



**SheffieldResources**  
LIMITED

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27 July 2015

**QUARTERLY REPORT FOR PERIOD ENDING 30 JUNE 2015**

**HIGHLIGHTS**

*Thunderbird HMS project*

- PFS confirms the technical viability, long life and robust economics of the Thunderbird project and strengthens the case for development
  - At 18mt annual mining rate, Life of Mine (LOM) operating cash flow is estimated to be \$4.3 billion (\$163m per annum for the first 10 years)
  - Average LOM annual EBITDA of \$120m (\$148m for first 10 years)
  - Pre-production Capex of \$367m + \$26m contingency with payback period of 3.6 years
  - LOM revenue to cost ratio of 1.82:1 (2.03:1 for first 10 years)
  - Average annual production of 114,000t zircon, 439,000t ilmenite and 30,000t of HiTi84
  - Robust mine-to-port logistics chain
- PFS update, due Q4 2015, will focus on the following key opportunities to further improve the already strong project economics:
  - Opportunities to reduce development capital and operating costs
  - Resource update (due soon) which will include high grade results from infill drilling
  - Upgrading of ilmenite product to suit a wider range of potential markets and to attract higher product prices

*Fraser Range Nickel project*

- New, high-priority Ni-Cu drill target identified from ground EM survey at Red Bull
- Five new nickel targets and seven gold targets identified from review of historic exploration data on recently granted tenements

*Eneabba HMS project*

- First-pass drilling outlines four new HMS discoveries with high value mineral assemblage

*Cash Position*

- Completion of sale of Oxley potash project tenements to Centrex Metals Ltd for \$2.5m

As at 30/06/15:

Issued Shares	<b>134.4M</b>	ASX Code	<b>SFX</b>	Closing Price	<b>\$0.48</b>
Market Cap	<b>\$64.5M</b>	Cash Reserves	<b>\$5.1M</b>		

## SUMMARY

On 14 May the Company announced the results of a Pre-feasibility Study (PFS) on its flagship Thunderbird Mineral Sands project.

The PFS results confirm the technical viability, long life and robust economics of the Thunderbird project. The Company is targeting project construction commencing 2017 and initial production in 2019. The initial planned production profile is aligned with expected emerging supply gaps in global markets.

Work has commenced on a PFS update, due to be delivered in Q4 2015, which will incorporate a resource update, the results of ilmenite upgrade testwork and cost reduction initiatives, all currently in progress.

In the Fraser Range, ground EM and aircore drilling programs generated several promising targets for follow up work, including a bedrock conductor at the Stud prospect with coincident nickel-copper-cobalt anomalism from shallow aircore drilling.

Scout aircore drilling was undertaken on the Eneabba HMS and McCalls (Mindarra Springs) projects resulting in four new dunal-style HMS discoveries at Eneabba.

Exploration expenditure for the quarter is \$1,814,000.



Figure 1: Location of Sheffield's Projects

## THUNDERBIRD MINERAL SANDS

Sheffield's flagship Thunderbird mineral sands project is located near Derby in Western Australia (Figures 1 & 2). Thunderbird is the largest zircon deposit to be discovered in the last 30 years.

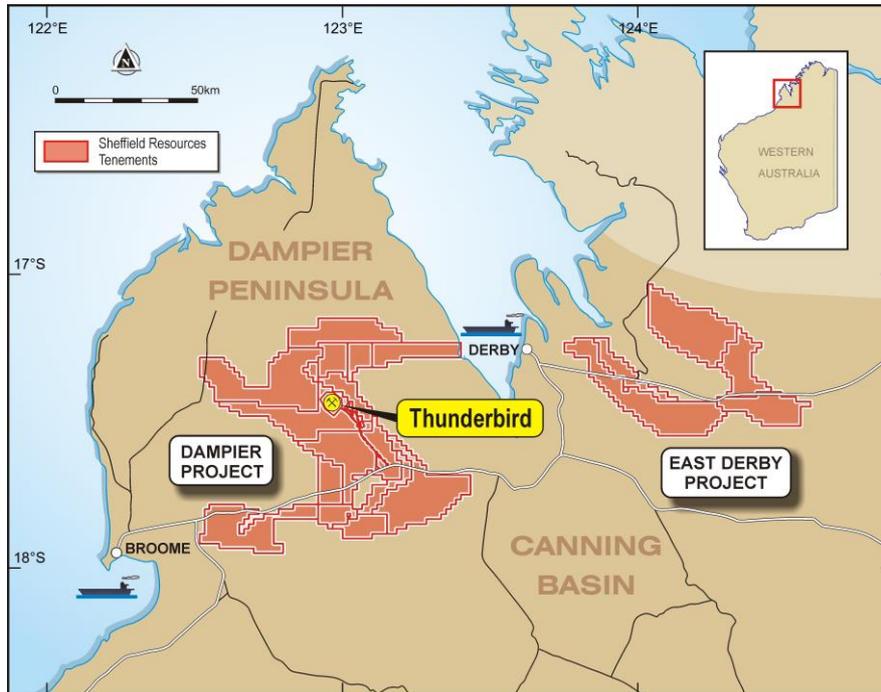


Figure 2: Location of Thunderbird HMS project

Thunderbird has mineral resources of **3.2Bt @ 6.8% HM** (Measured, Indicated and Inferred) (at 3% HM cut-off), containing 95Mt of valuable heavy mineral (VHM), including 19.3Mt of zircon (Appendix 1, refer to ASX release dated 12 December 2015 for full details).

Within this is a coherent high grade zone of **1.080Bt @ 11.8% HM** (Measured, Indicated and Inferred) (at 7.5% HM cut-off), containing 10.0Mt of zircon, 3.1Mt of high-titanium leucoxene, 2.8Mt of leucoxene and 36Mt of ilmenite.

The high in-situ VHM grades for this zone of 0.92% zircon, 0.28% high-titanium leucoxene, 0.25% leucoxene and 3.3% ilmenite place Thunderbird in the top tier of mineral sands deposits globally.

### Thunderbird Pre-feasibility Results

The PFS confirms the technical viability, long life and strong economics of the Thunderbird project and strengthens the case for development. The PFS has been completed to a +/-25% confidence level (process engineering -12%+25%).

At a planned mining rate of 18Mtpa (2,430tph) after ramp-up, average annualised production over a 32-year mine life is estimated to be 114,000t of zircon, 439,000t of Ilmenite, and 30,000t of HiTi84 leucoxene.

At assumed pricing<sup>1</sup> of US\$1,375/t for zircon, US\$155/t for ilmenite and US\$580/t for HiTi84 over the life of the mine, and an exchange rate of \$US0.78, the project is anticipated to generate average operating cash flows of \$134 million per annum. The life-of-mine (LOM) revenue is forecast to be \$9.5 billion and C1 cash costs over the life of mine are \$5.2 billion, giving a LOM revenue-to-cost ratio of 1.82:1 and average annual EBITDA of \$120 million.

The first 10 years of scheduled mining incorporates higher grade mineralisation with less overburden, resulting in higher cash margins. The revenue-to-cost ratio for the first 10 years is 2.03:1, while the annual EBITDA for that period averages \$148 million.

<sup>1</sup> The price forecasts quoted for zircon and ilmenite are specific to the Thunderbird planned products and are based on TZMI's price forecast with adjustment made for quality and likely target market placement. The pricing for the HiTi84 product is derived from a combination of industry sources.

**Table 1: Physicals Summary**

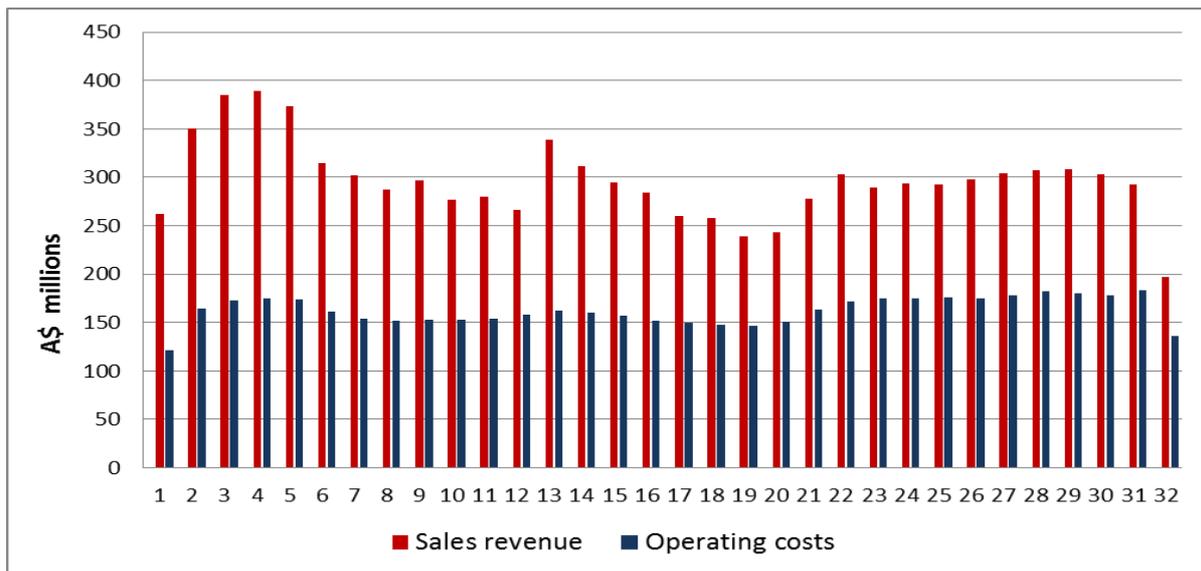
	Years 1-10	LOM
Ore mined (mt)	179	580
Strip ratio (waste:ore)	0.22:1	0.68:1
HMC Produced (mt)	15.6	45.4
Production- Zircon (ktpa)	126	114
Production-HiTi 84 (ktpa)	31	30
Production- Ilmenite (ktpa)	479	439

