

29 July 2015

Mr Sebastian Bednarczyk  
Adviser, Issuers (Perth)  
ASX Limited  
Level 8, Exchange Plaza  
2 The Esplanade  
Perth WA 6000

Dear Sebastian,

**LODGEMENT OF JUNE 2015 QUARTERLY REPORT, QUARTERLY UPDATE PRESENTATION  
AND INVESTOR CONFERENCE CALL AND WEBCAST**

I am pleased to attach the following items for immediate release to the market:

1. June 2015 Quarterly Activities Report
2. June 2015 Quarterly Update Powerpoint Presentation

In addition, Sandfire's Managing Director and CEO, Karl Simich, is hosting an investor teleconference and live webcast on the June 2015 Quarterly Report at 10.00am (AWST) / 12.00pm (AEST) today.

The webcast and synchronised slide presentation is available through the Company's website or through BRR Media.

Live date: Wednesday, 29 July 2015

Access this webcast at: <http://webcasting.brrmedia.com/broadcast/139336>  
<http://www.sandfire.com.au>

Yours sincerely,

**Matt Fitzgerald**  
**Chief Financial Officer**  
**and Company Secretary**

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Diamond drilling at the new VMS discovery on the Springfield JV, 10km east of DeGrussa



SANDFIRE RESOURCES NL

# QUARTERLY REPORT

For the period ended 30 June 2015

## HIGHLIGHTS

**Outstanding June Quarter with record copper production, a significant new high-grade copper discovery**

### ASX Code:

SFR

### Issued Capital:

Ordinary Shares 156.9M  
Options 5.8M

### Directors:

**Derek La Ferla**  
Non-Executive Chairman

**Karl M. Simich**  
Managing Director and  
Chief Executive Officer

**Paul Hallam**  
Non-Executive Director

**W. John Evans**  
Non-Executive Director

**Robert Scott**  
Non-Executive Director

### Management:

**Michael Spreadborough**  
Chief Operating Officer

**Matthew Fitzgerald**  
Chief Financial Officer and  
Joint Company Secretary

**Robert Klug**  
Chief Commercial Officer,  
Joint Company Secretary and  
Acting Business Development  
Officer

### Date:

29 July 2015

## Production & Operations

Contained metal production	Sep 2014 Quarter	Dec 2014 Quarter	Mar 2015 Quarter	Jun 2015 Quarter	FY2015 Total
<b>Copper (t)</b>	16,064	15,350	17,103	18,637	67,154
<b>Gold (oz)</b>	8,678	9,058	10,150	9,499	37,386

- 18,637t copper and 9,499oz gold produced; C1 US\$0.98/lb.
- Strong mine production at 1.7Mtpa.
- Milling rates maintained at 1.6Mtpa for the Quarter with June milling rates exceeding 1.7Mtpa rates.
- Process plant enhancements delivering strong improvements, increasing copper recoveries by around 2% and significantly enhancing plant efficiency.
- FY2016 production guidance: 65,000-68,000t of copper, 35,000-40,000oz of gold at C1 cash operating cost in the range of US\$0.95-1.05/lb.

## Exploration

- Significant high-grade VMS copper-gold discovery on the Talisman JV ground, ~10km east of DeGrussa with results to date including:
  - **16.5m grading 18.9% Cu and 2.1g/t Au** from 409.5m down-hole in TLDD0004A (not true width, from 365m vertical depth);
  - **9.2m grading 11.8% Cu and 2.9g/t Au** from 417m down-hole in TLDD005, ~70m along strike; and
  - **18m of massive sulphides** from 108m down-hole in TLRC0004, 200m along strike from TLDD0004A – assays awaited.
- Major 2D seismic survey completed – designed as proof-of-concept testing for utilising this technique as a direct detection tool for VMS deposits.

## Corporate

- Restructure of remaining \$125M DeGrussa Project Finance Facility into a separate \$85M Revolver Facility and \$40M Amortising Facility.
- Facility term extended to December 2017 to better align with the recently extended mine life at DeGrussa (to mid-2021).
- \$120M remaining facility balance at 30 June 2015 following \$5M repayment at the end of the Quarter; \$107M cash and deposits.
- POSCO Australia completed the sale of its 15.2% stake in Sandfire via an institutional block trade.

June 2015 Quarterly Report Presentation to be webcast at 10.00am (WST) / 12.00pm (AEST) today, 29 July 2015, with a simultaneous investor conference call (details inside).



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## 1.0 SAFETY PERFORMANCE

The Total Recordable Injury Frequency Rate (TRIFR) for the Sandfire Group for the June Quarter was 9.7, compared to a TRIFR for the March Quarter of 8.6. During the Quarter a number of ankle injuries were experienced in the underground operations with preventive measures implemented to reduce further incidents.

Recordable injuries include those that result in any days away from work (Lost Time Injuries) and those where an employee or contractor cannot perform all or any part of their normal shift (Restricted Work Day Injuries), as well as any injury that requires services that only a medical practitioner can provide (Medical Treatment Injuries).

Work continues on initiatives to further improve safety performance including development of safety systems, improved safety leadership, improvement of safety culture and risk and assurance management.



Figure 1: The DeGrussa Concentrator (left and centre); exploration drilling (right)

## 2.0 OPERATIONS OVERVIEW

Copper production for the June Quarter was 18,637 tonnes (March Quarter: 17,103 tonnes) at an average ore grade of 5.05% Cu (March Quarter: 5.12% Cu). C1 cash operating costs for the Quarter were US\$0.98/lb (March Quarter: US\$0.97/lb).

Mill throughput was maintained at an annualised rate of approximately 1.6Mtpa for the June Quarter, with a total of 399,525 tonnes of ore milled. During June, without planned interruptions, the milling rate was maintained at annualised rates above 1.7Mtpa.

Copper recovery averaged 92.4% in the June Quarter, reflecting stable plant operation throughout the Quarter together with the impact of the column cell, which has delivered a significant improvement to copper recoveries since its installation in February 2015.

A total of 552.9 metres of ore drive development was completed during the Quarter resulting in the production of 46,809 tonnes of development ore. In addition, 385,592 tonnes of stope ore was produced, resulting in total ore production for the Quarter of 432,401 tonnes grading 5.3% Cu. This reflects an annualised production rate from the mine exceeding 1.7Mtpa. The mine remains in balance between production and back-fill.

Total underground development had reached 28.8km at Quarter-end. The development program remains on target to deliver the first stope ore from C4 in the December 2015 Quarter. C5 ore development is on target to start in the March 2016 Quarter with stoping planned to commence early in the 2017 financial year.

## 3.0 MINING & PRODUCTION

### 3.1 Overview

June 2015 Quarter – Production Statistics		Tonnes	Grade (% Cu)	Grade (g/t Au)	Contained Copper (t)	Contained Gold (oz)
Concentrator	Mined	432,401	5.3	1.7	22,914	23,922
	Milled	399,525	5.1	1.8	20,171	22,723
<b>Production</b>		<b>75,082</b>	<b>24.8</b>	<b>3.9</b>	<b>18,637</b>	<b>9,499</b>

**Note:** Mining and production statistics are rounded to the nearest 0.1% Cu grade and 0.1 g/t Au grade. Errors may occur due to rounding. Production Statistics are subject to change following reconciliation and finalisation subsequent to the end of the Quarter.

### 3.2 Underground Mining

A total of 552.9 metres of ore drive development was completed during the Quarter resulting in the production of 46,809 tonnes of development ore. In addition, 385,592 tonnes of stope ore was produced, resulting in total ore production for the Quarter of 432,401 tonnes grading 5.3% Cu.

This reflects an annualised production rate from the mine exceeding 1.7Mtpa. This strong performance reflects a continued focus on reliable stope design and excavation, as well as mining fleet productivity. Future mine production has been lifted to a sustained 1.6Mtpa rate, representing an improvement on the previous sustained rate of 1.5Mtpa despite an increase in the number of stopes required to be mined per year, with smaller stopes remaining in the C1 and DeGrussa lenses and the small stopes associated with the mining of the C4 lense.

The production profile change reflects an overall 7% increase in future annualised mine production with the same mine personnel and mining fleet. Opportunities to further enhance mine production will continue to be explored.

The mine remains in balance between production and back-fill. Given the maturity of production in the C1 and DeGrussa lenses, opportunities to replace paste back-fill in some stopes have been identified for FY2016, therefore reducing overall paste requirements and waste haulage to the surface.

