



## Sandfire Resources NL

ABN 55 105 154 185

ASX Code: SFR

Web Page: [www.sandfire.com.au](http://www.sandfire.com.au)

### Issued Capital:

Ordinary Shares	131.5M
Options	10.2M

### Major Shareholders:

Oz Minerals	19.7%
POSCO	16.7%
Institutions	19.2%
Founders/Board	8.1%

### Directors:

**Derek La Ferla**  
Non-Executive Chairman

**Karl M Simich**  
Managing Director and CEO

**W. John Evans**  
Executive Technical Director

**Jonghun Jong**  
Non-Executive Director

**Robert Scott**  
Independent Non-Executive Director

### Management:

**Matthew Fitzgerald**  
CFO/Company Secretary

**Martin Reed**  
Project Manager

## HIGHLIGHTS

### DEGRUSSA COPPER-GOLD PROJECT, Western Australia

#### Resources & Exploration

- **43% increase** in Phase II Mineral Resource to **9.62Mt grading 5.5% copper, 1.8g/t gold and 14g/t silver**, containing:
  - **533,000 tonnes of copper, 559,000 ounces of gold, 4.3Moz of silver**
- **Significant new zone of massive sulphides** discovered at Conductor 5, 250m north-east of Conductor 4, with four intersections to date including:
  - **23.2m @ 6.3% copper, 2.5g/t gold** from 487.0m (DGDD-225)
  - **10.4m @ 7.8% copper, 3.2g/t gold** from 578.1m (DGDD-205)
  - **10.2m @ 9.2% copper, 4.1g/t gold** from 536.5m (DGDD-219)
- **Major exploration programs underway** focusing on **6km long priority corridor** extending either side of the DeGrussa mineralisation

#### Project Development

- **Scoping Study on the DeGrussa Project** continued with progress in a number of key areas including metallurgical testwork, preliminary process plant design and completion of a number of baseline environmental studies.
- **Preliminary pit optimisation and design studies** completed on the upper portion of the DeGrussa zone, confirming the viability of an initial open pit to extract potentially direct shipping material.
- **Encouraging results received from initial metallurgical testwork** indicating a conventional flotation circuit processing route can be adopted.
- **Preliminary development schedule** indicates that, subject to permitting, processing could commence during the third quarter of 2012.

### BORROLOOLA PROJECT, Northern Territory

- **Drilling program** commences to test two large geophysical targets, Tawallah 1 and Tawallah 2, for potential large-scale lead-zinc style deposits similar to the McArthur River deposit.

