Increase to Pilbara Ore Reserves

3 March 2016

Included in Rio Tinto's annual Ore Reserves and Mineral Resources update, released to the market today as part of its 2015 Annual Report, are increases in Ore Reserves in Pilbara iron ore deposits in Western Australia.

The updated Ore Reserves and Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 (JORC Code) and Australian Securities Exchange (ASX) Listing Rules. As such, Ore Reserve increases relating to three Pilbara iron ore deposits require the additional supporting information set out in this release and its appendices.

A full update of Ore Reserves and Mineral Resources is provided in the 2015 Annual Report.

As at the end of 2015, the estimated iron ore Ore Reserves increased by 309 Mt after depletion from mining. The increases in iron ore Ore Reserves have been delivered as part of the ongoing resource development drilling program designed to maintain Ore Reserves coverage ahead of mining depletion rates. Increases in Ore Reserves are reported for:

1. Yandicoogina (Pisolite Ore) which has increased from 247 Mt to 642 Mt following the completion of Feasibility level studies within the Oxbow portion of the channel and Prefeasibility level studies for the Billiard South portion of the channel.
2. Brockman 2 (Brockman ore) which has increased from 62 Mt to 93 Mt due to additional drilling, modelling and mine planning studies within the existing operations.
3. West Angelas (Marra Mamba ore) which has increased from 185 Mt to 209 Mt due to the first time reporting of the Deposit F deposit following the completion of a Prefeasibility level study.

Ore Reserves are quoted on a 100% basis.

The location of the three deposits discussed are shown in Figure 1.

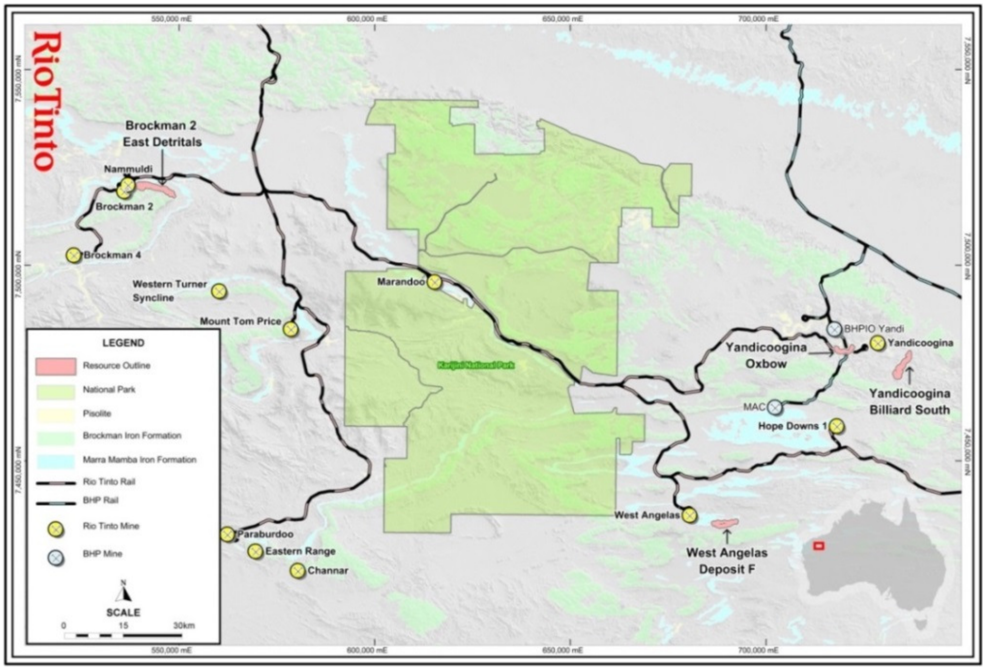


Figure 1 Deposit Location Map

Summary of information to support the Ore Reserves estimates

Yandicoogina

Increases in the Ore Reserve Estimates of the Yandicoogina deposit are supported by JORC Table 1 provided in Appendix 1 of this release and located at www.riotinto.com/JORC. The following summary of information for Mineral Resource Estimates is provided in accordance with Chapter 5.8 of ASX Listing Rules.

Geology and geological interpretation

The Yandicoogina deposit is located within the Hamersley Basin of Western Australia, which hosts some of the most significant iron ore deposits in the world. Mineralisation at the Yandicoogina occurs as pisolitic ores forming a Channel Iron Deposit (CID) overlying the Brockman Formation ores.

Geologic interpretations are supported by surface mapping of outcrops, and data collected from numerous percussion, reverse circulation and diamond drilling programs carried out between 1972 and 2015. In total, 915 holes are drilled into the Oxbow portion of the deposit and 1,744 holes are drilled into the Billiard South portion of the deposit.

Drilling techniques

Drilling at the Yandicoogina deposit was carried out by using diamond, percussion and reverse circulation drilling rigs. Geophysical logging was completed for the majority of the drill holes employing a suite of down hole tools to obtain calliper and gamma data to assist in the interpretation of the stratigraphy.

Sampling, sub-sampling method and sample analysis method

For the reverse circulation drilling, sub-sampling at the drill rig was carried out using static and rotary splitters. For diamond drilling, 1 metre samples were passed through a jaw crusher with a top size of 2 centimetres. A rotary splitter as then used to create an ‘A’ sub-sample with 40% of the sample by mass.

The sub-sample is then sent to independent and certified laboratories for analysis. At the laboratory, the sample is oven dried at 105 degrees celsius for a minimum of 24 hours. The sample is then crushed to approximately 3 millimetres using a Jaw Crusher and split to produce a sub-sample. The sub-sample is pulverised to 95 per cent of weight passing 150 µm. Fe, SiO_2, Al_2O_3, P, Mn, MgO, TiO_2, CaO and S are assayed using industry standard lithium metaborate fusion and X-Ray Fluorescence (XRF) analysis. Loss On Ignition (LOI) was determined using industry standard Thermo-Gravimetric Analyser.

Economic assumptions

Rio Tinto applies a common process to the generation of commodity price estimates (as an input into Ore Reserves) across the group. This involves generation of long-term price curves based on current sales contracts, industry capacity analysis, global commodity consumption and economic growth trends. In this process, a price curve rather than a single price point is used to develop estimates of mine returns over the life of the project. The detail of this process and of the price point curves is commercially sensitive and is not disclosed.

Criteria used for classification

Appropriate drill hole spacing criteria for classifying Mineral Resources within the Pilbara is based on an understanding of the geological and grade variability, and reconciliation of operating mines across the Pilbara area. Typically, a Measured Resource would have a drill spacing 100 metre x 50 metre at Yandicoogina.

Estimation methodology

Modelling was completed using the Rio Tinto Iron Ore Pilbara geological modelling and estimation standards. Ordinary Kriging were used to estimate grades through the deposits.

Mining and recovery factors

The Mineral Resource model was regularised to a block size which was determined to be the selective mining unit following an analysis of a range of selective mining units. Dilution and mining recovery were modelled by applying the regularisation process to the sub-block geological model.

Metallurgical models were applied to the regularised model in order to model product tonnage, grades and yields.

Detailed pit designs were developed, extending to the Limit of the CID, with due consideration of geotechnical, geometric and access constraints.

These pit designs were used as the basis for production scheduling and economic evaluation. Conventional mining methods (truck and shovel) similar to other Rio Tinto Iron Ore mines were selected. The mine has been designed to utilise in-pit crushing and conveying to transport ore to a central processing facility.

The geotechnical parameters have been applied based on geotechnical studies informed by assessments of diamond drill holes, specifically drilled for geotechnical purposes in the surrounding host rock.

Cut-off grades

The cut-off grade for high-grade ore is less than or equal to 1.9% Al_2O_3 and 6.5% SiO_2

Processing

The Yandicoogina Oxbow mine has been designed with a dry crush and screen processing facility similar to processing facilities at the current Yandicoogina mining operation.

The Billiard South mine has been designed with wet/dry crush and screen processing facility similar to processing facilities at Yandicoogina mining operations, to process below water table high aluminous ore

The proposed metallurgical process is a well-tested and proven processing methodology, having been utilised at Rio Tinto Iron Ore mining operations for decades.

Modifying factors

The Yandicoogina deposits are located within existing tenure Mining Lease (ML)274SA, which was granted under the Iron Ore (Yandicoogina) Agreement Act 1996.

The Yandicoogina operation is well established with central administration and workshop facilities. The workforce currently operates on a Fly-in Fly-out (FIFO) model using the Barimunya airport. Process water will be sourced from groundwater abstracted through the mine dewatering process. Potable water will be sourced from the bore fields servicing the current Yandicoogina operation. Power supply will be derived from the existing distribution system at the Yandicoogina Operation, sourced from the Hamersley Iron power stations in Dampier and Paraburdoo.

2015 Annual Report Ore Reserve Table, showing line items relating to Yandicoogina upgrade

		Proved Ore reserves at end 2015		Probable ore reserves at end 2015		Total ore reserves 2015 compared with 2014					
	Type (a)	Tonnage	Grade	Tonnage	Grade	Tonnage		Grade		Interest %	Recoverable metal
						2015	2014	**2015**	2014		
IRON ORE (b)		millions of tonnes	%Fe	millions of tonnes	%Fe	**millions of tonnes**	millions of tonnes	**%Fe**	%Fe		**Marketable product millions of tonnes**
Reserves at Operating Mines											
Hamersley Iron (Australia)											
- Yandicoogina (Pisolite ore HG) (b)	O/P	637	58.5	4	58.8	**642**	247	**58.5**	58.7	100.0	**642**

(a) Type of mine: O/P = open pit (b) Reserves of iron ore are shown as recoverable Reserves of marketable product after accounting for all mining and processing losses. Mill recoveries are therefore not shown.
(b) Hamersley Iron Yandicoogina (Pisolite ore HG) Reserves tonnes increased due to the inclusion of additional pits.

Brockman 2

Mineral Resource Estimates of the Brockman 2 deposit are supported by JORC Table 1 provided in Appendix 2 of this release and located at www.riotinto.com/JORC. The following summary of information for Mineral Resource Estimates is provided in accordance with Chapter 5.8 of ASX Listing Rules.

Geology and geological interpretation

The Brockman 2 deposit is located within the Hamersley Basin of Western Australia, which hosts some of the most significant iron ore deposits in the world. Mineralisation at the Brockman 2 deposit occurs as hematite goethite within the Brockman Iron Formation and overlying detrital ores.

Geologic interpretations are supported by surface mapping of outcrops, and by a number of drilling programs. Reverse circulation drilling is the predominant form of drilling and totals 1,596 holes for 119,704 m. In addition to this 109 dual rotatory percussion and 18 diamond drill holes are available for geological interpretation, geotechnical and metallurgical assessments.

Drilling techniques

Drilling at the Brockman 2 deposit was carried out by using reverse circulation drilling rigs and dual rotary diamond drill rigs. Geophysical logging was completed for most drill holes employing a suite of down hole tools to obtain calliper and gamma and down hole density.

Sampling, sub-sampling method and sample analysis method

Sub-sampling at the drill rig was carried out using rotary splitters. The sample is then sent to independent and certified laboratories for analysis. At the laboratory, the sample is oven dried at 105 degrees celsius for a minimum of 24 hours. The sample is then crushed to approximately 3 millimetres using a Jaw Crusher and split to produce a 500 g sub-sample. The sub-sample is pulverised to 95 per cent of weight passing 150 µm. Fe, SiO_2, Al_2O_3, P, Mn, MgO, TiO_2, CaO and S are assayed using industry standard lithium metaborate fusion and X-Ray Fluorescence (XRF) analysis.

Economic assumptions

Rio Tinto applies a common process to the generation of commodity price estimates (as an input into Ore Reserves) across the group. This involves generation of long-term price curves based on current sales contracts, industry capacity analysis, global commodity consumption and economic growth trends. In this process, a price curve rather than a single price point is used to develop estimates of mine returns over the life of the project. The detail of this process and of the price point curves is commercially sensitive and is not disclosed.

Criteria used for classification

Appropriate drill hole spacing criteria for classifying Mineral Resources within the Pilbara is based on an understanding of the geological and grade variability, and reconciliation of operating mines across the Pilbara area. Brockman 2 is drilled at approximately 50 m x 50 m to 400 m x 200 m which is suitable for the classification of an Inferred, Indicated and Measured Mineral Resource.

Estimation methodology

Modelling was completed using the Rio Tinto Iron Ore Pilbara geological modelling and estimation standards. Ordinary kriging methods were used for the grade estimates.

Mining and recovery factors

The Mineral Resource model was regularised to a block size which was determined to be the selective mining unit following an analysis of a range of selective mining units. Dilution and mining recovery were modelled by applying the regularisation process to the sub-block geological model.

Metallurgical models were applied to the regularised model in order to model products tonnage, grades and yields.

Pit optimisations utilising the Lerchs-Grosmann algorithm with industry standard software were undertaken. This optimisation utilised the regularised Mineral Resource model together with cost, revenue, and geotechnical inputs. The resultant pit shells were used to develop detailed pit designs with due consideration of geotechnical, geometric and access constraints.

These pit designs were used as the basis for production scheduling and economic evaluation. Conventional mining methods (truck and shovel) similar to other Rio Tinto Iron Ore mines were selected.

The geotechnical parameters have been applied based on geotechnical studies informed by assessments of diamond drill holes drilled during the 2011, 2012 & 2013 drilling programmes, specifically drilled for geotechnical purposes on the surrounding host rock.

Cut-off grades

A variable cut-off grade protocol to maximise the tonnages whilst maintaining product quality is applied at Brockman 2.

Processing

There are two existing dry crush and screen processing facilities and one existing wet de-sliming processing facility to which Brockman 2 ore could be fed. Product prediction regressions for both dry and wet processing routes are assigned to the designated domains and are based on the most appropriate available metallurgical data generated from PQ-3 cores, WDC, winzes and production data.

Modifying factors

The Brockman 2 deposit 100% owned by Hamersley Iron Proprietary Limited (100% Rio Tinto Limited), held under the Mining Lease ML4SA (section 110, 112, 113, 239 and 242) and the Exploration lease (E47/00031).

The Brockman 2 mine has significant infrastructure in place including rail and road access, shared airport and camp facilities shared with the Rio Tinto Iron Ore Brockman 4 deposit, central workshops and administrations buildings.

2015 Annual Report Ore Reserve Table, showing line items relating to Brockman 2 upgrade

		Proved Ore reserves at end 2015		Probable Ore reserves at end 2015		Total Ore reserves 2015 compared with 2014					
	Type (a)	Tonnage	Grade	Tonnage	Grade	Tonnage		Grade		Interest %	Recoverable metal
						2015	2014	**2015**	2014		
IRON ORE (b)		millions of tonnes	%Fe	millions of tonnes	%Fe	**millions of tonnes**	millions of tonnes	**%Fe**	%Fe		**Marketable product millions of tonnes**
Reserves at Operating Mines											
Hamersley Iron (Australia)											
- Brockman 2 (Brockman ore) (b)	O/P	47	62.5	46	62.1	**93**	62	**62.3**	62.8	100.0	**93**

(a) Type of mine: O/P = open pit (b) Reserves of iron ore are shown as recoverable Reserves of marketable product after accounting for all mining and processing losses. Mill recoveries are therefore not shown.
(b) Hamersley Iron Brockman 2 (Brockman ore) Reserves tonnes increased due to the inclusion of additional pits, updated geological models and cut-off grade changes.

West Angelas

Ore Reserve Estimate upgrades for the West Angelas deposit supported by JORC Table 1 (Section 4) documents provided in Appendix 3 of this release and located at www.riotinto.com/JORC . The following summary of information for Ore Reserve Estimates is provided in accordance with Chapter 5.9 of ASX Listing Rules.

Geology and Mineral Resources:

The West Angelas Deposit F is located within the Hamersley Basin of Western Australia, which hosts some of the most significant iron ore deposits in the world. Mineralisation at the deposit occurs as bedded mineralisation within the Marra Mamba Iron Formation.

Geological interpretations are supported by surface mapping of outcrops. Reverse Circulation (RC) drilling was carried out between 1998 and 2014 which total 1,526 holes for 134 857 m. Drilling through the area that defines the Ore Reserves is at 50 m x 50 m grid spacing or 100 m x 50 m grid spacing for the Proved and Probable Reserves respectively. In addition to the RC drilling, 42 diamond drill holes for 3,455 m has been carried out to provide geotechnical data, metallurgical test cores and bulk density measurements.

Reverse circulation holes have been sub-sampled using rotary splitters. Samples are then sent for analysis by independent assay laboratories. At the laboratory the sample is dried at 105 degrees celsius for a minimum of 24 hours. The sample is then crushed to approximately 3 mm using a Jaw Crusher and riffle split to produce a 500 g sub-sample. The sub-sample is pulverised to 95% of weight passing 150 µm. Fe, SiO_2, Al_2O_3, P, Mn, MgO, TiO_2, CaO and S are assayed using industry standard lithium metaborate fusion and X-Ray Fluorescence (XRF) analysis.

Modelling was completed using the Rio Tinto Iron Ore Pilbara geological modelling and estimation standards. Ordinary kriging methods were used for the grade estimates.

Economic assumptions

Rio Tinto applies a common process to the generation of commodity price estimates (as an input into Ore Reserves) across the group. This involves generation of long-term price curves based on current sales contracts, industry capacity analysis, global commodity consumption and economic growth trends. In this process, a price curve rather than a single price point is used to develop estimates of mine returns over the life of the project. The detail of this process and of the price point curves is commercially sensitive and is not disclosed.

Criteria used for classification

The stated Proved and Probable Ore Reserves directly coincide with the Measured and Indicated Mineral Resources, respectively. There are no Inferred stated reserve numbers. Typically, a 50 m x 50 m drill spacing will define a Measured Resource.

Mining and recovery factors

The Mineral Resource model was regularised to a block size which was determined to be the selective mining unit following an analysis of a range of selective mining units. Dilution and mining recovery were modelled by applying the regularisation process to the sub-block geological model.

Metallurgical models were applied to the regularised model in order to model products tonnage, grades and yields.

Pit optimisations utilising the Lerchs-Grosmann algorithm with industry standard software were undertaken. This optimisation utilised the regularised Mineral Resource model together with cost, revenue, and geotechnical inputs. The resultant pit shells were used to develop detailed pit designs with due consideration of geotechnical, geometric and access constraints.

These pit designs were used as the basis for production scheduling and economic evaluation. Conventional mining methods (truck and shovel) similar to other Rio Tinto Iron Ore mines were selected.

