QUARTERLY ACTIVITIES REPORT
FOR THE PERIOD ENDED 30 JUNE 2020

7 July 2020

ASX Code:
SFX

Directors:

Mr John Richards
Non-Executive Chairman

Mr Bruce McFadzean
Managing Director

Mr Bruce Griffin
Commercial Director

Mr David Archer
Non-Executive Director

Mr Will Burbury
Non-Executive Director

Mr Ian Macliver
Non-Executive 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:	309.0M
Unlisted Options:	4.5M
Unlisted Rights:	8.2M

Market Capitalisation:
A$56 million

Cash Reserves:
A$7.1 million
(as at 30 June 2020)

Investor Relations:

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HIGHLIGHTS

Thunderbird Mineral Sands Project

- A project development review led by mineral sands expert Bruce Griffin was completed. The review considered a range of scale and product mix options to identify a project scope with reduced upfront capital expenditure and maximised investment returns.
- A representative twenty-tonne bulk ore sample was prepared for offtake partner Bengbu Zhongheng New Materials S&T Co. Ltd (Bengbu), arriving in China during the quarter and metallurgical test work commenced.
- Care and maintenance activity at the Thunderbird Project were suspended and security and environmental monitoring programs implemented.
- Cost management initiatives continued with the disposal of non-core accommodation units to realise A$1.75m. Further review and rationalisation of non-core exploration tenements also continued in line with cost management initiatives, resulting in further saving of approximately $0.5m in annual expenditure commitments.

Corporate Activities

- $7.1m in cash at quarter end (unaudited) with forecast expenditure of $2.5m in the forthcoming quarter (including $1m one-off milestone payment associated with signing of Thunderbird Project Co-existence Agreement in October 2018).
- Bruce Griffin appointed as Commercial Director
- COVID-19 protocols to secure the safety and well-being of all personnel continued throughout the quarter.

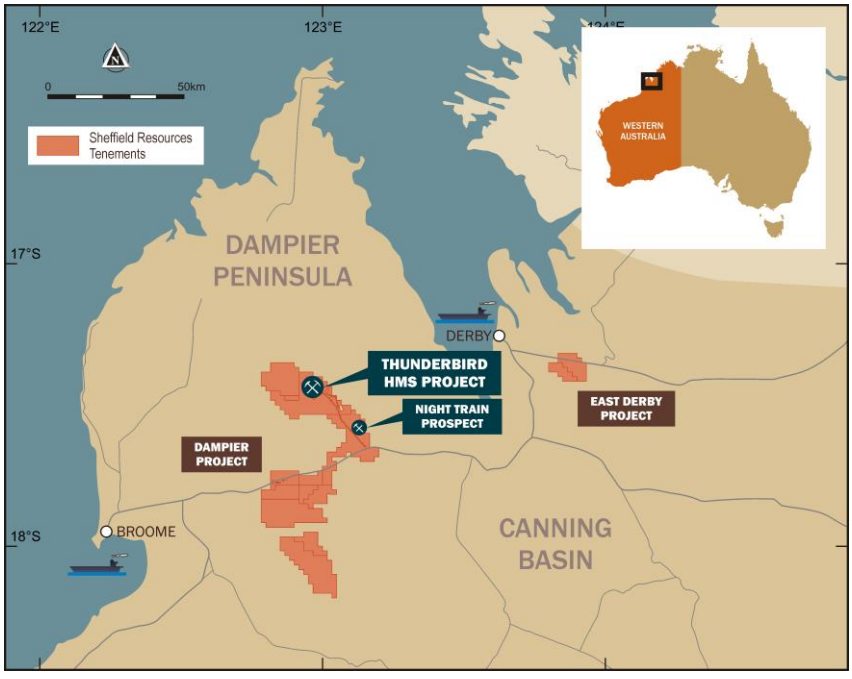

Figure 1: Location of Sheffield's Dampier Mineral Sands Projects

THUNDERBIRD MINERAL SANDS PROJECT

Sheffield Resources Limited ("Sheffield" or "the Company") continued to review development options of its world-class Thunderbird Mineral Sands Project ("Thunderbird" or "Project") with two core objectives:

i) Defining a lower capital cost and more readily financeable project scope; and
ii) Preserving cash reserves to ensure a cash runway well into 2021.

Project Scope

An internal project development review, led by mineral sands expert Bruce Griffin, considered a range of Project scale and product mix options. A small range of development strategies that all include a zircon rich non- magnetic stream in conjunction with alternate ilmenite streams were identified.

The BFSU flowsheet included a Mineral Separation Plant (MSP) which produced Premium Zircon and Zircon in Concentrate products. The removal of the MSP from the flowsheet will materially reduce upfront capital costs and produce a zircon and leucoxene rich non-magnetic concentrate. The market for non-magnetic concentrates has emerged as an alternative route to market for zircon in recent years and continues to grow strongly. Going forward, Sheffield intends to undertake further evaluation of ilmenite product options, through engagement with potential strategic and funding partners and through further test work of ilmenite options.

The review identified alternative ilmenite streams which would be suitable for direct sale in the sulfate pigment or chloride slag market significantly reducing the ilmenite product market risk.

Thunderbird remains a Tier 1 mineral sands project in a Tier 1 jurisdiction. Thunderbird is fully permitted and able to be brought into production at a time when a gap between consumption and production of both zircon and titanium minerals is expected to emerge.

