



SheffieldResources
LIMITED

ASX and Media Release

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HIGH GRADE DRILLING RESULTS FROM THUNDERBIRD

KEY POINTS

- Latest infill drilling results continue to return outstanding high grade intervals, e.g. **22.5m @ 13.3% HM** from 1.5m
- Results continue to demonstrate excellent continuity of high grade mineralisation
- Mineralisation remains open along strike and down dip
- 40% of Thunderbird assay results now received from 2013 drill programme
- Remaining assay results include samples from extensional drilling to the deposit – due in coming weeks

Mineral sands explorer Sheffield Resources (“Sheffield”) (ASX:SFX) today announced further high grade drill results from its world class Thunderbird heavy mineral sand (HMS) deposit near Derby in the Canning Basin region of Western Australia.

The second batch of assay results reported from the 2013 aircore drilling programme returned further thick, high grade intervals, confirming the excellent grade continuity of the deposit. The results relate to 77 infill drill holes (Figure 1) and include:

- **40.5m @ 9.30% HM** from 1.5m (THAC246), including **22.5m @ 13.3% HM** from 1.5m
- **55.5m @ 10.0% HM** from 30m (THAC344), including **49.5m @ 11.0% HM** from 30m
- **42m @ 8.61% HM** from 9.5m (THAC244), including **33m @ 10.2% HM** from 18.5m
- **36m @ 8.19% HM** from 15m (THAC242), including **24m @ 10.9% HM** from 16.5m
- **63m @ 7.41% HM** from 18m (THAC345), including **46.5m @ 8.96% HM** from 28.5m

(Refer to Table 1 for full details).

The results underscore the excellent continuity of both the mineralised sequence and the high grade zones (Figure 2).

The 2013 drilling programme at Dampier comprised 326 holes for a total of 21,747m at the Thunderbird and Argo prospects.

Managing Director, Bruce McQuitty said the geometry of the high grade zone at Thunderbird is emerging from these results.

“The infill drilling has outlined a coherent zone of mineralisation above 7.5% HM, which in current results is about 2.5km wide, 4km long and expected to grow as results are returned from the remaining drill holes.”

“Within this zone is a broad high grade lobe up to 39m thick, orientated in a north south direction. We are still awaiting results for many holes drilled within this interpreted channel.”

In addition, the assay results still to be received include samples from extensional drilling to the deposit. Following receipt of these assays in the coming weeks, the significance of this discovery will become clearer.”

“Once all results are received we will finalise the resource update, followed by a scoping study scheduled for Q1 2014.”

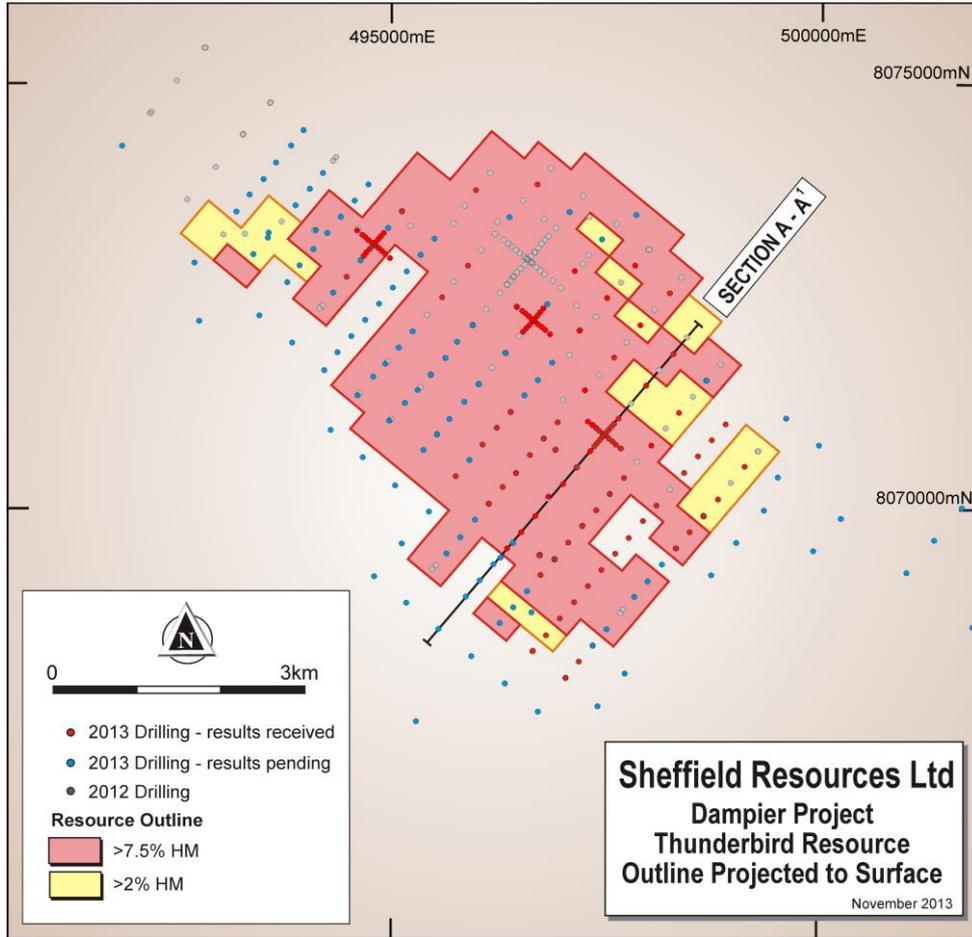


Figure 1: Thunderbird drill collar plan showing location of holes with results announced to date, and the current (Dec 2012) resource outline projected to surface

