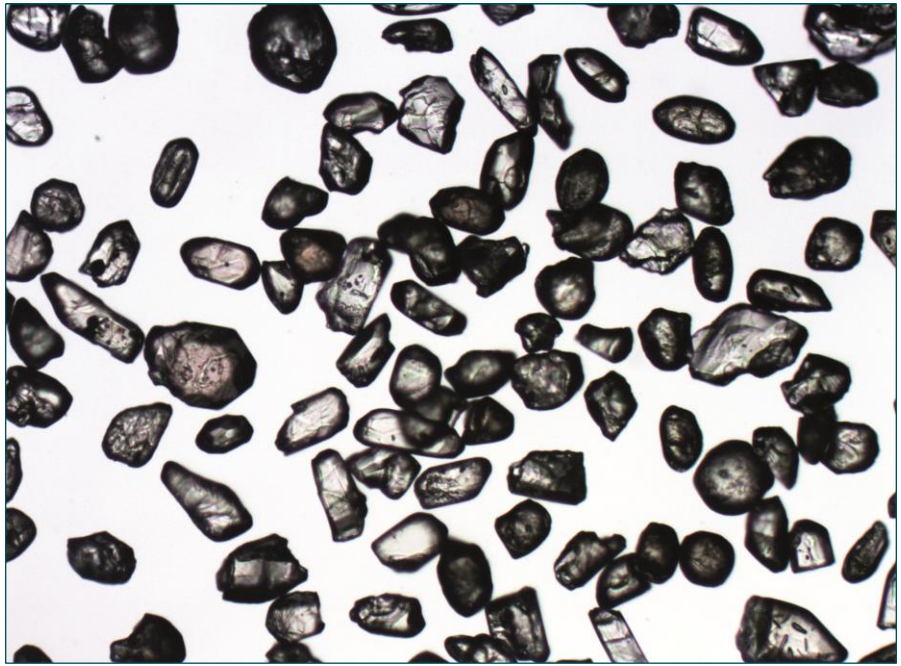


Sheffield Resources LIMITED

SFX

Thunderbird HMS Deposit Investor Update

24th MARCH 2014

LARGE SCALE HIGH GRADE PREMIUM PRODUCT WORLD CLASS

Disclaimer

MINERAL RESOURCES
The information in this report that relates to Mineral Resources is based on information compiled under the guidance of Mr Mark Teakle, a Competent Person who is a Member of the Australasian 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 styles of mineralisation and types 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 information in this report that relates to the estimation of Mineral Resources is based on information compiled by Mr Trent Strickland, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Strickland is a full-time employee of QG and has sufficient experience that is relevant to the styles of mineralisation and types 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 Strickland consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

PREVIOUSLY REPORTED INFORMATION
This report includes information that relates to Exploration Results which were prepared and first disclosed under the JORC Code 2012. The information was extracted from the Company's previous ASX announcements as follows:

SHEFFIELD DOUBLES TOTAL MINERAL RESOURCES AT WORLD CLASS THUNDERBIRD HMS DEPOSIT, 19 March 2014

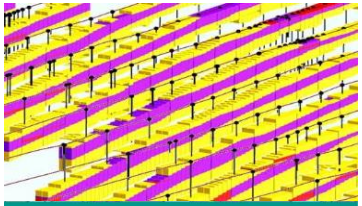
This report also includes information that relates to Mineral Resources which were prepared and first disclosed under the JORC Code 2004. The information has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. The information was extracted from the Company's previous ASX announcements as follows:

- "1MT CONTAINED HM INFERRED RESOURCE AT ELLENGAIL", 25 October 2011
- "WEST MINE NORTH MINERAL RESOURCE ESTIMATE EXCEEDS EXPECTATIONS", 7 November 2011
- "4.4 BILLION TONNE MAIDEN RESOURCE AT MCCALLS HMS PROJECT", 20 February 2012.
- "ENEABBA PROJECT RESOURCE INVENTORY EXCEEDS 5MT HEAVY MINERAL", 28 August 2012
- "LARGE HIGH GRADE MAIDEN RESOURCE FOR THUNDERBIRD HMS DEPOSIT", 18 December 2012
- "YANDANOOKA RESOURCE UPGRADE AND METALLURGICAL RESULTS", 30 January 2013.
- "1Mt HEAVY MINERAL RESOURCE ADDED TO ENEABBA PROJECT", 30 October 2013

These announcements are available to view on Sheffield Resources Ltd's website www.sheffieldresources.com.au

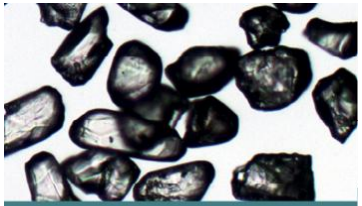
The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant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

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



Large Scale

High Grade



Premium Product

World Class

Key Messages

THUNDERBIRD MINERAL SANDS

Company Snapshot

Shareholder Split	
Top 20 Shareholders	**36%**
Directors	**19.4%**

3 Year Performance	
Share Price	**138%**
Market Cap	**+388%**

Capital Structure	
Share price	**$0.69**
Shares on issue	**119.6m**
Employee Options (Ave. Ex Price 68c)	**8.1m**
Market Cap (Undiluted)	**$82.5m**
Cash (At 31 Dec, no debt)	**$3.4m**
Enterprise Value	**$79.1m**

Management

	Board & Management	
	**Will Burbury**	Executive Chairman
	**Bruce McQuitty**	Managing Director
	**David Archer**	Technical Director
	**David Boyd**	Exploration Manager
	**Mark Teakle**	Project Development Manager
	**Wayne Groeneveld**	Sustainability Manager

PROVEN TRACK RECORD

- History of successful exploration and corporate transactions
- Built global scale HMS resource base in 3 years
- 37 years of collective mineral sand experience

