



SFX

Thunderbird A New Tier 1 Mineral Sands Project

Long Life High Margin Premium Product Tier 1

DIGGERS & DEALERS 4 AUGUST 2014

Disclaimer

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
"SCOPING STUDY HIGHLIGHTS THUNDERBIRD'S EXCEPTIONAL FINANCIAL RETURNS", 14 April 2014
"LARGE BEDROCK CONDUCTOR IDENTIFIED AT RED BULL Ni-Cu PROJECT, FRASER RANGE", 7 July 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 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", "potential", "could" "nominal" "conceptual" and similar expressions. Forward looking statements, opinions and estimates included in this announcement 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.

SCOPING STUDY

The Scoping Study referred to in this report is based on low-level technical and economic assessments, and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised

The Company believes it has a reasonable basis for making the forward looking statements in this report, including with respect to any production targets, based on the information contained in the announcement "SCOPING STUDY HIGHLIGHTS THUNDERBIRD'S EXCEPTIONAL FINANCIAL RETURNS", dated 14 April 2014, and with respect to the Mineral Resource for Thunderbird as at 19 March 2014, independently compiled by QG Pty Ltd, together with independent metallurgical, processing design, engineering, mining and marketing studies, product quality assessment, external commodity price and exchange rate forecasts and global operating cost data. The Company confirms that all the material assumptions underpinning the Thunderbird production target or forecast financial information derived from the production target which first appeared in the announcement "SCOPING STUDY HIGHLIGHTS THUNDERBIRD'S EXCEPTIONAL FINANCIAL RETURNS", dated 14 April 2014, continue to apply and have not materially changed.

In this report the term "mining inventory" is used to report that part of the Mineral Resource that has been considered in the Scoping Study. The mining inventory does not meet the requirements of an Ore Reserve as defined under the 2012 edition of the JORC Code and should not be considered an Ore Reserve. There is no certainty that all or any part of the mining inventory will be converted into Ore Reserves.

Company Snapshot



Shareholder Split

Top 20 Shareholders **40%**

Directors **17.5%**

No industry major or offtake group on register

Capital Structure

Share price **\$0.89**

Shares on issue **133.8m**

Employee Options
(Ave. Ex Price 68c) **8.1m**

Market Cap (Undiluted) **\$119.1m**

Cash (30 June 2014) **\$10.9m**

Enterprise Value **\$108.2m**

Board & 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
- Completed Thunderbird Scoping Study demonstrating outstanding project economics
- 37 years of collective mineral sands experience

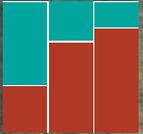


Key Messages

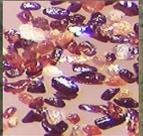
THUNDERBIRD MINERAL SANDS



Long Life



High Margin



Premium Product



Tier 1 Project

Strategic Location



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THUNDERBIRD MINERAL SANDS PROJECT

LOCATION

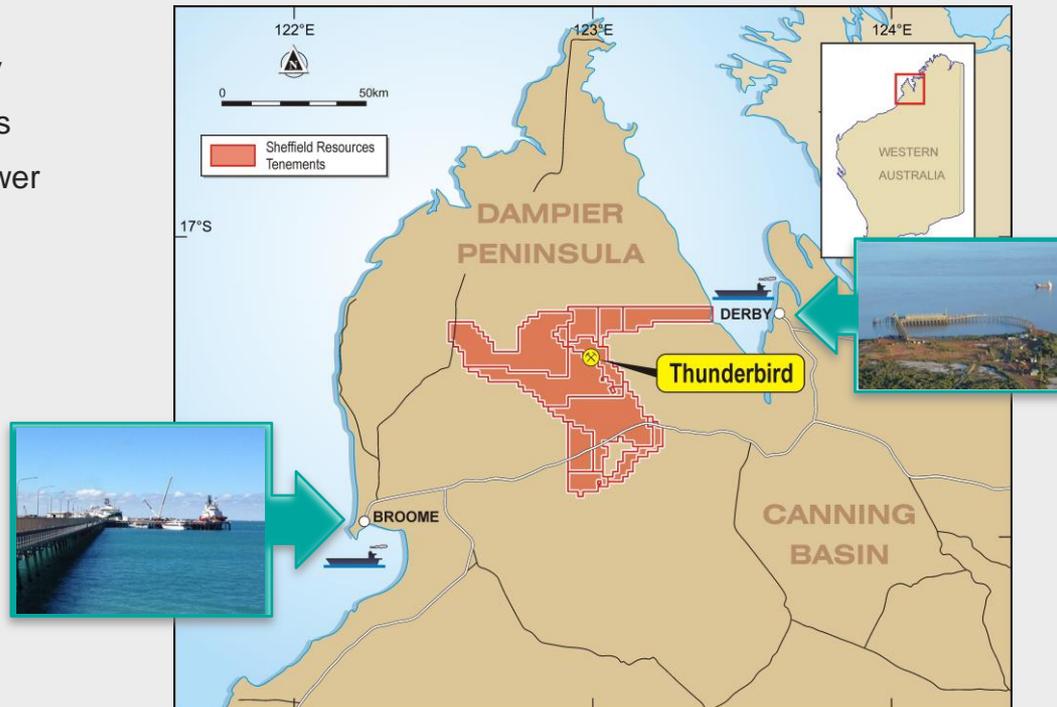
- 30km north of sealed Broome - Derby highway
- 140km by road to either Broome or Derby ports
- Gas discoveries nearby providing potential power source for project
- Close to Asian markets

