ASX and Media Release

27 November, 2013

AIRCORE DRILLING UNDERWAY AT RED BULL NICKEL PROJECT

KEY POINTS

- **Sheffield has commenced Phase 2 aircore drilling on the Northern Targets at Red Bull**
- **This drilling follows further positive results from Phase 1, including:**
  - **Intersection of 5m @ 0.73% Ni from 1 metre resampling of drill hole REAC240**
  - **Copper (chalcopyrite) and nickel (violarite & gersdorffite) sulphides identified from petrological examination of end-of-hole aircore chips**
- **New Ni-Cu-Co targets outlined at Red Bull from soil sampling analysis**
- **Grant of key tenement E39/1733 "Big Bullock" in northern sector of Fraser Complex**

Sheffield Resources ("Sheffield", "the Company") (ASX:SFX) today announced it has commenced a second phase of aircore drilling at its Red Bull Nickel-Copper Project. Red Bull is within 20km of Sirius Resources NL's (ASX:SIR) Nova Nickel-Copper deposit, in the Fraser Range Nickel Province in Western Australia (Figure 2).

The Phase 2 aircore drilling programme of approximately 100 holes for 4,000m follows the successful first phase of drilling completed earlier this year which identified the Earlobe, Stud and Sleeper prospects (collectively the "Northern Targets") (see ASX release dated 12 September, 2013).

The new drilling aims to better define each prospect and will evaluate a further 3km strike-length of the 8km-long host mafic-ultramafic intrusive sequence (Figure 2). The drilling is expected to take 3-4 weeks to complete, with results expected in Q1 2014.

Included in the programme is drilling along strike from hole REAC240 at the Stud prospect, which returned the strongest nickel results from Phase 1 drilling. Recent 1m resampling and re-assaying of this drill hole returned higher Ni-Cu-Co values, including the following significant interval:

- **22m @ 0.39% Ni**, 138ppm Cu, 272ppm Co from 32m (REAC240), *including:*
  ***5m @ 0.73% Ni**, 168ppm Cu, 466ppm Co from 33m*
  (see below and Table 2 for details).

Managing Director, Bruce McQuitty said the aircore drilling programme will complete a broadly-spaced first past test of an 8km strike of the prospective mafic-ultramafic complex at Red Bull.

"Sheffield is taking a systematic approach to exploration for magmatic nickel sulphide deposits at Red Bull."

"The tenor of aircore drilling results received to date, and identification of nickel-sulphide minerals associated with a layered mafic-ultramafic intrusive sequence, highlights the potential of the Red Bull project to host a significant nickel sulphide deposit."

"Sheffield's presence in the Fraser Range is expanding rapidly and our generative work continues to deliver new targets."

Aircore Drilling Programme

The Phase 2 aircore drilling programme at Red Bull follows the Company's successful initial aircore drilling programme which identified three substantial nickel-copper-cobalt anomalies in the "Northern Targets" area, named the Earlobe, Stud and Sleeper prospects. The current drilling programme has been designed to determine the extent of these anomalies, and infill 3km of prospective strike yet to be tested by aircore drilling (Figure 1).

Significant results previously announced from each prospect include:

<u>Stud</u>

- 22m @ 0.26% Ni, 121ppm Cu, 223ppm Co, 7.5ppb Pt from 32m (REAC240)
  including 8m @ 0.41% Ni, 170ppm Cu, 350ppm Co, 6.8ppb Pt from 32m
- 12m @ 0.32% Ni, 204ppm Cu, 337ppm Co, 8 ppb Pd from 37m (REAC272)
- 8m @ 0.15% Ni, 400ppm Cu, 261ppm Co, 14.5ppb Pd, 14.5ppb Pt from 22m (REAC250)

<u>Earlobe</u>

- 6m @ 0.24% Ni, 53ppm Cu, 170ppm Co, from 52m (REAC230)

<u>Sleeper</u>

- 4m @ 0.16% Ni, 203ppm Cu, 301ppm Co from 44m (REAC320)