Strategic Location

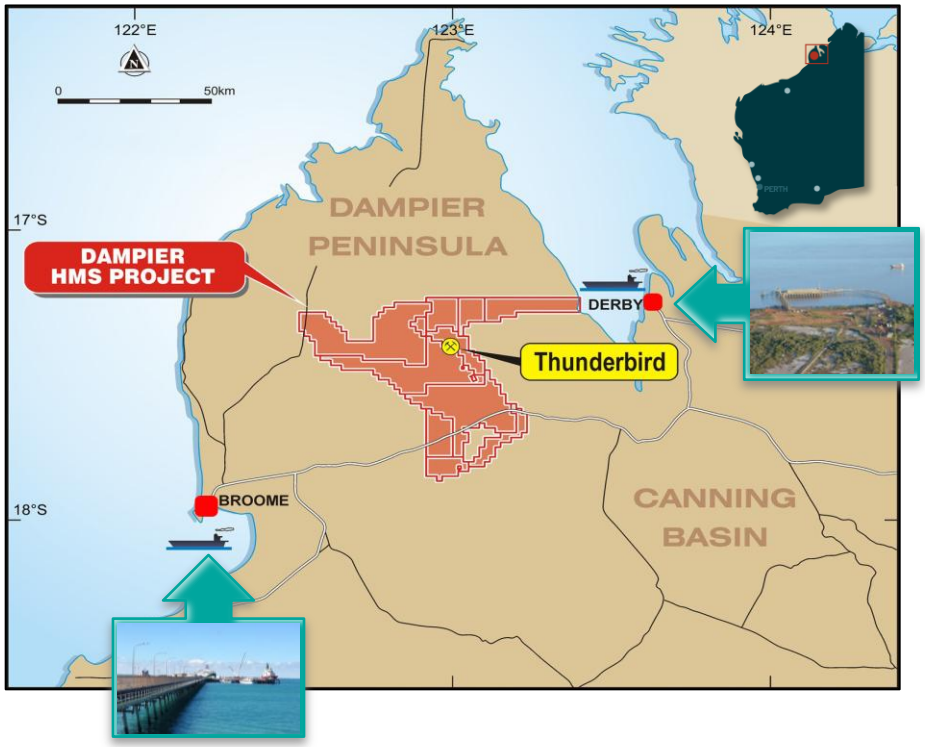
DAMPIER MINERAL SANDS PROJECT

THUNDERBIRD

- 30km north of sealed Broome - Derby Highway
- 140km by road to either Broome or Derby ports
- Gas discoveries nearby
- Close to Asian markets

CANNING BASIN

- Thunderbird first major HMS discovery in the province
- Sheffield holds over 2,500km^2



Large Scale, High Grade

THUNDERBIRD MINERAL SANDS

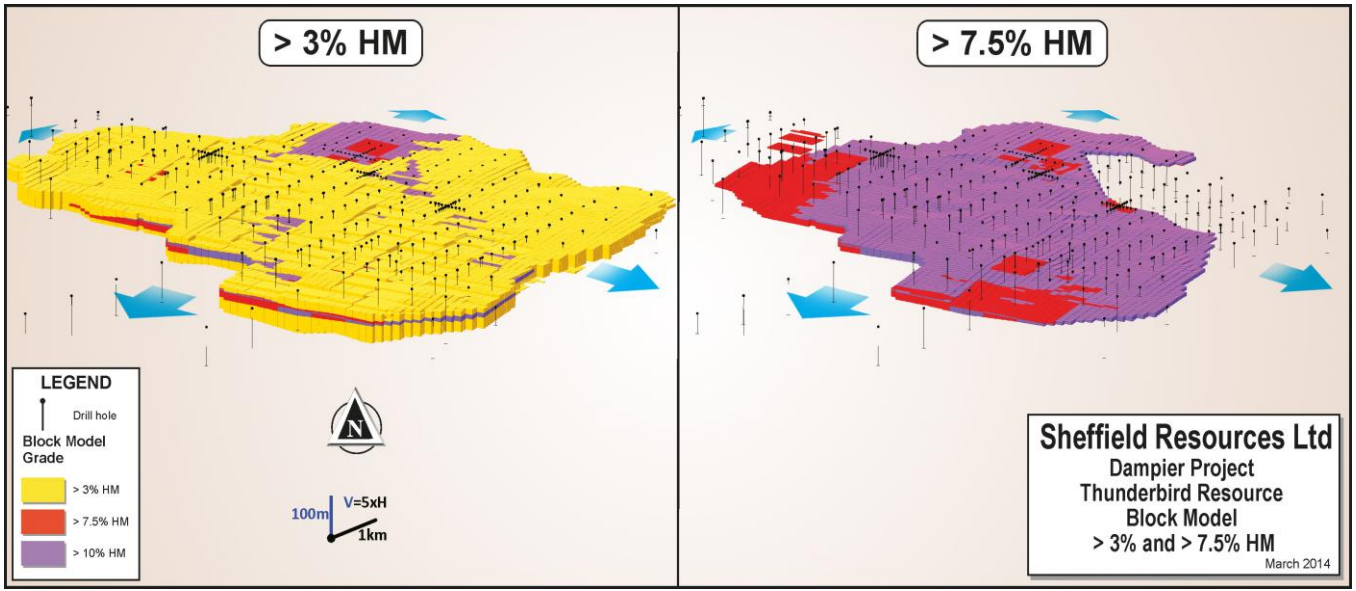
MARCH 2014 RESOURCE UPDATE

		Mineral Resources [2]		Valuable HM Grade (in situ) [1]			
Resource Category	**Cut-off HM%**	**Material Million Tonnes**	**HM %**	**Zircon %**	**HiTi Leucoxene %**	**Leucoxene %**	**Ilmenite %**
Measured	3.0	75	7.5	0.68	0.20	0.18	2.2
Indicated	3.0	1,805	6.8	0.56	0.19	0.20	1.9
Inferred	3.0	740	5.7	0.49	0.17	0.20	1.6
Total	**3.0**	**2,620**	**6.5**	**0.55**	**0.18**	**0.20**	**1.8**
Measured	7.5	30	12.2	1.1	0.32	0.26	3.6
Indicated	7.5	545	12.5	0.94	0.29	0.25	3.5
Inferred	7.5	165	10.9	0.84	0.27	0.24	3.2
Total	**7.5**	**740**	**12.1**	**0.92**	**0.29**	**0.25**	**3.4**

1. The in situ grade is determined by multiplying the percentage of HM by the percentage of each valuable heavy mineral within the heavy mineral assemblage.
2. Tonnes have been rounded to reflect the relative uncertainty of the estimate.

