

1 VENTNOR AVE
WEST PERTH 6005
WESTERN AUSTRALIA

PO BOX 1495
WEST PERTH 6872
WESTERN AUSTRALIA

T +61 8 9226 5833
F +61 8 9226 5844
E admin@sandfire.com.au
www.sandfire.com.au



SANDFIRE RESOURCES NL

ABN 55 105 154 185

QUARTERLY ACTIVITIES REPORT
FOR THE PERIOD ENDED 31 MARCH 2008
ASX CODE: SFR

HIGHLIGHTS

DOOLGUNNA GOLD PROJECT (Western Australia)

- **Significant gold intersections** recorded from RC drilling at the Old Highway Prospect, including:

Hole	DGRC 072	23 m at 4.07 g/t gold, and
		22 m at 3.01 g/t gold
	DGRC 071	10 m at 7.15 g/t gold
	DGRC 075	7 m at 7.28 g/t gold
	DGRC 080	6 m at 9.72 g/t gold
- This drilling has **significantly improved the Company's understanding** of the disposition of the high-grade, gold-bearing quartz veins at the Doolgunna Old Highway Prospect.
- Detailed soil geochemistry over four prospects has identified **targets for immediate drilling**.
- A **10,000 metre RAB drilling program** is underway to follow up previous high-grade intersections from reconnaissance drilling and soil geochemical anomalies.

DOOLGUNNA IRON PROJECT (Western Australia)

- **Shallow intersections of iron mineralisation** returned from a small RC drilling program with a best result of **12m at 56.8% Fe and 0.014% P** from surface.

BORROLOOLA PROJECT (Northern Territory)

Lead-Zinc

- Compilation of all geophysical, geological and geochemical data for the Project is nearing completion, with targets being prioritised.
- **Diamond drilling is scheduled to commence initially at the Yalco Prospect**, 30km north of the world-class MacArthur River mine, in June 2008.

Manganese

- **A large number of manganese exploration targets** and areas of manganese mineralisation have been identified following a detailed review of the tenement holding.
- A comprehensive field program of drilling and geophysics is planned for the 2008 field season.

Diamonds

- A review of previous **diamond exploration results** is underway given the proximity of the Borroloola Project to the Merlin kimberlite intrusive field.
- Initial reviews have **highlighted unattributed indicator minerals and micro-diamond clusters** within Sandfire's tenements.

OVERVIEW

During the March 2008 Quarter, Sandfire Resources NL (**Sandfire**) (**ASX: SFR**) continued to progress exploration activities across its diversified portfolio of 100%-owned manganese, lead-zinc-silver, iron ore and gold projects in Australia.

Highlights included **further significant gold exploration results** from the Doolgunna Gold Project in Western Australia, **significant iron ore intersections** from a limited RC drilling program on the Robinson Range at Doolgunna and the completion of compilations of the **lead-zinc and manganese** exploration data for the Borroloola Project in the Northern Territory.

In addition to delivering highly encouraging gold grades and widths, the RC drilling program at the Old Highway Prospect at Doolgunna achieved its principal objective of enabling the Company to understand the structural controls of the gold mineralisation for the first time. This will significantly enhance the effectiveness of future exploration.

At the Borroloola Lead-Zinc Project in the Northern Territory, Sandfire completed preparations for the winter field season. Diamond drilling is scheduled to **commence in early June**, initially at the **Yalco Prospect**, located 30km north of the world-class McArthur River lead, zinc and silver mine, and, subsequently at other newly developed targets which will be tested on a prioritised basis.

The previously reported assessment of the **manganese potential** of the large Borroloola tenement holding has been completed and **a large number of targets**, airborne electromagnetic anomalies (AEM) and previously identified areas of manganese mineralisation have been identified. Sandfire will be carrying out selected programs of detailed AEM surveys and drill testing of some of the more accessible manganese targets during the northern field season.

