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E.L. 43/84

ANNUAL REPORT

for the year ending

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by

MINERAL HOLDINGS AUSTRALIA PTY., LTD.

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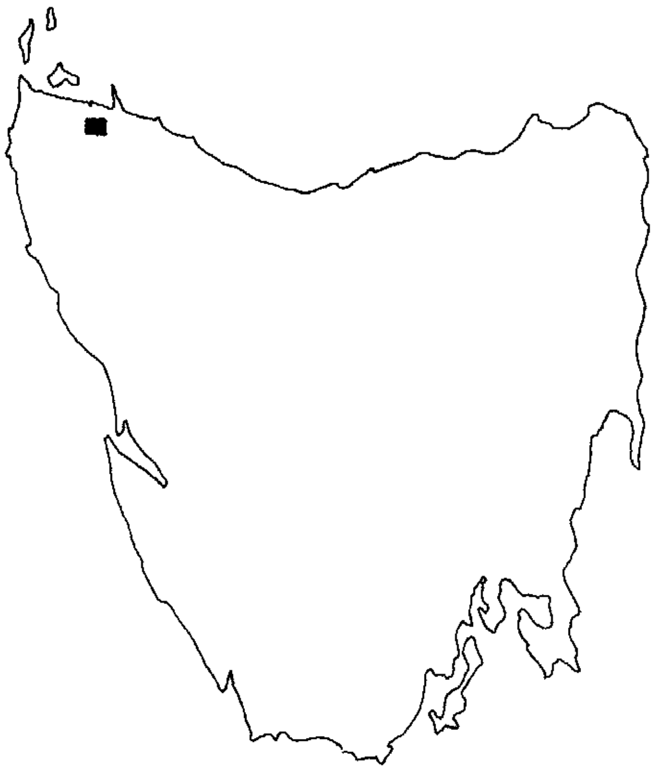
V.M. Threader
Consulting Geologist



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CONTENTS

E.L. 43/84

Introduction

The dolomite occurrencies in E.L. 43/84 were originally prospected by Longworth and McKenzie in 1979 under contract to Mineral Holdings Australia. This work was extended under joint venture agreement with C.R.A. in 1982-3. Both programmes were conducted in E.L. 10/79. The licence lapsed in 1984 and was reissued as E.L. 43/84.

Location and Access

The exploration licence extends south for 15 km. from Smithton to Edith Creek and is traversed by the Irishtown and Trowutta Roads and Bass Highway.

The distances from Smithton to Port Latta is 25 km. and to Stanley 20 km.

Geology

The Smithton Triangle contains infill ranging from Proterozoic to late Cambrian consisting of three units: a stromatolite bearing dolomite, a younger mixed basalt/volcaniclastic wacke sequence and the overlying Smithton dolomite. The spatial relationship of these rocks to the subject area is indicated in fig.4 (Baillie and Patterson 1984). This interpretation distinguishes between the dolomite of Duck River west of the volcaniclastic sequence and the older Irishtown dolomite, east of this sequence, as shown in fig.4.

Both dolomites have been prospected and attention is now focused on the Smithton dolomite (west of Duck River) as being both more extensive and of higher quality.

Previous Exploration

1. Surface sampling of Smithton dolomite was undertaken by Nye et al 1934 (Appendix 2). These rocks do not form continuous outcrops and so the results were inconclusive but generally not indicative of high grade, perhaps due to the durability of the more siliceous dolomite.
2. A 14 hole drill grid over the area of Watsons Bend and Blackwood Bridge i.e. West of Smithton on the site of the present Smithton Dolomite and Trading Company Quarry was conducted by B.H.P. (1944-45) Appendix 1 for refractory grade dolomite. The analytical results are given as follows and the borehole location map is included in this report.

A search for a report has been made in B.H.P. archives without success. F. Canavan, who conducted the programme, stated that dolomite of comparable grade was available in South Australia. It appears therefore that distance from markets was the principal reason for rejecting this resource.

Analytical Results:

Hole No.	Depth	Overburden Thickness	Dolomite Thickness	Analysis (Weighted Means) CaO	MgO	SiO2	Fe2O3	Al2O3	Core Recovery %
Z2	18.29	1.22	17.07	31.9	20.9	0.27	0.37	0.22	100
E0	21.34	9.14	12.20	31.2	20.9	0.34	0.53	0.34	"
C2.5	18.29	5.49	12.80	26.7	18.9	10.65	1.48	2.50	"
C1.5	18.29	4.57	13.72	31.5	20.9	0.18	0.30	0.20	"
*B6	14.94	2.13	12.81	29.2	20.0	5.10	1.37	2.44	"
B5	18.29	9.60	8.69	30.5	19.4	2.17	0.54	1.40	"
B4	15.20	3.05	12.15	29.5	20.4	3.47	0.83	0.83	Crumbly 5% rec.
B3	18.29	1.52	16.77	28.9	18.6	5.55	1.02	2.34	"
B2	17.37	0.91	16.46	30.9	20.5	1.34	0.77	0.92	100
B1a	18.29	0.91	17.38	31.1	20.6	0.16	0.54	0.54	70
B0	18.29	1.22	17.07	31.1	21.5	0.17	0.31	0.15	100
A1.5	18.29	1.83	16.46	31.5	20.4	0.38	0.45	0.54	"
B1	6.10	0.91	5.19	30.1	21.4	0.34	0.56	0.22	"
A2.5	18.29	4.88	13.41	30.6	20.5	2.24	0.43	1.51	"
			(Mean 13.73)						
		Weighted Mean:		30.4	20.3	2.25	0.67	1.00	
Weighted mean of Z2, E0, C1½, B1½, B1, B0, A1½			:	31.3	20.9	0.25	0.42	0.33	

(* B6 14.94 - 21/3 in Cambrian Volcanics)

The drilled area covers approximately 285 000 s.m. or 670 000 t. (RD of 2.85) per vertical metre. To the depth drilled (mean 13.73 m. of dolomite) the tonnage in situ is 9.24 m.t. with a mean composition of 93% dolomite (by comparison with the theoretical composition of dolomite - 21.8% MgO, 30.4% CaO, 2.25% SiO_2, 0.67% Fe_2O_3 and 1.00% Al_2O_3. Some holes recorded white secondary carbonates (calcite) which probably accounts for the slightly higher ratio of CaO/MgO than is present in pure dolomite.

These 14 holes were drilled on a 100 x 140 m. grid and the status of the above calculation is therefore a measured resource.

Holes Z2, E0, C1½, B1½, B1, B0 and A1½ collectively cover an area of approximately 100 000 s.m. of relatively high grade dolomite (see table above). This is estimated to contain 4 million tonnes of 96% dolomite containing 0.25% SiO_2, 0.42% Fe_2O_3 and 0.33% Al_2O_3. The trend of this belt of dolomite appears to conform to the regional strike of the sediments as read from the Smithton geological sheet, which suggests good prospectivity to the south.

3. Longworth and McKenzie (1981) drilled 5 Percussion holes in the

Irishtown deposit, two of which intersected dolomite, while the remaining three were abandoned owing to unstable ground conditions.

One of these two holes into dolomite was sampled and silica was recognised as a major contaminant (SiO_2 : 21.5, 7.2, 5.2 and 2.3%). It was concluded that more exploration was required to assess the extent of silica contamination and the ground water conditions.

4. C.R.A. (1983) drilled 9 percussion holes. Nos.1 to 4 were in the Duck River dolomite and 5 to 9 in the Irishtown dolomite.

Depths to dolomite were:

No.	Metres
1	5
2	19
3	19
4	Did not reach bedrock
5	Cambrian Volcanics
6	Tertiary basalt
7	15
8	15
9	21

The main contaminant was silica with values ranging from 0.8% to 19.2%

In addition, six rock chip samples were taken in the Duck River area with a similar silica content to the silica content of the borehole samples.

Summary of Results

	Composition				Over -burden	Resource Estimate
	CaO	MgO	SiO_2	Fe_2O_3	m.	Mt/Vertical m.
Irishtown Deposit	29.5	19.9	6.36	0.20	10	7
Duck River "	28.5	19.7	5.37	1.16	10	27

Gold values of 3g/t over 5m. and 4 g/t over 15m. were reported by the Department of Mines laboratory from some of the C.R.A. samples. Resampling by Pan Australian did not reproduce these grades and it was thought therefore that the previous samples may have been contaminated.

Discussion

The resource of 7 and 27 million tonnes per vertical metre estimated by C.R.A. for the Irishtown and Duck River deposits respectively was not based on borehole data and is therefore an Inferred Resource within the area indicated on Fig.3.

The C.R.A. dolomite exploration was undertaken "with a view to its open cut potential for agricultural or refractory usage". It was abandoned because "abundant resources of similar grade occur elsewhere in N.W. Tasmania".

Current Exploration

1. Investigations by C.H. Whitehead (July 1987) on behalf of Pan Australian Mining Ltd. consisted of:

i) a ground magnetometer survey which failed to confirm the presence of anomaly detected by E.Z.(E.L. 52/80) in an airborne magnetometer survey near Smithton, and

ii) stream sediment sampling and analysis for gold, tungsten, tin, bismuth and arsenic in the licence area. No anomalies were recorded. Gold exceeded 1 mg/t in only three samples. No significance can be attached to these values.

Whitehead concluded that "no further work could be justified or is recommended" and it is agreed here that these matters have now been adequately investigated. This work appears as appendix 3 to this volume. No further investigation in the volcaniclastic sequence is intended and this portion of the exploration licence will be relinquished.

2. A study of the status of Mineral Holdings' deposits of industrial minerals was undertaken to assess their viability. This was carried out by Hudson Lees Associates and appears as Appendix 4 to this volume.

3. Miscellaneous analytical data relating to the suitability of Smithton dolomite for the production of magnesium metal from overseas companies which have expressed an interest in this resource are included as Appendix 5.

Exploration Programme for 1987-1988

The programme outlined hereunder refers to the proposed amalgamation of ELs 29/80 and 43/84 and consists of i) completing the investigation of industrial minerals within these licence areas and ii) a study of an additional 50 sq.km. west of Duck River which is considered to be prospective for high quality dolomite.

i) Isolated outcrops of dolomite and Forest quartzite occur in the South Forest, Mengha and Irishtown areas. These will be sampled and any favourable results will be followed by a drilling programme to determine their extent. It is not anticipated that a major resource can be found in these areas and this work is considered to be a "clean up" operation.

ii) Indications are that a major resource of high quality dolomite exists at shallow depth (5m) west of Duck River and it is intended to carry out a percussion drilling programme to determine the thickness of overburden, the hydrology and the dolomite quality. This will commence immediately to the south of the B.H.P. drilling area in an attempt to trace the high quality dolomite intersected in that programme. Follow up diamond drilling will be necessary at a later stage for reserve calculations purposes and to obtain samples for testing.

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Exploration Reports:

Longworth & McKenzie (1981) Report on drilling programme, dolomite prospect. T.C.R. 81-1641

C.R.A. (1983) Smithton Exploration Report T.C.R. 83-2011

Mineral Holdings Aust. (1984) Final Report on EL 10/79 T.C.R. 85-2431

McKenna D. (1986) Preliminary Inspection of EL 43/84 for Pan Aust. Min. Ltd. T.C.R. 86-2560

Whitehead C (1987) Investigations for Pan Aust. Min. Ltd. (Appendix 3 - this volume).

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APPENDIX 1

Drilling Data B.H.P. 1944

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THE BROKEN HILL PROPRIETARY COY. LTD.
DRILL HOLE REPORT

BORE Z2

Bearing Vertical Locality Watson's Bend – Grid

Depression Position Z2

17/8/45

Water cut & stands	R.L.	Depth	Description	Sample No	Sample From – to feet	Core dia	MgO	SiO_2	Fe_2O_3 / Al_2O_3	CaO	Ig.
water stands 3' in hole	[illegible]		Sand								
		4'0"	Grey crystalline dolomite, sugary texture, much sec. carbonate along fractures. Iron staining	Z2 4'-6'	4'0"	3½"	20·74	·45	{ ·31 ·30	31·14	46·8
		6'0"	do.	Z2 6'-7'	6'0"	3"	20·88	·28	{ ·32 ·31	31·29	46·7
		7'0"	do. From 8'-10' prominent vertical joints	Z2 7'-11'	7'0"	2¼"	20·85	·28	{ ·30 ·30	31·40	4[illegible]
		11'0"	do. Again prominent vertical joints.	Z2 11'-16'	11'0"	1⅞"	20·85	·27	{ ·31 ·31	31·[illegible]	[illegible]
		16'0"	do. Rather more iron staining. From 19'-22' distinct brecciation.	Z2 16'-24'	16'0"	1⅞"	20·82	·34	{ ·46 ·20	31·[illegible]	
		24'0"	Grey dolomite, practically no iron staining in places small angular dol. pebbles set in powdery carb. matrix	Z2 24'-25'	24'0"	1⅞"	20·61	·24	{ ·43 ·21	3[illegible]	
		25'0"	Grey finely crystalline dolomite, some ironstaining.	Z2 25'-37'	25'0"	1⅞"	21·00	·24	{ ·44 ·1[illegible]		
		37'0"	do. no coarse core	Z2 37'-53'	37'0"	1 15/16" / 1"	21·00	·22	{ [illegible]		
		53'0"	do. Rather harder and less friable than above – quite large core from the bottom of the hole. A few prominent vertical joints coated with sec. carbonates. Occasional iron staining & small amount pyrite	Z2 53'-60'	53'0"	1"	20·75	·32	{ ·3[illegible] ·2[illegible]		
		60'			60'0"						

Driller reported no influx nor loss of water. 7/7/45.

N.B. No silica seen in the whole bore.

Weighted Average: 4'–60' (= 56') 20·90 ·27 { ·37 ·22 [illegible] ·40

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DRILL HOLE REPORT

BORE A 1½

Bearing Vertical..... Locality Watson's Bend – Smithton..........

Depression.......... Position Grid A1½..........

Date: 16/2/45

Water cut & stands	R.L.	Depth	Description	Sample No.	Sample From - to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 / Al_2O_3	Analysis CaO	Analysis Ig. Loss
	8·2'		Sand								
		6' 7'6" 10'0"	Dolomite cuttings with qtz sand " No obvious quartz	A1½ 7'6"–10'	7'6"–10'0"		19·04	1·40	·65 1·17	31·36	46·20
		16'0"	Dol. grey to blue grey, much broken, fine grained, crystalline. No qtz. Sec. carbonates on cleavage planes.	A1½ 10'–16'	10'0"–16'0"		19·05	·43	·47 1·01	32·26	45·48
			Similar to above, slightly darker. Minute traces FeS_2 and dark green mineral.	A1½ 16'–23'	16'0"–23'0"		19·93	·18	·29 ·33	32·34	46·3[illegible]
		23'0" 24'0"	No sample received		23'0"–24'0"						
water lost, bit jammed		25'0"	Light grey dol., dip 40°	A1½ 24'–29'	24'0"–29'0"		21·48	·35	·45 ·34	31·39	45·5
		29'0" 30'0"	Cuttings ("Owing windblown sand treat SiO_2 with suspicion" R.A.H. "Almost wholly soluble" R.L.J.)	Also cuttings 24–31'	29'0"–30'0"		21·46	·16	·67 ·59	31·39	[illegible]
		31'0"	Light grey, more broken than 24'–29'. Core reduced 1⅞" to 1⅝"	A1½ 30–34'	30'0"–34'0"		21·08	·24	·35 ·37	31·46	46·2[illegible]
No difference in water circulation through 35'–36½' honeycomb structure		34'0" 35'0" 36'6"	No sample. Honeycomb dolomite, water circulation not affected. No core made 35'–36½'.	A1½ 34'–44'	34'0"–44'0"		21·20	·20	·32 ·34	31·36	46·22
			Light grey dolomite								
		44'0"	Dark grey, with small white carbonate veinlets.	A1½ 44'–50'	44'0"–50'0"		19·10	·60	·63 ·31	31·88	47·20
		50'0"	Light grey – a shade darker than 24'–29'.	A1½ 50'–60'	50'0"–60'0"		20·62	·40	·53 ·73	30·47	47·2[illegible]
		60'0"									
			N.B. All dolomite 24'–60' is very finegrained and no quartz is visible.								
			Weighted average				20·36	·38	·45 ·54	31·[illegible]	[illegible]

