27 July 2017

ASX Code:
SFX

Directors:

Mr Will Burbury
Non-Executive Chairman

Mr Bruce McFadzean
Managing Director

Mr Bruce McQuitty
Non-Executive Director

Mr David Archer
Technical Director

Registered Office:

Level 2, 41-47 Colin Street
West Perth WA 6005

Share Registry:

Link Market Services
Level 4, Central Park
152 St Georges Terrace
Perth WA 6000

Capital Structure:
Ordinary Shares: 181.4M
Unlisted Options: 14.6M

Market Capitalisation:
A$100 million

Cash Reserves:
A$8.3 million

Investor Relations:

Mr Bruce McFadzean
T: +61 8 6555 8777
E: info@sheffieldresources.com.au

Mr John Gardner
Citadel-MAGNUS
T: +61 413 355 997
E: jgardner@citadelmagnus.com

Sheffield Resources LIMITED

QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 30 JUNE 2017

HIGHLIGHTS

Thunderbird Mineral Sands Project

- Six non-binding offtake MOUs secured for premium zircon, zircon concentrate and LTR ilmenite with multiple counterparties
- Financing opportunities for the Thunderbird Mineral Sands Project progressing well
- Tendering of major activities including construction, village accommodation, mining and power supply agreements well advanced
- Native Title determination received in favour of Sheffield, enabling proposed grant of Thunderbird mining lease
- Environmental permitting remains on track for conclusion at end of Q3 2017

Exploration

- Secured agreement to earn 100% of the Jamieson Gold Project, located in the central Victorian Goldfields
- High grade rock chip sampling results of up to 44.5% Cu from the Western Star Copper prospect in the East Pilbara

Corporate Activities

- Cash position of A$8.3 million as at 30 June 2017

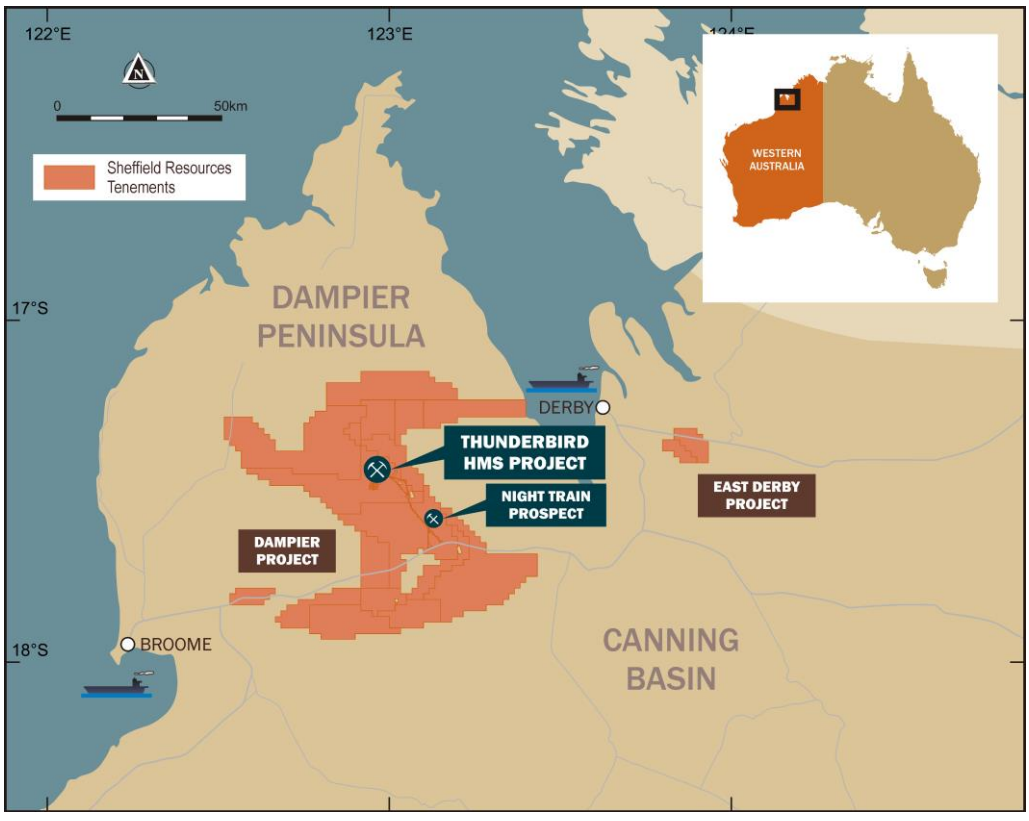

Figure 1: Location of Thunderbird Mineral Sands Project

OPERATIONAL SUMMARY

During the June quarter Sheffield Resources Limited ("Sheffield" or "the Company") continued its operational focus on its world class Thunderbird Mineral Sands Project (Thunderbird), located in the Canning Basin in northern Western Australia (Figure 1).

Following completion of the Bankable Feasibility Study (BFS) for Thunderbird in the March quarter, Sheffield continues to pursue offtake, financing, construction readiness, permitting and exploration activities.

During the quarter, Sheffield secured six non-binding memorandums of understanding (MOUs) for the future sale of premium zircon, zircon concentrate and ilmenite with high quality industry counterparties (see ASX announcement dated 4 April 2017, 10 April 2017 and 26 April 2017).

In conjunction with its financial advisor Azure Capital, Sheffield initiated a financing process, inviting a number of lenders and strategic partners to participate in the development of the Thunderbird project.

Sheffield progressed the selection of an engineering, procurement and construction (EPC) contractor. Discussions advanced in accordance with the project schedule with the selection of a preferred contractor expected during the September quarter.

Permitting activities continued to advance throughout the quarter with the Environmental Protection Agency (EPA) board attending a site visit of the Thunderbird project. The environmental approval process for Thunderbird remains on track for completion in Q3 2017.

A positive good faith decision by the National Native Title Tribunal (NNTT) found in favour of Sheffield, followed by the substantive Native Title determination by the NNTT enabling the grant of the mining lease. Subsequent to the good faith decision, the Mount Jowlaenga Polygon #2 claimant group has lodged a notice of appeal with the Federal Court of Australia, regarding a narrow point of law in the good faith process and unrelated to heritage or environmental matters. A hearing date has been scheduled for 28 August 2017.

An exploration aircore drilling program of 64 holes or a total of 1,779m was completed at the Eneabba Project, results are expected during Q3 2017.

The Company secured an agreement, through its wholly-owned subsidiary Carawine Resources Pty Ltd (Carawine), to earn 100% interest in a gold exploration project from Jamieson Minerals Pty Ltd. This Earn-In Agreement provides Carawine the right to earn 100% of the Project by incurring $190,000 of exploration expenditure within the next two years, followed by a further $200,000 by way of cash payment or share issue.

Subsequent to the end of the quarter, results from reconnaissance sampling at the Western Star Copper prospect in the East Pilbara returned high grade values of up to 44.5% Cu.

Exploration and evaluation expenditure totalled A$1.2m for the quarter. Cash reserves of A$8.3 million (unaudited) remain as at 30 June 2017.

THUNDERBIRD MINERAL SANDS PROJECT

Marketing and Offtake

Offtake negotiations with a range of counterparties continued during the quarter, culminating in multiple offtake MOUs being secured for the high quality zircon and LTR ilmenite products from Thunderbird. Sheffield secured five non-binding memorandums of understanding (MOUs) for the future sale of premium zircon and zircon concentrate with high quality industry counterparties (see ASX

announcement dated 4 April 2017, 10 April 2017 and 26 April 2017). The agreements account for 70% of premium zircon and 45% of zircon concentrate to be produced from Stage 1 of the Thunderbird project to European, Indian and Chinese consumers. Additionally, a maiden LTR ilmenite MOU was secured with the premier Chinese manufacturing entity CNNC Huayuan Titanium Dioxide Co. Ltd (CHTi). The agreement with CHTi represents approximately 45% of the estimated total volume of LTR ilmenite to be produced from Stage 1 of Thunderbird (see ASX announcement dated 29 May 2017).

The Company remains focussed on negotiating binding offtake agreements with the counterparties whilst negotiations are underway with a range of other parties interested in securing commercial agreement for Sheffield's high quality zircon and ilmenite products.

Market conditions for TiO_2 products have steadied over the previous quarter with prices falling marginally compared to the high point of the previous quarter. Demand remains strong.

Zircon has seen continued recovery on pricing as global stock levels continue to draw down in conjunction with strong demand. Further industry price increases were implemented during the quarter with further price improvements expected during 2017.

Figure 2: Derby wharf with bulk export ship loading facility

Project Financing

In conjunction with its financial advisor Azure Capital, Sheffield has commenced a process inviting a number of lenders and strategic partners to participate in the development of the Thunderbird project. Initial screening of proposals is scheduled to conclude in Q3 2017 and Sheffield will appraise the market of financial developments in the near future.

Project Execution Planning

Sheffield progressed the selection of an engineering, procurement and construction (EPC) contractor with discussions advancing in accordance with the project schedule, with selection of a preferred contractor expected during the September quarter.

A number of contracting activities were progressed, including:

- Selection of mining services contractor
- Electricity and gas supply sourcing
- Accommodation village construction and facilities management
- Various minor and preliminary works and owner works planning, including mining geotechnical pits and front end engineering design work associated with the low temperature roast (LTR)
- Tailings management studies

It is anticipated that major contracts will be concluded throughout the remainder of 2017.

Sustainability

Permitting activities continued to advance throughout the quarter with the Environmental Protection Agency (EPA) Board attending a site visit of the Thunderbird project and engaging with key community stakeholders. The environmental approval process for Thunderbird remains on track for completion at the end of Q3 2017.

A positive good faith decision by the National Native Title Tribunal (NNTT) found in favour of Sheffield, followed by the substantive Native Title determination by the NNTT clearing the way for the grant of the mining lease from the Western Australian Government authorities. Subsequently, the Mount Jowlaenga Polygon #2 claimant group has lodged a notice of appeal with the Federal Court of Australia. A hearing date has been scheduled for 28 August 2017.

Thunderbird continues to have strong and wide local community support. Engagement with a range of stakeholders throughout the Kimberley community continued during the quarter.

Work Ready Program

Sheffield continued recruitment of local Kimberley employees during the quarter and has committed to a construction work ready program to enable a wider cross section of traditional owners to be meaningfully engaged at Thunderbird during the construction phase. The commencement of work ready programs shall provide employment opportunities and skill growth pathways for up to 18 traditional owners that will focus on preparing participants for employment and training during the project construction phase.