The Borroloola Project is located near to the Merlin kimberlite intrusive field, which contained fourteen pipes of which nine have been open pit mined for diamonds. Previous diamond exploration throughout Sandfire's large tenement holding has identified indicator mineral clusters including diamonds and micro-diamonds that have not been satisfactorily explained.

In light of these results, Sandfire has commissioned a thorough review of previous diamond exploration data for Borroloola for completion during the current quarter. No field work for diamonds is at present planned.

Sandfire holds a 100 percent interest in all of its exploration projects.

DOOLGUNNA PROJECT (Western Australia)

1.1 Doolgunna Project, Gold, WA (Sandfire 100%)

During the March 2008 Quarter, Sandfire's work program included:

- reverse circulation (RC) drilling at the Old Highway Prospect;
- detailed follow-up geochemistry about gold anomalous targets previously located; and
- ground-based sub-audio magnetic (SAM) surveys over the major prospects.

In January 2008, Sandfire completed an RC drilling program over the eastern end of the Old Highway gold prospect, located 140km north of Meekatharra in Western Australia.

Previous widespread drilling in this locality had indicated encouraging widths and grades of gold mineralisation although correlation of the various intercepts was not possible. This RC program consisted of close-spaced, relatively shallow drilling and was designed gain a greater understanding of the disposition of gold-bearing quartz veins.

A total of 16 inclined holes [DGRC 069 to 082 incl.] were drilled for an advance of 1,071 metres. The holes were generally drilled on 20 metre spacings and the hole orientation change from north to north northwest (335°), at right angles to the broad gold-bearing shear zone. [Refer Figure 2].

The drilling program has, for the first time, established that the quartz veins and vein arrays hosting the gold mineralisation are a lenticular east to west orientated array within a broader, weakly mineralised shear zone.

Figure 2 indicates the high grade zones projected to the surface, the enclosing mineralised shear zone and the positions of the drill holes.

Table 1 (below) summarises the impressive results of the January 2008 program and the best results were reported from hole DGRB 072 of 23 metres from 29 to 52 metres of 4.07 g/t gold and 22 metres from 57 to 79 metres of 3.01 g/t gold.

This RC drilling program was carried out consistent with resource calculation standards – all holes have been surveyed down-hole and collar; samples carefully collected and split; appropriate repeats and standard samples co-submitted to the analytical laboratory; and, the gold assay accuracy and precision confirmed.

The RC drilling achieved its principal objective of enabling the Company to understand the structural controls of the gold mineralisation at the Old Highway Prospect and will significantly enhance effectiveness of further evaluation and exploration.

Table 1
Old Highway Prospect
Results from the January 2008 RC drilling program

Hole ID	MGA-N	MGA-E	EOH (m)	Az / Dip (degrees)	From-To (m)	Interval (m)	Gold (g/t)
DGRC067	7161385	717327	52	332.5 / 59.5	18-24 incl: 18-19 33-34 47-50	6 1 1 3	2.99 13.15 4.33 0.92
DGRC068	7161385	717309	88	333.5 / 60.4	38-45	7	3.27
DGRC069	7161361	717291	58	334.4 / 55.4	33-43 incl: 35-40	10 5	2.08 3.39
DGRC070	7161361	717267	40	333.5 / 56.6	3-11 15-24	8 9	3.34 5.50
DGRC071	7161352	717271	62	332.8 / 55.9	13-15 19-20 25-35 45-46	2 1 10 1	1.83 2.06 7.15 1.41
DGRC072	7161343	717253	100	330.5 / 57	29-52 incl: 30-38 57-79 incl: 57-65 86-88	23 8 22 8 2	4.07* 8.03* 3.01* 5.94* 2.78
DGRC073	7161340	717214	40	331.9 / 55.1	8-17 Incl: 8-12	9 4	4.47 7.43
DGRC074	7161331	717218	58	332 / 58.9	1-7 Incl: 2-6 17-18 23-24 32-36 41-45 50-52 56-57	6 4 1 1 4 4 2 1	7.64 10.15 3.37 1.48 1.52 1.52 2.10 1.98
DGRC075	7161347	717238	46	332.9 / 54.7	16-23 Incl: 17-20 27-30 33-42 Incl: 33-38	7 3 3 9 5	7.28* 15.24* 1.85 3.25 4.74
DGRC076	7161338	717242	70	326.5 / 60.3	30-37 50-52	7 2	2.85 1.44
DGRC077	7161318	717169	30	332.6 / 58.6	0-1 8-13 Incl: 11-13 19-20	1 5 2 1	2.15 1.64 2.59 2.87
DGRC078	7161302	717176	69	332.2 / 58.7	37-39 60-61	2 1	1.34 2.03
DGRC079	7161310	717228	124	331.5 / 59.5	90-91 123-124	1 1	1.50 1.48
DGRC080	7161325	717265	130	331 / 55	49-55 58-59 71-73 101-102	6 1 2 1	9.72* 1.55 4.22 3.73
DGRC081	7161299	717145	66	328.5 / 54.6			NSA
DGRC082	7161387	717299	38	359.1 / 54.3	14-15 25-28	1 3	1.52 1.92
	* Interval includes grades cut to 20.00 g/t Au						

