



24 April 2013

SHEFFIELD TO DRILL MAJOR POTASH TARGET

KEY POINTS

- Major new potash target identified
- Tenure secured over entire 32km strike length of the target horizon
- Average 10.6% K₂O from 59 rock chip samples, values up to 14.9% K₂O
- 2 rigs mobilised to commence initial drilling program
- Low cost drilling program aided by State Government EIS co-funding of up to \$150,000

Sheffield Resources ("Sheffield") (ASX:SFX) today announced that it will drill a major new potash target recently outlined at its **Oxley Project** near Three Springs in Western Australia's Mid-west region (Figure 1).

The Oxley potash target is an unconventional, hard rock style of mineralisation, hosted by a unique series of ultrapotassic microsyenite lava flows which contain over 90% sanidine (potash) feldspar. Sheffield has pegged the entire 32km strike extent of this prospective horizon within the northern portion of the Moora Basin (Figure 1).

An initial rock chip sampling program returned consistently high potassium oxide grades over an 8km strike extent of the target horizon. A total of 59 samples of fresh to slightly weathered microsyenite averaged 10.6% K₂O (equivalent to 16.7% KCl¹, refer to Tables 2-3 for full details). The horizon also contains significant amounts of titanium, iron and aluminium (Table 1).

Table 1: Average assay results from 59 rock chip samples of microsyenite horizon

Sample Type	K ₂ O %	TiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %	LOI %
Fresh to slightly weathered microsyenite	10.6	2.0	12.8	15.6	2.0

Two drill rigs (an RC and a diamond rig) have been mobilised to the project to undertake an initial test of an 8km segment of the target horizon. The aim of the 2,500m program is to determine the thickness, continuity and grade of the potassium rich horizon and to obtain samples for metallurgical testwork.

Sheffield was successful in obtaining State Government EIS co-funding of up to \$150,000 for the direct drilling cost component of the program.

Sheffield's Managing Director, Bruce McQuitty said the Oxley potash project was an example of the Company's strategy of targeting large scale projects in new mineral provinces.

"Oxley provides our shareholders with another large scale project in a region with established infrastructure."

"The initial phases of evaluation at Oxley will be low cost and can be undertaken in parallel with work on the high priority Dampier Mineral Sands and Red Bull Nickel Projects."

¹K₂O is commonly expressed as KCl according to the formula (KCl = K₂O/0.6317).

Sheffield intends to evaluate the Oxley Project for its potential to produce muriate of potash (MOP, KCl) or sulphate of potash (SOP, K_2SO_4) products for use in the fertilizer market. Due to the unique composition of the microsyenite host rock, new metallurgical processes may need to be developed to produce these target commodities and possible byproducts of iron, aluminium and titanium.

The Oxley project has many similarities to Verde Potash's (TSX: NPK) Cerrado Verde hard rock potash project located in Brazil, which has a current NI43-101 mineral resource estimate² comprising 71Mt @ 9.22% K_2O (Indicated) and 2,763Mt @ 8.91% K_2O (Inferred). The potash mineralisation at Cerrado Verde is associated with metamorphosed sedimentary rocks composed of quartz, chlorite, muscovite, and microcline feldspar.

Sheffield's rock chip sampling (average 10.6% K_2O) indicates the Oxley Project has potential for higher grades than those of Cerrado Verde.

