

ASX and Media Release

20 September 2011

DRILLING RESULTS CONFIRM MASSIVE SCALE OF McCALLS HMS DEPOSIT

KEY POINTS

- Results from a single drill traverse outline a 5km wide mineralised zone with consistent thickness and grade, beneath a thin layer of overburden
- Mineralisation is open to north and south and at depth to over 90m
- Higher grades, greater thickness and lower slimes than indicated by historical BHP drilling
- Sheffield to undertake mineral assemblage and resource estimation work in Q4 2011

Bulk minerals explorer Sheffield Resources ("Sheffield") (ASX:SFX) today announced results from a 30 hole drilling program at its McCalls heavy mineral sand (HMS) exploration project located 110km north of Perth, near Gingin in Western Australia (Figure 1).

The results demonstrate consistent grades and widths of heavy mineral (HM) along a 5km long north-south section (398740mE) across the strike of the deposit (Figure 2).

Of the 30 holes drilled, all returned significant mineralised intervals (>1% HM), with all but 2 holes ending in mineralisation. Drill hole MCAC0019 extended to test the depth potential, intersected 85.5m of mineralisation and was still in mineralisation at the end of the hole.

Managing Director, Bruce McQuitty said the drill results exceeded the expectations set by historic work at McCalls.

"These drill results are excellent, and improve on both the average grade and the dimensions of the deposit as outlined by BHP's prior drilling; confirming our belief that McCalls is potentially a very large scale, high titanium ilmenite project with significant zircon credits."

Drilling results are shown in Table 3 and Figure 3, with significant intersections including:

85.5m @ 1.52% HM from 4.5m (MCAC0019)
58.5m @ 1.49% HM from 4.5m (MCAC0015)
61.5m @ 1.32% HM from 1.5m (MCAC0008)
49.5m @ 1.52% HM from 1.5m (MCAC0016)
45.0m @ 1.60% HM from 6.0m (MCAC0010)

The mineralised intervals on Section 398740mE average 44m in thickness at 1% HM cut-off and are open at depth (Figure 3). The overburden is thin (average 13m), and "free-digging".

Sheffield's drilling programme was designed to infill earlier broadly spaced drilling by BHP who explored the McCalls region during the early 1990s. On Section 398740mE Sheffield completed 25 drill holes to infill 8 holes drilled by BHP. Significantly, the average width and grade of Sheffield's drill intersections is higher, and the average slimes component is lower than those of the BHP drill intersections, as follows:

Table 1: Sheffield vs BHP drill results on Section 398740E

	Drill holes	Average Width (m)	Average HM%	Average Slimes% (<45µ)
Sheffield	25	44	1.36	22.8
BHP	8	29	1.25	23.7

In its release of 17 January, 2011, Sheffield stated an **Exploration Target*** of between **1.5 and 2.5 billion tonnes grading between 1.1% and 1.3% HM** for McCalls. The average heavy mineral grade of 1.35% (all intersections), from this drilling programme is above the higher target range suggesting either the presence of a large zone of higher grade material within the overall deposit, or a conservative grade estimate for the Exploration Target.

The average heavy mineral assemblage at McCalls as determined by BHP (who performed mineral observations on just 15% of the holes they drilled) is: ilmenite 74.2%, zircon 4.37%, rutile 0.52%, leucoxene 4.08%, monazite 0.03%, and other minerals 16.8%. The high TiO₂ content of the ilmenite (62.6%) indicates potential suitability for chloride route processing or synthetic rutile feedstock. Sheffield will undertake its own mineral assemblage testwork to gain a better understanding of the spatial distribution of high value heavy minerals, such as zircon and rutile, within the deposit.

The McCalls project is well situated with respect to existing infrastructure, including main roads, rail and power. A railway line located 10km to the east of the project connects to Fremantle/Kwinana ports approximately 160km by rail to the south and to Geraldton port 345km by rail to the north. This railway also links to Iluka Resources' Narngulu synthetic rutile plant near Geraldton and passes within 1km of Tiwest's Chandala synthetic rutile plant at Muchea, 75km to the south of McCalls.

