



## DEGRUSSA COPPER RESOURCE SOARS 43% TO 533,000t

RESOURCE TARGET SET AT 1 MILLION TONNES OF CONTAINED COPPER METAL

### HIGHLIGHTS

- **Phase II JORC Mineral Resource of 9.62Mt at 5.5% copper, 1.8g/t gold, 14g/t silver:**
  - **containing 533,000 tonnes of copper, 559,000 ounces of gold, 4.3Moz of silver**
- **Phase II Resource includes:**
  - *DeGrussa Supergene Chalcocite:* **0.25Mt @ 17.6% copper, 2.6g/t gold, 21g/t silver**
  - *DeGrussa Primary:* **1.38Mt @ 8.2% copper, 2.4g/t gold, 21g/t silver**
  - *Conductor 1:* **6.12Mt @ 4.8% copper, 1.7g/t gold, 12g/t silver**
  - *Conductor 4:* **1.77Mt @ 4.1% copper, 1.7g/t gold, 12g/t silver**
- Latest drilling strengthens **Conductor 5 discovery** with a new intersection of 14.2 metres of massive sulphides recorded 50 metres up-dip of recent drilling and new assays received:
  - **10.2m @ 9.2% copper, 4.1g/t gold, 21g/t silver (DGDD-219)**
- **Major exploration programs underway** focused on a 6km long priority corridor extending either side of the DeGrussa mineralisation

Sandfire Resources NL (ASX: **SFR**; "Sandfire") is pleased to report a substantial increase in the JORC compliant Mineral Resource for its 100%-owned **DeGrussa VMS Copper-Gold Project** in Western Australia to **9.62 million tonnes grading 5.5% copper, 1.8g/t gold and 14g/t silver**.

The Phase II resource, which is estimated to contain **533,000 tonnes of copper metal, 559,000 ounces of gold** and **4.3 million ounces of silver**, represents a **35% increase in overall tonnage** and a **43% increase in contained copper metal** compared with the Phase I JORC resource (February 2010: 7.13Mt containing 372,000t of copper).

The overall copper grade of the resource inventory has also increased as a result of a substantial increase in the average grade of the DeGrussa deposit to **9.5% Cu** with the inclusion of the near-surface oxide zone (**8.8% Cu**) and supergene chalcocite (**17.6% Cu**), and an increase in the grade of the primary lens to **8.2% Cu**. The Phase II resource also includes a maiden resource for Conductor 4.

The Phase II Mineral Resource does not yet include the recently discovered **Conductor 5 deposit**, located 900m north-east of DeGrussa, where an intensive resource drill-out is continuing. Further outstanding intersections have just been recorded in this zone (*see below*), further highlighting the outstanding exploration upside of the DeGrussa Project and the broader field.

Also not fully represented in the new resource are the oxide gold, oxide copper, and native copper zones associated with the near-surface portions of DeGrussa and Conductor 1 – which will be evaluated by an RC drilling program due to commence shortly.



The Indicated Resource for the high-grade chalcocite zone, comprising **250,000 tonnes grading 17.6% copper, 2.6g/t gold and 21g/t silver**, together with the DeGrussa oxide zone is expected to underpin an initial open pit operation at DeGrussa. An open pit optimisation is currently in progress to establish an inventory of potential Direct Shipping Ore (DSO) within this zone.

*“This resource upgrade is an outstanding result which confirms DeGrussa’s position as one of the highest grade copper deposits in the world, with an in-ground gross value at current metal prices approaching A\$5 billion,”* said Sandfire’s Managing Director, Karl Simich. *“The four deposits discovered to date have been delineated in just 15 months – a fantastic performance by the Sandfire team.*

*“These deposits lie within a 1,500 metre long zone at the centre of a corridor of electro-magnetic responses extending over a 6km strike length. In our view, this represents one of the most prospective tracts of ground for copper exploration in the world. What is most exciting is that we have tested less than 2km, or a third, of this zone effectively to a depth of only 500 metres.*

*“VMS deposits generally occur in clusters. We believe this 6km corridor may represent a cluster of deposits and we have numerous other strong targets within our 400 sq km tenement package which could represent additional clusters or centres of mineralisation,”* Mr Simich added.