**Table 2: Thunderbird PFS Key Project Economic Parameters**

		Years 1-10	LOM
Revenue	A\$m	3,236	9,479
Average Operating Cash Flow (LOM)	A\$mpa	163	134
EBITDA	A\$mpa	148	120
EBIT	A\$mpa	134	100
Unit Revenue	A\$/tonne product	510.16	508.26
Unit Revenue	A\$/tonne MUP feed	18.06	16.34
Cash operating costs (C1 costs)	A\$ tonne product	250.62	279.08
Cash operating costs (C1 costs)	A\$/tonne MUP feed	8.88	8.97
Royalties	A\$/tonne product	25.4	25.4
Revenue to Cost ratio (ex royalties)		2.03	1.82

Pre-production capital costs total \$394 million, including \$26.2 million contingency, with a payback period (before financing) of 3.6 years. The capex total includes a full mineral separation plant at the mine site. The estimated sustaining capital, including finance lease balloon payments, is \$7.5m per annum.

Thunderbird is operating cash flow positive even at current depressed “spot” prices<sup>2</sup>, with LOM average annual EBITDA of \$57m and LOM revenue-to-cost ratio of 1.42:1 without altering the mining rate or optimising the mine schedule towards higher grade ore.



**Figure 3: Projected annual sales revenue versus operating costs**

<sup>2</sup> Current spot pricing is sourced from Industrial Minerals and other industry sources: US\$110/t ilmenite, US\$1,100 primary zircon, US\$500/t HiTi.

<sup>3</sup> The mining inventory is based on pit optimisation studies which take into account a range of modifying factors such as mining loss, mineral recovery and pit wall slope.

Potential remains for a staged approach to expansion of the project which will be explored further, however the PFS considers a single stage project as a solid foundation that generates strong cash margins over a very long mine life and provides for an effective and efficient use of capital.

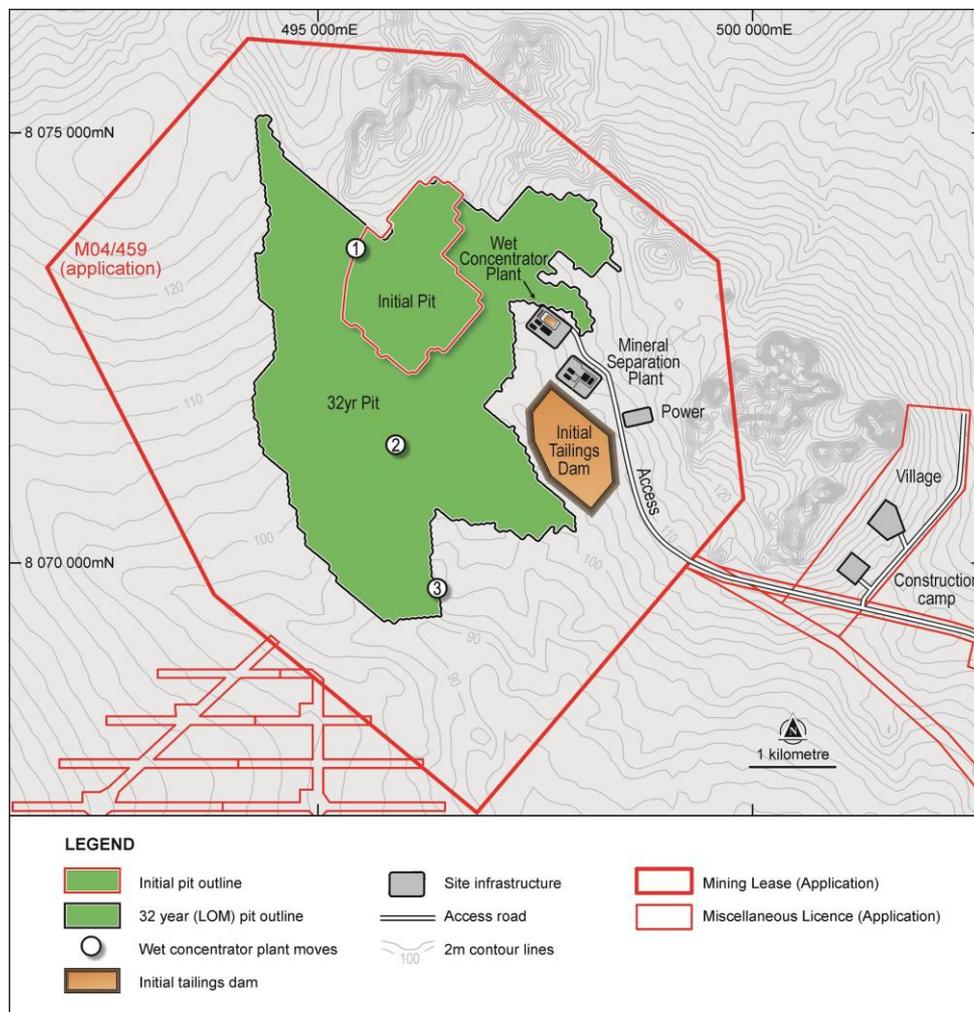
### Mining & Processing

The Mining Inventory<sup>3</sup> that forms the basis of the PFS is from the northern central portion of the Thunderbird Mineral Resource and comprises **580Mt at 11.7% HM**, with in-situ grades of **0.94% zircon**, **0.29% HiTi leucoxene**, **0.29% leucoxene** and **3.32% ilmenite** (from Measured and Indicated Resources only).

The mining inventory equates to 32 years of scheduled production at an 18Mtpa mining rate. Mineralisation remains open beyond the 32-year pit shell outline, with optimisation studies indicating a further 12 years of production at 18Mtpa is possible.

The mining schedule commences in the northern up-dip region of the deposit, where high grade mineralisation occurs close to surface, then progresses southward following the shallow dip of the high grade zone. The waste-to-ore ratio averages 0.22:1 for the first 10 years of scheduled production and 0.68:1 over the 32-year life of mine.

The proposed mining method is a conventional dry mining technique involving large dozers and dozer trap mining units.



**Figure 4: Thunderbird Site Layout Plan**

Wet Concentrator Plant moves will be required in production years 12, 20 and 28 (Figure 4). The final move in year 28 will allow further mining past the currently optimised 32-year pit shell if supported by global markets at the time.

The Mineral Separation Plant, the initial location of the movable Wet Concentrator Plant, a 16MW LNG/diesel power station and an initial Tailings Storage Facility will all be favourably located in an

'embayment' in the orebody within optimal pumping distances (Figure 4). This has major operating cost advantages.

The processing flowsheet has been developed by leading mineral sands specialists Robbins Metallurgical Pty Ltd on the basis of metallurgical process development testwork during the Scoping Study, and during the PFS on a 12.5 tonne bulk sample using full-scale and scalable equipment. The product recoveries obtained from this work have been used in the PFS financial model.

Overall zircon recovery, excluding semi-processed and re-circulated streams, is calculated at 67%. The Primary (66.4% ZrO<sub>2</sub>) Zircon comprises 80% of the recovered zircon. A Secondary (65.1% ZrO<sub>2</sub>) and a Special (62.8% ZrO<sub>2</sub>) Zircon were also produced.

HiTi84 (87.7% TiO<sub>2</sub>) product recovery, excluding semi-processed or re-circulation streams is 37%.

Overall recovery of ilmenite to product is 65%. This product is an ilmenite with 49.1% TiO<sub>2</sub> and is offset by a reduction in recovery to increase the TiO<sub>2</sub> content and reduce Fe<sub>2</sub>O<sub>3</sub> levels, resulting in a higher value product.

### Product quality and marketability

Industry experts TZMI completed an assessment of the marketability of final products obtained from the 12.5t bulk sample metallurgical testwork, taking into account product quality and expected production volumes.

TZMI concluded that the primary zircon product is suitable for ceramic applications. The ceramics sector is the largest sector of the zircon market, with China being the largest importing country. TZMI do not see any issue with placing this material in the market due to the progressively growing supply gap beyond 2018. The secondary and special zircon can be sold as high grade concentrates to the zircon chemicals sector or to zircon concentrate processors, most of which are located in China.

The primary ilmenite product (49.1% TiO<sub>2</sub>) is a suitable feedstock for the sulphate-route TiO<sub>2</sub> pigment process, or as a feed for titanium slag manufacture. The low levels of alkalis and chromium also make this ilmenite an attractive feedstock for blending with ilmenite from other deposits with higher levels of these contaminants.

