31 July 2019

**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 12, QV1 Building
250 St Georges Terrace
Perth WA 6000

**Capital Structure:**

| | |
|---|---|
| Ordinary Shares: | 260.6M |
| Unlisted Options: | 10.5M |
| Unlisted Rights: | 9.3M |

**Market Capitalisation:**
A$182 million

**Cash Reserves:**
A$2.7 million
(as at 30 June 2019)

**Investor Relations:**

**Bruce McFadzean**
T: +61 8 6555 8777
E: info@sheffieldresources.com.au

**John Gardner**
Citadel-MAGNUS
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# QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 30 JUNE 2019

## HIGHLIGHTS

*Thunderbird Mineral Sands Project*

- Bankable Feasibility Study Update[1] (BFS Update) announced following the end of the quarter
- Ilmenite processing circuit removed and annual average zircon production increased by 39%[1]
- BFS Update key metrics[1] include
  - Pre-tax **$NPV_{10}$ (Pre-tax) of A$1.13 Billion** and **30.1% IRR**
  - Equity funding materially reduced by A$108m to a total of A$143m
  - Stage 1 direct Project capital expenditure reduced by A$101m to A$478m
  - Ore Reserve increased to 748 million tonnes @ 11.2% HM[2]
- Binding agreement signed for 100% of Stage 1 primary ilmenite production
- ~100% of Stage 1 revenues under binding off take agreements

*Exploration*

- Review of Dampier Project exploration data completed with planning well advanced ahead of heritage survey program scheduled for Q4 2019
- Data compilation and geological interpretation of Eneabba Project completed in preparation for Mineral Resource estimation for the Corridor Prospect, in proximity to West Mine North and Ellengail Mineral Resources

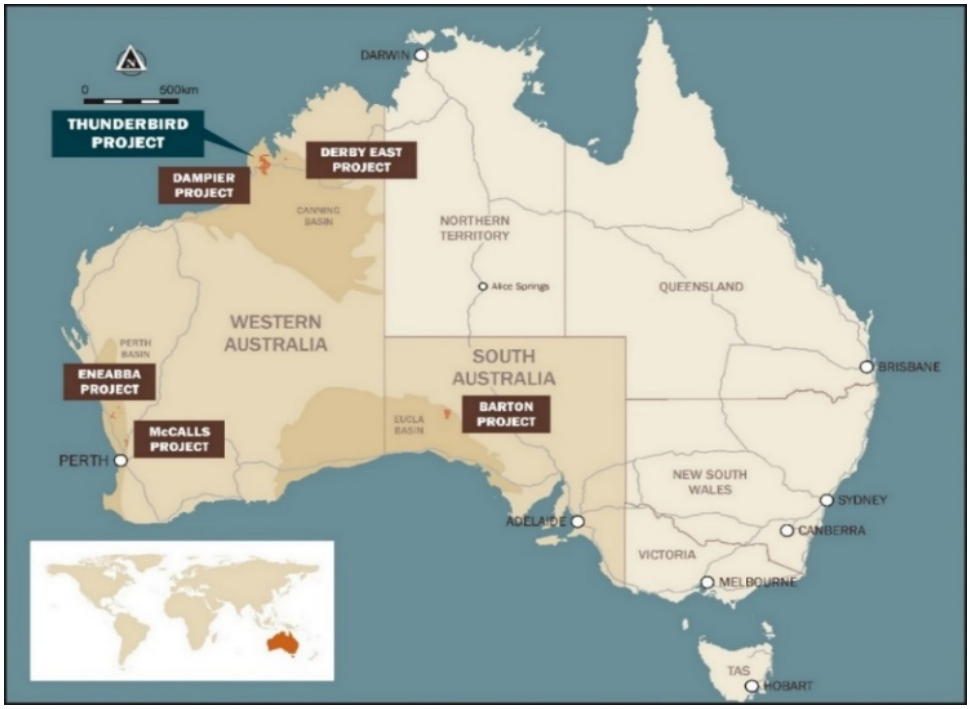



**Figure 1: Location of Sheffield Mineral Sands Projects**

[1]Refer to ASX Announcement "BFS Update Materially Reduces Capital", 31 July 2019
[2]ASX Announcement dated 31 July 2019 titled "Thunderbird Ore Reserve Update"

## OPERATIONAL AND EXPLORATION SUMMARY

During the Quarter, Sheffield Resources Limited ("Sheffield" or "the Company") continued to progress its fully permitted and construction ready, world class Thunderbird Mineral Sands Project (Thunderbird or Project), culminating in the completion of a Bankable Feasibility Study Update (BFSU) following the end of the Quarter (refer ASX Announcement "BFS Update Materially Reduces Capital", 31 July 2019).

The BFSU follows detailed technical assessment over the past six months by Sheffield and GR Engineering Services (GRES) with the primary focus of removing the ilmenite processing circuit and increasing zircon production to materially reduce the equity funding requirements for the Project. With a robust financial metrics including pre tax NPV10 of A$1.13 Billion and 30.1% IRR, the BFSU reduces estimated funding requirement by A$101 million to A$478 million. The zircon focussed Project increases life of mine average annual zircon production from 145kt in the 2017 Bankable Feasibility Study to over 200kt in the BFSU.

The strong cashflows from the BFSU target a debt carrying capacity of A$335m with Stage 1 Taurus project financing of A$240 million (6.5-year tenor) and Stage 1 NAIF infrastructure project financing of A$95 million (15 and 20 year tenor) supporting the material reduction in in equity funding requirements.

Supporting the BFSU a new Ore Reserve of 748 million tonnes at 11.2% HM, during the quarter, which is an increase of 68 million tonnes or approximately 10% (based on ore tonnes) and approximately 9% (based on HM tonnes) compared to the previous Ore Reserve of 680.5 million tonnes at 11.3% HM. (See ASX Announcement dated 31 July 2019 titled "Thunderbird Ore Reserve Update")

This reflects changes in market product pricing, reduced operating costs and the increased revenue certainty for Thunderbird. The majority of the cost estimates applied to determine the Ore Reserve have been informed by negotiated or executed agreements. In addition, binding offtake agreements account for ~100% of projected Stage 1 revenues.

A cornerstone 7-year binding offtake agreement for 100% of the Stage 1 ilmenite production was signed with Bengbu Zhongheng New Materials S&T Co., Ltd (Bengbu) at the end of the quarter. The agreement is based on an annual supply of 650,000 tonnes of primary ilmenite and represents the total volume of estimated primary ilmenite to be produced during Thunderbird Stage 1. The signing of this agreement enhances Thunderbird's economics by generating additional revenue from primary ilmenite sales and complements the removal of the ilmenite processing circuit from the BFS Update.

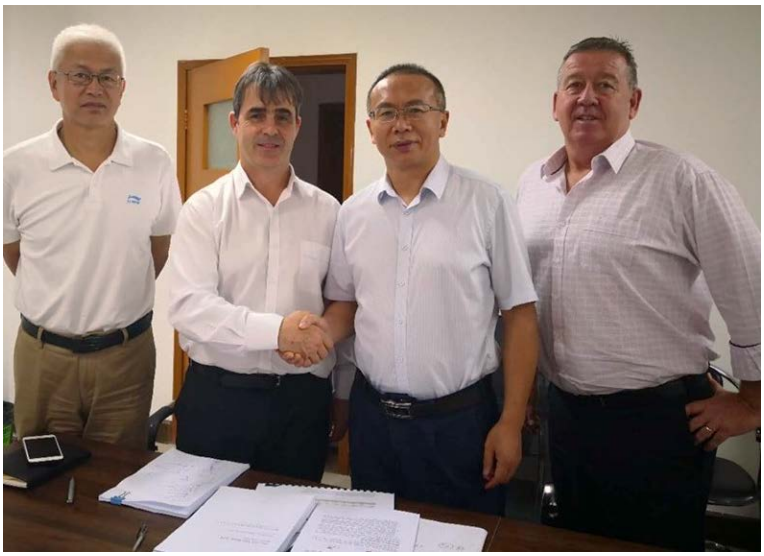


**Figure 2: Bengbu General Manager Mr Wang Yonghe, affirming another binding offtake agreement with Sheffield's Technical Director, Mr David Archer.**

On site activities at Thunderbird were aligned to dry season conditions, seeing a residential site roster implemented for the care & maintenance team. Care & maintenance activities included regular security inspections of key infrastructure to identify and correct any impacts of weather, vermin or pests. Additionally, a minor works program around the accommodation village has focused on the installation of storm water drainage and ground contouring around buildings.

The accommodation village, communications equipment and the site access road remain in excellent condition and ready to support the start of construction activities upon the completion of the strategic partner process.

**Figure 3 & 4: Stormwater piping & contouring completed**

The company held two implementation committee meetings with representatives of the Traditional Owners under the Thunderbird Project Co-existence Agreement during the quarter. The Traditional Owners have appointed a full-time implementation officer to facilitate the administration of the co-existence agreement.

Community engagement activities occurred in Derby, Broome and on the Dampier Peninsula, including the Resources Industry presentation with the Broome Chamber of Commerce (BCCI) (Figure 6).

**Figure 5 & 6: Site and community consultation sessions in the Kimberley**

The zircon market price remained stable, primarily due to larger producers maintaining a balanced supply during the Quarter. The expectation remains that the zircon market will be under some minor price pressure in the short term however, the medium to long term view is unchanged with consensus supporting structural supply deficit expected in the foreseeable future. The $TiO_2$ feedstock markets have continued to strengthen with most global producers increasing prices through during the Quarter. In the mid to long term, significant supply restraint on higher quality $TiO_2$ feedstocks is evident, impacting upon the supply chain. The main beneficiary of the supply restraints will be chloride slag producers as this material is a suitable replacement for other high quality $TiO_2$ feedstocks.