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DRILL HOLE REPORT

BORE A2½

Bearing 80°

Depression 60°

Locality Watson's Bend - Smithton

Position Grid A2½

Date: 1/3/45

Water cut & stands	R.L		Depth	Description	Sample No	From - to feet	% core recovery	MgO	SiO_2	Fe_2O_3 Al_2O_3	CaO	Ig.Lo
Bore made no water throughout	11·2'			Sand								
			16'0"	Core reduced from 2⅜" to 1⅞"		16'0"						
				Light to medium grey dol, fine-grained, highly fracturable	A2½ 16'-26'			21·03	·42	{·36 ·62	31·64	45·7
			26'0"	Core reduced from 1⅞" to ⅞".		26'0"						
				Light to medium grey dol, fine-grained. Some brecciated and highly fractured with secondary carbonates.	A2½ 26'-36'			21·01	·82	{·36 ·59	31·56	45·5
			36'0" 37'0"	Core lost down hole		36'0" 37'0"						
				Light grey, fine-grained dol.	A2½ 37'-44'			20·93	·98	{·37 ·59	31·56	[illegible]
			43'0" 44'0"	Slightly brecciated		44'0"						
				Medium grey, fine-grained dolomite. Trace pyrite	A2½ 44'-51'			21·17	2·16	{·45 1·21	30·02	44·8
			51'0" 52'0" 53'0" 54'0"	Trace chert Trace chert	A2½ 51'-60'	51'0"		18·57	6·90	{·61 4·47	27·83	41·45
				Dark grey, fine-grained dol, Some pyrite.								
			60'0"			60'0"						
				Weighted average to 44' (27' core)				21·00	0·71	{·36 ·60	31·69	45·5
				Weighted average to 60' (43' core)				20·52	2·24	{·43 1·51	30·55	44·6

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DRILL HOLE REPORT

BORE BO

Bearing Vertical

Depression

Locality Walson's Bend - Smithton Reserve

Position 4' S. of Corner James St and Smithton Reserve

1/8/45

Water cut & stands	R.L.	Depth	Description	Sample No	Sample From - to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 Al_2O_3	Analysis CaO	Analysis Ig. Loss
"Lost some water circulation at 56', otherwise good results all through 7/6/45" Refer Ana RS 4/6/45			Core diam. 3" Sand								
		4'0" – 7'0"	Light grey, weathered dol., good fracturable stone. Core diam 1 7/8"	Sa. 1 4'-7'	4'0" – 7'0"		21·27	·16	{·33 ·13	31·07	46·86
		7'0" – 17'0"	Light grey, finegrained dol, as small angular pieces. 11'0" Slightly darker grey finegrained dol, less broken. Unweathered and fairly hard from 11'-60'	Sa. 2 7'-17'	7'0" – 17'0"		21·40	·16	{·35 ·17	31·14	46·70
		17'0" – 27'0"	do.	Sa. 3 17'-27'	17'0" – 27'0"		21·40	·20	{·31 ·11	31·07	46·8
		27'0" – 37'0"	Grey finegrained dolomite. 32'-37' coarser core 34'-35' shows cavities up to 1/2"	Sa 4 27'-37'	27'0" – 37'0"		21·65	·14	{·26 ·16	31·07	46·58
		37'0" – 48'0"	Grey, finegrained and uniform	Sa. 5 37'-48'	37'0" – 48'0"		21·40	·16	{·33 ·17	31·22	[illegible]
		48'0" – 60'0"	Grey, finegrained and uniform. Between 55' and 56' is an inch of white dolomite meal, with included grey fragments (Could be a fault breccia)	Sa. 6 48'-60'	48'0" – 60'0"		21·60	·20	{·30 ·14	31·07	46·63
			Weighted Average 4'-60' = 56'				21·48	·17	{·31 ·15	31·11	46·66

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DRILL HOLE REPORT

BORE B1

Bearing: Vertical

Locality: Watson's Bend - Smithton

Depression:

Position: Grid B1

Surface R.L. 8·19'

Date: 31/5/44

	Water cut & stands	R.L.	Depth	Description	Sample No	Sample From - to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 / Al_2O_3	Analysis CaO	Analysis Ig.L
		8·19										
	← Stands 3'0"		3'7"	Sand								
		H.W.S.		Dolomite	3'							
10	← Water lost 9'4"		10'6½"	Cavity	20'7½"							
			11'5"	"Honeycomb material"				21·45	0·34	0·56 / 0·22	30·07	47·[illegible]
			14'1"									
			15'3"	Cavity								
		L.W.S.		Dolomite								
20			19'1"	Cavity								
			19'7½"	Dolomite								
			20'7½"									
70												

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DRILL HOLE REPORT

BORE B1a

Bearing Vertical. Locality Watson's Bend · Smithton

Depression .... Position Grid 'B1 - 2' 9" E. of B1

Surface R.L. 8.19'
Date 23/6/44

Water cut & stands	R.L.	Depth	Description		Sample No	From - to feet	% core recovery	MgO	SiO_2	Fe_2O_3 Al_2O_3	CaO	Ig.L.
	8.19'		Sand									
stands 3'0"		3'0"	Dolomite	x	1	3'0" – 6'11"	100	22.94	0.08	0.96	29.04	46.[illegible]
water lost 5'10" →		6'11"	Cavity									
	H.W.S.	8'6"	~~Sand~~									
		12'5"	Dolomite	x	2	12'5" – 16'11"	78	18.78	0.28	1.66	31.94	46.8
	L.W.S.	16'11"	Sand									
		19'9"	Dolomite	x	3	19'9" –	94	22.14	0.08	1.06	30.04	46.5
water recovered 26' →			← Hole reduced at 26'	x	4	– 29'4"	94	21.45	0.08	0.96	30.24	47.[illegible]
		29'4"	Cavity									
		32'0"		x	5	32'0" –	57	19.98	0.08	0.96	31.99	46.6[illegible]
					6 (cuttings)	– 38'5"	14	18.24	3.38	1.56	31.00	[illegible]
			Dolomite	x	69	38'5" –	51	19.90	.14	{.83 .21}	31.84	46.88
					70 (cuttings)		25	20.20	.94	{.58 .46}	31.23	46.34
								Sa 70 contaminated with surface sand				
				x	71		60	20.40	.30	{.72 .32}	31.23	4[illegible]
		60'0"										
			To 60' - i.e. 46.0' core	Weighted average x cores				20.59	.16	1.08	31.1[illegible]	[illegible]

Hole dry from 30'-45', made water 45'-60', and finally stood at 3'11" below surface.

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THE BROKEN HILL PROPRIETARY COY. LTD.

DRILL HOLE REPORT

880017 BORE B 2

Bearing Vertical. Locality Watson's Bend - Smithton

Depression .... Position Grid B 2

Surface R.L. 9·19'

Date: 21/7/44.

Depth scale	Water cut & stands	R.L.	Depth	Description		Sample No.	From - to feet	% core recovery	MgO	SiO_2	Fe_2O_3 Al_2O_3	CaO	Ig.L.
		9·19'	3'0"	Sand			3'0"						
	water standing RL 5·64' 27/7/44				x	72		57	20·04	·68	{·98 ·22	31·23	46·
						73 (cuttings)		36	20·10	1·40	{·76 ·08	31·06	46·
10		H.W.S.		Hole reduced at 10'									
				Dolomite	x	74		62·5	20·15	·40	{·69 ·35	31·40	46·
						75 (cuttings)		28	19·96	1·26	{·58 ·42	31·23	46·
20		L.W.S.					22'0"						
	water lost 25'0"		25'0" 25'7"	Clay & dolomite fragments	x	76		61	23·20	·86	{·67 ·65	28·98	45
						77 (cuttings)		100	23·70	·88	{·36 ·60	28·60	45·
30							31'0"						
				Dolomite	x	100		100	20·88	·84	{·73 Tr	31·34	4
40					x	101		100	20·33	1·12	{·80 Tr.	31·68	45·8
50				Hard dolomite	x	102		90	18·72	4·02	{·75 ·73	30·63	44
60									1169·30	76·26	52·31	1761·59	
				To 60' - i.e. 57' core — Weighted average x cores					20·51	1·34	·92	30·90	
70				To 50' - i.e. 47' core — "					20·89	·77			

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DRILL HOLE REPORT

BORE B 3

Bearing: Vertical
Locality: Watson's Bend - Smithton
Depression: ....
Position: Grid B 3

Surface R.L. 10·88'

Date: 11/8/44.

Water cut & stands	R.L.	Depth	Description	Sample No.	Sample From .. to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 / Al_2O_3	Analysis CaO	Analysis Ig.Loss
water standing R.L. 7·38' 23/8/44	10·88	4'0"	Sand								
			S131A Original Sa. shewing sand contamination; S131B Coarse material screened from part of S131A; All crumbly	131	5'0"	Broken material from hole	131A 17·38; 131B 18·11	9·48; 9·48	1·57 / 2·01; 1·45 / 1·91	28·21; 27·44	41·[illegible]; 41·[illegible]
	H.W.S.		S132A Original Sa.; S132B Screened Sa.	132	16'0"		132A 18·52; 132B 19·74	4·88; 4·52	1·50 / 1·14; 1·38 / 1·10	29·66; 28·80	43·[illegible]; 44·[illegible]
water lost 15'0"	lost	x		138	17'4"	core 94	17·42	5·02	·95 / 3·98	29·63	42·[illegible]
			dolomite - but								
	L.W.S.		S133A Original Sa.; S133B Screened Sa.	133	27'0"		133A 18·73; 133B 20·27	4·88; 2·88	·97 / 1·35; 1·13 / 1·03	30·15; 29·47	43·7; 45·0
			S141A + 142A - Orig. Sa.; slightly harder	141	30'0"	cuttings	141A, 142A 18·70	5·60	·88 / 1·92	29·23	43·[illegible]
			S141B + 142B - Fraction +20#	142	33'0"	c'ings	141B, 142B 18·81	4·44	·81 / 2·09	29·53	44·[illegible]
		x		139		core 60	18·44	6·42	·74 / 2·06	29·4[illegible]	[illegible]
			in sections		40'0"						
			S143A + 144A Orig. Sa	143	44'0"	c'ings	143A, 144A 18·67	7·24	1·07 / 1·23	[illegible]	43·2[illegible]
			S143B + 144B Fraction +16#	144	49'0"	c'ings	143B, 144B 16·17	6·62	1·07 / 4·71	28·41	42·[illegible]
			marked "X"								
			S145A + 146A Orig. Sa	145	51'0"	c'ings	145A, 146A 15·04	15·46	2·63 / 4·93	24·10	37·[illegible]
			S145B + 146B Fraction +30#	146	55'0"	c'ings	18·12	8·50	1·17 / 3·47	27·51	41·23
			S147A Original Sa.; S147B Fraction +50#	147		c'ings	147A 13·80; 2 19·68	20·50; 12·08	3·51 / 5·65; 1·84 / 1·33	21·68; 25·72	34·85; 39·74
		x	Undetermined green mineral about here	140	60'0"	core 10	19·34	2·86	·60 / 1·48	30·74	45·07
			Mean weighted original cuttings and core samples				17·90	6·83	·98 / 2·06	28·45	42·23
			Mean weighted coarse fractions of original cuttings and core samples (excluding 147B)				18·56	5·55	1·02 / 2·34	28·93	43·4[illegible]

THE BROKEN HILL PROPRIETARY COY. LTD. 880019

018 DRILL HOLE REPORT BORE B4

Bearing: Vertical — Locality: Watson's Bend

Depression: .... — Position: Boring Grid - B4

R.L. of surface 10·12'

Date: 4/9/44

Water cut & stands	R.L.	Depth	Description	Sample No	From – to feet	% core recovery	MgO	SiO_2	Fe_2O_3 / Al_2O_3	CaO	Ig.Lo
water standing R.L. 5·12 13/8/44	10·12		Sand								
	0·12				10'						
			Surface sand seen?	190	10'–12'		18·93	3·82	·90 / ·86	30·11	45·1
			No surface sand seen	191	12'–16'		18·25	7·42	·97 / ·95	28·84	43·3
			" " "	193	16'–20'		19·10	4·28	1·53 / 1·87	29·32	43·7
			Surface sand seen	194	20'–24'		19·19	1·78	1·33 / ·77	30·75	45·4
			No surface sand seen	195	24'–28'		20·00	4·08	1·37 / ·55	29·60	4[illegible]
			crumbly								
			Surface sand seen	196	28'–32'		21·43	2·96	·75 / ·57	29·93	44·[illegible]
			dolomite								
				197	32'–48'		21·16	2·91	·87 / ·73	29·9[illegible]	[illegible]
				198	48'–58'		21·36	2·64	·78 / ·80	29·85	4[illegible]
	49·88	58'	some hard dolomite	199	58'–60'	50%	19·78	5·46	·72 / ·64	29·44	[illegible]
			From 10' to 60' Weighted average				20·43	3·47	·98 / ·83	29[illegible]	

Ground water not cut and drilling water not lost

all sampled, except No. 199, are cuttings

019

THE BROKEN HILL [illegible]

DRILL HOLE REPORT

880020

BORE B 4A

Bearing Vertical

Depression

Locality Watson's Bend - Smithton

Position 9 feet North of Grid B4

Surface R.L. 10.[illegible]

Date 20/10/44

Water cut & stands	R.L.	Depth	Description	Sample No	Sample From to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 Al_2O_3	Analysis CaO	
water stands	10.72	1'6"									
		10'0"	Yellow Sand								
	H.W.S.	12'0"	Yellow clay and sand, with dolomite pebbles								
		13'4"	Brown clay with dolomite pebbles		13'4"						
		16'0"	Crumbly dolomite	200		36	19.15	3.28	1.0[illegible] / 1.05	[illegible]	[illegible]
		16'6"	Hard dolomite		16'6"						
	L.W.S.	19'0"	Fawn coloured clay		19'0"						
				201		40	18.98	2.18	1.53 / .91	30.49	
			Core diam. 2⅛"		24'0"						
				202		41	19.00	2.42	1.12 / .94	30.[illegible]	
					29'0"						
Water lost throughout			Crumbly dolomite, some visible qtz. in places	203		38	18.98	2.[illegible]	[illegible]	30.49	45
					33'6"						
				204		41	18.84	6.48	[illegible]	28.38	4[illegible]
				205	36'0" 37'0"	78	19.88	1.40	[illegible]	30.33	4[illegible]
			Core diam. reduced to 1⅝"	206	37'9"	52	19.31	4.70	[illegible]	29.19	[illegible]
				207		55	20.13	2.4[illegible]	[illegible]	[illegible].00	45
				208	42'0" 42'6"	78	19.37	3.60	[illegible] / .80	30.6	45
				209		48	18.83	3.20	1.5[illegible] / 1.41	30.33	45
		46'0"	core chip samples		46'0"						
			Hard dolomite, no visible qtz.	210		92	19.25	3.60	[illegible]	[illegible]	[illegible]
		52'0"			52'0"						
			Crumbly dolomite	211		29	19.05	3.84	.83 / 1.57	2[illegible].64	[illegible]
			Core diam. reduced to 1⅛"		56'0"						
			core samples	212		25	18.53	3.58	.9[illegible] / 1.51	[illegible]	45.[illegible]
		60'0"			60'0"						
			Weighted average 44'2"				19.04	3.22	.4[illegible] / 1.1[illegible]	30.40	45.2

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020

DRILL HOLE REPORT

BORE B5

Bearing Vertical

Depression

Locality Watson's Bend — Smithton

Position Grid B5

Surface R. L. 8·8'

Date 21/11/4[illegible]

Water cut & stands	R.L.	Depth	Description	Sample No.	Sample From - to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 Al_2O_3	Analysis CaO	Analysis Ig.Lo
	8·8'		Sand								
		8'									
		11' 0"									
			Basalt dyke								
		31' 6"	Fine gr. light grey, shaley dol.		31' 6"						
				B5 1.			19·44	2·48	{·85 / 1·65	30·[illegible]	45·5
			" " dark grey, harder dol. minute trace FeS_2 and white carb. No vis. qtz.		40' 0"						
			" " trace FeS_2 on rough face or fracture	B5 2			19·49	1·64	{·58 / 1·38	[illegible]	[illegible]
					47' 0"						
			small blebs white carb.	B5 3			19·28	1·52	{·65 / ·81	31·03	46
			somewhat brecciated. No visible quartz		51' 0"						
			Fine gr. to waxy, grey dolomite. hackly fracture slightly shaley No vis. qtz	B5 4			19·37	2·60	{·72 / 1·44	30·22	45·4
		60' 0"			60' 0"						
			Weighted average 28·5'				14 4	2·17	{·54 / 1·40	3[illegible]	[illegible]

021 THE BROKEN HILL PROPRIETARY COY. LTD. 880022
DRILL HOLE REPORT

BORE B6

Bearing Vertical

Depression

Locality Watson's Bend Grid

Position Grid Position B6

Water cut & stands	R.L.	Depth	Description	Sample No.	Sample From - to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 / Al_2O_3	Analysis CaO	Analysis Ig.L.
			Sand								
		7'0" – 9'0"	Dark grey, fine grained dolomite	1	7'0" – 9'0"	100%	18.81	3.64	1.14 / 2.12	30.08	44
		9'0" – 13'0"	do.			dry boring					
		13'0" – 20'0"	Dark grey, fine grained dol., brecciated in part.	2	13'0" – 20'0"		18.76	6.12	1.56 / 2.10	29.44	41.[illegible]
		20'0" – 30'0"	Dark grey, fine grained dol., brecciated throughout, traces of pyrite	3	20'0" – 30'0"		18.83	5.92	1.57 / 2.81	28.32	42
		30'0" – 39'0"	do.	4	30'0" – 39'0"	wet boring 100%	19.13	6.04	1.42 / 2.84	28.6[illegible]	
		39'0" – 49'0"	do. Last few feet harder and more coarsely crystalline.	5	39'0" – 49'0"	dry boring 39'–41'	19.26	3.58	1.14 / 2.72	[illegible]	[illegible]
		49'0" – 60'0"	Basalt								
			Weighted average 7'–49'				18.98	5.10	1.37 / 2.44	29.21	42.7[illegible]

THE BROKEN HILL PROPRIETARY COY. LTD.

