Dear Shareholder and Broken Hill Prospecting Supporter,

In this seventh newsletter I welcome the opportunity to update you on Broken Hill Prospecting’s (‘BPL’) progress towards our goal to grow a substantial chemical business through production of sulphuric acid from our vast deposits of cobaltiferous pyrite.

### New tenement granted

BPL has been granted a new exploration licence (EL8143), which is a small, four sub-block area located immediately to the south of the cobalt deposits in EL6622, ML86 and ML87. The new tenement has a 24-month term and includes similar gneiss rock which hosts the cobalt mineralisation. BPL plans to explore EL8143 for new deposits of cobaltiferous pyrite.

### Chemical company formed

Broken Hill Chemical Pty Limited (‘BCL’), a 100% subsidiary of BPL has been established to develop a sulphuric acid (H2SO4) chemical business at Broken Hill. BPL has commenced a search for assistance in due diligence, metallurgical and feasibility studies with the intention to develop a world-class chemical project based on sulphuric acid production.

BPL’s future pyrite concentrate could supply a sulphide ‘roast’ plant for long term sulphuric acid production. Additional value could be added by high-iron cinder (hematite)/cobalt ash as well as ‘zero-carbon’ electricity produced from excess heat generated by pyrite-roast processing.
**Chemical company formed continued**

Cobalt-rich pyrite from BPL’s near-surface deposits could be mined, concentrated and processed on site or transported by rail or road with relative ease and at comparatively low cost. BPL’s deposits are very extensive and mostly contain more than 20% pyrite (average cobalt grade of pyrite is about 0.45% cobalt). Importantly, contents of other metals (arsenic, lead, copper, mercury, cadmium etc.) are very low and this is a positive environmental consideration for sulphuric acid production.

**Sulphuric acid markets**

In addition to widespread use of sulphuric acid in many industrial processes, most mineral processing operations require sulphuric acid. In Australia, many companies import sulphuric acid (or sulphur for acid production). Several examples of sulphuric acid processing include:

- Metal producing activities in South Australia, such as BHP Billiton’s Olympic Dam uranium-copper-gold operation and the Beverley and Honeymoon uranium projects.
- In NSW, Alkane Resources Ltd is planning a world-class zirconia—rare earth development (Dubbo Zirconia Project) and this will require considerable sulphuric acid for whole-of-ore processing.
- Processing of phosphate ore to produce fertiliser products generally requires vast quantities and reliable supply of sulphuric acid. Several of the world’s largest undeveloped phosphate deposits occur in Australia.
- Lateritic nickel mines have need of large volumes of sulphuric acid and some deposits have yet to be developed, largely due to the cost and uncertainty of reliable sulphuric acid supply.

**Scoping studies**

In late 2012, BPL announced results of scoping studies for the production of sulphuric acid from pyrite concentrate and these highlighted significant potential for low capital start-up and staged development. The studies identified robust economics for production of sulphuric acid through five fast-track, low cost development options with nominal processing rates of 1.5 – 7.5 million tonnes per annum.

The scoping noted the excellent location of the deposits beside railway and road networks and within half an hour by road and rail from the supportive mining community of Broken Hill. They highlighted an increasing industrial demand for cobalt, a metal mostly produced as by-product of copper mining in central Africa as well as a developing Australian market for sulphuric acid in fertiliser and mineral processing industries.

**Electricity Generation**

Another key element of pyrite roasting is the potential to use the high temperatures which are generated for steam/electrical energy production. Future project development could capture excess heat from exothermic reactions of pyrite processing to produce carbon-neutral electricity for operations as well as supplying power to the Australian electricity grid. Similar operating plants produce up to 24MW.

**Large cobalt miner forecasts lower production**

Freeport McMoRan, the operator at Tenke Fungurume Mining announced in its second-quarter results that cobalt hydroxide sales will not reach previously forecast levels. Cobalt sales at Tenke (Katanga province of the DRC), are unlikely to be more than 24 million pounds in 2013, down from 25 million pounds in 2012 and considerably less than the 28 million pounds which were forecast.

**Seeking a partner**

Broken Hill Chemical Pty Limited is well positioned to take advantage of growing mineral processing industries and uncertainty of supply of sulphur/sulphuric acid imports. Investment in BCL will appeal to enterprises which are seeking to mitigate risk and establish security of long-term acid supply. BCL is seeking partners to assist in future planning, funding and development.
Pyrite roasting and sulphuric acid

Sulphide (pyrite) roasters at other projects (not BPL) have concentrate feed capacities ranging to 400,000 tonnes per year and, depending on the type of fluidised bed reactor, higher throughput ranges could be achieved by implementing technology improvements.

