



C O N T E N T S

Introduction

Other Tenements

Land Tenure

Local Council Jurisdiction

Location & Access

Geology

Geomorphology

Lithology of the Quartz Arenites

Silicification of the Quartz Arenites

Previous Exploration

Exploration 1992-3

Exploration Programme 1993-4

References

- Figures: 1. Locality map 1 : 250 000  
2. Tenement map 1 : 100 000  
3. Sample Location map 1 : 25 000

### Introduction

The licence area contains significant areas of outcropping quartzite in which it is hoped to locate a sufficient reserve of high grade quartzite and/or sand to supply local and overseas markets for fracturing sand, silicon and ferrosilicon production and the glass-making industry.

### Other Tenements

E.L.11/92 is in part superimposed as a stone licence on minerals exploration licences 44/89 and 30/90 held by Geopeko Exploration Ltd.

### Land Tenure

The area comprises  $\approx 4\text{km}^2$  of freehold land in its most northern part  $\approx 16\text{km}^2$  of uncommitted crown land and  $29\text{km}^2$  of State Forest.

### Local Council Jurisdiction

69% ( $34\text{km}^2$ ) of the licence lies in the Circular Head Municipality and 31% ( $15\text{km}^2$ ) in the Wynyard Municipality (fig.2).

### Location and Access

The northern boundary of the licence lies 15 km from Sisters Creek on the Bass Highway and is accessed by way of Myalla Road, which becomes Keith River Road and traverses almost the entire length of the licence area. Other access routes are confined to logging tracks some of which are charted on the 1:25000 Keith, Folly and Milabeena Sheets. In the north of the licence, Newhaven Track, formerly Pokes Road, links Myalla Road with Newhaven Road, Montumana Road and Bass Highway.

### Geology

Interest is centred on quartz arenites in the Precambrian Rocky Cape Group, the stratigraphy of which is according to Gee (1968):

	<u>Thickness (m)</u>
* Jacob Quartzite	1100
Irby Siltstone	750
* Detention Subgroup	1400
Cowie Siltstone	2450

\* quartz sandstone (arenite) predominant

The type section, as the name implies, lies 20 km to the north; there is as yet insufficient information on the stratigraphy of the Group in the subject area but recent mapping by Seymour and Everard indicate thinning and facies changes towards the S.W.

The main structural feature of the Rocky Cape Group is a series of northeasterly trending folds which dominate the present topography.

The units of this group which have been identified by Seymour in the licence area are Cowrie Siltstone (C), Detention quartz arenite (D), Irby siltstone (I), and Jacob Quartz arenite (J) see figure.

#### Geomorphology

Detention Group quartz arenites have given rise to the topographic highs of Dip Range and a line of hills: Meunna Hills, Eagle Hill, Phantom Peak, Folly Hill, Frog Hill, Hoof Hill and Blue Peak, which are composed of both Jacob Quartzite and Detention Sub Group arenites. The main drainage channel is the Arthur River and its tributaries Cann Creek and Lyons River. The Arthur River traverses the licence from S.S.E. to N.N.W. and has cut a 300m gorge on its passage across the sedimentary sequence. This discordance with structure indicates superimposition of drainage from an unconformable cover of rocks of different structure which has since been removed by erosion.

Dip River and Hebe River in the north of the licence are lesser examples of the same process. The course of the River around the Wynsmith Hills which lie west of the licence at its southern end suggest that there may be other, parallel, exposures of the quartz rich units of this sequence.

#### Previous exploration

An investigation for quartzite was conducted by Longworth and McKenzie for a Kaiser Aluminium/Mineral Holdings joint venture in 1981. The aim of this work was to establish reserves of high grade quartzite rock for the production of silicon for the aluminium industry.

The units examined included Detention Quartz arenite on Dip Range and Jacob Quartzite at Meunna (Pokes Road prospect). Investigation consisted of trenching, diamond and percussion drilling, hammer seismic testing, chemical analysis, abrasion resistance and thermal properties.

