MINERAL HOLDINGS AUSTRALIA PTY LTD

RETENTION LICENCE 1/2005
HOGARTH CREEK, NW TASMANIA

ANNUAL REPORT ON EXPLORATION
TO JUNE 2007

Compiled by

T W Dickson
5 Crouch Court,
Doncaster Vic 3108
20th May 2007

For

Mineral Holdings Australia Pty Ltd
11 Kent Court,
Toorak Vic 3124

TABLE OF CONTENTS

RL 1/2005 HOGARTH CREEK, NW TASMANIA, ANNUAL REPORT 2007

ABSTRACT

This report gives a review of previous exploration and evaluation work carried out by Mineral Holdings Australia Pty. Ltd. prior to the grant of RL 1/2005 and lists the marketing and exploration work carried out over the past 12 months on RL 1/2005. The licence covers 5 sq km in the Dip Ranges and encloses the Thomas Mountain Silica Mine.

The licence covers the Detention Quartzite of the Rocky Cape Group and the target of exploration is silica, silica sand and quartzite for the chemical, metallurgical glass and coal seam methane industries.

Previous exploration by Mineral Holdings Australia Pty. Ltd. and its joint venture partners has outlined a substantial inventory of potential silica products in the RL namely 0.35Mt of hard, silicified quartzite, 1.55Mt of hard sandstone, 0.65Mt of poorly consolidated, soft sandstone and 2.45Mt of very soft unconsolidated sand. Some infill drilling would be required to raise this resource estimate to the Indicated Level (JORC Code)

Current marketing interest is centered on the production of frac or propping sands for the coal bed methane industry.

RL 1/2005 HOGARTH CREEK, NW TASMANIA, ANNUAL REPORT 2007

1.0 INTRODUCTION

RL 1/2005 was applied for by Mineral Holdings Australia Pty Ltd on 21th Feburary 2005 and was granted on 15th June 2005. This is the Annual Report for year two of the licence. There was no report for 2005 as no work was carried out during the first year of the Licence.

RL 1/2005 covers the site of the Thomas Mountain Silica Resource which was originally covered by CML 8M/1989 and 1W/1088. Under its policy of revoking non performing mining leases Mineral Resources Tasmania suggested that a Retention Licence would be a more appropriate title for the marketing and industrial testing activities currently being pursued by MHA. Consequently Rl1/2005 was granted and the mineral leases cancelled.

The Thomas Mountain Mine and prospect occurs in the northern Dip Range about 25 km 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, 25 km west of Wynyard, thense 6 km south along Montumana and Newhaven roads to a turn-off just east of Hogarths Creek.

Over the past two years, MHA has had discussions with a number of industrial companies, within Australia and overseas, as potential customers or developers of the deposit. There has been considerable interest in the potential for producing “frac” sands from the site and MHA has carried out a limited program of sieve analysis to determine the range of size fractions of sand available on the site.

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 sub-group and rocks of this sub-group 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 Sub-group (1400m). Gee suggested The Detention Sub-group contained about 10% siltstone in beds from a few metres to more than 80 metres in thickness. The Rocky Cape Group, in turn, overlies the Cowrie Siltstone which was at least 2400m in thickness.

Structurally the Detention Quartzite is 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 call the mature, quartzose, sandy sediments quartz arenites and attributes their variable physical character as mostly due to variable silicification and occasionally to metamorphism.

The silica resources currently outlined in the licence are 0.35Mt of very hard, silicilied sandstone or quartzite, 1.55 Mt of hard sandstone, 0.65 Mt of poorly consolidated or soft weathered sandstone and 2.45 Mt of unconsolidated sand. The potential uses of the resources include silicon metal, silica sand and quartzite for the chemical, metallurgical, glass petroleum and coal seam gas industries.

3.0 PREVIOUS EXPLORATION AND EVALUATION

There has been a long history of exploration by MHA and a series of joint venture partners for a wide range of silica products at Thomas Mountain. Duncan (2005) summarized that work as follows-

Longworth and McKenzie P/L, 1981 (for Kaiser Aluminium) in the area NE of Hogarths Ck. They developed-

5 costeans
27 air track holes for 345m across 6 sites, none deeper than 15m
4 diamond drill holes for 126 m.
Chemical analyses on surface, costeans and 2 diamond holes. Percussion holes not analysed due to suspected contamination
5 samples subjected to abrasion and decrepitation testing.