Large Scale, High Grade

THUNDERBIRD MINERAL SANDS



- Total Mineral Resource **2.62Bt @ 6.5% HM** (Measured, Indicated & Inferred)[1]
- Includes coherent high grade component of **740Mt @ 12.1% HM** (Measured, Indicated & Inferred)[2]

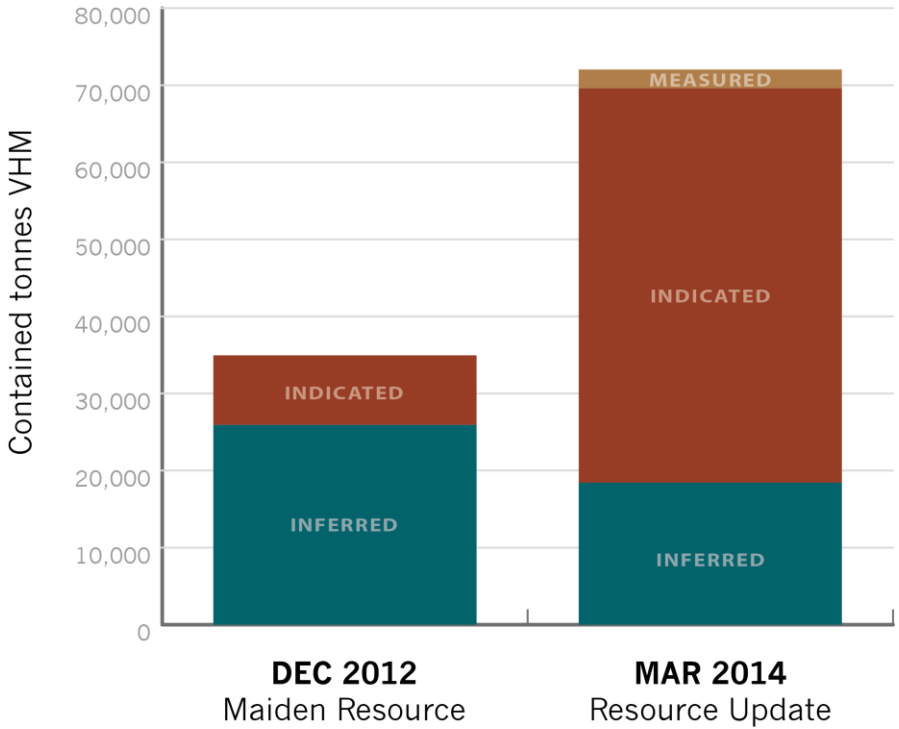
1 At 3% HM cut-off. Refer to Appendices 6 & 7.
2 At 7.5% HM cut-off. Refer to Appendices 6 & 7.

Large Scale, High Grade

THUNDERBIRD MINERAL SANDS

IMPROVED CONFIDENCE

- 529% increase in Total Mineral Resource tonnage in Measured and Indicated categories[1]



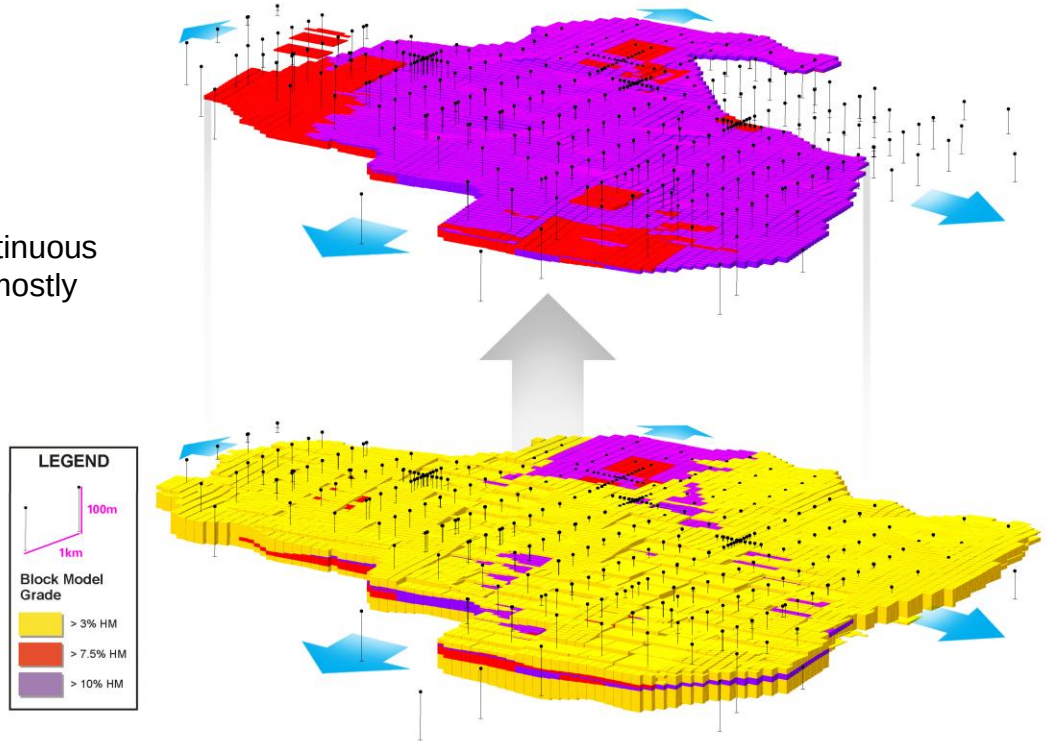
1. Refer to Appendices 6 & 7

Large Scale, High Grade

THUNDERBIRD MINERAL SANDS

CONTINUITY OF HIGH GRADE ZONE

- Key to Thunderbird is the continuous high grade zone >7.5% HM (mostly >10% HM)
- This zone occurs at or near surface in the northeastern section of the deposit
- Prime target for early development



