


Quarterly newsletter - July 2014



Heavy Mineral Sand.

Dear Shareholder and Broken Hill Prospecting Supporter,

Broken Hill Prospecting's ('BPL') has taken advantage of a recent opportunity to acquire a large portfolio of heavy mineral sands (HMS) prospects south of Broken Hill. This newsletter details this exciting new project, which includes 20 known heavy mineral sand deposits, and the synergies that it provides BPL. The applications for 100% ownership of substantial tenements covering titanium and zirconium mineral sands in the northern Murray basin of NSW is a huge step forward for the Company. The project will complement BPL's large cobalt-pyrite deposits and our vision to create a substantial minerals producer.

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BPL applies for Ti and Zr projects

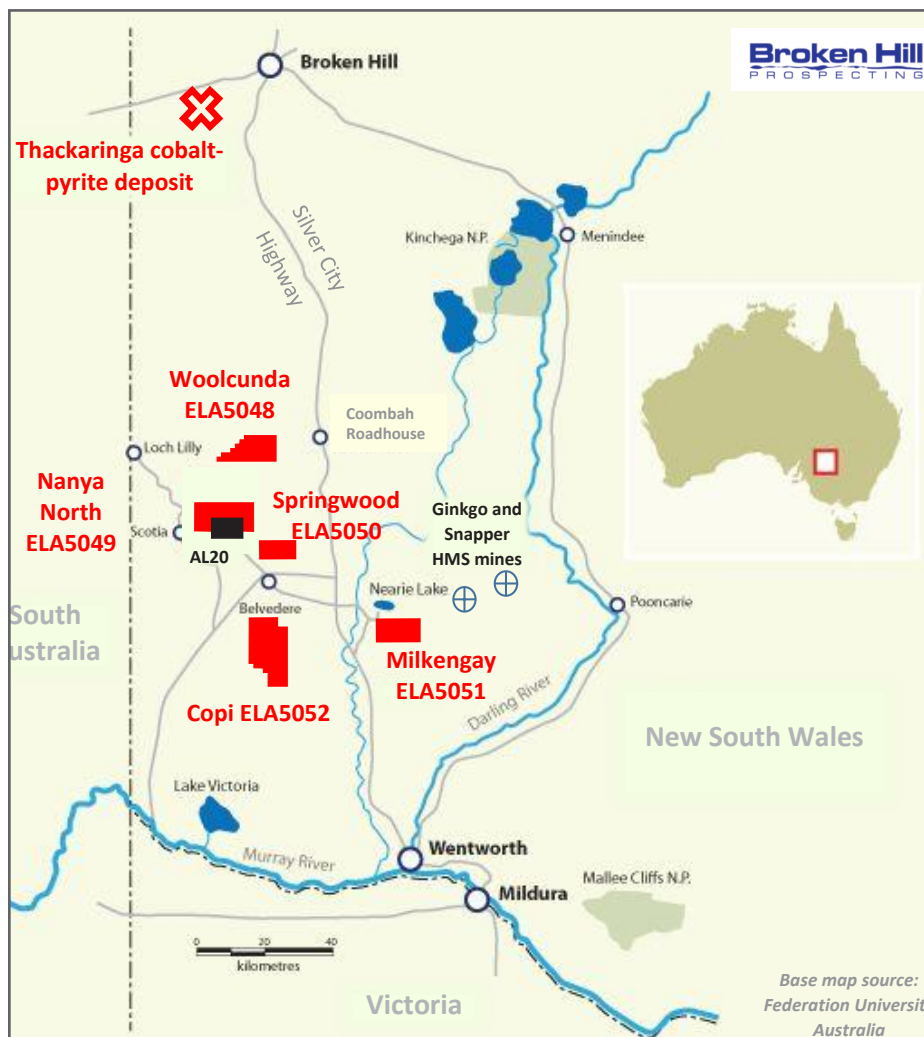
During the last few months BPL has assessed historical mineral sand exploration in NSW with a view to establishing a foothold in the HMS industry where emerging technology is making significant advances in processing and recovery of titanium (Ti) and zirconium (Zr) minerals (ilmenite, rutile, leucoxene and zircon) from fine-grained, large-tonnage HMS deposits.