1.2 Gold Geochemical Surveys

Soil geochemical sampling was completed in February and March on grids over the DeGrussa, Marty's Patch, One Ounce and Southwest Corner gold prospects.

The minus 180 micron soil fraction samples were collected on grids centred on known gold occurrences, variously 20 to 50 metres apart, along the grids that were spaced 100 to 200 metres apart. A total of 640 samples were collected and analysed for gold, arsenic and copper. Three prospects – DeGrussa, One Ounce and the Southwest Corner – recorded extensive trends of elevated gold-in-soil geochemistry correlated with the primary target area.

At the DeGrussa Prospect a bedrock gold intersection of 10 metres at 5.95 g/t gold correlated with a southwesterly trending zone of elevated gold-in-soil extending over 800 metres. Other trends are evident in the data with a peak gold value of 308 parts per billion (ppb) gold. Similarly, a drill intersection at the One Ounce Prospect relates to a 600 metre long gold-in-soil anomaly in broad area of alluvial cover. The peak value recorded for the One Ounce prospect was 270 ppb gold value, not related to the One Ounce anomaly.

At Marty's Patch Prospect, an area known for the abundant gold nuggets recovered by prospectors, the soil geochemistry results were inconsistent. The broad spaced geochemistry at the Southwest Corner Prospect supported the planned RAB drilling program.

At the DeGrussa Prospect the soil geochemistry grid, currently 1,000 metres by 800 metres, will be extended during the current quarter to 1,600 metres by 1,000 metres to delineate extensions to the anomalous gold-in-soil zones defined by the March quarter program.

In mid-April, Sandfire commenced a RAB drilling program for gold at the Doolgunna Project. This program has two objectives:

- i. Following up previously recorded drill intersections of substantial width and/or gold grade with close-spaced drilling directed to establishing the continuity of the gold mineralisation along the controlling structures, and
- ii. Testing the recently acquired gold-in-soil geochemical results.

The program of approximately 10,000 metres is underway on the following prospects:

- Marty's Patch
- DeGrussa
- S.W. Old Highway
- S.W. Corner
- G.I. Prospect

Initial reconnaissance traverses of RAB drilling are planned for the GI Prospect to test a large magnetic anomaly, both under transported cover sequences.

1.3 Doolgunna Project, Iron Ore, WA (Sandfire 100%)

During the March quarter, a small RC drilling program of six holes (252 metres) was completed on the Robinson Range, testing about iron deposit nine. Due to access difficulties, drilling was carried out adjacent to one of the smaller zones of outcropping hematite-goethite mineralisation, where easier access could be achieved without the use of earthmoving equipment. Two lines of drill holes, each consisting of three holes, 400 metres apart, were drilled on alluvium and colluvium bordering the outcropping hill of iron mineralisation.

