

19 April 2017

ASX Code:
SFX

Directors:

Mr Will Burbury
Non-Executive Chairman

Mr Bruce McFadzean
Managing Director

Mr Bruce McQuitty
Non-Executive Director

Mr David Archer
Technical Director

Registered Office:

Level 2, 41-47 Colin Street
West Perth WA 6005

Share Registry:

Link Market Services
Level 4, Central Park
152 St Georges Terrace
Perth WA 6000

Capital Structure:

Ordinary Shares: 181.0M
Unlisted Options: 14.9M

Market Capitalisation:

A\$103 million

Cash Reserves:

A\$11.0 million

Investor Relations:

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QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 MARCH 2017

HIGHLIGHTS

Thunderbird Mineral Sands Project

- High quality BFS delivered in March 2017 and includes:
 - Pre-tax NPV₁₀ of A\$676 million and an IRR of 25%
 - EBITDA of A\$5.1 billion over Life of Mine
 - Stage 1 capital of A\$324 million plus A\$24 million contingency
 - Long mine life of 42 years, offering leverage to multiple pricing cycles
- Ore Reserve updated to 680.5 million tonnes @ 11.3% heavy mineral (HM) (Proved + Probable)
- Three non-binding offtake MOU's signed for Premium Zircon
- Environmental permitting on track following conclusion of Public Environmental Review process
- Native Title process continues on schedule

Corporate Activities

- Cash position of A\$11.0 million as at 31 March 2017
- Advancing offtake and financing following completion of BFS

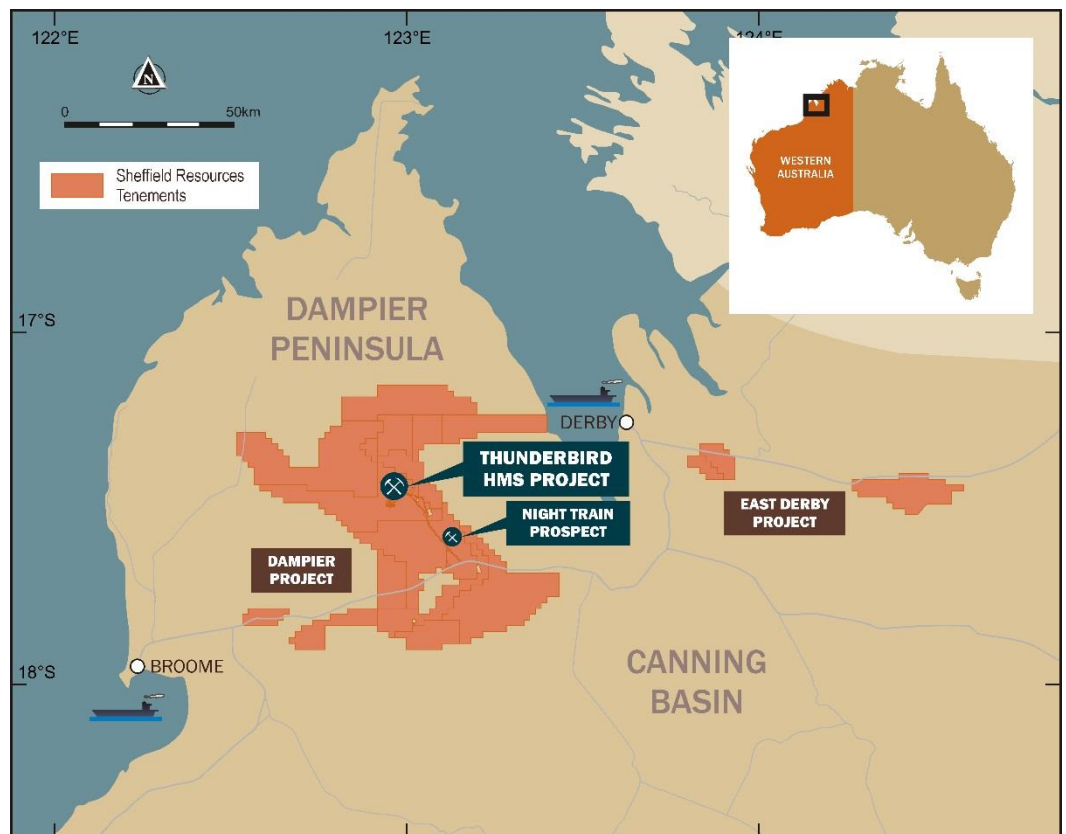


Figure 1: Location of Thunderbird Mineral Sands Project

OPERATIONAL SUMMARY

During the March quarter Sheffield Resources Limited (“Sheffield” or “the Company”) continued its operational focus on its world class Thunderbird Mineral Sands Project (Thunderbird), located in the Canning Basin in northern Western Australia (Figure 1), culminating with the completion of the Bankable Feasibility Study (BFS) for Thunderbird, delivering financially robust metrics.

Key results of the BFS include:

- Pre-tax NPV₁₀ of A\$676 million, IRR of 25%
- Long mine life of 42 years, offering leverage to multiple pricing cycles
- Stage 1 capital of A\$324 million plus A\$24 million contingency (A\$348m, US\$261m)
- EBITDA of A\$5.1 billion over Life of Mine (LOM), averaging A\$123 million per annum
- Ore Reserve totalling 680.5 million tonnes @ 11.3% heavy mineral (HM) (Proved and Probable), including 235.8 million tonnes @ 13.3% HM as Proved Ore Reserve.
- Almost all of the first 10 years of scheduled production (97%) is from the highest confidence Proved Ore Reserve category.
- 100% owned and located in one of the world’s best mining jurisdictions.

Further details of the Thunderbird BFS are detailed below, and in the ASX announcement dated 24 March 2017.

In conjunction with the BFS process, permitting activities continued to advance throughout the quarter. The environmental approval process for Thunderbird is well advanced following completion of a Public Environmental Review in February 2017 and conclusion of environmental permitting expected in mid-2017. The Native Title process is also well advanced with an outcome anticipated before mid-2017.

Sheffield continues to advance offtake and funding opportunities. Interest in both funding and offtake has been strong and following conclusion of the BFS in late March 2017, Sheffield announced the signing of three non-binding memorandums of understanding (MOUs) for the future sale of Premium Zircon with high quality industry counterparties (see ASX announcement dated 4 April 2017 and 10 April 2017). Negotiations are progressing toward binding offtake agreements with these counterparties whilst discussions continue with other counterparties interested in securing commercial agreement for Sheffield’s high quality zircon and ilmenite products.

Exploration and evaluation expenditure including BFS activities totalled A\$3.0m for the quarter. Cash reserves of A\$11.0 million (unaudited) remain as at 31 March 2017.

THUNDERBIRD MINERAL SANDS PROJECT

Located in the Canning Basin in northern Western Australia, the Thunderbird Mineral Sands Project, wholly owned by ASX-listed Sheffield Resources Limited, is situated midway between the port towns of Derby and Broome. Thunderbird, by virtue of its location, size and quality of product has the potential to become a globally significant mineral sands operation. The significance of the Project is supported by the “Lead Agency” project status afforded by the Department of Mines and Petroleum in Western Australia.