The study identified five areas south of Broken Hill, which contain 20 known HMS prospects, all of which have been investigated by other mineral explorers including Iluka Resources Ltd, Bemax Resources Ltd (now Cristal Mining) and Westralian Sands Ltd. Several of the prospects have been shown to be of considerable size. Recent advances in technology have resulted in lower cost and competitive processing options for fine-grained heavy mineral sands, unlocking an opportunity to take a fresh look these HMS prospects.

Some of the ilmenite separated from HMS mining could be amenable for upgrading to titanium pigment through the use of sulphuric acid. This may also aid BPL's plans to establish a sulphuric acid industry associated with cobalt recovery from the company's Thackaringa cobalt deposits.

Broken Hill Minerals Pty Ltd, a wholly owned subsidiary of BPL, lodged applications for the five Exploration Licences ('ELA') (group 10, mineral sands) which have a combined area of 858 square kilometres (see map).

BPL applies for Ti and Zr projects Cont.



Location map of heavy mineral sand EL Applications.

BPL will consider new technology

BPL intends to evaluate the new HMS prospects using a variety of recent exploration and development advances, many of which were not available during previous assessments of the ELA areas.

The application of sonic drilling techniques to mineral exploration provides effective and total sample recovery in unconsolidated sandy overburden. It does that by retrieving a continuous, undisturbed core sample to reduce waste by up to 80% relative to conventional drilling methods. Sonic drilling can be 2-3 times faster than percussion air core drilling. BPL will consider sonic drilling to evaluate the HMS targets which the company selects to drill test.

Many of the prospects BPL has selected contain a large proportion

of fine-grained heavy mineral sands and silts. Traditional separation and recovery processes for heavy minerals in fine-grained sands are difficult and costly. BPL will investigate new developments in spiral separators, which have recently focused on the processing of fine mineral particles. New spiral separators can effectively treat HMS material <0.1 mm diameter.

Other, recent mineral separation applications for fine grain size sands include the Allflux process which is based on the fluidised bed principle and uses a two-step process to eliminate pre-thickening. Fine particles form an autogenous fluidised bed on which lightweight material floats and can be removed.

Third mineral sands mine for Cristal

HMS miner Cristal Mining operates two mineral sands mines (Ginkgo and Snapper) in the NSW Murray Basin and a mineral separation plant at Broken Hill. According to Cristal's December 2013 quarter report, these mines produced 163,479 tonnes of ilmenite and yielded sales revenues of \$A309 million during 2013.

The NSW Planning and Environment gave a green light for Cristal Mining's next mineral sands mine in mid-June between Balranald and Ivanhoe. The Atlas-Campaspe project is located 10 kilometres from the Mungo National Park and Willandra world heritage site, and a comprehensive study was completed as part of the Environmental Impact Statement.

Heavy mineral sands mined at the new project will be processed at Cristal's established minerals separation plant at Broken Hill, requiring the construction of a rail load-out facility at Ivanhoe.

Harley-Davidson opts for a Li-cobalt battery

Harley-Davidson's new model, the LiveWire, promises to be the first full-size electric motorcycle with a real chance to crack the mainstream US market. Powered by a lithium-cobalt-ion battery, the LiveWire generates 75 horsepower and can go from zero to 96 kph in four seconds. Speed tops out at about 145 kph. The futuristic, angular design has an aluminum exo-skeleton with a short wheelbase and 45 cm tyres.

The speedster has a maximum battery range of about 210 kilometres and is slated for city use. Harley-Davidson expects the LiveWire to be on sale in 2015.



Iluka bullish on mineral sand prices

During 2010-2012, mineral sand product prices rose from values typically less than US\$600/t to more than US\$1,500. Prices have since settled to about US\$1,000/t for most mineral sand products.

In a mineral sands market update in late March 2014, Iluka, one of the world's leading producers of titanium and zirconia, reported that more favourable demand dynamics are emerging in the pigment sector (the major end use sector for titanium dioxide) which, if sustained, should lead to improved

sales opportunities for both rutile and synthetic rutile. The report noted improving confidence levels and that at the time of Iluka's March quarterly production announcement Iluka considered that ilmenite and rutile prices may have found a floor.