These results continue the flow of excellent results from drilling programmes undertaken by Sheffield on its North Perth Basin Projects in the first half of 2011. Sheffield's ongoing resource estimation and scoping study schedule is provided in Table 2 below.

Table 2: Drilling and Resource Estimation Schedule

Project	Drilling status	Assay timetable	Resource Estimation	Scoping Study
Yandanooka	130 holes completed	Results received (see ASX release 16 May 2011)	Completed (ASX release 16 August 2011)	Commence October 2011
Ellengail	Compilation of historic drilling completed	Not applicable	Commenced, results due late September 2011	Commence October 2011
West Mine North	90 holes completed	Results received (see ASX release 9 August 2011)	Commence September, results due October 2011	Commence October 2011
McCalls	30 holes completed	This release	Commence September, results due December 2011	Commence December 2011
Irwin	31 holes completed	Results received (see ASX release 13 September 2011)	N/A	N/A
Drummond Crossing	30 holes completed	Results due October 2011	N/A	N/A

Note – these dates are indicative only and remain subject to possible delays arising from laboratory assay and other factors

ENDS

*Sheffield Resources has not yet reported Mineral Resources at McCalls and any discussion in relation to targets and Mineral Resources is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

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COMPETENT PERSONS' STATEMENTS

The information in this announcement that relates to exploration results is based on information compiled by Bruce McQuitty. Mr McQuitty is a full time employee of the Company. Mr McQuitty 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 McQuitty 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", "prospective", and similar expressions.

The terms "Target" and "Exploration Target", where used in this announcement, 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.

