News Release

30 September 2016

PANORAMIC RESOURCES LTD

VISION | COMMITMENT | RESULTS

ASX:PAN

MINERAL RESOURCES AND ORE RESERVES AT 30 JUNE 2016

Summary

Panoramic Resources Limited (**ASX Code: PAN**) is pleased to announce the Group's Mineral Resources and Ore Reserves Statement at 30 June 2016. Key points:

Resource / Reserve	FY2016	FY2015	% Change y-o-y
Total Nickel Resources	256,300 tonnes	218,600 tonnes	+ 17%
Total Nickel Reserves	22,300 tonnes	45,700 tonnes	- 51%
Total Copper Resources	83,200 tonnes	68,300 tonnes	+ 22%
Total Copper Reserves	11,500 tonnes	24,600 tonnes	- 53%
Total Cobalt Resources	10,400 tonnes	7,700 tonnes	+ 35%
Total Cobalt Reserves	900 tonnes	2,200 tonnes	- 59%
Total Gold Resources	1.27 million ounces	2.43 million ounces	- 48%
Total Platinum Resources	1.36 million ounces	1.36 million ounces	No change
Total Palladium Resources	1.44 million ounces	1.44 million ounces	No change

Nickel in Mineral Resources increased by 37,700 tonnes between FY2015 and FY2016 due to:

- additions at Savannah North (+54,400 tonnes) and Lower Schmitz (+6,700 tonnes);
- mining depletion at Savannah, Copernicus and Lanfranchi (-12,400 tonnes); and
- sterilisation / other changes (-11,000 tonnes).

The Group nickel Resources at 30 June 2016 do not include 65,500 tonnes of nickel contained added to the Savannah North Resource from the August 2016 Resource upgrade (*refer ASX announcement dated 24 August 2016*). **With the inclusion of the Resource upgrade at Savannah North, Group nickel Resources at 30 September 2016 are 321,800 tonnes contained nickel**.

Nickel in Ore Reserves declined by 23,400 tonnes between FY2015 and FY2016 due to:

- mining depletion at Savannah, Copernicus and Lanfranchi (-12,400 tonnes);
- exclusion of Savannah Sub-900 Fault material due to economic factors (-10,800 tonnes);
- an increase in Reserves at Metcalfe (+1,100 tonnes); and
- other changes (-1,300 tonnes).

Gold in Mineral Resources decreased by 1.17 million ounces between FY2015 and FY2016 due to the sale of the Company's 70% interest in the Mt Henry Project. There was no change to platinum and palladium Mineral Resources between FY2015 and FY2016.

Commodity price and US$:A$ exchange rate assumptions used for the FY2016 Ore Reserves, based on medium term forecasts compiled from a range of external parties, were:

- Nickel US$6.00/lb
- Copper US$2.50/lb
- Cobalt US$11.83/lb
- US$:A$ 0.74

Savannah Nickel Project (including Copernicus and Savannah North)

At Savannah, Ore Reserves as at 30 June 2016 are 1.56 million tonnes at 1.16% Ni, 0.74% Cu and 0.06% Co for 18,100 tonnes contained nickel, 11,500 tonnes contained copper and 900 tonnes contained cobalt. Savannah Ore Reserves declined by 23,500 tonnes nickel between FY2015 and FY2016 due to mining depletion at Savannah and Copernicus (-11,400 tonnes), exclusion of Savannah Sub-900 Fault Resources from the Ore Reserve due to economic factors (-10,800 tonnes), and other changes (-1,300 tonnes).

Mineral Resources at Savannah (including Copernicus and Savannah North) at 30 June 2016 are 10.5 million tonnes at 1.53% Ni, 0.79% Cu and 0.10% Co for 160,900 tonnes contained nickel, 83,200 tonnes contained copper and 10,400 tonnes contained cobalt. This is an increase of contained nickel in Mineral Resources of 32,000 tonnes between FY2015 and FY2016 due to additions at Savannah North (+54,400 tonnes), partly offset by mining depletion at Savannah and Copernicus (-11,400 tonnes), sterilisation and other changes (-10,900 tonnes).

Drilling at Savannah North during 2015 resulted in a Resource estimate of 6.88 million tonnes at 1.59% Ni for 109,600 tonnes contained nickel (*refer ASX announcement dated 1 October 2015*), which is included in the total Resource reported above. There was no resource drilling undertaken at Savannah or Copernicus during FY2016.

