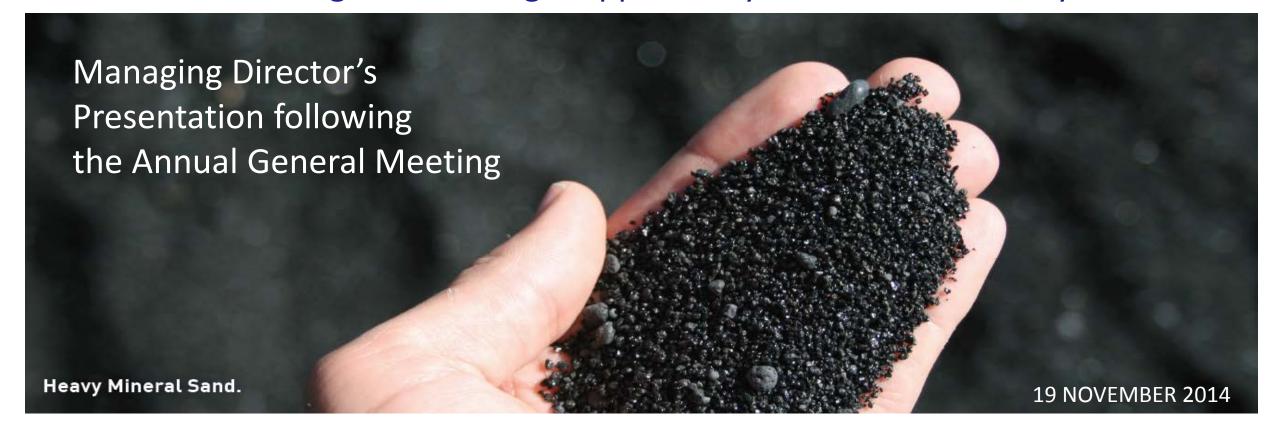


# High-grade Heavy Mineral Sand (Ti-Zr) Acquisition An Outstanding New Strategic Opportunity in the North Murray Basin



### **Cautionary Notes**



#### **Disclaimer**

This presentation contains forward-looking statements that involve subjective judgement and analysis and accordingly, are subject to significant uncertainties and risks, many of which are outside the control of, and are unknown to, Broken Hill Prospecting Pty Ltd ("BPL"). In such circumstances, the forward-looking statements can be identified by the use of forward-looking words such as "may", "will", "expect", "intend", "seek", "estimate", "believe", "continue" or other similar words.

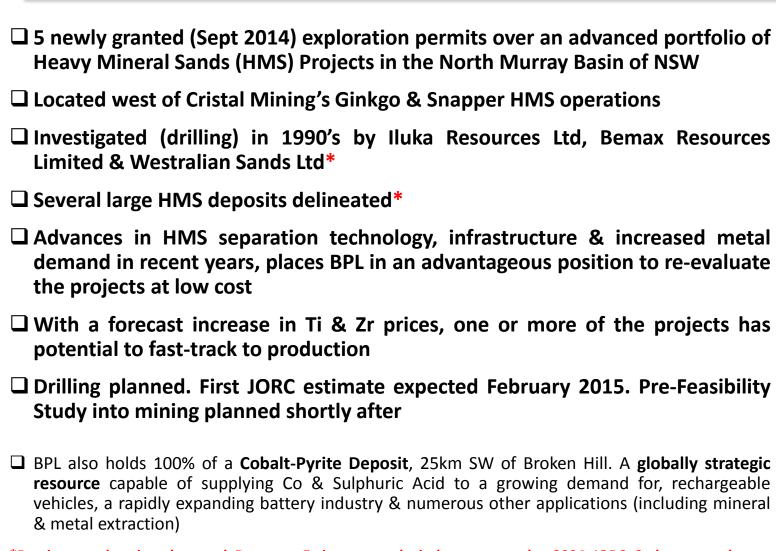
No representation, warranty or assurance is given or made in relation to any forward-looking statement by BPL or it's representatives, In addition, no representation, warranty or assurance is given in relation to any underlying assumption or that any forward-looking statements will be achieved. Actual future events may vary materially from the forward-looking statements and the assumptions on which the forward-looking statements are based. Accordingly, presentation readers are cautioned not to place undue reliance on such forward-looking statements as a result of the uncertainties. In particular, BPL wishes to caution readers that these forward-looking statements are based on economic predictions and assumptions on reserves, mining method, production rates, metal prices and costs (both capital and operating) developed by BPL management in conjunction with consultants. This presentation and the forward-looking statements made in this presentation, speak only as of the date of the presentation. Accordingly, subject to any continuing obligations under the Corporations Act and the Australian Stock Exchange Listing Rules, BPL disclaims any obligation or undertaking to publicly update or revise any of the forward-looking statements in this presentation, whether as a result of new information, or any change in events, conditions or circumstances on which any such statements is based.

