RETENTION LICENCE 1/2001
MEUNNA

REPORT ON EXPLORATION
MARCH 2010 to MARCH 2011

For
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ABSTRACT

RL 1/2001 was granted to Mineral Holdings Australia Pty Ltd on 1st March 2002 for a period of 3 years over an area of 2 sq km in North West Tasmania. The Licence was renewed on the 1st March 2005 for a period of 3 years to 1st March 2008 and subsequently for another 5 years to 1st March 2013. The Licence is a flow on title from EL 11/1992 and covers exploration for Category 3 construction materials and 5 Industrial minerals and semi precious stones.

The Licence was applied to cover the silica resources of the 1130m thick Proterozoic Jacob Quartzite, a quartz arenite formation within the Rocky Cape Group. The resources lie along a NE-SW trending 2Km length of the Muenna Hills. The targets are high grade quartzite and sand to supply local and overseas markets with fracturing (frac) sand, silicon or ferrosilicon products and materials for the glass making industry.

Exploration carried out by Mineral Holdings Pty. Ltd. under EL 11/1992 over the period 1992 to 2002 has outlined an indicated resource of 90,000 cu m and an inferred resource of 270,000 cu m of silica sand and gravel. In addition, there is an inferred, in situ, quartzite resource of 700,000 cu m or 1.7 million tonnes, assuming an SG factor of 2.5.

There is greatly increased interest in the availability of frac sands for the use in the coal gas industry in Queensland and New South Wales and in the availability of high grade silica sand and quartzite for the production of liquid crystal screens and solar panels. Interest in the production of fused silica, silicon carbide, silicon metal and glass manufacture is also increasing.

Information meetings and/or field visits have been arranged with Dow Corning Corporation, Haliburton, Cominex Pty Ltd. and Temco.

Discussions with these companies will continue with a view to potential joint ventures and future development of the resource.

1.0 INTRODUCTION

RL 1/2001 was granted to Mineral Holdings Australia Pty Ltd on 1st March 2002 for a period of 3 years over an area of 2 sq km in North West Tasmania. The Licence was renewed on the 1st March 2005 for a period of 3 years to 1st March 2008 and subsequently for a further 5 years to 1st March 2013. The Licence is a flow on title from EL 11/1992 and covers exploration for Category 3 construction materials and 5 Industrial minerals and semi precious stones.

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2.0 PREVIOUS EXPLORATION

Over the past 20 years, Mineral Holdings has carried out an extensive program of exploration for silica resources in North west Tasmania. It has identified resources at Thomas Mountain (Dip Range) RL 1/2005, (quartzite and sand), Champion Road RL 2/1996 (silica flour) and Muenna originally EL 11/92 now RL1/2001 (quartzite and sand). The exploration effort on EL 11/92 has been described in the series of annual reports by V.M.Threader (listed in the reference) and was summarized by David Duncan as follows.

" In the year to 1993, exploration consisted of preliminary traverses along existing tracks and three surface samples were taken from an area just west of the Newhaven Track/Myalla Road junction. The samples were found to be of high purity sand derived from quartz arenite with SiO2 greater than 99.6%. The conclusion was that the area was prospective for quartz arenite and derived sand as local accumulations in depressions and hill cap remnants.

In the following year, some 26 samples of rock chips and sand derived from the Jacob Quartzite were taken along roads and logging tracks. Most of these were discounted due to high levels of the natural contaminants Al2O3, Fe2O3 and TiO2. Three samples of sand from the Meunna Hills, NE of Myalla road showed high chemical purity with average contaminant level of about 0.07%. The area of the Licence was reduced to 30 sq km.