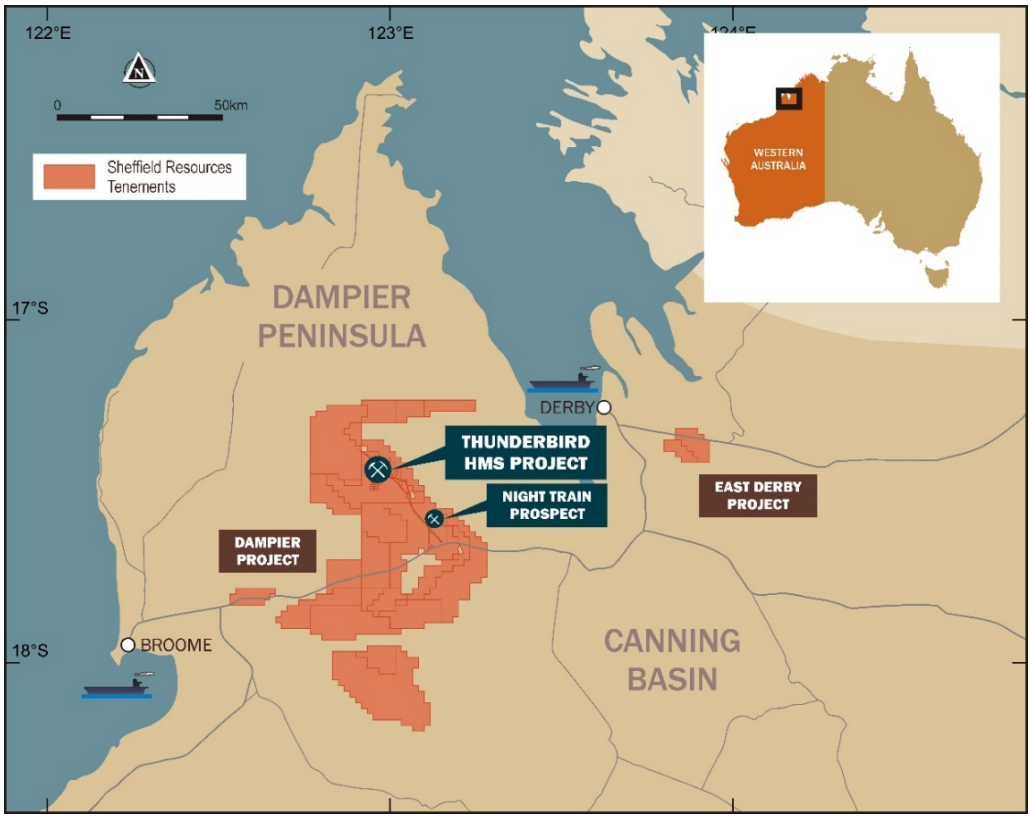



Figure 7: Location of Thunderbird Mineral Sands Project

Sheffield completed a review of exploration drill data at the Dampier Project to assist with planning for heritage surveys scheduled in the second half of 2019. Historic data was captured at the Corridor heavy mineral (HM) prospect within the Eneabba Project and at the Barton HM Project near Jacinth Ambrosia in South Australia. The Mindarra Springs HM Prospect, which has an Inferred Resource of 2,200Mt at 1.6% HM (at a 1.1% cut-off, refer to ASX announcement 03 October 2018) was successful in the application for retention status. The Thomson Prospect which has an Inferred Resource of 26Mt at 2.0% HM (at a 1.4% HM cut-off, refer to Quarterly Report 31 December 2017) was also successful in application for retention status.

## THUNDERBIRD MINERAL SANDS PROJECT

### Early Works Program

A review of the care & maintenance program determined that a site-based accommodation roster would be the most effective during the dry season months. The minor works program which consists of storm water management, contouring, compaction of ground surface around buildings and accommodation improvement works continued. These activities, along with regular inspections of key infrastructure, maintained the site in excellent condition in readiness for construction.

Thunderbird participated in the Dampier Peninsula Fire Working Group to ensure Thunderbird assets are adequately protected and prepared for the fire season (late dry season) along with involvement in annual burning programs.

The accommodation village, communications equipment and the site access road remain in excellent condition and ready to support the start of construction activities upon the completion of the strategic partner process.

Engineering, Procurement and Construction

In consultation with GR Engineering Services (GRES), engineering and design activities focussed on supporting the BFS Update with GRES providing design input along with capital and operating costs estimates to inform the study. Following completion of the BFS Update, the Company intends to re-engage with key suppliers with a view to reviewing commercial arrangements with the BFS Update strategy.

Aboriginal Engagement

Subsequent to the end of the Quarter, Sheffield recognised its inaugural female Aboriginal graduate at a presentation event in Broome. As the fifth graduate and first female graduate of the Thunderbird group training program, Talissa Kinley stands tall and proud of achieving a Certificate 3 in Civil Construction and looks keenly toward being a foundation employee on the construction of Thunderbird.

The Company continues to achieve strong levels of Aboriginal employment, as demonstrated in the figures below.

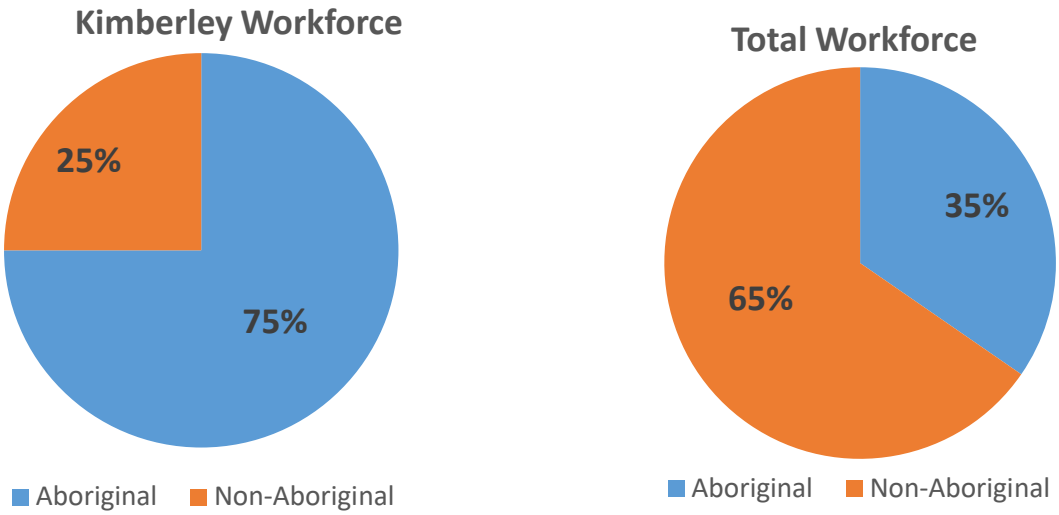



**Figure 8 & 9: Company employment metrics: Aboriginal and Non-Aboriginal employees**

Sustainability

Stakeholder engagement activities occurred in Derby, Broome, the Dampier Peninsula and with industry and business community, including local education and training providers about future skills and training pathways.

Key engagements included presentations at the Joint Kimberley Pilbara Energize Tomorrow Forum in Broome, Derby's Mary Island Fishing Club Thunderbird Update event and Broome Chamber of Commerce and Industry Thunderbird Update event.

A project briefing was held with newly appointed Shire of Derby West Kimberley CEO Amanda O'Halloran, as well as the Board of NAIF, various Government Ministers, advisors and Departmental officers.

Team members participated in the annual Careers Week at Broome Senior High School, NAIDOC week activities and community events supported by Sheffield including the Derby Long Table Dinner and the Kimberley Art Prize.

Marketing and Offtake

A softening of the zircon market occurred during the quarter although prices have been maintained and there is no indication that this will change in the near term. The longer-term view for zircon remains unchanged, with significant supply constraints expected. The depletion of existing mines and lack of new development continues the upward pricing pressure with the predicted supply deficit and growth in zircon demand enhancing Thunderbird's Project economics over the projected multi decade mine life.

The $TiO_2$ feedstock market continued to improve with stronger than expected demand in the sector driving up commodity prices. Expectation for the coming quarter is more of the same, with demand out stripping supply, particularly in the higher quality $TiO_2$ feedstock market. The longer term view still sees significant supply shortages for all $TiO_2$ feedstocks and with the predicted growth in the Chinese chloride slag market demand expected to remain very strong for the coming years.

Discussions were instigated with potential offtake groups for supply of the uncontracted volumes of both zircon and ilmenite expected to be produced from the BFSU. There was significant interest from many of the existing offtake partners, resulting in the Company successfully securing binding offtake agreements for 100% of both the additional zircon material and ilmenite material that will be produced for increased Stage 1 of the Thunderbird operation.

Project Financing

The confidential strategic partnering process continued supported by the Company's corporate advisor, UBS. UBS conducted a structured, formal process to identify, evaluate and progress the introduction of strategic parties that would assist in achieving the Company's objective of optimising shareholder value through Thunderbird's development.

Sheffield announced that it had mandated Taurus Mining Finance Fund and Taurus Mining Finance Annex Fund (Taurus) to provide a US$10 million bridging finance facility.

## EXPLORATION ACTIVITIES

Sheffield completed exploration data reviews and geological interpretation for the Dampier and Eneabba Projects. At the Dampier Project a review of exploration drilling data was undertaken to assist with planning for heritage surveys scheduled for the second half of 2019.

Capture of historic open file data was undertaken at the Corridor HM prospect at the Eneabba Project in Western Australia and at the Barton HM Project 150km north of Jacinth Ambrosia in South Australia. An application for retention status was successful for the Mindarra Springs Mineral Resource at the McCalls Project and the Thomson Mineral Resource at the Eneabba Project.

Dampier Project

Analysis of regional drilling was undertaken to assist in the planning of future drill programs. Heritage surveys were planned and scheduled for the second half of 2019. Sheffield's regional exploration

strategy is focused on delineating shallow, large, high-grade, zircon-rich deposits, containing high quality zircon.

New exploration licences E04/2642, E04/2643 E04/2644 and E04/2645 were applied.

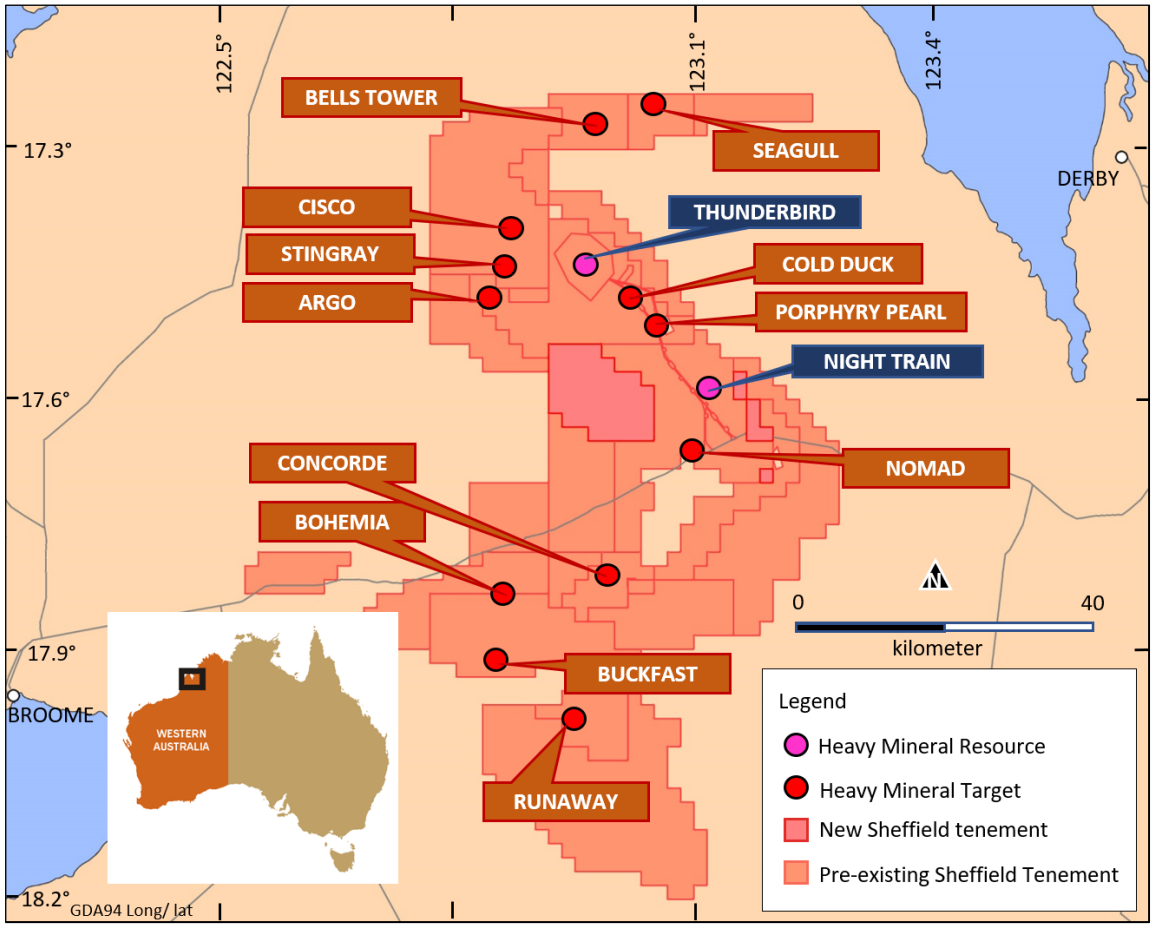



**Figure 10: Dampier Project status plan**

Eneabba Project

The Eneabba Project comprises seven deposits with a combined Mineral Resource totalling 193 million tonnes @ 3.0% HM (Measured, Indicated and Inferred) containing 4.8 million tonnes of VHM, across seven deposits. These include Yandanooka, Durack, Drummond Crossing, Robbs Cross, Thomson, West Mine North, and Ellengail (refer to ASX announcement dated 3 October 2018).