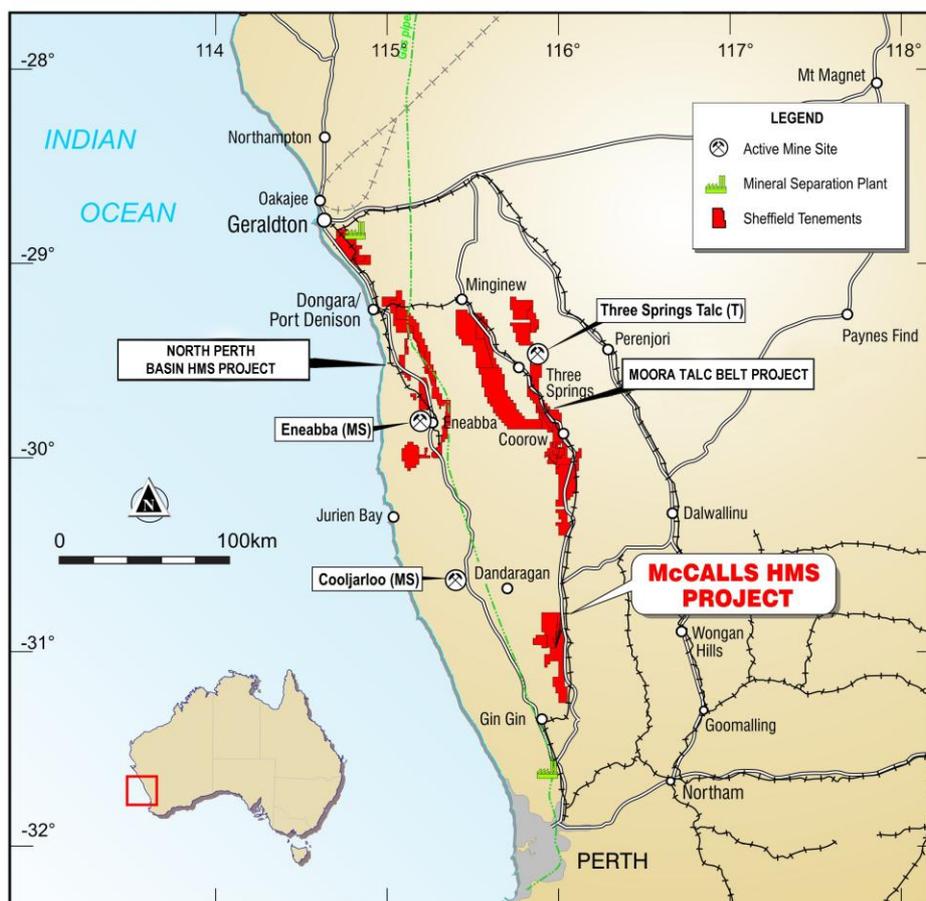


Figure 1: Location of McCalls and Sheffield's other HMS projects in the North Perth Basin