CANNING BASIN

- Thunderbird first major HMS discovery in the province
- Sheffield holds over 2,500km²

WESTERN AUSTRALIA

- Stable jurisdiction
- Pool of skilled workers & expertise
- Established mineral sands industry



Large Scale, High Grade

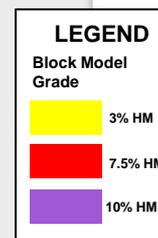
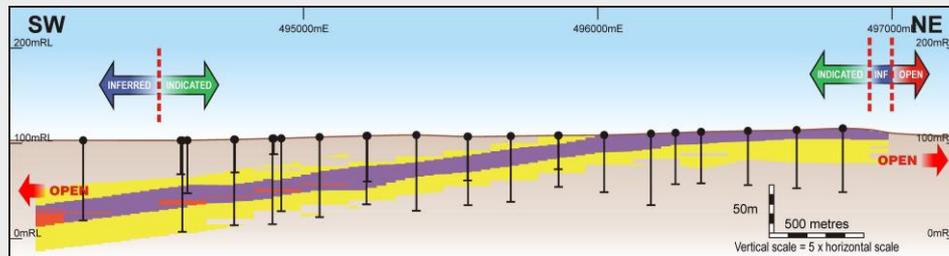
THUNDERBIRD MINERAL RESOURCE 19 MARCH 2014



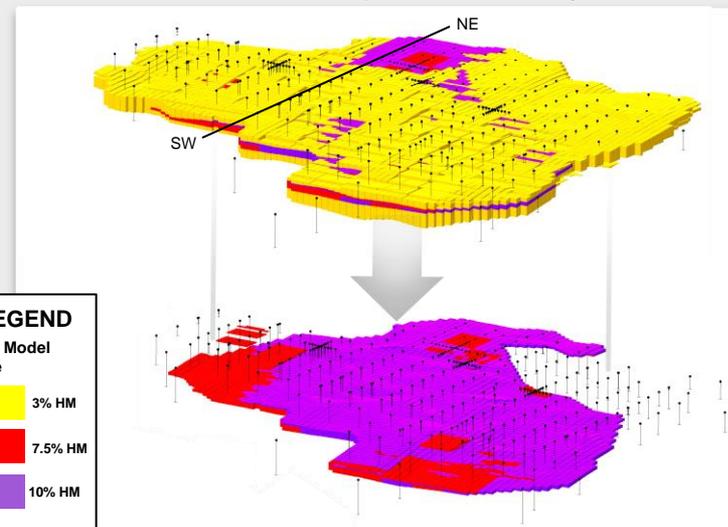
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	Mineral Resources ¹			Valuable HM Grade (in situ) ²			
Resource	Cut-off HM%	Material Mt	HM %	Zircon %	HiTi Leucoxene %	Leucoxene %	Ilmenite %
Total	3.0	2,620	6.5	0.55	0.18	0.20	1.8
Total	7.5	740	12.1	0.92	0.29	0.25	3.4

Refer to Appendices 1 & 2 for full Resources Tabulation



Total Resource
2.62Bt @ 6.5% HM (at 3%HM cut-off)



