

Inclination at collar 60°

Total length 172.5 m

Commenced: 18 / 3 / 80

Completed: 25 / 3 / 80

Drilling contractor LONGYEAR AUST PTY LTD

Rig type LONGYEAR 38

Details of down hole location-survey methods.
TROPARI every 30 m.

Purpose of drilling and anticipated lengths to targets.
To investigate any possible tin mineralisation in 'Brown Face' Dolomite sulphide rock (0-100 m), and any possible extensions of tin mineralisation in 'Slaughter' porphyry dyke 121-146 m. Planned depth of hole 160.0 m.

Core size and non-coring (NC)

TRICONE	0	TO	4.0
NQ	4.0	TO	49.5
BQ	49.5	TO	172.5
		TO	
		TO	
		TO	

Comments on drilling.

Results of down hole location-survey.

LENGTH FROM COLLAR	W.C. BEARING type Azimuth	DIP
30.0	146°30'	60°
72.0	147°	61°
102.0	146°	65°
135.0	146°30'	63°
171.0	150°	61°

Legend for graphic log column (see drill log for Hole No. ______)
'DERWENT' PENCIL NO. FIELD ROCK NAME, ETC.

Symbols and abbreviations for drilling notes column.

LOGGED BY	FROM	TO	DATE
C. BROADBENT	0	172.5 m	26.3.80

Company managing exploration programme. METALS EXPLORATION LTD

HOLE No. MBD 38
Log sheet 1 of 3

028504

Depth from-to : Rock unit / description	Graphic log	Structural and vein information	Mineralisation	Percent
TRICONE TO 4.0 m - NO CORE				
4.0-21.8 DOLOMITE SULPHIDE LODE. 4-8.7 pale greenish grey talc > dark green/black serpentine. Minor granular grey carbonates and qtz and rare patches 'phlogopite' - white mica with fluorite. Some fibrous (?)tremolite/actinolite at 8.2 m - green and black, columnar crystals. Weakly banded, 'wrigglite', texture 4-21.8 m, alternating with more massive serpentinite etc.	4/6/7		4.0-7.5 po, fluorite, trace py in granular aggregates to 20 cm separated by bands talc, serpentine to 10 cm.	60-70%
			7.5-8.7 po in thin bands stringers and granular aggregates, trace fluorite, weak trace py	20%
8.7-16.1 hard granular khaki-green serpentinite with soft greenish-grey talcy patches and small interstitial patches of grey quartz.	7/6/4		8.7-11.0 po, trace py in irregular patches and blebs to 5 cm.	20%
			11.0-12.2 po > sp, trace py, sp in a coarsely granular fabric.	10%
			12.2-16.1 po > asp, py > sp blebs and grains to 2 cm, granular texture.	10%
16.1-21.8 Greeny grey talc and grey and apple green serpentinite with granular pyrite, minor pyrrhotite in a weakly banded matrix.	6/7/5		16.1-17.4 po, trace py, coarse granular.	10%
		Contact irregular	17.4-21.8 py > po, as pitted cellular aggregates, po surrounded by pyrite.	30-40%
21.8-22.4 DOLOMITE, pale grey, brecciated and broken, barren.	2	Broken contact.	21.8-22.4 trace sp	<1%
22.4-27.0 SILTSTONES AND QUARTZITES Medium grey, fairly sericitic (?) clay rich siltstone, sometimes massive and finely laminated to 2 m. Thin beds very hard bluish grey quartzites to 30 cm, which decrease towards base of interval. Minor soft sediment disruption and later fracturing.	10/4	∠25.2 Bedding 45° Gradual Change	22.4-27.0 py, finely dissem in quartzites, and in thin veinlets and stringers with qtz and sparse carbonate	2-3%