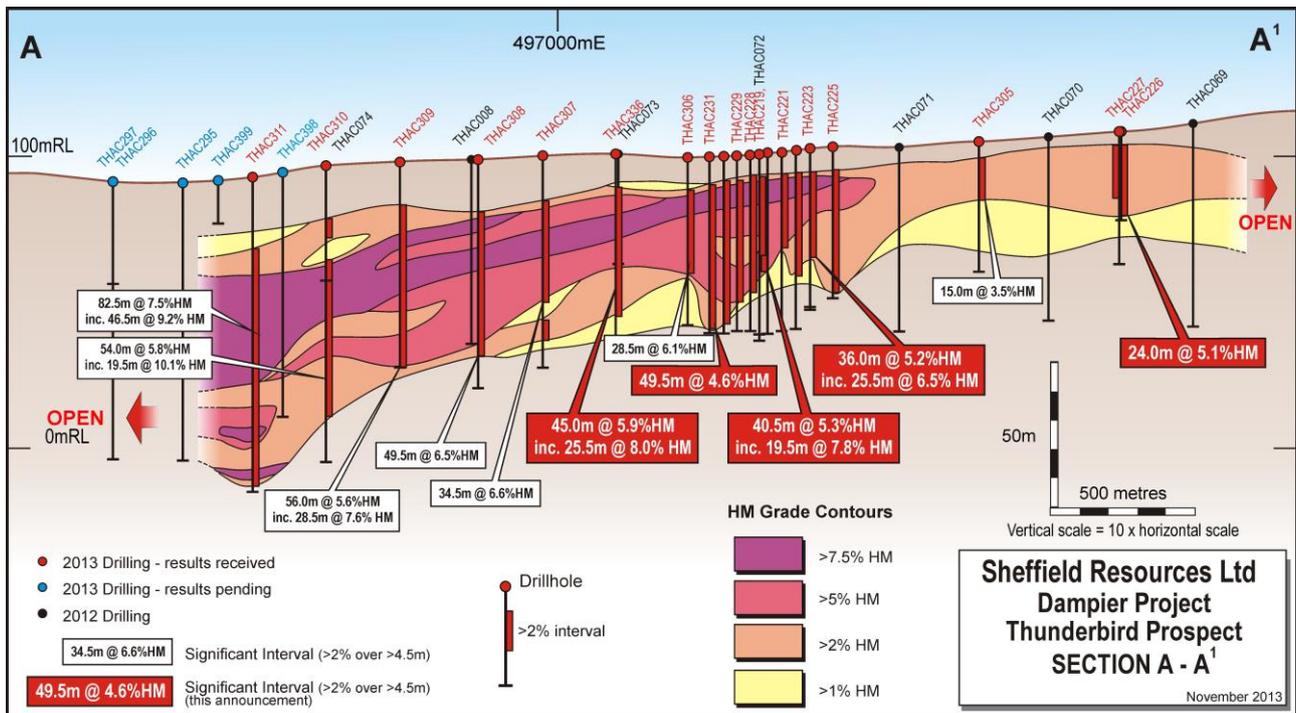


Figure 2: Section A-A', looking northwest showing the excellent continuity between holes of the mineralised envelope (>2% HM), and the higher grade zones (>5% and >7.5% HM)

2013 drilling programme

These results are the second batch of assays reported from the 2013 aircore drilling programme at Dampier. Results for approximately 40% of samples submitted from the 2013 drilling programme at Thunderbird have been received (see Sheffield's ASX release of 21 October 2013 for details of the first batch (approximately 20% of assays)). Results are also reported from drilling at the Argo prospect (see below).

About the Thunderbird Deposit

The Thunderbird deposit is located on crown land in the central part of the Dampier Peninsula, close to existing ports and sealed highways (Figure 3).

Thunderbird has Indicated and Inferred mineral resources totalling **1.37Bt @ 6.1% HM** for 83Mt of contained HM (at 2% HM cut-off), including 5.7Mt of zircon, 1.3Mt of rutile, 3.6Mt of leucoxene and 24Mt of ilmenite (Appendix 1).

The resource includes a coherent high grade core of **517Mt @ 10.1% HM** (Indicated and Inferred), containing 3.6Mt of zircon, 0.8Mt of rutile, 2.2Mt of leucoxene and 15.2Mt of ilmenite (at 7.5% HM cut-off).

This zone, which averages 20m thickness, is the focus of initial development studies.

The deposit has favourable geometry, occurring as a thick, shallowly-dipping sheet 4km x 5km in area, extending from surface and open in most directions. Due to the shallow dip of the deposit, approximately 40% of the total resource area has less than 3m of overburden.

Metallurgical testwork confirms Thunderbird will generate high quality marketable products using conventional processing technology (see ASX release of 25 March 2013). Product assessment by TZ Minerals International (TZMI) confirms Thunderbird zircon as premium grade and suitable for the ceramic sector; while the primary ilmenite is suitable for sulphate TiO₂ pigment manufacture and sulphate or chloride slag. The secondary ilmenite, rutile and high TiO₂ leucoxene are suitable for the welding electrode sector (see ASX release of 1 August 2013).

Thunderbird Scoping Study

Work continues on the Thunderbird Scoping Study which is scheduled for completion in Q1 2014, incorporating results from an updated mineral resource due in the same quarter.