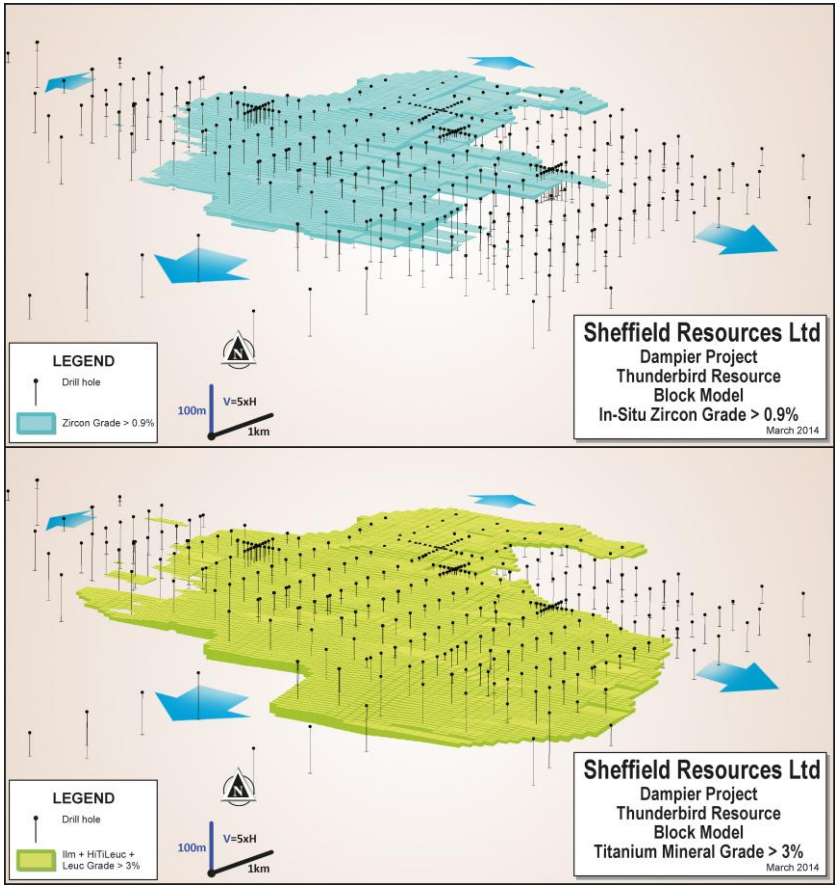
Large Scale, High Grade

THUNDERBIRD MINERAL SANDS

HIGH GRADE IN SITU ZIRCON AND TITANIUM

The in situ zircon and titanium mineral grades are amongst the highest in the world for deposits greater than 100Mt in size

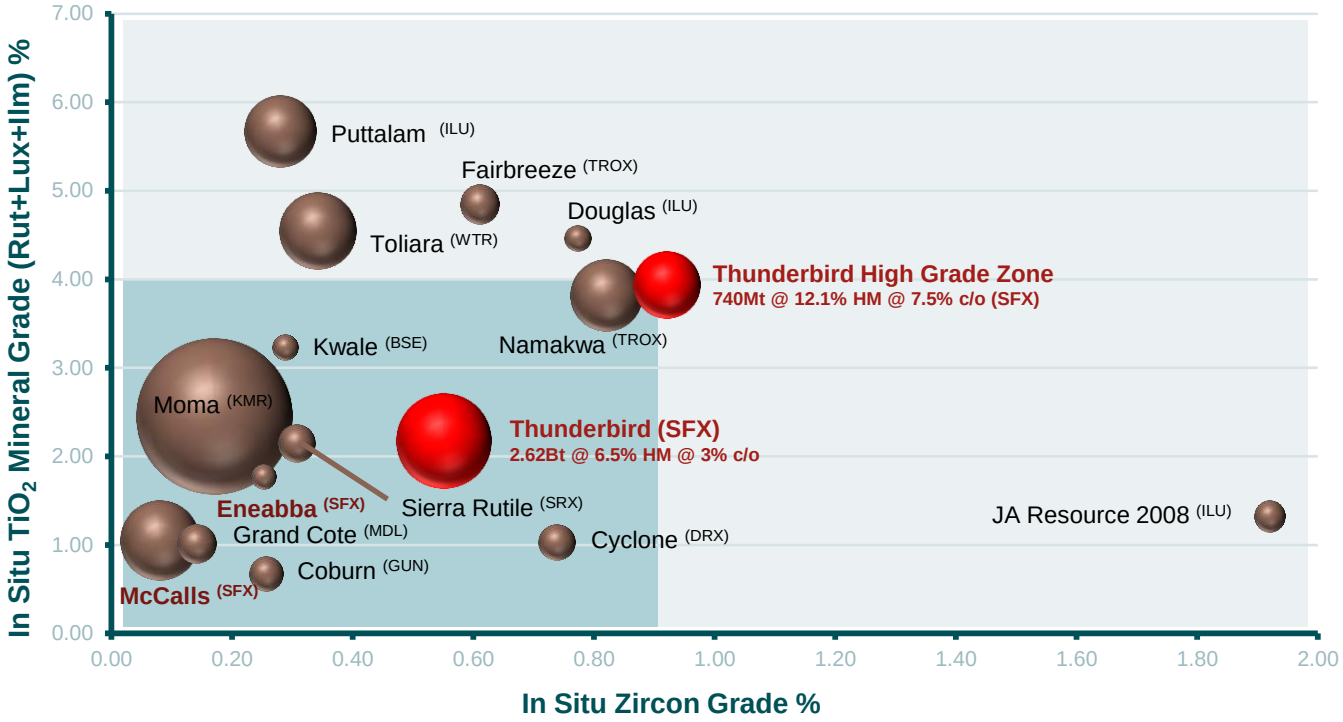
- High in-situ VHM grades[1]:
- 0.92% zircon
- 0.29% HiTi leucoxene
- 0.25% leucoxene
- 3.4% ilmenite
- Combined titanium mineral in situ grade = 3.94%



