

# **Quarterly Activities Report**

for the period ended 31 December 2010

#### About Iron Road

Iron Road Limited was established to capitalise on the growing global demand for iron ore. Iron Road has a strong project portfolio including a development stage project with excellent infrastructure, complemented by early stage projects.

Road's principal Iron project is the Central Eyre Iron Project (CEIP) in South Australia. A prefeasibility study is underway currently examining the viability of a mining and beneficiation operation initially producing 10Mtpa of iron concentrate for export. Test work indicates that a coarse-grained, high grade, blast furnace quality concentrate may be produced at a grind size of -106 micron grading 67% iron with low impurities.

The Company has a multidisciplinary Board and management team that are experienced in the areas of exploration, project development, mining, steel making and finance.

ASX Code – IRD

PO Box 2806 West Perth 6872 Western Australia

Tel: (08) 9200 6020 Fax: (08) 9200 6021 Email: admin@ironroadlimited.com.au Web: www.ironroadlimited.com.au Iron Road continued its high level of activities aimed at advancing the flagship Central Eyre Iron Project, which is currently under prefeasibility study for a significant magnetite concentrate export operation. A major drilling programme concluded at Murphy South during the Quarter and compilation of a mineral resource estimate report covering this area is underway. The Company secured a 51% interest in the iron rights at the Gawler Iron Project.

## Highlights

### **Central Eyre Iron Project**

- Completion of Stage V drilling programme mid-December 2010 comprising 65 holes for 22,645m at Murphy South within the Warramboo project area.
- Commenced a JORC mineral resource estimate report for Murphy South by Coffey Mining completion expected early February 2011.
- Metallurgical test work indicates excellent amenability of Murphy South ore to *Dry* Low Intensity Magnetic Separation (DLIMS).
- Exceptional thickening and HBF (horizontal belt filter) filtration tests indicate reduced capital and operating costs due to distinctive physical characteristics of the mineralisation.
- Commencement mid-January 2011 of a 2,600m geotechnical drilling programme at Murphy South required for prefeasibility study mining investigation by Coffey Mining.

#### **Gawler Iron Project**

• Iron Road secured 51% of the iron ore rights at the Gawler Iron Project from tenement holder Dominion Mining Limited and work is underway to move to 90%.

#### Windarling

• Earn-in participant Convergent Minerals commenced ground work at Windarling Peak, comprising ground magnetics and rock chip sampling.

#### Corporate

- 14.8 million shares placed to existing institutional investors and clients of Southern Cross Equities Ltd at a price of A\$0.55, raising A\$8.1M before costs.
- Mr Jerry Ellis appointed to the Board of Iron Road as a non-executive director.



Iron Road's largest shareholder, The Sentient Group, visited the Stage V drilling programme at Murphy South.



# **Projects**

#### South Australia – Central Eyre Iron Project

The Central Eyre Iron Project (663km<sup>2</sup>) is located on the Eyre Peninsula of South Australia and consists of three distinct prospects – Warramboo, Kopi and Hambidge. The project is located in a grain farming area with good infrastructure. Community relationships and support is excellent with great interest shown in possible development scenarios.

#### Stage V Drilling Programme

The Stage V drilling programme was initiated as a direct consequence of the discovery made at Murphy South during Stage IV drilling (Figure 1, and September 2010 Quarterly Report). The Stage V programme was designed to test the Murphy South anomaly across an additional nine traverses on a 200x100m grid with each traverse comprising seven to eight drill holes. Each hole is 100m apart in a north-south direction and each traverse is 200m apart in an east-west direction. The total area covered is 700-800m wide (on apparent dip) and over 2000m long (on strike). All holes are drilled on azimuths oriented true north, inclined at -60 degrees and maximum drill hole depths are in the order of 600m (Figure 2).



Figure 1

CEIP – Murphy South indicated.





The drilling programme at Murphy South commenced on 04 August 2010 and at full capacity utilised one RC drill rig for pre-collars and up to four diamond drill rigs for diamond tails (Figure 3).

The programme was completed on 13 December 2010 and by the end of the programme 22,645m had been drilled, most of which was NQ2 diamond core. During mid-January 2011 a 2,600m geotechnical drilling programme commenced at Murphy South as part of the mine design by Coffey Mining as required for the prefeasibility study.

From inversion modelling of the aeromagnetic data and existing drill data at the Murphy South prospect (Stage I and IV), an exploration target of 400-800Mt at a grade of 17-20% iron <sup>1</sup> was estimated for the area defined by the stage IV and V drilling programmes. In addition, it is likely that magnetite gneiss extends outside of this area, both east and west along strike.