Project Development

During the quarter, IHC Robbins progressed their test work program on a range of potential magnetic and non-magnetic products.

The project development review identified a requirement for further test work. IHC Robbins have been engaged to complete this test work with completion targeted for Q3 2020.

Offtake Partners

Information from completed test work has been shared with offtake partners and engagement with these offtake groups have been positive, with interest remaining strong for the forecast products from Thunderbird.

Sheffield dispatched a representative twenty-tonne bulk ore sample for offtake partner Bengbu Zhongheng New Materials S&T Co. Ltd (Bengbu). The sample arrived during the quarter and Bengbu have commenced metallurgical test work relating to the production of an ilmenite concentrate as a chloride slag feedstock.

Early Works Program

The suspension of care and maintenance activities was completed during the quarter.

The Company prepared COVID19 compliant travel and work procedures for environmental and baseline water monitoring work programs. These work programs and arrangements for security and caretaking will ensure the Project remains compliant and retains all required Project approvals in readiness for future construction activities.

Aboriginal and Community Engagement

The Company held COVID19 appropriate engagement with key Project stakeholders regarding the Company's strategy and particularly the suspension of care and maintenance activities at the Thunderbird Project.

During the quarter, Sheffield issued 2.8m shares at $1.05 per share to Kimberley Sustainable Development Pty Ltd, as partial consideration pursuant to the execution of the Thunderbird Project Co-existence Agreement (Agreement) by the parties on 31 October 2018. A one-off milestone payment of $1m, being further and final consideration pursuant to the execution of the Agreement, is scheduled for payment by the Company in the September quarter.

Markets

The mineral sands market has performed well considering the global economic conditions and uncertainty that has prevailed in 2020.

China has rebounded well, with most zircon industry groups operating closer to capacity and expectations are for a stronger second half of the year. Europe has restarted zircon operations more recently, with steady ramp up to near full capacity forecast in the near term. India initiated a hard stop with limited industry operating and with timing for resumption not yet defined. Zircon prices continued to decline in the quarter, with prices settling at a range of US$1350 - US$1500 per tonne.

The titanium feedstock market appears to be in balance, with little impact to pricing over the quarter. Outside of China, COVID19 impacted titanium dioxide pigment consumers in Q2 and is expected to impact titanium dioxide pigment consumption in Q3 2020. Titanium feedstock demand is expected to weaken in 2H 2020.

While some near term weakness is expected in 2H 2020, both markets are still forecast to have significant supply constraints in the mid to long term and Sheffield is well placed to supply material into what will be a tight market in the future.

EXPLORATION ACTIVITIES

A review of exploration tenure continued with a focus to reduce expenditure commitments and outgoings. At the Dampier Project, Sheffield voluntarily surrendered non-core exploration tenure from eighteen tenements. No change occurred to the Eneabba Project which is predominantly under retention status and the McCalls Projects which is fully under retention status. The Derby East Project tenure also remains unchanged. These changes further reduced annual expenditure commitments by approximately $0.5m.

Dampier Project

Sheffield continued its review of Dampier exploration tenements, voluntarily reducing the non-core tenement holdings by a further 1,018 square kilometres to cumulate saving in the order of $0.5m per annum.

In total, the Company retains exploration tenements totalling 1,427 square kilometres. Sheffield remains focused on remaining key tenure to support the development of the Thunderbird Mineral Sands Project.

Eneabba & McCalls Projects

Sheffield's 100% owned Eneabba Project is located approximately 230km north of Perth in Western Australia's Midwest region. The Eneabba Project has a Mineral Resource inventory totalling 193.3 million tonnes @ 3.0% HM containing 4.8 million tonnes of Valuable Heavy Mineral above various HM cut-offs (Measured, Indicated and Inferred) (refer to ASX announcement 3 October 2018 and 24 September 2019). The mineralisation is across seven Mineral Resources including Yandanooka, Durack, Drummond Crossing, Robbs Cross, Thomson, West Mine North and Ellengail.

The McCalls Mineral Sands Project (McCalls) is located 110km to the north of Perth near the town of Gingin. Across two deposits (McCalls and Mindarra Springs) the Project has a Mineral Resource of 5,800 million tonnes @ 1.4% HM above a 1.1% HM cut-off (Indicated and Inferred). The McCalls Project contains 67 million tonnes of chloride ilmenite grading 59-66% TiO_2 and is considered a longer-term strategic asset (refer to ASX announcement 03 October 2018 and 24 September 2019).

Both HM deposits in the McCalls Project have retention status. A review of all project data and Mineral Resource data for Eneabba & McCalls Projects continued during the Quarter.

Derby East Project

The Derby East Project comprises of a large occurrence of construction quality sand, located 24km east of the Port of Derby. No work was undertaken during the Quarter.

CORPORATE ACTIVITIES

The Sheffield Board renewal process continued with the appointment of Mr Bruce Griffin as an Executive Director of the Company. Mr Griffin joined the executive management team as Commercial Director following his recent consulting engagement, leading an internal study to assess a range of development options for the Thunderbird Project.

The Board remains focused upon generation of long-term shareholder value whilst navigating the COVID19 global pandemic and related market volatility and engagement with potential strategic partners and other key stakeholders is ongoing.