On the south-western line the three holes recorded shallow intersections of iron mineralisation from the surface, assaying from between 50% and 61% iron, all with very low phosphorus. The best intersection was 12 metres of mineralisation from 0 to 12 meters deep, assaying 56.8% iron and 0.014% phosphorus. This near surface mineralisation has been severely degraded due to surface weathering and soil, alluvium penetration down joints and bedding planes. No mineralisation greater than 50% iron was recorded on the north-eastern line.

All holes terminated in weathered and oxidised iron formation typically assaying between 25 and 35% iron.

Reconnaissance and detailed geological mapping of the Robinson Range iron formations will re-commence in the June 2008 quarter.

BORROLOOLA PROJECT (Northern Territory)

2.1 Borroloola Project, Lead-Zinc, Northern Territory (Sandfire 100%)

Work is proceeding towards generation of drilling targets for the 2008 field season. During the past quarter there has been an extensive review of historical data from previous exploration in to McArthur Basin and surrounding areas. Approximately 3,000 reports have been reviewed and thousands of stream sediment samples added to the company data base. A detailed topographic model of the area has been processed using topographic data from the Shuttle Radar Topographic Mission (SRTM) which is being used to interpret the stream sediments data in detail.

An extensive review of literature has also yielded valuable information and discussions are currently underway with academic researchers from the ARC Centre of Excellence in ore Deposits at University of Tasmania who have conducted extensive research in the area over the past 15 years.

Further work has also been conducted on the airborne electromagnetic data and a three dimensional conductivity analysis of the project area is currently in preparation. This will involve merging the results from some 16,000 line kilometres of surveys which would cost approximately \$2 million to acquire in the present market. CSIRO Division of Exploration and Mining have assisted in this process.

NTGS gravity data over the project area has been acquired and processed to images, and areas for gravity infill surveys are being decided.

A review of the seismic survey data and interpretation by Geoscience Australia is also underway.

Drilling rigs have been booked to commence in June 2008 and target selection and prioritisation is well underway.

2.2 Borroloola Project, Manganese, Northern Territory (Sandfire 100%)

During the quarter Sandfire completed a thorough review of the manganese potential of the extensive Borroloola tenement holdings. The review highlighted the prospectivity of the coastal and near-coastal Cretaceous sedimentary sequence laid down approximately 90 to 100 million years ago, that on-laps Proterozoic basement rocks and infills ancient channels cut into the basement rocks. This is directly analogous to the geological setting of the giant Cretaceous, Groote Eylandt manganese deposits located 130 kilometres north of the Borroloola Project.

There are four known Cretaceous manganese prospects within Sandfire's tenement holding, three of which have been drill tested to some extent. In addition to these known Cretaceous manganese prospects, Sandfire has identified numerous flat-lying, near-surface conductors in the company's airborne electromagnetic (AEM) database, that are interpreted to be within the basal Cretaceous sequence and targets for manganese exploration.

Most of the Cretaceous manganese targets, both known occurrences and AEM anomalies, are in isolated areas often in river drainage localities or near-coastal with access difficulties, particularly immediately after the wet season. Sandfire will be undertaking exploration, including drilling, in the second half of 2008.

During the regional review a drill hole within the Mesoproterozoic basement rocks was identified as having highly elevated manganese with a thick drill hole intersection averaging 25% manganese.

At the Borroloola Project, Sandfire has processed all the AEM data using a new EM Flow software package that creates inversion cross sections. In the vicinity of the manganese drill intersection the AEM inversion cross sections show a shallow flat-lying conductive unit, correlated with the manganese mineralisation. The conductive body is extensive along the strike of the sequence under superficial cover and weathered basement rocks.

Additionally, the target area is readily accessible and Sandfire plan to test the target and the extensive shallow anomaly as soon as a drilling rig is available.