022

DRILL HOLE REPORT

880023 BORE C 1½

Bearing Vertical Locality Watson's Bend - Smithton

Depression Position Grid C1½

Date 16/6/45

Water cut & stands	R.L.	Depth	Description	Sample No.	Sample From - to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 Al_2O_3	Analysis CaO	Analysis Ig.Lo
	5·8'		Sand								
		14'0"	Fine cuttings, some sand, discarded								
		15'0" – 20'0"	Light grey, finegrained Xalline dolomite, darkened by organic matter 18'-19'.	Sa. 1.	15'0" – 20'0"		20·87	·18	{·31 ·20	31·48	46·8
		20'0" – 30'0"	Light grey to light brown, fine-grained Xalline dol.	Sa. 2	20'0" – 30'0"	Dry bored 100%	20·95	·17	{·31 ·22	31·4[illegible]	46·3
		30'0" – 40'0"	do. with irregular fine veinlets of white secondary carbonates	Sa. 3	30'0" – 40'0"	Wet bored except 31'-34'	20·90	·26	{·30 ·20	[illegible]	46·5[illegible]
		40'0" – 50'0"	do. again irregular white veinlets	Sa 4	40'0" – 50'0"	Wet bored	20·84	·13	{·26 ·18	[illegible]·48	46·59
		50'0" – 60'0"	do. irregular veinlets and minute trace pyrite btwn 54' and 55' 58'-60' - soft waxy dolomite	Sa. 5	50'0" – 60'0"	Bored wet and dry	21·00	·18	{·30 ·21	31·[illegible]	46·[illegible]
			Weighted Av. (15' - 60')				20·92	·18	{·30 ·20	3[illegible]	

THE BROKEN HILL PROPRIETARY COY. LTD.

023

DRILL HOLE REPORT 880024 BORE C2½

Bearing ...Vertical... Locality ...Watson's Bend – Smithton.........

Depression.............. Position ....Grid C2½.............................

Date 11/4/45

Water cut & stands	R.L.	Depth	Description	Sample No.	Sample From – to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 / Al_2O_3	Analysis CaO	Analysis Ig.Loss
	9.2'		Sand & pebbles of chert								
water stands →		17'0" 18'0"	First solid dolomite - sand contamination. 3½" diam core →	C2½ 17'-18'	17'0" – 18'0"	100%	17.60	21.74	2.87 / 1.35	23.35	32[illegible]
		21'0"	Light grey dol., very fine grained. Small amount limonite staining along joints. Trace of pyrite. 3" diam core →	C2½ 18'-21'	18'0" – 21'0"	D.D. chips	18.58	7.00	2.50 / 2.03	25.[illegible]	[illegible]
		27'0"	Soft, light grey dolomite mud and grit.	C2½ 21'-27'	21'0" – 27'0"	Dry boring 100%	19.07	12.12	2.01 / 3.49	25.29	
		33'0"	Soft grey dolomite mud + grit. Somewhat darker in colour than above.	C2½ 27'-33'	27'0" – 33'0"	Dry boring 100%	18.21	11.74	2.00 / 3.4[illegible]	[illegible]	
		36'0"	1⅞" diam core → Fine grained dolomite, secondary carbonate + limonite staining. Brecciated + harder than above → 2⅜" diam core	C2½ 33'-36'	33'0" – 36'0"	D.D. chips	18.20	11.86	.68 / 2.12	[illegible]	
		44'0"	Soft light grey dolomite mud + grit.	C2½ 36'-44'	36'0" – 44'0"	Dry boring 100%	19.44	11.72	1.56 / 1.77	[illegible]	
		46'0"	do. 1⅞" diam core →	C2½ 44'-46'	44'0" – 46'0"	Dry boring 100%	19.31	9.06	2.31 / 2.63	[illegible]	
		49'0"	Soft brownish grey dol. mud + grit	C2½ 46'-49'	46'0" – 49'0"	Dry boring 100%	19.27	10.32	1.88 / 2.32	[illegible]	
		52'0"	⅞" diam core → do.	C2½ 49'-52'	49'0" – 52'0"	Dry boring 100%	19.25	9.22	1.73 / 2.04	[illegible]	
		55'0"	Finegrained grey dol., much chert + much pyrite.	C2½ 52'-55'	52'0" – 55'0"	D.D. chips	17.30	13.56	.72 / 2.36	[illegible]	
		60'0"	Soft light grey dol. mud + grit, much chert.	C2½ 55'-60'	55'0" – 60'0"	Dry boring 100%	19.46	7.06	1.52 / 2.34	28.0[illegible]	[illegible]
			Weighted average 18'–60' (i.e. 42' core)				18.88	10.65	1.48 / 2.50	26.66	39.6

880025

DRILL HOLE REPORT

024

BORE Eo

Bearing Vertical

Locality Smithton, Tas.

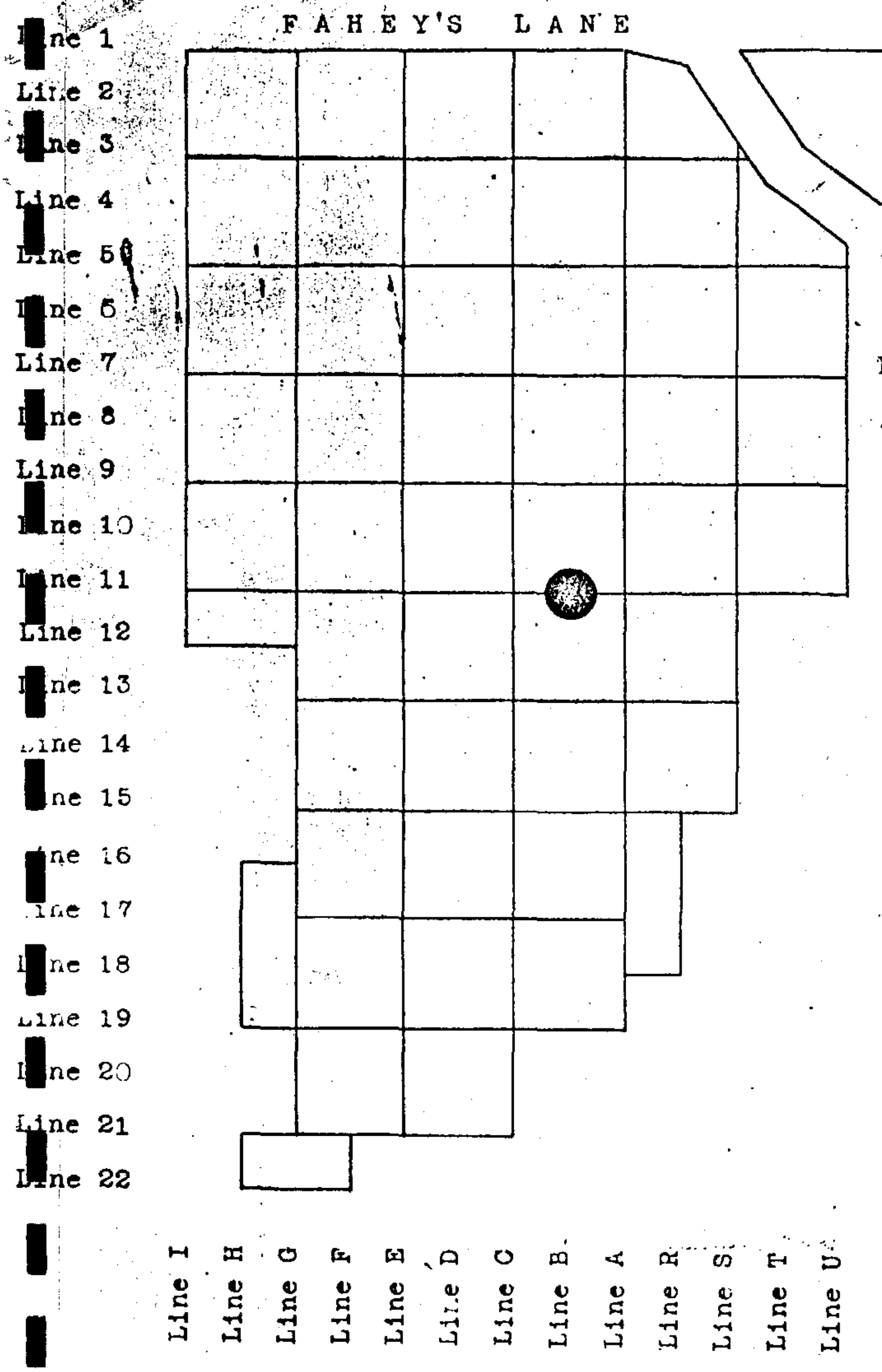
Depression

Position 335' W. and 920' S. of Cl on Boring Grid.

(25/8/45)

Water cut & stands	R.L.	Depth	Description	Sample No.	From - to feet	% core recovery	MgO	SiO_2	Fe_2O_3 Al_2O_3	CaO	Ig.L.
Driller reported watertight hole to 70'. 14/8/45	37'		Sand								
		30'0"	} a 1" abraded nodule dark silica. Core diam $1\frac{1}{8}$" throughout		30'0"						
			Fine textured, grey dolomite, bedding 40° to 45°. Cleavage or joint planes nearly vertical	Sa. Eo. 30'-40'			20·72	·56	{ [illegible] ·35	[illegible] 20	
		40'0"			40'0"						
			Fine textured grey dolomite, bedding 40°, cleavage almost vertical. No visible silica.	Sa. Eo. 40'-50'			20·84	·24	{ ·35 ·39	31 [illegible]	
		50'0"			50'0"						
			do.	Sa. Eo. 50'-62'			21·00	·25	{ ·43 ·31	31·20	
		62'0"	62'-63' white weathered honeycombed face - may be evidence of fracture. 63'-70' dolomite harder & lighter in colour, with grey dolomite streaks on bedding of about 20°.	Sa. Eo. 62'-70'	62'0"		21·07	·34	{ ·50 ·32	[illegible]	
		70'0"			70'0"						
			Weighted Av. 40' (30'-70')				20·40	·34	{ ·53 [illegible]	31·25	

025



BROKEN HILL PROPRIETARY

DOLOMITE - TAS

IRISHTOWN NORTH

Position of No.1 D.D.H

8

Scale

1" = 3ch.

026

DRILL HOLE REPORT **880027** BORE Irishtown North No I

Bearing Vertical. Locality Irishtown North – at point B11

Depression — Position on Boring Grid.

Hole	Water cut & stands	R. L.	Depth	Description	Sample No	Sample From – to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 / Al_2O_3	Analysis CaO	Analysis Ig. Lo
				No core								
			5'0" – 6'0"	Grey, finegrained dol. chips 1 chip quartz (washed sa)	Sa. 1	5'0" – 6'0"	1.52	20·88	·93	·25 / ·71	31·05	46·
10			10'0"	Brecciated grey, white, and powdery dolomite.	Sa. 2	6'0" – 10'0"		21·04	·56	·25 / ·49	31·21	46·
			17'0"	Grey, finegrained, dolomite chips, – no visible quartz	Sa. 3	10'0" – 17'0"		21·04	·45	·26 / ·73	31·05	46·3
20				do.	Sa. 4	17'0" – 25'0"		21·08	·86	·16 / ·55	31·06	46·
			25'0" – 27'0"	Brecciated core, fairly fine (siliceous!)	Sa. 5	25'0" – 27'0"		20·75	2·96	·22 / 1·18	30·02	44·
30			35'0"	Grey dolomite chips – quartz seam at 24'–30', but in 24'–30' section less than 1% white quartz fragments distinguishable	Sa. 6	27'0" – 35'0"		21·00	1·85	·22 / ·98	30·50	45·
40			44'0"	Rather lighter grey dolomite chips – no quartz	Sa. 7	35'0" – 44'0"		21·31	·58	·17 / ·93	30·98	45·8
			48'0"	Grey, finegrained, dol. chips – some quartz present, several percent between 46' and 48'.	Sa. 8	44'0" – 48'0"		21·43	·50	·21 / ·81	30·95	[illegible]
50			53'0"	Light grey dol. chips – no visible quartz	Sa. 9	48'0" – 53'0"		19·61	7·72	·21 / 1·21	28·63	4[illegible]
			57'0"	Medium grey dol. chips – fine grained	Sa. 10	53'0" – 57'0"		20·88	·88	·72 / ·51	30·45	46·3
60			67'0"	Medium grey dol. chips – fine-grained	Sa. 11	57'0" – 67'0"		20·86	·41	·36 / ·82	31·01	46·4
70			77'0"			67'0" – 77'0"						

027 DRILL HOLE REPORT 880028 BORE Irishtown North No.1 (contd)

Bearing Vertical. Locality Irishtown North
Depression .... Position B11 on Boring Grid

Water cut & stands	R.I.	Depth	Description	Sample No	Sample From - to feet	% core recovery	MgO	SiO_2	Fe_2O_3 / Al_2O_3	CaO	Ig.L
		70			67'0"						
			Light grey dol. - fine grained	Sa. 12			20·95	1·27	{·36 ·76	30·77	45
		77'0"			77'0"						
80											
			" "	Sa. 13			21·18	2·20	{·27 ·33	30·45	45
		87'0"	White carbonates in grey dol. from 87-91'. At 89' is ½" of quartz.	Sa. 14	87'0"		20·24	5·88	{·29 ·43	29·33	43
90											
		93'0"			93'0"						
			Tiny fragment quartz at 97-98'. Finegrained, light grey dol.	Sa. 15			21·20	1·50	{·36 ·78	30·45	45
100											
		103'0"			103'0"						
			Blue-grey fresh dolomite + some creamy (semi-weathered) chips up to ¼"	Sa. 16			20·81	2·08	{·72 ·56	30·45	45·
110		110'0"			110'0"						
			White to creamy semi-weathered dolomite. Chips can be crumbled in the hand.	Sa. 17			20·63	1·68	{·57 ·36	30·93	45·
120		119'0"			119'0"						
			Cream-coloured dolomite. Chips from 3/8" downwards.	Sa. 18			20·41	2·44	{·50 ·35	30·77	45·3
		129'0" 130'0"	Three inches essentially quartz. ~~Dolomite missing - probably ground up.~~	Sa. 19	129'0" 130'0"		—	19·03 on 3"; 7·0 on 12"		—	—
130											
			Cream coloured dolomite with small blue-grey fragments, all under 3/16" and most under 1/10" except 1" core in 136-137'.	Sa. 20			20·53	2·44	{·36 ·48	30·77	45·2
140		140'0"	47·67		140'0"						

DRILL HOLE REPORT 880029 BORE Irishtown North No (contd)

028

Bearing Vertical Locality Irishtown North

Depression Position B11 on Boring Grid

Water cut & stands	R.L.		Depth	Description	Sample No	Sample From - to feet	Sample % core recovery	Analysis MgO	Analysis SiO_2	Analysis Fe_2O_3 Al_2O_3	Analysis CaO	Analysis Ig.Lo
			140'–150'	Cream-coloured dolomite with increasing small blue-grey fragments. All under 1/8" and most under 1/16".	Sa. 21	140'–150'		20·67	1·72	{ ·46 ·52	30·93	45·5
				Weighted Average:								
				5'–110'				20·90	1·78	{ ·32 ·72	30·56	45·5
				110'–150' (taking 129'–130' as 3" SiO_2 and 9" dol. normal).				20·55	2·21	{ ·47 ·43	30·85	45·4
				5'–150' (weighted for length of samples)				20·83	1·90	{ ·36 ·64	30·64	45·5
				Note: From 110'–150' breaks to very small particles								

029
RIVER
High Water Mark
Ti-tree Swamp
Sand
Flat Depression
Soil and Dolomite Flat Depression
Dense Ti-tree Scrub
Soil Colouring
Creek
WEDGE STREET
LINE Z
Z2
LINE A
A1½
A2½
Dolomite
Quarry in Dolomite
LINE B
B0
B1
B2
B3
B4
B5
B6
CROWN LAND TEMPORARILY RESERVED
with apparently no Dolomite
Outcrops
Sandy Covering
Remains of Lense Fence
Thin Sand Covering
Thick Scrub Depression
LINE C
C1½
C2½
LINE 3
LINE 4
LINE 5
LINE 6
LINE 7
LINE 8
LINE 9
LINE 10
LINE 11
STREET
E0
880030
SMITHTON
DOLOMITE
OUTLINE
BORING
Legend
Dolomite Outcrops

APPENDIX 2

Analyses of Dolomite from Bulletin 41

(Geol. Surv. Tas. 1934)

031

TABLE NO. 13.