Sheffield undertook an appraisal to rationalise the Eneabba tenement holdings to streamline commitments within the region and to retain all Mineral Resources in the region. This appraisal resulted in the reduction of the size of tenements E70/3814, E70/4190 E70/4292, and E70/4747 to regions covering the Drummond Crossing, Robbs Cross and Thomson Mineral Resources as well as sufficient footprint required for potential future infrastructure needed to support their development. The Thomson HM Prospect which has an Inferred Resource of 26Mt at 2.0% HM (at a 1.4% HM cut-off, refer to Quarterly Report, 31 December 2017) was successful in application for retention status on tenements E70/4190 and E70/4747.

Historic data was collated from open file reports for tenement E70/4719 which hosts the Corridor HM Prospect. The Corridor Prospect is situated between the Indicated and Inferred Mineral Resources of Ellengail and West Mine North, which contain both a lower grade dunal HM component and a higher-

grade strandline HM component and strike north-south towards the Corridor HM Prospect. Sheffield recognises the potential for the low grade dunal and high-grade strandlines to extend on to E70/4719.

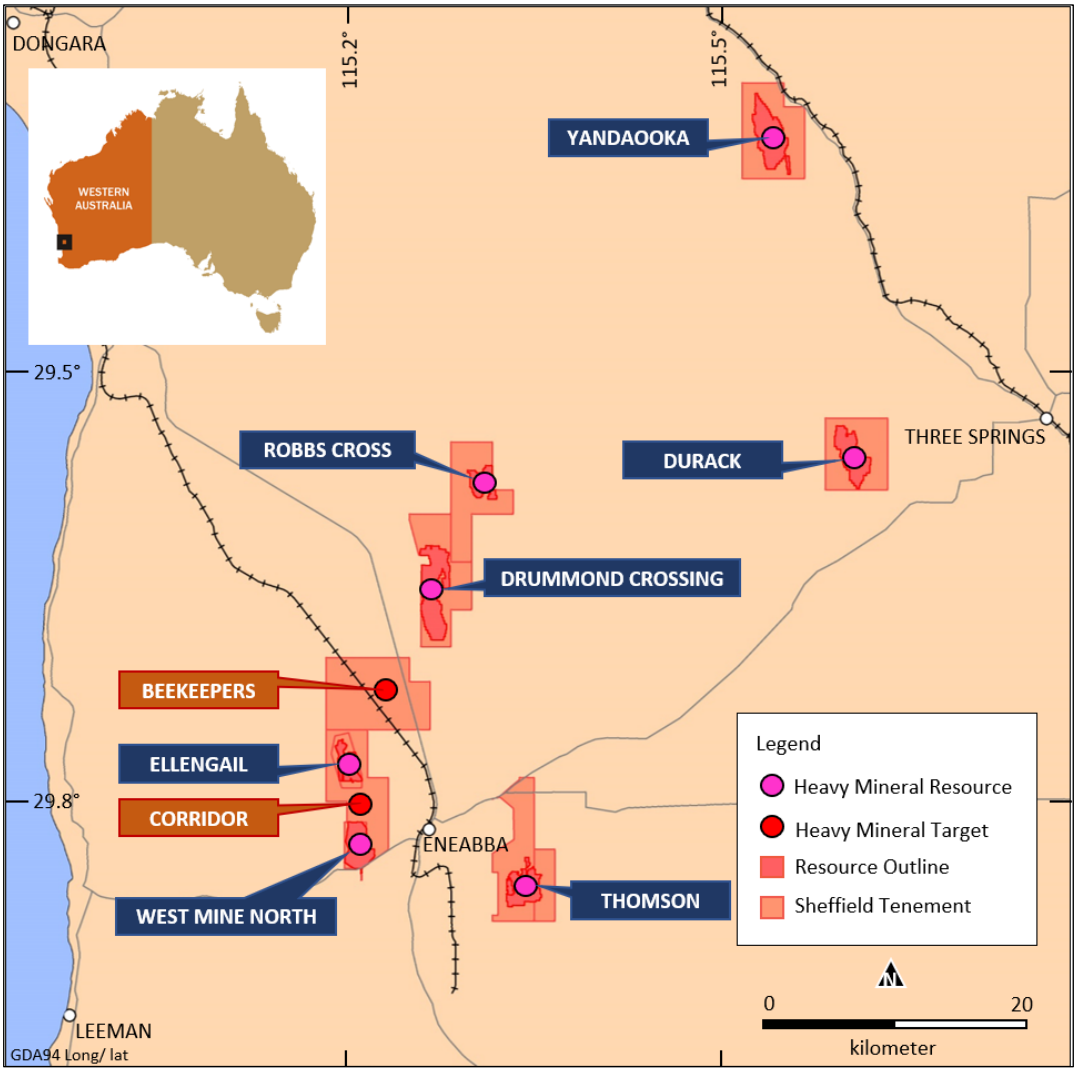



**Figure 11: Eneabba Project Tenements following rationalisation**

Technical reports were completed for the Drummond Crossing, Robbs Cross and Thomson Prospects.

McCalls Project

The McCalls Mineral Sand Project (McCalls), located 110km to the north of Perth near the town of Gingin, has combined Mineral Resources totalling 5.8 billion tonnes @ 1.4% HM (Indicated and Inferred) containing 75 million tonnes of VHM across two deposits, McCalls and Mindarra Springs (refer to ASX announcement dated 3 October 2018). These deposits are large chloride ilmenite resources.

The retention status was successfully achieved at Mindarra Springs Inferred Resource, which comprises 2,200Mt at 1.6% HM, at a cut-off of 1.1% HM. A technical report for the McCalls deposit was completed during the quarter.

Derby East

The Derby East Project comprises a large deposit of construction quality sand, located 24km east of the Port of Derby. Sand characteristics were assessed from samples retrieved during the 2018 Derby East

silica sands program. Sheffield has compiled composites required for geotechnical evaluation, which will enable the assessment of the sands suitability for end-use commercial requirements.

Barton

The Barton Project, located in the Eucla Basin region of South Australia, comprises exploration licence application ELA 2018-00046. Open file historic data was captured during the quarter.

Further Work

Heritage surveys are planned to be conducted at Sheffield's Dampier Mineral Sands Project in second half of 2019.

Sheffield's annual Statement of Mineral Resources and Ore Reserves will be updated during H2 2019 to incorporate the current Night Train Inferred Mineral Resource.

## CORPORATE ACTIVITIES

As at 30 June 2019, Sheffield held cash reserves of approximately A$2.7 million (unaudited).

**Mr Bruce McFadzean**
Managing Director
31 July 2019

## 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[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2083[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2084[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2159[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2171[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2192[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2193[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2194[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2348[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2349[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2350[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2390[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2399[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2400[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2494[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2554[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2571[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | E04/2509[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | E04/2510[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | E04/2540[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | E04/2596[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | E04/2597[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | E04/2642[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | E04/2643[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | E04/2644[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | E04/2645[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Pending |
| Mineral Sands | L04/82[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | L04/83[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | L04/84[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | L04/85[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | L04/86[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | L04/92[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | L04/93[2] | Thunderbird Operations Pty Ltd | 100% | Canning Basin | Granted |
| Mineral Sands | M04/459[2] | Thunderbird Operations Pty 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 | E04/2478 | 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 | E70/3859 | Sheffield Resources Ltd | 100% | Perth Basin | Pending |
| 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 | E70/4584 | 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 |
| Mineral Sands | E70/4922 | 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 | ELA 2018-00046 | Moora Talc Pty Ltd | 100% | Eucla Basin (SA) | Pending |

Notes:
[1]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.
[2]Thunderbird Operations Pty Ltd is a 100% owned subsidiary of Sheffield Resources Ltd.
[3]Moora Talc 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 accompanying Appendix 5B notice.

## 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. The information was extracted from the Company's previous ASX announcements as follows:

- Thunderbird Ore Reserve: "THUNDERBIRD ORE RESERVE UPDATE" 31 July 2019
- Thunderbird BFS Update: "BFS UPDATE MATERIALLY REDUCES CAPITAL", 31 July 2019
- "SHEFFIELD SIGNS ZIRCON AGREEMENT" 18 July 2019
- "SHEFFIELD SIGNS BINDING PRIMARY ILMENITE OFFTAKE AGREEMENT" 1 July 2019
- Review of mineral assemblage data at the Dampier Project: "QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 March 2019" 30 April, 2019
- Night Train Inferred Resource and Mineral Assemblage results "*HIGH GRADE MAIDEN MINERAL RESOURCE AT NIGHT TRAIN*" 31 January 2019
- Buckfast, Bohemia and Concorde results "*NEW LARGE HIGH GRADE DISCOVERY SOUTH OF THUNDERBIRD*" 13 November 2018
- Cold Duck, Porphyry Pearl, Cisco and Nomad results "*THREE NEW MINERAL SANDS DISCOVERIES NEAR THUNDERBIRD"*, 17 October 2018
- Night Train results: "*EXCEPTIONAL RESULTS CONFIRM MAJOR DISCOVERY AT NIGHT TRAIN*", 09 October 2018
- Mineral Resource and Ore Statement "*MINERAL RESOURCE AND RESERVE STATEMENT*" 03 October, 2018
- Thomson and Robbs Cross Mineral Resources: "QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 DECEMBER 2017" 30 January, 2018
- Thunderbird Ore Reserve: *"THUNDERBIRD ORE RESERVE UPDATE"* 16 March, 2017
- Thunderbird Bankable Feasibility Study: *"THUNDERBIRD BFS DELIVERS OUTSTANDING RESULTS"* 24 March, 2017
- Thunderbird Mineral Resource: *"SHEFFIELD DOUBLES MEASURED MINERAL RESOURCE AT THUNDERBIRD"* 5 July, 2016
- Night Train, Nomad and Seagull Drilling: "THREE NEW MINERAL SANDS DISCOVERIES IN CANNING BASIN" 25 February, 2015

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 and the Bankable Feasibility Study, 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 HM ORE RESERVE AS OF 30 JUNE 2019