L. & M. summarised the Detention Group prospects, on the basis of the Dip Range studies, as having "a physically unsuitable weathered zone of variable strength sandstone overlying a limited thickness of chemically unsuitable but extremely strong quartzite".

This work failed to investigate the most significant occurrence of quartzite in the licence area, viz. the Hogarths Creek deposit in M.L.8M/89. This quartzite has been satisfactorily furnace tested under production conditions for both ferrosilicon and silicon metal and would be supplying these markets at the present time if those operations had not closed down.

There is furthermore a sand resource on the Dip Range ML8M/89 lease

consisting, to some extent, of slope deposits derived by weathering and erosion of the quartz arenite, but mainly of in situ friable sandstone. The extent of this resource is not at present fully known but is of the order of 2M.t. It has been satisfactorily utilised in the production of table glassware by A.C.I.

L. & M. examined the (Jacob Quartzite) Meunna deposits which are 9 km due south of these proven materials on ML8M/89. Their conclusions, based on inspection of road material quarries in the vicinity of the Myalla Road/Newhaven Track intersection, were that they were thinly bedded, in places discoloured, contained some uncemented quartz arenite units and were in part overlain by phyllite. No sampling or testing was carried out on these materials.

#### Lithology of the Quartz Arenites

The arenaceous members of the Rocky Cape Group were classified as orthoquartzites by Gee (1971) and in the L. & M. reports they were described as erratically silicified quartzose sandstones. The beds are commonly hard and quartzitic due, sometimes, to metamorphism but more often to strong silica cement. However, in places the cement is weak and the rocks become disaggregated during weathering and the most general name for the arenaceous rocks of the Group is variably silicified quartz arenite (Turner 1989) which is in virtual agreement with L. & M.

#### Silicification of quartz arenites

The degree of silicification is not necessarily consistent within bedding units or between bedding units (L. & M. 1981). The authors do not consider absence of silicification of some beds is necessarily due to surface weathering but state that in general chemical purity decreases with depth due to surface leaching and

precipitation at lower levels of  $\text{Fe}_2\text{O}_3$  and  $\text{Al}_2\text{O}_3$  which has been demonstrated. (TCR 81-1640 Figs 4, 5 and 6).

The hogback landform is evident in much of the Dip Range topography, suggesting a hard cap rock (silcrete) with a deeply weathered layer below leading to the formation of the characteristic undercut escarpment. Silica is only mobilised in strongly alkaline conditions, which suggests an arid weathering environment, therefore silcrete if present should be more widespread than it is.

Some areas on Dip Range contain poorly consolidated sandstone to depths of >15m while in some diamond drill holes, quartzite, referred to in the logs as being silicified, occurs to depths of over 30m.

It is not clear which beds have been weathered and which beds silicified and the inter relationship between weathering, leaching, resilicification and variations in chemical purity with depth is imperfectly understood but is relevant to an economic appraisal of the silica resources of the Rocky Cape Group.

#### Exploration to date

Three surface samples have been collected from near the Newhaven Track/Myalla Road intersection as indicated on figure 3. Sample 1 was collected from a 1m cutting on the side of a logging track and consists of sand eroded from quartzite outcrop (370700/5452300 AMG). Samples 2 (370700/5452000) and 3 (370400/5452000 AMG) were collected from sand and gravel workings in the vicinity of Sample 1.

For comparative purposes these two samples represent only the sand fraction from the workings.

No samples were collected from the more extensive road materials quarry on Myalla Road (371300/5452100 AMG).

Preliminary 4WD and foot traverses along existing tracks indicate that there are no sand/gravel deposits derived from quartz arenites in the licence area other than local accumulations either in depressions or as hillcap remnants.

The numerous gravel pits used for logging road construction in the area are of this type. The Inglis River sand and gravel deposits (15 km <sup>E</sup>N.W. of E.L.11/92 - fig.1) are interpreted also as being derived by erosion of the Rocky Cape Group quartzose sediments which have accumulated in a structurally controlled lowland east of the Pieman Fault.