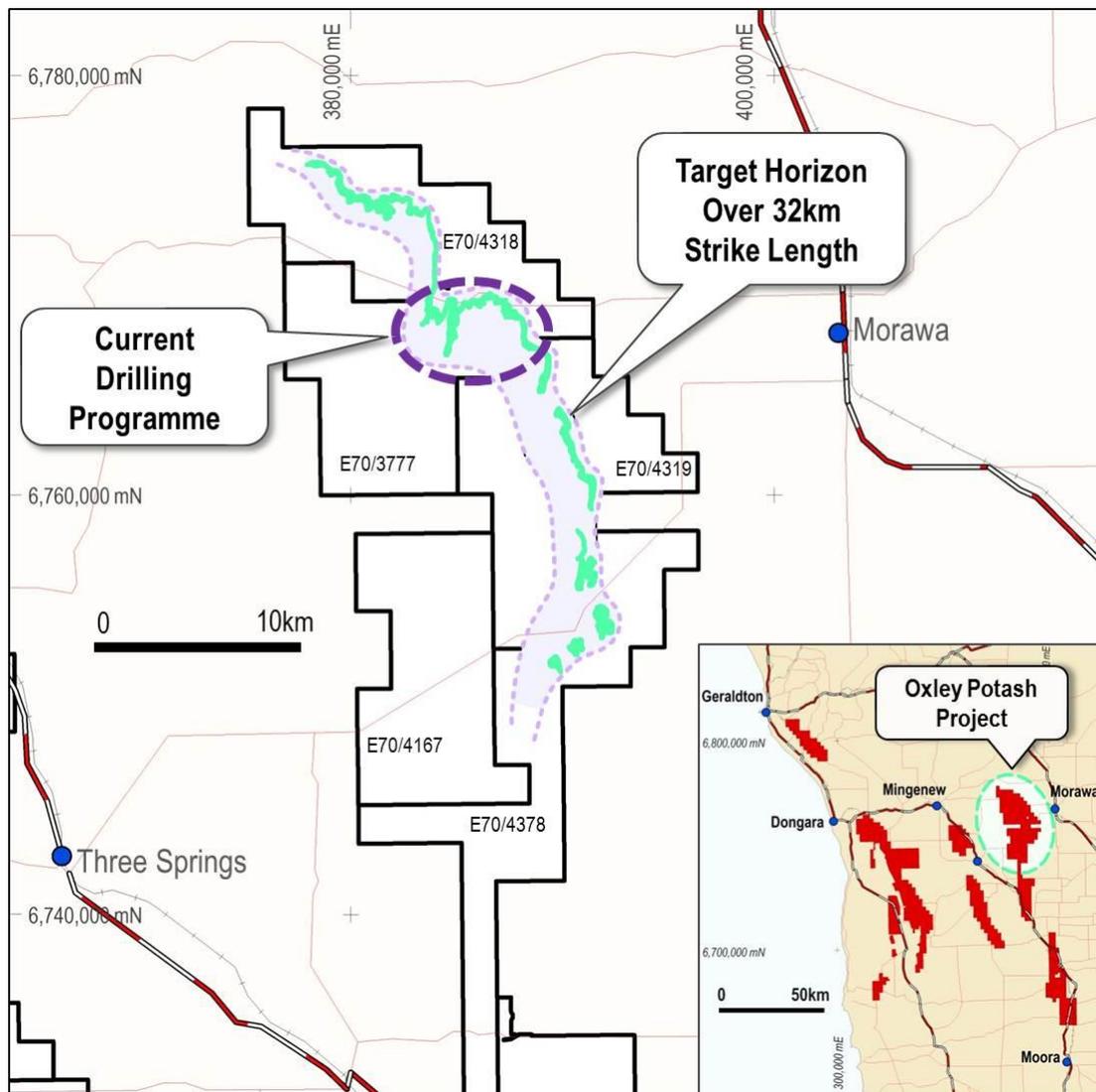


Figure 1: Oxley potash project location plan.

The Oxley Project is located in the northern part of the Proterozoic Moora Basin, approximately 38km northeast of Three Springs (Figure 1). Regional exploration by Sheffield has identified a series of unique ultrapotassic lava flows located at the top of the "Morawa Lavas" – a unit which was previously mapped as a sequence of basalts and trachytes. These lavas dip shallowly into the basin at between 8° and 24° .

² Cerrado Verde NI 43-101 Preliminary Economic Assessment

The ultrapotassic lava flows are interpreted as being microsyenite in composition and consist of over 90% sanidine (potash) feldspar, with minor secondary hematite and titanite. Regional mapping indicates that the highly potassic target sequence has a strike length of 32km and may be between 10m and 40m thick.

