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EXPLORATION LICENCE NO. 17/2002

MAYDENA, TASMANIA

PARTIAL RELINQUISHMENT REPORT

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ABSTRACT

Reconnaissance traverses, sampling and market conditions eliminated all but one prospect in E.L.17/2002. An area of 4 sq km surrounding this prospect is recommended for retention.

The remainder of the ground within E.L. 17/2002 has been assigned for relinquishment.

Keywords:

Maydena; Kallista.
Silica rock; Silica flour;
Dolomite; Relinquishment.

C O N T E N T S

ILLUSTRATIONS

1. INTRODUCTION

This brief report has been compiled in line with requirements attached to an application for relinquishment of 9 sq km of ground currently part of the 13 sq km Exploration Licence 17/2002. This relinquishment occurs at the end of the second year of tenure of this licence which remains in force until 10.01.08 and applies to all Category 3 and Category 5(a) Minerals.

Land classifications within the current tenement comprise:

State Forest – Multiple use forest land
Private Land
A Crown Reserve – (part of 14 Mile Creek)
MDC Informal Reserve Area
2 small Mining Leases (held by Norske Skog)

Extractive Industry is a permitted activity in the area under the Upper Derwent Shire Planning Scheme (1993).

The area is considered prospective for:

- High grade dolomite for use in the manufacture of magnesium using the Pidgeon process, with mining/processing fines for sale to the local agricultural market.
- High grade silica rock suitable for the manufacture of silicon, and also of magnesium by the Pidgeon process.
- Limestone for local agricultural use.
- Further supplies of high purity silica sand and flour to augment this company's resource base.

Previous work in the area is summarised by Ellis (in Jones, 1989) and Krummei (2003).

2. LOCATION AND INFRASTRUCTURE

E.L. 17/2002 lies to the west of Pine Hill with its eastern boundary approximately 6 km west of Maydena and about 95 km by sealed road west of Hobart (Fig 1.)

The tenement is well located with respect to infrastructure. Basic access to the northern and central segments of the area is provided by the sealed Gordon River Road. The southern and western segments are serviced by Maynes Road, with the south eastern section comprising private land given to pine plantations, containing a network of logging tracks.

Basic facilities, including housing and labour, 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 just 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. There are plans to complete the remaining 15 km section to Maydena within the next 2-3 years.

3. EXPLORATION TARGETS

In line with the deemed prospectivity of the area under tenure, the main exploration targets were:

- The lateral and downdip extensions of the small but open-sided Kallista Hill Cambrian dolomite deposit.
- The possible westward extensions of the Cambrian silica rock sequence mined for silica rock at the Western Quarry at Pine Hill by Pioneer Silicon Industries Pty Ltd for the production of silicon metal.
- Reported occurrences of Tertiary silica sand and flour of possible high quality.

4. ACTIVITIES

In the first year of tenure these included:

- Completion of desk top data review
- Acquisition of air photographs and most recent access maps
- Securing access to private land owned by Norske Skog under terms and conditions imposed by Norske Skog
- Orientation and confirmatory geological traverses throughout the area supported by limited float sampling
- Preliminary geological mapping, supported by tape and compass survey, of a 1100 x 500 m sub-area in the central west part of the tenement, accompanied by silica rock float sampling
- Limited reconnaissance sampling of an occurrence of silica sand/flour in the north west of the tenement
- Completion of a dolomite market study
- Inspection of the Kallista Hill dolomite prospect
- Scoping discussions with CODES re possible ground geophysical test traverses by an honours student.

Activities in the second year of tenure were severely curtailed by the lack of reliable line cutting and gridding crews in Tasmania.

Work was, therefore, restricted to:

1. Loading Bay Spur
    - Further recce silica rock gravel float sampling and mapping
    - Re-sampling and re-assaying silica rock material at Loading Bay Spur made necessary by a Laboratory incident.

2. Hedgehog Ridge
    - Particle size analysis on two previously collected near surface samples of silica flour
    - Inspection of area with a drilling contractor to assess drillability and drill access
    - Ongoing scoping discussions with CODES re ground geophysics traverses by student
    - Ongoing search for a suitable line cutting/gridding crew.

5. RESULTS

5.1 Tenement Geology:

The tenement embraces the upper and middle reaches of the Kallista Creek drainage basin with consequent widespread cover of Quaternary alluvium, including gravel, sand and clay.

Underlying and occasionally protruding through the alluvium are steeply dipping, folded and faulted sequences of lower Cambrian sediments resting on basalts and overlain by Cambro-Ordovician Dennison Group sediments (Calver & Forsyth, 1999). These sequences contain beds of dolomite potentially available for replacement by silica transported by hydrothermal fluids and deposited in favourable structural settings.

A 4 x 1 km, north-west trending block of these sequences occupies the central portion of the tenement, with Kallista Hill near its southern end and Hedgehog Ridge in the north. This represents the main target zone to be investigated for the presence of deposits of silica sand/flour and high quality dolomite.

Dolerite talus occupies a narrow zone on the steep slopes along the central section of the western tenement boundary.

5.2 Kallista Hill Dolomite Prospect:

Literature review and a field visit supports the concept of an open-cuttable, high grade dolomite deposit comprising in excess of 350,000 tonnes grading about 20.05% MgO, 30.6% CaO, 1.6% SiO_2, 0.2 Fe_2O_3 and 0.03% TiO_2 (Forster, 1992,1993).

This deposit remains open laterally and in depth.

5.3 Loading Bay Spur:

Recce mapping and surface rock sampling indicate a small deposit of only a few thousand tonnes of silica rock gravel (of possible glacial origin) averaging around 800 ppm Al_2O_3, 500 ppm Fe_2O_3 and 220 ppm TiO_2. This material is similar to the coarse vein silica rock material found at Pine Hill but quantities are too small for a stand alone operations.

5.4 14 Mile Creek Track:

A reconnaissance traverse did not locate any significant, in situ occurrences of silica sand or flour, except as road surfacing.

Boulders and cobbles of silicified sediment float occur over a zone of some 200 m wide near the southern end of this track. Minimum assay values of 1.22% Al_2O_3, 0.235% Fe_2O_3, 0.059% TiO_2 and 11 ppm Cr_2O_3 are too high for the material to be used in the production of silicon metal.

This material is of no further interest.

5.5 Hedgehog Ridge:

Encouragingly low impurity levels were encountered in recce samples of silica flour at this prospect. Further follow-up is planned.

Further details of work undertaken and results are given in Krummei (2003).

6. CONCLUSIONS

6.1 Due to loss of demand for high grade dolomite for magnesium production and only a small off-take and low demand growth for agricultural applications in Southern Tasmania (McBain, 2003), no further work is justified at present on the Kallista Hill dolomite prospect and its extensions.

6.2 The silica occurrences at Loading Bay Spur and 14 Mile Creek Track are uneconomic for reasons of small quantity and poor quality respectively. Further expenditures on these prospects is not warranted.

6.3 Reconnaissance results to date at Hedgehog Ridge justify further follow-up.

6.4 Most of E.L. 17/2002 can be relinquished except for an area of sufficient size surrounding the Hedgehog Ridge prospect to allow follow-up work to proceed.

7. RECOMMENDATIONS

7.1 Retain an area of 4 sq km around the Hedgehog Ridge prospect as indicated in Fig. 2.

REFERENCES

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