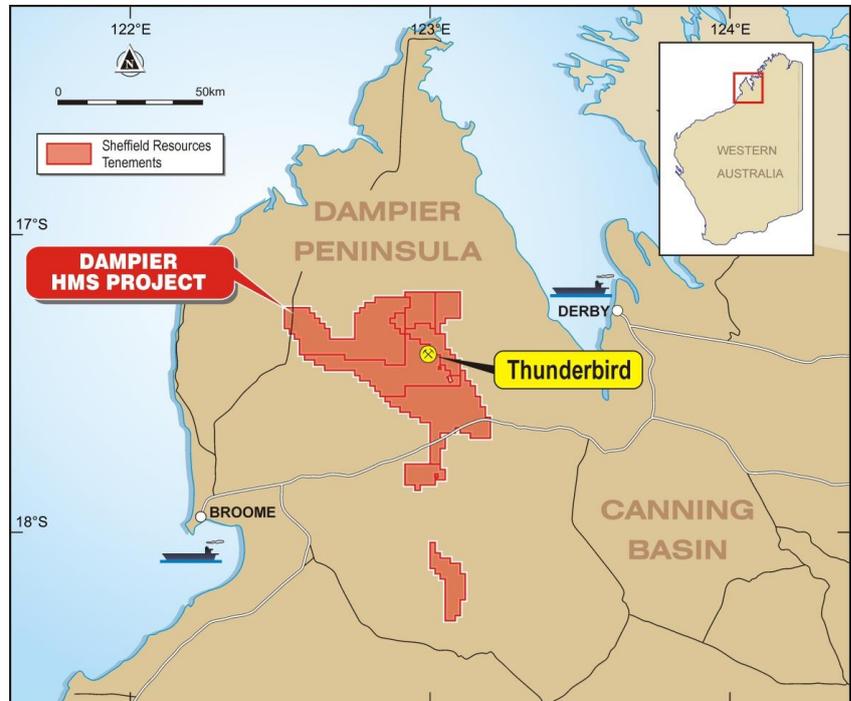


Figure 3: Location of Sheffield's Dampier HMS Project and the Thunderbird deposit

Argo Prospect

Final results have been received from a first pass drill test of the Argo prospect, located 12km to the west of Thunderbird. As anticipated, the HM results were very similar tenor to those previously obtained by Rio Tinto. The programme comprised 45 aircore holes drilled for a total 2,902m, and targeted anomalous HM identified on a single historical drill transect by Rio Tinto.

Significant results (>2% HM) were returned from four holes:

- 19.5m @ 3.69% HM from 84m (ARAC043), and 4.5m @ 2.52% HM from 69m
- 27m @ 2.35% HM from 49.5m (ARAC022)
- 18m @ 2.46% HM from 55.5m (ARAC030)
- 7.5m @ 2.80% HM from 52.5m (ARAC041)
(Refer to Table 2 for full details).

Initial drilling has to date outlined mineralisation over a 2km x 1.5km area, with an average interval thickness of 13m and depth to top of 49m (Figure 4). The mineralisation is relatively low-grade and occurs at depth. The initial drill pattern was widely spaced (500m by 500m) and higher grade zones may exist within the target horizon. Historic work by Rio Tinto showed potential for the mineral assemblage to contain between 7.4% (AutoGeoSEM) and 17.3% (420kg bulk sand sample) zircon, depending on the method of analysis (see Sheffield's ASX release of 7 September 2011 for details).

Sheffield will conduct mineral assemblage testwork from the drilling to determine the zircon content of the Argo mineralisation. Future exploration will attempt to track the mineralisation closer to surface and will target higher grade strandline targets.

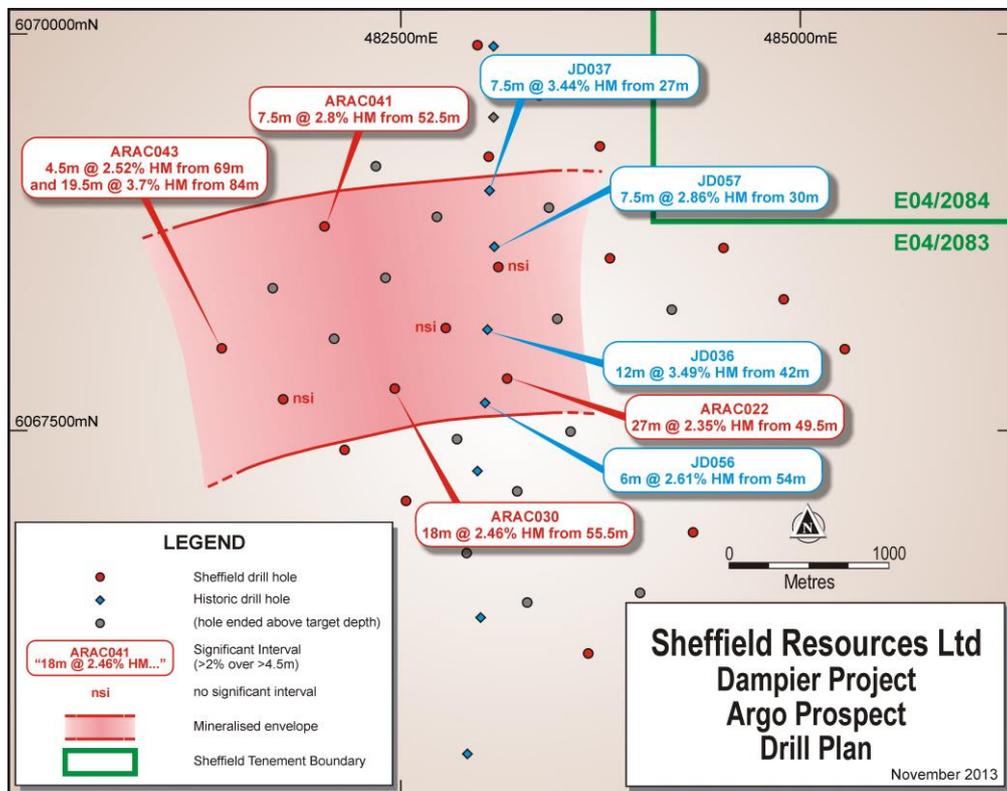


Figure 4: Argo prospect drill collar plan with outline of mineralisation projected to surface and Sheffield and historic drill results

ENDS

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COMPETENT PERSONS' STATEMENT

The information in this announcement that relates to exploration results is based on information compiled by David Boyd. Mr Boyd is a full time employee of the Company. Mr Boyd is a Member of the Australasian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity to which they are undertaking to qualify as Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code")'. Mr Boyd consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this announcement that relates to resource estimation is based on information compiled by Mr Trent Strickland. Mr Strickland is a full time employee of QG Pty Ltd and a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Strickland has sufficient experience in the minerals industry to satisfy the requirements to act as the competent person for this estimate as defined in the 2004 Edition of the Australasian Code for Reporting of Mineral Resources and Ore Reserves. Mr Strickland consents to the inclusion in this report of the Thunderbird Mineral Sands resource estimate.