EXPLORATION ACTIVITIES

DAMPIER REGIONAL MINERAL SANDS

Planning and permitting for regional exploration on the Dampier project for 2017 continued during the quarter, with programs expected to commence during H2 2017.

DERBY EAST PROJECT

Sheffield is investigating the potential of the Derby East Project tenements, located 25km east of Derby, to yield commercial quantities of sand for construction purposes.

Aircore drilling by Sheffield in October 2016 tested an area within its tenement E04/2390 with potential to yield significant quantities of clean, angular silica sand suitable for construction, first identified by previous explorers Areva. Sheffield's drilling intersected the sand unit in nine holes, beneath 0-12m of cover, over an area of about 6km by 2.5km with an average thicknesses of about 34m (refer Sheffield December 2016 ASX Quarterly Report for further details of this drilling).

During the quarter, results of a preliminary assessment of the sand unit for suitability as construction material was completed by Golder Associates Pty Ltd (Golder). Golder completed particle size distribution, Atterberg Limits and linear shrinkage, and compaction and soaked California Bearing Ratio ("CBR") tests on six composite samples, with five samples taken from within the target sand unit (Table 1).

Golder concluded that excepting two very minor grading exceedances, all five samples meet specification requirements for earthworks (Main Roads Western Australia Specification 302 – Earthworks) and Caisson Sand Key construction (Jurong Town Council Singapore Specification).

This preliminary test work is encouraging, with further drilling required to better define the potential quantities of these sands, along with additional test work designed to assess suitability for specific end-use requirements.

Sheffield will continue to evaluate the opportunity presented by this deposit.

Table 1: East Derby composite sample details.

Composite	Hole ID	Interval (m)	Description
EDSC0023	EDAC039 EDAC040	3-6 3-9	Dark brown-red, fine to medium grained sand (Pindan Cover)
EDSC0021	EDAC035	30-45	Light white-grey, fine to coarse grained sand
EDSC0022	EDAC038	18-27	Medium brown khaki, medium to coarse grained sand
EDSC0024	EDAC041	15-27	Light khaki fine to coarse grained sand
EDSC0025	EDAC042	18-39	Light khaki medium to coarse grained sand
EDSC0026	EDAC043	33-42	Light cream khaki coarse grained sand

ENEABBA MINERAL SANDS

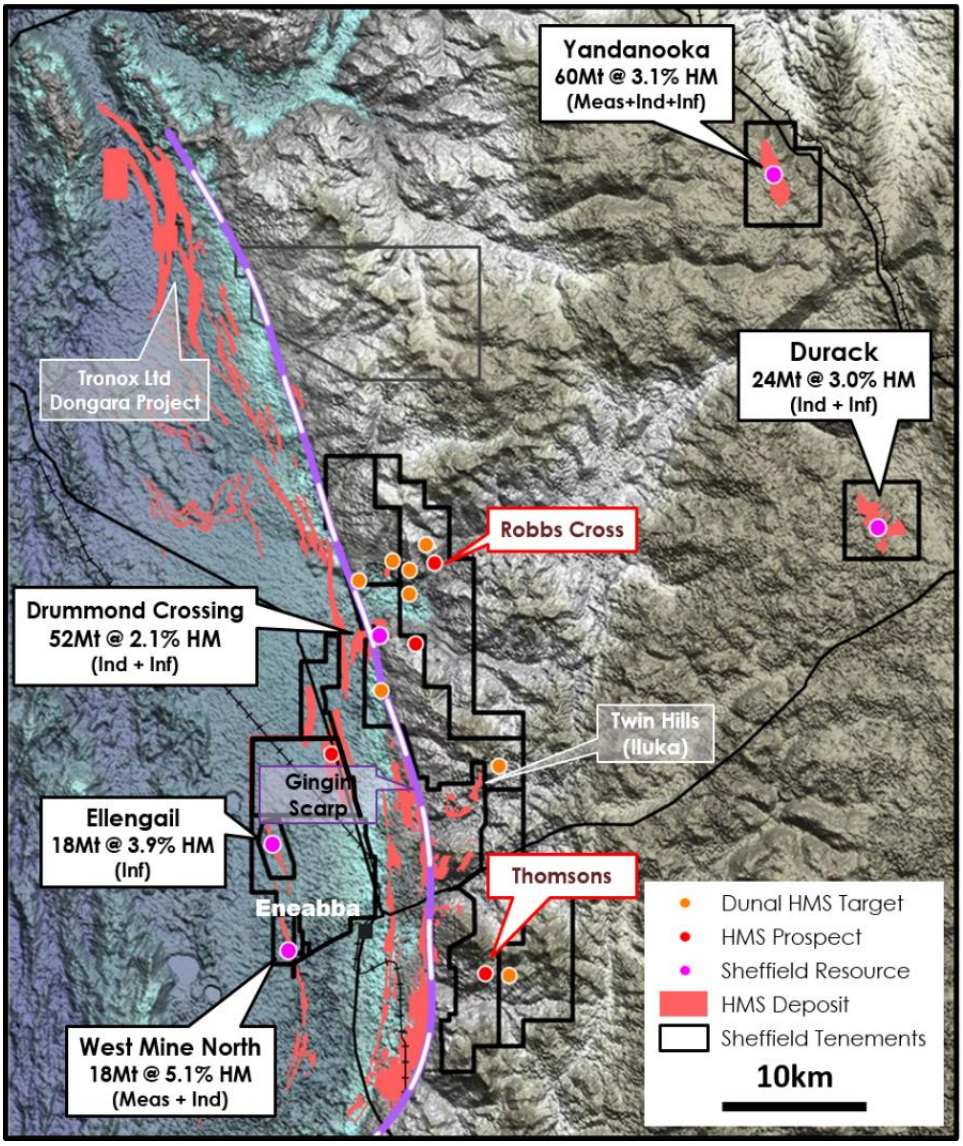

Figure 3: Eneabba Project Mineral Resources & Dunal HMS Targets

During the quarter exploration aircore drilling was completed at the Robbs Cross and Thomsons prospects within the Eneabba Project, near the town of Eneabba about 140km south of Geraldton in WA (Figure 3).

The drilling focussed on extension of dunal-style HMS mineralisation discovered by Sheffield in 2015 (see ASX announcement dated 23 July, 2015). At Robbs Cross, 32 holes were drilled for a total of 696m and at Thomsons 33 holes were drilled for a total of 1,083m.

Both prospects have high-value heavy mineral assemblages reported from previous work: 12.5% rutile, 14.7% zircon, 4.1% leucoxene and 47% ilmenite at Robbs Cross, and 12.3% rutile, 15.1% zircon, 3.6% leuxocene and 50% ilmenite at Thomsons, and therefore represent opportunities to add to Sheffield's HMS Mineral Resource base for the Eneabba Project, which currently contains 6.76Mt of HM (Appendix 1). Results from the drilling are expected to be received during Q3 2017.

CARAWINE RESOURCES PTY LTD

Carawine Resources Pty Ltd (Carawine) a wholly owned subsidiary of Sheffield, was created to hold Sheffield's substantial non-mineral sands exploration projects. These now include four gold, copper and base metal projects, each targeting high-grade deposits in well-established mineralised provinces throughout Australia (Figure 4):

- Jamieson Au-Cu-Ag-Zn-Pb project, VHMS targets
- Oakover Cu-Co project, Zambian style Cu-Co targets
- Paterson Au-Cu-Co(Zn-Pb) project, Nifty Cu-Co and Telfer Au-Cu targets
- Fraser Range Ni-Cu-Co project (Independence Group NL (ASX:IGO) 51%, earning 70% by spending A$5 million), Nova-Bollinger Ni-Cu-Co targets

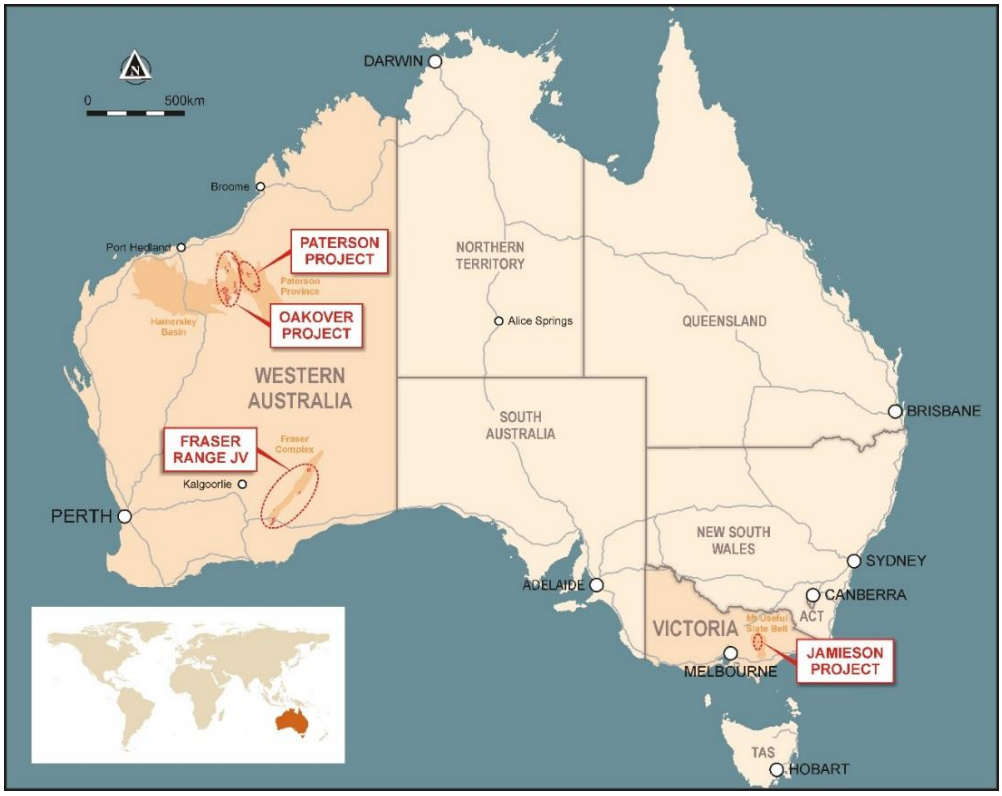

Figure 4: Carawine's Project locations

Sheffield will consider options to unlock the value of these assets for shareholders in the near term. Current work planned for Carawine's projects include low-cost exploration programs aimed at defining and prioritising targets.