A review of non-core assets resulted in the disposal of accommodation units, further strengthening the cash position by $1.75m during the quarter.

Completed corporate and organisational changes have reduced forecast cash expenditure for the remainder of 2020 by approximately 50% compared the first half of the year, further extending the cash runaway into 2021.

As at 30 June 2020, Sheffield held cash reserves of approximately A$7.1 million (unaudited).

This announcement is authorised by the Board of Sheffield Resources Limited.

Mr Bruce McFadzean
Managing Director
7 July 2020

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	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	E04/2171[2]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2349[2]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2390[2]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2494[2]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2509[2]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2540[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	E04/2597[2]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
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	E04/2456	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

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 and [3]Moora Talc Pty Ltd are wholly owned subsidiaries of Sheffield Resources Ltd.

Appendix 1

ORE RESERVES AND MINERAL RESOURCES

SHEFFIELD ORE RESERVE AS OF 30 JUNE 2020

DAMPIER PROJECT ORE RESERVES

SHEFFIELD ORE RESERVE FOR DAMPIER PROJECT AT 30 JUNE 2020 (in-situ assemblage)

Summary of Ore Reserve[1,2,3,4]					Valuable HM Assemblage (in-situ)[5]					
Deposit	Ore Reserve Category	Material (Million Tonnes)	In-situ Total HM[7] (Million Tonnes)	Total HM Grade (%)	Zircon (%)	HiTi Leuc (%)	Leuco -xene (%)	Ilmenite (%)	Oversize (%)	Slimes (%)
Thunderbird	Proved	**219**	30.0	13.7	1.02	0.30	0.28	3.68	14.0	16.1
	Probable	**529**	53.4	10.1	0.79	0.26	0.27	2.87	10.5	14.5
	Total	**748**	83.8	**11.2**	**0.86**	**0.27**	**0.27**	**3.11**	**11.6**	**15.0**

SHEFFIELD ORE RESERVE FOR DAMPIER PROJECT AT 30 JUNE 2020 (HM assemblage)

Summary of Ore Reserve[1,2,3,4]					Valuable HM Assemblage[6]					
Deposit	Ore Reserve Category	Material (Million Tonnes)	In-situ Total HM[7] (Million Tonnes)	Total HM Grade (%)	Zircon (%)	HiTi Leuc (%)	Leuco -xene (%)	Ilmenite (%)	Oversize (%)	Slimes (%)
Thunderbird	Proved	**219**	30.0	13.7	7.4	2.2	2.0	26.9	14.0	16.1
	Probable	**529**	53.4	10.1	7.8	2.6	2.7	28.4	10.5	14.5
	Total	**748**	**83.8**	**11.2**	**7.7**	**2.4**	**2.4**	**27.8**	**11.6**	**15.0**

[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 10% Ore Reserve Increase". 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]Total HM 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.
[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.
[7] The contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables

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). The Ore Reserve was 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 too Proved and Probable Ore Reserves respectively, subject to mine design, modifying factors and economic evaluation.

SHEFFIELD MINERAL RESOURCE

1) DAMPIER PROJECT MINERAL RESOURCES

SHEFFIELD MINERAL RESOURCE FOR DAMPIER PROJECT AT 30 JUNE 2020 (in-situ assemblage)

Summary of Mineral Resource[1,2,3]						In-situ Assemblage[4, 5]					
Deposit	Mineral Resource Category	Cut off (Total HM%)	Material (Million Tonnes)	In-situ Total HM[6] (Million Tonnes)	Total HM Grade (%)	Zircon (%)	HiTi Leuc (%)	Leuco-xene (%)	Ilmenite (%)	Over size (%)	Slimes (%)
Thunderbird (low-grade)	Measured	3.0	510	45	8.9	0.71	0.20	0.19	2.4	12	18
	Indicated	3.0	2,120	140	6.6	0.55	0.18	0.20	1.8	9	16
	Inferred	3.0	600	38	6.3	0.53	0.17	0.20	1.7	8	15
	Total	3.0	3,230	223	6.9	0.57	0.18	0.20	1.9	9	16
Night Train (low-grade)	Inferred	1.2	130	4.2	3.3	0.45	0.18	1.5	0.71	2.2	8.7
	Total	1.2	130	4.2	3.3	0.45	0.18	1.5	0.71	2.2	8.7
All Dampier Project (low grade cut-off)	Measured	3.0	510	45	8.9	0.71	0.20	0.19	2.4	12	18
	Indicated	3.0	2,120	140	6.6	0.55	0.18	0.20	1.8	9	16
	Inferred	Various	730	42	5.8	0.51	0.17	0.43	1.6	7.2	13
	Total	**Various**	**3,360**	**227**	**6.8**	**0.57**	**0.18**	**0.25**	**1.9**	**8.7**	**15**
Thunderbird (high-grade)	Measured	7.5	220	32	14.5	1.07	0.31	0.27	3.9	15	16
	Indicated	7.5	640	76	11.8	0.90	0.28	0.25	3.3	11	14
	Inferred	7.5	180	20	10.8	0.87	0.27	0.26	3.0	9	13
	Total	7.5	1,050	127	12.2	0.93	0.28	0.26	3.3	11	15
Night Train (high-grade)	Inferred	2.0	50	3.0	5.9	0.82	0.33	2.9	1.06	2.2	10.2
	Total	2.0	50	3.0	5.9	0.82	0.33	2.9	1.06	2.2	10.2
All Dampier Project (high grade cut-off)	Measured	7.5	220	32	14.5	1.07	0.31	0.27	3.9	15	16
	Indicated	7.5	640	76	11.8	0.90	0.28	0.25	3.3	11	14
	Inferred	Various	230	23	9.7	0.85	0.28	0.83	2.6	7.2	12
	Total	**Various**	**1,090**	**130**	**11.9**	**0.92**	**0.29**	**0.38**	**3.2**	**11**	**14**

[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% heavy mineral (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 3.0% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 7.5% HM cut-off.