*“While we are delighted to have reached this target of over 500,000 tonnes of contained copper so rapidly, we believe this is just the beginning of the story. With the targets we already have in the pipeline, we have set our medium term target to 1 million tonnes of contained copper metal.”*

### **Phase II JORC Mineral Resource**

The Phase II resource, which was completed by Coffey Mining Pty Ltd using a cut-off grade of **1.0% Cu**, was based on the results of 148 diamond drill holes and 8 Reverse Circulation (RC) drill holes completed up to the end of June 2010. The resource is summarised below:

Deposit	Resource Category	Tonnes (Mt)	Copper (%)	Gold (g/t)	Silver (g/t)	Contained Copper (tonnes)	Contained Gold (ounces)	Contained Silver (ounces)
DeGrussa Oxide	<i>Inferred</i>	0.10	8.8	2.2	11	8,000	7,000	33,000
DeGrussa Supergene Chalcocite	<i>Indicated</i>	0.25	17.6	2.6	21	43,000	20,000	165,000
DeGrussa Primary	<i>Indicated</i>	1.38	8.2	2.4	21	113,000	106,000	936,000
Conductor 1	<i>Indicated</i>	5.80	4.9	1.7	13	282,000	314,000	2,413,000
	<i>Inferred</i>	0.32	4.1	1.5	12	13,000	16,000	121,000
Conductor 4	<i>Indicated</i>	0.73	4.4	1.4	10	32,000	33,000	237,000
	<i>Inferred</i>	1.05	3.9	1.9	13	41,000	63,000	441,000
TOTAL	<i>Indicated</i>	8.15	5.8	1.8	14	470,000	474,000	3,750,000
	<i>Inferred</i>	1.47	4.3	1.8	13	63,000	85,000	596,000
	<b>TOTAL</b>	<b>9.62</b>	<b>5.5</b>	<b>1.8</b>	<b>14</b>	<b>533,000</b>	<b>559,000</b>	<b>4,346,000</b>

*The resource was estimated by Coffey Mining Pty Ltd and is based on 148 diamond drill holes and 8 RC drill holes. Drilling coverage is predominantly defined on a notional 40m by 40m drill spacing on North-South orientated cross-sections. Statistical analyses on samples and 2m composites were completed. Variography and search neighbourhood analysis were conducted as input into grade estimation. Copper, gold and silver estimates have been generated by Ordinary Kriging. Values have been rounded and differences may occur.*

Coffey Mining's resource summary for the Project is provided in Appendix 1, including details on the resource calculation used.

### **Conductor 5 Update**

Sandfire is pleased to report further outstanding results from the recently discovered Conductor 5 zone, located 900 metres north-east of the DeGrussa / Conductor 1 deposits.

An aggressive program of diamond drilling is continuing at Conductor 5, with three diamond rigs currently active. A fourth significant intercept has been recorded in Conductor 5 for hole DGDD230, which is located approximately 50 metres up-dip of the previously reported intercept in hole DGDD-205 (**10.4 metres @ 7.8% Cu, 3.2g/t Au, 19.8g/t silver** from 578.1m).

Intercepts recorded to date in the Conductor 5 zone are summarised below:

Hole ID	From	To	Width	Lithology	Cu (%)	Au (g/t)	Ag (g/t)
DGDD-205	578.1	588.5	10.4	Massive Sulphide	7.8	3.2	19.8
DGDD-219	536.5	546.7	10.2	Massive Sulphide	9.2	4.1	21.0
DGDD-225	487.0	510.2	23.2	Massive Sulphide	Assays Pending		
DGDD-230	489.1	503.3	14.2	Massive Sulphide	Assays Pending		

### **Exploration**

While all three diamond rigs at the DeGrussa Project are continuing to drill out the Conductor 5 discovery, the Company has an aggressive exploration program underway within the priority 6km long corridor extending the north-east and south-west from the DeGrussa/Conductor 1 deposits.