#### **Competent Person Statement**

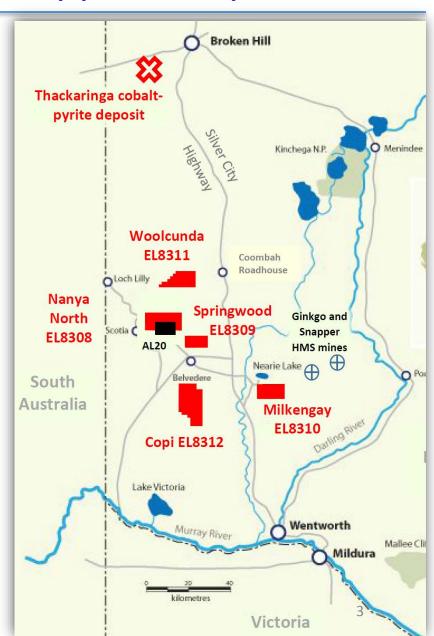
Exploration activities and results contained in this presentation are based on information compiled by Dr Ian Pringle, a Member of the Australasian Institute of Mining and Metallurgy. Dr Pringle is the Managing Director of Broken Hill Prospecting Ltd and also a Director of Ian J Pringle & Associates 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.

### Introduction – New Advanced Mineral Sands Opportunity





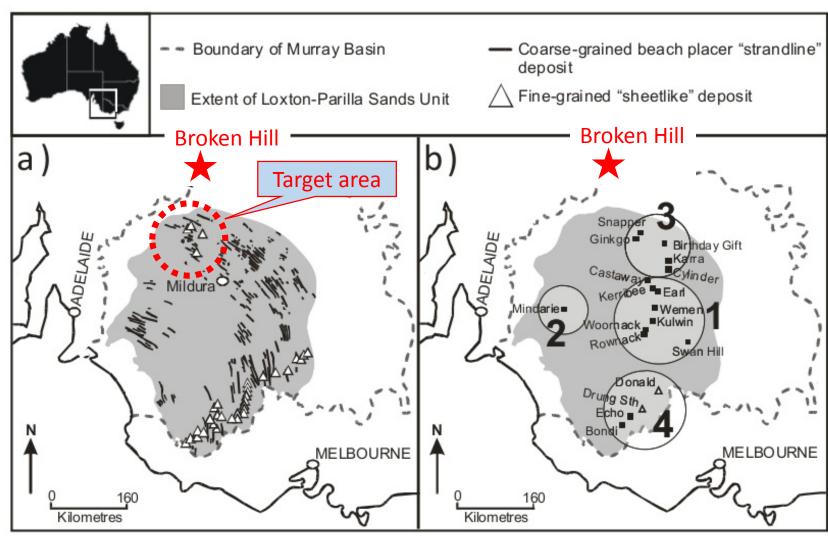
<sup>\*</sup>Previous exploration data and Resource Estimates made in-house or under 2004 JORC Code are no longer compliant with the current 2012 JORC reporting requirements & therefore are not stated in this presentation.



### Murray Basin HMS – Regional Setting



- The Murray Basin is a globally important Heavy Mineral Sand ('HMS') Province with current resources valued >US\$200b
- HMS deposits south of Broken
   Hill were evaluated by Iluka &
   others in 1990's then relinquished
   due to comparative lower tonnage
- Several are known to have Low overburden & high HM content
- With technological advances now readily available to process the deposits, BPL seized upon the opportunity to acquire the "open ground"



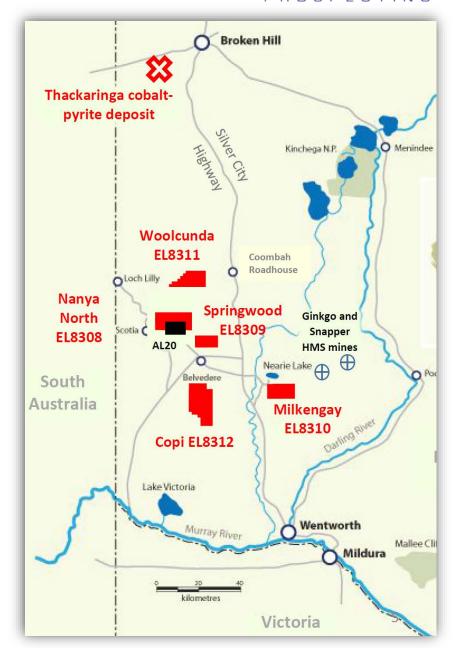
Modified from: David Freeman et al, CSIRO, Processing Murray Basin Mineral Sands, 5 March 2014

