



# **CORPORATE DIRECTORY**

#### ABN 55 104 154 185

DIRECTORS	SPECIAL RESPONSIBILITIES
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Mr Derek La Ferla Independent Non-Executive Chairman	Member of the Remuneration and Nomination Committee Member of the Audit and Risk Committee Member of the Sustainability Committee
Mr Karl Simich Managing Director & Chief Executive Officer	Operational responsibility for sustainability issues

Mr Paul Hallam	Chairman of the Remuneration and Nomination Committee
Independent Non-Executive Director	Member of the Audit and Risk Committee

Mr W John Evans	Chairman af the Containability Committee
Non-Executive Director	Chairman of the Sustainability Committee

Mr Robert Scott	Chairman of the Audit and Risk Committee
	Member of the Remuneration and Nomination Committee
Independent Non-Executive Director	Member of the Sustainability Committee

Ms Maree ArnasonMember of the Sustainability CommitteeIndependent Non-Executive DirectorMember of the Audit and Risk Committee

# PRINCIPAL PLACE OF BUSINESS & REGISTERED OFFICE

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#### **SHARE REGISTRY**

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# HOME EXCHANGE

Australian Securities Exchange Limited Exchange Plaza 2 The Esplanade, Perth WA 6000





# DRIVING CHANGE AND EMBRACING INNOVATION

# **2016 SUSTAINABILITY REPORT**



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# **ABOUT THIS REPORT**

This is Sandfire Resources NL's (Sandfire or the Company) second Sustainability Report, prepared for our stakeholders in accordance with the Global Reporting Initiative G4 framework 'core' option. The report period spans our financial year from 1 July 2015 until 30 June 2016 ("FY2016") and covers our DeGrussa Copper Mine (DeGrussa) in Western Australia and exploration activities in Australia. In November 2015 Sandfire increased its ownership in North American copper company Tintina Resources Inc. (TSX-V: TAU) to 57 per cent. We plan to report on this emerging operation in the future. Please see our website and accompanying Annual Report for more information about our Company activities.

All dollar figures reported are in Australian currency, unless otherwise stated.

There are no material re-statements of 2015 report data or content.

We welcome your feedback on our report. To provide feedback please visit www.sandfire.com.au/feedback. For further information on sustainability at Sandfire, please email sustainability@sandfire.com.au or contact +61 (08) 6430 3800.

# **OUR PERFORMANCE**







# **HIGHLIGHTS**

# Millionth

tonne of concentrate (wet) trucked from the DeGrussa Copper Mine to port



**HIGH-GRADE** Monty copper discovery







PAYMENT TO SUPPLIERS \$316.8M inc GST PAYMENT TO EMPLOYEES \$35.8M

TAXES & \$51.0M









#### **CHALLENGES**

**REVENUE ♣\$51.4M** (9%) for the year to \$497.2M

**NET PROFIT ♣\$21.0M** (30%) \$48.0M

# Continuous safety journey **DON'T WALK PAST**

24% female representation Gender diversity plan initiated



Increase Indigenous employment and participation

# 1 of 10,699 CONTAINERS

road. We continue to focus on our safety and environmental impacts

Due to greater mining depth and the nature of ore being milled

> 1.617.719 GJ of energy



Work continues on planning for **DeGrussa post mining rehabilitation** 



# DRIVING CHANGE AND EMBRACING INNOVATION - THE YEAR IN REVIEW

CHAIRMAN AND MANAGING DIRECTOR'S REPORT



Our first sustainability report last year acknowledged that Sandfire is part of a global community where we are responsible for our actions, and for helping shape positive outcomes for society and the environment.

Sustainability is now firmly at the heart of Sandfire. This year we have made a commitment to develop a long-term sustainability strategy that by FY2018 will align with our business strategy and support our vision to be a significant mid-tier mining company that operates at the upper quartile of international performance benchmarks for the industry, delivering measurable value for our business and society.

This FY2016 sustainability report shows that Sandfire has delivered on its commitment to continually improve our performance and disclosure in the areas of safety, business, community and stakeholder relations, corporate governance, and environmental management. This report provides a transparent account of our progress, focused on the most material aspects (please see page 24) from across these key sustainability areas, ultimately the issues that matter most to both our business and stakeholders.

Amid continued share market and commodity price volatility, and a subdued copper price, we achieved our fourth successive year of profitability, posting a net profit after tax of \$48 million (down 30 per cent on FY2015). A record of 68,202 tonnes of copper and 37,612 ounces of gold was produced at a C1 cash operating cost of US\$0.95 per pound. Sandfire is now cash flow positive after reducing debt by \$70 million from \$120 million to \$50 million, and having \$66 million in cash and deposits at 30 June 2016.

We are encouraged that we achieved this result with the Company's total recordable injury frequency rate declining 25 per cent to 7.08 from 9.5 last year. The safety of our people and visitors remains our highest priority – one of the top six material issues in this report – and we are working every day to reduce all safety risks and incidents. We congratulate our staff and contractors on this achievement.

Our strong operational and financial foundation allowed us both to fund our initiatives, including mine development, exploration and business development, as well as maximising value for our stakeholders.

.....

In FY2016 we paid (or have payable) \$51 million in taxes and royalties to the Government and Native Title Claimant Groups. We contributed \$152,315 (including GST) through donations and sponsorships, reflecting our commitment to grow our community contribution

The relationships we have within the communities in which we work are integral to our shared and ongoing success. Community relations ranks as one of our highest material issue this year, reflecting Sandfire's commitment to building and investing in enduring and constructive local community partnerships. During the year, we signed two strategic agreements with the Royal Flying Doctor Service (RFDS) and with Meekatharra District High School, where we are working with some of our key contractors to provide a counsellor over three years (please see page 28). We again provided both financial and in-kind support to a range of other locally-relevant organisations (please see page 28). These commitments help ensure our local communities receive genuine, long-term benefits from our ongoing operations in the region.

A key theme to emerge from the downturn in the Australian mining industry during FY2016 was the need for companies to embrace innovation in a rapidly changing sector. As an emerging leader in the Australian mid-tier mining sector, Sandfire is taking up its unique opportunity to deliver positive outcomes as a 'first-mover' for innovation with our DeGrussa Solar Power Farm. The completion of the new state-of-the-art, 10.6 mega watt solar power facility was a key highlight for the year. The plant will supply around 20 per cent of DeGrussa's power requirements and reduce emissions by around 12,000 tonnes of carbon dioxide per annum.

The successful delivery of this project is a demonstration of the exciting opportunities emerging within the mining industry for the adoption of renewable energy technologies at remote mine sites. We would like to take this opportunity to thank our project partners, the leading French renewable energy firm, Neoen, which owns the facility, and juwi Renewable Energy, who were responsible for project development. Project finance was provided by the Clean Energy Finance Corporation (CEFC) and recoupable grant funding support of \$20.9 million from the Australian Renewable Energy Agency (ARENA).

Our commitment to the solar power farm reflects Sandfire's drive to minimise our operational impact on the environment – where reducing our emissions – and not just of carbon dioxide, but all potentially harmful substances – is a significant part of our broader focus on also optimising our management of water, land, and waste.

Turning to our exploration activities, FY2016 produced exciting new developments with the discovery and subsequent successful resource drill-out of the ultra-high grade Monty Copper-Gold Project, located ten kilometres east of DeGrussa.

A Mining Lease Application was submitted for Monty in July 2016, and a Feasibility Study is now underway with the aim of bringing the Monty deposit into production as rapidly as possible.

Sandfire was delighted to announce the appointment, in December 2015, of Maree Arnason to the Sandfire Board as a Non-Executive Director. Ms Arnason is a highly experienced resources executive who brings us in-depth knowledge of corporate governance, sustainability and risk and adds valuable new perspective and skills to our Board's expertise.

Sandfire is proud of the progressive achievements made in FY2016, and we are strongly committed to further delivering on our sustainability goals and commitments. Living our vision, mission, and values centres on the delivery of continued strong operational and financial performance, offering a positive and safe working environment for our employees and contractors, as well as achieving sustainable social and environmental outcomes in the communities in which we operate.

We would like to acknowledge the dedication and contribution of our staff, contractors, and partners. Our sincere thanks you all.



A W

**DEREK LA FERLA**Chairman

KARL SIMICH

Managing Director & CEO



# THE SANDFIRE STORY

Sandfire Resources NL is a mid-tier Australian mining and exploration company based in Perth, Western Australia. Listed on the Australian Securities Exchange (ASX:SFR), we produce copper and gold from our flagship, 100 per cent-owned DeGrussa Copper Mine, located 900 kilometres north of Perth.

DeGrussa has a mineral resource inventory of 478,000 tonnes of contained copper and 625,000 ounces of contained gold (as at 31 December 2015) and an estimated mine life until 2021. This is a high quality inventory with the average grade well above the norm for global copper producers.

The DeGrussa mine produces high quality copper-inconcentrate with significant gold credits. Production for FY2017 is forecast at 65-68,000 tonnes of copper and 35-40,000 ounces of gold at a C1 cash cost of US\$0.95-1.05 per pound.

Sandfire has a substantial ongoing exploration commitment within its broader 1,700 square kilometre tenement holding surrounding DeGrussa, which is called the Doolgunna region. Sandfire also manages a portfolio of exploration joint ventures and initiatives in prospective mineral provinces in Australia and overseas.

SANDFIRE RESOURCES

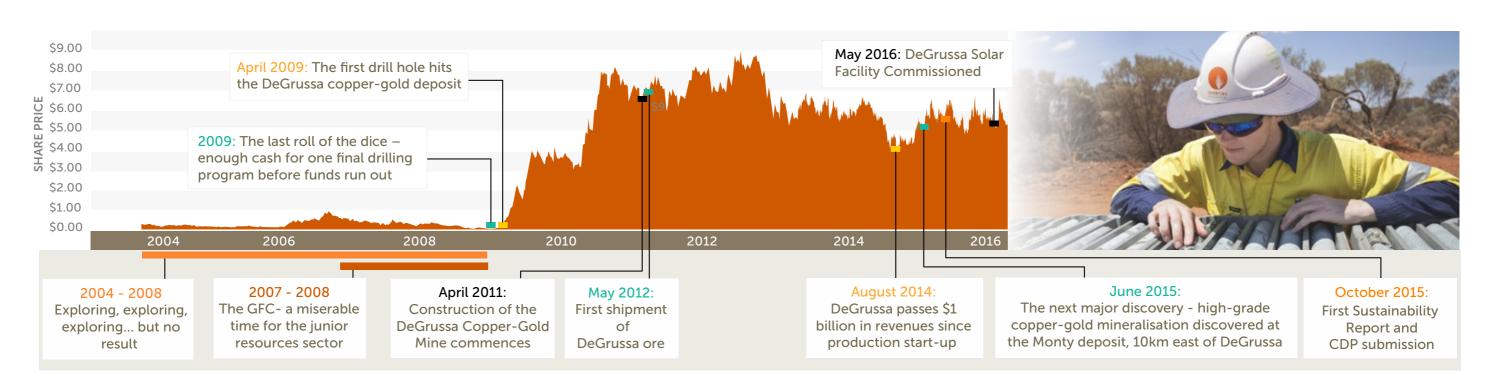
Sandfire aims to leverage the safety, sustainability, operational and financial performance of its DeGrussa Copper Mine to become a diversified Australian mining company with strong future growth. In June 2015, a new high-grade VMS copper-gold discovery was made at the Monty project, located 10 kilometres east of DeGrussa on the Springfield Project. Since we discovered DeGrussa, Sandfire has remained steadfast in its conviction that the Doolgunna region has the potential to yield multiple further high-grade ore discoveries. The discovery at Monty is the first significant accumulation of high-grade copper-gold mineralisation to be identified outside of DeGrussa, and represents a compelling breakthrough for our exploration team. A feasibility study has begun and a mining lease application has been lodged with the Western Australia Department of Mines and Petroleum.

This progressive approach is also reflected across our business, particularly through our management of and reporting on, environmental, social, and corporate governance. Last year we published our inaugural Sustainability Report, which was runner-up for Best Sustainability Report – Private Sector in the 2016 Australasian Reporting Awards. The report was well received by our key stakeholders and relevant interest and advisory groups. We are also proud of our involvement in our state-of-the-art solar power project which is now operational and reducing our emissions footprint at the DeGrussa Copper Mine.

During FY2016, Sandfire conducted exploration activities in Australia within the Bryah Basin region of Western Australia, the Mt Isa Inlier in Queensland, the Lachlan Fold Belt of New South Wales, the Gawler Craton of South Australia and the McArthur Basin of the Northern Territory.

Internationally, Sandfire is developing exploration and growth opportunities in Montana in the United States. In November 2015 Sandfire increased its ownership from 38 per cent to 57 per cent in Toronto Stock Exchange Listed Tintina Resources – (TSX-V: TAU). A Mine Operating Permit application was submitted to the Montana Department of Environmental Quality in December 2015. Sandfire also has a 38 per cent interest in WCB Resources Ltd (TSX-V: WCD), which is a copper-gold explorer on listed on the Toronto Stock Exchange.

Sandfire discloses its sustainability performance as part of the Corporate Governance Principles and Recommendations (3rd edition) published by the ASX Corporate Governance Council, Australian Government's National Greenhouse and Energy Reporting Scheme, the National Pollution Index, Global Reporting Initiative and the Carbon Disclosure Project (CDP).



#### **BUSINESS OVERVIEW**

# Vision

Sandfire's vision is to be a significant, mid-tier mining company that operates in the upper quartile of international performance benchmarks for the industry.



# Mission

SUSTAINABILITY REPORT

SANDFIRE RESOURCES

Sandfire is in the business of producing base and precious metals safely and profitably for the benefit of its shareholders and stakeholders. The Company's focus is on three core business elements:

- increasing its resource base by discovering new mineral deposits through its exploration programs
- securing assets that meet its investment criteria through business development initiatives and developing new assets that meet strict economic and technical criteria
- managing the productivity of its operations by maximising production and rigorously controlling expenditure at all times.





#### Values

Sandfire's values are designed to guide all who work for us in their day-to-day dealings with each other, competitors, customers and the community:

- operate and explore safely with minimal impact to the environment at all times
- co-operate with all of our communities for the mutual benefit of all
- attract and retain the very best people for jobs at all levels
- reward good performance
- place a high value on diversity, teamwork, respect and integrity
- value technical excellence and innovation
- place a high value on cost consciousness among our employees.



**&** 

#### **OUR VALUE CHAIN**

Our value chain comprises exploration work to identify new mineral deposits through to the rehabilitation of exploration sites and closure planning of our current mine site. We understand that our activities will have social, environmental, and economic impacts.







# **EXPLORATION**

Involves exploration within the bounds of our current operation to extend our mine life as well as discovery of new projects elsewhere.