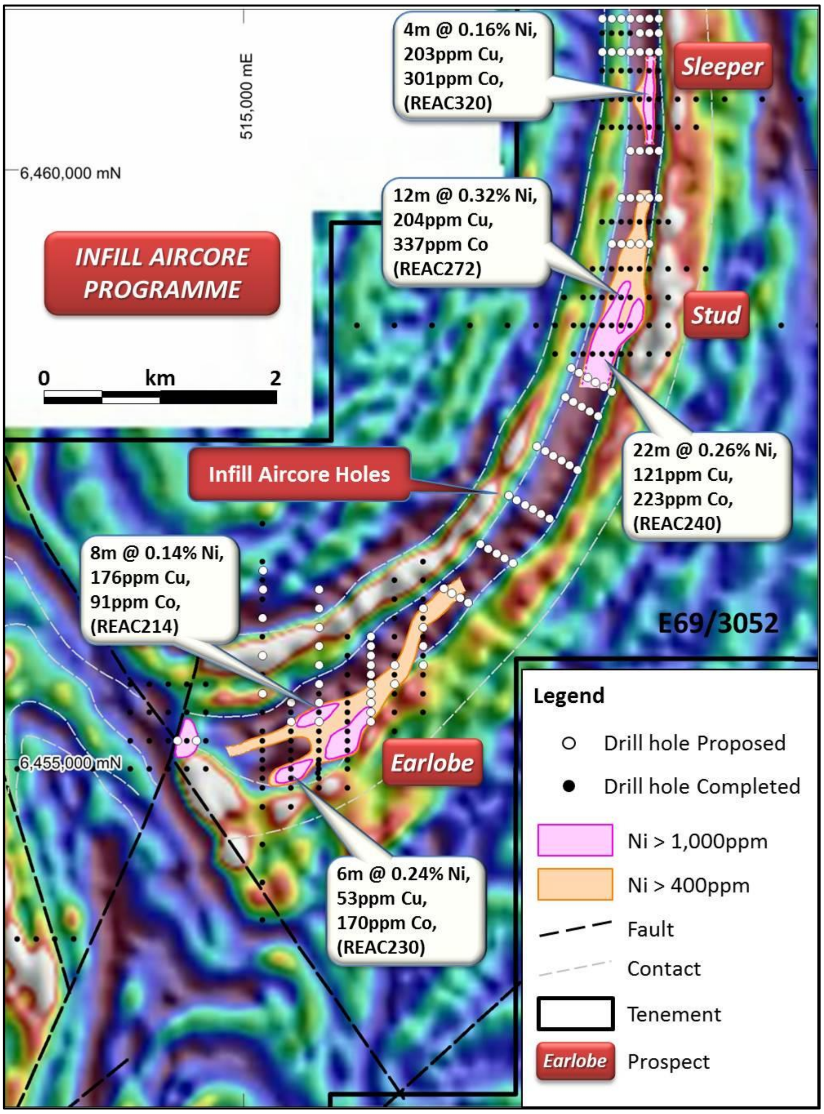

Figure 1: Current drilling programme (white circles) on aeromagnetic image showing contours of maximum Ni in hole and selected intervals at the Earlobe, Stud and Sleeper prospects

All three anomalous zones defined by the initial aircore drilling remain open along strike, particularly the southern line at the Stud prospect which returned some of the highest nickel intersections (e.g. 8m @ 0.41% Ni, REAC240).

RED BULL EXPLORATION UPDATE

Resampling REAC240 – Stud Prospect

Aircore drill hole REAC240 returned the strongest nickel anomaly from initial drilling. Resampling at 1m intervals was undertaken to better understand the multi-element association of the anomalous zone, and to apply a more definitive assay technique to this zone. The original aircore samples were assayed by 25g aqua-regia digest with ICP-OES and ICP-MS finish. This is a cost effective technique suited to early exploration, but is not considered a "total" analysis.

The 1m samples from REAC240 were re-assayed using a four acid digest with an ICP-OES & MS finish for the base metals and trace elements. This assay technique achieves near-complete digestion of minerals (including silicates) delivering more accurate results.

Results for REAC240 include:

- **22m @ 0.39% Ni, 138ppm Cu, 272ppm Co**, 466ppm Zn, 0.57% Cr, 7.0ppb Pt, 11ppb Pd from 32m
  including 5m @ 0.73% Ni, 168ppm Cu, 466ppm Co, 0.12% Zn, 0.58% Cr, 4.0ppb Pt, 11ppb Pd from 33m

  (Refer to Table 2 for details).

The high zinc values are supported by recent petrological examinations which reported zinc sulphide (sphalerite) in two end of hole samples (REAC162 and REAC273). The re-assaying of REAC240 also identified a strongly anomalous Rare Earth Element (REE) association including:

- **4m @ 0.26% TREO+Y** (total rare earth oxides plus yttrium), from 34m
  (Refer to Table 3 for details).

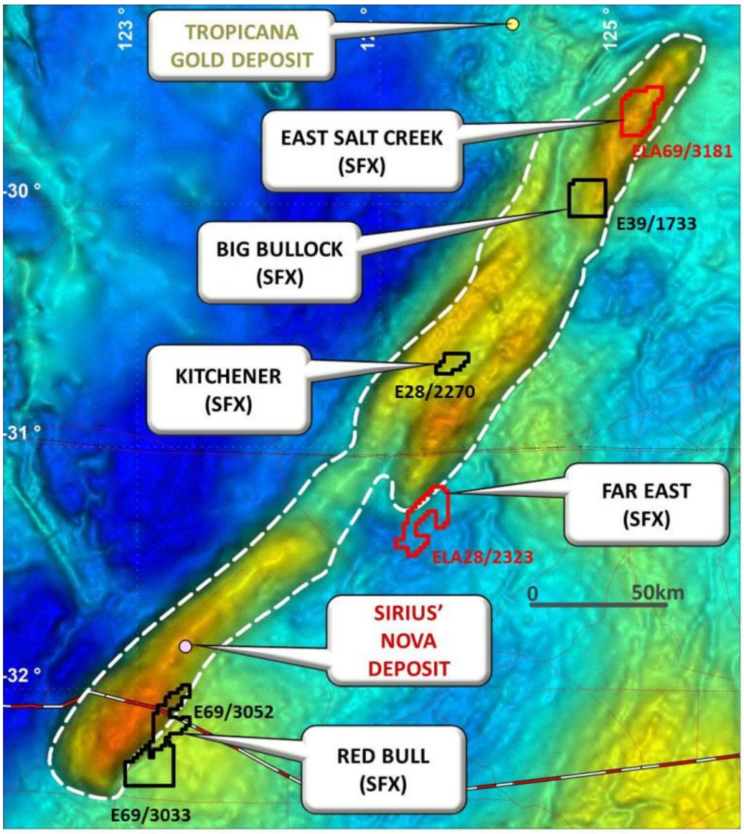

Figure 2: Location of Red Bull Project on a gravity image outlining the Fraser Complex