Drilling traverses at Murphy South show remarkable consistency with good correlation and the Company is of the view that considerable tonnage of magnetite gneiss is likely to be demonstrated to exist in this area.

Coffey Mining commenced with mineral resource modeling during January 2011 and a JORC mineral resource estimate report is expected early February 2011 (Figure 4).

<sup>&</sup>lt;sup>1</sup> Refer to Competent Person's Statement





Figure 3

Diamond drilling at Murphy South.



Figure 4 Cross-section of traverse 561940mE at Murphy South illustrating delineation of various magnetite gneiss units for mineral resource estimation purposes.



#### Metallurgical Test Work

Iron Road engaged *Mineral Engineering Technical Services* (METS) to comprehensively investigate the metallurgical characteristics of the Warramboo mineralisation as a major component of the prefeasibility study at the Central Eyre Iron Project in South Australia. The metallurgical test work continues to produce excellent results.

More recent test work has included material from Murphy South as diamond core samples from the Stage V drilling programme became available together with a dedicated large diameter metallurgical hole. These test results serve as useful comparison with data obtained for the nearby Boo-Loo / Dolphin area.

*Dry LIMS* – Dry Low Intensity Magnetic Separation test work for ore from Boo-Loo produced exceptional results with on average 30% mass rejection and iron recovery over 90% at a P100 of -25mm. Samples from Murphy South at the same crush size produce between 45-55% mass rejection, significantly higher than that for Boo-Loo / Dolphin (Figure 5).



#### Murphy South Deposit: Coarse Cobbing

Figure 5 – Graph showing Dry LIMS (coarse cobbing) mass rejection vs. crushed size for Murphy South.

The banded nature of the magnetite gneiss at Murphy South impacts on the iron recovery and as a consequence a crushed size at a P100 of -16mm has been selected as being optimum (Figure 6).



Figure 6 – Graph showing coarse cobbing Fe recovery (%) vs. crushed size (mm) for Murphy South.

Rarely do magnetite ores crushed to sizes greater than 5mm produce results as shown above. These test work results are regarded as exceptional and have major implications for reducing operating costs during beneficiation.

*Communition Tests* – Various communition tests have been completed on the Murphy South magnetite gneiss and these results compared to data from the Boo-Loo and Dolphin area. These tests include the *Bond Abrasion Index (Ai), Bond Rod Mill Work Index (RWi)* and the *Bond Ball Mill Work Index (BWi).* These results are broadly consistent between the two areas, with the Bond Abrasion Index at Murphy South being slightly higher than that of Boo-Loo / Dolphin. This is possibly due to higher silica content.

*Thickening Test* – Dynamic thickening test work produced exceptional results for both magnetite concentrate and magnetite tails with implications for reducing both capital and operating costs. The addition of flocculant to the tails may not be necessary.

*HBF Filtration Test* – HBF (horizontal belt filtration) test work produced exceptional results with respect to the filtration rate and drying times. These have direct bearing on the type of filters required and throughput with the consequence that both capital and operating costs may be reduced. The negligible clay content of the magnetite gneiss has a direct influence on these positive results.

*Marketing* – Metallurgical properties of the material likely to be mined and processed, as determined through test work, is inextricably linked to the end product to be sold. Ferrum Consultants, appointed to provide marketing advice, have been briefed in detail by Iron Road and its other consultants on metallurgical, geological and other relevant aspects of the magnetite gneiss at the CEIP. The favoured option of producing coarse-grained (grind size of -106 micron), high grade blast furnace feed with low impurities, is believed to be suited for the sinter market of southeast Asia.



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The prefeasibility study encompasses the Central Eyre Iron Project comprising three significant, though separate, iron occurrences (Warramboo, Kopi & Hambidge) with an exploration target of 2.8-5.7 billion tonnes magnetite gneiss <sup>2</sup>. The prefeasibility study commenced during April 2010 and is targeted for completion in the first Quarter of 2011.

The prefeasibility study has run in parallel with an aggressive drilling campaign at the CEIP, significantly accelerating overall progress at the project. Following the expected announcement of the mineral resource estimate for Murphy South during early February 2011, the completion of a favourable prefeasibility study is the next stage of Iron Road's development, as the Company works towards becoming an independent producer of quality iron ore concentrates.

The following companies have been engaged to complete various components of the study.

- Evans & Peck study oversight, project implementation plan, scheduling, personnel, risk & opportunity management;
- **Coffey Mining** geology, geotechnical, structural, mining and tailings;
- **Mineral Engineering Technical Services** (METS) metallurgical test work (including dry magnetic separation), beneficiation plant design, mine site infrastructure, mine to port concentrate transport and power supply;
- Sinclair, Knight, Mertz (SKM) port options and ground water;
- Ferrum Consultants- marketing strategy
- Community Engagement Group Australia (CEGA) Community engagement and access;
- Aldam Geoscience approvals pathway;
- Various consultants are contributing to the environmental and financial analysis portions.

