

MAYDENA SANDS PTY LTD

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EXPLORATION LICENCE NO. 17/2002

MAYDENA, TASMANIA

ANNUAL REPORT

TO

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ABSTRACT

The need to deal with a number of regulatory issues delayed the start-up of the proposed 2008 drilling programme.

Geophysical depth sounding methods and crew availability were investigated as a precursor/alternative to drilling.

Results of bench-top processing of three samples were introduced to several interested parties, while a local producer undertook preliminary investigations of a small sample of raw material with generally positive outcomes.

Keywords:

EL17/2002, Hedgehog Ridge Prospect
Regulatory issues; Marketing.

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1. INTRODUCTION

This report details activities by Maydena Sands Pty Ltd in EL.17/2002 in the sixth year of tenure to 10.01.2008.

Interest in the ground covered by this exploration licence arose as a result of J J McDonald & Sons Mining Pty Ltd activities at the Pine Hill silica sand deposit located within RL 2/2003 some 5 km to the south east.

In early 2005, this tenement was transferred into a new entity, Maydena Sands Pty. Ltd., which continues to focus under the same management on the exploration, assessment and development of the silica sand, silica flour and hard rock silica resources delineated within it.

Regional mapping by MRT geologists indicates that the geological formations potentially prospective for additional resources of silica sand and flour extend into this area in a north westerly direction from the Pine Hill deposit.

An added attraction is the availability of basic access to the main zone of interest.

2. TENURE

On the 30th of April 2002 an application was lodged by J. J. McDonald & Sons Mining Pty Ltd for an exploration licence of 13 sq km covering ground potentially prospective for silica sand/flour and silica rock associated with lower Cambrian sequences 7-10 km WSW of Maydena.

The area originally applied for was contiguous to the east with RL 2/2003 (formerly part of EL 17/1998) where a limited resource of potentially economic, good quality silica flour and silica sands has been delineated.

Ministerial consent to the grant of this exploration licence was obtained on 28/01/03 effective for 5 years to 10th January 2008.

In November 2004, application for a reduction of the original 13 sq km tenement area by 9 sq km to an interim size of 4 sq.km surrounding the Hedgehog Ridge silica sand and flour prospect (viz. Fig 2) was approved by the Director of Mines on 26.05.2005. Exploration

activities and outcomes during tenure of the larger area are summarized in a Partial Relinquishment Report by Krummei (2004) (a).

On the same date, title to the reduced Exploration Licence area was transferred to Maydena Sands Proprietary Limited, a Company formed to hold and operate the exploration and mining interests of the Directors and Shareholders of J. J. McDonald & Sons Mining Pty Ltd in the Maydena district.

A reduction of the Exploration Licence area to the current size of 2sq.km was approved on 27/04/07.

The reduced tenement now comprises:

State Forest – Multiple use forest land
MDC Informal Reserve Area

3. LOCATION AND INFRASTRUCTURE

Reduced EL 17/2002 lies to the west of Pine Hill with its eastern boundary approximately 7 km west of Maydena and about 95 km by sealed road west of Hobart (Fig.1).

The sealed Gordon River Road traverses the tenement diagonally from south east to north west providing excellent basic access to the area. However, thick vegetation, topography and drainage impede access within the immediate area of interest north of the Gordon River Road.

Other basic facilities, including housing and a small labour pool, are available in the small township of Maydena (pop. ca. 400) and surrounding district.

A single strand power line follows the Gordon River Road through the tenement.

A 700 m long, east-west oriented, fair weather gravel airstrip is located about 1 km eastwards off the eastern boundary of the tenement.

A narrow gauge railway line from New Norfolk to Maydena has been progressively upgraded as far as the entrance to the Mt Field National Park. Plans for the remaining 15km section to Maydena are uncertain, though some basic clearing of the railway easement was undertaken during the year.

4. OBJECTIVES AND TARGETS

The overall objective of the exploration activities during tenure of this exploration licence is to add commercially viable resources of high purity silica sand and flour to those already outlined by J. J. McDonald & Sons Mining Pty Ltd (now vested in Maydena Sands Pty Ltd) at the Eastern Quarry, Pine Hill, in RL 2/2003, 5 km to the east. High quality silica rock remains a subsidiary target.