The HiTi84 product (87.7% TiO<sub>2</sub> content) has specifications suited to the welding electrode market, subject to further customer testing. The product may also be suitable for the titanium sponge market subject to further work to reduce slightly elevated tin levels.

Notwithstanding there is ongoing product development, currently there is no perceived impediment to the sale of full production volumes.

### Logistics

Infrastructure studies undertaken during the PFS have determined a robust and straightforward mine-to-port supply chain for the Thunderbird mineral products.

The PFS assumes that bulk products will be transported by a fleet of 4 quad road trains from the mine to the Derby Port for storage and export. A storage warehouse facility and administration office will be constructed adjacent to the Derby wharf. Sheffield has been granted preferred proponent status for a bulk handling facility and product storage area at Derby port.

New road, and road upgrades from the mine to the sealed Great Northern Highway are required at an estimated cost of \$10.1m.

Derby Port has previously been used for the export of up to 500,000tpa of base metal concentrates from Western Metal's Lennard Shelf operations and is well suited to the export of mineral sands products.

Development Schedule

Sheffield plans to complete a Definitive Feasibility Study in 2016, followed by mine construction commencing in 2017, followed by commissioning in 2018 and the first full year of production targeted for 2019, as per the schedule below.

**Figure 5: Thunderbird Development Schedule**

ACTIVITY	2015				2016				2017				2018				2019	
	Q1	Q2	Q3	Q4	Q1	Q2												
Pre-Feasibility Study & Update	█	█	█															
Permitting	█	█	█	█														
Definitive Feasibility Study			█	█	█	█	█	█										
Environmental Approvals	█	█	█	█	█	█	█	█										
Infrastructure	█	█	█	█	█	█	█	█	█	█	█	█						
Engineering and Construction									█	█	█	█	█	█	█	█	█	█
Commissioning																	█	█
First Products																		█

Pre-feasibility Update

The PFS will be updated in H2 2015 to include positive infill drilling results yet to be incorporated and to focus on reducing capital and operating costs.

Further work is also being undertaken to optimise and/or reduce production throughputs, engineering and mine design and detailed mine scheduling to increase margins through improved efficiencies and reduced operating costs.

The next phase of metallurgical testwork will aim to further improve recoveries and product quality. A key focus will be the upgrading of ilmenite products to suit a wider range of potential markets and to attract higher product prices.

Permitting

Environment and permitting requirements are progressing in parallel with feasibility studies. Native title negotiations are progressing with respect to mining lease application M04/459. Three miscellaneous licences for project infrastructure were granted during the quarter.

2015 Field Campaign

Following completion of heritage surveys, drilling commenced subsequent to the end of the quarter. The 2015 drilling program aims to complete an infill pattern of 250m x 125m in the up-dip region of the deposit. This will enable more detailed mine scheduling to optimise cash flows in early production years.

It is also planned to obtain a 20t bulk sample of mineralisation from this area for DFS level process design and product development work. First pass drilling of regional exploration targets will also be undertaken.

Sheffield has a large tenement holding totalling 5,800km<sup>2</sup> in the emerging Canning Basin mineral sands province. The Company aims to generate further exploration targets during the second half of the year.

## FRASER RANGE NICKEL

Sheffield's tenement holding in the Fraser Range region comprises 15 granted exploration licences and 2 exploration licence applications with a total area of total area of 2,131km<sup>2</sup> (Figure 6). During the quarter, field programs were undertaken on the Red Bull (E69/3052) and Big Bullocks (E39/1733) tenements. A comprehensive review of historical exploration records was completed for all project tenements.

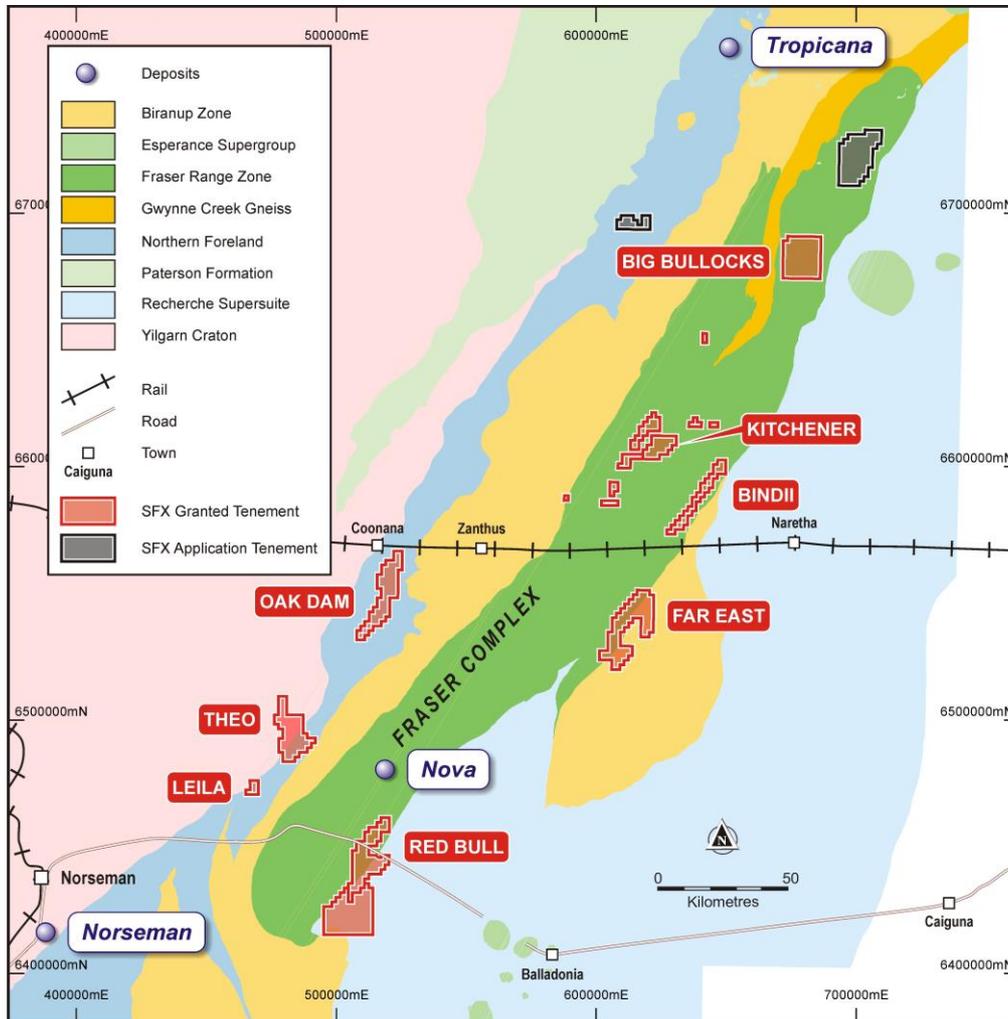


Figure 6: Location of Sheffield's tenements in the Fraser Range region

### Red Bull Nickel

During the quarter, high powered moving loop EM surveys were completed over the Northern Targets. This region features several areas of Ni-Cu-Co anomalism outlined by previous aircore drilling and soil sampling along an 8km strike length of a folded and faulted mafic/ultramafic complex (see ASX release dated 18 February 2015).

The most significant result from the survey was the discovery of a new bedrock conductor of moderate intensity located beneath significant Ni-Cu anomalism in shallow aircore drill holes at the Stud prospect. Stud was originally defined from two phases of exploration aircore drilling undertaken by Sheffield in the second half of 2013, outlining a coherent anomaly of >0.2% maximum Ni-in-hole over a strike length of 1.8km.

Southern Geoscience Consultants (SGC) have modelled the source of the conductive anomaly as large (~500m x 500m), striking NNE-SSW, with a vertical to 85 degree plunge to the ESE and a depth to top of ~150-200m (Figure 7).

Significant results from aircore drilling in the area immediately up-plunge from the modelled bedrock conductor include:

- **22m @ 0.39% Ni**, 138ppm Cu, 272ppm Co, 7ppb Pt, from 32m (REAC240) including **5m @ 0.73% Ni**, 168ppm Cu, 466ppm Co from 33m
- **12m @ 0.32% Ni**, 204ppm Cu, 337ppm Co, 8ppb Pt from 37m (REAC272)
- **8m @ 0.15% Ni**, 400ppm Cu, 261ppm Co, 14.5ppb Pd, 14.5ppb Pt from 22m (REAC250)
- **12m @ 0.15% Ni**, 152ppm Cu, 145ppm Co from 30m, 14.3ppb Pd (REAC239) including **4m @ 0.22% Ni**, 192ppm Cu, 227ppm Co from 38m

(see ASX releases dated 12 September 2013 and 27 November 2013 for details)

In addition to the anomalous geochemical results, trace amounts of the nickel-sulphide mineral violarite ( $\text{FeNi}_2\text{S}_4$ ) were observed in end-of-hole samples from two drill holes at Stud (REAC273 and REAC238 - see ASX release dated 27 November 2013).

Further, a previous MLTEM survey identified three localised zones of induced polarisation (IP) anomalous, immediately south along strike from the new bedrock conductor (see ASX release dated 7 July, 2014). The IP anomalous may be related to the presence of disseminated sulphide in the bedrock. Its location along strike from the bedrock conductor may represent a transition from a disseminated to semi-massive sulphide source.