Petrology

Thirty-two end of hole aircore samples were selected for initial petrological examination by Roger Townend and Associates, Consulting Mineralogists. The aim of this work was to determine the mineralogy of host rock types and identify any sulphide species present. Petrographic samples were generally selected from the last metre of each hole which is typically the interval which has been least affected by weathering.

Initial petrology has confirmed that the main host rock at the Earlobe, Stud and Sleeper prospects is pyroxene granulite of igneous origin. The metamorphic grade is determined as upper amphibolite to granulite facies with orthopyroxene frequently present in the granulite. To the northwest of the anomalous trend the pyroxene granulite commonly occurs in contact with garnet-biotite-plagioclase quartzite often containing graphite flakes. Metagabbro comprising plagioclase-clinopyroxene-orthopyroxene granulite, pyroxene-biotite-hornblende - plagioclase granulite and occasional anorthosite occur to the southeast of the pyroxene granulite. A titano-magnetite rich differentiated layer occurs within the metagabbro providing further evidence of a highly differentiated mafic-ultramafic intrusive system. Intercalated meta-sediments are occasionally observed within the pyroxene granulite.

Disseminated sulphides were observed in twenty two of the thirty two polished thin sections (Table 1 and Figure 3). Sulphide was often observed predominantly as pyrite/marcasite whose habit indicated derivation from pyrrhotite. Some examples were associated with silica-carbonate hydrothermal alteration. Violarite ($FeNi_2S_4$), a supergene sulfide mineral associated with the weathering and oxidation of primary pentlandite, was observed in trace amounts in two drill holes (REAC273 and REAC238). Base metal sulphides were observed in trace amounts, with chalcopyrite regularly observed and sphalerite observed in two separate samples (REAC273 and REAC162).

Table 1: Number of petrology samples with sulphides observed, including type of sulphides

	Sulphide All types	Pyrite/ Marcasite	Pyrrhotite	Chalcopyrite	Sphalerite	Violarite	Gersdorffite
Type	all	Iron	Iron	Copper	Zinc	Nickel	Nickel
Formula		FeS_2	$Fe_{(1-x)}S$	$CuFeS_2$	(Zn,Fe)S	$FeNi_2S_4$	NiAsS
No of samples with sulphide observed	22	19	1	8	2	2	1

Secondary nickel sulphides were identified in three holes. In REAC273, pyrite was observed as extensive veins and as subhedral composite grains with equivalent chalcopyrite and rarely violarite. The violarite was determined as forming after pentlandite (iron-nickel sulfide, $(Fe,Ni)_9S_8$). The host rock was identified as a pyroxene-biotite-hornblende-plagioclase granulite.

REAC238 contained abundant ilmenite with subordinate secondary pyrite/marcasite (ex-pyrrhotite) containing fresh chalcopyrite and one observation of violarite. This mineralisation was hosted in orthopyroxene-hornblende granulite.

The end of hole lithology in REAC362 was classified as a hornblendite, with common silica-goethite alteration of orthopyroxene. Fine disseminations of magnetite or hematite were observed with trace amount of gersdorffite. Gersdorffite is a nickel arsenic sulfide mineral (NiAsS) found commonly in hydrothermal veins containing nickel sulphides.