Following general reconnaissance, the main target remained the western end of a 4x1 km belt of steeply dipping, lower Cambrian sediments with carbonate sequences, which extend in a north westerly direction from Pine Hill.

5. PREVIOUS EXPLORATION

Although the area was part of BHP's EL 13/65 and EL 8/79 and later also fell within Amoco's EL 14/84, neither company undertook any work related to industrial minerals in this segment of their tenements (Ellis, in Jones, 1989).

Pioneer Silicon Industries Pty. Ltd. (PSI) embraced the area within its EL 14/88 but little, if any, work was carried out in this segment west of Pine Hill.

On taking over PSI's tenement in 1992, the Northwest Bay Co Pty Ltd successfully outlined a small resource of about 355,000 tonnes of good quality, open cuttable dolomite on the southern slopes of Kallista Hill situated approximately 2 km west of Pine Hill (Forster, 1993). Due to the demise of the operator, no production ensued and the ground was ultimately relinquished.

In the early 1990s, Mineral Resources Tasmania (MRT) completed three shallow diamond drill holes as part of its reconnaissance of the Tertiary/Quaternary sequences of the surrounding area (for locations see Calver and Forsyth, 1999):

Hole Styx 2	:	0 - 31m	:	Quaternary sediments
Hole Styx 3	:	0 – 32	:	Quaternary sediments
		32 – 35	:	Cambrian sandstone
Hole Styx 6	:	0 – 21	:	Quaternary sediments
		21- 22	:	Ordovician

1:25,000 scale mapping of the Maydena Sheet was completed by MRT geologists Calver & Forsyth in 1999, providing a basic, up-to-date geological framework for this district.

In 2003, during its first year of tenure, J.J. McDonald & Sons Mining Pty Ltd focused its activities on both the dolomite and silica rock/flour prospectivity of the larger tenement area. Reconnaissance identified the Loading Spur silica rock/gravel prospect and the Hedgehog Ridge silica flour prospect for further follow-up. A market study and departure of a potential client did not encourage further pursuit of a viable dolomite resource at this time.

Attention during the second year of tenure was concentrated on the two silica prospects outlined. Only a low tonnage potential for silica rock/gravel was indicated at the Loading Bay Spur Prospect and deemed of no further immediate interest. In contrast, encouraging low levels of impurities, especially iron, were indicated by assays of several surface samples of silica flour and gravel at the Hedgehog Ridge Prospect.

The third year's activities were focused on the Hedgehog Ridge Prospect. They comprised line cutting and gridding to provide access for further assessment of the silica flour occurrences there, followed by grid mapping and limited surface sampling.

The fourth year's activities concentrated on the northern part of the deposit and were aimed at a preliminary assessment of the quality and yield of the material to hand.

During the fifth year of tenure, main activities encompassed beneficiation test work on a small bulk sample from the southern part of the deposit. Field work was curtailed pending clarification and resolution of land access activities.

The current year's planned field activities were delayed due to the need to deal with regulatory matters related to the proposed drilling programme. However, air photography of the prospect area was completed. Discussions were held with geophysical contractors with a view to undertaking depth soundings of the sand and a raw material sample was submitted to TAM for preliminary testing assessment. Marketing of the silica flour end product from the prospect continued.

6. CURRENT ACTIVITIES

6.1 Work done:

Hedgehog Ridge Prospect

- 1:10,000 air photography coverage completed.
- Consultant engaged to identify geotechnical and other issues with possible negative impact on current and future activities at the prospect
- Consultant engaged to examine area to be drill tested for karst features.
- Site inspections undertaken with MRT and DIER (Roads and Traffic) officers re environmental, drill access and traffic control issues.
- 1kg of material submitted to TAM for preliminary tests.
- Technical visits to prospect with TAM and NU Energy personnel.
- Investigated geophysical depth sounding methods and crew availability as a precursor/alternative to drilling; crew found and engaged.
- Marketing: Results of bench-top processing of three samples introduced to two Japanese trading houses as well as OHC, TAM and NU Energy.
- Work programmes for 2008 field season submitted to MRT for approval.
- Statutory quarterly and annual reporting completed.