In the roasting process combustion air helps convert the pyrite (sulphide) to metal oxide and sulphur dioxide. A high-pressure fan controls the lower and upper limit for a stable fluidisation of the roaster bed. The reaction in the roaster is strongly exothermic, and the gas exits the roaster at temperatures between 800–900 °C. Hot gas leaving the roaster is drawn into a waste heat boiler where gases are cooled to about 350 °C. Sulphuric acid is produced from conversion of sulphur dioxide gas. Electricity can be generated from heat capture and steam processing.

Ash residue from ‘roasted’ pyrite concentrate may have considerable commercial value. After the extraction of cobalt by solvent extraction/electrowinning the remaining high-iron (hematite) cinder can be used in both cement and steel production.

Solar cells from cobalt – cheaper and more sustainable

Research at Switzerland’s University of Basel has succeeded in replacing the iodine used in copper-based dye-sensitised solar cells (DSSCs) with cobalt. This discovery could enable the manufacturing of cheaper, more environmentally friendly solar cells.

DSSCs are a type of solar cell that work by capturing sunlight via a colored dye, which then, through an electron transfer process, produces electrical current. Electrolytes function as the electron transport agents and normally iodine and iodide are the electrolytes, but the Basel research has succeeded in replacing those materials with a cobalt compound making a photovoltaic cell that is relatively inexpensive compared to silicon cells. The use of cobalt rather than iodine is also likely to substantially improve the lifespan of DSSCs.

In volume terms, sulphuric acid has the largest world-wide use of any chemical.

- Australia is a net importer of both sulphur and sulphuric acid. Australian acid production is often affected by lengthy periods of maintenance and breakdowns at Australia’s aging facilities (e.g. Incitec Pivot’s Mount Isa acid plant).
- The production of phosphate fertiliser materials is the major end use for sulphuric acid, accounting for more than half of world consumption.
- Other uses include manufacture of plastics, fibres, oil refining, metals and mineral processing. There has been a general increase in demand for sulphuric acid with world consumption increasing by about 58% between 1990 and 2011.
- Future growth in sulphuric acid use is anticipated as increasing populations in developing countries switch to higher nutrition food crops that require soil improvement.

China is the world’s most populated country (1.3 billion people, 19% of world population) but has only 9% of the world’s arable land. To address the growing food demand for China’s expanding population, it will not only require increasing supplies of nitrogen and potash fertilisers but also large imports of phosphate fertilisers. China will also need to overcome a deficiency in sulphur in an estimated 44% of its soils.
Large cobalt miner forecasts lower production

The Democratic Republic of Congo (DRC) has deferred a ban on the export of copper and cobalt concentrates. The ban, which had been scheduled to start in July 2013, is intended to coerce mining companies to process metals and minerals in the DRC despite insufficient electricity for processing. Martin Kabwelulu, the DRC minister for mining, has delayed the moratorium until the end of 2013 but has provided few other details. Cobalt prices have gained since the threat was first made, and was recently quoted at $US28,000/tonne on the London Metal Exchange.

Cobalt consumption increasing in China, decreasing in USA

According to a recent CRU report, China accounted for 36% of world cobalt consumption in 2012 (Panos Kotseras, CRU Metal Page, 12-13 March 2013). This is a significant increase from 2000 (9% of world cobalt consumption) and is the reverse of the USA which has seen reduced cobalt consumption from 34% in 2000 to 17% in 2012.

NSW and SA collaboration will help BPL

The NSW and SA state governments have agreed to a cooperative approach to development of resource projects adjacent their common border. Both resource Ministers will sign a memorandum of understanding with the aim to eliminate cross-border impediments to development of mineral assets. State cooperation in respect to infrastructure access and development, policies on best practice regulation and planning processes will be included.

The planned cooperative approach to new mineral projects will assist BPL as development plans for the Thackaringa Cobalt project are progressed. BPL is seeking a partner to assist in developing a modern sulphuric-acid based chemical business and this will provide a long-term customer for cobaltiferous pyrite concentrate produced from the Company's Broken Hill deposits. Cobalt produced from the acid making process, together with hematite iron and feldspar by-products are likely to contribute significant future value.

I look forward to providing updates as our work progresses and invite you to visit our website at www.bhpl.biz.

Yours faithfully

Dr Ian Pringle
Managing Director

Zambia tightens control on mining

Zambia, DRC’s neighbour and also a significant cobalt producer may also see a decline in future production. In April, the Zambian government announced that it plans to take ownership of up to 35% of new mining ventures as part of a plan to reduce tax evasion and realise more value from the mining sector.