# **BPL's HMS Project Portfolio**

Broken Hill

- Five new Exploration Licences, 20 Prospects. 100% ownership
- HM mineralogy: ilmenite, leucoxene, rutile & zircon
- Prospect data being evaluated & ranked
- Initial focus at Copi North & Magic deposits
- Shallow aircore drilling (<35m depth) planned Jan 2015 testing high grade parts of the two deposits
- Maiden JORC resource estimate expected Feb/Mar 2015

EL (Group 10, mineral	ral area		LINAS Divocinosta	
sands)	units	km²	HMS Prospects	
Woolcunda 8311	59	171	Magic, Majar	
Nanya North 8308	40	116	Massidon North, Strand A, Strand B, Nanya 1, Plain Tank	
Springwood 8309	32	93	Springwood	
Milkengay 8310	65	188	N226(N265), N264, 500, Milkengay	
Copi 8312	100	790	Copi North, Bulli, Circus, Wemba, Tarawi, Yabbi and Nulla	
Total	296	858		



# **Corporate Strategy**



Stage	1 – Establishing the Early Uplift Advantage
	Low Cost Entry Point −100% Ownership (Application <u>not</u> Purchase) ✓ ✓
	Quantify the Opportunity – Desk Top Studies ✓ ✓
	Communicate the Opportunity to Investors $\checkmark$ $\checkmark$
	Arrange Financing 🗸 🗸
Stage	2- Adding Value to Established Resources
	Define JORC 2012 Resources
	Pre-Feasibility Study
	Lowest Cost Quartile of Zircon Producers
Stage	3 – Developing a High-Grade, Lower Cost Quartile HMS Mine
	Arrange Financing for Feasibility Study & Mine Development

# Planned drilling

Shallow drill testing to define JORC 2012 Resources is planned in the new year

Copi HM strands with planned drill hole traverses

5 kilometres

EL8311 Woolcunda

Magic HM strand with planned drill hole traverses



### **Vision - Low Cost Production**

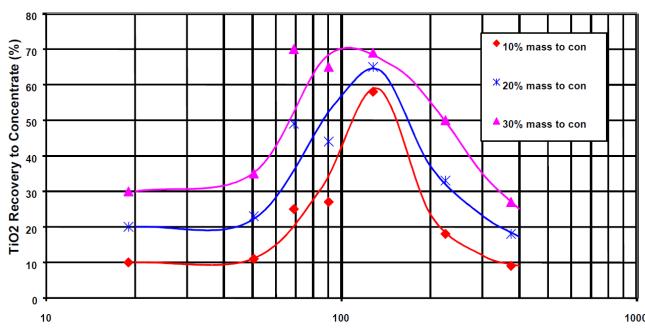


- $\Box$  Focus on well located shallow deposits (20-40Mt) <u>high-grade</u> (>8%HM)
- 10 year mine life, 2 year capital payback, contract mining
- ☐ Production envisaged using low cost Dry Mining techniques (Unlike Ginkgo & Snapper which use wet dredging)
- ☐ Mined "ore" processed by in-pit Wet Separator/Concentrator
- Concentrates transported by road-train to Broken Hill where:
  - i) they are exported via rail to South Australia's ports or,
  - ii) they are put through a purpose built Mineral Separation Plant (as Cristal Mining currently does) for further refinement before dispatch

# **Advances in HM Separation**



- ☐ Spiral separators have undergone continuous development over 40 years with recent focus on the processing of progressively finer mineral particles
- ☐ New spiral separators can now treat HMS material <30 microns and recover HM from fine fractions regarded as waste in many operating HMS mines
- ☐ A 1,750t/h wet concentrator at the Ginkgo mine with newly developed high capacity spiral technology cut plant capital expenditure by 25%



#### Mineral Technologies' FM1 spiral separator

- Extensive testing on a fine-grained Australian HMS.
- ➤ The size distribution was such than this feed would not normally be considered amenable to concentration using conventional spiral separators.
- ➤ Size-by-size recovery data indicate that maximum TiO<sub>2</sub> recovery occurs in the 100 to 105 micrometer range.