# MINING

The extraction of ore.

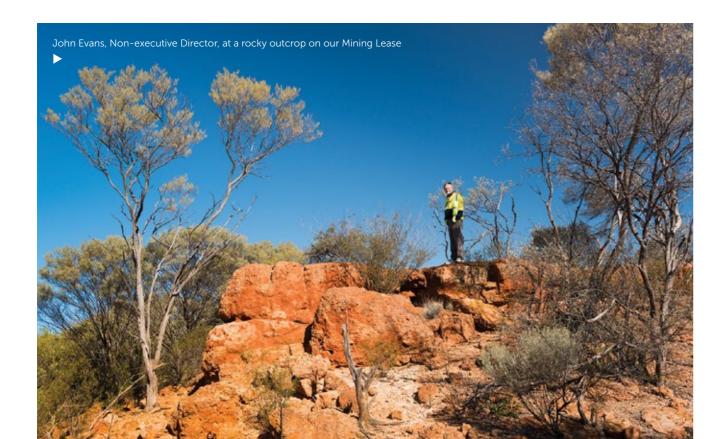
# **PROCESSING**

The processing of ore to produce copper concentrate.

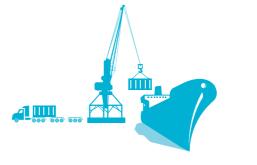
# **HOW WE GOVERN** SUSTAINABILITY

SANDFIRE RESOURCES

The Board of Directors oversees Sandfire's sustainability approach and performance and considers sustainability risks and opportunities as part of this process. Sandfire's Sustainability Committee, Audit and Risk Committee and Remuneration and Nomination Committee are tasked with responsibilities and functions in accordance with each Committees' Charter. The Chief Executive Officer (CEO), who is also a member of the Board, has operational responsibility for sustainability issues. Management, through the CEO, is responsible for the day-to-day design and implementation of the Company's risk management and internal control system (please see page 13).



We are committed to reducing the negative impacts in each area of our business and our communities, and positively contributing by ensuring our people are safe, local communities prosper and the environment is protected for all current and future generations.





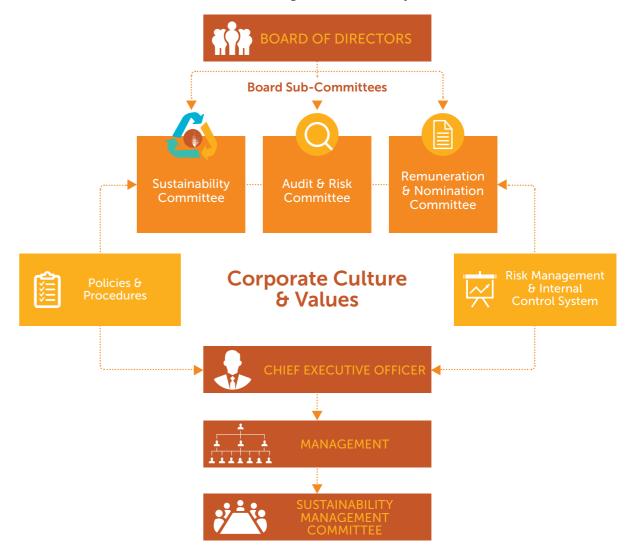
# **DELIVERY**

The sale and delivery of our copper concentrate to overseas smelters and traders.

# REHABILITATION

Rehabilitation of our exploration sites to ensure minimal disruption to land. Closure planning of our operation in collaboration with key stakeholders is ongoing throughout the life of the mine. Passive closure and monitoring.

How we govern sustainability:



Please visit the Company's website www.sandfire.com.au, the 2016 Annual Report and the Corporate Directory in this report for more information on our Board and Board Committees.

**Appointment of Experienced Resources Industry Executive** Maree Arnason as Non-**Executive Director** 

In December 2015, Maree Arnason, an experienced resources industry executive, was appointed as an Independent Nonexecutive Director of Sandfire. Ms Arnason's career has spanned 30 years in the resources and energy sectors in remote, regional and corporate environments. Ms Arnason has significant leadership expertise working in complex corporate and project environments with a focus on risk and reputation. Following development of her senior executive career with ASX-listed companies including BHP Billiton and Wesfarmers, Ms Arnason has broadened her work over the past 10 years to include directorships in listed and private companies.



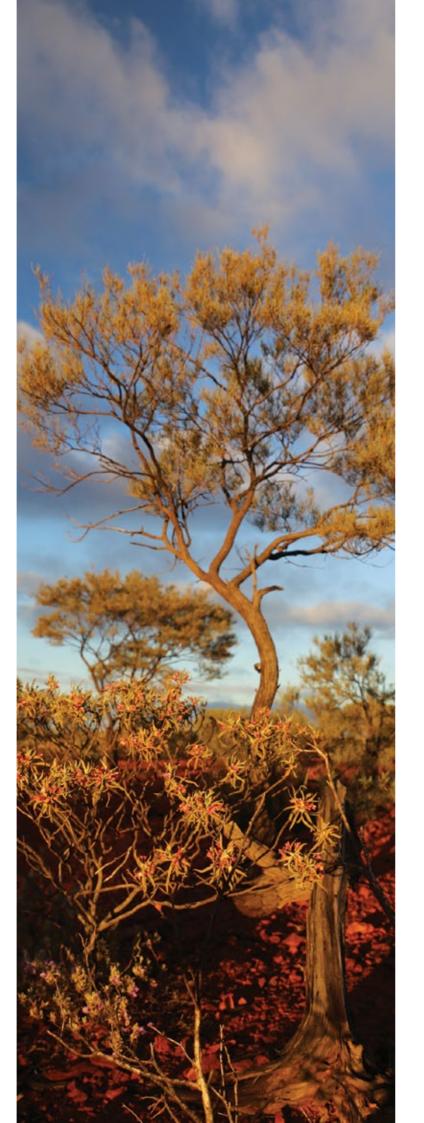
# **GOVERNANCE SYSTEMS**

SUSTAINABILITY

SANDFIRE RESOURCES

Sandfire is committed to ethical business practices, strong corporate governance, and proactive stakeholder engagement. We recognise that we are part of a global community and so are committed to operating our business in a sustainable manner that ensures our people are safe and well-supported, local communities prosper and that the environment is protected.

Sandfire has specific policies in place to meet these commitments and help govern business activities by providing clear expectations regarding our practices. Sandfire's policies are available on our website.



# KEY STRATEGIES FOR MANAGING SUSTAINABILITY - RISK MANAGEMENT

The Board is committed to reviewing and overseeing the risk management strategy for Sandfire and ensures the Company has an appropriate corporate governance structure, to support the achievement of business objectives. The Audit and Risk Committee undertakes an annual assessment of the effectiveness of risk management and internal controls.

Management implements Sandfire's risk management and internal control system, and reports to the Board on Sandfire's key risks, and the extent to which it believes that risks are being adequately managed.

Sandfire applies a whole-of-business approach to risk management that considers all categories of risks including in health and safety, strategic, business, environmental, social and governance areas. The Company's risks framework is used to identify, assess, evaluate, treat, monitor, and communicate risks, and is aligned with the international standard of risk management, ISO Standard 31000:2009. The process consists of steps that, when implemented sequentially, effectively identify and manage materials risks and enable continuous improvement.

#### Code of Conduct

The Board of Directors recognises the need to observe the highest standards of corporate practice and business conduct. Sandfire strives to be an open, fair organisation that promotes equal opportunity and is free from discrimination. This commitment is enshrined in our Code of Conduct that applies to our directors, employees, and contractors. This policy is published on our website.

The key principles of the Code of Conduct are:

- our actions must be governed by the highest standards of integrity and fairness
- our decisions must be made in accordance with the spirit and letter of applicable law
- our business must be conducted with our best skills and judgement, for the benefit of our shareholders, stakeholders, people and clients.

The Code of Conduct aims to:

- · communicate and benchmark the standard of behaviour that is expected from everyone who works for Sandfire
- support Sandfire's business reputation and corporate image within the community
- make employees aware of the consequences if they breach the code.

As a result of stakeholder feedback, during the year we updated our Code of Conduct to provide clear guidance on political donations, with the effect that we have prohibited donations to political parties. In accordance with best practice, we also updated our Code of Conduct by translating relevant content to plain, simple and collegial language for stakeholders. This included adding do's and don'ts, case studies and frequently asked questions.

In FY2017 we will be providing training to our employees on the Code of Conduct.

# Whistleblower Policy

Sandfire is committed to ensuring that illegal and other undesirable conduct within our business is detected and prevented, and personnel can report their concerns freely and without fear of reprisals. We amended our Whistleblower Policy during the reporting period to include a Whistleblower Hotline, in line with best practice. The hotline can be accessed 24 hours a day, seven days a week, and is operated by an independent, third party. Callers to the service remain anonymous, unless the callers wish to identify themselves.

This policy applies to directors, officers, employees, and contractors of Sandfire and can be accessed through our website.

During the year, no whistleblower reports were



# COMMITMENTS AND TARGETS



# TARGETS

Our strategic ambition is to embed social and environmental considerations into our core business through developing and integrating a sustainability strategy by FY2018. This will support our creation of value for both our business and society.

We will refer to the United Nations Sustainable
Development Goals (SDGs) to frame our strategy
development. The SDGs are intended as a global plan of
action for social inclusion, environmental sustainability, and
economic development. We intend to identify the areas
where we can have the most impact, that will create value
for our business, and that will support our expansion plans.

Our stakeholders have indicated that they want more detailed and measurable performance targets. We understand the importance of this for our stakeholders and in FY2017 we intend to continue developing targets and key performance indicators, aligned to our material issues (please see page 24), that will drive and measure our progress year-on-year as part of our strategy development.



Our high-level business targets that have been set to-date are detailed in the table below:

TARGET	FY2017 TARGET	FY2016 TARGET	FY2016 PERFORMANCE
Health and Safety			
Total Recordable Injury Frequency Rate (TRIFR)	5	7.0	7.1
Lost Time Injury Frequency Rate (LTIFR)	2	1.5	0.7
Significant near misses	< 4	< 12	8
Rehabilitation			
Rehabilitate areas disturbed by our operations	90% of available disturbed areas are rehabilitated	90% of available disturbed areas are rehabilitated	No areas were available
Gender diversity			
Maintain female participation above average industry rates through implementing a Gender Diversity Plan	>24% of workforce Gender Diversity Plan initiated	Continue to exceed the resource industry average female participation rates	24% of workforce
Emissions efficiency			
Reduce our emissions by at least 10 per cent	10% decrease	10% decrease	13% increase



# PROGRESS ON OUR 2015 SUSTAINABILITY COMMITMENTS\*

**KEY** ✓ Achieved In Progress

AREA	COMMITMENT	PROGRESS	UPDATE
Key Performance Indicators (KPIs)	Develop sustainability KPIs for business units.		We commenced the process of further detailing KPIs as part of our commitment to developing a full range of targets under our sustainability strategy
Our Material Issues	We will consult with external stakeholders to determine our material issues for the next report.	$\checkmark$	Please see Our material issues (page 24).
Contractors and Suppliers	Put in place processes for measuring suppliers and contractors against sustainability criteria into our tender process and introduce sustainability criteria into our new supplier assessment process.	$\checkmark$	A comprehensive set of questions and evaluation criteria has been developed for our tenders. Tenders in FY2017 will be assessed on these criteria. Please see Engaging our suppliers and contractors (page 31).
			Sustainability criteria have been developed and included on our mandatory new supplier form (for all suppliers of goods or services) and new suppliers will be requested to provide information from FY2017. Please see Engaging our suppliers and contractors (page 31).
	Strengthen our engagement with major contractors by developing contract management plans for all major contracts.		At June 30 2015, 2 out of 7 major contracts had contract management plans in place. Work on this will continue in FY2017. Please see Engaging our suppliers and contractors (page 31).
	Continue to audit contractor and contract management performance and identify practical opportunities for improvement.	$\checkmark$	Audits continued throughout the reporting period and are part of our continuous improvement process.
	Include sustainability topics into our contract management training.		We held scope of work training during the year to train our contract managers in how to develop a good scope of work, which will allow us to effectively manage our contracts. Contract managers were asked to analyse case studies - including community engagement and local procurement scenarios.
			The new supplier process was updated at the end of the reporting period. New suppliers are now asked questions about their environmental, social and governance approach. Formal training will be undertaken early in FY2017 and the reason for the inclusion of these questions will be highlighted.
	Continue to collaborate with Qube, our haulage concentrate contractor, in their community engagement efforts.		Community engagement visits in conjunction with Qube were not undertaken in FY2016, however, a school visit has been scheduled for early FY2017 (please see page 32).

<sup>\*</sup>In our FY2015 report these commitments were referred to informally as targets. Our focus for the year ahead will be to put in place research-based long-term measurable targets as part of our sustainability strategy, which may also have associated sub-commitments each year.

AREA	COMMITMENT	PROGRESS	UPDATE
Product Stewardship	Development of sustainability criteria for ship selection.	<b>√</b>	Sandfire now performs a greenhouse gas (GHG) Emissions Rating check when selecting ships for transportation. Please see Transporting our copper (please see page 32).
Our Community	Develop a formal grievance mechanism so that we have processes in place to respond to community concerns if they arise.	<b>√</b>	A formal grievance mechanism was developed with reference to United Nations Guiding Principles on Business and Human Rights. Please see Community engagement and landowner consultation (please see page 34).
	Explore how we can evaluate our community engagement approach.	<b>√</b>	Our employees attended training on evaluating our community engagement approach. We have established reporting mechanisms for our community investment at Meekatharra.
	Sponsor NAIDOC week celebration in Meekatharra in August 2015.	$\checkmark$	We proudly sponsored the NAIDOC week celebrations in Meekatharra. Please see case study on page 35.
Donations	Target areas where we want to donate.	<b>√</b>	Through consultation with our stakeholders, we identified an opportunity to help the Meekatharra community by sponsoring a full-time counsellor. Please see case study on page 28.
Human Resources	Review our induction process to embed our values and further build engagement.	$\checkmark$	The induction process was reviewed and updated to highlight and increase visibility of the Sandfire values. Please see case study on page 40.
	Conduct our first employee feedback survey.	$\checkmark$	An employee feedback survey was conducted in November 2015 and results shared with staff. Please see case study on page 29.
	Improve our internal communications strategy to support effective and open communication between the Company and our employees.		A company policy is being developed.
	Continue our leadership development program, including refresher training.		The leadership program was continued in the reporting period.
			Refresher training has been put on hold and is due to continue in FY2017 with the leadership program.
	Optimise the process of recording employee training hours.	$\checkmark$	Training hours have been captured in our INX InTuition program and detail can be found in the Appendix – Data Tables.
	Ensure all employees receive a performance appraisal.	$\checkmark$	Performance appraisals are run annually on a calendar year basis. In 2015, all employees received a performance appraisal.