In March 2016, the Company commenced an infill and extensional drilling program on Savannah North, which led to a major increase of the Savannah North Resource to 175,100 tonnes nickel contained (*refer ASX announcement dated 24 August 2016*). As this work was completed after the 30 June 2016 cut-off date for the annual Group Resources and Reserves report, this Resource upgrade is not included in the 30 June 2016 Resource estimates. **Nickel in Resources at Savannah (including Copernicus and Savannah North) at 30 September 2016 is 226,400 tonnes.**

Lanfranchi Nickel Project

At Lanfranchi, Ore Reserves at 30 June 2016 are 0.21 million tonnes at 2.03% Ni for 4,200 tonnes contained nickel. Lanfranchi Ore Reserves increased by 100 tonnes of nickel between FY2015 and FY2016 due to inclusion of the additional levels of Metcalfe in the Reserve (+1,100 tonnes) offset by mining depletion (-1,000 tonnes).

Mineral Resources at Lanfranchi at 30 June 2016 are 5.65 million tonnes at 1.69% Ni for 95,500 tonnes contained nickel. This is an increase of nickel in Mineral Resources of 5,600 tonnes between FY2015 and FY2016 due to additions at Lower Schmitz (+6,700 tonnes), partly offset by mining depletion (-1,000 tonnes).

A maiden Resource estimate for Lower Schmitz of 131,000 tonnes at 5.1% Ni for 6,700 tonnes contained nickel was reported in the March 2016 quarter (*refer ASX announcement dated 28 April 2016*). No other resource drilling was completed at Lanfranchi in FY2016.

Gum Creek Gold Project

Mineral Resources at Gum Creek at 30 June 2016 are 17.4 million tonnes at 2.28g/t Au for 1.27 million ounces contained gold. There were no changes to Gum Creek Resources during FY2016. There are no Ore Reserves at Gum Creek.

Mt Henry Gold Project

In September 2015, the Company completed the sale of its 70% interest in the Mt Henry Project to Metals X Limited (*refer ASX announcement dated 16 September 2015*). The Company has no retained interest in this project.

Panton Platinum-Palladium Project

Mineral Resources at Panton at 30 June 2016 are 14.3 million tonnes at 2.19g/t Pt and 2.39g/t Pd for 984,000 ounces contained platinum and 1,081,000 ounces contained palladium. There were no changes to Panton Resources during FY2016.

Thunder Bay North Platinum-Palladium Project

Mineral Resources at Thunder Bay North at 30 June 2016 are 10.4 million tonnes at 1.13g/t Pt and 1.07g/t Pd for 377,000 ounces contained platinum and 355,000 ounces contained palladium. There were no changes to Thunder Bay North Resources during FY2016. Rio Tinto Exploration Canada Inc. (RTEC) has the right to earn up to 70% in the Thunder Bay North Project by spending C$20 million over five years, with a minimum spend of C$5 million before RTEC can withdraw.

Material Information Summary

In accordance with the ASX Listing Rules, a fair and balanced representation of the information provided in Appendix 1 must be presented in the body of the ASX announcement. That representation follows below. This information applies only to the Company's Savannah and Lanfranchi Nickel Projects where material changes to the Mineral Resource and Ore Reserve position occurred during the year due to additions, model updates, mining depletion and sterilisation.

Savannah Nickel Project

Drilling and Supporting Data

The Savannah Resource estimate is based almost entirely on data gathered from NQ2 or LTK60 underground diamond drill core. Holes are drilled on a nominal 25m x 25m grid spacing over the extent of mineralisation. Face sampling and pre-production drill data is also used to refine resource and reserve stope shape outlines. All drill core is photographed, geologically logged, and then halved for sampling. All drill core is spatially orientated to the mine grid by survey control. Down-hole surveys are typically performed every 30m by using either Reflex EZ Shot™ or Flexit Smart Tool™.

Sampling and Assaying

Core sample lengths are typically between 0.2m to 1m long based on logged geological boundaries. Whilst Savannah was in operation, sample analysis was via an on-site laboratory. For core and mining related samples, the standard analytical technique is a 3-acid digest with an AAS finish. This method best approaches total dissolution for most minerals. For exploration samples or other samples (QAQC) sent off-site that are included in the geological database, the analytical technique is 4-acid digest with either ICP OES or AAS finish (typically AAS for high grade ore samples).

Geology and Geological Interpretation

Nickel mineralisation at Savannah is associated with the Savannah Intrusion; a Palaeoproterozoic mafic/ultramafic intrusion.The Ni-Cu-Co rich massive sulphide mineralisation at Savannah occurs as "classic", readily recognisable magmatic breccia-textured ores developed about the more primitive MgO rich basal parts of the intrusion. Panoramic has been mining and exploring the Savannah orebody for over 10 years and has a sound knowledge and understanding of the geology and orientation of the orebody and a high level of confidence in the geological interpretation.