Detailed rock chip sampling was undertaken over the area targeted by the current drilling programme (Figure 2). In total, 59 rock chip samples were taken from fresh to slightly weathered microsyenite (Table 2) and 19 rock chip samples were taken from strongly weathered to saprolitic microsyenite (Table 3). Samples of the fresh to slightly weathered microsyenite returned values of between 7.1% and 14.9% K₂O, with an average of 10.6% K₂O. Sampling of strongly weathered microsyenite shows that weathering substantially reduces the K₂O content of the mineralisation. It is anticipated that drilling below the base of weathering will yield higher and more consistent K₂O grades.

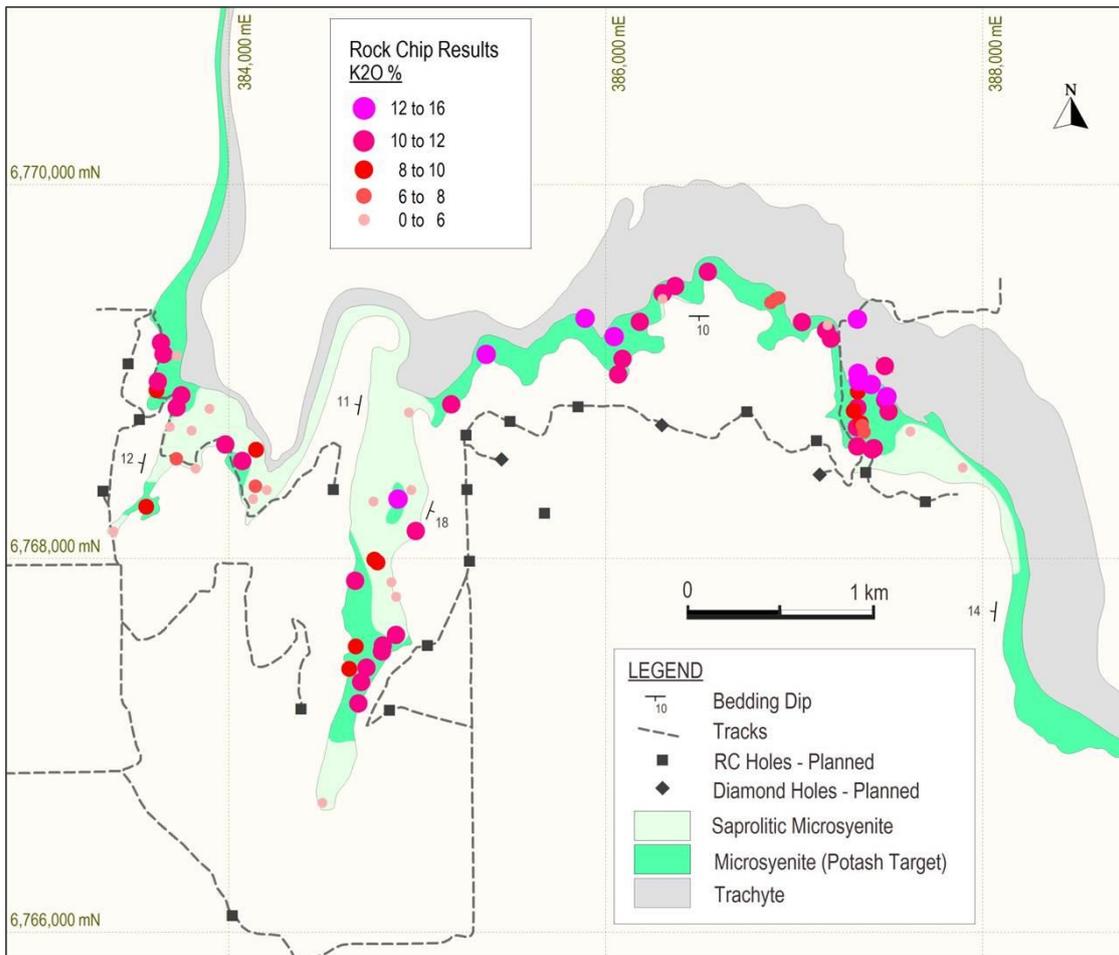


Figure 2: Oxley potash project rock chip sample results and planned drill hole location plan.