Geotechnical design recommendations for the Pre-Feasibility Study have been supplied based on geotechnical studies informed by the assessment of seven fully cored and geotechnically logged diamond drill holes (totalling 694 m) drilled in 2014. The resultant design recommendations produce inter-ramp slope angles varying between 20 and 38 degrees depending on the local rock mass, hydrogeology, and structural geological conditions.

Cut-off grades

The cut-off grade for high-grade Marra Mamba ore is greater than or equal to 58% Fe.

Processing

The West Angelas mine has been designed to be processed with the existing dry crush and screen processing facility at the West Angelas Operations.

Modifying factors

The West Angelas Deposit F deposits are located within existing tenure Mineral Lease (ML) 248SA, which was granted under the Iron Ore (Robe River) Agreement Act 1964.

Significant existing infrastructure is in place for the West Angelas deposits including road, rail, airport, camp facilities, central processing plants, central workshops and administration offices. Ore will be railed to Rio Tinto’s ports at Dampier and Cape Lambert.

2015 Annual Report Ore Reserve Table, showing line items relating to West Angelas upgrade

		Proved Ore reserves at end 2015		Probable ore reserves at end 2015		Total ore reserves 2015 compared with 2014					
	Type (a)	Tonnage	Grade	Tonnage	Grade	Tonnage		Grade		**Interest %**	**Recoverable metal**
						2015	2014	**2015**	2014		
IRON ORE (b)		millions of tonnes	%Fe	millions of tonnes	%Fe	**millions of tonnes**	millions of tonnes	**%Fe**	%Fe		**Marketable product millions of tonnes**
Reserves at Operating Mines											
Robe River JV (Australia)											
- West Angelas (Marra Mamba ore) (b)	O/P	153	62.0	55	60.0	**209**	185	**61.4**	61.5	53	**111**

(a) Type of mine: O/P = open pit (b) Reserves of iron ore are shown as recoverable Reserves of marketable product after accounting for all mining and processing losses. Mill recoveries are therefore not shown.
(b) Robe River JV West Angelas (Marra Mamba ore) Reserves tonnes increased due to the addition of a new pit, updated geological models and pit design modifications.

Competent Persons Statement

The information in this report that relates to Mineral Resources is based on information compiled by Bruce Sommerville, a Competent Person who is a Fellow of The Australasian Institute of Mining and Metallurgy.

The information in this report that relates to Ore Reserves is based on information compiled by Mr An Do, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy.

Mr Sommerville and Mr Do are full-time employees of the company.

Mr Sommerville and Mr Do have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as Competent Persons as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Mr Sommerville and Mr Do consent to the inclusion in the report of the matters based on the information in the form and context in which it appears.

Contacts

media.enquiries@riotinto.com

www.riotinto.com

Follow @RioTinto on Twitter

Media Relations, EMEA/Americas
Illtud Harri
T +44 20 7781 1152
M +44 7920 503 600

David Outhwaite
T +44 20 7781 1623
M +44 7787 597 493

David Luff
T + 44 20 7781 1177
M + 44 7780 226 422

Investor Relations, EMEA/Americas
John Smelt
T +44 20 7781 1654
M +44 7879 642 675

David Ovington
T +44 20 7781 2051
M +44 7920 010 978

Grant Donald
T +44 20 7781 1262
M +44 7920 587 805

Media Relations, Australia/Asia
Ben Mitchell
T +61 3 9283 3620
M +61 419 850 212

Bruce Tobin
T +61 3 9283 3612
M +61 419 103 454

Matthew Klar
T +61 7 3625 4244
M +61 457 525 578

Investor Relations, Australia/Asia
Natalie Worley
T +61 3 9283 3063
M +61 409 210 462

Rachel Storrs
T +61 3 9283 3628
M +61 417 401 018

Rio Tinto plc
6 St James's Square
London SW1Y 4AD
United Kingdom

T +44 20 7781 2000
Registered in England
No. 719885

Rio Tinto Limited
120 Collins Street
Melbourne 3000
Australia

T +61 3 9283 3333
Registered in Australia
ABN 96 004 458 404

Yandicoogina Oxbow & Billiard South Table 1

The following table provides a summary of important assessment and reporting criteria used at the Yandicoogina Oxbow & Billiard South deposit for the reporting of exploration results, Mineral Resources and Ore Reserves in accordance with the Table 1 checklist in *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition)*. Criteria in each section apply to all preceding and succeeding sections.

A summary of the Ore Reserve estimate for Yandicoogina is provided at the end of this document

SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	• Samples for geological logging, assay, geotechnical, metallurgical and density test work are collected via drilling at Yandicoogina Oxbow & Billiard South deposit. • Drilling for collection of samples for assay is conducted on a 100 m × 50 m regularly spaced grid (100 m along channel × 50 m across channel). Samples are collected at 1 m intervals. • All reverse circulation drilling utilises a static and rotary cone splitter beneath a cyclone return system for sample collection. The rotary cone splitter used in most recent holes produces two 8% samples ('A' and 'B') and one 84% reject sample. • All diamond core drilling uses triple-tube sampling; HQ-3 (61.1 mm core diameter) and PQ-3 (83.0 mm core diameter). • Grade, geotechnical and density samples are collected via diamond core drilling of HQ-3 core. • Metallurgical, density and grade twin samples are collected via diamond core drilling of PQ-3 core. • Diamond core is crushed to -6 mm and split at site prior to submitting to laboratory for further sample reduction. • Dry bulk density is derived from accepted gamma-density data collected at 10 cm intervals from down-hole geophysical sondes. Density measured from accepted gamma-density is corrected for moisture from diamond drill core twinned with reverse circulation drilling. Mineralisation is determined by a combination of geological logging and assay results.
Drilling techniques	• Drilling is conducted predominantly by diamond core and reverse circulation (Refer to Section 2, Drill hole Information, for a detailed breakdown of drilling by method and year). • 1970's drilling was open hole percussion. • 1993 - 2008 drilling was by diamond core drilling methods. • Between 2009 - 2015 drilling is by a combination of diamond core and reverse circulation drilling methods. • Pre-collars were drilled to the top of the weathered channel iron deposit (CID), or to refusal in the alluvial blanket, using a tri-cone roller bit or a dual rotary (DR) drill. Pre-collars were then reamed where necessary, sleeved with a PVC collar and the remainder of the hole drilled using HQ-3 wire-line drilling techniques with 1.5 m steel triple tubes for coring within 3 m barrels. • A majority of drill holes are oriented vertically. A small number of angled holes were drilled where appropriate, such as on channel margins and for geotechnical purposes.
Drill sample recovery	• No direct recovery measurements are performed on reverse circulation samples. Sample weights are recorded from laboratory splits and the recovery at the rig is visually estimated for loss per drilling interval. • Diamond core recovery is maximised via the use of triple-tube sampling and additive drill muds. • Sample recovery in some friable mineralisation may be reduced however it is unlikely to have a material impact on the reported assays for these intervals. • Diamond core recovery is recorded using rock quality designation (RQD) measurements with all cavities and core loss recorded in the Rio Tinto Iron Ore acQuire™ database. • Diamond core recovery was measured during each of the drill programs post 2002. Total core recovery for Oxbow (excluding cavities) was 98.5% for mineralised strands. Total core recovery for Billiard South (excluding cavities) was 98.6% for mineralised strands.
Logging	• All the drill holes are geologically logged utilising standard Rio Tinto Iron Ore Material Type Classification Scheme logging codes.

	• Geological logging is performed on 1 m intervals after examination of drill core or drill cuttings. • In 2014 and 2015 bulk logging was conducted on reverse circulation drill holes at Billiard South, where the majority material type is recorded. • All drill holes are logged using downhole geophysical tools for gamma trace, calliper, gamma density, resistivity, and magnetic susceptibility since 2002 at Oxbow and since 2004 at Billiard South.
Sub-sampling techniques and sample preparation	Sub-sampling technique: • Diamond core drilling: o Samples are collected at 1 m intervals. Following logging, photography, and oven drying, samples are passed through a jaw crusher resulting in a top size of 1 - 2 cm. The sample is then passed through a rotary splitting device at a minimum rate of 20 revolutions per sample to produce the following splits: ▪ ‘A’ Split - Analytical sample – 40% ▪ ‘B’ Split - Retention sample – 20% ▪ Waste or composited to nominal 10 m intervals for metallurgical test work – 40% • Reverse circulation drilling: o Samples are collected at a 1m interval and sub sampled using a rotary cone splitter, rotating at a nominal 20-30 RPM, beneath a cyclone return system and produces approximate splits of: ▪ ‘A’ Split - Analytical sample – 8% ▪ ‘B’ Split - Retention sample – 8% ▪ Bulk reject – 84% Sample preparation: • The ‘A’ Splits are then submitted to laboratory to undertake the following sample preparation process: o Dry at 105° C o Crushed to -3 mm using Boyd crusher and splitting through linear splitting device to capture 1 – 2.5 kg samples. o Robotic LM5 used to pulverise total sample (1 – 2.5 kg) to 90% passing 150 micron sieve. o A 100 gram sub sample collected for analysis.
Quality of assay data and laboratory tests	Assay methods: • An X-Ray Fluorescence (XRF) analysis conducted to determine : o Fe, SiO_2, Al_2O_3, TiO_2, Mn, CaO, P, S, MgO, K_2O, Zn, Pb, Cu, Ba, V, Cr, Cl, As, Ni, Co, Sn, Sr, Zr, Na • Loss on Ignition (LOI) was determined using industry standard Thermo-Gravimetric Analyser (TGA) o Pre 2004: ▪ LOI was measured at 371° C, 538° C, and 900° C. o 2004 - 2011: ▪ LOI was measured at three steps of temperatures: 140° - 425° C, 425° - 650° C, 650° - 1000° C. • 2002 – Samples were sent to the Rio Tinto internal Dampier Laboratory. • 2004 – 2005 – Samples were sent to the Rio Tinto internal Yandi Laboratory. • 2003 and 2005 - 2015 – Samples were sent to Ultra Trace Laboratories in Perth for sample preparation and analytical testing. Quality assurance measures include: • Insertion of coarse reference standard by Rio Tinto geologists at a rate of one in every 30 samples in mineralised zones and one in every 60 samples in waste zones with a minimum of one standard per drill hole. Reference material is prepared and certified by Rio Tinto Iron Ore following ISO 3082:2009 (Iron Ores – Sampling and sample preparation procedures) and ISO 9516-1:2003 (Iron Ores – Determination of various elements by X-ray fluorescence spectrometry – Part 1: Comprehensive procedure). • Coarse reference standards contain a trace of strontium carbonate that is added at the time of preparation for ease of identification. • Field duplicates were collected by sacrificing a ‘B’ split retention sample directly from the rig splitter. Duplicate insertion occurred at a frequency of one in 20. Trace zinc is included in the duplicate sample for later identification. • At a frequency of one in 20, -3 mm splits and pulps were collected as laboratory splits and repeats respectively. These sub-samples were analysed at the same time as the original

	sample to identify grouping, segregation and delimitation errors. • Internal laboratory quality assurance and quality control measures involve the use of internal laboratory standards using certified reference material in the form of pulps, blanks and duplicates were inserted in each batch. • Random re-submission of pulps at an external laboratory is performed following analysis. • Analysis of the performance of certified standard and field duplicates has indicated an acceptable level of accuracy and precision with no significant bias.
Verification of sampling and assaying	• At Billiard South, approximately one in ten reverse circulation drill holes were twinned with diamond core drilling in 2014 and 2015. Comparison of reverse circulation and twinned diamond drill core assay data distributions show that the drilling methods have similar grade distributions, verifying the suitability of reverse circulation samples in the Mineral Resource estimate. • No twinned drilling has taken place at Oxbow. • Data was returned electronically from Ultra Trace laboratories in Perth. All data is transferred to an acQuire™ database. • Written procedures outline the processes of geological logging and data importing, quality assurance and quality control validation and assay importing, etc. A robust, restricted-access database is in place to ensure that any requests to modify existing data go through appropriate channels and approvals, and that changes are tracked by date, time, and user.
Location of data points	• All drill hole collar locations at the Yandicoogina Oxbow and Billiard South deposits are surveyed using Geocentric Datum of Australia 1994 (GDA94) and Map Grid of Australia 1994 (MGA94) zone 50 using a Trimble RTK Global Positioning System survey equipment. The accuracy of this system is to within six to 10 cm. • Oxbow - All drilling was vertical and no down-hole surveys were conducted. Down-hole samples are located on traces assumed to be vertical. • Billiard South - Down hole survey includes the collar set-up survey, down hole magnetic surveys and gyroscopic surveys (on angled holes or >~100 m) with data uploaded to the acQuire™ database.
Data spacing and distribution	• Drill spacing of approximately 100 m × 50 m (100 m along the channel × 50 m across the channel). • The drill spacing is deemed appropriate for sufficient deposit knowledge by the Competent Person for the Mineral Resource classification applied. • The mineralised domains for the Yandicoogina Oxbow & Billiard South deposit have demonstrated sufficient continuity in both geology and grade to support the definition of Mineral Resources, and the classifications applied under the 2012 JORC Code guidelines.
Orientation of data in relation to geological structure	• Drill lines run perpendicular to the channel, and subsequently change through 90° as the channel meanders. • Drilling is predominantly vertical, which is appropriate for the sub-horizontal stratigraphy of the majority of the deposit. • A small number of angled holes were drilled where appropriate, such as on the channel margins, for geotechnical purposes.
Sample security	• Analytical samples (A splits) are collected by field assistants, placed onto steel sample racks, and transported to Ultra Trace Laboratories in Perth, Western Australia for analyses. Retention samples (B Splits) are collected and stored in drums. • Assay pulps are retained indefinitely at Laboratories and external storage facilities at CTI Logistic.
Audits or reviews	• No external audits have been performed. • Internal Rio Tinto Iron Ore peer review processes and internal Rio Tinto technical reviews have been completed. These reviews concluded that the fundamental data collection techniques are appropriate.

SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	Commentary
Mineral tenement and land tenure status	• 100% owned by Hamersley Iron-Yandi Pty Limited (HIY), 100% Rio Tinto Limited, held under Mining Lease (ML) 274SA.

Exploration done by other parties

- Drilling was conducted by CSR Ltd. at Yandicoogina between 1972 – 1978. The Yandicoogina deposit was acquired from CSR Ltd. by CRA in 1987.
- Mining Lease (ML) 274SA was granted to Hamersley Iron-Yandi Pty Limited (HIY) in October, 1998.

Geology

- The deposit is a channel iron deposit incised into the Lower Proterozoic Weeli Wolli Formation.
- The bedded mineralisation is generally overlain by a variable thickness zone of Quaternary alluvium/colluvium.

Drill hole Information

Year	Oxbow		Billiard South	
	No. of Holes	Type of Drilling	No. of Holes	Type of Drilling
1972	2	Percussion	-	-
1974	11	Percussion	-	-
1977	1	Percussion	17	Percussion
1978			12	Percussion
1993	19	Diamond	-	-
1999			4	Diamond
2002	6	Diamond	-	-
2003	108	Diamond	19	Diamond
2004	8	Diamond	111	Diamond
2005	376	Diamond	48	Diamond
2006	-	-	144	Diamond
2007	-	-	172	Diamond
2008	-	-	132	Diamond
2009	-	-	424	Diamond (398), DR (16) & RC (10)
2010	8	Diamond	235	Diamond
2011	376	Diamond	-	-
2014	-	-	422	Diamond (45) & RC (377)
2015	-	-	30	RC
Total	**915**	**-**	**1,744**	**-**

- All drilling data has been used for geological interpretation.
- No data pre - 2002 has been used in the Mineral Resource estimate due to concerns regarding sample quality.

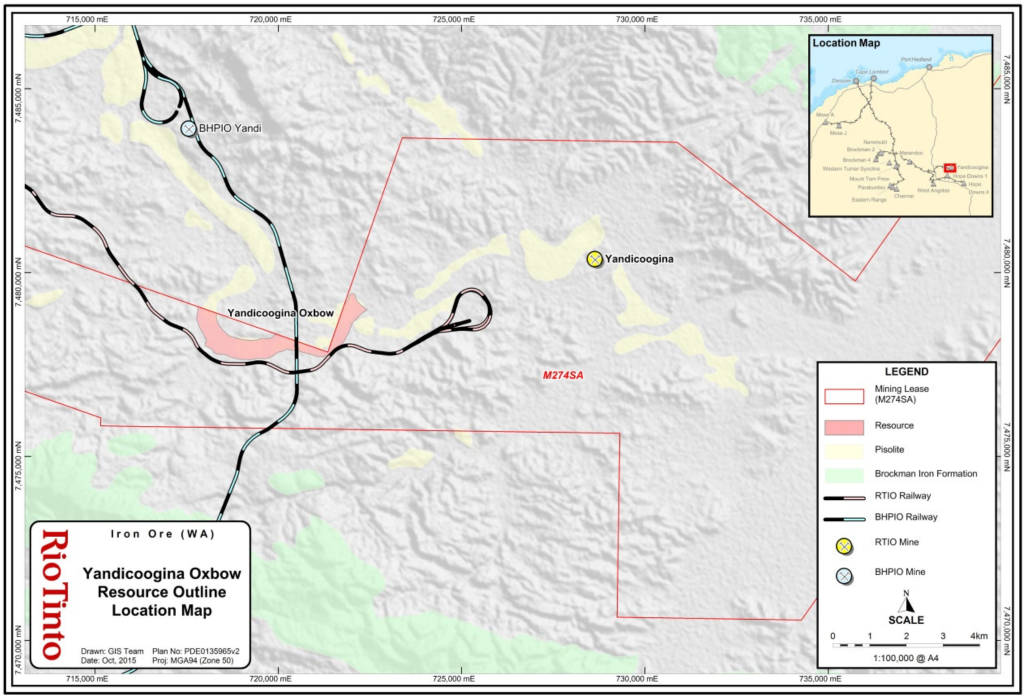
Data aggregation methods

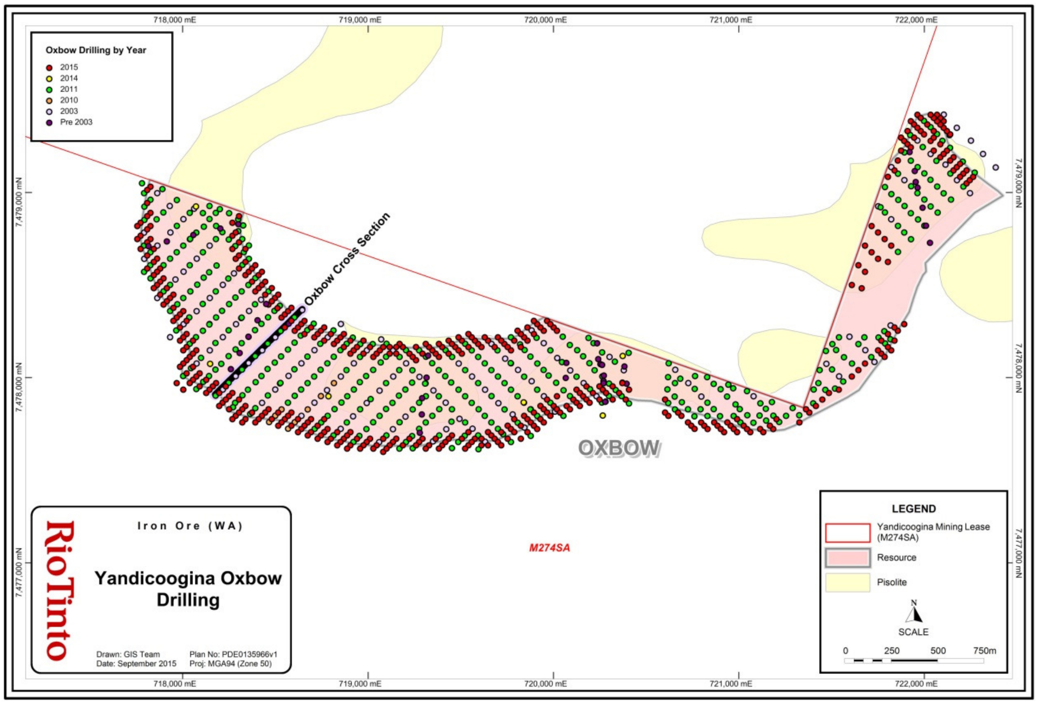
- No data aggregation. All diamond core samples collected at 1 m intervals.
- No grade truncations are performed.

