

MINERAL HOLDINGS AUSTRALIA PTY LTD

**EXPLORATION LICENCE EL47/2011
DIP RANGE, NW TASMANIA**

**ANNUAL REPORT ON EXPLORATION
TO AUGUST 2015**

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ABSTRACT

This report gives a review of the exploration work carried out by Mineral Holdings Australia Pty. Ltd. (MHA) over the past 12 months on EL47/2011. The Licence originally covered 186km² but this was reduced to 38km² in September 2013. The Licence is located in the Dip Ranges and surrounds the Thomas Mountain silica mine within 23M/2009 and RL1/2005.

The Licence covers outcrops of the Detention Quartzite and the Jacobs Quartzite of the Rocky Cape Group and the target of the exploration program is silica, silica sand and quartzite for the chemical, metallurgical, glass and coal seam gas industries.

Previous exploration by MHA and its joint venture partners has outlined a substantial inventory of potential silica products in retention licence RL1/2005 and the intention was to explore the adjacent areas for any further resources of those non-metallic minerals.

A detailed programme of foot traversing was carried out to locate any extension to the two known deposits and to locate any additional deposits of frac sand. No significant bodies were located. Five 8kg samples were taken - three from Alarm Creek and two from Shakespeare Hills and submitted to Amdel/Bureau Veritas Minerals Pty Ltd for crush testing. Results are awaited.

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1.0 INTRODUCTION

EL47/2011 was granted to Mineral Holdings Australia Pty. Ltd. (MHA) on 16 September 2012 for a period of 5 years. The Licence originally covered 186km² in the Dip Ranges, surrounding the Thomas Mountain silica mine within 23M/2009 and RL1/2005. The Licence was reduced to 38km² on the first renewal in September 2013.

The Thomas Mountain mine contains significant resources of high-quality quartzite and frac sand located in the northern Dip Range about 25km south-west of Wynyard and 20km south-east of a deep water harbour at Port Latta. Access is via the township of Montumana on the Bass Highway, 25km west of Wynyard, thence 6 km south along Montumana and Newhaven roads to a turn-off just east of Hogarths Creek. The mine site is held within 23M/2009, an area of 2km² inside RL1/2005.

Exploration licence EL47/2011 covers outcrops of the Detention Quartzite and the Jacobs Quartzite of the Rocky Cape Group surrounding the Thomas Mountain mine and the target of the exploration program is for any additional resources of silica, silica sand and quartzite for the chemical, metallurgical, glass and coal seam methane industries.

Initial exploration during 2013 located an area of silica sand in the Alarm River area, extending over a length of at least 500 metres and running south west from the boundary with RL1/2005. This area is directly along strike from the large area of frac sand south of Hogarth Creek. Follow up hand auger drilling has been carried out to determine the full extent and width of the zone.

A detailed program of foot traversing was carried out in the northern section of the Licence in the Shakespeare Hills area. A second area of sand was located, covering an area of 300 by 100 metres. Three samples were taken for detailed size analysis.

During 2015, a detailed programme of foot traversing was carried out to locate any further extension to the two known deposits and to locate any additional deposits of frac sand. No significant bodies were located. Five 8kg samples were taken – three from Alarm River and two from Shakespeare Hills and submitted to Amdel/Bureau Veritas Minerals Pty Ltd for crush testing. Results are awaited.

2.0 GEOLOGY

Resources of high-grade quartzite have been reported in various government publications as occurring within the Proterozoic rocks of north- west Tasmania. The better quartzite occurred within the Detention Quartzite and Jacob Quartzite sub-groups and rocks of these sub-groups underlie most of the licence area.

Gee (1971) described the Proterozoic sequence within the Rocky Cape Group from youngest to oldest as – the Jacob Quartzite (1130m in thickness), the Irby Siltstone (760m) and the Detention Quartzite (1400m). Gee suggested the Detention Quartzite contained about 10%

siltstone in beds from a few metres to more than 80 metres in thickness, while the Jacob Quartzite is a pure quartz sandstone and is the coarser grained of the two. The Rocky Cape Group, in turn, overlies the Cowrie Siltstone which was at least 2,400m in thickness.

Structurally the Detention Quartzite and the Jacob Quartzite are folded into a tight series of anticlines and synclines with north-east trending and dipping axes with folds becoming overturned in the east, resulting in north-west dipping beds at 45 degrees or above.

Gee (1971) described the quartzites as uniformly fine grained orthoquartzites with 99% quartz grains and a granular to glassy texture, depending on the degree of cementation by silica. Turner (1989), on the other hand, preferred to refer to the mature quartzose sandy sediments as quartz arenites and attributed their variable physical character as mostly due to variable silicification and occasionally to metamorphism.