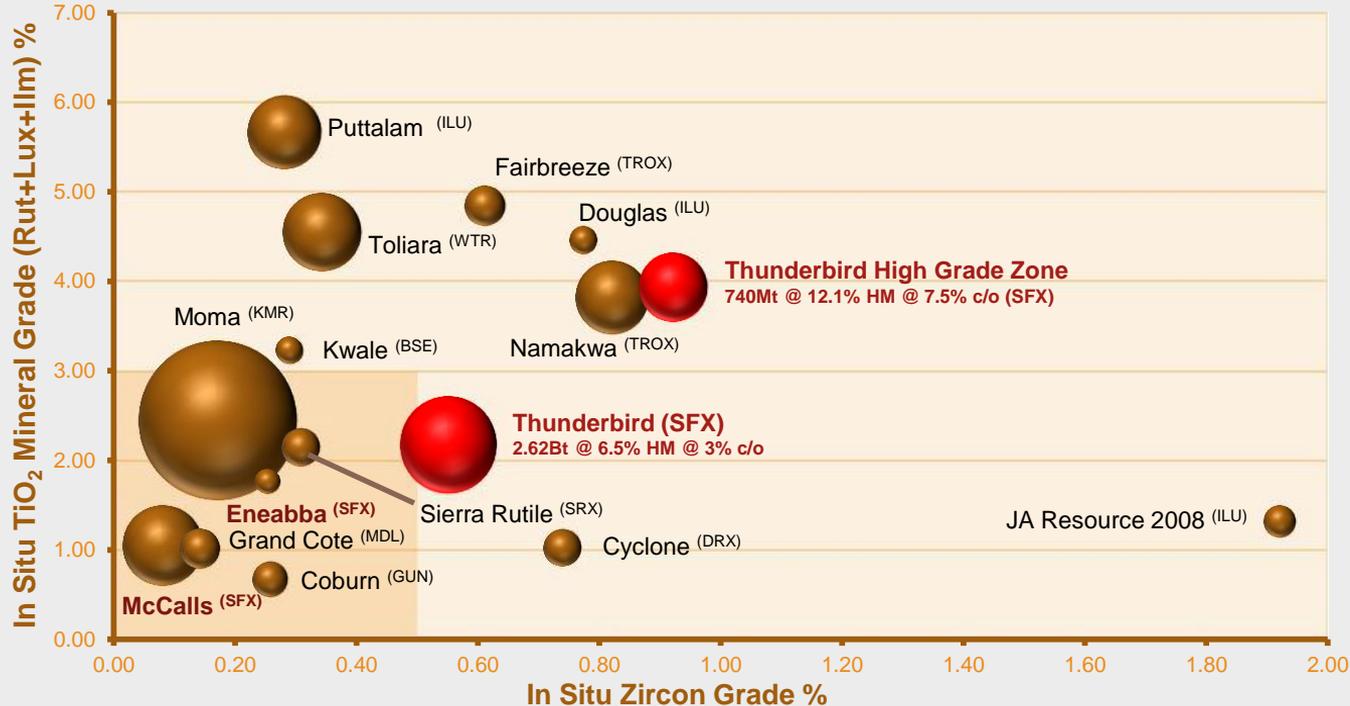
High Grade Zone
740Mt @ 12.1% HM (at 7.5%HM cut-off)

- Key to Thunderbird is continuous High Grade Zone
- This zone occurs at or near surface in the northern part of the deposit

1. Tonnes have been rounded to reflect the relative uncertainty of the estimate.
2. 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.

Tier 1 Project

THUNDERBIRD MINERAL SANDS



Amongst the world's largest and highest grade deposits

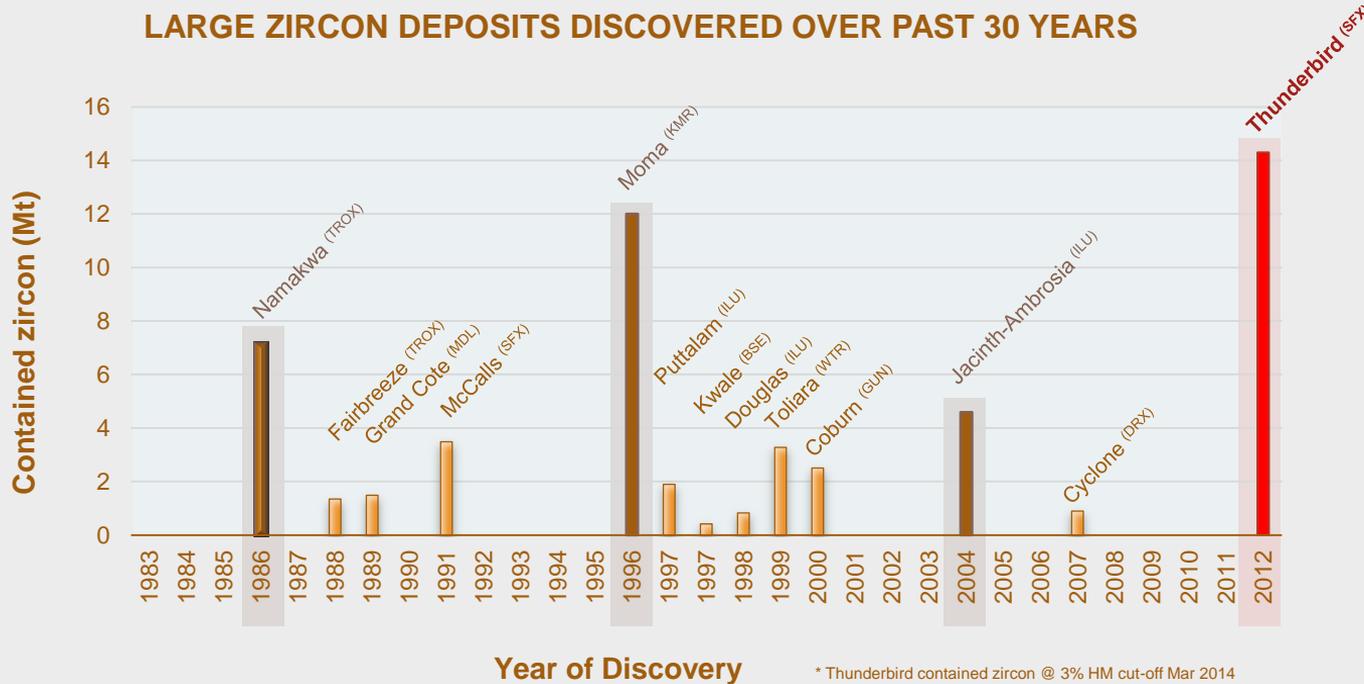
Only deposits greater than 100Mt are shown. Bubble size proportional to contained VHM tonnes