The information in this announcement that relates to reporting of resource results is based on information compiled under the guidance of Mark Teakle. Mr Teakle is a full time employee of the Company. Mr Teakle is a Member of the Australasian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and the activity to which they are undertaking to qualify as Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code")'. Mr Teakle consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

FORWARD LOOKING AND EXPLORATION TARGET STATEMENTS

Some statements in this announcement 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 "expected", "planned", "target", "scheduled", "intends", "potential", "prospective" and similar expressions. The terms "Target" and "Exploration Target", where used in this report, should not be misunderstood or misconstrued as an estimate of Mineral Resources and Reserves as defined by the JORC Code (2004), and therefore the terms have not been used in this context. Exploration Targets are conceptual in nature and it is uncertain if further exploration or feasibility study will result in the determination of a Mineral Resource or Reserve.

Results Tabulation - Thunderbird

Table 1: Thunderbird aircore drill results.

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)*	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
THAC208^	9.0	34.5	25.5	7.26	18.7	12.4	497316.5	8070953.9	101.7	43.5	Twin of THAC207 & 209
THAC209	7.5	36.0	28.5	7.20	16.3	13.1	497312.2	8070957.8	101.7	60.0	Twin of THAC207 & 208
<i>including</i>	10.5	28.5	18.0	9.54	14.6	13.5					
<i>and</i>	42.0	49.5	7.5	3.71	20.0	10.0					
THAC210	7.5	34.5	27.0	5.32	18.1	8.1	497358.7	8070918.0	101.3	48.0	
<i>including</i>	9.0	28.5	19.5	6.38	17.5	8.6					
THAC211	6.0	46.5	40.5	4.80	19.0	6.1	497353.6	8070923.3	101.4	57.0	Twin of THAC210
<i>Including</i>	7.5	30.0	22.5	7.19	20.1	7.4					
<i>and</i>	52.5	57.0	4.5	2.64	24.4	13.8					
THAC212	6.0	54.0	48.0	4.48	19.1	7.0	497391.5	8070887.3	100.7	60.0	
<i>including</i>	9.0	16.5	7.5	10.6	18.2	11.1					
<i>including</i>	22.5	30.0	7.5	6.45	26.1	10.8					
THAC213	6.0	43.5	37.5	4.12	19.7	8.4	497433.4	8070854.5	100.3	60.0	
<i>including</i>	8.5	28.0	19.5	5.20	20.7	7.6					
THAC214	6.0	34.0	28.0	6.63	20.9	6.8	497472.8	8070828.2	100.2	61.0	
<i>including</i>	8.5	34.0	25.5	6.92	20.8	7.2					
<i>and</i>	40.0	47.5	7.5	2.11	26.7	8.8					
THAC215	7.0	35.5	28.5	6.07	19.8	6.1	497506.4	8070789.5	100.2	61.0	
<i>including</i>	7.0	17.5	10.5	11.3	18.7	10.9					
THAC216	7.0	52.0	45.0	4.40	19.2	7.8	497549.1	8070754.4	100.5	61.0	
<i>including</i>	8.5	26.5	18.0	7.50	17.9	8.1					
THAC217	7.0	37.0	30.0	6.30	18.9	7.2	497589.8	8070719.3	100.7	61.0	
<i>including</i>	7.0	14.5	7.5	11.1	17.9	7.9					
<i>including</i>	22.0	26.5	4.5	7.85	16.9	11.0					
THAC218	8.5	47.5	39.0	4.84	21.3	8.5	497643.3	8070674.8	100.8	61.0	

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)*	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
<i>including</i>	10.0	41.5	31.5	5.44	20.2	9.0					
THAC219	7.0	34.0	27.0	4.64	24.4	6.1	497453.9	8070841.1	100.2	61.0	
<i>including</i>	7.0	17.5	10.5	7.77	24.5	6.1					
THAC220	7.0	40.0	33.0	5.86	18.9	9.9	497470.4	8070856.7	100.4	61.0	
<i>including</i>	7.0	35.5	28.5	6.25	19.7	8.9					
THAC221	7.0	32.5	25.5	5.25	21.0	7.7	497504.4	8070895.0	101.1	61.0	
<i>including</i>	8.5	25.0	16.5	6.61	19.9	7.6					
THAC222	7.0	43.0	36.0	5.24	19.1	9.1	497535.8	8070930.9	101.8	61.0	
<i>including</i>	7.0	32.5	25.5	6.55	20.5	9.0					
THAC223	8.5	37.0	28.5	4.00	17.9	9.9	497566.9	8070966.9	102.5	55.0	Twin of THAC224
<i>including</i>	8.5	16.0	7.5	6.57	21.9	15.8					
THAC224	7.5	33.0	25.5	3.94	21.2	14.8	497564.6	8070963.8	102.4	54.0	Twin of THAC223
THAC225	7.5	49.5	42.0	3.74	19.3	7.1	497619.0	8071027.6	102.7	51.0	
<i>including</i>	9.0	22.5	13.5	6.03	17.2	6.8					
THAC226	4.5	28.5	24.0	5.13	20.6	12.5	498259.2	8071793.8	108.1	30.0	Twin of THAC227
<i>including</i>	4.5	12.0	7.5	6.07	20.0	21.6					
THAC227	4.5	22.5	18.0	3.30	17.2	16.7	498254.7	8071788.4	108.0	45.0	Twin of THAC226
THAC228	6.0	46.5	40.5	5.26	19.1	8.4	497429.9	8070812.4	99.9	60.0	
<i>including</i>	7.5	27.0	19.5	7.83	19.3	7.3					
THAC229	7.5	49.5	42.0	5.27	18.3	10.0	497401.6	8070778.2	99.7	60.0	
<i>including</i>	9.0	27.0	18.0	6.74	16.3	5.6					
<i>including</i>	39.0	49.5	10.5	6.40	16.3	22.7					
THAC230	7.5	57.0	49.5	4.48	17.4	7.9	497370.3	8070740.8	99.6	60.0	
<i>including</i>	9.0	27.0	18.0	7.94	15.7	7.7					
THAC231	9.0	58.5	49.5	4.62	17.7	11.5	497338.5	8070703.3	99.4	60.0	
<i>including</i>	10.5	49.5	39.0	5.07	18.6	10.6					
THAC232	39.0	96.0	57.0	6.60	10.5	8.8	497158.2	8068160.3	86.2	96.0	Hole ended in mineralisation (at 2% HM cut off)
<i>including</i>	42.0	85.5	43.5	7.57	10.6	9.1					