1 At 7.5% HM cut-off. Refer to Appendices 6 & 7.

World Class

THUNDERBIRD MINERAL SANDS



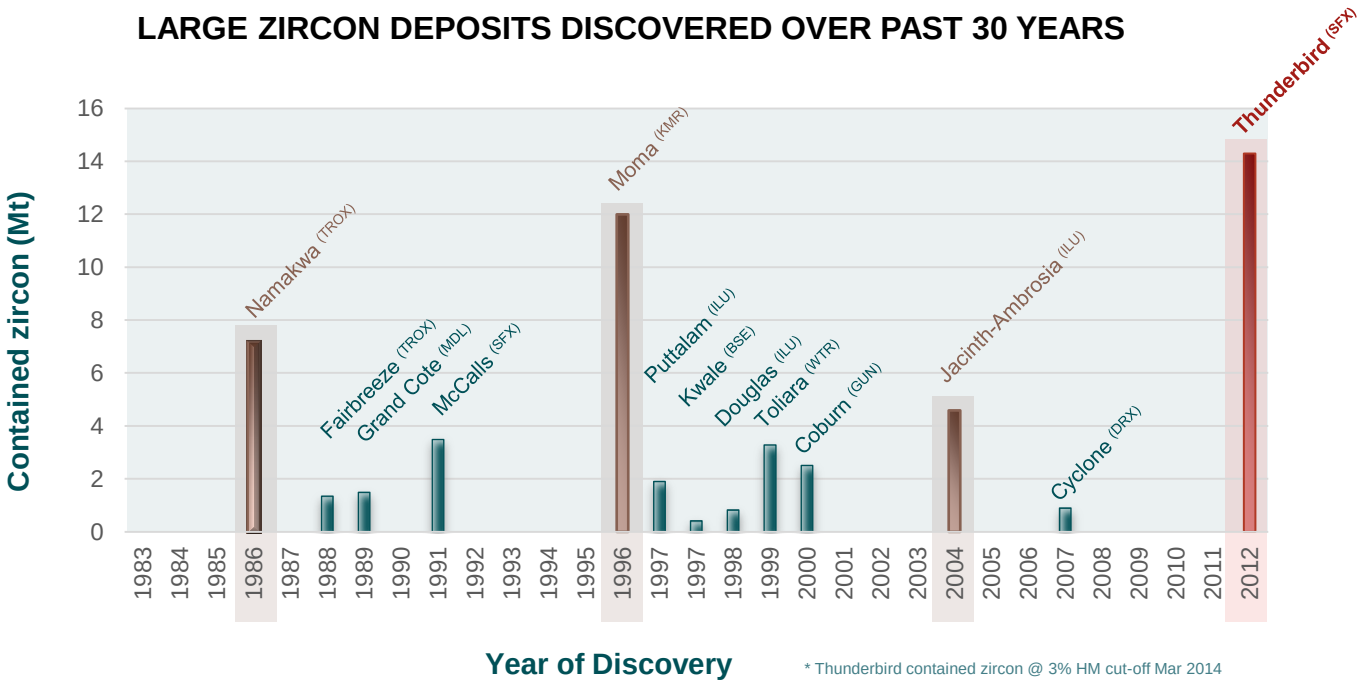
Amongst the world's largest and highest grade deposits

Only deposits greater than 100Mt are shown.
Bubble size proportional to contained VHM tonnes.

Data compiled by SFX from open file sources.
Rio Tinto's deposits excluded (unable to be sourced).

World Class

THUNDERBIRD MINERAL SANDS



* Thunderbird contained zircon @ 3% HM cut-off Mar 2014

Most significant discovery in decades: Grade and Scale

Metallurgy

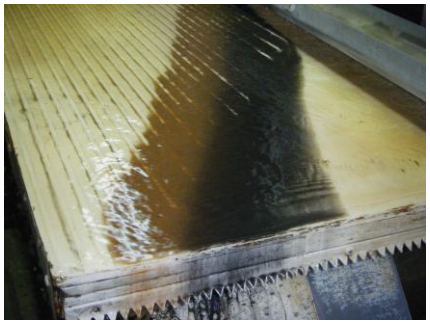
THUNDERBIRD MINERAL SANDS

CONVENTIONAL PROCESSING

- 6 tonne bulk sample from 2012 drilling processed at RJ Robbins Laboratory
- Mineralisation responds well to conventional processing techniques
- Slimes have low clay content – requiring low flocculant dosages
- Processing flowsheet designed for Scoping Study
- 30 tonne bulk sample collected from 2013 drilling for further process refinement during PFS

Part of 30 tonne Thunderbird bulk sample from 2013 drilling campaign

6 tonne sample processed at RJ Robbins laboratory, Brisbane

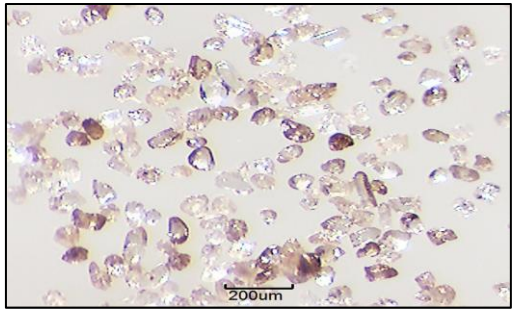


Premium Products

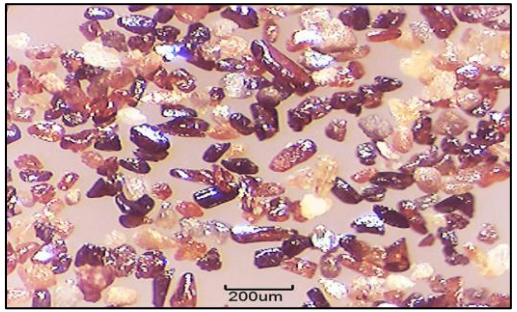
THUNDERBIRD MINERAL SANDS

HIGHLY MARKETABLE PRODUCTS

- Assessed by TZMI
- Premium grade zircon suitable for ceramics (largest sector of zircon market)
- Primary ilmenite suitable for sulphate pigment process or sulphate or chloride slag (broad customer base)
- Primary ilmenite has low Cr_2O_3 and low alkalis – ideal blending feed
- Secondary ilmenite, HiTi & rutile products suitable for welding rod market