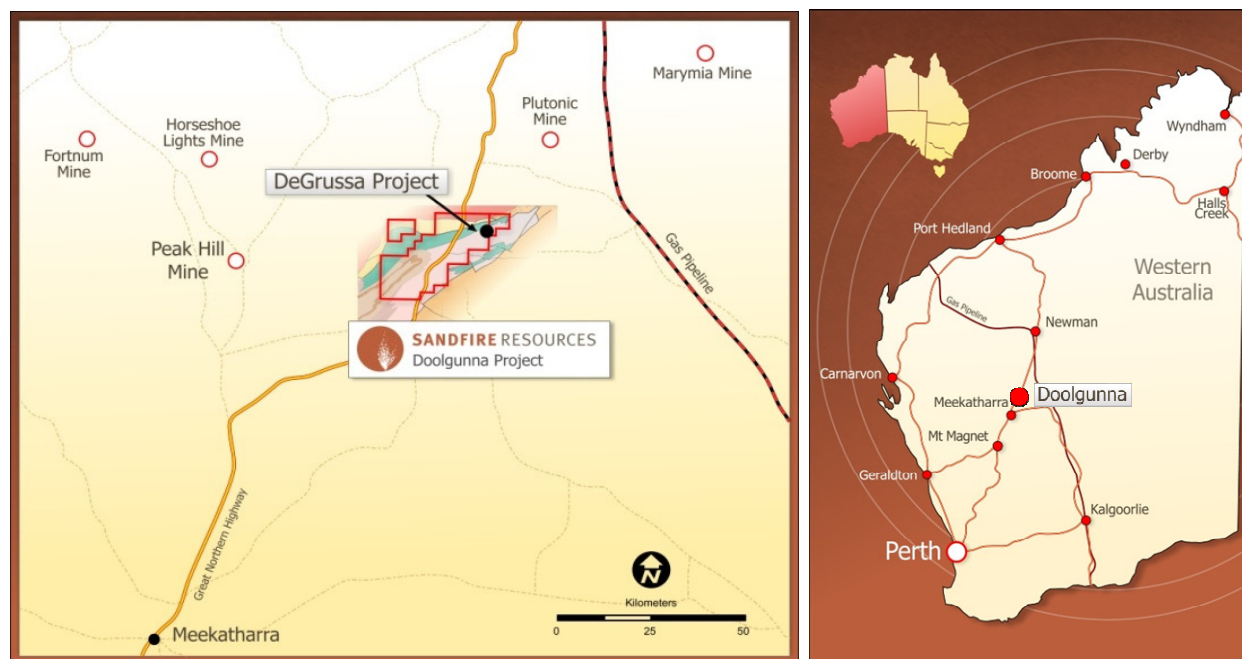
### CORPORATE

- Agreement concluded with Korean-based **LS-Nikko Copper Inc.**, the world's third largest copper smelter, subsequent to Quarter end to acquire a **12.5% strategic interest in Sandfire through a \$93.9M share placement**.
- Funds raised to underpin **major exploration push** at the DeGrussa Project and will also provide **cornerstone finance for project development**.
- Experienced corporate and commercial lawyer, **Mr Derek La Ferla, appointed Non-Executive Chairman**.
- Experienced Chartered Accountant and Company Director **Mr Robert Scott** appointed as **Independent Non-Executive Director** subsequent to the end of the Quarter.



## 1.0 DEGRUSSA COPPER-GOLD PROJECT, Western Australia (100%)

The DeGrussa Copper-Gold Project, which was discovered in April 2009, is located within the north-eastern portion of Sandfire's 100%-owned Doolgunna Project, a 400 square kilometre tenement package in Western Australia's Bryah Basin (see Figure 1). Sandfire has a dominant position in the prospective northern part of the Basin, which is considered to be an emerging VMS copper-gold province. A Phase II JORC compliant Indicated and Inferred Resource of **9.62 million tonnes grading 5.5% copper, 1.8g/t gold and 14g/t silver** was completed in July 2010 for the DeGrussa Project. The Company is nearing completion a Scoping Study as the prelude to a Feasibility Study which is scheduled to commence in the second half of 2010.



**Figure 1 – DeGrussa Copper-Gold Project Location**

### 1.1 Exploration and Resource Development

Further to the announcement of the Phase I resource for the DeGrussa Project of 7.13 million tonnes grading 5.2% copper, 1.9g/t gold and 15g/t silver (see ASX Announcement, 22 February 2010 – “Phase 1 DeGrussa Resource: 372,000 tonnes of copper and 439,000 ounces of gold” which includes the full Coffey Mining Report), Sandfire continued intensive programs of exploration and resource development at DeGrussa during the June 2010 Quarter.

As outlined in the last Quarterly Report, the objectives of this program were threefold:

1. **Resource extension drilling** within the immediate environment of the DeGrussa and Conductor 1 lenses to increase the Phase I JORC resource, including drilling targeting:
  - the **near-surface, high-grade chalcocite zone** which lies immediately above the DeGrussa lens; and
  - the **Conductor 4 deposit**, which lies approximately 200m east and below the DeGrussa and Conductor 1 deposits.
2. A **major program of deep diamond drilling** in the near-mine environment with a specific focus on the priority 6km long corridor extending north-east and south-west from the DeGrussa/Conductor 1 deposits; and
3. **Expanded regional RC and diamond drilling** targeting previously defined and new VTEM targets and gravity anomalies within the broader 400 square kilometre Doolgunna Project.