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

Tier 1 Project

THUNDERBIRD MINERAL SANDS

LARGE ZIRCON DEPOSITS DISCOVERED OVER PAST 30 YEARS



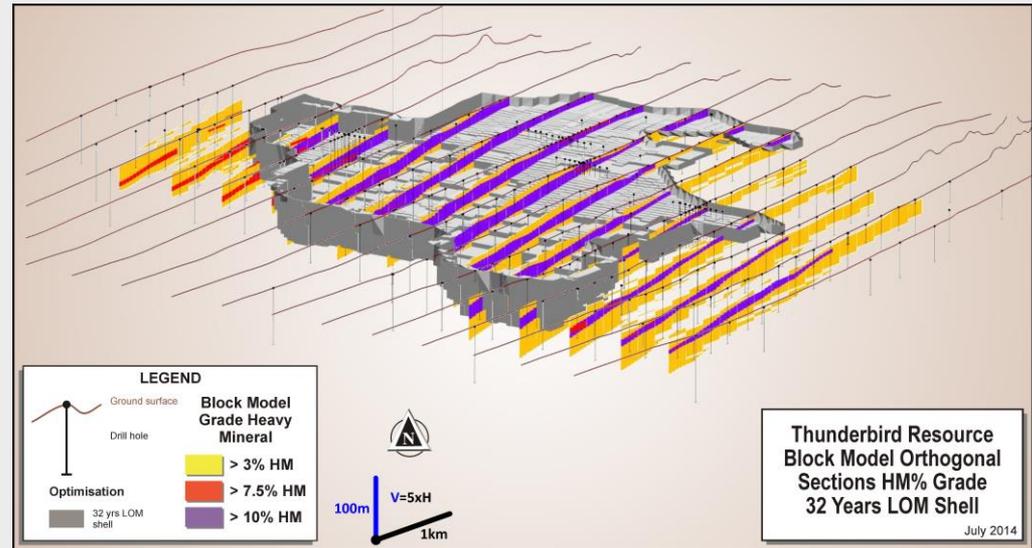
Most significant discovery in decades: Grade and Scale

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

Thunderbird Scoping Study

SCOPING STUDY COMPLETED APRIL 2014

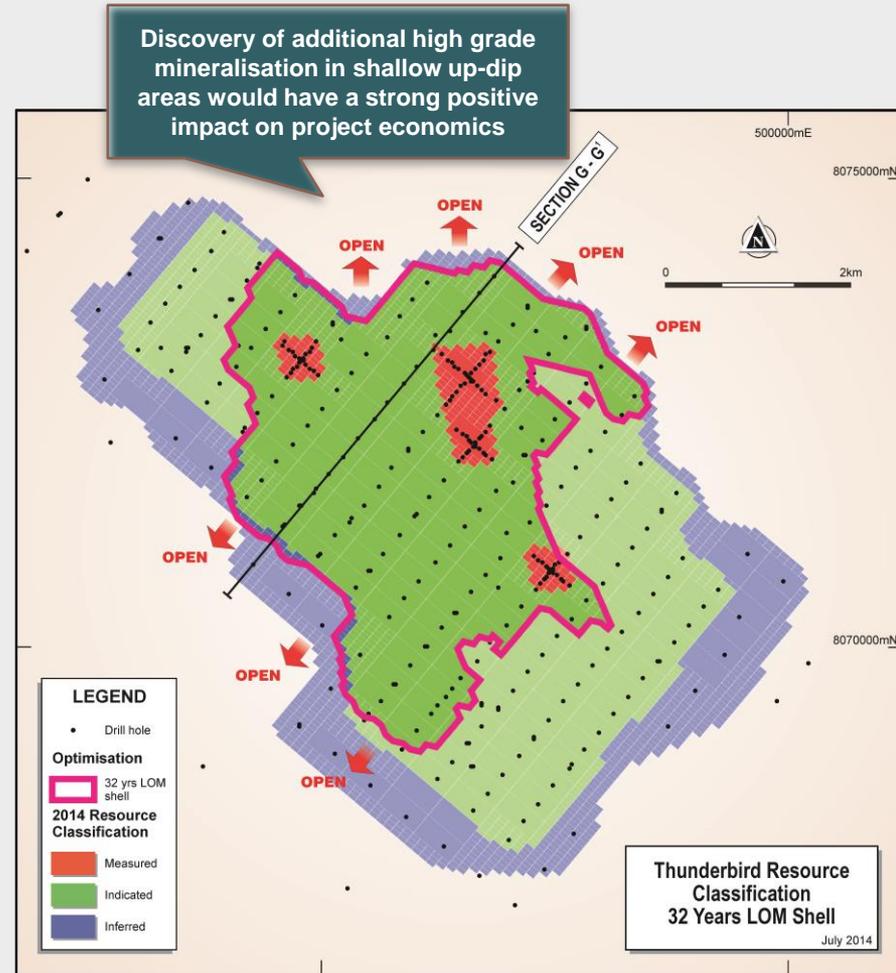
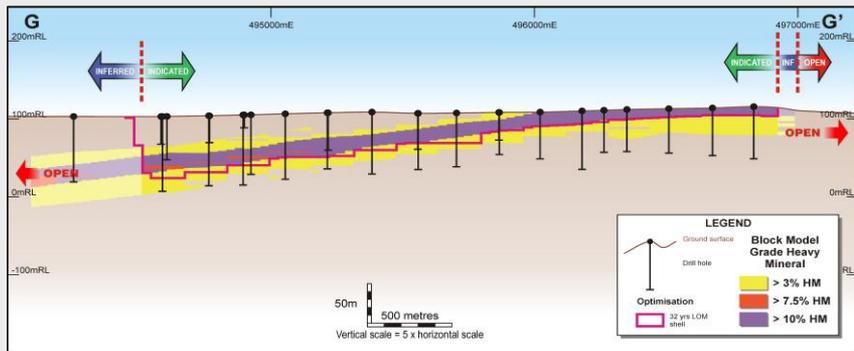
- Long initial mine life of 32 years
- Targeting ~ 8% of zircon and ~4% of ilmenite global production
- Highly marketable products
- Strong cash margins
- Modest Capex \$257m + \$37m contingency
- 2 year payback
- Targeting production commencement in 2017