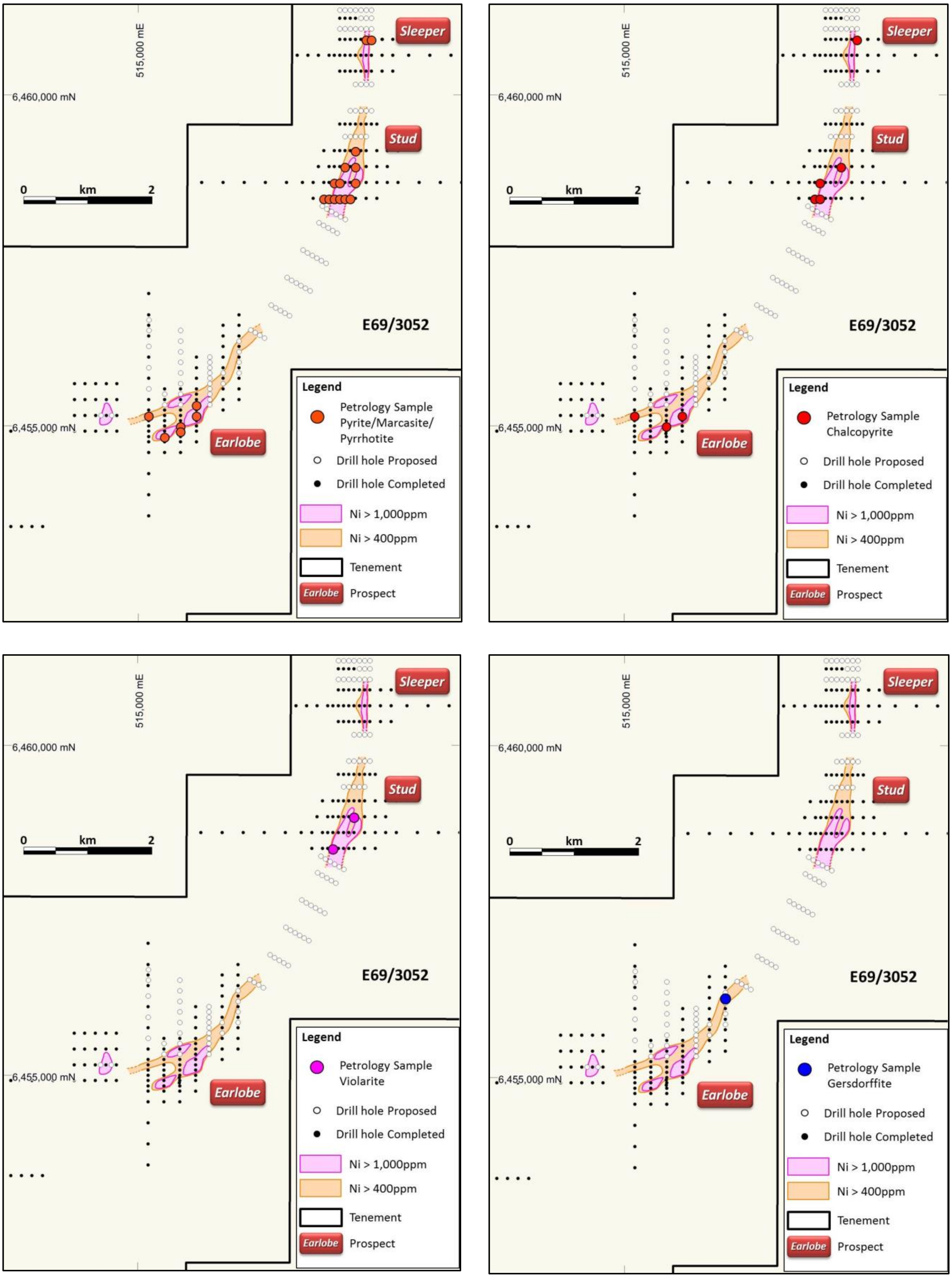

Figure 3: Aircore drill plan showing prospects and holes containing observed sulphides; pyrite/marcasite/pyrrhotite (top left), chalcopyrite (top right), violarite (bottom left) and gersdorffite (bottom right)

The next phase of petrographic work will involve collection of additional petrographic samples, more detailed analysis of sulphides present and interpretation of the mafic-ultramafic intrusive system present. The current data along with an additional thirty six samples have been forwarded to Dr Tony Crawford of A & A Crawford Geological Research Consultants for this next phase of work. This work will focus on identifying the presence of magmatic sulphides and interpreting the significance of the secondary nickel sulphides already identified. The work will include further determination of rock types to characterise the mafic-ultramafic intrusive and understand its potential to host magmatic nickel sulphide deposits. Samples have been despatched with results due in Q1, 2014.

