African Rainbow Minerals

MINERAL RESOURCES AND MINERAL RESERVES 2016

We do it better

MINERAL RESOURCES AND MINERAL RESERVES

COMPETENT PERSON'S REPORT ON MINERAL RESOURCES AND MINERAL RESERVES

The report is issued as the annual update of the Mineral Resources and Reserves to inform shareholders and potential investors of the mineral assets held by African Rainbow Minerals Limited (ARM).

Historical ARM Mineral Resources and Reserves statements can be found on www.arm.co.za under Investors and Media, Annual Reports.

SALIENT FEATURES FOR F2016

ARM FERROUS

Khumani Mine

Production increased by 11% to 21.38 million tonnes (ROM) iron ore compared to 2015.

Beeshoek Mine

Measured and Indicated Mineral Resources for Village ore body remained unchanged at 51.53 million tonnes at a grade of 64.42% Fe. However, Measured and Indicated Resources for BN/BNN Pit decreased from 16.09 million tonnes at 63.17% Fe to 12.20 million tonnes at 63.11% Fe due to sterilisation of certain sections of the ore body after the discovery of an underground cave as well as mining depletion.

Black Rock Mine

Mineral Reserves for Gloria Seam 1 increased from 92.62 million tonnes at 36.8% Mn to 122.20 million tonnes at 36.1% Mn mainly due to the change in the mining cut applied on the seam which increased from 3.5 to 4.0 metres after completion of appropriate assessments.

ARM COAL

Goedgevonden Coal Mine

Measured and Indicated Coal Resources increased to 568 million tonnes from 555 million tonnes due to the inclusion of additional Number 2 and 4 seam resources next to the river diversion area.

ARM PLATINUM

Two Rivers Mine

Mineral Reserves for the UG2 increased from 41.86 million tonnes at 3.65g/t (6E) to 43.25 million tonnes at 3.56g/t (6E) mainly due to reduction in the geological loss factor at the Main Decline area.

Nkomati Mine

Mineral Reserves decreased from 103.79 million tonnes at 0.32% Ni to 94.56 million tonnes at 0.31% Ni mainly due to production.

Modikwa Mine

Measured and Indicated Resources tonnage increased by 2% to 139.60 million tonnes at 5.92g/t (4E) as a result of remodelling and estimation which upgraded some Inferred Resources.

ARM COPPER

Lubambe Mine

Mineral Reserves decreased by 7% to 45.4 million tonnes at 2.18% total copper (TCu) mainly due to mining depletion.

F2016 MINERAL RESOURCES AND MINERAL RESERVES SUMMARY

(Summaries below reflect the Measured and Indicated Resources and the corresponding Proved and Probable Reserves for each Mine or Project. Refer to the relevant sections of this report for details of Resources and Reserves.)

	Mineral Resources						Mineral Reserves						
	Measured		Indicated		Measured and Indicated		Proved		Probable		Proved and Probable		
PLATINUM GROUP ELEMENTS	Mt	Grade g/t	Mt	Grade g/t	**Mt**	**Grade (g/t)**	Mt	Grade g/t	Mt	Grade g/t	**Mt**	**Grade (g/t)**	**Moz**
Two Rivers Mine													
UG2	14.87	5.52	57.89	5.03	**72.76**	**5.13(6E)**	11.72	3.76	31.53	3.48	**43.25**	**3.56(6E)**	**4.95(6E)**
Merensky			60.57	3.11	**60.57**	**3.11(6E)**							
Tamboti Platinum (Kalkfontein RE)													
UG2	0.09	5.89	15.11	6.19	**15.20**	**6.19(6E)**							
Merensky			14.39	4.31	**14.39**	**4.31(6E)**							
Modikwa Mine													
UG2	50.20	5.93	89.40	5.92	**139.60**	**5.92(4E)**	11.09	4.83	33.64	4.72	**44.73**	**4.75(4E)**	**6.83(4E)**
Merensky	18.55	2.93	55.75	2.72	**74.30**	**2.77(4E)**							
Nkomati Mine													
MMZ+PCMZ	90.70	0.92	96.52	0.98	**187.22**	**0.95(4E)**	62.93	0.88	31.63	0.89	**94.56**	**0.89(4E)**	**2.70(4E)**
MMZ Stockpiles							0.08	1.01			**0.08**	**1.01(4E)**	**0.003(4E)**
PCMZ Stockpiles							2.92	0.72			**2.92**	**0.72(4E)**	**0.07(4E)**
Kalplats PGM Prospect	14.04	1.59	55.88	1.46	**69.91**	**1.48(3E)**							

6E *=platinum+palladium+rhodium+iridium+ruthenium+gold.*
4E *= platinum+palladium+rhodium+gold.*
3E *= platinum+palladium+gold.*
The Mineral Resources are inclusive of those modified to produce Mineral Reserves, except for ***Modikwa Mine*** *where Mineral Resources are reported* ***exclusive of Mineral Reserves****.*

	Mineral Resources						Mineral Reserves					
	Measured		Indicated		Measured and Indicated		Proved		Probable		Proved and Probable	
NICKEL	Mt	Ni%	Mt	Ni%	**Mt**	**Ni%**	Mt	Ni%	Mt	Ni%	**Mt**	**Ni%**
Nkomati Mine												
MMZ+PCMZ	90.70	0.33	96.52	0.37	**187.22**	**0.35**	62.93	0.30	31.63	0.33	**94.56**	**0.31**
MMZ Stockpiles							0.08	0.30			**0.08**	**0.30**
PCMZ Stockpiles							2.92	0.20			**2.92**	**0.20**

The Mineral Resources are inclusive of those modified to produce Mineral Reserves.

	Mineral Resources						Mineral Reserves					
	Measured		Indicated		Measured and Indicated		Proved		Probable		Proved and Probable	
MANGANESE	Mt	Mn%	Mt	Mn%	**Mt**	**Mn%**	Mt	Mn%	Mt	Mn%	**Mt**	**Mn%**
Nchwaning Mine												
Seam 1	57.78	45.2	72.11	41.7	**129.89**	**43.3**	44.10	45.2	52.90	41.8	**97.00**	**43.3**
Seam 2	65.01	42.6	114.77	42.2	**179.78**	**42.3**	47.80	41.6	76.20	41.5	**124.00**	**41.5**
Black Rock (Koppie Area)												
Seam 1	9.03	40.3	34.57	40.7	**43.60**	**40.6**						
Seam 2	8.23	37.4	18.58	39.2	**26.81**	**38.6**						
Gloria Mine												
Seam 1	51.40	37.5	97.85	37.3	**149.25**	**37.4**	42.60	36.3	79.60	36.0	**122.20**	**36.1**
Seam 2			32.04	28.3	**32.04**	**28.3**						

The Mineral Resources are inclusive of those modified to produce Mineral Reserves.

F2016 MINERAL RESOURCES AND MINERAL RESERVES SUMMARY continued

	Mineral Resources						Mineral Reserves					
	Measured		Indicated		Measured and Indicated		Proved		Probable		Proved and Probable	
IRON ORE	Mt	Fe%	Mt	Fe%	**Mt**	**Fe%**	Mt	Fe%	Mt	Fe%	**Mt**	**Fe%**
Beeshoek Mine												
All Pits	98.08	64.09	9.63	63.81	**107.71**	**64.06**	42.94	64.74	3.85	63.95	**46.79**	**64.67**
Stockpiles									6.06	55.15	**6.06**	**55.15**
Khumani Mine												
Bruce	110.74	64.47	81.97	64.42	**192.71**	**64.45**	83.94	64.44	73.96	64.47	**157.90**	**64.46**
King	284.04	64.24	94.39	64.16	**378.43**	**64.22**	259.02	64.32	9.09	65.19	**268.11**	**64.35**
Stockpiles									4.45	60.00	**4.45**	**60.00**

The Mineral Resources are inclusive of those modified to produce Mineral Reserves.

	Mineral Resources						Mineral Reserves					
	Measured		Indicated		Measured and Indicated		Proved		Probable		Proved and Probable	
CHROMITE	Mt	Cr_2O_3%	Mt	Cr_2O_3%	**Mt**	**Cr_2O_3%**	Mt	Cr_2O_3%	Mt	Cr_2O_3%	**Mt**	**Cr_2O_3%**
Dwarsrivier Mine												
LG6 Chromitite Seam	28.38	37.56	40.66	38.41	**69.04**	**38.06**	18.01	32.81	30.33	33.23	**48.34**	**33.07**
Nkomati Mine												
PCMZ	36.90	12.00	39.34	12.05	**76.24**	**12.03**	30.65	13.69	13.85	13.52	**44.50**	**13.64**
Oxidized Massive Chromitite	0.18	25.97			**0.18**	**25.97**	0.10	23.79	0.04	21.67	**0.14**	**23.18**
Un-oxidized Massive Chromitite	6.48	28.88			**6.48**	**28.88**	0.94	17.72	0.47	19.45	**1.41**	**18.30**
Chromite Stockpiles							2.53	19.83			**2.53**	**19.83**

The Mineral Resources are inclusive of those modified to produce Mineral Reserves.

	Coal Resources						Coal Reserves (ROM)						Coal Reserves (Saleable)	
	Measured		Indicated		Measured and Indicated		Proved		Probable		Proved and Probable		Proved and Probable	
COAL	Mt	CV (MJ/kg)	Mt	CV (MJ/kg)	**Mt**	**CV (MJ/kg)**	Mt	CV (MJ/kg)	Mt	CV (MJ/kg)	**Mt**	**CV (MJ/kg)**	**Mt**	**CV (MJ/kg)**
Goedgevonden Coal Mine	540	19.83	28	19.20	**568**	**19.80**	305	19.21	11	19.21	**316**	**19.21**	**206**	**23.99**

The Coal Resources are inclusive of those modified to produce Coal Reserves.

	Mineral Resources						Mineral Reserves					
	Measured		Indicated		Measured and Indicated		Proved		Probable		Proved and Probable	
COPPER	Mt	TCu%	Mt	TCu%	**Mt**	**TCu%**	Mt	TCu%	Mt	TCu%	**Mt**	**TCu%**
Lubambe Mine	6.3	2.57	44.4	2.55	**50.7**	**2.55**	5.4	2.22	40.0	2.18	**45.4**	**2.18**
Lubambe Extension Target Area			90.0	3.73	**90.0**	**3.73**						

The Mineral Resources are inclusive of those modified to produce Mineral Reserves.

GENERAL STATEMENT

ARM's method of reporting Mineral Resources and Mineral Reserves complies with the South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC Code) of 2007, as amended in 2009.

Trucking ore at Beeshoek Iron Ore Mine

The Code sets out minimum standards, recommendations and guidelines for Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves in South Africa. The new SAMREC Code 2016 was launched and adopted by the Johannesburg Stock Exchange (JSE) in May 2016. The 2017 Mineral Resources and Mineral Reserves Report will be based on the new SAMREC Code.

The convention adopted in this report is that the Measured and Indicated Mineral Resources are reported inclusive of that portion converted to a Mineral Reserve, except for Modikwa Platinum Mine where the Measured and Indicated Mineral Resources are reported exclusive of the Mineral Reserves. Inferred Mineral Resources have not been included in feasibility studies or Life of Mine Plans. Resources and Reserves are quoted as at 30 June 2016.

External consulting firms audit the Resources and Reserves of the ARM operations on a three- to four-year cycle basis or when substantial geological borehole data has been added to the database. Underground Resources are *in situ* tonnages at the postulated mining width, after deductions for geological losses. Underground Mineral Reserves reflect tonnages that will be mined and processed while surface Mineral Reserves consist of stockpiles already mined and ready for processing. Both are quoted at the grade fed to the plant. Open-pit Mineral Resources are quoted as *in situ* tonnages and Mineral Reserves are tonnages falling within an economic pit-shell.

The classification into Measured, Indicated and Inferred Mineral Resources is done by consideration of geostatistical parameters, spacing of boreholes, geological structures and continuity of the mineralisation.

The Mineral Resources and Reserves are reported on a 100% basis and the attributable interest is noted in the tabulations. Maps, plans and reports supporting Resources and Reserves are available for inspection at ARM's registered office and at the relevant mines.

ARM operations have already had their conversions from Old Order Mining Licences to New Order Mining Rights approved and executed.

Rounding of figures may result in computational discrepancies on the Mineral Resources and Reserves tabulations.

DEFINITIONS

The definitions of Mineral Resources and Reserves, quoted from the SAMREC Code (2007, as amended in July 2009), are as follows:

A 'MINERAL RESOURCE'

is a concentration or occurrence of material of economic interest in or on the earth's crust in such form, quality and quantity that there are reasonable and realistic prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a Mineral Resource are known, or estimated from specific geological evidence, sampling and knowledge interpreted from an appropriately constrained and portrayed geological model. Mineral Resources are subdivided, and must be so reported, in order of increasing confidence in respect of geoscientific evidence, into Inferred, Indicated or Measured categories.

A 'MEASURED MINERAL RESOURCE'

is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable information from exploration, sampling and testing of material from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.

AN 'INDICATED MINERAL RESOURCE'

is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on information from exploration, sampling and testing of material gathered from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological or grade continuity but are spaced closely enough for continuity to be assumed.

AN 'INFERRED MINERAL RESOURCE'

is that part of a Mineral Resource for which volume or tonnage, grade and mineral content can be estimated with only a low level of confidence. It is inferred from geological evidence and sampling and assumed but not verified geologically or through analysis of grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that may be limited in scope or of uncertain quality and reliability.

A 'MINERAL RESERVE'

is the economically mineable material derived from a Measured or Indicated Mineral Resource or both. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a Pre-Feasibility Study for a project and a Life of Mine Plan for an operation must have been completed, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors). Such modifying factors must be disclosed.

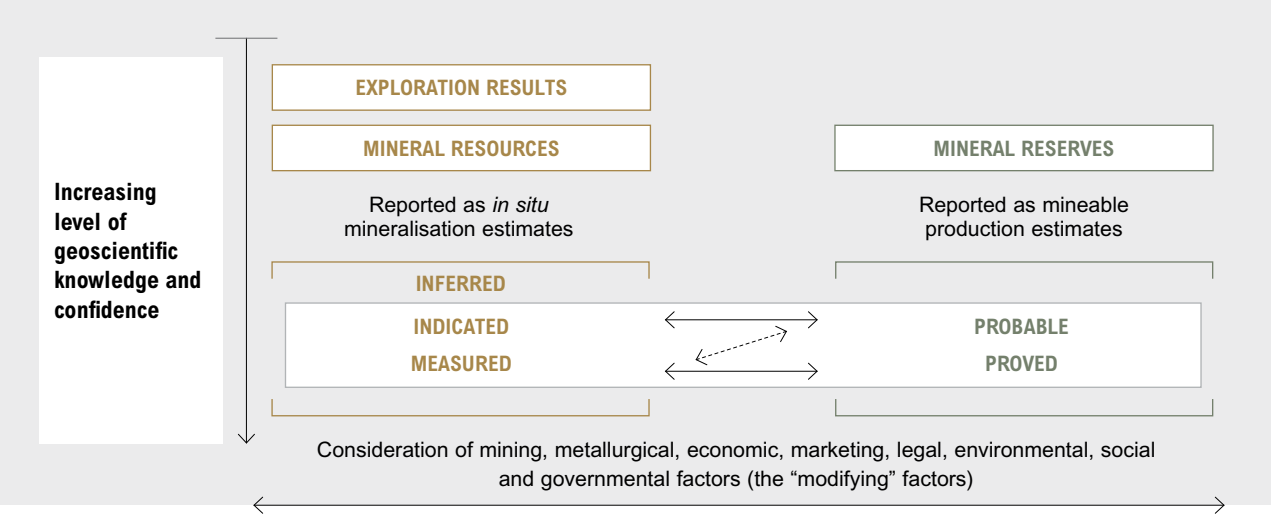
A 'PROVED MINERAL RESERVE'

is the economically mineable material derived from a Measured Mineral Resource. It is estimated with a high level of confidence. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a Pre-Feasibility Study for a project or a Life of Mine Plan for an operation must have been carried out, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Such modifying factors must be disclosed.

A 'PROBABLE MINERAL RESERVE'

is the economically mineable material derived from a Measured or Indicated Mineral Resource or both. It is estimated with a lower level of confidence than a Proved Mineral Reserve. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a Pre-Feasibility Study for a project or a Life of Mine Plan for an operation must have been carried out, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Such modifying factors must be disclosed.

RELATIONSHIP BETWEEN EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES



COMPETENCE

The Competent Person with overall responsibility for the compilation of the 2016 Mineral Resources and Reserves Report is Shepherd Kadzviti, Pr.Sci.Nat, an ARM employee. He confirms that the information in this report complies with the SAMREC Code and that it may be published in the form and context in which it was intended.

Shepherd Kadzviti graduated with a BSc (Geology and Mathematics) and MSc in Exploration Geology from the University of Zimbabwe. He later completed a Graduate Diploma in Mining Engineering (GDE) at the University of the Witwatersrand. He worked at RioZim's Renco Gold Mine for 14 years in various capacities of Geologist, Technical Services Superintendent and Mine Manager. In 2005, he joined Anglo American Platinum at Union Mine as an Evaluation Geologist with responsibilities for geological database management and mineral resource estimation. After two years at the mine, he was transferred to Anglo American Platinum corporate office where he was appointed Resource Geologist. He then joined African Rainbow Minerals (ARM) as Mineral Resources Specialist in 2008 where he was involved in the evaluation of the various mineral deposits for the Group. In 2012, he was appointed Group Mineral Resources Manager for ARM. He is registered with the South African Council for Natural Scientific Professions (SACNASP) as a Professional Natural Scientist (Pr.Sci.Nat) in the field of practice of geological science, registration number 400164/05, and as such is considered to be a Competent Person. SACNASP is based in the Management Enterprise Building, Mark Shuttleworth Street, Innovation Hub, Pretoria, 0087, South Africa.

All Competent Persons at the operations have sufficient relevant experience in the type of deposit and in the activity for which they have taken responsibility. Details of ARM's Competent Persons are available from the Company Secretary on written request.

The following Competent Persons were involved in the estimation of Mineral Resources and Reserves. They are employed by ARM or its subsidiaries and joint venture (JV) partners:

Iron	**M A Burger** (Pr.Sci.Nat) **S v Niekerk** (Pr.Sci.Nat) **M Lukhele** (Pr.Sci.Nat) **M A J Burger** (Pr.Sci.Nat)
Manganese	**B Ruzive** (Pr.Sci.Nat) **S Zitha** (ECSA)
Chrome	**A Pretorius*** (Pr.Sci.Nat)
Nickel	**N Strydom** (Pr.Sci.Nat)
PGM#	**J de Kock** (SAIMM)
PGM	**M Cowell** (Pr.Sci.Nat)
Coal	**M Smith^** (Pr.Sci.Nat)
Copper	**AMEC**** **C Rose** (Pr.Sci.Nat)

* *External consultant.*
** *AMEC – AMEC E and C Services Inc.*
^ *Glencore Operations South Africa.*
# *PGM – Platinum Group Metals.*
Anglo American Platinum and Glencore provide Mineral Resources and Reserves for Modikwa and Goedgevonden Mines respectively.

Shepherd Kadzviti (Pr.Sci.Nat)
Group Mineral Resources Manager
African Rainbow Minerals
24 Impala Road, Chislehurston,
Sandton, South Africa.

11 October 2016

ARM FERROUS

ASSMANG PROPRIETARY LIMITED (ASSMANG) OPERATIONS

ARM's attributable beneficial interest in Assmang operations is 50%. The other 50% is held by Assore Limited. Assmang operations comprise of Black Rock Manganese Mines, Khumani and Beeshoek Iron Ore Mines and Dwarsrivier Chrome Mine.

MANGANESE MINES

Locality

The manganese mines are situated in the Northern Cape Province in South Africa, approximately 80 kilometres north-west of the town of Kuruman. Located at latitude 27°07'50"S longitude 22°50'50"E, the site is accessed via the national N14 route between Johannesburg and Kuruman, and the provincial R31 road.

History

In 1940, ARM Ferrous acquired a manganese ore outcrop on a small hillock known as Black Rock. Several large properties underlain by ore were subsequently found and acquired. Today, the Black Rock area is considered to be one of the largest and richest manganese deposits in the world. Manganese mining operations were extended and today include the Gloria and Nchwaning underground mines. Manganese ore is supplied locally to Assmang-owned Cato Ridge Smelter, and is exported through Port Elizabeth as well as Durban and Richards Bay.

Mining authorisation

Legal Entitlement	Minerals covered by Mining Right	Comment	Period of Mining Right (years)
Mining Right NC 30/5/1/2/2/203 MRC	Manganese ore	The Converted Mining Right for the Black Rock Mine Operations was executed on 13 July 2011. Registration of this right took place on 22 September 2015.	30

Geology

The manganese ores of the Kalahari Manganese field are contained within sediments of the Hotazel Formation of the Griqualand West Sequence, a sub-division of the Proterozoic Transvaal Supergroup. At Black Rock, Belgravia and Nchwaning farms, the Hotazel, Mapedi and Lucknow Formations have been duplicated by thrusting. The thrusted ore bodies comprising Black Rock (Koppie), Belgravia 1 and Belgravia 2 are collectively known as Black Rock ore bodies. The average thickness of the Hotazel Formation is approximately 40 metres. The manganese ore bodies exhibit a complex mineralogy and more than 200 mineral species have been identified. Hydrothermal upgrading has resulted in zoning of the ore body adjacent to fault positions. Distal areas exhibit more original and low-grade kutnohorite and braunite assemblages, while areas immediately adjacent to faults exhibit high-grade hausmannite rich ore. The intermediate areas exhibit a very complex mineralogy, which includes bixbyite, braunite and jacobsite among a host of other manganese-bearing minerals. Similar zonation also exists in the vertical sense. At the top and bottom contacts it is common to have high iron (Fe) and low manganese (Mn) contents while the reverse is true towards the centre of the seam. This vertical zoning has given rise to a mining practice where only the 3.5 to 4.5 metre-high centre portion of the seam is being mined. At Gloria Mine, the intensity of faulting is much less, which may explain the lower Mn grade.

Two manganese seams are present. The lowermost (Seam 1) at Nchwaning 3 is up to 6 metres thick, of which up to 4.5 metres is mined. There is, therefore, minimum dilution. Limited mining of Nchwaning Seam 2 has been done, while no mining has been undertaken to date on Gloria Seam 2. Gloria Seam 1 is approximately 14 metres thick, but only an optimum cut of 3.5 to 4.0 metres is mined.

Nchwaning Mine Mineral Resources

Nchwaning Mine was diamond drilled from surface at 330 metre grid centres and the data is captured in a Geological Database Management System (GDMS) developed by Datamine. The core is logged and 0.5 metre-long, half-core, diamond-saw cut samples are submitted to Assmang's laboratory at Black Rock for X-ray fluorescence (XRF) analyses. Mn and Fe values are checked by Wet Chemical analyses. Several standards are used to calibrate the XRF equipment, and results are compared with other laboratories on a regular basis.