Jamieson Project

During the quarter Carawine secured an agreement to earn 100% of the Jamieson Project from Jamieson Minerals Pty Ltd, (Figure 7), by incurring $190,000 of exploration expenditure within the next two years, followed by a further $200,000 as a cash payment or issue of shares. The project is located near the township of Jamieson in the central Victorian Goldfields and comprises Exploration Licence 5523, containing the Hill 800 gold and Rhyolite Creek zinc-gold-silver prospects (see Sheffield's ASX announcement dated 28 June, 2017).

Hill 800 was discovered by New Holland Mining NL ("New Holland") in 1994, following sampling of outcropping gold-rich gossans. The prospect is a volcanic-hosted massive sulphide (VHMS) gold-copper (Au-Cu) system with similarities of host rock, age and mineralisation styles to those of the Henty gold and Hellyer lead-zinc-silver-god deposits in Western Tasmania.

New Holland drilled 51 RC and six diamond holes at Hill 800 (6,309m total) between 1996 and 1999, returning high-grade gold results including:

- 33m @ 4.31g/t Au, from surface (HEC1)
- 13m @ 10.9g/t Au, from surface (HEC13), including 3m @ 38.8 g/t Au from surface
- 23.4m @ 4.56g/t Au, from 0.5m (HED1)
- 25m @ 4.72g/t Au, from 3m (HEC45), including 1m @ 24.0g/t Au from 16m
- 21m @ 4.04g/t Au, from 76m (HEC49), including 1m @ 20.9g/t Au from 80m
- 4m @ 7.03g/t Au, from 91m (HEC12), including 1m @ 28.9g/t Au from 184m and 1m @ 122g/t Au from 188m

(Figure 5; down hole widths may not represent true thickness.)

Gold mineralisation is associated with silica-sericite-pyrite alteration in intermediate volcanic rocks at the core of a well-defined alteration zonation plunging approximately 70 degrees to the north. Within this zone higher gold grades occur in a main, sub-vertical lode, and two parallel mineralised trends in the footwall to the main lode. The effectiveness of prior drilling was restricted by limited site preparation and the use of large truck-mounted drill rigs, leading to a number of oblique intersections and holes missing mineralisation. The use of small diamond drill rigs and better drill site preparation presents an opportunity for Carawine to more effectively test the interpreted lode geometry and target down-plunge extensions and potential parallel lodes.

The Rhyolite Creek Zn (Au-Ag) prospect, located about 5km south of Hill 800, was discovered by Goldsearch in 2008. Goldsearch drilled one diamond hole in 2008 (RCD001), targeting a linear magnetic anomaly in an area of gold-silver-base metal anomalism in surface geochemical samples.

The discovery diamond core hole RCD001 intersected a zone of strong albite-chlorite-silica alteration and sulphide mineralisation (Figure 6), returning an interval of:

- **8m @ 3.7% Zn, 0.3% Pb, 0.1% Cu, 1.6g/t Au and 29g/t Ag** from 220m *including* **1.4m @ 15.6% Zn, 1.5% Pb, 0.5% Cu, 7.4g/t Au and 113g/t Ag** from 223m

Re-sampling of core within this interval, from 223.5 to 224.5m by Jamieson Minerals returned assay values of 20.3% Zn, 1.5% Pb, 0.7% Cu, 178g/t Ag and 10.3g/t Au.

Zinc mineralisation was identified as being related to low-iron sphalerite and the footwall to this high-grade zone was reported as being strongly altered intermediate volcanics, with significantly elevated zinc values over 52m downhole.

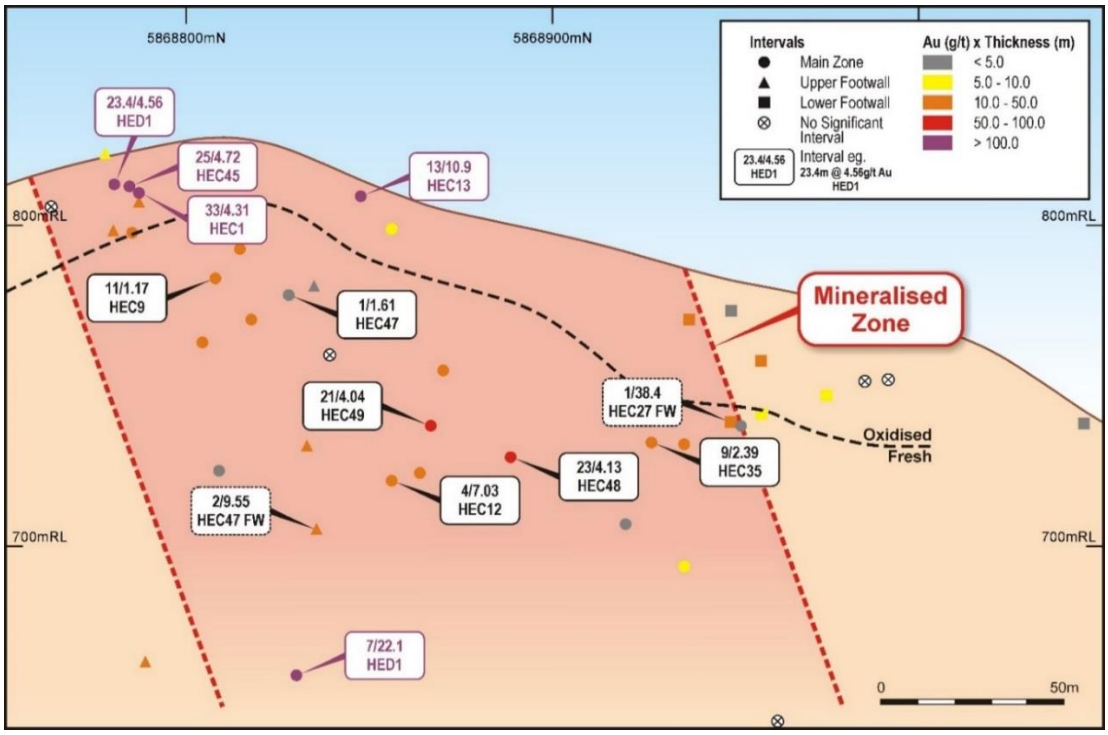

Figure 5: Hill 800 Long section, Main, Upper Footwall and Lower Footwall trends depicted. Most holes have been drilled oblique to mineralisation, therefore the downhole widths stated may not represent true widths.

Goldsearch interpreted the mineralisation intersected in RCD001 to be the result of a structurally controlled hydrothermal system (rather than VHMS mineralisation) and drilled a further four broadly spaced holes, with holes RCD002 and RCD004 testing within 200m and 150m of the original intercept. RCD002 intersected a diorite dyke at the target position and RCD004 intersected a broad zone of elevated zinc mineralisation with a 70m zone averaging 0.37% Zn from 233.6m.

Goldsearch concluded that drilling had defined a large zinc-gold-silver-copper mineralised system, which remained open in most directions, and suggested further work was warranted to identify and target high-grade mineralisation, which remained untested. (Goldsearch Quarterly Report, 29 April 2010 and open file reports).

The tenement EL5523 is located on unrestricted crown land within a geological province known as the Mt Useful Slate Belt (Figure 7). The region was founded on gold mining in the 1850's and a number of gold mines have operated in the region, including the A1 Mine near Gaffney's Creek south of Kevington, currently operated by Centennial Mining Ltd.

The tenement covers a "window" of Cambrian-aged volcanic rocks of similar age to the Mt Read Volcanics in western Tasmania, a world-class VHMS district. The discovery to date of two VHMS-style systems on the tenement confirms the outstanding potential of the project. Typically, deposits of this style occur in clusters often defining significant mining camps. Gold-rich VHMS deposits are particularly attractive given their high-grade and polymetallic nature.

The project area is considered to be under-explored, with limited systematic exploration for VHMS deposits completed to date (For further details see Sheffield's ASX announcement dated 28 June 2017).