Along with the quartzites are areas of loose silica sand which appear to be areas of uncemented quartzite. The sands are high purity silica sand and are suitable for use in coal bed methane extraction.

3.0 CURRENT EXPLORATION

The Shakespeare Hills area was extensively traversed on foot by prospector, Mr Kevin Pinner, and much of the area was better exposed after recent bushfires, giving a much better look at the geology. Roads and tracks are very rare in this area and traversing on foot is the only available method of exploration.

The sand body in this area is approximately 300 metres by 100 metres but recent exploration has not been able to increase the size of the resource.

Three hand auger samples were taken for size and roundness analysis and reports were detailed in the 2014 Annual Report. The yield of the important -20+40 and -40+70 size fractions was very good and the roundness of the grains was also acceptable.

The next most important test is the K factor or crushability test. Each of the 20/40 and 40/70 fractions are crushed at a pressure of 1,000 pounds per square inch (psi) and the amount of fines (crushed grains) measured. The pressure is increased in 1,000 psi increments until the total amount of fines is greater than or equal to 10% of the sample. That point is known as the K factor. A K factor of 3K (3,000 psi) is suitable for holes to 950 metres depth while a 4K sand is suitable to 1,300 metres depth.

Crush resistance tests by the industry accepted labs (i.e. Stim-Lab and PropTester – both located in the US) are extremely expensive, with Stim-Lab charging around \$5,000 per sample. As Bureau Veritas in South Australia will conduct the same test for about \$1,000 per sample, MHA will use Bureau Veritas for initial test work and if an area proves suitable for mining then some samples will be sent to Stim-Lab for verification.

Two 8kg samples were collected from the Shakespeare Hills deposit and forwarded to Bureau Veritas. Results are awaited.

Eight samples were previously taken in the Alarm River area, which is a south-west continuation of the Hogarth Creek frac sand deposit. An attempt was made to hand auger across the width of the sand area but the auger could only penetrate to about 1 to 1½ metres and a power auger will be necessary to evaluate the deposit at depth.

Details of the roundness and sizing analysis of all eight samples have been reported previously. The roundness is good and, although somewhat more variable than the deposit in 23M/2009, the favourable 20/40 and 40/70 fractions still make up a major part of the sand.

The zone is at least 200 metres wide and up to 500 metres in length. Four additional bulk samples were collected and forwarded to Bureau Veritas for crush resistance testing. The work takes several months to do and results are awaited.

If the crush resistance testing is successful then the two resource areas need to be mapped in detail and a track built to allow access for an auger drill to evaluate the deposits at depth.

4.0 EXPENDITURE

Expenditure on the Licence to the end of June 2014 by MHA was \$32,166.99. Expenditure to the end of June 2015 (the latest figure available) was \$9,760.78, making a total of \$41,927.77. Expenditure for the next twelve months is expected to be in the order of \$15,000.

5.0 CONCLUSION

Several new sources of potential frac sand material have been identified and evaluation of the sand is continuing.

6.0 REFERENCES

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7.0 KEYWORDS

Dip Range, Thomas Mountain, Detention Subgroup, Jacob Quartzite, Rocky Cape Group, Frac Sand, Quartzite, Silica Resources.