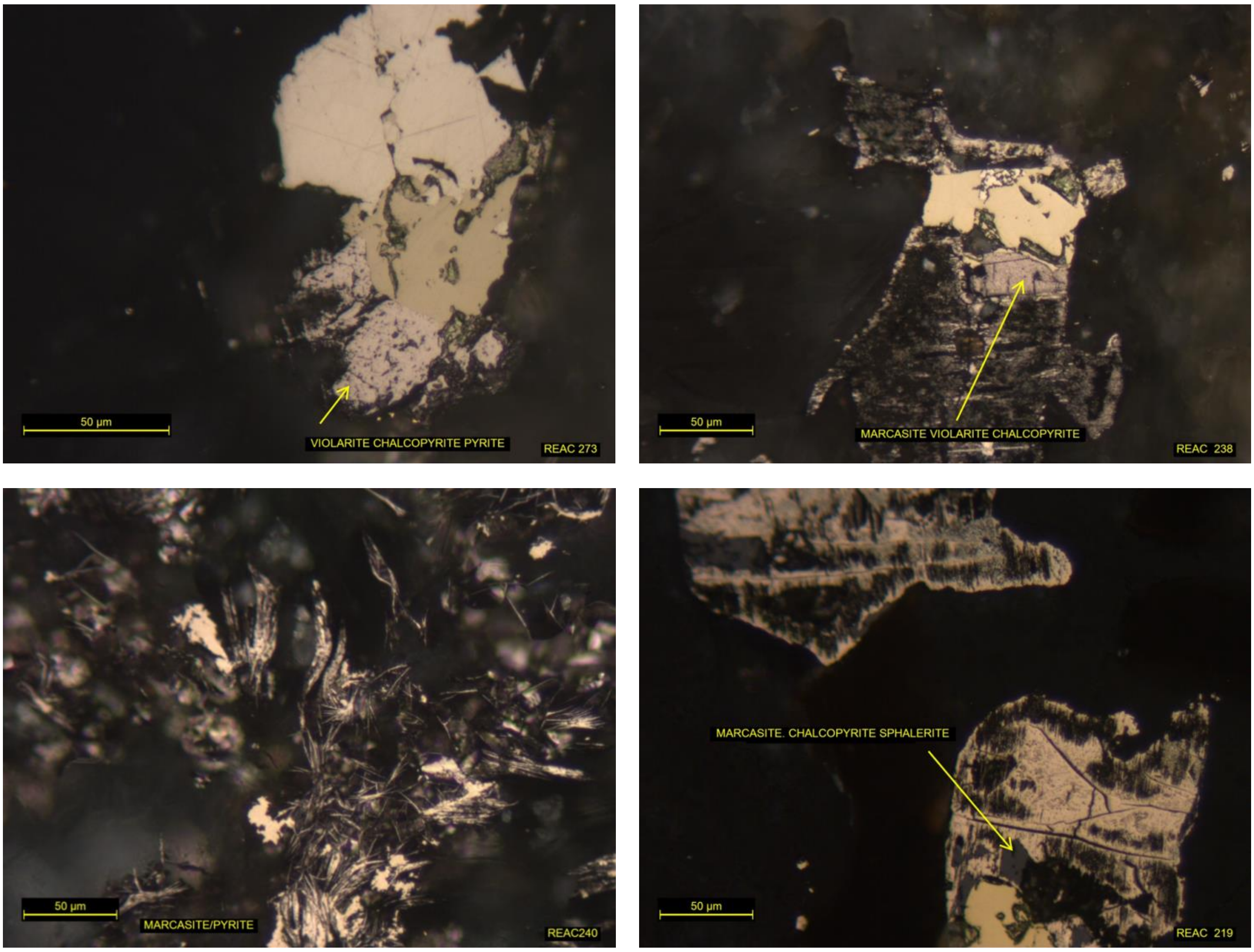

Figure 4: Photomicrographs of polished thin sections. REAC273 – violarite, chalcopyrite and pyrite (top left), REAC238 – marcasite, violarite and chalcopyrite (top right), REAC240 – marcasite, pyrite in silicified ultramafic (bottom left), REAC219 – marcasite, chalcopyrite and sphalerite (bottom right)

New Soil Anomalies

Sheffield completed an extensive surface rock and soil sampling programme during H1 2013. Results from this programme (2,768 samples) have been combined with historic soil sampling data and subjected to further interpretation and analysis. This work has confirmed existing targets and generated additional targets.

In particular, the soil sampling has identified several new targets located to the north and west of the Earlobe to Sleeper trend (Figure 5). This region occurs along strike from a number of targets currently being tested by Matsa Resources Limited (ASX:MAT). Matsa have recently reported elevated XRF nickel values from aircore drilling at its SHG02 and SHG03 prospects, located within 3km of Sheffield's northern tenement boundary (ASX:MAT, 21 November 2013). Future work on the new soil anomalies delineated within Sheffield's tenement will include infill sampling and field checking prior to follow-up aircore drilling. Summary statistics for the full element assay suite is provided for all samples in Appendix 1.