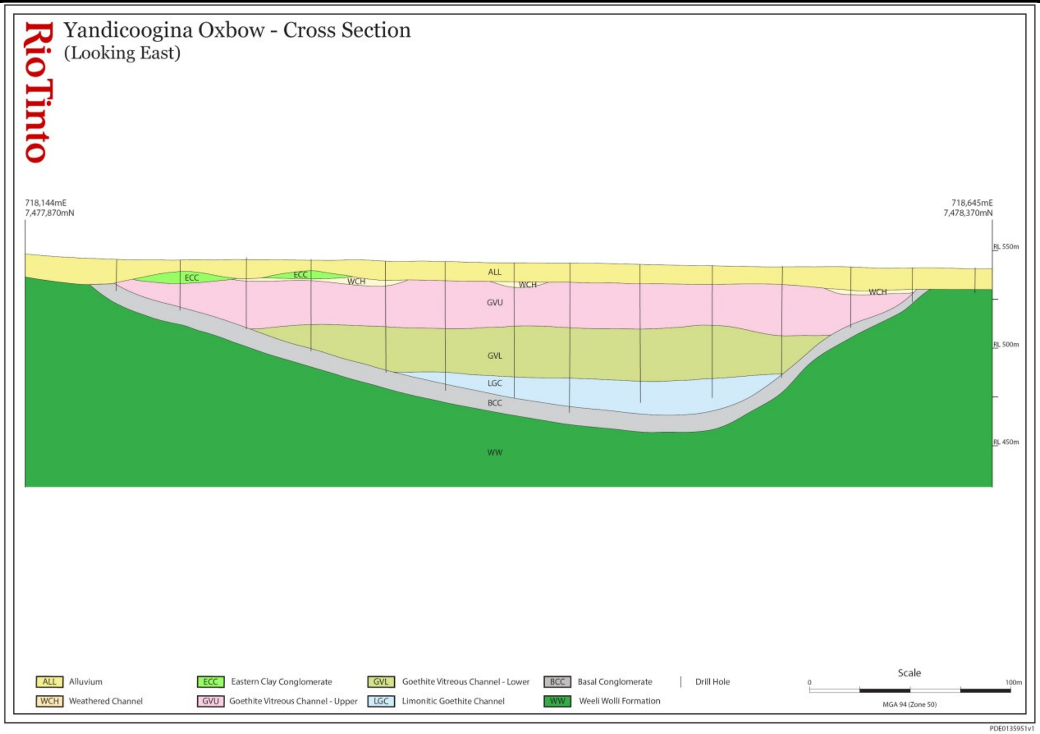
Relationship between mineralisation widths and intercept lengths

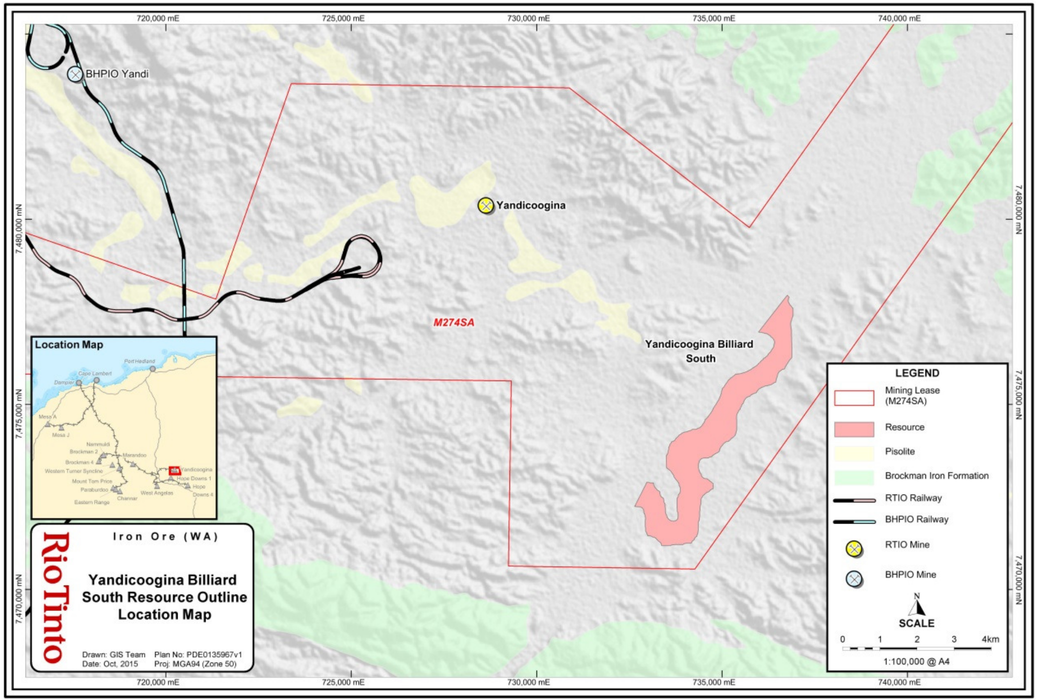
- Down-hole lengths are reported that are essentially true width due to vertical drilling and gently folded, horizontal strata.

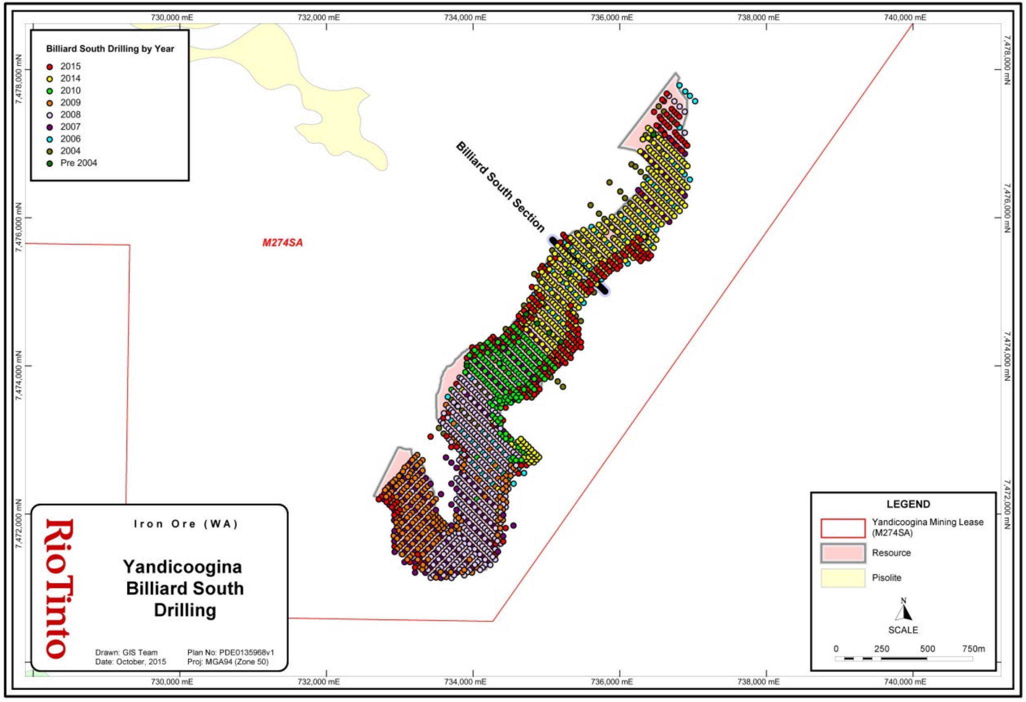
Diagrams

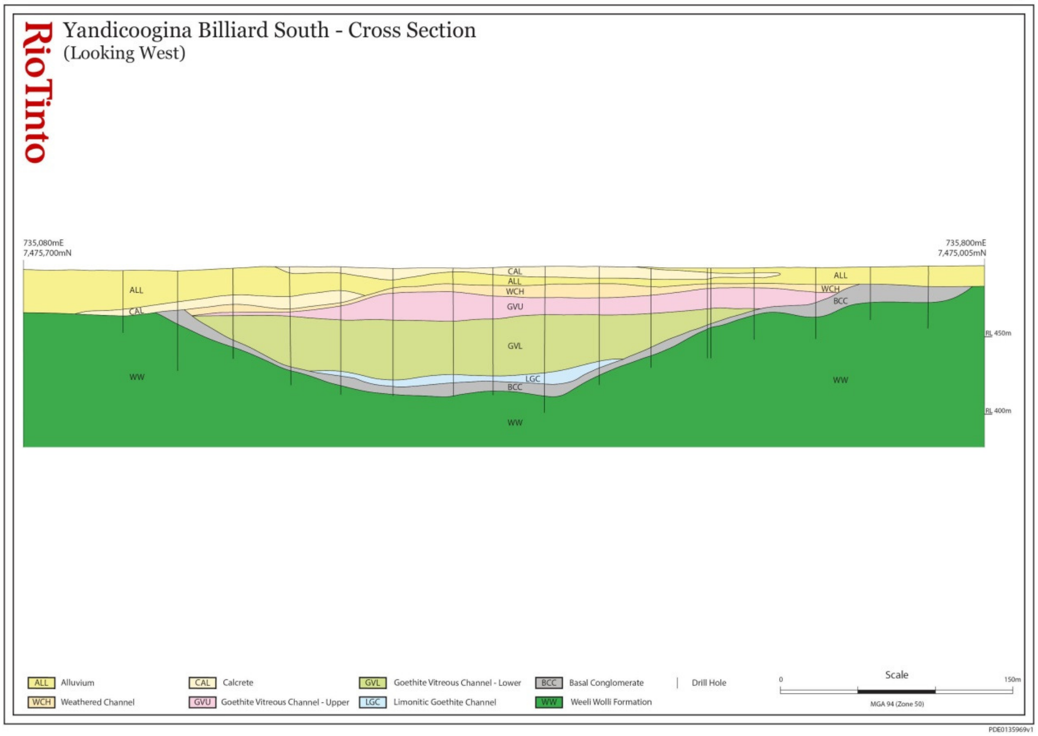

715,000 mE
720,000 mE
725,000 mE
730,000 mE
735,000 mE
7,485,000 mN
7,480,000 mN
7,475,000 mN
7,470,000 mN
Location Map
Port Hedland
Cape Lambert
Dampier
Yandicoogina
BHPIO Yandi
Yandicoogina Oxbow
M274SA
LEGEND
Mining Lease (M274SA)
Resource
Pisolite
Brockman Iron Formation
RTIO Railway
BHPIO Railway
RTIO Mine
BHPIO Mine
N
SCALE
0 1 2 3 4km
1:100,000 @ A4
RioTinto
Iron Ore (WA)
Yandicoogina Oxbow Resource Outline Location Map
Drawn: GIS Team
Date: Oct, 2015
Plan No: PDE0135965v2
Proj: MGA94 (Zone 50)


718,000 mE
719,000 mE
720,000 mE
721,000 mE
722,000 mE
7,479,000 mN
7,478,000 mN
7,477,000 mN
Oxbow Drilling by Year
2015
2014
2011
2010
2003
Pre 2003
Oxbow Cross Section
OXBOW
M274SA
LEGEND
Yandicoogina Mining Lease (M274SA)
Resource
Pisolite
N
SCALE
0 250 500 750m
RioTinto
Iron Ore (WA)
Yandicoogina Oxbow Drilling
Drawn: GIS Team
Date: September 2015
Plan No: PDE0135966v1
Proj: MGA94 (Zone 50)


RioTinto
Yandicoogina Oxbow - Cross Section
(Looking East)
718,144mE
7,477,870mN
718,645mE
7,478,370mN
RL 550m
RL 500m
RL 450m
ALL
ECC
ECC
WCH
WCH
WCH
GVU
GVL
LGC
BCC
WW
ALL Alluvium
WCH Weathered Channel
ECC Eastern Clay Conglomerate
GVU Goethite Vitreous Channel - Upper
GVL Goethite Vitreous Channel - Lower
LGC Limonitic Goethite Channel
BCC Basal Conglomerate
WW Weeli Wolli Formation
Drill Hole
Scale
0
100m
MGA 94 (Zone 50)
PDE0135951v1


720,000 mE
725,000 mE
730,000 mE
735,000 mE
740,000 mE
7,480,000 mN
7,475,000 mN
7,470,000 mN
BHPIO Yandi
Yandicoogina
M274SA
Yandicoogina Billiard South
Location Map
Port Hedland
Cape Lambert
Dampier
Mesa A
Mesa J
Nammuldi
Brockman 2
Brockman 4
Marandoo
Western Turner Syncline
Mount Tom Price
Paraburdoo
Eastern Range
Channar
West Angelas
Yandicoogina
Hope Downs 1
Hope Downs 4
RioTinto
Iron Ore (WA)
Yandicoogina Billiard South Resource Outline Location Map
Drawn: GIS Team
Date: Oct, 2015
Plan No: PDE0135967v1
Proj: MGA94 (Zone 50)
LEGEND
Mining Lease (M274SA)
Resource
Pisolite
Brockman Iron Formation
RTIO Railway
BHPIO Railway
RTIO Mine
BHPIO Mine
N
SCALE
0
1
2
3
4km
1:100,000 @ A4





Balanced reporting	• Not applicable as Rio Tinto has not specifically released exploration results for this deposit.
Other substantive exploration data	• Geological surface mapping has been collected at 1:10,000 scale in 1997. • Approximately 75% of the Mineral Resource lies below the water table at Oxbow and 98% of the Mineral Resource lies below the water table at Billard South.
Further work	• Further infill reverse circulation drilling is planned along channel margins.

SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

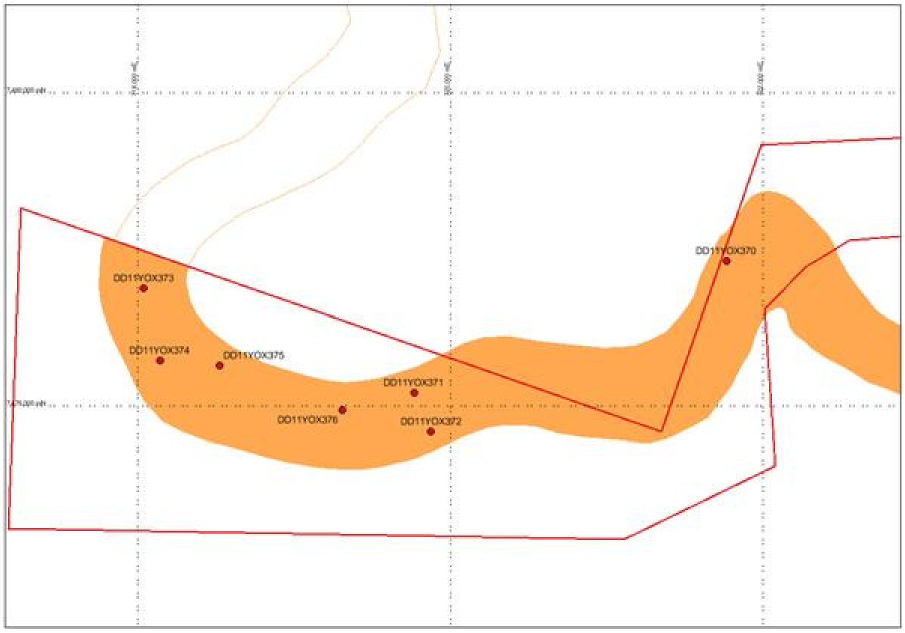
Criteria	Commentary
Database integrity	• All drilling data is securely stored in an acQuire™ geoscientific information management system managed by a dedicated team within Rio Tinto. The system is backed up nightly on servers in Perth, Western Australia. The backup system has been tested in 2015, demonstrating that it is effective. • The drilling database used for Mineral Resource estimation has been internally validated by Rio Tinto Iron Ore personnel by the following methods: ○ acQuire™ scripts for relational integrity, duplicates, total assay and missing / blank assay values ○ Grade ranges in each domain ○ Domain names and tags ○ Null and below detection limit grade values ○ Missing or overlapping intervals ○ Duplicate data • Drill hole data is also validated visually by domain to the geological model.
Site visits	• The Competent Person has regularly visited Yandicoogina Oxbow & Billiard South between 2011 and 2015. There were no outcomes as a result of these visits.
Geological interpretation	• Overall the Competent Person's confidence in the geological interpretation of the area is good, based on the quantity and quality of data available, and the continuity and nature of the mineralisation. • Geological modelling was undertaken by Rio Tinto geologists. The method involves interpretation of down-hole stratigraphy using surface geological mapping, lithological logging data, down-hole gamma data, and assay data. • Cross-sectional interpretation of each stratigraphic unit is performed followed by interpretation of mineralisation boundaries. Three-dimensional wireframes of the sectional interpretations are created to produce the geological model. • Mineralisation is continuous. It is affected by stratigraphy, structure and weathering. The drill hole spacing is sufficient to capture density, grade and geology variation for Mineral Resource reporting. • The geological model is sub-divided into domains and both the composites and model blocks are coded with these domains.
Dimensions	• The mineralisation is part of the Yandicoogina Channel Iron Deposit. • The Yandicoogina Oxbow deposit extends 4.5 km along strike. The paleochannel is saucer-shaped in cross section and between 450 m and 750 m wide. The main ore zone is 40 - 50 m thick in the centre of the channel, thinning towards the margins. • The Yandicoogina Billiard South deposit extends 7.4 km along strike. The paleochannel is saucer-shaped in cross section and between 450 m and 850 m wide. The main ore zone is 40 - 60 m thick in the centre of the channel, thinning towards the margins.
Estimation and modelling techniques	• The estimation process was completed in Maptek Vulcan software. • Mineralised domains were estimated by ordinary kriging and non-mineralised domains were estimated by inverse distance weighting to the first power. • A block size of 25 m (X) × 25 m (Y) × 5 m (Z) was used for parent blocks. Parent blocks are sub-celled to the geological boundaries to preserve volume. • All domains were estimated with hard boundaries applied. • Statistical analysis was carried out on data from all domains. High yield limits were applied to TiO_2 for the mineralised domains within Oxbow; and Mn within GVL and, MgO and CaO for the mineralised GVU and GVL domains within Billiard South. The limits differed for different domains and were selected based on histograms and the spatial distribution of the respective assay values. • Grades are extrapolated to a maximum distance of approximately 750 m from data points. • The block model was validated using a combination of visual, statistical, and multivariate global change of support techniques in the absence of any production data.
Moisture	• All Mineral Resource tonnages are estimated and reported on a dry basis.
Cut-off parameters	• The criteria for Mineral Resources were that geology must either be mixed clay and pisolite or hard competent pisolite.