Zircon is the key value driver of the Project making up almost 62% of forecast revenue, with the remainder generated from substantial amounts of high grade sulphate ilmenite and “Hi-Ti88” leucoxene. The high proportion of zircon sets Thunderbird apart from many of the world’s operating and undeveloped mineral sands projects which are dominated by lower value ilmenite.

Current Mineral Resources at Thunderbird comprise 1.05 billion tonnes @ 12.2% HM at a 7.5% HM cut-off (Measured, Indicated and Inferred) containing 9.7Mt of zircon, 3.0Mt of high-titanium leucoxene and 35Mt of ilmenite. This places Thunderbird in the top tier of mineral sands deposits globally, including those currently in production.

In conjunction with delivery of the BFS, an updated Ore Reserve comprising 680.5Mt @ 11.3% HM was finalised during the quarter. The March 2017 Ore Reserve is based on the BFS supports a 42 year mine life for the Project with a very low life-of-mine strip ratio (waste:ore) of 0.78:1 and includes a Proved Ore Reserve category of 235.8Mt @ 13.3% HM (see ASX announcements dated 16 March 2017 and 24 March 2017; and refer to Appendix 1).

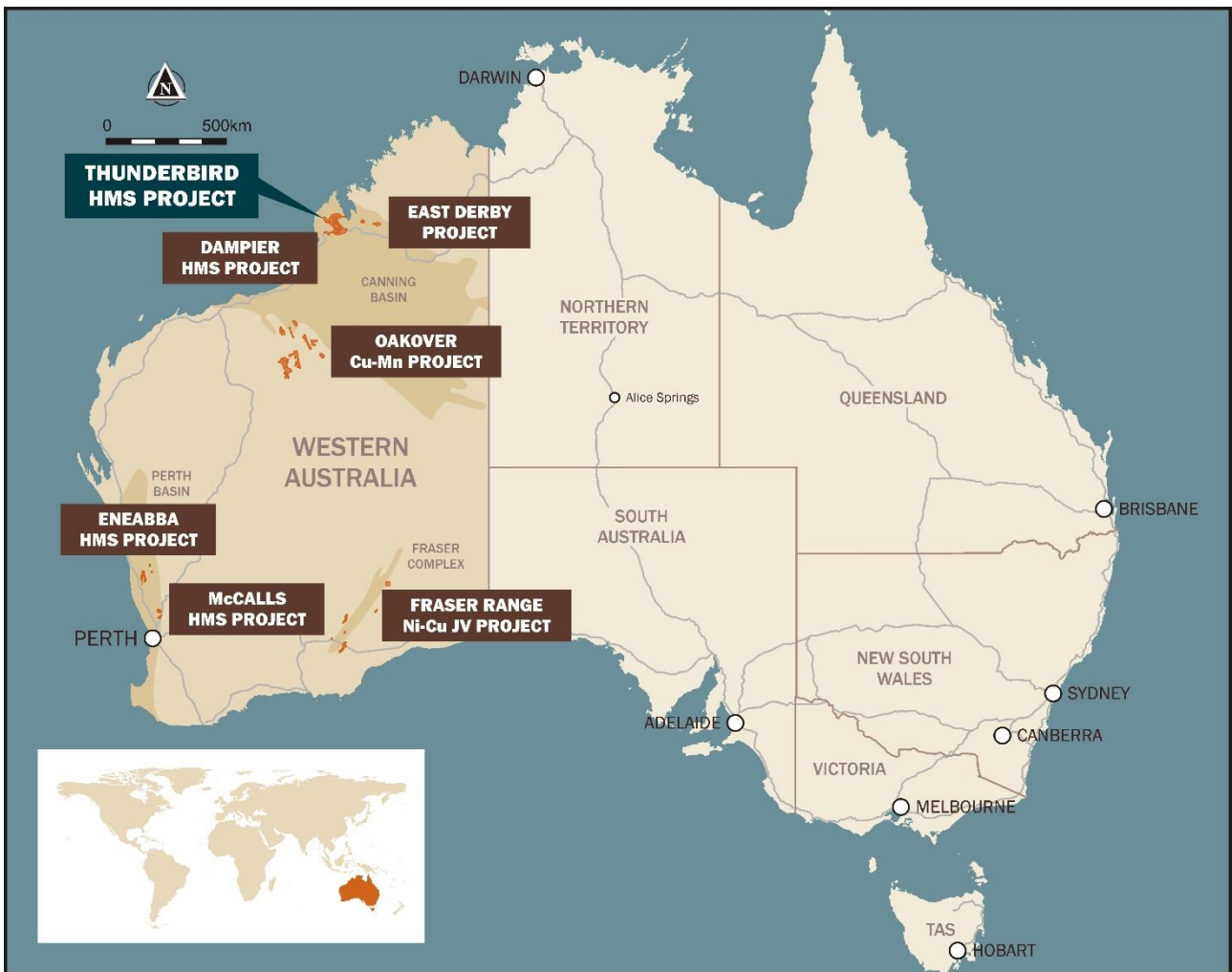


Figure 2: Location of Sheffield Resources Projects in Western Australia

Thunderbird Bankable Feasibility Study (BFS)

The BFS is based on a conventional dozer trap mineral sands mining and processing operation involving an initial 8.5 million tonnes per annum (Mtpa) throughput (single mining unit), doubling to 17Mtpa in Year 5 via the addition of a second mining unit and processing stream.

The BFS has demonstrated a low risk, technically strong project with robust financial metrics as summarised in Table 3 below. The financial analysis is based upon capital, cost and revenue assumptions derived from market contract and supply tenders, industry expert product pricing, consensus foreign exchange rates and a real discount rate of 10%.

The forecast EBITDA of A\$5.1 billion generated over a 42 year mine life underpins the strategic value of the Thunderbird Project. The pre-tax NPV₁₀ of A\$676 million and significant pre-tax IRR of 25% support the Project’s viability and provide a compelling case for financing and development.

The estimated initial development capital of A\$348 million including A\$24 million of contingency (7.5%) required over the first two years to facilitate Stage 1 development is based on an Engineering, Procurement and Construction (EPC) approach to the major process plant capital components. The Stage 2 expansion to approximately 17Mtpa throughput, expected to commence in 2022, is estimated at A\$195 million (\$US146 million) (excluding contingency) and Sheffield’s current expectation is that this will be predominantly funded from cash flows.

The mine schedule has been optimised to provide strong and consistent cash flows over the 42 year mine life. Figure 3 illustrates a consistent cost profile over the mine life with benefits of high grade, near surface ore in early production years, resulting in superior financial metrics.