## 1) DAMPIER PROJECT

SHEFFIELD ORE RESERVE FOR DAMPIER PROJECT AT 30 JUNE 2019 (in-situ assemblage)[9]

| Summary of Ore Reserve[1,2,3,4] | | | | In-situ Assemblage[5] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Deposit | Ore Reserve Category | Material Tonnes Millions (Mt) | THM (%) | Zircon (%) | HiTi Leuc (%) | Leuco-xene (%) | Ilmenite (%) | Oversize (%) | Slimes (%) |
| **Thunderbird** | Proved | **219** | 13.7 | 1.02 | 0.30 | 0.28 | 3.68 | 14.0 | 16.1 |
| | Probable | **529** | 10.1 | 0.79 | 0.26 | 0.27 | 2.87 | 10.5 | 14.5 |
| | **Total** | **748** | **11.2** | **0.86** | **0.27** | **0.27** | **3.11** | **11.6** | **15.0** |

SHEFFIELD ORE RESERVE FOR DAMPIER PROJECT AT 30 JUNE 2019 (HM assemblage)

| Summary of Ore Reserve[1,2,3,4] | | | | HM Assemblage[6] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Deposit | Ore Reserve Category | Material Tonnes Millions (Mt) | THM (%) | Zircon (%) | HiTi Leuc (%) | Leuco-xene (%) | Ilmenite (%) | Oversize (%) | Slimes (%) |
| **Thunderbird** | Proved | **219** | 13.7 | 7.4 | 2.2 | 2.0 | 26.9 | 14.0 | 16.1 |
| | Probable | **529** | 10.1 | 7.8 | 2.6 | 2.7 | 28.4 | 10.5 | 14.5 |
| | **Total** | **748** | **11.2** | **7.7** | **2.4** | **2.4** | **27.8** | **11.6** | **15.0** |

Notes:

[1]The Ore Reserves are presented with in-situ HM grade, and mineral 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. This Ore Reserve reported for the Dampier Project was prepared and first disclosed under the JORC Code (2012) in the announcement 31 July 2019 Titled "Thunderbird Ore Reserve Update". The Ore Reserve is reported to a design overburden surface with appropriate consideration for modifying factors, costs, mineral assemblage, process recoveries and product pricing

2.Ore Reserve is a sub-set of Mineral Resource

[3]THM is within the 38µm to 1 mm size fraction and reported as a percentage of the total material, slimes is the -38µm fraction and oversize is the +1mm fraction.

[4]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.

[5]The in-situ assemblage 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.

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

The Ore Reserve estimate was prepared by Entech Pty Ltd, an experienced and prominent mining engineering consultancy with appropriate mineral sands experience in accordance with the JORC Code (2012 Edition) and announced to the ASX on 31 July 2019. The Ore Reserve is estimated using all available geological and relevant drill hole and assay data, including mineralogical sampling and test work on mineral recoveries and final product qualities. The Company is not aware of any new information or data that materially affects the information included in the Ore Reserve estimate and confirms that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed. The Ore Reserve estimate is based on the current, July 2016 Thunderbird Mineral Resource estimate, announced to the ASX on 5 July 2016. Measured and Indicated Mineral Resources were converted to Proved and Probable Ore Reserves respectively, subject to mine design, modifying factors and economic evaluation.

## SHEFFIELD HM MINERAL RESOURCE

## 1) DAMPIER PROJECT

### SHEFFIELD MINERAL RESOURCE FOR DAMPIER PROJECT AT 30 JUNE 2019 (in-situ assemblage)

### SHEFFIELD MINERAL RESOURCE FOR DAMPIER PROJECT (in-situ assemblage)

| Summary of Mineral Resource[1,2,3] | | | | | In-situ Assemblage[5] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM%) | Material Tonnes Millions (Mt) | THM (%) | Zircon (%) | HiTi Leuc (%) | Leuco-xene (%) | Ilmenite (%) | Oversize (%) | Slimes (%) |
| Thunderbird low-grade | Measured | 3.0 | 510 | 8.9 | 0.71 | 0.20 | 0.19 | 2.4 | 12 | 18 |
| | Indicated | 3.0 | 2,120 | 6.6 | 0.55 | 0.18 | 0.20 | 1.8 | 9 | 16 |
| | Inferred | 3.0 | 600 | 6.3 | 0.53 | 0.17 | 0.20 | 1.7 | 8 | 15 |
| | **Total** | 3.0 | 3,230 | 6.9 | 0.57 | 0.18 | 0.20 | 1.9 | 9 | 16 |
| Night Train low-grade | Inferred | 1.2 | 130 | 3.3 | 0.45 | 0.18 | 1.5 | 0.71 | 2.2 | 8.7 |
| | **Total** | 1.2 | 130 | 3.3 | 0.45 | 0.18 | 1.5 | 0.71 | 2.2 | 8.7 |
| Thunderbird high-grade | Measured | 7.5 | 220 | 14.5 | 1.07 | 0.31 | 0.27 | 3.9 | 15 | 16 |
| | Indicated | 7.5 | 640 | 11.8 | 0.90 | 0.28 | 0.25 | 3.3 | 11 | 14 |
| | Inferred | 7.5 | 180 | 10.8 | 0.87 | 0.27 | 0.26 | 3.0 | 9 | 13 |
| | **Total** | 7.5 | 1,050 | 12.2 | 0.93 | 0.28 | 0.26 | 3.3 | 11 | 15 |
| Night Train high-grade | Inferred | 2.0 | 50 | 5.9 | 0.82 | 0.33 | 2.9 | 1.06 | 2.2 | 10.2 |
| | **Total** | 2.0 | 50 | 5.9 | 0.82 | 0.33 | 2.9 | 1.06 | 2.2 | 10.2 |

Notes:

[1] Night Train: The Mineral Resource estimate was prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to ASX announcement 31 January 2019 for further details including Table 1. The Mineral Resource reported above 1.2% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 2.0% HM cut-off. Thunderbird: The Mineral Resource estimate was prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to ASX announcement 5 July 2016 for further details including Table 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]THM is within the 38µm to 1mm size fraction and reported as a percentage of the total material, slimes is the -38µm fraction and oversize is the +1mm fraction.

[3]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.

[4] Night Train: Estimates of Mineral Assemblage are presented as percentages of the Heavy Mineral (HM) component of the deposit, as determined by magnetic separation, QEMSCAN™ and XRF for one of 12 composite samples. Magnetic fractions were analysed by QEMSCAN™ for mineral determination as follows: Ilmenite: 40-70% $TiO_2$ >90% Liberation; Leucoxene: 70-90% $TiO_2$ >90% Liberation; High Titanium Leucoxene (HiTi Leucoxene) and Rutile 90% $TiO_2$ >90% Liberation, and Zircon: 66.7% $ZrO_2$+$HfO_2$ >90% Liberation. The non-magnetic fraction was submitted for XRF analysis and minerals determined as follows: Zircon: ZrO2+HfO2/0.667 and High Titanium Leucoxene (HiTi Leucoxene): $TiO_2$/0.94. HM assemblage determination- was by the QEMSCAN™ process for 11 of 12 composite samples which uses observed mass and chemistry to classify particles according to their average chemistry, and then report mineral abundance by dominant % mass in particle. For the $TiO_2$ minerals the following breakpoints were used to distinguish between Ilmenite 40% to 70% $TiO_2$, Leucoxene 70% to 90% $TiO_2$, High Titanium Leucoxene and Rutile > 90%, Screening of the heavy mineral was not required. Thunderbird: Estimates of Mineral Assemblage are presented as percentages of the Heavy Mineral (HM) component of the deposit, as determined by magnetic separation, QEMSCAN™ and XRF. Magnetic fractions were analysed by QEMSCAN™ for mineral determination as follows: Ilmenite: 40-70% $TiO_2$ >90% Liberation; Leucoxene: 70-94% $TiO_2$ >90% Liberation; High Titanium Leucoxene (HiTi Leucoxene): >94% $TiO_2$ >90% Liberation; and Zircon: 66.7% $ZrO_2$+$HfO_2$ >90% Liberation. The non-magnetic fraction was submitted for XRF analysis and minerals determined as follows: Zircon: $ZrO_2$+$HfO_2$/0.667 and High Titanium Leucoxene (HiTi Leucoxene): $TiO_2$/0.94.

[5]in-situ assemblage 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.

## SHEFFIELD MINERAL RESOURCES FOR DAMPIER PROJECT AT 30 JUNE 2019 (HM assemblage)

| Summary of Mineral Resource[1,2,3] | | | | | HM Assemblage[4] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM%) | Material Tonnes Millions (Mt) | THM (%) | Zircon (%) | HiTi Leuc[5] (%) | Leuco-xene (%) | Ilmenite (%) | Oversize (%) | Slimes (%) |
| Thunderbird low-grade | Measured | 3.0 | 510 | 8.9 | 8.0 | 2.3 | 2.2 | 27 | 12 | 18 |
| | Indicated | 3.0 | 2,120 | 6.6 | 8.4 | 2.7 | 3.1 | 28 | 9 | 16 |
| | Inferred | 3.0 | 600 | 6.3 | 8.4 | 2.6 | 3.2 | 28 | 8 | 15 |
| | **Total** | 3.0 | 3,230 | 6.9 | 8.3 | 2.6 | 2.9 | 28 | 9 | 16 |
| **Night Train** low-grade | Inferred | 1.2 | 130 | 3.3 | 14 | 5.4 | 46 | 22 | 2.2 | 8.7 |
| | **Total** | 1.2 | 130 | 3.3 | 14 | 5.4 | 46 | 22 | 2.2 | 8.7 |
| **Thunderbird** high-grade | Measured | 7.5 | 220 | 14.5 | 7.4 | 2.1 | 1.9 | 27 | 15 | 16 |
| | Indicated | 7.5 | 640 | 11.8 | 7.6 | 2.4 | 2.1 | 28 | 11 | 14 |
| | Inferred | 7.5 | 180 | 10.8 | 8.0 | 2.5 | 2.4 | 28 | 9 | 13 |
| | **Total** | 7.5 | 1,050 | 12.2 | 7.6 | 2.3 | 2.1 | 27 | 11 | 15 |
| **Night Train** high-grade | Inferred | 2.0 | 50 | 5.9 | 14 | 5.6 | 49 | 18 | 2.2 | 10.2 |
| | **Total** | 2.0 | 50 | 5.9 | 14 | 5.6 | 49 | 18 | 2.2 | 10.2 |

Notes:

[1] Night Train: The Mineral Resource estimate was prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to ASX announcement 31 January 2019 for further details including Table 1. The Mineral Resource reported above 1.2% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 2.0% HM cut-off. Thunderbird: The Mineral Resource estimate was prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to ASX announcement 5 July 2016 for further details including Table 1. The Dampier Project Mineral Resources are reported inclusive of (not additional to) Ore Reserves. Thunderbird: 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. Night Train: The Mineral Resource reported above 1.2% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 2.0% HM cut-off.

[2] THM is within the 38µm to 1mm size fraction and reported as a percentage of the total material, slimes is the -38µm fraction and oversize is the +1mm fraction.

[3] 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.