27.0-38.4 THINLY BEDDED SILTSTONES, sparse QUARTZITES Thinly bedded faintly greenish clay rich siltstones, minor hard bluish grey sandy beds to 10 cm. The 'quartzose' siltstone beds become slightly brownish (tourmaline rich?) with depth. Disrupted, with minor contortion of beds and some later fracturing and brecciation. Some sparse tuffaceous beds <2 cm occur infrequently. Cavity 36.3-38.0 m.	10/(11)	∠27.7 Bedding 65° ∠28.9 10 mm qtz-py vein, 70° ∠31.0 Bedding 60° ∠33.9 Bedding 65°	27.0-38.4 py, finely dissem and in sparse thin qtz-carbonate veinlets.	1-2%
38.4-76.9 SILTSTONES AND QUARTZITES. Thinly bedded siltstones - mostly grey and clay rich, sparse beds pale brown and quartzose - intervals to 5 m separated by mid grey quartzite beds, mostly 0.5-1.0 m thick, occasional intervals to 5 m of 50/50 quartzite/siltstone. Minor soft-sediment disruption and brecciation, overall well bedded.	10/11	∠40.5 Bedding 70° ∠43.4 Bedding 55° ∠46.1 Bedding 40° ∠49.6 Bedding 50° ∠52.9 Bedding 60°	38.4-54.7 py, finely dissem in some quartzites, in sparse veinlets with quartz.	1%
		∠55.0 Bedding 65° ∠58.1 Bedding 75° ∠61.1 Bedding 80° ∠64.6 Bedding 75° ∠67.4 Bedding 45° ∠70.2 Bedding 60° ∠73.5 Bedding 60°	54.7-76.9 py, finely dissem and in sparse veinlets with qtz. Locally may be 7% for 1-2 m.	2%
76.3-76.9 Faulted and shattered - grey puggy material and broken core		∠76.2 Bedding 50° ∠Contact 40°		
76.9-79.0 QUARTZ FELSPAR PORPHYRY Matrix pale pinkish cream, well fractured and pitted by weathering. Qtz - rounded grains to 2 mm, 3-5%. Felspar - nil - weathered?	1	∠Contact 50°	76.9-79.0 Trace py (removed by weathering - 10-20% cavities in rock)	<1%
79.0-114.6 SILTSTONES AND QUARTZITES. See 38.4-79.6 for description. Core fractured and broken 79.0-85.0 - some small puggy zones, ≈45-50° LCA. 91.2 Small fault zone - 10 cm puggy material, 45° 91.2-115 - Core is well fractured and broken.	10/11	∠81.3 Bedding 50° ∠84.8 Bedding 45° ∠87.4 Bedding 60° ∠90.0 Bedding 55° ∠93.6 Bedding 70° ∠96.3 Bedding 70° ∠100.1 Bedding 75° ∠102.6 Bedding 70° ∠106.4 Bedding 70° ∠110.6 Bedding 70°	79.0-114.6 py, dissem in quartzites as grains to 1 mm. Some rare qtz-py-carbonate veins.	1-2%
114.6-121.7 THINLY BEDDED SANDSTONES AND SILTSTONES Scale of bedding <2 cm - hard faintly bluish medium grey fine grained quartzites separated by dark grey weakly sericitic greenish grey clay rich siltstones. Thin white clay laminae separate individual beds - originally pyrite laminae? Weakly brecciated, with thin white clay and carbonate filled fractures, apart from this very well bedded.	115/10	∠115.5 Bedding 65° ∠117.0 Bedding 85° ∠119.3 Bedding 80°	114.6-121.7 py, finely dissem in qtzites and as thin veinlets and stringers with qtz, marcasite - carbonates. Sparse rare blebs po	7-10%

5 cm

% Recovery estimate or core length recovered	DEPTH from-to : ROCK UNIT capital letters, underlined Depth : Detailed rock description and notes indented about 15 mm	Depth pointer drill log depth tag	GRAPHIC LOG see legend on sheet 1	Depth pointer	STRUCTURAL AND VEIN INFORMATION ATTITUDE = Angle between feature and LONG CORE AXIS	MINERALISATION	Percent mineralisation visual estimate	NOTES

METALS EXPLORATION LIMITED

MINERAL EXPLORATION
DRILL LOG
Scale 1:100

Prospect or project: MOUNT BISCHOFF
Logged by: G. BROADBENT date 26/3/80
HOLE No. MBD38
LOG SHEET 2 OF 3
from 0.0 m to 120.6 m