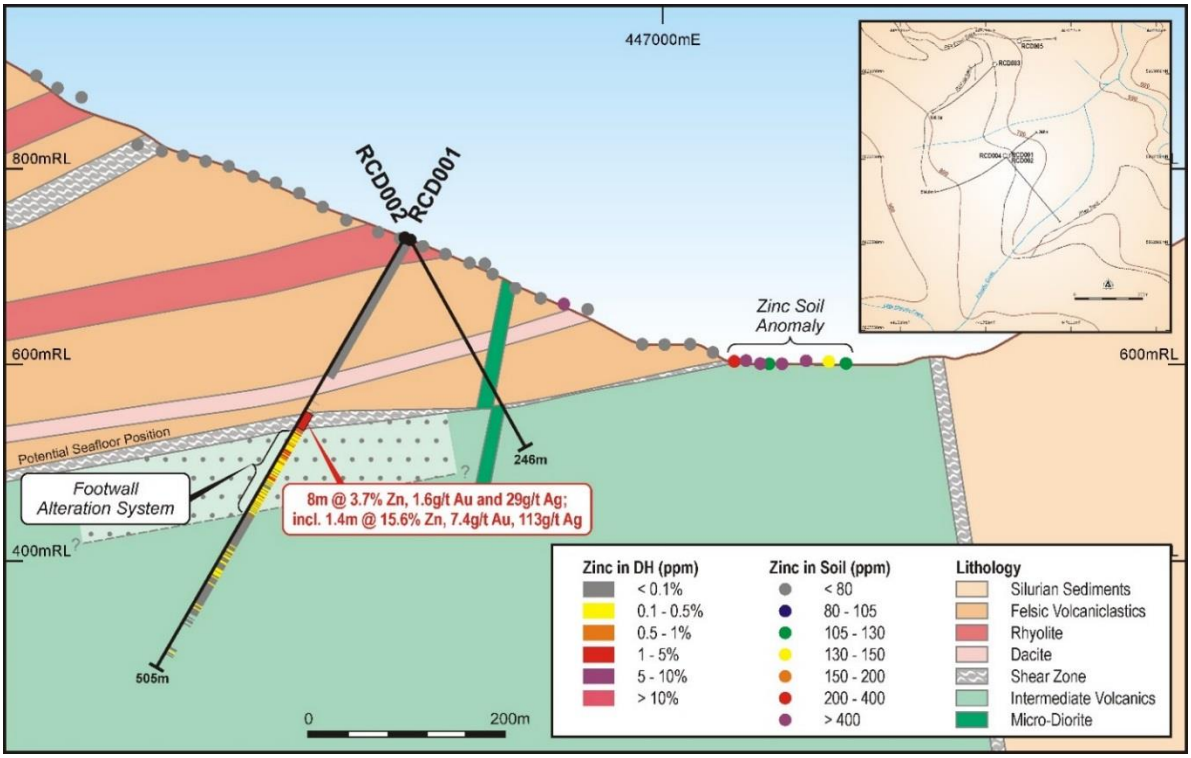

Figure 6: Rhyolite Creek cross-section through RCD001 and 002

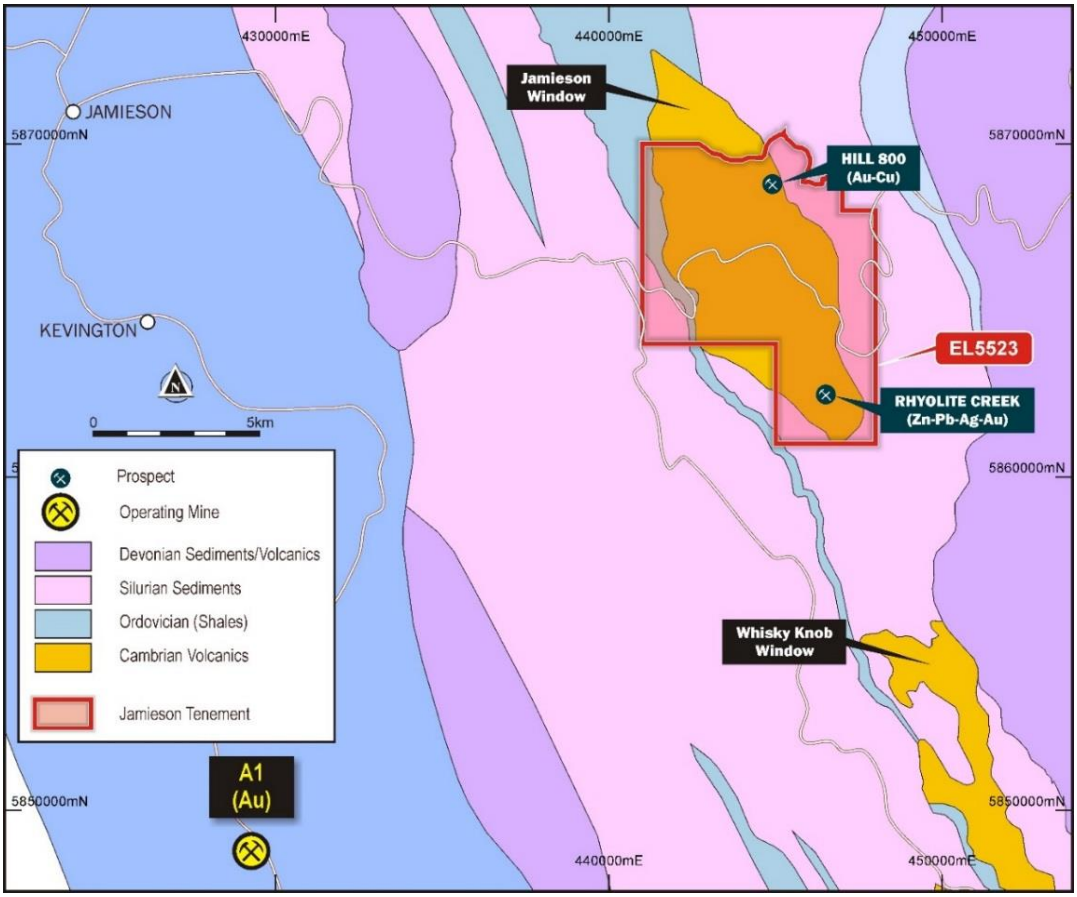

Figure 7: Jamieson Project regional geology (after Geol. Survey Victoria) showing windows of Cambrian Volcanics and EL5523

Oakover and Paterson Copper-Gold Projects

Sheffield's Oakover and Paterson Projects, located in the highly prospective Eastern Hamersley Basin and Paterson Province, comprise four granted exploration licences and 10 exploration licence applications totalling over 3,360 km^2 (Figure 11). The tenements cover three parallel geological provinces, which are highly prospective for large Proterozoic Cu-Au systems with significant long-life mines operating in each region (e.g. Telfer Au-(Cu), Nifty Cu-(Co) and Woodie Woodie Mn).

During the quarter, helicopter-supported geological reconnaissance and prospect-scale geological mapping and rock chip sampling continued, along with historical exploration data review, aimed at assessing the exploration potential of the tenements and identifying targets for further work.

At the Western Star copper prospect, detailed geological mapping and additional surface sampling identified additional zones of high-grade copper mineralisation hosted by breccia and vein stockworks within Proterozoic dolomites, further to those first described in the December 2016 Quarterly Report.

Assay results from rock chip samples of mineralisation exposed in outcrop and historic workings have confirmed observations of very high-grade copper at Western Star, with values returned up to 44.5% Cu (Figure 8, Table 2, Appendix 3). Along with petrological work this suggests that the surface copper mineralisation at Western Star is typical of oxide zone assemblages associated with weathering of copper-sulphides in carbonate-rich host rocks.

Table 2: Significant rock chip assay results from the Western Star prospect.

Sample	Cu (%)	Co (ppm)	Au (ppb)	Ag (ppm)	Pd (ppb)	Pt (ppb)	Description
CB20007	**11.4**	34.8	19	4.93	3.7	3.6	Malachite, chalcocite veinlets in small workings
CB20008	**38.9**	**810**	21	9.36	10.7	1.1	Malachite, limonite, chalcocite, calcite
CB20009	**25.1**	10.8	11	5.16	13.1	2.8	Malachite veinlets in dolomite
CB20010	**11.1**	46.3	2	3.99	1.2	1.3	Cuprite, malachite, chalcocite veinlets
CB20011	**14.9**	10.4	7	0.49	3.4	0.8	Malachite, chalcocite, cuprite and chrysocolla breccia and stockwork, workings
CB20012	**21.1**	7.8	32	0.49	**113**	**160**	Hematitic dolomite, malachite, cuprite and chalcocite in costean
SA042188	0.032	**884**	2	0.13	2.1	3.5	Siliceous altered manganiferous subcrop
SA042189	0.095	**577**	2	0.1	<0.5	<0.5	Thin subvertical vein
SA062401	**6.36**	**1436**	<1	2.57	<0.5	<0.5	Thin malachite-cuprite vein
SA062472	**44.5**	**495**	6	14.1	2.6	2.1	Malachite interstitial to brecciated dolomite
SA062476	**23.4**	**511**	12	9.33	2.6	1.9	Small malachite veins
SA062477	**32.8**	**853**	10	6.24	3.3	1.6	Old workings, malachite veining.
SS08328	**43.7**	22.1	35	**50.4**	2.9	1.9	Old workings, malachite and chalcocite. Fe veinlets at surface with silica alteration.
SS08334	**12.4**	2.1	2	14.1	0.6	<0.5	Vein and fractures in dolomite

See Figure 8 and Appendix 3 for sample locations, details and complete sample listing.

The prospect area lies along one of two large gravity ridges trending through the tenement (Figure 10), interpreted as fault-bounded basement highs. These have been incorporated with observations from mapping, petrology, and assay results to develop a conceptual mineralisation model for Western Star analogous to that developed for the Kennecott Copper deposit in the USA (Figure 9). This model will be used to guide future exploration at the prospect.

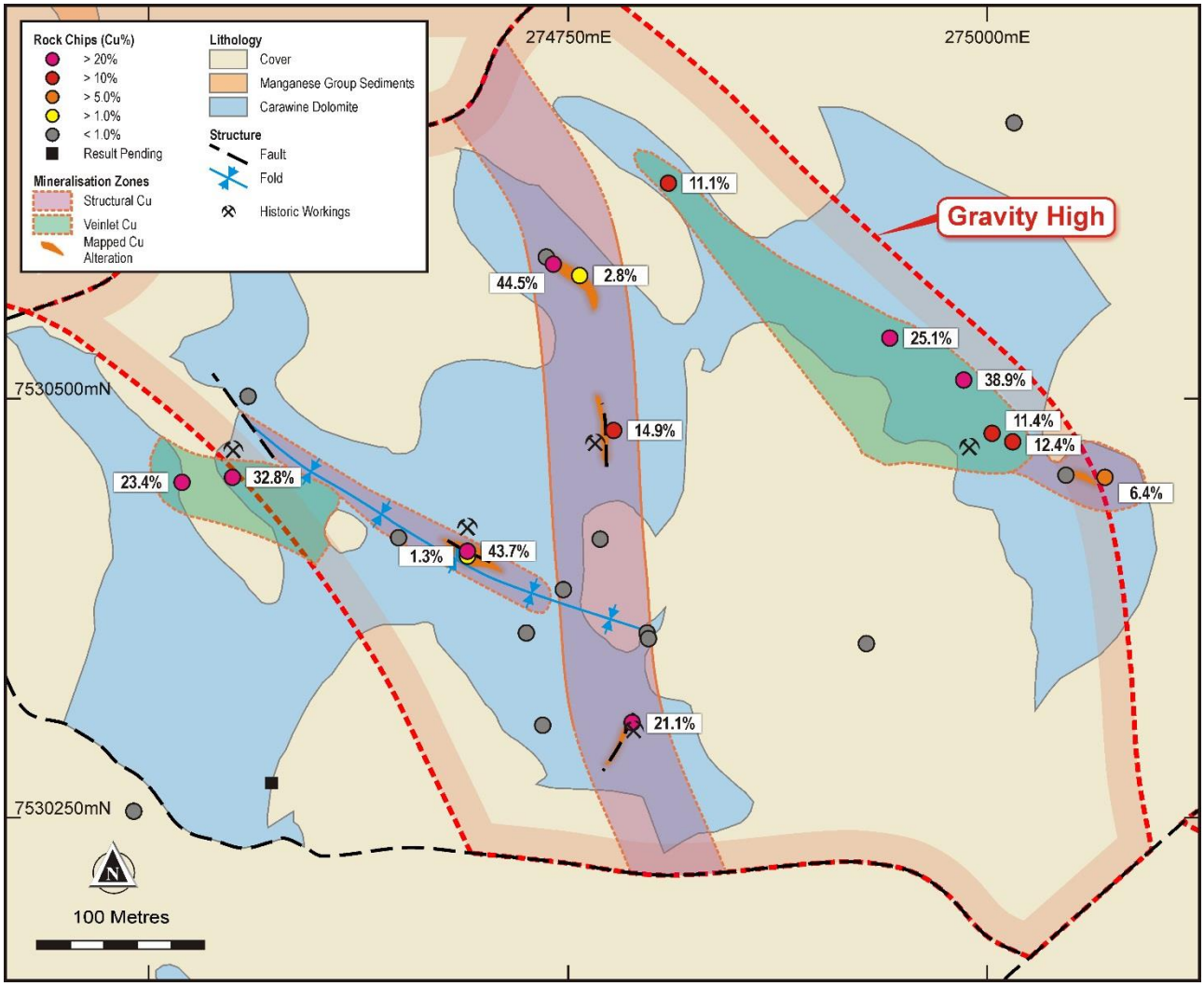

Figure 8: Western Star prospect geological map and rock chip sample locations.