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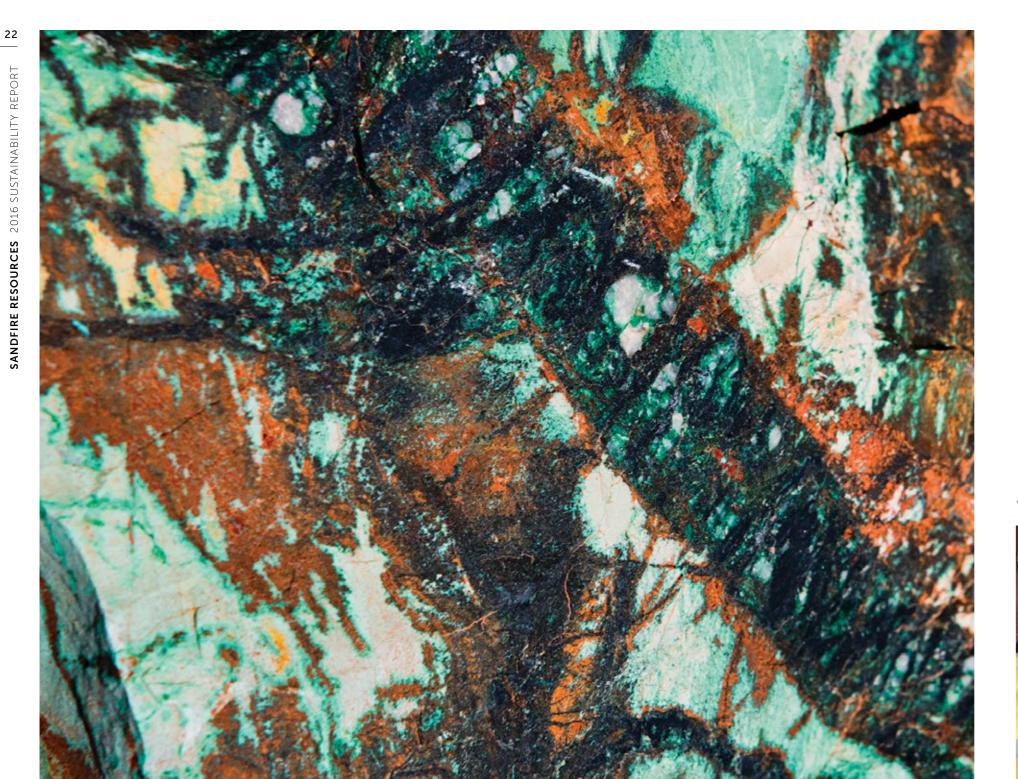
SANDFIRE RESOURCES 2016 SUSTAINABILITY REPORT

AREA	COMMITMENT	PROGRESS	UPDATE
Gender Diversity	Identify and develop high-performing women for career progression, as part of Sandfire's succession planning process.		No women were promoted during the year.  Ten women undertook further education under Sandfire's sponsorship.  Two women participated in formal mentoring programs.
	Provide suitable working arrangements for employees returning from maternity or parental leave and ongoing engagement to ensure a smooth transition.	<b>√</b>	In accordance with our Parental Leave Policy, flexible work arrangements are implemented wherever possible and we keep in contact with employees as appropriate. Employee entitlements are outlined in the Parental Leave Policy.
	Ensure that at least one woman is on the interview panel for each new executive and general management position to boost female representation in leadership.		No new executive or general management positions became available during the reporting period.
Aboriginal Employment	Retain our Aboriginal workforce and grow Aboriginal employment levels within other operators and contractors.	$\checkmark$	At 30 June 2016, our Aboriginal workforce was 21 which includes four directly engaged by Sandfire. Please see Aboriginal Employment (page 42).
Rehabilitation	Continue to develop our understanding of Land management and biodiversity.	$\checkmark$	Studies have continued during the year. Please see Land management and biodiversity (page 62).
	Rehabilitate the environments disturbed by our mining activities.		No land became available for rehabilitation during the year.
Mine Closure	We will commence the consultation process with stakeholders, develop closure criteria and plans, and undertake a formal review of the mine closure plan.	$\checkmark$	The consultation is well underway. Please see Mine closure planning (page 62).

 $\blacktriangledown$  Lauree Conte - Site Administrator, and James Crow - Mine Geologist



# LISTENING TO OUR STAKEHOLDERS



# HOW WE ENGAGE WITH OUR STAKEHOLDERS

Close collaboration with stakeholders is essential for our business. We rely on strong and open dialogue with our stakeholders to access resources, maintain our regulatory and social licence to operate, as well as deliver mutual benefit to our communities. Our stakeholders are those people or organisations who are affected by, or have an interest in, our business. We prioritise stakeholders based on their ability to impact our business and our ability to impact their lives or activities. Important stakeholders are our employees, local communities, native title claimant groups, suppliers, contractors, and governments.

We regularly engage stakeholders through a variety of mechanisms to ensure that we meet their needs including reporting responsively. Our Sustainability Management Committee leads our approach. This committee identifies important stakeholders and ensures that we manage relationships in a consistent and accountable way. It maps all our stakeholders, the level of impact, and set outs a plan for how we should engage with them.

For information about our stakeholder groups and engagement mechanism please see our website.

(I-r) Shaun Ryan - General Manager DeGrussa, Angie Jones- OHS&T Administrator, Justin Colwell - ERT Coordinator, Bill Wasley - OHS&T Manager, Paul Walker - Safety Advisor, John McGuire - Coordinator for Aboriginal Engagement, Alan Sinclair - Safety Advisor



#### **OUR MATERIAL ISSUES**

SANDFIRE RESOURCES 2016 SUSTAINABILITY REPORT

This year, we conducted a materiality review to understand issues that are most important to our business and our stakeholders.

We engaged an independent research firm to carry out detailed discussions with our external stakeholders to understand which sustainability issues Sandfire needs to address and how we could continue to improve our performance. They spoke with a wide range of our stakeholders, including community groups, industry partners, investors, government, and regulators.

Sandfire's Group Management Team prioritised and validated the issues raised by our external stakeholders, based on the significance of their impact to our business. The Sustainability Committee and Board of Directors affirmed the rankings of these material issues.

Our stakeholders were interested in knowing how we create benefits for local communities and the regional economy, how we keep our people safe and happy, and how we manage our impacts on the environment in a responsible way. The voices of our stakeholders shaped the content of this sustainability report.

Of the top seven material issues covered in this year's report, five are environment-related, reflecting the both the risks and opportunities this area presents to our business, and the community in which it operates. Our forward sustainability planning will address these issues and we will put metrics in place to demonstrate our progress to managing them.

Our validated material issues and boundaries, which define the scope for this report, are:

ISSUE	AGREED SCOPE	IMPACTS OCCUR	PAGE NO.
Ethics and transparency	Ethics and transparency are integral to our business and inherent in how we undertake all of our activities.	Inside and Outside	38
Community relations	How we contribute to local communities and share benefits through regional economic development and job creation including the employment of Aboriginal people.	Outside	34
Occupational health and safety	Maintaining a zero-harm culture, reducing risks of injury and fatalities, and having emergency preparedness procedures.	Inside	43
Water	How we carefully manage water availability and quality as a scarce resource including in waterways, bores, aquifers.	Inside and outside	50-53
Energy and carbon emissions	Management of energy efficiency, greenhouse gas emissions and renewable energy, as part of addressing climate change.	Inside and outside	54-55
Land management and closure planning	Preserving the quality of the land during development, operation and exploration; rehabilitation and long-term closure planning to restore the land after mining ceases.	Inside and outside	62
Waste management	Considering product life cycle impacts and compliant tailings storage facilities.	Inside	58-61





#### SUSTAINABILITY COLLABORATIONS

# Memberships

Sandfire is an active member of the Association of Mining and Exploration Companies (AMEC) and management presented "Embracing Change, Driving Innovation – The DeGrussa Solar Power Project" at the AMEC Convention in June 2016.

Our Managing Director and Chief Executive Officer, Mr Karl Simich, is a member of the Board of the International Copper Association Australia (ICAA), the peak body for the copper industry in Australia, representing some of the country's most influential companies in mining, manufacturing, production, and recycling. The Copper Alliance™ brand represents a network of regional copper centres and their industry-leading members, led by ICAA. The Mission of the Copper Alliance is to "defend and grow markets for copper based on its superior technical performance and its contribution to a higher quality of life worldwide". As global issues such as energy, climate change and health become more urgent, copper plays an important role in almost every industry (refer to http://www.sandfire.com.au/sustainability.html for details of the societal benefits of copper).



# MAINTAINING OUR SOCIAL LICENCE TO OPERATE

Our social licence to operate (SLO) is our community's acceptance and approval of our company's presence and activities. Close collaboration with stakeholders is essential for our business. We rely on strong and open dialogue with our stakeholders to access resources and maintain our regulatory and SLO. Our stakeholders are those who are affected by, or have an interest in our business.

We understand that a community's acceptance can be withdrawn at any time and we are invested in making a positive impact through our operations and subscribing to a high level of ethics and governance in everything that we do.

Sandfire makes an important contribution to local communities and regional economies by delivering solid financial returns to our shareholders, working with local business in our supply chain and by investing in our community through local employment and organisations.

# OUR ECONOMIC CONTRIBUTION

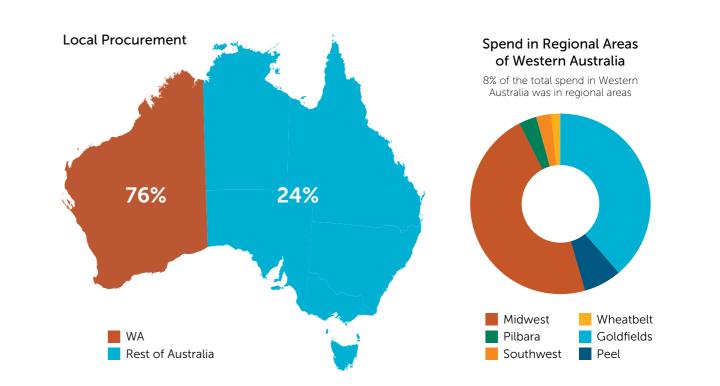
We made a positive socio-economic contribution to the areas in which we operate through:

• revenues from sales of our products – \$497.2 million

- taxes and royalties paid to the Government and Native Title Claimant Group of the land in which we operate – \$51.03 million
- community investments and partnerships -\$152,315 (including GST)
- salaries paid to our employees \$35.8 million
- payments to our contractors and suppliers \$316.8 million (including GST).

We are committed to paying our tax and royalty contributions with integrity, though our statutory requirements.

Of the total payments to our contractors and suppliers, 76 per cent was spent in Western Australia, where our operation and head office is based and where the majority of our service contracts are located. Eight per cent of this was spent in regional and remote areas with most of the regional expenditure spent in the Mid-West region of Western Australia where our DeGrussa Copper Mine is located.







▲ John McGuire, Coordinator for Aboriginal Engagement, with student accepting the Sandfire Art Award - this was completed by a classroom of 11 - 14 year old

# **COMMUNITY INVESTMENTS** AND PARTNERSHIPS

Our community investment approach is guided by our Donations, Sponsorship and Partnership Policy. This policy guides how we evaluate requests for financial assistance from local community organisations that are recognised as stakeholders in Sandfire activities, or have a purpose closely aligned to our business profile or activities.

The policy aims to ensure that requests for contributions or assistance from stakeholders and community organisations are processed in a consistent manner across the entire organisation.

Sandfire supports not-for-profit organisations that contribute to community-based initiatives, support disadvantaged sections of society, conduct educational and training programs, are involved in the arts and culture, undertake environmental and sustainability initiatives, or promote healthy lifestyles.

During the year we contributed \$152,315 (including GST) through donations and sponsorships, which is equal to 0.3 per cent of our net profit after tax. Sandfire does not have a targeted donations and sponsorship amount and historically our donations have been requests from our stakeholders. During the year, we signed two three year strategic partnerships with Royal Flying Doctors Service and with Meekatharra District High School (MDHS) (please see case study).

Recipients and details of this year's donations are available on our website

# CASE STUDY **COUNSELLOR AT MEEKATHARRA** DISTRICT HIGH SCHOOL

We are committed to building enduring relationships with our host community and this year we aimed to invest in initiatives that will have long-term benefits and strengthen our relationship with them.

We have been working closely with the Meekatharra District High School (MDHS) to raise funds to employ a full-time counsellor to provide support for the children and wider community in Meekatharra. Meekatharra is the closest community to our minesite. It is a remote town located 150 kilometers south of DeGrussa, a large proportion of the population is Indigenous.

We entered into a partnership with our contractors Orlando Drilling Pty Ltd, Qube Bulk Pty Ltd, DDH1 Drilling Pty Ltd, Byrnecut Australia Pty Ltd and CaterCare Pty Ltd to fund the counsellor position for three years. We anticipate that a counsellor will commence in 2016 in school term three.

The counsellor will:

- · deliver individualised counselling to children and young people
- provide education and consultancy support to MDHS teachers and other local human service providers
- facilitate a universal approach in MDHS towards increasing the resilience and wellbeing of students and
- · develop and maintain effective relationships with key stakeholders.





#### In-kind donations

During the year four cattle grids costing \$15,063 (excluding GST) were purchased for property owners in Breena Plains. This has a mutual benefit for the property owner and Sandfire because gates are no longer required to be opened and closed. Breena Plains is in the remote Mt Isa Cloncurry Region in North West Queensland where Sandfire is exploring for copper deposits. Prior to exploration activities, meetings are held with the property owners to determine if there are any cattle grids they would like to be installed on their properties. Sandfire purchases the cattle grids for the property owner and the property owner is responsible for the installation of the grid.

Twenty-seven volunteers (comprising Sandfire employees and contractors) contributed approximately 80 hours on Clean Up Australian Day at the Noonyaneena Pool. The pool is used as a rest area for drivers (predominantly truck and caravan drivers) and is located five kilometres south of the DeGrussa Copper Mine. Thanks to the efforts of the volunteers, they were able to collect 140 kilograms of general waste, recycled 20 kilograms of scrap metal, 11 kilograms of aluminium cans, 22 kilograms of glass, 10 kilograms of plastic and six tyres.



During the year, the Meekatharra Dirt Kart Association revitalised the disused Meekatharra Speedway and turned it into a dirt kart track. The Meekatharra Dirt Kart Association's vision is for the facility to be widely used by the community and promote junior participation. The Association and the Meekatharra District High School have partnered to put together a program to promote attendance at the school by allowing junior racers to participate after a succession of attendance at school.