The year to 1995 saw eleven excavator pits completed along disused logging tracks in the Meunna Hills following up on the surface sampling. An insitu resource of 90,000 cu m of sand and gravel was identified over an area of 25,000 sq m to an average depth of 3.6 m above a hard sandstone bedrock. Sizing studies showed that 50% of this was sand at minus 425 microns grain size. Chemical analyses revealed that the iron content was variable with the average content being 113 ppm. However, three of the samples indicated that they could meet the highest purity classification (less than 20 ppm Fe_2O_3) for the silica sand market.

In 1996, thirteen percussion holes were drilled along the crest of the ridge on the Meunna Hills. Because of drilling difficulties and problems with sample return, only one hole reached its target depth (18m). Geochemistry carried out on the successful hole indicated a general increase in the level of the contaminants TiO_2, Al_2O_3 and Fe_2O_3 at about 10-12m depth, above that the SiO_2 content being 99.4% or better. This is the pattern repeated throughout the NW and suggests enrichment by silica by either leaching of impurities or silicification.

Five airtrack holes were drilled successfully in 1997 with downhole hammer in the area of the high quality silica sand defined during the excavator program with all holes reaching target depth. Preliminary iron contents carried, out by Index Minerals, range from 217 to 1040 ppm Fe_2O_3 with the lower values being found in the top 10m. This is probably too high for premium quality silica which should be less than 200 ppm Fe_2O_3 but is considered to be acceptable for secondary metallurgical reade silicon or ferrosilicon production”

In December 2004, 5 pits were dug by excavator for an aggregate depth of 11.9 m in the area previously reported as less than 20 ppm Fe_2O_3. The pits all terminated in hard sandstone basically when the hole refused to advance with ripping in any reasonable time. When dug out and brought to the surface, the material presented as up to 30% blocks of sandstone / quartzite in a matrix of mainly fine grained, light brown sand.

Channel samples of the sand profile were washed to remove organic material, dried and passed over a magnet to remove any magnetic material and then assayed. The Fe_2O_3 content of these test pit samples at 187 to 455 ppm does not repeat the minus 20 ppm values of the first excavator program. In general, although the silica content is in the range of 99.5 to 99.8%, the contaminants are at least an order of magnitude too high for most silica flour specifications particularly in Fe_2O_3, TiO_2, K_2O and the metals Mn, Cu, Cr and nickel.

3.0 INVENTORY OF SILICA RESOURCES

The resources identified in RL 1/2001 by Mineral Holdings are based on the 1130 m thick Jacob Quartzite, a quartz arenite formation within the Rocky Cape Group. They lie along a NE-SW trending 2 km length of the Meunna Hills (Plan 2). The resources are-

Sand and gravel	90,000cu m	Indicated

	270,000cu m	Inferred
Quartzite/sandstone	700,000cu m	Inferred

The insitu resource of 90,000cu m of sand and gravel has been identified in the NE of the area based on 11 excavator pits over an area of 25,000 sq m with an average depth to hard sandstone bedrock of 3.6 m. Sizing and purity studies are given in the annual exploration accounts. Duncan (2002) judged that this deposit meets the criteria for the Indicated Resource Category (JORC 1999).

This sand and gravel resource occurs on the SE flank of the northern part of the NE-SW trending ridge. There is a distinct possibility that, following the pattern elsewhere in Tasmania, the deposit extends along the entire SE flank of the ridge to correlate with the sand and gravel resources of the Pokes Road Quarry located at the SW end. The ridge topography may have protected the resource on the sheltered SE flank from the eroding effects of the wind and sun prevailing from the north and west. If this is the case an additional Inferred resource of 270,000cu m of sand and gravel could lie along the SE flank of the ridge.

Also, eighteen percussion drill holes have quantified the bedrock quartzite/sandstone resource on the crest of the ridge (11holes) and also under the sand resource already defined (5 holes). In the program three holes encountered schist interbeds.

Based on the drilling, the insitu, hardrock quartzite resource along the ridge is conservatively inferred to be 700,000 cu m (2,000m x 50m x 7m) or 1.7 million tonnes assuming an SG of 2.5. The limited analyses available may rule out this material for best quality silicon but it is expected to be acceptable for secondary metallurgical grade silicon or ferrosilicon. On extraction, some of the deposit may be waste either as schist interbeds or substandard quartzite/sandstone.