Prepared 10/6/80

028505

Core recovery

Drill advance	Core length recovered	% Recovery
2.1	2.1	100
1.1	1.1	100
1.6	1.6	100
1.7	1.7	100
1.2	1.2	100
1.7	1.7	100
1.7	1.7	100
1.2	1.2	100
0.9	0.9	100
1.1	1.1	100
1.1	1.0	91
0.9	0.9	100
0.8	0.7	88
0.7	0.6	86
0.2	0.2	100
1.7	1.7	100
1.4	1.4	100
1.5	1.5	100
1.7	1.7	100
3.0	3.0	100
2.5	2.5	100
2.2	2.2	100
1.3	1.3	100
0.9	0.9	100
1.4	1.3	93
1.4	1.2	86
1.7	1.7	100
1.9	1.9	100
1.7	1.7	100
1.7	1.7	100
1.3	1.3	100
2.4	2.4	100
0.8	0.8	100
2.3	2.0	87
0.5	0.3	60

Rock description

114.6 - 121.7 See previous page.

121.7 - 129.5 QUARTZITES minor SILTSTONES

Hard grey massive quartzite beds separated by thin beds of grey clay-rich siltstone.
Brecciated - minor soft sediment deformation.

129.5 - 143.6 THINLY BEDDED SILTSTONES and SHALES with QUARTZITES.

Dark grey finely laminated siltstone/silty shale, alternating with thinly bedded quartzose siltstone/clay rich siltstone and quartzite beds (hard, medium grey) to 0.5 m thick. Minor disruption and brecciation - soft sediment deformation with later minor fracturing.

143 - 143.6 Hard and silicified.

143.6 - 163.9 QUARTZ FELSPAR PORPHYRY.

143.6 - 144.2 - Matrix greenish grey, Qtz to 2.5 mm, 5%, Felspar 3-5%

144.2 - 146.5 Matrix finely crystalline, faintly pinkish light cream, well fractured and broken, pitted by weathering
Qtz - 10 - 15%, rounded and subhedral grains to 4 mm.
Felspar - altered, to 3 mm, hard and brownish 2 - 5%.

146.5 - 157.4 Matrix very fine grained and pale grey with a mottled appearance
Phenocrysts - Qtz, subhedral and rounded, to 6 mm, 15%
- Felspar - altered to hard brownish translucent grains to 2 mm, 7-10%.

149.8 - 157.4 Fractured and weathered.

157.4 - 160.0 Greyish matrix, Phenocrysts larger: Qtz to 6x4 mm, 15%; Felspar brownish and altered to 6x3 mm, 7-10%

160.0 - 163.5 Faintly pinkish light cream matrix
Qtz - rounded grains to 4 mm, 10-15%
Felspar - to 3 mm, altered, 2-3%.

163.5 - 163.9 Greenish f.gr matrix, as for 143.6 - 144.2.

163.9 - 172.5 THINLY BEDDED SILTSTONES AND SHALES with QUARTZITES

See 129.5 - 143.6 for description.

END OF HOLE 172.5 m.

Structural and vein information

Gradual Change

11/10

122.8 15 mm vuggy py-marcasite-cassiterite vein, 60°

123.6 Bedding 50°

126.8 Bedding 70°

Gradual Change

10/11/9.