This corridor is defined by extensive electro-magnetic anomalism and will be systematically and comprehensively tested using a range of methods including high-powered surface EM surveys, diamond and RC drilling and down-hole EM. The recent discovery of the Conductor 5 zone has further confirmed the significant potential of this corridor for additional discoveries.

In addition, the Company is continuing to progress its regional exploration activities with drilling commencing shortly at several priority EM conductors, including two coincident EM and gravity targets to the south-west of DeGrussa.

W JOHN EVANS  
TECHNICAL DIRECTOR (FAusIMM Competent Person)

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#### **Competent Person's Statement**

The information in this report that relates to Mineral Resources and Exploration Results is based on information compiled by John Evans who is a Fellow of the Australasian Institute of Mining and Metallurgy. John Evans is a permanent employee of Sandfire Resources NL and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves. John Evans consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

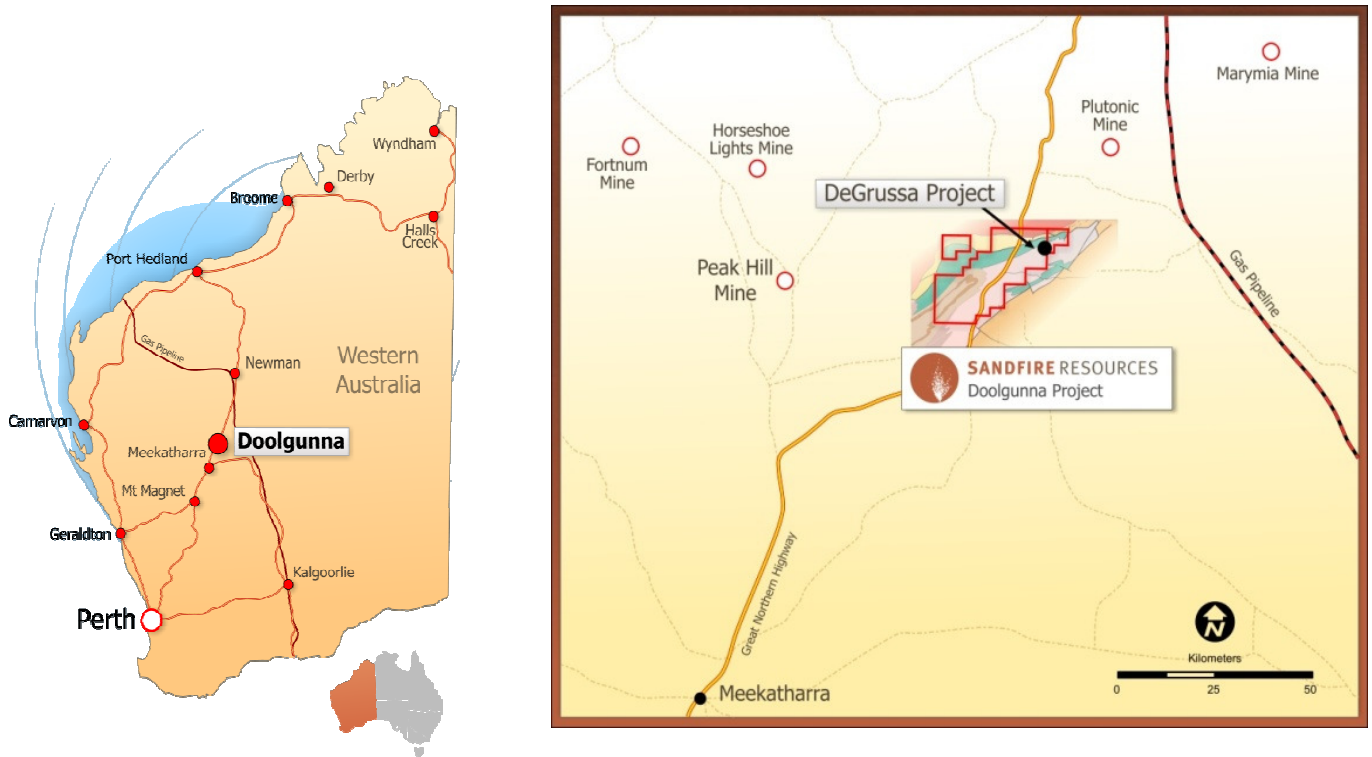
#### **Forward-Looking Statements**

Certain statements made during or in connection with this statement, including, without limitation, those concerning exploration targets, contain or comprise certain forward-looking statements regarding Sandfire's exploration operations, economic performance and financial condition. Although Sandfire believes that the expectations reflected in such forward-looking statements are reasonable, 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, 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. 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.