4.0 PROPOSED PROGRAM

Enough outcrop is visible along the tracks to prove that this is an insitu, weathered sandstone deposit in Jacob Quartzite. The weathering and/or other alteration has produced irregular zones of hard and soft sandstone and even quartzite (silicified sandstone) like the Detention Formation in the Dip Range at Thomas Mountain.

No tests to date have been carried out on the Muenna sand from the Jacob Quartzite for its frac sand potential. However, the sizing tests from samples from excavator pits in the area show that on average about 30% of the resource would be in the plus 420micron range considered optimum for frac sand (see Table 2, from Threader, 1995). Plotting on a conventional size grading diagram shows that Meunna, Dip Range and Hebe river sand are closely related in grain size distribution (Threader, 1995). It is apparent that specific testing for this usage should be carried out.

The presence of some very fine grained, pure material with 50% less than 75 microns suggests a possibility of a silica flour yield that also should be investigated.

Marketing studies have continued and industrial companies with suitable expertise have been approached for potential joint venture with down stream processing as part of any future development. Approaches have been made to Dow Corning Corporation, Haliburton, Cominex Pty Ltd. and Temco.

Temco have conducted a 5000 tonne furnace trial of Quartzite from the nearby Thomas Mountain site. Full results are not yet to hand but all indications are the trial was successful and negotiations are currently centered on potential price and freight charges to Bell Bay. The immediate future work program at Meunna will depend on these negotiations.

5.0 ENVIRONMENT

All pits and drill sites have been backfilled immediately following logging and sampling. The surface was recontoured and slash and litter distributed around as appropriate.

6.0 REFERENCES

Dickson,T.W. 2009, RL 1/2001 Muenna Report on exploration March 2008 to March 2009, Mineral Holdings Australia Pty. Ltd.

Dickson,T.W. 2010, RL 1/2001 Muenna Report on exploration March 2009 to March 2010, Mineral Holdings Australia Pty. Ltd.

Duncan, D. McP. 2002. Final Report on Exploration. 1992-2002 EL 11/1992, Muenna.Mineral Holdings Australia Pty.Ltd.

Duncan, D. McP. 2004. Annual Report to March 2004 Retention Licence 1/2001 Muenna.Mineral Holdings Australia Pty.Ltd.

Duncan, D. McP. 2005. Annual Report to March 2005 Retention Licence 1/2001 Muenna.Mineral Holdings Australia Pty.Ltd.

Threader, V.M. 1992. Annual Report for 1991-1992 EL 24/1988 Champion Road and EL 25/1988 Dip Range. Mineral holdings Australia Pty.Ltd.

Threader, V.M. 1993. Annual Report for EL 11/1992 Muenna. Nargun Pty.Ltd.

Threader, V.M. 1994. Annual Report, 1993-1994 for EL 11/1992 Muenna. Mineral Holdings Australia Pty.Ltd.