[4] Night Train: Estimates of Mineral Assemblage are presented as percentages of the Heavy Mineral (HM) component of the deposit, as determined by magnetic separation, QEMSCAN™ and XRF for one of 12 composite samples. Magnetic fractions were analysed by QEMSCAN™ for mineral determination as follows: Ilmenite: 40-70% $TiO_2$ >90% Liberation; Leucoxene: 70-90% $TiO_2$ >90% Liberation; High Titanium Leucoxene (HiTi Leucoxene) and Rutile 90% $TiO_2$ >90% Liberation, and Zircon: 66.7% $ZrO_2$+$HfO_2$ >90% Liberation. The non-magnetic fraction was submitted for XRF analysis and minerals determined as follows: Zircon: ZrO2+HfO2/0.667 and High Titanium Leucoxene (HiTi Leucoxene): $TiO_2$/0.94. HM assemblage determination- was by the QEMSCAN™ process for 11 of 12 composite samples which uses observed mass and chemistry to classify particles according to their average chemistry, and then report mineral abundance by dominant % mass in particle. For the $TiO_2$ minerals the following breakpoints were used to distinguish between Ilmenite 40% to 70% $TiO_2$, Leucoxene 70% to 90% $TiO_2$, High Titanium Leucoxene and Rutile > 90%, Screening of the heavy mineral was not required. Thunderbird: Estimates of Mineral Assemblage are presented as percentages of the Heavy Mineral (HM) component of the deposit, as determined by magnetic separation, QEMSCAN™ and XRF. Magnetic fractions were analysed by QEMSCAN™ for mineral determination as follows: Ilmenite: 40-70% $TiO_2$ >90% Liberation; Leucoxene: 70-94% $TiO_2$ >90% Liberation; High Titanium Leucoxene (HiTi Leucoxene): >94% $TiO_2$ >90% Liberation; and Zircon: 66.7% $ZrO_2$+$HfO_2$ >90% Liberation. The non-magnetic fraction was submitted for XRF analysis and minerals determined as follows: Zircon: $ZrO_2$+$HfO_2$/0.667 and High Titanium Leucoxene (HiTi Leucoxene): $TiO_2$/0.94.

[5] HiTi Leucoxene and Rutile (%) combined for Night Train at a >90% $TiO_2$ (as one assemblage sample utilised=> 90% rutile and HiTi Leucoxene), HiTi Leucoxene for Thunderbird > 94% $TiO_2$

## SHEFFIELD MINERAL RESOURCE FOR DAMPIER PROJECT AT 30 JUNE 2019 (in-situ tonnes)

| Summary of Mineral Resource[1,2,3] | | | In-situ Tonnes[4] | | | | | |
|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM%) | THM Tonnes Millions (Mt) | Zircon (kt) | HiTi Leuc[5] (kt) | Leuco-xene (kt) | Ilmenite (kt) | Total VHM (kt) |
| **Thunderbird** low-grade | Measured | 3.0 | 45 | 3,600 | 1,000 | 1,000 | 12,000 | 17,700 |
| | Indicated | 3.0 | 140 | 11,800 | 3,800 | 4,300 | 39,100 | 59,000 |
| | Inferred | 3.0 | 38 | 3,200 | 1,000 | 1,200 | 10,500 | 15,900 |
| | **Total** | 3.0 | 223 | 18,600 | 5,900 | 6,500 | 61,700 | 92,600 |
| **Night Train** low-grade | Inferred | 1.2 | 4.2 | 560 | 220 | 1,900 | 900 | 3,590 |
| | **Total** | 1.2 | 4.2 | 560 | 220 | 1,900 | 900 | 3,590 |
| **Total** low-grade | Measured | 3.0 | 45 | 3600 | 1000 | 1000 | 12000 | 17700 |
| | Indicated | 3.0 | 140 | 11,800 | 3,800 | 4,300 | 39,100 | 59,000 |
| | Inferred | Various | 42 | 3,760 | 1,220 | 3,100 | 11,400 | 19,490 |
| | **Total** | Various | 227 | 19,160 | 6,120 | 8,400 | 62,600 | 96,190 |
| **Thunderbird** high-grade | Measured | 7.5 | 32 | 2,300 | 700 | 600 | 8,400 | 12,000 |
| | Indicated | 7.5 | 76 | 5,800 | 1,800 | 1,600 | 21,000 | 30,200 |
| | Inferred | 7.5 | 20 | 1,600 | 500 | 500 | 5,600 | 8,200 |
| | **Total** | 7.5 | 127 | 9,700 | 3,000 | 2,700 | 35,000 | 50,400 |
| **Night Train** high-grade | Inferred | 2.0 | 3.0 | 420 | 170 | 1,500 | 540 | 2,600 |
| | **Total** | 2.0 | 3.0 | 420 | 170 | 1,500 | 540 | 2,600 |
| **Total** high-grade | Measured | 7.5 | 32 | 2300 | 700 | 600 | 8400 | 12000 |
| | Indicated | 7.5 | 76 | 5,800 | 1,800 | 1,600 | 21,000 | 30,200 |
| | Inferred | Various | 23 | 2,020 | 670 | 2,000 | 6,140 | 10,800 |
| | **Total** | Various | 131 | 10,120 | 3,170 | 4,200 | 35,540 | 53,000 |

*Notes:*

[1] Night Train: The Mineral Resource estimate was prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to ASX announcement 31 January 2019 for further details including Table 1. The Mineral Resource reported above 1.2% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 2.0% HM cut-off. Thunderbird: The Mineral Resource estimate was prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to ASX announcement 5 July 2016 for further details including Table 1. The Dampier Project Mineral Resources are reported inclusive of (not additional to) Ore Reserves. Thunderbird: 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. Night Train: The Mineral Resource reported above 1.2% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 2.0% HM cut-off.

[2] THM is within the 38µm to 1mm size fraction and reported as a percentage of the total material, slimes is the -38µm fraction and oversize is the +1mm fraction.

[3] 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.

[4] The contained in-situ tonnes for the valuable heavy minerals were derived from information from the Mineral Resource tables

[5] HiTi Leucoxene and Rutile (%) combined for Night Train at a >90% $TiO_2$ (as one assemblage sample utilised=> 90% rutile and HiTi Leucoxene), HiTi Leucoxene for Thunderbird > 94% $TiO_2$

## 2) ENEABBA PROJECT

### SHEFFIELD MINERAL RESOURCES FOR THE ENEABBA PROJECT AT 30 JUNE 2019 (in-situ assemblage)

| Summary of Mineral Resource[1,2] | | | | | In-situ Assemblage[11] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM %) | Material Tonnes Millions (Mt) | THM (%) | Zircon (%) | Rutile (%) | Leuco-xene (%) | Ilmenite (%) | Oversize (%) | Slimes (%) |
| Yandanooka[4,6,8] | Measured | 1.4 | 2.6 | 4.3 | 0.44 | 0.09 | 0.10 | 3.08 | 11.3 | 15 |
| | Indicated | 1.4 | 57.7 | 3.0 | 0.37 | 0.11 | 0.11 | 2.08 | 11.4 | 15 |
| | Inferred | 1.4 | 0.4 | 1.5 | 0.16 | 0.05 | 0.07 | 1.01 | 21.9 | 20 |
| | **Total** | 1.4 | 60.8 | 3.0 | 0.37 | 0.11 | 0.11 | 2.11 | 11.5 | 15 |
| Durack[4,6,7,8] | Indicated | 1.4 | 20.7 | 2.9 | 0.40 | 0.09 | 0.11 | 2.07 | 14.7 | 14 |
| | Inferred | 1.4 | 5.6 | 2.6 | 0.37 | 0.07 | 0.19 | 1.68 | 18.3 | 16 |
| | **Total** | 1.4 | 26.3 | 2.8 | 0.39 | 0.08 | 0.13 | 1.99 | 15.5 | 14 |
| Drummond Crossing[3,4, 6,8] | Indicated | 1.4 | 35.5 | 2.4 | 0.33 | 0.24 | 0.08 | 1.26 | 7.7 | 14 |
| | Inferred | 1.4 | 3.3 | 2.3 | 0.26 | 0.21 | 0.06 | 1.31 | 7.2 | 12 |
| | **Total** | 1.4 | 38.8 | 2.4 | 0.33 | 0.24 | 0.08 | 1.26 | 7.7 | 14 |
| Robbs Cross[5,6,8] | Indicated | 1.4 | 14.0 | 1.9 | 0.27 | 0.24 | 0.09 | 0.88 | 6.2 | 6 |
| | Inferred | 1.4 | 3.8 | 2.0 | 0.29 | 0.22 | 0.08 | 1.02 | 8.1 | 6 |
| | **Total** | 1.4 | 17.8 | 1.9 | 0.28 | 0.23 | 0.09 | 0.91 | 6.6 | 6 |
| Thomson[5,8,] | Inferred | 1.4 | 26 | 2.0 | 0.38 | 0.28 | 0.11 | 0.85 | 6.9 | 18 |
| | **Total** | 1.4 | 26 | 2.0 | 0.38 | 0.28 | 0.11 | 0.85 | 6.9 | 18 |
| West Mine North[3,4,6,9,] | Indicated | 2.0 | 10.2 | 7.3 | 0.43 | 0.48 | 0.13 | 3.51 | 2.3 | 11 |
| | Inferred | 2.0 | 1.8 | 2.7 | 0.25 | 0.23 | 0.06 | 1.31 | 3.0 | 17 |
| | **Total** | 2.0 | 12.0 | 6.6 | 0.40 | 0.44 | 0.12 | 3.18 | 2.4 | 12 |
| Ellengail[3,4,9,10] | Indicated | 2.0 | 6.5 | 5.3 | 0.53 | 0.43 | 0.55 | 3.49 | 3.2 | 15 |
| | Inferred | 2.0 | 5.3 | 4.1 | 0.41 | 0.34 | 0.35 | 2.55 | 2.5 | 15 |
| | **Total** | 2.0 | 11.8 | 4.8 | 0.47 | 0.39 | 0.46 | 3.07 | 2.9 | 15 |
| Total | Measured | 1.4 | 2.6 | 4.3 | 0.44 | 0.09 | 0.10 | 3.08 | 11 | 15 |
| | Indicated | Various | 144.6 | 3.1 | 0.37 | 0.19 | 0.12 | 1.92 | 9 | 14 |
| | Inferred | Various | 46.0 | 2.4 | 0.36 | 0.24 | 0.14 | 1.21 | 8 | 16 |
| | **Total** | Various | 193.3 | 3.0 | 0.36 | 0.20 | 0.13 | 1.77 | 9 | 14 |

[1]The Mineral Resource estimates were prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to this ASX announcement and December 2017 Quarterly Activities Report for Robbs Cross and Thomson deposits for further details

[2]All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus the sums of columns may not equal.

[3]THM %: Samples from 1989 and 1996 (Drummond Crossing, Ellengail and West Mine North) were analysed using a -75 µm slimes / +2 mm oversize screen. Separation of HM% was by heavy liquid TBE (density 2.84 g/ml) from the -710µm+75µm fraction.

[4]THM %: RGC samples from 1998 and Iluka samples (Drummond Crossing, Durack, Ellengail, West Mine North and Yandanooka) were analysed using a -53 µm slimes / +2 mm oversize screen. Separation of total HM% was by heavy liquid TBE (density 2.90 g/ml) from the -710µm+53µm fraction.

[5]THM %: Samples from Robbs Cross and Thomson analysed by Diamantina Laboratories in Perth using a -45 µm slimes / +1 mm oversize screen (method DIA_HLS_45µm_1mm). Separation of total HM% was by heavy liquid TBE (density 2.96g/ml) from the -45 µm+1mm fraction.