Two drill rigs are currently on site with completion scheduled for mid-May. Assay results are expected in Q3 2013.

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 Archer. Mr Archer is a full time employee of the Company. Mr Archer 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 Archer 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 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", "strategy" and similar expressions.

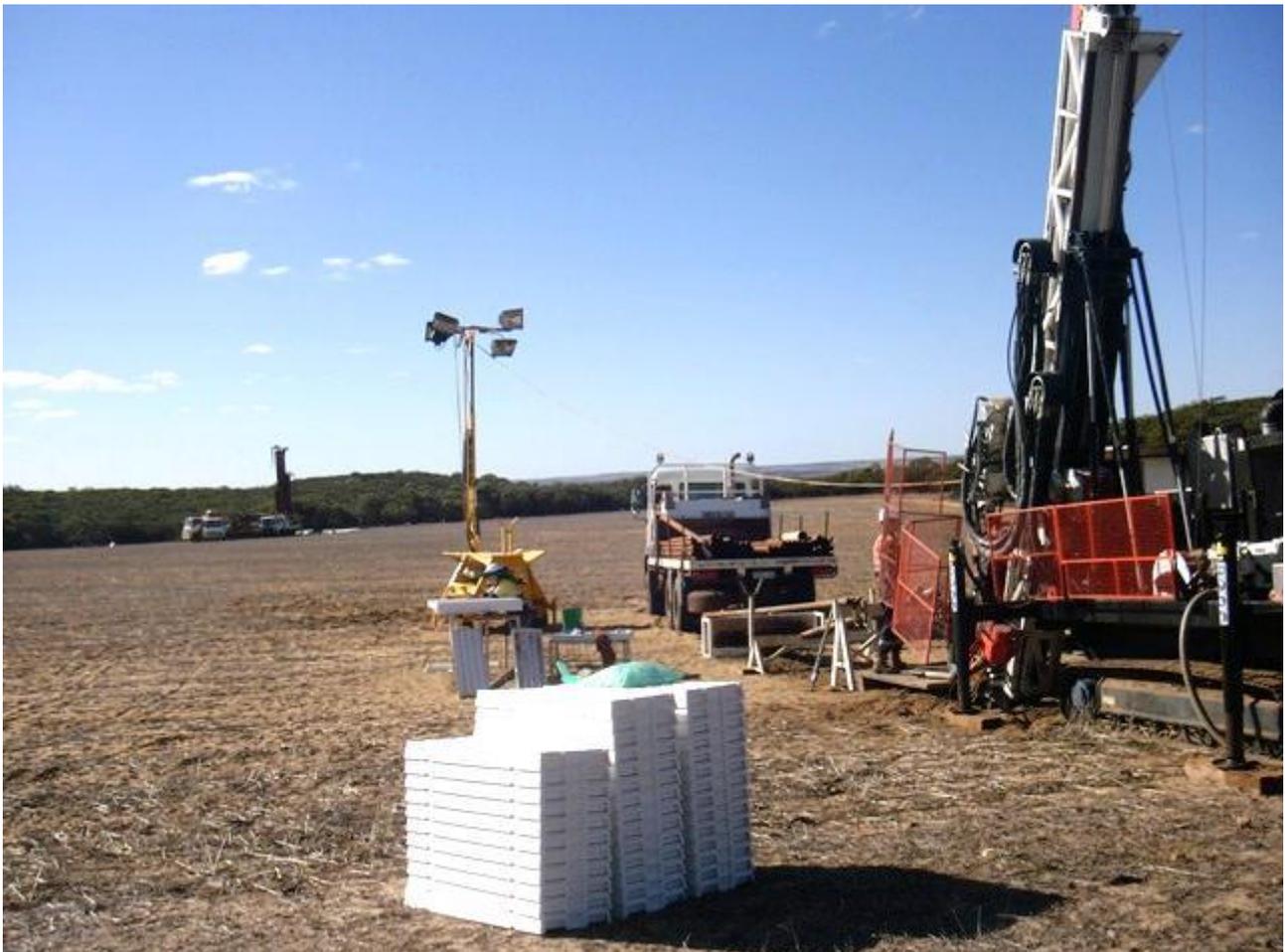


Figure 3: Two rigs drilling at Oxley Potash Project

Table 2: Rock chip sample results taken from fresh to slightly weathered microsyenite

Sample No	Easting	Northing	K ₂ O %	TiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %	LOI %
HV075	386370	6769463	10.5	1.8	15.5	14.6	1.5
HV076	386543	6769539	11.1	2.1	10.8	15.9	1.7
HV091	387196	6769182	11.2	2.1	13.9	15.2	1.4
HV092	387171	6769225	10.8	1.9	14.5	14.4	1.2
HV093	387172	6769226	11.7	1.8	15.1	15.2	1.1
HV094	386922	6769397	7.2	1.8	16.4	12.9	3.0
HV095	386902	6769389	7.1	1.6	15.8	12.0	2.4
HV096	386878	6769372	7.8	1.7	28.1	12.4	2.7
HV098	387043	6769269	11.9	1.7	16.2	15.6	1.7
HV101	387409	6768935	12.2	1.8	8.5	15.3	1.1
HV102	387482	6769035	10.5	2.0	11.6	15.8	2.1
HV103	387493	6768870	12.5	1.9	3.3	15.8	0.8
HV104	387485	6768853	11.6	1.6	14.9	14.4	0.9
HV105	387503	6768792	10.2	1.9	16.9	14.3	2.2
HV107	387425	6768595	10.8	2.1	17.4	15.6	2.1
HV108	387336	6768605	10.1	1.5	16.8	13.9	1.1
HV109	387318	6768792	8.6	2.0	14.8	14.3	1.5
HV110	387338	6768811	10.6	1.8	12.4	15.2	1.7
HV113	387340	6768895	9.1	1.7	17.5	14.6	2.3
HV114	387343	6768954	12.2	1.8	7.0	15.3	1.0
HV115	387339	6768995	14.9	2.1	1.9	17.6	0.9