[2]Total HM 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+Hf02/0.667 and 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, HiTi leucoxene and rutile > 90%, Screening of the heavy mineral was not required. Thunderbird: estimates of Mineral Assemblage are presented as percentages of the 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; 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 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.

[6] The contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables.

SHEFFIELD MINERAL RESOURCES FOR DAMPIER PROJECT AT 30 JUNE 2020 (HM assemblage)

Summary of Mineral Resource[1,2,3]						HM Assemblage[4]					
Deposit	Mineral Resource Category	Cut off (Total HM%)	Material (Million Tonnes)	In-situ Total HM[6] (Million Tonnes)	Total HM Grade (%)	Zircon (%)	HiTi Leuc[5] (%)	Leuco-xene (%)	Ilmenite (%)	Over size (%)	Slimes (%)
Thunderbird (low-grade)	Measured	3.0	510	45	8.9	8.0	2.3	2.2	27	12	18
	Indicated	3.0	2,120	140	6.6	8.4	2.7	3.1	28	9	16
	Inferred	3.0	600	38	6.3	8.4	2.6	3.2	28	8	15
	Total	3.0	3,230	223	6.9	8.3	2.6	2.9	28	9	16
Night Train (low-grade)	Inferred	1.2	130	4.2	3.3	14	5.4	46	22	2.2	8.7
	Total	1.2	130	4.2	3.3	14	5.4	46	22	2.2	8.7
All Dampier Project (low grade cut-off)	Measured	3.0	510	45	8.9	8.0	2.3	2.2	27	12	18
	Indicated	3.0	2,120	140	6.6	8.4	2.7	3.1	28	9	16
	Inferred	Various	730	42	5.8	8.9	2.9	7.5	27	7.2	13
	Total	**Various**	**3,360**	**227**	**6.8**	**8.4**	**2.7**	**3.7**	**28**	**8.7**	**15**
Thunderbird (high-grade)	Measured	7.5	220	32	14.5	7.4	2.1	1.9	27	15	16
	Indicated	7.5	640	76	11.8	7.6	2.4	2.1	28	11	14
	Inferred	7.5	180	20	10.8	8.0	2.5	2.4	28	9	13
	Total	7.5	1,050	127	12.2	7.6	2.3	2.1	27	11	15
Night Train (high-grade)	Inferred	2.0	50	3.0	5.9	14	5.6	49	18	2.2	10.2
	Total	2.0	50	3.0	5.9	14	5.6	49	18	2.2	10.2
All Dampier Project (high grade cut-off)	Measured	7.5	220	32	14.5	7.4	2.1	1.9	27	15	16
	Indicated	7.5	640	76	11.8	7.6	2.4	2.1	28	11	14
	Inferred	Various	230	23	9.7	8.8	2.9	8.6	27	7.2	12
	Total	**Various**	**1,090**	**130**	**11.9**	**7.8**	**2.4**	**3.2**	**27**	**11**	**14**

[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 Night Train Mineral Resource reported above 1.2% heavy mineral (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 3.0% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 7.5% HM cut-off.

[2] Total HM 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 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+Hf02/0.667 and 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, HiTi leucoxene and rutile > 90%, Screening of the heavy mineral was not required. Thunderbird: estimates of Mineral Assemblage are presented as percentages of the 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; 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 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

[6] The contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables.

SHEFFIELD MINERAL RESOURCE FOR DAMPIER PROJECT AT 30 JUNE 2020 (in-situ tonnes)

Summary of Mineral Resource[1,2,3]				In-situ Tonnes[4]					
Deposit	Mineral Resource Category	Cut off (Total HM%)	Material (Million Tonnes)	In-situ Total HM[6] (Million Tonnes)	Zircon (Thousand Tonnes)	HiTi Leuc[5] (Thousand Tonnes)	Leucoxene (Thousand Tonnes)	Ilmenite (Thousand Tonnes)	Total VHM (Thousand Tonnes)
Thunderbird (low-grade)	Measured	3.0	510	45	3,600	1,000	1,000	12,000	17,700
	Indicated	3.0	2,120	140	11,800	3,800	4,300	39,100	59,000
	Inferred	3.0	600	38	3,200	1,000	1,200	10,500	15,900
	Total	3.0	3,230	223	18,600	5,900	6,500	61,700	92,600
Night Train (low-grade)	Inferred	1.2	130	4.2	560	220	1,900	900	3,590
	Total	1.2	130	4.2	560	220	1,900	900	3,590
All Dampier Project (low grade cut-off)	Measured	3.0	510	45	3,600	1,000	1000	12,000	17,700
	Indicated	3.0	2,120	140	11,800	3,800	4,300	39,100	59,000
	Inferred	Various	730	42	3,760	1,220	3,100	11,400	19,490
	Total	**Various**	**3,360**	**227**	**19,160**	**6,020**	**8,400**	**62,600**	**96,190**
Thunderbird (high-grade)	Measured	7.5	220	32	2,300	700	600	8,400	12,000
	Indicated	7.5	640	76	5,800	1,800	1,600	21,000	30,200
	Inferred	7.5	180	20	1,600	500	500	5,600	8,200
	Total	7.5	1,050	127	9,700	3,000	2,700	35,000	50,400
Night Train (high-grade)	Inferred	2.0	50	3.0	420	170	1,500	540	2,600
	Total	2.0	50	3.0	420	170	1,500	540	2,600
All Dampier Project (high grade cut-off)	Measured	7.5	220	32	2,300	700	600	8,400	12,000
	Indicated	7.5	640	76	5,800	1,800	1,600	21,000	30,200
	Inferred	Various	230	23	2,020	670	2,000	6,140	10,800
	Total	**Various**	**1,090**	**130**	**10,120**	**3,170**	**4,200**	**35,540**	**53,000**