Sandfire is very supportive of the Meekatharra Dirt Kart Track and has assisted with fundraising through our DeGrussa Social Club to help restore the track. One of our employees volunteered 60 hours of time and materials to build the dirt karts ready for use. In total, Sandfire employees built four dirt karts in FY2016 with the intent of building more next year. We have also committed a further \$15,000 towards the provision of junior karts and racing equipment for the school program in FY2017.



#### **OUR SUPPLY CHAIN**

2016 SUSTAINABILITY REPORT

SANDFIRE RESOURCES

At Sandfire, contractors and suppliers are a crucial part of our business and we rely on them to ensure that we meet our overall operating strategy and maximise efficiencies. We are working to build the sustainability of our supply chain by engaging with contractors and suppliers to reduce potential environmental, social and governance risks. This year we worked on understanding our local supplier spend in an effort to determine whether local procurement could be prioritised. This work will continue in FY2017.

The greatest impacts in our supply chain are:

- the contracting of mining and other services at our DeGrussa mine and exploration sites (impacts to safety of contractor personnel, local procurement, secondary economic benefits)
- the material inputs used to produce our copper concentrate, and waste from the process (of environmental and health impacts) and
- the transport of our products (potential environmental and social impacts).

Our supply chain includes:

**Support services** – camp management services, air charter services, freight of inbound goods, power supply, IT services and fuel supply

**Exploration** – labour hire, drilling contractors and consultants

**Mining** – mining labour services, cement supply, explosives supply, drilling contractors

**Processing** – supply of grinding machine, supply of flocculants, labour hire, supply of equipment, supply of liners

**Delivery** – haulage services, port services, stevedoring and shipping.

The largest portion of our procurement spend is on mining labour services, concentrate haulage, fuel for our operations, binder, lime and cement for our underground mine.



# Engaging our suppliers and contractors

Last year we committed to ensuring that all our major contracts (defined as high risk/ high dollar value contracts) have Contract Management Plans in place to strengthen our contract management. During the year, we rolled out the Contractors and Suppliers Standard which outlines the requirements for systematic and comprehensive contract and supplier management across our business. This prescribes that our major contracts must have a Contract Management Plan which outlines the obligations, accountabilities, authorities, reporting requirements and controls in place to manage the contract.

We have identified seven contracts in this category. Of these two had contract management plans in place at 30 June 2016. In FY2017 we will have a

dedicated contract management resource at our DeGrussa site who will assist in embedding the Contractors and Suppliers Standard.

In 2016, we continued to focus on our contractor pre-qualification processes. We revised our new supplier process to include sustainability criteria. Prospective suppliers are now asked questions regarding their organisation's sustainability performance and we will use this to collect data to better understand our supply chain from FY2017 onwards.

During the year, we updated our tendering process to include questions about tenderers' sustainability performance. These questions form the criteria upon which our tenderers will be assessed starting FY2017.



# OUR PRODUCT LIFECYCLE

Sandfire produces copper concentrate from which copper is extracted for use in electrical products, machinery and equipment, building construction and transport. In addition to its conductive properties, copper is an integral component in renewable energy production systems, and due to its antimicrobial properties is used in medical facilities to stop the spread of germs<sup>1</sup>.

Our DeGrussa mine produces a high-quality copper concentrate with broad customer acceptance and a very marketable 24 per cent copper grade, with notable gold and silver credits.

DeGrussa copper concentrate is generally classed as clean – meaning it is low in deleterious elements, such as arsenic and bismuth. Smelters favour clean copper concentrate. They will not process concentrates with high arsenic levels due to the health and safety implications, as well as the effect it has on smelter emissions compliance. Complex materials attract penalty payments due to the higher levels of deleterious elements.

Our product stewardship responsibilities include how we safely contain copper concentrate on site and transport it from the mine at DeGrussa to the ports in Geraldton and Port Hedland, and then to our customers around the world.

We are governed by our statutory obligations, contractual obligations and penalties and financial consequences. We are affiliated members of the ICAA and attend board meetings where the sustainability of copper production is a key focus.

<sup>1</sup> 'The World Copper Factbook 2014' available at www.copperalliance.org

## Transporting our copper

We transport the copper concentrate, produced at DeGrussa, to our ports by road.

We manage the entire transport process to our customers, including from mine to ship. This gives us greater ability to mitigate product stewardship risks, which include negative impacts to the environment through product spillage, dust, emissions and noise and the impacts to communities along our transport route.

The route from mine to port is approximately 700 kilometres through remote areas of Western Australia using sealed main highways. We work closely with our haulage contractor, Qube, to ensure that the copper concentrate is transported safely and the impacts to the environment and the communities along the route are minimised. For example, the halfheight sea containers used to transport our copper concentrate are fitted with lids whilst in our fully enclosed concentrate shed to minimise risk of dust or spillage along the route.

We regularly engage with the remote communities along our transport route. Through discussions with them we have identified driver behaviour and the potential to cause accidents as an issue that our stakeholders are concerned about. We are committed to ensuring that our concentrate is transported safely, and we perform regular safety audits on our contractor to ensure high standards are maintained.

In our FY2015 report, we made a commitment to continue to collaborate with Qube in their

SANDFIRE RESOURCES

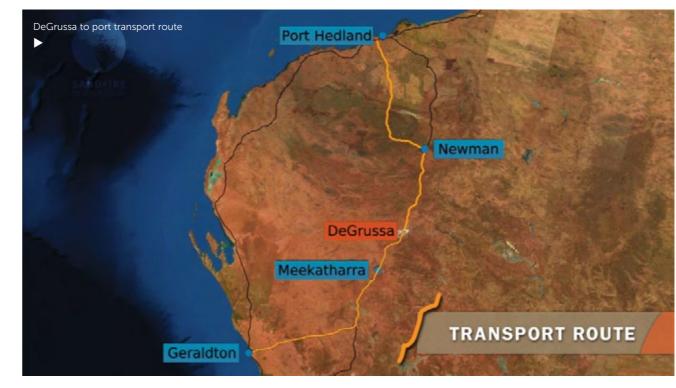
community engagement efforts after a successful school visit in July 2015. The next school visit, focused on road safety, has been scheduled for July 2016. We look forward to participating in this day and are committed to continuing to support Qube in their efforts.

Sandfire applies a rigorous approach to ship selection to ensure the highest practical levels of safety and environmental protection are considered. Sandfire use the RightShip's Ship Vetting Information System which receives vessel data from various sources and inputs information into a sophisticated online vetting system. Sandfire will only fix vessels that receive the maximum five-star rating (lowest risk).

During the year, Sandfire added RightShip's GHG Emissions Rating to our ship evaluation process. This relatively new rating framework compares the relative efficiency of marine vessels against vessels of similar size and type. Sandfire believes the GHG emissions rating system implemented by RightShip is beginning to gain traction within the shipping industry.

In FY2017 Sandfire intends to improve the due diligence process of vetting vessels and shipowners by including a screening check through the Thomson Reuters World-Check screening service. This will allow Sandfire to determine whether there are sanctions on the nominated vessel, and whether any crime, bribery or corruption issues have been flagged against the ship owner. In FY2017 all nominated vessels and contracted counterparties will be screened using this service.







Trucking incident on the Great Northern Highway

In January 2016 there was a spill incident on the Great Northern Highway. A Qube road train was carrying four containers loaded with copper concentrate from the DeGrussa Copper Mine when it lost partial control at an intersection causing its rear container to detach and land on the road at speed, spilling its contents. Qube conducted a cleanup operation and soil samples were taken and tested in a laboratory to confirm a satisfactory clean-up of the site. The investigation of the incident found that poor surface

conditions of the road were the cause of the accident. Qube and Sandfire engaged Main Roads, who responded by repairing the road surface in question. Ongoing engagement with Main Roads has occurred since the incident to monitor the safety of the intersection and to ensure the surface is maintained. Qube have employed geo-fencing around the area to ensure their drivers know the area is a hazard.

# COMMUNITY ENGAGEMENT AND LANDOWNER CONSULTATION

Effective and open stakeholder relationships are essential to forging and maintaining our social licence to operate, meeting our stakeholders' needs and mitigating business risk.

Our Stakeholder Engagement Policy sets out our commitment to engage effectively with our stakeholders.

Our Community Relations Strategy, which covers all of our operations, maps the stakeholders for all the areas in which we operate so they have an open communication channel with us. This now includes a formal Grievance Mechanism Procedure.

As mentioned in Our material issues, this year a third party undertook a materiality review to define the scope of this report. The feedback solicited from our stakeholders also provided us with information to improve our engagement process. Stakeholders were asked what their preferred communication method was and 100 per cent responded that they prefer face-to-face and over-the-phone interaction. Our sustainability report was the second most favoured mechanism.

Our community relations strategy prioritises face-to-face engagement and our relationship owners will continue to meet with stakeholders to ensure there is an open dialogue about our sustainability performance. For example, through listening to our stakeholders in NSW we have developed minimal-impact exploration drilling, detailed on page 63.

In FY2016, we developed a Grievance Mechanism Procedure with reference to the United Nations Guiding Principles on Business and Human Rights. It provides an avenue for external stakeholders to voice their concerns and gives transparency to how grievances will be managed internally. The procedure applies to all external stakeholders of our operations and exploration activities, and is available on our website. In FY2017 we will report externally on any grievances received, and how they have been addressed.



# NATIVE TITLE CLAIMANT GROUP ENGAGEMENT

Sandfire actively engages with its Aboriginal stakeholders through open and constructive dialogue to maintain strong and mutually-beneficial relationships. We acknowledge and respect the rights and culture, as well as connection to county, language and traditions of the different Aboriginal Native Title Claimant groups near our projects. We have a program to embed an understanding of Aboriginal culture in our operations to strengthen positive engagement with Aboriginal people across all levels of our business. Through growing the strength of our relationships, Sandfire can in turn better understand and ensure the protection of local Aboriginal culture. Engagement with Native Title Claimant groups helps us to develop strong working relationships and protect culturally significant or sensitive areas through taking appropriate measures to mitigate potential impact risks.

Sandfire has five projects across Australia that currently affect 11 Native Title Claim Groups and five Native Title Determination Groups. There are wideranging Cultural Heritage Protection Agreements and Land Access Agreements in place with the groups where we are operating that protect cultural heritage sites and can offer opportunities for employment, education and commercial contracts.

We have the following agreements in place:

- two Land Access Agreements (for mining) with the Yugunga-Nya Native Title Claim Group (Western Australia) (WA) and the Gingirana Native TitleClaim Group (WA) provide for royalties, employment opportunities, contracting opportunities, scholarships and land access payments
- one Settlement, Consultation and Heritage Deed (for exploration) with the Nharnuwannga Wajarri and Ngarlawangga Native Title Claim Group (WA), which is represented by the Jidi Jidi Aboriginal Corporation. This provides for consultation meetings and heritage surveys
- two Heritage Agreements (for exploration) with Yulluna Native Title Determination (Queensland) and the Mitakoodi People (Queensland). These provide for native title payments and heritage surveys
- eight Heritage Agreements (for exploration) with the Yugunga-Nya Native Title Claim Group (WA), the Gingirana Native Title Claim Group (WA); and the Wajarri Yamatji Native Title Claim Group (WA). These provide for heritage surveys.

Sandfire has completed over 70 cultural heritage surveys across its projects in Australia while engaging with the relevant Native Title Groups. During the reporting period, we undertook eight cultural heritage surveys.

We hold bi-annual Liaison Committee meetings with the Yugunga-Nya people, who are the recognised Native Title Claim Group at the DeGrussa mine. These meetings are an open discussion on employment, education and training and commercial opportunities, as well any heritage and environmental concerns.

The Yugunga-Nya Scholarship Committee meet quarterly and the committee is comprised of one Yugunga-Nya representative, one independent representative and one Sandfire representative. A significant outcome for the year was the establishment of the Yugunga-Nya Scholarship Fund through an initial \$50,000 provided by Sandfire for application in FY2016. An application

form was circulated to the wider Yugunga-Nya community. There were no applications during the period.

We hold bi-annual working group meetings with the Gingirana people who are a recognised Native Title Claim Group on certain tenements adjacent to the DeGrussa Mine. These meetings are an open discussion on employment, education and training and commercial opportunities, as well any heritage and environmental concerns. We have established a scholarship fund for the Gingirana people, applications for which are reviewed by the trustee (currently the principal of the MDHS).

We also hold bi-annual meetings with the Jidi-Jidi people in relation to mutually beneficial employment, education, training and commercial opportunities on their claim group land on which explore or may explore.

# CASE STUDY NAIDOC WEEK CELEBRATIONS 2015 In July 2015, Sandfire supported the National Aborigines and Islanders Day Observance

Aborigines and Islanders Day Observance Committee (NAIDOC) week celebrations in Meekatharra.

Celebrations officially began on 5 July 2015 with the raising of the Aboriginal flag outside the local shire offices. This was a momentous occasion as it was the first time the flag had ever been raised at the shire.

The week-long celebrations included an opening ceremony with a traditional lunch for the whole community, various art, history and sporting events, and a youth and adult ball.

John McGuire, our Coordinator for Aboriginal Engagement, spoke at the opening ceremony and our financial contribution of \$11,000 supported hiring the town hall for the week, sporting facilities around the town, and two bands for the youth and adult ball. This allowed people from remote areas to come together to celebrate NAIDOC week.



# BUILDING A SAFE AND INCLUSIVE CULTURE

Sandfire is dedicated to maintaining the highest standards of safety, integrity, and quality in everything that we do.

This focus is fundamental to our work practices, our approach to sustainability and the environment, as well as our dealings with individuals and cultures. Sandfire actively encourages a high level of teamwork, leadership, and collaboration.

It is imperative that our people are fit for the work that they perform in a supportive, productive, and harmonious workplace. To achieve this we:

- focus on the health and wellness of our people
- attract and retain quality people who are appropriately skilled and fit to undertake assigned tasks
- commit to equal opportunity and a workplace free of discrimination, harassment and bullying
- ensure that all staff are treated with dignity,

courtesy and respect and recognise the importance of valuing the many differences in background, cultures and demographic characteristics of employees, including their family responsibilities

- train and develop our employees so that all staff at all sites are competent to carry out their work safely and to their full capacity
- encourage career development, supporting ongoing training, personal development and further education
- regularly review policies, procedures and practices.

We take pride in teamwork and believe that each employee contributes directly to Sandfire's growth and success. Our human resources management team maintains these standards and makes decisions based on objective, skills-based criteria.

#### **OUR EMPLOYEES**

Our total workforce at 30 June 2016 was approximately 517. This includes permanent contractor personnel who work at the DeGrussa Copper Mine. Our contractor workforce can fluctuate throughout the year depending on requirements for services, but on average is approximately 250 per month. Our direct workforce is 267, a 4.3 per cent increase on 30 June 2015.