According to Iluka the medium term fundamentals for zircon and high-grade titanium dioxide products are favourable and growing demand for mineral sands products will be driven by increasing urbanisation, consumption growth in developing economies and new applications.

Severe shortage of ilmenite in India

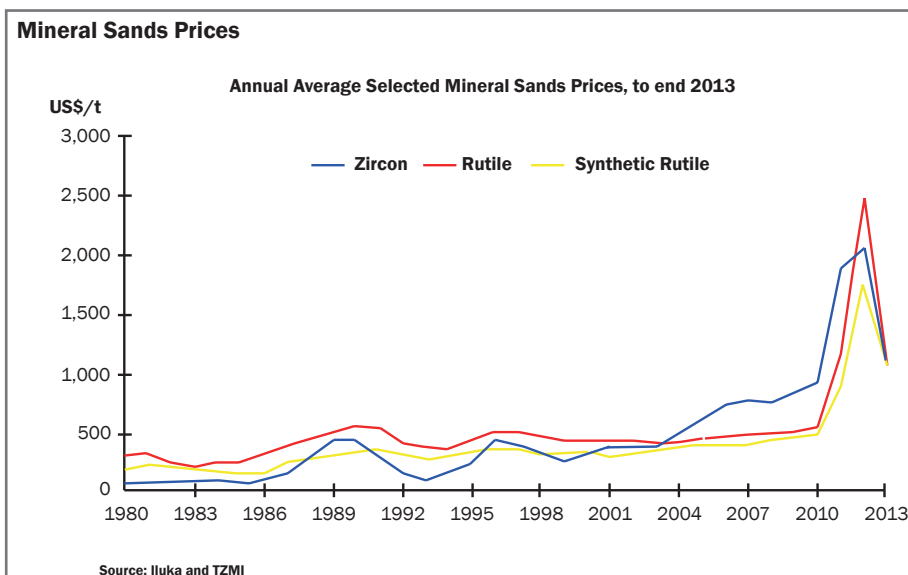
A recent local shortage of ilmenite, the raw material used in the production of synthetic rutile, has been a concern for the giant Indian pigment producer, Cochin Minerals and Rutilites Ltd (CMRL). The production of ilmenite mined in the Kollam district declined from 65,000t in 2009/10 to about 3,000t in 2013/14 as India's ban on mineral sands beach mining caused higher raw material costs. CMRL now imports lower quality ilmenite from offshore and 50,000t was sourced from Mozambique last year.

Supply crunch and price spike for cobalt

If Tesla's plan to double the output of lithium-ion batteries progresses they will have far-reaching consequences for the cobalt market. About 42% of current cobalt production is used in the rechargeable battery industry and the impact of the Tesla factory could potentially lift cobalt battery demand by 30,000-35,000t/year. This could lead to a supply crunch and a price spike.

The US Geological Survey recently reported that the USA has not mined cobalt since 1971, and has only about 301 tonnes stockpiled. Some of the largest producers in the cobalt industry, including Glencore Xstrata, are predicting supply deficits as early as 2016.

In late May, the European Union's Ad-Hoc Working Group on defining critical raw materials released a report which identified cobalt and 19 other raw materials as 'critical'. A recent market research report released by TechNavio has forecast that the global cobalt market will grow at about 6% between 2014 and 2018. One of the key contributing factors in the research is the increased demand for cobalt from the battery industry.



Car of the future will run on cobalt

Tesla Motors is designing the world's largest lithium-cobalt-ion battery factory, the 'gigafactory' and is planning to produce batteries for 500,000 cars in 2020. According to Robert Baylis, an analyst for Roskill, the gigafactory alone will require an additional 6,750 tons of cobalt when operating at full capacity.

Considerably more cobalt is used in a lithium-ion battery than graphite, and LiNiCoAlO₃ (Li-NCA) batteries, the type planned by Tesla, typically have 9% cobalt by weight. That equates to roughly six kilograms of cobalt per vehicle.

BPL are assessing the Thackaringa cobalt-pyrite deposit located 25 kilometres south-west of Broken Hill and future development of Thackaringa could benefit from increasing cobalt demand.

Threat of disruption to DRC cobalt supply

The Democratic Republic of Congo (DRC) currently produces most of the world's cobalt, and refinery production is about 43% of global production is processed in China. While China has some policy risks, the DRC has geopolitical threats and is introducing additional taxes and export bans to encourage in-country processing.