Mining factors or assumptions	• Development of this Mineral Resource assumes mining using standard Rio Tinto Iron Ore equipment and methods similar to other Rio Tinto Iron Ore operations. The assumed mining method is conventional truck and shovel open pit mining at an appropriate bench height. Mining practices will include grade control utilising blast hole data.
Metallurgical factors or assumptions	• It is assumed that a mixture of dry and wet crush and screening processes used by Rio Tinto Iron Ore will be applicable for the processing of the Yandicoogina Oxbow and Billiard South deposits.
Environmental factors or assumptions	• Rio Tinto Iron Ore has an extensive environmental and heritage approval process. A detailed review of these requirements has been undertaken in a recent Feasibility Study. No issues were identified that would impact on the Mineral Resource estimate.
Bulk density	• Gamma-density logs are collected from reverse circulation drill holes. • Dry core densities are generated via the following process: ○ The core volume is measured in the split and the mass of the core is measured and recorded. ○ Wet core densities are calculated by the split and by the tray. ○ The maximum length of sample for each density measurement is 1.5 m. ○ Core recovery is recorded. ○ The core is then dried and dry core masses are measured and recorded. ○ Dry core densities are then calculated. • Density measured from accepted gamma-density logs is corrected for moisture from diamond drill core twinned with reverse circulation drilling. • Dry bulk density was estimated using ordinary kriging in mineralised zones and inverse distance weighted to the first power in waste zones.
Classification	• The model has been classified into the categories of Measured, Indicated and Inferred. The determination of the applicable resource category has considered the average data density for the respective domains, the interpreted geological continuity and the estimation statistics. • The Competent Person is satisfied that the stated Mineral Resource classification reflects the data spacing, data quality, level of geological continuity and the estimation constraints of the deposits.
Audits or reviews	• All stages of Mineral Resource estimation have undergone a documented internal peer review process, which has documented all phases of the process.
Discussion of relative accuracy/ confidence	• Rio Tinto Iron Ore operate multiple mines in the Pilbara region of Western Australia. The Mineral Resource data collection and estimation techniques used for Yandicoogina Oxbow and Billiard South are consistent with those applied at other deposits which are being mined. Reconciliation of actual production with the Mineral Resource estimates for individual deposits is generally accurate to within ten percent for tonnes on an annual basis. This result is indicative of a robust process. • The accuracy and confidence of the Mineral Resource estimate is consistent with the current level of study (Feasibility).

SECTION 4 ESTIMATION AND REPORTING OF ORE RESERVES

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• The Billiard South Mineral Resource estimate was generated in 2015, incorporating 1,722 drill holes for grade on a final drilling grid of 100 m x 50 m. The grade and density estimates were generated using geostatistical spatial analysis and Ordinary Kriging for the mineralised domains. • The Oxbow Mineral Resource estimate was generated in 2012, incorporating 514 drill holes for grade on a final drilling grid of 100 m x 50 m. The grade and density estimates were generated using geostatistical spatial analysis and Ordinary Kriging for the mineralised domains. • The most recent Mineral Resource estimates together with the latest update of pit designs were used for reporting Ore Reserves. • The declared Ore Reserves are for the Yandicoogina Billiard South and Oxbow deposits. • Mineral Resources are reported additional to Ore Reserves.
Site visits	• The Competent Person has visited Yandicoogina in 2014.
Study status	• The Oxbow Feasibility study was completed in 2015. • The Billiard South Pre-Feasibility Study was completed in 2015 and the Feasibility Study is in progress.
Cut-off parameters	• The cut-off grade for high-grade ore is less than or equal to 1.9% Al_2O_3 and 6.5% SiO_2.
Mining factors or assumptions	• The Mineral Resource model was regularised to a block size of 25 m E × 25 m N × 5 m RL, which was determined to be the selective mining unit following an analysis of a range of selective mining units. Dilution and mining recovery were modelled by applying the regularisation process to the sub-block geological model. • Metallurgical models were applied to the regularised model in order to model products tonnage, grades and plant yields. • The pit design is extended to the limit of the channel iron deposit (CID) with due consideration of geotechnical, geometric and access constraints. The pit design was used as the basis for production scheduling and economic evaluation. • Conventional truck and shovel mining methods, similar to the existing Yandicoogina operation and other Rio Tinto Iron Ore mines, were selected. The mine has been designed to utilise trucks to transport ore to central processing facilities. • Geotechnical design recommendations have been supplied based on geotechnical studies informed by the assessment of seven fully cored and geotechnically logged diamond drill holes in Oxbow, and seven fully cored and geotechnically logged diamond drill holes in Billiard South, both drilled in 2014. This site specific data was supplemented by 19 fully cored and geotechnically logged diamond drill holes from across adjacent Yandicoogina deposits (Junction Central, Junction South West, Junction South East and Billiard South), in 2009, 2010 and 2014 and were also supported by rock strength and RQD information from 38 diamond resource geology holes drilled at Oxbow. • The resultant design recommendations are to follow the Basal Clay Conglomerate (BCC) (contour mining) up to a dip of 30 degrees, and then a typical batter berm configuration with inter ramp slope angles varying between 32 and 43 degrees, depending on the local rock mass and structural geological conditions. • During the above process, Inferred Mineral Resources were excluded from mine schedules and economic valuations utilised to validate the economic viability of the Ore Reserves. • The Oxbow Feasibility and Billiard South Pre-Feasibility Studies considered infrastructure requirements associated with the conventional truck and shovel mining operation including crushing and conveying systems, dump & stockpile locations, maintenance facilities, access routes, explosive storage, water and power.
Metallurgical factors or assumptions	**Oxbow** • The Oxbow mine has been designed with a dry crush and screen processing facility similar to existing processing facilities at Yandicoogina mining operations. The alternative processing technologies are available for Oxbow; however this has been excluded from this Ore Reserve declaration. • Metallurgical core processing followed a well-tested and proven processing methodology that has been utilised for Rio Tinto Iron Ore Yandicoogina process design purposes for decades. • During drill campaigns in 2011, a total of 500 m of metallurgical PQ-3 diamond core was drilled. This core formed the basis for metallurgical test work, which informed the study for the design of the processing facility and metallurgical models. The map below show the

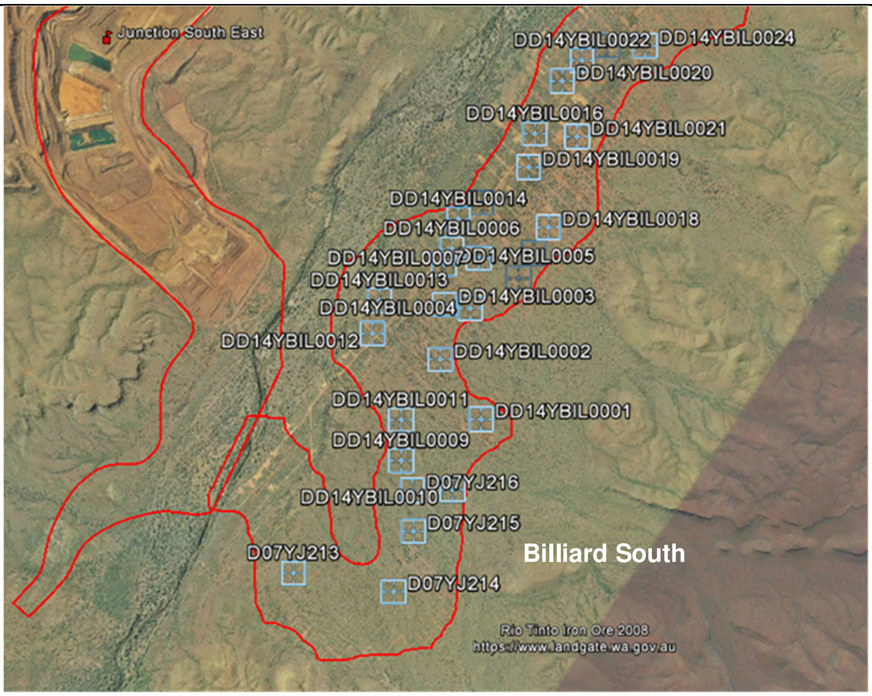
location of these drill holes.



- The diamond drill core test results were utilised to develop metallurgical models representing upper and lower ore domains and were considered representative of the ore body. The metallurgical models predict plant yield, product tonnage and grade parameters for fines product.

Billiard South

- The Billiard South mine has been designed with wet/dry crush and screen processing facility similar to processing facilities at Yandicoogina mining operations, to process below water table high aluminous ore.
- Metallurgical core processing followed a well-tested and proven processing methodology that has been utilised for Rio Tinto Iron Ore Yandicoogina process design purposes for decades.
- During drill campaigns in 2011 and 2014 a total of 1800 m of metallurgical PQ-3 diamond core was drilled. This core formed the basis for metallurgical test work, which informed the study for the design of the processing facility and metallurgical models. The map below show the location of these drill holes.

	 • The diamond drill core test results were utilised to develop metallurgical models representing upper and lower ore domains and were considered representative of the ore body. The metallurgical models predict plant yield, product tonnage and grade parameters for fines products.
Environmental	• The Oxbow (west) deposit is approved under the Western Australian *Environmental Protection Act 1986* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. Approval for Oxbow (east) is being sought as a non-significant amendment to the existing environmental approvals and is underway. • Hamersley Iron – Yandi Pty Limited referred the Yandicoogina Pocket-Billiard South project to the WA Environmental Protection Authority and has been given a level of assessment of a Public Environmental Review under section 38 of the *Environmental Protection Act 1986*. The project is currently undergoing an environmental impact assessment. The Proposal was also referred to the Commonwealth and determined to be a 'not controlled' action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. Therefore no further federal environmental assessment is required. • A geochemical risk assessment has been completed for the project. The assessment encompasses all material types present at the site, and tests have been conducted in accordance with industry standards. Mining operations at the project pose a low acid mine drainage risk based on current pit designs and the assessment of samples from within the pit locations.
Infrastructure	• Access to the site is well established from the Great Northern Highway. • Ore will be railed to Rio Tinto's ports at Dampier and Cape Lambert. The port and railway networks have sufficient capacity to accommodate ore supply from the site. • A central hub for all non-process support facilities is located close to the existing Junction Central (JC) pit for ease of access. It is located centrally to the processing plant and accommodation precinct. • The Yandicoogina Explosive Facility is located east of the JC pit and is similar to those constructed at other Rio Tinto Iron ore projects in the Pilbara, Western Australia. • The Yandicoogina operation is well established with central administration and workshop facilities at JC. The workforce currently operates on a Fly in Fly out (FIFO) model using the Barimunya airport located to the north. • Process water will be sourced from groundwater abstracted through the mine dewatering process. Potable water will be sourced from the bore fields servicing the current Yandicoogina operation. • Power supply will be derived from the existing distribution system at the Yandicoogina Operation, sourced from the Hamersley Iron power stations in Dampier and Paraburdoo. • The existing fuel storage and handling facilities at the site will be upgraded to service the project mining operations.

	• The site operation is well established with a permanent village.
Costs	• The capital costs are based on relevant Engineering Studies utilising experience from the construction of existing, similar Rio Tinto Iron Ore projects in the Pilbara, Western Australia. • Operating costs were benchmarked against similar operating Rio Tinto Iron Ore mine sites. • Exchange rates were forecast by analysing and forecasting macro-economic trends in the Australian and World economy. • Transportation costs were based on the existing operating experience at Rio Tinto Iron Ore mine sites in the Pilbara, Western Australia. • Allowances have been made for royalties to the Western Australian government and other private stakeholders.
Revenue factors	• Rio Tinto applies a common process to the generation of commodity price estimates across the group. This involves generation of long-term price curves based on current sales contracts, industry capacity analysis, global commodity consumption and economic growth trends. In this process, a price curve rather than a single price point is used to develop estimates of mine returns over the life of the project. The detail of this process and of the price point curves is commercially sensitive and is not disclosed.
Market assessment	• The supply and demand situation for iron ore is affected by a wide range of factors, and as iron and steel consumption changes with economic development and circumstances. Rio Tinto Iron Ore delivers products aligned with its Mineral Resources and Ore Reserves; these products have changed over time and successfully competed with iron ore products supplied by other companies.
Economic	• Economic inputs such as foreign exchange rates, carbon pricing, and inflation rates are also generated internally at Rio Tinto. The detail of this process is commercially sensitive and is not disclosed. • Sensitivity testing of the Yandicoogina Ore Reserves using both Rio Tinto long-term prices and a range of published benchmark prices demonstrates a positive net present value for the project sufficient to meet Rio Tinto Limited investment criteria.
Social	• The Yandicoogina deposits are located within existing tenure Mining Lease (ML) 274SA, which was granted under the *Iron Ore (Yandicoogina) Agreement Act 1996*. • The Yandicoogina deposits and associated infrastructure are located within the Shire of East Pilbara, who has been informed of the proposal to develop the deposits.
Other	• Semi-quantitative risk assessments have been undertaken throughout the Oxbow and Billiard South study phases, no critical naturally occurring risks have been identified through the above mentioned risk management processes.
Classification	• The Billiard South Ore Reserves consist of 100% Proved Reserves. • The Oxbow Ore Reserves consist of 100% Proved Reserves. • The Competent Person is satisfied that the stated Ore Reserve classification reflects the outcome of technical and economic studies.
Audits or reviews	• No external audits have been performed. • Internal Rio Tinto Iron Ore peer review processes and internal Rio Tinto technical reviews have been completed. These reviews concluded that the fundamental data collection techniques are appropriate.
Discussion of relative accuracy/ confidence	• Rio Tinto Iron Ore operates multiple mines in the Pilbara region of Western Australia. The Ore Reserve estimation techniques utilised for the Oxbow and Billiard South deposits are consistent with those applied at the existing operations. Reconciliation of actual production with the Ore Reserve estimate for individual deposits is generally within 10 percent for tonnes on an annual basis. This result is indicative of a robust Ore Reserve estimation process. • Accuracy and confidence of modifying factors are generally consistent with the current level of studies (Billiard South Pre-Feasibility Study and Oxbow Feasibility Study). It is anticipated that the modifying factors for Billiard South will be further refined during the Feasibility Study, which is currently under way.

2015 Annual Report Ore Reserve Table, showing line items relating to Yandicoogina upgrade

		Proved Ore reserves at end 2015		Probable ore reserves at end 2015		Total ore reserves 2015 compared with 2014					
	Type (a)	Tonnage	Grade	Tonnage	Grade	Tonnage		Grade		Interest %	Recoverable metal
						2015	2014	**2015**	2014		
IRON ORE (b)		millions of tonnes	%Fe	millions of tonnes	%Fe	**millions of tonnes**	millions of tonnes	**%Fe**	%Fe		**Marketable product millions of tonnes**
Reserves at Operating Mines											
Hamersley Iron (Australia)											
- Yandicoogina (Pisolite ore HG) (c)	O/P	637	58.5	4	58.8	**642**	247	**58.5**	58.7	100.0	**642**

(a) Type of mine: O/P = open pit (b) Reserves of iron ore are shown as recoverable Reserves of marketable product after accounting for all mining and processing losses. Mill recoveries are therefore not shown.
(c) Hamersley Iron Yandicoogina (Pisolite ore HG) Reserves tonnes increased due to the inclusion of additional pits.

Brockman Syncline 2 – East Detrital - Table 1

The following table provides a summary of important assessment and reporting criteria used at the Brockman Syncline 2 – East Detrital deposit for the reporting of exploration results, Mineral Resources and Ore Reserves in accordance with the Table 1 checklist in *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition)*. Criteria in each section apply to all preceding and succeeding sections.