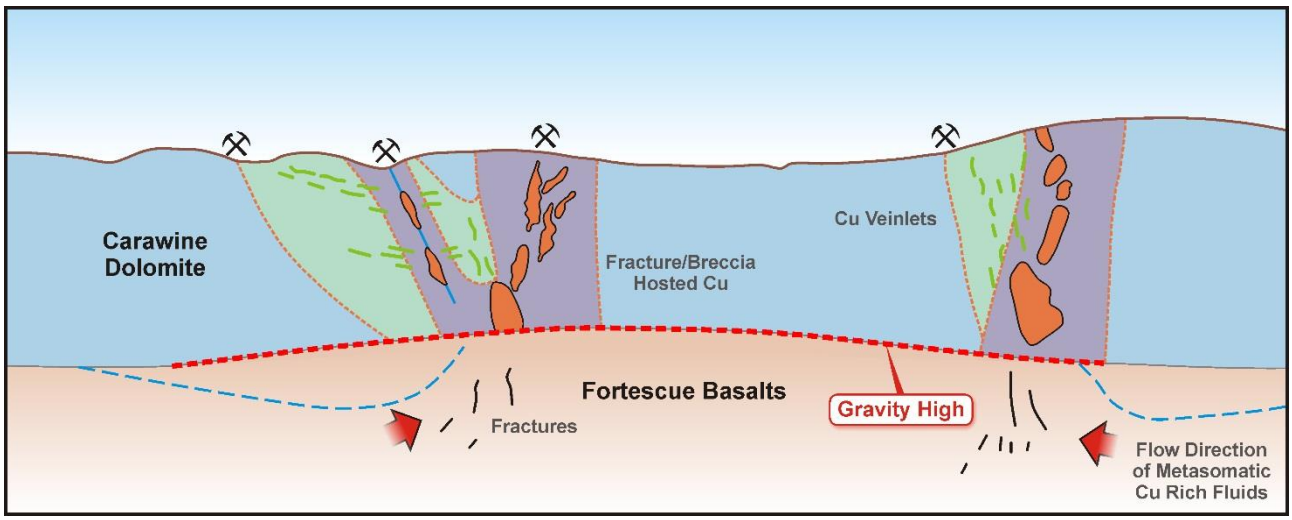

Figure 9: Conceptual mineralisation model for Western Star

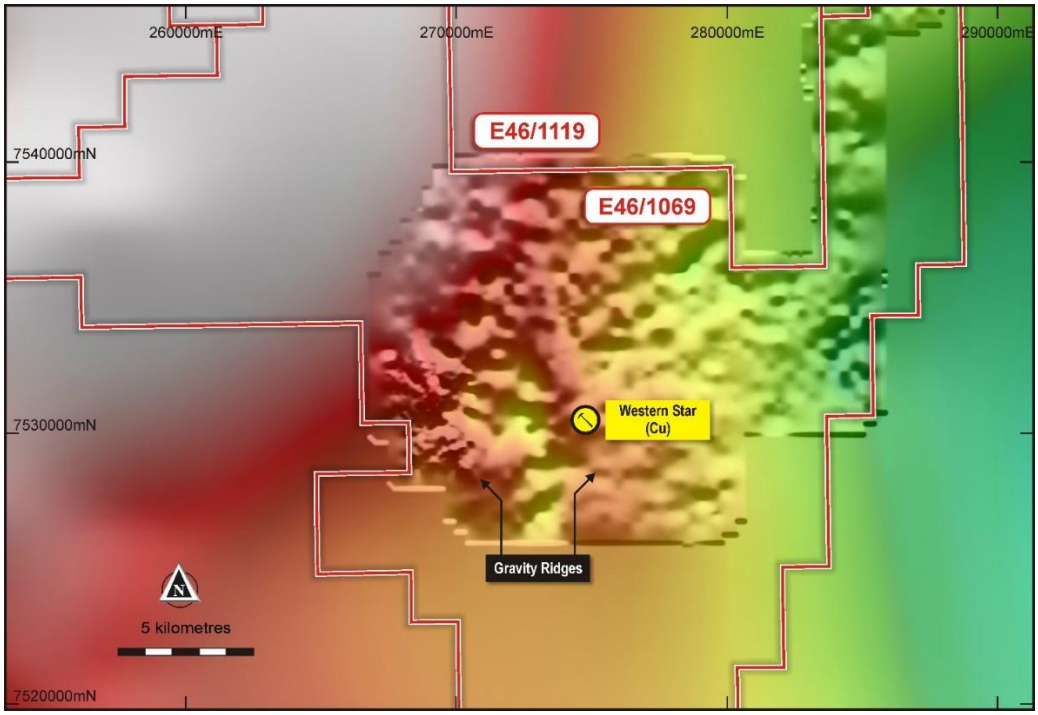

Figure 10: Bouger Gravity Image at Western Star

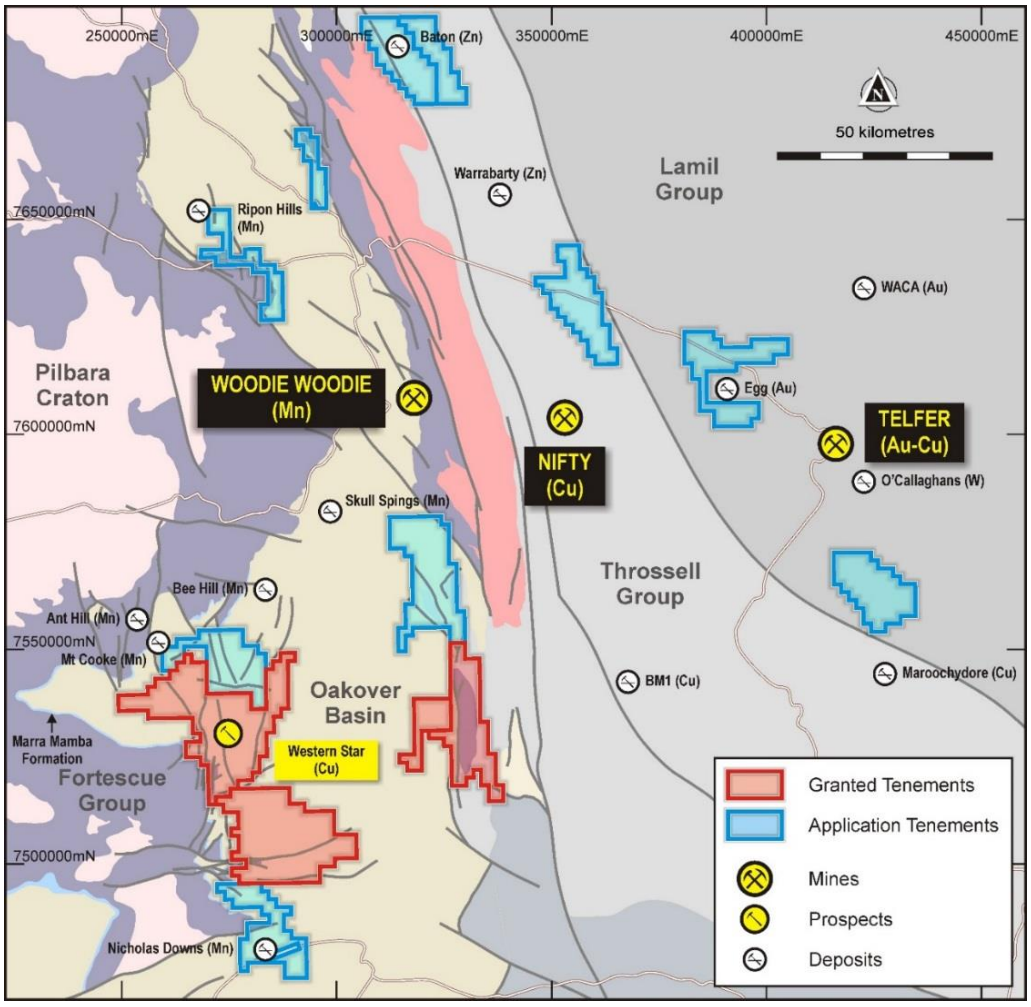

Figure 11: Oakover Project tenements

Also subsequent to the end of the quarter, a review of the tenement holding in the Oakover and Paterson Project areas resulted in the withdrawal of five exploration licence applications and the application for three new exploration licences.

Fraser Range Joint Venture (Carawine 49%; Independence Group NL 51%, Earning to 70%)

During Q4 2016, Sheffield formed a Joint Venture with Independence Group NL ("IGO") (ASX: IGO) to explore five Fraser Range Nickel tenements. IGO are the Manager of the Joint Venture, and currently hold a 51% interest in the tenements. IGO can earn an additional 19% interest by spending $5 million on the tenements within the next 5 years (see Sheffield's ASX announcement dated 16 November, 2016 for further details). The Joint Venture provides Sheffield with significant exposure to exploration success in the Fraser Range, as it focuses on developing the Thunderbird Project.

During the quarter, IGO completed a 400m x 400m gravity survey on the Red Bull tenements E69/3052 and E69/3033 and a detailed aircore drilling program on the Big Bullocks tenement E39/1733.

At Red Bull, a total of 4,305 new gravity stations where collected. Salt lakes could not be surveyed due to inclement weather prior to and during the survey period making the surface unpassable for quad bike and foot traffic. The new data will be used to identify possible mafic and ultramafic intrusions that are blind to magnetic data.

An eighty-nine (89) hole aircore drilling program was completed on tenement E39/1733 during June for a total of 2,796m. The average hole depth is 31m. Drill spacing was nominally 3km x 1km. Samples have been despatched to the lab for multi-element analysis and results are expected during Q3 2017.

CASH POSITION AND CORPORATE ACTIVITIES

As at 30 June 2017, Sheffield had cash reserves of approximately $8.3 million (unaudited).

Stuart Pether, a mining engineer with extensive industry experience, was appointed as Chief Operating Officer during the quarter.

Sheffield's corporate activities continue to focus on securing a pathway through to project development with the development of a corporate strategy plan and building of operational, financial, corporate and commercial capacity and systems.