[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 Night Train Mineral Resource reported above 1.2% heavy mineral (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 3.0% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 7.5% HM cut-off.

[2] Total HM 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. 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.

[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

[6] The contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables

2) ENEABBA PROJECT MINERAL RESOURCES

SHEFFIELD MINERAL RESOURCES FOR THE ENEABBA PROJECT AT 30 JUNE 2020 (in-situ assemblage)

Summary of Mineral Resource[1,2]						In-situ Assemblage[11]					
Deposit	Mineral Resource Category	Cut off (Total HM%)	Material (Million Tonnes)	In-situ Total HM[12] (Thousand Tonnes)	Total HM Grade (%)	Zircon (%)	Rutile (%)	Leuco-xene (%)	Ilmenite (%)	Over size (%)	Slimes (%)
Yandanooka[4,6,8]	Measured	1.4	2.6	112	4.3	0.44	0.09	0.10	3.08	11.3	15
	Indicated	1.4	57.7	1,726	3.0	0.37	0.11	0.11	2.08	11.4	15
	Inferred	1.4	0.4	7	1.5	0.16	0.05	0.07	1.01	21.9	20
	Total	1.4	60.8	1,845	3.0	0.37	0.11	0.11	2.11	11.5	15
Durack[4,6,7,8]	Indicated	1.4	20.7	600	2.9	0.40	0.09	0.11	2.07	14.7	14
	Inferred	1.4	5.6	148	2.6	0.37	0.07	0.19	1.68	18.3	16
	Total	1.4	26.3	748	2.8	0.39	0.08	0.13	1.99	15.5	14
Drummond Crossing[3,4,6,8]	Indicated	1.4	35.5	838	2.4	0.33	0.24	0.08	1.26	7.7	14
	Inferred	1.4	3.3	77	2.3	0.26	0.21	0.06	1.31	7.2	12
	Total	1.4	38.8	915	2.4	0.33	0.24	0.08	1.26	7.7	14
Robbs Cross[5,6,8]	Indicated	1.4	14.0	261	1.9	0.27	0.24	0.09	0.88	6.2	6
	Inferred	1.4	3.8	77	2.0	0.29	0.22	0.08	1.02	8.1	6
	Total	1.4	17.8	338	1.9	0.28	0.23	0.09	0.91	6.6	6
Thomson[5,8,]	Inferred	1.4	26	516	2.0	0.38	0.28	0.11	0.85	6.9	18
	Total	1.4	26	516	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	748	7.3	0.43	0.48	0.13	3.51	2.3	11
	Inferred	2.0	1.8	48	2.7	0.25	0.23	0.06	1.31	3.0	17
	Total	2.0	12.0	796	6.6	0.40	0.44	0.12	3.18	2.4	12
Ellengail[3,4,9,10]	Indicated	2.0	6.5	346	5.3	0.53	0.43	0.55	3.49	3.2	15
	Inferred	2.0	5.3	218	4.1	0.41	0.34	0.35	2.55	2.5	15
	Total	2.0	11.8	565	4.8	0.47	0.39	0.46	3.07	2.9	15
Total	Measured	1.4	2.6	112	4.3	0.44	0.09	0.10	3.08	11	15
	Indicated	Various	144.6	4,519	3.1	0.37	0.19	0.12	1.92	9	14
	Inferred	Various	46.0	1,091	2.4	0.36	0.24	0.14	1.21	8	16
	Total	**Various**	**193.3**	**5,723**	**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 03 October 2018 ASX announcement for Yandanooka, Durack, Drummond Crossing, West Mine North and Ellengail. Refer to 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]Total heavy mineral (HM) %: 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]Total HM %: 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]Total HM %: 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]Total HM %: 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 HM 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 (HM concentrate 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) was used with the Sheffield QEMSCAN™ data and Iluka Method 4
[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.
[12] The contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables

SHEFFIELD MINERAL RESOURCE FOR ENEABBA PROJECT AT 30 JUNE 2020 (HM assemblage)