### Exploration and Resource Targets

Any discussion in relation to the potential quantity and grade of Exploration Targets for the DeGrussa Project 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 resource inventory and it is uncertain if further exploration will result in the determination of additional JORC compliant Mineral Resources.

Figure 1 – DeGrussa Copper-Gold Project location



**Appendix 1 – Coffey Mining Mineral Resource Report**

16<sup>th</sup> July 2010

Executive Technical Director  
Sandfire Resources NL  
1 Ventnor Ave., West Perth  
WA 6005

Attention: Mr W. John Evans

Dear Sir,

**DOOLGUNNA COPPER-GOLD PROJECT**

The Mineral Resource for the DeGrussa, Conductor 1 and Conductor 4 mineralisation of the Doolgunna Copper-Gold Project inclusive of data supplied to Coffey Mining as of 30<sup>th</sup> June 2010 is complete. The Mineral Resource Statement as at 16<sup>th</sup> July, 2010 is tabulated below in Table 1.

The information in the report to which this statement is attached that relates to the Mineral Resource is based on information compiled by David Slater, who is a Member of The Australasian Institute of Mining and Metallurgy. David Slater is employed full time by Coffey Mining Pty Ltd. The Mineral Resource Statement as at 16<sup>th</sup> July 2010 is tabulated below in Table 1 with accompanying estimation notes.

David Slater has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking, to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". David Slater consents to the inclusion in the report of the matters based on his information in the form and context in which it appears below.

[Sent electronically without signature]

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David Slater  
Specialist Consultant - Resources  
Coffey Mining

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<b>Table 1</b> <b>Doolgunna Copper Gold Project: Mineral Resource - 16<sup>th</sup> July 2010</b> <b>Grade Tonnage Report- Ordinary Kriging</b> <b>Reported above 1.0% Cu lower cutoff grade</b> <b>Grouped by JORC classification</b>							
<b>Classification</b>	<b>Tonnes (Mt)</b>	<b>Cu %</b>	<b>Au g/t</b>	<b>Ag g/t</b>	<b>Cu Tonnes (Kt)</b>	<b>Au (K Ounces)</b>	<b>Ag (K Ounces)</b>
<b>DeGrussa - Oxide containing Native Cu</b>							
Indicated	-	-	-	-	-	-	-
Inferred	0.10	8.8	2.2	11	8	7	33
<b>DeGrussa - Supergene Chalcocite</b>							
Indicated	0.25	17.6	2.6	21	43	20	165
Inferred	-	-	-	-	-	-	-
<b>DeGrussa - Primary</b>							
Indicated	1.38	8.2	2.4	21	113	106	936
Inferred	-	-	-	-	-	-	-
<b>DeGrussa Total</b>							
<b>Indicated</b>	<b>1.63</b>	<b>9.6</b>	<b>2.4</b>	<b>21</b>	<b>156</b>	<b>126</b>	<b>1,101</b>
<b>Inferred</b>	<b>0.10</b>	<b>8.8</b>	<b>2.2</b>	<b>11</b>	<b>8</b>	<b>7</b>	<b>33</b>
<b>Total Indicated+Inferred</b>	<b>1.73</b>	<b>9.5</b>	<b>2.4</b>	<b>20</b>	<b>165</b>	<b>133</b>	<b>1,134</b>
<b>Conductor 1</b>							
<b>Indicated</b>	<b>5.80</b>	<b>4.9</b>	<b>1.7</b>	<b>13</b>	<b>282</b>	<b>314</b>	<b>2,413</b>
<b>Inferred</b>	<b>0.32</b>	<b>4.1</b>	<b>1.5</b>	<b>12</b>	<b>13</b>	<b>16</b>	<b>121</b>
<b>Total Indicated+Inferred</b>	<b>6.12</b>	<b>4.8</b>	<b>1.7</b>	<b>12</b>	<b>295</b>	<b>330</b>	<b>2,535</b>
<b>Conductor 4</b>							
<b>Indicated</b>	<b>0.73</b>	<b>4.4</b>	<b>1.4</b>	<b>10</b>	<b>32</b>	<b>33</b>	<b>237</b>
<b>Inferred</b>	<b>1.05</b>	<b>3.9</b>	<b>1.9</b>	<b>13</b>	<b>41</b>	<b>63</b>	<b>441</b>
<b>Total Indicated+Inferred</b>	<b>1.77</b>	<b>4.1</b>	<b>1.7</b>	<b>12</b>	<b>73</b>	<b>96</b>	<b>677</b>
<b>All Mineralisation</b>							
<b>Total Indicated</b>	<b>8.15</b>	<b>5.8</b>	<b>1.8</b>	<b>14</b>	<b>470</b>	<b>474</b>	<b>3,750</b>
<b>Total Inferred</b>	<b>1.47</b>	<b>4.3</b>	<b>1.8</b>	<b>13</b>	<b>63</b>	<b>85</b>	<b>596</b>
<b>Total Indicated+Inferred</b>	<b>9.62</b>	<b>5.5</b>	<b>1.8</b>	<b>14</b>	<b>533</b>	<b>559</b>	<b>4,346</b>