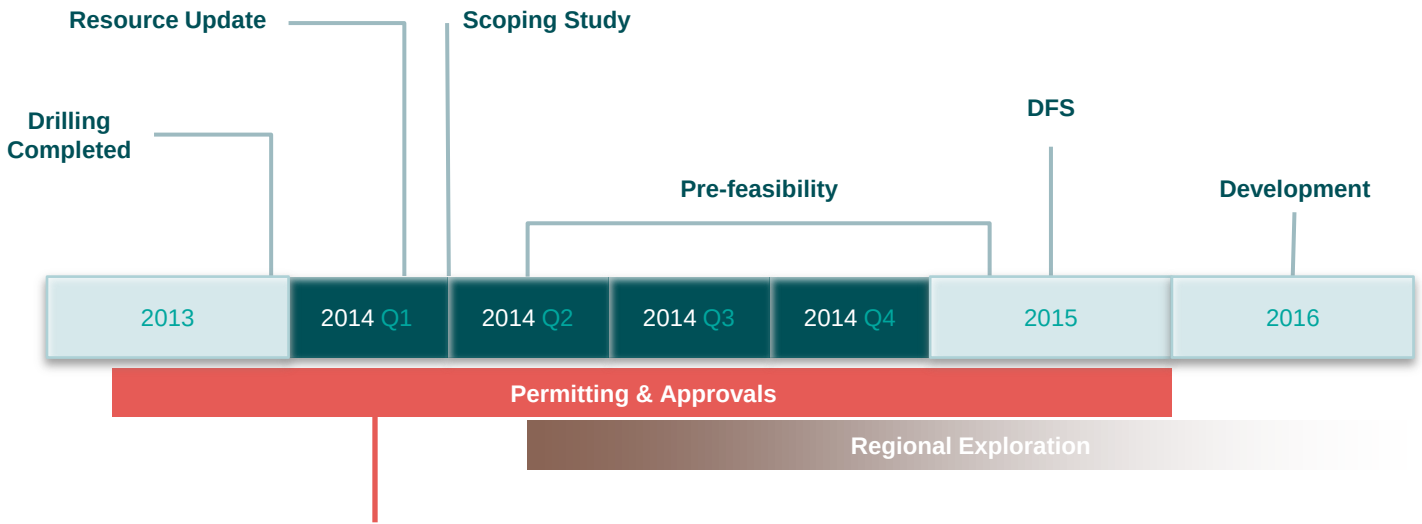


Thunderbird Zircon



Thunderbird Rutile

Dampier Timeline



ENVIRONMENTAL STUDIES WELL ADVANCED

- Level 2 Flora and Fauna surveys nearing completion
- Site groundwater studies to be undertaken during PFS 2014

Large Scale

High Grade

Premium Product

Conclusion:
A World Class HMS deposit

- Once in a decade discovery: grade and scale
- High quality zircon & ilmenite
- Highly marketable product suite
- Scoping study results imminent
- Moving to PFS in 2014

For further information please contact:

Sheffield Resources Ltd
Level 1, 57 Havelock Street
West Perth WA 6005
Ph +61 (8) 6424 8440
info@sheffieldresources.com.au

Sheffield Resources LIMITED

Appendices

Appendix 1: Project Locations

PROJECTS (ALL 100% SFX)

Dampier - HMS
Flagship - Thunderbird Total Resource
2.62Bt @ 6.5% HM (170Mt HM)[1]
including 740Mt @ 12.1% HM

North Pilbara Iron
High grade DSO target

Eneabba - HMS
Strategic resource base

McCalls HMS
Very large chloride
ilmenite deposit

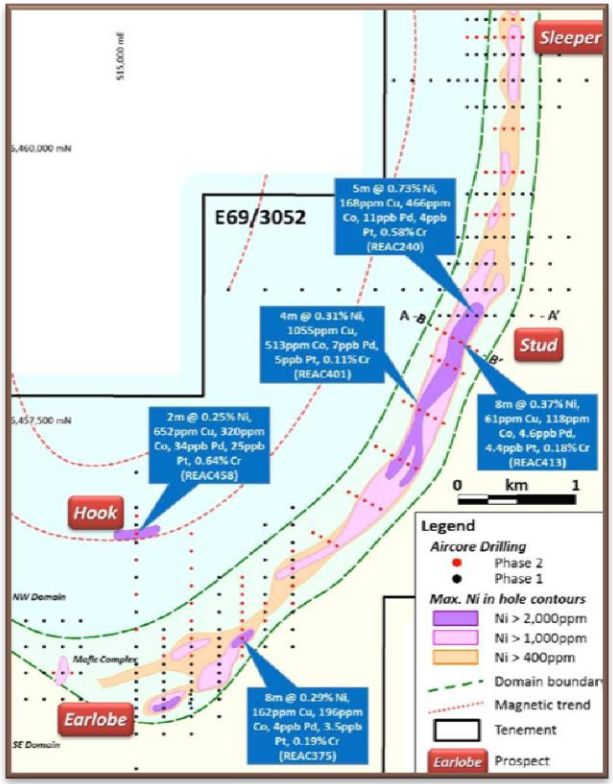
Red Bull
Ni-Cu targets in Fraser Range

[1] Refer to Appendices 2 & 3

Appendix 1: Other Projects

RED BULL (Ni-Cu)

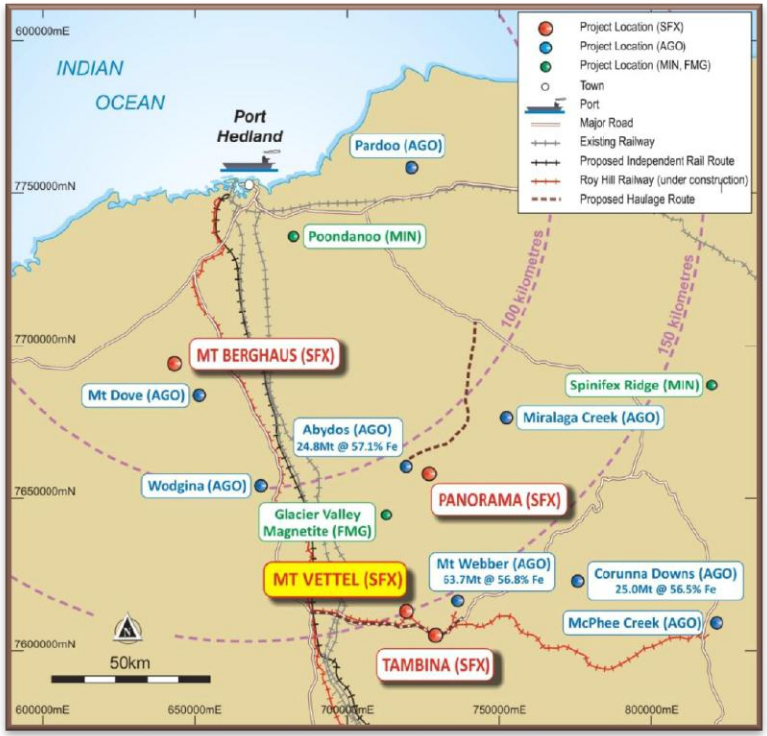
- Within 20km of Sirius Resources Nova discovery in Fraser Range Nickel Province
- Phase 2 AC Drilling outlined more large Ni-Cu-Co anomalies
- Stud anomaly strike length 1.8km at 0.2% Ni cut-off, best 5m @ 0.73% Ni
- New Ni-Cu-Co (PGE, Cr) anomaly identified at Hook prospect
- Program of works in Q2 2014 prior to deeper drilling of targets:
  - Next phase AC
  - Ground geophysical surveys
- Additional 11 license applications lodged in Fraser Range