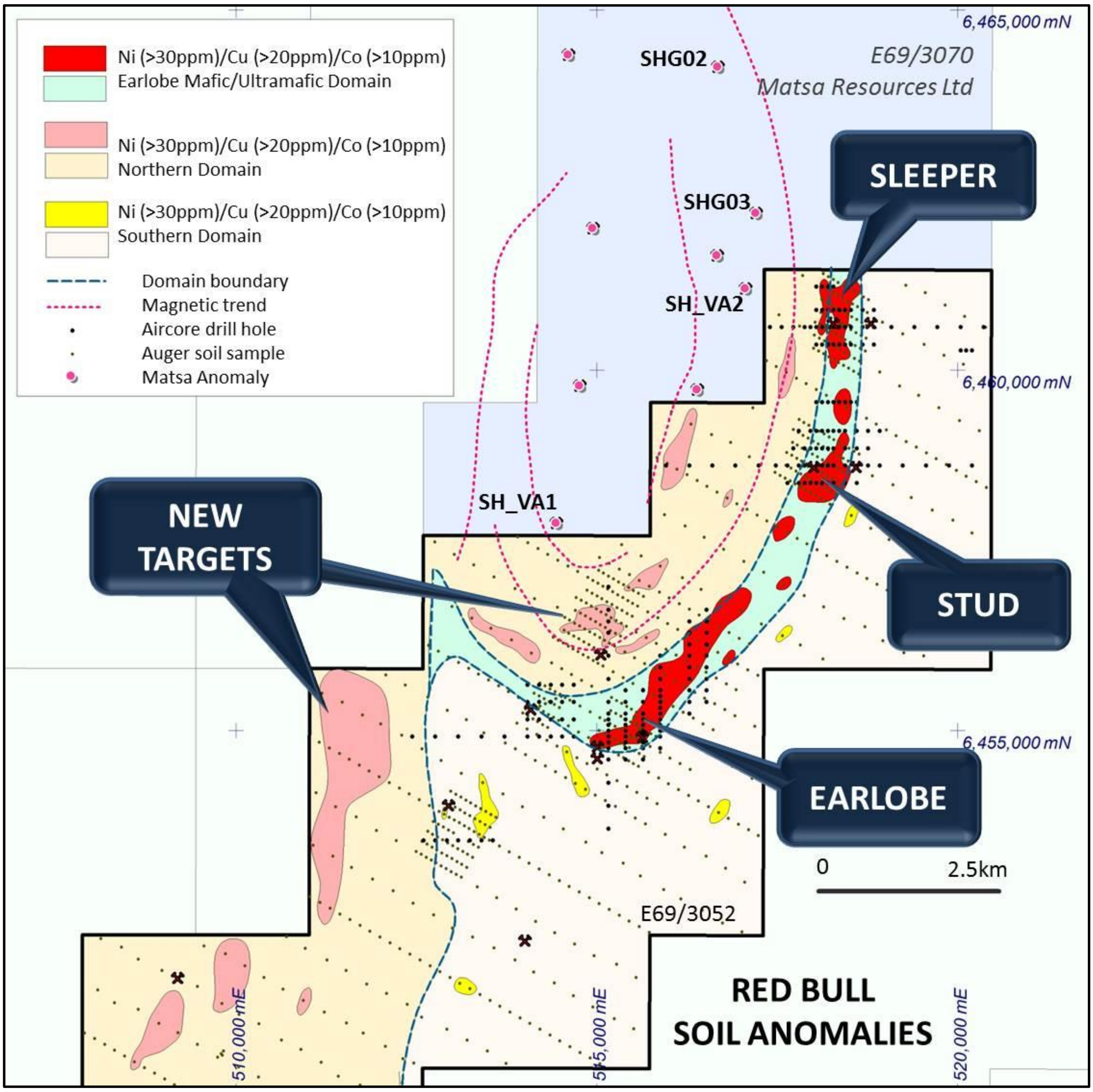

Figure 5: Summary of soil anomalies – northern targets area

Big Bullock Project - Key Tenement Granted

The Big Bullock Exploration Licence E39/1773, located in the northern portion of the Fraser Complex (Figures 2 and 6), has recently been granted. The tenement is situated along strike and to the south west of Orion Gold NL's (ASX: ORN) Peninsular Nickel-Cu-PGE project. The northern Fraser Complex has recently been the focus of increased exploration activities. Orion Gold NL recently commenced its maiden drilling program at the Peninsular project with drilling designed to test multiple targets which occur along strike from the Big Bullock project (ASX:ORN, 20 November 2013).

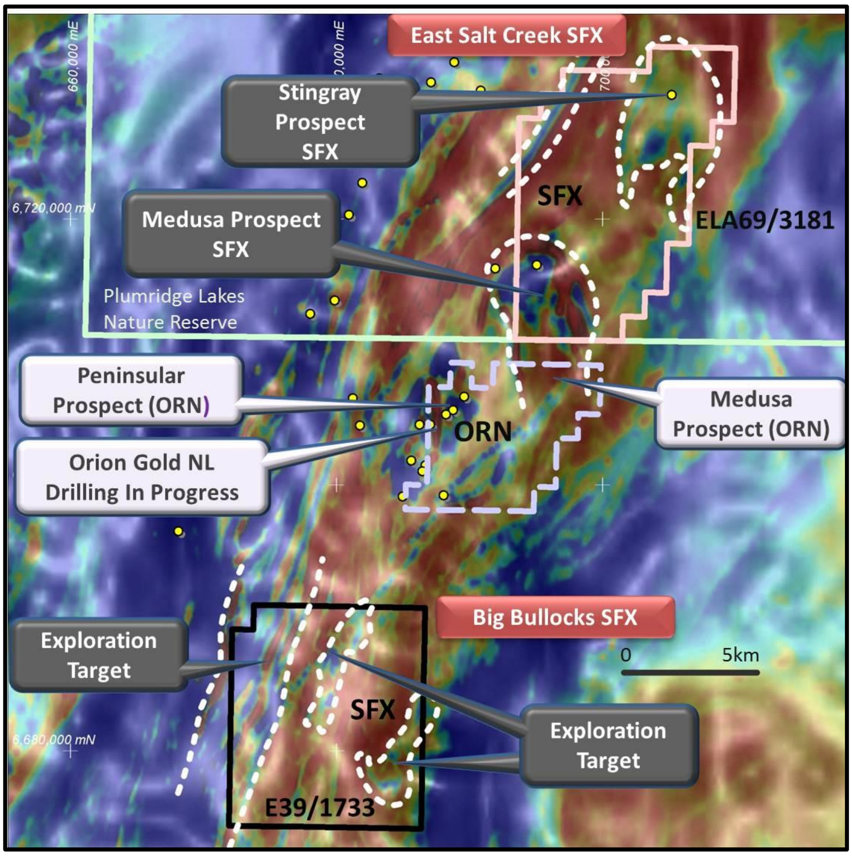

Figure 6: Big Bullock tenement granted (E39/1733) on aeromagnetic image over grey scale gravity image

Sheffield has commenced on-ground exploration with a reconnaissance field trip just completed. Further work scheduled includes a review of historic exploration and geophysical data, airborne geophysical surveys and additional on-ground reconnaissance prior to a maiden aircore drilling programme.