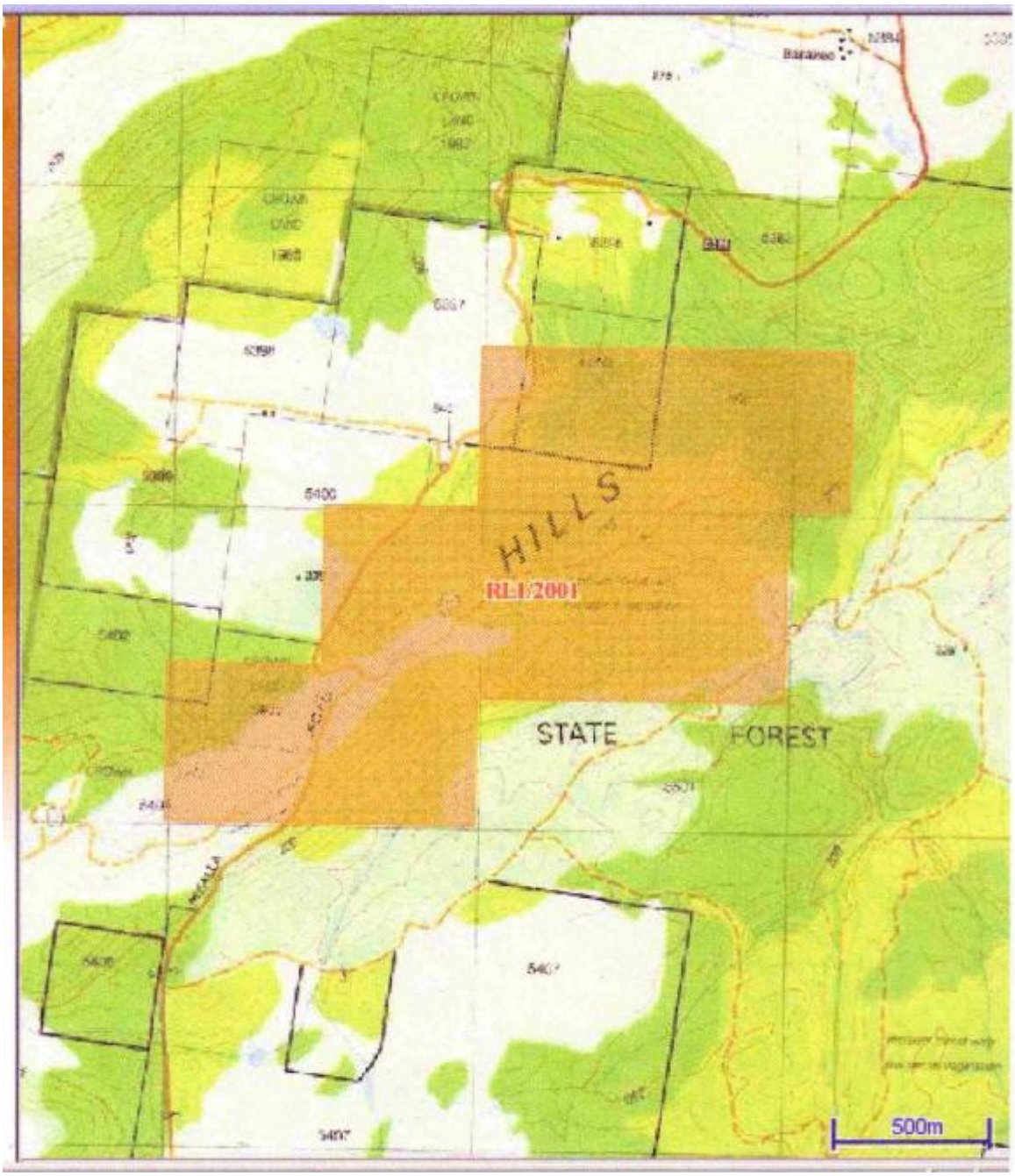
Threader, V.M. 1995. Annual Report, EL's 11/1992 and 20/1993, Muenna and Hebe River. Mineral Holdings Australia Pty.Ltd.

Threader, V.M. 1996. Annual Report, EL 11/1992 Muenna.1996. Mineral Holdings Australia Pty.Ltd.