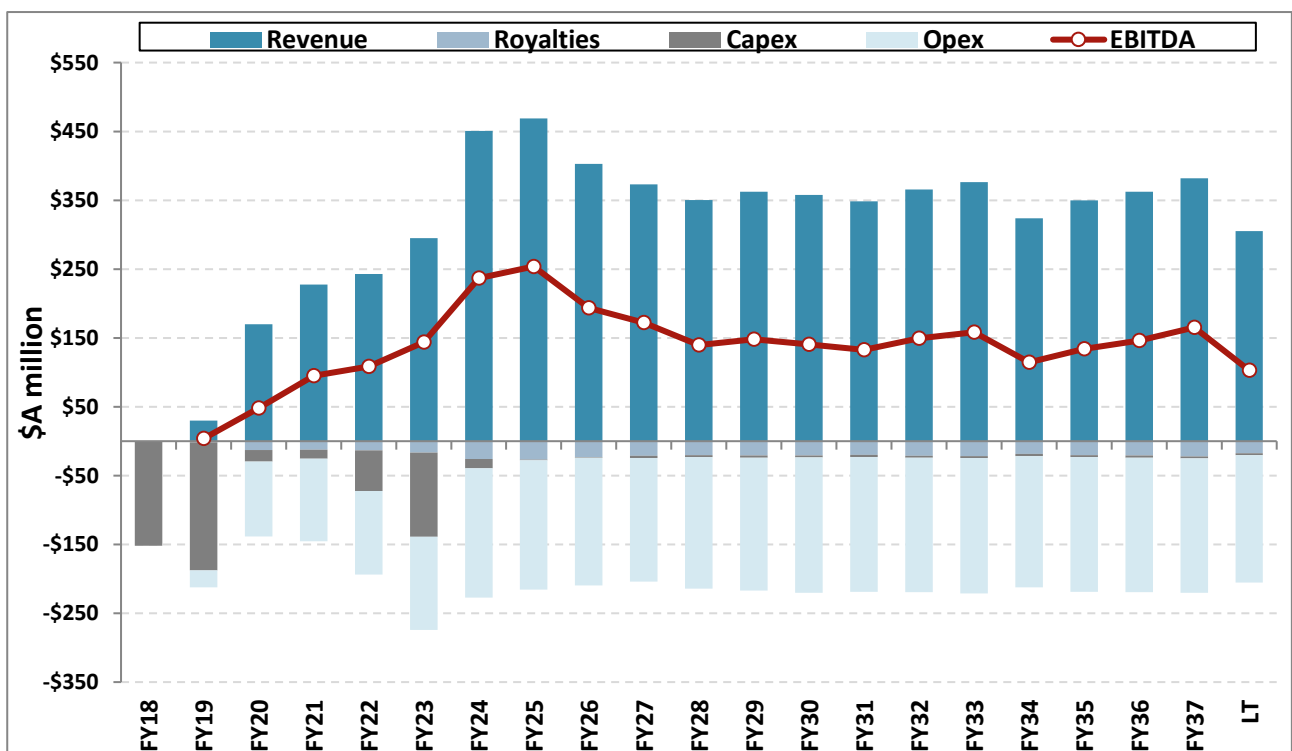


Figure 3: Annual EBITDA (real 2017 prices) and Cash Flows

Production (Average tonnes per annum)	Financial Year 2019 – 2023 ⁵	Financial Year 2024 – 2033 ⁶	LOM ⁷
Premium Zircon	51,500	88,700	76,100
Zircon Concentrate	49,100	80,100	68,500
LTR Ilmenite	264,500	481,600	387,800
Hi-Ti88	12,800	23,000	20,300
Titano-magnetite	156,600	285,300	229,800

Table 1: BFS Production Assumptions

Commodity Prices (US\$) ⁴	Financial Year 2019 – 2023 ⁵	Financial Year 2024 – 2033 ⁶	LOM ⁷
Premium Zircon	1,282	1,387	1,381
Zircon Concentrate	659	677	676
LTR Ilmenite	183	183	183
Hi-Ti88	500	500	500
Titano-magnetite	48	48	48

Table 2: Commodity Price Assumptions

\$AM, Real 2017 Prices	Financial Year 2019 – 2023 ⁵	Financial Year 2024 – 2033 ⁶	LOM ⁷
Revenue	854	3,875	13,560
Royalties	(50)	(223)	(781)
Net Revenue	803	3,652	12,779
Opex: Mining	(104)	(421)	(1,828)
Opex: Processing	(228)	(1,024)	(4,093)
Opex: Logistics	(73)	(288)	(1,005)
Opex: Site G&A	(59)	(172)	(707)
Total Opex¹	(464)	(1,905)	(7,633)
EBITDA	339	1,746	5,146
A\$ Site costs ² / tonne ore mined	14.65	11.11	11.40
A\$ Revenue / tonne ore mined	25.99	22.29	19.92
US\$ Site costs ² / tonne Premium Zircon equivalent ^{3,4}	721	692	790
US\$ Revenue / tonne Premium Zircon equivalent ^{3,4}	1,278	1,387	1,381

Table 3: Thunderbird Project Key Financial Metrics

Notes:

1. Excludes corporate overheads.
2. Includes sustaining capex, excludes corporate overheads and royalties.
3. Premium Zircon equivalent tonnes calculated as total revenues across all products/premium zircon price
4. AUD:USD = 0.75:1.00. USD long term commodity prices are quoted as FOB terms, sourced from TZMI (Premium Zircon, Zircon Concentrate, LTR Ilmenite and Hi-Ti88) and Ruidow (for Titano-magnetite).
5. Stage 1 time period depicted as Q4 FY2019 to Q3 FY2023 inclusive
6. Stage 2 first 10 years depicted as Q4 FY2023 to Q3 FY2033 inclusive
7. LOM (Life of Mine) describes the period 2018 to 2061, inclusive of the construction period.

Figure 4 depicts the Calendar Year 2020 TZMI revenue to cost (RC) ratio curve for the mineral sands industry. Thunderbird is represented adjacent to first quartile producers, several of whom are vertically integrated and operate titanium feedstock beneficiation plants.

Thunderbird's position on an industry RC curve shows the Project is expected to be highly competitive and capable of operating through multiple commodity pricing cycles, underpinning the Project's global strategic value.