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)*	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
THAC233	40.5	46.5	6.0	7.22	10.4	3.3	497004.5	8067968.0	89.7	83.0	Hole abandoned in mineralisation (at 2% HM cut off)
<i>including</i>	40.5	45.0	4.5	8.66	11.2	2.8					
and	54.0	83.0	29.0	3.78	9.9	10.9					
<i>including</i>	63.0	69.0	6.0	6.77	9.8	12.9					
THAC234	13.5	55.5	42.0	5.44	17.0	10.5	498287.8	8069493.8	97.6	66.0	
<i>including</i>	18.0	40.5	22.5	8.13	17.7	14.9					
THAC235	9.0	51.0	42.0	5.80	18.1	10.4	498445.6	8069685.6	99.9	66.0	
<i>including</i>	10.5	24.0	13.5	10.5	15.5	12.2					
<i>including</i>	31.5	36.0	4.5	6.69	21.9	16.4					
THAC236	4.5	25.5	21.0	4.65	18.2	8.5	498323.1	8071095.7	105.6	42.0	
<i>including</i>	9.5	15.5	6.0	7.01	16.7	6.3					
and	31.5	36.0	4.5	2.55	23.1	6.5					
THAC237	18.0	54.0	36.0	5.54	15.8	4.3	497198.0	8069763.8	97.0	72.0	
<i>including</i>	27.0	49.5	22.5	7.25	17.5	6.5					
and	60.0	66.0	6.0	3.09	14.4	2.7					
THAC238	9.0	13.5	4.5	3.05	15.3	2.6	497031.9	8069562.7	94.9	78.0	
and	24.0	75.0	51.0	5.70	16.8	4.6					
<i>including</i>	33.0	58.5	25.5	8.11	19.1	4.7					
THAC240#	3.0	37.5	34.5	3.19	19.1	11.2	497567.1	8071749.8	105.3	54.0	
THAC241	0.0	25.5	25.5	5.67	17.1	6.1	498216.3	8072507.6	111.8	60.0	
<i>including</i>	1.5	12.0	10.5	8.97	14.6	11.6					
THAC242	15.0	51.0	36.0	8.19	18.8	4.5	496746.7	8070795.0	104.1	66.0	
<i>including</i>	16.5	40.5	24.0	10.9	16.8	4.9					
THAC243^	0.0	18.0	18.0	6.91	18.8	16.8	497168.4	8072070.7	104.0	60.0	
THAC244	9.5	51.5	42.0	8.61	17.8	4.9	496363.0	8071107.0	104.4	78.0	
<i>including</i>	18.5	51.5	33.0	10.2	18.8	6.1					
and	59.0	67.5	8.5	2.88	17.8	15.6					
THAC245	14.0	55.5	41.5	8.53	20.2	4.6	495564.5	8072463.8	107.1	72.0	

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)*	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
<i>including</i>	14.0	51.0	37.0	9.42	20.7	4.7					
THAC246	1.5	42.0	40.5	9.30	19.9	13.7	495866.3	8072835.9	108.3	54.0	
<i>including</i>	1.5	24.0	22.5	13.3	19.5	19.2					
<i>including</i>	30.0	36.0	6.0	6.70	24.2	12.8					
THAC247	0.0	33.5	33.5	6.74	20.7	8.9	496677.8	8073795.8	113.9	60.0	
<i>including</i>	0.0	9.0	9.0	16.6	19.1	22.7					
THAC248	1.5	34.5	33.0	9.90	18.5	5.9	495959.3	8073730.0	115.1	60.0	
<i>including</i>	3.0	27.0	24.0	12.6	17.3	6.5					
THAC249	6.0	54.0	48.0	6.22	21.7	6.2	495099.0	8073480.6	115.3	66.0	
<i>including</i>	22.5	46.5	24.0	9.69	21.9	9.7					
THAC250	16.5	54.0	37.5	7.67	19.6	7.5	494752.5	8073070.3	112.8	69.0	
<i>including</i>	25.5	54.0	28.5	8.94	19.6	8.8					
THAC251	31.5	72.0	40.5	6.36	20.3	8.3	494451.6	8072704.7	112.3	81.0	
<i>including</i>	42.0	64.5	22.5	8.40	20.1	9.8					
THAC313	10.5	58.5	48.0	5.02	14.3	8.1	497680.6	8070328.5	99.3	60.0	
<i>including</i>	10.5	31.5	21.0	8.46	13.7	10.2					
THAC314	13.5	60.0	46.5	5.02	15.1	10.7	497516.1	8070136.4	97.2	60.0	
<i>including</i>	15.0	49.5	34.5	5.70	16.0	11.2					
THAC315	9.0	57.0	48.0	5.05	14.2	7.0	497361.1	8069947.0	96.4	60.0	
<i>including</i>	19.5	37.5	18.0	8.08	16.1	12.1					
THAC316	19.5	25.5	6.0	3.54	10.9	0.8	496712.1	8069181.5	89.8	87.0	
<i>and</i>	33.0	73.5	40.5	6.26	11.8	5.7					
<i>including</i>	36.0	60.0	24.0	8.11	9.9	6.0					
THAC317	16.5	22.5	6.0	2.78	17.8	2.5	496873.1	8069363.7	93.7	87.0	
<i>and</i>	30.0	78.0	48.0	7.01	11.6	5.4					
<i>including</i>	31.5	69.0	37.5	8.33	10.2	5.5					
THAC318	30.0	60.0	30.0	7.45	12.4	11.4	497262.8	8069051.9	93.9	91.0	
<i>including</i>	30.0	49.5	19.5	9.92	11.3	17.3					