At Nchwaning, boreholes and underground sample sections were considered in the geological modelling and grade estimation for Nchwaning Seam 1 and Seam 2 resource modelling. The underground sample sections that were used were sampled at intervals of 0.3 metres rather than one composite value for the whole section, providing data that could be used in modelling the seams at a composite width of 0.5 metres. The geological modelling was undertaken using Datamine Strat3D software and Studio 3 for the grade estimation. The resource models were built on 50 x 50 x 0.5 metre blocks allowing for sub-splitting in the X and Y directions for the model to accurately follow the geological boundaries.

The full vertical extent of both Seam 1 and Seam 2 were modelled. Statistical and geostatistical analysis was done on the following variables: Mn, Fe, Al_2O_3, BaO, CaO, K_2O, MgO, Na_2O, P, S and SiO_2. Ordinary Kriging interpolation within Datamine Studio 3 was used

ARM FERROUS continued

to estimate the grade of each 50 x 50 x 0.5 metre blocks each identifiable by the layer number of the seam. Borehole and/or underground sample data with corresponding layer numbers was used in the estimation of grades. The relative density of the Nchwaning manganese Seams 1 and 2 was determined as 4.3 t/m^3. Seam 1 and Seam 2 were modelled separately. The resource model for use in the evaluation was selected over a thickness of 4.5 metres (Nchwaning 3, Seam 1), 4 metres (Nchwaning Graben, Seam 1) and 3.5 metres for the rest of Nchwaning (Seams 1 and 2), based on the best Mn values and/or Mn/Fe ratios.

Mineral Resource classification at Nchwaning Mine is based on a number of parameters: Kriging variance, Kriging efficiency, regression slope, geological continuity of the manganese seams, geological structures and quality of assay data. Each of these parameters contributes to the overall classification depending on a weighting assigned to each of the parameters. Measured and Indicated Resources have been defined for Nchwaning.

Nchwaning Mine Mineral Reserves

Trackless mechanised equipment is used in the Bord and Pillar mining method. Mining in the eastern extremity of Nchwaning occurs at a depth of 200 metres while the deepest (current) excavations are at a depth of 519 metres below surface. Ore from Nchwaning No 2 Mine is crushed underground before being hoisted to a surface stockpile via a vertical shaft. Similarly, ore from the Nchwaning No 3 Mine is crushed underground before being conveyed to a surface stockpile via a declined conveyor system. Ore is withdrawn from the surface stockpile and undergoes two stages of crushing, dry screening and wet screening to yield lumpy and fine products.

At the plant, the finer fractions are stockpiled while the coarser fractions are extracted from the respective product boxes into road haulers, sampled, weighed and stored on stacks ahead of despatch. Samples from each stack are analysed for chemical content and size distribution. This ensures good quality control and enables the ore control department to blend various stacks according to customer requirements.

NCHWANING MINE: SEAM 1 MANGANESE MINERAL RESOURCES AND RESERVES

	Mineral Resources				Mineral Reserves		
ARM attributable interest: 50%	Mt	Mn%	Fe%		Mt	Mn%	Fe%
Measured	57.78	45.2	8.7	Proved	44.10	45.2	8.7
Indicated	72.11	41.7	8.3	Probable	52.90	41.8	8.4
Total Resources (Seam 1) 2016	**129.89**	**43.3**	**8.5**	**Total Reserves (Seam 1) 2016**	**97.00**	**43.3**	**8.5**
Total Resources (Seam 1) 2015	133.02	43.0	9.2	Total Reserves (Seam 1) 2015	104.21	42.7	9.6

The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.

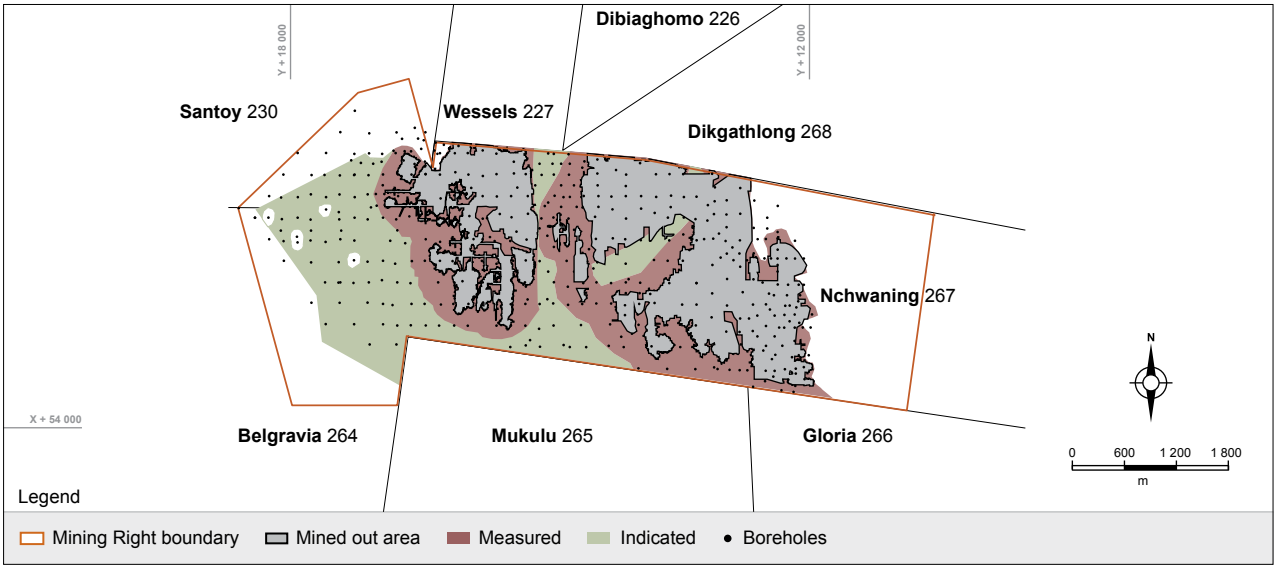
Key assumptions for Mineral Resources:

True thickness cut-off: 3.5 m – 4.5 m.
Density: 4.3 t/m^3.

Modifying factors for the conversion of Mineral Resources to Reserves include:

Geological loss: 2%.	*Mining loss factor: 2%.*	*Mining dilution is minimal.*	*Plant recovery: 85% – 90%.*
Mine extraction factor: 78%.	*Price ranges: Based on market-related long-term view and customer contracts.*	*Exchange rate used: Market-related.*	*Grade cut-off: 38% Mn.*

NCHWANING MANGANESE SEAM 1 MINERAL RESOURCES CLASSIFICATION



NCHWANING MINE: SEAM 2 MANGANESE MINERAL RESOURCES AND RESERVES

	Mineral Resources				Mineral Reserves		
ARM attributable interest: 50%	Mt	Mn%	Fe%		Mt	Mn%	Fe%
Measured	65.01	42.6	16.3	Proved	47.80	41.6	15.9
Indicated	114.77	42.2	15.8	Probable	76.20	41.5	16.2
Total Resources (Seam 2) 2016	**179.78**	**42.3**	**16.0**	**Total Reserves (Seam 2) 2016**	**124.00**	**41.5**	**16.1**
Total Resources (Seam 2) 2015	184.16	40.8	17.0	Total Reserves (Seam 2) 2015	118.53	40.9	16.8

The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.

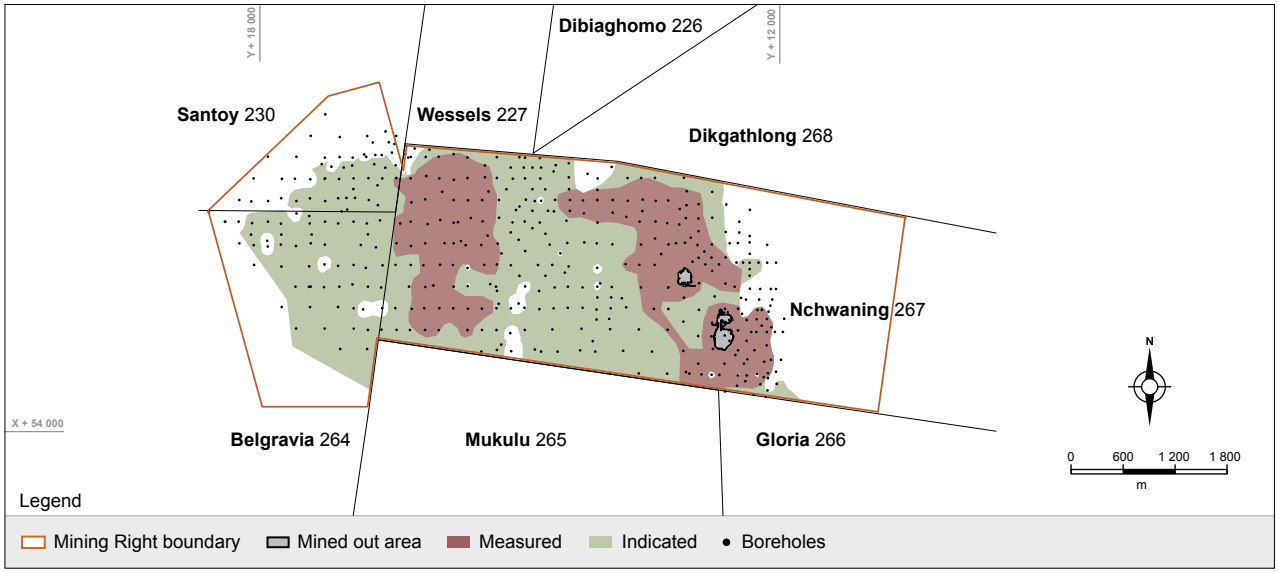
Key assumptions for Mineral Resources:

True thickness cut-off: 3.5 m.
Density: 4.3 t/m^3.

Modifying factors for the conversion of Mineral Resources to Reserves include:

Geological loss: 2%.	*Mining loss factor: 2%.*	*Mining dilution is minimal.*	*Plant recovery: 85% – 90%.*
Mine extraction factor: 78%.	*Price ranges: Based on market-related long-term view and customer contracts.*	*Exchange rate used: Market-related.*	*Grade cut-off: 38% Mn.*

NCHWANING MINE: SEAM 2 MANGANESE MINERAL RESOURCES CLASSIFICATION



NCHWANING YEAR-ON-YEAR CHANGE

The Mineral Resources for Seam 1 reduced by 2% from 133.02 to 129.89 million tonnes at 43.3% Mn mainly due to mining depletion. Nchwaning Seam 2 Mineral Resources decreased from 184.16 to 179.78 million tonnes at a slightly higher grade of 42.3 % Mn due to remodelling of the seam.

Mineral Reserves tonnage for Nchwaning Seam 1 decreased from 104.21 to 97.00 million tonnes at 43.3% Mn. Mineral Reserves for Nchwaning Seam 2 increased by 5% due to re-estimation and updating of the Reserves, to 124.0 million tonnes at 41.5% Mn.

HISTORICAL MANGANESE PRODUCTION AT NCHWANING MINE

	ROM	Saleable
Financial Year	Mt	Mt
2011/2012	2.94	2.46
2012/2013	2.79	2.40
2013/2014	3.15	2.69
2014/2015	3.05	2.48
2015/2016	2.91	2.39

ARM FERROUS continued

Black Rock Mineral Resources

The Black Rock ore bodies occur in the Black Rock Koppie, Belgravia 1 and Belgravia 2 areas. They are all part of a large thrust complex. Modelling of these ore bodies was undertaken using 151 Nchwaning boreholes that intersected the thrust complex and 174 Black Rock in-fill boreholes. A 38% manganese cut-off was used in the modelling. Seams 1 and 2 were modelled at variable thicknesses. No mining is currently being done at Black Rock Koppie.

BLACK ROCK (KOPPIE AREA): SEAM 1 MANGANESE MINERAL RESOURCES

ARM attributable interest: 50%	Mt	Mn%	Fe%
Measured	9.03	40.3	18.1
Indicated	34.57	40.7	18.1
Total Resources (Seam 1) 2016	**43.60**	**40.6**	**18.1**
Total Resources (Seam 1) 2015	43.60	40.6	18.1

Totals are rounded off.

Key assumptions for Mineral Resources:

Density: 4.0 t/m^3.	*Grade cut-off: 38% Mn.*

BLACK ROCK (KOPPIE AREA): SEAM 2 MANGANESE MINERAL RESOURCES

ARM attributable interest: 50%	Mt	Mn%	Fe%
Measured	8.23	37.4	19.8
Indicated	18.58	39.2	19.8
Total Resources (Seam 2) 2016	**26.81**	**38.6**	**19.8**
Total Resources (Seam 2) 2015	26.81	38.6	19.8

Totals are rounded off.

Key assumptions for Mineral Resources:

Density: 4.0 t/m^3.	*Grade cut-off: 38% Mn.*

Gloria Mine Mineral Resources

Procedures for drilling and assaying at Gloria Mine are the same as at Nchwaning. Both boreholes and underground sample sections were considered in the evaluation of Gloria Seam 1. The underground sampling values represent sampling at 0.3 metre intervals. Gloria was modelled similarly to Nchwaning using Datamine Strat3D software for the geological modelling and Studio 3 for the grade estimation. The geological block model was created for every 0.5 metre layer for the entire Seam 1 and Seam 2 using Datamine Strat3D. Block sizes in the X and Y directions were 50 x 50 metres allowing for sub-splitting. The evaluation width of 4.0 metres (Seams 1 and 2) was used and the relative density was determined as 3.8 t/m^3. The full vertical extent of both Seams 1 and 2 were modelled respectively.

Statistical and geostatistical analysis for the following variables: Mn, Fe, Al_2O_3, BaO, CaO, K_2O, MgO, Na_2O, P, S and SiO_2 was undertaken. Ordinary Kriging interpolation within Studio 3 was used to estimate the grade in the 50 x 50 x 0.5 metre blocks each identified by a layer number of the seam, using borehole and/or underground sample data of the corresponding layer. Mineral Resource classification methods were similar to those applied at Nchwaning Mine.

Gloria Mine Mineral Reserves

The Bord and Pillar mining method is also used at Gloria Mine. Manganese is extracted at depths that vary between 180 to 250 metres. Ore is crushed underground before being conveyed to a surface stockpile via a decline shaft. Ore is withdrawn from the surface stockpile and forwarded to two stages of crushing, dry screening, and wet screening to yield lumpy and fine products. At the plant, the ore is processed similarly to Nchwaning run of mine ore.

GLORIA MINE: SEAM 1 MANGANESE MINERAL RESOURCES AND RESERVES

	Mineral Resources				Mineral Reserves		
ARM attributable interest: 50%	Mt	Mn%	Fe%		Mt	Mn%	Fe%
Measured	51.40	37.5	5.1	Proved	42.60	36.3	4.9
Indicated	97.85	37.3	4.9	Probable	79.60	36.0	5.2
Total Measured and Indicated (Seam 1) 2016	**149.25**	**37.4**	**5.0**	**Total Reserves (Seam 1) 2016**	**122.20**	**36.1**	**5.1**
Total Measured and Indicated (Seam 1) 2015	126.45	36.9	5.1	Total Reserves (Seam 1) 2015	92.62	36.8	5.3
Inferred 2016	**29.02**	**36.2**	**6.1**				
Inferred 2015	42.81	35.7	5.3				

The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.

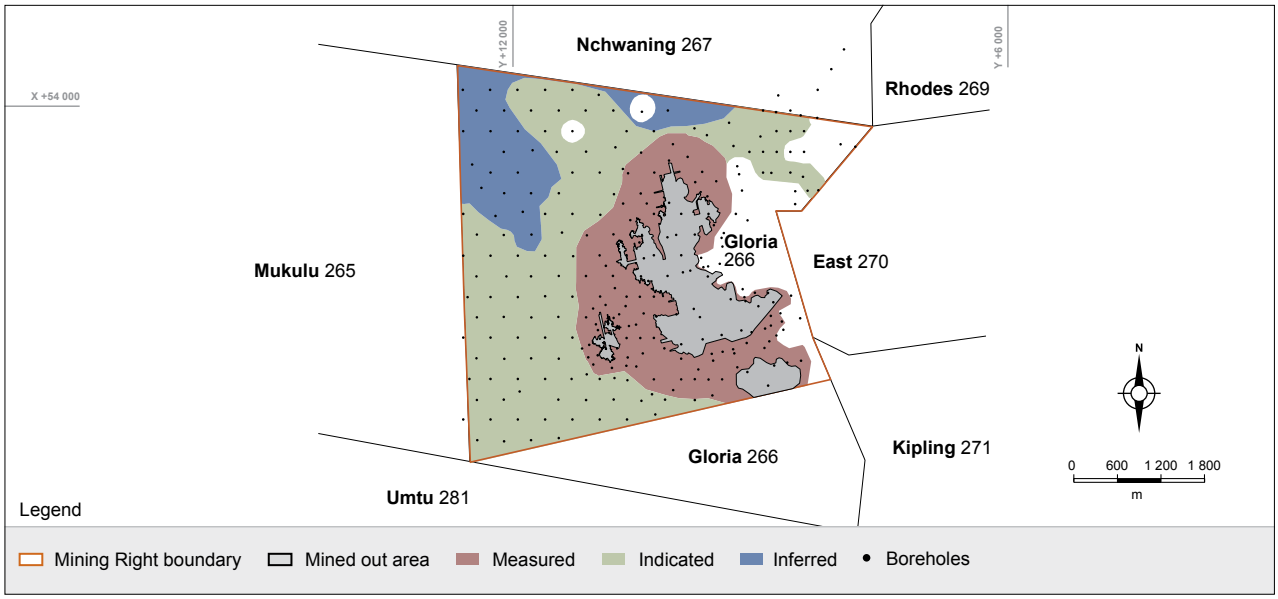
Key assumptions for Mineral Resources:

True thickness cut-off: 4.0 m.
Density: 3.8 t/m^3.

Modifying factors for the conversion of Mineral Resources to Reserves include:

Geological loss: 2%.	*Mining loss factor: 2%.*	*Mining dilution is minimal.*	*Plant recovery: 88% – 90%.*
Mine extraction factor: 84%.	*Price ranges: Based on market-related long-term view and customer contracts.*	*Exchange rate used: Market-related.*	*Grade cut-off: 36% Mn.*

GLORIA MANGANESE SEAM 1 MINERAL RESOURCES CLASSIFICATION



GLORIA MINE: SEAM 2 MANGANESE MINERAL RESOURCES

	Mineral Resources		
ARM attributable interest: 50%	Mt	Mn%	Fe%
Measured Indicated	32.04	28.3	9.4
Total Measured and Indicated (Seam 2) 2016	**32.04**	**28.3**	**9.4**
Total Measured and Indicated (Seam 2) 2015	30.73	28.0	9.7
Inferred 2016	**122.60**	**30.0**	**9.6**
Inferred 2015	130.08	28.2	11.3

Totals are rounded off.

Key assumptions for Mineral Resources:

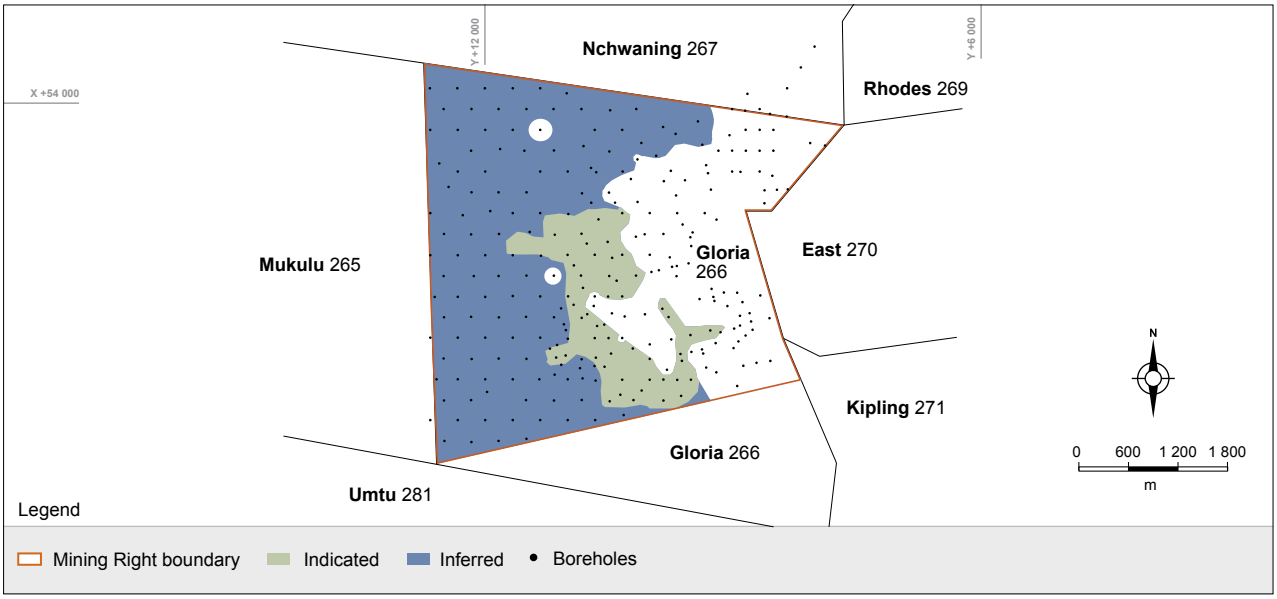
True thickness cut-off: 4.0 m.

Density: 3.8 t/m^3.

Black Rock Mine

ARM FERROUS continued

GLORIA MANGANESE SEAM 2 MINERAL RESOURCES CLASSIFICATION



GLORIA YEAR-ON-YEAR CHANGE

New boreholes and assay data provided information that was sufficient for the upgrade of some Indicated to Measured Resources as well as portions of Inferred to Indicated Resources for Gloria Seam 1. The upgrades resulted in Measured Resources increasing by 5% to 51.40 million tonnes at 37.5% Mn and Indicated Resources increasing by 26% from 77.44 to 97.85 million tonnes at 37.3% Mn. Inferred Resources decreased from 42.81 to 29.02 million tonnes. Seam 2 Indicated Resources increased slightly due to remodelling.

Gloria Seam 1 Reserves are 32% higher than in 2015 at 122.20 million tonnes at a grade of 36.1% Mn. The increase can be attributed to the Resource upgrade mentioned above and the increase of optimum mining cut from 3.5 metres to 4 metres.

HISTORICAL MANGANESE PRODUCTION AT GLORIA MINE

	ROM	Saleable
Financial Year	Mt	Mt
2011/2012	0.92	0.84
2012/2013	0.82	0.75
2013/2014	0.79	0.67
2014/2015	0.74	0.61
2015/2016	0.56	0.55

IRON ORE MINES

Locality

The Iron Ore Division is made up of the Beeshoek Mine located on the farms Beesthoek 448 and Olyn Fontein 475, and the Khumani Mine situated on the farms Bruce 544, King 561 and Mokaning 560. All properties are in the Northern Cape, approximately 200 kilometres west of Kimberley. The Beeshoek open-pit operations are situated 7 kilometres west of Postmasburg and the Khumani open pits are adjacent to, and south-east of, the Sishen Mine, which is operated and owned by Kumba Iron Ore Limited. Beeshoek and Khumani Mines are located at latitude 28°30'00"S/longitude 23°01'00"E, and latitude 27°45'00"S/longitude 23°00'00"E respectively. Khumani Mine supplies iron ore to the export markets. Exports are railed to the iron ore terminal at Saldanha Bay. Beeshoek ore is mainly supplied to local customers, with some exported via Khumani.