Thunderbird Scoping Study

MINING INVENTORY

- Mining inventory of **669Mt @ 10.2% HM** (Measured & Indicated Resources only)
- In situ grades: **0.83% zircon**, 0.27% HiTi leucoxene, 0.26% leucoxene & **2.9% ilmenite**
- High grade Inferred Resources excluded from mining inventory
- Potential upside to be evaluated with drilling in Q3 2014



Thunderbird Resource Classification
32 Years LOM Shell
July 2014

Thunderbird Scoping Study



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MINING

- Dry mining at rate of 20.8mtpa (2,500tph) with dozers and scrapers
- 2 large mining unit plants
- High grades and very low strip ratio (particularly in first 10 years)
- Mining commences in shallow northeast sector of deposit
- Mining parameters to be optimised during Pre-feasibility



Typical Dry Mining Mineral Sands Operation (source: Piacentini & Sons)

Long Life

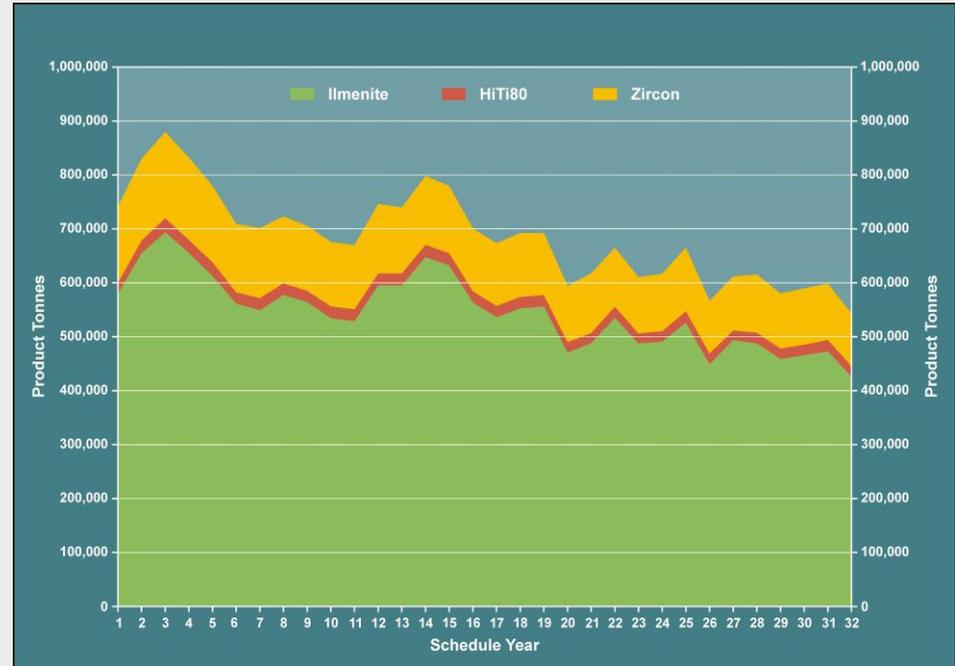


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THUNDERBIRD SCOPING STUDY PHYSICALS