[6]THM %: Samples from Drummond Crossing, Durack, West Mine North and Yandanooka were analysed by Western Geolabs in Perth using a -53 µm slimes / +1 mm oversize screen. Separation of total HM% was by heavy liquid TBE (density 2.96 g/ml) from the +53µm-1mm fraction.

[7]Reported below an upper cut-off grade of 35% slimes.

[8]Estimates of mineral assemblage are presented as percentages of the total heavy mineral (THM) component of the deposit, as determined by QEMSCAN analysis. For the $TiO_2$ minerals specific breakpoints are used to distinguish between rutile (>95% $TiO_2$), leucoxene (85-95% $TiO_2$) and ilmenite (<55-85% $TiO_2$).

[9]At West Mine North and Ellengail mineral assemblage data determined by Iluka using Method 4 (HMC is separated into magnetics and non-magnetics) was used with the Sheffield QEMSCAN data

[10]At Ellengail mineral assemblage data determined by Iluka using Method 3 (magnetic separation and XRF analysis) was used with the Sheffield QEMSCAN data and Iluka Method 4 data

[11]The in-situ assemblage 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.

## SHEFFIELD MINERAL RESOURCE FOR ENEABBA PROJECT AT 30 JUNE 2019 (HM assemblage)

| Summary of Mineral Resource[1,2] | | | | | HM Assemblage[8,9,10] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM %) | Material Tonnes Millions (Mt) | THM (%) | Zircon (%) | Rutile (%) | Leuco-xene (%) | Ilmenite (%) | Oversize (%) | Slimes (%) |
| Yandanooka[4,6,8] | Measured | 1.4 | 2.6 | 4.3 | 10 | 2.1 | 2.3 | 72 | 11.3 | 15 |
| | Indicated | 1.4 | 57.7 | 3.0 | 12 | 3.6 | 3.7 | 69 | 11.4 | 15 |
| | Inferred | 1.4 | 0.4 | 1.5 | 11 | 3.0 | 4.4 | 68 | 21.9 | 20 |
| | **Total** | 1.4 | 60.8 | 3.0 | 12 | 3.5 | 3.6 | 70 | 11.5 | 15 |
| Durack[4,6,7,8] | Indicated | 1.4 | 20.7 | 2.9 | 14 | 2.9 | 3.7 | 71 | 14.7 | 14 |
| | Inferred | 1.4 | 5.6 | 2.6 | 14 | 2.6 | 7.4 | 64 | 18.3 | 16 |
| | **Total** | 1.4 | 26.3 | 2.8 | 14 | 2.9 | 4.4 | 70 | 15.5 | 14 |
| Drummond Crossing[3,4, 6,8] | Indicated | 1.4 | 35.5 | 2.4 | 14 | 10.3 | 3.4 | 53 | 7.7 | 14 |
| | Inferred | 1.4 | 3.3 | 2.3 | 11 | 9.0 | 2.7 | 56 | 7.2 | 12 |
| | **Total** | 1.4 | 38.8 | 2.4 | 14 | 10.2 | 3.4 | 54 | 7.7 | 14 |
| Robbs Cross[5,6,8] | Indicated | 1.4 | 14.0 | 1.9 | 15 | 12.7 | 5.0 | 47 | 6.2 | 6 |
| | Inferred | 1.4 | 3.8 | 2.0 | 14 | 10.9 | 4.1 | 50 | 8.1 | 6 |
| | **Total** | 1.4 | 17.8 | 1.9 | 15 | 12.3 | 4.8 | 48 | 6.6 | 6 |
| Thomson[5,8,] | Inferred | 1.4 | 26 | 2.0 | 19 | 13.8 | 5.4 | 42 | 6.9 | 18 |
| | **Total** | 1.4 | 26 | 2.0 | 19 | 13.8 | 5.4 | 42 | 6.9 | 18 |
| West Mine North[3,4,6,9,] | Indicated | 2.0 | 10.2 | 7.3 | 6 | 6.5 | 1.8 | 48 | 2.3 | 11 |
| | Inferred | 2.0 | 1.8 | 2.7 | 9 | 8.6 | 2.1 | 50 | 3.0 | 17 |
| | **Total** | 2.0 | 12.0 | 6.6 | 6 | 6.6 | 1.8 | 48 | 2.4 | 12 |
| Ellengail[3,4,9,10] | Indicated | 2.0 | 6.5 | 5.3 | 10 | 8.0 | 10.4 | 66 | 3.2 | 15 |
| | Inferred | 2.0 | 5.3 | 4.1 | 10 | 8.2 | 8.4 | 62 | 2.5 | 15 |
| | **Total** | 2.0 | 11.8 | 4.8 | 10 | 8.1 | 9.6 | 64 | 2.9 | 15 |
| Total | Measured | 1.4 | 2.6 | 4.3 | 10 | 2.1 | 2.3 | 72 | 11 | 15 |
| | Indicated | Various | 144.6 | 3.1 | 12 | 6.1 | 3.9 | 62 | 9 | 14 |
| | Inferred | Various | 46.0 | 2.4 | 15 | 10.3 | 5.8 | 51 | 8 | 16 |
| | **Total** | Various | 193.3 | 3.0 | 12 | 6.8 | 4.2 | 60 | 9 | 14 |

[1]The Mineral Resource estimates were prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to this ASX announcement and December 2017 Quarterly Activities Report for Robbs Cross and Thomson deposits for further details

[2]All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus the sums of columns may not equal.

[3]THM %: Samples from 1989 and 1996 (Drummond Crossing, Ellengail and West Mine North) were analysed using a -75 µm slimes / +2 mm oversize screen. Separation of HM% was by heavy liquid TBE (density 2.84 g/ml) from the -710µm+75µm fraction.

[4]THM %: RGC samples from 1998 and Iluka samples (Drummond Crossing, Durack, Ellengail, West Mine North and Yandanooka) were analysed using a -53 µm slimes / +2 mm oversize screen. Separation of total HM% was by heavy liquid TBE (density 2.90 g/ml) from the -710µm+53µm fraction.

[5]THM %: Samples from Robbs Cross and Thomson analysed by Diamantina Laboratories in Perth using a -45 µm slimes / +1 mm oversize screen (method DIA_HLS_45µm_1mm). Separation of total HM% was by heavy liquid TBE (density 2.96g/ml) from the -45 µm+1mm fraction.

[6]THM %: Samples from Drummond Crossing, Durack, West Mine North and Yandanooka were analysed by Western Geolabs in Perth using a -53 µm slimes / +1 mm oversize screen. Separation of total HM% was by heavy liquid TBE (density 2.96 g/ml) from the +53µm-1mm fraction.

[7]Reported below an upper cut-off grade of 35% slimes.

[8]Estimates of mineral assemblage are presented as percentages of the total heavy mineral (THM) component of the deposit, as determined by QEMSCAN analysis. For the $TiO_2$ minerals specific breakpoints are used to distinguish between rutile (>95% $TiO_2$), leucoxene (85-95% $TiO_2$) and ilmenite (<55-85% $TiO_2$).

[9]At West Mine North and Ellengail mineral assemblage data determined by Iluka using Method 4 (HMC is separated into magnetics and non-magnetics) was used with the Sheffield QEMSCAN data

[10]At Ellengail mineral assemblage data determined by Iluka using Method 3 (magnetic separation and XRF analysis) was used with the Sheffield QEMSCAN data and Iluka Method 4 data

[11]The in-situ assemblage 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.

## SHEFFIELD MINERAL RESOURCE FOR ENEABBA PROJECT AT 30 JUNE 2019 (in-situ tonnes)

| Summary of Mineral Resource[1,2,3] | | | In-situ Tonnes | | | | | |
|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM%) | THM Tonnes Millions (kt) | Zircon (kt) | Rutile (kt) | Leuco-xene (kt) | Ilmenite (kt) | Total VHM (kt) |
| Yandanooka[4,6,8] | Measured | 1.4 | 112 | 12 | 2 | 3 | 81 | 98 |
| | Indicated | 1.4 | 1,726 | 212 | 63 | 63 | 1,197 | 1,535 |
| | Inferred | 1.4 | 7 | 1 | 0.2 | 0.3 | 4 | 6 |
| | **Total** | 1.4 | 1,845 | 224 | 65 | 66 | 1,283 | 1,639 |
| Durack[4,6,7,8] | Indicated | 1.4 | 600 | 82 | 18 | 22 | 429 | 551 |
| | Inferred | 1.4 | 148 | 21 | 4 | 11 | 95 | 130 |
| | **Total** | 1.4 | 748 | 104 | 21 | 33 | 523 | 681 |
| Drummond Crossing[3,4,6,8] | Indicated | 1.4 | 838 | 118 | 86 | 29 | 447 | 680 |
| | Inferred | 1.4 | 77 | 9 | 7 | 2 | 43 | 61 |
| | **Total** | 1.4 | 915 | 127 | 93 | 31 | 490 | 741 |
| Robbs Cross[5,6,8] | Indicated | 1.4 | 261 | 38 | 33 | 13 | 123 | 208 |
| | Inferred | 1.4 | 77 | 11 | 8 | 3 | 39 | 61 |
| | **Total** | 1.4 | 338 | 50 | 41 | 16 | 162 | 269 |
| Thomson[5,8,] | Inferred | 1.4 | 516 | 97 | 71 | 28 | 219 | 415 |
| | **Total** | 1.4 | 516 | 97 | 71 | 28 | 219 | 415 |
| West Mine North[3,4,6,9,] | Indicated | 2.0 | 748 | 44 | 49 | 13 | 359 | 465 |
| | Inferred | 2.0 | 48 | 5 | 4 | 1 | 24 | 34 |
| | **Total** | 2.0 | 796 | 48 | 53 | 14 | 383 | 498 |
| Ellengail[3,4,9,10] | Indicated | 2.0 | 346 | 34 | 28 | 36 | 227 | 325 |
| | Inferred | 2.0 | 218 | 22 | 18 | 18 | 136 | 193 |
| | **Total** | 2.0 | 565 | 56 | 46 | 54 | 363 | 519 |
| Total | Measured | 1.4 | 112 | 12 | 2 | 3 | 81 | 98 |
| | Indicated | Various | 4,519 | 529 | 276 | 176 | 2,782 | 3,764 |
| | Inferred | Various | 1,091 | 165 | 113 | 64 | 559 | 900 |
| | **Total** | Various | 5,723 | 705 | 392 | 242 | 3,423 | 4,762 |

Notes:

[1]The Mineral Resource estimates were prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to this ASX announcement and December 2017 Quarterly Activities Report for Robbs Cross and Thomson deposits for further details

[2]All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus the sums of columns may not equal.

[3]THM %: Samples from 1989 and 1996 (Drummond Crossing, Ellengail and West Mine North) were analysed using a -75 µm slimes / +2 mm oversize screen. Separation of HM% was by heavy liquid TBE (density 2.84 g/ml) from the -710µm+75µm fraction.

[4]THM %: RGC samples from 1998 and Iluka samples (Drummond Crossing, Durack, Ellengail, West Mine North and Yandanooka) were analysed using a -53 µm slimes / +2 mm oversize screen. Separation of total HM% was by heavy liquid TBE (density 2.90 g/ml) from the -710µm+53µm fraction.