Mr Bruce McFadzean
Managing Director
27 July 2017

Schedule 1: Interests in Mining Tenements at the end of the quarter as required under ASX Listing Rule 5.3.3

Project	Tenement	Holder	Interest	Location[3]	Status
Mineral Sands	E04/2386	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2455	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2456	Sheffield Resources Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2478	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/82	Sheffield Resources Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/83	Sheffield Resources Ltd	100%	Canning Basin	Pending
Nickel	E28/2563	Sheffield Resources Ltd[2]	49%	Fraser Range	Granted
Copper/Manganese	E46/1042	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1116	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E46/1119	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E45/4717	Sheffield Resources Ltd	100%	Pilbara	Pending
Copper/Manganese	E45/4719	Sheffield Resources Ltd	100%	Pilbara	Pending
Mineral Sands	E70/3762	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3813	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3814	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3859	Sheffield Resources Ltd	100%	Perth Basin	Pending
Mineral Sands	E70/3929	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/3967	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4190	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4292	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4313	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4584	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4719	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4747	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E70/4922	Sheffield Resources Ltd	100%	Perth Basin	Pending
Mineral Sands	L70/150	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/872[1]	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/965[1]	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	M70/1153[1]	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	R70/35[1]	Sheffield Resources Ltd	100%	Perth Basin	Granted
Mineral Sands	E04/2081[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2083[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2084[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2159[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2171[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2192[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2193[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2194[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2348[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2349[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2350[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2390[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2399[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted

Project	Tenement	Holder	Interest	Location	Status
Mineral Sands	E04/2400[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	E04/2494[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Pending
Mineral Sands	L04/84[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/85[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/86[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/92[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	L04/93[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Granted
Mineral Sands	M04/459[5]	Thunderbird Operations Pty Ltd	100%	Canning Basin	Pending
Nickel	E69/3033[4]	Carawine Resources Pty Ltd[2]	49%	Fraser Range	Granted
Nickel	E69/3052[4]	Carawine Resources Pty Ltd[2]	49%	Fraser Range	Granted
Nickel	E39/1733[4]	Carawine Resources Pty Ltd[2]	49%	Fraser Range	Granted
Nickel	E28/2374-I[4]	Carawine Resources Pty Ltd[2]	49%	Fraser Range	Granted
Copper/Manganese	E46/1041[4]	Carawine Resources Pty Ltd	100%	Pilbara	Granted
Copper/Manganese	E46/1044[4]	Carawine Resources Pty Ltd	100%	Pilbara	Granted
Copper/Manganese	E46/1069-I[4]	Carawine Resources Pty Ltd	100%	Pilbara	Granted
Copper/Manganese	E46/1099[4]	Carawine Resources Pty Ltd	100%	Pilbara	Granted
Copper/Zinc	E45/4871[4]	Carawine Resources Pty Ltd	100%	Patterson	Pending
Copper/Zinc	E45/4881[4]	Carawine Resources Pty Ltd	100%	Patterson	Pending
Copper/Zinc	E45/4844[4]	Carawine Resources Pty Ltd	100%	Patterson	Pending
Copper/Gold	E45/4845[4]	Carawine Resources Pty Ltd	100%	Patterson	Pending
Copper/Gold	E45/4847[4]	Carawine Resources Pty Ltd	100%	Patterson	Pending

Notes:
[1]Iluka Resources Ltd (ASX: ILU) retains a gross sales royalty of 1.5% in respect to tenements R70/35, M70/872, M70/965 & M70/1153.
[2]Sheffield Group holds a 49% interest, with JV partner Independence Group NL (IGO) holding a 51% interest and earning in.
[3]All tenements are located in the state of Western Australia.
[4]Carawine Resources Pty Ltd is a 100% owned subsidiary of Sheffield Resources Ltd.
[5]Thunderbird Operations Pty Ltd is a 100% owned subsidiary of Sheffield Resources Ltd.

Details of tenements and/or beneficial interests acquired/disposed of during the quarter are provided in Section 10 of the Company's Appendix 5B notice for the June 2017 quarter.

COMPLIANCE STATEMENTS

EXPLORATION RESULTS

The information in this report that relates to Exploration Results is based on information compiled by Mr David Boyd, a Competent Person who is a Member of Australian Institute of Geoscientists (AIG). Mr Boyd is a full-time employee of Sheffield Resources Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Boyd consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

PREVIOUSLY REPORTED INFORMATION

This report includes information that relates to Exploration Results, Mineral Resources and Ore Reserves prepared and first disclosed under the JORC Code (2012) and a Bankable Feasibility Study and Technical Studies. The information was extracted from the Company's previous ASX announcements as follows:

- Jamieson Gold Project Farm-In: "SHEFFIELD FARMS IN TO HIGH GRADE JAMIESON GOLD EXPLORATION PROJECT" 28 June, 2017
- Maiden LTR ilmenite MOU: "SHEFFIELD SIGNS CORNERSTON ILMENITE MOU" 29 May, 2017
- Zircon MOU: *"SHEFFIELD SECURES FURTHER ZIRCON OFFTAKE"* MOUs 26 April, 2017
- Further Thunderbird MOU signed: *"ADDITIONAL ZIRCON OFFTAKE MOU SIGNED"* 10 April, 2017
- Thunderbird MOUs for future sales of Zircon: *"SHEFFIELD SIGNS OFFTAKE MOUs"* 4 April, 2017
- Thunderbird Ore Reserve: *"THUNDERBIRD ORE RESERVE UPDATE"* 16 March, 2017
- December 2016 Quarterly Report: "QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 31 DECEMBER 2016" 24 January, 2017
- Fraser Range Joint Venture: *"SHEFFIELD FORMS JOINT VENTURE WITH INDEPENDENCE GROUP IN FRASER RANGE"* 16 November 2016
- McCalls Mineral Resource: *"QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDED 30 JUNE 2016"* 25 July 2016.
- Thunderbird Mineral Resource: *"SHEFFIELD DOUBLES MEASURED MINERAL RESOURCE AT THUNDERBIRD"* 5 July, 2016
- Robbs Cross and Thomsons Discovery: "NEXT GENERATION OF MINERAL SANDS DISCOVERIES AT ENEABBA" 23 July, 2015

This report also includes information that relates to Exploration Results and 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:

- Drummond Crossing Mineral Resource and Sampling Results from Dunal-Style HM Targets, Eneabba Project: *"1Mt HEAVY MINERAL RESOURCE ADDED TO ENEABBA PROJECT"*, 30 October 2013.
- Yandanooka Mineral Resource: *"YANDANOOKA RESOURCE UPGRADE AND METALLURGICAL RESULTS"*, 30 January 2013.
- Durack Mineral Resource: *"ENEABBA PROJECT RESOURCE INVENTORY EXCEEDS 5MT HEAVY MINERAL"*, 28 August 2012.
- West Mine North Mineral Resource: *"WEST MINE NORTH MINERAL RESOURCE ESTIMATE EXCEEDS EXPECTATIONS"*, 7 November 2011.
- Ellengail Mineral Resource: *"1MT CONTAINED HM INFERRED RESOURCE AT ELLENGAIL"*, 25 October 2011.

These announcements are available to view on Sheffield'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 relevant market announcements and, in the case of estimates of Mineral Resources, Ore Reserves, Bankable Feasibility Study and Technical Study results, 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 relevant original market announcements.

CAUTIONARY STATEMENTS AND RISK FACTORS

The contents of this report reflect various technical and economic conditions at the time of writing. Given the nature of the resources industry, these conditions can change significantly over relatively short periods of time. Consequently, actual results may vary from those contained in this report.

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", "anticipates", "believes", "potential", "predict", "foresee", "proposed", "aim", "target", "opportunity", "could", "nominal", "conceptual" and similar expressions. Forward-looking statements, opinions and estimates included in this report 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, and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. So there can be no assurance that actual outcomes will not materially differ from these forward-looking statements.

APPENDIX 1: Ore Reserves and Mineral Resources

Sheffield announced an updated Ore Reserve totalling 680.5 million tonnes @ 11.3% HM for the Thunderbird heavy mineral sands deposit, in the Kimberley Region of Western Australia, on 16 March 2017, and has since completed a Bankable Feasibility Study for development of the deposit (the Thunderbird Mineral Sands Project). The Proved and Probable Ore Reserve estimate is based on that portion of the current July, 2016 Thunderbird deposit Measured and Indicated Mineral Resources within scheduled mine designs that may be economically extracted, considering all "Modifying Factors" in accordance with the JORC Code (2012).

Sheffield also has a number of Mineral Resource estimates for heavy mineral sands deposits within its Eneabba and McCalls Projects located in the Mid-West Region of Western Australia.

Ore Reserves

Dampier Project Ore Reserves [1,4]

Deposit	Ore Reserve Category	Ore Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Valuable HM Grade (In-situ)[2]				Slimes (%)	Osize (%)
					Zircon %	HiTi Leuc %	Leuc %	Ilmenite %		
Thunderbird	Proved	235.8	31.4	13.3	1.00	0.29	0.26	3.55	16.5	13.7
	Probable	444.8	45.4	10.2	0.80	0.26	0.26	2.85	15.2	11.0
	Total	**680.5**	76.8	**11.3**	**0.87**	**0.27**	**0.26**	**3.10**	**15.7**	**12.0**

Deposit	Ore Reserve Category	Ore Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
					Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
Thunderbird	Proved	235.8	31.4	13.3	7.5	2.2	1.9	26.7	16.5	13.7
	Probable	444.8	45.4	10.2	7.8	2.5	2.6	28.0	15.2	11.0
	Total	**680.5**	76.8	**11.3**	**7.7**	**2.4**	**2.3**	**27.4**	**15.7**	**12.0**

1) Ore Reserves are presented both in terms of in-situ VHM grade, and HM assemblage. Tonnes and grades have been rounded to reflect the relative accuracy and confidence level of the estimate, thus the sum of columns may not equal. Ore Reserve is reported to a design overburden surface with appropriate consideration of modifying factors, costs, mineral assemblage, process recoveries and product pricing.
2) The in-situ grade is determined by multiplying the HM Grade by the percentage of each valuable heavy mineral within the heavy mineral assemblage.
3) Mineral Assemblage is reported as a percentage of HM Grade, it is derived by dividing the in-situ grade by the HM grade.
4) Ore Reserves reported for the Dampier Project were prepared and first disclosed under the JORC Code (2012)

Mineral Resources

Dampier Project Mineral Resources [1,2,5]