The Company achieved significant success during the June Quarter with the completion of in-fill and evaluation drilling of the near-surface chalcocite zone above DeGrussa and Conductor 4 and the discovery of a new zone of mineralisation located 900m north-east of DeGrussa/Conductor 1, referred to as Conductor 5.

At the time of this report, Sandfire had successfully delineated four high-grade copper-gold deposits within a period of 15 months over a strike extent of approximately 1.5km (see Figure 2).

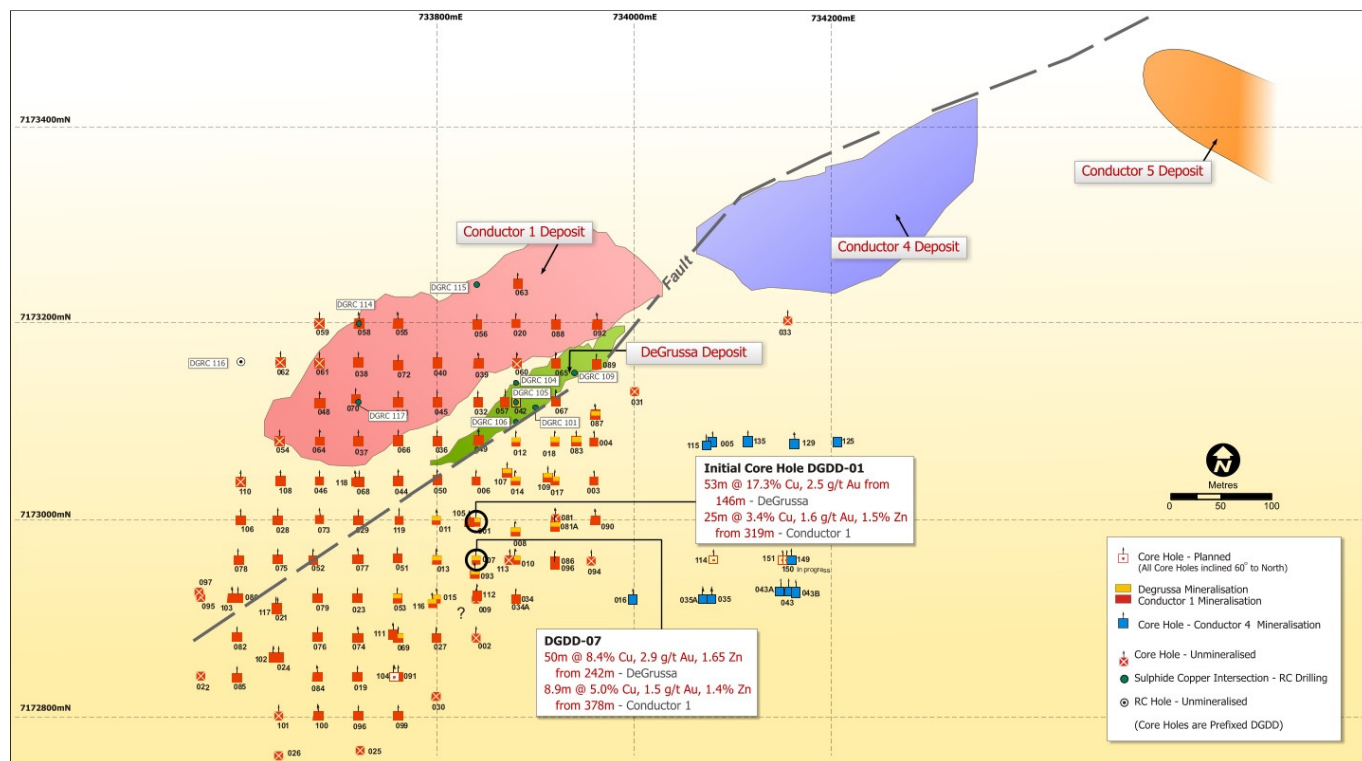


Figure 2 – DeGrussa Copper-Gold Project – Drilling Plan and Key Deposits

1.1.1 Phase II JORC Mineral Resource

On 19 July, the Company announced the Phase II JORC compliant Mineral Resource for the DeGrussa Project. The Phase II resource, which was estimated by Coffey Mining Pty Ltd using a cut-off grade of **1.0% Cu**, is 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	Inferred	0.10	8.8	2.2	11	8,000	7,000	33,000
DeGrussa Supergene Chalcocite	Indicated	0.25	17.6	2.6	21	43,000	20,000	165,000
DeGrussa Primary	Indicated	1.38	8.2	2.4	21	113,000	106,000	936,000
Conductor 1	Indicated	5.80	4.9	1.7	13	282,000	314,000	2,413,000
	Inferred	0.32	4.1	1.5	12	13,000	16,000	121,000
Conductor 4	Indicated	0.73	4.4	1.4	10	32,000	33,000	237,000
	Inferred	1.05	3.9	1.9	13	41,000	63,000	441,000
TOTAL	Indicated	8.15	5.8	1.8	14	470,000	474,000	3,750,000
	Inferred	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.

The Phase II Mineral Resource estimate represents a 35% increase in overall tonnage and a 43% increase in contained copper metal compared with the Phase I JORC resource. 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 250m north-east of Conductor 4, where an intensive resource drill-out is continuing. 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.

### 1.1.2 New VMS Discovery – Conductor 5

Subsequent to the end of the Quarter, Sandfire announced the discovery of a significant new zone of massive sulphide mineralisation approximately 900 metres north-east of the DeGrussa / Conductor 1 deposits.

The new zone, which is referred to as **Conductor 5**, was discovered by follow-up diamond drilling to test a strong off-hole conductor generated by down-hole electro-magnetic (EM) surveys undertaken on recently completed drill holes to the north-east of the Conductor 4 deposit. An aggressive program of diamond drilling is continuing at Conductor 5.