Analyses of Dolomite Samples.

(Expressed as Percentages.)

Raw Dolomite.													Calcined Dolomite.			
Sample No.	Reg. No.	SiO_2	FeO and Fe_2O_3		Al_2O_3	CaO	MgO	As	P_2O_5	C	CO_2 By Ign. Loss.	SO_3	Calcines.	SiO_2	CaO	MgO
1	1819	0.08	0.24*		0.36	31.12	21.48	M.T.	T.	0.02	46.73	T.T.	52.74	0.16	58.50	40.44
2	1820	0.20	0.24*		0.48	31.22	21.64	M.T.	T.	0.166	46.14	T.	52.72	0.06	58.34	41.53
3	1821	0.12	0.12*		0.36	31.32	21.50	M.T.	T.	0.032	46.68	T.	52.73	0.06	58.34	41.06
4	1822	0.08	0.12*		0.48	31.22	21.56	T.	T.	0.028	46.64	T.	52.78	0.06	58.21	41.52
			Fe_2O_3	FeO												
5	1823	0.08	0.08	N.D.	0.40	31.60	22.22	M.T.	T.	0.03	46.84	N.D.	52.85	‡0.04	58.03	40.74
6	1824	4.60	0.37	0.84	3.18	28.70	19.72	Nil	0.029	0.20	43.60	N.D.	56.37	‡9.63	49.80	36.13
7	1825	4.88	0.44	0.78	3.06	28.30	19.76	Nil	0.03	0.25	43.31	N.D.	56.36	‡10.16	51.00	34.84
8	1826	4.80	0.47	0.87	3.56	28.64	19.32	Nil	0.03	0.25	43.35	N.D.	56.40	‡9.22	49.60	36.09
9	1827	3.80	0.29	0.74	3.38	28.40	20.36	Nil	0.028	0.35	43.73	N.D.	56.31	‡9.10	48.99	37.05
10	1828	5.08	0.35	0.71	3.86	28.00	19.20	Nil	0.035	0.25	43.63	N.D.	57.13	‡11.26	48.18	35.92
11	1829†	6.64	0.76	1.26	8.24	28.20	14.62	Nil	0.054	0.65	40.75	N.D.	58.61	‡14.86	46.33	29.79
12	1830	2.12	0.71	1.03	3.54	29.80	19.40	Nil	0.04	0.35	44.73	N.D.	54.93	‡5.86	52.96	36.34
13	1831	5.52	0.40	0.94	3.68	28.00	19.98	Nil	0.05	0.40	42.48	N.D.	57.16	‡12.12	47.54	35.50
14	1832	3.28	0.15	0.38	0.42	30.40	21.56	Nil	0.06	0.05	44.83	N.D.§	54.79	‡7.28	54.00	37.33
15	1833	0.52	0.65	0.71	0.56	31.20	21.36	Nil	0.10	0.14	46.46	N.D.	53.35	‡1.02	57.42	38.77

Phosphate is soluble in hydrochloric acid. Oxides of iron in Nos. 1 to 5 soluble in hydrochloric acid, and in Nos. 6 to 15 probably a small proportion is insoluble in hydrochloric acid.

* Estimated that the oxides of iron contain approximately 65 per cent. Fe_2O_3

† TiO_2 — 0.20.

‡ Insoluble.

§ Contains a trace of iron pyrite.

Sample No.

1. Across 20 feet of the north-west face in western quarry, west of Blackwood Bridge. Sample of clean dolomite only. Crystalline type.
2. Across 30 feet over total width of 60 feet. North face of northern quarry, west of Blackwood Bridge. Sample of clean dolomite only. Crystalline type, partly weathered in places.
3. Picked from 10 feet x 10 feet x 3 feet heap of dolomite obtained from shallow pits, West of Blackwood Bridge. Clean material only. Crystalline type (some soft, due to weathering).
4. Picked from 10 feet x 25 feet x 3 feet heap of dolomite obtained from shallow pits, west of Blackwood Bridge. Clean material only. Crystalline type (some soft, due to weathering).
5. Picked from 10 feet x 25 feet x 3 feet heap of dolomite obtained from shallow pits, west of Blackwood Bridge. Clean material only. Crystalline type (some soft, due to weathering).
6. Railway-cutting, north of Edith Creek, 10 feet vertical sample. Iron stains on joint-planes. Fine-grained type.
7. Three chains north of No. 6. Across 10 to 12 feet. Iron-stained on joint-planes. Fine-grained type.
8. Half a chain north of No. 7. Across 6 feet. Iron stains on joint-planes. Fine-grained type.
9. Quarry at intersection of road and railway, north of Edith Creek. Across 12 feet at west side. Jointed, weathered, and stained material. Fine-grained type.
10. Quarry at intersection of road and railway, north of Edith Creek. Across 8 feet at east side. Jointed, weathered, and stained material. Fine-grained type.
11. Quarry near Junction of Duck River and Mowbray Creek. Across 12 feet on east side. Fine-grained type, with oolitic band. Clean material.
12. Quarry near Junction of Duck River and Mowbray Creek. Across 10 feet on west side. Fine-grained type, with oolitic band. Clean material.
13. Quarry 30 chains south-west of Nos. 11 and 12. Across 10 feet. Fine-grained. Fairly clean material.
14. Cutting, Wiltshire-Irishtown railway, 20 chains east of Smithton-Irishtown road. Across 200 feet. Chiefly fine-grained type. Jointed and stained.
15. Grab sample. Watson's Bend. Crystalline type.

032

880033

APPENDIX 3

Geochemical & Geophysical Investigations of Volcaniclastics in E.L. 43/84

by

C. Whitehead

033

880034

EXPLORATION LICENCE No 43/84

SMITHTON - NORTH WEST TASMANIA

INVESTIGATIONS FOR

PAN AUSTRALIAN MINING LTD

Cliff H. Whitehead

July, 1987

034

880035

C.H. WHITEHEAD GEO - TECHNICAL SERVICES PTY. LTD.

P.O. Box 177
BURNIE
Tasmania 7320

3 East Cam Road
BURNIE

PHONE (004) 312334

20th July, 1987

PREAMBLE - SCOPE OF WORK

On 26th May, 1987, the undersigned was requested by Mr. R.J. MORRISON, Chief Geologist, of Pan Australian Mining Ltd. to undertake a study of the mineral potential of Exploration Licence 43/84 located in the Smithton district of N.W. Tasmania.

The study was to include running a cyanide leach gold stream sediment sampling programme, and an evaluation of a magnetic anomaly in the northern western section of the E.L.

The principal objective of the study was to evaluate the possibilities of profitable gold deposits occurringin the area, plus evaluate the overall potential of the ground for other possible mineralisation.

The above work was carried out during June 1987, and the following report summarises the results of completed field studies and evaluation of the E.L. area.

Cliff Whitehead

Cliff H. Whitehead.

035

880036

E.L. 43/84 - SMITHTON

TABLE OF CONTENTS

FIGURES

Plans

036

STUDY OF THE MINERAL POTENTIAL OF EXPLORATION LICENCE 43/84

SMITHTON DISTRICT - N. W. TASMANIA

1. INTRODUCTION

As part of Pan Australian Mining Ltd previous commitments to Mineral Holdings Australia Pty. Ltd., a geotechnical study of the mineral potential of E.L. 43/84 in the Smithton district of N. W. Tasmania was completed during June 1987

Priority objectives of the work was to evaluate the possibilities of gold deposits in the area, plus an assessment of any other mineral potential.

During December 1985, Douglas McKenna & Partners Pty. Ltd., had been commissioned by Pan Australian Mining Ltd. to undertake a preliminary inspection of E.L. 43/84. Emphasis was to be placed upon the examination of two dolomite occurrences previously reported as anomalous in gold values. Their subsequent inspection indicated this anomalism to be unfounded, and in addition, the statement was made that the there appeared little likelihood of any gold potential in the immediate E.L. area. However, if this statement was to be quantified, it was suggested a regional cyanide leech stream sediment programme should be implemented.

This recommended sampling programme for gold, and other geochemical investigations, have been completed during the current evaluation.

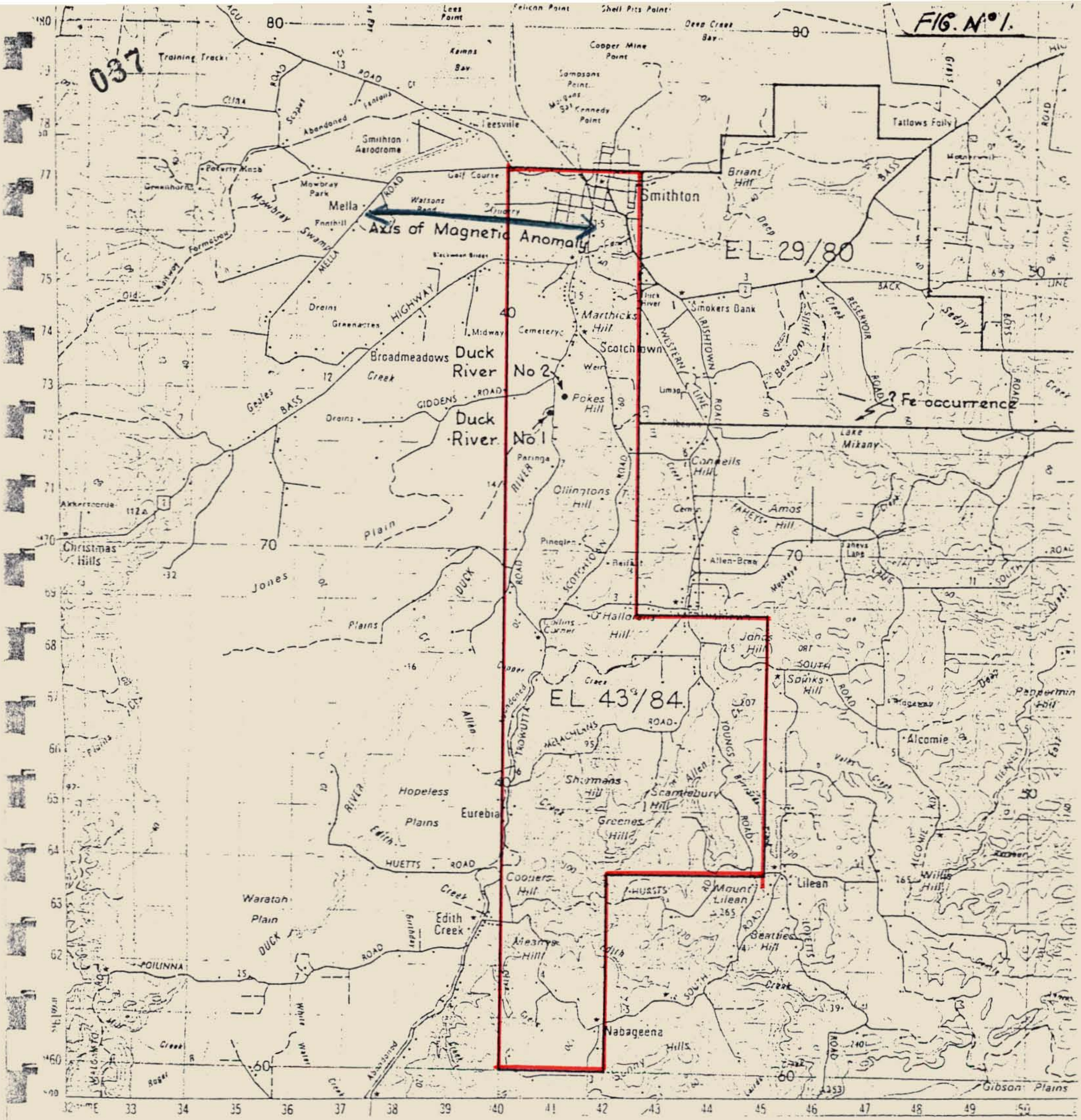
To substantiate a reported airborne magnetic anomaly in the northwestern corner of the E.L., follow-up ground magnetic surveys of the area in question were also completed.

2. TENEMENT AREA

Exploration Licence 43/84 occurs immediately south of Smithton (Figure 1). It embraces an area of 39sq kms, and in shape is narrow (2km to 5km width), and elongated in a N-S direction over a total distance of 17.5Kms.

The area is primarily arable farm land centred around the communities of Lileah, Nabageena, Edith Creek and Eurebia, and as a consequence the E.L. is well serviced by both surfaced road and farm tracks.

On no occasion were there objections to enter private land or refusal to execute field examinations by either property owners or



Part of Circular Head Sheet 7916
1:100,000 Topographic Survey.

880038

5 cm

PAN AUSTRALIAN MINING LTD		
EL 43/84 SMITHTON, TAS.		
LOCALITY PLAN		
FIG N° 1.		
Prepared by: Douglas M^c Kenna and Partners Pty Ltd		
Date: Dec 85	Scale: 1:100,000	Plan No. SM - 01

occupiers.

The extreme western sections of E.L. 29/80 (contiguous to E.L. 43/84), also held by Mineral Holdings Australia Pty. Ltd. were also considered during the current study. As at 15th June 1987, ground to the immediate west and east of E.L. 43/84 was not covered by Exploration Licence tenements.

3. NATURE OF CURRENT INVESTIGATIONS

The current study included the following:

- review of past exploration work and geological literature available of the E.L. 43/84 area and surrounding environs.
- Appraisal of the areas geology, mineral potential, including on-site field inspections/examinations.
- geochemical investigations:
  - a) completion of a bulk sample cyanide leach stream sediment sampling programme, 40 samples, and analyses for Au.
  - b) collection of pan concentrate drainage samples, 40 samples and samples assayed for WO_3, Sn, Bi and As.
- geophysical studies. An on-ground inspection of an airborne magnetic anomaly was made, and grid ground magnetic surveys of the location was completed (4 grid lines, 1730 metres, readings at 5m intervals).
- result evaluation, report/plan preparation.

Total expenditures for the above work amounted to approx. $5,100.00

4. GEOLOGIC SETTING

The E.L. 43/84 occurs within the SMITHTON TROUGH ZONE exposing a series of NNE - SSW trending Cambrian sequences. These include siltstones, greywackes, pillowed spilitic lavas with associated pyroclastic rocks, reportedly of at least 1500m thickness, and stated to be Lower to Middle Cambrian status.

This Cambrian sequence grades conformably into underlying Upper ('younger') Precambrian and Lower Cambrian sediments (Smithton Dolomite).

The Western boundary of the E.L. approximately coincides with a Tertiary N.S. trending fault - supposedly the northerly extension of the TROWUTTA Fault Zone - however the greatest portion of this section of the E.L. area is masked by Quaternary or Tertiary/ Quaternary sediments. The 'hard rock geology' of the eastern - central sections of the E.L. are likewise masked by a cover of Tertiary basalt/sediments.

Plan PAS/1/87, scale 1:25,000, has been compiled from Tasmanian Geological Survey plans, and shows known geology of E.L. 43/84.

Exposures in the area would be classified as poor, swampy ground being developed especially over the younger Precambrian sequences, which are predominated by the Smithton Dolomite, a fine grained crystalline, thick bedded, light grey dolomite. These sequences are restricted to the vicinity of Irishtown (E section of E.L.) and the extreme S.E. portions of the region.

From east to west, the Cambrian sequences would be lithologically divisible into:-

- white quartzites
- grey, green quartzites, slates, greywackes
- a dolomite succession
- chert, breccias, tuffs, greywackes, breccia conglomerates
- slates, cherts, limestones

The regional trend is NNE, with dips to the west (20° - 70°).

No locations of metallic mineralisation are known to have been worked in the E.L. area.

5. GEOCHEMICAL INVESTIGATIONS

A - Stream sediment sampling on a regional basis was completed within the overall E.L. area and its bordering margins. For both sample cyanide leach tests, a total of 40 samples each weighing between 5 and 12.5kg were collected from the drainage system of the E.L. - for specific sample locations please refer to Plan No. PAS/2/87. The samples were submitted to AMDEL laboratories, Adelaide, and subjected to both cyanide leach analysis for Au - Code PM6. Results of Au values, recorded as ng/kg are tabulated in Table No. 1, and shown on Plan No. PAS/2/87. The results showed that 35 of the 40 samples recorded values below 1000ng/kg, the five exceptions (i.e. Au values in excess of 1000ng/kg) were all located in the top northern section of the E.L. area, immediately south of Smithton and in the vicinity of locations examined by Douglas McKenna & Partners Pty. Ltd.