Summary of Mineral Resource[1,2]						HM Assemblage[8,9,10]					
Deposit	Mineral Resource Category	Cut off (Total HM%)	Material (Million Tonnes)	In-situ Total HM[11] (Thousand Tonnes)	Total HM Grade (%)	Zircon (%)	Rutile (%)	Leuco-xene (%)	Ilmenite (%)	Over size (%)	Slimes (%)
Yandanooka[4,6,8]	Measured	1.4	2.6	112	4.3	10	2.1	2.3	72	11.3	15
	Indicated	1.4	57.7	1,726	3.0	12	3.6	3.7	69	11.4	15
	Inferred	1.4	0.4	7	1.5	11	3.0	4.4	68	21.9	20
	Total	1.4	60.8	1,845	3.0	12	3.5	3.6	70	11.5	15
Durack[4,6,7,8]	Indicated	1.4	20.7	600	2.9	14	2.9	3.7	71	14.7	14
	Inferred	1.4	5.6	148	2.6	14	2.6	7.4	64	18.3	16
	Total	1.4	26.3	748	2.8	14	2.9	4.4	70	15.5	14
Drummond Crossing[3,4,6,8]	Indicated	1.4	35.5	838	2.4	14	10.3	3.4	53	7.7	14
	Inferred	1.4	3.3	77	2.3	11	9.0	2.7	56	7.2	12
	Total	1.4	38.8	915	2.4	14	10.2	3.4	54	7.7	14
Robbs Cross[5,6,8]	Indicated	1.4	14.0	261	1.9	15	12.7	5.0	47	6.2	6
	Inferred	1.4	3.8	77	2.0	14	10.9	4.1	50	8.1	6
	Total	1.4	17.8	338	1.9	15	12.3	4.8	48	6.6	6
Thomson[5,8,]	Inferred	1.4	26	516	2.0	19	13.8	5.4	42	6.9	18
	Total	1.4	26	516	2.0	19	13.8	5.4	42	6.9	18
West Mine North[3,4,6,9,]	Indicated	2.0	10.2	748	7.3	6	6.5	1.8	48	2.3	11
	Inferred	2.0	1.8	48	2.7	9	8.6	2.1	50	3.0	17
	Total	2.0	12.0	796	6.6	6	6.6	1.8	48	2.4	12
Ellengail[3,4,9,10]	Indicated	2.0	6.5	346	5.3	10	8.0	10.4	66	3.2	15
	Inferred	2.0	5.3	218	4.1	10	8.2	8.4	62	2.5	15
	Total	2.0	11.8	565	4.8	10	8.1	9.6	64	2.9	15
Total	Measured	1.4	2.6	112	4.3	10	2.1	2.3	72	11	15
	Indicated	Various	144.6	4,519	3.1	12	6.1	3.9	62	9	14
	Inferred	Various	46.0	1,091	2.4	15	10.3	5.8	51	8	16
	Total	**Various**	**193.3**	**5,723**	**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 03 October 2018 ASX announcement for Yandanooka, Durack, Drummond Crossing, West Mine North and Ellengail. Refer to 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]Total heavy mineral (HM) %: Samples from 1989 and 1996 (Drummond Crossing, Ellengail and West Mine North) were analysed using a -75µm slimes / +2 mm oversize screen. Separation of HM% was by heavy liquid TBE (density 2.84 g/ml) from the -710µm+75µm fraction.

[4]Total HM %: 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]Total HM %: Samples from Robbs Cross and Thomson analysed by Diamantina Laboratories in Perth using a -45µm slimes / +1mm 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]Total HM %: 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 2.96g/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 HM 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 (HM concentrate 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 contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables

SHEFFIELD MINERAL RESOURCE FOR ENEABBA PROJECT AT 30 JUNE 2020 (in-situ tonnes)

Summary of Mineral Resource[1,2,3]				In-situ Tonnes					
Deposit	Mineral Resource Category	Cut off (Total HM%)	Material (Million Tonnes)	In-situ Total HM[11] (Thousand Tonnes)	Zircon (Thousand Tonnes)	Rutile (Thousand Tonnes)	Leuco-xene (Thousand Tonnes)	Ilmenite (Thousand Tonnes)	Total VHM (Thousand Tonnes)
Yandanooka[4,6,8]	Measured	1.4	2.6	112	12	2	3	81	98
	Indicated	1.4	57.7	1,726	212	63	63	1,197	1,535
	Inferred	1.4	0.4	7	1	0.2	0.3	4	6
	Total	1.4	60.8	1,845	224	65	66	1,283	1,639
Durack[4,6,7,8]	Indicated	1.4	20.7	600	82	18	22	429	551
	Inferred	1.4	5.6	148	21	4	11	95	130
	Total	1.4	26.3	748	104	21	33	523	681
Drummond Crossing[3,4, 6,8]	Indicated	1.4	35.5	838	118	86	29	447	680
	Inferred	1.4	3.3	77	9	7	2	43	61
	Total	1.4	38.8	915	127	93	31	490	741
Robbs Cross[5,6,8]	Indicated	1.4	14.0	261	38	33	13	123	208
	Inferred	1.4	3.8	77	11	8	3	39	61
	Total	1.4	17.8	338	50	41	16	162	269
Thomson[5,8,]	Inferred	1.4	26	516	97	71	28	219	415
	Total	1.4	26	516	97	71	28	219	415
West Mine North[3,4,6,9,]	Indicated	2.0	10.2	748	44	49	13	359	465
	Inferred	2.0	1.8	48	5	4	1	24	34
	Total	2.0	12.0	796	48	53	14	383	498
Ellengail[3,4,9,10]	Indicated	2.0	6.5	346	34	28	36	227	325
	Inferred	2.0	5.3	218	22	18	18	136	193
	Total	2.0	11.8	565	56	46	54	363	519
Total	Measured	1.4	2.6	112	12	2	3	81	98
	Indicated	Various	144.6	4,519	529	276	176	2,782	3,764
	Inferred	Various	46.0	1,091	165	113	64	559	900
	Total	**Various**	**193.3**	**5,723**	**705**	**392**	**242**	**3,423**	**4,762**