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
					Zircon (%)	HiTi Leuc (%)	Leuc (%)	Ilmenite (%)		
Thunderbird (> 3% HM)	Measured	510	45	8.9	8.0	2.3	2.2	27	18	12
	Indicated	2,120	140	6.6	8.4	2.7	3.1	28	16	9
	Inferred	600	38	6.3	8.4	2.6	3.2	28	15	8
	Total	3,230	223	6.9	8.3	2.6	2.9	28	16	9
Thunderbird (>7.5% HM)	Measured	220	32	14.5	7.4	2.1	1.9	27	16	15
	Indicated	640	76	11.8	7.6	2.4	2.1	28	14	11
	Inferred	180	20	10.8	8.0	2.5	2.4	28	13	9
	Total	1,050	127	12.2	7.6	2.3	2.1	27	15	11

Eneabba Project Mineral Resources [2,4,6]

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
					Zircon (%)	Rutile (%)	Leuc (%)	Ilmenite (%)		
Yandanooka (> 0.9% HM)	Measured	3	0.1	4.1	10	1.9	2.2	72	15	14
	Indicated	90	2.1	2.3	12	3.7	3.7	69	16	15
	Inferred	3	0.03	1.2	11	3.9	4.6	68	18	21
	Total	96	2.2	2.3	12	3.6	3.7	69	16	15
Durack (>0.9% HM)	Indicated	50	1.0	2.0	14	2.8	4.6	70	15	21
	Inferred	15	0.2	1.2	14	2.4	6.7	67	14	17
	Total	65	1.2	1.8	14	2.8	4.9	70	15	20
Drummond Crossing (>1.1% HM)	Indicated	49	1.0	2.1	14	10	3.6	53	16	9
	Inferred	3	0.05	1.5	13	9.9	2.8	55	16	8
	Total	52	1.1	2.1	14	10	3.6	53	16	9
Ellengail (>0.9% HM)	Inferred	46	1.0	2.2	9	8.7	1.9	64	16	2
	Total	46	1.0	2.2	9	8.7	1.9	64	16	2
West Mine North (>0.9% HM)	Measured	6	0.4	5.6	4	9.6	9.5	54	15	1
	Indicated	36	0.8	2.3	7	9.6	5.4	60	13	3
	Total	43	1.2	2.8	6	9.6	6.6	58	13	3
All Eneabba (various)	Measured	9	0.5	5.2	6	7.7	7.7	59	15	5
	Indicated	225	5.0	2.2	12	5.8	4.2	64	15	13
	Inferred	68	1.3	1.9	10	7.7	2.7	64	15	6
	Total	**302**	6.8	**2.2**	**11**	**6.3**	**4.1**	**64**	**15**	**11**

McCalls Project Mineral Resources [2,4,6]

Deposit (cut-off)	Mineral Resource Category	Material Tonnes (millions)	In-situ HM Tonnes (millions)	HM Grade (%)	Mineral Assemblage[3]				Slimes (%)	Osize (%)
					Zircon (%)	Rutile (%)	Leuc (%)	Ilmenite (%)		
McCalls (>1.1% HM)	Indicated	2,214	31.7	1.4	5.1	3.2	2.7	76.8	21.7	1.3
	Inferred	1,436	18.7	1.3	5.0	3.2	3.1	80.3	25.5	1.1
	Total	**3,650**	**50.4**	**1.4**	**5.1**	**3.2**	**2.9**	**78.5**	**23.2**	**1.2**

1) The Dampier Project Mineral Resources are reported inclusive of (not additional to) Ore Reserves. The Mineral Resource reported above 3% HM cut-off is inclusive of (not additional to) the Mineral Resource reported above 7.5% HM cut-off.
2) All tonnages and grades have been rounded to reflect the relative accuracy and confidence level of each estimate and to maintain consistency throughout the table, therefore the sum of columns may not equal.
3) Estimates of Mineral Assemblage are represented as the percentage of HM grade. For Dampier the mineral assemblage was determined by screening and magnetic separation. Magnetic fractions were analysed by QEMSCAN for mineral determination as follows: >90% liberation and; Ilmenite 40-70% TiO_2; Leucoxene 70-94% TiO_2; High Titanium Leucoxene (HiTi Leucoxene) >94% TiO_2 and Zircon 66.7% ZrO_2+HfO_2. The non-magnetic fraction was analysed by XRF and minerals determined as follows: Zircon ZrO2+HfO_2/0.667 and HiTi Leucoxene TiO_2/0.94. For Eneabba & McCalls determination was by QEMSCAN, with TiO_2 minerals defined according to the following ranges: Rutile >95% TiO_2; Leucoxene 85-95% TiO_2; Ilmenite <55-85% TiO_2
4) West Mine North, Durack, Drummond Crossing and McCalls are reported below a 35% Slimes upper cutoff.
5) Mineral Resources for the Dampier and McCalls Projects were prepared and first disclosed under the JORC Code (2012).
6) Mineral Resources reported for the Eneabba Project were prepared and first disclosed under the JORC Code 2004. These have not been updated since to comply with the JORC Code 2012 on the basis that the information on which the Resource estimates are based has not materially changed since it was last reported.

The Company's Ore Reserves and Mineral Resources Statement is based on information first reported in previous ASX announcements by the Company. These announcements are listed below and are available to view on Sheffield's website www.sheffieldresources.com.au . Mineral Resources and Ore Reserves reported for the Dampier Project and Mineral Resources reported for the McCalls Projects were prepared and first disclosed under the JORC Code (2012). Mineral Resources reported for the Eneabba Project were prepared and first disclosed under the JORC Code (2004), these have not been updated since to comply with the JORC Code (2012) on the basis that the information on which the Mineral Resource estimates are based has not materially changed since it was last reported.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant original market announcement continue to apply and have not materially changed.

The Competent Persons for reporting of Mineral Resources and Ore Reserves in the relevant original market announcements are listed below. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the relevant original market announcement.

Item	Name	Company	Professional Affiliation
Mineral Resources Reporting	Mr Mark Teakle Mr David Boyd	Sheffield Resources Sheffield Resources	MAIG, MAusIMM MAIG
Mineral Resources Estimation	Mrs Christine Standing Mr Tim Journeaux Mr Trent Strickland	Optiro QG QG	MAusIMM MAusIMM MAusIMM
Ore Reserves	Mr Per Scrimshaw	Entech	MAusIMM

Ore Reserves and Mineral Resources prepared and first disclosed under the JORC Code (2012):

Item	Report Title	Report Date	Competent Person(s)
Thunderbird Ore Reserve	Thunderbird Ore Reserve Update	16 March 2017	P. Scrimshaw
Thunderbird Mineral Resources	Sheffield Doubles Measured Mineral Resource At Thunderbird	5 July 2016	M. Teakle C. Standing
McCalls Mineral Resources	Quarterly Activities Report For The Period Ended 30 June 2016	20 July 2016	D. Boyd T. Journeaux

Mineral Resources prepared and first disclosed under the JORC Code (2004):

Item	Report Title	Report Date	Competent Person(s)
Ellengail Mineral Resource	1Mt Contained HM Inferred Resource at Ellengail	25 October 2011	M. Teakle T. Strickland
West Mine North Mineral Resource	West Mine North Mineral Resource Estimate Exceeds Expectations	7 November 2011	M. Teakle T. Strickland
Durack Mineral Resource	Eneabba Project Resource Inventory Exceeds 5Mt Heavy Mineral	28 August 2012	M. Teakle T. Strickland
Yandanooka Mineral Resource	Yandanooka Resource Upgrade and Metallurgical Results	30 January 2013	M. Teakle T. Strickland
Drummond Crossing Mineral Resource	1Mt Heavy Mineral Resource Added to Eneabba Project	30 October 2013	M. Teakle T. Strickland

Appendix 2: BFS Final Product Specifications
(refer to ASX announcement dated 12 October 2016 for further details)

Premium zircon

ZrO_2+HfO_2	TiO_2	Fe_2O_3	SiO_2	Al_2O_3	D_{50}
66.3%	0.14%	0.08%	32.5%	0.1%	59µm

- High grade 66.3% ZrO_2+HfO_2
- Low in key impurities iron and titanium
- Very low in aluminium impurities
- Good opacity, similar to other competing products

LTR Ilmenite

TiO_2	FeO	Fe_2O_3	$FeO:Fe_2O_3$	Cr_2O_3	CaO	MgO	D_{50}
56.1%	22.0%	18.5%	1.2	0.03%	0.01%	0.21%	67µm

- High titanium grade (56.1% TiO_2)
- Low in key contaminant Cr_2O_3
- Very low in alkalis CaO and MgO
- Consistent homogenous product
- LTR Ilmenite feedstock can produce high grade TiO_2 slag (88% TiO_2) and HPPI co-product
- Soluble in sulphuric acid, TiO_2 solubility > 95%
- Highly reactive ($FeO:Fe_2O_3$ of 1.2)

HiTi88

TiO_2	Fe_2O_3	Cr_2O_3	CaO	MgO	SiO_2	Al_2O_3	D_{50}
87.8%	2.9%	0.07%	0.04%	0.00%	3.4%	0.5%	71µm

- High titanium grade (87.8% TiO_2)
- Suitable for flux cored wire welding market or titanium sponge markets.
- Blended feedstock for processing via the chloride process.
- Low in key contaminants Cr_2O_3
- Very low in alkalis CaO and MgO

Zircon Concentrate

ZrO_2+HfO_2	TiO_2	Fe_2O_3	SiO_2	Al_2O_3	CeO_2	D_{50}
43.7%	20.1%	0.9%	23.3%	1.7%	0.2%	62µm

- Initially focussing on a ZrO_2 rich (~44%) concentrate for process upgrading by the customer.
- Target zirconium chemicals industry

Titanomagnetite

Fe	TiO_2	P	SiO_2	Al_2O_3	Cr_2O_3	MnO	D_{50}
56.2%	11.3%	0.05%	7.8%	0.9%	0.05%	0.20%	67µm

- Co-product produced as from magnetic separation post the LTR process
- Targeting steel feeds industry, protection against erosion of the blast furnace hearth

Appendix 3, Table 1: Western Star Prospect rock chip sample assay results listing.