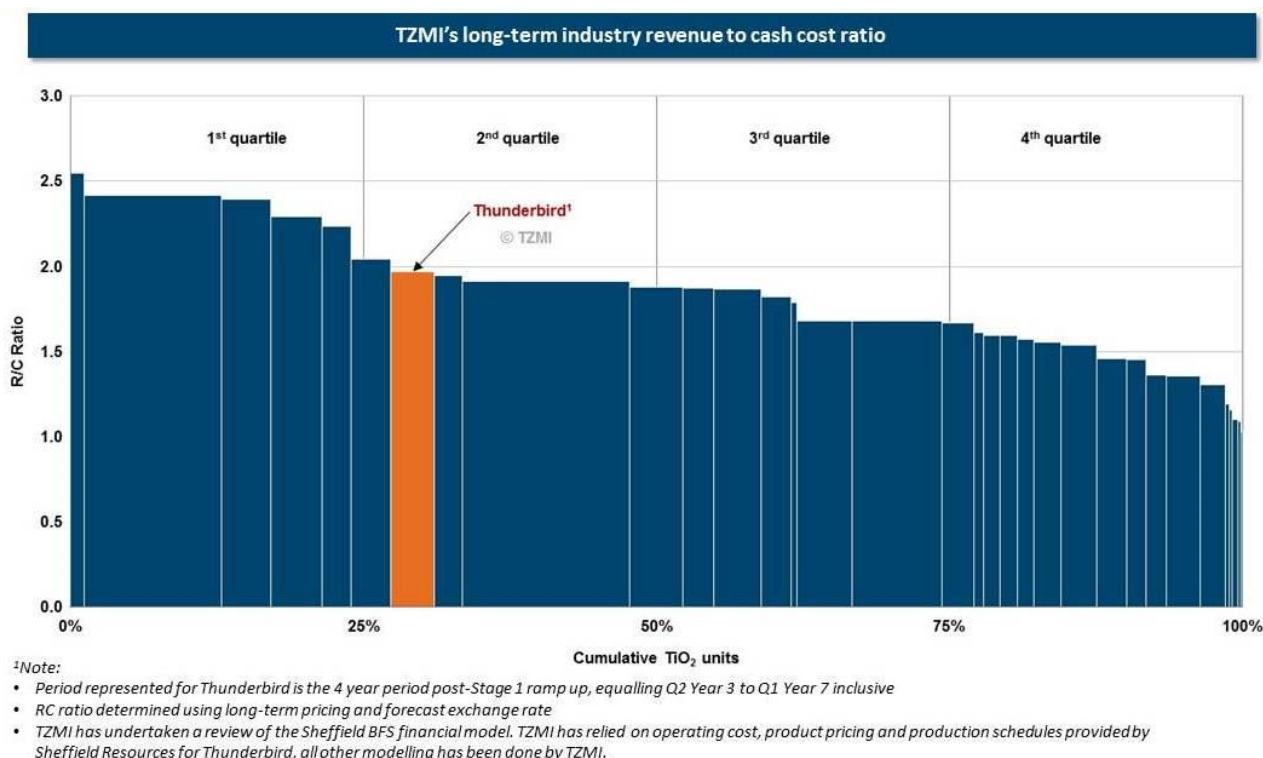


Figure 4: TZMI 2020 Industry Revenue to Cash Cost Curve

Thunderbird Ore Reserve

The Thunderbird BFS is based on one of the world's largest and highest grade, zircon and ilmenite-rich mineral sands Ore Reserves (Figure 5, Table 4). Approximately 97% of the first 10 years of production is scheduled from Proved Ore Reserves, the highest confidence classification. Furthermore, Proved Ore Reserves features an exceptionally high in situ zircon grade of 1.00% and 39% of the contained valuable heavy mineral (VHM) (see ASX announcement dated 16 March 2017 and refer to Appendix 1).

Table 4: Thunderbird Ore Reserve March 2017

Ore Reserve			Valuable HM Grade (In-Situ) ²						
Reserve Category	Material (Mt)	HM (%)	Zircon (%)	HiTi Leuc (%)	Leucoxene (%)	Ilmenite (%)	Oversize (%)	Slimes (%)	
Proved	235.8	13.3	1.00	0.29	0.26	3.55	13.7	16.5	
Probable	444.8	10.2	0.80	0.26	0.26	2.85	11.0	15.2	
Total	680.5	11.3	0.87	0.27	0.26	3.10	12.0	15.7	

²The in-situ grade is determined by multiplying the percentage of HM by the percentage of each valuable heavy mineral within the heavy mineral assemblage at the resource block model scale. Tonnes and grades have been rounded to reflect the relative accuracy and confidence level of the estimate, thus the sum of columns may not equal.

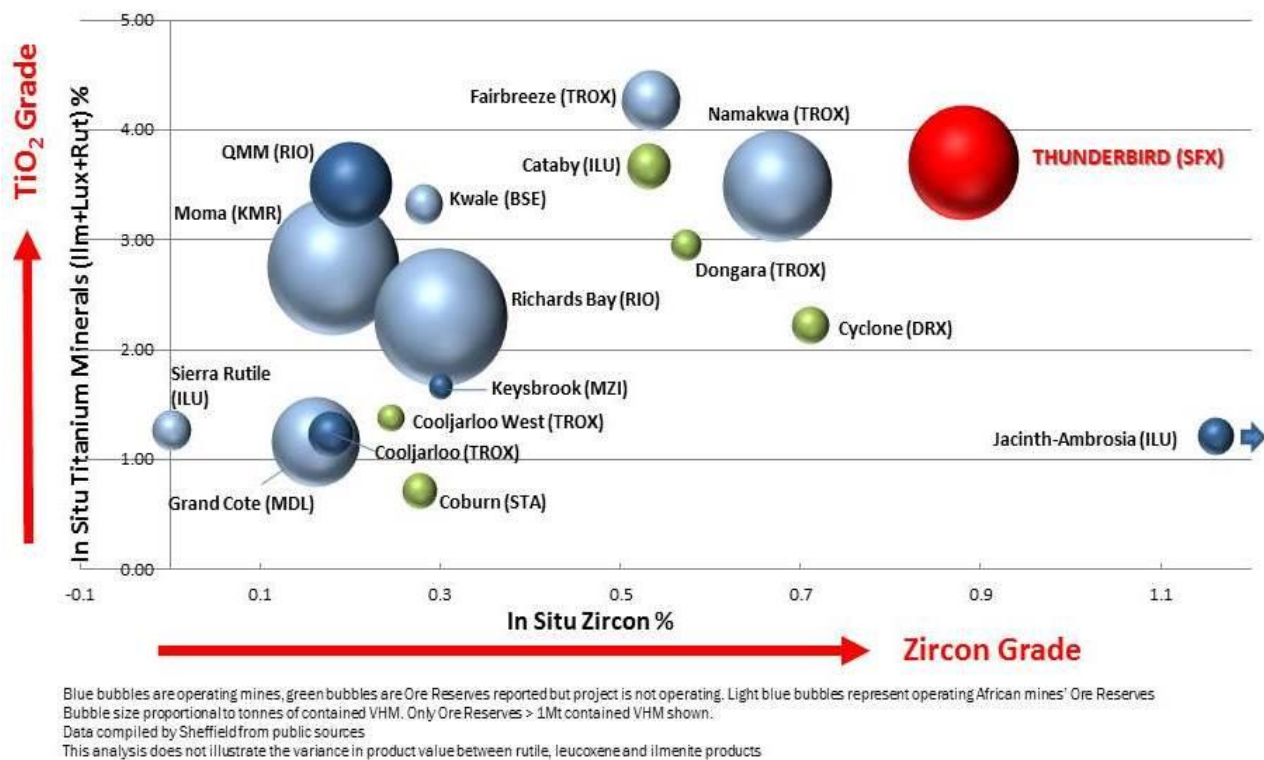


Figure 5: Thunderbird Ore Reserves ranked against Ore Reserves of current mineral sands operations and projects

BFS Product Test Work Results

Extensive test work and process design during the BFS and earlier studies has enabled Sheffield to develop a suite of high quality mineral sands products with specifications suited to market requirements.

- **Premium Zircon** – high quality ceramic grade zircon, >66% ZrO₂;
- **LTR Ilmenite** – pre-reduced, high grade TiO₂ ilmenite with low alkalis and low chromium suitable for:
 - Feedstock for sulphate pigment plants - 56.1% TiO₂;
 - Production of chloride grade and sulphate grade slag - 88% TiO₂ with a high purity pig iron co-product;
 - Potential blended feedstock for chloride processing. LTR Ilmenite can be produced at higher grades (57-59% TiO₂) for this potential market;
- **Hi-Ti88** – suited to flux cored wire welding market, production of titanium sponge, or blended material for processing via the chloride process;
- **Zircon concentrate** – zircon rich (44% ZrO₂, 20% TiO₂) suited to the zirconium chemicals industry, and further upgrading; and
- **Titano-magnetite** – co-product from the LTR process suited to furnace protection in the steel the industry.

