

EXPLORATION LICENCE

14/88 - MAYDENA

ANNUAL REPORT ON EXPLORATION ACTIVITY

6TH JULY 1989 TO 4TH AUGUST 1990

90-3202 O/F

OPEN FILE

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| Submitted to | Date |

W. PATERSON.
PIONEER SILICON INDUSTRIES PTY. LTD.

I N D E X

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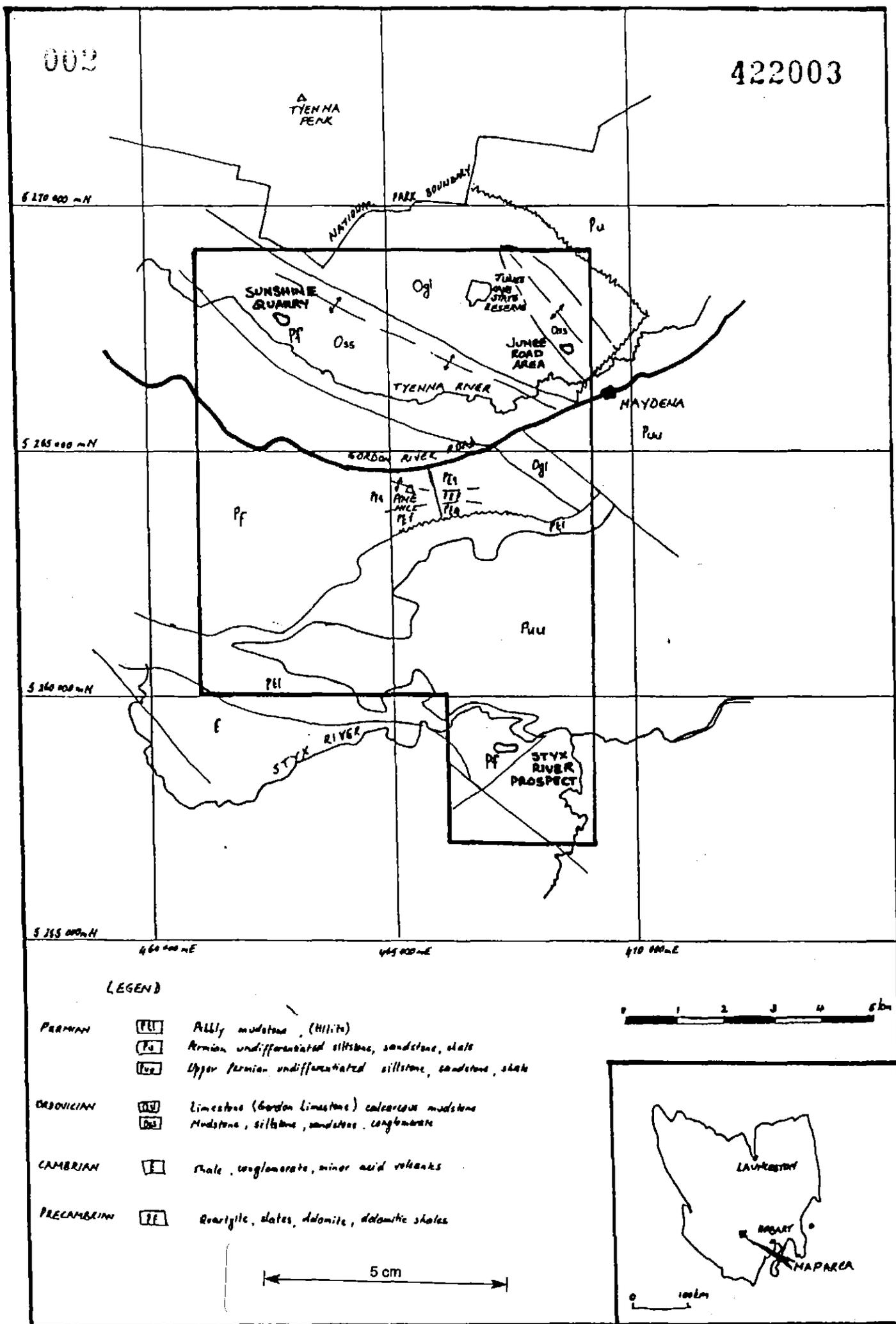


FIG.1 LOCATION MAP, EL.14/88 MAYDENA

EXPLORATION TARGETS

Pioneer targeted Maydena as a possible source for high quality silica deposits thought to occur in association with Precambrian Quartzites.

Field work to date has confirmed that the primary Precambrian orthoquartzites when subjected to various secondary weathering phenomenon (which has leached many of the deleterious elements including Al_2O_3 and Fe_2O_3 from the host) has had the silica component significantly upgraded. At Pine Hill leached and secondarily silicified siliceous lag is observed overlying an equivalent outcropping more massive siliceous host.