A summary of the Ore Reserve estimate for Brockman 2 is provided at the end of this document

SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	• Samples for geological logging, assay, geotechnical, metallurgical and density test work are collected via drilling at Brockman Syncline 2 – East Detrital. • Drilling for collection of samples for assay is conducted on a North-South grid at 50 m × 50 m collar spacing. All intervals are sampled. • All reverse circulation drilling utilises a static and rotary cone splitter beneath a cyclone return system for sample collection. The rotary cone splitter used in most recent holes produces two 8% samples ('A' and 'B') and one 84% reject sample. • All diamond core drilling uses triple-tube sampling; HQ-3 (61.1 mm core diameter) and PQ-3 (83.0 mm core diameter). • Geotechnical and density samples are collected via diamond core drilling of HQ-3 core. • Metallurgical and density samples are collected from via diamond core drilling of PQ-3 core. • Dry bulk density is derived from accepted gamma-density data collected at 10 cm intervals from down-hole geophysical sondes. Density measured from accepted gamma-density is corrected for moisture from diamond drill core twinned with reverse circulation drilling. • Mineralisation is determined by a combination of geological logging and assay results.
Drilling techniques	• Drilling is predominantly by reverse circulation with a lesser proportion of percussion and diamond drill core (Refer to Section 2, Drill hole Information, for a detailed breakdown of drilling by method and year). • The majority of drilling is oriented vertically. • Geotechnical diamond core was oriented using the ACE orientation tool, which marks the bottom of the core at the end of each run.
Drill sample recovery	• No direct recovery measurements of reserve circulation samples are performed. Sample weights are recorded from laboratory splits and the recovery at the rig is visually estimated for loss per drilling interval. • Diamond core recovery is maximised via the use of triple-tube sampling and additive drilling muds. • Diamond core recovery is recorded using rock quality designation (RQD) measurements with all cavities and core loss recorded in the Rio Tinto Iron Ore acQuire™ database. Overall recovery from diamond drill core showed acceptable levels of recovery (>92%) for all holes. • Sample recovery in some friable mineralisation may be reduced; however it is unlikely to have a material impact on the reported assays for these intervals. • Thorough analysis of duplicate samples performance does not indicate any chemical bias as a result of inequalities in samples weights.
Logging	• All drill samples are geologically logged utilising standard Rio Tinto Iron Ore Material Type Classification Scheme logging codes. • 1986 - 1995: Geological logging was performed on 1.5 m intervals and on 2 m intervals afterwards. • Since 2009, all drill holes are logged using downhole geophysical tools for gamma trace, calliper, gamma density, resistivity, magnetic susceptibility. • Since 2013, acoustic and optical televiewer data are collected at select drill hole locations for geological structural analyses.
Sub-sampling techniques and sample preparation	Sub-sampling techniques: • 1986 – 1993: ○ Percussion drilling was sampled and logged on 1.5 m intervals. Two 1 kg sub samples were collected for each 1.5 m interval by riffle splitting. Rig mounted cyclones and sample splitters were used. Wet samples collected in buckets or in a

	wheel barrow placed below the cyclone. • 1994 - 1995: o Reverse circulation drilling samples were collected on 1.5 m intervals (1994 and 1995) and on 2.0 m intervals (1995). Two sub samples were collected from a multi-level riffle splitter; one was the reference sample of 1 kg contained in a plastic jar with a sample tag placed inside the container. A second sample, used for chemical analysis, weighing approximately 5 kg was collected in a calico bag with the sample tag stapled on top of the bag. • 1996 - 2000: o Reserve circulation drilling samples were collected on 2 m intervals with the sub sampling procedure the same as from 1994 - 1995. • 2001 - 2005: o Reverse circulation drilling samples were collected on 2 m intervals. Sub samples were collected through a three-tiered riffle splitter. It produced approximate splits of: ▪ 'A' Split - Analytical sample – 12.5% ▪ 'B' Split - Retention sample – 12.5% ▪ Bulk reject – 75% • 2006 – 2014: o Reserve circulation drilling samples were collected on 2 m intervals. Sub sampling was carried out using a Rotating Cone Splitter rotating at a nominal 20 - 25 RPM, beneath a cyclone return system, produces approximate splits of: ▪ 'A' Split - Analytical sample – 8% ▪ 'B' Split - Retention sample –8% ▪ Bulk reject – 84% Sample preparation: • Pre 2000: o Reserve circulation drilling samples were prepared by crushing the 5 kg drill sample to -3 mm. This was split to 200 – 300 g using a rotary splitter. The sample was dried for eight hours at 105° C and then pulverised in a ring mill to 95% passing a 100 micron sieve for assay. • 2001-2014: o 'A' split samples dried at 105° C. o Sample crushed to -3 mm by Boyd crusher and splitting through linear splitting device to capture 1 – 2.5 kg samples. o Robotic LM5 used to pulverise the total sample (1 – 2.5 kg) to 150 microns. o A 100 gram sub sample collected for assay.
Quality of assay data and laboratory tests	Assay methods: • An X-Ray Fluorescence (XRF) analysis is conducted to determine : o Pre 2001 : ▪ Fe, SiO_2, Al_2O_3, P, S, CaO, TiO, Mn and MgO o 2001 - 2014 ▪ Fe, SiO_2, Al_2O_3, TiO_2, Mn, CaO, P, S, MgO, K_2O, Zn, Pb, Cu, Ba, V, Cr, Cl, As, Ni, Co, Sn, Sr, Zr, Na • Loss on Ignition (LOI) is determined using industry standard Thermo-Gravimetric Analyser (TGA) o Pre 2001 : ▪ LOI was measured using a LECO TGA 500 analyser. For this, 1 to 2 g aliquot was ignited to 900° C until a dehydrated constant weight was achieved. o 2007 – 2010: ▪ LOI was measured at three steps of temperatures: 110° - 425° C, 425° - 650° C, and 650° - 1000° C. o 2011 – 2014: ▪ LOI was measured at three steps of temperatures: 140° - 425° C, 425° - 650° C, 650° - 1000° C. • Pre 2000, samples were sent to the Rio Tinto internal Dampier Laboratory. • 2000 - 2012 samples were sent to Ultra Trace Laboratories in Perth for sample preparation and analytical testing. • 2013 - Present: samples are sent to ALS Laboratories in Perth for sample preparation and analytical testing. Quality assurance measures include: • Insertion of coarse reference standards by Rio Tinto geologists at a rate of one in every 30

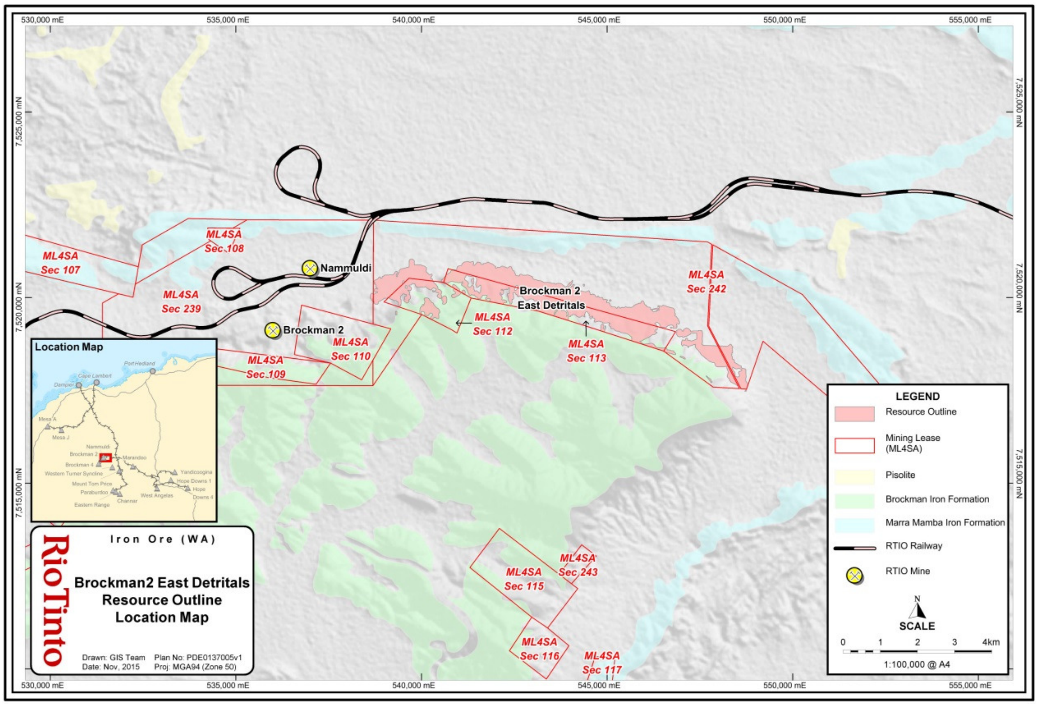
	samples in mineralised zones and one in every 60 samples in waste zones with a minimum of one standard per drill hole. Reference material is prepared and certified by Rio Tinto Iron Ore following ISO 3082:2009 (Iron Ores – Sampling and sample preparation procedures) and ISO 9516-1:2003 (Iron Ores – Determination of various elements by X-ray fluorescence spectrometry – Part 1: Comprehensive procedure). • Coarse reference standards contain a trace of strontium carbonate that is added at the time of preparation for ease of analytical detection. • Field duplicates are collected by using a 'B' split retention sample directly from the rig splitter. Duplicate insertion occurred at a frequency of one in 20. Trace zinc is included in the duplicate sample for later identification. • At a frequency of one in 20, -3 mm splits and pulps are collected as laboratory splits and repeats respectively. These sub samples are analysed at the same time as the original sample to identify grouping, segregation and delimitation errors. • Internal laboratory quality assurance and quality control measures involve the use of internal laboratory standards using certified reference material in the form of pulps, blanks and duplicates were inserted in each batch. • Random re-submission of coarse splits and pulps at an external laboratory was performed as part of Inter Laboratory Check Assay. • Analysis of the performance of certified standard and field duplicates has indicated an acceptable level of accuracy and precision with no significant bias. • Pre 1997 – No quality assurance and quality control processes were performed prior to 1997 at the time of drilling. Where logged geology from these drill holes was comparable with more recent drilling, the sample assays were deemed valid and included in the Mineral Resource estimate.
Verification of sampling and assaying	• No twinned drilling has been conducted at Brockman Syncline 2 – East Detrital deposit. • Data was returned electronically from Ultra Trace and ALS laboratories in Perth. All data is transferred to an acQuire™ database. • An extensive quality control process is performed prior to accepting a batch of assay results from the laboratory. • Written procedures outline the processes of geological logging and data importing, quality assurance and quality control validation and assay importing, etc. A robust, restricted-access database is in place to ensure that any requests to modify existing data go through appropriate channels and approvals, and that changes are tracked by date, time, and user.
Location of data points	• All drill hole collar locations at the Brockman Syncline 2 – East Detrital deposit are surveyed using Geocentric Datum of Australia 1994 (GDA94) and Map Grid of Australia 1994 (MGA94) zone 50 using Differential Global Positioning System (DGPS) survey equipment. • Drill hole collar reduced level (RL) data is compared to detailed topographic maps and show that the collar survey data is accurate. The topographic surface is based on 10 m grid sampling of the 2008 Light Detecting and Ranging (LiDAR) survey, including spot heights from DGPS drilling collars and is considered robust.
Data spacing and distribution	• Drill spacing is predominantly 50 m × 50 m (increases towards the eastern deposit margins to 200 m × 200 m). • The drill spacing is deemed appropriate for sufficient deposit knowledge by the Competent Person for the Mineral Resource classification applied. • The mineralised domains at Brockman Syncline 2 – East Detrital deposit have demonstrated sufficient continuity in both geology and grade to support the definition of Mineral Resources, and the classifications applied under the 2012 JORC Code guidelines.
Orientation of data in relation to geological structure	• Drill lines are oriented North/South along the Brockman Mine grid and perpendicular to the deposit strike. • Drilling is predominantly vertical, however in areas of restricted access or to intersect structures perpendicularly, angled holes were utilised. • Geotechnical drill holes were typically angled at -85° minimum on a 0° or 180° azimuth to be perpendicular to drill lines.
Sample security	• Analytical samples (A splits) are collected by field assistants, placed onto steel sample racks, and transported to Ultra Trace and ALS Laboratories in Perth, Western Australia for analyses. Retention samples (B splits) are collected and stored in drums for two years at a Rio Tinto Iron Ore Resource Evaluation camp located onsite. • Pulps are retained indefinitely at Laboratories and external storage facilities at CTI Logistics located in Perth, Western Australia.
Audits or	• No external audits have been performed. • Internal Rio Tinto Iron Ore peer review processes and internal Rio Tinto technical reviews

reviews	have been completed. These reviews concluded that the fundamental data collection techniques are appropriate.

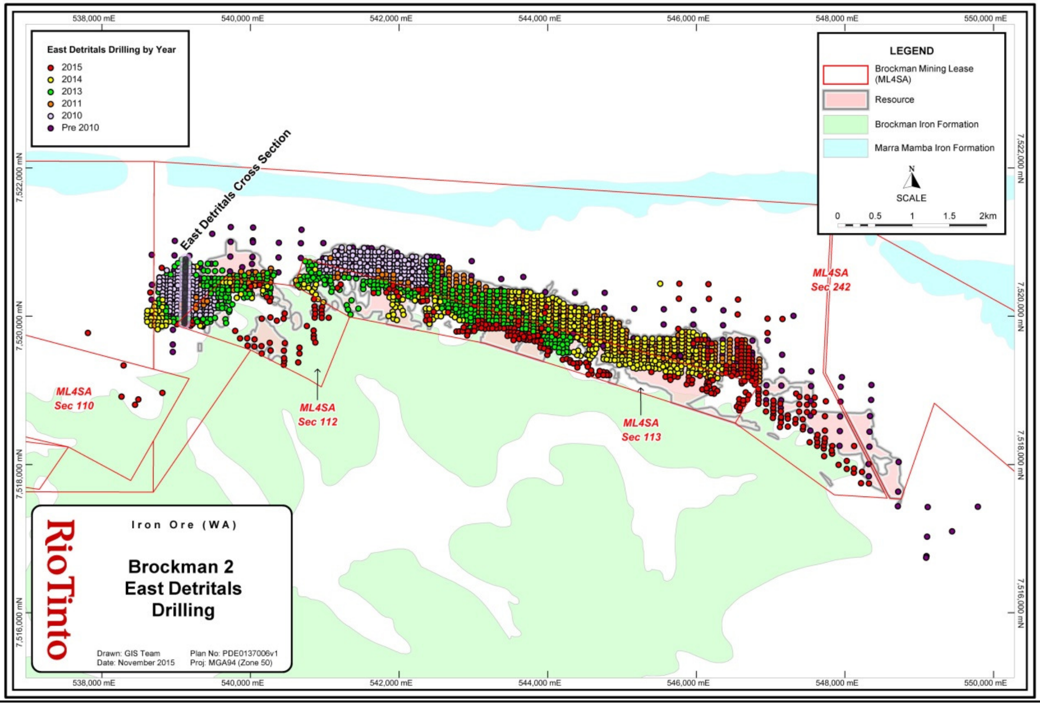
SECTION 2 REPORTING OF EXPLORATION RESULTS

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td>Mineral tenement and land tenure status</td><td>100% owned by Hamersley Iron Proprietary Limited (100% Rio Tinto Limited), held under the Mining Lease ML4SA (section 110, 112, 113, 239 and 242) and the Exploration lease (E47/00031).</td></tr>
<tr><td>Exploration done by other parties</td><td>There was no exploration completed on this ground by other parties.</td></tr>
<tr><td>Geology</td><td>The deposit contains both detrital and bedded-hosted iron mineralisation.
The detrital portion of the deposit is a Brockman Iron Formation-derived detrital iron deposit overlying the bedded Dales Gorge Member of the Archean Brockman Iron Formation.
The bedded-hosted portion of the deposit contains iron mineralisation which occurs as a high-phosphorus Brockman Iron deposit with a weathering overprint.</td></tr>
<tr><td>Drill hole Information</td><td>
<table>
<tr><th rowspan="2">Year</th><th colspan="2">Percussion</th><th colspan="2">Diamond</th><th colspan="2">Reverse Circulation</th></tr>
<tr><th># Holes</th><th>Metres</th><th># Holes</th><th>Metres</th><th># Holes</th><th>Metres</th></tr>
<tr><td>1986</td><td>93</td><td>4,089</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>1987</td><td>1</td><td>26</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>1993</td><td>15</td><td>1,104</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>1994</td><td>-</td><td>-</td><td>-</td><td>-</td><td>3</td><td>237</td></tr>
<tr><td>1995</td><td>-</td><td>-</td><td>-</td><td>-</td><td>30</td><td>1,707</td></tr>
<tr><td>1997</td><td>-</td><td>-</td><td>-</td><td>-</td><td>4</td><td>622</td></tr>
<tr><td>2009</td><td>-</td><td>-</td><td>-</td><td>-</td><td>11</td><td>1,720</td></tr>
<tr><td>2010</td><td>-</td><td>-</td><td>-</td><td>-</td><td>342</td><td>31,418</td></tr>
<tr><td>2011</td><td>-</td><td>-</td><td>-</td><td>-</td><td>389</td><td>28,566</td></tr>
<tr><td>2013</td><td>-</td><td>-</td><td>17</td><td>1,872</td><td>382</td><td>22,820</td></tr>
<tr><td>2014</td><td>-</td><td>-</td><td>1</td><td>54</td><td>435</td><td>32,614</td></tr>
<tr><td>Total</td><td>109</td><td>5,219</td><td>18</td><td>1,926</td><td>1,596</td><td>119,704</td></tr>
</table>
All drilling data has been used for geological interpretation and Mineral Resource estimation.</td></tr>
<tr><td>Data aggregation methods</td><td>No data aggregation. A majority of the reverse circulation samples are collected at 2 m intervals (91%), no sample compositing was performed.
No grade truncations were performed.</td></tr>
<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>Geometry of the mineralisation with respect to the drill hole angle is well-defined in most areas of the deposit. The strata are generally horizontal with slight folding and perceived true width is held consistent during geological interpretations. Down-hole interval lengths reported are essentially true width due to vertical drilling and gently dipping or horizontal strata.</td></tr>
</table>