The specifications of each product are detailed in Appendix 2.

Test work undertaken by Roundhill Engineering Pty Ltd has determined the LTR conditions required to reduce the Fe₂O₃ content of the ilmenite product to less than 13%. An ilmenite product with these

specifications is expected to attract a further pricing premium in the Chinese market (see ASX announcement dated 13 March 2017).

Marketing and Offtake Status

Offtake negotiations with potential Premium Zircon consumers advanced during the quarter with three non-binding memorandums of understanding signed during April 2017. Binding offtake agreements are expected to be established over the coming months. In parallel, negotiations are continuing with a range of other potential customers on both the Premium Zircon and Zircon Concentrate.

Negotiations with potential ilmenite consumers progressed well during the quarter. Following successful test work to optimise the Fe₂O₃ content of LTR Ilmenite product for the Chinese consumer market, product samples are currently being prepared for dispatch to potential customers for assessment, with further site visits planned to progress offtake opportunities.

Market conditions for TiO₂ products have improved considerably over the past several months with very strong demand for material in the market place. Zircon sand has seen a slight recovery on pricing as overstocking draws to a conclusion. Incremental price increases have been implemented over the past two quarters and further modest price improvements are expected during 2017.

Sustainability

Environmental approval and Native Title processes continue to advance. The Public Environmental Review (PER) opened for public comment for a period of four weeks during January 2017 and concluded in February 2017. The environmental approval process is scheduled to conclude in mid-2017. The Native Title process is also well advanced with finalisation anticipated before mid-2017.

Substantial engagement with a range of stakeholders throughout the Kimberley local community continued during the quarter, with a series of BFS and PER information sessions and stakeholder briefings taking place.

DAMPIER REGIONAL MINERAL SANDS

Planning and permitting for regional exploration on the Dampier project for 2017 continued during the quarter, with programs expected to commence during 2017.

DERBY EAST PROJECT

The Derby East Project comprises 3 exploration licences (one under application), with a total area of 367km². The Company is investigating the potential of two of these tenements, closest to Derby, to yield commercial quantities of sand for construction purposes (E04/2390 and E04/2478; Figure 1). The third tenement in the Project (E04/2392) has been retained for potential sale or joint venture due to the presence of diamondiferous palaeochannels outlined by previous explorers.

During the quarter consultants Golder Associates Pty Ltd were commissioned to complete a program of initial test work and assessment of sand samples from East Derby collected during drilling in October 2016. Results of this work are expected during Q2 2017.

FRASER RANGE JOINT VENTURE (Sheffield 49%; Independence Group NL 51%, Earning to 70%)

During Q4 2016 Sheffield formed a Joint Venture with Independence Group NL ("IGO") (ASX: IGO) to explore five Fraser Range Nickel tenements. IGO are the Manager of the Joint Venture, and currently hold a 51% interest in the tenements. IGO can earn an additional 19% interest by spending \$5 million on the tenements within the next 5 years (see Sheffield's ASX announcement dated 16 November,

2016 for further details). The Joint Venture provides Sheffield with significant exposure to exploration success in the Fraser Range, as it focuses on developing the Thunderbird Project.

IGO have not reported any activity on the tenements during the quarter.

OAKOVER COPPER-MANGANESE PROJECT

Sheffield's Oakover Project, located in the highly prospective Eastern Hamersley Basin and Paterson Province, comprises 3 granted exploration licences and 13 exploration licence applications totalling over 3,790 km² (Figure 8). The tenements cover three parallel geological provinces which are highly prospective for large Proterozoic Cu-Au systems with significant long-life mines operating in each region (e.g. Telfer Au-(Cu), Nifty Cu-(Co) and Woodie Woodie Mn).

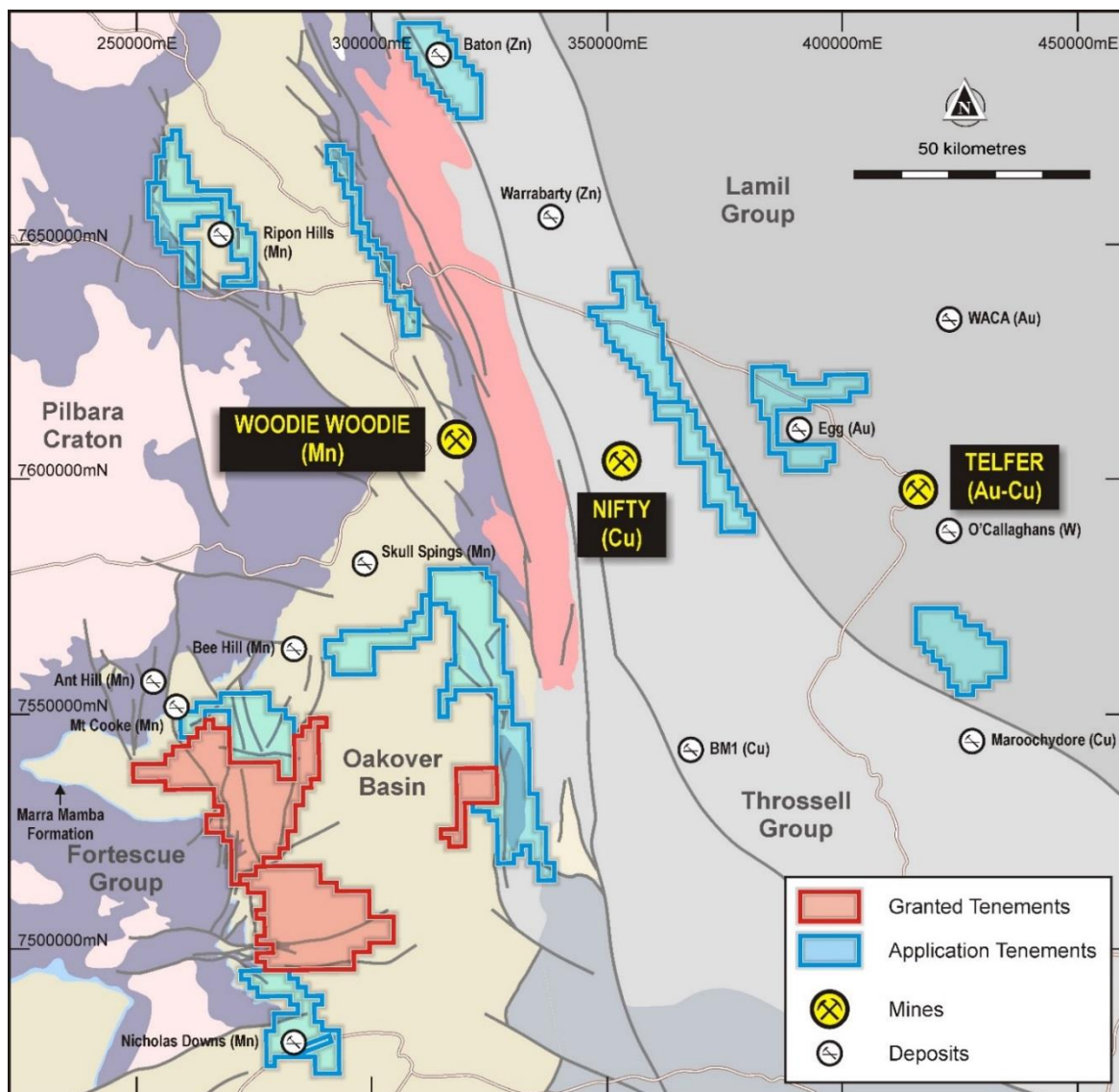


Figure 8: Oakover Project tenements

Sheffield is targeting the Oakover Project for;