Sample No. PA/S/8 recorded the maximum Au value of the current survey, namely 2150ng/kg, and was collected from drainage from O'Hallorans Hill. Immediately to the north, two additional samples, namely PA/S/5 and PA/S/6 - draining Ollingtons Hill had values of 1900ng/kg and 1650ng/kg respectively.

All these above mentioned samples (No's 8, 6 and 5) drain Cambrian (Ev) sequences, but similar strata to the south were barren in Au.

Samples collected from drainage transgressing Smithton dolomite sequences, both in the central and southern sections of the E.L., showed no gold anomalism.

The results of the overall bulk sample leach test programme would indicate little likelihood of gold mineralisation in the E.L. region.

B - Pan-concentrate samples were also collected from the same locations as the bulk stream sediment samples.

These were likewise submitted to Amdel, Adelaide and analysed for WO_3, Sn, As and Bi (detection limits 10, 4, 4 and 2ppm respectively) by Amdel Code XRF. X1.

No metallic heavy minerals were visible in any of the samples, and examination under ultra-violet light indicated nil fluorescence.

The results of this analytical work could also be described as negative, but individual values are shown on Plans PAS/3/87 (WO_3 and Sn values) and PAS/4/87 (Bi and As).

General Comments:-

WO_3 values:- only 9 of the 40 samples recorded values above detection limit (10ppm). Maximum value recorded was 160ppm - samples PA/S/8 and 36, both of which drain Cambrian siltstones/greywackes. No tungsten anomalism was recorded in samples drained from the Smithton dolomite sequence.

Sn values:- no cassiterite was visible. Only 11 of the 40 samples were above detection limit, no values above 50ppm and only 1 above 10ppm - namely PA/S/18 - 44ppm, a sample collected from drainage with Smithton dolomite service.

Bi values:- completely negative, only six samples above detection limit, maximum recorded being 10ppm - samples PA/S/26 and PA/S/10.

As values:- four samples recorded plus 50ppm, maximum 200ppm namely samples PA/S/15. The 'higher values' (i.e. above 50ppm) showed no special relationship to other 'high' gold values or to any specific stratigraphical - lithological units.

6. GROUND MAGNETICS

An airborne magnetite anomaly trend as delineated on Figure No. 1 was investigated on the ground. This anomaly was stated to be detected by E.Z. Company during regional surveys of an adjacent E.L. to the west.

The location of the anomaly is immediately south of the Smithton Football Club grounds, flat lying ground and covered by alluvial material.

Four north - south ground magnetic traverses, totalling 1730m, were run across the magnetic trend, lines being spaced at 300 metres intervals, and magnetic readings (expressed in gammas) taken at 5m intervals. Please refer to Figure No. 2 and Tables No. 2 and 3.

As can be seen from the table, no anomalous zones, signatures or spikes were recorded, and no further investigation in the area is warranted.

7. CONCLUSIONS - RECOMMENDATIONS

The results of the geochemical stream sediment work showed negative responses in recognising any gold anomalism. It is believed the pattern and nature of sampling, plus the actual method of Au analysis are completely sufficient to recognise any gold anomalism on a local and regional pattern within the E.L. area.

Supplementary pan concentrate sampling was likewise discouraging, reporting negative heavy mineral contents and negative WO_3, Sn, As and Bi values.

The identification of a reported airborne magnetic anomaly could not be made by a detailed ground magnetic surveys.

The above surveys - combined with a regional geological appraisal - do not classify the E.L. area in question as prospective either for gold mineralisation, or other mineral potential, and no further work could be justified or is recommended.

Cliff H. Whitehead.

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880044

FIG. N°2.

TASMANIA 1 : 25 000 SERIES

5 cm

= GRID MAGNETIC SURVEY. READINGS @ 5m INTERVALS.

= RECONNAISSANCE MAG SURVEY.

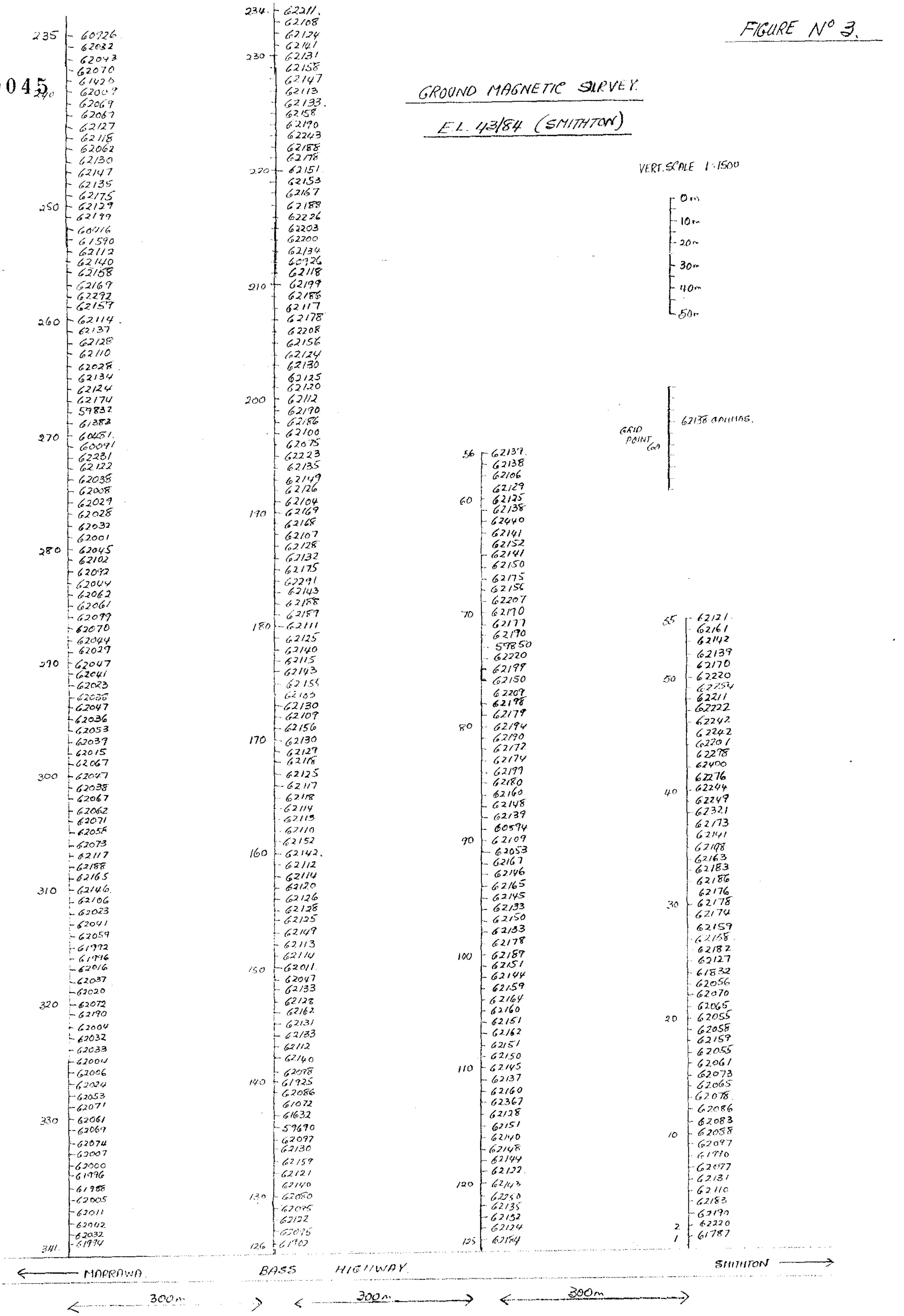
044

880045

FIGURE No 3.

GROUND MAGNETIC SURVEY.

E.L. 43/84 (SMITHTON)



REFER FIG No 2 FOR SPECIFIC LOCATION.

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PAN AUSTRALIAN MINING LTD.

EXPLORATION LICENCE 43/84 - SMITHTON

ASSAY RECORD SHEET

A - BULK STREAM SEDIMENT SAMPLES

Number of Samples	=	Forty (40)
Sample Numbers	=	PA/S/1 to PA/S/40
Analysis by	=	AMDEL (Adelaide) Report AC 4224/87
Type of Analysis	=	Code PM6 - Au Bulk Cyanidation, Furnace AAS
Plan Ref	=	PAS/2/87

SAMPLE No.		GOLD Au ng/kg	SAMPLE No.		GOLD Au ng/kg
PA/S/1	=	100	PA/S/21	=	500
PA/S/2	=	400	PA/S/22	=	450
PA/S/3	=	1000	PA/S/23	=	850
PA/S/4	=	1500	PA/S/24	=	350
PA/S/5	=	1900	PA/S/25	=	400
PA/S/6	=	1650	PA/S/26	=	250
PA/S/7	=	950	PA/S/27	=	250
PA/S/8	=	2150	PA/S/28	=	200
PA/S/9	=	450	PA/S/29	=	50
PA/S/10	=	550	PA/S/30	=	150
PA/S/11	=	550	PA/S/31	=	800
PA/S/12	=	250	PA/S/32	=	200
PA/S/13	=	350	PA/S/33	=	<50
PA/S/14	=	900	PA/S/34	=	400
PA/S/15	=	300	PA/S/35	=	300
PA/S/16	=	450	PA/S/36	=	300
PA/S/17	=	800	PA/S/37	=	150
PA/S/18	=	300	PA/S/38	=	400
PA/S/19	=	850	PA/S/39	=	150
PA/S/20	=	750	PA/S/40	=	150

046

880047

PAN AUSTRALIAN MINING LTD.

EXPLORATION LICENCE 43/84 - SMITHTON

ASSAY RECORD SHEET

A - PAN CONCENTRATE SAMPLES

Number of Samples	=	Forty (40)
Sample Numbers	=	PA/S/1 to PA/S/40
Analysis by	=	AMDEL (Adelaide) Report No. 4224/87
Type of Analysis	=	Code X1 - WO_3, Sn, Bi, As
Plan Ref No.	=	PAS/3/87 and PAS/4/87

SAMPLE No.		WO_3	Sn	Bi	As
PA/S/1	-	<10	<4	6	15
PA/S/2	-	<10	8	<4	11
PA/S/3	-	<10	<4	<4	7
PA/S/4	-	<10	<4	4	76
PA/S/5	-	<10	<4	<4	7
PA/S/6	-	<10	<4	<4	9
PA/S/7	-	<10	<4	<4	14
PA/S/8	-	160	8	<4	17
PA/S/9	-	50	<4	<4	4
PA/S/10	-	<10	<4	10	7
PA/S/11	-	<10	4	<4	7
PA/S/12	-	85	<4	<4	<2
PA/S/13	-	<10	6	4	9
PA/S/14	-	60	<4	8	24
PA/S/15	-	<10	8	<4	200
PA/S/16	-	<10	4	<4	43
PA/S/17	-	<10	<4	<4	150
PA/S/18	-	<10	44	6	38
PA/S/19	-	<10	<4	<4	39
PA/S/20	-	<10	<4	<4	6
PA/S/21	-	25	<4	<4	32
PA/S/22	-	<10	<4	<4	9

047

SAMPLE No.		WO_3	Sn	Bi	As
PA/S/23	–	<10	6	4	60
PA/S/24	–	<10	<4	6	19
PA/S/25	–	<10	<4	4	34
PA/S/26	–	<10	<4	10	46
PA/S/27	–	<10	<4	<4	19
PA/S/28	–	<10	<4	4	11
PA/S/29	–	<10	<4	<4	15
PA/S/30	–	<10	<4	<4	2
PA/S/31	–	<10	<4	4	7
PA/S/32	–	<10	<4	<4	43
PA/S/33	–	<10	4	<4	4
PA/S/34	–	10	<4	<4	40
PA/S/35	–	<10	8	<4	12
PA/S/36	–	160	4	<4	9
PA/S/37	–	45	<4	<4	20
PA/S/38	–	<10	<4	4	12
PA/S/39	–	50	6	<4	20
PA/S/40	–	<10	<4	<4	10
DTN	=	(10)	(4)	(4)	(2)

048

880049

APPENDIX 4

Status of Mineral Deposits of

Mineral Holdings Aust. Ltd.

by

Hudson Lees Associates

049

880050 CRT

HUDSON LEES ASSOCIATES

16 Hammersley Court
MT. ELIZA VIC. 3930
Tel: (03) 787-2907

17th July, 1987

Minerals Finance Ltd.,
Lower Ground Floor
53 Macquarie Street
SYDNEY N.S.W. 3000

ATTENTION: MR. L. FURLONG

Dear Sirs,

REPORT: MINERALS HOLDINGS AUSTRALIA LTD.
STATUS OF MINERAL DEPOSITS

As requested we have reviewed the status of the exploration and market/project development of the three major mineral leases held by Minerals Holdings Australia in N.W. Tasmania. This review has included a general appreciation of the Magnesium Metal Industry and the prospect for such development in Tasmania and/or Victoria.

In addition, we have summarised and commented upon the prospects for Quartzite and Dolomite/Magnesite processing industries. In this regard, we must emphasize that we are engineers, not geologists, and therefore have taken all assay reports at face value.

Finally, we would comment that each of the projects being promoted by MHA should be considered in detail as regards environmental impact, markets, materials processing and handling, and overall feasibility. This work would need to be supported by specific minerals testing and reserve substantiation, and could culminate in an overall strategy for development of these leases.

We trust that this report proves to be of assistance to you. Naturally, we shall be happy to answer any specific queries that you care to raise.

Yours faithfully,
for HUDSON LEES ASSOCIATES

Richard Hudson

Richard Hudson
C.Eng. M.I. Mech.E.
DIRECTOR

050

880051

HUDSON LEES ASSOCIATES

16 Hamersley Court
MT. ELIZA 3930

Tel: 787-2907

DEVELOPMENT OF QUARTZITE, DOLOMITE & MAGNESITE DEPOSITS N.W. TASMANIA

1.0 INTRODUCTION:

The exploration of Quartzite (EL 29/80 and EL 43/70(1)); Dolomite (EL 43/84) and Magnesite (EL 43/70(2)) deposits has reached the stage where detailed planning of new materials extractive and investigation into practical and profitable process industries should be commenced. To this end Messrs. Thomas (MHA) and Hudson (Hudson Lees Associates) attended the 1986 International Magnesium Conference in Los Angeles and followed by visits to Magnesium Metal, and Magnesite/ Dolomite Producers/Marketeers in France, England, Italy and United States.

Mr. Thomas attended the 1987 IMA meeting in Tokyo and also visited the Baymag Magnesite Mine in Alberta, Canada and Quartzite Importing Companies in West Coast USA.

This report summarises the status of the various projects based upon the above visits and review of relevant correspondence.

2.0 MAGNESIUM METAL

There is no doubt that recent development of higher strength, thin wall, corrosion resistant Magnesium Alloys (Mg-Zn-Cu-Mn) and associated Die Cast Technology at effective metal costs equal or slightly less than Aluminium has raised expectations of massive growth in magnesium metal production in the next few years (30% by 1991/2). The World's major motor car and motor cycle manufacturers have participated in the development of suitable alloys which also has appeal to gearbox, pump, and hydraulic transmission manufacturers.

Most of the producers of magnesium metal are planning expansion(s) of their existing capacity, and a new one step magnesite to Magnesium Hydroxide Process (MPLC) with significantly lower production cost potential; is planning to build four new 50,000 TPY plants located adjacent to suitable magnesite deposits in low energy/low labour cost countries. NW Tasmania is a possibility for one of these plants. Brasil, Turkey, Queensland and China are other possibilities. The existing metal producers employ either Magnatherm or Silicothermic processes and variants; using salt water brines, Dolomite and Magnesite as feed stocks. Opportunities will exist to supply raw or calcined Magnesite to these producers if quality and price is right.

Cont'd..2/

2.1 History of Magnesium Metal:

First produced in late 1940's with fluctuating demand over the following years. Last ten (10) years have averaged 1.9% growth. 1985 production was 230,000 Tons. It seems that poor corrosion protection and lack of metal availability have been controlling factors in low growth, i.e. no metal available for new demand. Price has been regarded as a neutral factor. (US$1.40/lb in 1987).