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)*	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
and	66.0	85.0	19.0	3.18	11.9	2.9					
THAC319	22.5	75.0	52.5	5.31	13.4	4.2	497420.2	8069240.9	94.9	75.0	
and	24.0	51.0	27.0	8.02	11.3	7.0					
THAC320	24.0	52.5	28.5	6.24	16.6	9.5	497581.3	8069433.8	93.3	69.0	
<i>including</i>	25.5	43.5	18.0	7.98	16.3	9.9					
and	58.5	63.0	4.5	3.78	13.1	4.4					
THAC321	16.5	58.5	42.0	6.13	15.9	6.9	497738.9	8069619.6	94.7	66.0	
<i>including</i>	18.0	39.0	21.0	8.67	16.9	8.9					
<i>including</i>	51.0	57.0	6.0	6.34	8.2	6.7					
THAC322	36.0	87.0	51.0	5.89	11.5	3.0	496934.2	8068667.2	87.4	87.0	
<i>including</i>	45.0	75.0	30.0	7.76	10.9	4.8					
THAC323	31.5	66.0	34.5	6.17	13.1	9.1	497099.4	8068859.9	88.6	87.0	
<i>including</i>	42.0	61.5	19.5	8.37	12.8	9.5					
and	75.0	79.5	4.5	2.41	13.7	1.4					
THAC324	4.5	30.0	25.5	3.59	17.3	9.4	498868.7	8070962.0	112.5	42.0	
<i>including</i>	6.0	13.5	7.5	5.74	15.3	19.1					
THAC325	10.5	37.5	27.0	3.00	16.6	9.2	498706.1	8070772.1	109.0	39.0	
THAC326	4.5	33.0	28.5	4.49	16.3	20.6	498546.0	8070580.5	106.1	45.0	
<i>including</i>	6.0	24.0	18.0	5.44	15.1	24.4					
THAC327	7.5	34.5	27.0	4.07	18.2	12.2	498383.6	8070387.4	103.3	51.0	
<i>including</i>	12.0	16.5	4.5	6.81	16.3	14.8					
THAC328	7.5	46.5	39.0	4.69	17.0	6.5	498058.8	8070001.0	99.4	57.0	
<i>including</i>	10.5	31.5	21.0	6.17	16.4	6.3					
THAC329	12.0	54.0	42.0	7.06	15.9	5.9	497905.4	8069818.8	96.4	54.0	
<i>including</i>	13.5	34.5	21.0	8.76	16.5	6.9					
<i>including</i>	40.5	45.0	4.5	7.27	10.2	9.5					
THAC330	31.5	36.0	4.5	3.40	9.9	1.3	496773.3	8068468.5	88.0	108.0	
and	45.0	106.5	61.5	5.27	12.0	2.9					

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)*	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
<i>including</i>	46.5	81.0	34.5	7.34	12.1	4.1					
THAC331	no significant interval						496620.5	8068284.4	90.1	20.0	Hole abandoned above mineralised zone
THAC332	1.5	36.0	34.5	5.65	17.6	15.1	499089.4	8070460.7	111.8	39.0	
<i>including</i>	1.5	18.0	16.5	7.79	16.8	26.1					
THAC333	9.0	30.5	21.5	4.62	17.9	5.4	498777.2	8070074.4	105.4	30.5	Hole abandoned in mineralisation (at 2% HM cut off)
<i>including</i>	10.5	18.0	7.5	6.79	13.6	5.5					
THAC334	10.5	18.0	7.5	4.36	23.5	9.3	498606.3	8069874.9	103.0	18.5	Hole abandoned in mineralisation (at 2% HM cut off)
THAC335	10.5	19.0	8.5	4.79	19.1	15.7	498612.5	8069875.0	103.1	19.0	Twin of THAC334, hole abandoned in mineralisation (at 2% HM cut off)
THAC336	10.5	55.5	45.0	5.86	14.9	6.7	497131.3	8070452.6	100.5	66.0	
<i>including</i>	12.0	37.5	25.5	7.99	14.5	7.2					
THAC337	13.5	51.0	37.5	7.03	15.7	4.2	496884.9	8070658.1	103.0	66.0	
<i>including</i>	16.5	31.5	15.0	11.2	15.2	5.8					
<i>and</i>	57.0	63.0	6.0	2.90	14.7	7.1					
THAC338	10.5	55.5	45.0	6.83	14.9	6.7	496427.5	8070387.0	98.3	60.0	
<i>including</i>	22.5	48.0	25.5	10.2	14.5	10.8					
THAC339	16.5	69.0	52.5	6.38	13.4	4.2	496270.3	8070220.6	98.3	69.0	
<i>including</i>	30.0	46.5	16.5	12.8	12.4	6.9					
THAC340	22.5	46.0	23.5	10.8	12.0	5.5	496107.8	8070021.1	96.4	46.0	Hole abandoned in mineralisation (at 2% & 5% HM cut off)
<i>including</i>	24.0	46.0	22.0	11.3	11.6	5.1					
THAC341	18.0	24.0	6.0	3.74	16.9	0.7	496702.2	8069417.8	94.1	66.0	
<i>and</i>	30.0	64.5	34.5	8.81	11.2	7.2					
<i>including</i>	33.0	52.5	19.5	12.3	9.0	9.7					
<i>Including</i>	60.0	64.5	4.5	6.09	18.3	10.6					
THAC342	9.0	45.0	36.0	6.63	15.7	5.8	496908.2	8070984.4	103.6	57.0	
<i>including</i>	19.5	27.0	7.5	14.0	13.7	12.4					
<i>including</i>	33.0	37.5	4.5	6.97	17.6	8.2					
THAC343	15.0	54.0	39.0	8.62	16.4	5.9	496586.9	8070599.6	100.9	66.0	