6.2 Statistical Summary:

No. of small bulk samples collected	:	1
Weight	:	1 kg approx.
No. of small bulk samples processed	:	1
No. of process route samples generated	:	2
No. of process route samples analysed	:	2
No. of determinations	:	18
Expenditure prior to current year	:	\$48,406.00
Expenditure for 9 months to 30.09.08	:	\$12,666.00
Cumulative Expenditure to 30.09.08	:	\$61,072.00
Estimated expenditure for 12 months to 10.01.09	:	\$ 21,000.00

7. RESULTS

7.1 Hedgehog Ridge Prospect:

7.1.1 Technical

At the beginning of the year, following a site inspection, a SEMF consultant was engaged to comment on the likely geotechnical risks of a sand mining operation in a segment of the prospect adjacent to the north of the Gordon River Road, where a preliminary drilling programme was planned for the 2008 summer season. The consultant was also requested to identify any other issues that might impact on the planned programme and on any possible future development of the silica sand/flour resource to be drilled including:

1. A 100m wide “wildlife” corridor, adjacent to the road, possibly required by Forestry Tasmania.
2. Specific DIER requirements for the offset of activities from the main road.
3. Requirements for progressive and final rehabilitation of the mined area.

Geotechnical Stability:

The consultant’s report states:

“From observations during the site inspection, the outer surface of exposed silica sand deposits appears to be very stable at near vertical grades. This is evident through the road cutting and another older cutting/embankment off the road on the 4750E flagged alignment. It is noted that the clay content of the silica sand is very low. There is no obvious evidence of erosion in the sand deposit that may have been caused by rainfall runoff, perhaps due in part to the deposit forming a high point in the local rainfall catchment, the good drainage characteristics of the sand and the vegetation cover over the deposit.

The stability of the sand deposit when exposed during mining activity will be subject to the angle of internal friction of the material, drainage control and mining methods. Studies have shown that the angle of internal friction of silica sands can vary from 30 to 50 degrees from the horizontal. It is expected that the sand in this deposit would have a Φ in this range also, with the northern slope of the deposit sighted to vary from 20degrees to 40degrees at the western end of the deposit.”

Specific DIER Requirements:

It was considered unlikely that DIER would be able to provide any advice without first being appraised of details regarding the proposed mine operations etc.

However the consultant considers that:

“With DIER approval, it would be feasible to consider mining operations being undertaken to within 5 metres of the edge of the sealed trafficable surface of the Gordon River Road. This setback would retain the existing road pavement shoulder, allow provision for table drainage and also provide clearance to install appropriate barrier fencing and screening for traffic using the road. Mining in the deposit could then be undertaken at an angle of up to 45 degrees, or greater pending results of geotechnical assessments, from the horizontal at this offset point.”

DIER was also consulted on possible issues arising from the more immediate need to construct access off the Gorgon River Road towards the proposed drill sites through the first 2.5m beyond the limit of any earthworks along the road corridor for which it is responsible.

During a site visit with DIER personnel specific issues of track entry construction, traffic movement and traffic control were raised.

These matters are receiving attention.

Rehabilitation:

Mining activity will require attention to sloping and re-shaping of the final mined profile in order to produce slopes with angles, lengths and shapes compatible with the surrounding landscape, suitable for future land use and not prone to unacceptable rate of erosion. Details may be subject to conditions of the eventual mining lease and approvals by other Departments.

Threatened Flora and Fauna:

There are no listings of any threatened flora and fauna in the area.

One plot on FPA plans of a threatened plant species in the area (*Stenanthemum Pimeleoides* – “propeller plants”) proved to be incorrect and was removed.

However, the possibility of karst features in the area was flagged.

“Wildlife” Corridor:

The area to be drilled, and possibly subject to mining in the future, is currently described as an FT management decision classification (MDC) area.

Currently, it is mooted that a 100m wide screening, or “wildlife”, corridor could be extended into this area.

Such a development would have the potential to sterilize a significant part of an already limited in situ resource and is clearly a matter of concern. However, it is understood that, subject to circumstances, such corridors could be reduced in width or relocated.