[1] The Mineral Resource estimates were prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer 03 October 2018 ASX announcement for Yandanooka, Durack, Drummond Crossing, West Mine North and Ellengail. Refer to 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]Total heavy mineral (HM) %: Samples from 1989 and 1996 (Drummond Crossing, Ellengail and West Mine North) were analysed using a -75µm slimes / +2mm oversize screen. Separation of HM% was by heavy liquid TBE (density 2.84 g/ml) from the -710µm+75µm fraction.

[4]Total HM %: 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]Total HM %: 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]Total HM %: Samples from Drummond Crossing, Durack, West Mine North and Yandanooka were analysed by Western Geolabs in Perth using a -53µm slimes / +1mm 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 HM) 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 (HM concentrate 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 contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables

3) McCALLS PROJECT MINERAL RESOURCES

SHEFFIELD MINERAL RESOURCES FOR McCALLS PROJECT AT 30 JUNE 2020 (in-situ assemblage)

Summary of Mineral Resources[1,2,3,4]						In-situ Assemblage[5, 6]					
Deposit	Mineral Resource	Cut off	Material	In-situ Total HM[6]	Total HM Grade	Zircon	Rutile	Leuco-xene	Ilmenite	Over size	Slimes
	Category	(Total HM%)	(Million Tonnes)	(Million Tonnes)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
McCalls	Indicated	1.1	1,630	23.3	1.4	0.07	0.05	0.04	1.10	1.1	21
	Inferred	1.1	1,980	24.4	1.2	0.06	0.05	0.04	1.00	1.1	26
	Total	1.1	3,600	47.7	1.3	0.07	0.05	0.04	1.05	1.1	24
Mindarra Springs[7]	Inferred	1.1	2,200	36.3	1.6	0.07	0.01	0.05	1.32	5.1	20
	Total	1.1	2,200	36.3	1.6	0.07	0.01	0.05	1.32	5.1	20
Total	Indicated	1.1	1,630	23.3	1.4	0.07	0.05	0.04	1.10	1.1	21
	Inferred	1.1	4,180	60.7	1.5	0.07	0.03	0.05	1.17	3.2	23
	Total	**1.1**	**5,800**	**84.0**	**1.4**	**0.07**	**0.03**	**0.04**	**1.15**	**2.6**	**22**

SHEFFIELD MINERAL RESOURCES FOR McCALLS PROJECT AT 30 JUNE 2020 (HM assemblage)

Summary of Mineral Resources[1,2,3,4,7]						HM Assemblage[5, 6]					
Deposit	Mineral Resource	Cut off	Material	In-situ Total HM[6]	Total HM Grade	Zircon	Rutile	Leuco-xene	Ilmenite	Over size	Slimes
	Category	(Total HM%)	(Million Tonnes)	(Million Tonnes)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
McCalls	Indicated	1.1	1,630	23.3	1.4	5.2	3.3	2.8	77	1.1	21
	Inferred	1.1	1,980	24.4	1.2	5.0	3.8	3.2	81	1.1	26
	Total	1.1	3,600	47.7	1.3	5.1	3.6	3.0	79	1.1	24
Mindarra Springs[7]	Inferred	1.1	2,200	36.3	1.6	4.2	0.9	3.1	80	5.1	20
	Total	1.1	2,200	36.3	1.6	4.2	0.9	3.1	80	5.1	20
Total	Indicated	1.1	1,630	23.3	1.4	5.2	3.3	2.8	77	1.1	21
	Inferred	1.1	4,180	60.7	1.5	4.5	2.1	3.2	81	3.2	23
	Total	**1.1**	**5,800**	**84.0**	**1.4**	**4.7**	**2.4**	**3.1**	**79**	**2.6**	**22**

[1]The Mineral Resource estimates for McCalls and Mindarra Springs were prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to ASX announcement 03 October 2018

[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]Total heavy mineral (HM) 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 HM) 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 contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables

[7]Excludes Mineral Resources within the Mogumber Nature Reserve

SHEFFIELD MINERAL RESOURCES FOR McCALLS PROJECT AT 30 JUNE 2020 (in-situ tonnes)

Summary of Mineral Resources[1,2,3,4]				In-situ Tonnes					
Deposit	Mineral Resource Category	Cut off (Total HM%)	Material (Million Tonnes)	In-situ Total HM[7] (Million Tonnes)	Zircon (Thousand Tonnes)	Rutile (Thousand Tonnes)	Leuco-xene (Thousand Tonnes)	Ilmenite (Thousand Tonnes)	Total VHM (Thousand Tonnes)
McCalls	Indicated	1.1	1,630	23.3	1,210	770	650	17,940	20,570
	Inferred	1.1	1,980	24.4	1,210	930	790	19,790	22,720
	Total	1.1	3,600	47.7	2,430	1,700	1,430	37,730	43,290
Mindarra Springs[8]	Inferred	1.1	2,200	36.3	1,520	320	1,130	29,080	32,050
	Total	1.1	2,200	36.3	1,520	320	1,130	29,080	32,050
Total	Indicated	1.1	1,630	23.3	1,210	770	650	17,940	20,570
	Inferred	1.1	4,180	60.7	2,740	1,250	1,920	48,860	54,770
	Total	**1.1**	**5,800**	**84.0**	**3,950**	**2,020**	**2,570**	**66,810**	**75,340**