### Conceptual Timeline For Development



2015

- COMPLETE PRE-FEASIBILITY & FEASIBILITY STUDIES
- UNDERTAKE ENVIRONMENTAL, HERITAGE STUDIES
- COMMENCE DEVELOPMENT APPROVALS PROCESS

2016

- COMPLETE DEVELOPMENT, EIS, APPROVALS & FINANCING
- LODGE MINE PLAN

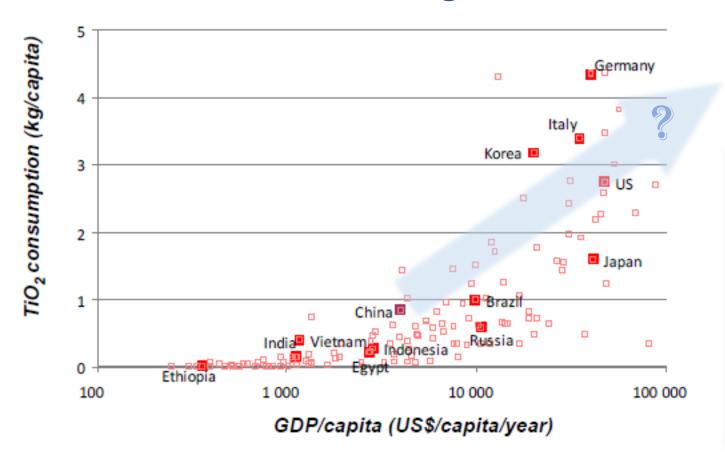
2017

CONSTUCTION AND PRODUCTION

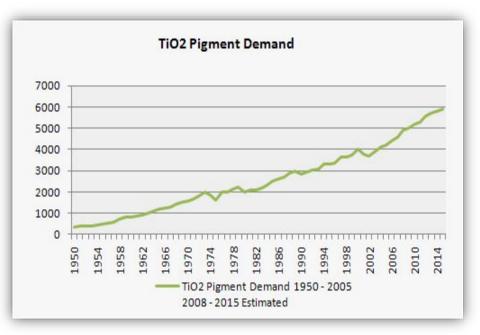
### Ti Demand Linked to Economic Growth



### China & India are now recognised as the current market drivers



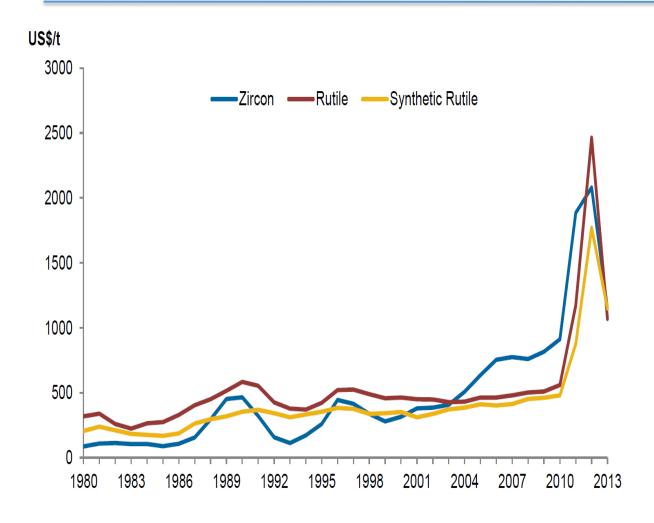
# Demand is expected to continue to grow ......



Sources: TZMI

### Medium Term Prices - Driven by Urbanisation





Source: Iluka and TZMI

During 2010-2012 mineral sand product prices rose from values typically less than US\$600/t to over US\$1,500/t

Since 2012 prices have settled to around US\$1,000/t.

Medium term fundamentals for zircon & high-grade TiO<sub>2</sub> products are favourable & growing demand for mineral sands products will be driven by increasing urbanisation, consumption growth in developing economies & new applications.

# **Corporate Overview**



Capital	
ASX Code	BPL
Ordinary Shares On Issue	99.04m
Options; Unlisted (20c, 17/2/16)	38.65m
Options; Unlisted (8c, 12/11/19)	11.05m
Cash (on 18/11/2014)	\$0.5m
Market Cap (Undiluted @ 4cps)	\$4.0m

Shareholders	Shares (m)	%
So Co Limited	34.37	35%
New Talisman Gold Mines Ltd (previously Heritage Gold NZ Ltd)	17.93	18%
Top 20	72.09	74%
Total shareholders: 536		



#### **Directors/Management**

Creagh O'Connor Dr Ian Pringle Matt Hill Rob Barnes Non-Exec Chairman Managing Director Non-Exec Director Non-Exec Director

### **Contact**



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