

**MINERAL HOLDINGS AUSTRALIA PTY LTD**

**RETENTION LICENCE RL2/1996  
CHAMPION ROAD**

**FINAL REPORT ON EXPLORATION  
MARCH 2017**

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## **ABSTRACT**

RL2/1996 was granted to Mineral Holdings Australia Pty Ltd (MHA) on 28 March 1997 over an area of 2km<sup>2</sup> on the west side of the Arthur River, approximately 6km south-west of Meunna in north-west Tasmania. The Licence is current to 28 March 2017 and is a flow-on title from EL28/1988. It covers exploration for Category 3 Construction Materials and Category 5 Industrial Minerals and Semi-precious Stones. The Licence covers Tertiary, fine-grained, quartz sand and silica flour deposits, overlying Precambrian schist bedrock. Previous exploration by MHA, based on excavator pitting and bulk sampling, has established a resource of 220,000 tonnes of silica sand for marketing for possible optical glass and fibre, fused silica and ferrosilicon production.

Since 1996, MHA has operated a number of joint venture agreements with Index Minerals (1999 - 2000) and Cominex Pty Ltd (2001 - 2011), and negotiated potential joint ventures with MHM Metals (2012), Tasmanian Advanced Minerals (2008) and Kassem Holdings (2015). Negotiations were also conducted with Dow Corning Corporation, Halliburton, Samsung, Sibelco, Australian Resources and Mangalore Minerals Private Ltd.

Tasmanian Advanced Minerals indicated that Champion Road sand would need upgrading to meet their specification and, in the latter part of 2012, MHA engaged Jericho Resources Pty Ltd to investigate methods of upgrading the silica flour to the highest possible extent for sale for specialty silica products. This work continued to 2014 but was discontinued due to limited success and doubts regarding the effectiveness of the process.

Mineral Resources Tasmania (MRT) has put considerable pressure on MHA to undertake new drilling programs to increase the confidence in the level of the resource from “inferred” to “measured” under the JORC Code. However, MHA believes there is sufficient confidence in the size of the resource to attract interest and that the most pressing problem is to reduce the level of contaminants to meet user specifications. This problem is long-term and requires new and as yet undeveloped technology. As MRT is not prepared to allow time for this technology to develop, MHA has decided to not renew retention licence RL2/1996, and will allow the Licence to lapse on 28 March 2017 rather than wasting money on unnecessary additional drilling.

## **1.0 INTRODUCTION**

RL2/1996 was granted to Mineral Holdings Australia Pty Ltd (MHA) on 28 March 1997, over an area of 2km<sup>2</sup> on the west side of the Arthur River, approximately 6km south-west of Meunna in north-west Tasmania. The Licence was renewed in March 2000, March 2003, March 2006, March 2009 and March 2012 for successive periods of 3 years to 28 March 2015. The Licence is a flow-on title from EL24/1988 and covers exploration for Category 3 Construction Materials and Category 5 Industrial Minerals and Semi-precious Stones.

The Licence covers Tertiary, fine-grained, quartz sand and silica flour deposits, overlying Precambrian schist bedrock. Previous exploration by MHA, based on excavator pitting and bulk sampling, has established a resource of 220,000 tonnes of silica sand for marketing for possible optical glass and fibre, fused silica and ferrosilicon production.

## **2.0 PREVIOUS EXPLORATION (UP TO 1996)**

Duncan (2003) outlines previous exploration at Champion Road as follows:

“An account of the discovery and evaluation of the silica deposits on Champion Road by MHA is contained in the series of annual reports by Threader (1989-1995). The deposits are believed to have been derived from replacements after carbonates in the Cann Creek area and transported southwards into their present position (Plan2).

Prior to 1988, in the decade of the 1970s, exploration on EL 43/70 had located outcrops of silica sand along Champion Road, south of the Cann Creek magnesite and silica prospect.

In 1988-89, nine excavator pits returned silica flour in seven and outlined two deposits – Northern and Southern – at 3.5 m and 6.5 m thickness and volumes of 42,000 cu m and 52,000 cu m respectively, overlying Precambrian schists.

In 1989-90, reconnaissance sampling attempted to extend the prospectivity of the licence by outlining alluvial areas for further test pitting. Two possible sites for bulk sampling were selected. For marketing purposes, samples were dispatched to Australian and Overseas clients for testing. Accumulating data on sizing and chemistry suggested that Champion Road silica flour had a 50% better yield at the minus 75µm grain size than Corinna flour but was slightly less pure. The target material came into focus as fine silica sand or flour with greater than 50% of minus 75µm grain size for optical glass, optical fibre and fused silica.