At the time of this report, four significant intercepts had been recorded in Conductor 5, as summarised below:

Hole_ID	From (m)	To (m)	Width (m)	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	6.3	2.5	26.5
DGDD-230	489.1	503.3	14.2	Massive Sulphide	Assays Pending		

The first three holes targeting this conductor were collared approximately 80 metres apart.

The Conductor 5 mineralisation occurs in a similar stratigraphic position to the Conductor 4 deposit, commencing around 500 metres below surface. Initial drilling indicates that the Conductor 5 mineralised body dips to the south-west and remains open. Further step-out drilling is continuing, with a further six to eight diamond drill holes expected to be completed within the next few weeks. Assay results for the other holes are pending.

The discovery of a new massive sulphide lode at Conductor 5 provides further strong evidence that the DeGrussa Project is a very substantial VMS system, bringing the total number of separate deposits discovered within the past 14 months to four (DeGrussa, Conductor 1, Conductor 4 and Conductor 5).

### 1.1.3 Ongoing Near-Mine Drilling Programs

While all three diamond rigs currently 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, down-hole EM and a comprehensive trial Induced Polarisation (IP) survey over the entire 6km long priority DeGrussa corridor. The recent discovery of the Conductor 5 zone has further confirmed the significant potential of this corridor for additional discoveries.

VMS deposits generally occur in clusters. Sandfire believes this 6km corridor may represent a cluster of deposits, with other opportunities identified for other target clusters within Sandfire's 400 sq km tenement holding at the Doolgunna Project.

#### 1.1.4 Regional Exploration – Emerging VMS Field

While the principal focus of activity during the Quarter was resource drilling within the main DeGrussa Project area, Sandfire continued to work up a series of priority regional targets which represent potential repetitions of the DeGrussa VMS deposits. These targets were generated from ground-based EM surveys undertaken to follow up targets located by an airborne EM survey in 2009.