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)*	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information					
							Easting	Northing	RL	Depth (m)	Comment	
<i>including</i>	18.0	36.0	18.0	14.2	13.7	9.5						
<i>including</i>	49.5	54.0	4.5	6.50	8.3	4.3						
THAC344	30.0	85.5	55.5	10.0	10.4	5.6	495724.9	8070346.0	97.5	91.5		
<i>including</i>	30.0	79.5	49.5	11.0	10.1	6.1						
THAC345	18.0	81.0	63.0	7.41	14.3	5.4	496034.3	8070723.9	101.0	81.0		
<i>including</i>	28.5	75.0	46.5	8.96	14.7	6.3						
THAC346	no significant interval						496203.0	8070922.5	103.5	9.0	Hole abandoned above mineralised zone	

^Interval is identical at 2% and 5% HM cut-off. #THAC239 assays are incomplete and will be reported at a later date.

*Intervals calculated using 2% HM lower cut, 4.5m minimum width, maximum 4.5m internal waste; "*including*" intervals >5% HM, 4.5m minimum width, maximum 4.5m internal waste. HM, Slimes and Oversize ("Osize") determined by Heavy Liquid Separation (HLS) using TBE (sg. 2.96g/cc); screen sizes: slimes 38µm and oversize ("Osize") +1mm. RTKGPS surveyed hole coordinates (+/- 0.02m X and Y accuracy), RL determined by projection to a DTM model created from regional (Landgate) spot heights. Easting and Northing coordinate system is MGA Zone 51 (GDA94), RL is AHD. All holes were drilled vertically.

Results Tabulation - Argo

Table 2: Argo prospect aircore drill results.

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
ARAC001			NSR				484520.1	8068647.2	143.6	72.0	
ARAC002			NSR				484895.3	8068323.2	141.8	91.5	
ARAC003			NSR				485277.5	8068008.9	141.0	93.0	
ARAC004			NSR				484959.9	8067614.3	144.2	93.0	
ARAC005			NSR				484642.6	8067245.1	150.1	117.0	
ARAC006			NSR				484327.5	8066853.8	156.1	67.5	
ARAC007			NSR				483997.9	8066471.2	158.7	46.0	Hole did not reach target depth
ARAC008			NSR				483672.7	8066088.6	156.6	86.5	
ARAC009			NSR				484578.5	8067939.4	147.5	99.0	
ARAC010			NSR				484249.9	8067565.2	154.9	84.0	
ARAC011			NSR				483931.3	8067181.7	160.8	73.0	
ARAC012			NSR				483603.7	8066792.8	161.4	42.5	
ARAC013			NSR				483289.7	8066411.5	158.2	42.5	Hole did not reach target depth
ARAC014			NSR				484194.4	8068258.6	151.2	99.0	Hole did not reach target depth
ARAC015			NSR				483877.8	8067880.7	158.5	99.0	
ARAC016			NSR				483563.2	8067489.3	163.7	37.5	Hole did not reach target depth
ARAC017			NSR				483228.7	8067111.0	163.8	32.5	Hole did not reach target depth
ARAC018			NSR				482911.3	8066721.7	159.4	46.0	Hole did not reach target depth
ARAC019			NSR				484125.7	8068976.2	146.9	69.0	
ARAC020			NSR				483808.3	8068582.6	154.5	114.0	
ARAC021			NSR				483480.0	8068199.7	161.5	42.0	Hole did not reach target depth
ARAC022	49.5	76.5	27.0	2.35	19.2	12.2	483164.6	8067822.7	166.1	84.0	
ARAC023			NSR				482850.7	8067440.4	165.4	31.5	Hole did not reach target depth
ARAC024			NSR				482532.0	8067052.0	160.8	87.0	
ARAC025			NSR				482204.0	8066663.6	155.5	66.0	

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
ARAC026			NSR				483745.8	8069287.9	149.8	63.0	
ARAC027			NSR				483426.1	8068901.5	157.2	7.5	Hole did not reach target depth
ARAC028			NSR				483109.4	8068526.2	163.2	90.0	
ARAC029			NSR				482780.1	8068141.0	166.9	93.0	
ARAC030	55.5	73.5	18.0	2.46	12.9	18.8	482460.9	8067759.2	165.6	99.0	
ARAC031			NSR				482148.4	8067372.4	161.5	63.0	
ARAC032			NSR				483365.9	8069609.4	151.6	60.0	
ARAC033			NSR				483050.4	8069222.9	159.3	78.0	
ARAC034			NSR				482723.6	8068843.3	165.4	9.0	Hole did not reach target depth
ARAC035			NSR				482404.9	8068458.2	167.7	39.0	Hole did not reach target depth
ARAC036			NSR				482083.7	8068073.7	166.1	40.5	Hole did not reach target depth
ARAC037			NSR				481764.2	8067691.5	162.5	60.0	
ARAC038			NSR				482979.9	8069927.1	153.5	60.0	
ARAC039			NSR				482672.4	8069541.8	160.5	6.2	Hole did not reach target depth
ARAC040			NSR				482344.1	8069161.2	165.1	32.0	Hole did not reach target depth
ARAC041	52.5	60.0	7.5	2.80	11.2	3.9	482021.1	8068783.7	167.1	84.0	
ARAC042			NSR				481698.0	8068393.0	165.8	59.0	Hole did not reach target depth
ARAC043	69.0	73.5	4.5	2.52	8.0	1.8	481378.2	8068013.0	162.2	108.0	
and	84.0	103.5	19.5	3.69	10.5	2.1					
ARAC044			NSR				482676.5	8069546.5	160.5	26.5	Hole did not reach target depth
ARAC045			NSR				482726.3	8068843.1	165.4	9.5	Hole did not reach target depth

*Intervals calculated using 2% HM lower cut, 4.5m minimum width, maximum 4.5m internal waste. HM, Slimes and Oversize ("Osize") determined by Heavy Liquid Separation (HLS) using TBE (sg. 2.96g/cc); screen sizes: slimes -45µm and oversize ("Osize") +1mm. RTKGPS surveyed hole coordinates (+/- 0.02m X and Y, +/- 0.03m vertical accuracy). Easting and Northing coordinate system is MGA Zone 51 (GDA94), RL is AHD. All holes were drilled vertically. NSR – no significant result at a 2% lower cut.