Of this, 247 are full-time employees and 20 are casual employees. During the year, all of our part-time employees moved to a full-time contract. We employed 63 females, of which 52 were permanent employees, and 204 males, of which 195 were permanent.

We hired 63 new people in FY2016 and our total direct employee turnover was 52, which represents a turnover rate of 19 per cent. This is steady compared to FY2015. Half of our turnover is attributed to employees who were at the end of fixed term contracts. Please refer to our workforce data on page 67 of the Appendix.

Our DeGrussa workforce is predominantly fly-in fly-out from Perth. The nearest town to DeGrussa is Meekatharra, 150 kilometres south of our operation. For safety reasons we prefer workers from Meekatharra to drive in and stay on site for their roster, which prevents us from employing a residential workforce. Where possible we will consider candidates from local communities, subject to availability and skills, but the total numbers only make up a very small proportion of our workforce.



#### The Sandfire Values

During the year, we focused on raising visibility of the Sandfire Values to further embed these in our organisation. Our values are included in our general induction for employees and contractors to establish a clear foundation in what the culture of our organisation is and what is expected of our people.

Our employees are now measured against the Sandfire Values in performance and development appraisals. This allows the Sandfire Values to be continuously reinforced, and our employees are given guidance on what is expected from them and how they are demonstrating our values.

# **SANDFIRE VALUES AND BEHAVIOURS**







Operate and explore safely and with due care for the environment at all times.

- · Health and safety
- Training
- Sustain

- Ignoring unsafe acts or housekeeping
- Withholding important information regarding incidents
- Not reactive
- Turning the blind eye to safety issues



Co-operate with all of our communities for the mutual benefit of all.

- Giving feedback good & bad
- Prompt responses to all calls & emails
- Accepting responsibilityRespect for colleagues-
- Respect for colleagues good communication
- Lack of communication
- Saying 'this is just the way it is'
- Ignoring advice/people
- Second guessing people



SANDFIRE RESOURCES 2016 SUSTAINABILITY REPORT

Attract and retain the very best people for jobs at all levels.

- Generating new ideas
- Willingness to do things
- A positive attitude
- Embracing change
- Not being supportive of new ideas change
- Not being a team player
- Taking the best jobs for yourself
- Being unapproachable
- Lack of transparency



Reward performance (performance appraisal, options, bonuses).

- Doing what you say you're going to do
- Actively engaging task assignments
- Communicating problems early
- Providing feedback on delivery
- Making unrealistic timeframes
- Not giving support, inconsiderate of others
- Unclear goals
- Not listening, making one-sided conversations and promises



Place a high value on teamwork, respect and integrity.

- Respect others
- Work as one with the team
- Not cooperating with co workers and departments
- Not being supportive



Value technical excellence and innovation.

- Generating new ideas
- Challenge the status quo
   Encouraging others with
- Encouraging others with good ideas
- Not tunnel vision
- Not accepting sub standard
   Not willing to put now ideas
- Not willing to put new ideas forward
- Not being critical of others ideas



Place a high value on cost consciousness among our employees.

- Asset care
- Being aware of costs
- · Keeping within budget
- Not misusing assets
- Ordering unnecessary items that add no value to the operation
- Not aware of budget constraints

# Performance appraisals

We are committed to developing the capabilities and careers of our employees and rewarding good performance. During the year, we refined our performance and development appraisal to focus on the Sandfire Values. This provides a framework for managers and their team members to improve their work performance through:

- understanding what is expected of them and their team
- motivating people to work well and improve the quality of their work and performance
- providing face-to-face feedback and coaching against role expectations as a basis of improvement
- identifying training needs and providing appropriate opportunities
- providing fair assessments of work performance
- rewarding staff for good performance.

This year, all of our employees received a performance appraisal. Our employees and their manager met to discuss the achievement of their agreed objectives, and in accordance with our bonus scheme, eligible employees were rewarded for good performance.

# Training and development

Sandfire supports all employees to strive to achieve their full potential. We are committed to providing clear career development pathways and ensuring that all employees and contractors are skilled and educated in their individual responsibilities.

We encourage career development through continuing professional development, formal training, and opportunities for on-the-job experience. Managers and employees are jointly responsible for identifying individual development and learning opportunities through our performance management process.

We provide a wide range of training opportunities including on-the-job training, external training and relevant further education sponsorship.

In our last sustainability report, we made a commitment to record training hours. We put in processes to capture this data and have found no discrepancies between training hours by gender.

Our total training hours in FY2016 were 2,548 and each of our employees received on average 9.5 hours of training per year. Our managers have received a proportionately higher amount of training than non-managers, senior managers, and executives, which can be attributed to the leadership training, which continued during FY2016. Please refer to data tables in Appendix.

In 2016, 14 employees took advantage of our further education support, which allows employees to access sponsorship of up to 75 per cent of course fees as well as dedicated study leave.





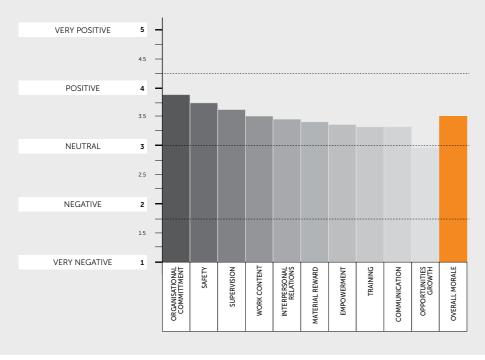
# **CASE STUDY EMPLOYEE ENGAGEMENT**

We are committed to optimising the wellbeing of our employees. In November 2015 we conducted our first employee engagement survey to measure job-related attitudes and overall morale and engagement levels — a 'health check' of our organisation.

All of our direct employees received a questionnaire and 75 per cent participated. The survey measured 10 job-related attitudes, providing an index of morale.

The results showed positive employee engagement (with a score of 3.6 out of 5) and that eight of the ten surveyed attitudes are favourable.

The survey identified areas what we can focus on to improve engagement. Poorer performing areas were communication and opportunities for career growth. We found that employees are looking for greater feedback from management on matters affecting their job. This includes feedback from performance appraisals, feedback from surveys of this type, and information on the Company's plans and achievements. The focus for the year ahead will be to improve communication and address real and perceived barriers for job advancement and promotion.



#### **DIVERSITY**

2016 SUSTAINABILITY REPORT

SANDFIRE RESOURCES

Sandfire values employee diversity in a dynamic and challenging work environment. We believe that a workforce with diversity of gender, age, religion, sexual orientation, language, ethnicity and cultural background has many benefits. It can:

- broaden the pool for recruitment of high quality employees
- support employee retention
- encourage greater innovation, enhanced work practices and productivity
- demonstrate socially and economically responsible governance practice.

At 2016, approximately 17 per cent<sup>2</sup> of employees in the resources industry are female (2015: 16 per cent<sup>3</sup>). Sandfire is proud to outperform this with 24 per cent (2015: 23 per cent) of our employees being female (please see data tables in Appendix). Last year we committed to improving the representation of women across our business. As priorities, we will continue to encourage female candidates when recruiting, and focus on the career development of female employees so that future promotion opportunities are available.

Sandfire offers equal remuneration for all our employees, reflective of the type of job, years of experience and the period for which employees have held their position. We conducted an internal pay audit at the end of 2014, which found that there was no gender bias based on role. Our remuneration balance table (available in Appendix - Data Tables) does not show a 1:1 ratio for all employee categories, largely because men had higher roles within each job category.

We will be conducting our second pay audit this year to investigate remuneration balance further.

#### In 2016 we:

- promoted the Women In Sandfire Group<sup>4</sup> and held our first networking event on site.
- appointed our first female Non-Executive Director, Ms Arnason.
- supported an inclusive culture that treats the workforce with fairness and respect by promoting Sandfire's Values, participating in Equal Opportunity Employment training and attendance at the Women In Mining Western Australia Summit.
- sponsored four women to participate in the Women in Mining Mentoring Program which supports mentees through career guidance.
- · accommodated flexible work arrangements for three positions.
- participated in the Workforce Gender Equality Agency's Public Report for the second year in a row. A copy of these reports are available on Sandfire's website in the Report Section.

Sandfire is currently in the process of creating a Diversity Committee whose members comprise a gender mix and representation from across the business to support the implementation of our FY2017 objectives and report on the objectives' progress and/or recommend changes to management.

Sandfire has taken a long-term view when setting these diversity objectives. For example, a key objective is to conduct a gender diversity status review (such as reviewing internal data and policies and benchmarking this to peer groups) to develop a three-year gender diversity plan.

This will enable Sandfire to set more targeted objectives in the future because we will be able to focus on the areas that we identify as requiring improvement. The FY2017 objectives were set in consultation with employees from all of the Company's business units and have been approved by the Group Management Team, Remuneration and Nomination Committee and Board of Directors.

Our goal for FY2017 is to establish the Diversity Committee whose members comprise a gender mix and representation from across the business to support the implementation of Sandfire's gender diversity objectives. These are to:

- conduct a gender diversity status review of Sandfire and develop a three-year gender diversity plan
- continue to exceed the resource industry average female participation rates
- support the intent of the Australian Institute of Directors (AICD) target<sup>5</sup> by maintaining or increasing the current percentage of female representation on Sandfire's Board
- develop and implement a mentoring and career development program for senior women for career progression, as part of the Sandfire's succession planning process
- promote and support mentoring and programs for all the women in the business
- promote an inclusive culture that treats the workforce with fairness and respect
- support the Women in Sandfire Group, and
- conduct Sandfire's second gender pay audit by December 2016 and implement actions to address any variances (where applicable).

<sup>2</sup> ABS May 2016 – Labour Force

- <sup>3</sup> ABS May 2015 Labour Force
- <sup>4</sup> Women in Sandfire Group is an internal group that was launched in 2015 to promote a diverse work environment and enhance our commitment to our people and unique culture. See our FY2015 Sustainability Report for more information.
- <sup>5</sup> The AICD's target is for 30 per cent female representation on ASX200 boards by 2018.





#### ABORIGINAL EMPLOYMENT

2016 SUSTAINABILITY

SANDFIRE RESOURCES

Sandfire recognises the employment potential and right to economic inclusion of the Aboriginal communities near our operations. We aim to take a flexible, innovative, and committed approach to Aboriginal employment. This lets us increase the economic participation of our Aboriginal stakeholders while accessing new talent and strengthening ties with the community.

Our focus during the year was to assist our contractors grow their Aboriginal workforce as they can offer a large variety of roles and represent a larger proportion of the workforce on our site. Our Aboriginal Engagement Co-ordinator has been instrumental in increasing our Aboriginal workforce, including contractor personnel, to 26 (from 19 in FY2015) by the end of the financial year. We directly employed four Aboriginal team members, and our contractors employed 26 (8 new hires), who work as underground and utility operators at the DeGrussa camp and water cart operators.

The Yagahong Alliance contract for Run of Mine Pad (ROM) Operations and site services began on 1 July 2015. The Yagahong Alliance is owned 70 per cent by Central Earthmoving and 30 per cent by the Yugunga-Nya People. The DeGrussa workforce consists of 18 people, of which five are Yugunga-Nya people. The contractor is currently training a further four Yugunga-Nya people.

The Yagahong Alliance had a great first year on site, without a recordable injury. Since starting the contract, the contractor has increased its scope of work with the incorporation of a larger loader, purchased by the Yugunga-Nya People, for ROM works. The other major achievement during the year was winning the site water cart contract. This, amongst other advantages, will allow the Yagahong to train new operators as a start for their career.



# HEALTH, SAFETY, AND WELL-BEING

# Safety Management and Performance

Safeguarding people and the environment is our highest priority, including identifying and managing risks, and investing in health safety and environment initiatives. Health, safety and environment (HSE) excellence is integral to achieving our objectives and targets, and part of great business.

We work collaboratively with our internal and external stakeholders, striving to apply innovative and sustainable solutions that continuously improve our practices. Our 'Don't Walk Past' philosophy depicts the workplace culture we work together for, one in which all workers are supported to make HSE the highest priority.

During the year, to further develop a positive, 'Don't Walk Past' safety culture, we focused on supporting our leaders by providing leadership training and coaching on leader safety observations, a process where leaders engage with personnel in the field to identify at-risk behaviours and acknowledge positive behaviours. This ensures that we have visible and engaged leadership for all our teams.

There has also been significant focus on better embedding our risk management process into our operations, ensuring identification of our principal hazards and effective implementation of our critical controls to address areas of concern.



Our senior leadership team all participate in our risk management assurance program, which monitors the effectiveness of critical controls. We continually improve this process through annual review, with progress reported to the Board of Directors.

There were no fatalities or serious disabling injuries or illnesses in FY2016. Our TRIFR per million hours worked was 7.1 against a target of 7.0 (compared to 9.5 in FY2015).

We also improved our LTIFR to 0.7, compared to 1.5 in FY2015 (industry average for FY2015 was 2.2).

We attribute our improved performance to:

- the continued development and progressive rollout of our Health and Safety Management System Standards and Hazard Standards
- continual review of our risk assessments and verification of critical controls
- additional improvements made to the assurance reporting process enabling better monitoring of risk, hazards and critical controls
- continued auditing of contractor health and safety management plans annually for existing companies and during the tendering processes to determine selection and award of contracts, and
- a review of the DeGrussa Authority to Work System, which identified system gaps and has been modified to improve understanding and compliance.

The 'Don't Walk Past' philosophy is built on the premise that the standard that you walk past or the situation you ignore, is the standard you accept.

The 'Don't Walk Past' philosophy highly visible at DeGrussa site

Our management strategy includes the use of proactive health and safety measures, so we monitor positive performance indicators (PPIs) to reduce hazards, incidents, and injuries. PPIs allow measurement of activities specifically undertaken to improve performance and can provide the information necessary to make decisions and meet due diligence and reporting requirements. These include internal reporting to managers, workplace inspections, risk assessments, and board reports.

Each area of the business has monthly targets. These KPIs include leader safety observations, audits, inspections and completed action tasks. In May and June 2016, we focused on refining our targets to be more quality rather than quantity-focused, and hope to see further improvements next year. This quality emphasis is to ensure we do not focus on completing high numbers of workplace inspections and safety environment check forms, for example, but instead review the quality of those completed and provide feedback to ensure continuous improvement of our systems.

We investigate any potential and significant incidents (as rated by the Sandfire Risk Matrix) using the Incident Cause Analysis Method (ICAM), with outcomes comprehensively reviewed and discussed at our Corporate HSEC meeting. This ensures trends or lessons learned are communicated and additional controls implemented as required.