Additional priority targets have been identified to the south-west of DeGrussa within Sandfire's extensive 400 square kilometre tenement package at Doolgunna. These include coincident TEM and gravity targets which include some of the strongest regional exploration targets developed by the Company to date. Programs of work have been submitted for drilling programs in up to 14 areas with drilling scheduled to commence as clearances are obtained during the September 2010 Quarter.

### 1.2 Mine Development

The Scoping Study of the DeGrussa Project continued during the Quarter with key items of progress including programs of metallurgical testwork on representative samples of DeGrussa and Conductor 1 ore and preliminary process plant design. Other work included the completion of a number of baseline environmental studies which will support the Company's approvals process.

The enhanced information for this zone was also used to undertake preliminary pit optimisation and design studies. These studies indicate that the uppermost portion of the DeGrussa ore zone will be extracted using open pit techniques and some of the ore will be directly saleable to a smelter (Direct Shipping Ore). Such ore could be extracted ahead of the development of the process plant.

Initial metallurgical results are encouraging, indicating that a conventional flotation circuit processing route can be adopted. No specific gold or silver recovery circuits are proposed for the process plant. Metallurgical testwork will continue and it is anticipated will be completed in the September Quarter.

Preliminary capital and operating cost estimates are being prepared based on the process plant and infrastructure designs. A preliminary development schedule has been prepared that indicates, subject to permitting, ore processing could commence during the third Quarter of 2012 with first concentrate shipments late in that same Quarter.

Other development activities undertaken during the Quarter included:

- *Baseline flora, fauna, archaeology and hydrological studies continued in preparation for submissions to regulators;*
- *Native Title and Heritage negotiations continued;*
- *Process flowsheet development;*
- *Geotechnical testwork and assessment for the underground mine;*
- *Search for water supply; and*
- *Preliminary infrastructure designs.*

The Scoping Study is expected to transition seamlessly into a Pre-Feasibility Study (PFS) which will commence during the September quarter 2010. This in turn will lead directly to a Definitive Feasibility Study commencing later in the second half of 2010, which will provide a strong foundation for a potential mine development process commencing in CY 2011.

### 1.3 Doolgunna Project – Iron Ore Exploration

Sandfire has located and mapped seven separate zones of iron mineralisation within the Robinson Range at Doolgunna. The total area of low phosphorus, hematite-goethite mineralisation is approximately 200,000 square metres contained in two moderate sized deposits and five small deposits. There are several areas where the mineralisation extends under cover. The Doolgunna Project straddles the Great Northern Highway and is ideally located for a small mining operation, trucking to either railheads or export ports.

In light of the Company's focus on the DeGrussa Project, no significant activity was carried out on the Doolgunna iron ore prospects during the Quarter.

## 2. BORROLOOLA PROJECT, Northern Territory (100%)

The Borroloola Project comprises a total area of approximately 14,200 square kilometres of granted tenements and tenements under application in the Northern Territory. The Project encloses a significant proportion of the Batten Fault Zone, host to the giant McArthur River lead and zinc mine deposit. This deposit is the second largest SEDEX base metal deposit in the world. The Project also covers near-coastal areas of Cretaceous rocks considered to be highly prospective for sedimentary manganese mineralisation, similar to the world-class Groote Eylandt manganese deposits north of the Borroloola Project in the Gulf of Carpentaria.

### 2.1 Manganese Exploration

Last year, Sandfire entered into an agreement with the ASX-listed mining services and contracting company, Mineral Resources Limited (ASX: **MIN**), to fund the ongoing exploration and development of its highly prospective Borroloola Manganese Project.

This strategic Joint Venture was concluded following the Company's success with initial testing of a wide range of manganese prospects and targets. In particular, Sandfire was successful in confirming a new manganese occurrence to the south of the historically known Rosie Creek prospect. The potential of this area for substantial deposits of Cretaceous-style manganese deposits is what underpins the Joint Venture with Mineral Resources, which is a substantial diversified mining, services and contracting company.