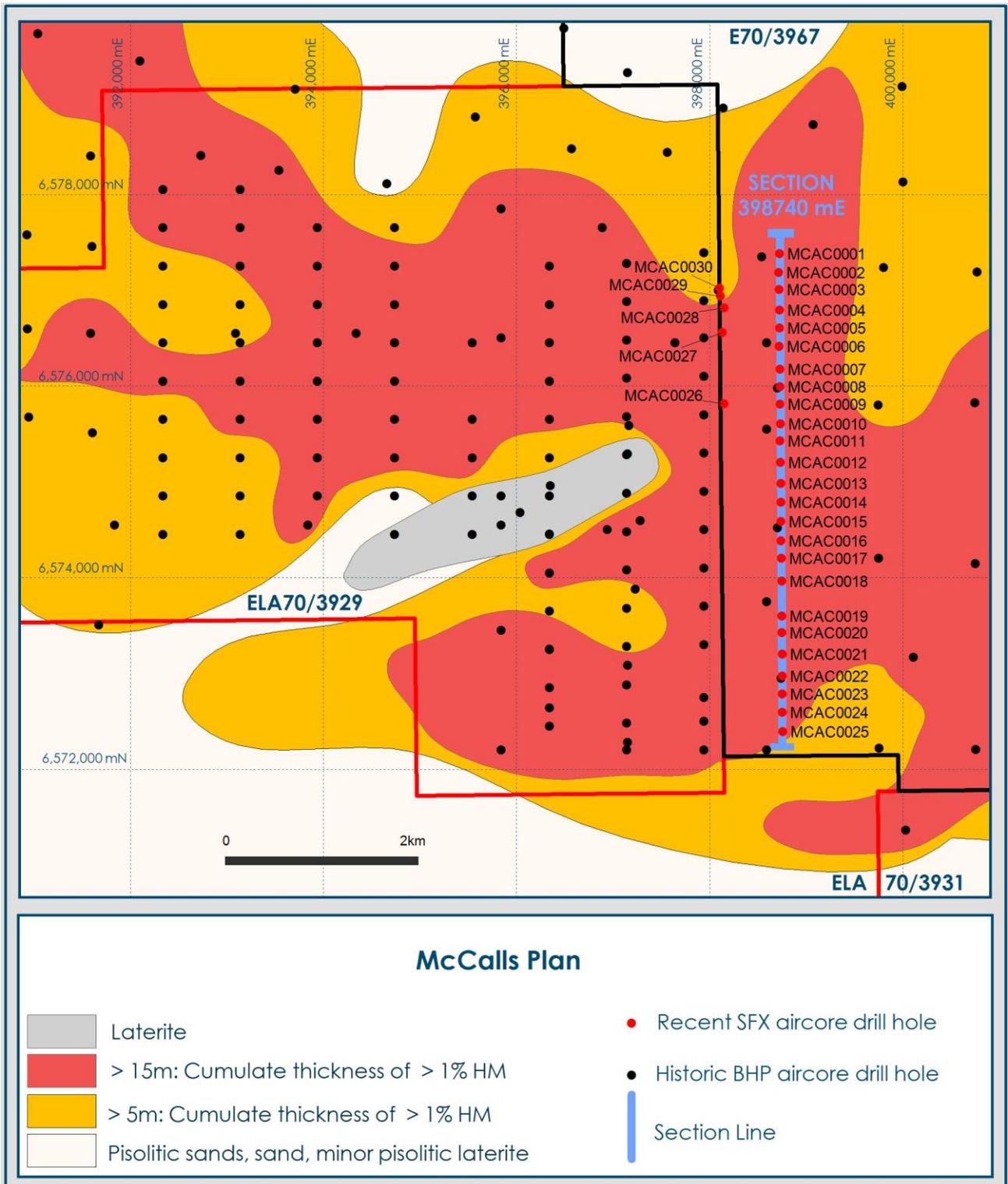


Figure 2: McCalls HMS project – plan of drill hole collars and mineralised zones

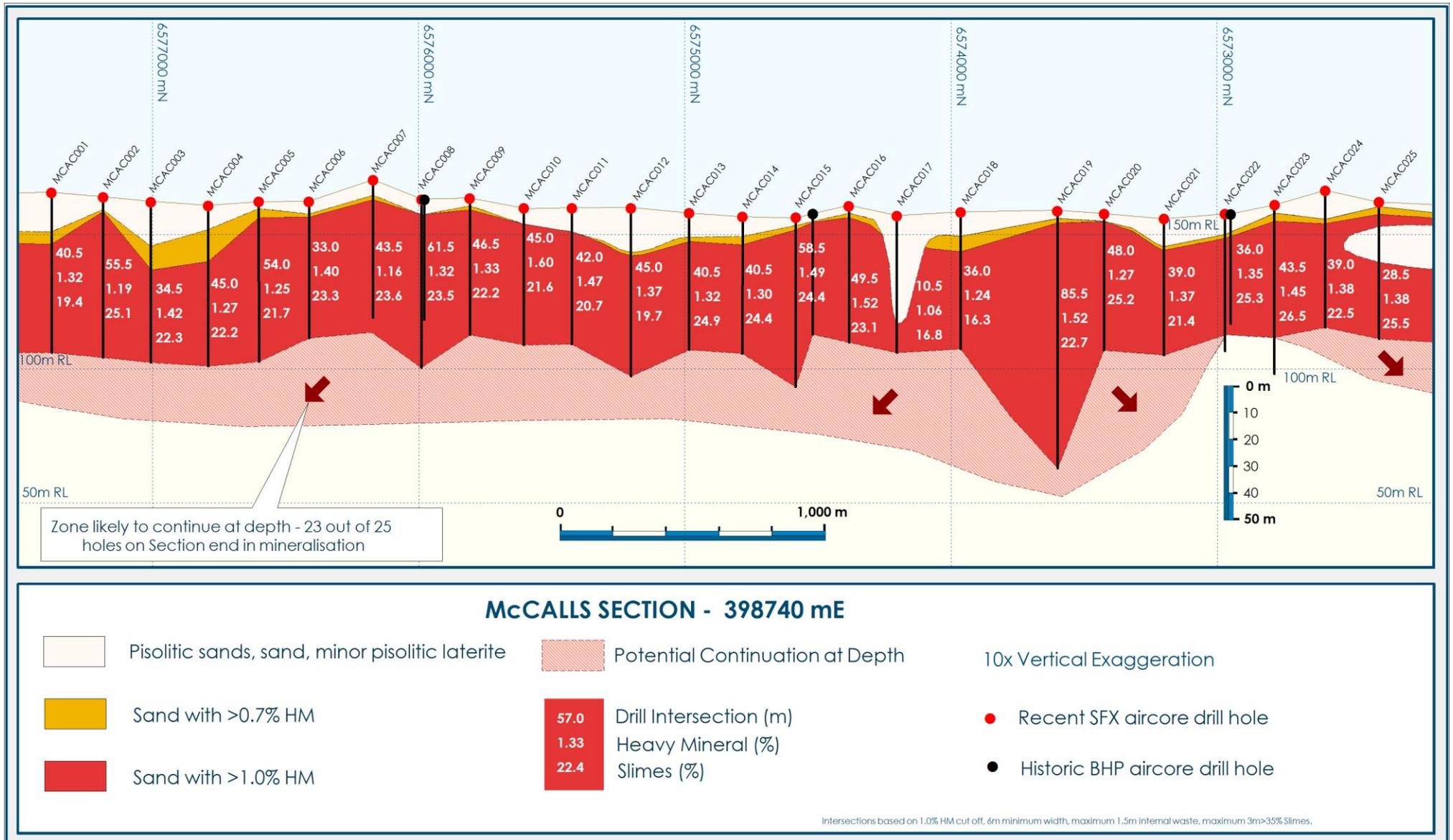


Figure 3: McCalls Project – Section 398740mE, looking to the east. Note the number of holes ending in mineralisation and minimal overburden.

Results Tabulation

Results of heavy liquid separation (HLS) are tabulated below. HLS using TBE, screen sizes: slimes -45µm, oversize +1mm. Coordinates used throughout are MGA Zone 50 (GDA94), all holes drilled vertically.

Table 3: McCalls aircore drill results. Intervals calculated using 1% HM cut-off, 6m minimum width, maximum 6m internal waste, maximum 3m >35% Slimes.

Hole ID	Easting	Northing	RL	Depth From (m)	Depth To (m)	Interval (m)	HM Wt%	Slimes Wt%	Osize Wt%
MCAC0001*	398723	6577379	126	19.5	60.0	40.5	1.32	19.4	0.14
MCAC0002*	398715	6577185	132	4.5	60.0	55.5	1.19	25.1	0.18
MCAC0003*	398718	6577006	120	25.5	60.0	34.5	1.42	22.3	0.27
MCAC0004*	398723	6576792	124	15.0	60.0	45.0	1.27	22.2	0.10
MCAC0005*	398723	6576602	129	6.0	60.0	54.0	1.25	21.7	0.18
MCAC0006*	398722	6576413	128	18.0	51.0	33.0	1.40	23.3	0.44
MCAC0007*	398730	6576173	141	7.5	51.0	43.5	1.16	23.6	0.53
MCAC0008*	398730	6575990	131	1.5	63.0	61.5	1.32	23.5	0.28
MCAC0009*	398730	6575808	136	4.5	51.0	46.5	1.33	22.2	0.22
MCAC0010*	398733	6575606	131	6.0	51.0	45.0	1.60	21.6	0.86