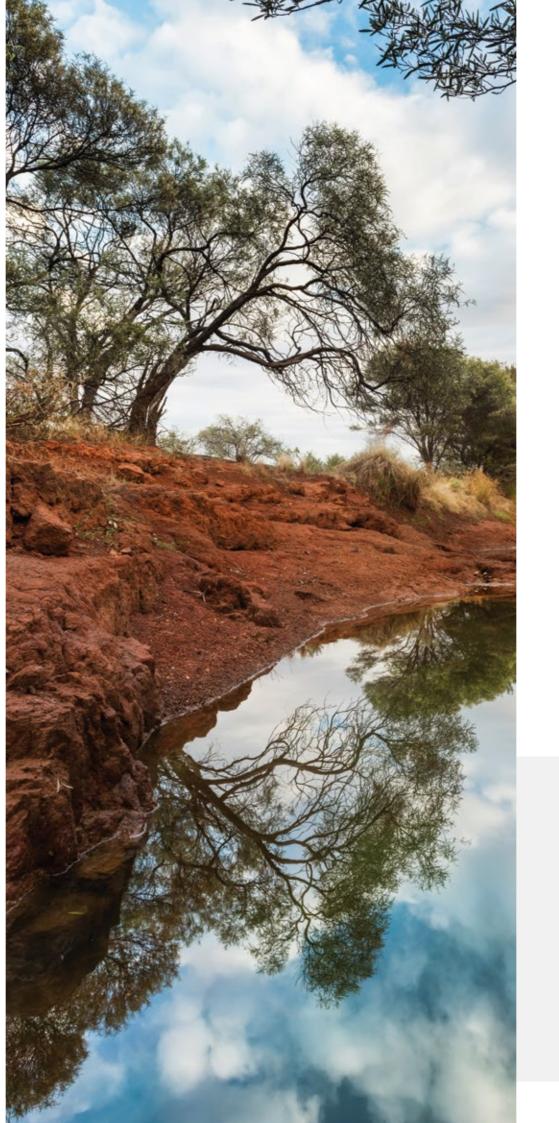
#### Health and well-being

SANDFIRE RESOURCES

It is important to us that all of our people are fit, healthy, and ready to perform their work. We try to minimise our occupational exposures as much as possible. Exposure to noise, vibration, dust, chemicals, heat, and psychological effects can bear high risks to the health and well-being of people who work on mine sites and exploration tenements.

We reviewed our occupational health and safety results and hygiene-monitoring program at our DeGrussa Mine site, which includes both mining and exploration personnel, to ensure our exposures to noise, dust, diesel particulate matter, radiation and mineral fibres exposures are being managed appropriately. The existing control measures were deemed effective. These include wearing personal protective equipment, housekeeping to reduce chemical and dust exposures, water suppression, exhaust filters, ventilation and maintaining our equipment in good condition. We report exceedances above regulatory limits to authorities and in publications and ensure actions are implemented to reduce exposure to the workforce. There were no exceedances above regulatory limits in the reporting period.

In 2016, we completed a qualitative health risk assessment for Regional Exploration and designed a monitoring program that commenced in July 2016 to cover all risk areas in that department.



# Safety and health communication and engagement

We have three health and safety committees at Sandfire. These are Corporate HSEC, the DeGrussa Health and Safety Committee and the Perth Office Safety and Wellness Committee.

Sandfire's Corporate HSEC manages our safety performance and ensures that it remains a priority. The committee comprises nominated management representatives from all business units. Committee meetings are held quarterly and attended by a minimum of three executives, six managers representing health, safety, environment and each of the four business units, one employee, one non-executive director on a rotational basis, and one external consultant. The key functions of the Corporate HSEC are to:

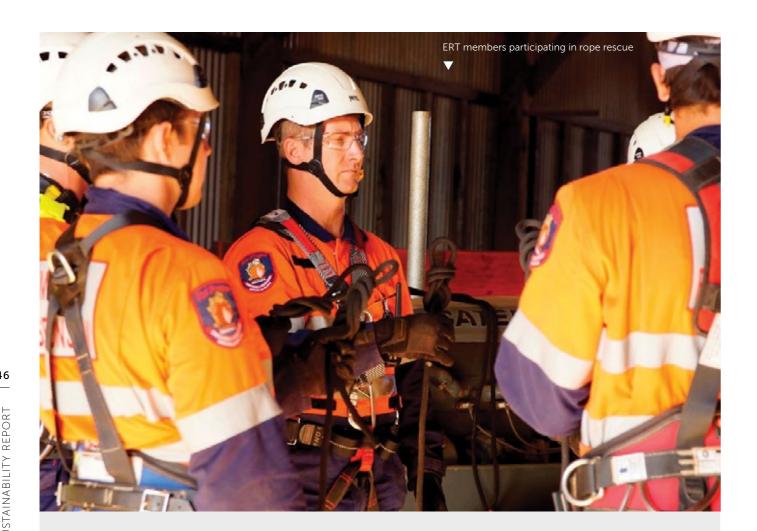
- endorse the annual HSE Plan
- approve and monitor HSE initiatives and strategies as appropriate
- endorse HSE Policies and Standards
- monitor HSE performance against approved objectives and targets
- review HSE data and incidents
- review compliance with approved HSE Standards, and
- make recommendations to the Board about rewarding and recognising safety performance.

The aim of both the DeGrussa Health and Safety Committee and the Perth Office Safety and Wellness Committee is to develop and promote measures for communication and cooperation between all levels of management and employees that ensure personnel and the environment are safe.

The DeGrussa Health and Safety Committee comprises a minimum of two managers and three employees as well as representatives from major contractors on site. The Perth Health and Wellness Committee comprises of employees from each business unit based in Perth.

# CASE STUDY MENTAL HEALTH SURVEY

We are committed to building and maintaining a workplace, culture, and environment that supports mental health. In July 2015, we conducted a voluntary workforce survey at our DeGrussa mine, which focused on the mental wellbeing of our employees. One hundred and twenty people responded to the survey, which asked people how often they spoke with their loved ones whilst on site, and to provide feedback on the facilities at site which assist with wellbeing. The results were very positive and most felt that Sandfire provided adequate facilities. The key request from personnel was for internet access in the camp and management are now considering options for this investment.



# CASE STUDY EMERGENCY PREPAREDNESS

SANDFIRE RESOURCES

Sandfire's Crisis Management Plan outlines the roles, responsibilities and processes that the Crisis Management Team (CMT) follow in the event of a crisis or emergency. Our sites have Emergency Management Plans (EMP) that outline the emergency response and reporting requirements to the CMT.

At DeGrussa, the Emergency Response Team (ERT) are trained and equipped to respond to emergencies ranging from injuries, fires, falls from heights and vehicle rescues. They are

also trained to assist with local community emergencies and other mine sites in the region. The team consists of an Emergency Response Co-ordinator, two Safety and Emergency Response Officers and volunteers, including employees and contractors from all departments on site. Sandfire increased the number of Mutual Aid Agreements with neighbouring mines site companies to three. Each company shares training opportunities and agrees to provide assistance in an emergency.



# CASE STUDY DEGRUSSA EMERGENCY RESPONSE TEAM

DeGrussa's ERT has increased its numbers to 35 dedicated members, who are trained in breathing apparatus, confined space rescue, firefighting, rope rescue techniques, vehicle extrication, first aid and hazardous materials response. The members train on a weekly basis to ensure they have the necessary skills and are able to respond with a high degree of preparedness. Sandfire has provided additional first aid training to a number of ERT members, who now hold a paramedic qualification, increasing DeGrussa's first aid response capability.

Sandfire has a close relationship with the local community, in particular the local emergency services. If an incident occurs near the mine, the DeGrussa ERT receives calls for assistance from the police, fire brigade, ambulance or the State Emergency Services located in Meekatharra. Due to DeGrussa's close proximity to the Great Northern Highway,

DeGrussa's ERT has responded to a number of vehicle incidents, missing person incidents, floods and fires.

Building on the relationships between DeGrussa and its three surrounding mines, ERT members from surrounding mines are invited to train at the DeGrussa emergency response training facility.

The DeGrussa emergency response training facility is equipped to the high level normally found in much larger locations. It allows ERT members to practice all aspects of mines rescue in a controlled environment, and includes a three-storey rope rescue training area, a confined space training area, a mock-up of an office area, and a simulated underground drive, including ground support and an escape way. The facility also has a state-of-the-art fire training system located on a purpose-built fire ground, and an air-conditioned classroom.





# **CASE STUDY RISK MANAGEMENT IMPROVEMENTS**

Our priority over the last two years has been ensuring our people understand hazard identification with a primary focus on fatality prevention. At Sandfire, we pay particular attention to identifying our principal hazards and understanding what our controls are for them. Each year, we review our risk assessments to ensure risks are identified and controls are relevant and appropriate.

Every morning at our pre-start meetings before work, we ask, "What tasks are being performed today where there is a principal hazard?" The work is discussed and the controls being implemented are reviewed for adequacy. This process is designed to complement our 'Don't Walk Past' philosophy, and to ensure all our personnel are given the tools to understand the risks and to help their workmates by being proactive in not walking past an unsafe condition.

This year we made improvements to our risk communication process, which included the rollout of an internally developed risk management awareness video. This provides an overview of the risk management process, the purpose of risk management and information about the tools used at Sandfire to manage risk.

In the video, Sandfire's top 10 principal hazards are described along with our assurance reporting process, which provides information to the business about the control of health and safety risks in the business. It is also the means by which Sandfire identifies and reports on critical health, safety and environmental issues. Next year, we plan to obtain feedback from the workforce on the changes to the risk management system and on whether they understand the risks and controls in their area.

# **CASE STUDY AUTHORITY TO WORK** AND ISOLATION IMPROVEMENTS

During our risk review process, we identified an opportunity to reduce our risk profile by redesigning our Authority to Work and Isolation (Zero Energy) systems within the Processing Plant. The redesign also encompassed current best practises from similar industries. Over 18,000 hours were invested in rolling out the new system, which also refreshed and upskilled employee knowledge.

# Authority to Work (ATW) improvements:

The ATW "Approval" process was remodelled to allow lower risk work to follow a simpler review and approval process (ATW Pathway), rather than all work going via one "Review and Approval" model. This reduced the requirement for resources to review, approve and sign low-risk work tasks.

A formal work review and sign off by the supervisor of the person doing or leading the work, prior to commencement of the work task. This ensures that the supervisor is fully aware of the scope of work, risks, and associated elements and that principal hazards and risks are thoroughly reviewed.

We simplified and shortened forms to manage specific elements of the ATW review and approval process, including expanded risk identification. This also reduced overall printing costs and paper waste.

# Isolation (Zero Energy) improvements:

Each item of equipment that needs energy removed or released (isolated) must have an approved Energy Control Instruction (ECI) prior to an isolation being performed.

Key Elements of an ECI include:

- isolation steps listed in the sequence that the isolation is performed
- equipment isolation point details are clearly listed to remove confusion
- the verification of "Zero Energy" method is listed (test for dead, visual change of
- three stage creation, review and approval process:
  - 1st person creates
  - 2nd person reviews (senior isolating person) and
  - 3rd person approves it for use (Production Co ordinator or higher).

All isolations are now independently checked by a second person to remove the risk of incorrect energy control.

All manual isolation valves have been fitted with stainless steel labels and unique isolation point IDs, to ensure accurate valve identification during isolation. These IDs are listed on the relevant ECIs. Over 900 valve ID tags have now been attached to valves.

Over 400 valves have been added or modified within the processing plant to ensure Zero Energy Verification of Zero Energy. This includes adding bleed valves, improving the reliability of isolation valves, and adding extra isolation valves to reduce isolation time.

An employee feedback survey will be completed in August 2016 to identify further improvement opportunities ahead of further modifying and implementing the system across the rest of DeGrussa.





# ENVIRONMENTALLY SUSTAINABLE OPERATIONS

Sandfire is committed to environmentally responsible management of our facilities and activities. We have committed to the following key goals to mitigate and manage our impact on the environment.

We aim to:

- maintain our statutory and social licence(s) to operate
- integrate sustainability into our business
- minimise adverse impacts on our environment
- leave a positive environmental legacy
- efficiently use energy, water and other resources while reducing waste
- implement our Mine Closure Plan, and
- maintain an Environmental Management System.

We use an Environmental Management System (EMS), supported by policies, management plans, standard work practices, and guidelines. The EMS aligns with ISO/AS14001:2004 Standard for Environmental Management. It is subjected to a continuous internal review process by site management and our Environment Department, and external independent review every two years. The

EMS will be reviewed in FY2017 to ensure alignment with the revised ISO/AS 14001/2015 which is being issued soon.

We meet statutory obligations by annually reporting on environmental management of our operation and exploration activities to regulators responsible for mines, water, and the environment in several licence jurisdictions.

#### MANAGING WATER

Water scarcity and access to fresh water are critical issues facing our planet as our climate becomes progressively dryer and warmer.

We use water in all aspects of our operations; to mine and process our copper ore, to suppress dust caused by our mining activities and we rely on access to clean water for our workforce. Our DeGrussa operation is located in an area with no permanent surface water and water is sourced from

groundwater aquifers. Our ability to operate in this environment is dependent on access to and efficient management of this water.

DeGrussa is unique in that we have access to an aquifer that provides more water than we require. Sandfire provides strong water stewardship to understand and maximise the efficient use of this resource. Impacts to groundwater abstraction and usage at DeGrussa are managed in accordance with our Water Management Standard, operation-specific Groundwater Management Plans and regulator approved operating strategies. The use, monitoring and reporting of groundwater resources at DeGrussa is in accordance with statutory requirements through the state Department of Water and the Department of Environment Regulation.

Water at DeGrussa has historically been sourced from two aquifers; one is a fractured rock aquifer that is considered renewable; the other is a shallow aquifer, close to the Gascoyne River, that is non-renewable. In FY2016, processing water has been

sourced from underground dewatering following the identification of a substantial sheared dolomite aquifer during underground operations which now provides an excess supply for the processing operations. This has resulted in the shallow aquifer being maintained and operated as a back-up supply preserving the non-renewable resource. Our focus for the next year will be to increase our understanding of the underground mine aquifer through further studies and for the construction of an underground pump station to handle potential increase in water generated from mining activities.

We aim to reduce the intake of water from the aquifers by maximising the recycling of water and we aim to reuse water where possible. Water is reused in our copper concentrate processing facility and for dust suppression on our site. Where we have excess water, discharge to the environment is managed through water settling and cleaning initiatives to ensure the water quality is such so as to minimise impacts on the environment and ecosystem.





We continually monitor our water balance, which allows us to assess our overall use of primary ground water, recycled and re-used water, process water and the volume of discharge water. Monitoring bores are installed at both DeGrussa bore fields to measure potential drawdown impacts and to refine dewatering models that form part of the water balance.