[5]THM %: Samples from Robbs Cross and Thomson analysed by Diamantina Laboratories in Perth using a -45 µm slimes / +1 mm oversize screen (method DIA_HLS_45µm_1mm). Separation of total HM% was by heavy liquid TBE (density 2.96g/ml) from the -45 µm+1mm fraction.

[6]THM %: Samples from Drummond Crossing, Durack, West Mine North and Yandanooka were analysed by Western Geolabs in Perth using a -53 µm slimes / +1 mm oversize screen. Separation of total HM% was by heavy liquid TBE (density 2.96 g/ml) from the +53µm-1mm fraction.

[7]Reported below an upper cut-off grade of 35% slimes.

[8]Estimates of mineral assemblage are presented as percentages of the total heavy mineral (THM) component of the deposit, as determined by QEMSCAN analysis. For the $TiO_2$ minerals specific breakpoints are used to distinguish between rutile (>95% $TiO_2$), leucoxene (85-95% $TiO_2$) and ilmenite (<55-85% $TiO_2$).

[9]At West Mine North and Ellengail mineral assemblage data determined by Iluka using Method 4 (HMC is separated into magnetics and non-magnetics) was used with the Sheffield QEMSCAN data

[10]At Ellengail mineral assemblage data determined by Iluka using Method 3 (magnetic separation and XRF analysis) was used with the Sheffield QEMSCAN data and Iluka Method 4 data

[11]The in-situ assemblage 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.

## 3) McCALLS PROJECT

### SHEFFIELD MINERAL RESOURCES FOR McCALLS PROJECT AT 30 JUNE 2019 (in-situ assemblage)

| Summary of Mineral Resources[1,2,3,4,7] | | | | | In-situ Assemblage[6] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM%) | Material Tonnes Millions (Mt) | THM (%) | Zircon (%) | Rutile (%) | Leuco-xene (%) | Ilmenite (%) | Oversize (%) | Slimes (%) |
| McCalls | Indicated | 1.1 | 1,630 | 1.4 | 0.07 | 0.05 | 0.04 | 1.10 | 1.1 | 21 |
| | Inferred | 1.1 | 1,980 | 1.2 | 0.06 | 0.05 | 0.04 | 1.00 | 1.1 | 26 |
| | Total | 1.1 | 3,600 | 1.3 | 0.07 | 0.05 | 0.04 | 1.05 | 1.1 | 24 |
| Mindarra Springs | Inferred | 1.1 | 2,200 | 1.6 | 0.07 | 0.01 | 0.05 | 1.32 | 5.1 | 20 |
| | Total | 1.1 | 2,200 | 1.6 | 0.07 | 0.01 | 0.05 | 1.32 | 5.1 | 20 |
| Total | Indicated | 1.1 | 1,630 | 1.4 | 0.07 | 0.05 | 0.04 | 1.10 | 1.1 | 21 |
| | Inferred | 1.1 | 4,180 | 1.5 | 0.07 | 0.03 | 0.05 | 1.17 | 3.2 | 23 |
| | **Total** | 1.1 | 5,800 | 1.4 | 0.07 | 0.03 | 0.04 | 1.15 | 2.6 | 22 |

### SHEFFIELD MINERAL RESOURCES FOR McCALLS PROJECT AT 01 OCTOBER 2018 (HM assemblage)

| Summary of Mineral Resources[1,2,3,4,7] | | | | | HM Assemblage[5] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM%) | Material Tonnes Millions (Mt) | THM (%) | Zircon (%) | Rutile (%) | Leuco-xene (%) | Ilmenite (%) | Oversize (%) | Slimes (%) |
| McCalls | Indicated | 1.1 | 1,630 | 1.4 | 5.2 | 3.3 | 2.8 | 77 | 1.1 | 21 |
| | Inferred | 1.1 | 1,980 | 1.2 | 5.0 | 3.8 | 3.2 | 81 | 1.1 | 26 |
| | Total | 1.1 | 3,600 | 1.3 | 5.1 | 3.6 | 3.0 | 79 | 1.1 | 24 |
| Mindarra Springs | Inferred | 1.1 | 2,200 | 1.6 | 4.2 | 0.9 | 3.1 | 80 | 5.1 | 20 |
| | Total | 1.1 | 2,200 | 1.6 | 4.2 | 0.9 | 3.1 | 80 | 5.1 | 20 |
| Total | Indicated | 1.1 | 1,630 | 1.4 | 5.2 | 3.3 | 2.8 | 77 | 1.1 | 21 |
| | Inferred | 1.1 | 4,180 | 1.5 | 4.5 | 2.1 | 3.2 | 81 | 3.2 | 23 |
| | Total | 1.1 | 5,800 | 1.4 | 4.7 | 2.4 | 3.1 | 79 | 2.6 | 22 |

[1]The Mineral Resource estimates were prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to this ASX announcement

[2]All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus the sums of columns may not equal.

[3]THM is within the 45µm to 1mm size fraction and reported as a percentage of the total material, slimes is the -45µm fraction and oversize is the +1mm fraction.

[4]Reported below an upper cut-off grade of 35% slimes.

[5]Estimates of mineral assemblage (Sheffield) are presented as percentages of the total heavy mineral (THM) component of the deposit, as determined by QEMSCAN analysis. For the $TiO_2$ minerals specific breakpoints are used to distinguish between rutile (>95% $TiO_2$), leucoxene (85-95% $TiO_2$) and ilmenite (<55-85% $TiO_2$). Estimates of mineral assemblage (BHP) HM assemblage determination was by magnetic separation and observation (grain-counting)

[6]The in-situ assemblage 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.

[7]Excludes Mineral Resources within the Mogumber Nature Reserve

SHEFFIELD MINERAL RESOURCES FOR McCALLS PROJECT AT 30 JUNE 2019 (in-situ tonnes)

| Summary of Mineral Resources[1,2,3,4,7] | | | In-situ Tonnes | | | | | |
|---|---|---|---|---|---|---|---|---|
| Deposit | Mineral Resource Category | Cut off (THM%) | THM Tonnes Millions (Mt) | Zircon (kt) | Rutile (kt) | Leuco-xene (kt) | Ilmenite (kt) | Total VHM (kt) |
| McCalls | Indicated | 1.1 | 23.3 | 1,210 | 770 | 650 | 17,940 | 20,570 |
| | Inferred | 1.1 | 24.4 | 1,210 | 930 | 790 | 19,790 | 22,720 |
| | **Total** | 1.1 | 47.7 | 2,430 | 1,700 | 1,430 | 37,730 | 43,290 |
| Mindarra Springs | Inferred | 1.1 | 36.3 | 1,520 | 320 | 1,130 | 29,080 | 32,050 |
| | **Total** | 1.1 | 36.3 | 1,520 | 320 | 1,130 | 29,080 | 32,050 |
| Total | Indicated | 1.1 | 23.3 | 1,210 | 770 | 650 | 17,940 | 20,570 |
| | Inferred | 1.1 | 60.7 | 2,740 | 1,250 | 1,920 | 48,860 | 54,770 |
| | Total | 1.1 | 84.0 | 3,950 | 2,020 | 2,570 | 66,810 | 75,340 |

[1]The Mineral Resource estimates were prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to this ASX announcement

[2]All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus the sums of columns may not equal.

[3]THM is within the 45µm to 1mm size fraction and reported as a percentage of the total material, slimes is the -45µm fraction and oversize is the +1mm fraction.
[4]Reported below an upper cut-off grade of 35% slimes.

[5]Estimates of mineral assemblage (Sheffield) are presented as percentages of the total heavy mineral (THM) component of the deposit, as determined by QEMSCAN analysis. For the $TiO_2$ minerals specific breakpoints are used to distinguish between rutile (>95% $TiO_2$), leucoxene (85-95% $TiO_2$) and ilmenite (<55-85% $TiO_2$). Estimates of mineral assemblage (BHP) HM assemblage determination was by magnetic separation and observation (grain-counting)

[6]The in-situ assemblage 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.

[7]Excludes Mineral Resources within the Mogumber Nature Reserve

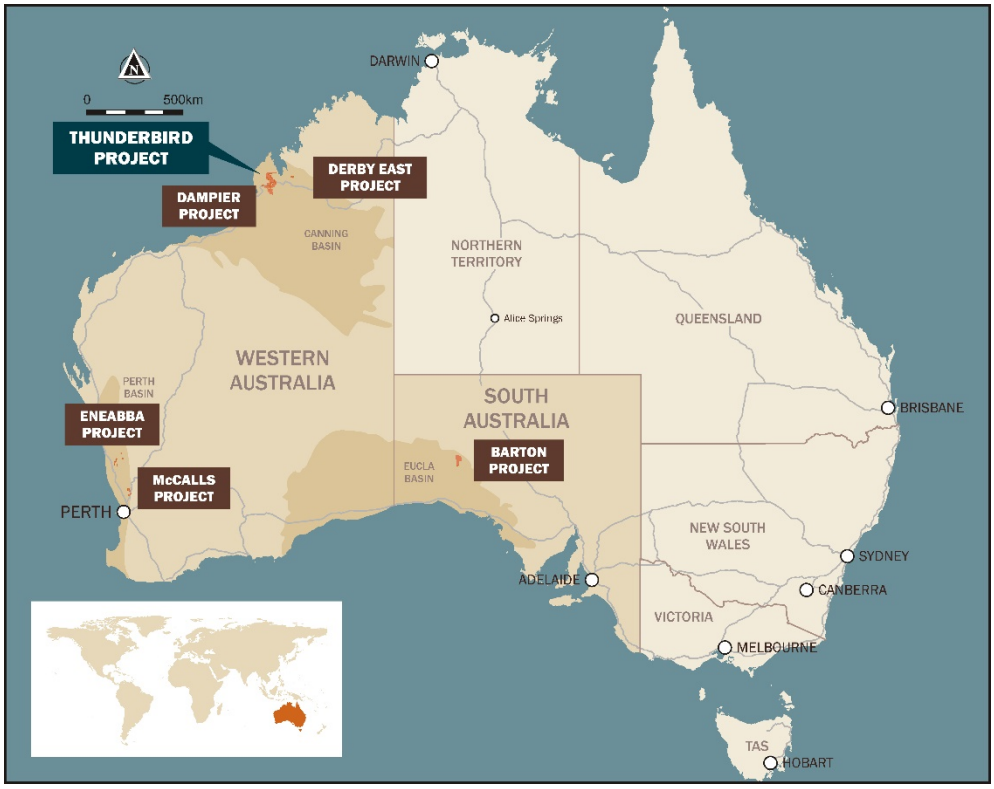



Figure 12: Location of Sheffield's Mineral Sands Projects

## GOVERNANCE AND INTERNAL CONTROLS

Mineral Resource and Ore Reserve are compiled by qualified Sheffield personnel and/or independent consultants following industry standard methodology and techniques. The underlying data, methodology, techniques and assumptions on which estimates are prepared are subject to internal peer review by senior Company personnel, as is JORC compliance. Where deemed necessary or appropriate, estimates are reviewed by independent consultants. Competent Persons named by the Company are members of the Australasian Institute of Mining and Metallurgy and/or the Australian Institute of Geoscientists and qualify as Competent Persons as defined in the JORC Code 2012.