Further test pitting was carried out in 1990-91, with excavation of seven additional pits spread over the two deposits to provide more fine sand samples for analyses and to access the recemented bottom sand to test that material as a furnace feed for ferrosilicon production at Temco. The fine grained samples were analysed by Analabs and M.K.Silica and it was confirmed that Champion Road material had

slightly lower levels of contaminants than the sand from Cann Creek. The resiliified silica varied from lithified opaline silica to lumps of soft sandstone with the former performing well in decrepitation tests at Temco but liable to be present in commercially insignificant amounts in the deposits.

A bulk sample of 150 tonnes of fine sand was excavated from the North Deposit by M.K.Silica in January 1991 and stockpiled at Heybridge, Burnie, for processing for the overseas market but this was delayed until 1994 due to closure of the plant. Meanwhile, a grab sample across the cutting prior to bulk sampling by the Gwalia Group gave a significantly higher proportion of glass sand (-250 to +75 um) than the material tested to that date.

Hand augering and test pitting was carried out in 1991-92 in the SW of the licence mainly with negative results although a small area of 10,000 cu m of sand per metre depth was indicated. A market study of silica sand from both Champion Road and Thomas Mountain was carried out by MHA and test reports accumulated from Comalco, Unimin (USA), Santos and Stim-Lab (USA).

In 1992-93, there was no field work but the previously taken bulk sample was processed in the plant at Heybridge, now taken over by Index Minerals. In 1993-94, power auger drilling in the SW confirmed the small deposit as a potentially viable resource.

In 1994-95, eleven excavator pits were dug in the SW deposit with five unbottomed in +6 m of silica flour giving at least 30,000 cu m or 50,000 tonnes (SG factor 1.69) as an indicated resource. The deposit may continue further to the south west.

In 1996, MHA successfully applied for Retention Licence 2/1996 which was granted on an in situ resource of 220,000 tonnes of silica sand (Plan 3)."

Threader (1994) estimated the in situ resource in four separate deposits as North Deposit (70,000 tonnes), South Deposit (90,000 tonnes), West No. 1 Deposit (50,000 tonnes) and West No. 2 Deposit (10,000 tonnes), for a total of 220,000 tonnes of silica flour. As a number of the backhoe pits were not bottomed, Threader suggested there was considerable scope to increase the 220,000 tonnes. The simple geology and the sample density indicate this resource would be categorised as an Inferred Mineral Resource under the JORC Code.

In 1996, Vic Threader upgraded part of the "inferred" resource to what would appear to be an "indicated" resource. He used a polygonal method and restricted the areal extent around each sample pit. Judging by Threader's careful nature and the method used, his estimate of 90,000 tonnes could be classed as an Indicated Mineral Resource under the JORC Code. The resource is open in area and at depth.

### **3.0 EXPLORATION ON RL2/1996 (AFTER 1996)**

From 1997 to 2000, MHA worked closely with Index Minerals, the owner and operator of the only processing plant at Heybridge, near Wynyard. A bulk sample of 200 tonnes was taken from the same position in the North Deposit as the 1991 bulk sample. The sample was taken by Index Minerals at the end of 1999, at their cost, under an arrangement with MHA, using Hazell Bros as contractors. The sample was dug on the edge of the Forestry road using an excavator, loaded directly onto trucks and transported to the Heybridge plant to stockpile. At completion, the pit was filled in and the land surface recontoured.

For various reasons, not the least due to the imminent sale of the plant, only about 20 to 40 tonnes of the sample was tested, with generally similar results to the previous bulk sample.

Promotional work was continued during 2000 by Index Minerals, with Champion Road silica sand used as one component of a blend being offered to the South-East Asian and US markets but no contracts were realised and Index Minerals went out of business.

Cominex, however, maintained the joint venture in the hope Sumitomo Australia would build a new plant in Wynyard and continued to study the silica market with the possibility of blending the two products to enhance the yield from both deposits. The joint venture was finally disbanded in December 2011.

Under the terms of the joint venture agreement MHA was responsible for title maintenance while Index Minerals and Cominex were to meet all evaluation costs. No costs borne by Index or Cominex were charged to the Licence during this long period.

MHA then negotiated a possible joint venture with Tasmanian Advanced Minerals but nothing eventuated.

During 2012, a new joint venture agreement was under negotiation with MHM Metals. They were intending to raise the resource estimate to JORC standard within six months and then purchase the Licence but changes in their company focus lead to the collapse of the negotiations before any work commenced.

Mineral Holdings then began a long process of negotiation with other potential customers regarding the Champion Road silica flour. The high quality silica market has changed over this period, with the emphasis moving from optical lenses and fibres to liquid crystal displays (LCD) in the computer industry and to solar panels. Information has been sent to and meetings arranged with Tasmanian Advanced minerals, Dow Corning Corporation, Halliburton, Samsung, Sibelco, Australian Resources and Mangalore Minerals Private Ltd. Both Samsung and Sibelco obtained a number of samples for testing in their own laboratories.