HV118	387336	6769285	14.2	2.4	3.6	17.1	1.1
HV122	387334	6768707	10.6	1.6	16.4	14.5	1.2
HV123	387356	6768725	8.4	2.3	18.6	19.9	3.9
HV124	387363	6768714	7.1	1.9	17.6	16.6	3.1
HV125	387373	6768678	7.1	2.1	14.9	17.8	4.0
HV126	387415	6768589	10.5	1.7	8.2	13.4	1.2
HV132	386067	6768990	11.1	1.8	13.5	15.2	1.5
HV133	386090	6769074	10.5	1.6	11.8	13.4	1.0
HV134	386046	6769192	12.3	2.0	4.6	16.0	0.7
HV135	386182	6769272	11.9	1.9	15.0	15.9	1.4
HV137	386304	6769425	10.5	1.7	16.8	14.1	1.9
HV138	385891	6769289	14.8	2.1	2.3	17.8	0.8
HV139	385182	6768830	10.7	1.9	15.8	14.9	2.1
HV140	385367	6769096	12.3	2.0	14.1	15.8	1.6
HV150	384889	6767596	10.1	2.3	8.6	17.6	3.5
HV151	384818	6767540	11.8	2.4	9.5	18.3	2.5
HV152	384813	6767508	11.6	2.5	7.1	18.5	2.7
HV156	384790	6767981	9.3	2.8	1.5	19.9	4.1
HV157	384774	6767995	8.2	2.5	2.9	18.7	4.6
HV159	384993	6768153	10.1	2.0	9.9	16.4	3.2
HV161	384671	6767886	11.1	2.2	12.5	16.9	2.3
HV162	384675	6767531	9.3	2.0	11.0	14.7	2.5
HV163	384640	6767412	9.5	2.1	12.2	15.2	2.4
HV165	384689	6767229	10.7	1.9	17.2	14.9	1.8
HV166	384732	6767421	10.6	2.0	17.3	15.1	2.1
HV167	384703	6767345	11.2	1.9	16.6	15.5	2.0
HV169	384898	6768322	13.1	2.3	7.9	16.8	1.8
HV172	384142	6768389	7.1	2.0	17.5	14.9	3.6
HV173	384145	6768584	9.9	2.2	8.9	16.9	3.1
HV174	384072	6768527	10.1	2.0	17.0	14.9	2.0
HV175	383983	6768615	10.7	2.1	16.4	15.4	1.9
HV179	383562	6768279	9.8	1.8	18.5	13.6	1.1
HV184	383750	6768878	11.0	2.1	15.7	16.0	2.0
HV185	383724	6768813	10.1	2.2	12.0	16.2	2.3
HV186	383617	6768902	9.2	2.0	16.6	14.2	2.4
HV187	383624	6768951	11.4	1.9	10.9	16.0	1.6
HV188	383655	6769098	11.8	2.0	12.1	15.7	1.4
HV190	383641	6769160	11.2	2.0	13.4	15.8	2.0