History

Mining of iron ore (mainly specularite) was undertaken as early as 40 000 BC on the farm Doornfontein which is due north of Beeshoek. The potential of iron ore in this region was discovered in 1909, but, due to lack of demand and limited infrastructure, this commodity was given little attention. In 1929, the railway line was extended from Koopmansfontein (near Kimberley) to service a manganese mine at Beeshoek. In 1935, the Associated Manganese Mines of South Africa Limited (Assmang) was formed, and in 1964, the Beeshoek Iron Ore Mine was established, with a basic hand-sorting operation. In 1975, a full washing and screening plant was installed at Beeshoek Mine. The Khumani Iron Ore Mine was commissioned in 2007.

Mining authorisation

Mining Operation	Legal Entitlement	Minerals covered by Mining Right	Comment	Period of Mining Right (years)
Beeshoek Mine	Mining Right NC 223 MRC	Iron ore	The Beeshoek Mine Converted Mining Right was executed on 16 March 2012 and registered on 29 May 2013.	30
Khumani Mine	Mining Right NC 50/5/1/2/5/2/70 MR	Iron ore	The Khumani New Order Mining Right was executed on 25 January 2007 and was registered on 5 March 2007.	30

Geology

The iron ore deposits are formed within in a sequence of early Proterozoic sediments of the Transvaal Supergroup deposited between 2 500 and 2 200 million years ago. In general, two ore types are present, namely laminated hematite ore forming part of the Manganore Iron Formation and conglomerate ore belonging to the Doornfontein Conglomerate Member at the base of the Gamagara Formation. The older laminated ore types occur in the upper portion of the Manganore Iron Formation as enriched high-grade hematite bodies. The boundaries of high-grade hematite ore bodies cross-cut primary sedimentary bedding, indicating that secondary hematitisation of the iron formation took place. In all of these, some of the stratigraphic and sedimentological features of the original iron formation are preserved. The conglomeratic ore is found in the Doornfontein Conglomerate Member of the Gamagara Formation, is lenticular but not consistently developed along strike. It consists of stacked, upward fining conglomerate-gritstone-shale sedimentary cycles. The lowest conglomerates and gritstones tend to be rich in sub-rounded to rounded hematite ore pebbles and granules and form the main ore bodies. The amount of iron ore pebbles decreases upwards in the sequence so that upper conglomerates normally consist of poorly sorted, angular to rounded chert and banded iron formation pebbles. Hematite is the predominant ore mineral, but limonite and specularite also occur.

The erosion of the northern Khumani deposit is less than in the southern Beeshoek area. This results in Khumani being characterised by larger stratiform bodies and prominent hangingwall outcrops. The down-dip portions are well preserved and developed, but in outcrop the deposits are thin and isolated. Numerous deeper iron ore extensions occur into the basins due to karst development. A prominent north-south strike of the ore bodies dipping to the west is notable. The southern Beeshoek ore bodies were exposed to more erosion and hence are more localised and smaller. Outcrops are limited to the higher topography on the eastern side of the properties. Down-dip to the west, the ore is thin and deep. The strike of the ore bodies is also in a north-south direction dipping to the west, but less continuous.

Mineral Resources

The methodology followed to identify exploration targets is initiated with geological mapping, followed by geophysics (ground magnetics and gravity). Numerous exploration programmes have been completed in the last 40 years. Percussion drilling is used to pilot holes through overlying waste rock down to the iron ore bodies. Diamond drilling is the next phase, which is usually on a 200 x 200 metre grid. Further in-fill drilling is carried out at spacing ranging from 100 x 100 metres to 25 x 25 metres, depending on the complexity of the geological structures. Core samples are logged and split by means of a diamond saw and the half-core is sampled at 0.5 metre intervals. The half-cores are crushed, split and pulverised and submitted to the owner-managed laboratory for assaying. All holes and blast holes in ore are sampled and analysed for Fe, K_2O, Na_2O, SiO_2, Al_2O_3, P, S, CaO, MgO, Mn and BaO.

ARM FERROUS continued

The analytical technique for elemental analyses is XRF spectroscopy. Volumetric titration is used as verification method for the determination of total iron in the ore. International standards (e.g. SARM11) and in-house iron standards are used for the calibration of the XRF spectrometer. The Khumani laboratory undertakes stringent quality control and assurance methods, including 'round robin' analysis with 11 laboratories for verification of assay results.

Samples with values larger than 60% Fe cut-off are included in the definition of the ore bodies. Any lower-grade samples inside the ore body are defined as internal waste and modelled separately. Each zone is modelled per section, and then wireframed to get a three-dimensional (3D) model. Ordinary Kriging interpolation is used to estimate the grade of each 25 x 25 x 10 metre block generated within the geological model. Estimation is also undertaken outside the 60% Fe envelope within the limits of the ore body stratigraphy. Densities in the resource model are calculated using a fourth degree polynomial fit applied to the estimated Fe grade. Densities range from 4.38 t/m^3 (60% Fe) to 5.01 t/m^3 (68% Fe).

Mineral Reserves

Only Measured and Indicated Resources are converted to Proved and Probable Reserves respectively. Modifying factors are applied to these Resources and financially optimised. The optimised financial parameters are used to define the optimal pit outline. The Resources within this mining constraint (optimised pit-shell) are defined as Reserves. These are categorised into different product types, destined for the different plant processes and then scheduled for mining.

Mining operations are all open pit, based on the conventional drill-and-blast, truck-and-shovel operations. Run-of-mine ore is crushed and stored as 'on-' or 'off-grade' on blending stockpiles. Ore from the stockpiles is either sent to the wash-and-screen plants or, if 'off-grade', to the beneficiation plants. The washing and screening plants consist primarily of tertiary crushing, washing, screening, conveying and stacking equipment. The beneficiation plants consist of tertiary crushers; scrubbers; coarse and fine jigs; lumpy and fines product stockpiles; and a rapid load-out facility. No chemicals are being used in any of the treatment plants.

BEESHOEK MINE: IRON ORE MINERAL RESOURCES AND RESERVES

ARM attributable interest: 50%	Measured Resources		Indicated Resources		Total Measured and Indicated Resources		Inferred Resources		Proved Reserves		Probable Reserves		Total Reserves	
Pit/Area	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%
BN Pit	12.20	63.11			12.20	63.11			7.07	63.41			7.07	63.41
HF/HB Pit	16.00	64.10			16.00	64.10			6.87	64.27			6.87	64.27
BF Pit	7.50	63.51	0.23	63.54	7.73	63.51	0.001	65.24	0.60	61.59			0.60	61.59
East Pit	5.27	65.03	0.03	64.50	5.30	65.03			2.72	65.10			2.72	65.10
Village Area	42.27	64.55	9.26	63.83	51.53	64.42			25.68	65.26	3.85	63.95	29.53	65.09
GF Pit	3.13	63.81	0.09	61.80	3.22	63.75								
HH Ext Pit	0.28	62.63			0.28	62.63								
HL Pit	1.98	64.82	0.02	65.21	2.00	64.82								
West Pit	9.45	63.19			9.45	63.19	0.050	61.88						
Detrital*							2.500	60.00						
Total 2016	**98.08**	**64.09**	**9.63**	**63.81**	**107.71**	**64.06**	**2.551**	**60.04**	**42.94**	**64.74**	**3.85**	**63.95**	**46.79**	**64.67**
Total 2015	104.10	64.07	9.63	63.81	113.73	64.05	2.551	60.04	47.64	64.63	3.86	63.95	51.50	64.58

The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.
* *Detrital is loose fragmented material occurring in various areas at Beeshoek.*

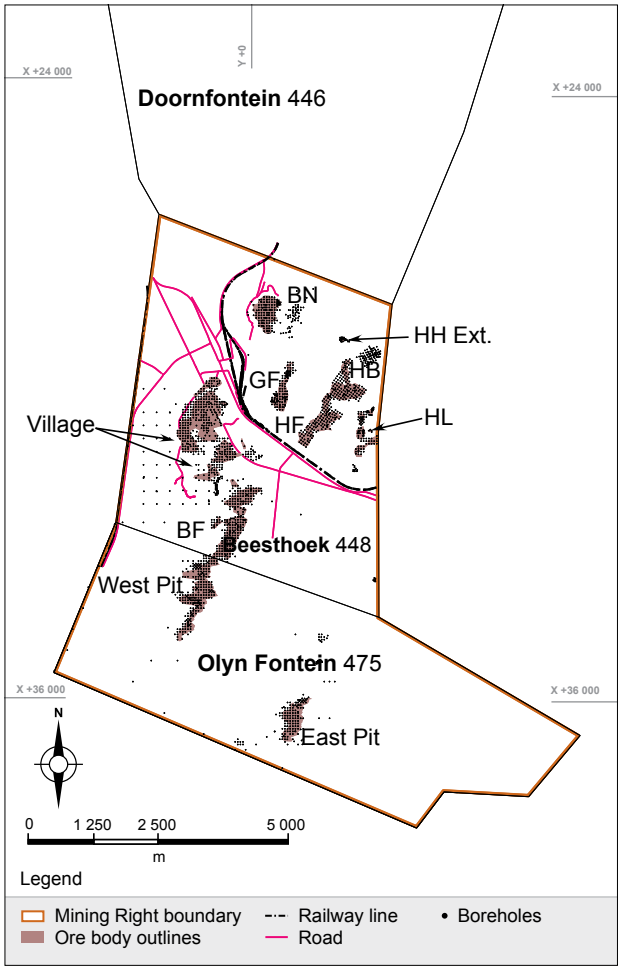
Key assumptions for Mineral Resources:

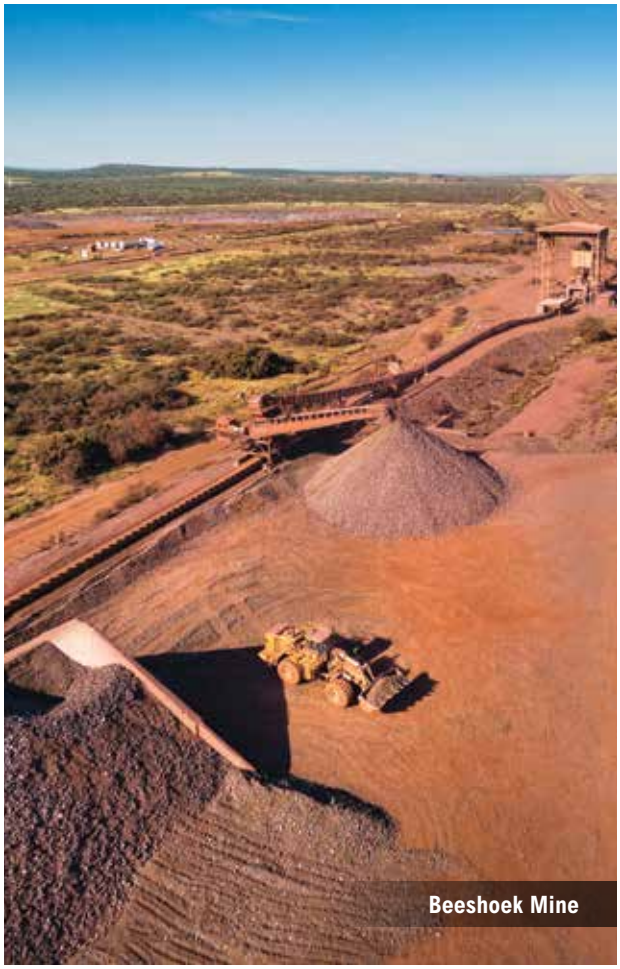
Grade cut-off: 60% Fe.

Modifying factors for the conversion of Mineral Resources to Reserves include: (applicable to Village Pit)

Grade cut-off: 60% Fe.	*Plant yield: 55% – 85% (depending on material type).*	*Mining dilution: 3%.*	*Exchange rate used: Market-related.*	*Price used for iron ore: Based on market-related long-term view and customer contracts.*
Stripping ratio: 3.77.	*Mining loss factor: 2%.*			

BEESHOEK ORE BODY LOCALITY MAP





BEESHOEK MINE: STOCKPILES

	Proved Reserves		Probable Reserves		Total Reserves	
ARM attributable interest: 50%	Mt	Fe%	Mt	Fe%	Mt	Fe%
Total 2016 Stockpiles			**6.06**	**55.15**	**6.06**	**55.15**
Total 2015 Stockpiles			7.42	55.38	7.42	55.38

Stockpiles are beneficiated to produce saleable product.

BEESHOEK YEAR-ON-YEAR CHANGE

Measured and Indicated Resources for Beeshoek Mine decreased from 113.73 to 107.71 million tonnes mainly due to mining depletion and sterilisation of certain sections of the BN ore body (BNN) after the discovery of an underground cave.

HISTORICAL PRODUCTION AT BEESHOEK MINE

	ROM	Saleable
Financial Year	Mt	Mt
2011/2012	1.98	2.10
2012/2013	2.88	2.94
2013/2014	2.06	3.12
2014/2015	3.35	3.43
2015/2016	3.05	3.11

ARM FERROUS continued

KHUMANI MINE: IRON ORE MINERAL RESOURCES AND RESERVES

ARM attributable interest: 50%	Measured Resources		Indicated Resources		Total Measured and Indicated Resources		Inferred Resources		Proved Reserves		Probable Reserves		Total Reserves	
Pit/Area	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%
Bruce A	37.57	64.37	63.40	64.66	100.97	64.55			34.64	64.35	58.90	64.72	93.54	64.58
Bruce B	61.74	64.54	18.57	63.59	80.31	64.32	1.73	61.19	45.77	64.47	15.06	63.51	60.83	64.23
Bruce C	11.43	64.41			11.43	64.41			3.53	65.03			3.53	65.03
Total for Bruce Pits	**110.74**	**64.47**	**81.97**	**64.42**	**192.71**	**64.45**	**1.73**	**61.19**	**83.94**	**64.44**	**73.96**	**64.47**	**157.90**	**64.46**
King/ Mokaning	284.04	64.24	94.39	64.16	378.43	64.22	11.67	62.96	259.02	64.32	9.09	65.19	268.11	64.35
Total 2016	**394.78**	**64.30**	**176.36**	**64.28**	**571.14**	**64.30**	**13.40**	**62.73**	**342.96**	**64.35**	**83.05**	**64.55**	**426.01**	**64.39**
Total 2015	420.62	64.30	179.63	64.26	600.25	64.29	14.39	62.74	365.07	64.32	82.88	64.45	447.95	64.34

The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.

Key assumptions for Mineral Resources:

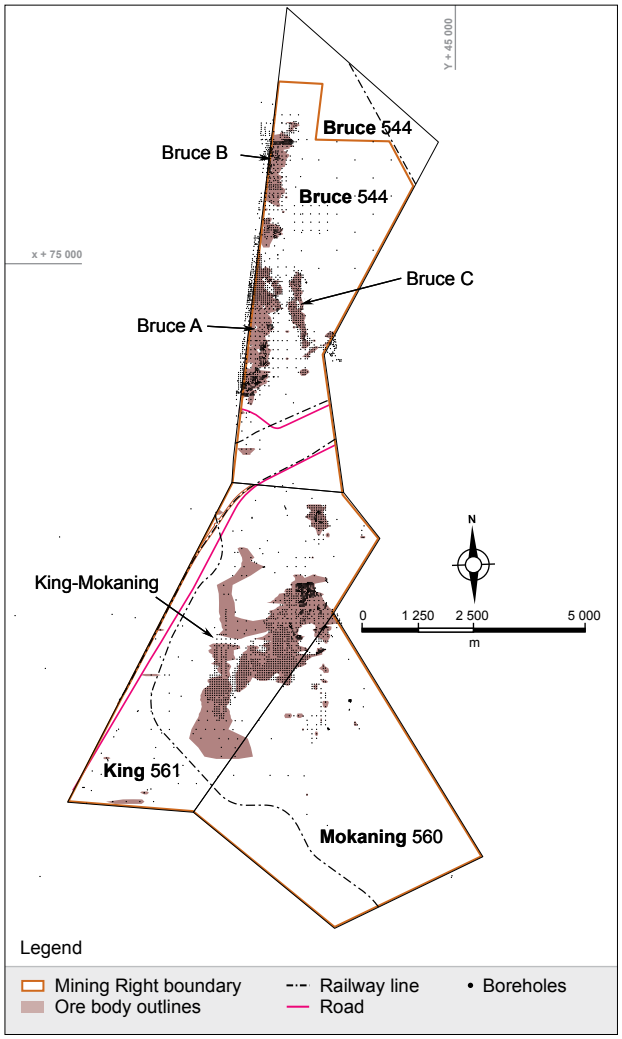
Grade cut-off: 60% Fe.

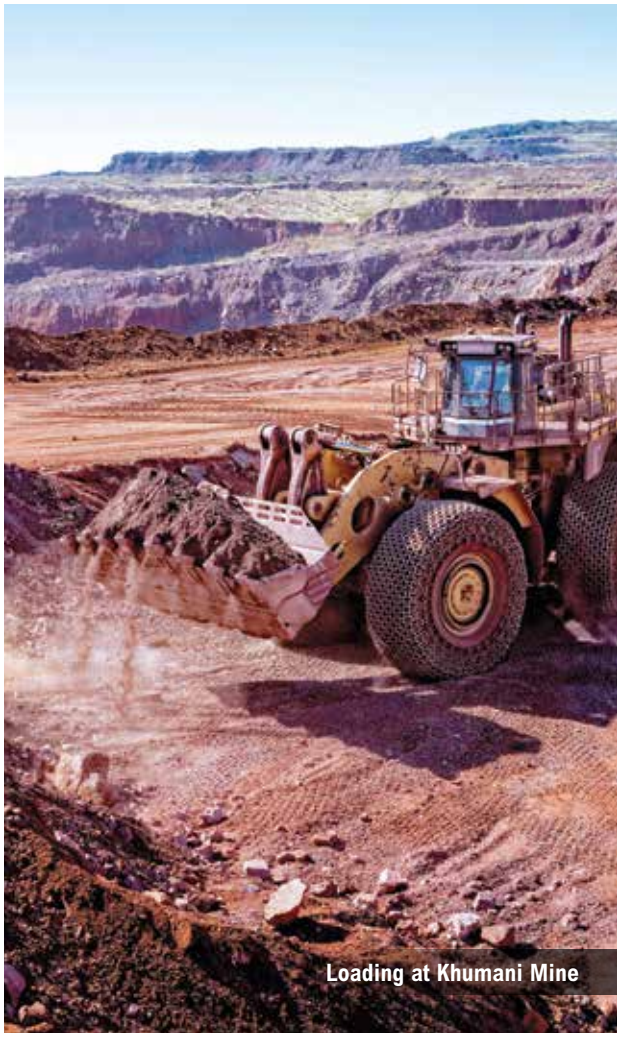
Modifying factors for the conversion of Mineral Resources to Reserves include:

Mining loss factor: 2%.	*Plant yield: 60% – 85% (depending on material type).*	*Mining dilution: 3%.*
Grade cut-off: 60% Fe.	*Price used for iron ore: Based on market-related long-term view and customer contracts.*	*Exchange rate used: Market-related.*
Stripping ratio: 2.41.		

Khumani Mine Plant

KHUMANI ORE BODY LOCALITY MAP




Loading at Khumani Mine

KHUMANI MINE: STOCKPILES

ARM attributable interest: 50%	Proved Reserves		Probable Reserves		Total Reserves	
Area	Mt	Fe%	Mt	Fe%	Mt	Fe%
Bruce			2.10	60.00	2.10	60.00
King			2.35	60.00	2.35	60.00
Total 2016 Stockpiles*			**4.45**	**60.00**	**4.45**	**60.00**
Total 2015 Stockpiles			4.76	55.79	4.76	55.79

Totals are rounded off.
* *Stockpiles are beneficiated to produce a saleable product.*

KHUMANI YEAR-ON-YEAR CHANGE

Measured and Indicated Resources decreased by 29.11 million tonnes while Proved and Probable Reserves decreased by 21.94 million tonnes mainly due to mining depletion and minor pit designs' adjustments.

HISTORICAL PRODUCTION AT KHUMANI MINE

	ROM	Saleable
Financial Year	Mt	Mt
2011/2012	14.89	11.60
2012/2013	19.33	13.17
2013/2014	19.12	12.93
2014/2015	19.06	12.65
2015/2016	21.38	13.62

ARM FERROUS continued

DWARSRIVIER CHROMITE MINE

Locality

Dwarsrivier Chromite Mine is situated on the farm Dwarsrivier 372KT, approximately 30 kilometres from Steelpoort and 60 kilometres from Lydenburg, Mpumalanga Province, South Africa. Located at longitude 30°05'00"E/latitude 24°59'00"S, Assmang purchased the farm from Gold Fields Limited, together with all surface and Mineral Rights in October 1998.

History

Neighbouring properties to the north and south of Dwarsrivier had existing chrome mining operations at the time of purchase. A feasibility study of the plant, tailings dam and designs for the open-pit and underground mines was undertaken. After the completion of the feasibility study, approval to proceed with the final design and construction work was given in July 1999. Chromite was mined from the open pit areas at a rate of approximately 0.9 million tonnes a year and these areas were mined out within five years. Underground mining commenced in 2005 at a rate of 1.2 million tonnes ROM a year. Dwarsrivier Mine was specifically geared to deliver high-quality metallurgical grade chromite. In addition, the plant has been designed to produce chemical grade products for export.

Mining authorisation

Legal Entitlement	Minerals covered by Mining Right	Comment	Period of Mining Right (years)
Mining Right L 179 MRC	Chrome and platinum group metals, excluding the rights to platinum, palladium, rhodium, ruthenium, osmium, iridium, silver, gold and ores thereof occurring in the Merensky and UG2 Reefs (as the rights were sold to Two Rivers Platinum (Pty) Limited), as well as excluding the rights to chromite in the LG6 Reef in respect of that portion of the area covered by the Mining Right marked 'portion of farm sold' on the Dwarsrivier plan on page 20 of this report.	Dwarsrivier Mine Converted Mining Right was executed on 15 May 2013 and registered on 2 June 2015. As of 1 August 2016, Dwarsrivier Mine is no longer an ARM operation.	30

Geology

Dwarsrivier Mine is situated in the eastern limb of the Bushveld Complex, which comprises persistent layers of mafic and ultramafic rocks, containing the world's largest known resources of platinum group metals, chromium and vanadium. The mafic rocks termed the Rustenburg Layered Suite, are approximately 8 kilometres thick in the Eastern Limb, and are divided formally into five zones. The rocks of the Marginal Zone at the base of the succession consist mainly of pyroxenites with some dunites and harzburgites. Above the Marginal Zone, the Lower Zone comprises mainly pyroxenites, harzburgites and dunite, and is present only in the northern part of the Eastern Limb, and only as far south as Steelpoort.