The Conductor 1 decline advanced 101.2 metres during the Quarter. The development of this decline will enable the Conductor 1 deposit to be fully developed and extracted. Conductor 4 decline development advanced 638.2 metres in good ground conditions and intersected the first development ore early in the Quarter to allow stoping to commence the December Quarter. The Conductor 5 decline development advanced 282.2 metres during the Quarter, with all development advance occurring in good ground conditions. C5 ore development is on target to start in the March 2016 Quarter with stoping planned to commence early in the 2017 financial year.

### 3.3 Processing

Key processing metrics for the June Quarter included:

- 399,525 tonnes milled at an average head feed grade of 5.05% Cu (March Quarter: 363,841 tonnes at 5.12% Cu);
- Overall copper recovery of 92.4% (March Quarter: 91.7%);
- Concentrate production of 75,082 tonnes (March Quarter: 70,217 tonnes); and
- Metal production of 18,637 tonnes of contained copper and 9,499 ounces of contained gold (March Quarter: 17,103 tonnes of contained copper and 10,150 ounces of contained gold).

Mill throughput was maintained at an annualised rate of approximately 1.6Mtpa for the June Quarter. During the month of June, without planned interruptions, the milling rate was maintained at annualised rates above 1.7Mtpa. Further work during July has shown that the June milling performance can be sustained, representing an 11% increase on the previous 1.5Mtpa long-term milling rates.

Sandfire continued to actively track the performance of the three key enhancement projects at the DeGrussa Concentrator during the Quarter. These projects were designed to increase copper recoveries and enhance the overall performance and stability of the DeGrussa Concentrator. Data from the Quarter indicates that significant benefits are being generated by each of the process plant improvements, with key outcomes including:

- Improvements to the flotation column have increased copper recoveries from the flotation circuit by around 2%;
- The pebble crusher is delivering a 25% reduction in milling energy, generating a large improvement to the operating cost of the circuit; and
- A significant improvement to the efficiency of the ball mill, which is now doing 350% more work while using 40% less power.

Ongoing optimisation work is continuing including installation of further processing plant controls and increased integration of geo-metallurgical parameters. The optimisation work currently underway is aimed at delivering a copper recovery of 92% for grades around 4.5% Cu for FY2016. Further opportunities to lift recoveries above this level are being investigated now that the plant performance has been stabilised at an enhanced baseline.

### 3.4 Guidance – FY2016

FY2016 targeted copper production is expected to be within the range of 65,000-68,000 tonnes of contained copper metal with gold production within the range of 35,000-40,000 ounces. Headline C1 cash operating costs are expected to be within the range of US\$0.95-1.05/lb. Mine production is forecast at 1.6Mt with the processing of 1.65Mt of ore achieved via the pull-down of ROM stocks. First and third quarter production will be impacted by 8-day planned shuts to re-line the mill and refurbish the thickener tanks and concentrate filter. The July shut has been completed according to schedule with production returning to planned performance.

Refer to Sandfire's June 2015 Quarterly Presentation (released today) for further detail and guidance on operating parameters and unit costs.

## **4.0 SALES AND MARKETING**

### **4.1 Copper Concentrate Shipments**

A total of 81,693 dry metric tonnes of plant concentrate containing 20,184 tonnes of copper and 11,012 ounces of gold was sold for the Quarter. Shipments were completed from Port Hedland and Geraldton.

A total of 280,185 dry metric tonnes of plant concentrate containing 67,903 tonnes of copper and 37,194 ounces of gold was sold for the year to date.

## **5.0 INFRASTRUCTURE**

### **5.1 Solar Power Project**

Subsequent to the end of the Quarter, Sandfire signed the final agreements clearing the way for the construction to commence on the proposed 10.6MW solar power station at DeGrussa, as outlined in the March 2015 Quarterly Report.

Formal approval for the project, which will be the largest integrated off-grid solar and battery storage facility in Australia, follows the establishment of an extensive international consortium to finance, develop, operate and own the facility. The DeGrussa Solar Power Project has also attracted significant funding support from the Australian Federal Government.

The DeGrussa Solar Photovoltaic (PV) System is expected to set new benchmarks for the use of renewable power for mining and processing operations, establishing DeGrussa as a potential world-leading reference site for the use of renewables to reduce operating costs and improve environmental performance.

Sandfire has executed a final Power Purchase Agreement (PPA) with juwi Renewable Energy Pty Ltd ("juwi"), which will develop and operate the project. Diversified infrastructure and survey solutions company OTOC Limited (ASX: OTC) has secured the procurement and installation contract for the project via a joint venture with juwi, while the leading French renewable energy firm Neoen will own the facility.

The Clean Energy Finance Corporation (CEFC) is committing up to \$15 million in finance towards the project, while the Australian Renewable Energy Agency (ARENA) is providing \$20.9 million of funding with Neoen contributing most of the balance. Sandfire's cash contribution to the project will be less than \$1 million.

Construction activities at the DeGrussa mine site will commence in July 2015 with the facility expected to be fully operational in 2016.

The \$40 million project comprises a 10.6MW solar array utilising 34,080 solar panels over 20 hectares. It uses single-axis tracking technology, combined with 6MW of short term battery storage, and will be located near the site of the current DeGrussa underground mine at 1.5Mtpa Concentrator. Once completed, it will be one of the world's largest integrated solar installations providing peak load power to a mining operation.

The solar power station will be fully integrated with the existing 19MW diesel-fired power station at DeGrussa, which is owned and operated by Kalgoorlie Power Systems (a subsidiary of Pacific Energy, ASX: PEA) under an agreement with KPS. This integrated system will be designed with the diesel power station continuing to provide base-load power to the DeGrussa mine with sufficient minimum load to ensure it can respond quickly to meet the power requirements of the process plant and underground mine. Agreements have been completed with KPS for the integration of the solar power facility.

Under the PPA, Sandfire will purchase the solar power generated at a fixed rate that is lower than the historical cost of diesel-generated power. The project is expected to achieve savings in the consumption of diesel fuel and will deliver a significant environmental benefit for DeGrussa, reducing its CO<sub>2</sub> emissions by an estimated 12,000 tonnes per year.

## **6.0 FEASIBILITY STUDIES & METALLURGY**

### **6.1 Oxide copper**

The Sandfire Oxide Copper Project at DeGrussa has been extensively tested and a Scoping Study undertaken on the basis of a traditional sulphuric acid heap leach combined with a solvent extraction circuit with a strong electrolyte fed to an electrowinning circuit to produce 99.99-99.999% copper cathode.

As outlined in the December 2014 Quarterly Report, the preliminary economics from the Scoping Study indicate that the Oxide Project has an Internal Rate of Return (IRR) exceeding 10% and requiring capital expenditure of over \$50 million. The project is sensitive to acid costs, copper recovery and capital costs.

During the Quarter, Sandfire conducted further reviews and optimisation of the flowsheet to enhance the project returns. Given the metallurgical complexity of the oxide material, Sandfire conducted a literary review of new and innovative extraction methods currently being developed by research institutions. The review investigated not only leaching methods but also leaching environments, identifying Innovat continuous vat leach leaching as an alternative to heap leaching and glycine as a potential alternative to a sulphuric acid leach environment.

Based on preliminary testing both of these changes have demonstrated comparably high recoveries to the acid leach system, however at significantly lower operating costs. Larger samples are being collected and tested to further prove up these results. Sandfire anticipates that, on the successful completion of this larger scale testing, a study into the capital requirement will be completed to understand the capital requirement for financial evaluation.

## 7.0 DEGRUSSA EXPLORATION

### 7.1 Overview

Sandfire continues to progress a tightly focused, multi-disciplined exploration campaign to test for extensions to the known cluster of VMS deposits at DeGrussa and to unlock the broader potential of the Doolgunna region for additional VMS (volcanogenic massive sulphide), and structurally-hosted copper deposits. Key components of the Company's exploration activity at DeGrussa during the June Quarter included:

- The discovery of a significant zone of high-grade massive sulphide mineralisation at the Talisman JV Project which is emerging as an important new VMS discovery within the Greater Doolgunna Project;
- Continued underground resource definition drilling of Conductor 5 to allow conversion of the existing Inferred Resource to Indicated and Measured status;
- Continued first-pass regional exploration over a number of projects within the broader Doolgunna tenement holding;
- The completion of a series diamond drill holes targeting a geochemical anomaly north of the Robinson Range prospect; and
- Commencement of the process of integrating data from the Ned's Creek Project (following completion of the agreement to acquire all of Sipa's Thaduna tenure).