The Stud prospect represents a compelling drill target due to the combination of bedrock conductor, strong nickel anomalous near surface and observed trace amounts of nickel sulphide.

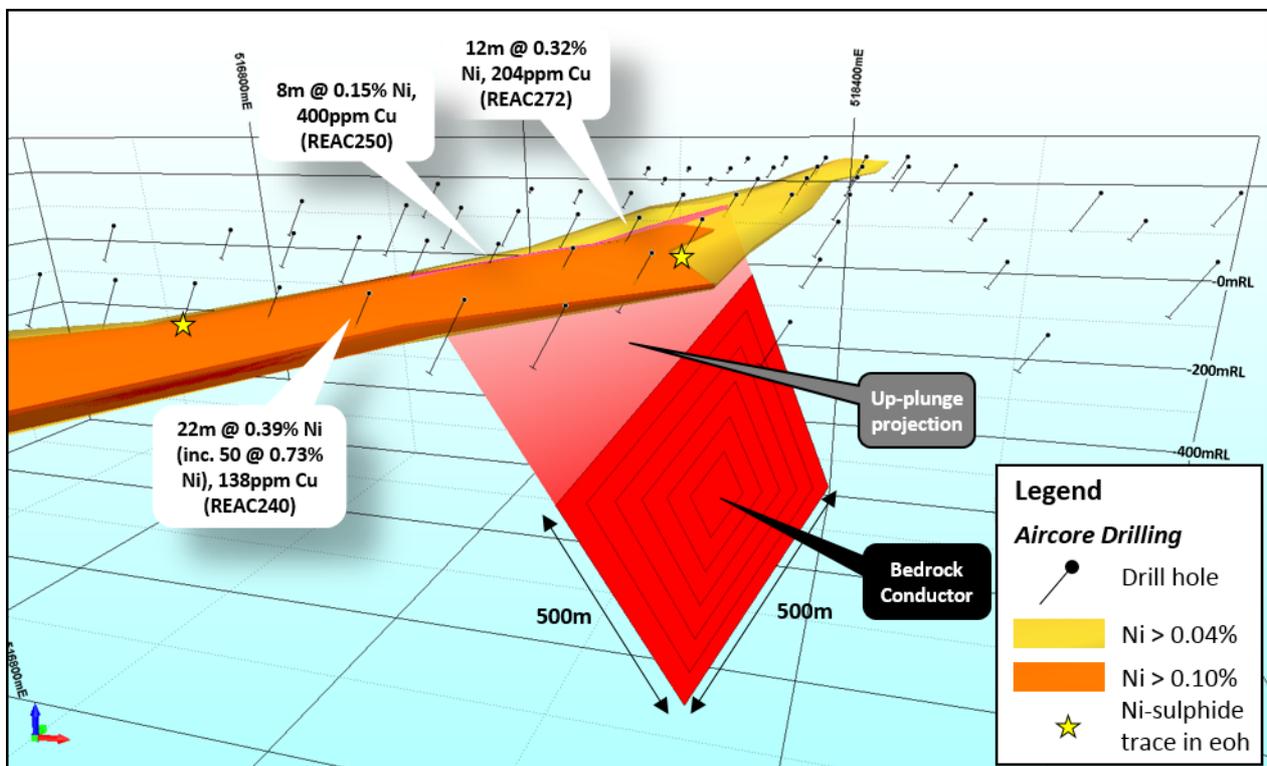


Figure 7: Stud prospect showing modelled bedrock conductor beneath extensive nickel geochemical anomalous in shallow aircore drill holes

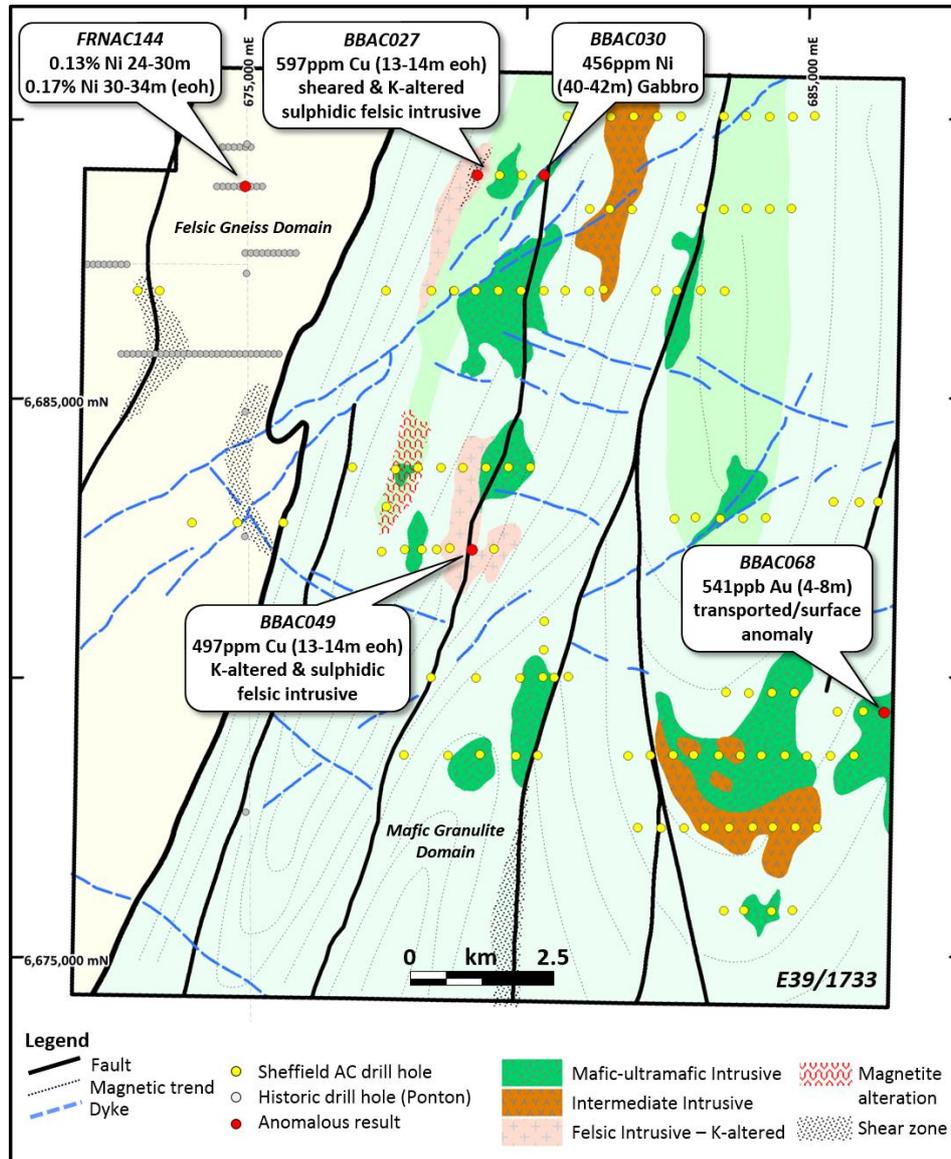
### Big Bullocks Nickel

The Big Bullocks project (E39/1733) is located in the northeast sector of the Fraser Range and straddles the major regional gravity ridge associated with the Fraser Complex (Figure 6).

A scout aircore drilling program of 110 holes for 3,432m was completed during the quarter. This is the first time the Big Bullocks tenement has been drilled for nickel.

Significantly, mafic/ultramafic intrusive complexes were identified, confirming the presence of rock types suitable for formation of magmatic nickel sulphide deposits.

In addition, two felsic intrusive units with sulphidic and potassic alteration and anomalous copper values were identified (BBAC027 and BBAC 049). Anomalous drill results are shown in Figure 8 and are discussed below.



**Figure 8: Big Bullocks geological interpretation and drill hole locations showing anomalous results**

BBAC030 returned highest nickel values of **456ppm Ni** (40-42m), and **336ppm Ni** (42-43m, eoh) in a gabbro adjacent to an interpreted fault.

BBAC027 returned **596.8ppm Cu** from 13-14m (eoh) in a sheared, quartz-rich felsic intrusive rock, with potassic alteration and ex-sulphide throughout. The association of anomalous copper with sulphides suggest the area may be a prospective copper-gold target.

BBAC049 returned **496.6ppm Cu** from 13-14m (eoh) in a coarse-grained felsic intrusive rock, with abundant interstitial networks of ex-sulphide and moderate potassic alteration. This area is similarly considered a prospective copper-gold target.

BBAC068 returned **541ppb Au** and 11ppm As from a single 4m composite (4-8m) within transported silcrete immediately above the interface with weathered bedrock (upper saprolite). Although there were no other anomalous gold values from this or adjacent drill holes, the value is considered significant enough to warrant follow-up work.

Sheffield also sampled and assayed several spoil piles from historic holes drilled by Ponton Minerals in the northwest corner of the Big Bullocks project (Figure 8). An anomalous end-of-hole nickel result reported by Ponton from drill FRNAC144 (from 36-39m) was confirmed by Sheffield's sampling, returning values of **0.13% Ni** (24-30m) and **0.17% Ni** (30-34m) in a sheared anorthosite. This area is also considered worthy of follow-up work to investigate the extent of the anomalous nickel value.