MCAC0011*	398730	6575425	130	9.0	51.0	42.0	1.47	20.7	1.41
MCAC0012*	398736	6575203	120	18.0	63.0	45.0	1.37	19.7	1.24
MCAC0013*	398739	6574984	127	10.5	51.0	40.5	1.32	24.9	1.49
MCAC0014*	398741	6574785	126	10.5	51.0	40.5	1.30	24.4	0.11
MCAC0015*	398740	6574583	123	4.5	63.0	58.5	1.49	24.4	0.51
MCAC0016*	398738	6574384	135	1.5	51.0	49.5	1.52	23.1	0.33
MCAC0017*	398744	6574204	111	40.5	51.0	10.5	1.06	16.8	0.46
MCAC0018*	398746	6573964	126	15.0	51.0	36.0	1.24	16.3	0.12
MCAC0019*	398750	6573599	109	4.5	90.0	85.5	1.52	22.7	0.57
MCAC0020*	398750	6573427	131	3.0	51.0	48.0	1.27	25.2	0.43
MCAC0021*	398754	6573200	125	12.0	51.0	39.0	1.37	21.4	0.24
MCAC0022	398751	6572970	131	9.0	45.0	36.0	1.35	25.3	0.42
MCAC0023	398752	6572786	133	6.0	49.5	43.5	1.45	26.5	0.38
MCAC0024*	398755	6572596	135	12.0	51.0	39.0	1.38	22.5	0.32
MCAC0025*	398757	6572393	125	22.5	51.0	28.5	1.38	25.5	0.53
MCAC0026	398150	6575815	138	13.5	22.5	9.0	1.09	24.2	0.00
MCAC0026*	398150	6575815	108	33.0	63.0	30.0	1.31	24.9	0.61
MCAC0027	398130	6576556	133	16.5	34.5	18.0	1.10	22.5	0.00
MCAC0027*	398130	6576556	112	42.0	51.0	9.0	1.25	20.7	0.49
MCAC0028*	398150	6576813	113	42.0	51.0	9.0	1.12	19.9	0.23
MCAC0029*	398111	6576936	108	31.5	72.0	40.5	1.34	15.5	0.63
MCAC0030	398110	6577020	130	25.5	34.5	9.0	1.11	19.8	0.00
MCAC0030*	398110	6577020	104	49.5	63.0	13.5	1.43	19.7	0.46