The aggregate exploration metres drilled on Sandfire's tenements during the June 2015 Quarter are summarised below:

Drilling	AC/RAB Drilling (m)	RC Drilling (m)	UG Diamond Drilling (m)	Surface Diamond Drilling (m)	Total Drilling (m)
Q1FY2015	26,368	-	3,646	-	30,014
Q2FY2015	18,055	3,307	4,172	1,548	27,082
Q3FY2015	28,747	5,290	670	927	35,634
Q4FY2015	30,929	1,119	2,673	3,336	38,057
<b>TOTAL</b>	<b>104,099</b>	<b>9,716</b>	<b>11,161</b>	<b>5,811</b>	<b>130,787</b>

**Note:** 30,929 metres of AC/RAB drilling, 60 metres RC, and 2,256 metres of DDH during the quarter related to the Talisman Joint Venture.

### 7.3 DeGrussa Near-Mine Extensional Exploration

During the Quarter, Swick completed 14 resource definition drill holes for a total of 2672.7 metres. Drilling was primarily designed to upgrade the eastern portion of the C5 orebody from an Inferred to an Indicated Mineral Resource status as well as testing the down-plunge extension of the currently modelled C5 orebody.

### 7.4 DeGrussa Regional Exploration

*The Greater Doolgunna Project now includes the Talisman Farm-in and the tenements acquired from Sipa Resources, which have increased the aggregate contiguous exploration area to 1,700km<sup>2</sup>. This includes over 65km of strike extent in VMS lithologies. Much of this stratigraphy is obscured beneath transported alluvium and requires systematic aircore (AC) drilling to test the bedrock geochemistry and identify prospective areas.*

## 7.4.1 VMS Discovery – Talisman Farm-In

The Talisman Projects comprise the Springfield, Halloween and Halloween West Projects, which abut Sandfire's DeGrussa-Doolgunna tenements and contain extensions of the volcanic rock package which hosts the DeGrussa VMS deposits. The projects are being explored under a Farm-in Agreement with Talisman Mining Limited (ASX: TLM) under which Sandfire has the right to earn up to a 70% interest by spending \$15 million on exploration over five-and-a-half years.

Sandfire commenced a new program of reconnaissance diamond drilling at the Springfield Project during the Quarter, targeting the Monty and Homer prospects.

Diamond drill hole TLDD0004A at the Monty Prospect intersected a significant zone of high-grade copper-gold mineralisation approximately 10km east of DeGrussa, with final assays returning an exceptional massive sulphide intercept of 16.5 metres grading 18.9% Cu and 2.1g/t Au from 409.5m to 426m down-hole (not true width, from 365m below surface vertical depth). Full details of the hole are provided in the Company's ASX Announcements dated 25 June 2015, 14 July 2015, 20 July 2015 and 21 July 2015.

TLDD0004A was drilled as a follow-up hole to TLDD0002A, completed in May, and was designed to intersect an off-hole EM response detected in a down-hole electro-magnetic (DHEM) survey on the hole.

The intersection in TLDD0004A represents a significant development for Sandfire and the Company's ongoing exploration efforts within the Greater Doolgunna Project. While exploration of this emerging VMS prospect is still at an early stage, the width, exceptional grade and tenor of the copper-gold mineralisation intersected is considered to be very encouraging.

This is also the first significant intersection of high-grade copper-gold mineralisation to be discovered outside of the known lenses of VMS mineralisation at DeGrussa. Additionally, the massive sulphide mineralisation intersected in TLDD0004A (see core photos below) is similar to that seen in the DeGrussa, Conductor 1, 4 and 5 VMS lenses and occurs within a host sequence that bears many similarities to that which hosts the massive sulphide mineralisation at DeGrussa.



Figure 2: SFR's Exploration Manager – Doolgunna, Ian O'Grady, examining drill core from hole TLDD0004A



Figure 3: Massive sulphide mineralisation from hole TLDD0004A

Follow-up diamond hole TLDD0005, which was completed subsequent to the end of the Quarter, intersected the mineralised horizon approximately 70 metres south-west of TLDD0004A, returning an outstanding high-grade massive sulphide intercept of:

- **9.2 metres grading 11.8% Cu and 2.9 g/t Au** from 417.0m to 426.2m down-hole (not true width, from 370m below surface vertical depth)

This intercept occurs within a broader mineralised zone of:

- **13.1 metres grading 8.4% Cu and 2.1 g/t Au** from 416.7m to 429.8m down-hole

Also subsequent to the end of the Quarter, RC drill-hole TLRC0004 – which was drilled as a pre-collar for planned diamond drilling and as a platform for down-hole EM surveying along strike from the massive sulphide intercepts in TLDD0004 and TLDD0005 – intersected 18 metres of massive sulphides from 108.0m to 126.0m down-hole. Note, all widths are down-hole as true widths are not currently known.

Based on field observations, the massive sulphides intersected in TLRC0004 also contain visible chalcopyrite and have been dispatched for assaying. This new intersection (TLRC0004) is located approximately 135 metres along strike to the south-west from the massive sulphide mineralisation intersection reported in TLDD0005 and approximately 200 metres along strike from the high-grade intersection in TLDD0004A. The location of the holes is shown in Figure 2. Hole TLRC0004 has been completed to a final depth of 306 metres and will provide an optimal platform for down-hole EM (DHEM) surveys.

It is important to note that, while the new intersections have increased the known footprint of mineralisation, the continuity with the mineralisation seen in holes TLDD0004A, TLDD0005 and TLRC0004 is not known. Further drilling will be undertaken to determine the geological setting.

Step-out diamond hole TLDD0006, which was collared to intersect the interpreted strike extension of the previously intersected high-grade mineralisation 80m further to the south-west from hole TLDD0005, was also completed subsequent to the end of the Quarter to a final depth of 553.9 metres.

The hole intersected a potentially significant fault zone and an extension of what is interpreted to be the sedimentary host horizon to the intercepts seen in TLDD0004A and TLDD0005. The fault zone was intersected between 407.2 metres and 445.6 metres down-hole with a thick sedimentary sequence of 80 metres observed from 422.5 metres to 502.2 metres down-hole. This sedimentary sequence is similar to that observed on the margins of the massive sulphide mineralisation at DeGrussa.

While no massive sulphides have been recorded in TLDD0006, the hole provides valuable geological and stratigraphic information to assist in guiding ongoing drilling to test the extent and orientation of the high-grade copper-gold mineralisation intersected in the previous three holes.

The significance of this fault zone, including sense of movement and potential offsets, is not yet known. This includes the relationship of the fault zone to the deeper mineralisation intersected in TLDD0004A and TLDD0005 and the shallower massive sulphide zone intersected in step-out hole TLRC0004, for which assays are awaited. Additional drilling pierce points will be required to inform the Company's growing understanding of the local geological context of this exciting new area.

Drilling is continuing and the next diamond drill-hole (TLDD0007) will be targeted approximately 80m down-dip of the mineralisation seen in TLDD0004A. This hole will be drilled as a diamond tail off an existing Reverse Circulation (RC) pre-collar that was drilled to a depth of 186m. The RC rig will continue scout drilling to define the location of the prospective horizon as well as drilling pre collars for the diamond drilling rig.

Sandfire will continue to explore the area to determine the potential extents of the mineralisation and to develop further understanding of the broader geological context. A multi-faceted approach to the exploration in the area will include collating information from ongoing down-hole EM surveys, structural geological reviews, geochemical vectoring and stratigraphic analysis.

### Drill-hole Information Summary, Springfield Project

Details and coordinates of the historical drill-hole SPD021 and recent drill holes completed by Sandfire at the Springfield Project, TLDD0001, TLDD0002A, TLDD0003 and TLDD0004A, together with details of step-out drill holes TLDD0005 and TLDD0006 and the new RC holes, are provided below:

Hole ID	Depth	Dip	Azimuth	Grid_ID	East	North	RL	Lease ID	Hole Status
SPD021	553	-60°	180°	MGA94_50	743598	7171437	598	E52/2282	Complete
TLDD0001	1099	-62°	357°	MGA94_50	740146	7174149	589	E52/2313	Complete
TLDD0002A	463	-61°	110°	MGA94_50	743544	7171211	602	E52/2282	Complete
TLDD0003	658	-62°	355°	MGA94_50	740596	7174550	589	E52/2313	Complete
TLDD0004A	817	-60°	148°	MGA94_50	743588	7171281	601	E52/2282	Complete
TLDD0005	478	-62°	139°	MGA94_50	743544	7171211	602	E52/2282	Complete
TLDD0006	554	-62°	138°	MGA94_50	743479	7171160	602	E52/2282	Complete
TLRC0004	306	-62°	143°	MGA94_50	743497	7171025	605	E52/2282	Complete
TLRC0005	306	-62°	138°	MGA94_50	743321	7170993	602	E52/2282	Complete
TLDD0007	<i>Ongoing</i>	-62°	138°	MGA94_50	743505	7171271	602	E52/2282	In Progress