According to a Roskill Information Services briefing paper (June, 2014), the DR Congo accounted for 57% of cobalt mine production in 2013, about 60,000t of cobalt. Roskill said "fears that supply might be disrupted as a result of domestic instability and violence, through government action, or as a result of poor infrastructure, are legitimate".

Cobalt breakthrough in microchips

A Silicon Valley company Applied Materials has made a breakthrough in computer microchip technology by using cobalt and replacing tantalum to coat microscopic copper wires that connect chip transistors. This is the first material breakthrough in the last 15 years in interconnect technology and follows a series of other changes

in a race to make smaller transistors.

As transistors get smaller, many more billions can be packed onto each chip. To keep each microchip working correctly the new technology uses a cobalt coating and can result in an 80-fold increase in the electrical reliability.

Scandium project requires sulphuric acid

Jervois Mining recently reported bench-scale tests on drill sample at its Syerston Scandium Project in central western NSW. Metallurgical studies show that the scandium ore will respond favourably to a stirred, direct sulphuric acid leach. A four-hour direct leach consuming one ton of acid for each ton of sample extracted more than 70% of the scandium.

Development of the Syerston scandium project may provide a future customer for sulphuric acid produced from cobalt processing at Broken Hill. Scandium, like cobalt, could become an important metal of the future. Scandium has almost as low a density as aluminium but has a much higher melting point and may become an important metal for space industries.

Nyrstar to proceed at Pt Pirie

Nyrstar will upgrade South Australia's Port Pirie lead smelter for cleaner and expanded operations. The \$514m investment by Nyrstar will develop an advanced metals recovery and refining operation and reduce emissions. Construction work is planned to begin in early 2015 and the facility is

expected to be fully operational by the end of 2016. The cost of the project has risen because an increased capacity sulphuric acid plant will be constructed. This facility could become a significant customer for pyrite concentrate produced at BPL's Broken Hill project.

BPL's entry into heavy mineral sands projects

BPL's entry into heavy mineral sands projects is a timely addition to the Company. It adds another strategic metal component to BPL's very large cobalt-pyrite resources and the Company's plans to develop a parallel sulphuric acid industry when the cobalt project is progressed.

Titanium and zirconium, like cobalt, are metals of the future. They are used in numerous applications, especially in paints, ceramics, paper and building industries. Supply and demand

dynamics of increasing urbanisation and technology advances are likely to underpin future value growth in these important metals.

BPL's assessment of the HMS prospects south of Broken Hill will benefit from many recent advances in exploration and processing of fine-grained heavy mineral sands, which were not available at the time other companies assessed the mineral sand deposits in the EL Application areas.

British car industry is going electric

In late April, the British Government announced a £500 million initiative to boost the use of electric and hybrid vehicles, which still represent just one per cent of car sales in Britain. The Government wants to encourage drivers to switch from petrol or diesel vehicles by making it more convenient and cost effective to drive electric cars. The program will include the installation of more charging points on major roads to counter fears that drivers could be stranded when batteries run flat.

Clearly, government incentives of this type will be an additional boost to future demand for cobalt batteries.

BPL Share Purchase Plan completed

In April shareholders of the Company were offered participation in a Share Purchase Plan (SPP). Each shareholder had an opportunity to purchase additional shares in BPL. The SPP closed on 6 May 2014 and raised \$260,000 from 52 subscriptions.

Yours faithfully



Ian Pringle
Managing Director

Competent Person Statement

Exploration activities and results contained in this letter are based on information compiled by Dr Ian Pringle, a Member of the Australasian Institute of Mining and Metallurgy. Dr Pringle is the Managing Director of Broken Hill Prospecting Ltd and also a Director of Ian J Pringle & Associates Pty Ltd, a consultancy company in minerals exploration. He has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). The Inferred Mineral Resource was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. The Potential is reported under JORC Code 2012. It is conceptual in nature and more drilling is required to further define it. However, there is no certainty that additional work will result in an upgrade of potential to Mineral Resource. Dr Pringle has consented to the inclusion in this report of the matters based on his information in the form and context in which it appears.

For further information contact

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