- Sediment hosted copper Cu-Co-(Zn-Pb) (e.g. Nifty, Warrabarty)
- Proterozoic gold-copper systems Au-Cu-(Ag-W) (e.g. Telfer, Calibre)
- Manganese Mn (e.g. Woodie Woodie, Ripon Hills)
- Iron Fe (e.g. Christmas Creek, Roy Hill)

Sheffield, through its wholly-owned subsidiary Carawine Resources, is building a significant landholding in the highly prospective Oakover and Paterson regions. During the quarter an additional exploration licence (E45/4871) was applied for which contains the historic Baton Zn-(Pb-Cu) deposit. As this work progresses, Sheffield shall seek opportunities to realise value from these assets, through potential new listing or divestment by sale or joint-venture.

During the quarter, field reconnaissance work continued on Cu, Mn and Fe targets on granted tenements E46/1041 and E46/1069, including at the Western Star prospect as reported in the previous quarter. At Western Star, geological mapping and sampling confirmed the occurrence of several zones of high grade copper mineralisation hosted by Proterozoic dolomites.

A comprehensive review of historical exploration data is continuing, with additional field work, including helicopter supported reconnaissance mapping and sampling planned for Q2 2017.

ENEABBA & McCALLS HEAVY MINERAL SANDS

There are no activities to report on the Eneabba and McCalls Projects during the quarter. A drilling program is planned for Eneabba in the forthcoming quarter.

CASH POSITION AND CORPORATE ACTIVITIES

As at 31 March 2017, Sheffield had cash reserves of approximately \$11.0 million (unaudited).

Following conclusion of the Thunderbird BFS process, Sheffield's corporate activities continue to focus on securing a pathway through to project development, which most recently has culminated in securing three offtake MOU's for the high quality premium zircon product to be delivered from Thunderbird. Marketing activities and engagement with potential customers continues to move forward with significant interest in Sheffield's products shown by a range of parties.



Mr Bruce McFadzean
Managing Director
19 April 2017

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 ³	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	Granted
Mineral Sands	E04/2349	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2350	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2386	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	E04/2390	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2392	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2399	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2400	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2455	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2456	Sheffield Resources Ltd	100%	Canning Basin	Granted
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	L04/92	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/93	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E70/3762	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	E70/3929	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3967	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	E70/4584	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/872 ¹	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/965 ¹	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/1153 ¹	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	R70/35 ¹	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	Granted
Mineral Sands	E70/4719	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4747	Sheffield Resources Ltd	100%	Perth Basin	Granted

Project	Tenement	Holder	Interest	Location	Status
Mineral Sands	E70/4922	Sheffield Resources Ltd	100%	Perth Basin	Pending
Nickel	E69/3033 ²	Sheffield Resources Ltd	49%	Fraser Range	Granted
Nickel	E69/3052 ²	Sheffield Resources Ltd	49%	Fraser Range	Granted
Nickel	E39/1733 ²	Sheffield Resources Ltd	49%	Fraser Range	Granted
Nickel	E28/2374-1 ²	Sheffield Resources Ltd	49%	Fraser Range	Granted
Nickel	E28/2563 ²	Sheffield Resources Ltd	49%	Fraser Range	Pending
Gold	E63/1696	Sheffield Resources Ltd	100%	Tropicana Belt	Granted
Nickel/Gold	E28/2481	Sheffield Resources Ltd	100%	Tropicana Belt	Granted
Copper/Manganese	E46/1041	Sheffield Resources Ltd	100%	Pilbara	Granted
Copper/Manganese	E46/1042	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1044	Sheffield Resources Ltd	100%	Pilbara	Granted
Copper/Manganese	E45/4574	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1069-1	Sheffield Resources Ltd	100%	Pilbara	Granted
Copper/Manganese	E46/1070	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1099	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1116	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1119	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E45/4717	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E45/4719	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Zinc	E45/4871	Carawine Resources Pty Ltd ⁴	100%	Patterson	Pending
Copper/Zinc	E45/4881	Carawine Resources Pty Ltd ⁴	100%	Patterson	Pending
Copper/Zinc	E45/4844	Carawine Resources Pty Ltd ⁴	100%	Patterson	Pending
Copper/Gold	E45/4845	Carawine Resources Pty Ltd ⁴	100%	Patterson	Pending
Copper/Gold	E45/4847	Carawine Resources Pty Ltd ⁴	100%	Patterson	Pending

Notes:

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

²Sheffield holds a 49% interest, with JV partner Independence Group NL (IGO) holding a 51% interest and earning in.

³All tenements are located in the state of Western Australia.

⁴Carawine Resources Pty Ltd is a 100% owned subsidiary of Sheffield Resources Ltd.

Details of tenements and/or beneficial interests acquired/disposed of during the quarter are provided in Section 10 of the Company's Appendix 5B notice for the March 2017 quarter.

COMPLIANCE STATEMENTS

PREVIOUSLY REPORTED INFORMATION

This report includes information that relates to Exploration Results, Mineral Resources and Ore Reserves prepared and first disclosed under the JORC Code (2012) and a Bankable Feasibility Study and Technical Studies. The information was extracted from the Company's previous ASX announcements as follows:

- Further Thunderbird MOU signed: "ADDITIONAL ZIRCON OFFTAKE MOU SIGNED" 10 April, 2017
- Thunderbird MOUs for future sales of Zircon: "SHEFFIELD SIGNS OFFTAKE MOUS" 4 April, 2017
- Thunderbird BFS: "THUNDERBIRD BFS DELIVERS OUTSTANDING RESULTS" 24 March, 2017
- Thunderbird Ore Reserve: "THUNDERBIRD ORE RESERVE UPDATE" 16 March, 2017
- LTR Ilmenite Test Results: "THUNDERBIRD ILMENITE EXCEEDS PREMIUM SPECIFICATION" 13 March, 2017
- Previous Quarterly Report: "QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 DECEMBER 2016" 24 January, 2017
- Fraser Range Joint Venture: "SHEFFIELD FORMS JOINT VENTURE WITH INDEPENDENCE GROUP IN FRASER RANGE" 16 November 2016
- Thunderbird BFS Progress: "OUTSTANDING IMPROVEMENTS IN RECOVERIES AND PRODUCT SPECIFICATIONS FROM THUNDERBIRD BFS" 12 October, 2016
- McCalls Mineral Resource: "QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 30 JUNE 2016" 25 July 2016.
- Thunderbird Mineral Resource: "SHEFFIELD DOUBLES MEASURED MINERAL RESOURCE AT THUNDERBIRD" 5 July, 2016

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:

- 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.
- Yandanooka Mineral Resource: "YANDANOOKA RESOURCE UPGRADE AND METALLURGICAL RESULTS", 30 January 2013.
- Durack Mineral Resource: "ENEABBA PROJECT RESOURCE INVENTORY EXCEEDS 5MT HEAVY MINERAL", 28 August 2012.
- West Mine North Mineral Resource: "WEST MINE NORTH MINERAL RESOURCE ESTIMATE EXCEEDS EXPECTATIONS", 7 November 2011.
- Ellengail Mineral Resource: "1MT CONTAINED HM INFERRED RESOURCE AT ELLENGAIL", 25 October 2011.