Figure 4: Sandfire's Greater Doolgunna Project, showing the Springfield Project and the location of recent drilling

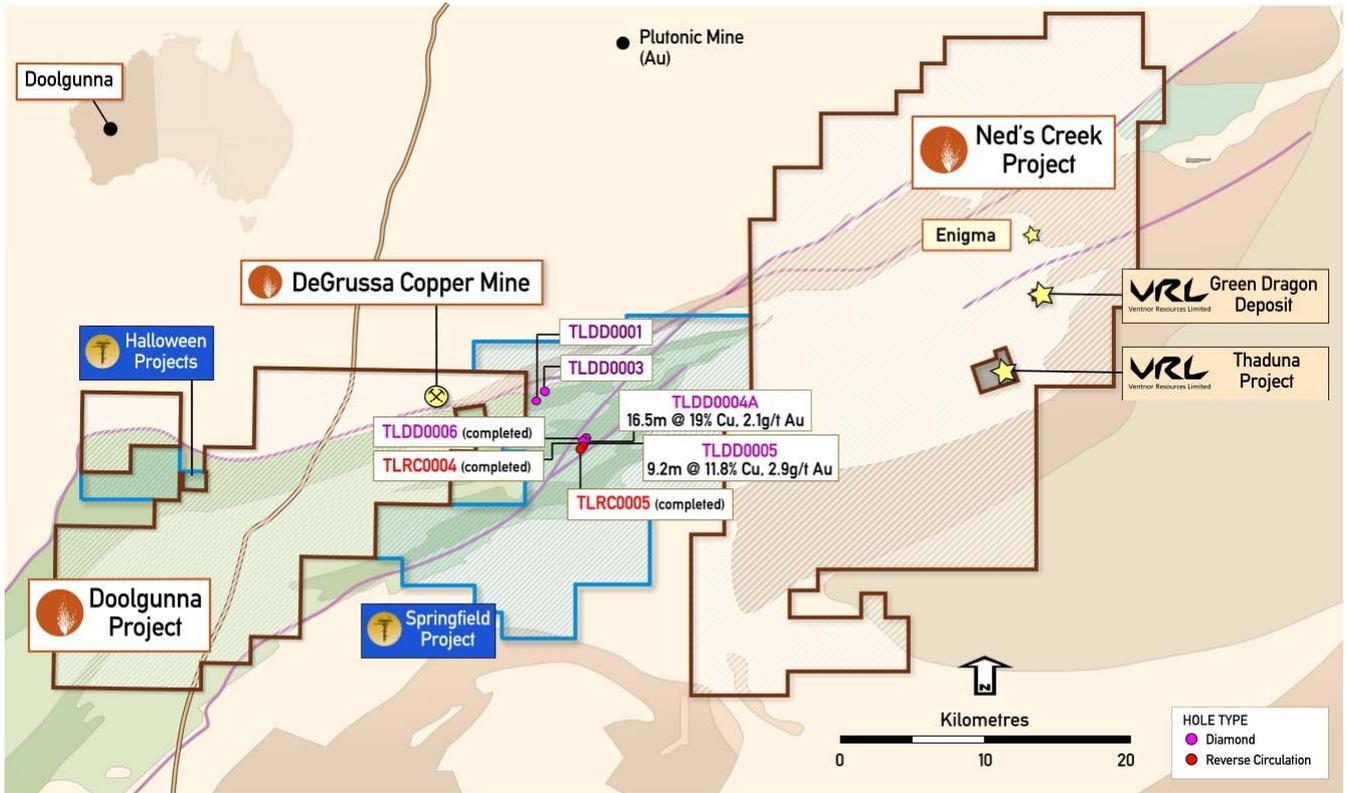
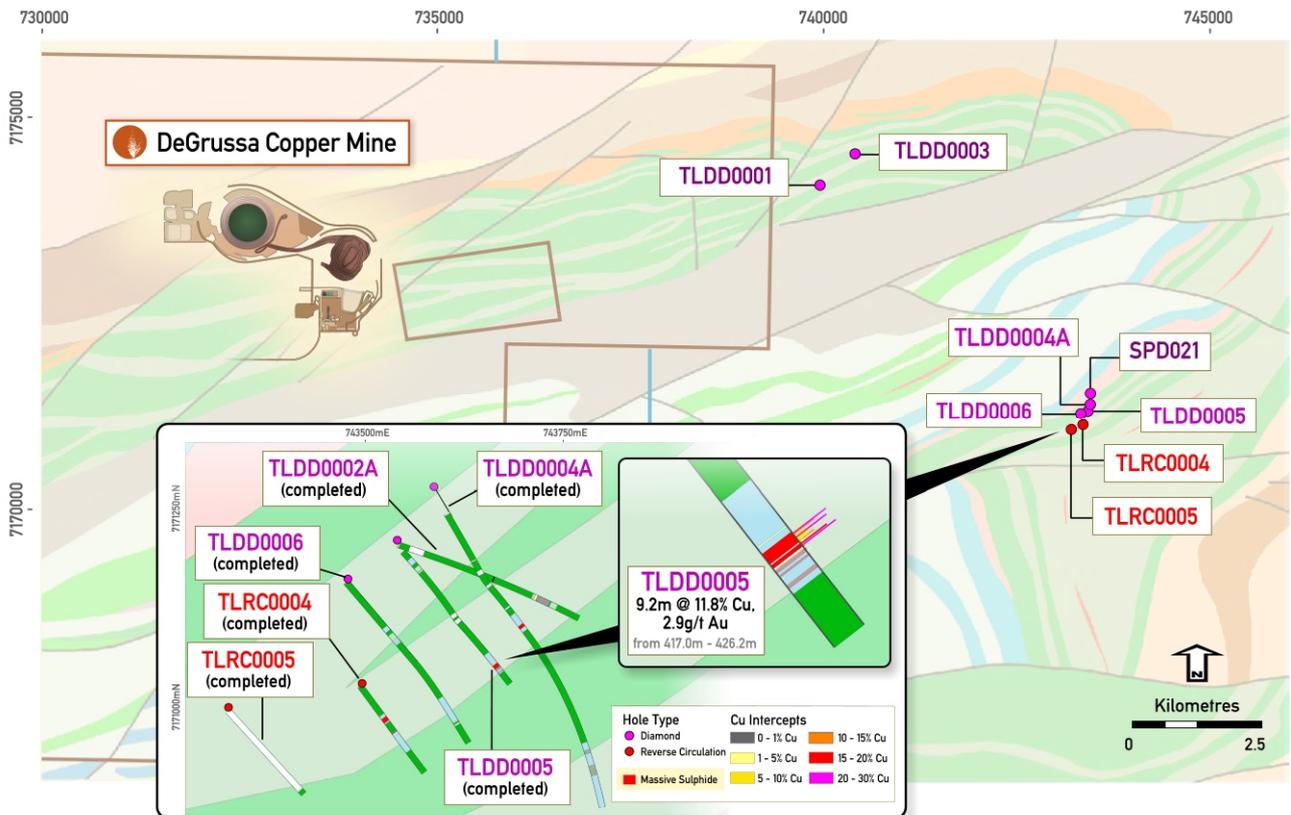


Figure 5: Location of recent diamond and RC drilling relative to the DeGrussa Copper Mine



At the Homer Prospect, TLDD0003 (seen in Figure 4) was designed to test the eastern strike extension of the interpreted C5 host horizon roughly 450m ENE of the TLDD0001 intersection. The location of the drill collar coincided with a recently completed seismic line to facilitate stratigraphic interpretation. The drill-hole intersected haematitic exhalite with jasper clasts, which is interpreted to be the C5 target horizon. This horizon returned weakly anomalous base metal and trace elements. The hole confirms the continuation of the C5 host horizon and supports additional work in the area heading further east along strike.

## 7.4.2 Seismic Survey and Other Regional Exploration

During the Quarter, 34.48km of 2D seismic surveying was completed by HiSeis Pty Ltd. This programme, which consisted of five dip-parallel and one strike-parallel profiles, was designed as proof-of-concept testing for utilising this technique as a direct detection tool for VMS deposits.

The quality of the data collected was good to excellent and final interpretation of results is expected in the coming quarter.

Assay results were received from drilling at the North Robinson Range prospect, which was targeting a 7km geochemical anomaly.

Significant intercepts from this drilling programme included:

- DGRC851: 5m @ 1080ppm Cu (220m - 225m)
- DGRC852: 10m @ 1995ppm Zn (130m - 140m)
- DGRC866: 155m @ 1700ppm Cu (15m - 175m)

1000m x 1200m high-power FLEM geophysical surveys have been completed over the Shed Well and Homestead areas (as part of the SW extension from the Talisman programme), with no significant anomalies identified to date.