Follow-up drilling to investigate the anomalies and targets identified from this very broadly-spaced first-pass drilling program will be prioritised along with other work in the Fraser Range.

### Nickel and Gold Targets on Recently Granted Tenements

A review of historic exploration has identified five new significant nickel targets and seven advanced gold targets on recently granted tenements E28/2481 "Oak Dam", E28/2453 "Theo" and E63/1696 "Leila". These tenements are located around 50km to the north of Sirius's Nova/Bollinger Nickel-Copper deposit within the northern foreland region of the Tropicana Belt (Figure 6).

A substantial amount of historical, shallow, early stage exploration has been completed over the tenements, providing well defined nickel and gold targets for follow up work.

The five nickel targets, named Dreadnought, Depth Charge, Lifeboat, Torpedo and Frigate, occur on the Oak Dam tenement. They are defined by historical auger soil sampling undertaken by AngloGold Ashanti Ltd. The nickel soil anomalies with peak values ranging from **167-1,274ppm Ni** are associated with magnetic highs (Figure 9) and sporadic outcrop of ultramafic rocks.

Only one nickel anomaly has been tested by drilling, as gold was the principal focus of previous exploration. Limited reconnaissance rock chip sampling undertaken by Sheffield has confirmed elevated nickel values (up to 1.15% Ni) associated with these targets.

The targets are associated with ultramafic rocks that are thought to have intruded deep-seated structures separating the Yilgarn Craton from the Fraser Complex.

The tenements also contain seven gold targets delineated by early stage historic shallow drilling programmes by explorers targeting the region for Tropicana style gold mineralisation. Only a few of these have been tested by deeper RC drilling, with encouraging results.

Further details of the nickel and gold targets are provided in Sheffield's ASX release dated 3 July 2015.

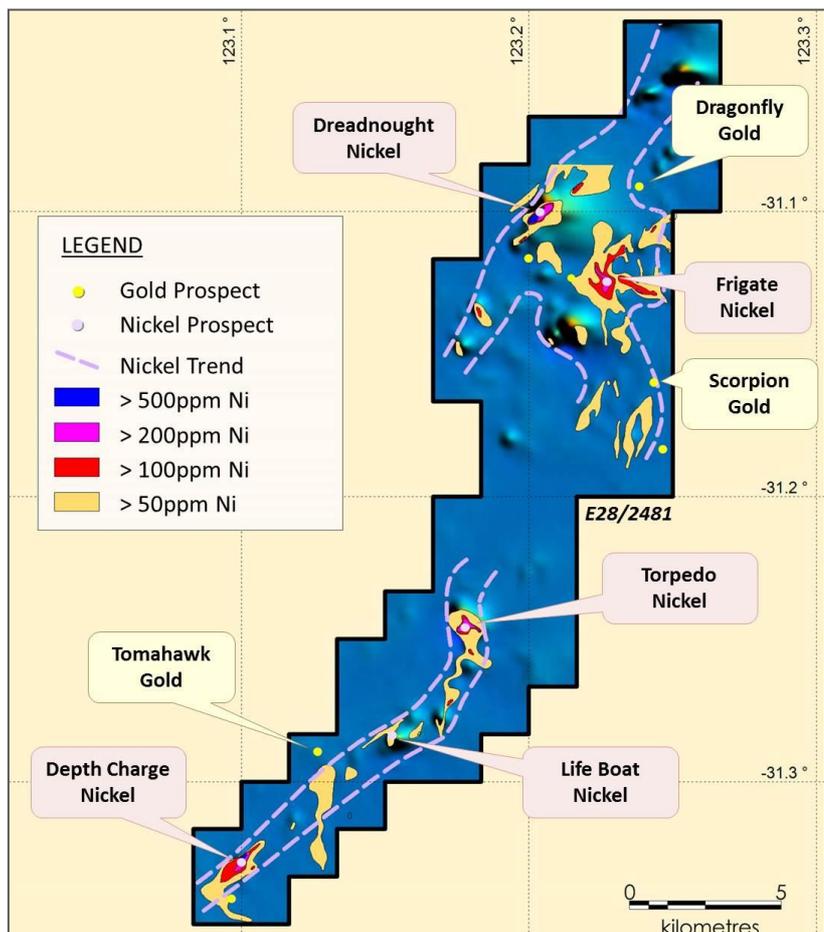


Figure 9: E28/2481 Oak Dam nickel soil anomalies, nickel and gold prospects on magnetic image

## ENEABBA HEAVY MINERAL SANDS

A program of 92 shallow aircore drill holes totalling 2,664m was undertaken as an initial test of dunal-style HMS targets along the Gingin scarp (an ancient coastal cliff) to the east and north of Eneabba. Historically, most mineral sands mining and exploration at Eneabba has targeted strandlines located to the west of this feature (Figure 10).

The drilling resulted in the discovery of four new dunal mineral sands prospects named Robbs Cross, Thomson, Ding Road and Mt Adams. Highlights of the drilling are shown below:

### Robbs Cross

- **21m @ 1.96% HM** from 3m (RCAC001), including **9m @ 2.76% HM** from 12m
- **19.5m @ 1.98% HM** from 3m (RCAC005), including **9m @ 2.58% HM** from 10.5m
- mineral assemblage: **12.5% rutile, 14.7% zircon, 4.1% leucoxene, 47% ilmenite**
- mineralised area (>2% HM) of 1km x 600m, up to 9m thick, within a broader halo of lower grade (0.9%-2.0% HM) mineralisation

### Ding Road

- **10.5m @ 2.35% HM** from 0m (DCAC153), including **6m @ 3.02% HM** from 3m
- **9m @ 2.70% HM** from 0m (DCAC154), including **7.5m @ 2.97% HM** from 0m
- mineral assemblage: **15.4% rutile, 20.3% zircon, 3.8% leucoxene, 44% ilmenite**
- 1km of mineralisation, up to 7.5m thick, defined by a single line of holes

### Thomsons

- **22.5m @ 2.16% HM** from 0m (TMAC016), including **4.5m @ 4.37% HM** from 18m
- **16.5m @ 1.83% HM** from 0m (TMAC005), including **7.5m @ 2.22% HM** from 6m
- mineral assemblage: **12.3% rutile, 15.1% zircon, 3.6% leucoxene, 50% ilmenite**
- two mineralised zones (upper and lower) within a 2.5km x 1.5km area, plus an outlier intersection of **24m @ 1.64% HM** from surface (TMAC013)

### Mt Adams

- **10.5m @ 2.11% HM** from 0m (MAAC017), including **7.5m @ 2.48% HM** from 1.5m
- mineral assemblage: **10.4% rutile, 13% zircon, 2.1% leucoxene, 57% ilmenite**
- mineralised area (>0.9% HM) of 1.7km x 850m, average 6m thick

(See ASX release dated 23 July 2015 for details)

There is little or no overburden associated with these prospects and, in each case, mineralisation remains open in most directions.

The current high grade resource at Sheffield's Eneabba Project comprises **172Mt at 3.0% HM** in five deposits (Table 3 and Appendix 1). Of these, the Drummond Crossing resource, with its combined zircon and rutile assemblage of 24%, is most similar in setting and style to the dunal prospects outlined by recent drilling. The four recent discoveries have combined zircon and rutile assemblages of between 23% and 36%.

**Table 3: Eneabba Resource Summary (see Appendix 1 for full details)**

Deposit	Resource Category	Cutoff HM%	Material Million Tonnes	HM %	Mineral Assemblage			
					Zircon %	Rutile %	Leucoxene %	Ilmenite %
Yandanooka	Meas+Ind+Inf	1.4	60	<b>3.1</b>	12	3.4	3.6	70
West Mine North	Meas+Ind	1.5	18	<b>5.1</b>	6.7	9.7	6.3	59
Durack	Ind+Inf	1.5	24	<b>3.0</b>	14	2.8	4.5	70
Drummond Crossing	Ind+Inf	1.1	52	<b>2.1</b>	14	10	3.5	53
Ellengail	Inf	1.5	18	<b>3.9</b>	8.9	8.7	1.9	64
<b>Total</b>	<b>All</b>	<b>var.</b>	<b>172</b>	<b>3.0</b>	<b>12</b>	<b>6.5</b>	<b>3.8</b>	<b>63</b>

The dunal deposits of the Eneabba region are typically rich in zircon and rutile and the ilmenite is generally high grade (>60% TiO<sub>2</sub>) and suitable as feedstock for the chloride pigment process or as synthetic rutile feedstock. The deposits are broad, up to 20m thick, have little or no overburden and sit above the water table – factors which contribute to simple, low-cost mining. Sheffield recently expanded its total tenement holding in the Eneabba region to 862km<sup>2</sup> with applications for 3 new exploration licences. Sheffield now has full coverage over 70km of the prospective corridor to the east of the Gingin Scarp (Figure 10).