- Average annual production following ramp-up to a 20.8 Mtpa mining rate is estimated to be:
 - 118,200tpa zircon (135,100tpa in first 10 years)
 - 545,000tpa ilmenite
 - 21,700tpa HiTi80
 - High grades and very low strip ratio in initial years

Average Mining Rate	mtpa	20.8
Mine Life	years	32
HMC Produced	ktpa	1,477
Production- Zircon	ktpa	118.2
Production- HiTi80	ktpa	21.7
Production- Ilmenite	ktpa	545
Strip Ratio (average LOM)	waste:ore	0.6:1
Strip Ratio (first 10 years)	waste:ore	0.2:1



Thunderbird Projected Saleable Product Physicals

Modest Capex

THUNDERBIRD SCOPING STUDY PRE-PRODUCTION CAPEX

Pre Production Capital Summary ¹	A\$M
Local site infrastructure	43.05
Mining Units	22.9
Wet Concentrator Plant	39.8
Concentrate Upgrade Plant	8.8
Mineral Separation Plant	47.6
Process Water System	22.9
Off-site Infrastructure	19.0
Labour Indirects	4.5
EPCM	37.8
Contingency (15%)	36.9
Other Costs	10.9
TOTAL	294.15

Estimated Life of Mine sustaining capital is \$158m
(average of \$4.9mpa)

¹ Excludes estimated cost of PFS (\$5m) and DFS (\$10m)



Mineral sand prior to processing

High Margin

THUNDERBIRD SCOPING STUDY FINANCIALS

LOM revenue	A\$m	10,010
Average Operating Cash Flow ¹ (first 10 yrs)	A\$m/pta	204
Average Operating Cash Flow ¹ (LOM)	A\$m/pta	156
EBITDA (first 10 years)	A\$m/pta	187
EBITDA	A\$m/pta	140
EBIT (first 10 years)	A\$m/pta	179
EBIT	A\$m/pta	126.4
EBIT Margin	A\$/tonne product	183
Unit Revenue (average LOM)	A\$/tonne product	457
Unit Cash Cost (exc. Royalties) (avge LOM)	A\$/tonne product	230
Royalties (average LOM)	A\$/tonne product	22.8
Pre-production Capex Payback	Years	2.0

- Long life, strong margin project
- \$140mpa EBITDA for 32 years
- Production scheduling delivers higher margins in first 10 years
- Modest Capex requirement, with short payback period of 2 years
- Revenue split: zircon 57%, ilmenite 36%, HiTi80 7%

KEY ASSUMPTIONS

A\$:US\$ Exchange rate		0.90
Zircon Price	US\$/tonne	1,475
Ilmenite Price	US\$/tonne	185
HiTi 80 leucogene Price	US\$/tonne	870

1 Excluding taxes, royalties, closure costs, sale of capital equipment.

Premium Products

THUNDERBIRD MINERAL SANDS

CONVENTIONAL PROCESSING

- Metallurgical testwork on two bulk samples totalling 11 tonnes confirms mineralisation responds well to conventional processing techniques
- Slimes have low clay content – requiring low flocculant dosages
- 30 tonne bulk sample collected for further process refinement during PFS

HIGHLY MARKETABLE PRODUCTS

- Potential products assessed by TZMI & Ruidow
- 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
- HiTi80 product suitable for welding rod market



Wet table work on Thunderbird bulk sample



6 tonne sample processed at RJ Robbins laboratory, Brisbane

Market Outlook

THUNDERBIRD MINERAL SANDS



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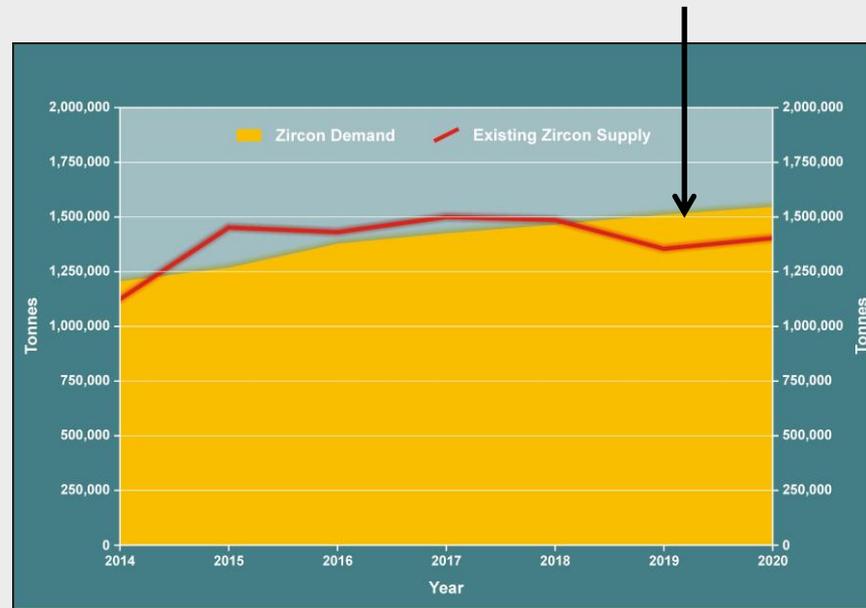
ZIRCON SUPPLY DEFECIT FROM 2018