The test work proved the amount of hard quartzite, suitable for ferrosilicon production, within the Detention Group, was more limited than first thought. There was deep weathering with variable secondary silicification and much of the unit was a poorly cemented sandstone or sand below a hard silica cap. While the quality of the silica near surface was good the Al2O3 content increased with depth as the alumina leached from the weathering profile was washed into joint faces below the water table.

Kaiser withdrew from the joint venture and Australia, selling their interests in silicon to **Pioneer – Pechiney** who later investigated Thomas Mountain as a potential smelter feed for silicon metal. They carried out furnace trials at Electrona in 1988 on a 209 tonne bulk sample of crushed and sized quartzite of 99.7% SiO2 from the Hogarths Quarry and reported satisfactory performance although the Al2O3 levels were considered to be too high due to contamination with material from below the water table. A second parcel of 204 tonnes taken from above the water table ran satisfactorily with very low Al2O3 and no technical problems were reported.

The plant at Snug was closed in 1991 and Pioneer took no further interest in the area.

Monier Ltd., in 1987 tested an area of silica sand in L&M's No2 traverse just north of Hogarths Creek They developed 3 percussion holes to 12m depth and found the material suitable as an export quality glass sand.

The Australian Glass Manufacturers Company (ACI) tested 4000tonnes of Thomas Mountain sand in Hobart. The sand showed "excellent low cost furnacing" and averaged 99.92% SiO_2 after simple washing.

Temco 1990 Hogarths Gully south side.

In 1990 Temco drilled an RC hole to 102m inclined at 45º easterly from the quartzite cliffs on the south side of Hogarths Gully, on the future site of the bulk sample quarry. The sediments varied from hard quartzite to soft sandstone and uncemented sand in short intervals throughout the hole. Best grades were from 0 to 10m and from 52 to 69m with an average grade of 98.9% SiO_2, 0.37% Al_2O_3, 0.23% Fe_2O_3 and 0.05%TiO_2. The clay jointings in the drill core were not washed in the tests and a higher grade result should be achieved by simple washing.

An access road was built into the cliffs of hard glassy quartzite in Hogarths Gully by MHA and 4033 tonnes of quartzite was quarried and tested in two furnace trials at Temco, Bell Bay.

The results proved that the Dip Range quartzite had an average grade of 99.7% SiO_2 and 0.2% Al_2O_3. The material was competent, non-decrepitating, eminently suitable for ferrosilicon production and was considered superior to other silica ores tested, including their own feedstock from Whyalla. The Dip Range Quartzite consumed 5-10% less energy than the other silicas tested.

The Temco plant closed in 1991 and converted to silicon-manganese production which required a much lower purity and ultimately locally sourced feed stock.

Mineral Holdings 1987 to present.

Apart from developing the quarry on Hogarths Gully MHA carried out extensive programs of excavator pitting and hand auger drilling for sand resources both NE and SW of Hogarths Creek. An area on the eastern side of the quartzite ridge south of Hogarths Creek returned high purity sand with SiO_2 values over 99.1% and both Al_2O_3 and Fe_2O_3 less than 0.05%. A second area north of the area sampled by Monier north of the Creek was tested by 27 hand auger holes. Mean depth was 0.9m and two thirds of the 3,000 sq m area contained contained more than 40% of the significant 20/45 US mesh size category for proppant sand.

Over this period a number of industrial tests and trials have been made. **Dow Corning** successfully tested small samples of quartzite and sand for production of silicon metal with a view of setting up a plant in Tasmania. They ultimately set up in Brazil.

Norton Abrasives of Lillesand Norway tested two 150 tonne samples, one of quartzite and one of sand from Thomas Mountain for the production of silicon carbide. The trials were considered very successful with a high percentage yield of green silicon carbide and excellent furnaceability. Norton also considered setting up a plant in Tasmania but were unable to obtain a suitable price for power and set up in Venezuela instead.