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.

Table 2: Red Bull aircore drilling re-sampling – significant results

Hole	Easting	Northing	Depth (m)	Dip	Azimuth	From (m)	To (m)	Width (m)	Ni ppm	Cu ppm	Co ppm	Zn ppm	Cr ppm	Pd ppb	Pt ppb
REAC250	518120	6458680	66	-60	270	39	40	1	758	190	273	134	425	6	4
REAC272	518200	6458920	60	-60	270	42	43	1	3029	833	517	487	2984	44	20
REAC240	518120	6458440	54	-60	270	27	29	1	2705	330	404	683	2288	8	8
						29	32	3	Not sampled						
						32	33	1	1839	267	284	250	5973	7	14
						33	34	1	7370	383	530	1124	7711	5	13
						34	35	1	8854	209	823	1524	8725	4	20
						35	36	1	4794	56	309	953	2050	1	2
						36	37	1	9285	75	369	1502	5076	2	7
						37	38	1	6040	117	300	876	5276	8	12
						38	39	1	3203	286	207	372	6199	12	11
						39	40	1	3040	265	256	327	6345	11	10
						40	41	1	3167	200	382	323	6407	10	10
						41	42	1	2774	264	272	212	5555	14	14
						42	43	1	2202	130	285	262	5856	7	10
						43	44	1	1086	57	144	241	4718	3	5
						44	45	1	1164	55	151	183	2869	2	3
						45	46	1	2005	104	213	141	3694	6	8
						46	47	1	1913	98	225	258	3867	5	9
						47	48	1	2268	69	183	207	5708	7	12
						48	49	1	5051	67	232	444	6411	8	14
						49	50	1	4505	76	254	372	14647	12	27
						50	51	1	3576	61	162	209	6575	7	13
						51	52	1	5493	30	159	219	4235	6	11
						52	53	1	3412	88	129	139	3677	6	8
						53	54^	1	3138	79	119	122	3514	5	9

Down-hole widths are quoted. Intervals calculated from 1m samples, 1m minimum width. >1,000ppm (>0.1%) Ni, with 4m maximum internal waste. ^ denotes end of hole interval. Elements assayed by four acid digest with an ICP-OES & MS finish for base metals and trace elements. Au, Pt, Pd as additional elements assayed by Fire Assay with ICP-MS finish. Coordinates GDA94 MGA Zone 51 projection, grid azimuth, hole locations approximate using handheld GPS, +/- 15m accuracy.

Table 3: Re-sampling of aircore drill hole REAC240 - significant rare earth element results

Sample Id	Hole	Easting	Northing	Depth (m)	Dip	Azimuth	From (m)	To (m)	Width (m) (m)
SS08628	REAC240	518120	6458440	54	-60	270	34	35	1
SS08629							35	36	1
SS08630							36	37	1
SS08631							37	38	1
Sample Id	**La_2O_3 ppm**	**Ce_2O_3 ppm**	**Pr_2O_3 ppm**	**Nd_2O_3 ppm**	**Sm_2O_3 ppm**	**Eu_2O_3 ppm**	**Gd_2O_3 ppm**		**Light REO**
SS08628	1006.6	317.2	396.8	1432.8	315.0	69.3	155.5		
SS08629	234.3	88.2	82.3	314.2	71.1	16.7	44.3		
SS08630	799.3	159.5	253.1	1020.1	231.7	60.0	181.6		
SS08631	275.1	123.6	76.0	302.3	67.7	17.5	56.1		
Sample Id	**Tb_2O_3 ppm**	**Dy_2O_3 ppm**	**Ho_2O_3 ppm**	**Er_2O_3 ppm**	**Tm_2O_3 ppm**	**Yb_2O_3 ppm**	**Lu_2O_3 ppm**	**Y_2O_3 ppm**	**Heavy REO**
SS08628	21.8	107.2	15.0	36.8	5.3	33.0	3.8	321.9	
SS08629	6.7	36.4	5.8	16.2	2.6	16.5	2.1	145.8	
SS08630	27.3	154.5	25.4	69.4	10.2	60.8	7.9	622.9	
SS08631	7.8	42.7	7.1	19.2	2.8	16.2	2.1	206.4	

Down-hole widths are quoted. Intervals calculated from 1m samples, 1m minimum width. Elements assayed by Lithium borate fusion ICP-OES with ICP-OES and ICP-MS finish. Coordinates GDA94 MGA Zone 51 projection, grid azimuth, hole locations approximate using handheld GPS, +/- 15m accuracy.

ABOUT SHEFFIELD RESOURCES

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

ASX Code – SFX	Market Cap @ 60cps - $71.0m
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.