We engage with groundwater specialists to assist us to maximise our water efficiency and to manage the risks associated with drawing water from underground aquifers. We monitor the quality and quality of groundwater near the DeGrussa operation, potential downstream impacts to the Gascoyne River system and adjacent pastoral lease supplies, and to ensure drawdown is not affecting vegetation communities or fauna habitats in the greater Doolgunna area.

2016 SUSTAINABILITY REPORT

SANDFIRE RESOURCES

During FY2016, our DeGrussa operations extracted 1,604 megalitres (compared with 1,956 megalitres in 2014-2015 and 1,382 megalitres in 2013-2014) of groundwater from both aquifers (including underground dewatering). The water extracted remained comparable with FY2016 and is due to an increase to sustained dewatering from the underground mine.

Recycling of water at DeGrussa is achieved principally by the recirculation of water removed from the tailings storage facility and returned to the processing circuit. During 2015/2016, 635 megalitres of water was recycled for further use within our processing plant representing 39 per cent of the water extracted.

Excess water from our DeGrussa underground mine was either used in the processing circuit or was returned to the environment via an ephemeral watercourse located immediately north of the integrated waste landform. Water that has been in contact with mining activities has the potential to impact the environment, therefore the quality of the water is closely monitored to ensure it is within compliance limits. In accordance with our discharge permit, a total of 224 megalitres (compared with 1,078 megalitres in 2014/2015) was discharged to the ephemeral watercourse, after undergoing primary treatment through a series of settlement ponds.

In 2016, we identified that water discharged to the ephemeral watercourse has resulted in minor sedimentation at the discharge point, and in some localised mulga tree deaths stemming from saturation of the ground surface. Investigation and monitoring is ongoing and mitigation plans are being developed to manage these impacts in consultation with regulators.



# ▼ Water use at DeGrussa

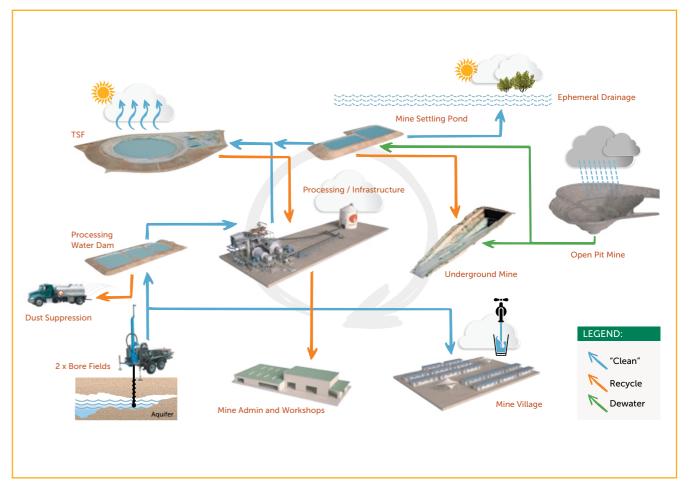


Table 1: Water Use Footprint

	2012/13	2013/14	2014/15	2015/16
Water extracted from Borefields (ML)	1,232	777	599	1,300
Groundwater renewable (ML)	1-	-	80.1	309.6
Groundwater non-renewable (ML)	-	-	1,876	1,295
Water extracted from dewatering of mining areas (ML)	121	605	1,357	963
Total water extracted (ML)	1,353	1,382	1,956	1,604
Reclaimed water used in processing (ML)	0	440	532	635
Percentage of water reclaimed (TSF)	0%	32%	27%	38%
Water discharged to the environment	35	281	1,078	224
Water consumption (kL per <sup>3</sup> tonne of ore processed)	0.74	0.44	0.14	0.20

# **ENERGY, CARBON AND** RENEWABLE ENERGY GENERATION

Consumption of energy has environmental and operating cost implications for the business. Impacts of energy consumption, such as release of greenhouse gas emissions and other air pollutants, can in part be minimised through improved energy use efficiency.

DeGrussa's energy use during FY2015/2016 was 1,617,719 gigajoules which is 14 per cent more than the FY2014/2015 reporting period. Purchased diesel was the dominant energy source at DeGrussa in FY2015/2016. Our solar power facility (see the solar facility case study) was in full solar production from May, and energy from renewable sources accounted for approximately eight per cent of energy usage at DeGrussa over May and June 2016. It is projected that the solar power facility will provide twenty per cent of DeGrussa's total energy requirements over the coming year.

The overall increase in energy use is related to the changes in the mining depth (greater haul distances and increase power to supply ventilation to the underground) and the nature of ore being milled (physically different hardness).

2016 SUSTAINABILITY REPORT

Sandfire seeks to improve energy efficiency where clear value to the business can be demonstrated. At the end of the reporting period we commenced a study to identify energy efficiency opportunities. This will be undertaken in FY2017 aligning with reporting and monitoring reviews.

Sandfire's total greenhouse gas emissions for 2015/2016 were equivalent to 86,649 tonnes of carbon dioxide and were a 13 per cent increase on last year and as indicated above this is related to the changes in mining and requirement to provide additional ventilation as the mining depth increases. Through our 2015 Carbon Disclosure Project (CDP) reporting we made a commitment to reduce our emissions by 10 per cent compared to our FY2013 base year. The commissioning of our Solar Project was later than anticipated which precluded us from achieving the emissions reduction. 99 per cent of emissions were produced on site with approximately 80 per cent of emissions associated with the generation of electricity to run the concentrator, ancillary equipment and other infrastructure (including offices and the accommodation village) at DeGrussa. The remaining 20 per cent of emission stem from sources including the mining fleet, processing reagents and explosives.

We have also made a commitment in our CDP submission to investigate implementing an internal price on carbon within two years. The initial work will be in determining what this price will be in lieu of a signal from the Australian Government and how this can be applied within the business.

During the reporting period, we met our ongoing commitments under the National Greenhouse and Energy Reporting Scheme and National Pollutant Inventory, and we continued our participation in the Carbon Disclosure Project.



Table 2: Energy consumption

	ENERGY CONSUMED TOTAL	ENERGY CONSUMED NET	ENERGY PRODUCED AT POWER PLANT	TONNAGES PROCESSED	ENERGY (TOTAL) PER TONNE ORE PROCESSED
	GJ	GJ	GJ	tonne	GJ/tonne
2012/13	1,158,983	950,879	208,104	1,172,295	0.9886
2013/14	1,357,773	1,052,881	304,892	1,493,040	0.9094
2014/15	1,422,111	1,103,476	318,635	1,465,523	0.9704
2015/16	1,617,720	1,246,933	370,786	1,573,000	1.0280

Table 3: Fuel consumption

	2013/2014	2014/2015	2015/2016
Fuel consumed (KL)	22,041	23,402	25,299
Fuel consumption rate (KL/MWh)	0.25	025	0.25

Table 4: Greenhouse Gas Emissions

	GHG EMISSIONS					METRIC
	Scope 1 emissions	Scope 2 emissions	Scope 3 Emissions	Total	Tonnage processed	GHG emissions/ tonne ore processed
	(t CO2 e)	(t CO2 e)	(t CO2 e)	(t CO2 e)	t	t CO2 e/t
2012/13	65,994	137	0	66,131	1,172,295	0.0564
2013/14	73,133	141	0	73,274	1,493,040	0.0491
2014/15	76,641	139	0	76,780	1,465,523	0.0524
2015/16	86,495	154	0	86,649	1,573,000	0.0551

# CASE STUDY SOLAR FACILITY

Sandfire is a first-mover in Australia for renewable energy use in an off-grid mining application. We believe this is the way to deliver real reductions in the level of greenhouse emissions while reducing operating costs. The use of solar at DeGrussa makes this a reference site for the use of renewables and sends a strong message to the mining industry about the opportunities to adopt renewable energy at remote mine sites.

The consortium of parties involved in this solar project have now constructed the largest integrated off-grid solar and battery storage facility, in Australia, covering 20 hectares.

The project comprises 34,080 solar photovoltaic panels with a single-axis tracking system mounted on 4,700 steel posts. This enables the panels to track the sun during the day, improving the plant's overall performance. The panels are connected via an extensive network of low-voltage, high-voltage, and communication cables to a 6 mega watt lithium-ion battery storage facility, and the existing 19 mega watt diesel-fired power station at DeGrussa.

The solar facility's integration with the diesel-fired power station, continues 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.

The DeGrussa Solar Project is expected to

SANDFIRE RESOURCES

supply around 20 per cent of the annual power requirements of the DeGrussa Copper Mine and cut its emissions by around 12,000 tonnes of carbon dioxide a year, a reduction of around 15 per cent based on its reported emissions for FY2016.

The project has generated economic benefits by employing 250 people over the course of construction, 90 per cent of whom were sourced from Western Australia, and sourcing 23 per cent of the required equipment in Australia. Commissioning commenced in April 2016 and the system will be optimised over the next twelve months. The solar facility was in full solar production in May and June and provided eight per cent of the site power demand, saving approximately 180,000 litres of diesel per month.

Solar energy production was reaching approximately 5 mega watt at the end of the reporting period, which is winter in Western Australia. The summer months will see the solar production ramp up to full capacity. There have been no unplanned outages from the facility during the operation phase, showing that solar power being integrated with a remote site diesel fired power station can viably service a highly critical operation where safety and continuity of operations are paramount.

To optimise the solar facility integration with the diesel power station we will implement several initiatives over the next twelve months:

- The minimum loading of the diesel generators will be reduced currently they have been running at 70 per cent minimum loading of site continuous rating. The initial target is 50 per cent minimum loading with the intent to reduce this further if they are no adverse effects to the power station or the continuous supply of power to the site. The main risk is glazing of diesel generators that are run at low load.
- The amount of available spinning reserve will be reduced, currently spinning reserve is set at 100 per cent of PV plus 1.6 mega watt. This has been set to ensure the diesel power station would be able to recover if we suddenly lost 100 per cent of the photo voltaic power and at the same time the site load increased with no trips experienced. We are looking to reduce the spinning reserve to 85 per cent plus 1.6 mega watt following some final testing.
- Utilise the batteries 24 hours a day. Currently the batteries are only used when solar is being produced to provide spinning reserve and then are set to sleep mode. The batteries have the capability to provide frequency control, ramp rate control, power factor improvements, spinning reserve and assistance in black starts. A trial will be held over a couple of months to better understand the benefits these batteries can provide.

• The amount the battery can support the solar production depends heavily on the time it takes the diesel generators to start up and synchronize. The quicker this process happens the more battery capacity available to support the solar production. An investigation is now underway as to what can be done to ensure the diesel generators start up and synchronize as fast as possible without causing damage to the diesel generator or reliability issues for the continuous supply of power to site.

# **HIGHLIGHTS**

**Reduction in carbon emissions** – estimated 12,000 tonnes per year

•••••••••••

Reduction in diesel required for power – estimated 5 million litres per year

Average power delivered by solar during daylight hours – 50 per cent (6 mega watt of a total of 12 mega watt for site)

**Peak power** delivered by solar during daylight hours – 68 per cent (8 mega watt of a total of 12 mega watt for site)

Commissioning commenced mid-March – power generation successfully ramped up to full capacity in May 2016



#### WASTE

SANDFIRE RESOURCES

We are committed to effective waste management and aim to reduce the amount of waste generated by our operations where possible. We reuse and recycle waste wherever we can to reduce the impacts to the environment.

Waste generated at our DeGrussa site includes mine and processing waste, hazardous and non-hazardous waste, domestic solid and liquid wastes, equipment and vehicle wash-down water, general mine site waste, and waste chemicals including hydrocarbons, oils and lubricants. Some wastes are classified as controlled waste and these are managed in accordance with relevant statutory requirements.

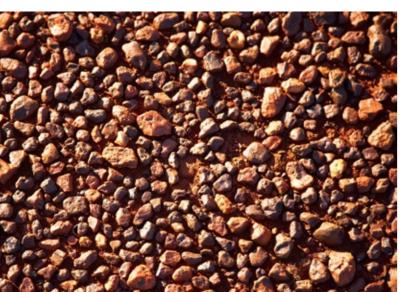
# Tailings and Waste Rock Management

Waste rock and tailings are generated through our mining and processing activities. We manage this critical part of our operations by our mining proposal approvals, our tailings storage facility operating manual and the waste rock management plan, part of our wider environmental management performance standards and environmental management system.

Over the reporting period, our DeGrussa operation produced 641,377 tonnes of waste rock and 684,888 tonnes of tailings.

The potential impacts of ineffective waste rock management at DeGrussa which we manage include:

- inadequate construction and monitoring of the integrated waste landform (IWL), resulting in higher post-mining rehabilitation and closure liabilities
- ineffective rehabilitation could result in accelerated erosion and degradation of the landform and discharge of sediment into surrounding drainage lines
- incorrect characterisation of the materials placed in the waste dump could lead to formation of acid mine drainage through leaching of potentially acid forming (PAF) materials, and
- disposal of PAF materials in incorrect encapsulation could result in leaching of acid forming materials subsequently impacting on groundwater.



# Tailings Storage Facility (TSF)

Our tailings storage facility (TSF) is located within the waste rock dump as part of an integrated waste landform (IWL). This means that the TSF will be fully encapsulated inside the waste dump when the mine is closed. Waste rock generated from the surface mining operation was used to construct the IWL, this rock was classified as being non-acid generating material.

The TSF was designed and constructed by Sandfire to best practice with a thick clay liner on the base and sides and a base high-density polyethylene (HDPE) liner sealing to contain any possible seepage. We have a water recovery decanting channel in the TSF to recycle water for the processing circuit, which helps us reduce the use of primary aquifers as much as possible.

This return/recycled water provides between 20 to 50 per cent of required water for processing. The remainder comes from underground dewatering (40 to 70 per cent) and a minor amount of aquifer water (5 to 20 per cent) to supplement the feed.

During the year there was a spill of an estimated 4,000 litres of process water in the return line from the TSF to the processing plant. The spill occurred from a burst pipeline that had come apart at the welded joint and allowed process water to breach a damaged bunded area onto disturbed ground. This triggered our site control limits for significant incidents. The area was sampled and results indicated no long term impacts or issues. An investigation was undertaken to determine the root cause of the incident and to put in place mechanisms for preventing future occurrences. The entire TSF flow pipelines were inspected immediately with four repairs undertaken. The incident was reported to the Department of Environmental Regulation in accordance with our regulatory requirements. Additional improvements are planned.

Independent engineers inspect the TSF annually for integrity compliance to the operating strategy and provide a formal report to regulators as required.



# Waste Rock Use and Stockpiles

To prevent or minimise the potential environmental impacts associated with waste rock and tailings disposal, we implement a number of strategies during project development and operations, led by our environmental policy and our waste rock and tailings management standards. In addition, we consider mine closure and rehabilitation requirements for the mine allows for proactive forward planning and design to further improve closure outcomes and minimise costs. They include geochemical characterisation of PAF materials, resource modelling, selective handling and encapsulation of PAF waste rock, disposal of tailings into our specially designed and engineered TSF, and linking operational planning to closure management objectives.