Litho-geochemistry processing and interpretation continued throughout the reporting period. This project is expected to be finalised in Q1 FY 2016 and is anticipated to provide a number of drill targets warranting immediate drill testing.

## 7.4.3 Thaduna Project Joint Venture

*The Thaduna Project is located 40km east of DeGrussa and represents the largest copper resource in the Doolgunna-Bryah Basin Region outside of Sandfire's DeGrussa-Doolgunna Project (7.9Mt @ 1.8% Cu for 142,000 tonnes of contained copper). Sandfire currently owns a 35% interest in the project, and has entered into a farm-in agreement to earn up to a further 45% (total of 80%) with Ventnor Resources Limited (ASX: VRX).*

Work during the Quarter was focused on the planning and preparation of a drilling program aimed at increasing the understanding of the plunge controls within and around the current resource. It is envisaged the program will commence in Q1 FY2016. This work will be undertaken in line with the JV agreement with Ventnor Resources, with the aim of reviewing the resource and Scoping Study at the completion of drilling.

## 7.4.4 Ned's Creek Project

*The Ned's Creek Project comprises all of the tenements acquired from Sipa Resources Limited. The package totals over 900km<sup>2</sup> of prospective geology and surrounds the Thaduna Project Joint Venture in totality.*

During the Quarter, project data interrogation identified the need for additional detailed airborne magnetic surveying. Sandfire has developed parameters for a survey to be flown over the Ned's Creek Project in Q1 FY2016, with final contractual and logistical details now being finalised.

## 8.0 AUSTRALIAN EXPLORATION

*Sandfire has a number of exploration joint ventures around Australia. The Company recognises that its activities impact directly and indirectly on the local environments and communities in which we operate. Sandfire is committed to conducting its activities in a sustainable and socially responsible manner to minimise and mitigate these impacts. In order to achieve its sustainability objectives, Sandfire applies the same high standards and commitment to absolute safety in the workplace, environmentally sound practices and transparent social responsibility at its exploration joint ventures as it does at its DeGrussa Copper Mine in Western Australia.*

### 8.1 Borroloola Project

*The Borroloola Project is located north of the McArthur River Mine (Xstrata), and is prospective for base metals, sedimentary manganese and iron ore. Sandfire has signed two farm-out agreements to advance the Borroloola Project. The Batten Trough JV covering the eastern portion of the tenements is under an option and joint venture agreement with MMG Exploration Pty Ltd, which can earn up to an 80% interest. The Borroloola West JV covering the western portion is under an agreement with Pacifico Minerals Ltd, which has the right to earn up to an 80% interest.*

Pacifico Minerals commenced drilling at the Coppermine Creek prospect in June, with copper sulphides intersected in one hole subsequent to the end of the quarter (*Pacifico Minerals Ltd release of 13<sup>th</sup> July 2015*). Further drilling is now planned at both the Coppermine Creek and the Bing Bong prospects.

MMG carried out helicopter-supported stream sediments and soils sampling at the Batten Trough JV during the Quarter. This work was combined with mapping and field testing of 14 prospects. An Aboriginal Area Protection Authority (AAPA) survey was undertaken and a water bore completed in preparation for the commencement of drilling in Q1 FY2016. A total of 15 holes are planned for 5,000m. In addition an Audio-Magnetotelluric (AMT) and gravity survey will commence shortly.

## **8.2 Queensland Projects**

*A number of projects are held in the eastern succession of the Mount Isa region south and east of Cloncurry in northwest Queensland which are prospective for Broken Hill style lead-zinc-silver deposits such as the Cannington deposit (BHP) and the Ernest Henry Iron Oxide copper-gold deposits (Xstrata).*

A review of existing data and a re-processing of the geophysics for Sandfire's landholdings in the eastern succession has increased the prospectivity of the newly-granted Breena Plains Project. The area contains numerous very high magnetic anomalies both within the +60km strike length of Cannington host rock stratigraphy, and associated with felsic intrusives in a similar style to that seen at the Ernest Henry copper deposit.

Drilling has commenced on the first of these targets, with one drill-hole completed and a second commenced by the end of the Quarter. The first hole intersected lithologies and weak alteration reminiscent of distal Cannington mineralisation. Assays are awaited, however no ore grades are anticipated.

The planned drilling program includes drill testing of another three targets at Breena Plains. One of these is a Broken Hill/Cannington type target and the remaining two are IOCG targets.

Further drill testing of the Altia deposit and soil sampling of the Blackrock and Altia projects is planned.

## **8.3 New South Wales Projects**

*A number of project areas are held in the Lachlan Fold Belt of New South Wales near West Wyalong which are prospective for porphyry copper-gold mineralisation as found at Northparkes (China Moly), Cadia (Newcrest) and Cowal (Barrick). Farm-in agreements to earn up to 80% are held with Straits Resources Ltd (ASX: SRQ) on the Bland Creek Project and with Gold Fields Australasia Pty Ltd on the Marsden South Project.*

A small ground magnetics survey has been completed at the Marsden South JV, and a follow up drilling program is planned for November, targeting porphyry copper gold mineralisation.

A review of all NSW projects has been completed and programs planned for the 100%-owned Wingrunner, Wilga West and Wellington North projects. Drilling will be focused on Ordovician porphyry copper mineralisation within the world class Lachlan Fold Belt.

## **8.4 Alford Project**

*The Alford Project on the Yorke Peninsula lies 20km NE of Wallaroo, South Australia in the southern portion of the Gawler Craton. The tenements are prospective for iron oxide copper-gold mineralisation as found at Prominent Hill (OZ Minerals), Olympic Dam (BHP) and Hillside (Rex Minerals). The Project includes an option to Joint Venture into the Alford Project (EL3969, PM268) with Argonaut Resources (ASX: ARE) to earn up to 75% of the project.*

Two diamond drill holes were completed at the Alford Project to test a large magnetic body to the north of Netherleigh Park and down dip of the Netherleigh Park mineralisation itself. Both holes returned encouraging anomalous copper and silver results as reported by Argonaut Resources in their announcement dated 25 June 2015. Follow-up work will include a geological review and drill planning.

## **9.0 INTERNATIONAL EXPLORATION**

### **9.1 WCB Resources – Misima Copper Project, PNG**

*Sandfire holds a 38.38% interest in WCB Resources Ltd ("WCB"; TSX-V: WCB), a Toronto-listed copper-gold explorer, which it acquired by subscribing for shares in a A\$5.9M private share placement. WCB is earning a 70% interest in the Misima Island exploration lease through a joint venture with Pan Pacific Copper ("PPC"), an integrated copper mining and smelting company that is jointly owned by JX Nippon Mining & Metals Corporation and Mitsui Mining & Smelting Company Ltd. The Misima Project is located within a porphyry belt which contains four of the*

world's richest primary grade copper and gold porphyries including Grasberg (4.9 billion tonnes @ 0.8% Cu and 0.7g/t Au), Ok Tedi (1.7 billion tonnes @ 0.7% Cu and 0.6g/t Au), Golpu (1 billion tonnes at 0.9% Cu and 0.6g/t Au) and Panguna (1.4 billion tonnes @ 0.5% Cu and 0.6g/t Au)<sup>1</sup>.

Further details can be found in WCB's News Releases, which are available at the WCB Resources website, [www.wcbresources.com](http://www.wcbresources.com).

## 9.2 Tintina Resources – Black Butte Project, USA

Sandfire holds an initial 36% interest in Vancouver-based copper development company, Tintina Resources (TSX-V: TAU), after subscribing for C\$16 million of shares in a private share placement. Tintina's key asset is a 100% interest in the premier, high-grade Black Butte Copper Project, located near Helena in the State of Montana in the United States. The project is located close to existing road, power and rail infrastructure, with the ability to access a residential workforce located nearby and competitive sources of materials and power.

Located on private ranch land in central Montana, the Black Butte Project copper resource consists of three flat-lying sedimentary hosted copper deposits which have been extensively drilled by Tintina (over 53,000m of diamond drilling).

An Updated Technical Report and Preliminary Economic Assessment (PEA) completed by Tintina in July 2013 was based on reported NI 43-101 Measured and Indicated Resources totalling 15.7 million tonnes grading 3.4% Cu, 0.1% Co and 14g/t Ag for 533,600 tonnes of contained copper and Inferred Resources totalling 2.3 million tonnes grading 2.8% Cu, 0.09% Co and 14g/t Ag for 63,500 tonnes of contained copper (calculated using a 1.6% copper cut-off grade) for the Johnny Lee Upper Zone and Lowry deposits, and a 1.5% Cu cut-off for the Johnny Lee Lower Zone).