Considerable effort was put into testing the sand as a propping agent in oil drilling. Dip Range sand was tested by **Stim Laboratories, Halliburton Services and Dowell Schlumberger** of the USA and **Santos and Amdel** in Australia. Tests were carried out on the 20/45 size range (US screen) which is the -850 to +420um fraction. Dip range sand is a fine/medium grained sand with a median value of about 250um with about 50% in the 20/45 size fraction

As summarized by Stim, the Dip Range sample passed the size analysis, the acid solubility test and the turbidity test but was slightly below standard for shape factor, grain clusters and crush resistance tests for deep wells. From the Amdel tests, it is found that the sand grains have a dramatic decrease in crush resistance at about 4000 psi which would , according to Halliburton, restrict the use of the sand to shallow wells where less than 1200 psi is required in the recovery of methane gas from coal seams.

In 1993/4 MHA developed 42 hammer drill holes along 8 sections for 666m in the area SW of Hogarths Creek. This has allowed a resource estimate to be made for an area of about 25 Ha extent to a depth of 10 metres extending south- west of the Quarry site. (Duncan (2005) estimated an inferred resource of **5 million tonnes** of siliceous material in the area just south of Hogarths Creek which breaks down to –

0.35 Mt of very hard, silicified sandstone,
1.55 Mt of hard sandstone,
0.65 Mt of poorly consolidated, soft sandstone and
2.45 Mt of very soft sand

Duncan suggested some infill drilling would be necessary to lift the resource to the Indicated level of the JORC Code. He also suggested a significant increase in resource was likely at depth and along strike to the NE and SW with an inferred 20 Mt of high grade sand and sandstone available as a conservative figure in the area of the Retention Licence.

4.0 CURRENT EXPLORATION AND MARKETING

Marketing letters have been sent out to a number of companies inviting them to inspect, or declare expressions of interest in, the Thomas Mountain mine with a view to developing extractive and processing industries in NW Tasmania. The companies include OI Asia Pacific (ACI Operations P/L), Mitsubishi Australia Ltd., RIO Tinto, Santos, Halliburton Services and Dowell Schlumberger. Technical meetings and /or site visits were held with Mitsubishi and OI Asia Pacific.

All companies expressed a keen interest in the potential for frac or proppant sands and as a result MHA have attempted to determine if there is any systematic variation in grain size within the sand unit. Test samples were sieved in the field from several sites around the surface of the sand deposit. As indicated in the table below there is some variation and most likely this is due to stratigraphic differences between the original sandstone units. The sites are indicated on the attached plan. Plus 20 mesh and 20 to 45 mesh are the most favoured size ranges.

Sample	+20#	20-40#	40-60#	-60#
Pit No1	-	54.5	25.0	20.5
East end costean from No1 pit	5.0	45.0	28.0	22.0
West side Pit No1	6.0	61.0	19.0	14.0
Pit No2	-	58.0	19.0	23.0
Start of track to No2 Pit	-	55.0	24.0	21.0
Former ACI stockpile	1.7	67.7	12.5	18.0
1000t sand stockpile	2.5	70.0	11.4	17.8
Hole 30 at 5m	2.5	50.0	27.5	25.0
Hole 36 at 5m	5.0	36.0	24.0	35.0
Hole 36 at 17m	2.0	30.0	35.0	33.0

5.0 CONCLUSION

Marketing efforts by MHA have generated considerable interest in the potential for the Thomas Mountain mine to produce proppant sands for the expanding coal seam methane industry. Some 40 to 60% of the unconsolidated sand falls within the favourable 20 to 40 mesh size range and in a commercial operation the run of mine material could be screened to produce a +30mm fraction of metallurgical silica, a 20 to 40 mesh fraction of frac sand and a -40 mesh fraction for glass sand. The deposit is too coarse for silica flour.

Discussions will continue with interested parties with a view to developing a commercial mining operation.

No ground disturbance was necessary in the past 12 months and consequently there was no need for rehabilitation.

6.0 REFERENCES

Anon, April 1981. Report on Stage 2 – Geological Investigation of EL 43/1970 for Kaiser Aluminium. Longworth and McKenzie Pty. Ltd. TCR 81-1553.

Anon, June 1981. Report on Stage 3 – Preliminary Drilling of EL 43/1970 for Kaiser Aluminium. Longworth and McKenzie Pty. Ltd. TCR 81-1573.