Most of the waste rock from underground was replaced as underground backfill, with the

remainder placed in the IWL or used for the construction of mine road infrastructure. In addition approximately half the process tailings waste was placed in the engineered surface tailings facility (TSF) and the remainder of tailings were used as mix to provide paste to the underground backfill.

Of the total tonnage of waste rock produced during the reporting period, 167,734 cubic metres is considered to be PAF. Most of the waste rock (63 per cent) regarded as potential acid forming is disposed of in clay-lined encapsulation cells within the Integrated Waste Landform. The remainder is placed in the underground mine workings as backfill. 10 per cent of the total tonnage of waste rock produced during the year is considered PAF.

#### MANAGING NON-MINERAL WASTE

We are committed to reducing the negative impacts of waste by minimising waste generation, correctly identifying and segregating waste streams, recycling and reusing waste, minimising the risk of waste soils, and ensuring the safe disposal of waste.

Ineffective disposal of domestic waste has the potential to contaminate the surrounding environment and negatively impact native and pest animals as well as water supply. Inappropriate disposal of contaminated soil, water and materials can contaminate local and regional groundwater and surface water resources. Unsuitable containment of waste also has potential for windgenerated litter of the surrounding environment. Decomposing putrescible waste materials have the potential to generate odour, a negative impact on general amenity at the site, and a loss of resources can occur through incorrect segregation of waste or lack of recycling.

We produce a range of non-mineral wastes in mining and processing including oils, greases and other hydrocarbon waste, chemicals and solvents, scrap steel, tyres and domestic rubbish. We aim to reduce the generation of waste and, where possible, have materials recycled and reused. Where that is not possible, we dispose of waste in a licenced on-site putrescible landfill facility.

Waste that is characterised as hazardous is taken off site. The generation of hazardous waste at our DeGrussa operation is summarised in Table 5. Waste oil was the dominant component of this waste, with 179,192 litres generated and 100 per cent of this was recycled at off-site, approved recycling facilities.

A conceptual assessment for the installation of high temperature incineration unit(s) for disposal of organic and hydrocarbon waste products on site was undertaken during the year. The results indicated the payback period to be beyond the planned life of mine and overall cost exceeded budget capacity during this current economic downturn.

During the year we implemented a 'cook to order' system on our DeGrussa site. Since its implementation, the waste and cost of providing meals has decreased. In FY2017, the food wastage will be assessed to quantify the impact this program in reducing how much waste is disposed of.

Table 5: Hazardous Waste Generation and Disposal Offsite FY2016

HAZARDOUS WASTE	AMOUNT OF WASTE CREATED	AMOUNT OF WASTE DISPOSED	UNITS	DESTINATION/ DISPOSAL METHOD
Oil	179,192	179,192	L	Recycled at approved facility
Tyres	453.0	453.0	Count	Recycled at approved facility
Grease	8,670. 0	8,670.0	L	Disposed at an approved facility
Batteries	166.0	166.0	Count	Recycled at an approved facility
Hydrocarbon Contaminated Waste	146.2	146.2	m <sup>3</sup>	Disposed at an approved facility

The generation of non-hazardous waste generated at our DeGrussa Operation is recorded in Table 6 during the reporting period, comprising mainly scrap steel and general rubbish. 100 per cent of steel was sent off-site for recycling.

Table 6: Non-hazardous Waste Generation and Disposal FY2016

NON-HAZARDOUS WASTE STREAM	AMOUNT OF WASTE CREATED	AMOUNT OF WASTE DISPOSED	UNITS	DESTINATION/ DISPOSAL METHOD
General Waste to Off Site Landfill	2370.0	2370.0	m³	Landfill
General Waste to On Site Landfill	6449.0	6449.0	m³	Landfill
Glass	54500.0	54500.0	L	Recycling
Plastic	2.77	2.77	Т	Recycling
Cardboard	26.1	26.1	Т	Recycling
Printer Cartridges	108.1	108.1	kg	Recycling
Steel	1706.1	1706.1	m³	Recycling
Aluminum	4.53	4.53	Т	Recycling

# **CASE STUDY RECYCLING AT DEGRUSSA**

2016 SUSTAINABILITY REPORT

SANDFIRE RESOURCES

Recycling of domestic and industrial waste is a major focus of the DeGrussa waste management program and a dedicated recycling facility is used to process glass, paper, plastic, cardboard and aluminium cans. Throughout the DeGrussa operations, recycling stands have been established to facilitate segregation at the source of the key domestic waste streams. In 2012, we eliminated disposable lunchboxes and paper cups from DeGrussa. To date, in excess of five million disposable lunch containers have been removed from DeGrussa's waste stream with commensurate cost savings, reduced disposal volumes and a significant reduction in windblown waste across the project area. Prior to

this initiative, approximately 50 to 80 per cent of all wind-blown waste collected was either disposable cups or disposable lunch containers.

The DeGrussa industrial waste recycling program includes scrap steel, rubber poly pipe, batteries and pallets.

Sandfire's contractor management process requires contractors to adopt a cradle-to-grave approach to waste management at our DeGrussa operation, where any waste generated must be removed to an appropriate off-site facility. This was successfully applied to the recently completed DeGrussa Solar Power project.

# **CASE STUDY**

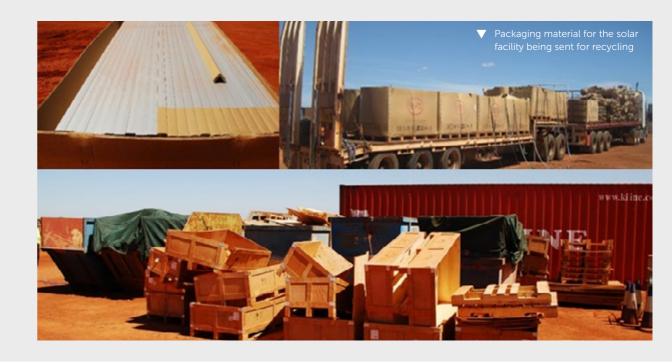
# CONTRACTOR ENGAGEMENT WITH WASTE MANAGEMENT FOR THE DEGRUSSA SOLAR PROJECT

As part of our contract management system, contractors are required to be responsible for management and removal of their waste from site. During the solar facility project evaluation we identified that there would be a large volume of cardboard, wood and other materials waste that we could that make a commitment to recycle where possible.

Waste generated and recycled during the project construction was mostly from 1,312 module boxes delivered to site and included:

- 33 tonnes of cardboard, and
- 133 tonnes of wood pallets and packaging.

Additional waste from general construction activities included steel, paper and plastic. All recycled waste was been delivered to the offsite recycler for sorting and processing.





#### LAND AND BIODIVERSITY MANAGEMENT

The manner in which we manage land and its biodiversity strongly influences our reputation with our local communities and other stakeholders. This has implications for future access to land and, therefore, our licence to operate. It is essential that we both minimise and account for our total land use including our disturbance and rehabilitation for future use by others.

The land use impacts of Sandfire's operations are managed in accordance with our Environmental Policy, Environmental Management System, Biodiversity Management Plan and our Landform and Rehabilitation Standard. Sandfire recognises that successful management of land must occur throughout both the exploration and operational phases of the mine life cycle, through to mine rehabilitation and closure phases. Rehabilitation of disturbed areas is an expectation of regulators for successful closure and relinquishment of sites. Progressive rehabilitation that is integrated into mine plans can help to efficiently reduce the potential scope and cost of rehabilitation required at closure.

The DeGrussa Mine is located within an area that has been historically degraded by grazing pressures on the former Doolgunna Pastoral Lease, which is also nominated as a future conservation zone by the State. During the project planning phase we undertook comprehensive studies to understand the flora and fauna of the region, the impacts our operations can have to biodiversity and how we can protect the local ecosystem. Our objective is to manage impacts to native flora and fauna and identify and mitigate potential risks to native wildlife, their associated habitats and the ecosystem as a whole. Our program of work to manage biodiversity involves routine vegetation monitoring and eradication of potential weed species at DeGrussa, we perform weeds and seeds inspections on all vehicles coming onto site to ensure they are clean of debris to prevent introduction of weeds. We participate in stock round up and regional feral dog baiting programs in collaboration with the Department of Parks and Wildlife (DPaW) and pastoralists on an annual basis to protect native wildlife in the area and to assist with regeneration of vegetation within the former Doolgunna Pastoral Lease.





# Mine closure planning

We developed and received regulatory approval of the DeGrussa mine closure and rehabilitation plan in 2014. We are undertaking a required triennial review of the mine closure plan, and will align with updated 2015 Mine Closure Guidelines issued by the Western Australian, Department of Mines and Petroleum. The Mine Closure Plan will address closure issues and opportunities all the way through to current planned closure of DeGrussa in 2021, with planned development of an implementation plan 2017.

Stakeholder consultation forms a major component of our mine closure planning process. This year we have consulted with the Department of Water in regards to borefield infrastructure, Three Rivers Pastoral Station regarding infrastructure and post-closure activities, and the State Department of Parks and Wildlife in respect to closure activities located on the former Doolgunna Pastoral Lease. The Department of Parks and Wildlife visited DeGrussa in August 2016 to discuss mine closure expectations for the long-term management and closure of the site as part of continued stakeholder engagement relations.





# CASE STUDY MINIMAL IMPACT AIRCORE DRILLING IN REGIONAL EXPLORATION

We developed a minimal impact aircore (AC) drilling methodology as a result of listening to the concerns of landholders. Our exploration activities are often on pastoral land and we strive to ensure that the social licence our stakeholders grant us goes beyond acceptance of our presence towards trust in the way we operate. Through discussions with our stakeholders we understood that there was a sense of apprehension in allowing exploration companies onto their ground. This was due to negative experiences of poor environmental stewardship by historic mineral exploration.

To us, this heralded a need for change, and the concept of minimal impact drilling emerged.

In partnership with our AC drilling contractor, Bostech Drilling Australia Pty Ltd, we developed a system for AC drilling which results in a near zero environmental impact. We were able to reduce the residual footprint of the drill site to just the 20 centimetre drill hole collar itself by introducing specialised equipment to retain drill cuttings, embedding procedures to prevent spillage and training our staff and contractors to implement these procedures.

Together we developed a system that allows us to collect everything coming out of the drill hole and capture it without touching the ground. One-thousand-litre pods (and a small mud pump) are used to take water outflows beyond the capacity of the drilling rig. This, combined with bunded plastic sheeting placed under the rig before an overflow occurs, means everything is captured and nothing touches the ground.

All samples collected in plastic bags are then placed in plastic bales to eliminate sample spillage and are disposed at a licensed facility.

There are many benefits of minimal impact drilling:

- eliminating contamination and disturbance of the ground
- reducing the amount and cost of rehabilitation required post drilling
- demonstrating best practices increases our credibility with regulators and other local stakeholders, and shows commitment to strong environmental stewardship.

The owners of both properties where we used this system approved of the rehabilitation and have allowed us to return to their properties to carry out next-stage geophysical work during the sensitive seeding period. This is an outcome that would not have been possible if not for the trust developed by the careful consideration and mitigation of the impact of drilling on the land.

This AC drilling procedure is now being utilised across all sensitive areas in regional exploration. Primarily these are cropped paddocks where any disturbance can negatively impact the following season's crop. We are working on ensuring that other drilling types utilised in these sensitive areas attain the same low level of impact. To that end we are currently trialling new technologies (solids removal units) on our Queensland projects to minimise and eventually the use of sumps.



# AWARDS AND RECOGNITION



# **GLOSSARY**

TERM	DEFINITION
Aircore (AC) drilling	A drilling technique that forces compressed air down a drill hole to lift rock chips to the surface.
C1 cash operating cost	The costs of mining, milling and concentrating, onsite administration and general expenses, property and production royalties not related to revenues or profits, metal concentrate treatment charges, and freight and marketing costs less the net value of the by-product credits.
Group Management Team (GMT)	Comprised of the following members; Chief Executive Officer, Chief Operating Officer, Chief Financial Officer, Chief Commercial Officer and Chief Exploration and Business Development Officer
High density polyethylene (HSFD)	A polyethylene thermoplastic made from petroleum. This has been used to line the Tailings Storage Facility.
Integrated waste landform (IWL)	The waste rock dump and the tailing storage facility are one facility known as an integrated waste landform. The waste rock dump surrounds the tailings storage facility.
Lost time injury	An injury which results in the person being declared (by a medical practitioner) as being unfit to perform their normal duties for a shift, after the shift in which the injuries were sustained.
Lost time injury frequency rate (LTIFR)	The total number of lost time injuries (for the 12 month period/ total hours worked for the 12 month period) multiplied by 1,000,000 hours.
NAIDOC	NAIDOC stands for National Aborigines and Islanders Day Observance Committee. Its origins can be traced to the emergence of Aboriginal groups in the 1920's which sought to increase awareness in the wider community of the status and treatment of Indigenous Australians.
	NAIDOC Week is held in the first full week of July. It is a time to celebrate Aboriginal and Torres Strait Islander history, culture and achievements and is an opportunity to recognise the contributions that Indigenous Australians make to our country and our society.
Potentially acid forming (PAF)	A characterisation of waste rock that has the potential to be acid forming.
Principal hazard	Principal hazards are potential fatality risks.
Significant near miss	An unplanned event that did not result in significant injury, illness or damage, but had the potential to do so. Significant is defined as having an actual or potential risk rating of > 18 in Sandfire's Risk Matrix.
Tailings	Tailings are finely ground rock and mineral waste products of mineral processing operations.
Tailings storage facility (TSF)	Purpose built retaining embankment to store tailings for the life of mine.
Total recordable injury	The combination of fatalities, lost time injuries, restricted work injuries and medically treated injuries.
Total recordable injury frequency rate (TRIFR)	The total number of recordable injuries (for the 12 month period/ total hours worked for the 12 month period) multiplied by 1,000,000 hours.
Volcanogenic massive sulphide (VMS)	A type of metal sulphide ore deposit which has been created by volcanic-associated hydrothermal events in submarine environments. Most significant VMS deposits occur in clusters that define major sources of copper, zinc, lead etc.
Waste Rock	Waste rock is material that contains minerals in concentrations considered too low to be extracted at a profit.

# **GRI CONTENT INDEX**

# **APPENDIX - DATA TABLES**

Please see our website for the GRI Content Index.

http://www.sandfire.com.au/images/GRI\_content\_index\_2016.pdf

Please see our website for the Data Tables appendix. http://www.sandfire.com.au/images/data\_tables\_2016.pdf