Appendix 1: Soil Sample Assay Statistics

Element	Units	Detection	Method*	Count	Min	Max	Percentile			
							75th	90th	95th	98th
Ni	**ppm**	**1**	**AR25/OE**	**2766**	**4**	**190**	**27.75**	**33.5**	**38**	**45**
Cu	**ppm**	**1**	**AR25/OE**	**2766**	**1**	**60**	**21**	**25**	**29**	**32**
Co	**ppm**	**0.1**	**AR25/MS**	**2766**	**1.1**	**108.6**	**9.7**	**12.2**	**14.0**	**16.4**
Ag	ppm	0.05	AR25/MS	214	0.05	0.05	n/a	n/a	n/a	n/a
Al	ppm	20	AR25/OE	2766	3208	43669	18291	22578	25551	29278
As	ppm	1	AR25/MS	2766	1	120	2	3	5	8
Au	ppb	1	AR25/GF	2766	1	20	3	5	6	8
Au-Rp1	ppb	1	AR10/GF	86	3	19	9	12	13.75	15.3
Ba	ppm	1	AR25/MS	2766	5	677	78	107	134	196.4
Be	ppm	0.05	AR25/MS	2766	0.05	1.43	0.48	0.60	0.69	0.80
Bi	ppm	0.01	AR25/MS	2766	0.01	1.34	0.07	0.09	0.11	0.13
Ca	%	0.01	AR25/OE	2766	0.08	21.06	8.94	11.34	12.73	14.93
Cd	ppm	0.01	AR25/MS	2766	0.01	0.53	0.05	0.06	0.08	0.10
Ce	ppm	0.01	AR25/MS	2766	1.17	129.60	22.92	28.58	33.76	45.84
Cr	ppm	2	AR25/OE	2766	7	837	59	86	104	122
Cs	ppm	0.01	AR25/MS	2766	0.10	4.84	0.74	0.91	1.05	1.23
Fe	%	0.01	AR25/OE	2766	0.31	21.26	2.85	4.32	5.37	6.85
Ga	ppm	0.05	AR25/MS	2766	0.61	13.50	4.77	6.16	7.11	8.26
Hf	ppm	0.01	AR25/MS	2766	0.01	0.64	0.15	0.20	0.24	0.29
In	ppm	0.05	AR25/MS	214	0.05	0.05	n/a	n/a	n/a	n/a
K	ppm	20	AR25/OE	2766	354	12027	4133	4844	5252	5830
La	ppm	0.01	AR25/MS	2766	0.55	59.55	11.01	13.44	15.89	21.92
Li	ppm	0.1	AR25/MS	2766	2.3	38.5	11.1	13.5	15.1	16.9
Mg	%	0.01	AR25/OE	2766	0.06	9.36	3.06	4.31	5.10	5.79
Mn	ppm	1	AR25/OE	2766	34	1277	306	420	505	600
Mo	ppm	0.1	AR25/MS	2766	0.1	2.6	0.3	0.5	0.6	0.7
Na	%	0.01	AR25/OE	2766	0.01	1.43	0.29	0.36	0.41	0.48
Nb	ppm	0.2	AR25/MS	214	0.2	0.9	0.2	0.2	0.2	0.3
P	ppm	20	AR25/OE	2766	0	378	53	72	84	107.7
Pb	ppm	0.5	AR25/MS	2766	0.5	16.0	6.2	7.9	9.1	10.3
Pd	ppb	10	AR25/MS	214	10	10	n/a	n/a	n/a	n/a
Pt	ppb	5	AR25/MS	2766	5	16	5	5	5	6
Rb	ppm	0.02	AR25/MS	2766	1.98	65.64	14.88	18.72	21.71	25.55
Re	ppm	0.05	AR25/MS	214	0.05	0.05	n/a	n/a	n/a	n/a
Sb	ppm	0.02	AR25/MS	2766	0.02	0.70	0.10	0.13	0.15	0.18
Sc	ppm	1	AR25/OE	2766	1	22	7	9	10	12
Se	ppm	1	AR25/MS	214	1	1	n/a	n/a	n/a	n/a
Sn	ppm	0.05	AR25/MS	2766	0.11	1.55	0.50	0.63	0.71	0.83
Sr	ppm	0.02	AR25/MS	1211	7.90	1284.33	505.03	708.38	848.67	953.88
Ta	ppm	0.05	AR25/MS	214	0.05	0.05	n/a	n/a	n/a	n/a
Te	ppm	0.01	AR25/MS	2766	0.01	0.92	0.04	0.06	0.08	0.12
Th	ppm	0.01	AR25/MS	2766	0.12	17.25	3.50	4.46	5.06	5.88
Ti	ppm	5	AR25/OE	2766	14	2740	748	981	1159	1384
Tl	ppm	0.01	AR25/MS	2766	0.02	0.39	0.10	0.12	0.13	0.15
U	ppm	0.01	AR25/MS	2766	0.05	7.28	1.04	1.86	2.37	3.18
V	ppm	2	AR25/OE	2766	5	469	74	104	127	157
W	ppm	0.05	AR25/MS	2766	0.05	1.80	0.03	0.05	0.06	0.11
Y	ppm	0.02	AR25/MS	2766	0.61	59.95	10.60	13.77	16.65	22.38
Zn	ppm	1	AR25/OE	2766	2	110	17	21	24	27
Zr	ppm	0.1	AR25/MS	2766	0.8	29.4	5.7	7.1	8.3	10.2

* Method codes as follows. Digest: AR25=aqua-regia 25g charge; AR10=aqua-regia 10g charge. Determination: MS=ICP-MS; OE=ICP-OES; GF=graphite furnace.