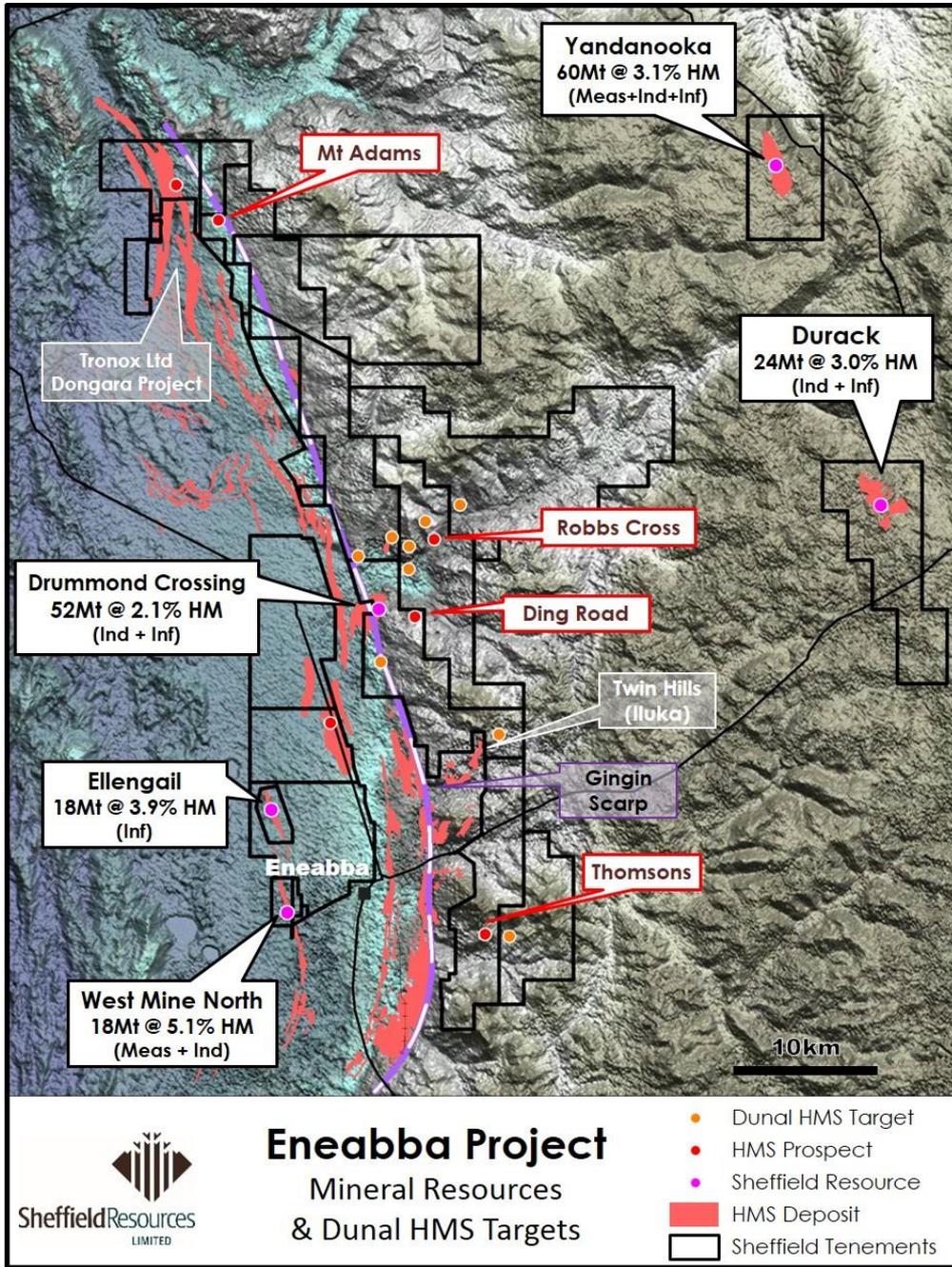


Figure 10: Eneabba Project plan on elevation image

### MCCALLS HEAVY MINERAL SANDS

The McCalls project, located 110km north of Perth, has an Inferred Resource of **4.4Bt @ 1.2% HM** containing 53Mt of HM (Appendix 1). Of this, 43 million tonnes is chloride grade ilmenite (66% TiO<sub>2</sub>) ranking McCalls as one of the largest undeveloped chloride ilmenite deposits in the world.

The McCalls project includes the Mindarra Springs deposit, located 20km to the south McCalls. BHP explored Mindarra Springs for mineral sands in the mid-1990's and drilled approximately 150 aircore drill holes through the area. Sheffield has previously announced an Exploration Target<sup>4</sup> based on this drilling of approximately **1.7-2.2Bt @ 1.4%-1.6% HM** (refer to Sheffield's September 2014 Quarterly Report, dated 28 October 2014 for details).

At Mindarra Springs, six holes totalling 219m were drilled at 500m spacing along an existing road for the primary purpose of collecting sample for ilmenite characterisation test work. The mineralised intervals and assemblage data from the drilling are within the ranges predicted, confirming the quality of the historic BHP drilling. For example the best interval of **16.5m @ 2.17% HM** from 10.5m in hole MSAC005, including **9m @ 2.78% HM from 16.5m**. The mineral assemblage has a very high proportion of valuable heavy mineral, comprising 3.9% rutile, 3.8% zircon, 2.3% leucoxene and 81% ilmenite (total 91% VHM) and is similar to the mineral assemblage at McCalls.

## **OXLEY POTASH**

Sheffield completed the sale of Oxley Potash tenements E70/4318, E70/3777, E70/4004, E70/4320, E70/4319 and E70/4378 to Centrex Metals Limited (ASX:CXM) for a total consideration of A\$2.5 million. A final payment of A\$1.5 million was received during the quarter.

## **OTHER**

Several tenement applications were lodged in the eastern Pilbara targeting copper and manganese (Oakover project, Figure 1). No work was undertaken on the Pilbara Iron project during the quarter.

## **CASH POSITION**

As at 30 June 2015, the Company had cash reserves of approximately \$5.1 million.



**Bruce McQuitty**  
Managing Director  
27 July 2015

<sup>4</sup> Sheffield Resources has not yet reported any Mineral Resources for Mindarra Springs and any discussion in relation to the potential quantity of the targets is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. Figures have been rounded to reflect the implied level of accuracy.

**Schedule 1: Interests in Mining Tenements at the end of the quarter as required under ASX Listing Rule 5.3.3**

Project	Tenement	Holder	Interest	Location <sup>3</sup>	Status
Mineral Sands	E04/2081	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2083	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2084	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2159	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2171	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2192	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2193	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2194	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2348	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2349	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2350	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2386	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2390	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2391	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2392	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2393	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2394	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2399	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2400	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2401	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	M04/459	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/82	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/83	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/84	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/85	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/86	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E70/3762	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3812	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3813	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3814	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3846	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3901	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3929	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3931	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3967	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3970	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4190	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4292	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4313	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4314	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4434	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4584	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/872 <sup>1</sup>	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/965 <sup>1</sup>	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/1153 <sup>1</sup>	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	R70/35 <sup>1</sup>	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3859	Sheffield Resources Ltd	100%	Perth Basin	Pending
Mineral Sands	L70/150	Sheffield Resources Ltd	100%	Perth Basin	Pending
Mineral Sands	E70/4719	Sheffield Resources Ltd	100%	Perth Basin	Pending
Nickel	E69/3033	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E69/3052	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2270	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E39/1733	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2374-I	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2448	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2449	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2450	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2323	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2430	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2431	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E28/2428	Sheffield Resources Ltd	100%	Fraser Range	Granted
Nickel	E69/3181	Sheffield Resources Ltd	100%	Fraser Range	Pending
Gold	E63/1696	Sheffield Resources Ltd	100%	Tropicana Belt	Granted

Project	Tenement	Holder	Interest	Location	Status
Nickel/Gold	E28/2481	Sheffield Resources Ltd	100%	Tropicana Belt	Granted
Gold	E28/2453	Sheffield Resources Ltd	100%	Tropicana Belt	Granted
Nickel	E39/1865	Sheffield Resources Ltd	100%	Tropicana Belt	Pending
Iron	E45/3662-I	Ironbridge Resources Pty Ltd <sup>2</sup>	100%	Pilbara	Granted
Iron	E45/3822-I	Sheffield Resources Ltd	100%	Pilbara	Granted
Iron	E45/4029	Sheffield Resources Ltd	100%	Pilbara	Granted
Iron	E47/3031-I	Sheffield Resources Ltd	100%	Pilbara	Pending
Manganese	E46/1041	Sheffield Resources Ltd	100%	Pilbara	Pending
Manganese	E46/1042	Sheffield Resources Ltd	100%	Pilbara	Pending
Manganese	E46/1044	Sheffield Resources Ltd	100%	Pilbara	Pending
Manganese	E45/4558	Sheffield Resources Ltd	100%	Pilbara	Pending
Manganese	E45/4573	Sheffield Resources Ltd	100%	Pilbara	Pending
Manganese	E45/4574	Sheffield Resources Ltd	100%	Pilbara	Pending
Manganese	E46/1069	Sheffield Resources Ltd	100%	Pilbara	Pending
Manganese	E46/1070	Sheffield Resources Ltd	100%	Pilbara	Pending

Notes:

<sup>1</sup>Iluka Resources Ltd (ASX:ILU) retains a gross sales royalty of 1.5% in respect to tenements R70/35, M70/872, M70/965 & M70/1153.

<sup>2</sup>Ironbridge Resources Pty Ltd is a 100% owned subsidiary of Sheffield Resources Ltd.

<sup>3</sup>All tenements are located in the state of Western Australia.