2.3 Borroloola Project, Diamonds, Northern Territory (Sandfire 100%)

The Borroloola Project is located in a region known for the presence of diamond-bearing kimberlite intrusives. Australia's only diamond mine that sourced diamonds from within kimberlite pipes, the Merlin Mine is located some 100 kilometres southeast of Yalco.

In the 1980s and 1990s extensive diamond exploration was carried out over the Borroloola Project area with many unexplained microdiamonds and indicator mineral occurrences.

Since the end of the March quarter, Sandfire has commissioned a leading diamond exploration geologist to review all previous exploration over the Company's tenement holding and report on the diamond prospectivity of the Project.

OTHER WESTERN AUSTRALIAN SANDFIRE PROJECTS

3.1 Urandy, Yannarie, Mt Boggola and Sandfire Projects

No work was carried out on the Projects during the March quarter 2008. Planning for the 2008 programs has previously been completed.

3.2 Native Title

Negotiations with the Jidi Jidi Aboriginal Corporation are continuing. These negotiations relate to the NWN (Jidi Jidi) claim, and affect exploration on the Mt Boggola Prospect and part of the Doolgunna Project.

SCHEDULE OF MINING TENEMENTS – 31 MARCH 2008			
Tenement	Notes	Area (graticule blocks)	Date of Grant
Sandfire			
E04/1344		35	20/10/03
E04/1425		24	10/1/2005
E04/1449		40	13/4/2005
E04/1451		34	13/4/2005
Urandy			
E08/1462		70	26/7/2005
E08/1463		70	26/7/2005
Yannarie			
E08/1374		70	1/8/2005
E08/1409	1	26	24/5/2004
E09/1111		70	22/6/2005
E09/1510		12	Application
Doolgunna			
E52/1697		23	22/6/2005
E52/1698		28	1/8/2005
E52/1699		54	1/8/2005
E52/1715		54	22/6/2005
P52/1123		-	
Tangadee			
E52/1794		70	Application
E52/1795		70	Application
E52/1796		70	Application
E52/1797		70	Application
E52/1798		49	Application
E52/1799		40	Application
E52/1800		70	Application
E52/1801		70	Application
Glen Ross			
E52/1840		70	Application
E52/1841		70	Application
E52/1842		66	Application
E52/1843		68	Application
E52/1844		70	Application
E52/1845		68	Application
Mt Boggola			
E08/1433	1	68	11/10/2005
E08/1460	1	35	14/10/2004
E52/1736	1	66	11/10/2005
Borrooloola			
MLN624		16.18ha	4/8/1971
EL10121		5	5/9/2002
EL24349		367	10/4/2005
EL24373		45	10/4/2005
EL24374		79	10/4/2005
EL24401		413	3/6/2005
EL24402		433	3/6/2005
EL24714		18	1/12/2005
EL24664		139	21/12/2005
EL24700		310	21/12/2005
EL24946		70	18/4/2006

EL24778		143	27/4/2006
EL24943		146	1/8/2006
EL24996		39	14/8/2006
EL24997		106	14/8/2006
EL25070		488	14/8/2006
EL24942		161	22/8/2006
EL25328		37	5/3/2007
EL25312		48	31/5/2007
EL25590		38	12/7/2007
EL25591		11	12/7/2007
EL25592		23	12/7/2007
EL25462		159	1/8/2007
EL25647		16	1/8/2007
EL25501		37	Application
EL26298		29	5/03/2008
EL26299		52	Application
EL26361		30	Application
EL26480		3	Application
EL26481		4	Application
EL26482		11	Application
EL26486		10	Application
EL26555		314	Application
EL26587		24	Application
EL26599		329	Application
EL26637		47	Application
1, Tenements in process of being transferred to Sandfire.			

**JOHN EVANS
TECHNICAL DIRECTOR**

30 April 2008

The information in this report that relates to Exploration Results is based on information compiled by John Evans who is a Fellow of the Australasian Institute of Mining and Metallurgy. John 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 for 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.

The Australian Stock Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release.