The appearance of chromitite layers marks the start of the Critical Zone, economically the most important zone. The layers within this zone are grouped into three sets termed the Lower, Middle and Upper Groups. The sixth chromitite seam in the Lower Group (LG6), is an important source of chromite ore and defines the ore body that is mined at Dwarsrivier Mine. In the Eastern Limb, in the vicinity of Dwarsrivier, the strike is nearly north-south, with a dip of approximately 10 degrees towards the west. Average thickness of the LG6 seam is about 1.86 metres in the Dwarsrivier area. Pipe-like dunite intrusions are evident in the area, as well as dolerite dykes that normally strike north-east south-west. No significant vertical grade variation is evident in the ore seam in the Dwarsrivier Resource.

Mineral Resources

Mineral Resources were estimated from boreholes on 150 to 300 metre grid spacing. All Mineral Resources down to a mineable depth of 350 metres below surface have been considered. Vertical diamond boreholes are used for geological and grade modelling. The Mineral Resources are based on a total of 390 diamond boreholes, which have been used for ore body modelling and grade estimation purposes. The drill core is NQ size and is geologically and geotechnically logged. The collar position of the boreholes are surveyed, but no down-hole surveys are done, as the holes are assumed to have minimal deflection. The chromitite seam is bounded above and below by pyroxenites, and as such, the ore horizon is clearly defined.

The core is sampled from the top contact downwards at 0.5 metre intervals. The core is split and half is retained as reference material. The other half is crushed and split into representative samples, which are crushed and pulverised for chemical analysis. The samples are analysed using fusion/ICP-OES for chrome oxide (Cr_2O_3), SiO_2, FeO, Al_2O_3, MgO and CaO. Three laboratories, all ISO 17025 accredited for this method, are used. Every tenth sample is analysed in duplicate. The density for each sample is measured using a gas pycnometer.

The LG6 layer, other chromitite layers above the LG6, i.e. MG1 to MG4 chromitites, as well as prominent faults were geologically modelled in Datamine Strat3D. Mineral Resources have been estimated using Ordinary Kriging, where Cr_2O_3, FeO, Al_2O_3, MnO and MgO contents of the LG6 seam and densities were determined, using parent block size of 50 x 50 x 4 metres. Immediately above the LG6, there is a 30 to 50 centimetre-thick pyroxenite that is capped by a thin chromitite layer, locally known as the "false hanging wall". This unit is modelled and mined for geotechnical reasons as it creates an unstable hanging wall if left behind.

The Resource classification was done by considering geological and geostatistical parameters. Geological aspects include the continuity of the LG6 layer and the influence of geological structures such as dykes and faults. Geostatistical parameters such as Kriging efficiency, Kriging variance, number of samples used in estimation, search volume and regression slope were also considered in the Resource classification.

Mineral Reserves

The LG6 chromitite seam is accessed via a decline shaft system. The mining method applied is fully mechanised underground Bord and Pillar method. Pillar size designs range from 10 x 10 metres at the shallowest point to 12 x 12 metres at 350 metres below surface. This results in an average mine extraction factor of 70% across the mine.

The false hanging wall unit forms part of the dilution in the conversion from Resources to Reserves, increasing the Reserve tonnage and decreasing the average Reserve grade. A run-of-mine ore inclusive of the 'false hanging wall' is fed to the beneficiation plant. In the dense media separation part of the plant, the coarse fraction of the ore is upgraded to 40% Cr_2O_3, with a yield of 80%. In the spiral section of the plant, the finer fraction is upgraded to metallurgical and chemical grade fines of 44% Cr_2O_3 and 46% Cr_2O_3 respectively. A 67% yield is achieved in the spiral circuit.

DWARSRIVIER CHROMITE MINE: LG6 CHROMITITE MINERAL RESOURCES AND RESERVES

	Mineral Resources				Mineral Reserves		
ARM attributable interest: 50%	Mt	Cr_2O_3%	FeO%		Mt	Cr_2O_3%	FeO%
Measured	28.38	37.56	22.40	Proved	18.01	32.81	20.84
Indicated	40.66	38.41	22.70	Probable	30.33	33.23	21.04
Total Measured and Indicated 2016	**69.04**	**38.06**	**22.58**	**Total Reserves 2016**	**48.34**	**33.07**	**20.97**
Total Measured and Indicated 2015	53.07	37.89	22.82	Total Reserves 2015	37.60	34.28	21.67
Inferred 2016	**29.92**	**38.32**	**22.73**				
Inferred 2015	43.21	38.33	22.60				

The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.

Key assumptions for Mineral Resources:

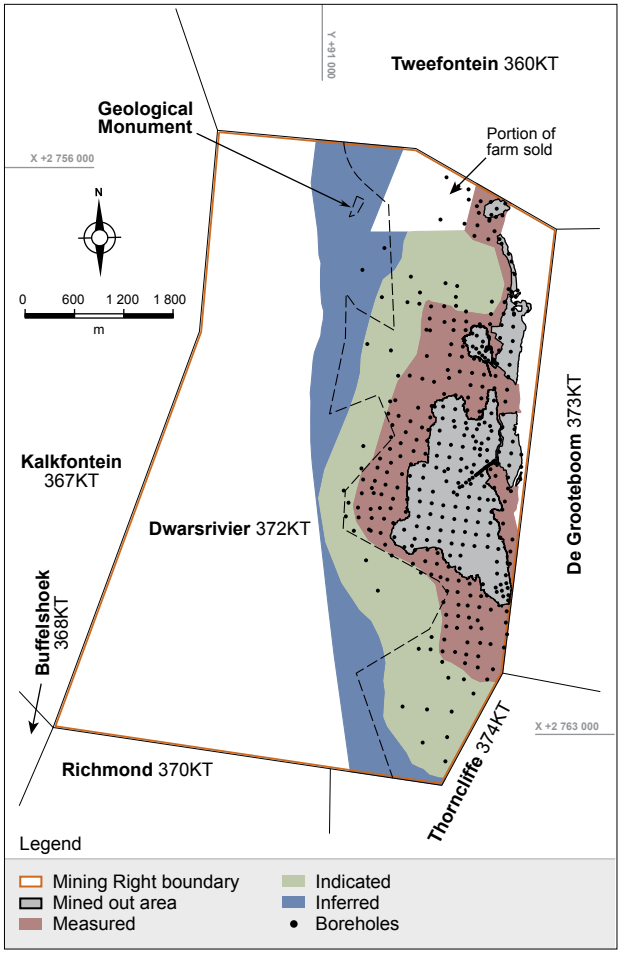
Geological loss factor applied: 15%.

Modifying factors for the conversion of Mineral Resources to Reserves include:

Mining loss factor: 5%.	*Plant yield: 61%.*	*Mining dilution: 21%.*
Mine extraction factor: 70%.	*Price ranges: Based on market-related long-term view.*	*Exchange rate used: Market-related.*

ARM FERROUS continued

DWARSRIVIER MINE LG6 CHROMITITE MINERAL RESOURCES CLASSIFICATION



YEAR-ON-YEAR CHANGE

A total of 56 new boreholes were drilled in 2015 and 2016 and they provided information that was sufficient for the upgrade of some Indicated to Measured Resources as well as portions of Inferred to Indicated Resources. The upgrades resulted in Measured Resources increasing by 27% to 28.38 million tonnes at 37.56% Cr_2O_3 and Indicated Resources increasing by 32% to 40.66 million tonnes at 38.41% Cr_2O_3. The changes in the Mineral Reserves resulted in an increase of 10.74 million tonnes to 48.34 million tonnes at 33.07% Cr_2O_3.

HISTORICAL PRODUCTION AT DWARSRIVIER CHROMITE MINE

	ROM	Saleable
Financial Year	Mt	Mt
2011/2012	1.50	1.01
2012/2013	1.60	1.03
2013/2014	1.61	1.07
2014/2015	1.77	1.11
2015/2016	1.96	1.20

ARM

PLATINUM

NKOMATI NICKEL-COPPER-COBALT-PGM-CHROMITE MINE

ARM's attributable beneficial interest in the Nkomati operation is 50%. The other 50% is held by Norilsk Nickel Africa (Pty) Ltd.

Locality

Nkomati Nickel Mine is located some 300 kilometres east of Johannesburg in Mpumalanga Province in South Africa. Situated at latitude 25º40'S and longitude 30º30'E, the site is accessed via the national N4 highway between Johannesburg and Machadodorp, the R341 provincial road and the R351 tarred road.

History

Nickel, copper, cobalt, PGM and chromite mineralisation is hosted by the Uitkomst Complex, a layered mafic-ultramafic, Bushveld satellite intrusion. The Uitkomst Complex outcrops on the farms Slaaihoek 540JT and Nkomati 770JT. In 1929, the Mineral Rights on Slaaihoek were purchased by ETC, an Anglovaal subsidiary, to mine gold at the old Mamre and Slaaihoek Mines. In the early 1970s, an Anglo American/INCO joint venture began exploring Uitkomst for nickel. In 1990, Anglo American (AAC) completed a feasibility study on an open-pit operation exploiting the large disseminated sulphide resource on Uitkomst, with negative results.

Exploration on Slaaihoek by Anglovaal began in 1989, and in 1991, the massive sulphide body (MSB) was discovered by surface drilling. In 1995, the Nkomati JV between Anglovaal and AAC was formed and in January 1997, underground production started on the MSB. In 2004, Anglovaal acquired AAC's interest and in 2005 following the merger of Anglovaal and ARM, a 50:50 JV was formed between ARM and LionOre, then a global nickel producer and owner of the Activox technology. In February 2006, Nkomati approved the Phase 1 expansion project to exploit the Main Mineralised Zone (MMZ), one of the disseminated sulphide ore bodies, by underground and open-pit mining at a rate of 100 000 tonnes per month of ore to maintain annual nickel production at approximately 5 000 tonnes in concentrate after output from the MSB started declining. The project was completed in 2007 and in the same year, Norilsk Nickel acquired LionOre, together with its 50% share in Nkomati. The MSB ore body is now completely mined out.

The Phase 2a expansion project, increasing MMZ ore production to 375 000 tonnes per month with the construction of a new plant, was commissioned during 2010. The Phase 2b expansion, involving the upgrading of the 100 000 tonnes per month MMZ plant to a 250 000 tonnes per month Chromititic Peridotite Mineralised Zone (PCMZ) plant was completed during the 2010/2011 year. The PCMZ, which is being mined only in the open pit, is a disseminated chromite-rich sulphide body within the Chromititic Peridotite (PCR) Unit (overlying the MMZ), which has to be treated separately to liberate the chromite fines.

Nkomati has also been producing lumpy chromite, chips and fines from the Oxidized Massive Chromitite since 2006, a layer which overlies the PCMZ ore body. A chrome washing plant to treat the fines stockpile was commissioned in 2008. In addition, the Oxidized PCR, which is the highly weathered PCR Unit immediately below the Oxidized Massive Chromitite, is being stockpiled for future processing for its chromite content.

Mining authorisation

Legal Entitlement	Minerals covered by Mining Right	Comment	Period of Mining Right (years)
Mining Rights MP 146 MR MP 147 MR	Nickel, copper, cobalt, platinum, palladium, rhodium, iridium, ruthenium, osmium, gold, silver and other contained minerals and metals.	Nkomati was granted the Mining Rights on 6 June 2012 over the area, and for the minerals, as previously held under its Old Order Mining Licences.	25

Geology

The Uitkomst Complex is a Bushveld-age layered, mafic-ultramafic body intruded into the basal sediments of the Transvaal Supergroup, which lies unconformably on an Archean granitic basement. The complex is a long linear body, which outcrops in the Slaaihoek valley for approximately 8 kilometres and dips below an escarpment where it has been drilled at depth for an additional 4 kilometres. The complex, which dips at approximately 4 degrees to the north-west, is still open-ended.

From the base to top, the stratigraphy of the Uitkomst Complex comprises the Basal Gabbro Unit (up to 15 metres thick), the Lower Pyroxenite Unit (average 35 metres), the Chromititic Peridotite Unit (30 to 60 metres), the Massive Chromitite Unit (up to 10 metres), the Peridotite Unit (330 metres), the Upper Pyroxenite Unit (65 metres), the Gabbronorite Unit (250 metres), and the Upper Gabbro Unit (50 metres). The complex and surrounding sediments are intruded by numerous diabase sills up to 30 metres in thickness.

There are five sulphide zones in the Uitkomst Complex: the MSB, situated at and below the base of the complex, but which has now been mined out; the Basal Mineralised Zone (BMZ) within the Basal Gabbro; the MMZ, occurring within the Lower Pyroxenite, the PCMZ, which occurs with the Chromititic Peridotite (PCR), and the Peridotite Mineralised Zone (PRDMZ), which occurs in the Peridotite

ARM PLATINUM continued

Unit, but which is not yet included in the mine's resource base. In addition, the Massive Chromitite Unit (MCHR), situated at the top of the PCR Unit, is mined in the open-pit area. The dominant sulphide minerals are pyrrhotite, pentlandite and chalcopyrite; cobalt is mostly in solid solution in the pentlandite, and the PGMs occur as separate minerals, merenskyite being dominant.

Mineral Resources

There has been numerous diamond, percussion and Reverse Circulation (RC) drilling campaigns since 1972. Consequently, various sampling and assaying protocols as well as varying standards of QA/QC have been used. Core sizes are mainly NQ and TNW. Before 1990 (Anglo American boreholes), half core samples over widths ranging from 1 metre to 5 metres were taken. Samples were assayed at the Anglo American Research Laboratory (AARL) for total nickel, copper and cobalt using AA and for 'sulphide' nickel using a peroxide leach/AA finish. Composite samples were assayed for platinum and palladium by Pb-collection fire assay/ICP, S by combustion, and a range of major elements by fusion, and RD using the Archimedes bath method. Between 1990 and 1997 (Anglovaal boreholes), assays were carried out at the Anglovaal Research Laboratory (AVRL), with internal standard checks. Nickel analyses were also carried out by the partial digestion methods. Comparisons between AARL and AVRL were undertaken to ensure that the data was compatible.

In 2003, a 50 metre-spaced drilling programme was carried out in the shallow open-pit area. Samples from this drilling were analysed at AVRL for nickel, copper and cobalt using an aqua regia partial extraction/AA finish. Platinum, palladium, rhodium and gold were analysed by Pb collection fire-assay/AA finish. Analyses also included Cr_2O_3, MgO, FeO and S. Density was also determined by gas pycnometer. Duplicates and internal standards were used and a suite of referee samples were analysed at the Genalysis Laboratory in Perth. Comparisons indicated good correlations between laboratories. In 2005, it was decided to resample many of the Anglo American drill holes to improve the sample density for PGEs in the open-pit area. Drill core was resampled (quarter core) at 1 metre intervals. Assays were carried out by the SGS Laboratory in Johannesburg for Pt, Pd and Au by Pb-collection fire-assay/AA finish and for Ni, Cu and Co by aqua regia leach/AA finish. Blanks, duplicates and AMIS standards were included for quality control.

In 2007/2008, a 50 metre in-fill diamond drilling programme (116 holes – 18 000 metres) was completed in the shallower part of Pit 3. In the Pit 2 area, another 44 holes (3 450 metres) were added to the database. Half-core samples from the Pit 3 drilling were analysed at Genalysis Laboratory Services in Perth for Ni, Cu and Co by aqua regia partial digestion/ICP finish; for Pt, Pd and Au by Pb collection fire assay/ICP finish; high chrome samples for Cr_2O_3 by fusion/ICP and SG by gas pycnometer. AMIS standards, duplicates and blank samples were used for internal QA/QC. Half-core samples from the Pit 2 drilling were analysed at Nkomati's mine laboratory for Ni, Cu and Co by aqua regia partial digestion/AA finish.

The underground MMZ and PCMZ Mineral Resources are based on surface and underground diamond drilling as well as RC holes. Underground holes are spaced 10 to 20 metres apart and the drill core is sampled at 1 metre intervals. The Nkomati mine laboratory analyses samples for Ni, Cu and Co using aqua regia leach/ICP finish, while the PGE assays are carried out by SGS and Mintek Laboratories in Johannesburg. Both laboratories use blanks, standards and check assays for quality control.

Geological wireframe models are generated from the entire borehole database (boreholes and RC holes) in Datamine Studio 3. All data is used for the variography. Grade estimation is by Ordinary Kriging. In addition to the estimation of Ni, 3PGMs+Au, Co and Cu,density is also estimated for each model cell. Block sizes for the resource model are at 50 x 50 x 2.5 metres for poorly informed areas, 25 x 25 x 2.5 metres for moderately informed areas and 12.5 x 12.5 x 2.5 metres for well-informed areas. Grade cut-offs used for the Mineral Resources are 0.16% Ni for MMZ, and PCMZ.

The open-pit and underground resources are based on the 2016 resource model which was created on-mine and internally reviewed.

The Mineral Resource classification strategy used in past years was reviewed and changed. A three-dimensional approach to the Mineral Resource classification has been adopted. It allows for the classification of each block model cell based on a combination of model cell geostatistical parameters and geological confidence. The geostatistical parameters considered are search volume, Kriging variance, Kriging efficiency and regression slope.

Mineral Reserves

Mining operations to date comprise a mechanised underground (Bord and Pillar and Long Hole Open Stoping) and open-pit mining operation which feeds two concentrators (MMZ and PCMZ) producing concentrate containing PGMs, nickel, copper and cobalt. Final products are transported to various third parties for toll smelting and refining. Chrome products from oxidized massive chromitite and the PCMZ are sold to local and export markets.

Mineral Reserves for the Nkomati open-pit area were derived from application of modifying factors to the Measured and Indicated Resources. The factors included mining method and design, mining recovery factors, mining dilution, plant recovery factors and mine optimisation at specific metal prices. Details of some of these parameters are provided as footnotes below the Mineral Resources and Reserves tables. The open-pit optimisation also considered the following parameters: mining cost, processing cost, services and supplementary cost, geotechnical slope parameters and environmental aspects. Underground Mineral Reserves were produced by applying the following modifying factors: mining method and design, mining extraction factors and mining dilution.

NKOMATI MINE: MINERAL RESOURCES (NI, PGEs, CU, CO, CR_2O_3)

ARM attributable interest: 50%	Measured Resources						Indicated Resources						Total Resources (Measured and Indicated)						Inferred Resources					
	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%
Underground																								
MMZ	10.04	0.57	0.20	0.03	1.19		37.37	0.48	0.21	0.02	1.19		47.41	0.50	0.21	0.02	1.19		6.30	0.41	0.20	0.02	1.26	
PCMZ	1.05	0.37	0.12	0.02	0.95	10.11	12.68	0.38	0.12	0.02	0.92	10.77	13.73	0.38	0.12	0.02	0.92	10.72	40.05	0.40	0.12	0.02	0.92	10.52
Open Pit																								
MMZ Pit 3	43.76	0.36	0.16	0.02	1.01		19.81	0.37	0.16	0.02	0.99		63.57	0.36	0.16	0.02	1.00							
PCMZ Pit 3	35.85	0.22	0.07	0.01	0.74	12.06	26.66	0.21	0.06	0.01	0.70	12.66	62.51	0.22	0.07	0.01	0.72	12.32						
Total 2016 Mineral Resources	**90.70**	**0.33**	**0.13**	**0.02**	**0.92**		**96.52**	**0.37**	**0.15**	**0.02**	**0.98**		**187.22**	**0.35**	**0.14**	**0.02**	**0.95**		**46.35**	**0.40**	**0.13**	**0.02**	**0.97**	
Total 2015 Mineral Resources	113.65	0.34	0.13	0.02	0.86		112.94	0.37	0.15	0.02	1.05		226.59	0.35	0.14	0.02	0.96		27.55	0.42	0.13	0.01	0.97	

***4E** = platinum+palladium+rhodium+gold.*
The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.

Key assumptions for Mineral Resources:

Grade cut-off: Underground: 0.30% Ni MMZ and 0.30% Ni PCMZ.	*Grade cut-off: Open Pit: 0.16% Ni MMZ and 0.16% Ni PCMZ.*

NKOMATI MINE: CHROMITE MINERAL RESOURCES

ARM attributable interest: 50%	Measured Resources		Indicated Resources		Total Resources (Measured and Indicated)		Inferred Resources	
	Mt	Cr_2O_3%	Mt	Cr_2O_3%	Mt	Cr_2O_3%	Mt	Cr_2O_3%
Oxidized Massive Chromitite Pit 3 2016	**0.18**	**25.97**			**0.18**	**25.97**		
Un-oxidized (fresh) Massive Chromitite Pit 3 2016	**6.48**	**28.88**			**6.48**	**28.88**		
Oxidized Massive Chromitite Pit 3 2015	0.62	28.23			0.62	28.23		
Un-oxidized (fresh) Massive Chromitite Pit 3 2015	5.48	29.27			5.48	29.27		

The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.

Key assumptions for Mineral Resources:

Grade cut-off: 20% (Cr_2O_3).