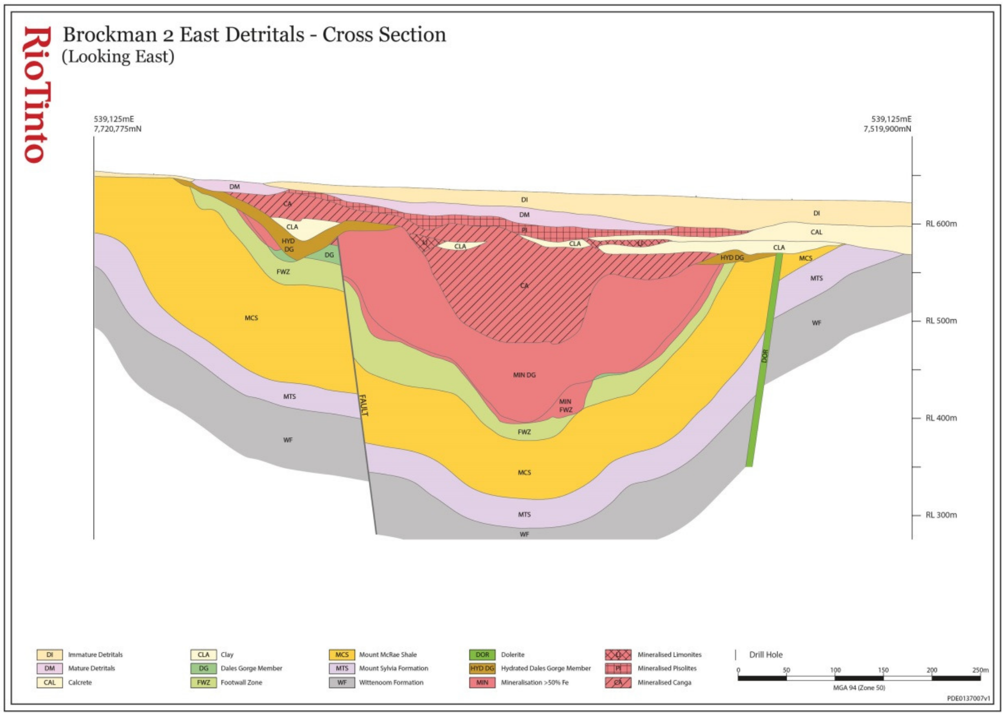
Diagrams



530,000 mE
535,000 mE
540,000 mE
545,000 mE
550,000 mE
555,000 mE
7,525,000 mN
7,520,000 mN
7,515,000 mN
ML4SA Sec 107
ML4SA Sec 108
ML4SA Sec 239
ML4SA Sec.109
ML4SA Sec 110
ML4SA Sec 112
ML4SA Sec 113
ML4SA Sec 242
ML4SA Sec 115
ML4SA Sec 243
ML4SA Sec 116
ML4SA Sec 117
Nammuldi
Brockman 2
Brockman 2 East Detritals
Location Map
Port Hedland
Cape Lambert
Dampier
Mesa A
Mesa J
Nammuldi
Brockman 2
Brockman 4
Marandoo
Western Turner Syncline
Mount Tom Price
Paraburdoo
Channar
Eastern Range
West Angelas
Yandicoogina
Hope Downs 1
Hope Downs 4
LEGEND
Resource Outline
Mining Lease (ML4SA)
Pisolite
Brockman Iron Formation
Marra Mamba Iron Formation
RTIO Railway
RTIO Mine
N
SCALE
0
1
2
3
4km
1:100,000 @ A4
Iron Ore (WA)
RioTinto
Brockman2 East Detritals Resource Outline Location Map
Drawn: GIS Team
Date: Nov, 2015
Plan No: PDE0137005v1
Proj: MGA94 (Zone 50)



538,000 mE
540,000 mE
542,000 mE
544,000 mE
546,000 mE
548,000 mE
550,000 mE
7,522,000 mN
7,520,000 mN
7,518,000 mN
7,516,000 mN
East Detritals Drilling by Year
2015
2014
2013
2011
2010
Pre 2010
East Detritals Cross Section
ML4SA Sec 110
ML4SA Sec 112
ML4SA Sec 113
ML4SA Sec 242
LEGEND
Brockman Mining Lease (ML4SA)
Resource
Brockman Iron Formation
Marra Mamba Iron Formation
N
SCALE
0
0.5
1
1.5
2km
Iron Ore (WA)
RioTinto
Brockman 2 East Detritals Drilling
Drawn: GIS Team
Date: November 2015
Plan No: PDE0137006v1
Proj: MGA94 (Zone 50)

	
Balanced reporting	• Not applicable as Rio Tinto has not released exploration results for this deposit.
Other substantive exploration data	• Geological surface mapping has been conducted in 1976 at 1:12,000 scale and in 2013 - 2014 at 1:5,000 scale. • Approximately 29% of the Mineral Resource lies below the water table.
Further work	• Further infill reverse circulation drilling is planned to achieve a final designed drilling grid at 50 m × 50 m spacing.

SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	Commentary
Database integrity	• All drilling data is securely stored in an acQuire™ geoscientific information management system managed by a dedicated team within Rio Tinto Iron Ore. The system is backed up nightly on servers located in Perth, Western Australia. The backup system has been tested in 2015, demonstrating that it is effective. • The drill hole database used for Mineral Resource estimation has been internally validated. Methods include: o acQuire™ scripts for relational integrity, duplicates, total assay and missing / blank assay values; o Grade ranges in each domain; o Domain names and tags; o Survey data down-hole consistency; o Null and negative grade values; o Missing or overlapping intervals; o Duplicate data. • Drill hole data is also validated visually by domain and compared to the geological model.
Site visits	• The Competent Person visited Brockman Syncline 2 - East Detrital deposit regularly between 2011 and 2015. There were no outcomes as a result of the most recent visit.
Geological interpretation	• Overall the Competent Person's confidence in the geological interpretation of the area is good, based on the quantity and quality of data available, and the continuity and nature of the mineralisation. • Geological modelling was performed by Rio Tinto geologists. The method involves interpretation of down-hole stratigraphy using surface geological mapping, lithological logging data, down-hole gamma data, and assay data. • Cross-sectional interpretation of each stratigraphic unit is performed followed by interpretation of mineralisation boundaries. Three-dimensional wireframes of the sectional interpretations are created to produce the geological model. • Mineralisation is continuous. It is affected by stratigraphy, structure and weathering. The drill hole spacing is sufficient to capture grade and geology changes at a large scale. • The geological model is sub-divided into domains and both the composites and model blocks are coded with these domains.
Dimensions	• The mineralisation extends 10 km along strike in an East – West direction, up to 1 km perpendicular to strike in a South - North direction and to a maximum depth of 230 m below the current topographical surface. The hydrated and detrital domains are mostly continuous with the pod-like bedded domains and the average depth varying.
Estimation and modelling techniques	• The mineralised domains are estimated using ordinary kriging or inverse distance weighted to the second power and non-mineralised domains were estimated using inverse distance weighting to the first power or a scripted average of composited sample data. These methods are appropriate for estimating the tonnes and grade of the reported Mineral Resources. • A block size of 12.5 m (X) × 12.5 m (Y) × 5 m (Z) was used for parent blocks. Parent blocks are sub-celled to the geological boundaries to preserve volume. • All domains were estimated with hard boundaries applied. • Statistical analysis was performed on data from all domains. • A high yield limit was used for manganese to restrict particular samples' range of influence. The limits differed for each domain and were selected based on the histograms and spatial distribution of manganese. • The grade estimation process was completed using Maptek's Vulcan software. • Grades are extrapolated between 250 m to 1,000 m from data points, depending on the domain. • The block model was validated using a combination of visual, statistical, and multivariate global change of support techniques.
Moisture	• All Mineral Resource tonnages are estimated and reported on a dry basis.
Cut-off parameters	• The cut-off grade for high grade ore is greater than or equal to 60% Fe. • The cut-off for Brockman Process Ore is 50% ≤ Fe < 60% and 3% ≤ Al_2O_3 < 6% (geology domain must be Dales Gorge Member, Joffre or Footwall Zone).
Mining factors	• Development of this Mineral Resource assumes mining using standard Rio Tinto Iron Ore

or assumptions	equipment and methods similar to other Rio Tinto Iron Ore operations. The assumed mining method is conventional truck and shovel, open pit mining at an appropriate bench height. Mining practices will include grade control utilising blast hole data.
Metallurgical factors or assumptions	• It is assumed that standard crushing and screening processes used by Rio Tinto Iron Ore will be applicable for the processing of the Brockman Syncline 2 – East Detrital deposit.
Environmental factors or assumptions	• Rio Tinto Iron Ore has an extensive environmental and heritage approval process. No issues were identified that would impact on the Mineral Resource estimate.
Bulk density	• Gamma-density logs are collected from reverse circulation drill holes. • Dry core densities are generated via the following process: ○ The core volume is measured in the split and the mass of the core is measured and recorded. ○ Wet core densities are calculated by the split and by the tray. ○ Core recovery is recorded. ○ The core is then dried and dry core masses are measured and recorded. ○ Dry core densities are then calculated. • Density measured from accepted gamma-density logs is corrected for moisture from diamond drill core twinned with reverse circulation drilling. • Dry bulk density was estimated using ordinary kriging in mineralised zones and inverse distance weighted to the first power in waste zones.
Classification	• The model has been classified into the categories of Measured, Indicated and Inferred. The determination of the applicable Mineral Resource category has considered the average data density for the respective domains, the interpreted geological continuity and the estimation statistics. • The Competent Person is satisfied that the stated Mineral Resource classification reflects the data spacing, data quality, level of geological continuity and the estimation constraints of the deposits.
Audits or reviews	• All stages of Mineral Resource estimation have undergone a documented internal peer review process, which has documented all phases of the process.
Discussion of relative accuracy/ confidence	• Rio Tinto Iron Ore operates multiple mines in the Pilbara region of Western Australia. The Mineral Resource data collection and estimation techniques used for Brockman Syncline 2 – East Detrital deposit are consistent with those applied at other deposits that are being mined. Reconciliation of actual production with the Mineral Resource estimates for individual deposits is generally accurate to within ten percent for tonnes on an annual basis. This result is indicative of a robust process.

SECTION 4 ESTIMATION AND REPORTING OF ORE RESERVES

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• Initial generation of the modifying factors for this Ore Reserve estimate were based on a Mineral Resource estimate completed in April 2014. • The most recent Mineral Resource estimate together with the latest update of pit designs were used for reporting Ore Reserves. • The declared Ore Reserves are for the Brockman Syncline 2 - East Detrital Pit 8, Pit 11 & Pit 12. • Mineral Resources are reported additional to Ore Reserves.
Site visits	• The Competent Person visited Brockman Syncline 2 - East Detrital deposit in 2013.
Study status	• The Brockman Syncline 2 - East Detrital deposit is a brownfields expansion of existing operations at Brockman Syncline 2.
Cut-off parameters	• A variable cut-off grade is applied at Brockman Syncline 2 - East Detrital.
Mining factors or assumptions	• The Mineral Resource model was regularised to a block size of 12.5 m E × 12.5 m N × 10 m RL which was determined to be the selective mining unit following an analysis of a range of

	selective mining units. Dilution and mining recovery were modelled by applying the regularisation process to the sub-block geological model. - Metallurgical models were applied to the regularised model in order to model products tonnage, grades and yields. - Pit optimisations utilising the Lerchs-Grosmann algorithm with industry standard software were undertaken. This optimisation utilised the regularised Mineral Resource model together with cost, revenue, and geotechnical inputs. The resultant pit shells were used to develop detailed pit designs with due consideration of geotechnical, geometric and access constraints. These pit designs were used as the basis for production scheduling and economic evaluation. - Conventional mining methods (truck and shovel) similar to other Rio Tinto Iron Ore operating mines are utilised. - The geotechnical parameters have been applied based on geotechnical studies informed by assessments of diamond drill holes drilled during the 2011, 2012 & 2013 drilling programmes, specifically drilled for geotechnical purposes on the surrounding host rock. - Structural geology was assessed based on angled reverse circulation drill holes. - During the above process, Inferred Mineral Resources were excluded from mine schedules and economic valuations utilised to validate the economic viability of the Ore Reserves.
Metallurgical factors or assumptions	- There are two existing dry crush and screen processing facilities and one existing wet desliming processing facility to which Brockman Syncline 2 – East Detrital ore could be fed. Product prediction regressions for both dry and wet processing routes are assigned to the designated domains, based on the most appropriate available metallurgical data generated from PQ-3 cores, WDC, winzes and production data. - The dry plants crush and screen the ore into dry lump and fines products. - The wet desliming plant scrubs, screens and deslimes the ore to produce washed lump and fines products. The plant was commissioned in early 2015. - Product moisture assumptions are based on a combination of data from operating sites with similar ore type and results from bench to pilot scale product dewatering test work. - Conversion of railed products to shipped products is based on the results of test work that estimates the conversion during rail and port handling process. - During drill campaigns in 1999, 2005 and 2010 metallurgical drill core was obtained, mostly from the western half of Brockman Syncline 2 – East Detrital and Brockman Syncline 2. These drill cores are believed to have intersected all major geology member/strands with relevant grades. Additional metallurgical PQ-3 core was obtained from eastern half of Brockman Syncline 2 – East Detrital in 2014 and 2015 but the data is not yet available for inclusion in the regressions. The map below show the location of these drill holes, excluding 2014/2015 PQ-3 core holes. 
Environmental	- On behalf of Hamersley Iron Pty Limited (the Proponent) Rio Tinto Iron Ore referred the Nammuldi - Silvergrass Expansion Project to the Environmental Protection Authority on 25 June 2010. The proposal was given a level of assessment of a Public Environmental Review under Part IV of the *Environmental Protection Act 1986* (**EP Act**). The proposal included the development of above and below water deposits at each of Nammuldi, Silvergrass and Brockman Syncline 2 – East Detrital. The Minister for Environment authorised the Nammuldi - Silvergrass Expansion on 13 January 2013 via Ministerial Statement 925. - Minor above water table extension to pits within the Brockman Syncline 2 – East Detrital deposits was authorised under s45C of the EP Act ion 17 June 2015 (MS 925 as amended). - Assessment of the potential for impacts on Matters of National Environmental Significance did not trigger a requirement to refer the proposed development of the Nammuldi, Silvergrass and Brockman Syncline 2 – East Detrital deposits for assessment under the *Environment Protection and Biodiversity Conservation Act 1999*. - Rio Tinto Iron Ore has an extensive environmental and heritage approval process. A review of these requirements was undertaken during a PFS and FS study in 2012/2013. The Brockman Syncline 2 – East Detrital project is located in the Hamersley Range, which has a deep and

	rich history of Aboriginal occupation. A total of 34 heritage sites were identified within the project area. The locations of these sites were considered during mine planning and engineering activities. Twenty of these sites have been or are proposed to be impacted. • A geochemical risk assessment has been completed for the project. The assessment encompasses all material types present at the site, and tests have been conducted in accordance with industry standards. The majority of mining operations at the project pose a low acid mine drainage risk based on current pit designs and the assessment of samples from within the pit locations; however some material that will pose an acid mine drainage risk is likely to be encountered in one of the pits and will be managed according to existing procedures.
Infrastructure	• Brockman Syncline 2 - East Detrital utilises existing facilities located at the Brockman Syncline 2 and Nammuldi mines.
Costs	• Operating costs were benchmarked against similar operating Rio Tinto Iron Ore mine sites. • Exchange rates were forecast by analysing and forecasting macro-economic trends in the Australian and World economy. • Transportation costs were based on existing operating experience at Rio Tinto Iron Ore mine sites in the Pilbara, Western Australia. • Allowances have been made for royalties to the Western Australian government and other private stakeholders.
Revenue factors	• Rio Tinto applies a common process to the generation of commodity price estimates across the group. This involves generation of long-term price curves based on current sales contracts, industry capacity analysis, global commodity consumption and economic growth trends. In this process, a price curve rather than a single price point is used to develop estimates of mine returns over the life of the project. The detail of this process and of the price point curves is commercially sensitive and is not disclosed.
Market assessment	• The supply and demand situation for iron ore is affected by a wide range of factors, and as iron and steel consumption changes with economic development and circumstances. Rio Tinto Iron Ore delivers products aligned with its Mineral Resources and Ore Reserves; these products have changed over time and successfully competed with iron ore products supplied by other companies.
Economic	• Economic inputs such as foreign exchange rates, carbon pricing, and inflation rates are also generated internally at Rio Tinto. The detail of this process is commercially sensitive and is not disclosed. • Sensitivity testing of the Brockman Syncline 2 - East Detrital Ore Reserves using both Rio Tinto long-term prices and a range of published benchmark prices demonstrates a positive net present value for the project sufficient to meet Rio Tinto Limited investment criteria.
Social	• The Brockman Syncline 2 - East Detrital deposits are located within Mining Lease (ML) 4SA sections 112, 113, 239 and 242 which have been granted pursuant to the Iron Ore (Hamersley Range) Agreement Act 1963. • The Brockman 2 East Detrital mine and proposed associated infrastructure falls wholly within the area of the Eastern Guruma groups' native title determination. Rio Tinto has a registered Indigenous Land Use Agreement with the Eastern Guruma People, which informs the manner in which native title and heritage are managed in the project area. Representatives of the Eastern Guruma People were involved in the multiple archaeological and ethnographic surveys undertaken throughout this area. • Rio Tinto Iron Ore has undertaken environmental surveys across the project area to support the development of the Nammuldi - Silvergrass Expansion (including Brockman Syncline 2 – East Detrital). Surveys comprised flora and vegetation and terrestrial, aquatic and subterranean fauna.
Other	• Semi-quantitative risk assessments have been undertaken throughout the Brockman Syncline 2 - East Detrital study phases, no material naturally occurring risks have been identified through the above mentioned risk management processes.
Classification	• The Ore Reserves for the Brockman 2 Hub consist of 50% Proven Reserves and 50% Probable Reserves. • The Competent Person is satisfied that the Ore Reserve classification reflects the outcome of technical and economic studies.
Audits or reviews	• No external audits have been performed. • Internal Rio Tinto Iron Ore peer review processes and internal Rio Tinto technical reviews

	have been completed. These reviews concluded that the fundamental data collection techniques are appropriate.
Discussion of relative accuracy/ confidence	• Rio Tinto Iron Ore operates multiple mines in the Pilbara region of Western Australia. The Ore Reserve estimation techniques utilised for the Brockman Syncline 2 - East Detrital deposit are consistent with those applied at the existing operations. Reconciliation of actual production with the Ore Reserve estimate for individual deposits is generally within 10 percent for tonnes on an annual basis. This result is indicative of a robust Ore Reserve estimation process.

2015 Annual Report Ore Reserve Table, showing line items relating to Brockman 2 upgrade

		Proved Ore reserves at end 2015		Probable Ore reserves at end 2015		Total Ore reserves 2015 compared with 2014					
	Type (a)	Tonnage	Grade	Tonnage	Grade	Tonnage		Grade		Interest %	Recoverable metal
						2015	2014	**2015**	2014		
IRON ORE (b)		millions of tonnes	%Fe	millions of tonnes	%Fe	**millions of tonnes**	millions of tonnes	**%Fe**	%Fe		**Marketable product millions of tonnes**
Reserves at Operating Mines											
Hamersley Iron (Australia)											
- Brockman 2 (Brockman ore) (c)	O/P	47	62.5	46	62.1	**93**	62	**62.3**	62.8	100.0	**93**

(a) Type of mine: O/P = open pit (b) Reserves of iron ore are shown as recoverable Reserves of marketable product after accounting for all mining and processing losses. Mill recoveries are therefore not shown.