- Forecast supply deficit from 2018
- “...few new credible high quality sources of supply...” – Iluka annual report 2013

IMPROVING TiO₂ FEEDSTOCK DEMAND

- “The additional demand growth (of TiO₂ feedstock) to 2030 is estimated to be approximately the scale of seven Richards Bay Minerals operations” – Rio Tinto (JP Morgan research note 24/6/2014)

DEMAND EXCEEDS SUPPLY

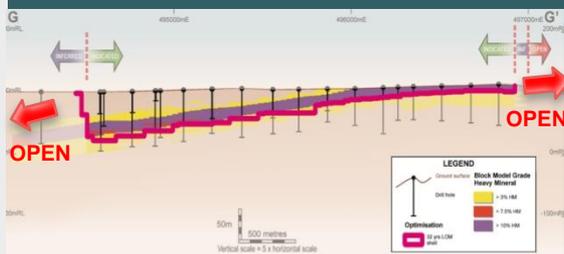


Source: Rio Tinto (JP Morgan Research Note 24 June 2014)

Key Focus

VALUE ENHANCEMENT OPPORTUNITIES IN 2014

1. Exploration upside



Discovery of additional shallow high grade mineralisation could significantly enhance project economics – high priority for drilling

2. Optimise mining schedule

Infill drilling of up-dip areas will enable optimisation of mine scheduling in early production years



3. Enhancement of recoveries & process design



Further metallurgical testwork on 30t of bulk sample will target enhancement of recoveries and process design

4. Incremental step changes in mining rate

5. Leasing of mining units, mobile plant and equipment

6. Using locally sourced gas for power generation

7. Production of an ilmenite product and a non-magnetic concentrate to simplify processing and lower Capex

8. Bucket wheel excavator/dredge mining

9. Regional Exploration – Finding the next Thunderbird!

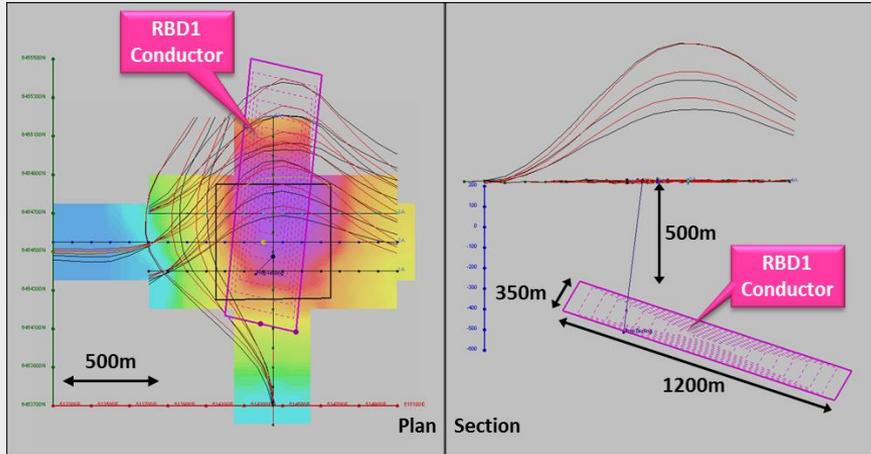
Red Bull Nickel-Copper



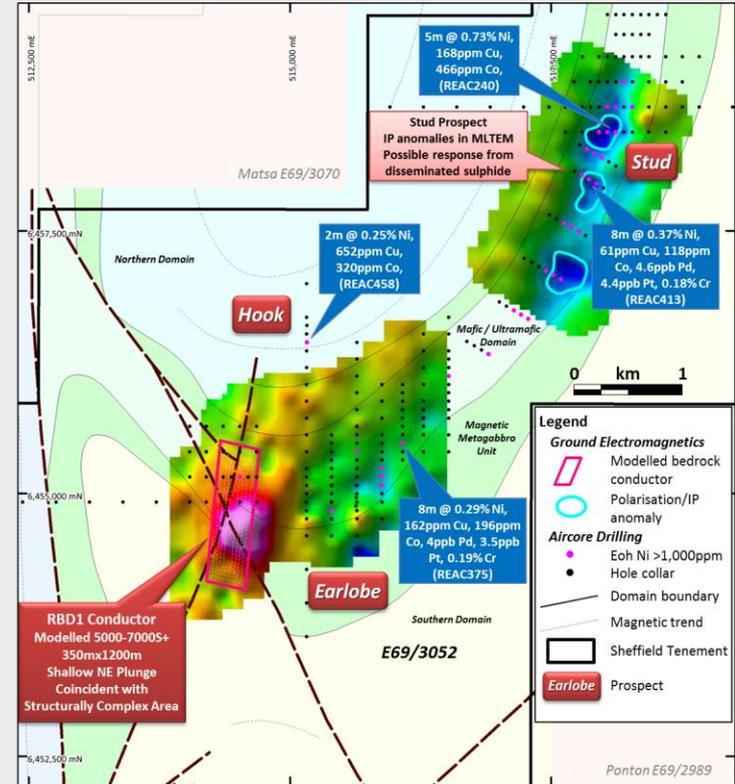
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LARGE CONDUCTOR TO BE DRILLED THIS MONTH