## COMPETENT PERSONS AND COMPLIANCE STATEMENTS

The information in this report that relates to Exploration Results is based on information compiled by Mr Seb Gray, a Competent Person who is a Member of Australian Institute of Geoscientists (AIG). Mr Gray is a full-time employee of Sheffield Resources Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gray consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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 Eneabba and McCalls Projects, are prepared and disclosed under the JORC Code 2012. 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 information in this report that relates to the estimation of the Ore Reserve is based on information compiled by Mr Per Scrimshaw, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Scrimshaw is employed by Entech Pty Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Scrimshaw consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to the estimation of the Mineral Resources is based on information compiled by Mrs Christine Standing, a Competent Person who is a Member of the Australian Institute of Geoscientists (AIG) and the Australasian Institute of Mining and Metallurgy (AusIMM). Mrs Standing is a full-time employee of Optiro Pty Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mrs Standing consents to the inclusion in this report of the matters based on her information in the form and context in which it appears.

The information in this report that relates to the Thunderbird Mineral Resource is based on information compiled under the guidance of Mr Mark Teakle, a Competent Person who is a Member of the Australian Institute of Geoscientists (AIG) and the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Teakle is a full-time employee of Sheffield Resources Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Teakle consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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 Persons' findings are presented have not been materially modified from the relevant original market announcement.

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 10% Ore Reserve Increase | 31 July 2019 | P. Scrimshaw |
| Thunderbird Mineral Resource | Sheffield Doubles Measured Mineral Resource at Thunderbird | 5 July 2016 | M. Teakle, C. Standing |
| Night Train Mineral Resource | High Grade Maiden Mineral Resource at Night Train | 31 January 2019 | C. Standing |
| Robbs Cross Mineral Resource | Quarterly Activities Report for The Period Ended 31 December 2017 | 25 January 2017 | C. Standing |
| Thomson Mineral Resource | Quarterly Activities Report for The Period Ended 31 December 2017 | 25 January 2017 | C. Standing |
| Yandanooka Mineral Resource | Mineral Resource and Ore Reserve Statement | 03 October 2018 | C. Standing |
| Durack Mineral Resource | Mineral Resource and Ore Reserve Statement | 03 October 2018 | C. Standing |
| Drummond Crossing Mineral Resource | Mineral Resource and Ore Reserve Statement | 03 October 2018 | C. Standing |
| West Mine North Mineral Resource | Mineral Resource and Ore Reserve Statement | 03 October 2018 | C. Standing |
| Ellengail Mineral Resource | Mineral Resource and Ore Reserve Statement | 03 October 2018 | C. Standing |
| McCalls Mineral Resource | Mineral Resource and Ore Reserve Statement | 03 October 2018 | C. Standing |
| Mindarra Springs Mineral Resource | Mineral Resource and Ore Reserve Statement | 03 October 2018 | C. Standing |

| Item | Name | Company | Professional Affiliation |
|---|---|---|---|
| Exploration Results | Mr Seb Gray | Sheffield Resources | MAIG |
| Mineral Resource Reporting | Mr Mark Teakle | Sheffield Resources | MAIG, MAusIMM |
| Mineral Resource Estimation | Mrs Christine Standing | Optiro | MAIG, MAusIMM |
| Ore Reserve | Mr Per Scrimshaw | Entech | MAusIMM |

## SUPPORTING INFORMATION REQUIRED UNDER ASX LISTING RULES, CHAPTER 5

The supporting information below is required, under Chapter 5 of the ASX Listing Rules, to be included in market announcements reporting estimates of Mineral Resources and Ore Reserves.

Section 1, Section 2, of JORC Table 1 can be found in Appendices 1.

## 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. The information was extracted from the Company's previous ASX announcements as follows:

- Thunderbird Ore Reserve: "THUNDERBIRD ORE RESERVE UPDATE" 31 July 2019
- Thunderbird BFS Update: "BFS UPDATE MATERIALLY REDUCES CAPITAL", 31 July 2019
- Night Train Inferred Resource and Mineral Assemblage results "*HIGH GRADE MAIDEN MINERAL RESOURCE AT NIGHT TRAIN*" 31 January 2019
- Yandanooka, Durack, Drummond Crossing, West Mine North, Ellengail, McCalls and Mindarra Springs Resource Estimates and including Mineral Resource and Ore Statement "*MINERAL RESOURCE AND RESERVE STATEMENT*" 03 October, 2018
- Thomson and Robbs Cross Mineral Resources: "QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 DECEMBER 2017" 30 January, 2018
- Thunderbird Ore Reserve: *"THUNDERBIRD ORE RESERVE UPDATE"* 16 March, 2017
- Thunderbird Bankable Feasibility Study: *"THUNDERBIRD BFS DELIVERS OUTSTANDING RESULTS"* 24 March, 2017
- Thunderbird Mineral Resource: *"SHEFFIELD DOUBLES MEASURED MINERAL RESOURCE AT THUNDERBIRD"* 5 July, 2016

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 and the Bankable Feasibility Study, 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 Persons' findings are presented have not been materially modified from the relevant original market announcements.

## FORWARD LOOKING AND CAUTIONARY STATEMENTS

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.

*+Rule 5.5*

# Appendix 5B

# Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

**Name of entity**

Sheffield Resources Limited

| **ABN** | **Quarter ended ("current quarter")** |
|---|---|
| 29 125 811 083 | 30 June 2019 |

| **Consolidated statement of cash flows** | | **Current quarter $A'000** | **Year to date (12 months) $A'000** |
|---|---|---|---|
| **1.** | **Cash flows from operating activities** | | |
| 1.1 | Receipts from customers | - | - |
| 1.2 | Payments for: | | |
| | (a) exploration & evaluation | (450) | (2,453) |
| | (b) development (refer note below) | (1,361) | (28,037) |
| | (c) production | - | - |
| | (d) staff costs | (695) | (3,666) |
| | (e) administration and corporate costs | (477) | (2,566) |
| 1.3 | Dividends received (see note 3) | - | - |
| 1.4 | Interest received | 19 | 262 |
| 1.5 | Interest and other costs of finance paid | - | - |
| 1.6 | Income taxes paid | - | - |
| 1.7 | Research and development refunds | - | - |
| 1.8 | Other: | - | - |
| **1.9** | **Net cash from / (used in) operating activities** | **(2,964)** | **(36,460)** |

| | | | |
|---|---|---|---|
| **2.** | **Cash flows from investing activities** | | |
| 2.1 | Payments to acquire: | | |
| | (a) property, plant and equipment | - | (102) |
| | (b) tenements (see item 10) | - | - |
| | (c) investments | - | - |
| | (d) other non-current assets | - | - |

| **Consolidated statement of cash flows** | | **Current quarter $A'000** | **Year to date (12 months) $A'000** |
|---|---|---|---|
| 2.2 | Proceeds from the disposal of: | | |
| | (a) property, plant and equipment | - | - |
| | (b) tenements (see item 10) | - | - |
| | (c) investments | - | - |
| | (d) other financial assets | - | - |
| 2.3 | Cash flows from loans to other entities | - | - |
| 2.4 | Dividends received (see note 3) | - | - |
| **2.6** | **Net cash from / (used in) investing activities** | **-** | **(102)** |

| **3.** | **Cash flows from financing activities** | | |
|---|---|---|---|
| 3.1 | Proceeds from issues of shares | - | 17,448 |
| 3.2 | Proceeds from issue of convertible notes | - | - |
| 3.3 | Proceeds from exercise of share options | - | - |
| 3.4 | Transaction costs related to issues of shares, convertible notes or options | (33) | (1,127) |
| 3.5 | Proceeds from borrowings | - | - |
| 3.6 | Repayment of borrowings | - | - |
| 3.7 | Repayment of finance lease | (50) | (182) |
| 3.8 | Transaction costs related to loans and borrowings | - | - |
| 3.9 | Dividends paid | - | - |
| 3.10 | Other (provide details if material) | - | - |
| **3.11** | **Net cash from / (used in) financing activities** | **(83)** | **16,139** |

| **4.** | **Net increase / (decrease) in cash and cash equivalents for the period** | | |
|---|---|---|---|
| 4.1 | Cash and cash equivalents at beginning of period | 5,766 | 23,142 |
| 4.2 | Net cash from / (used in) operating activities (item 1.9 above) | (2,964) | (36,460) |
| 4.3 | Net cash from / (used in) investing activities (item 2.6 above) | - | (102) |
| 4.4 | Net cash from / (used in) financing activities (item 3.10 above) | (83) | 16,139 |
| 4.5 | Effect of movement in exchange rates on cash held | - | - |
| **4.6** | **Cash and cash equivalents at end of period** | **2,719** | **2,719** |

| 5. | Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts | Current quarter $A'000 | Previous quarter $A'000 |
|---|---|---|---|
| 5.1 | Bank balances | 2,719 | 5,766 |
| 5.2 | Term deposits | - | - |
| 5.3 | Bank overdrafts | - | - |
| 5.4 | Other (provide details) | - | - |
| **5.5** | **Cash and cash equivalents at end of quarter (should equal item 4.6 above)** | **2,719** | **5,766** |

| 6. | Payments to directors of the entity and their associates | Current quarter $A'000 |
|---|---|---|
| 6.1 | Aggregate amount of payments to these parties included in item 1.2 | 177 |
| 6.2 | Aggregate amount of cash flow from loans to these parties included in item 2.3 | - |

6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2

Director fees and superannuation

| 7. | Payments to related entities of the entity and their associates | Current quarter $A'000 |
|---|---|---|
| 7.1 | Aggregate amount of payments to these parties included in item 1.2 | - |
| 7.2 | Aggregate amount of cash flow from loans to these parties included in item 2.3 | - |

7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2

N/A

| **8.** | **Financing facilities available**<br>*Add notes as necessary for an understanding of the position* | **Total facility amount at quarter end $A'000** | **Amount drawn at quarter end $A'000** |
|---|---|---|---|
| 8.1 | Loan facilities | - | - |
| 8.2 | Credit standby arrangements | - | - |
| 8.3 | Other (please specify) | - | - |

8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.

During the Quarter, the Company entered into a mandate with Taurus Mining Finance for the provision of a US$10m bridging loan facility. Key terms of the proposed facility are disclosed in the announcement of 25 June 2019.

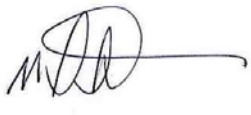
| **9.** | **Estimated cash outflows for next quarter** | **$A'000** |
|---|---|---|
| 9.1 | Exploration and evaluation | 150 |
| 9.2 | Development | 1,200 |
| 9.3 | Production | - |
| 9.4 | Staff costs | 650 |
| 9.5 | Administration and corporate costs | 400 |
| 9.6 | Other (provide details if material) | - |
| **9.7** | **Total estimated cash outflows** | **2,400** |

| **10.** | **Changes in tenements (items 2.1(b) and 2.2(b) above)** | **Tenement reference and location** | **Nature of interest** | **Interest at beginning of quarter** | **Interest at end of quarter** |
|---|---|---|---|---|---|
| 10.1 | Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced | L70/150 – Perth Basin | Relinquished | 100% | Nil |
| 10.2 | Interests in mining tenements and petroleum tenements acquired or increased | E04/2510 – Canning Basin | Granted | Nil | 100% |

## Compliance statement

1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.

2 This statement gives a true and fair view of the matters disclosed.



Sign here: ..... Date: 31 July 2019
(Company secretary)

Print name: Mark Di Silvio

**Notes**

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.