Coordinates are GDA94 Zone 50. All samples were analysed by X-Ray Fluorescence Spectrometry (XRF). Loss on Ignition (LOI) values were determined using Thermo-Gravimetric Analyses between 110 and 1000°C.

Table 3: Rock chip sample results taken from weathered to saprolitic microsyenite

Sample No	Easting	Northing	K ₂ O %	TiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %	LOI %
HV099	387178	6769251	1.3	1.6	11.2	13.4	4.6
HV106	387618	6768682	0.8	2.5	38.7	13.4	5.1
HV130	387895	6768489	1.3	2.9	17.3	14.0	5.3
HV136	386302	6769391	5.8	2.0	22.6	16.3	4.0
HV141	384956	6768784	2.7	2.0	16.1	15.4	6.3
HV142	384968	6768368	5.6	2.1	33.5	12.7	4.7
HV154	384889	6767798	0.4	1.8	15.0	13.8	7.4
HV155	384864	6767876	1.6	2.3	4.2	19.1	7.6
HV164	384497	6766695	0.8	1.5	49.8	13.5	7.4
HV168	384769	6768307	1.2	2.3	14.9	15.3	7.1
HV170	384129	6768320	0.1	0.5	5.1	10.2	2.6
HV171	384202	6768368	3.3	2.4	2.8	22.5	8.0
HV176	383824	6768484	3.9	2.8	20.3	13.9	5.2
HV177	383723	6768535	6.5	2.0	16.5	15.0	3.7
HV180	383802	6768687	1.0	1.8	18.6	12.8	14.2
HV181	383898	6768803	1.6	2.0	22.5	13.5	4.5
HV183	383687	6768707	6.0	1.9	28.7	14.2	5.2
HV189	383723	6769086	4.3	0.3	6.5	6.9	1.3
HV191	383388	6768148	0.4	1.6	8.2	9.6	5.0

Coordinates are GDA94 Zone 50. All samples were analysed by X-Ray Fluorescence Spectrometry (XRF). Loss on Ignition (LOI) values were determined using Thermo-Gravimetric Analyses between 110 and 1000°C.