Following receipt and assessment of the consultant’s report, a request for a work programme approval was submitted to MRT. The proposed programme consisted of limited gridding, drill access construction and the completion of ten shallow aircore/RC drill holes.

The MRT approval process highlighted drill access and, later, karst issues, for further attention.

During a site visit with a MRT officer it was also noted that two drill site areas are now designated apiary sites.

The karst issue has been resolved. No karst features were found in the area to be drilled. (See consultant’s report in Appendix 1.)

Outstanding matters relating to drill access construction, traffic movement, traffic control and apiary sites continue to be addressed and are nearing resolution.

The need to attend to the above matters, combined with the need to abide by the Forestry Practices Code, delayed implementation of the proposed drilling programme which is now expected to be completed in 2009.

In order to at least obtain a preliminary indication of sand thicknesses at the prospect to justify drilling, non-destructive geophysical depth soundings using resistivity and ground penetrating radar methods were considered.

After some considerable effort, a suitable geophysical contractor was located with whom discussions are in train to implement this survey. It is anticipated that the survey will commence around year end 2008. MRT approval for this work is in place.

7.1.2 Marketing

Results for silica flour products derived from three bench top processed small bulk samples were introduced to, Itochu, Iwatani, OHC, TAM and NU Energy and were well received.

A further 1kg raw material sample was submitted to TAM for preliminary assessment of the middle fraction of the +45 μ -250 μ size band using two different approaches, with the following results (in ppm):

Sample	Prep	Al ₂ O ₃	Fe ₂ O ₃	TiO ₂	CaO	MgO	Cu	Cr	Mn	Ni
HR004B	Cut	235	22	22	450	291	0.14	0.62	0.24	0.08
HR004B	A-I	390	36	115	451	303	3.83	1.38	0.35	0.39

Particle Size Distribution: (% retained)

Sample	+425 μ	+300 μ	+250 μ	+212 μ	+150 μ	+106 μ	+75 μ	+45 μ	+25 μ	PAN
HR004B	12.4	4.6	3.6	3.2	11.4	13.2	11.4	20.8	17.6	0.08

From the TAM perspective, the results are judged “satisfactory” and appear amenable for processing into a commercial grade product, subject to suitable blending ratios being present in the deposit.

Technical visits to the prospect were undertaken with TAM and NU Energy personnel.

8. ENVIRONMENTAL & REHABILITATION ACTIVITIES

No environmental damage occurred during test sample collection and no rehabilitation was necessary. All plastic air photo survey markers were removed and marker sites cleaned up.

9. CONCLUSIONS

- 9.1** There appears to be no major geotechnical impediments to open cut sand extraction in the area intended for drill testing north of the Gordon River Road. However, the possible limits imposed by shallow angles may sterilise some of the area’s resource potential.

- 9.2** No threatened or endangered flora, fauna or karst features were identified in the main area of interest at the prospect.
- 9.3** The above reduce the risk profile of the project and alleviate to some extent concerns about future impediments to progress.
- 9.4** The above findings justify careful, stepwise progression to the next stage, i.e resource definition and testing by drilling.

10. RECOMMENDATIONS

- 10.1** Continue investigations into the extent and quality of the Hedgehog Ridge silica sand deposit in the light of generally encouraging technical results to date.

11. PROPOSED FUTURE ACTIVITIES

- 11.1** Before committing to a drilling programme, undertake geophysical depth soundings using resistivity and/or ground penetrating radar along segments of three previously established grid lines to gauge the depth of sand to be drilled.
- 11.2** Subject to positive results from 11.1 above, undertake the proposed ten hole RC/Aircore shallow drilling programme to test for depth extent and quality of the silica sand.
- 11.3** Sampling, assaying, bench-top processing tests, mineralogy, as appropriate.

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APPENDIX 1

HEDGEHOG RIDGE PROSPECT

KARST SURVEY

Geomorphology Assessment of Hedgehog Prospect, for Maydena Sands Pty. Ltd.

Introduction

The author was approached by Maydena Sands Pty. Ltd. to undertake a karst survey of The Hedgehog Ridge Prospect, Exploration Lease 17/2002. Fieldwork was undertaken on 21 October 2008.