Assay*	Sample	East	North	Cu (%)	Co (ppm)	Au (ppb)	Ag (ppm)	Pd (ppb)	Pt (ppb)	Fe (%)	Mn (ppm)	Description
A	CB20007	275003	7530479	11.4	34.8	19	4.93	3.7	3.6	11.1	2596	Dolomite with veinlets of malachite, chalcocite and hematite, in small workings
A	CB20008	274986	7530511	38.9	810	21	9.36	10.7	1.1	9.55	1444	Dolomite with veinlets of malachite, limonite, chalcocite, calcite and minor manganese
A	CB20009	274942	7530536	25.1	10.8	11	5.16	13.1	2.8	12.2	1113	Malachite veinlets in dolomite
A	CB20010	274810	7530628	11.1	46.3	2	3.99	1.2	1.3	3.69	862	Dolomite with veinlets of cuprite, malachite, chalcocite, adjacent to chert breccia
A	CB20011	274777	7530481	14.9	10.4	7	0.49	3.4	0.8	22.7	161	Workings: breccia and stockwork in altered dolomite containing malachite, chalcocite, cuprite and chrysocolla
A	CB20012	274788	7530307	21.1	7.8	32	0.49	113	160	7.24	703	Costean: stockwork, breccia and veins within haematitic dolomite, malachite, cuprite and chalcocite
A	SA042187	274769	7530416	0.001	21.0	<1	<0.05	<0.5	0.7	6.01	1.59%	Mn-stained vuggy ferruginous dolomite
A	SA042188	274725	7530360	0.032	884	2	0.13	2.1	3.5	1.91	39.9%	Siliceous altered manganiferous subcrop
A	SA042189	274735	7530305	0.095	577	2	0.1	<0.5	<0.5	2.19	33.3%	Thin subvertical vein
A	SA062401	275070	7530453	6.36	1436	<1	2.57	<0.5	<0.5	2.77	4109	Thin malachite-cuprite vein
C	SA062405	275016	7530664	0.026	NA	NA	NA	NA	NA	2.85	42.8%	Mn near base of chert
C	SS042190	275047	7530454	0.058	NA	NA	NA	NA	NA	2.54	50.2%	Mn-rich goethite alteration in gossan
A	SA062471	274737	7530584	0.01	5	<1	<0.05	3.8	3.1	7.41	3088	Small patch of hematite alteration in otherwise grey partly brecciated dolomite
A	SA062472	274741	7530580	44.5	495	6	14.1	2.6	2.1	8.69	986	Small patch of malachite interstitial to brecciated dolomite
A	SA062473	274757	7530573	2.84	40.5	1	0.26	0.6	<0.5	1.51	3064	Brecciated dolomite with sparry dolomite and malachite infill
A	SA062476	274520	7530450	23.4	511	12	9.33	2.6	1.9	6.74	1395	Small veins and pockets of malachite at chert-dolomite interface
A	SA062477	274550	7530453	32.8	853	10	6.24	3.3	1.6	8.71	1914	Old workings with malachite veining in grey dolomite, copper oxides hosted in chert also.
A	SA062479	274798	7530357	0.39	11.8	<1	0.16	0.8	<0.5	0.97	6976	Pink-grey dolomite with sparry dolomite veins
A	SS08326	274747.0397	7530386.06	0.01	1.4	1	0.08	<0.5	<0.5	0.44	3651	Sparry dolomite, subvertical veins , pink dolomite Fe alt on halo of vein

Assay*	Sample	East	North	Cu (%)	Co (ppm)	Au (ppb)	Ag (ppm)	Pd (ppb)	Pt (ppb)	Fe (%)	Mn (ppm)	Description
C	SS08327	274490.9854	7530253.965	0.007	NA	NA	NA	NA	NA	2.00	53.8%	Mn alteration dolomite/chert breccia contact. Massive vuggy and powdery Mn.
A	SS08328	274690.0184	7530409.058	43.7	22.1	35	50.4	2.9	1.9	6.61	625	Old workings, malachite and chalcocite. Fe veinlets at surface with silica alteration on footwall of fault/ plane.
A	SS08329	274690	7530406	1.31	71.3	1	0.83	0.8	1.7	5.83	7001	Chalcocite & malachite in hanging wall, Fe rich on strike with south east workings
A	SS08330	274648.9899	7530416.986	0.6	1.8	<1	0.62	<0.5	<0.5	0.54	2968	Strata bound ferric vein in dolomite
A	SS08331	274559.033	7530500.98	0.11	33.4	1	0.05	0.8	<0.5	8.69	4034	Strongly brecciated dolomite, malachite and chalcocite massive and veins. Fault related.
A	SS08332	274796.9872	7530359.979	0.02	6.2	<1	<0.05	0.8	<0.5	0.93	6949	Brecciated dolomite minor Fe alteration no significant mineralisation. Probable trend of old workings
A	SS08333	274927.9684	7530354.013	0.01	9.7	1	<0.05	0.6	0.8	27.4	2945	Black goethite vein with silica outer rim ~1-5cm, parasitic sparry dolomite veinlets off main vein
A	SS08334	275014.9676	7530474.025	12.4	2.1	2	14.1	0.6	<0.5	0.75	3900	Vein and fractures in dolomite

* Assay Method

A Au, Pd, Pt 25g fire assay ICP-MS; Cu, Fe, Mn 4-acid digest ICP-OES; Ag, Co 4-acid digest ICP-MS;

C Cu, Fe, Mn, Li-borate fusion XRF

Western Star Prospect rock chip sample JORC (2012) Table 1 Report

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Point surface samples consisting of rock chips of outcropping bedrock, to a nominal 0.5- 2kg weight. • Each sample was described at the site and time of collection to ensure accurate records of sampled material. Samples were selected based on mineralisation / alteration zones, or to distinguish low level alteration indicating potential mineralisation at depth.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• NA
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• NA
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All samples have been logged at the time and location of collection, enabling them to be placed in geological context. • All surface samples have been logged to high detail.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Samples were collected dry and consisted of multiple chips dislodged and fractured by a geological pick. • Samples were between a nominal 0.5-2kg weight and placed directly in to numbered calico bags at the collection point. • Appropriate assay techniques were designated at the point of collection based on the perspective commodity. • Single point samples
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Assays were carried out by Intertek Genalysis Laboratories of Maddington, Western Australia. • Samples taken for predominantly copper mineralisation were assayed by Au 25g fire assay ICP-MS (Au, Pt, Pd); 4-acid digest ICP-OES (Al, Ca, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, P, S, Sc, Ti, V, Zn);); 4-acid digest ICP-MS (Ag, As, Ba, Be, Bi, Cd, Ce, Co, Cs, Ga, Ge, Hf, In, La, Li, Mo, Nb, Pb, RB, Re, Sb, Se, Sn, Sr, Ta, Te, Th, Tl, U, W, Y, Zr). Method A. • Samples taken for predominantly manganese mineralisation were assayed by Li-borate fusion XRF (Al2O3, BaO, CaO, Cr_2O_3, Cu, Fe_2O_3, K_2O, LOI, MgO, Mn, Na_2O, P_2O_5, Pb, SO_3, SiO_2, TiO_2, V_2O_5). Method C. • Internal laboratory standards were used for each job to ensure correct calibration of elements. • Only relevant and material element results are reported. • Standard industry practices have been employed in the collection and assaying of samples from Western Star. Internal laboratory standards and checks have passed control thresholds. The assay data has sufficient quality for the reporting of Exploration Results.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Assay results summarised in the context of this report have been rounded appropriately. • No assay data have been adjusted.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Sample locations were surveyed by a hand held GPS +/-5m, at the time of sample collection. • RL was not recorded and is not relevant to surface point samples. • Coordinates reported are MGA Zone 51. • Location data is considered to be of sufficient quality for reporting of exploration results.
Data spacing and	• *Data spacing for reporting of Exploration Results.*	• Selective sampling based on field observation and outcrops identified as hosting potential for

Criteria	JORC Code explanation	Commentary
distribution	• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	mineralisation. • Should not be considered representative of the rock mass as a whole. • See figures in body of announcement for location.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Samples are representative only of the material sampled, and should not be considered representative of the rock mass as a whole.
Sample security	• *The measures taken to ensure sample security.*	• No measures taken regarding sample security have been reported however this is not considered a high risk given the Project location.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• NA

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Statement	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• Exploration Licence E46/1069 is situated 160km northeast of Newman within the pastoral lease of Mt Divide, Western Australia. It was granted to Sheffield Resources Ltd on 11 November 2016. Subsequently it has been transferred to Carawine Resources Pty Ltd, a wholly owned subsidiary of Sheffield, on the 1 June 2017. The tenement is due to expire on the 10 November 2021. • There are no known impediments to obtaining a licence to operate in the area.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous work was carried out by Pickland and Mather in 1969, although the location of activities is not stated in their statutory report or visible in the field. Golden Reef Enterprises sampled rock chip samples for copper at the prospect asdid CRA. Pilbara Manganese Pty Ltd a subsidiary of Consolidated Minerals Ltd previously held the project area, although concentrated on their core target commodity; manganese.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Project is hosted in gently dipping Carawine dolomite covered by a thin veneer of recent colluvium, talus, scree and intermittent remnants of Pinjian chert breccia. • The exposure of the host Carawine Dolomite at Western star is approximately 600m by 400m partially covered by overlying Pinjian chert breccia and more recent cover. Copper mineralisation is associated with discontinuous at surface brecciated fracture zones that have undergone malachite and chalcocite enrichment by metasomatic fluids injected by a Kennicott style model. Sinuous copper veinlets are peripheral to

Criteria	Statement	Commentary
		these fracture zones which cross-cut strata or associated with bedding planes. Mineralisation has also been observed to be associated with a fold axis, channelling metasomatic fluids in a similar manner to the bedding planes. • Two zones of mineralisation have been identified. A central north-south zone of discontinuous brecciated fractures with bedded veinlets spanning 400m length. To the northeast is a zone associated with a dissolution 'sink hole' structure, with peripheral cross-cutting veinlets spanning approximately 350m in length and orientated northwest-southeast. • Mineralisation is co-incidental with a gravity high and fault bound. These faults may not necessarily limit the mineralisation to Western Star as the gravity high extends beyond these structures. • Hematite alteration occurs peripheral to the copper mineralisation, often accompanied by more distal silica alteration. Sparry dolomite veining can exist in the outer aural. • Copper is potentially sourced from underlying Fortescue basalts.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• NA
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• All sample results are listed. Those considered significant in terms of grade and potential to indicate potentially significant mineralisation are highlighted.
Relationship between mineralisation widths and intercept	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	• Mineralisation is associated within discontinuous brecciated fracture zones and veinlets. • Depth and continuity of these fracture zones is unknown.

Criteria	Statement	Commentary
lengths	• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• See body of announcement for plan and interpretative section view and tabulation of significant surface sample assays.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All information considered material to the reader's understanding of the Exploration Results has been reported.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Information relating to the most advanced data from the primary prospects on the tenement have been reported in this announcement. Surface mapping has been conducted at this tenement and is summarised in the plan within the body of the announcement. • All information considered material to the reader's understanding of the Exploration Results has been reported.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further work is required to properly assess the exploration potential of the prospect, and may include additional mapping and surface sampling, ground geophysical surveys, and/or drill testing.