2.2 Projected Growth:

The international Magnesium Association projects growth in range 19% to 25% in next four years. Discussion with magnesium metal producers suggests that growth may exceed the IMA projection, certainly the new production being planned indicates this, as seen by IMA published data:

Producer	Approximate Production	Additional Production by 1991	
Norsk Hydro	40,000	50,000	Becancour
Pechiney	20,000		--
North West Alloys	20,000		--
Societa Magnesia	15,000	15,000	
Japan	6,000	10,000	
Metaleur	6,000	40,000	
Dow) Amax) Various US)	165,000		--
MPLC	--	250,000	
	272,000	375,000	

It is to be noted that Norsk Hydro have made a slow start with ther Becancour project and have made extensive process changes; Metaleur are reported to be moving slowly, and MPLC have had partner changes made, being ANC (Canada), and have made a start with their Alberta Plant.

In our view, the additional production forecast by 1991 can not be achieved. Plant construction and start-up times will preclude this.

Cont'd..3/

2.3 Metal Users: (Source IMA)

Magnesium metal is used as follows:-

Use	1985	1986	FORECAST 1991
Aluminium Alloys	53%	53.3%	48.9%
Die Casting	18%	12.8%	19.9%
Structural	2%	3.5%	3.8%
Furnace Protection/ Modular iron/ Desulphurisation/ Chemical	27%	30.4%	27.4%
	230,000 TONS	236,900 TONS	266,000 TONS

NOTE: Australian Aluminium producers use 12000/15000 TPY of magnesium metal for use in Aluminiun Alloys.

2.4 MPLC Planning:

MPLC are to build a 50,000 TPY plant at Calgary, Canada, with their new partners, A N C (Canada). It is understood that finance has been arranged.

The plant will be supplied electrical energy at 0.9¢ Canadian per kwh and receive substantial Canadian government guarantees.

MPLC plan to build at least four other 50,000 TPY plants.

(a) Brazil
(b) Turkey
(c) China
(d) Pacific Rim (could be NW Tasmania)

NOTE: At our meetings with MPLC it was said that Tasmania could be a better site than Calgary.

Laboratory samples of Tasmanian magnesite have been found suitable by MPLC and the CRA/MHA Joint Venture supplied a 60 Tonne sample of Arthur River Raw Magnesite to MPLC (Scunthorpe, U.K.) in September, 1986. This material is awaiting test in the 4 TPD Pilot plant. If the tests are suitable, MPLC and MHA have agreed to jointly undertake a feasibility study into the extent of suitable reserves of the mineral and construction of magnesium metal plant. The study would include consideration of a Chlorine Production plant which would also have the benefit of producing caustic soda as a by-product (used in manufacture of paper). The study would further include a metal diecasting facility to be carried out in conjunction with motor manufacturers.

Cont'd..4/

2.4 MPLC Planning: (Cont'd.)

It is anticipated that the feasibility study and subsequent environmental impact statements would take 12-24 months, and that a decision to build the plant would not be taken until the MPLC Calgary plant is in full production. Say 1990.

2.5 Basic Data for a M.P.L.C. plant is as follows:-

Ground area required = 30 - 40 acres
Site to be adjacent to fresh water (5,000 GPH).
Site to be adjacent to sea water for chlorine production.
Site to be adjacent to roads and possibly rail.
Plant requires 40 mw electric power rising to 100 mw during phased start-up.
Plant will employ 100 - 150 people rising to 500 - 600.
Plant has few environmental problems. There will be no solid effluent. Discharges to atmosphere are said to be clean and mildly aromic while discharge of scrubbing water will be mildly saline, (level less than sea water).

Sound levels will be within statutory requirements. It is anticipated that all primary and secondary raw materials reduction and sizing will be carried out adjacent to the Magnesite quarry face.

Capital Cost 300/400 million US $ (1986 Dollars).

2.6 Other Processes:

MHA Dolomite has been tested by both Metaleur (Brazil) and Societa Magnesia (Italy). Both companies have expressed interest in building a plant in NW Tasmania and no doubt would supply technology without equity. The Societa Magnesia process is highly regarded as producing very high purity magnesium.

Pechiney (France) would supply technology under licence and no doubt Norsk Hydro would also supply technology.

2.7 General Comments:

The Tasmanian Magnesites appear to be suitable for magnesium metal production by MPLC method although extent and consistency of reserves has yet to be defined. The Tasmanian Dolomite is also suitable for magnesium metal production by the Silicothermic and Magnatherm processes. All processes use considerable quantities of electrical power and Tasmanian Government have stated that they will supply power at competitive rates (subject to negotiation). A key factor in power price negotiations will be new jobs created per Megawatt of power required.

Cont'd../5

C. 054

880055

2.7 General Comments: (Cont'd.)

Aluvic (State of Victoria Aluminium Company) and State Electricity Commission of Victoria have expressed interest in establishing a Magnesium Metal facility in Victoria and may look at a Joint Venture with MHA. Discussions are just beginning now.

We point out again that Australian Aluminium producers use 12000/15000 TPY of magnesium metal in alloying with aluminium (approx. 5% magnesium). A base load therefore exists for a magnesium facility.

Published costs of magnesium metal production show MPLC with substantial advantage over Silicothermic and Magnatherm (yet to be proven commercially).

3.0 RAW MAGNESITE:

Currently being evaluated by the CRA/MHA joint venture. Drill cores from the three major ore bodies indicate vast quantities of high grade/low impurity magnesite, and the costean programme initiated in February 1987 is intended to accelerate the joint ventures understanding of the ore bodies. Bad weather has retarded this work, and new, high ground locations for constean(s) have been selected. It is most necessary to prove the consistency of the deposits.

CRA are concentrating upon locating materials suitable for high grade refractories. MHA has consistently taken a much wider view of potential markets.

It is to be noted that MHA can extract up to 100,000 tonnes of magnesite to meet various market prospects viz. Fused Magnesia, Talc and Marble, and that CRA have said that they would see 50,000 tonnes as being a suitable quantity of product upon which to commence extraction. (Price and availability to be negotiated).

3.1 Sales Prospects:

Norsk Hydro (Norway) have a concentrate sample for testing but now say that process changes will require raw material. (100,000 TPY)

North West Alloys (Alcoa Washington) could purchase calcined ore. (12,000 TPY)

Pechiney (France) could purchase calcined ore. (10,000 TPY)

MHA could require up to 150,000 TPY for downstream activity processing (Calcined and Fused Magnesia)

No estimates are to hand in regard to Refractories markets. (CRA responsibility).

Cont'd..6/

3.2 Sample Testing:

Sample testing to date indicates high grade ore existing in each location with some variance in impurities.

Extracts from various Tasmanian Department of Mines reports indicate the following variations:-

Element	Pinner	Arthur River M1 Area	Cann Creek
Mgo	43.81	43.70	46.5
S_1O_2	5.6	1.90	0.73
CaO	1.14	2.80	0.11
Fe_2O_3	0.51	0.88	0.10
Al_2O_3	0.01	0.02	0.10
LO1	48.54	50.10	51.00

Traces of various other minerals.

The low iron and alumina are particularly attractive features of these samples.

Calcination tests have been undertaken by Comalco laboratories at Williamstown (Vic.) with encouraging results; and the Joint Venture has an arrangement with Steetley Ltd. of Hartlepool, U.K. to undertake analysis and testing work as required.

4.0 RAW DOLOMITE:

This common material is available in large quantities in MHA leases. Sample tests by Metaleur and Societa Magnesia have indicated quality suitable for magnesium metal production.

Many other prospective markets exist in the fields of fertilizers, animal feed stocks and road aggregates. Price will be most important to achieve sales of this common mineral.

5.0 PROCESSING OF DOLOMITES AND MAGNESITES:

Opportunities exist for a Dolomite and Magnesite Calciner with necessary material reduction and sizing plants for bagged products for agricultural, animal feed stocks, chemical and chipboard industries.

An economic calciner would produce 50,000/100,000 TPY of product while advance predictions for the Australian (and N.Z.) chipboard industries alone is in this range.

Cont'd..7/

5.0 PROCESSING OF DOLOMITES AND MAGNESITES: (Cont'd.)

Calcined Magnesite could also be supplied to a fused magnesia plant to produce very high purity products for electrical insulators, conductors, abrasives and cements. Quantities for this market are very low (2000/5000 TPY) but price of product is extremely high.

It is to be noted that chemical and material grading specifications for fused magnesia products are extremely severe.

Universal Abrasives of U.K. have agreed to test material samples for suitability and also to provide technology and knowhow for a plant; but not equity.

An opportunity exists to supply finely ground (high surface area) Dolomite or Magnesite to Australian Tioxide an alkali powder for acid correction. Quantities may exceed 100,000 TPY if successful. Tests using imported samples (calcined) are currently in train.

6.0 QUARTZITES:

MHA believe that their deposits hold hard rock down to fine sands in high purity quartzite. This opens possibilities to supply material with appropriate and/or minimal processing to the whole field of silica material users.

Potential markets include BHP Temco (Tasmania) and various Canadian, United States, South Korean and Japanese Companies, MHA has much initial market data in regard to these possibilities.

U.S.A. Company, L. Bar Products, are presently considering a Joint Venture with MHA to import 50,000/100,000 TPY Quartzite material from Tasmania through upgraded DOMTAR West Coast USA port facilities. Possible destinations for the material could be:

Pittsburgh Plate Glass	20,000 TPY
Guardian Glass	15,000 TPY
J.M. Manufacturing Co.	10,000 TPY
Westwood Ceramics	6,000 TPY
John Manswell	5,000 TPY
Libby Owen Ford	60,000 TPY

	106,000 TPY
	=======

At present, the BHP Temco prospect (30,000 TPY) is proceeding satisfactorily. Rock with size range of -6" + 1-1/2" is required in a nondegradable quality. A 2000 tonne test sample has been tried successfully and a second 2000 tonne sample from a larger deposit is to be tried soon.

Cont'd../8

6.0 QUARTZITES: (Cont'd.)

Extraction and material crushing and sizing has been carried out by contractors and deliveries made at costs within budget. (Selling price $35/tonne). A commercial plant would generate additional margins and further revenue would be obtained from the sale of -1-1/2" materials (approx. 30% of total).

MHA have a feasibility study prepared by Bechtel Australia for a suitable commercial operation. This study is appropriate to Dolomite, Magnesite and Quartzite with variations to suit the final product required.

7.0 MARBLE:

Reported to be available in large quantities and attractive colours in NW Tasmania. Veneer marble is an extremely highly priced product (approx. $6000/cubic metre). Also Brown/Green Granites are under evaluation.

8.0 SUMMARY:

MHA has vast quantities of Dolomite, Magnesite and Quartzite in NW Tasmania which appear to have exciting commercial prospects.

A quartzite rock operation seems to be a probability within the foreseeable future, and a quartzite sand development could follow with adequate marketing at minimal investment. It seems logical that this operation could expand to cover much of the range of quartzite (silica) markets as the operation gains maturity and more is learnt about the deposits.

The magnesite leases are seen to be most exciting due to the size and purity of the deposits. A magnesium metal facility in Tasmania (or Victoria) would be a major project and must include international partners of world standing in addition to MPLC. Much work would need to be done to get this project off the ground, not least in general feasibility and environmental impact areas. This project is therefore long term in nature.

A magnesium metal plant would seem to have an immediate market to Australian Aluminium producers for alloying with that metal. Government of Victoria has spare electrical generating capacity and can be expected to compete with Tasmania for such an energy dependant project; particularly in view of Aluvic's equity in the Portland Aluminium Smelter.

Undoubtedly markets exist for calcined, dead burnt, and fused magnesias and dolomates. Transport costs would preclude sales of raw materials to overseas markets whereas the cost of calcining and handling the minerals has to be weighed against transport cost savings. A fused magnesia operation can only be seen as an adjunct to a large scale calcining industry.

Cont'd../9

058

9.0 COMMENTS:

In our view, MHA has done well in advancing the various projects to the current status. We feel that the CRA/MHA joint venture poses considerable risk to MHA both as regards project operating costs, and the size and hence, capital needed for a successful operation. CRA, as project manager, will control material extraction costs which may not suit any of MHA downstream projects. In particular, a magnesium metal plant would insist upon guaranteed supplies of material at an acceptable price: MHA's 25% shareholding may not be adequate. Cross shareholding may be mandatory.

Another consideration would be Comalco's presence in CRA group. This could be a positive or negative factor depending upon viewpoint of parties concerned.

MHA has the prospect of starting a calcining industry which could service a wide range of markets. The marketing information gained by MHA (Tominex) during their importing (agency) activities is a worthwhile base for detailed marketing and production cost studies without which no project can be expected to proceed.

It is to be noted that we understand that MHA's main Australian competitor - Queensland Metal Corporation - have completed studies for a Calcining Plant and have decided to build such a facility near Rockhampton. We understand also that this company has carried out only very preliminary work into a Magnesium Metal Plant but may put in hand some more detailed work fairly soon.

The potential quartzite operation seems to be most likely to proceed in the near future, but again, market and production cost feasibilities and statutory impact studies need to be undertaken.

In summary therefore, all MHA's general marketing information needs to be reviewed, checked and expanded upon; and detailed production cost studies undertaken. Environmental impact statements are mandatory to the successful commencement of any project.

Finally, it is relevant to note that MHA has no engineering or plant operating capability. Any prospective partner would need to see that these disciplines be adequately provided.

Richard Hudson
17.7.1987

Copies: Minerals Finance Ltd. 2
Hudson Lees Associates 2

APPENDIX 5

Miscellaneous Test Data

880061

960 Società Italiana per il Magnesio e Leghe di Magnesio

SOCIETA' PER AZIONI
CAPITALE SOCIALE L. 5.000.000.000 VERSATO L. 4.500.000.000
SEDE LEGALE BOLZANO

Bolzano, 2nd May 1986

Ns. rif. AL/lp

RECEIVED
27 ... 1986
Ans'd A 17/11/86

MINERAL HOLDINGS
AUSTRALIA PTY. LIMITED
2nd Floor
100 Collins Street
MELBOURNE, AUSTRALIA, 3000

OGGETTO:

For the attention of Mr. Neil Thomas

Dear Sir,

we send you herewith our evaluations on the samples you dispatched us.

- From the chemical point of wiew, the Dolomite's samples have a good composition, even thoug sample n° 1 has got a SiO_2 tenor decydely higher than samples n°2 and n° 3.
- Behaviour at calcination :
  Dolomite : Cleft phenomena between 1050 °C and 1100°C
  Magnesite: At 1000°C flacking phenomena.

Those resoults are merely indicative, because a definitife opinion on the behaviour at calcination, can only be given on an industrial-test basis, in revolving furnace at 1200°C, furthermore, it might be opportune for us to have more material at our disposal, in order to have a completer picture and do a reduction test with Fe-Si alloy on a pilot furnace.

./.

Mod. 205

061

Anyway it is intended, that, for technical and economic reasons, Magnesite is not to be taken into consideration for the production of Magnesium, with the silicothermic process.

Yours faithfully

SOCIETA ITALIANA
PER IL MAGNESIO E
LEGHE DI MAGNESIO S.p.A.

ANALYSES ON THE DOLOMITE AND MAGNESITE SAMPLES

OF MINERAL HOLDINGS PTY. LTD.

Sample n° 1 : Blackwood dolomite bridge darkergrey.
Behaviour in furnace at 1100 ° C good;
clefts along the crystallization lines.

Sample n° 2 : Smithon quarry dolomite lighter grey.
Behaviour in furnace at 1100 °C good;
clefts along the crystallization lines.

Sample n° 3 : Blackwood bridge dolomite lighter grey.
Behaviour in furnace at 1100 °C good;

Sample n° 4 : Magnesite. Flackings at 100 °C in furnace.

	DOLOMITE Sample n° 1	DOLOMITE Sample n° 2	DOLOMITE Sample n° 3	MAGNESITE Sample n° 4
P.F. %	47,10	47,39	47,35	45,72
SiO_2 %	0,27	0,02	0,03	11,57
R_2O_3 %	0,32	0,44	0,54	0,73
CaO %	30,37	30,45	30,67	1,32
MgO %	20,97	21,14	20,90	40, 43
Zn %	0,0008	0,0010	0,0015	0,0030
Mn %	0,0094	0,0108	0,0094	0,0443
Na %	0, 012	0,010	0,018	0,005
K %	0,005	0, 005	0,006	0,005
Others	0,94	0,53	0,47	0,17

063

880064

SOCIETÀ ITALIANA PER IL MAGNESIO E LEGHE DI MAGNESIO

SOCIETA' PER AZIONI
CAPITALE SOCIALE L. 5.000.000.000 VERSATO L. 4.500.000.000
SEDE LEGALE BOLZANO

Bolzano, 7th May 1986

Ns. rif. AL/lp

MINERAL HOLDINGS
AUSTRALIA PTY. LIMITED
2nd Floor
100 Collins Street
MELBOURNE ,AUSTRALIA, 3000

OGGETTO:

For the attention of Mr. Neil Thomas

Dear Sir,

we send you herewith the "on the whole" informations requested by you for a Magnesium Smelter by 10.000 T/Y referred to one Kg metal.