Additional areas of outcropping Precambrian orthoquartzite within the licence remain to be tested.

DESCRIPTION OF THE PROPERTY AND OWNERSHIP

EL 14/88 is situated immediately west of Maydena in central southern Tasmania (Fig. 1) and is bounded by the following co-ordinates:

Commencing at the north west corner of the area whose grid co-ordinates are 461 000 mE 5 269 000 mN thence grid east 469 000 mE grid south to 5 257 000 mN grid west to 466 000 mE grid north to 5 260 000 mN again grid west to 461 000 mE aforesaid thence again grid north to the point of commencement.

The licence totals 81 square kilometres and was granted to Pioneer Silicon Industries Pty. Ltd. on the 5th August, 1988 and the licence renewed in 1989. A renewal of the licence for a further 12 month period has been lodged with the Department of Mines. A Mining Lease application covering the Pine Hill area has been submitted to the Department.

One pre-existing Mining Lease (13 M/83) of 10 hectares held by ANM is located near the northern boundary of the licence and ANM hold extensive freehold areas within the lease.

WORK CONDUCTED DURING THE PERIOD

The majority of exploration work on EL 14/88 took place in the September quarter 1989, with the second attempt at a 1000 tonne trial sample from the Pine Hill quarry site Area A.

Brambles Equipment were the successful tenderers, and commenced work in late June, 1989. The final load of the 1034 tonne sample was delivered to the Electrona plant by mid July.

The trial mining operation was carried out within the confines of the existing quarry at Pine Hill. Brambles cleared the quarry floor and set up a basic crushing plant consisting of a 24"x15" Jacques Jaw Crusher and a single deck screen, plus associated feeder and conveyor systems.

Feed rock was excavated from four sites in the existing quarry face and one site in the quarry floor by a 20 tonne hydraulic excavator, using bucket and ripper. Some minor blasting work was required in areas of harder rock. The jaw crusher was set at 125mm (5") open setting and the screen fitted with a 20mm screencloth, to produce a final product of plus 20mm minus 150mm, and a byproduct of minus 20mm fines.

Total insitu material processed was approximately 1060m³, or 2650 tonnes (at Bulk Density 2.5 tonnes/m³), which yielded 1034 tonnes of product, giving a mining yield of approximately 39%.

Close monitoring of the mining was required to ensure adequate grade control, due to pockets and seams of high Al_2O_3 and Fe_2O_3 content material. These areas could visually be identified due to the red/yellow discolouration. Areas of high TiO_2 content material were more rare, but harder to identify visually.

Material in the quarry ranged from hard massive rock, to fragments in a soft floury matrix.

The plus 20mm, minus 150mm material was transported to PSI and samples taken for analysis. Average analysis was: Al_2O_3 0.084%, Fe_2O_3 0.028%, TiO_2 0.020%, CaO 0.031%. For full results see ~~location?~~ Appendix 1. Subsequent smelting trials showed that the material performed satisfactorily in the furnace.

Results?
- see letter 30/1/91

As a consequence of the initial drilling programme and the bulk sample results, a Mining Lease was applied for over Area A at Pine Hill. Part of the mining lease, and the access route to Pine Hill were on freehold land, owned by Australian Newsprint Mills. Negotiations with ANM commenced to secure long term access to and rights to, the Pine Hill site. Further exploration work, planned for the area adjacent to Area A at Pine Hill, was suspended pending the outcome of the access negotiations. These negotiations reached a satisfactory result in September, 1990 with a draft access proposal.

lab report

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Exploration activity in the North-East of the EL was restarted in June/July 1990, with the negotiation of a "sub-contract" exploration agreement with Mac Forster. As a result, foot traverses of several ridges in the North-East quadrant of the EL were done, with chip samples taken of outcropping quartzite. The principal area of interest was the ridge running down from Gourlays Bush, between the Junee Road and John Bull Creek (hereinafter called Junee Ridge). Results of chip samples from Junee Ridge are presented in Appendix 2. These results were encouraging enough to warrant a percussion drilling programme to take place in August, 1990.

Sample Locations?

FUTURE EXPLORATION**AREA B - PINE HILL**

Conditional upon obtaining a Mining Lease at Area A at Pine Hill, and in conjunction with mining at Area A, further exploration work by use of percussion drill sampling will take place on Area B, which is approx. 250 metres east of Area A.

It is proposed to drill thirty holes in a 50 metre square pattern, with the drill chips being collected and assayed for Al_2O_3 , Fe_2O_3 , TiO_2 , and CaO content. Depending upon the results of this work, further pitting and possible bulk sampling may be required.