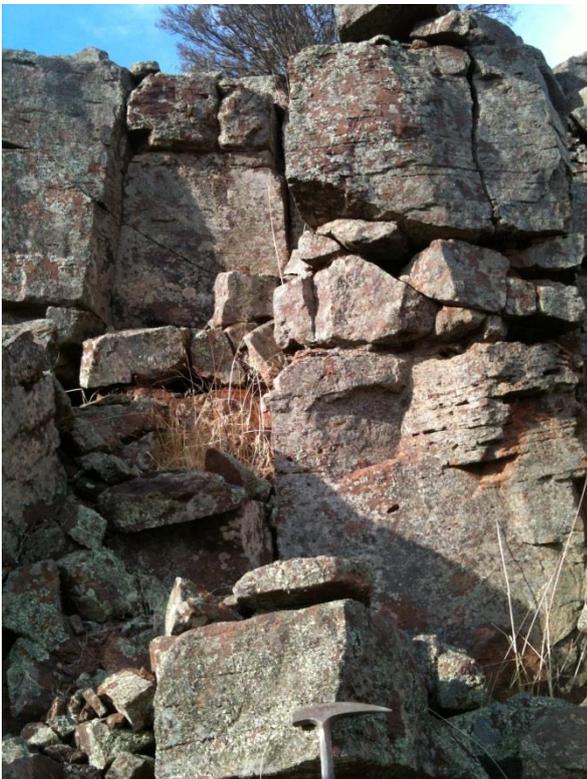


Figure 4: Outcrop of microsyenite flow

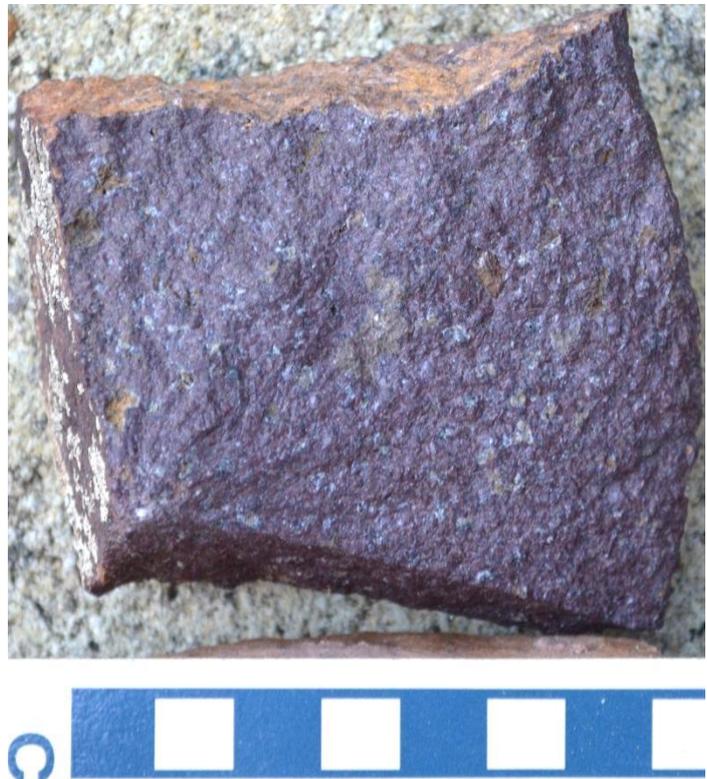


Figure 5: Hand specimen of microsyenite (cm scale)

ABOUT SHEFFIELD RESOURCES

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

ASX Code – SFX

Market Cap @ 45.5cps - \$46.8m

Issued shares – 102.9m

Cash - \$6.2m (approx.)

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

HEAVY MINERAL SANDS

The Dampier project, located near Derby in WA's Kimberley region, contains the global scale, 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 525km² Red Bull project is located in the highly prospective Fraser Complex within 20km of Sirius Resources NL's (ASX:SIR) Nova Ni-Cu discovery. Targets include three strong bedrock conductors which the Company intends to drill in Q2 2013.

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 the recent sale of its 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 in WA's Mid-West region. Sheffield is exploring the Oxley Potash project for unconventional hard rock potash mineralisation suitable for open pit mining.