The area of interest is a northwest-southeast trending ridge approximately 1 km long and 250 m wide, alongside the Gordon River Road ~8 km west of Maydena. Karst is known in the area, less than 1 km to the south east where large sinkholes and a cave are known in the Eocambrian dolomite sequences. Figure 1 shows the mapped distribution of interbedded fine grained dolostone (dolomite), carbonaceous mudstone and laminated cherts, though any dolostones are likely to have been silicified and weathered to form the extensive lag of fine grained siliceous sands. As the nearby presence of karst features demonstrates, unaltered dolostones are favourable for the development of karst.

Nature of work

Five cut gridlines cross the prospect and these are clearly flagged and pegged and cross the. Traverses on foot were undertaken along these lines and between them. See the attached map for traverses undertaken. Visibility was generally poor as the vegetation is dominated by thick ti-tree, with bauera, banksias and some wattles and eucalypts (mainly peppermints) on the ridge. North-east of the ridge, the vegetation changes and becomes more typical mixed forest with rainforest species. The vegetation changes are undoubtedly related to the presence or absence of fine grained siliceous sands.

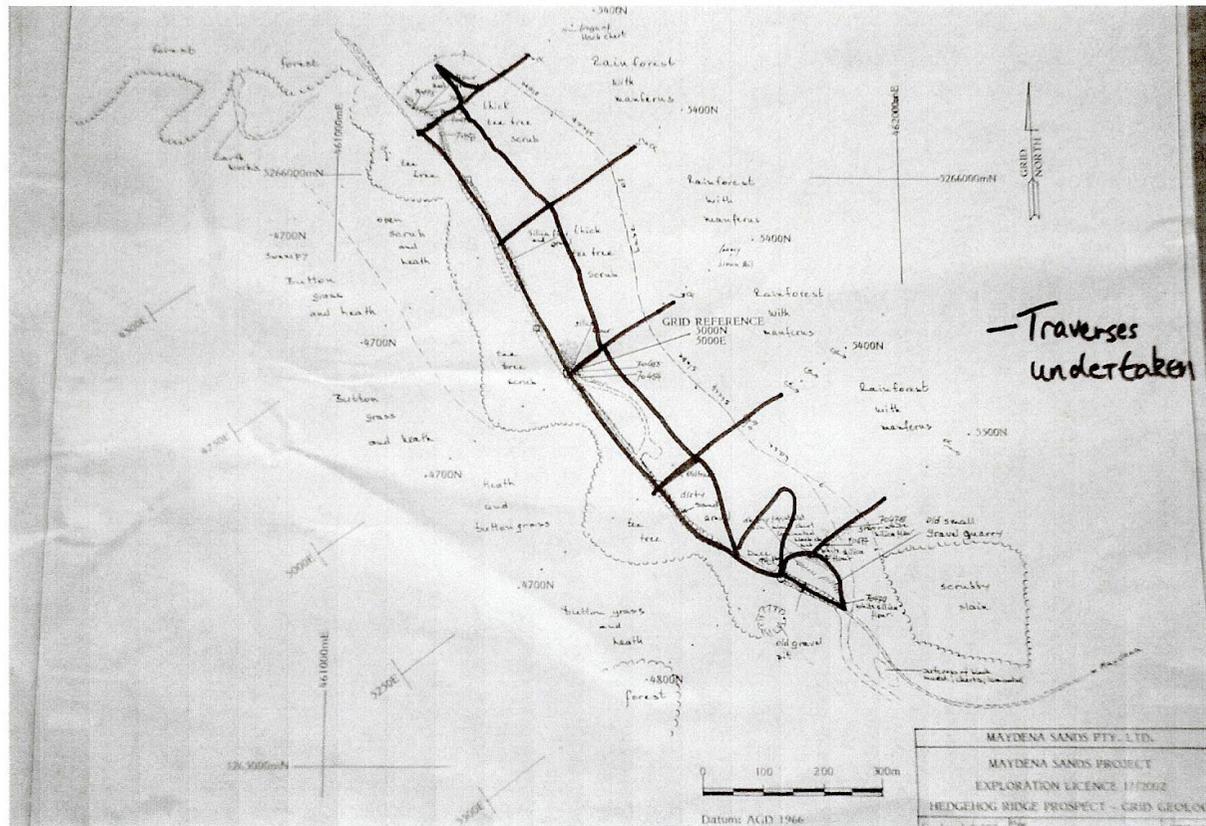
Findings

No karst features such as sinkholes or caves were observed, though there are karst-like features present. Alongside the road, there are excavations associated with culverts and road drainage that superficially appear to be sinkholes, though these are clearly not karstic. There are some dry gullies on the north-eastern flanks of the ridge that drain down the steep slope towards the south-eastern flowing creek. Rather than being karstic, these are more likely to be fluvial features developed on the relatively erodible sands.

Conclusion

In spite of the mapped dolomites within the prospect area, there has been extensive silicification and no karst has been developed. There are some karst-like features present, though these are either anthropogenic or fluvial in nature. On the basis of fieldwork to date, there is little likelihood of any karst development on the Hedgehog Ridge prospect, though these findings cannot be extrapolated beyond the area investigated.

Nathan Duhig
28 October 2008.



Traverses undertaken on foot on 21 October 2008.

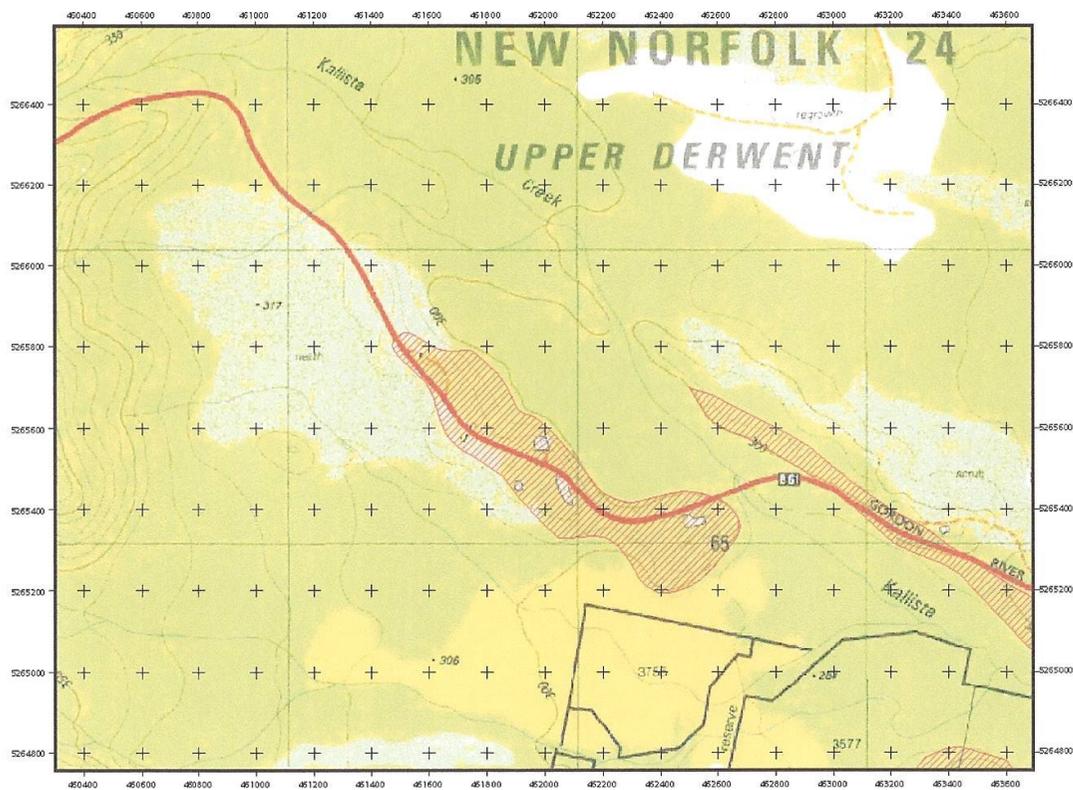


Figure 1. Mapped distribution of of interbedded fine grained dolostone (dolomite), carbonaceous mudstone and laminated cherts.

ILLUSTRATIONS