- Located ~20km south of Nova in the Fraser Range
- Large, strong conductor identified from Fixed Loop EM survey
- Similar size and conductance to main Nova conductor*
- Coincident with major faults and an ultramafic unit which is anomalous in Ni-Cu-Co



* Refer to Sirius Resources' (ASX:SIR) release of 18 April 2012

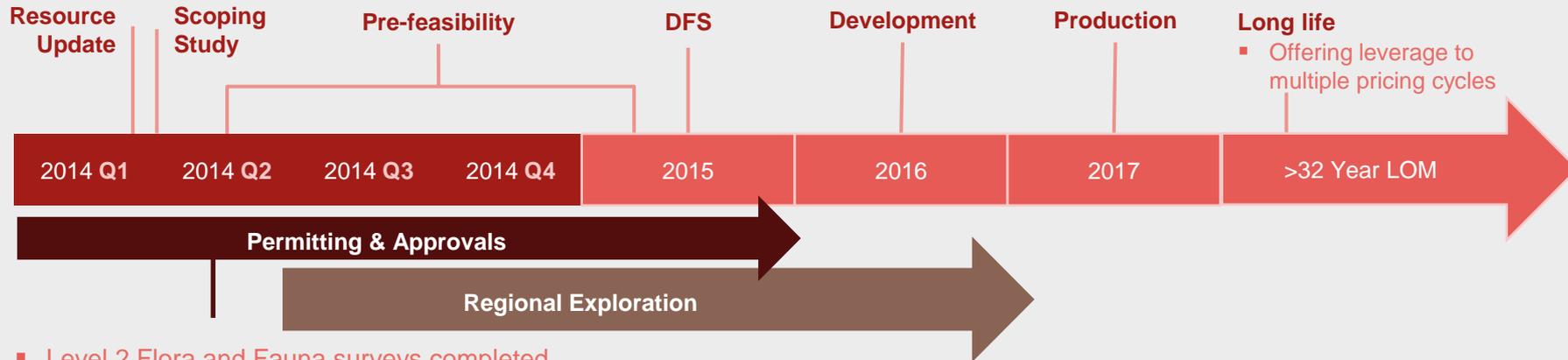




2014 To Be A Defining Year For Sheffield

Upcoming 2014 Milestones Will Drive Shareholder Value

- Drilling to target extensions of shallow, high grade mineralisation
- Resource Update Q4 2014
- Project Optimisation Q4 2014
- Regional Exploration - targeting another Thunderbird
- Mine Planning Studies
- Permitting & Approvals
- Drilling Red Bull Nickel conductor Q3 2014



- Level 2 Flora and Fauna surveys completed
- Site groundwater studies have commenced

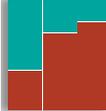
Conclusion

A New Tier 1 HMS Project

Long Life



High Margin



Premium Product



Tier 1 Project



Red Bull Nickel



- World class, large scale, long life project
- High estimated cash margins with leverage to multiple pricing cycles
- Modest estimated development capital with 2 year payback
- Globally significant projected production levels of zircon and ilmenite
- Highly marketable product suite
- Outstanding upside opportunities to be pursued during 2014
- Drilling Red Bull Conductor in coming weeks

Appendices



Appendix 1: 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	1,950	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 2.. * Valuable Heavy Minerals are classified as zircon, rutile, HiTi leucosene, leucosene and ilmenite. See the compliance statements at the beginning of this presentation for important information relating to the reporting of these Mineral Resources.

Appendix 2: HMS Mineral Resources¹

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 %
THUNDERBIRD	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 Thunderbird	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	55
	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
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 3: Thunderbird Product Specifications

PRIMARY ZIRCON SPECIFICATIONS

ZrO ₂ %	Fe ₂ O ₃ %	TiO ₂ %	Al ₂ O ₃ %	P ₂ O ₅ %
66.2	0.05	0.09	0.10	0.14

PRIMARY ILMENITE SPECIFICATIONS

TiO ₂ %	FeO %	Fe ₂ O ₃ %	SiO ₂ %	Al ₂ O ₃ %	Cr ₂ O ₃ %	ZrO ₂ %
50.1	8.0	36.4	1.6	0.3	0.05	0.00

HiTi80 SPECIFICATIONS

TiO ₂ %	Fe ₂ O ₃ %	SiO ₂ %	Al ₂ O ₃ %	Cr ₂ O ₃ %	ZrO ₂ %	MgO
84.4	9.2	2.6	0.7	0.08	0.6	<0.01