Appendix 2: Other Projects

NORTH PILBARA (IRON)

- Targeting DSO on 4 granted exploration licenses in North Pilbara
- Tenements strategically located
- High-grade outcropping iron mineralisation identified at Panorama and Mt Vettel
- Mt Vettel high-grade DSO target:
  - Average 61.2% Fe from 37 samples
  - Very low contaminant levels
- Maiden drilling programme scheduled for Q2 2014

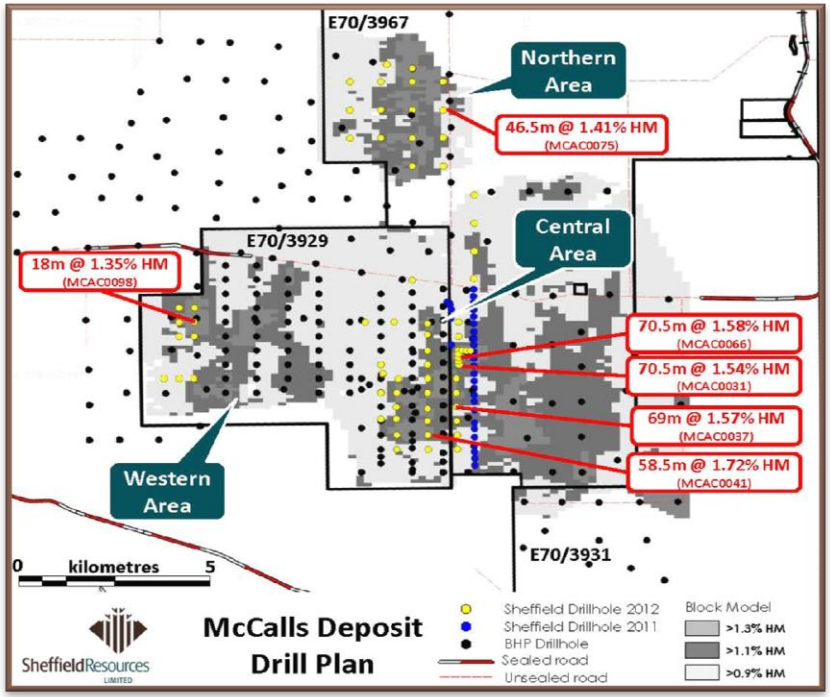


1 Refer to Appendices 6 & 7.

Appendix 3: Other Projects

MCCALLS (MINERAL SANDS)

- Global scale chloride ilmenite deposit
- Mineral Resource 4.4Bt @ 1.2% HM (53Mt HM)[1]
- Mineral assemblage includes: 80.8% ilmenite at 66% TiO_2
- Evaluating as a potential dredge project
- 2012 drilling results highlight central area as having higher grade, lower slimes and greater thickness
- Awaiting new QEMSCAN mineral assemblage results
- Resource update scheduled mid-2014

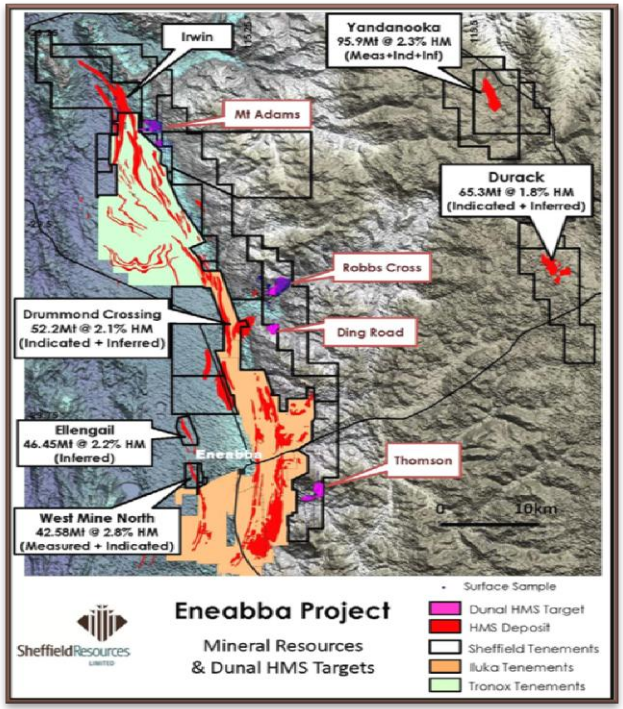


1 Refer to Appendices 6 & 7.

Appendix 4: Other Projects

ENEABBA (MINERAL SANDS)

- Total Mineral Resources: 302Mt @ 2.2% HM (6.76Mt HM)[1]
- Comprising 5 deposits, each with over 1Mt contained HM
- Established mining district
- Adjacent to Tronox's Dongara project
- Considerable exploration upside – 4 new dunal HM targets
- Dunal deposits have minimal overburden and have a high value assemblage (e.g. Drummond Crossing 14% zircon, 10% rutile)



1 Refer to Appendices 6 & 7.

Appendix 6: Resource Inventory

SHEFFIELD'S CONTAINED VALUABLE HM (VHM)*
RESOURCE INVENTORY AT 19 MARCH 2014

Deposit	Resource Category	Zircon ('000t)	Rutile ('000t)	HiTi Leuc. ('000t)	Leuc. ('000t)	Ilmenite ('000t)	Total VHM ('000t)
Thunderbird	Measured	510	-	150	140	1,660	**2,450**
Thunderbird	Indicated	10,170	-	3,350	3,550	34,110	**51,170**
Thunderbird	Inferred	3,600	-	1,230	1,470	12,110	**18,420**
Yandanooka	Measured	13	2	-	3	87	**105**
Yandanooka	Indicated	240	81	-	83	1,440	**1,840**
Yandanooka	Inferred	4	1	-	2	23	**29**
Durack	Indicated	144	29	-	52	703	**928**
Durack	Inferred	26	5	-	13	121	**164**
Drummond Crossing	Indicated	143	101	-	37	542	**823**
Drummond Crossing	Inferred	7	5	-	1	28	**41**
Ellengail	Inferred	92	90	-	19	658	**859**
West Mine North	Measured	18	33	-	42	200	**293**
West Mine North	Indicated	71	87	-	46	506	**709**
McCalls	Inferred	3,490	1,060	-	2,580	42,910	**50,040**
Total	Measured	540	35	150	180	1950	**2,850**
Total	Indicated	10,770	300	3,350	3,760	37,300	**55,470**
Total	Inferred	7,220	1,160	1,230	4,080	55,850	**69,550**
Total	**All**	**18,530**	**1,500**	**4,730**	**8,020**	**95,100**	**127,870**

All tonnages have been rounded to reflect the relative uncertainty of the estimate, thus sum of columns may not equal. The contained VHM tonnages in the above table are derived from Mineral Resource Estimates for the Yandanooka, Ellengail , West Mine North, McCalls, Durack deposits (estimated using a 0.9% HM cut-off), the Drummond Crossing deposit (estimated using a 1.1% HM cut-off) and the Thunderbird deposit (estimated using a 3% HM cut-off) detailed in Appendix 7. * Valuable Heavy Minerals are classified as zircon, rutile, HiTi leucoxene, leucoxene and ilmenite. See the compliance statements at the beginning of this presentation for important information relating to the reporting of these Mineral Resources.