GENERAL

The initial chip sampling on Junee Ridge will be followed up by a series of percussion drill holes along the line of the fire trail which traverses the spine of the ridge, with further foot traverses and chip sampling on the flanks of the ridge.

Other targetted ridges in the EL will be foot traversed and chip sampled where appropriate. Further work will depend upon the results of the sampling.

422010

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Your Ref: KM3.91:AT

January 30th, 1991.

The Director of Mines,
P.O. Box 56,
ROSNY PARK. TAS. 7018.

Dear Sir,

In reply to your letter of 11th January, 1991, requesting further details with regard to subjects on page 5 of the "Annual Report on Exploration Activity 6th July 1989 to 4th August 1990", for EL 14/88 - Maydena:

The samples mentioned were drawn from the mined and sized material delivered to Electra as a result of the trial mining programme.

The drilling information requested I assume refers to the "initial drilling programme?". Results of this drilling programme are contained in the previous years annual report.

As far as smelting results are concerned, the material was thermally stable in the furnace, gave quartz efficiencies between 81% and 89% with power consumption less than 13000kw hours per tonne of silicon.

If I can be of any further assistance, please contact me.

Yours faithfully,

(W. Paterson)
RAW MATERIALS SUPERINTENDENT

WP:plw

A



And



Joint Venture

422011

MAYDENA BULK SAMPLE ASSAYS

**P.S.I.
Electrona
Laboratory**

Laboratory Number: 890711
Sample Delivery Date:
Analysis Issued Date: 200789
Required by:

SAMPLE
DETAILS

Quartzites

TRIAL MINING PINE

| SAMPLES | ANALYSIS | | | | | | | | | | |
|---------|--------------------------------|--------------------------------|------------------|-------|--|--|--|--|--|--|-------------------|
| | Al ₂ O ₃ | Fe ₂ O ₃ | TiO ₂ | CaO | | | | | | | |
| 550 | 0.12 | 0.093 | 0.022 | 0.036 | | | | | | | Maydena Sample #1 |
| 2551 | 0.032 | 0.010 | 0.007 | 0.019 | | | | | | | Maydena Sample #2 |
| 2552 | 0.078 | 0.003 | 0.013 | 0.030 | | | | | | | Maydena Sample #3 |
| 3 | 0.115 | 0.025 | 0.022 | 0.033 | | | | | | | Maydena Sample #4 |
| 2554 | 0.073 | 0.007 | 0.034 | 0.036 | | | | | | | Maydena Sample #5 |

APPENDIX 2

INITIAL CHIP SAMPLES EX JUNEE RIDGE

P.S.I.
Electrona
Laboratory

Laboratory Number: 900163
Sample Delivery Date:
Analysis Issued Date: 060790
Required by:

SAMPLE
DETAILS

QUARTZITES

MAYDENA CHIP SAMPLES

EX M.F. EX M.F.

JUNEE RIDGE

| SAMPLES | ANALYSIS | | | | | | | | | |
|----------|--------------------------------|--------------------------------|------------------|------|--|--|--|--|--|--|
| | Al ₂ O ₃ | Fe ₂ O ₃ | TiO ₂ | CaO | | | | | | |
| 2862 JR1 | .43 | 1.6 | .086 | .012 | | | | | | |
| 2863 JR2 | .17 | .19 | .048 | .004 | | | | | | |
| 2864 JR3 | .032 | .065 | .038 | .008 | | | | | | |
| 2865 JR4 | .080 | .047 | .059 | .010 | | | | | | |
| 2866 JR5 | .37 | .13 | .048 | .009 | | | | | | |
| 2867 JR6 | .34 | .054 | .048 | .008 | | | | | | |

Monotone Art Printers

| SAMPLES | ANALYSIS | | | | | | | | | |
|-----------------------|--------------------------------|--------------------------------|------------------|------|--|--|---------|--|--------|--|
| | Al ₂ O ₃ | Fe ₂ O ₃ | TiO ₂ | CaO | | | | | | |
| 2868 JR7 ⁸ | .12 | .050 | .071 | .007 | | | TWO # 8 | | NO # 7 | |
| 2869 JR7 ⁸ | .067 | .028 | .040 | .009 | | | | | | |
| 2870 JR9 | .23 | .021 | .11 | .007 | | | | | | |
| 2871 JR10 | .11 | .036 | .055 | .008 | | | | | | |
| 2872 JR11 | .091 | .030 | .059 | .010 | | | | | | |
| 2873 JR12 | .074 | .036 | .067 | .008 | | | | | | |

Monotone Art Printers