Note; Values have been rounded and differences may occur.

**Notes accompanying resource estimation.**

- Drilling coverage is predominantly defined on a notional 40mE x 40mN drill spacing on North-South orientated cross sections. Closer spaced drilling for the DeGrussa chalcocite and oxide mineralisation is predominantly defined at a notional 20mE x 8mN drill spacing.
- 148 diamond drillholes and 8 reverse circulation (RC) drillholes have been used in the resource definition at Doolgunna. In general, both the RC and diamond drilling are considered robust and of industry standard.
- QAQC data review of blanks, duplicates, standard and umpire assay data show acceptable correlation. Sample preparation issues at Ultratrace laboratories have previously been identified. However, Coffey considers these issues not to be material and have been considered in resource classification.
- Survey of all collars has been completed. Investigation of available downhole survey indicates appropriate spatial location of samples.
- Initial mineralisation envelopes have been supplied by Diederik Speijers, of McDonald Speijers, and revised by Coffey Mining that encompass the mineralised zones using a notional 0.4% Cu lower cutoff, a minimum horizontal thickness of 1 m and no strict internal waste criteria. The mineralisation envelopes are suitable for modelling methods such as OK (Ordinary Kriging). The lithological interpretation is considered robust, with some uncertainty associated with logging and subsequent definition of oxidation.
- Statistical analyses on samples and 2m composites were completed. Variography and search neighbourhood analysis were also conducted as input into grade estimation.
- Copper, Gold and Silver estimates have been generated by Ordinary Kriging.
- Validation of the resource was conducted by investigating plots of input composites and block model grades by Easting and RL.
- The dry insitu bulk density has been derived for the various horizons of similar style mineralisation using a substantial amount of data. Data was collected by industry standard methodologies, including Archimedean method for core and downhole geophysical data. A total of 562 determinations recorded for core and 38,315 downhole geophysical measurements were recorded within the mineralised domains. From this analysis, for the predominant zones, an average density of 2.44 t/m<sup>3</sup> was assigned to oxide mineralisation, 3.75 t/m<sup>3</sup> was assigned to chalcocite mineralisation at DeGrussa and 3.67 t/m<sup>3</sup>, 3.61 t/m<sup>3</sup>, 3.52 t/m<sup>3</sup> assigned to primary mineralised horizons at DeGrussa, Conductor 1 and Conductor 4 respectively.
- Categorisation of the OK resource estimate has been conducted based on the criteria tabled in the 2004 JORC Code. The key parameters considered during the resource categorisation include confidence levels in the key criteria including drilling methods, data quality, geological understanding and interpretation, sampling, data density and location, grade estimation and estimation quality. All oxide material (not including the chalcocite domain) is classified as Inferred.