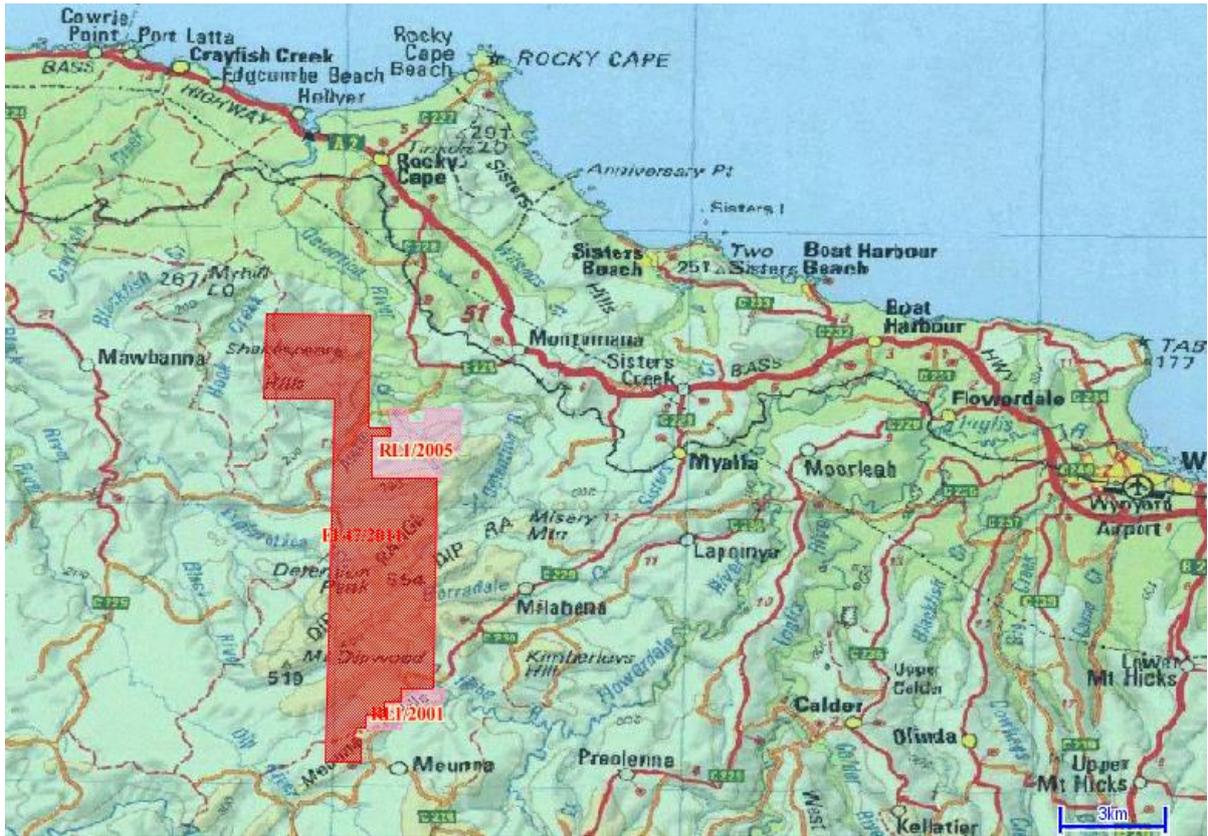


FIGURE 1: Location Diagram - EL47/2011 Dip Range

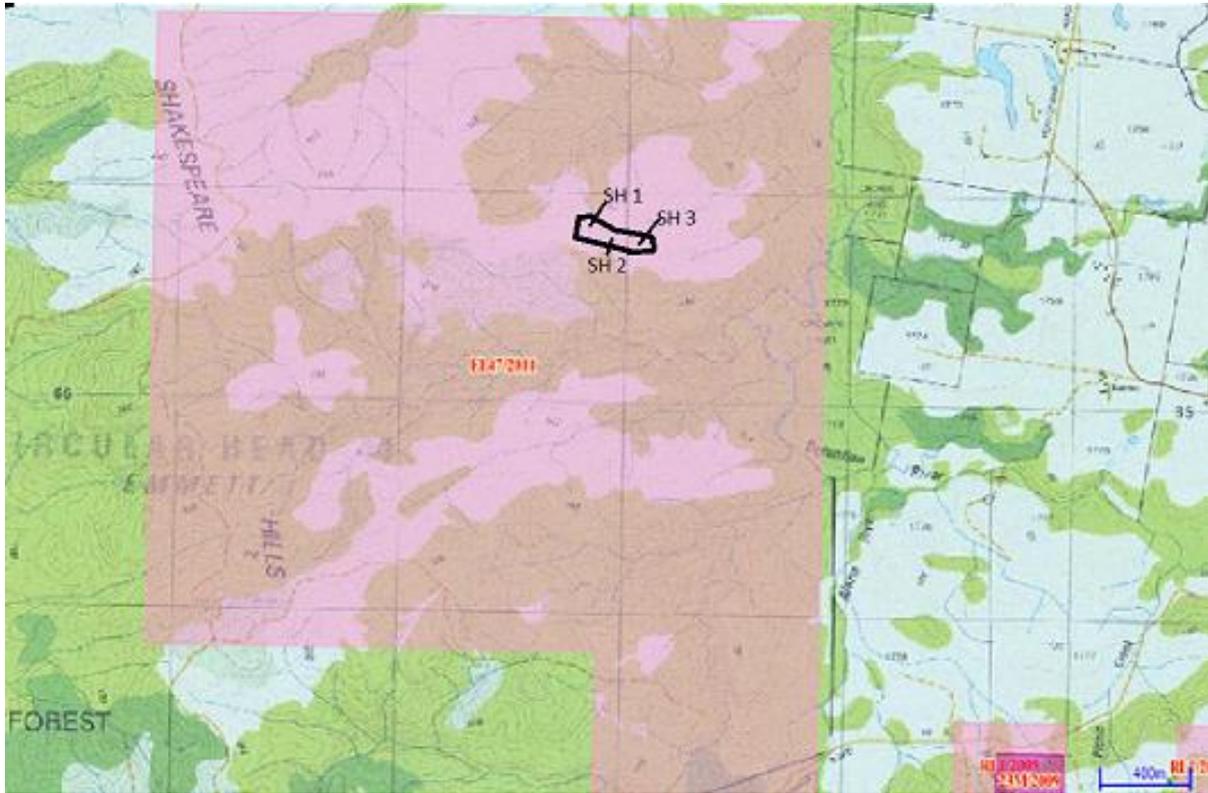


FIGURE 2: Shakespeare Hills Sand