The PEA confirmed that the deposit has the potential to underpin a robust underground mining operation with forecast life-of-mine production of ~30,000tpa of copper-in-concentrate over a mine life of ~11 years, based on total mill throughput of 11.8 million tonnes at an average head grade of 3.1% Cu.

Tintina advised during the Quarter that it continues studies on development of the Johnny Lee deposit to support an application for a Mine Operating Permit which the Company anticipates completing in 2015.

Full details can be found in the Tintina announcements, which are available at the Tintina website, [www.tintinaresources.com](http://www.tintinaresources.com).

## 10.0 CORPORATE

### 10.1 Finance Facility

During the Quarter, Sandfire reached agreement with its financier, ANZ Banking Corporation ("ANZ"), to restructure the DeGrussa Project Finance Facility. The restructured facility provides increased flexibility and better aligns the facility term to the operating cash flows to be generated by DeGrussa over the current mine life, which now extends until mid-2021 (see ASX Announcement – 28 January 2015).

The revised structure includes two facilities, namely:

- an \$85 million Revolver Facility, initially fully-drawn, which can be paid down or redrawn as required and which must be fully repaid by 31 December 2017; and
- a \$40 million Amortising Facility with fixed repayments of \$5 million per quarter for six quarters (commenced on 30 June 2015), followed by \$2 million per quarter for five quarters (ending 31 December 2017).

The previous repayment schedule required full repayment by December 2015.

The new facilities are subject to usual financing terms, covenants and pricing.

Sandfire has also reduced its existing working capital facility with ANZ from \$50 million to \$25 million. This facility can be drawn-down against the value of saleable copper concentrate inventories held by the Company at the mine and ports and remains undrawn.

Cash on hand at 30 June 2015 totalled \$107 million.

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<sup>1</sup> Production + Resources, Interria 2014.

## 10.2 Discontinuance of Federal Court proceedings against CAER

On 30 April 2015, Centre for Australian Ethical Research Pty Limited (CAER) issued a statement on its website admitting that the research processes it applied to compile environmental, social and governance (ESG) ratings and reports on Sandfire Resources NL (ASX: SFR; "Sandfire") failed to meet its own stated standards (the EIRIS research process and ARISTA Quality Standards).

CAER provided the Australian National University (ANU) with ESG ratings and reports on Sandfire in August 2014 that were deficient and inaccurate. Significant aspects of the research, conclusions and ratings were drawn from incomplete and out of date information.

As a result of CAER's acknowledgement of this failure, Sandfire's Federal Court Proceedings against CAER have been discontinued.

## 10.3 Sale of shares by POSCO Australia

On 14 May 2015, POSCO Australia announced that it had sold its 15.2% stake in Sandfire via an institutional block trade at an average price of \$5.43 per share.

## 10.4 Investor Call and Webcast

An investor conference call on Sandfire's June 2015 Quarterly Report will be held today (Wednesday 29 July 2015) for investors and analysts, commencing at 10.00am (AWST) / 12.00pm (AEST). Analysts, brokers, investors and media can join the conference call by dialling the following numbers:

<b>Australia Toll Free:</b>	<b>1 800 558 698</b>
<b>Alternate Australia Toll Free:</b>	<b>1 800 809 971</b>
<b>International:</b>	<b>+61 2 9007 3187</b>
<b>Audio Access Code:</b>	<b>491297</b>

The Quarterly Report and an accompanying Quarterly slide presentation will be available via the ASX Company Announcements Platform (Code: SFR), as well as at Sandfire's website: [www.sandfire.com.au](http://www.sandfire.com.au).

In addition, a live webcast of the investor call and the slide presentation will be available via the Boardroom Radio (BRR Media) service by clicking on the following link: <http://webcasting.brrmedia.com/broadcast/139336>.

A recording of the webcast will be available at the same link shortly following the conclusion of the conference call.

**ENDS**

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## Competent Person's Statement – Exploration Results

The information in this report that relates to Exploration Results is based on information compiled by Mr. Shannan Bamforth who is a Member of The Australasian Institute of Mining and Metallurgy. Mr. Bamforth is a permanent employee of Sandfire Resources and has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Bamforth consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## Exploration and Resource Targets

Any discussion in relation to the potential quantity and grade of Exploration Targets is only conceptual in nature. While Sandfire is confident that it will report additional JORC compliant resources for the DeGrussa Project, there has been insufficient exploration to define mineral resources in addition to the current JORC compliant Mineral Resource inventory and it is uncertain if further exploration will result in the determination of additional JORC compliant Mineral Resources.

## Forward-Looking Statements

Certain statements made during or in connection with this statement contain or comprise certain forward-looking statements regarding Sandfire's Mineral Resources and Reserves, exploration operations, project development operations, production rates, life of mine, projected cash flow, capital expenditure, operating costs and other economic performance and financial condition as well as general market outlook. Although Sandfire believes that the expectations reflected in such forward-looking statements are reasonable, such expectations are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements to differ materially from those expressed, implied or projected in any forward looking statements and no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, delays or changes in project development, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in metals prices and exchange rates and business and operational risk management. Except for statutory liability which cannot be excluded, each of Sandfire, its officers, employees and advisors expressly disclaim any responsibility for the accuracy or completeness of the material contained in this statement and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person as a consequence of any information in this statement or any error or omission. Sandfire undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events other than required by the Corporations Act and ASX Listing Rules. Accordingly you should not place undue reliance on any forward looking statement.

## JORC Compliance Statement

A summary of the information used in this release is as follows.

The DeGrussa VHMS (volcanic-hosted massive sulphide) copper-gold deposit is located 900 kilometres north of Perth and 150 kilometres north of Meekatharra in the Peak Hill Mineral Field. The system is hosted within a sequence of metasediments and mafic intrusions situated in the Bryah Basin that have been metamorphosed and structurally disrupted.

The sulphide mineralisation consists of massive sulphide and semi-massive sulphide mineralisation. Primary sulphide minerals present are pyrite, chalcopyrite, pyrrhotite and sphalerite, together with magnetite. The sulphide mineralisation is interpreted to be derived from volcanic activity. The deposit shares characteristics with numerous VHMS deposits worldwide.

DeGrussa is located wholly within Mining Lease 52/1046. This tenement is subject to the Yugunga-Nya (WC99/046) and Gingirana Claims (WC06/002). A Land Access Agreement was executed with both claimant groups in November 2010. Sandfire is required to make royalty payments to the State and affected Native Title Claimants on a periodical basis.

Drilling of the DeGrussa massive sulphide lens (of which there are four defined lenses of mineralisation) and surrounding area is by diamond drill holes of NQ2 diameter core and, to a lesser extent, by Reverse Circulation (RC) face sampling hammer drilling. The nominal drill-hole spacing is less than 80m x 40m in the inferred areas of the Mineral Resource and increases in density as the classification increases to Measured where nominal 13m x 20m drill hole spacing is achieved. Drilling has been by conventional diamond drilling with a small number holes aided by the use of navigational drilling tools. RC drilling was completed with a nominal 140mm face sampling hammer and split on a cone or riffle splitter. Drill-hole collar locations were surveyed using RTK GPS, and all holes were down-hole surveyed using high speed gyroscopic survey tools.

Sampling of diamond core was based on geological intervals (standard length 0.5 m to 1.3 m). The core was cut into half or quarter (NQ2) to give sample weights up to 3 kg. RC samples were 1.0m samples down-hole, with sample weights between 3.5kg and 7kg depending on material type. Field quality control procedures involved assay standards, along with blanks and duplicates. These QC samples were inserted at an average rate of 1:15.

The sample preparation of diamond core involved oven drying, coarse crushing of the core sample down to ~10 mm followed by pulverisation of the entire sample to a grind size of 90% passing 75 micron. A pulp sub-sample was collected for analysis by either four acid digest with an ICP/OES, ICP/MS (multi element) finish or formed into fused beads for XRF determination on base metals and a fire assay for Au.

All reported assays have been length weighted. No top-cuts have been applied. A nominal 0.3% Cu lower cut-off is applied. High grade intervals internal to broader zones of sulphide mineralisation are reported as included intervals.

The attitude of the ore bodies at DeGrussa is variable but there is a dominant southerly dip from ~40 to 90 degrees flat-lying and is drilled to grid west with drill holes inclined between -60 and -90 degrees. As such the dominant hole direction is north and with varying intersection angles all results are clearly defined as either down hole or approximate true width.

Density of the massive sulphide orebody ranges from 2.8g/cm<sup>3</sup> to 4.9g/cm<sup>3</sup>, with an average density reading of 3.7g/cm<sup>3</sup>. Geotechnical and structural readings recorded from diamond drilling include recovery, RQD, structure type, dip, dip direction, alpha and beta angles, and descriptive information. All data is stored in the tables Oriented Structure, Geotechnical RQD, Core Recovery, Interval Structure as appropriate.