These announcements are available to view on Sheffield's website 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 relevant market announcements and, in the case of estimates of Mineral Resources, Ore Reserves, Bankable Feasibility Study and Technical 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 relevant original market announcements.

CAUTIONARY STATEMENTS AND RISK FACTORS

The contents of this report reflect various technical and economic conditions at the time of writing. Given the nature of the resources industry, these conditions can change significantly over relatively short periods of time. Consequently, actual results may vary from those contained in this report.

Some statements in this report regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward-looking statements include, but are not limited to, statements preceded by words such as "planned", "expected", "projected", "estimated", "may", "scheduled", "intends", "anticipates", "believes", "potential", "predict", "foresee", "proposed", "aim", "target", "opportunity", "could", "nominal", "conceptual" and similar expressions. Forward-looking statements, opinions and estimates included in this report are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions.

Forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward-looking statements may be affected by a range of variables that could cause actual results to differ from estimated results, and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. So there can be no assurance that actual outcomes will not materially differ from these forward-looking statements.

APPENDIX 1: Ore Reserves and Mineral Resources

Sheffield announced an updated Ore Reserve totalling 680.5 million tonnes @ 11.3% HM for the Thunderbird heavy mineral sands deposit, in the Kimberley Region of Western Australia, on 16 March 2017, and has since completed a Bankable Feasibility Study for development of the deposit (the Thunderbird Mineral Sands Project). The Proved and Probable Ore Reserve estimate is based on that portion of the current July, 2016 Thunderbird deposit Measured and Indicated Mineral Resources within scheduled mine designs that may be economically extracted, considering all “Modifying Factors” in accordance with the JORC Code (2012).

Sheffield also has a number of Mineral Resource estimates for heavy mineral sands deposits within its Eneabba and McCalls Projects located in the Mid-West Region of Western Australia.

Ore Reserves										
<i>Dampier Project Ore Reserves</i> ^{1,4}										
Deposit	Ore Reserve Category	Ore Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Valuable HM Grade (In-situ) ²				Slimes (%)	Osize (%)
					Zircon %	HiTi Leuc %	Leuc %	Ilmenite %		
Thunderbird	Proved	235.8	31.4	13.3	1.00	0.29	0.26	3.55	16.5	13.7
	Probable	444.8	45.4	10.2	0.80	0.26	0.26	2.85	15.2	11.0
	Total	680.5	76.8	11.3	0.87	0.27	0.26	3.10	15.7	12.0
Deposit	Ore Reserve Category	Ore Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage ³				Slimes (%)	Osize (%)
					Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
Thunderbird	Proved	235.8	31.4	13.3	7.5	2.2	1.9	26.7	16.5	13.7
	Probable	444.8	45.4	10.2	7.8	2.5	2.6	28.0	15.2	11.0
	Total	680.5	76.8	11.3	7.7	2.4	2.3	27.4	15.7	12.0

1) Ore Reserves are presented both in terms of in-situ VHM grade, and HM assemblage. Tonnes and grades have been rounded to reflect the relative accuracy and confidence level of the estimate, thus the sum of columns may not equal. Ore Reserve is reported to a design overburden surface with appropriate consideration of modifying factors, costs, mineral assemblage, process recoveries and product pricing.

2) The in-situ grade is determined by multiplying the HM Grade by the percentage of each valuable heavy mineral within the heavy mineral assemblage.

3) Mineral Assemblage is reported as a percentage of HM Grade, it is derived by dividing the in-situ grade by the HM grade.

4) Ore Reserves reported for the Dampier Project were prepared and first disclosed under the JORC Code (2012)

Mineral Resources

Dampier Project Mineral Resources ^{1,2,5}

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage ³				Slimes (%)	Osize (%)
					Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
Thunderbird (> 3% HM)	Measured	510	45	8.9	8.0	2.3	2.2	27	18	12
	Indicated	2,120	140	6.6	8.4	2.7	3.1	28	16	9
	Inferred	600	38	6.3	8.4	2.6	3.2	28	15	8
	Total	3,230	223	6.9	8.3	2.6	2.9	28	16	9
Thunderbird (>7.5% HM)	Measured	220	32	14.5	7.4	2.1	1.9	27	16	15
	Indicated	640	76	11.8	7.6	2.4	2.1	28	14	11
	Inferred	180	20	10.8	8.0	2.5	2.4	28	13	9
	Total	1,050	127	12.2	7.6	2.3	2.1	27	15	11

Eneabba Project Mineral Resources ^{2,4,6}

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage ³				Slimes (%)	Osize (%)
					Zircon (%)	Rutile (%)	Leuc (%)	Ilmenite (%)		
Yandanooka (> 0.9% HM)	Measured	3	0.1	4.1	10	1.9	2.2	72	15	14
	Indicated	90	2.1	2.3	12	3.7	3.7	69	16	15
	Inferred	3	0.03	1.2	11	3.9	4.6	68	18	21
	Total	96	2.2	2.3	12	3.6	3.7	69	16	15
Durack (>0.9% HM)	Indicated	50	1.0	2.0	14	2.8	4.6	70	15	21
	Inferred	15	0.2	1.2	14	2.4	6.7	67	14	17
	Total	65	1.2	1.8	14	2.8	4.9	70	15	20
Drummond Crossing (>1.1% HM)	Indicated	49	1.0	2.1	14	10	3.6	53	16	9
	Inferred	3	0.05	1.5	13	9.9	2.8	55	16	8
	Total	52	1.1	2.1	14	10	3.6	53	16	9
Ellengail (>0.9% HM)	Inferred	46	1.0	2.2	9	8.7	1.9	64	16	2
	Total	46	1.0	2.2	9	8.7	1.9	64	16	2
West Mine North (>0.9% HM)	Measured	6	0.4	5.6	4	9.6	9.5	54	15	1
	Indicated	36	0.8	2.3	7	9.6	5.4	60	13	3
	Total	43	1.2	2.8	6	9.6	6.6	58	13	3
All Eneabba (various)	Measured	9	0.5	5.2	6	7.7	7.7	59	15	5
	Indicated	225	5.0	2.2	12	5.8	4.2	64	15	13
	Inferred	68	1.3	1.9	10	7.7	2.7	64	15	6
Total	302	6.8	2.2	11	6.3	4.1	64	15	11	

McCalls Project Mineral Resources ^{2,4,6}

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage ³				Slimes (%)	Osize (%)
					Zircon (%)	Rutile (%)	Leuc (%)	Ilmenite (%)		
McCalls (>1.1% HM)	Indicated	2,214	31.7	1.4	5.1	3.2	2.7	76.8	21.7	1.3
	Inferred	1,436	18.7	1.3	5.0	3.2	3.1	80.3	25.5	1.1
	Total	3,650	50.4	1.4	5.1	3.2	2.9	78.5	23.2	1.2

1) The Dampier Project Mineral Resources are reported inclusive of (not additional to) Ore Reserves. The Mineral Resource reported above 3% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 7.5% HM cut-off.