Dolomite, finisshed size	10.5 Kg/Kg Mg
Fe-Si Alloy (Si 78%)	0.9 Kg/Kg Mg
Energy from Magnesium reduction	7.9 KWh/Kg Mg
Utilities	0.3 KWh/Kg Mg
Iron resistors	0.12 Kg/Kg Mg
Heavy oil for Dolomite's calcination	0.89 Kg/Kg Mg
Natural gas for remelting	0.11 m^3/Kg Mg
Flux Salts for remelting	0.15 Kg/Kg Mg
Manual labour *	0.032 h/Kg Mg
Non manual labour *	0.004 h/Kg MG

(*For these informations we consider 1650 yearly working hours for each person)

Employed electric power:

Average : 11500 KW

Peak : 13000 KW

./.

These estimates are merely to be considered as valid, for Magnesium production. An eventual production of Fe-Si alloy is not taken into consideration.

Final production : A standard ingot production is forseen.
The production of other kinds of sizes (T-bars, Round bars) is conditioned by the market request.
Our production does not forsee extruded shapes, as there is no request, nevertheless we think that, anyway, it is more convenient to produce in sub-contact with Aluminium Alloy Extruders.

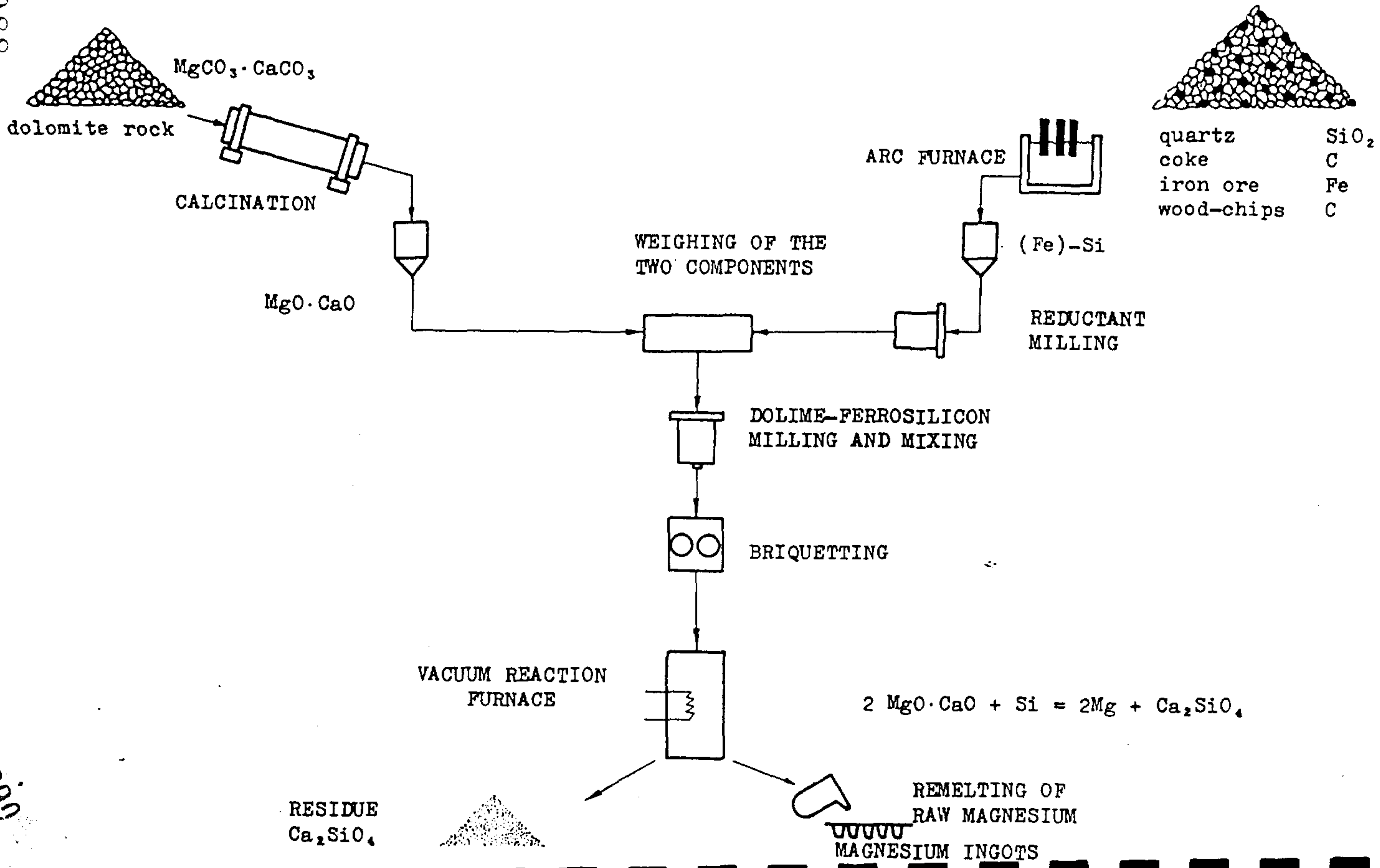
We further enclose an indicative flow-sheet of our production process.

We rebate our interest for an eventual know-how supply as well as technical assistance, and with the occasion we kindly greet you.

Best regards.

SOCIETA ITALIANA
PER IL MAGNESIO E
LEGHE DI MAGNESIO S.p.A.

SIMPLIFIED FLOW SHEET FOR BOLZANO PROCESS



066

880067

*
TOMNEX AA31317
586 7 PCLASE G
TLX/REF8960 86-10-07 12:09

FOR THE ATTN MR NEIL M. THOMAS, MINERAL HOLDINGS AUSTRALIA PTY LTD.

TEST WORKS ON DOLOMITE/MAGNESITE SAMPLES COMPLETED. MAIN CONCLUSIONS AS FOLLOWS:-

1. SMITHTON DOLOMITE

BLACKWOOD BRIDGE SAMPLE HAD HIGH SIO_2 (3.4%) AND AL_2O_3 (1.0%) IMPURITIES. QUARRY SAMPLE SIO_2 (1%) AND AL_2O_3 (0.4%) WAS OF HIGHER PURITY.

BOTH SAMPLES CALCINED SATISFACTORILY AT 1200 DEGREES C TO DOLIME BUT TENDED TO DECREPITATE WHEN DEADBURNED AT 1800 DEGREES C GIVING PRODUCT DENSITY OF 3.1 G/ML. THE QUARRY SAMPLE CAUSTIC CALCINED AND BRIQUETTED DEADBURNED TO A 3.3 G/ML DENSITY AT 1800 DEGREES C WHEREAS THE BLACKWOOD BRIDGE ONLY DEADBURNED TO 3.0 G/ML BY THIS PROCESS BECAUSE OF HIGH IMPURITY LEVELS.

2. MAGNESITE

BOTH SAMPLES HAD HIGH SIO_2, AL_2O_3 AND CAO IMPURITIES WITH MGO CONTENTS OF ONLY 86% (PINNER) AND 87% (ARTHUR RIVER). DIRECT DEADBURNING AT 1800 DEGREES C GAVE DENSITIES OF 3.1 G/ML (ARTHUR RIVER) AND 3.3 G/ML (PINNER) BUT DENSITIES ABOVE 3.0 G/ML COULD NOT BE OBTAINED ON EITHER SAMPLE VIA THE CAUSTIC MAGNESIA CALCINATION/BRIQUETTING ROUTE BECAUSE OF THE HIGH IMPURITY LEVELS.

CLEARLY THE MAGNESITE WOULD HAVE TO BE BENEFICIATED TO GIVE ACCEPTABLE PRODUCT QUALITY.

A MORE DETAILED REPORT ON THE TESTWORK IS BEING PREPARED.

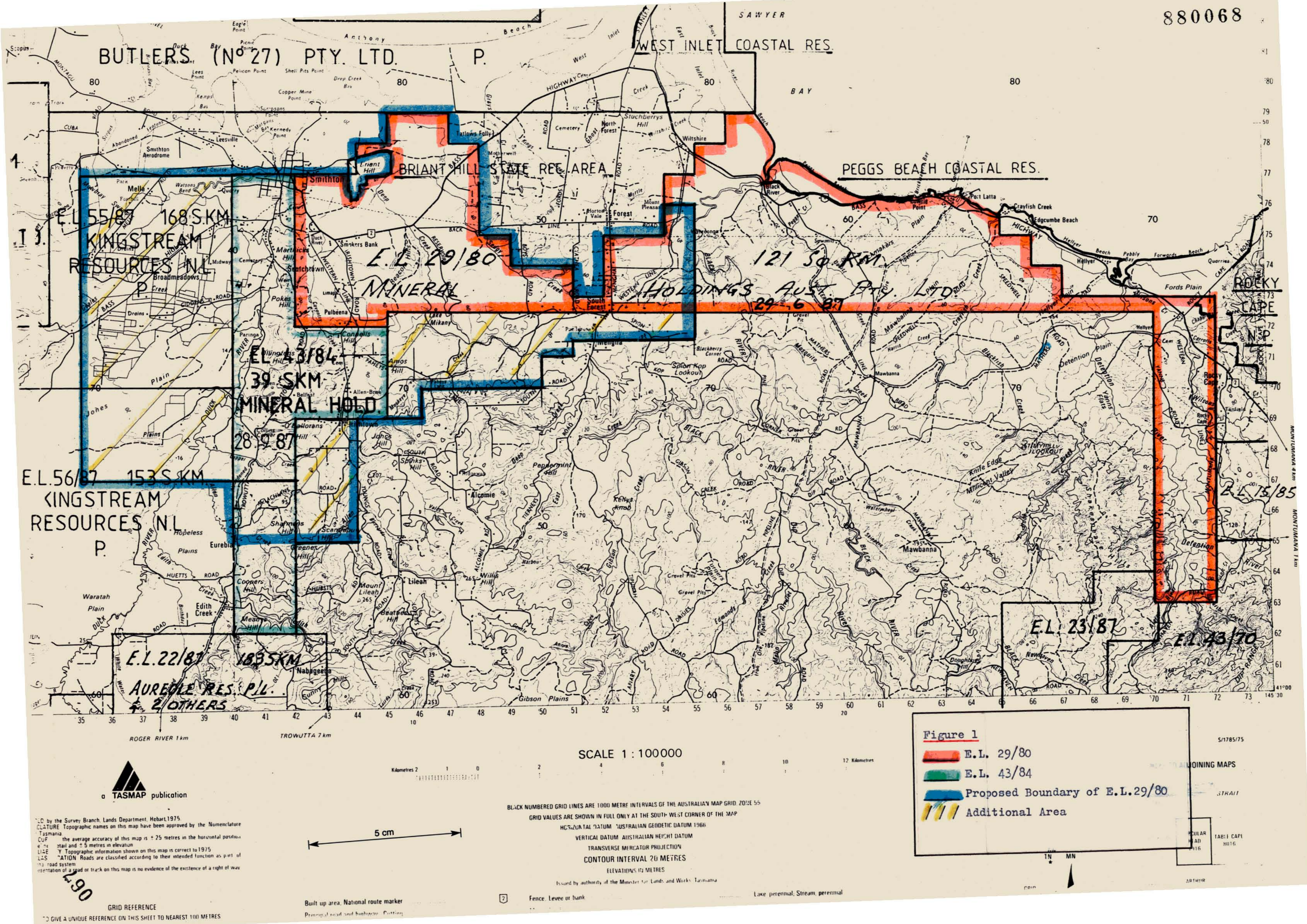
ANALYSES GIVEN ABOVE ARE ON A LOSS FREE BASIS.

REGARDS

NOEL HEASMAN
STEETLEY HARTLEPOOL

58649 PCLASE G*
TOMNEX AA31317

880068



BUTLERS (No 27) PTY. LTD. P.
WEST INLET COASTAL RES.
BRIANT HILL STATE REC AREA
PEGGS BEACH COASTAL RES.
E.L 55/87 168 S.KM
KINGSTREAM RESOURCES N.L
P
E.L. 29/80 121 Sq Km
MINERAL HOLDINGS AUST. PTY. LTD.
29 6 87
EL 43/84
39 SKM
MINERAL HOLD.
28 9 87
E.L.56/87 153 S.KM
KINGSTREAM RESOURCES N.L
P.
E.L.22/87 183 SKM
AUREOLE RES. P/L
& 2 OTHERS
E.L. 23/87
E.L 43/70
E.L 75/85
ROCKY CAPE N.P.
SCALE 1 : 100000
a TASMAP publication
Figure 1
E.L. 29/80
E.L. 43/84
Proposed Boundary of E.L.29/80
Additional Area
BLACK NUMBERED GRID LINES ARE 1000 METRE INTERVALS OF THE AUSTRALIAN MAP GRID, ZONE 55
GRID VALUES ARE SHOWN IN FULL ONLY AT THE SOUTH WEST CORNER OF THE MAP
HORIZONTAL DATUM AUSTRALIAN GEODETIC DATUM 1966
VERTICAL DATUM AUSTRALIAN HEIGHT DATUM
TRANSVERSE MERCATOR PROJECTION
CONTOUR INTERVAL 20 METRES
ELEVATIONS IN METRES
5 cm
GRID REFERENCE