The prefeasibility study is on schedule and metallurgical test work is now concentrating on the Murphy South area, which is producing excellent results. There is strengthening potential for the Central Eyre project to become one of the major magnetite iron ore projects currently under review in Australia.

#### Current Work

Work is focussed on the mineral resource estimate report, geotechnical drilling programme at Murphy South and the prefeasibility study. All are proceeding well and are meeting or exceeding expectations.

#### South Australia – Gawler Iron Project

The Gawler Iron Project is located 25 kilometres north of the Trans Australian Railway and within 100 kilometres of the Central Australia Railway in South Australia. Iron Road has a farm-in agreement with tenement holder Dominion Gold Operations to earn up to 90% interest in the iron ore rights.

During the Quarter Iron Road secured a 51% interest in the iron rights at the Gawler Iron Project. The meeting of the earn-in commitment follows the completion of a Stage I exploration and evaluation program consisting of aeromagnetic and ground gravity geophysical surveys followed up by reconnaissance RC drilling. The remaining earn-in obligation of issuing Dominion with one million Iron Road shares was satisfied with a cash payment, in lieu of issuing additional shares.

<sup>&</sup>lt;sup>2</sup> Refer to Competent Person's Statement



The results of the initial study suggest excellent beneficiation characteristics of the magnetite. Average iron content of magnetite concentrates is in the range 69-70% with minimal impurities and most concentrates meet DR (direct reduction) grade specifications and all meet or exceed high grade blast furnace requirements.

#### **Ongoing Exploration and Test Work**

The results of Stage I drilling are very encouraging and warrant further exploration. An oxide (hematite) and magnetite test work programme from the Stage II drilling will assess the metallurgy and mineralogy of each ore type. These studies will focus on cost-effective beneficiation methods such as dry magnetic separation that may allow for relatively simple upgrading of ore, possibly producing a product suitable for sinter feed.

A Stage II diamond drilling programme will provide important new information on the structural geology and metallurgy of the known target areas and will also test a limited number of new targets that were identified during the Stage I drilling programme.

Stage II drilling will be partly funded by the South Australian Government as part of the PACE Theme 2 – Drilling Collaboration between PIRSA and Industry. Only 23 projects from 63 proposals were successful and are viewed by PIRSA "as the highest quality exploration targets based on sound technical, scientific and commercial criteria".

#### Western Australia – Windarling

The Windarling Peak project is located approximately 85km north of Koolyanobbing, Western Australia. The tenure consists of three granted exploration licenses and four prospecting licences. The Company entered into an agreement with Convergent Minerals Limited (Convergent) during September whereby Convergent may earn up to a 75% interest in the project by meeting certain expenditure and management criteria.

Convergent reports that initial field work has commenced at Windarling Peak, comprising broad and closer spaced ground magnetics and rock chip sampling of outcropping rock units. Regional scale magnetics had indicated that tenement E77/1236 had some magnetic anomalism likely to be banded iron formation. Ground magnetics commenced on this tenement and confirmed this was the case and another survey with 25 metre line spacing has been commissioned over the area of interest.

#### CORPORATE

#### Equity Raising

The Company placed 14.8 million shares at a price of A\$0.55, raising A\$8.1M before costs. The shares have been placed to existing institutional investors, including several North American based institutions and clients of Southern Cross Equities Ltd.

Funds raised under the issue will be primarily used to further advance the Central Eyre Iron Project and to allow for the completion of the prefeasibility study by March 2011.

#### Board

During the period Iron Road announced the appointment of Mr Jerry Ellis to the Board as Non-Executive Director. Mr Ellis has had a long and distinguished career in business, particularly in the resources sector, including three decades at BHP Ltd, Chairing the company from 1997 to 1999.

#### Industrial Partners

Iron Road continued discussions with potential industrial partners with a view to further accelerating activities at its Central Eyre Iron Project.



#### Glossary

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**DTR** – Davis Tube Recovery testing is used to separate ferromagnetic and non-magnetic fractions in small samples of approximately 20g at a time. The test is suited to establishing the recoveries likely from a magnetic separation process. This can assist mineral body assessment for magnetite, hematite or combinations thereof.

**XRF** – X-Ray Fluorescence spectroscopy is used for the qualitative and quantitative elemental analysis of geological and other samples. It provides a fairly uniform detection limit across a large portion of the Periodic Table and is applicable to a wide range of concentrations, from 100% to few parts per million (ppm).