Details of tenements and/or beneficial interests acquired/disposed of during the June 2015 Quarter are provided in Section 6 of the Company's Appendix 5B notice for the June 2015 Quarter.

## COMPLIANCE STATEMENTS

### PREVIOUSLY REPORTED INFORMATION

This report includes information that relates to Exploration Results, Exploration Targets, Mineral Resources and a Pre-feasibility Study which were prepared and first disclosed under the JORC Code 2012. The information was extracted from the Company's previous ASX announcements as follows:

- Thunderbird Pre-feasibility Study: "PRE-FEASIBILITY STUDY CONFIRMS THUNDERBIRD AS NEXT MAJOR MINERAL SANDS PROJECT IN GLOBAL DEVELOPMENT PIPELINE", 14 May 2015
- Thunderbird Resource Update: "THUNDERBIRD HIGH GRADE RESOURCE SURPASSES ONE BILLION TONNES", 12 December 2014
- Thunderbird Drilling Results: "EXCEPTIONALLY HIGH GRADES FROM INFILL DRILLING AT THUNDERBIRD MINERAL SANDS PROJECT", 15 February 2015
- Red Bull Results: "LARGE Ni-Cu-Co ANOMALIES IDENTIFIED IN THE FRASER RANGE", 11 February, 2014
- Red Bull EM and Big Bullocks aircore drilling: "COMPELLING NEW DRILL TARGET IDENTIFIED FROM GROUND EM SURVEY AT RED BULL NICKEL PROJECT", 23 June 2015
- New Fraser Range Nickel & Gold targets: "TWELVE NEW NICKEL AND GOLD TARGETS OUTLINED IN FRASER RANGE", 3 July 2015
- Eneabba and Mindarra Springs Drilling Results: "NEXT GENERATION OF MINERAL SANDS DISCOVERIES AT ENEABBA", 23 July 2015
- Mindarra Springs Exploration Target: "QUARTERLY REPORT FOR PERIOD ENDING 30 SEPTEMBER 2014", 28 October 2014

This report also includes information that relates to Exploration Results and Mineral Resources which were prepared and first disclosed under the JORC Code 2004. The information 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 information was extracted from the Company's previous ASX announcements as follows:

- Ellengail Mineral Resource: "1MT CONTAINED HM INFERRED RESOURCE AT ELLENGAIL", 25 October 2011.
- West Mine North Mineral Resource: "WEST MINE NORTH MINERAL RESOURCE ESTIMATE EXCEEDS EXPECTATIONS", 7 November 2011.
- McCalls Mineral Resource: "4.4 BILLION TONNE MAIDEN RESOURCE AT MCCALLS HMS PROJECT", 20 February 2012.
- Durack Mineral Resource: "ENEABBA PROJECT RESOURCE INVENTORY EXCEEDS 5MT HEAVY MINERAL", 28 August 2012.
- Yandanooka Mineral Resource: "YANDANOOKA RESOURCE UPGRADE AND METALLURGICAL RESULTS", 30 January 2013.
- Drummond Crossing Mineral Resource and Sampling Results from Dunal-Style HM Targets, Eneabba Project: "1Mt HEAVY MINERAL RESOURCE ADDED TO ENEABBA PROJECT", 30 October 2013.

These announcements are available to view on Sheffield Resources Ltd's web site [www.sheffieldresources.com.au](http://www.sheffieldresources.com.au)

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources and Pre-feasibility Study results, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

**FORWARD LOOKING STATEMENTS**

Some statements in this report regarding estimates or future events are forward-looking statements. They involve risk and uncertainties that could cause actual results to differ from estimated results. Forward-looking statements include, but are not limited to, statements concerning the Company's exploration programme, outlook, target sizes and mineralised material estimates. They include statements preceded by words such as "anticipated", "expected", "target", "scheduled", "intends", "potential", "prospective" and similar expressions.

## APPENDIX 1: MINERAL RESOURCES

**Table 1: Sheffield's contained Valuable HM (VHM) Resource inventory at 12 December 2014**

Deposit	Resource Category	Zircon (kt)*	Rutile (kt)*	HiTi Leuc. (kt)*	Leuc. (kt)*	Ilmenite (kt)*	Total VHM (kt)*
Thunderbird	Measured	500	-	200	200	1,800	<b>2,600</b>
Thunderbird	Indicated	15,900	-	5,200	6,500	50,400	<b>78,100</b>
Thunderbird	Inferred	2,800	-	1,000	1,300	9,000	<b>14,100</b>
Yandanooka	Measured	13	2		3	87	<b>105</b>
Yandanooka	Indicated	240	81		83	1,440	<b>1,840</b>
Yandanooka	Inferred	4	1		2	23	<b>29</b>
Durack	Indicated	144	29		52	703	<b>928</b>
Durack	Inferred	26	5		13	121	<b>164</b>
Drummond Crossing	Indicated	143	101		37	542	<b>823</b>
Drummond Crossing	Inferred	7	5		1	28	<b>41</b>
Ellengail	Inferred	92	90		19	658	<b>859</b>
West Mine North	Measured	18	33		42	200	<b>293</b>
West Mine North	Indicated	71	87		46	506	<b>709</b>
McCalls	Inferred	3,490	1,060		2,580	42,910	<b>50,040</b>
<b>Total</b>	Measured	<b>530</b>	<b>35</b>	<b>200</b>	<b>245</b>	<b>2,090</b>	<b>3,100</b>
<b>Total</b>	Indicated	<b>16,500</b>	<b>300</b>	<b>5,200</b>	<b>6,720</b>	<b>53,590</b>	<b>82,310</b>
<b>Total</b>	Inferred	<b>6,420</b>	<b>1,160</b>	<b>1,000</b>	<b>3,915</b>	<b>52,740</b>	<b>65,235</b>
<b>Total</b>	<b>All</b>	<b>23,450</b>	<b>1,500</b>	<b>6,400</b>	<b>10,880</b>	<b>108,420</b>	<b>150,650</b>

All tonnages have been rounded to reflect the relative uncertainty of the estimate, thus sum of columns may not equal. The contained VHM tonnages in the above table are derived from Mineral Resource Estimates for the Yandanooka, Ellengail, West Mine North, McCalls, Durack deposits (estimated using a 0.9% HM cut-off), the Drummond Crossing deposit (estimated using a 1.1% HM cut-off) and the Thunderbird deposit (estimated using a 3% HM cut-off) as detailed in Table 2.

\* Valuable Heavy Minerals are classified as zircon, rutile, HiTi leucoxene, leucoxene and ilmenite.

**Table 2: Sheffield's HMS Mineral Resource<sup>2</sup> Inventory at 12 December 2014**

Project	Deposit	Resource Category	Cut-off (% HM) <sup>3</sup>	Material (Mt)*	Bulk Density	HM %	Slimes % <sup>3</sup>	Osize %	Insitu HM (Mt)*	Zircon <sup>2</sup> %	Rutile <sup>2</sup> %	HiTi <sup>2</sup> Leuc. %	Leuc. <sup>2</sup> %	Ilm. <sup>2</sup> %
<b>Dampier</b>	Thunderbird	Measured	3.0	75	2.1	7.9	19	11	6	9.3	-	2.7	2.7	30
	Thunderbird	Indicated	3.0	2,550	2.1	7.0	16	9	180	8.9	-	2.9	3.6	28
	Thunderbird	Inferred	3.0	580	2.0	5.6	16	9	32	8.8	-	3.0	4.1	28
	<b>Total Dampier</b>	<b>All</b>	<b>3.0</b>	<b>3,205</b>	<b>2.1</b>	<b>6.8</b>	<b>16</b>	<b>9</b>	<b>218</b>	<b>8.9</b>	<b>-</b>	<b>2.9</b>	<b>3.7</b>	<b>28</b>
<b>Eneabba</b>	Yandanooka	Measured	0.9	3	2.0	4.1	15	14	0.1	11	1.9	-	2.2	72
	Yandanooka	Indicated	0.9	90	2.0	2.3	16	15	2.1	11	3.9	-	3.9	69
	Yandanooka	Inferred	0.9	3	2.0	1.2	18	21	0.03	11	3.9	-	4.6	68
	Yandanooka	All	0.9	96	2.0	2.3	16	15	2.2	11	3.8	-	3.9	69
	Durack	Indicated	0.9	50	2.0	2.0	15	21	1.0	14	2.8	-	5.1	69
	Durack	Inferred	0.9	15	1.9	1.2	14	17	0.2	14	2.5	-	7.2	66
	Durack	All	0.9	65	2.0	1.8	15	20	1.2	14	2.8	-	5.6	68
	Drummond Crossing	Indicated	1.1	49	2.0	2.1	16	9	1.0	14	10	-	3.6	53
	Drummond Crossing	Inferred	1.1	3	2.0	1.5	16	8	0.05	13	10	-	2.8	55
	Drummond Crossing	All	1.1	52	2.0	2.1	16	9	1.1	14	10	-	3.5	53
	Ellengail	Inferred	0.9	46.	2.0	2.2	16	2	1.0	8.9	8.7	-	1.9	64
	Ellengail	All	0.9	46	2.0	2.2	16	2	1.0	8.9	8.7	-	1.9	64
	West Mine North	Measured	0.9	6	2.0	5.6	15	1	0.4	4.9	9.1	-	12	55
	West Mine North	Indicated	0.9	36	1.9	2.3	13	3	0.8	8.4	10	-	5.4	60
	West Mine North	All	0.9	43	1.9	2.8	13	3	1.2	7.9	10	-	6.4	59
	Total Eneabba	Measured	var.	9	2.0	5.2	15	5	0.5	6.7	6.8	-	8.7	60
	Total Eneabba	Indicated	var.	225	2.0	2.2	15	13	5.0	12	6.0	-	4.4	64
Total Eneabba	Inferred	var.	68	2.0	1.9	15	6	1.3	10	7.2	-	3.2	64	
<b>Total Eneabba</b>	<b>All</b>	<b>var.</b>	<b>302</b>	<b>2.0</b>	<b>2.2</b>	<b>15</b>	<b>11</b>	<b>6.8</b>	<b>12</b>	<b>6.3</b>	-	<b>4.2</b>	<b>64</b>	
<b>McCalls</b>	McCalls	Inferred	0.9	4,431	2.3	1.2	27	1.4	53	6.6	2.0	-	4.9	81
	<b>Total McCalls</b>	<b>All</b>	<b>0.9</b>	<b>4,431</b>	<b>2.3</b>	<b>1.2</b>	<b>27</b>	<b>1.4</b>	<b>53</b>	<b>6.6</b>	<b>2.0</b>	-	<b>4.9</b>	<b>81</b>