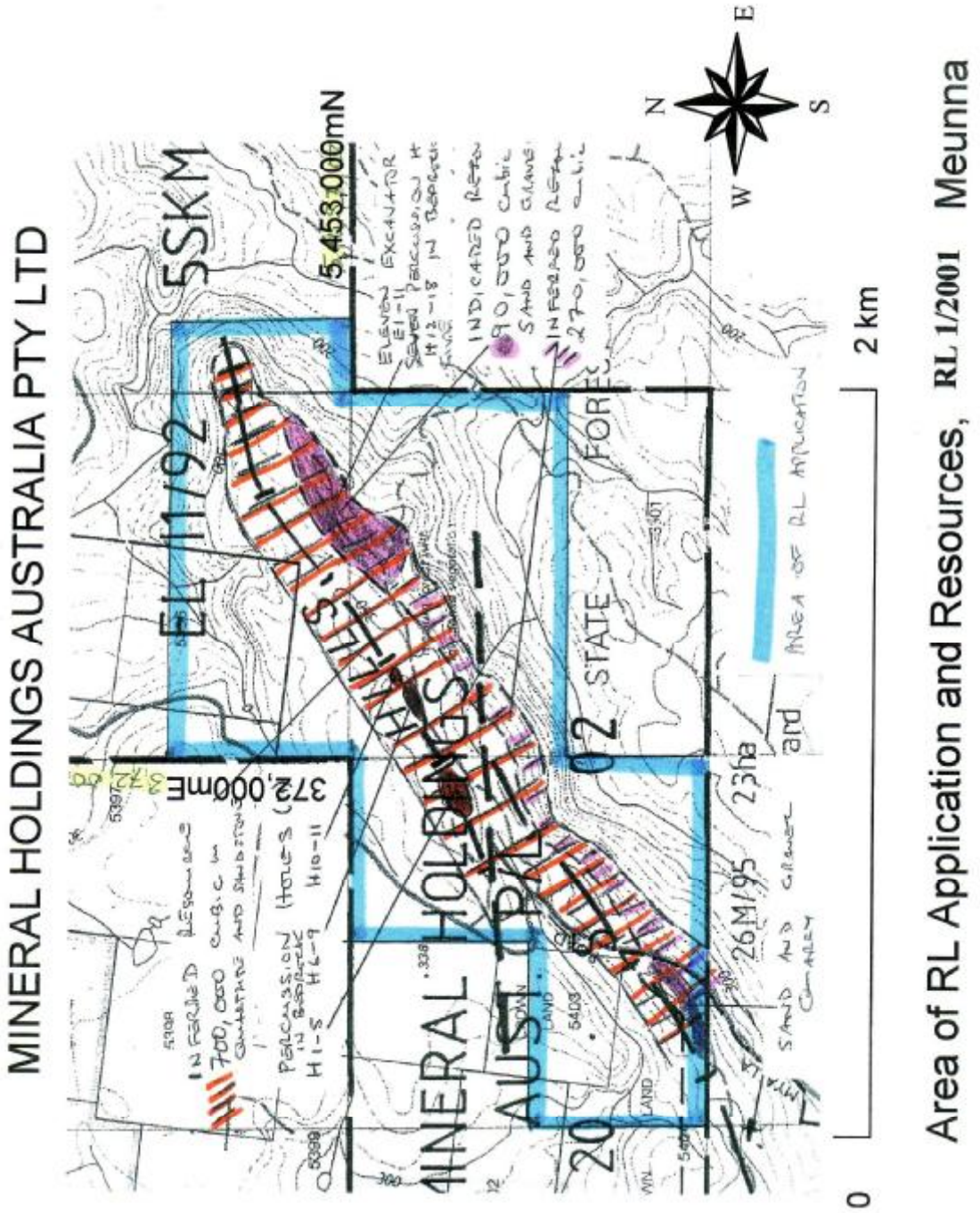
Threader, V.M. 1997. Annual Report, EL 11/1992 Muenna. Mineral Holdings Australia Pty.Ltd.

7.0 KEYWORDS

Meunna hills, Jacob Quartzite, Rocky Cape Group, Sand, Sandstone, Quartzite, Silica resources.



PLAN 1. Location diagram RL 1/2001 Muenna (GDA 66 grid)



PLAN 2 Geology and Resource plan Muenna RL 1/2001