NKOMATI MINE: MINERAL RESERVES (NI, PGEs, CU, CO, CR_2O_3)

ARM attributable interest: 50%	Proved Reserves						Probable Reserves						Total Reserves					
	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%
Underground Mine																		
MMZ	0.32	0.43	0.16	0.02	1.05		10.91	0.47	0.21	0.02	1.12		11.23	0.47	0.21	0.02	1.12	
Open Pit																		
MMZ Pit 3	31.96	0.37	0.15	0.02	1.03		6.87	0.35	0.15	0.02	0.94		38.83	0.37	0.15	0.02	1.01	
PCMZ Pit 3	30.65	0.22	0.07	0.01	0.73	13.69	13.85	0.21	0.06	0.01	0.69	13.52	44.50	0.22	0.07	0.01	0.72	13.64
Total Mineral Reserves 2016	**62.93**	**0.30**	**0.11**	**0.02**	**0.88**		**31.63**	**0.33**	**0.13**	**0.02**	**0.89**		**94.56**	**0.31**	**0.12**	**0.02**	**0.89**	
Total Mineral Reserves 2015	73.66	0.30	0.11	0.02	0.84		30.14	0.36	0.13	0.02	1.13		103.79	0.32	0.12	0.02	0.92	

***4E** = platinum+palladium+rhodium+gold.*
Totals are rounded off.

Modifying factors for the conversion of Mineral Resources to Reserves include:

Mining extraction factor: Underground: 68%. Open Pit: 100%.	*Average plant recovery: 75%.*	*Price ranges (US$): Ni: 9 935 – 13 871/t; Cu: 4 824 – 5 463/t; Co: 11.78 – 12.68/lb; Pt: 1 041 – 1 226/oz; Pd: 619 – 750/oz; Au: 1 218 – 1 222/oz.*	*Exchange rate (R/US$): 13.00 – 15.33.*	*Grade cut-off: Underground: 0.35% Ni MMZ. Open Pit: 0.16% Ni MMZ and 0.16% Ni PCMZ.*

ARM PLATINUM continued

NKOMATI MINE: MMZ STOCKPILE MINERAL RESERVES

ARM attributable interest: 50%	Proved Reserves						Probable Reserves						Total Reserves					
	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%
MMZ Stockpiles 2016	**0.08**	**0.30**	**0.15**	**0.02**	**1.01**								**0.08**	**0.30**	**0.15**	**0.02**	**1.01**	
MMZ Stockpiles 2015	0.17	0.29	0.10	0.01	0.65								0.17	0.29	0.10	0.01	0.65	

***4E** = platinum+palladium+rhodium+gold.*
Totals are rounded off.
Grade cut-off: 0.16% Ni.

NKOMATI MINE: PCMZ STOCKPILE MINERAL RESERVES

ARM attributable interest: 50%	Proved Reserves						Probable Reserves						Total Reserves					
	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%	Mt	Ni%	Cu%	Co%	4E g/t	Cr_2O_3%
PCMZ Stockpiles 2016	**2.92**	**0.20**	**0.06**	**0.01**	**0.72**	**13.89**							**2.92**	**0.20**	**0.06**	**0.01**	**0.72**	**13.89**
PCMZ Stockpiles 2015	3.63	0.21	0.05	0.01	0.52	13.98							3.63	0.21	0.05	0.01	0.52	13.98

***4E** = platinum+palladium+rhodium+gold.*
Totals are rounded off.
Grade cut-off: 0.16% Ni.

NKOMATI MINE: CHROMITE MINERAL RESERVES

	Proved Reserves		Probable Reserves		Total Reserves	
ARM attributable interest: 50%	Mt	Cr_2O_3%	Mt	Cr_2O_3%	Mt	Cr_2O_3%
Oxidized Massive Chromitite Pit 3 2016	**0.10**	**23.79**	**0.04**	**21.67**	**0.14**	**23.18**
Un-oxidized (Fresh) Massive Chromitite Pit 3 2016	**0.94**	**17.72**	**0.47**	**19.45**	**1.41**	**18.30**
Oxidized Massive Chromitite Pit 3 2015	0.18	25.42	0.39	25.25	0.57	25.30
Un-oxidized (Fresh) Massive Chromitite Pit 3 2015	0.81	19.56	0.40	22.62	1.21	20.57

Totals are rounded off.

Modifying factors for the conversion of Mineral Resources to Reserves include:

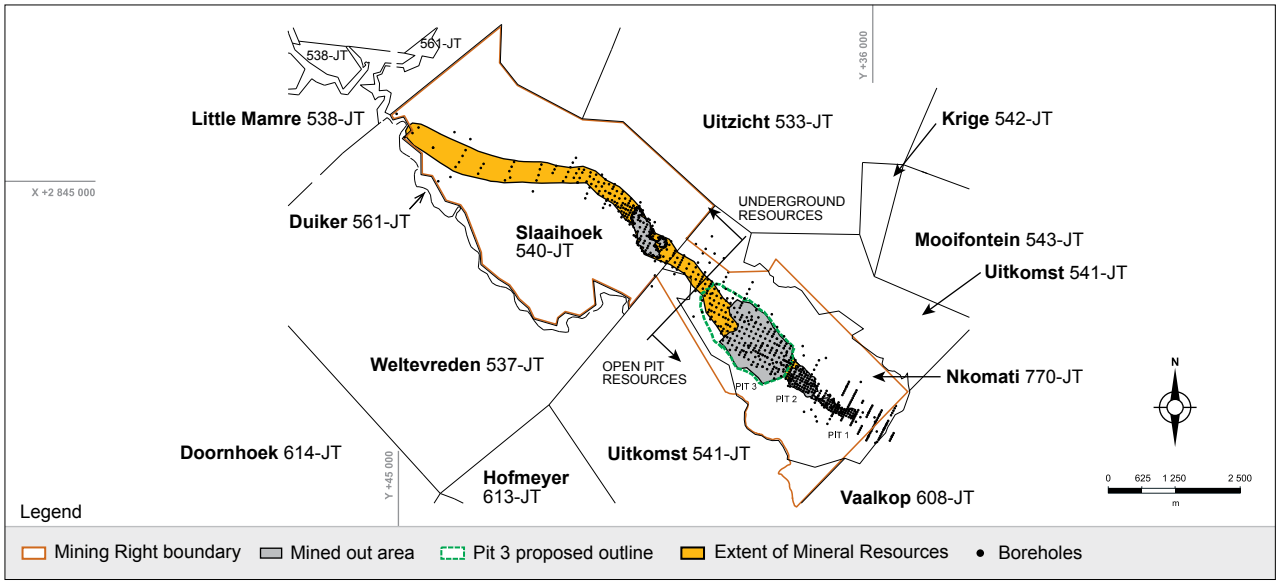
Grade cut-off: 20% (Cr_2O_3).	*Price ranges (US$/t): Cr Concentrate: 123 – 145.*	*Exchange rate (R/US$): 13.00 – 15.33.*

NKOMATI MINE: CHROMITE STOCKPILE MINERAL RESERVES

	Proved Reserves		Probable Reserves		Total Reserves	
ARM attributable interest: 50%	Mt	Cr_2O_3%	Mt	Cr_2O_3%	Mt	Cr_2O_3%
PCR Stockpile	2.30	19.20			2.30	19.20
Uncrushed ROM Stockpile	0.10	31.38			0.10	31.38
Other Chrome Stockpiles	0.13	22.15			0.13	22.15
Total Stockpiles Reserves 2016	**2.53**	**19.83**			**2.53**	**19.83**
Total Stockpiles Reserves 2015	2.62	20.53			2.62	20.53

Totals are rounded off.
Grade cut-off: 20% (Cr_2O_3).

NKOMATI MINE MINERAL RESOURCES LOCALITY MAP



YEAR-ON-YEAR CHANGE

The Measured and Indicated Mineral Resources (MMZ and PCMZ) reduced from 226.59 million tonnes at 0.35% Ni to 187.22 million tonnes at 0.35% Ni mainly due to reclassification of some underground Mineral Resources and mining depletion.

Mineral Reserves (MMZ and PCMZ) reduced from 103.79 million tonnes at 0.32% Ni in 2015 to 94.56 million tonnes at 0.31% Ni in 2016 mainly due to mining depletion of 7.61 million tonnes (ROM) and the remodelling.

HISTORICAL PRODUCTION AT NKOMATI MINE (MMZ AND PCMZ)

	ROM	Milled
Financial Year	Mt	Mt
2011/2012	8.15	6.39
2012/2013	11.74	7.59
2013/2014	7.01	7.93
2014/2015	7.35	8.03
2015/2016	7.61	8.24


Drilling at Nkomati Mine operations

ARM PLATINUM continued

TWO RIVERS PLATINUM MINE

ARM's attributable beneficial interest in Two Rivers Platinum Mine (TRP) operation is 51%. The other 49% is held by Impala Platinum.

Locality

Two Rivers Platinum Mine is located within the southern sector of the Eastern Limb of the Bushveld Complex. The mine was previously located at the farm Dwarsrivier 372KT only, but now extends to portions 1 to 6 of Kalkfontein farm, Tweefontein and Buffelshoek farms which were recently acquired from Impala Platinum (Implats). The mine is situated at longitude 30º07'E and latitude 24º59'S. The UG2 and Merensky Reefs are present on the farms.

History

Exploration, development and production history in the area dates from the early 1920s. During 1929, Lydenburg Platinum Areas Limited started mining activity, but no records are available.

Following the acquisition by Gold Fields Mining and Development Limited, exploration started up again in 1987 and was mainly directed at the Merensky Reef. Assmang Limited acquired the Dwarsrivier farm in September 1998, primarily to exploit the LG6 chromitite. During 2001, Avmin acquired the PGE rights on the farm from Assmang and targeted the UG2 Reef. In June 2005, after the ARM/Anglovaal merger, and following a full feasibility study and a period of trial underground mining, the ARM/Impala Joint Venture announced the approval of a 220 000 ounce-per-year PGM mine. As a result, an underground mine was established. The plant was commissioned in July 2006. Two Rivers now incorporates portions 1 to 6 of Kalkfontein farm, Tweefontein and Buffelshoek farms after agreement was reached between ARM and Implats.

MINING AUTHORISATION

Legal Entitlement	Minerals covered by Mining Right	Comment	Period of Mining Right (years)
Mining Right LP 178 MR	Platinum, palladium, rhodium, ruthenium, osmium, iridium, silver, gold and ores.	Two Rivers Mine was granted the Mining Right on 20 March 2013 over the area, and for the minerals, as previously held under its Old Order Mining Licence. The acquisition of the Prospecting Right from Implats in respect of portions of the farms Kalkfontein, Tweefontein and Buffelshoek is complete. The incorporation of these areas into the Mining Right of Two Rivers is also complete.	25

Geology

The UG2 Reef occurs on all the above-mentioned farms. The reef outcrops in the Klein Dwarsrivier valley on the Dwarsrivier farm, with a north-south strike length of 7.5 kilometres, dipping to the west at between 7 to 10 degrees. The elevated topography results in the UG2 occurring at a depth of 935 metres towards the western boundary. The following reef facies have been defined for the UG2 at Two Rivers:

UG2 Normal Reef facies which is characterised by a 100 to 120 centimetre-thick chromitite overlain by up to three chromitite 'leaders' collectively termed the UG2A chromitites.

UG2 Split Reef facies in the southern, west-central and north-eastern parts, characterised by a chromitite seam that is separated by a layer of a fine- to medium-grained internal pyroxenite unit.

The UG2 Multiple Split Reef facies are represented by multiple splitting of the UG2 chromitite by internal pyroxenite. It occurs mainly in the southern section of the mine on the Dwarsrivier farm as well as the east-central section of the Buffelshoek farm.

The UG2 is usually bottom loaded with peak PGM values occurring in the basal 10 centimetre portion.

The Merensky Reef consists mainly of orthopyroxene with lesser amounts of plagioclase and clinopyroxene. Thin chromitite layers, usually 1 to 4 millimetres thick, occur near the upper and lower contacts of the reef. Merensky has variable thickness but generally reduces in thickness from the Dwarsrivier farm towards Kalkfontein and Buffelshoek farms.

The regional north-northeast to south-southwest trending Kalkfontein fault, with a vertical displacement of up to 1 000 metres down-thrown to the west, defines the limits of the eastern structural domain for both the UG2 and Merensky Reefs. The ground beyond this fault remains an exploration target where both reefs are at depths in excess of 1 000 metres. Both reefs are affected by the granite intrusion in the southern portion of the Buffelshoek farm where both reefs are absent.

Mineral Resources

The Two Rivers Mine UG2 and Merensky geological and grade models were updated at the end of 2014 using the borehole data from all the farms: Dwarsrivier, Kalkfontein, Tweefontein and Buffelshoek.

TRP has a large borehole database from drilling undertaken by the Mine (Dwarsrivier farm and portions 4 to 6 of Kalkfontein and Tweefontein farms), Implats (Kalkfontein portions 1 to 3 and Buffelshoek) and Kameni (Pty) Ltd (Kalkfontein Remaining Extent). The boreholes were drilled to intersect Merensky and UG2 Reefs. The boreholes have an average grid spacing of 500 metres over the whole property and 250 metre grid spacing in some areas. The borehole spacing is 100 metres on strike and 50 metres on dip in the north-eastern portion of Dwarsrivier farm.

The borehole core drilled by TRP is halved by diamond saw and the half-core sampled at 20 centimetre intervals. Samples for both Merensky and UG2 Reefs are crushed and split and submitted for assaying. All samples from recent drilling at TRP were assayed at Genalysis Laboratory Services (Pty) Ltd (Genalysis) using Ni-sulphide collection fire-assay with an ICP-MS finish to determine Pt, Pd, Rh, Ru, Ir and Au values. Base metals (Ni, Cu, Co) were assayed by aqua regia digestion/OES finish. Duplicate samples and check analyses are carried out. Densities are also determined at the laboratory by pycnometer. The earlier Gold Fields and Assmang samples were assayed by Pb-collector fire-assay with gravimetric finish. In order to combine the data, some of the original core samples were re-assayed by means of Ni-sulphide collection fire-assay and a regression equation was derived, to re-cast the original Pb-collection data as Ni-sulphide assay 'equivalents'. Samples from other drilling campaigns by Implats and Kameni utilised the Genalysis laboratory as well.

Ordinary Kriging interpolation within Datamine Studio 3 was used to estimate the grade of each 50 x 50 x 1 metre blocks generated within the UG2 and Merensky reefs geological models. Five geological domains separated by major faults (greater than 3 metres vertical displacement) were used in the estimation. Variables estimated were Pt, Pd, Rh, Au, Ru, and Ir, Cu and Ni. Within each of the domains the UG2 chromitite was wireframed and estimated as two units based on the Pt:Pd ratio, one with a ratio greater or equal to 2.75, the other with a ratio less than 2.75. The internal pyroxenite and the leader chromitites were also modelled and estimation undertaken. Sub-cell splitting of blocks was allowed to follow the geological boundaries accurately. Density was estimated by Kriging in the resource model. Additional models of the UG2 leaders and the footwall of the UG2 chromitite were created for use in the Mineral Reserve model as mining dilution. The Merensky resource estimation was done for the five domains based on three mineralised zones that distinctly reflect different PGE grade profiles and styles of mineralisation.

The Mineral Resources for UG2 and Merensky Reefs have been classified into Measured, Indicated and Inferred Resources. Measured Mineral Resources for UG2 reef are in the areas around the North and the Main Declines where there is more closely spaced drilling as well as the availability of underground sampling data. Indicated UG2 Mineral Resources have been defined in the southern part of Two Rivers on the Dwarsrivier farm, and on parts of Kalkfontein portions 1 to 6. All UG2 Mineral Resources in the Buffelshoek farm are classified as Inferred. Merensky Reef is classified as Indicated Resources in almost all of the Dwarsrivier farm and portions of Kalkfontein. In the western portions on Kalkfontein 1 to 6 and Buffelshoek farms the Merensky Reef is classified as Inferred Mineral Resources. Mineral Resource classification is based on borehole spacing, geological continuity of the UG2 and Merensky reefs as well as consideration of geostatistical parameters such as Kriging variance, regression slope, Kriging efficiency and search volume. The faulting in the proximity of the Kalkfontein fault which resulted in significant displacement of the UG2 and Merensky reefs resulted in this area being classified in the Inferred Mineral Resources category.

Total *in situ* resources for both UG2 and Merensky were reduced by a factor ranging from 22% to 30% to account for geological losses due to potholes, faults, dykes and replacement pegmatoids.

Mineral Reserves

Two Rivers Mine is a mechanised underground operation utilising the Bord and Pillar mining method. The Mine has a concentrator plant on site where initial processing is done. Concentrate is transported by road to Impala Platinum's plants for further processing.

The Mineral Resources to Reserves conversion for the UG2 was done using the Studio 5D Mine Planning software package. Conversion of the UG2 Mineral Resources was done for the Measured and Indicated Resources in Dwarsivier Farm, Kalkfontein Farm Portions 4 to 6 and Tweefontein. Kalkfontein 1 Indicated Resources are still to be converted to Reserves pending the approval of the incorporation of the Tamboti (Kalkfontein RE) portion into the Two Rivers Mining Right, the latter separating Kalkfontein Portion 1 from the rest. The modifying factors used for the conversion of Mineral Resources to Reserves took into account the mining method, mining extraction factor, mining losses, mining dilution, mine call factor and commodity prices amongst other parameters. Details of these parameters are provided as footnotes on the Reserve tabulations.

ARM PLATINUM continued

TWO RIVERS PLATINUM MINE: UG2 REEF MINERAL RESOURCES

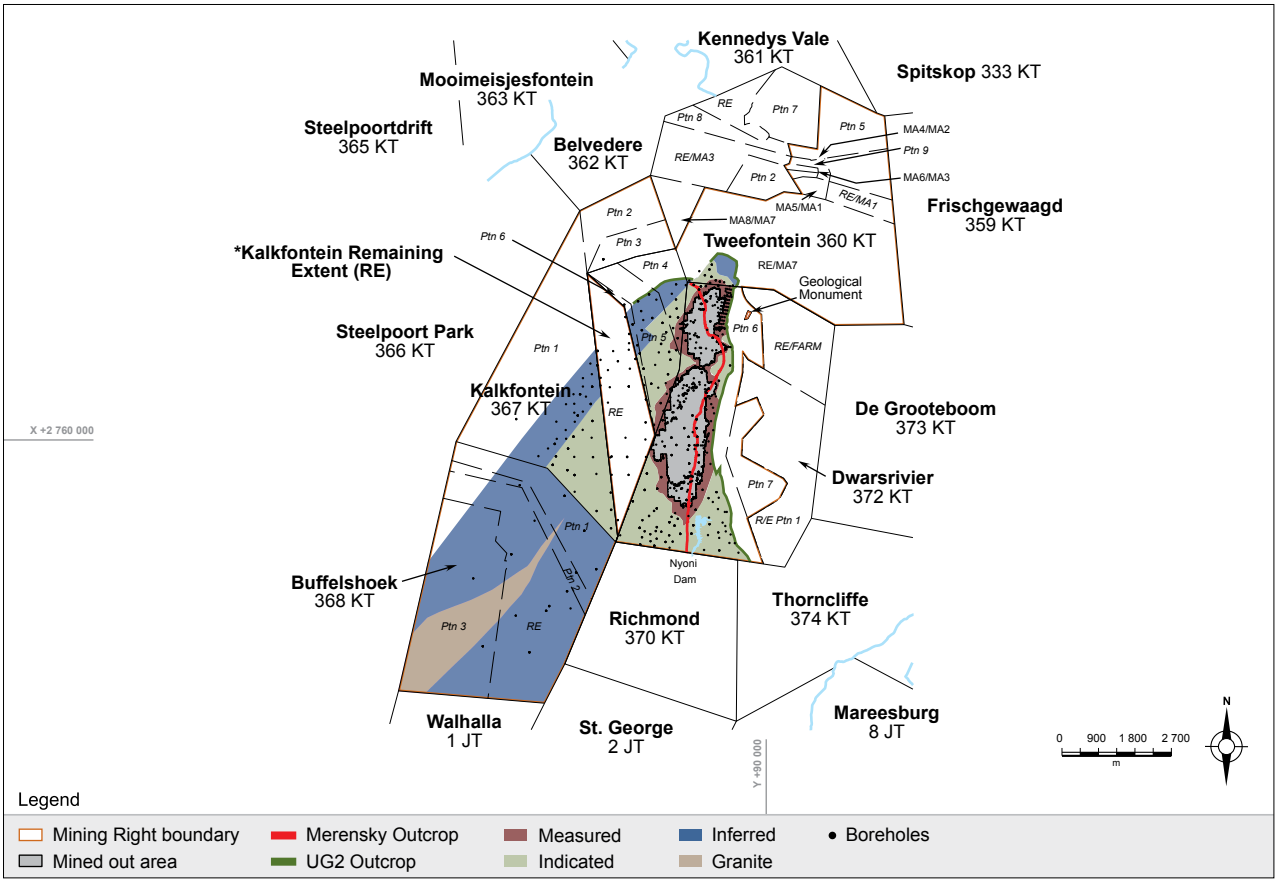
	Mineral Resources								
ARM attributable interest: 51%	Mt	Pt g/t	Pd g/t	Rh g/t	Au g/t	4E g/t	6E g/t	Pt Moz	6E Moz
Measured	14.87	2.64	1.38	0.49	0.04	4.54	5.52	1.26	2.64
Indicated	57.89	2.31	1.39	0.43	0.05	4.17	5.03	4.30	9.35
Measured and Indicated 2016	**72.76**	**2.38**	**1.39**	**0.44**	**0.05**	**4.25**	**5.13**	**5.56**	**11.99**
Measured and Indicated 2015	74.94	2.39	1.40	0.44	0.04	4.28	5.16	5.76	12.42
Inferred 2016	**117.83**	**2.52**	**1.82**	**0.47**	**0.06**	**4.86**	**5.75**	**9.56**	**21.77**
Inferred 2015	117.83	2.52	1.82	0.47	0.06	4.86	5.75	9.54	21.77

4E *= platinum+palladium+rhodium+gold.*
6E *= platinum+palladium+rhodium+iridium+ruthenium+gold.*
The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.

Key assumptions for Mineral Resources:

Geological loss factor applied: 22% – 30%.

TWO RIVERS PLATINUM MINE: UG2 REEF MINERAL RESOURCES CLASSIFICATION



* *Kalkfontein Remaining Extent (RE), currently 100% owned by ARM, was acquired as part of the Tamboti Platinum (Pty) Ltd transaction. The Mineral Resources for this portion are reported under Tamboti Platinum on pages 31 to 33 of this report.*

TWO RIVERS MINE: UG2 REEF MINERAL RESERVES

	Mineral Reserves								
ARM attributable interest: 51%	Mt	Pt g/t	Pd g/t	Rh g/t	Au g/t	4E g/t	6E g/t	Pt Moz	6E Moz
Proved	11.72	1.77	0.96	0.33	0.03	3.09	3.76	0.67	1.42
Probable	31.53	1.60	0.94	0.30	0.02	2.87	3.48	1.63	3.53
Total Reserves 2016	**43.25**	**1.65**	**0.95**	**0.31**	**0.02**	**2.93**	**3.56**	**2.30**	**4.95**
Total Reserves 2015	41.86	1.70	0.97	0.31	0.03	3.00	3.65	2.27	4.92

4E *= platinum+palladium+rhodium+gold.*
6E *= platinum+palladium+rhodium+iridium+ruthenium+gold.*
Totals are rounded off.

Modifying factors for the conversion of Mineral Resources to Reserves include:

Mining loss factor: 5%.	*Plant recovery: 87% (6E).*	*Mine call factor: 98%.*	*Mining dilution: on average 15 cm on hanging wall and 35 cm on footwall.*
Mine extraction factor: 68% – 89%.	*Price ranges (US$/oz): Pt: 1 012 – 1 095; Pd: 616 – 715; Rh: 844 – 1 020; Ru: 30 – 42; Ir: 495 – 520; Au: 1 180 – 1 218.*	*Exchange rate (R/US$): 13.00 – 15.33.*	*Reserve cut-off grade: 2.64 g/t (6E).*

TWO RIVERS PLATINUM MINE: MERENSKY REEF MINERAL RESOURCES

	Mineral Resources								
ARM attributable interest: 51%	Mt	Pt g/t	Pd g/t	Rh g/t	Au g/t	4E g/t	6E g/t	Pt Moz	6E Moz
Indicated 2016	**60.57**	**1.68**	**0.88**	**0.10**	**0.19**	**2.85**	**3.11**	**3.27**	**6.05**
Indicated 2015	60.57	1.68	0.88	0.10	0.19	2.85	3.11	3.27	6.05
Inferred 2016	**99.19**	**2.09**	**1.15**	**0.13**	**0.25**	**3.61**	**3.92**	**6.67**	**12.51**
Inferred 2015	99.19	2.09	1.15	0.13	0.25	3.61	3.92	6.67	12.51

4E *= platinum+palladium+rhodium+gold.*
6E *= platinum+palladium+rhodium+iridium+ruthenium+gold.*
Totals are rounded off.