Anon, Aug, 1994. Treatment of A High Grade Silica Sand for Gwalia Consolidated Ltd. Dip Range. Ammtec Ltd. TCR94-3652

Bacon, C.A. 1989. Silica. Miner. Resour. Tasm. 12.

Duncan, D. McP., March 2004. Exploration Licence 38/2002 Dip Range, NW Tasmania. Annual Report on Exploration to March 2004. Mineral Holdings Australia Pty. Ltd.

Duncan, D. McP., Feb, 2005. Application for a retention Licence as a Flow on Title from EL 38?2002, Previously EL 43/1970, and MLS 8M/1989 and 1W/1988- Dip Range N.W. Tasmania. Mineral Holdings Australia Pty. Ltd.

Gee, R.D, 1971. Table Cape, Tasmania. Tasm. Geol. Atlas 1 Mile Series Expl. Rep., Sheet 22 (8016S).

Threader, V. M. Nov, 1989. Annual Report, EL 25/1988 (Dip Range). Mineral Holdings Australia Pty. Ltd. TCR 89-3047.

Threader, V. M. Oct, 1990. Annual Report, EL 25/1988 (Dip Range). Mineral Holdings Australia Pty. Ltd. TCR 90-3193.

Threader, V. M. Oct, 1991. Annual Report, EL 25/1988 (Dip Range). Mineral Holdings Australia Pty. Ltd. TCR 91-3307.

Threader, V. M. Oct, 1992. Annual Report for 1991-2, EL 24/1988 (Champion Road) andEL 25/1988 (Dip Range). Mineral Holdings Australia Pty. Ltd. TCR 92-3395.

Threader, V. M. Oct, 1994. Annual Report for 1993-1994, EL 25/1988 (Dip Range). Mineral Holdings Australia Pty. Ltd.

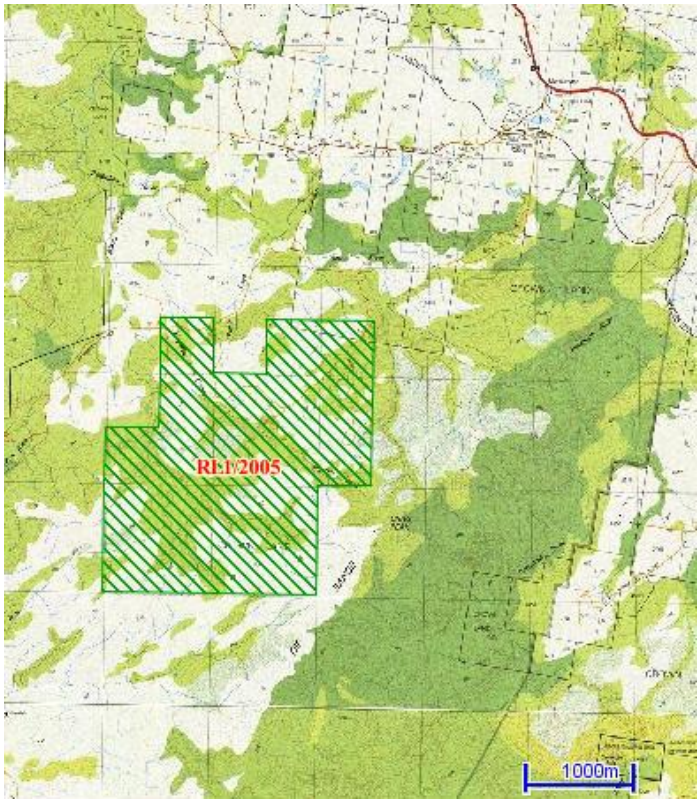
Threader, V. M. Aug, 1995. Annual Report for 1994-1995, EL 11/1992 (Muenna) and EL 20/1993 (Hebe River). Mineral Holdings Australia Pty. Ltd. TCR 95-3765.

Threader, V. M. June, 1996. Relinquishment Report. EL 25/1988 Dip Range (Part). Mineral Holdings Australia Pty. Ltd. TCR 96-3879

Turner, N.J., 1989. in Geology and Mineral Resources of Tasmania. Special Publication Geological Society of Australia 15. Eds. Burret, C.F., Martin, E. L.

7.0 KEYWORDS

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



PLAN 1 Location diagram RL 1/2005