**Hematite** – Hematite is a mineral, coloured black to steel or silver-gray, brown to reddish brown or red. Hematite is a form of Iron (III) oxide ( $Fe_2O_3$ ), one of several iron oxides.

**Magnetite** – Magnetite is a form of iron ore, one of several iron oxides and a ferrimagnetic mineral with chemical formula  $Fe_3O_4$  and a member of the spinel group. It is metallic or dull black and a valuable source of iron ore. Magnetite is the most magnetic of all the naturally occurring minerals on Earth, and these magnetic properties allow it to be readily refined into an iron ore concentrate.

Aeromag survey – Short for aeromagnetic survey, an aeromag survey is a common type of geophysical method carried out using a magnetometer aboard or towed behind an aircraft. The aircraft typically flies in a grid like pattern with height and line spacing determining the resolution of the data. As the aircraft flies, the magnetometer records tiny variations in the intensity of the ambient magnetic field and spatial variations in the Earth's magnetic field. By subtracting the solar and regional effects, the resulting aeromagnetic map shows the spatial distribution and relative abundance of magnetic minerals (most commonly magnetite) in the upper levels of the crust.

**Gravity survey** – A geophysical method undertaken from the surface or from the air which identifies variations in the density of the earth from surface to depth. It is used to directly measure the density of the subsurface, effectively the rate of change of rock properties. From this information a picture of subsurface anomalies may be built up to more accurately target mineral deposits. For iron exploration gravity surveys are commonly overlain on magnetic surveys to help identify and target fresh and oxidised iron ore (ie. magnetite and hematite).

**Martite** – The name given for Hematite pseudomorphs after Magnetite. More simply put primary magnetite that has been totally replaced by secondary hematite through oxidation.

**Specularite** – A black or gray variety of hematite with brilliant metallic luster, occurring in micaceous / foliated masses or in tabular or disk-like crystals. Also known as specular iron.

**HBF** – Horizontal Belt Filters are commonly used vacuum filters due to their flexibility of operation and suitability to handle large throughputs.



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The information in this report that relates to Exploration Results and the exploration target at Murphy South is on and accurately based reflects information compiled by Mr Larry Ingle, who is a fulltime employee of Iron Road Limited and а Member of the Australasian Institute of Mining and Metallurgy. Mr Ingle has sufficient experience relevant to the style of mineralisation and the type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Ingle consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that Figure 7 relates to Mineral Resources is based





Location of the Company's South Australian projects

on and accurately reflects information compiled by Mr Iain Macfarlane, Coffey Mining, who is a consultant and advisor to Iron Road Limited and a Member of the Australasian Institute of Mining and Metallurgy. Mr Macfarlane has sufficient experience relevant to the style of mineralisation and the type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Macfarlane consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to exploration targets is based on and accurately reflects information compiled by Mr Albert Thamm, Coffey Mining, who is a consultant and advisor to Iron Road Limited and a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Thamm has sufficient experience relevant to the style of mineralisation and the type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Thamm consents to the inclusion in the report of the matters based on his information in the form and context in which it appears on 31 August, 2009 in West Perth. The potential quantity and grade of an exploration target is conceptual in nature since there has been insufficient work completed to define the prospects as anything beyond exploration target. It is uncertain if further exploration will result in the determination of a Mineral Resource, in cases other than the Boo-Loo prospect.

Appendix 5B

Rule 5.3

# Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001, 01/06/10.

Name of entity

### IRON ROAD LIMITED

ABN

51 128 698 108

Quarter ended ("current quarter")

Year to date

(6 months)

31 December 2010

Current quarter

\$A'000

#### Consolidated statement of cash flows

# Cash flows related to operating activities

			\$A'000
1.1	Receipts from product sales and related debtors	-	-
1.2	Payments for (a) exploration & evaluation	(5,814)	(10,078)
	(b) development	-	-
	(c) production	_	-
	(d) administration	(214)	(483)
1.3	Dividends received	_	-
1.4	Interest and other items of a similar nature received	30	64
1.5	Interest and other costs of finance paid	_	-
1.6	Income taxes paid	-	-
1.7	Other (provide details if material)	(101)	213
	ά , , , , , , , , , , , , , , , , , , ,		
	Net Operating Cash Flows	(6,099)	(10,284)
	Cash flows related to investing activities		
1.8	Payment for purchases of: (a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	(9)	(76)
1.9	Proceeds from sale of: (a) prospects	-	-
	(b) equity investments	_	-
	(c) other fixed assets	_	-
1.10	Loans to other entities	-	-
1.11	Loans repaid by other entities	-	-
1.12	Other (provide details if material)	_	-
	·•		
	Net investing cash flows	(9)	(76)
1.13	Total operating and investing cash flows		
	(carried forward)	(6.108)	(10.360)

<sup>+</sup> See chapter 19 for defined terms.