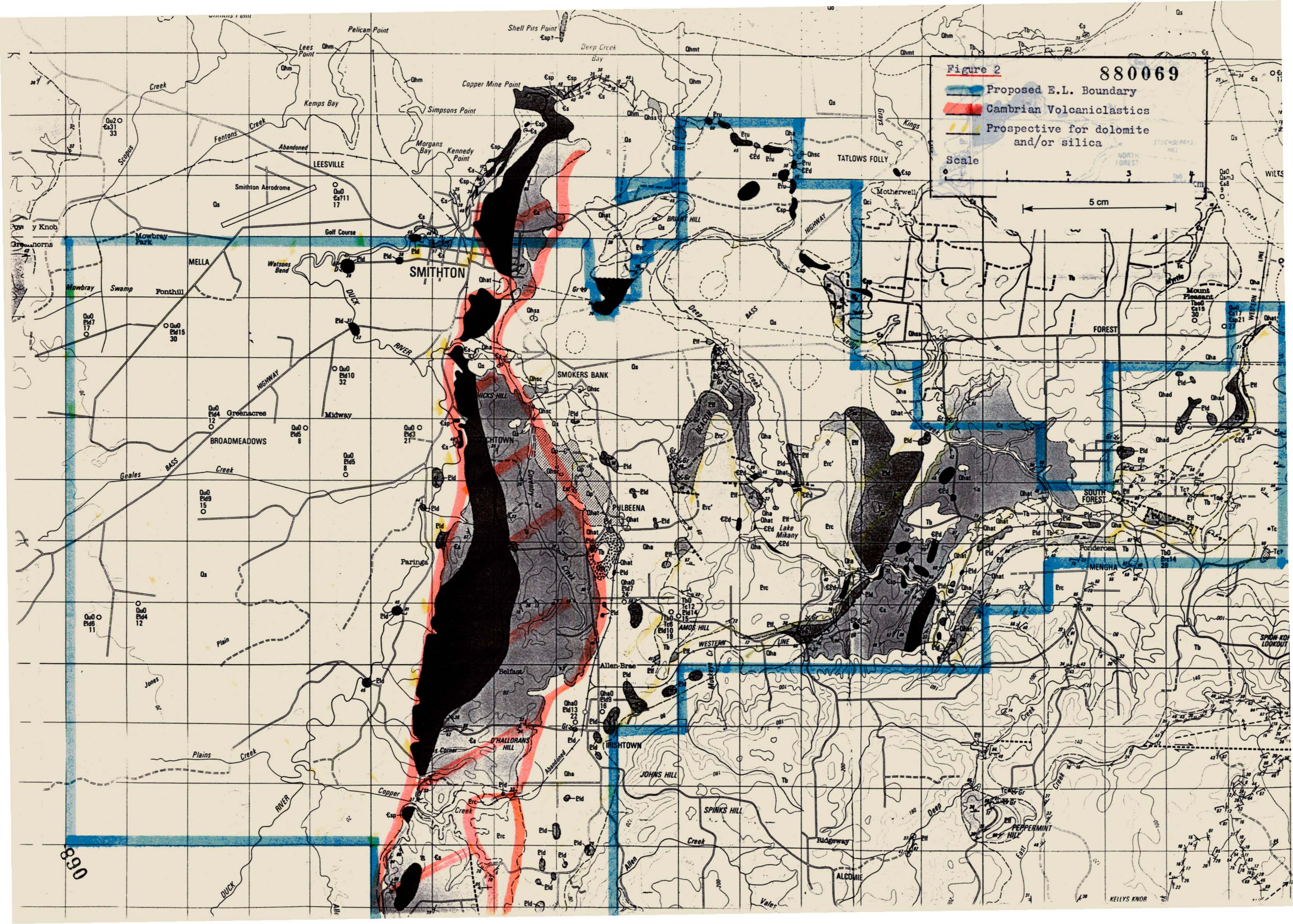
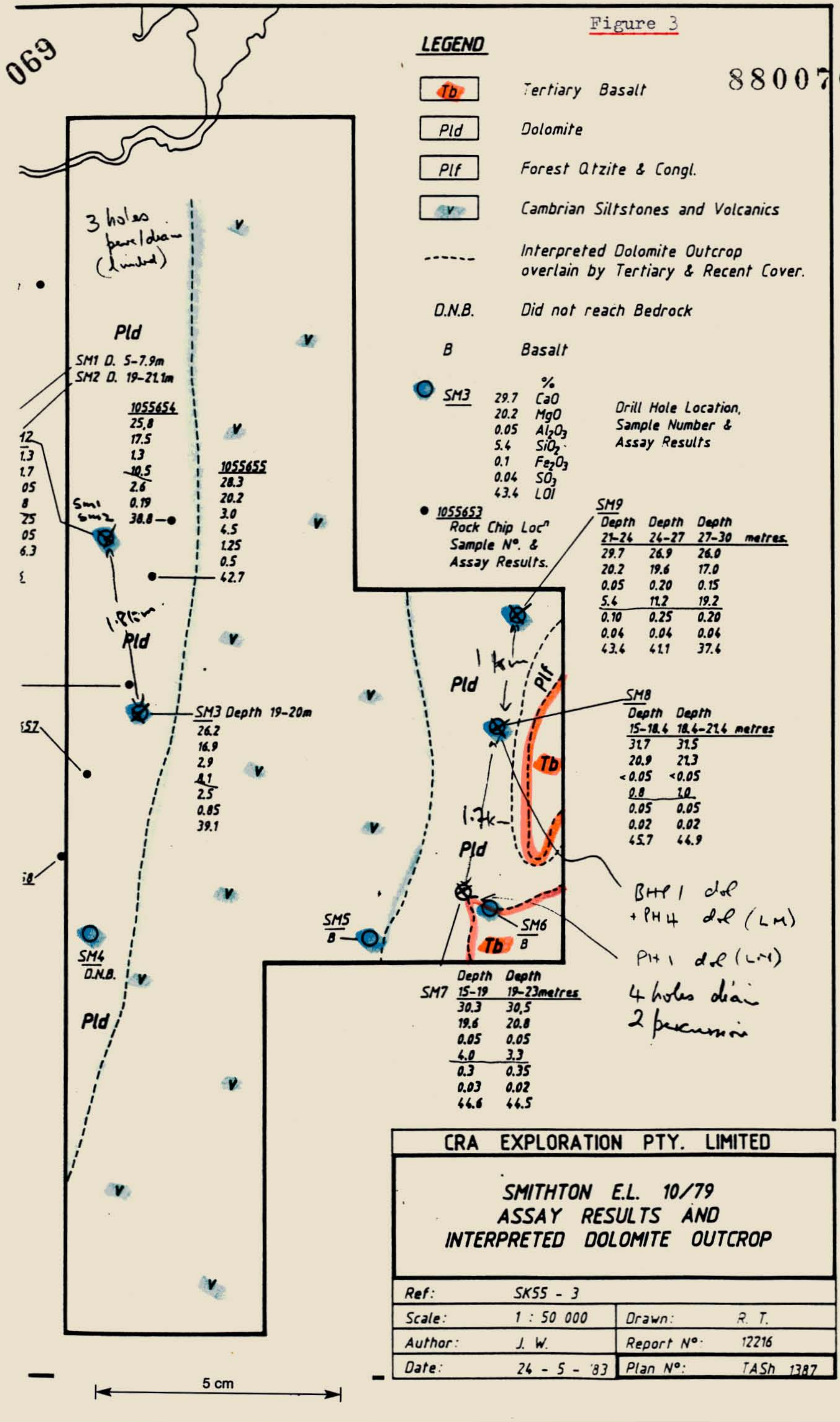


Figure 2
880069
Proposed E.L. Boundary
Cambrian Volcaniclastics
Prospective for dolomite and/or silica
Scale
0 1 2 3 4cm
5 cm
SMITHTON
LEESVILLE
Smithton Aerodrome
MELLA
Mowbray Park
Mowbray Swamp
Fonthill
Greenacres
BROADMEADOWS
Midway
Paringa
Belfast
SMOKERS BANK
HICKS HILL
BRYANT HILL
TATLOWS FOLLY
Motherwell
Mount Pleasant
FOREST
SOUTH FOREST
Ponderosa
MENGHA
PULBEENA
Lake Mikany
AMOS HILL
Allen-Brae
IRISHTOWN
O'HALLORANS HILL
JOHNS HILL
SPINKS HILL
Ridgeway
ALCOMIE
PEPPERMINT HILL
KELLYS KNOB
SPION KOP LOOKOUT
Pelican Point
Shell Pits Point
Deep Creek Bay
Lees Point
Copper Mine Point
Kemps Bay
Simpsons Point
Morgans Bay
Kennedy Point
Golf Course
Watsons Bend
DUCK RIVER
BASS HIGHWAY
WESTERN LINE
890

Figure 3

880070



CRA EXPLORATION PTY. LIMITED

SMITHTON E.L. 10/79
ASSAY RESULTS AND
INTERPRETED DOLOMITE OUTCROP

Ref:	SK55 - 3		
Scale:	1 : 50 000	Drawn:	R. T.
Author:	J. W.	Report No:	12216
Date:	24 - 5 - '83	Plan No:	TASh 1387

880071

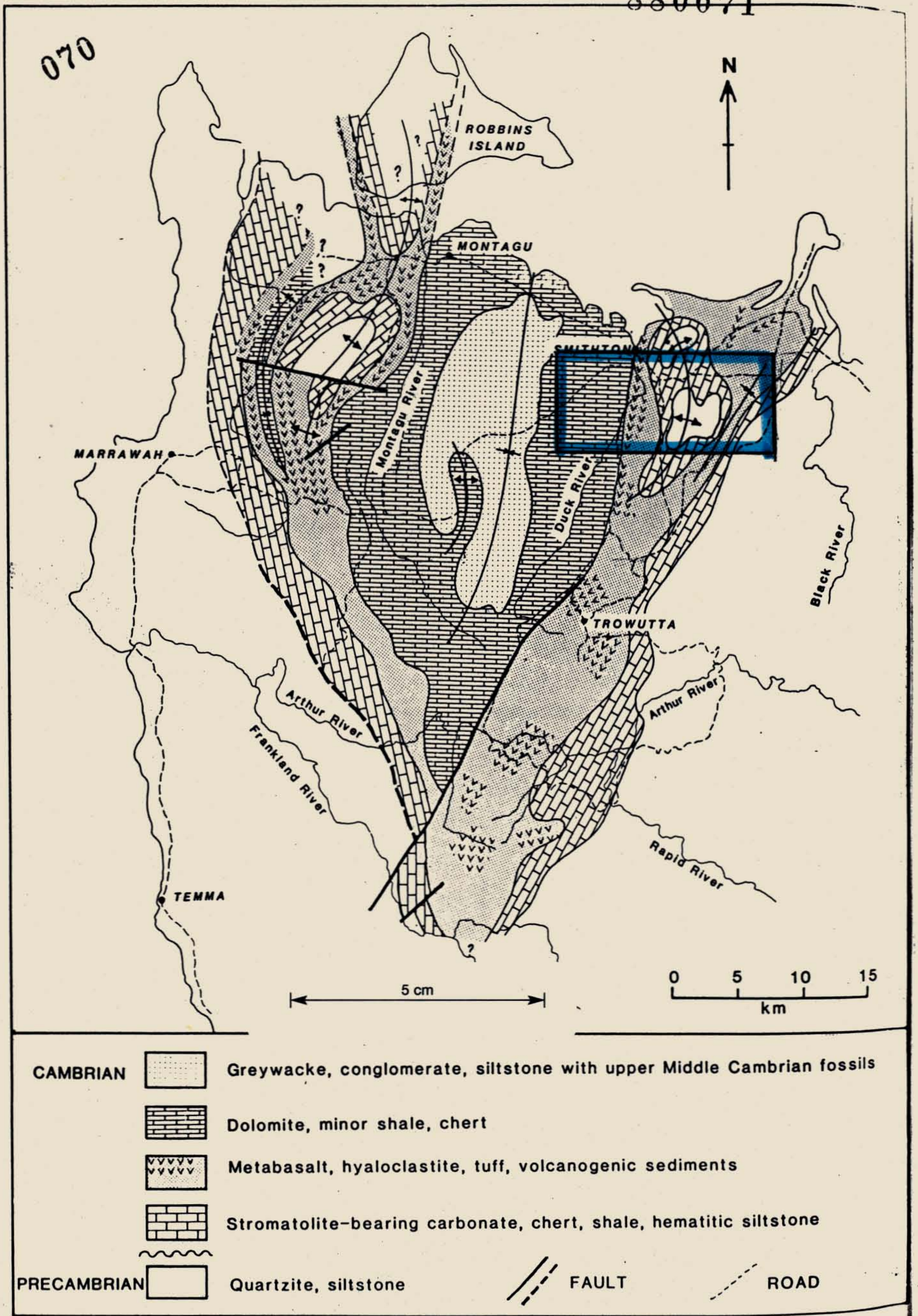


Figure 4. Interpretative geological map of the Smithton Trough, modified after Large (1982) and Williams & Turner (1973).

Subject area


GEOLOGICAL LEGEND
Qra = Quaternary - Alluvial Soils
Q+T = Quaternary + Tertiary
Tb = Tertiary - Basalts, Tuffs, Pillow Lavas
€v = Cambrian - Basalt, Tuff, Breccia, Greywacke
€d = Cambrian - Siltstone, Greywacke
p€s = Precambrian - Smithton Dolomite
LEGEND -:
S5 Location of stream sed. sample
Primary road
Secondary road
Creek
340000mE.
345000mE.
5475000mN.
5470000mN.
5465000mN.
5460000mN.
MAG TREND
SMITHTON
DUCK RIVER
BASS HIGHWAY
MARTHICS HILL
POKES HILL
OLLINGTONS HILL
IRISHTOWN
O'HALLORANS HILL
SHARMANS HILL
SCANTLEBURY HILL
GREENS HILL
COOPERS HILL
MEANYS HILL
MOUNT LILEAH
BEATIES HILL
Lileah
E.L.43/84 BOUNDARY
5 cm
880072
PAN AUSTRALIAN MINING LTD.
E.L. 43/84 87-2708
SMITHTON, N.W.TASMANIA
STREAM SEDIMENT
SAMPLING PROGRAMME
GEOLOGICAL PLAN
DRAWN BY: C.H.W.
DRAFTSMAN: T.G.D.S.
DATE: June 1987
REVISIONS:
FILE No.
PLAN No. PAS/1/87
SCALE 1:25000
METRES


PAN AUSTRALIAN MINING LTD.
E.L. 43/84
87-2708
SMITHTON, N.W. TASMANIA
STREAM SEDIMENT SAMPLING PROGRAMME
Au VALUES (ng/kg)
DRAWN BY: C.H.W.
DRAFTSMAN: T.G.D.S.
DATE: June 1987
REVISIONS:
FILE No.
SCALE: 1:25000
METRES
PAS/2/87
5 cm
E.L.43/84 BOUNDARY
LEGEND—:
Location of stream sed. sample
Primary road
Secondary road
Creek
N
MAG TREND
Creek to Duck River
SMITHTON
DUCK RIVER
BASS HIGHWAY
MARTHICS HILL
POKES HILL
OLLINGTONS HILL
O'HALLORANS HILL
IRISHTOWN
SHARMANS HILL
SCANTLEBURY HILL
GREENS HILL
COOPERS HILL
MEANYS HILL
MOUNT LILEAH
BEATIES HILL
Lileah
Eurebia
340000mE.
345000mE.
5475000mN.
5470000mN.
5465000mN.
5460000mN.
880073

5715


PAN AUSTRALIAN MINING LTD.
E.L. 43/84
87-2708
SMITHTON, N.W. TASMANIA
(PAN - CONCENTRATE SAMPLES.)
STREAM SEDIMENT
SAMPLING PROGRAMME
TUNGSTEN + TIN (WO3 + Sn ppm)
DRAWN BY: C.H.W.
DRAFTSMAN: T.G.D.S.
DATE: June 1987
REVISIONS:
FILE No.
PAS/3/87
SCALE: 1:25000
METRES
5 cm
E.L.43/84 BOUNDARY
LEGEND-:
S5 Location of stream sed. sample
Primary road
Secondary road
Creek
N
MAG TREND
SMITHTON
DUCK RIVER
BASS HIGHWAY
MARTHICS HILL
POKES HILL
OLLINGTONS HILL
O'HALLORANS HILL
SHARMANS HILL
SCANTLEBURY HILL
GREENS HILL
COOPERS HILL
MEANYS HILL
MOUNT LILEAH
BEATIES HILL
IRISHTOWN
Lileah
Eurebia
SCOTCHTOWN ROAD
IRISHTOWN ROAD
GROOMS CROSS ROAD
Connells Cross Road
Coventry Creek
Copper Creek
Bourkes Road
JOHNS HILL ROAD
Mclachlans Road
TROWATTA ROAD
SOUTH ROAD
HURSTS ROAD
McPherson Road
Edith Creek
Allen Creek
Blizzards Creek
Greenes Road
Beaties Road
Dyer Creek
340000mE.
345000mE.
5475000mN.
5470000mN.
5465000mN.
5460000mN.
S3 <10/<4
S21 25/<4
S22 <10/<4
S4 <10/<4
S12 85/<4
S11 <10/4
S10 <10/<4
S9 50/<4
S14 60/<4
S13 <10/6
S6 <10/<4
S5 <10/<4
S15 <10/8
S7 <10/<4
S8 160/8
S25 <10/<4
S24 <10/<4
S23 <10/6
S20 <10/<4
S16 <10/4
S17 <10/<4
S18 <10/<4
S19 <10/<4
S2 <10/8
S1 <10/<4
S29 <10/<4
S28 <10/<4
S30 <10/<4
S40 <10/<4
S39 50/6
S38 <10/<4
S37 45/<4
S36 160/<4
S27 <10/<4
S26 <10/<4
S35 <10/5
S31 <10/<4
S33 <10/4
S32 <10/<4
S34 10/<4.
880074


PAN AUSTRALIAN MINING LTD.
E.L. 43/84
87-2708
SMITHTON, N.W. TASMANIA
PAN-CONCENTRATE SAMPLES.
STREAM SEDIMENT
SAMPLING PROGRAMME
BISMUTH + ARSENIC (ppm)
DRAWN BY: C.H.W.
DRAFTSMAN: T.G.D.S.
DATE: June 1987
REVISIONS:
FILE No.
SCALE: 1:25000
METRES
PAS/4/87
5 cm
E.L. 43/84 BOUNDARY
LEGEND-:
S5 Location of stream sed. sample
Primary road
Secondary road
Creek
N
MAG TREND
340000mE.
345000mE.
5475000mN.
5470000mN.
5465000mN.
5460000mN.
SMITHTON
IRISHTOWN
Lileah
Eurebia
DUCK RIVER
BASS HIGHWAY
MARTHICS HILL
POKES HILL
OLLINGTONS HILL
O'HALLORANS HILL
SHARMANS HILL
SCANTLEBURY HILL
GREENS HILL
COOPERS HILL
MEANYS HILL
MOUNT LILEAH
BEATIES HILL
Coventry Creek
SCOTCHTOWN ROAD
IRISHTOWN ROAD
Connells Cross Road
GROOMS CROSS ROAD
JOHNS HILL ROAD
Bourkes Road
Copper Creek
Mclachlans Road
TROWATTA ROAD
SOUTH ROAD
Bizzards Creek
Greenes Road
Allen Creek
McPherson Road
HURSTS ROAD
Edith Creek
Beaties Road
Drew Creek
S3 <4/7
S21 <4/32
S22 <4/9.
S4 4/76
S12 S11 <4/<2
<4/7
S10 10/7
S9 <4/4
S13 4/9
S14 8/24
S6 <4/9
S5 <4/7
S15 <4/200.
S7 <4/14
S8 <4/17
S25 4/34
S24 6/19
S23 4/60
S20 <4/6
S16 <4/43
S17 <4/150
S18 6/38
S19 <4/39
S2 <4/11
S1 6/15
S29 <4/15
S28 4/11
S40 <4/10
S39 <4/20
S38 4/12
S37 <4/20
S36 <4/9
S27 <4/14
S26 10/46.
S30
S35 <4/12
S31 4/7
S33 <4/4
S32 <4/43
S34 <4/40.
880075

5713