Appendix 7: HMS Mineral Resource[1]

INVENTORY 19 MARCH 2014

Project	Deposit	Resource Category	Cut-off (% HM)[3]	Material (Mt)*	Bulk Density	HM %	Slimes %[3]	Osize %	In-situ HM (Mt)*	Zircon[2] %	Rutile[2] %	HiTi Leuc. %[2]	Leuc.[2] %	Ilmenite[2] %
DAMPIER	Thunderbird	Measured	3.0	75	2.1	7.5	19	11	6	9.1	-	2.7	2.4	30
	Thunderbird	Indicated	3.0	1805	2.1	6.8	17	9	122	8.3	-	2.7	2.9	28
	Thunderbird	Inferred	3.0	740	2.0	5.7	15	9	42	8.5	-	2.9	3.5	29
	Total Dampier	**Total**	**3.0**	**2,620**	**2.1**	**6.5**	**17**	**9**	**170**	**8.4**	**-**	**2.8**	**3.0**	**28**
ENEABBA	Yandanooka	Measured	0.9	3	2.0	4.1	15	14	0.1	11	1.9	-	2.2	72
	Yandanooka	Indicated	0.9	90	2.0	2.3	16	15	2.1	11	3.9	-	3.9	69
	Yandanooka	Inferred	0.9	3	2.0	1.2	18	21	0.03	11	3.9	-	4.6	68
	Yandanooka	Total	0.9	96	2.0	2.3	16	15	2.2	11	3.8	-	3.9	69
	Durack	Indicated	0.9	50	2.0	2.0	15	21	1.0	14	2.8	-	5.1	69
	Durack	Inferred	0.9	15	1.9	1.2	14	17	0.2	14	2.5	-	7.2	66
	Durack	Total	0.9	65	2.0	1.8	15	20	1.2	14	2.8	-	5.6	68
	Drummond Crossing	Indicated	1.1	49	2.0	2.1	16	9	1.0	14	10	-	3.6	53
	Drummond Crossing	Inferred	1.1	3	2.0	1.5	16	8	0.05	13	10	-	2.8	53
	Drummond Crossing	Total	1.1	52	2.0	2.1	16	9	1.1	14	10	-	3.5	53
	Ellengail	Inferred	0.9	46	2.0	2.2	16	2	1.0	8.9	8.7	-	1.9	64
	Ellengail	Total	0.9	46	2.0	2.2	16	2	1.0	8.9	8.7	-	1.9	64
	West Mine North	Measured	0.9	6	2.0	5.6	15	1	0.4	4.9	9.1	-	12	55
	West Mine North	Indicated	0.9	36	1.9	2.3	13	3	0.8	8.4	10	-	5.4	60
	West Mine North	Total	0.9	43	1.9	2.8	13	3	1.2	7.9	10	-	6.4	59
	Total	Measured	Var.	9	2.0	5.2	15	5	0.5	6.7	6.8	-	8.7	60
	Total	Indicated	Var.	225	2.0	2.2	15	13	5.0	12	6.0	-	4.4	64
	Total	Inferred	Var.	68	2.0	1.9	15	6	1.3	10	7.2	-	3.2	64
	Total Eneabba	**All**	**Var.**	**302**	**2.0**	**2.2**	**15**	**11**	**6.8**	**12**	**6.3**	**-**	**4.2**	**64**
MCCALLS	McCalls	Inferred	0.9	4,431	2.3	1.2	27	1.4	53	6.6	2.0	-	4.9	81
	Total McCalls	**All**	**0.9**	**4,431**	**2.3**	**1.2**	**27**	**1.4**	**53**	**6.6**	**2.0**	**-**	**4.9**	**81**

* All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate and maintain consistency throughout the table, thus sum of columns may not equal. 1 See the compliance statements at the beginning of this presentation for important information relating to the reporting of these Mineral Resources. 2 The Mineral Assemblage is represented as the percentage of the Heavy Mineral (HM) component of the deposit, determined by QEMSCAN for Eneabba & McCalls, with TiO2 minerals defined according to the following ranges: Rutile >95% TiO2; Leucoxene 85-95% TiO2; Ilmenite <55-85% TiO2; for Dampier the mineral assemblage was determined by screening and magnetic separation. Magnetic fractions were analysed by QEMSCAN for mineral determination as follows: Ilmenite: 40-70% TiO2 >90% Liberation; Leucoxene: 70-94% TiO2 >90% Liberation; High Titanium Leucoxene (HiTi Leucoxene): >94% TiO2 >90% Liberation; and Zircon: 66.7% ZrO2+HfO2 >90% Liberation. Non-magnetic fractions were submitted for XRF analysis and minerals determined as follows: Zircon: ZrO2+HfO2/0.667 and High Titanium Leucoxene (HiTi Leucoxene): TiO2/0.94. 3 West Mine North, Drummond Crossing, Durack and McCalls deposits are reported below 35% slimes cut-off.

Appendix 8: Thunderbird

PRODUCT SPECIFICATIONS

PRIMARY ZIRCON SPECIFICATIONS

ZrO_2 %	Fe_2O_3 %	TiO_2%	Al_2O_3%	P_2O_5%
66.2	0.05	0.09	0.10	0.14

PRIMARY ILMENITE SPECIFICATIONS

TiO_2 %	FeO %	Fe_2O_3 %	SiO_2 %	Al_2O_3%	Cr_2O_3 %	ZrO_2 %
50.1	8.0	36.4	1.6	0.3	0.05	0.00