2) All tonnages and grades have been rounded to reflect the relative accuracy and confidence level of each estimate and to maintain consistency throughout the table, therefore the sum of columns may not equal.

3) Estimates of Mineral Assemblage are represented as the percentage of HM grade. For Dampier the mineral assemblage was determined by screening and magnetic separation. Magnetic fractions were analysed by QEMSCAN for mineral determination as follows: >90% liberation and; Ilmenite 40-70% TiO₂; Leucosene 70-94% TiO₂; High Titanium Leucosene (HiTi Leucosene) >94% TiO₂ and Zircon 66.7% ZrO₂+HfO₂. The non-magnetic fraction was analysed by XRF and minerals determined as follows: Zircon ZrO₂+HfO₂/0.667 and HiTi Leucosene TiO₂/0.94. For Eneabba & McCalls determination was by QEMSCAN, with TiO₂ minerals defined according to the following ranges: Rutile >95% TiO₂; Leucosene 85-95% TiO₂; Ilmenite <55-85% TiO₂

4) West Mine North, Durack, Drummond Crossing and McCalls are reported below a 35% Slimes upper cutoff.

5) Mineral Resources for the Dampier and McCalls Projects were prepared and first disclosed under the JORC Code (2012).

6) Mineral Resources reported for the Eneabba Project were prepared and first disclosed under the JORC Code 2004. These have not been updated since to comply with the JORC Code 2012 on the basis that the information on which the Resource estimates are based has not materially changed since it was last reported.

The Company's Ore Reserves and Mineral Resources Statement is based on information first reported in previous ASX announcements by the Company. These announcements are listed below and are available to view on Sheffield's website www.sheffieldresources.com.au. Mineral Resources and Ore Reserves reported for the Dampier Project and Mineral Resources reported for the McCalls Projects were prepared and first disclosed under the JORC Code (2012). Mineral Resources reported for the Eneabba Project were prepared and first disclosed under the JORC Code (2004), these have not been updated since to comply with the JORC Code (2012) on the basis that the information on which the Mineral Resource estimates are based has not materially changed since it was last reported.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant original market announcement continue to apply and have not materially changed.

The Competent Persons for reporting of Mineral Resources and Ore Reserves in the relevant original market announcements are listed below. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the relevant original market announcement.

Item	Name	Company	Professional Affiliation
Mineral Resources Reporting	Mr Mark Teakle	Sheffield Resources	MAIG, MAusIMM
	Mr David Boyd	Sheffield Resources	MAIG
Mineral Resources Estimation	Mrs Christine Standing	Optiro	MAusIMM
	Mr Tim Journeaux	QG	MAusIMM
	Mr Trent Strickland	QG	MAusIMM
Ore Reserves	Mr Per Scrimshaw	Entech	MAusIMM

Ore Reserves and Mineral Resources prepared and first disclosed under the JORC Code (2012):

Item	Report Title	Report Date	Competent Person(s)
Thunderbird Ore Reserve	Thunderbird Ore Reserve Update	16 March 2017	P. Scrimshaw
Thunderbird Mineral Resources	Sheffield Doubles Measured Mineral Resource At Thunderbird	5 July 2016	M. Teakle C. Standing
McCalls Mineral Resources	Quarterly Activities Report For The Period Ended 30 June 2016	20 July 2016	D. Boyd T. Journeaux

Mineral Resources prepared and first disclosed under the JORC Code (2004):

Item	Report Title	Report Date	Competent Person(s)
Ellengail Mineral Resource	1Mt Contained HM Inferred Resource at Ellengail	25 October 2011	M. Teakle T. Strickland
West Mine North Mineral Resource	West Mine North Mineral Resource Estimate Exceeds Expectations	7 November 2011	M. Teakle T. Strickland
Durack Mineral Resource	Eneabba Project Resource Inventory Exceeds 5Mt Heavy Mineral	28 August 2012	M. Teakle T. Strickland
Yandanooka Mineral Resource	Yandanooka Resource Upgrade and Metallurgical Results	30 January 2013	M. Teakle T. Strickland
Drummond Crossing Mineral Resource	1Mt Heavy Mineral Resource Added to Eneabba Project	30 October 2013	M. Teakle T. Strickland

Appendix 2: BFS Final Product Specifications
(refer to ASX announcement dated 12 October 2016 for further details)

Premium zircon

ZrO ₂ +HfO ₂	TiO ₂	Fe ₂ O ₃	SiO ₂	Al ₂ O ₃	D ₅₀
66.3%	0.14%	0.08%	32.5%	0.1%	59µm

- High grade 66.3% ZrO₂+HfO₂
- Low in key impurities iron and titanium
- Very low in aluminium impurities
- Good opacity, similar to other competing products

LTR Ilmenite

TiO ₂	FeO	Fe ₂ O ₃	FeO:Fe ₂ O ₃	Cr ₂ O ₃	CaO	MgO	D ₅₀
56.1%	22.0%	18.5%	1.2	0.03%	0.01%	0.21%	67µm

- High titanium grade (56.1% TiO₂)
- Low in key contaminant Cr₂O₃
- Very low in alkalis CaO and MgO
- Consistent homogenous product
- LTR Ilmenite feedstock can produce high grade TiO₂ slag (88% TiO₂) and HPPI co-product
- Soluble in sulphuric acid, TiO₂ solubility > 95%
- Highly reactive (FeO:Fe₂O₃ of 1.2)

HiTi88

TiO ₂	Fe ₂ O ₃	Cr ₂ O ₃	CaO	MgO	SiO ₂	Al ₂ O ₃	D ₅₀
87.8%	2.9%	0.07%	0.04%	0.00%	3.4%	0.5%	71µm

- High titanium grade (87.8% TiO₂)
- Suitable for flux cored wire welding market or titanium sponge markets.
- Blended feedstock for processing via the chloride process.
- Low in key contaminants Cr₂O₃
- Very low in alkalis CaO and MgO

Zircon Concentrate

ZrO ₂ +HfO ₂	TiO ₂	Fe ₂ O ₃	SiO ₂	Al ₂ O ₃	CeO ₂	D ₅₀
43.7%	20.1%	0.9%	23.3%	1.7%	0.2%	62µm

- Initially focussing on a ZrO₂ rich (~44%) concentrate for process upgrading by the customer.
- Target zirconium chemicals industry

Titanomagnetite

Fe	TiO ₂	P	SiO ₂	Al ₂ O ₃	Cr ₂ O ₃	MnO	D ₅₀
56.2%	11.3%	0.05%	7.8%	0.9%	0.05%	0.20%	67µm

- Co-product produced as from magnetic separation post the LTR process
- Targeting steel feeds industry, protection against erosion of the blast furnace hearth