A suite of multi-element assays are completed on each mineralised sample and include all economic and typical deleterious elements in copper concentrates. This suite includes Cu, Au, Ag, Zn, Pb, S, Fe, Sb, Bi, Cd and As.

Regional drilling has been completed using a combination of RC and AC drilling. A majority of the drilling is preliminary in nature and starts with 800m x 100m AC drilling where the geology and geochemistry is revaluated to determine the requirement for follow 400m x 100m drilling. If significant anomalism is identified in the AC drilling then follow up RC drilling will be conducted to determine the opportunity for delineating potentially economic mineralisation. Whilst the main aim of the exploration at Doooolgunna is to identify additional VHMS mineralisation in some areas of regional land holding it is currently the interpreted that there is shear zones located on the contact between dolerite and sediments hosting auriferous quartz vein stockworks with some coincident copper.

AC and RC regional samples are prepared at Ultra Trace in Perth with the original samples being dried at 80° for up to 24 hours and weighed, and Boyd crushed to -4mm. Samples are then split to less than 2kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1/20 and entered into the job results file. Pulverising is completed using LM5 mill to 90% passing 75µm. Assaying is completed using a Mixed 4 Acid Digest (MAD) 0.3g charge and MAD Hotbox 0.15g charge methods with ICPOES or ICPMS. The samples are digested and refluxed with a mixture of acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric acids and conducted for multi elements including Cu, Pb, Zn, Ag, As, Fe, S, Sb, Bi, Mo. The MAD Hotbox method is an extended digest method that approaches a total digest for many elements however some refractory minerals are not completely attacked. The elements are then determined by ICPOES or ICPMS finish. Samples are analysed for Au, Pd and Pt by firing a 40g of sample with ICP AES/MS finish.

Figure 6: Strategic location in an emerging VMS belt: Doolgunna Project, Talisman and Ventnor Joint Ventures and Ned's Creek Project

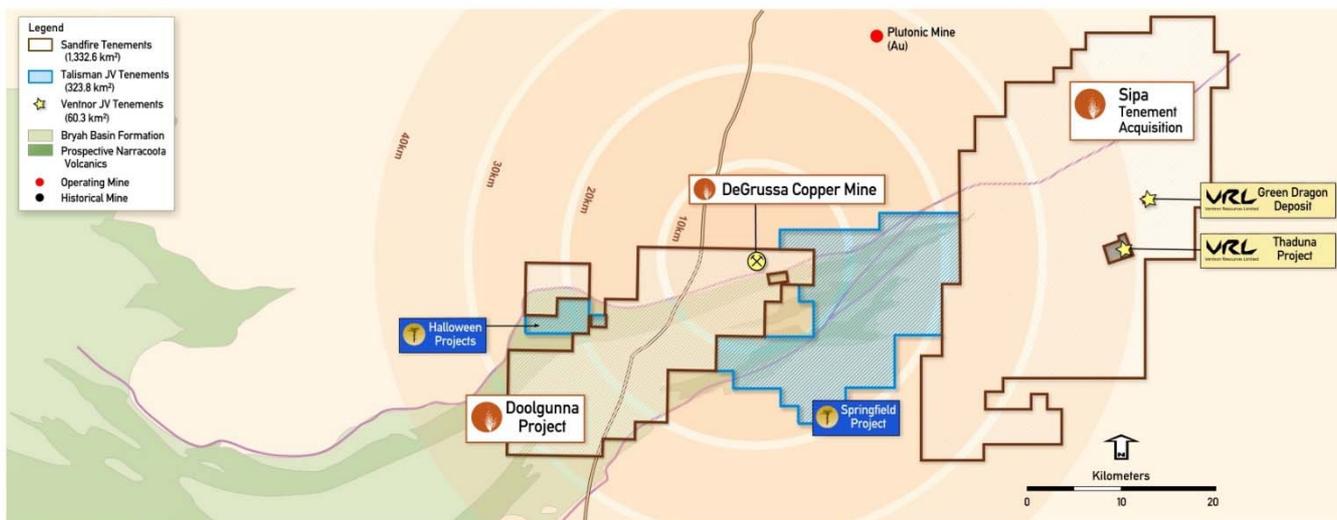


Figure 7: Australian Joint Venture and Exploration Project Locations and WCB/Misima investment



**TABLE 1: EXPLORATION RESULTS - JORC 2012  
DEGRUSSA COPPER MINE**

*Section 1: Sampling Techniques and Data*

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g. 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling methods include half-core sampling of NQ2 core from underground diamond drilling (DD) , Reverse Circulation drilling (RC) samples are collected by a cone splitter for single metre samples or by a sampling spear for first pass composite samples using a face sampling hammer with a nominal 140mm hole, aircore drilling. Air Core (AC) samples are collected from spear samples for both composite and single metre samples.</li> <li>Sampling is guided by Sandfire DeGrussa protocols and QAQC procedures as per industry standard.</li> <li>Underground DD sample size reduction is completed through a Jaques jaw crusher to -10mm and all samples Boyd crushed to -4mm and pulverised via LM2 to nominal 90% passing -75µm. RC and AC sample size reduction is completed through a Boyd crusher to -10mm and pulverised via LM5 to nominal -75µm. Pulp size checks are completed.</li> <li>Pulp samples are fused into a glass bead by the combination of 0.4g of assay sample plus 9.0g flux XRF analysis. A 40g and 0.15g assays charges are used for FA and mixed acid digest respectively.</li> <li>Core samples are routinely sampled for SG determination.</li> </ul>
Drilling techniques	<p><i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).</i></p>	<ul style="list-style-type: none"> <li>Underground drilling is completed by DD rig with a core size of NQ2.</li> <li>Surface drilling is by RC with sampling hammer of nominal 140mm hole and AC drilling with a blade bit.</li> <li>All surface drill collars are surveyed using RTK GPS. All underground drill collars are surveyed using Trimble S6 electronic theodolite with downhole survey completed by gyroscopically.</li> <li>Holes are inclined at varying angles for optimal ore zone intersection from the drilling position.</li> <li>All core where possible is oriented using a Reflex ACT II RD orientation tool with stated accuracy of +/-1% in the range 0 to 88°.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Core is meter marked and orientated to check against the driller's blocks, ensuring that all core loss is taken into account.</li> <li>Diamond core recovery is logged and captured into the database with weighted average core recoveries of approximately 99%. Surface RC sampling is good with almost no wet sampling in the project area. AC drilling recovery is good with sample quality captured in the database.</li> <li>Samples are routinely weighed and captured into the central secured database.</li> <li>No sample recovery issues have impacted on potential sample bias.</li> </ul>

Logging	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Geological logging is completed for all holes and representative across the ore body. The lithology, alteration, and structural characteristics of core are logged directly to a digital format following standard procedures and using Sandfire DeGrussa geological codes. Data is imported into the central database after validation in LogChief™.</li> <li>• Logging is both qualitative and quantitative depending on field being logged.</li> <li>• All cores are digitally photographed and stored.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• DD Core orientation is completed where possible and all are marked prior to sampling. Half core samples are produced using Almonte Core Saw. Samples are weighed and recorded.</li> <li>• RC samples are split using a cone or riffle splitter. A majority of RC samples are dry. On occasions that wet samples are encountered they are dried prior to splitting with a riffle splitter.</li> <li>• AC samples consist of 5m composite spear samples produced from 1m drilling with weights averaging approximately 3kg. In certain locations after composite samples are received additional 1m sampling may be completed.</li> <li>• At the on-site laboratory, the original sample is dried at 80° for up to 24 hours and weighed on submission to laboratory. Sample is then crushed through Jaques crusher to nominal -10mm (DD samples only). Second stage crushing Boyd crusher to nominal -4mm. Where required samples are split to less than 2kg through linear splitter. Sample splits are weighed at a frequency of 1/20 and entered into the job results file. Pulverising is completed using LM2 mill to 90% passing 75µm. Two lots of pulp packets are retained for on-site laboratory services whilst the pulverised residue is shipped to Ultra Trace in Perth for further analysis.</li> <li>• Sample preparation at Ultra Trace in Perth involves the original samples being dried at 80° for up to 24 hours and weighed. DD Samples are then crushed through Jaques crusher to nominal -10mm. Second stage crushing uses Boyd crusher to nominal -4mm. All RC and AC samples are Boyd crushed to -4mm. Samples are then split to less than 2kg through linear splitter and excess retained. Sample splits are weighed at a frequency of 1/20 and entered into the job results file. Pulverising is completed using LM5 mill to 90% passing 75µm.</li> <li>• Sandfire has protocols that cover auditing of sample preparation at the laboratories and the collection and assessment of data to ensure accurate steps in producing representative samples for the analytical process. Key performance indices include contamination index of 90% (that is 90% blanks pass); Crush Size index of P95-10mm; Grind Size index of P90-75µm and Check Samples returning at worse 20% precision at 95% confidence interval and bias of 5% or better.</li> <li>• Duplicate analysis has been completed and identified no issues with sampling representatively.</li> <li>• The sample size is appropriate for the VHMS and Gold mineralisation styles.</li> </ul>