(c) Hamersley Iron Brockman 2 (Brockman ore) Reserves tonnes increased due to the inclusion of additional pits, updated geological models and cut-off grade changes. A JORC table 1 in support of this change will be released to the market contemporaneously with the release of this Annual report and can be viewed at riotinto.com/factsheets/JORC.

Appendix 3

West Angelas Deposit F Table 1

The following table provides a summary of important assessment and reporting criteria used at the West Angelas Deposit F for the reporting of exploration results, Mineral Resources and Ore Reserves in accordance with the Table 1 checklist in *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition)*. Criteria in each section apply to all preceding and succeeding sections.

A summary of the Ore Reserve estimate for West Angelas is provided at the end of this document

SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	• Samples for geological logging, assay, geotechnical, metallurgical and density test work are collected via drilling at West Angelas Deposit F. • Drilling for collection of samples for assay is conducted on a North-South grid at 50 m × 50 m collar spacing. All intervals are sampled. • All reverse circulation drilling utilises a static and rotary cone splitter beneath a cyclone return system for sample collection. The rotary cone splitter used in most recent holes produces two 8% samples ('A' and 'B') and one 84% reject sample. • All diamond core drilling uses triple-tube sampling; HQ-3 (61.1 mm core diameter) and PQ-3 (83.0 mm core diameter). • Geotechnical and density samples are collected via diamond core drilling of HQ-3 core. • Metallurgical and density samples are collected from via diamond core drilling of PQ-3 core. • Dry bulk density is derived from accepted gamma-density data collected at 10 cm intervals from down-hole geophysical sondes. Density measured from accepted gamma-density is corrected for moisture from diamond drill core twinned with reverse circulation drilling. • Mineralisation is determined by a combination of geological logging and assay results.
Drilling techniques	• Drilling is predominantly by reverse circulation with a lesser proportion of percussion, dual rotary and diamond drill core (Refer to Section 2, Drill hole Information, for a detailed breakdown of drilling by method and year). • The majority of drilling is oriented vertically. • 1970's drilling was open hole percussion (minimum 5.5 inch diameter). • Dual rotary drilling was conducted in 1998 - 2001. • The majority of 1998-2014 drilling was reverse circulation with a 140 mm outer diameter. • Pre 2013 all reverse circulation holes were dry drilled and 2013 - 2014 programmes were wet drilled.
Drill sample recovery	• No direct recovery measurements of reserve circulation samples are performed. Sample weights are recorded from laboratory splits and the recovery at the rig is visually estimated for loss per drilling interval • Diamond core recovery is maximised via the use of triple-tube sampling and additive drilling muds. • Diamond core recovery is recorded using rock quality designation (RQD) measurements with all cavities and core loss recorded in the Rio Tinto Iron Ore acQuire™ database. • Diamond core recovery is maximised via the use triple-tube sampling and additive drilling muds. • Sample recovery in some friable mineralisation may be reduced; however it is unlikely to have a material impact on the reported assays for these intervals. • Thorough analysis of duplicate sample performance does not indicate any chemical bias as a result of inequalities in samples weights.
Logging	• All the drill holes are geologically logged utilising standard Rio Tinto Iron Ore Material Type Classification Scheme logging codes. • Geological logging is performed on 2 m intervals for all reverse circulation drilling. • Since 2001, all drill holes are logged using downhole geophysical tools for gamma trace, calliper, gamma density, resistivity, and magnetic susceptibility.
Sub-sampling techniques and sample preparation	Sub-sampling techniques: • 1998 - 2014: ○ Reverse circulation drilling was sampled at 2 m intervals. Sub sampling was carried out using a static and rotary cone splitter beneath a cyclone return system,

	producing approximate splits of: ▪ 'A' Split – Analytical sample – 8% ▪ 'B' Split – Retention sample - 8% ▪ Bulk Reject - 84%. Sample preparation: • 1998 - 2006: o 'A' split sample dried at 105° C. o Dried sample crushed using a Jacques Jaw Crusher to approx. -5 mm. The entire sample was pulverised for samples 3.5 kg and under, samples over 3.5 kg were pulverised to 90% passing 150 microns. • 2013 – 2014: o 'A' split sample dried at 105° C. o Sample crushed to -3 mm using Boyd Crusher and split using a linear sample divider to capture 1 – 2.5 kg samples. o Robotic LM5 used to pulverise total sample (1 – 2.5 kg) to 90% passing 150 micron sieve. o A 100 gram sub sample collected for analysis.
Quality of assay data and laboratory tests	Assay methods: • An X-Ray Fluorescence (XRF) analysis is conducted to determine: o Fe, SiO_2, Al_2O_3, TiO_2, Mn, CaO, P, S, MgO, K_2O, Zn, Pb, Cu, Ba, V, Cr, Cl, As, Ni, Co, Sn, Sr, Zr, Na • Loss on Ignition (LOI) is determined using industry standard Thermo-Gravimetric Analyser (TGA) o 1998-2014: ▪ LOI was measured at three steps of temperatures: 140° - 425° C, 425° - 650° C, 650° - 1000° C. • 1998 - 1999: Samples were submitted to the SGS Laboratory in Perth for sample preparation and analytical testing. • 2004 - 2014: Samples were submitted to Ultra Trace Laboratories in Perth for sample preparation and analytical testing. Quality assurance measures include: • Insertion of coarse reference standard by Rio Tinto geologists at a rate of one in every 30 samples in mineralised zones and one in every 60 samples in waste zones with a minimum of one standard per drill hole. Reference material is prepared and certified by Rio Tinto Iron Ore following ISO 3082:2009 (Iron Ores – Sampling and sample preparation procedures) and ISO 9516-1:2003 (Iron Ores – Determination of various elements by X-ray fluorescence spectrometry – Part 1: Comprehensive procedure). • Coarse reference standards contain a trace of strontium carbonate that is added at the time of preparation for ease of identification. • Field duplicates were collected by sacrificing a 'B' split retention sample directly from the rig splitter. Duplicate insertion occurred at a frequency of one in 20. Trace zinc is included in the duplicate sample for later identification. • At a frequency of one in 20, -3 mm splits and pulps were collected as laboratory splits and repeats respectively. These sub-samples were analysed at the same time as the original sample to identify grouping, segregation and delimitation errors. • Internal laboratory quality assurance and quality control measures involve the use of internal laboratory standards using certified reference material in the form of pulps, blanks and duplicates were inserted in each batch. • Random re-submission of pulps at an external laboratory is performed following analysis. • Analysis of the performance of certified standard and field duplicates has indicated an acceptable level of accuracy and precision with no significant bias.
Verification of sampling and assaying	• Comparison of reverse circulation and twinned diamond drill core assay data distributions show that the drilling methods have similar grade distributions verifying the suitability of reverse circulation samples in the Mineral Resource estimate. • Data was returned electronically from Ultra Trace Laboratories in Perth. All data is transferred to an acQuire™ database. • Written procedures outline the processes of geological logging and data importing, quality assurance and quality control validation and assay importing. A robust, restricted-access database is in place to ensure that any requests to modify existing data go through appropriate channels and approvals, and that changes are tracked by date, time, and user.
Location of data points	• From 2006 onwards, all drill hole collar locations at the West Angelas Deposit F deposit are surveyed to Geocentric Datum of Australia 1994 (GDA94) grid by qualified surveyors using

	Differential Global Positioning System (DGPS) survey equipment, accurate to 10 cm in both horizontal and vertical directions. • Prior to 2006, all drill hole collar locations at the West Angelas Deposit F deposit were surveyed to the Australian Map Grid 1984 (AMG84) grid by qualified surveyors. The coordinates were subsequently converted to GDA94 coordinates in the acQuire™ database using universal standard grid transformation. • Drill hole collar reduced level (RL) data is compared to detailed topographic maps and show that the collar survey data is accurate. The topographic surface is based on 10 m grid sampling of the 2015 Light Detecting and Ranging (LiDAR) survey, including spot heights from DGPS drilling collars and is considered robust.
Data spacing and distribution	• Drill spacing is predominantly 50 m × 50 m (increases towards deposit margins to 200 m × 100 m). • The drill spacing is deemed appropriate for sufficient deposit knowledge by the Competent Person for the Mineral Resource classification applied. • The mineralised domains for the West Angelas Deposit F have demonstrated sufficient continuity in both geology and grade to support the definition of Mineral Resources, and the classifications applied under the 2012 JORC Code guidelines.
Orientation of data in relation to geological structure	• Drill lines are oriented North/South, perpendicular to the deposit strike. • Reverse circulation drilling is predominantly vertical and intersects the folded stratigraphy at right angles.
Sample security	• Analytical samples (A splits) are collected by field assistants, placed onto steel sample racks, and transported to Ultra Trace Laboratories in Perth, Western Australia for analyses. Retention samples (B splits) are collected and stored in drums. • Assay pulps are retained indefinitely at laboratories and external storage facilities at CTI Logistic in Perth, Western Australia.
Audits or reviews	• No external audits have been performed. • Internal Rio Tinto Iron Ore peer review processes and internal Rio Tinto technical reviews have been completed. These reviews concluded that the fundamental data collection techniques are appropriate.

SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	Commentary
Mineral tenement and land tenure status	• Mining lease granted to Robe River Ltd. In 1976 (53% Rio Tinto Ltd.), held under Mining Lease (ML) 248SA, Section 67 to 80.
Exploration done by other parties	• Cliffs International Inc. carried out exploration in the area between 1972 and 1978. • Robe River Mining Co Pty Ltd. performed exploration between 1992 and 1998 prior to the acquisition by Rio Tinto Ltd.
Geology	• The deposit contains both detrital and bedded-hosted iron mineralisation. It is hosted in the Marra Mamba Iron Formation. The mineralisation occurs primarily within the Mount Newman Member with minor mineralisation within the West Angela Member, MacLeod Member and Nammuldi Member. • The bedded mineralisation is generally overlain by a variable thickness zone of alluvium/colluvium with a weathering overprint.

Drill hole Information

Year	Diamond Holes		Dual Rotary		Reverse Circulation		Percussion (Open hole)	
	# Holes	Metres	# Holes	Metres	# Holes	Metres	# Holes	Metres
1976	-	-	-	-	-	-	4	168
1977	-	-	-	-	-	-	32	1,957
1998	-	-	-	-	33	2,408	-	-
1999	-	-	12	816	52	5,006	-	-
2000	-	-	-	-	20	1,672	-	-
2001	4	270	16	1,073	44	3,944	-	-
2004	-	-	-	-	344	23,652	-	-
2005	-	-	-	-	277	26,497	-	-
2006	-	-	-	-	564	56,506	-	-
2013	-	-	-	-	6	1,140	-	-
2014	38	3,185	-	-	186	14,032	-	-
Total	**42**	**3,455**	**28**	**1,889**	**1,526**	**134,857**	**36**	**2,125**

- All drilling data has been used for geological interpretation.
- No quality assurance and quality control processes were performed prior to 1998. Following a review of the 1970's data, these sample assays have not been used in the Mineral Resource estimate.
- A review of the 2000 – 2001 sample assay results has determined a significant bias in the assay results and this data has not been used in the Mineral Resource estimate.

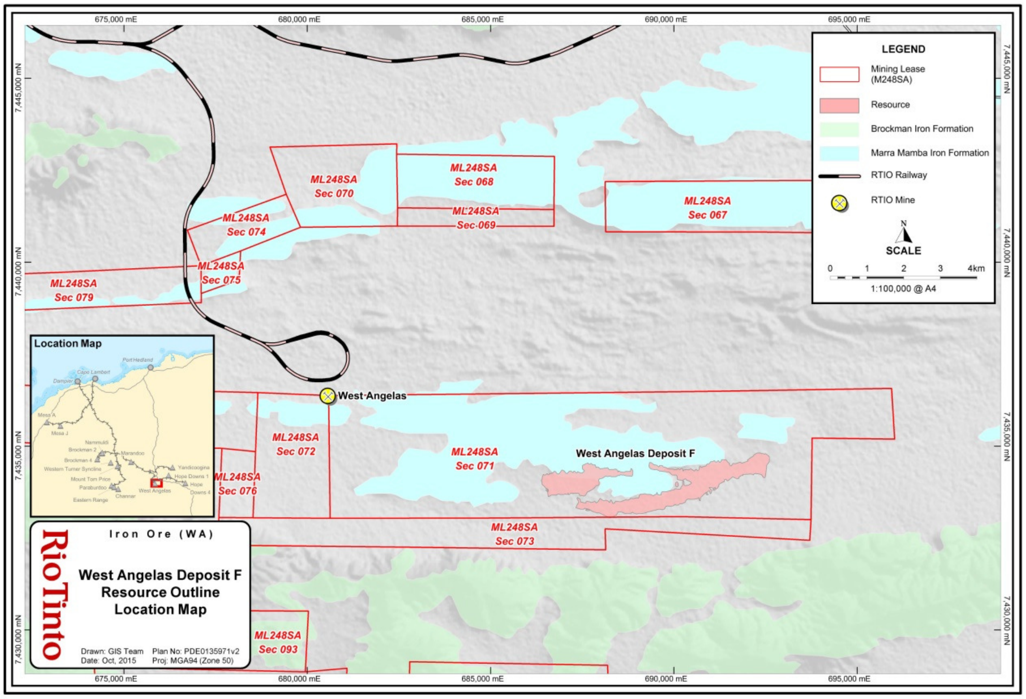
Data aggregation methods

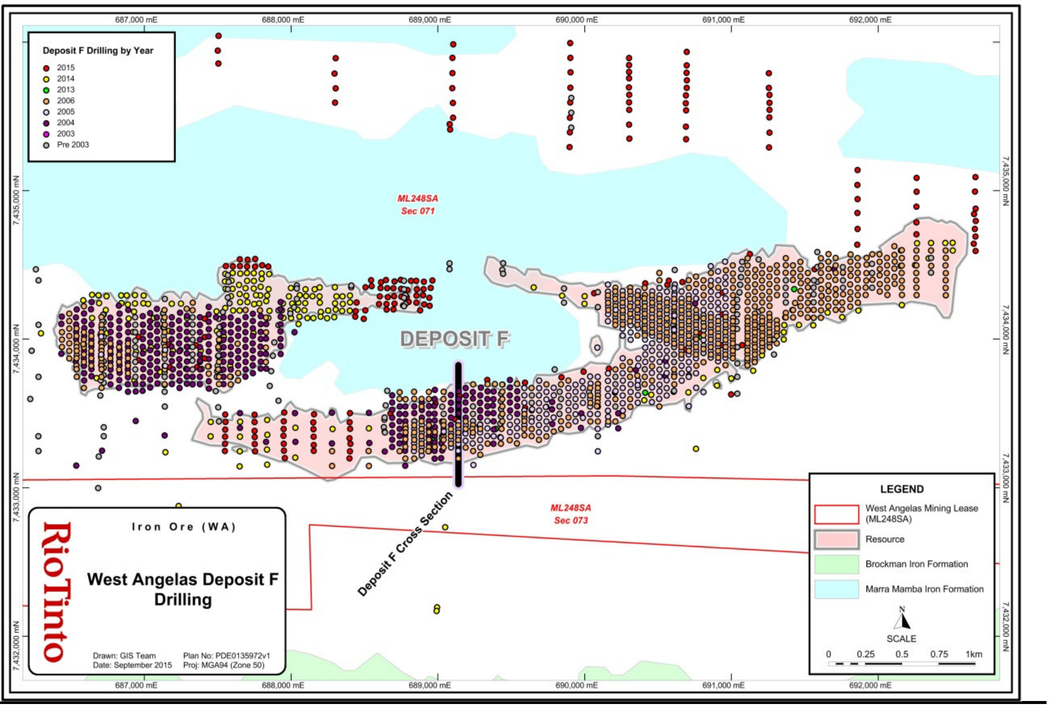
- No data aggregation. All reverse circulation samples collected at 2 m intervals.
- No grade truncations are performed.

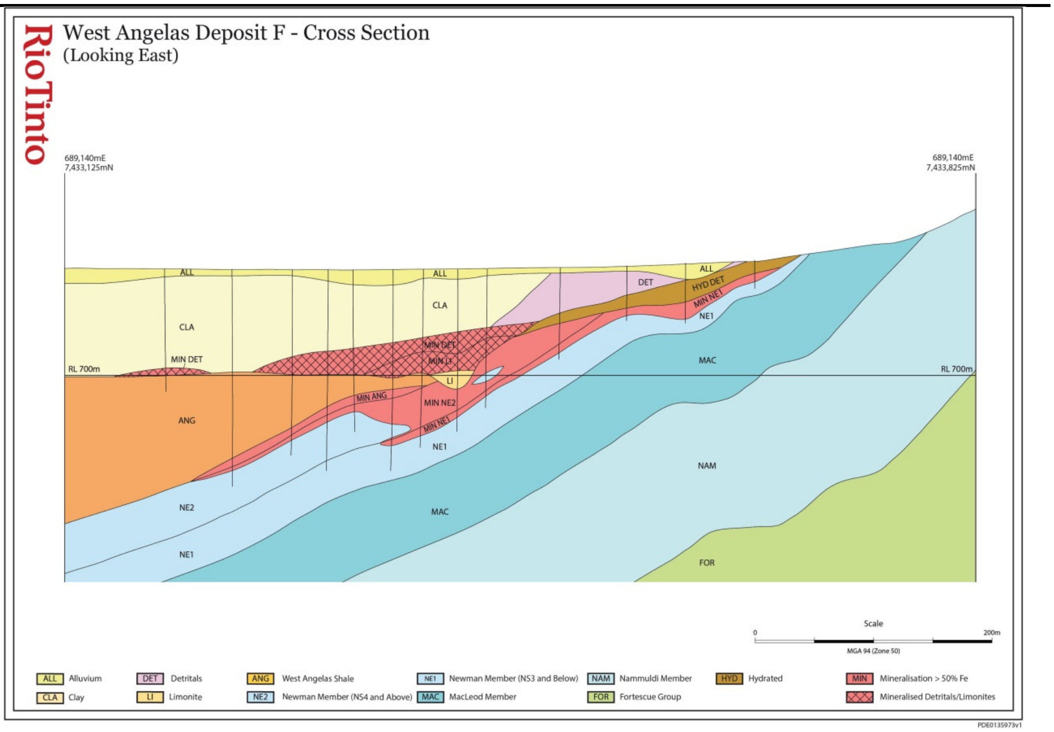
Relationship between mineralisation widths and intercept lengths

- Down-hole interval lengths reported are essentially true width due to vertical drilling and gently dipping or horizontal strata.