* hole ends in mineralisation

ABOUT SHEFFIELD RESOURCES

Sheffield Resources Limited (**Sheffield**) is a new exploration company with a bulk minerals focus. The Company's Projects are geared towards the steel industry feed cycle (iron ore and tungsten) and the emerging fillers-ceramics-pigments cycle (talc, zircon, titanium dioxide).

ASX Code – SFX

Market Cap @ 27cps - \$15.8m

Issued shares – 58.7m

Cash - \$4.1 (at 30/6/2011)

The Company has over 6,000km² of highly prospective tenure, all situated in Western Australia.

HEAVY MINERAL SANDS

Sheffield controls over 5,000km² of mineral sands tenure in the established North Perth Basin mineral sands province and the emerging Carnarvon, Eucla and Canning Basin provinces.

The Dampier project, located near Derby in WA's Kimberley region is the most recent addition to Sheffield's heavy mineral sands project portfolio. Dampier is a large scale zircon play formerly explored by Rio Tinto.

Sheffield's North Perth Basin tenement package of over 2,500km² contains seven advanced exploration projects: West Mine North, Ellengail, Yandanooka, Durack, Beekeepers, and Irwin which are located near Eneabba; and the large McCalls deposit - a former BHP project located near Gingin. These projects are well located close to existing mineral sands operations and to a network of highways and railway lines connecting to Geraldton and Fremantle/Kwinana ports. Sheffield's strategy is, subject to exploration success, to build multiple HMS projects capable of supporting a flexible mobile mining plant.

TALC

Sheffield has 1,152km² of tenure over the 175km-long Moora Talc Belt which represents a dominant ground position over a region that has, for the last 50 years, been exclusively controlled by major mining companies.

The Moora Talc Belt includes the large Three Springs mine which is owned by Rio Tinto Limited subsidiary Luzenac Australia Pty Ltd. Three Springs is renowned for producing high purity talc and is a relatively simple "dig-and-deliver" operation.

The existing infrastructure is excellent. A railway and a sealed highway transect the project and connect to Geraldton port approximately 170km to the northwest.

Sheffield's large tenement holding contains numerous talc occurrences and has the potential to become a strategic talc asset. Sheffield therefore represents a unique opportunity for investors to gain exposure to one of the few high-grade talc explorers in the world.

IRON

Sheffield's Pilbara iron ore projects consist of five granted tenements and 7 tenement applications, five of which are subject to ballot with multiple competing parties. Sheffield's strategy is to target hematite mineralisation adjacent to infrastructure in the world class Pilbara iron province and to build up consolidated tenement holdings over time. High grade iron mineralisation has been identified on three of the Company's tenements.