The as yet unexplored portion of the licence area is prospective for in situ quartz arenite (rock) and unconsolidated quartz arenite (sand) resources comparable with those in ML8M/89.

#### Exploration Programme 1993-4

The licence area will be further explored for the purpose of surface sampling and to locate suitable drilling sites.

REFERENCES

Gee R.D. (1971) Geol. Surv. Explan. Rpts Table Cape Sheet 21

(1977) " " " " Burnie Sheet 28

Longworth & McKenzie (1981)

1) Report on Geological Investigation of EL 43/70  
Stage 2 TCR 81-1553

2) Preliminary drilling Stage 3 TCR 81-1640

Seymour D (1993) Pers. comm. Preliminary regional  
mapping data. Trowutta Quadrangle

Turner N. in Barrett C.F. and Martin E.L. (eds) 1989  
Geology and Mineral Resources of Tasmania  
Spec.Pub. Geol. Soc. Aust. 15

37

**Figure 1**  
**E.L.11/92**  
 --- Locality Map  
 Scale 1 : 250 000

5 cm

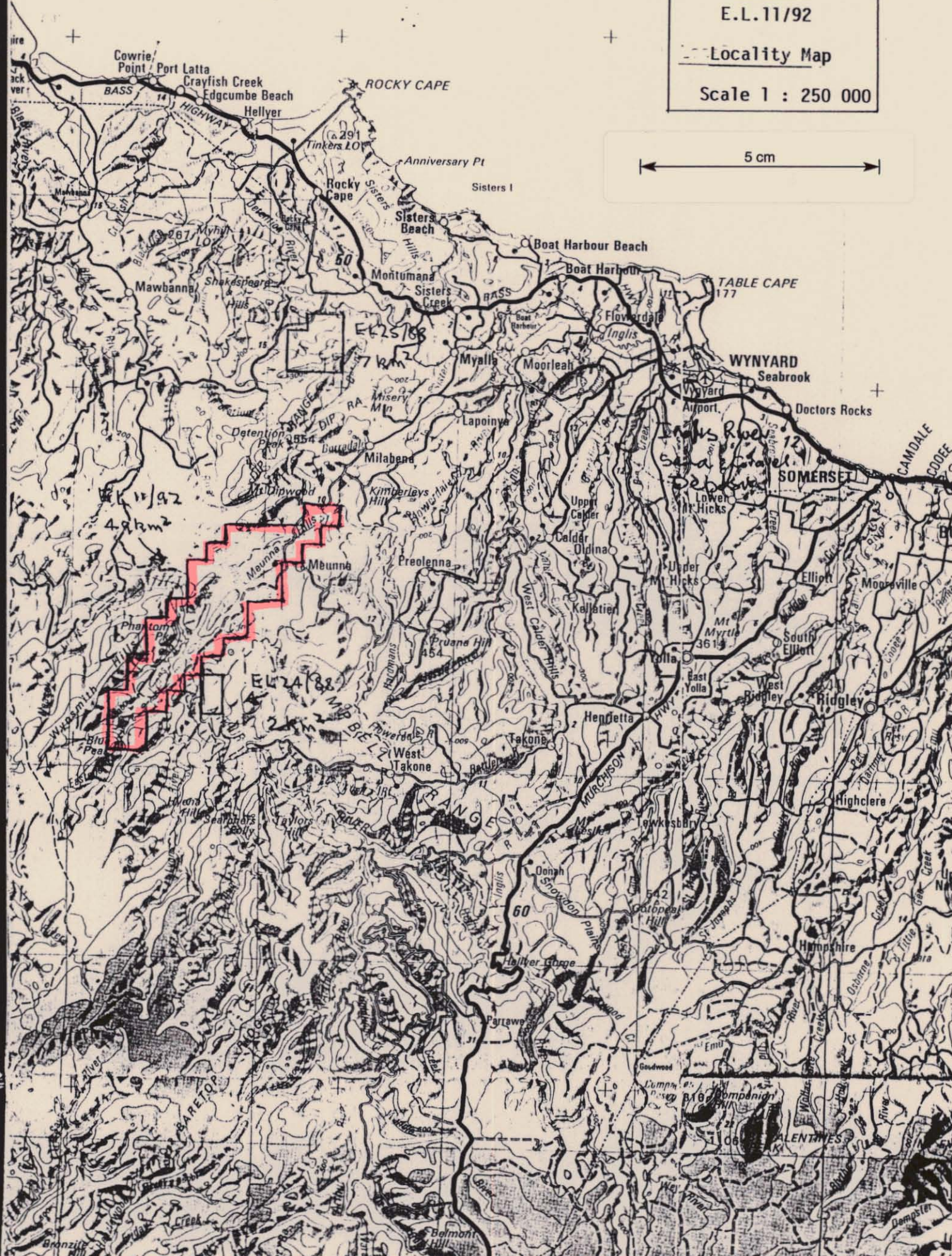


FIGURE 2

MARBANNA

1 : 25000

I  
D  
EL 25/88

EL 11/92 MEUNNA

Nargun Pty Ltd

- M-S Mafic Schist
- P Phyllite
- J Jacob Quartzite
- I Irby Siltstone
- D Detention Subgroup
- C Cowrie Siltstone

Scale 1 : 100 000 (Arthur River)