The agreement will see Mineral Resources – through its wholly-owned subsidiary, Process Minerals International (PMI), which has a successful track record in the manganese industry – solely fund and operate an exploration and development program at the Borroloola Project.

Mineral Resources/PMI will also solely fund the full cost of any mining operation (including all capital costs) established at Borroloola as well as meeting all associated operating expenses of any manganese operations. In return, Mineral Resources/PMI will be entitled to 70% of profits (before interest and tax) flowing from the future sale of manganese products.

Essentially, under the agreement Sandfire will receive 30% of the profit (before interest and tax) from all manganese operations undertaken by Mineral Resources/PMI and importantly at no risk or cost to Sandfire. The deal also provides for full accommodation of Sandfire's agreement with Korean steel maker POSCO, under which POSCO is entitled to buy 30% of all manganese produced from any operation. Mineral Resources has established a \$0.5 million drilling budget at Borroloola for the 2010 dry season.

### 2.2 Base Metal Exploration

Sandfire's original exploration objective at Borroloola was the discovery of high grade, large tonnage SEDEX-style zinc, lead and silver mineral deposits within the McArthur Basin and in close proximity to the Emu Fault Zone (**EFZ**), which is the eastern boundary of the Batten Fault Zone.

This deposit type and geological setting is similar to that of the giant McArthur Mine (HYC Deposit) which is located west of the EFZ and south of Sandfire's Borroloola Project. McArthur River is one of the world's biggest lead-zinc deposits with a primary resource of ~230 million tonnes at a grade of 13% combined lead and zinc.

Sandfire's 14,200 square kilometre Project encompasses a 100 km length of the EFZ which has been sparsely tested for repetitions of the SEDEX-style base metal mineralisation. Sandfire's regional program to date, including extensive airborne electromagnetic surveys has resulted in the definition of two key target areas within the northern section of the EFZ structure.

A drilling program has been developed to test two strong geophysical targets, Tawallah 1 (with a surface area of 2km<sup>2</sup>) and Tawallah 2 (with a surface area of 4km<sup>2</sup>). This drilling program, comprising 6,000 metres, has commenced.

### 2.3 Iron Ore Exploration

Exploration activities for iron ore in this region are continuing to gather momentum with ASX-listed Batavia Mining recently commencing its 2010 field program at the nearby Roper River Iron Ore Project (North Australian Iron Ore)

and continued progress on the large-scale iron ore project being explored and developed by ASX-listed Western Desert Resources Limited.

Sandfire's tenements contain extensions of the iron ore mineralisation within Western Desert Resources' Roper Bar Project. The Company intends to commence an initial drilling program during the third Quarter of 2010 to test this mineralisation.

### **3. URANDY PROJECT: Western Australia (Sandfire 100%)**

*The Urandy Project is located in the West Pilbara region some 80 km southeast of the coastal town of Onslow. The property is prospective for gold and basemetals, hosted in the Paleoproterozoic Ashburton Formation.*

No field work was carried out on the Urandy Project during the Quarter.

### **4. YANNARIE PROJECT: Western Australia (Sandfire 100%)**

*The Yannarie Project is located 250 km northeast of Carnarvon on the west coast of Western Australia.*

No field work was carried out on the Yannarie Project during the Quarter.

## **5. CORPORATE**

### **5.1 Agreement with LS-Nikko Copper Inc.**

On 21 July, the Company concluded an agreement with Korean-based LS-Nikko Copper Inc. ("LS-Nikko"), the world's third largest copper smelter, encompassing a strategic alliance, sales arrangements for future production and a \$93.9 million share placement.

Under the Agreement, LS-Nikko will acquire a 12.5% strategic holding in Sandfire through the issue of 18.7 million shares at \$5.02 per share. The share placement can be undertaken within the Company's available 15% share placement capacity. The agreement is subject to approval by each respective company's Board and Foreign Investment Review Board (FIRB) approval, if required.