Tasmanian Advanced Minerals indicated that Champion Road sand would need upgrading to meet their specification and, in the latter part of 2012, MHA engaged Jericho Resources Pty Ltd to investigate methods of upgrading the silica flour to the highest possible extent for sale for specialty silica products. Initial results were encouraging but, even though MHA was paying for the work, Jericho refused to supply any details of the process. Work on the project ceased in 2013 due to limited success and doubts regarding the effectiveness of the process. Full details were provided in the 2013 to 2014 annual report.

Mineral Resources Tasmania (MRT) has put considerable pressure on MHA to undertake new drilling programs to increase the confidence in the level of the resource from “inferred” to “measured” under the JORC Code. However, MHA believes there is sufficient confidence in the size of the resource to attract interest and that the most pressing problem is to reduce the level of contaminants to meet user specifications. This problem is long-term and requires new and as yet undeveloped technology. As MRT is not prepared to allow time for this technology to develop, MHA has decided to not renew retention licence RL2/1996, and will allow the Licence to lapse on 28 March 2017 rather than wasting money on unnecessary additional drilling.

#### **4.0 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. There has been no surface disruption during recent time.

#### **5.0 REFERENCES**

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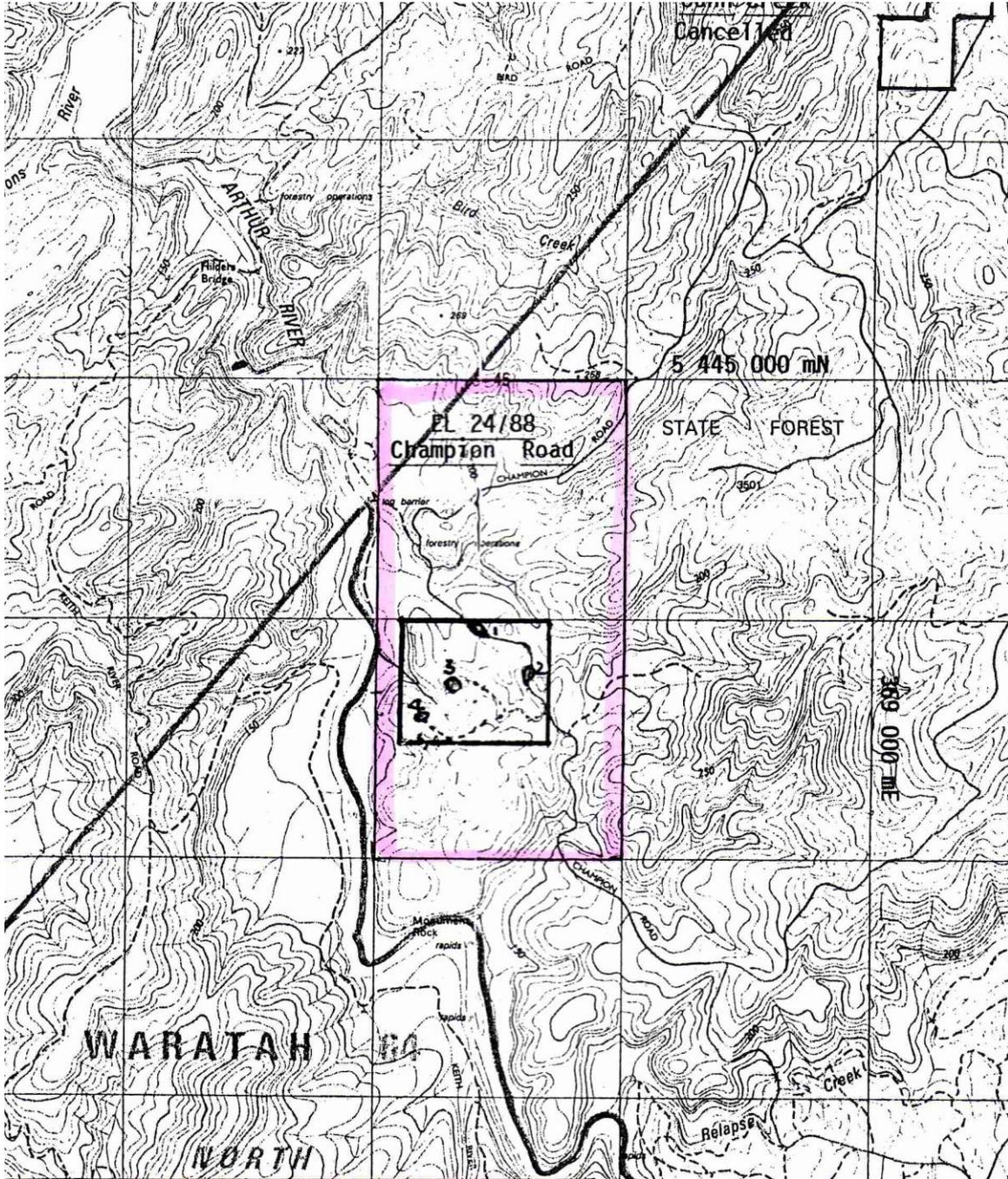
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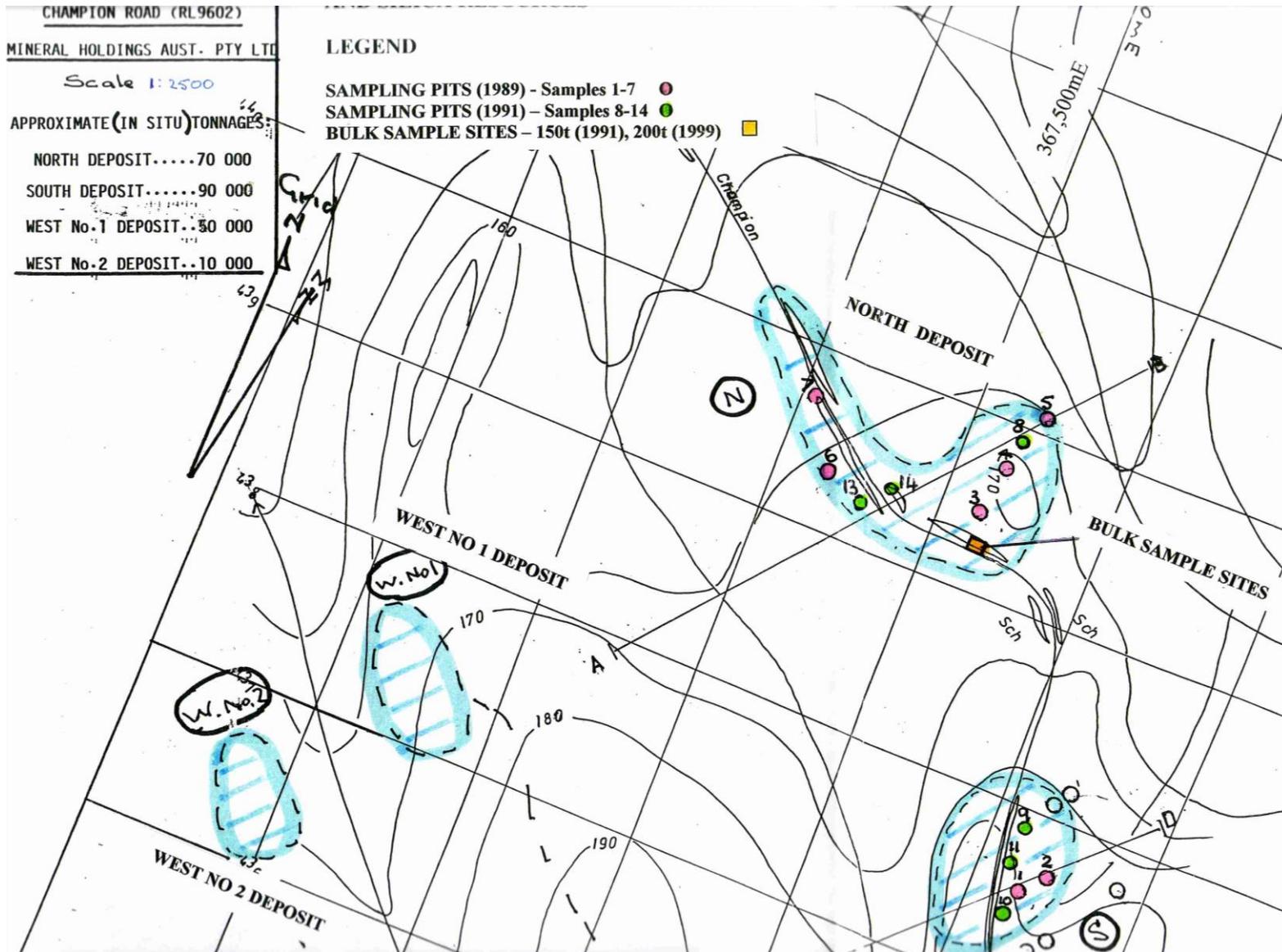
## **6.0 KEYWORDS**

Champion Road, Corinna, silica sand, silica flour, lenses, optical fibres, LCD.



**Plan 1: Location Diagram - RL2/1996 Champion Road**





Plan 3: Sample Sites and Silica Resources – RL2/1996