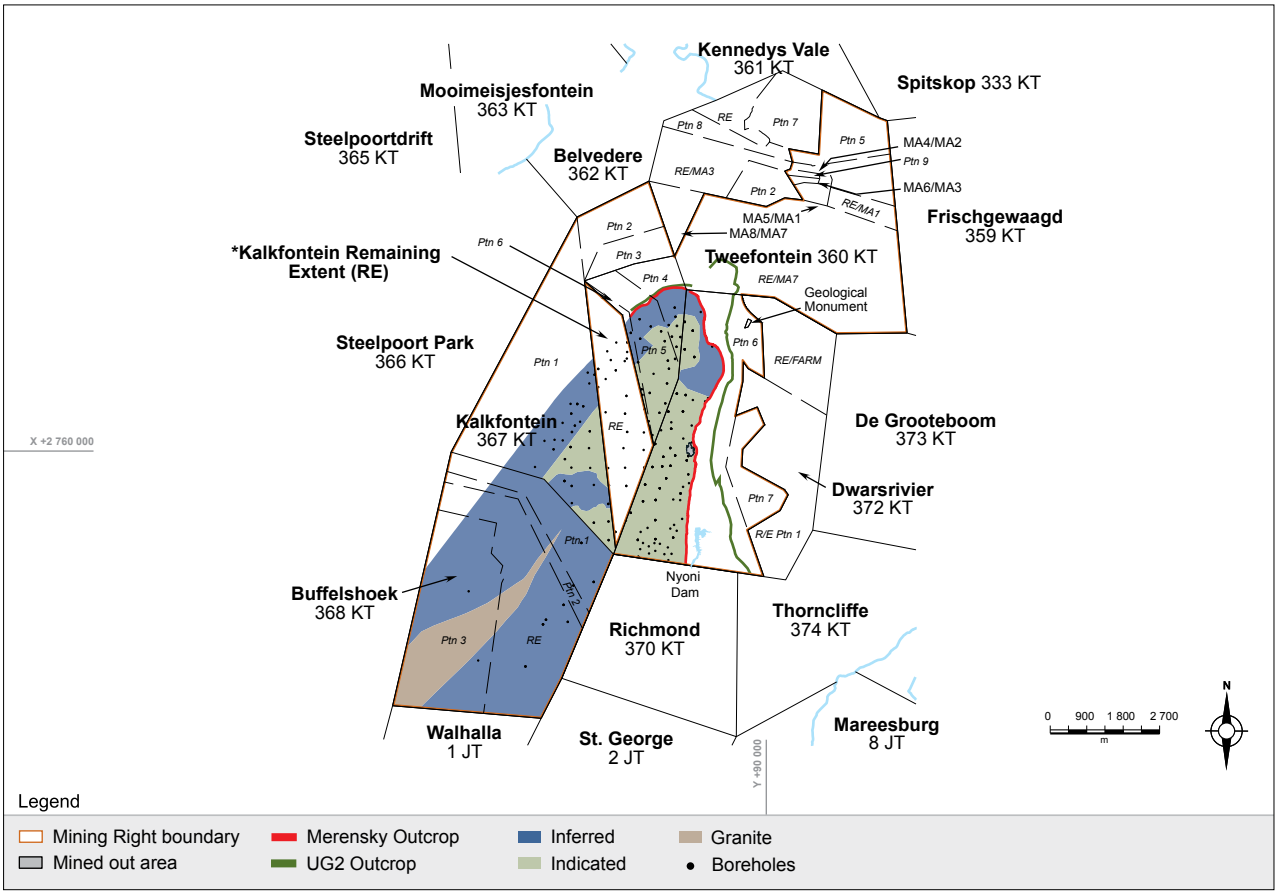
Key assumptions for Mineral Resources:

Geological loss factor applied: 30%.

Truck offloading at the Two Rivers mine

ARM PLATINUM continued

TWO RIVERS PLATINUM MINE MERENSKY REEF MINERAL RESOURCES CLASSIFICATION



* *Kalkfontein Remaining Extent, currently 100% owned by ARM, was acquired as part of the Tamboti Platinum (Pty) Ltd transaction. The Mineral Resources for this portion are reported under Tamboti Platinum on pages 31 to 33 of this report.*

YEAR-ON-YEAR CHANGE

UG2 Measured and Indicated Mineral Resources at Two Rivers Platinum Mine decreased by 3% to 72.76 million tonnes at 5.13 g/t (6E) mainly due to mining depletion. Merensky Mineral Resources remained the same as in 2015 as the models for 2015 were still used in the 2016 evaluation.

Mineral Reserves for the UG2 Reef increased from 41.86 million tonnes at 3.65 g/t (6E) to 43.25 million tonnes at 3.56 g/t (6E) mainly due to reduction in the geological loss factor at the Main Decline area.

HISTORICAL PRODUCTION AT TWO RIVERS MINE

	ROM	Milled
Financial Year	Mt	Mt
2011/2012	3.29	3.10
2012/2013	3.33	3.17
2013/2014	3.27	3.28
2014/2015	3.44	3.36
2015/2016	3.37	3.51

TAMBOTI PLATINUM

ARM's interest in Tamboti Platinum is 100% following the acquisition of Tamboti Platinum (Pty) Ltd, holder of a Mining Right over the Kalkfontein Remaining Extent (RE) adjacent to Two Rivers Mine. An agreement has been reached with Implats and approvals are awaited to transfer this property into the Two Rivers Mine Mining Right.

Locality

Tamboti Platinum area is located in the Eastern Limb of the Bushveld Complex, contiguous to Two Rivers Mine on the Remaining Extent portion of Kalkfontein farm. Both UG2 and Merensky Reefs are present on the Kalkfontein RE.

History

The area has been explored for its mineral potential since the early 1900s. Most of the activity in the area was in the form of erratic exploration activities which included trenching. Recent drilling has been done by Implats and Kameni (Pty) Ltd between 1987 and 2010.

Mining authorisation

Legal Entitlement	Minerals covered by Mining Right	Comment	Period of Mining Right (years)
Mining Right LP 165 MR	Platinum group metals, gold, silver, nickel, copper, chrome and cobalt.	Tamboti Platinum (Pty) Ltd was granted the Mining Right on 9 July 2014 over the Remaining Extent of the farm Kalkfontein 367 KT for the minerals as described therein. The exchange of Tamboti assets for an increased shareholding in Two Rivers is complete, but subject to certain conditions which are not yet complete. On completion of the conditions, the Tamboti assets will be incorporated into the Two Rivers Mining Right.	20

Geology

The Kalkfontein RE is underlain by both UG2 and Merensky Reefs. The general dip of reefs is to the west at 7 to 10 degrees. Within 500 metres of the Kalkfontein fault, the reef is faulted with vertical up-throw displacements in excess of 20 metres to the west. The reefs are vertically displaced and down-thrown by up to 1 000 metres to the west of the Kalkfontein fault. This western portion has been identified as an exploration target in which only four boreholes have intersected UG2 and Merensky Reefs.

The following reef facies, similar to those at Two Rivers Mine, have been defined for the UG2 in the Kalkfontein RE:

UG2 Normal Reef facies, which are characterised by a 100 to 120 centimetre-thick chromitite overlain by up to three chromitite 'leaders' collectively termed the UG2A chromitites.

UG2 Split Reef facies are characterised by a chromitite seam that is separated by a layer of a fine- to medium-grained internal pyroxenite unit.

The UG2 Multiple Split Reef facies are represented by multiple splitting of the UG2 chromitite separated by internal pyroxenite.

The UG2 is usually bottom loaded with peak PGM values occurring in the basal 10 centimetre portion.

The Merensky Reef consists mainly of orthopyroxene with lesser amounts of plagioclase and clinopyroxene. Thin chromitite layers, usually 1 to 4 millimetres thick, occur near the upper and lower contacts of the reef. The regional north-northeast to south-southwest trending Kalkfontein fault, with a vertical displacement of up to 1 000 metres down-throw to the west, defines the limits of the eastern structural domain for both the UG2 and Merensky Reefs.

Mineral Resources

The Kalkfontein Remaining Extent UG2 and Merensky geological and grade models were created at the end of 2014 together with the models for the adjacent areas of Kalkfontein and Dwarsrivier.

Borehole data provided by Impala and Kameni for the Kalkfontein RE portion together with the data from adjacent farms was used in the estimation of the Kalkfontein RE. These boreholes were drilled to intersect Merensky and UG2 Reefs. The boreholes have an average grid spacing of 500 metres over the whole property and 250 metre grid spacing in some areas.

All samples from historical and recent drilling at Kalkfontein RE were mostly assayed at Genalysis Laboratory Services (Pty) Ltd (Genalysis) using Ni-sulphide collection fire-assay. Some samples in earlier drilling phases were assayed at the Impala Laboratory in Springs, South Africa.

Ordinary Kriging interpolation within Datamine Studio 3 was used to estimate the grade of each 50 x 50 x 1 metre block generated within the UG2 and Merensky Reefs' geological models. Five geological domains separated by major faults (greater than 3 metres vertical displacement) were used in the estimation for the Kalkfontein RE and adjacent areas. Within each of the domains, the UG2 chromitite was wireframed and estimated as two units based on the Pt:Pd ratio. Variables estimated were Pt, Pd, Rh, Au, Ru, and Ir, Cu and Ni. The internal pyroxenite and the leader chromitites were also modelled and estimation undertaken. Sub-cell splitting of

ARM PLATINUM continued

blocks was allowed to follow the geological boundaries accurately. Density was estimated by Kriging in the resource model. Additional models of the UG2 leaders and the footwall of the UG2 chromitite were created. The Merensky Reef resource estimation was similarly done for the five structural domains.

The Mineral Resources for UG2 and Merensky Reefs have been classified into Measured, Indicated and Inferred Resources. Measured Mineral Resources for UG2 Reef are defined in a small area contiguous to Dwarsrivier farm while Indicated UG2 Mineral Resources have been defined for a large portion of the Kalkfontein RE block. Inferred Mineral Resources are on the western portion of Kalkfontein RE due to the complex faulting in the proximity of the Kalkfontein fault which resulted in significant displacement of the UG2 and Merensky Reefs. Mineral Resource classification is based on borehole spacing, geological continuity of the UG2 and Merensky Reefs as well as consideration of geostatistical parameters such as Kriging variance, regression slope, Kriging efficiency and search volume.

A geological loss factor of 30% was used for UG2 and Merensky to account for faults, dykes, potholes and replacement pegmatoids.

TAMBOTI PLATINUM (KALKFONTEIN RE): UG2 REEF MINERAL RESOURCES

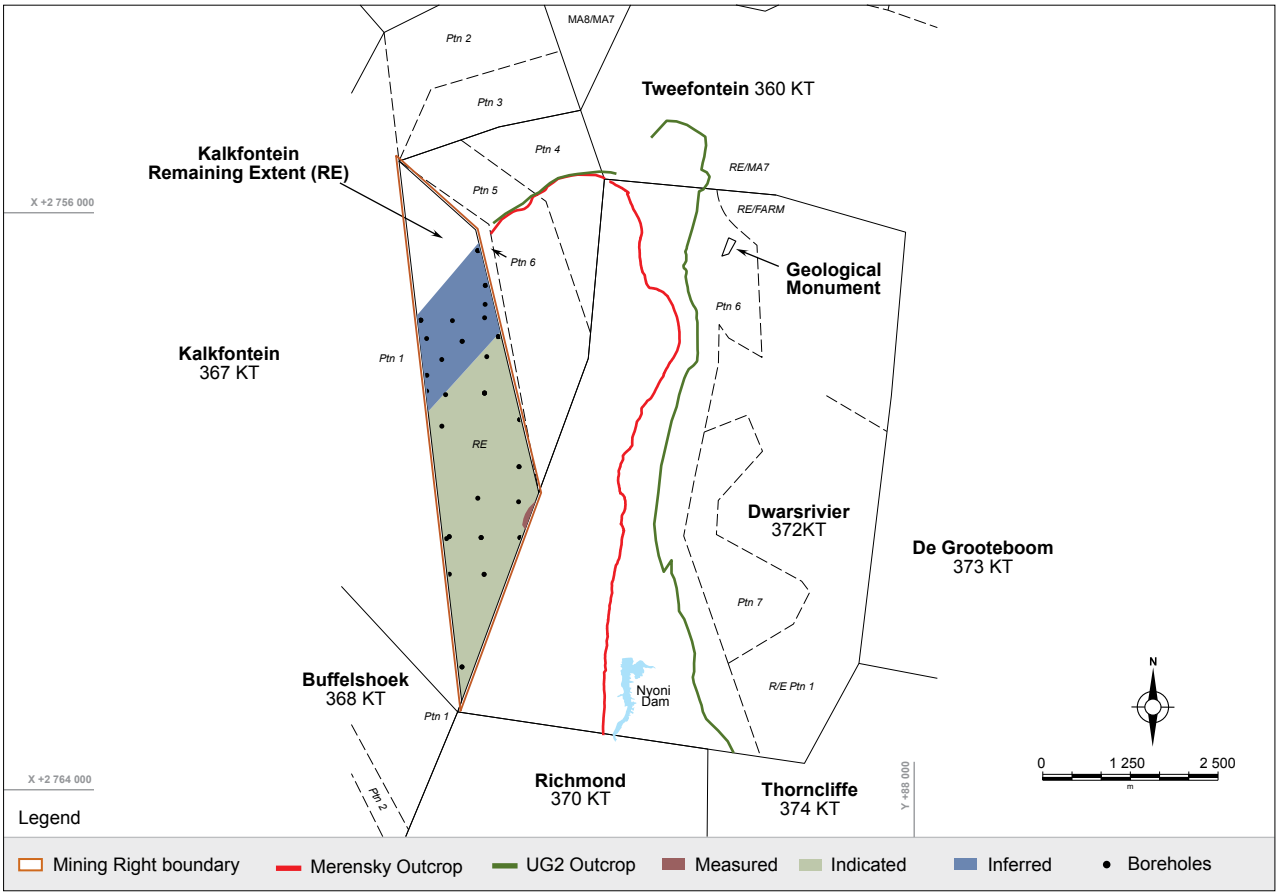
	Mineral Resources								
ARM interest: 100%	Mt	Pt g/t	Pd g/t	Rh g/t	Au g/t	4E g/t	6E g/t	Pt Moz	6E Moz
Measured	0.09	2.87	1.42	0.51	0.04	4.84	5.89	0.01	0.02
Indicated	15.11	2.84	1.74	0.51	0.05	5.14	6.19	1.38	3.01
Measured and Indicated 2016	**15.20**	**2.84**	**1.74**	**0.51**	**0.05**	**5.14**	**6.19**	**1.39**	**3.02**
Measured and Indicated 2015	15.20	2.84	1.74	0.51	0.05	5.14	6.19	1.39	3.02
Inferred 2016	**5.18**	**3.05**	**1.83**	**0.56**	**0.06**	**5.50**	**6.69**	**0.51**	**1.11**
Inferred 2015	5.18	3.05	1.83	0.56	0.06	5.50	6.69	0.51	1.11

4E *= platinum+palladium+rhodium+gold.*
6E *= platinum+palladium+rhodium+iridium+ruthenium+gold.*
Totals are rounded off.

Key assumptions for Mineral Resources:

Geological loss factor applied: 30%.

TAMBOTI PLATINUM (KALKFONTEIN RE) UG2 MINERAL RESOURCES CLASSIFICATION



TAMBOTI PLATINUM (KALKFONTEIN RE): MERENSKY REEF MINERAL RESOURCES

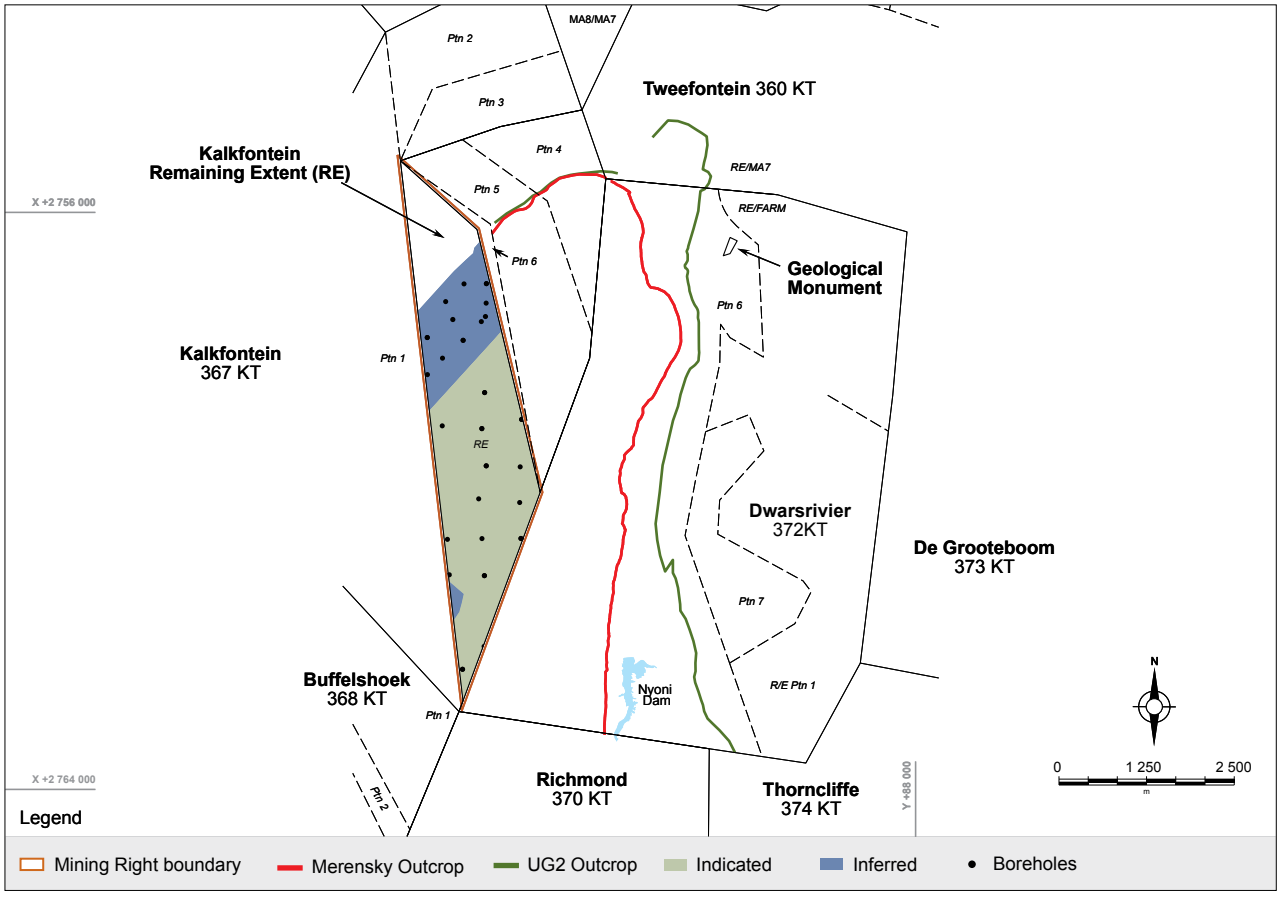
	Mineral Resources								
ARM interest: 100%	Mt	Pt g/t	Pd g/t	Rh g/t	Au g/t	4E g/t	6E g/t	Pt Moz	6E Moz
Indicated 2016	**14.39**	**2.37**	**1.20**	**0.13**	**0.28**	**3.98**	**4.31**	**1.10**	**1.99**
Indicated 2015	14.39	2.37	1.20	0.13	0.28	3.98	4.31	1.10	1.99
Inferred 2016	**5.50**	**1.94**	**0.91**	**0.11**	**0.22**	**3.18**	**3.44**	**0.34**	**0.61**
Inferred 2015	5.50	1.94	0.91	0.11	0.22	3.18	3.44	0.34	0.61

4E *= platinum+palladium+rhodium+gold.*
6E *= platinum+palladium+rhodium+iridium+ruthenium+gold.*
Totals are rounded off.

Key assumptions for Mineral Resources:

Geological Loss factor applied: 30%.

TAMBOTI PLATINUM (KALKFONTEIN RE) MERENSKY REEF MINERAL RESOURCES CLASSIFICATION



YEAR-ON-YEAR CHANGE

The Mineral Resources for Tamboti Platinum remained as reported in 2015.

ARM PLATINUM continued

MODIKWA PLATINUM MINE

ARM's attributable beneficial interest in Modikwa's operations is 41.5%; 8.5% is held by the Modikwa Communities and 50% is held by Anglo American Platinum.

Locality

Modikwa Platinum Mine is situated some 15 kilometres north of Burgersfort and 15 kilometres north-west of Steelpoort, along the border between the Mpumalanga and Limpopo Provinces in South Africa. Located at longitude 30º10'E and latitude 24º40'S, the site is accessed via the R37 road between Polokwane and Burgersfort.

History

Exploration in the area started in the mid-1920s with the discovery of the Merensky Reef. During the late 1980s further drilling was undertaken on the UG2 and Merensky Reefs. In the late 1990s, a feasibility study was completed for the exploitation of the UG2. During 2001, a 50:50 JV agreement was signed between Rustenburg Platinum Mines and ARM Mining Consortium Limited. ARM's effective stake in Modikwa is 41.5%, through its 83% ownership of ARM Mining Consortium. The other 8.5% is held by the Mampudima and Matimatjatji community companies through their 17% shareholding in the ARM Mining Consortium.

Mining authorisation

Legal Entitlement	Minerals covered by Mining Right	Comment	Period of Mining Right (years)
Mining Right LP 129 MR	Platinum group metals together with metals and minerals found in association therewith.	Modikwa Platinum Mine was granted the Mining Right on 13 November 2013 over the area, and for the minerals, as previously held under its Old Order Mining Licence. The acquisition of a portion of the Prospecting Right from Randgold in respect of the farm Doornbosch is complete but the incorporation thereof into the Modikwa Mining Right is not yet complete.	30

Geology

The igneous layering at Modikwa Mine is north north-west striking with an average dip of 10 degrees to the west. Both the UG2 and Merensky Reefs are present. The UG2 occurs as a chromitite layer with an average thickness of approximately 60 centimetres. Three leader chromitites occur above the main seam. Gentle undulations of the UG2 with amplitudes of less than 2 metres are developed across the mine area. Potholes of varying size appear to be randomly distributed within the North Shaft area. Potholes are less abundant in the South Shaft area, which is more disturbed by faulting. The Onverwacht Hill area in the southern portion of the mine is characterised by the presence of several large ultramafic pegmatoid intrusions that disrupt, and locally replace, the UG2.