<p>Quality of assay data and laboratory tests</p>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Samples submitted to Ultra Trace in Perth are assayed using Mixed 4 Acid Digest (MAD) 0.3g charge and MAD Hotbox 0.15g charge methods with ICPOES or ICPMS. The samples are digested and refluxed with a mixture of acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric acids and conducted for multi elements including Cu, Pb, Zn, Ag, As, Fe, S, Sb, Bi, Mo, Re, Mn, Co, Cd, Cr, Ni, Se, Te, Ti, Zr, V, Sn, W and Ba. The MAD Hotbox method is an extended digest method that approaches a total digest for many elements however some refractory minerals are not completely attacked. The elements S, Cu, Zn, Co, Fe, Ca, Mg, Mn, Ni, Cr, Ti, K, Na, V are determined by ICPOES, and Ag, Pb, As, Sb, Bi, Cd, Se, Te, Mo, Re, Zr, Ba, Sn, W are determined by ICPMS. Samples are analysed for Au, Pd and Pt by firing a 40g of sample with ICP AES/MS finish. Lower sample weights are employed where samples have very high S contents. This is a classical FA process and results in total separation of Au, Pt and Pd in the samples.</li> <li>• Samples submitted to the on-site laboratory have 0.4g of sample plus 9.0g flux combined and fused into a glass bead. XRF is used to analyse for a suite of elements (including Cu, Fe, SiO<sub>2</sub>, Al, Ca, MgO, P, Ti, Mn, Co, Ni, Zn, As, and Pb). Pulps are dispatched to Ultra Trace in Perth for ICPOES or ICPMS for extended elements (including Cu, Fe, As, Pb, S, Zn, Fe, Ag, Sb, Bi, Cd, Cl, F, and Hg). Au, Pt, and Pd analysed by FA/ICP AES/MS on a 40g assay charge (assay charge is variable depending on Sulphur content).</li> <li>• Sandfire DeGrussa QAQC protocol is considered industry standard with standard reference material (SRM) submitted on regular basis with routine samples.</li> <li>• SRMs and blanks are inserted at a minimum of 5% frequency rate. A minimum of 2% of assays are routinely re-submitted as Check Assays and Check Samples through blind submittals to external and primary laboratories respectively. Adhoc umpire checks are completed annually.</li> </ul>
<p>Verification of sampling and assaying</p>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Significant intersections have been verified by alternative company personnel.</li> <li>• There are no twinned holes drilled for the DeGrussa deposit.</li> <li>• Primary data are captured on field tough book laptops using Logchief™ Software. The software has validation routines and data is then imported into a secure central database.</li> <li>• The primary data is always kept and is never replaced by adjusted or interpreted data.</li> </ul>
<p>Location of data points</p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Sandfire DeGrussa Survey team undertakes survey works under the guidelines of best industry practice.</li> <li>• Underground drilling collar surveys are carried out using Trimble S6 electronic theodolite and wall station survey control. Re-traverse is carried out every 100 vertical meters within main decline. Downhole surveys are completed by gyroscopic downhole methods at regular intervals.</li> <li>• Downhole survey completed by gyroscopic downhole methods at regular intervals in the mine area or by electronic multishot systems in regional exploration.</li> <li>• MGA94 Zone 50 grid coordinate system is used.</li> <li>• A 1m ground resolution DTM with an accuracy of 0.1m was collected by Digital Mapping Australia using LiDAR and a vertical medium format digital camera (Hasselblad). The LiDAR DTM and aerial imagery were used to produce a 0.1m</li> </ul>

		resolution orthophoto that has been used for subsequent planning purposes.
Data spacing and distribution	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• UG DD drilling was at a nominal 40m x 30m grid with additional holes in areas of potential complexity to remove bias.</li> <li>• DD Data spacing and distribution are sufficient to establish geological and grade continuity. This latest drilling has not been included in the Mineral Resources.</li> <li>• No sample compositing have been applied to the Exploration Results.</li> <li>• RC drilling is at a nominal 100m line spacing at Cow Hole Bore.</li> <li>• AC drill spacing is initially at 800m x 100m line spacing with infill to 400m x 100m in areas of geological or geochemical interest.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The majority of the DD drillholes are orientated to achieve intersection angles as close to perpendicular to the mineralisation as practicable.</li> <li>• No significant sampling bias occurs in the data due to the orientation of drilling with regards to mineralised bodies.</li> <li>• In regional exploration holes are oriented to achieve high angles of intersection. DD drilling is used as required to determine structural orientations in regional programs.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All samples are prepared onsite under the supervision of Sandfire Geological staff.</li> <li>• Samples are transported to the Perth Ultra Trace laboratory by Toll IPEC or Nexus transport companies in sealed bulka bags, or to the onsite laboratory by company personnel.</li> <li>• The laboratories receipt received samples against the sample dispatch documents and issues a reconciliation report for every sample batch.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The sampling techniques and data collection processes are of industry standard and have been subjected to multiple internal and external reviews.</li> </ul>

Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>M52/1046, E52/1698, E52/1699, E52/1715, E52/2208, E52/2209, E52/2358 and E52/2401 are wholly owned by Sandfire Resources NL, with no known third party ownership encumbrances.</li> <li>All tenements are current and in good standing.</li> <li>The mentioned tenements are currently subject to 3 Native Title Claims by the Gingirana People (WC06/002), the Yungunga-Nya People (WC99/046) and the Nharnuwangga Wajarri Ngarlawangga People (WC99/013). Sandfire currently has Land Access Agreements in place with the Gingirana and Yugunga-Nya Native Title Claimants which overlay the DeGrussa Copper deposit and has allowed mining and exploration activities to commence on their traditional land.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>There has been no significant previous historical drilling by parties other than Sandfire Resources N.L. within the leases.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Degrussa Copper Mine is a Volcanogenic Massive Sulphide deposit located with the Proterozoic Bryah Basin of Western Australia.</li> <li>In some area zones of regional land holding it is currently interpreted that there is shear zones located on the contact between dolerite and sediments hosting an auriferous quartz vein stockworks with some coincident copper mineralisation.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to Appendix 1 of this accompanying document.</li> <li>All DD drillholes are downhole gyroscopically surveyed at completion with Total Station survey pickup of drill collars.</li> <li>Electronic multishot downhole surveys are completed for RC drilling and with a subset of holes gyroscopically surveyed for internal checks.</li> <li>AC drill holes ore not down hole surveyed</li> </ul>

Data aggregation methods	<ul style="list-style-type: none"> <li><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li><i>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.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>Significant Resource intersections are calculated using a 0.5% Cu cut-off grade and may include up to a maximum of 3.0m of internal dilution, with a minimum composite grade of 1.0% Cu.</li> <li>Cu grades used for calculating significant intersections are uncut.</li> <li>Reported intersections are based on a regular sample interval of 1m or 5m composites in regional drilling subject to the location of geological boundaries.</li> <li>Minimum and maximum sample intervals used for intersection calculations are 0.3m and 1.3m respectively.</li> <li>No metal equivalents are used in the intersection calculation.</li> <li>Where core loss occurs; the average length-weighted grade of the two adjacent samples are attributed to the interval for the purposes of calculating the intersection. The maximum interval of missing core which can be incorporated with the reported intersection is 1.0m.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.</i></li> <li><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>Estimated true width is presented in the Table in Appendix 1 where possible</li> <li>Underground drilling is based on the DeGrussa local mine grid.</li> <li>Where the geometry of the mineralisation is known; estimated true widths of mineralisation will be estimated and reported. Where the geometry is uncertain; no true width of mineralisation will be estimated or reported.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Appropriate maps and cross-sections with scale are included within the body of the accompanying document.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>The accompanying document is considered to represent a balanced report.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Other exploration data collected is not considered as material to this document at this stage. Further data collection will be reviewed and reported when considered material.</li> </ul>
Further work	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Exploration drilling will continue to target projected lateral and depth extensions of known mineralisation. Additionally regional anomalism will be investigated as required to determine the opportunity to identify economic mineralisation.</li> </ul>