LS-Nikko has the right, following completion of the placement, to nominate a representative to be considered for appointment to the Board of Sandfire and the Agreement also encompasses the opportunity to share technical skills and knowledge. Following completion of the placement, LS-Nikko also has the right, for as long as it maintains a minimum 10% shareholding:

- *to maintain its interest in the Company by participating in future capital raisings. The shares to be issued to LS-Nikko are subject to a 1-year lock-up. Sandfire has a pre-emptive right to buy back the shares issued to LS-Nikko; and*
- *LS-Nikko will be offered the right to purchase 45% of Sandfire's share of any copper concentrate and other base metals produced from any of its projects, at fair market prices.*

Following completion of the share placement, Sandfire will have a total of approximately 149.8 million fully paid shares and 10.6 million options on issue, and cash on hand of approximately \$145 million.

The proceeds of the share placement will be used to underpin an unprecedented exploration program at the DeGrussa Copper-Gold Project in Western Australia, giving shareholders an outstanding opportunity to capitalise on the upside of this emerging world-class region, which already hosts four high-grade copper-gold deposits.

The significant cash injection will also provide cornerstone funding for development of the DeGrussa Project, while the relationship with LS-Nikko – together with Sandfire's existing strategic alliance with POSCO – will underpin the potential for Sandfire to secure project finance on highly favourable terms.

LS-Nikko is the world's third largest copper smelter with annual capacity of 560,000 tonnes of metal, of which more than 450,000 tonnes is used in its fully integrated downstream business. With revenues of US\$4.9 billion in 2009, LS-Nikko is Asia's third largest buyer of metals.

## 5.2 Appointment of Non-Executive Chairman

During the Quarter, Sandfire appointed experienced corporate and commercial lawyer, Mr Derek La Ferla, as Non-Executive Chairman. Mr La Ferla is an experienced and respected commercial lawyer who has advised on a wide range of corporate and commercial transactions over the past 25 years.

Mr La Ferla is a Senior Corporate Partner of Norton Rose in its Perth office.

He has worked closely with the Boards and Management of many public, private and statutory corporations, with a particular emphasis on corporate governance, directors' responsibilities and balancing commercial, legal and risk management considerations. He has also worked as a corporate consultant.

## 5.3 Appointment of Independent Non-Executive Director

On 30 July, Sandfire announced the appointment of Mr Robert Scott as an independent non-executive Director.

Mr Scott is a Fellow of the Institute of Chartered Accountants, a Fellow of the Taxation Institute of Australia and a member of the Institute of Company Directors.

Mr Scott is a corporate advisor, highly experienced company director and was previously an international partner of Arthur Andersen and a partner of KMG Hungerfords.

Sandfire Chairman Derek La Ferla said Mr Scott will bring a wealth of experience and knowledge to the Company's Board as well as independence and objectivity.

Mr Scott will be Chairman of the Audit and Risk Committee and a Member of the Remuneration and Nomination Committee of the Board.

## 5.4 Investment by Oz Minerals

On 2 July, Australian mining house Oz Minerals Limited (ASX: OZL) acquired a 19.9% interest in Sandfire.

Sandfire's Managing Director, Karl Simich, welcomed Oz Minerals onto the Sandfire share register, saying its decision to make a substantial investment in Sandfire was a vote of confidence in the significant merits of the DeGrussa copper-gold discovery in Western Australia.

It is also an endorsement of the significant exploration potential offered by the DeGrussa discovery, the surrounding tenements and the rest of Sandfire's Australian exploration portfolio.

### W JOHN EVANS

#### TECHNICAL DIRECTOR

AUSIMM Competent Person

#### Competent Person's Statement

The information in this public report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr John Evans who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Evans is a permanent employee and Director of Sandfire Resources NL. Mr Evans 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. Mr 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.

#### For further information, please contact:

Karl Simich – Managing Director/CEO

John Evans – Technical Director

Office: +61 8 6430 3800

Nicholas Read – Read Corporate:

Mobile: +61 419 929 046 (Nicholas Read)