1.13	Total operating and investing cash flows		
	(brought forward)	(6,108)	(10,360)
	Cash flows related to financing activities		
1.14	Proceeds from issues of shares, options, etc.	8,457	13,186
1.15	Proceeds from sale of forfeited shares	-	-
1.16	Proceeds from borrowings	-	-
1.17	Repayment of borrowings	-	-
1.18	Dividends paid	-	-
1.19	Other – capital raising costs	(150)	(256)
	Not financing cash flows		
	Net Imancing cash nows	8,307	12,930
	Net increase (decrease) in cash held	2,199	2,570
1.20	Cash at beginning of quarter/year to date	3,443	3,072
1.21	Exchange rate adjustments to item 1.20	-	-
1 22	Cash at and of quarter		
1.22	Cash at thu of quarter	5,642	5,642

# Payments to directors of the entity and associates of the directors Payments to related entities of the entity and associates of the related entities

	Current quarter \$A'000
1.23 Aggregate amount of payments to the parties included in item 1.2	101
1.24 Aggregate amount of loans to the parties included in item 1.10	Nil

1.25 Explanation necessary for an understanding of the transactions

All transactions involving Directors and associates were on normal commercial terms.

## Non-cash financing and investing activities

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

Nil

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

Nil

<sup>+</sup> See chapter 19 for defined terms.

**Financing facilities available** Add notes as necessary for an understanding of the position.

Ada	l notes as necessary for an understanding of the position.		
		Amount available \$A'000	Amount used \$A'000
3.1	Loan facilities		
		Nil	Nil
3.2	Credit standby arrangements		
		Nil	Nil

# Estimated cash outflows for next quarter

4.1	Exploration and evaluation	\$A'000			
4.2	Development	3,000			
4.3	Production				
4.4	Administration	150			
	Total	3,150			

# **Reconciliation of cash**

Record shown the re	nciliation of cash at the end of the quarter (as n in the consolidated statement of cash flows) to lated items in the accounts is as follows.	Current quarter \$A'000	Previous quarter \$A'000
5.1	Cash on hand and at bank	5,642	3,443
5.2	Deposits at call	_	-
5.3	Bank overdraft	_	-
5.4	Other (provide details)	-	-
	Total: cash at end of quarter (item 1.22)	5,642	3,443

# Changes in interests in mining tenements

		Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1	Interests in mining tenements relinquished, reduced or lapsed	Nil			1
6.2	Interests in mining tenements acquired or increased	Nil			

<sup>+</sup> See chapter 19 for defined terms.

**Issued and quoted securities at end of current quarter** Description includes rate of interest and any redemption or conversion rights together with prices and dates.

		Total number	Number quoted	Issue price per	Amount paid up per
				security (see note 3) (cents)	security (see note 3) (cents)
7.1	<b>Preference</b> +securities (description)				((()))
7.2	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions				
7.3	<sup>+</sup> Ordinary securities	113,695,564	113,695,564		Fully paid
7.4	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs	15,019,579	15,019,579	55 cents	Fully paid
7.5	<pre>*Convertible debt securities (description)</pre>				
7.6	Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				
7.7	<b>Options</b> (description and conversion factor)	7,125,000 7,500,000 2,000,000 3,000,000 1,250,000 1,250,000 1,250,000 1,250,000		Exercise price 20 cents 35 cents 20 cents 35 cents 20 cents 25 cents 30 cents 35 cents	<i>Expiry date</i> 22/1/13 22/1/13 11/3/13 6/8/13 15/12/14 15/12/14 15/12/14 15/12/14
7.8 7 9	Issued during quarter				
1.7	Exercised during quarter				
7.10	Expired during quarter				
7.11	<b>Debentures</b> (totals only)				
7.12	Unsecured notes (totals only)				

<sup>+</sup> See chapter 19 for defined terms.

# **Compliance statement**

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 4).
- 2 This statement does /does not\* (delete one) give a true and fair view of the matters disclosed.

Sign here:

(Director/Company secretary)

Date: 31 January 2011

Print name: GRAHAM DOUGLAS ANDERSON

#### Notes

- 1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.
- 2 The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, *AASB 1022: Accounting for Extractive Industries* and *AASB 1026: Statement of Cash Flows* apply to this report.
- 5 **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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<sup>+</sup> See chapter 19 for defined terms.