Mineral Resources

The Mineral Resource modelling and estimation for Modikwa Mine is done by the Anglo American Platinum Resource modelling team. The Mineral Resource classification is based on data constraints, information risk assessments, geological, geostatistical considerations and review by the Competent Person's Team. The UG2 and Merensky Reef Mineral Resource is based on surface diamond drillholes (mother boreholes and deflections) and underground sample sections. The logs and assay values are kept in separate electronic databases and are combined for estimation purposes after rigorous data validation. Samples are submitted to Anglo Research Laboratories (AR) and Mintek Laboratories (primary laboratories) and to Genalysis (check laboratory) for analysis. The UG2 Resource cut is divided into three units comprising the UG2 Reef and dilution cuts in the hanging wall and footwall to make up the mining cut. Estimation of the three sub-units in the mining cut is carried out separately and independently. Two-dimensional block models with block sizes of 125 x 125 metres, 250 x 250 metres and 500 x 500 metres, depending on the drill hole/sample section spacing are created. The Pt, Pd, Rh, Au, Cu and Ni grades, width and density are interpolated using Ordinary Kriging. Resources are reported after deduction of geological losses and exclude Resources converted to Reserves, i.e. the reporting of Resources is exclusive of Reserves. The geological losses account for losses due to pegmatoidal intrusions, faults, dykes and potholes.

Mineral Reserves

Mining consists of mechanised development and conventional stoping. Run-of-mine tonnage is processed at the Modikwa concentrator and the PGE-rich concentrate is transported to Anglo Platinum's Polokwane smelter and refining facilities.

Part of the Measured and Indicated Mineral Resources are converted to Mineral Reserves by applying appropriate mining, metallurgical and economic factors, i.e. 'modifying factors', details of which are below the Mineral Reserves table.

A minimum mining cut of 102 centimetres is used to determine the amount of footwall waste that is included in the mining cut. Where the hanging wall and the main seam thickness are greater than 102 centimetres, an additional 5 centimetres of footwall waste is included. The basal contact of the UG2 layer is typically high-grade and it is important that this contact is not left in the footwall during mining. The UG2 is accessed via two primary declines from the surface.

*MODIKWA PLATINUM MINE: UG2 REEF MINERAL RESOURCES AND RESERVES

ARM attributable interest: 41.5%	Mineral Resources Mt	4E g/t	4E Moz		Mineral Reserves Mt	4E g/t	4E Moz
Measured	50.20	5.93	9.57	Proved	11.09	4.83	1.72
Indicated	89.40	5.92	17.02	Probable	33.64	4.72	5.10
***Total Measured and Indicated 2016**	**139.60**	**5.92**	**26.59**	**Total Reserves 2016**	**44.73**	**4.75**	**6.83**
*Total Measured and Indicated 2015	136.70	5.91	25.99	Total Reserves 2015	48.13	4.66	7.21
Inferred 2016	**77.70**	**6.21**	**15.51**				
Inferred 2015	75.90	6.21	15.15				

4E *= platinum+palladium+rhodium+gold.*
** The Measured and Indicated Mineral Resources are* ***exclusive*** *of those modified to produce Mineral Reserves.*
Totals are rounded off.

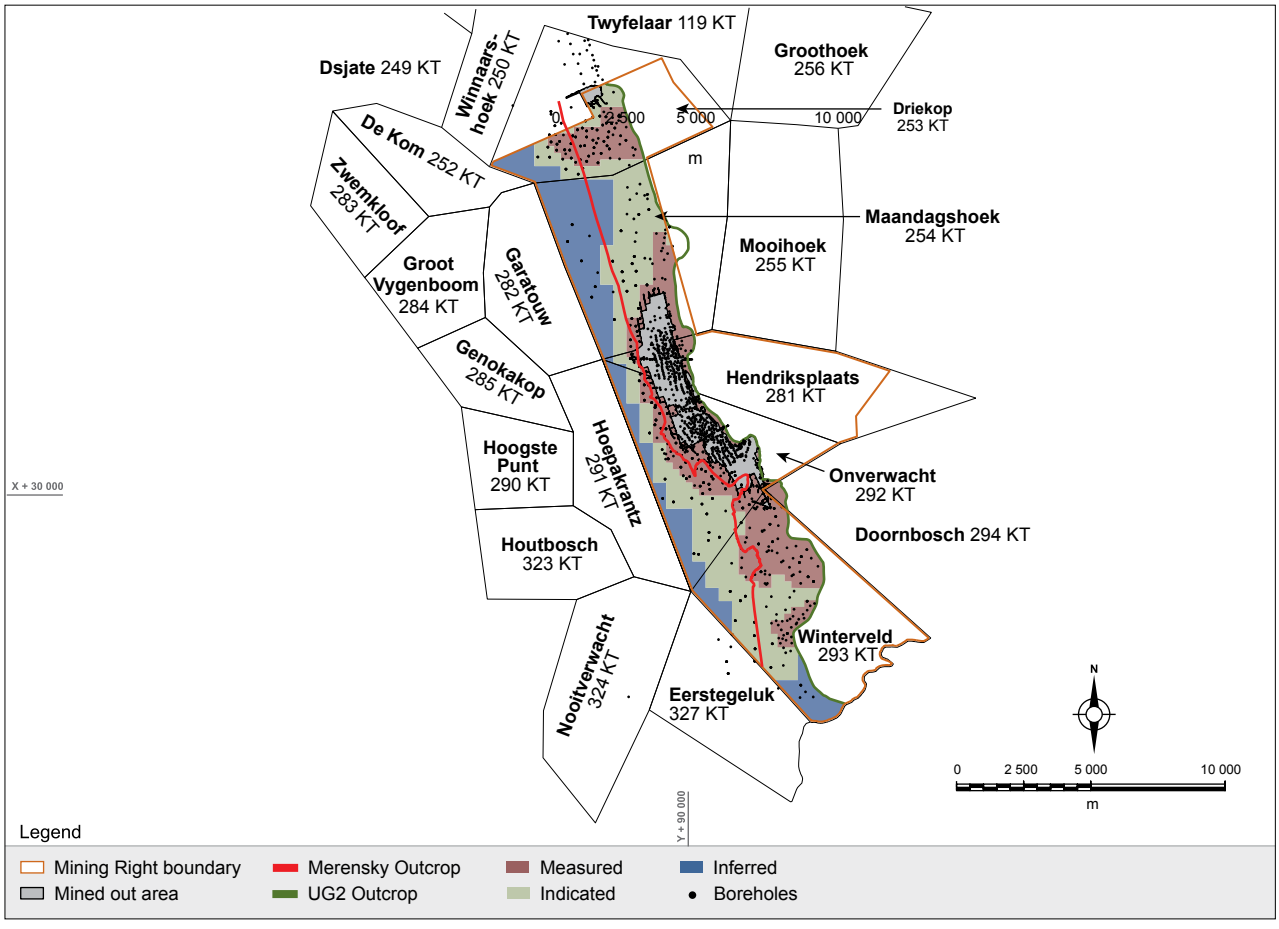
Key assumptions for Mineral Resources:

Geological loss factor applied: 14% – 35%.
Grade and thickness cut-off: 3.66 g/t (4E) and 1.02 metres.

Modifying factors for the conversion of Mineral Resources to Reserves include:

Mining loss factor: 1.2%.	*Plant recovery: 87% (4E).*	*Mine call factor: 95%.*
Price ranges (US$/oz): Pt: 1 012 – 1 095; Pd: 616 – 715; Rh: 844 – 1 020; Ru: 30 – 42; Ir: 495 – 520; Au: 1 180 – 1 218.	*Exchange rate (R/US$): 13.00 – 15.33.*	*Reserve cut-off grade: 3.66 g/t (4E).*
Mining dilution: 15%.	*Mining extraction factor: 85%.*	

MODIKWA MINE: UG2 REEF MINERAL RESOURCES CLASSIFICATION



ARM PLATINUM continued

MODIKWA MINE: MERENSKY REEF MINERAL RESOURCES

	Mineral Resources		
ARM attributable interest: 41.5%	Mt	4E g/t	4E Moz
Measured	18.55	2.93	1.75
Indicated	55.75	2.72	4.88
Total Measured and Indicated 2016	**74.30**	**2.77**	**6.62**
Total Measured and Indicated 2015	72.00	2.78	6.44
Inferred 2016	**139.85**	**2.65**	**11.92**
Inferred 2015	136.84	2.65	11.66

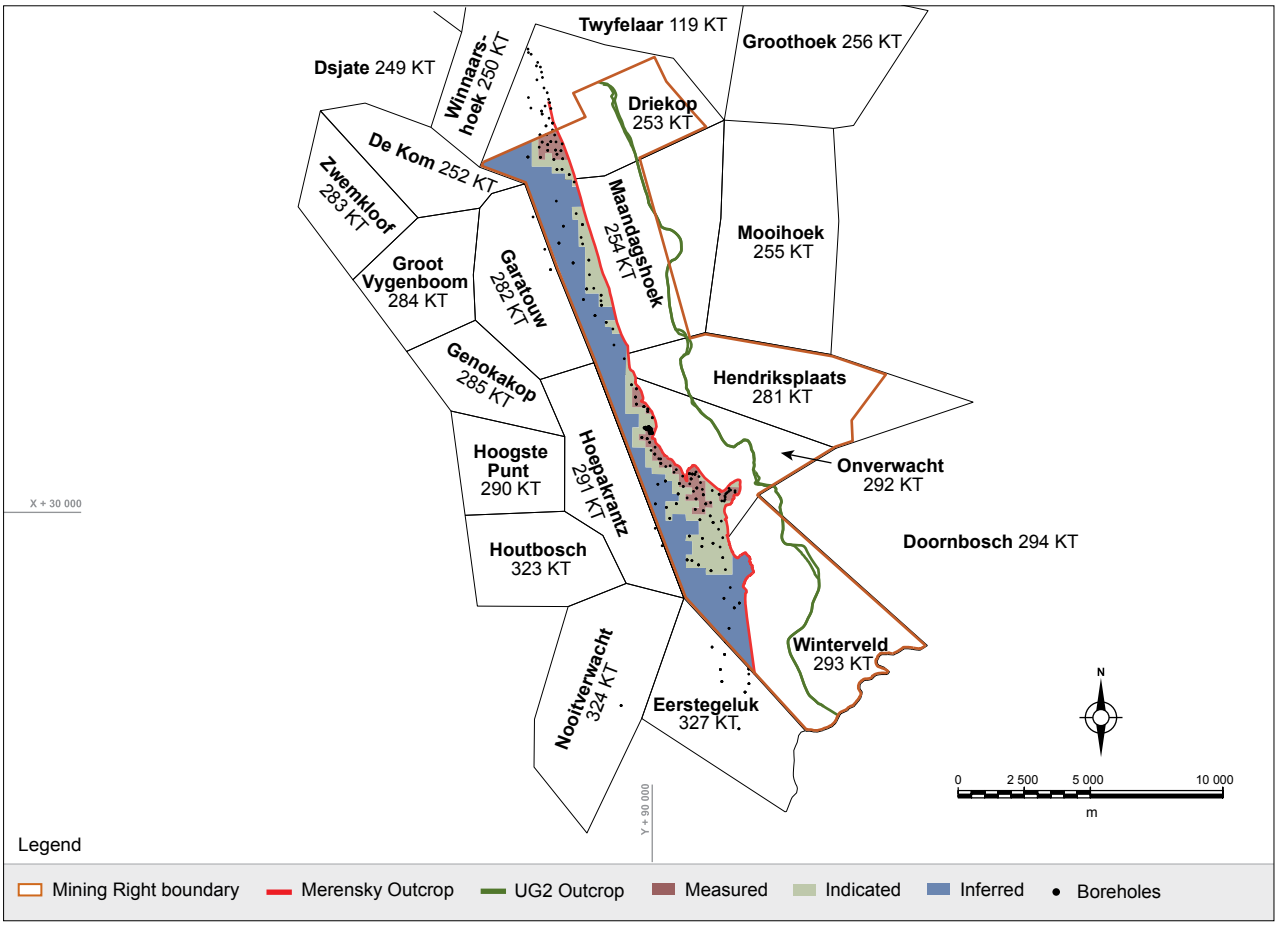
***4E** = platinum+palladium+rhodium+gold.*
Totals are rounded off.

Key assumptions for Mineral Resources:

Geological loss factor applied: 14% – 35%.

Grade cut-off: 1.44 g/t (4E).

MODIKWA MINE: MERENSKY REEF MINERAL RESOURCES CLASSIFICATION



YEAR-ON-YEAR CHANGE

The Measured and Indicated UG2 Reef Mineral Resources increased from 136.70 million tonnes at 5.91 g/t (4E) to 139.6 million tonnes at 5.92 g/t (4E) due to re-evaluation. Mineral Reserves decreased from 48.13 million tonnes at 4.66 g/t (4E) to 44.73 million tonnes at 4.75 g/t (4E) mainly due to production, design changes and modifying factor changes.

Merensky Measured and Indicated Mineral Resources marginally increased by 3% to 74.30 million tonnes at 2.77 g/t (4E) due to a refinement of the geological losses.

HISTORICAL PRODUCTION AT MODIKWA MINE

	ROM	Milled
Financial Year	Mt	Mt
2011/2012	1.91	2.18
2012/2013	2.20	2.33
2013/2014	1.94	2.11
2014/2015	1.86	1.86
2015/2016	2.08	2.05

Modikwa Mine decline

ARM PLATINUM continued

KALPLATS PGM PROSPECT

Kalplats PGM Prospect – ARM Platinum's attributable beneficial interest is 46%. Platinum Australia Limited (PLA) holds 44% and Anglo American Prospecting Services 10%.

Kalplats Extended Prospect – ARM Platinum's attributable beneficial interest is 50%. The other 50% is held by PLA.

Locality

The Kalplats Platinum Prospects are situated 330 kilometres west of Johannesburg and some 90 kilometres south-west of Mahikeng in the North West Province of South Africa. Situated at latitude 26º30'S and longitude 24º50'E, the project areas are accessed from Stella on the N14 national road linking Mahikeng and Vryburg.

History

Anglo American discovered the Kalplats platinum deposits in the early 1990s and Harmony Gold Mining Company Limited acquired the prospect from Anglo in 1999. Subsequently, ARM acquired the prospect as part of the merger of the Anglovaal, ARM and Harmony assets in 2004. Pre-2004, exploration comprised a combination of rotary air blast (RAB), reverse circulation (RC) and diamond drilling. Anglo drilled a total of 6 000 metres in 133 holes, while Harmony drilled a total of 35 640 metres in 399 holes. Harmony commissioned a feasibility study in 2003 and excavated a 500 tonne bulk sample for metallurgical test work. The study assessed the viability of both an open-pit and underground mining operation. The feasibility study was completed early in 2004.

In 2005, ARM Platinum entered into two joint venture agreements with PLA, one over the 'Kalplats PGM Prospect', which provides for PLA to earn up to 49% by completing a bankable level feasibility study and making the Panton metallurgical process available at no cost. The other joint venture agreement covers the 'Kalplats Extended Prospect' (Extended Prospect) in which ARM Platinum and PLA each has a 50% share and contributes equally to the exploration expenditure. Both prospects are managed by PLA.

PLA commenced drilling in 2006 with a combination of diamond and RC drilling focusing on extending the resources on the Vela, Scorpio, Sirius, Mira, Serpens North, Serpens South and Crux deposits. PLA completed 683 drill holes for a total of 92 529 metres. Late in 2009, PLA completed a pre-feasibility study on a 1.5 million tonne of ore per year open-pit mining operation and in 2012, PLA completed a Definitive Feasibility Study.

Prospecting Rights

Prospect	Legal Entitlement	Minerals covered by Prospecting Right	Comment	Period of Prospect Right (years)
Kalplats PGM Prospect	Prospecting Right NW 492 PR	Platinum, gold ore, silver ore, precious stones, palladium, nickel ore, copper ore, cobalt and chrome ore.	In September 2006, ARM Platinum was granted a Prospecting Right over the PGM Prospect covering portions of the farms Groot Gewaagd 270, Gemsbok Pan 309, Koodoos Rand 321 and Papiesvlakte 323 (approximately 3 810 hectares). The Prospecting Right was renewed until 26 July 2012 when it lapsed. ARM Platinum has applied for a Retention Permit over the Kalplats Prospect area.	Application for Retention Permit pending
Kalplats Extended Prospect area	Prospecting Right DME 1056	Platinum group metals, copper ore, cobalt, chrome ore, nickel ore, gold ore, silver ore, iron ore and vanadium.	In April 2007, a New Order Prospecting Right (approximately 62 985 hectares) was granted to ARM Platinum over the Extended Prospect area which covers an additional 20 kilometres of strike to the north and 18 kilometres to the south of the Kalplats Prospect area. The renewal of the Prospecting Right was executed in June 2014.	Application for Retention Permit pending

Geology

PGE mineralisation is hosted mainly by magnetite-rich gabbros within the Stella Layered Intrusion (SLI), a 3.0 billion year old layered complex intruded into the Kraaipan Greenstone Belt. Mineralisation is contained in eight separate, subvertically dipping zones known as Crater, Orion, Vela, Sirius, Mira, Serpens North and Serpens South and Crux, each with strike lengths of between approximately 500 and 1 000 metres and widths of between 15 and 45 metres. In addition, drilling has outlined at least three additional deposits known as Scorpio, Tucana and Pointer.

Three main sub-parallel reef packages within each zone have been recognised. They are the Main Reef (the highest grade reef), Mid Reef and LG Reef. The area is structurally complex, and thrusting has caused duplication of reefs in some cases.

Mineral Resources

Geological modelling and resource estimation was done by Coffey Mining consultants on all eight major deposits in the Kalplats PGM Prospect. Resources have been estimated to a depth of 200 metres below surface at a cut-off grade of 0.5 g/t 3E. Tonnages and grades are reported only for the entire thickness of a package of seven reefs, namely the UM, UUM, LM, MR, LG, MMW and Main Reef Residual layers.

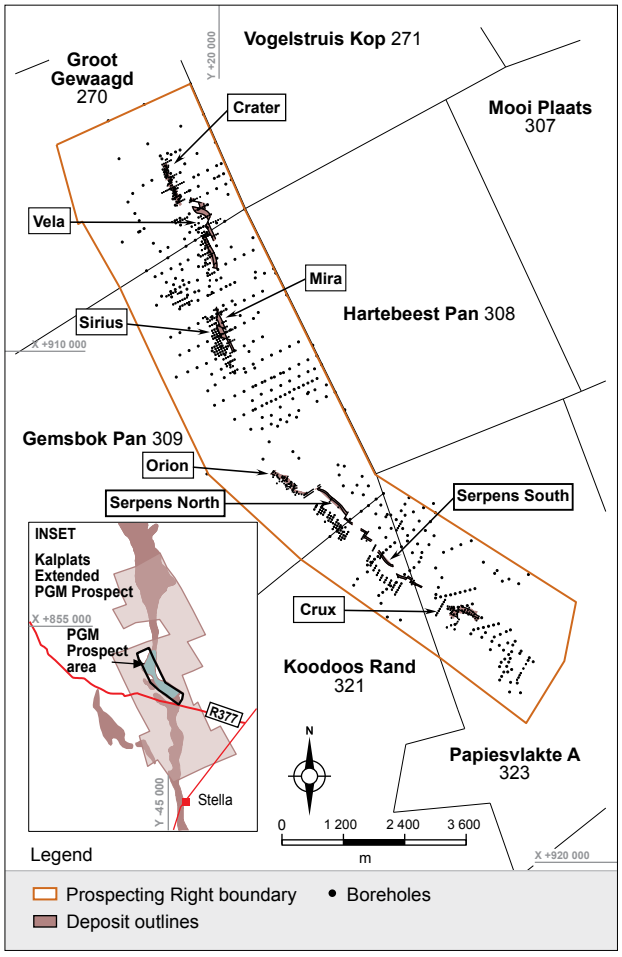
KALPLATS PROSPECT MINERAL RESOURCES

ARM attributable interest: 46%	Measured Resources		Indicated Resources		Total Measured and Indicated Resources			Inferred Resources	
	Mt	3E g/t	Mt	3E g/t	Mt	3E g/t	3E Moz	Mt	3E g/t
Crater	1.34	1.89	6.22	1.85	7.55	1.86	0.45	18.66	2.11
Orion	4.20	1.57	4.01	1.56	8.21	1.57	0.41	3.64	1.61
Crux	7.70	1.55	10.88	1.40	18.58	1.46	0.87	9.46	1.35
Sirius	0.80	1.52	5.31	1.49	6.11	1.49	0.29	3.38	1.27
Mira			2.71	1.42	2.71	1.42	0.12	3.93	1.44
Vela			21.79	1.36	21.79	1.36	0.95	14.87	1.32
Serpens N			4.96	1.41	4.96	1.41	0.22	2.74	1.47
Serpens S								10.76	1.34
Total 2016	**14.04**	**1.59**	**55.88**	**1.46**	**69.91**	**1.48**	**3.33**	**67.44**	**1.57**
Total 2015	14.04	1.59	55.88	1.46	69.91	1.48	3.33	67.44	1.57

3E = platinum+palladium+gold.
Totals are rounded off.
Resources include UM, UUM, LM, MR, LG, MMW and the Main Reef Residual layers, which is the total mineralised width for all seven layers.

Key assumptions for Mineral Resources: *Grade cut-off: 0.5 g/t.*

KALPLATS PGM PROSPECT ORE BODY LOCALITY MAP



YEAR-ON-YEAR CHANGE

There were no changes to the Measured, Indicated and Inferred Mineral Resources in comparison to 2015.

ARM

COAL

GOEDGEVONDEN COAL MINE

ARM's attributable beneficial interest in Goedgevonden's operations is 26%. The other 74% is held by Glencore Operations South Africa. The joint venture with Glencore also includes other coal operations in South Africa, Participating Coal Business (PCB), in which ARM has an economic interest of 20.2%.

Locality

Goedgevonden Mine is situated in the Witbank Coalfield about 7 kilometres south of the town of Ogies in Mpumalanga Province in South Africa.

History

A total of 548 surface diamond boreholes were drilled during 1964 to 2004 by Duiker Mining and Xstrata SA. Anglo Coal drilled an additional 102 boreholes for the Zaaiwater area. Most boreholes were drilled down to basement to define the seam locality and basement topography. Owing to the different campaigns, the database had to be validated to produce a consistent set of data.

Mining authorisation

Legal Entitlement	Minerals covered by Mining Right	Comment	Period of Mining Right (years)
Mining Right	Coal	New Order Mining Rights were granted and subsequently registered on 22 August 2008.	30

Geology

The stratigraphy of the Witbank Coalfield consists of five seams numbered from oldest to youngest: No 1 to No 5 Seam. The seams vary in thickness from less than 0.5 metres to over 6 metres and do not exceed 300 metres in depth from surface. The coal seams dip at less than 5 degrees. However, coal seam morphology and qualities may be locally influenced by basement topography, surface weathering and intrusion of dolerite dykes and sills. The coal qualities vary both within and between individual coal seams.