MILABEENA

1 : 25000

EL 44/89

EL 11/92

FOLLY

1 : 25000

EL 30/90

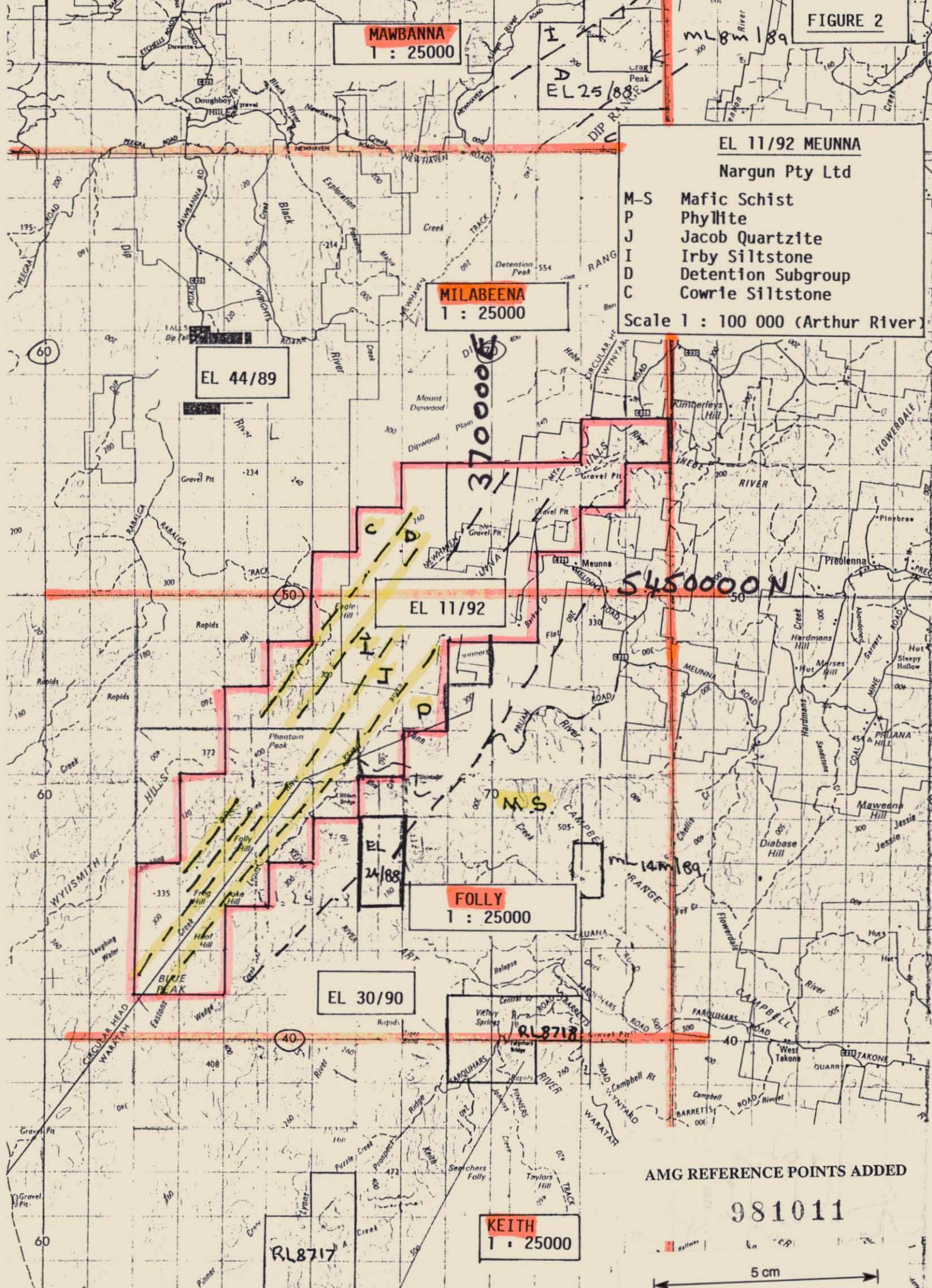
KEITH

1 : 25000

AMG REFERENCE POINTS ADDED

981011

5 cm







ANALABS				
PRELIMINARY ANALYTICAL DATA MEUNA TRIG SAND (POKES ROAD)				
CLIENT PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	109515.60.00637	25/03/92	N. Thomas	2 OF 2
SAMPLE	P205	Na2O	Wt	LOI
PR 1	0.0009	0.0022	2.30	0.10
PR 2	0.0011	0.0021	0.53	0.10
PR 3	0.0007	0.0021	1.67	0.13
DETECTION 0.0002 0.0002 0.01 0.01				
UNITS % % g %				
METHOD 00144 00144 GP001 0M615				

109515.60.08637

PROSPECT: MEUNA TRIG (POKES ROAD)

## PARTICLE SIZE ANALYSIS

SAMPLE NO. PR 1

SIEVE SIZE	FRACTION WEIGHT (g)	FRACTION WEIGHT (%)	CUMULATIVE WEIGHT (%)