129.6 Bedding 65°

132.2 Bedding 65°

134.9 Bedding 70°

138.0 Bedding 70°

142.1 Bedding 50°

Contact 40°

Contact 45°

10/11/9

Mineralisation

Mineralisation	Percent mineralisation (visual estimate)
114.6 - 121.7 See previous page.	
121.7 - 129.5 py-marcasite-qtz veinlets, also dissem py in quartzites. Some irregular stringers py. qtz to 8x4 cm.	7%
129.5 - 143.6 py. qtz as veinlets and irregular stringers, also finely dissem. py. in quartzite beds. Minor qtz-carbonate veinlets.	2-3%
143.6 - 144.2 trace black? tourmaline and dark fluorite	<1%
144.2 - 146.5 py, trace marcasite as distinct rounded grains and f.gr. aggregates to 6x3 mm. Some patches to 3x2 cm.	10-15%
146.5 - 149.8 py. marcasite, trace cassiterite. py and marcasite occur as fine grained aggregates to 6x5 mm.	15-20%
149.8 - 151.2 pitted by weathering - py, marcasite, trace cassiterite	10-15%
151.2 - 154.6 py. marcasite, pitted and weathered, trace cassiterite	10%
154.6 - 157.4 Very weathered and pitted, trace cassiterite, sulphides 1-2%	1-2%
157.4 - 160.0 pitted py as fine grained aggregates to 6x4 mm. Some ultrafine disseminated cassiterite?	5-7%
160.0 - 163.5 py, trace marcasite as rounded grains and some fine grained aggregates to 6x4 mm. Rare grains cassiterite, weak trace sp.	10-15%
163.5 - 163.9 trace fluorite, tourmaline	1%
163.9 - 172 py-qtz-carbonate veinlets and stringers, py also finely dissem in quartzites and quartzose siltstones	3-5%

5 cm

DRILL ADVANCE	LOST CORE ZONE	CORE LENGTH RECOVERED	% RECOVERY ESTIMATE OR	DEPTH from-to : ROCK UNIT capital letters, underlined Depth : Detailed rock description and notes indented about 15 mm	DEPTH TAG	DRILL LOG	DEPTH POINTER	GRAPHIC LOG SEE LEGEND ON SHEET 1	DEPTH POINTER	STRUCTURAL AND VEIN INFORMATION ATTITUDE = Angle between feature and LONG CORE AXIS	MINERALISATION	PERCENT MINERALISATION Visual estimate	NOTES

METALS EXPLORATION LIMITED

MINERAL EXPLORATION
DRILL LOG
Scale 1:100

Prospect or project: MOUNT BISCHOFF
Logged by: G. BROADBENT
date 26 / 3 / 80

HOLE No. MBD 38
LOG SHEET 3 OF 3
from 120.0 m. to 172.5 m.

Prepared 10/6/80

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	As	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97848		4.0	6.0	2.0	50									
49		6.0	8.0	"	x									
50		8.0	10.0	"	x									
51		10.0	12.0	"	x									
52		12.0	14.0	"	16									
53		14.0	16.0	"	14									
54		16.0	18.0	"	x									
55		18.0	20.0	"	8									
56		20.0	21.2	1.2	x									
57		21.2	23.1	1.9	38									
97858		76.9	79.0	2.1	620.									
59		141.6	143.6	2.0	65									
60		143.6	145.6	"	450		230	50	720	<1	15	85	160	Pulp check
61		145.6	147.6	"	4350		400	40	80	<1	120	1950		
62		147.6	149.6	"	2950		500	28	42	<1	45	820		
63		149.6	151.6	"	1550		460	26	130	<1	15	1000		
64		151.6	153.6	"	2700		400	60	150	1	65	1650		
65		153.6	155.6	"	520		300	30	220	2	<10	940		
66		155.6	157.6	"	340		160	180	390	3	10	490		
67		157.6	159.6	"	340		260	44	180	2	<10	1250		
68		159.6	161.6	"	5400		340	60	100	<1	30	80		
69		161.6	164.2	2.6	1250		260	25	340	1	15	150		
70		164.2	166.2	2.0	180									

Notes :— Sn by XRF Bi Method.

x — means less than detection limit

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 38A

SAMPLE TYPE : DRILL CORE FROM 4.0 TO 166.2

028506

SAMPLE NO.	SAMPLE NO	FROM	TO	INTER-VAL	Sn	Sn	Cu	Pb	Zn	Ag	W	Au	Check Sn	Bulked Assays
SPLIT CORE	GROUND CORE	m	m	m	SPLIT	GROUND								
97881		0 0	4.0	4.0	1250									
82		4.0	6.0	2.0	2300									
83		6.0	7.5	1.5	12									
84		18 0	19.5	1.5	10									
85		19.5	21.0	"	32									

Notes:— Sn by XRF Bi Method.

METALS EXPLORATION LTD - MT BISCHOFF TIN PROSPECT

ASSAY SUMMARY SHEET HOLE NO. MBD 38 B

SAMPLE TYPE : DRILL CORE FROM 0.0 TO 21.0

SLUDGE