Low-quality coals, suitable for the local steam coal market, have a calorific value of between 18 to 22 MJ/kg, whereas the high-quality export steam coal has a calorific value of greater than 27 MJ/kg.

All five coal seams are developed on Goedgevonden. The No 1 Seam is of low quality, thin and only developed in paleo-low areas. The No 2 Seam is extensively developed and is of good quality and is, on average, 6 metres thick. The No 3 Seam is of good quality but, with an average thickness of only 0.3 metres, is uneconomic. The No 4 Seam, being closer to surface and although of the same thickness as the No 2 Seam, is influenced by weathering and is not as extensively developed. The No 5 Seam is of good quality, but is preserved as erosional remnants on the high ground only and thus not extensively developed over the area. No major faults, structural disturbances or intrusives were observed in the boreholes drilled to date. Opencast dragline mining operations in the area are extracting the No 2, No 4 and No 5 Seams. The open-cut mine produces both export and domestic thermal coal.

Coal Resources

Borehole data for the Mine is captured into the Geobank database. Minex provides the geological and mine planning software solution for the Mine.

Two-dimensional resource models are generated with block sizes of 50 x 50 metres. All estimations of the individual blocks are done using inverse distance cubed with an isotropic search. Other software packages used in the evaluation are 'Washproduct' and 'Xpac'.

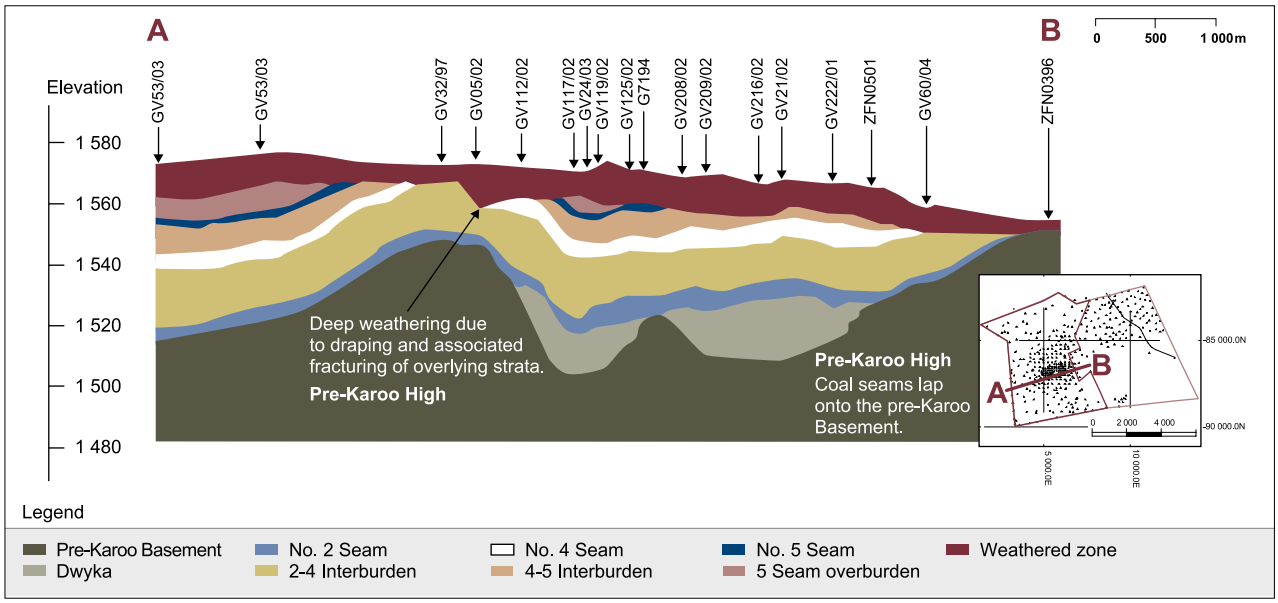
Coal Reserves

Open-cut mining methods are utilised at Goedgevonden Mine.

Measured and Indicated Coal Resources are converted to Coal Reserves by applying the modifying factors such as mining losses, mining dilution, coal quality requirements, seam thickness cut-offs. Details of these parameters are provided in the footnotes on the Reserve tables.

The following tables show the Goedgevonden Coal Resources and Reserves obtained from Glencore, reflecting the status as at 31 December 2015. Coal Resources and Reserves of the Glencore Mines are the responsibility of the Glencore Resources and Reserves team.

SECTION SHOWING GOEDGEVONDEN COAL SEAMS



GOEDGEVONDEN MINE: COAL RESOURCES

ARM attributable interest: 26%	Coal Type and Qualities	Coal Resources			
		Measured	Indicated	Measured and Indicated	Inferred
Total 2016	**Thermal Coal (Mt)***	**540**	**28**	**568**	
	CV (MJ/kg)	**19.83**	**19.20**	**19.80**	
	Ash (%)	**32.46**	**30.82**	**32.38**	
	VM (%)	**21.87**	**21.17**	**21.84**	
	S (%)	**1.17**	**0.83**	**1.15**	
Total 2015	Thermal Coal (Mt)*	530	25	555	1
	CV (MJ/kg)	19.76	19.73	19.76	13.86
	Ash (%)	32.56	31.74	32.52	48.49
	VM (%)	21.77	20.96	21.73	18.09
	S (%)	1.15	0.82	1.14	0.80

Coal Resources are inclusive of those modified to produce Coal Reserves.
Mining method is open-cut.
CV – Calorific Value; VM – Volatile Matter; S – Sulphur
Totals are rounded off.

Key assumptions for Mineral Resources:

** Coal Resources quoted on a Gross In-Situ (GTIS) basis.*	*Coal Resources qualities are reported on an air dried moisture basis.*
Geological loss: 6%.	*Density ranges: 1.3 – 1.8 g/cm^3.*
Seam thickness cut-off: 1 m (seams 2 and 4); 0.5 m (seams 1 and 5).	*Qualities cut-off: Ash: 50%; VM: 20% (DAF vols); S: 3%.*

ARM COAL continued

GOEDGEVONDEN MINE: COAL RESERVES

ARM attributable interest: 26%	Coal Type and Qualities	Coal Reserves (ROM) Proved	Probable	Total Reserves	Coal Type and Qualities	Coal Reserves (Saleable) Proved	Probable	Total Reserves
Total 2016	**Thermal Coal (Mt)**	**305**	**11**	**316**	**Thermal Coal (Mt)**	**200**	**6**	**206**
	CV (MJ/kg)			**19.21**				
	Ash (%)			**31.20**	**Export (Mt)**			**89**
	VM (%)			**20.62**	***Export CV (Kcal/kg)**			**6 000**
	S (%)			**1.06**	**Domestic (Mt)**			**117**
					Domestic CV (MJ/kg)			**21.50**
Total 2015	Thermal Coal (Mt)	320	11	331	Thermal Coal (Mt)	200	6	206
	CV (MJ/kg)			19.90				
	Ash (%)			32.33	Export (Mt)			89
	VM (%)			21.80	Export CV (MJ/kg)			5 900
	S (%)			1.10	Domestic (Mt)			117
					Domestic CV (MJ/kg)			21.50

Totals are rounded off.
** Export coal CV reported in kCal/kg.*
Mining method is open-cut.
CV – Calorific Value; VM – Volatile Matter; S – Sulphur

Modifying factors for the conversion of Coal Resources to Reserves include:

Coal Reserves qualities are reported on an air dried moisture basis.	*Plant yields: Export – 15%; Domestic – 45%.*	*Price used: Short term – based on the API4; Long term – Based on market-related long-term view and customer contracts.*
Mining loss factor: 6%.	*Seam thickness cut-off: 1 m (Seams 2 and 4); 0.5 m (Seam 5).*	*Qualities cut-off: Domestic: CV: 18%; Ash: 35%; VM: 20% (DAF vols); S: 1.5%. Export: All coal beneficiated.*
Exchange rate (R/US$): Market-related.		

YEAR-ON-YEAR CHANGE

Coal Resources changed due to the following reasons:

- Depletion due to mining (-16.8 Mt).
- Additional No. 4 and No. 2 Seam resources next to river diversion included (+32.2 Mt).
- No. 4 and No. 2 Seam Resources around Pre-Karoo sterilised due to spoils (-1.9 Mt).
- Coal losses due to geological structures (-1.2 Mt).
- Evaluation of No. 2 Seam pillars resulted in a gain in pillar resources due to a decrease in the original extraction factor (+1.2 Mt).
- Seam thickness and footprint gain due to drilling and remodelling (+4 Mt).

Coal Reserves changed as follows:

- Depletion due to mining (-11.7 Mt).
- Alignment of mine planning assumptions to reflect optimised mining sequence and practice, resulting in a net loss of -5.3 Mt ROM.

However, there was an increase of 0.4 Mt Saleable Coal Reserves. An additional gain of 11.1 Mt of saleable production was realised through fines beneficiation.

HISTORICAL PRODUCTION AT GOEDGEVONDEN MINE

	ROM	Saleable
Financial Year	Mt	Mt
2011/2012		6.4
2012/2013		8.2
2013/2014		7.3
2014/2015	11.9	8.3
2015/2016	9.9	6.5

ARM

COPPER

LUBAMBE COPPER MINE

ARM's attributable beneficial interest in Lubambe Copper Mine is 40%. Vale owns 40% and ZCCM-IH 20%.

Locality

Lubambe Copper Mine is located within the Greater Konkola area of the Zambian Copperbelt in close proximity to the town of Chililabombwe.

History

A prospective outcrop at Lubambe Mine was discovered in 1924. Since then, exploration drilling and production have been undertaken at Lubambe by companies such as Bancroft Mines Limited and ZCCM. On 27 August 2010, the Vale/ARM JV announced the development of Lubambe Copper Mine. Construction work started in September 2010. The Mine is designed to produce 2.5 million tonnes of ore per annum, resulting in 45 000 tonnes of contained copper in concentrate to be toll smelted and refined in Zambia.

MINING AUTHORISATION

Legal Entitlement	Minerals covered by Mining Right	Comment	Period of mining licence (years)
Mining Licence 7061-HQ-LML	Copper, cobalt, gold, silver, selenium, tellurium and sulphur.	The revised Large Scale Mining Licence for the Lubambe Copper Project was issued in April 2011. The mining licence is bound by the Zambia/DRC border to the west, north and east and the Vedanta's Konkola Copper Mine mining licence to the south.	25

Geology

The Lubambe copper deposit is one of approximately 30 copper/cobalt deposits occurring within the Central African Copperbelt. It is located at the north-western extremity of the Zambian portion of the Copperbelt. The deposit is hosted within sediments which accumulated in an intracratonic rift, which was subsequently closed during the Lufilian Orogeny. The deposit mineralisation is defined as the ore shale (OS) type of mineralisation. Copper mineralisation is largely hosted within the OS1 Member, whose true thickness varies from 3 to 14 metres. The lower-most 1.5 metres of the OS1 Member contains very little copper, due to leaching which preferentially occurs at the base of the OS1 where the contact between the siltstone and conglomerate/arkose represents a permeability channelway. The transition to greater than 1% total copper is abrupt and takes place over centimetres, above a thin red iron oxide-rich marker layer, which probably acted as a redox boundary. The upper contact of the greater than 1% total copper zone (assay hanging wall) is also well-defined in the assay profile, but is not as sharp as the assay footwall contact.

Mineralisation occurs as finely disseminated sulphides along bedding planes and cleavage, in thin veinlets, and in lenticles and stringers, comprising of chalcocite, chalcopyrite, bornite, digenite, covellite, pyrite and carrollite. A large proportion of the non-sulphide copper minerals occur along fractures and veins and consist of malachite, pseudomalachite, chrysocolla, cuprite, azurite and native copper.

Mineral Resources

Mineral Resources for Lubambe Mine are based on the 2010 model which has since been updated by the Mine using new drilling data and underground mapping information. The 2010 model was done by AMEC E&C Services Inc (AMEC) consultants. A total of 137 boreholes were used in the AMEC estimate but the data has since increased with the addition of underground boreholes. All this data has been used in the resource model updates at the Mine. Although a number of laboratories were used prior to 2007 for sample assaying, ALS Chemex in Johannesburg has been used since then. ALS Chemex Laboratory determines total copper (TCu) content by using procedure ME-OG62, a four acid (HNO3-HClO4-HF-HCl) digestion followed by conventional ICP-AES analysis. Total copper assays include the acid soluble copper (ASCu) assay component. The ASCu content is determined by shaking the sample in 5% sulphuric acid at room temperature. The copper content is then determined by AAS. AMEC estimated TCu and ASCu separately for oxide and sulphide domains using accumulation (grade times thickness). Mineral Resource classification was based on borehole spacing and geological continuity of the copper mineralisation. The Mineral Reserves have been derived from Measured and Indicated Resources within the Life of Mine (LOM) design and classified as either Proved or Probable Reserves. The reported resource is based on a cut-off of 1.5% TCu and minimum true thickness of 2 metres.

The Mineral Resources for the Lubambe Extension area which includes the Lubambe Extension Target area were estimated by AMEC with the latest update having been done in February 2014. The Lubambe Extension Target area is subject to ongoing feasibility studies. Since 2007, ALS Chemex has been used as the primary laboratory for determination of the assays from the drilling undertaken in the Lubambe Extension area. The geological model for the ore body was based on a selected mineralised zone (SMZ) determined in each borehole on a 1% total copper grade over a 3 metre true thickness. Estimation into 25 x 25 metre blocks using accumulation (grade

ARM COPPER continued

times true thickness) for TCu, ASCu and TCo was undertaken. The reported resource is based on a cut-off of 1.5% TCu and 4 metres true thickness.

Mineral Reserves

Lubambe is an underground operation utilising the Longitudinal Room and Pillar mining method. The Cut and Fill mining method will also be applicable in some areas of the Mine.

The LOM design and schedule were developed by the Mine personnel and consultants. The modifying factors used for the conversion of Mineral Resources to Reserves took into consideration the mining method, mining extraction factors, mining losses, mining dilution and commodity prices amongst other parameters. Details of these parameters are provided as footnotes on the Reserve tabulations.

LUBAMBE MINE: COPPER MINERAL RESOURCES

	Mineral Resources			
ARM attributable interest: 40%	Mt	*TCu%	*ASCu%	Mt Contained Cu
South Limb				
Measured	3.6	2.44	0.51	0.09
Indicated	20.0	2.37	0.46	0.47
Measured and Indicated	**23.6**	**2.38**	**0.47**	**0.56**
Inferred	15.1	2.17	0.40	0.33
East Limb				
Measured	2.7	2.74	0.31	0.07
Indicated	24.4	2.70	0.37	0.66
Measured and Indicated	**27.1**	**2.70**	**0.36**	**0.73**
Inferred	7.8	2.31	0.24	0.18
Lubambe Mine Total Resources				
Total Measured	6.3	2.57	0.42	0.16
Total Indicated	44.4	2.55	0.41	1.13
Total Measured and Indicated 2016	**50.7**	**2.55**	**0.41**	**1.29**
Total Measured and Indicated 2015	52.8	2.65	0.43	1.40
Total Inferred 2016	**22.9**	**2.22**	**0.35**	**0.51**
Total Inferred 2015	21.9	2.19	0.37	0.48

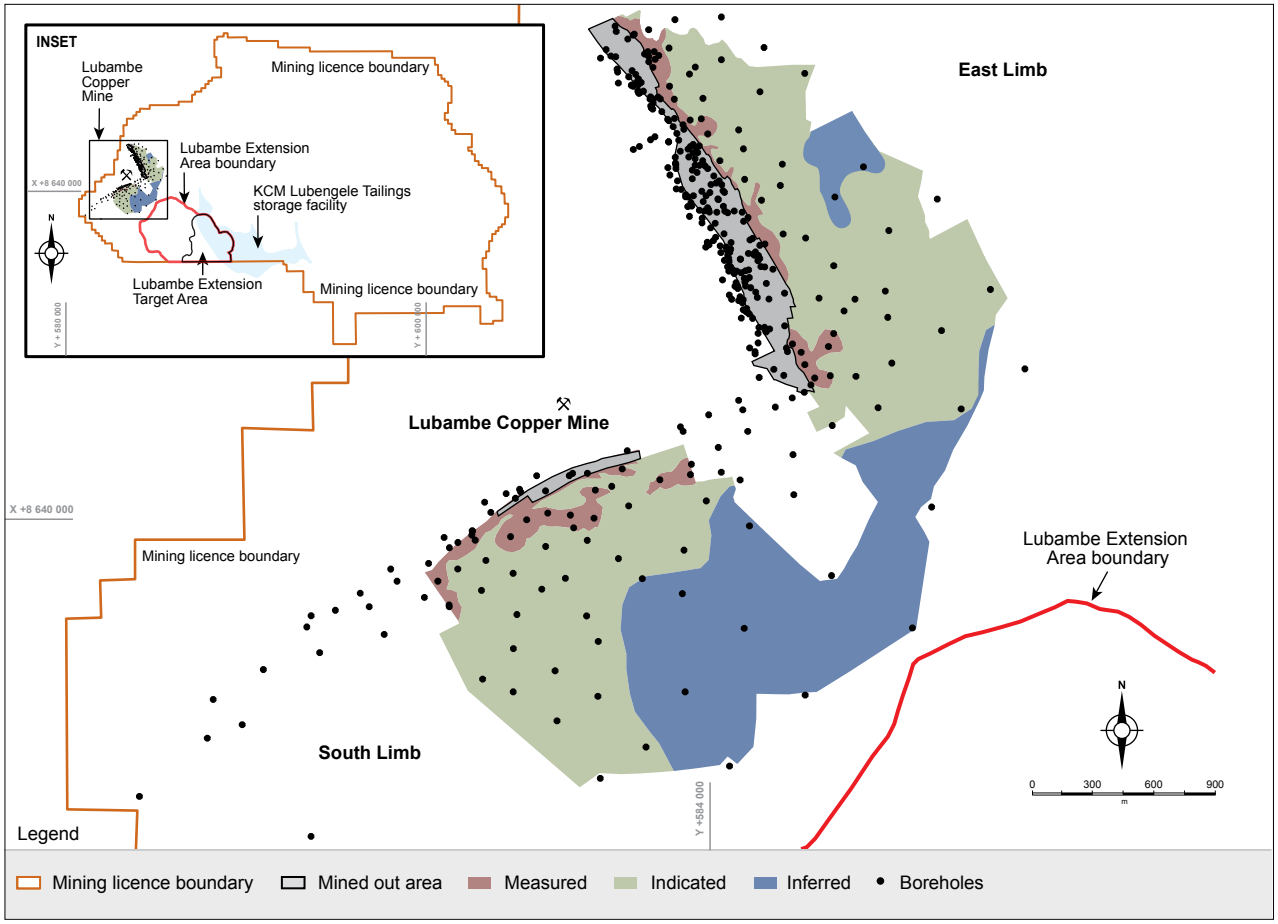
The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves.
Totals are rounded off.
TCu - Total Copper; *ASCu - Acid Soluble Copper.

Key assumptions for Mineral Resources:

Geological loss factor applied: 5%.	*Grade and true thickness cut-off: 1.5% (TCu) and 2 metres.*	*Density: 2.57 g/cm^3.*

Maintenance of machinery at Lubambe Mine

LUBAMBE COPPER MINE MINERAL RESOURCES CLASSIFICATION



ARM COPPER continued

LUBAMBE MINE: COPPER MINERAL RESERVES

	Mineral Reserves			
ARM attributable interest: 40%	Mt	*TCu%	*ASCu%	Mt Contained Cu
South Limb				
Proved	3.1	2.12	0.36	0.07
Probable	18.9	1.99	0.32	0.38
Proved and Probable 2016	**22.0**	**2.01**	**0.33**	**0.45**
East Limb				
Proved	2.3	2.35	0.33	0.05
Probable	21.1	2.35	0.31	0.50
Proved and Probable 2016	**23.4**	**2.35**	**0.31**	**0.55**
Lubambe Mine Total Reserves				
Total Proved 2016	5.4	2.22	0.35	0.12
Total Probable 2016	40.0	2.18	0.31	0.88
Total Reserves 2016	**45.4**	**2.18**	**0.32**	**1.00**
Total Reserves 2015	48.6	2.25	0.34	1.10

Totals are rounded off.
**TCu – Total Copper; *ASCu – Acid Soluble Copper.*

Modifying factors for the conversion of Mineral Resources to Reserves include:

Mining loss factor: 10% – 20%.	*Plant recovery: 83% (average).*	*Mine extraction factor: 73% (Longitudinal Room and Pillar); 81% (Cut and Fill).*	*Stoping dilution: 20%.*	*Price (US$/t): Cu: 6 614.*	*Exchange rate (ZMW/US$): 10.0.*
Reserve cut-off grade: 1.5% TCu.	*Reserve cut-off thickness: 2 m.*				

LUBAMBE EXTENSION AREA: COPPER MINERAL RESOURCES

	Mineral Resources			
ARM attributable interest: 40%	Mt	*TCu%	*ASCu%	Mt Contained Cu
****Lubambe Extension Target Area**				
Indicated 2016	**90.0**	**3.73**	**0.56**	**3.36**
Indicated 2015	90.0	3.73	0.56	3.36
Inferred 2016	**44.0**	**4.78**	**0.29**	**2.10**
Inferred 2015	44.0	4.78	0.29	2.10
Lubambe Extension (Outside Target Area)				
Inferred 2016	**79.0**	**2.8**	**1.44**	**2.21**
Inferred 2015	79.0	2.8	1.44	2.21

*** Lubambe Extension Target Area is the area currently under feasibility studies and is a portion of the Lubambe Extension Area.*
Totals are rounded off.
** ASCu – Acid Soluble Copper.*
** TCu – Total Copper.*

Key assumptions for Mineral Resources:

Geological loss factor applied: 5%.	*Grade and true thickness cut-off: 1.5% (TCu) and 4 metres.*	*Density: 2.57 g/cm^3.*

YEAR-ON-YEAR CHANGE

The Measured and Indicated Resources for Lubambe Copper Mine decreased from 52.8 million tonnes at 2.65% TCu to 50.7 million tonnes 2.55% TCu mainly due to mining depletion, and re-evaluation.

The Mineral Reserves decreased to 45.4 million tonnes at a grade of 2.18% TCu compared to 48.6 million tonnes at 2.25% TCu in 2015 due to mining depletion and the change in applicable modifying factors. The latter was necessitated by additional geological losses and bad ground conditions which had not been anticipated in the initial modifying factors. These conditions are limited to the current mining area and are not expected to extend to other areas.

Lubambe Extension Mineral Resources remained unchanged as no additional drilling was undertaken in the area.

HISTORICAL PRODUCTION AT LUBAMBE MINE

	ROM
Financial Year	Mt
2011/2012	0.14
2012/2013	0.96
2013/2014	1.56
2014/2015	1.60
2015/2016	1.22

GOLD HARMONY

ARM owns 14.6% of Harmony's issued share capital. Harmony is separately run by its own management team. Mineral Resources and Reserves of the Harmony mines are the responsibility of the Harmony team and are published in Harmony's Annual Report.

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