3.35mm	10.00	0.8	0.8
2.00mm	7.20	0.6	1.3
850um	24.80	1.9	3.3
425um	52.30	4.1	7.4
150um	1073.90	83.8	91.2
75um	11.50	0.9	92.0
-75um	101.90	8.0	100.0
TOTAL	1281.60		

SAMPLE NO. PR 2

SIEVE SIZE	FRACTION WEIGHT (g)	FRACTION WEIGHT (%)	CUMULATIVE WEIGHT (%)
3.35mm	0.60	0.1	0.1
2.00mm	2.40	0.2	0.3
850um	40.60	3.5	3.7
425um	453.10	39.0	42.7
150um	625.00	53.7	96.4
75um	11.20	1.0	97.4
-75um	30.30	2.6	100.0
TOTAL	1163.20		

SAMPLE NO. PR 3

SIEVE SIZE	FRACTION WEIGHT (g)	FRACTION WEIGHT (%)	CUMULATIVE WEIGHT (%)
3.35mm	30.30	2.5	2.5
2.00mm	73.10	6.0	8.5
850um	214.20	17.7	26.2
425um	398.60	32.9	59.2
150um	473.50	39.1	98.3
75um	7.40	0.6	98.9
-75um	13.00	1.1	100.0
TOTAL	1210.10		