Deposit - Location & Sample Sites

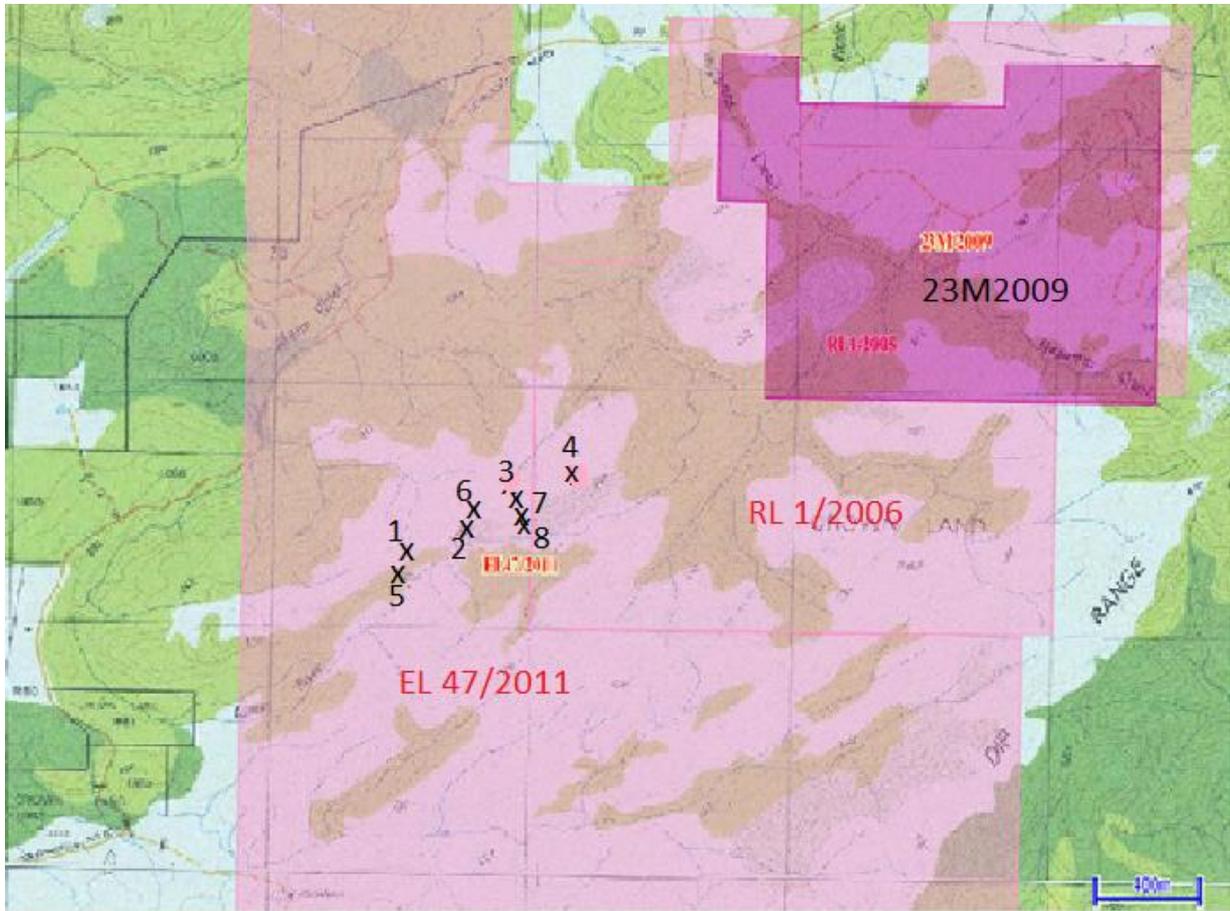


FIGURE 3: Alarm River Sand Deposit - Sample Sites
(Samples AR 1 to 4 reported previously)