Diagrams


675,000 mE
680,000 mE
685,000 mE
690,000 mE
695,000 mE
7,445,000 mN
7,440,000 mN
7,435,000 mN
7,430,000 mN
LEGEND
Mining Lease (M248SA)
Resource
Brockman Iron Formation
Marra Mamba Iron Formation
RTIO Railway
RTIO Mine
N
SCALE
0 1 2 3 4km
1:100,000 @ A4
ML248SA Sec 070
ML248SA Sec 068
ML248SA Sec 069
ML248SA Sec 067
ML248SA Sec 074
ML248SA Sec 075
ML248SA Sec 079
Location Map
Port Hedland
Dampier
Cape Lambert
Mesa A
Mesa J
Nammuldi
Brockman 2
Brockman 4
Marandoo
Western Turner Syncline
Mount Tom Price
Paraburdoo
Eastern Range
Channar
Yandicoogina
Hope Downs 1
Hope
Hope Downs 4
West Angelas
ML248SA Sec 072
ML248SA Sec 076
ML248SA Sec 071
West Angelas Deposit F
ML248SA Sec 073
ML248SA Sec 093
Rio Tinto
Iron Ore (WA)
West Angelas Deposit F Resource Outline Location Map
Drawn: GIS Team
Date: Oct, 2015
Plan No: PDE0135971v2
Proj: MGA94 (Zone 50)


687,000 mE
688,000 mE
689,000 mE
690,000 mE
691,000 mE
692,000 mE
7,435,000 mN
7,434,000 mN
7,433,000 mN
7,432,000 mN
Deposit F Drilling by Year
2015
2014
2013
2006
2005
2004
2003
Pre 2003
ML248SA Sec 071
DEPOSIT F
Deposit F Cross Section
ML248SA Sec 073
LEGEND
West Angelas Mining Lease (ML248SA)
Resource
Brockman Iron Formation
Marra Mamba Iron Formation
N
SCALE
0 0.25 0.5 0.75 1km
Rio Tinto
Iron Ore (WA)
West Angelas Deposit F Drilling
Drawn: GIS Team
Date: September 2015
Plan No: PDE0135972v1
Proj: MGA94 (Zone 50)

	 West Angelas Deposit F - Cross Section (Looking East)
Balanced reporting	- Not applicable as Rio Tinto Ltd. has not released exploration results for this deposit.
Other substantive exploration data	- Geological surface mapping has been collected at 1:25,000 scale in 1972, 1:10,000 between 1993 – 1996 and most recently at 1:5,000 scale in 2015 - Approximately 89% of the Mineral Resource lies above the water table.
Further work	- Further infill reverse circulation drilling is planned to achieve a final designed drilling grid at 50 m × 50 m spacing.

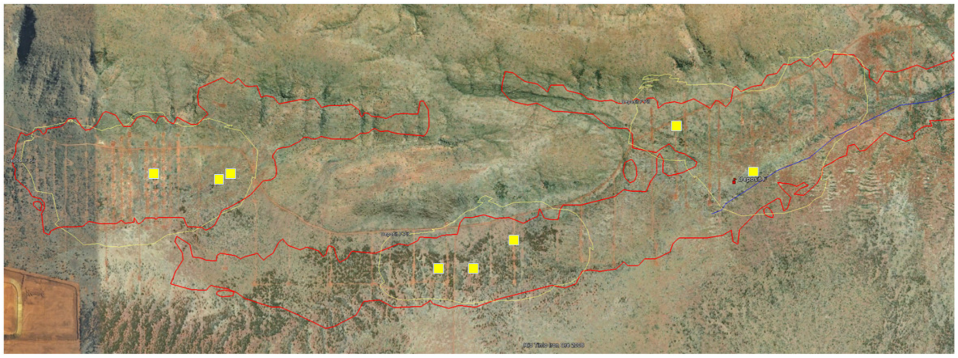
SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	Commentary
Database integrity	• All drilling data is securely stored in an acQuire™ geoscientific information management system managed by a dedicated team within Rio Tinto. The system is backed up nightly on servers in Perth, Western Australia. The backup system has been tested in 2015, demonstrating that it is effective. • The drilling database used for Mineral Resource estimation has been internally validated by Rio Tinto Iron Ore personnel by the following methods: ○ acQuire™ scripts for relational integrity, duplicates, total assay and missing / blank assay values; ○ Grade ranges in each domain; ○ Domain names and tags; ○ Null and below analytical detection limit grade values; ○ Missing or overlapping intervals; ○ Duplicate data. • Drill hole data is also validated visually by domain and compared to the geological model.
Site visits	• The Competent Person visited West Angelas Deposit F regularly between 2011 and 2015. There were no outcomes as a result of these visits.
Geological interpretation	• Overall the Competent Person's confidence in the geological interpretation of the area is good, based on the quantity and quality of data available, and the continuity and nature of the mineralisation. • Geological modelling was performed by Rio Tinto geologists. The method involves interpretation of stratigraphy using surface geological mapping, lithological logging data, down-hole gamma data, and assay data. • Cross-sectional interpretation of each stratigraphic unit is performed followed by interpretation of mineralisation boundaries. Three-dimensional wireframes of the sectional interpretations are created to produce the geological model. • Mineralisation is continuous. It is affected by stratigraphy, structure and weathering. The drill hole spacing is sufficient to capture density, grade and geology variation for Mineral Resource reporting. • The geological model is sub-divided into domains and both the composites and model blocks are coded with these domains.
Dimensions	• West Angelas Deposit F strikes East-West for approximately 6 km and has a width of 800 m. The mineralisation extends from surface to a depth of 200 m.
Estimation and modelling techniques	• The grade estimation process was completed using Maptek Vulcan software. • Mineralised domains were estimated by ordinary kriging and non-mineralised domains were estimated by a moving average method. • A block size of 25 m (X) × 10 m (Y) × 5 m (Z) was used for parent blocks. Parent blocks are sub-celled to the geological boundaries to preserve volume. • All domains were estimated with hard boundaries applied. • Statistical analysis was carried out on data from all domains. High yield limits were applied to Mn, SiO_2, and CaO for the mineralised domains. The limits differed for different domains and were selected based on histograms and the spatial distribution of the respective assay values. • Grades are extrapolated to a maximum distance of approximately 450 m from data points. • The block model was validated using a combination of visual, statistical, and multivariate global change of support techniques.
Moisture	• All Mineral Resource tonnages are estimated and reported on a dry basis.
Cut-off parameters	• The cut-off for high grade ore is greater than or equal to 58% Fe.

Mining factors or assumptions	• Development of this Mineral Resource assumes mining using standard Rio Tinto Iron Ore equipment and methods similar to other Rio Tinto Iron Ore operations. The assumed mining method is conventional truck and shovel, open pit mining at an appropriate bench height. Mining practices will include grade control utilising blast hole data.
Metallurgical factors or assumptions	• It is assumed that standard crushing and screening processes used by Rio Tinto Iron Ore will be applicable for the processing of West Angelas Deposit F.
Environmental factors or assumptions	• Rio Tinto Iron Ore has an extensive environmental and heritage approval process. A detailed review of these requirements has been undertaken in a recent Preliminary Feasibility Study. No issues were identified that would impact on the Mineral Resource estimate.
Bulk density	• Gamma-density logs are collected from reverse circulation drill holes. • Dry core densities are generated via the following process: ○ The core volume is measured in the split and the mass of the core is measured and recorded. ○ Wet core densities are calculated by the split and by the tray. ○ Core recovery is recorded. ○ The core is then dried and dry core masses are measured and recorded. ○ Dry core densities are then calculated. • Density measured from accepted gamma-density logs is corrected for moisture from diamond drill core twinned with reverse circulation drilling. • Dry bulk density was estimated using ordinary kriging in mineralised zones and inverse distance weighted to the first power in waste zones.
Classification	• The model has been classified into the categories of Measured, Indicated and Inferred. The determination of the applicable resource category has considered the average data density for the respective domains, the interpreted geological continuity and the estimation statistics. • The Competent Person is satisfied that the stated Mineral Resource classification reflects the data spacing, data quality, level of geological continuity and the estimation constraints of the deposits.
Audits or reviews	• All stages of Mineral Resource estimation have undergone a documented internal peer review process, which has documented all phases of the process.
Discussion of relative accuracy/ confidence	• Rio Tinto Iron Ore operates multiple mines in the Pilbara region of Western Australia. The Mineral Resource data collection and estimation techniques used for West Angelas Deposit F are consistent with those applied at other deposits which are being mined. Reconciliation of actual production with the Mineral Resource estimates for individual deposits is generally accurate to within ten percent for tonnes on an annual basis. This result is indicative of a robust process. • The accuracy and confidence of the Mineral Resource estimate is consistent with the current level of study (Preliminary Feasibility).

SECTION 4 ESTIMATION AND REPORTING OF ORE RESERVES

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• Initial generation of the modifying factors for this Ore Reserve estimate were based on a Mineral Resource estimate completed in July 2013. Subsequent to the completion of the Pre-Feasibility Study an updated Mineral Resource estimate was completed in April 2015 (incorporating more recent drilling information). The most recent Mineral Resource estimate together with the Pre-Feasibility Study pit designs were used for reporting Ore Reserves. • The declared Ore Reserves are for the West Angelas Deposit F. • Mineral Resources are reported additional to Ore Reserves.
Site visits	• The Competent Person has visited West Angelas Deposit F in 2014.
Study status	• A Pre-Feasibility Study was completed in 2015. A Feasibility Study is in progress.
Cut-off parameters	• The cut-off grade for high-grade Marra Mamba ore is greater than or equal to 58% Fe.
Mining factors	• The Mineral Resource model was regularised to a block size of 25 m E × 10 m N × 8 m RL

or assumptions	which was determined to be the selective mining unit following an analysis of a range of selective mining units. Dilution and mining recovery were modelled by applying the regularisation process to the sub-block geological model. • Metallurgical models were applied to the regularised model in order to model products tonnage, grades and yields. • Pit optimisations utilising the Lerchs-Grosmann algorithm with industry standard software were undertaken. This optimisation utilised the regularised Mineral Resource model together with cost, revenue, and geotechnical inputs. The resultant pit shells were used to develop detailed pit designs with due consideration of geotechnical, geometric and access constraints. These pit designs were used as the basis for production scheduling and economic evaluation. • Conventional mining methods (truck and shovel) similar to other Rio Tinto Iron Ore mines were selected. The mine has been designed to transport ore to an existing central crushing and processing facility. • Geotechnical design recommendations for the Pre-Feasibility Study have been supplied based on geotechnical studies informed by the assessment of 7 fully cored and geotechnically logged diamond drill holes (totalling 694 m) drilled in 2014. The resultant design recommendations produce inter-ramp slope angles varying between 20 and 38 degrees depending on the local rock mass, hydrogeology, and structural geological conditions. • During the above process, Inferred Mineral Resources were excluded from mine schedules and economic valuations utilised to validate the economic viability of the Ore Reserves. • The Pre-Feasibility Study considered the infrastructure requirements associated with the conventional truck and shovel mining operation including dump and stockpile locations, and access routes.
Metallurgical factors or assumptions	• The West Angelas mine has been designed with a dry crush and screen processing facility similar to processing facilities at other Rio Tinto Iron Ore mining operations. • The proposed metallurgical process is a well-tested and proven processing methodology, having been utilised at Rio Tinto Iron Ore mining operations for decades. • During a drill campaign in 2014 a total of 558 m of metallurgical diamond drill core (PQ-3 core) was drilled at West Angelas Deposit F. Data obtained from this core formed the basis for metallurgical test work which informed the study for the design of the processing facility and metallurgical models. The map below shows the location of these drill holes.  • The diamond drill core test results were utilised to develop metallurgical models representing different metallurgical domains which were considered representative of the ore body. The metallurgical models predict product tonnage and grade parameters for lump and fines products.
Environmental	• The Deposit A west and Deposit F Proposal was formally referred to the Environmental Protection Authority (EPA) under section 38 of the Environmental Protection Act 1986 in December 2014 and was assessed at a level of Assessment on Proponent Information (API), Category A. The EPA published its Report and Recommendations (Report 1551) in June 2015 and the Minister for the Environment approved the Proposal, subject to the conditions of Ministerial Statement 1015, on 21 August 2015. • Pursuant to Section 45B of the Environmental Protection Act 1986 for Revised Proposals, Ministerial Statement 1015 is to be read as an addendum to the existing Ministerial Statement 970 (dated 12 June 2014). Ministerial Statement 1015 includes only one additional condition, Condition 10 requiring the Proponent to contribute $750 (excluding GST) per hectare of 'good to excellent' condition native vegetation cleared to a government-established conservation offset fund.

	• A geochemical risk assessment has been completed for the West Angelas deposits. The assessment encompasses all material types present at the site, and tests have been conducted in accordance with industry standards. West Angelas deposits pose a low acid mine drainage risk.
Infrastructure	• West Angelas Deposit F is approximately 10 km from the existing West Angelas mining operations. • Access to West Angelas Deposit F during construction will be from the Great Northern Highway and then into the mine site via the mine access road. • Operation of West Angelas Deposit F will utilise the existing processing and non-processing infrastructure that are used to operate the West Angelas mine. • Some minor infrastructure will be established near West Angelas Deposit F including offices, crib facilities, ablutions, refuelling and communications. • Water for dust suppression at West Angelas Deposit F will be sourced from bores located at the deposit and in the adjacent Deposit E. These bores will support construction activities and ongoing water demands. • Ore will be railed to Rio Tinto's ports at Dampier and Cape Lambert. The port and railway networks will have sufficient capacity to accommodate ore supply from West Angelas Deposit F.
Costs	• The capital costs are based on a Preliminary Engineering Study utilising experience from the construction of existing similar Rio Tinto Iron Ore projects in the Pilbara, Western Australia. • Operating costs were benchmarked against similar operating Rio Tinto Iron Ore mine sites. • Exchange rates were forecast by analysing and forecasting macro-economic trends in the Australian and World economy. • Transportation costs were based on existing operating experience at Rio Tinto Iron Ore mine sites in the Pilbara, Western Australia. • Allowances have been made for royalties to the Western Australian government and other private stakeholders.
Revenue factors	• Rio Tinto applies a common process to the generation of commodity price estimates across the group. This involves generation of long-term price curves based on current sales contracts, industry capacity analysis, global commodity consumption and economic growth trends. In this process, a price curve rather than a single price point is used to develop estimates of mine returns over the life of the project. The detail of this process and of the price point curves is commercially sensitive and is not disclosed.
Market assessment	• The supply and demand situation for iron ore is affected by a wide range of factors, and as iron and steel consumption changes with economic development and circumstances. Rio Tinto Iron Ore delivers products aligned with its Mineral Resources and Ore Reserves; these products have changed over time and successfully competed with iron ore products supplied by other companies.
Economic	• Economic inputs such as foreign exchange rates, carbon pricing, and inflation rates are also generated internally at Rio Tinto. The detail of this process is commercially sensitive and is not disclosed. • Sensitivity testing of the West Angelas Deposit F Ore Reserves using both Rio Tinto long-term prices and a range of published benchmark prices demonstrates a positive net present value for the project sufficient to meet Rio Tinto Limited investment criteria.
Social	• The West Angelas Deposit F deposits are located within existing tenure Mineral Lease (ML) 248SA, which was granted under the Iron Ore (Robe River) Agreement Act 1964. • The West Angelas Deposit F expansion and proposed associated infrastructure falls within the area of the Yinhawangka and Ngarlawangga groups' registered native title claim. • The West Angelas Deposit F and associated infrastructure are located within the Shire of East Pilbara. Rio Tinto Iron Ore has established an ongoing engagement with the Shire of East Pilbara which includes scheduled meetings and project updates. Engagement with the Shire on West Angelas Deposit F has been established and will be ongoing throughout the project.
Other	• Semi-quantitative risk assessments have been undertaken throughout the West Angelas Deposit F study phases, no material naturally occurring risks have been identified through the above mentioned risk management processes.
Classification	• The Ore Reserves consist of 74% Proved Reserves and 26% Probable Reserves. • The Competent Person is satisfied that the stated Ore Reserve classification reflects the outcome of technical and economic studies.

Audits or reviews	• No external audits have been performed. • Internal Rio Tinto Iron Ore peer review processes and internal Rio Tinto technical reviews have been completed. These reviews concluded that the fundamental data collection techniques are appropriate.
Discussion of relative accuracy/ confidence	• Rio Tinto Iron Ore operates multiple mines in the Pilbara region of Western Australia. The Ore Reserve estimation techniques utilised for the West Angelas Deposit F are consistent with those applied at the existing operations. Reconciliation of actual production with the Ore Reserve estimate for individual deposits is generally within 10 percent for tonnes on an annual basis. This result is indicative of a robust Ore Reserve estimation process. • Accuracy and confidence of modifying factors are generally consistent with the current level of study (Pre-Feasibility Study). It is anticipated that the modifying factors will be further refined during the Feasibility Study which is currently under way.

2015 Annual Report Ore Reserve Table, showing line items relating to West Angelas upgrade

		Proved Ore reserves at end 2015		Probable ore reserves at end 2015		Total ore reserves 2015 compared with 2014					
	Type (a)	Tonnage	Grade	Tonnage	Grade	Tonnage		Grade		**Interest %**	**Recoverable metal**
						2015	2014	**2015**	2014		
IRON ORE (b)		millions of tonnes	%Fe	millions of tonnes	%Fe	**millions of tonnes**	millions of tonnes	**%Fe**	%Fe		**Marketable product millions of tonnes**
Reserves at Operating Mines											
Robe River JV (Australia)											
- West Angelas (Marra Mamba ore) (c)	O/P	153	62.0	55	60.0	**209**	185	**61.4**	61.5	53	**111**

(a) Type of mine: O/P = open pit (b) Reserves of iron ore are shown as recoverable Reserves of marketable product after accounting for all mining and processing losses. Mill recoveries are therefore not shown.

(c) Robe River JV West Angelas (Marra Mamba ore) Reserves tonnes increased due to the addition of a new pit, updated geological models and pit design modifications. A JORC table 1 in support of this change will be released to the market contemporaneously with the release of this Annual report and can be viewed at riotinto.com/factsheets/JORC.