Table 2: Argo prospect historic aircore drill results (Rio Tinto).

Hole ID	Depth From (m)	Depth To (m)	Interval Width (m)	HM wt%	Slimes wt%	Osize wt%	Drill Hole Collar Information				
							Easting	Northing	RL	Depth (m)	Comment
JD033	no significant interval						482917	8065457	150	72.0	
JD034	no significant interval						483000	8066316	158	51.0	
JD035	no significant interval						482979	8067239	166	34.5	
JD036	42.0	54.0	12.0	3.49	7.0	-	483042	8068131	167	75.0	
JD037	27.0	34.5	7.5	3.44	6.5	-	483055	8069009	162	36.0	
JD038	no significant interval						483080	8069918	154	75.0	
JD056	54.0	60.0	6.0	2.61	7.1	-	483027	8067671	169	63.0	
JD057	30.0	37.5	7.5	2.86	7.0	-	483086	8068655	164	43.5	
JD058	no significant interval						483080	8069472	158	12.0	Hole abandoned
JD059	not assayed						483042	8068131	167	69.0	

* Intervals calculated using 2% HM lower cut, 4.5m minimum width, maximum 4.5m internal waste. HM, Slimes and Oversize ("Osize") determined by Heavy Liquid Separation (HLS) using TBE (sg. 2.96g/cc) screen size: slimes -45µm, oversize not recorded. Hole location survey method GPS, unknown accuracy, coordinate system is MGA Zone 51 (GDA94), all holes drilled vertically.

Appendix 1: Thunderbird Mineral Resource at 18 December, 2012.

Table 1: Thunderbird Mineral Resource (at 2% and 7.5% HM cut-off)¹

Resource Category	Cut off (HM%)	Mineral Resources					In-situ HM (Mt)*	Mineral Assemblage ²			
		Material (Mt)*	Bulk Density	HM %	Slimes % ³	Osize %		Zircon %	Rutile %	Leuc. %	Ilmenite %
Indicated	2.0	299	2.1	7.2	19	14	21.5	6.9	1.6	4.3	29
Inferred	2.0	1,075	2.1	5.8	17	16	61.9	6.9	1.6	4.3	29
Total	2.0	1,374	2.1	6.1	17	15	83.4	6.9	1.6	4.3	29
Indicated	7.5	138	2.1	11.5	18	16	15.8	6.9	1.6	4.3	29
Inferred	7.5	379	2.1	9.6	16	19	36.5	6.9	1.6	4.3	29
Total	7.5	517	2.1	10.1	16	18	52.3	6.9	1.6	4.3	29

Table 2: Thunderbird prospect contained Valuable HM (VHM) Resource Inventory (at 2% and 7.5% HM cut-off)

Resource Category	Cut off (HM%)	Zircon (kt)*	Rutile (kt)*	Leuc. (kt)*	Ilmenite (kt)*	Total VHM (kt)*
Indicated	2.0	1,483	344	924	6,256	9,007
Inferred	2.0	4,270	990	2,661	18,007	25,927
Total	2.0	5,753	1,334	3,585	24,262	34,934
Indicated	7.5	1,089	252	678	4,592	6,611
Inferred	7.5	2,521	585	1,571	10,631	15,307
Total	7.5	3,609	837	2,249	15,223	21,918

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

¹ This estimate is classified and reported in a manner compliant with the JORC code and guidelines (JORC, 2004). ² The Mineral Assemblage is represented as the percentage of the Heavy Mineral (HM) component of the deposit, as determined by QEMSCAN. TiO₂ minerals defined according to the following ranges: Rutile >95% TiO₂; Leucoxene 70-95% TiO₂; Ilmenite 40-70% TiO₂.

ABOUT SHEFFIELD RESOURCES

Sheffield Resources Limited (**Sheffield**) is a rapidly emerging heavy mineral sands (HMS) company.

ASX Code – SFX

Market Cap @ 52cps - \$61.5m

Issued shares – 118.3m

Cash - \$5.3m (at 30 September 2013)

Sheffield's projects are all situated within the state of Western Australia and are 100% owned by the Company.

HEAVY MINERAL SANDS

The Dampier project, located near Derby in WA's Canning Basin region, contains the large, high grade zircon-rich Thunderbird HMS deposit.

The Eneabba project comprises multiple HMS deposits and is located near Eneabba approximately 140km south of the port of Geraldton in WA's Mid-West region.

Sheffield is also evaluating the large McCalls chloride ilmenite project, located 110km to the north of Perth.

NICKEL-COPPER

Sheffield's Red Bull project is located in the highly prospective Fraser Complex within 20km of Sirius Resources NL's (ASX:SIR) Nova Ni-Cu discovery.

IRON

Sheffield holds four exploration licences prospective for iron in the North Pilbara region, all near existing iron ore mine sites or major development projects and within potential trucking distance of Port Hedland. Following its recent sale of the South Pilbara Iron tenements, Sheffield continues to seek to unlock value on its remaining Pilbara iron tenements through consolidation and/or further exploration.

POTASH

The Oxley potash project is located in the northern part of the Proterozoic Moora Basin, approximately 38km northeast of Three Springs. Sheffield is exploring the Oxley Potash project for unconventional hard rock potash mineralisation suitable for open pit mining.