[1]The Mineral Resource estimates for McCalls and Mindarra Springs were prepared by Optiro Pty Ltd and first disclosed under the JORC Code (2012) refer to ASX announcement 03 October 2018

[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]Total heavy mineral (HM) 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 HM 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]The contained in-situ tonnes derived from HM and material tonnes from information in the Mineral Resource tables

[8]Excludes mineralisation within the Mogumber Nature Reserve

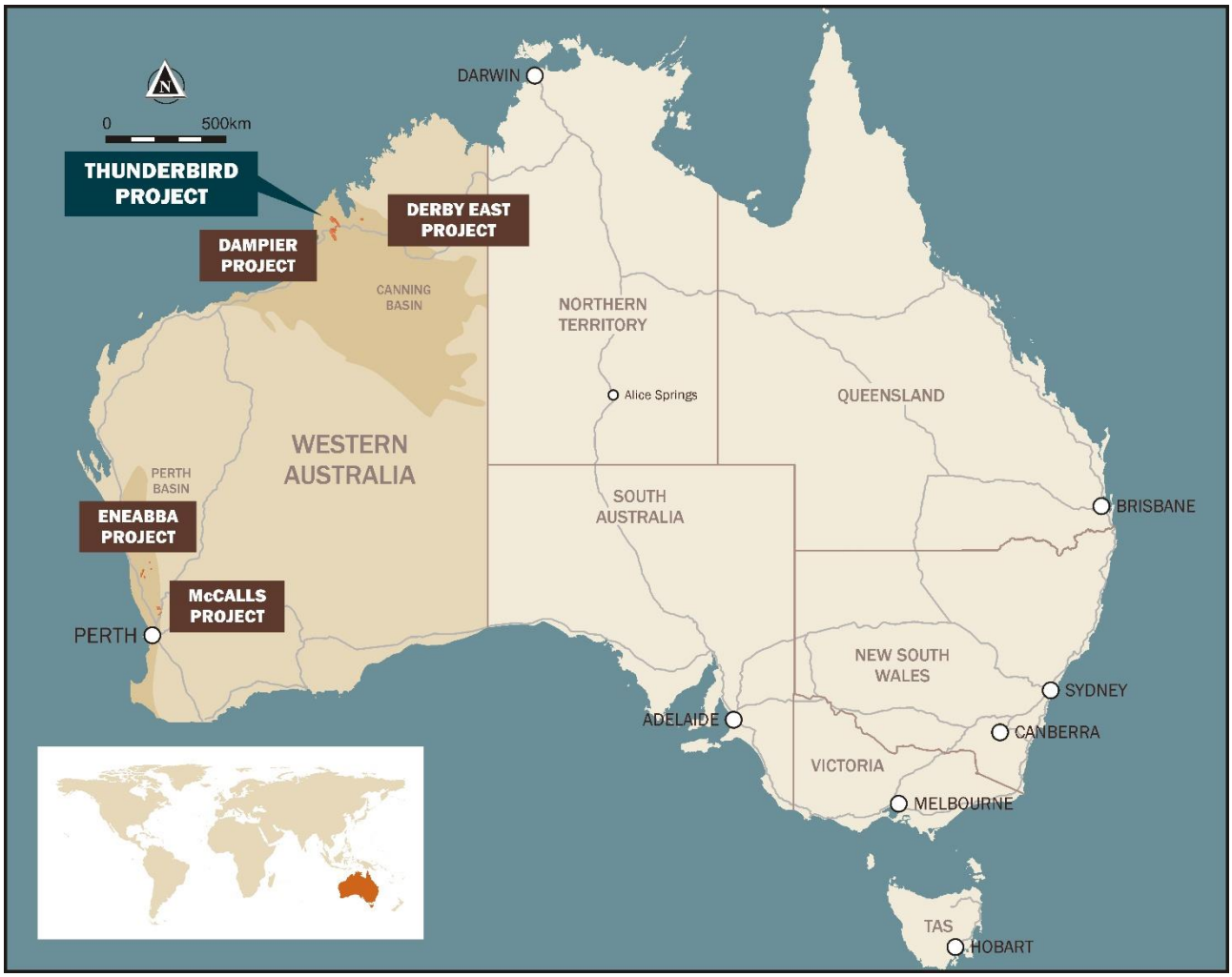

Figure 2: Location of Sheffield's Mineral Sands Projects

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 former 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	05 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	30 January 2018	C. Standing
Thomson Mineral Resource	Quarterly Activities Report for The Period Ended 31 December 2017	30 January 2018	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	N/A	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.

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:

- Mineral Resource and Ore Reserve Statement: "MINERAL RESOURCE AND ORE RESERVE STATEMENT" 24 September 2019
- Thunderbird Ore Reserve Update: "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

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 Update, 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.