\* All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate and maintain consistency throughout the table, thus sum of columns may not equal.

<sup>1</sup> See the compliance statements in this report for important information relating to the reporting of these Mineral Resources. <sup>2</sup> The Mineral Assemblage is represented as the percentage of the Heavy Mineral (HM) component of the deposit, determined by QEMSCAN for Eneabba & McCalls, with TiO<sub>2</sub> minerals defined according to the following ranges: Rutile >95% TiO<sub>2</sub>; Leucoxene 85-95% TiO<sub>2</sub>; Ilmenite <55-85% TiO<sub>2</sub>; for Dampier the mineral assemblage was determined by screening and magnetic separation. Magnetic fractions were analysed by QEMSCAN for mineral determination as follows: Ilmenite: 40-70% TiO<sub>2</sub> >90% Liberation; Leucoxene: 70-94% TiO<sub>2</sub> >90% Liberation; High Titanium Leucoxene (HiTi Leucoxene): >94% TiO<sub>2</sub> >90% Liberation; and Zircon: 66.7% ZrO<sub>2</sub>+HfO<sub>2</sub> >90% Liberation. Non-magnetic fractions were submitted for XRF analysis and minerals determined as follows: Zircon: ZrO<sub>2</sub>+HfO<sub>2</sub>/0.667 and High Titanium Leucoxene (HiTi Leucoxene): TiO<sub>2</sub>/0.94. <sup>3</sup> West Mine North, Drummond Crossing, Durack and McCalls deposits are reported below 35% slimes cut-off.

**Table 3: Eneabba Project contained Valuable HM (VHM) inventory<sup>1</sup> (at high grade cut off)**

Deposit	Resource Category	Zircon (kt)*	Rutile (kt)*	Leuc. (kt)*	Ilmenite (kt)*	Total VHM (kt)*
Yandanooka	Measured	13	2	3	87	<b>104</b>
Yandanooka	Indicated	202	60	62	1,190	<b>1,510</b>
Yandanooka	Inferred	1	0.2	0.3	5	<b>6</b>
Yandanooka	Total	215	62	65	1,280	<b>1,620</b>
West Mine North	Measured	15	32	34	183	<b>264</b>
West Mine North	Indicated	43	58	30	351	<b>481</b>
West Mine North	Total	58	89	64	534	<b>745</b>
Durack	Indicated	98	20	32	492	<b>641</b>
Durack	Inferred	4	1	1	21	<b>27</b>
Durack	Total	102	21	33	513	<b>668</b>
Drummond Crossing	Indicated	143	101	37	542	<b>823</b>
Drummond Crossing	Inferred	7	5	1	28	<b>41</b>
Drummond Crossing	Total	150	107	38	569	<b>864</b>
Ellengail	Inferred	60	59	13	431	<b>564</b>
Ellengail	Total	60	59	13	431	<b>564</b>
Total	Measured	28	34	37	270	<b>368</b>
Total	Indicated	486	239	160	2,570	<b>3,450</b>
Total	Inferred	72	65	16	485	<b>638</b>
<b>Total</b>	<b>All</b>	<b>585</b>	<b>337</b>	<b>213</b>	<b>3,320</b>	<b>4,460</b>

\*kt' (kilotonnes) have been rounded to reflect the relative uncertainty of the estimate.

<sup>1</sup> The data summarised in this Table is sourced from the Table above.

**Table 4: Eneabba Project Mineral Resource<sup>1</sup> inventory (at high grade cut off)**

Deposit	Resource Category	Cutoff HM%	Material Million Tonnes*	Bulk Density	HM %	Slimes % <sup>3</sup>	Osize %	In-situ HM Million Tonnes*	Zircon %	Rutile %	Leucoxene %	Ilmenite %
Yandanooka	Measured	1.4	3	2.0	4.2	15	13	<b>0.1</b>	11	1.9	2.2	72
Yandanooka	Indicated	1.4	57	2.0	3.0	16	15	<b>1.7</b>	12	3.5	3.6	70
Yandanooka	Inferred	1.4	0.4	2.0	1.6	15	14	<b>0.01</b>	11	3.2	4.9	71
Yandanooka	<b>Total</b>	<b>1.4</b>	<b>60</b>	<b>2.0</b>	<b>3.1</b>	<b>16</b>	<b>15</b>	<b>1.8</b>	<b>12</b>	<b>3.4</b>	<b>3.6</b>	<b>70</b>
West Mine North	Measured	1.5	4	2.0	8.3	14	1	<b>0.3</b>	4.5	9.4	10	55
West Mine North	Indicated	1.5	14	1.9	4.2	11	3	<b>0.6</b>	7.3	9.8	5.2	60
West Mine North	<b>Total</b>	<b>1.5</b>	<b>18</b>	<b>1.9</b>	<b>5.1</b>	<b>11</b>	<b>2</b>	<b>0.9</b>	<b>6.7</b>	<b>9.7</b>	<b>6.3</b>	<b>59</b>
Durack	Indicated	1.5	23	1.9	3.0	14	19	<b>0.7</b>	14	2.9	4.5	70
Durack	Inferred	1.5	1.1	1.9	2.6	12	21	<b>0.03</b>	14	1.9	4.0	75
Durack	<b>Total</b>	<b>1.5</b>	<b>24</b>	<b>1.9</b>	<b>3.0</b>	<b>14</b>	<b>19</b>	<b>0.7</b>	<b>14</b>	<b>2.8</b>	<b>4.5</b>	<b>70</b>
Drummond Crossing	Indicated	1.1	49	2.0	2.1	16	9	<b>1.0</b>	14	10	3.6	53
Drummond Crossing	Inferred	1.1	3	2.0	1.5	16	8	<b>0.05</b>	13	10	2.8	55
Drummond Crossing	<b>Total</b>	<b>1.1</b>	<b>52</b>	<b>2.0</b>	<b>2.1</b>	<b>16</b>	<b>9</b>	<b>1.1</b>	<b>14</b>	<b>10</b>	<b>3.5</b>	<b>53</b>
Ellengail	Inferred	1.5	18	2.0	3.9	15	2	<b>0.7</b>	8.9	8.7	1.9	64
Ellengail	<b>Total</b>	<b>1.5</b>	<b>18</b>	<b>2.0</b>	<b>3.9</b>	<b>15</b>	<b>2</b>	<b>0.7</b>	<b>8.9</b>	<b>8.7</b>	<b>1.9</b>	<b>64</b>
Total	Measured	var.	7	2.0	6.6	14	6	<b>0.5</b>	7.0	6.3	6.9	62
Total	Indicated	var.	142	2.0	2.8	15	13	<b>4.0</b>	12	6.2	3.9	63
Total	Inferred	var.	23	2.0	3.4	15	4	<b>0.8</b>	9.8	8.5	2.2	63
<b>Total</b>	<b>All</b>	<b>var.</b>	<b>172</b>	<b>2.0</b>	<b>3.0</b>	<b>15</b>	<b>11</b>	<b>5.2</b>	<b>12</b>	<b>6.5</b>	<b>3.8</b>	<b>63</b>

\*Tonnes have been rounded to reflect the relative uncertainty of the estimate.

<sup>1</sup> This estimate is classified and reported in a manner compliant with the JORC code and guidelines (JORC, 2004). Further details on the Mineral Resource at each deposit can be found on the ASX Announcements page of the Company's website.

<sup>2</sup> The Mineral Assemblage is represented as the percentage of the Heavy Mineral (HM) component of the deposit, as determined by GEMSCAN. TiO<sub>2</sub> minerals defined according to the following ranges: Rutile >95% TiO<sub>2</sub>; Leucoxene 85-95% TiO<sub>2</sub>; Ilmenite <55-85% TiO<sub>2</sub>.

<sup>3</sup> West Mine North, Durack and Drummond Crossing are reported below a 35% Slimes upper cut-off.