Database

The Savannah geological database is administered on a SQL Server by Panoramic's Database Manager in Perth. Data is captured on-site into Excel™ software templates using laptop computers and uploaded via "Datashed" to the site database, which in turn is automatically replicated to the SQL server in Perth. Regular exports of the database enable the Company's site and Perth based personnel to access the data. Validation of the database is undertaken regularly by Company geologists by plotting the data on plan and cross-sections and through visual 3D inspection using Surpac™ software.

Cut-off Grade

A 0.50% nickel cut-off grade with no minimum mining width is used to define mineralised shapes for resource modelling. This enables the entire mineralised part of the Savannah Intrusion to be encapsulated and available for conversion to Ore Reserve status once the appropriate mining and economic factors are applied. The 0.50% cut-off grade is a natural grade boundary between the magmatic breccia-textured ores and weaker disseminated mineralisation at Savannah.

An initial cut-off grade of 0.8% nickel is used for mine planning. An economic analysis is carried out for each planned stope and only stopes with a positive return are included in the Ore Reserve estimate. Commodity price and US$:A$ exchange rate assumptions are based on medium term forecasts compiled from a range of external parties.

Metallurgical and Mining Assumptions

The metallurgical features of the Savannah ore are well understood and have not materially changed since mining began in 2004. The sulphide ore is processed via a conventional crush, grind and flotation process to make a bulk Ni-Cu-Co concentrate free of any significant deleterious elements. Metallurgical recoveries used for Ore Reserve estimations are 86% for nickel, 95% for copper and 88% for cobalt. The concentrate is transported by road to Wyndham, then shipped to the Jinchuan Group's smelter/refinery in the Gansu province of north-west China.

Due to the favourable geometry and availability of paste backfill, ore is extracted by sublevel stoping methods. Ore development is conducted under geological control with face and sludge sampling routinely performed to refine the geological interpretations and stope design. Blast hole drilling is designed to minimise over-break and is set out by survey control. Mining dilution between 7.5-20% at zero grade is applied to stope and ore development depending on location in the mine and stope type (primary, secondary or sill pillar). The minimum underground mining width for development is 4.8m and 3.0m for stopes.

Estimation methodology

Ordinary Kriging techniques using Surpac™ software were used to estimate Ni, Co, Cu and density into the Savannah 3D Resource Block Model. Top-cut analysis was undertaken for each Resource domain using grade histograms, but generally no extreme values were detected. Variography was calculated for the domain with the largest sample population and the resultant variogram models adapted for the remaining domains. Check estimates by Panoramic staff using Inverse Distance Squared method yielded similar results to the Ordinary Kriged model. The Savannah Resource Model has been updated periodically since mining began in 2004, with differences in tonnage for successive updates accounted for by new drilling, mining depletion, sterilisation and new resource areas. Grade correlation between updated estimates has remained high.

Classification

The Resource classification system adopted at Savannah is based on the level of confidence as set out in the 2012 JORC Code guidelines. Measured Resources are defined by areas supported by strong drilling and confined up and down dip by mine development such that confidence in lode volume and continuity of grade is very high. Indicated Resources are defined by areas where geological confidence is high and drilling support is strong (equal to or less than 25m x 25m grid spacing). Inferred Resources are typically in areas where geological confidence is lower.

Proven Ore Reserves are based on Measured Resources subject to economic viability. Probable Ore Reserves are based on Indicated Resources subject to the economic viability.

Lanfranchi Nickel Project

Drilling and Supporting Data

The Lanfranchi Resource estimates are based almost entirely on data gathered from NQ2 or LTK60 underground diamond drill core. Holes are typically drilled on a regular grid pattern that varies according to the size and consistency of the resource being drilled. Due to the low coefficient of variation of the Lanfranchi Resources nickel grades, Resource definition drilling is more about defining shapes and volume estimation purposes than grade estimation. All drill core was geologically logged and then halved for sampling. All drill core was spatially orientated to the mine grid by survey control. Down-hole surveys are typically performed every 30m by either Reflex Multi-Shot or single shot tools.

Sampling and Assaying

All sampling for Resource estimation purposes at Lanfranchi was based on underground diamond drill core. Sample selection was based on geological core logging with individual samples typically between 0.2m and 1.2m in length.

All Resource drill-hole samples were analysed by the Kalassay Group in their Perth laboratory. The laboratory process for Lanfranchi samples involved reducing each sample by crushing and pulverising to 90% passing 75um. A 0.2g assay aliquot was taken from the pulverised sample and digested by 4-Acid digest and analysed by an ICP-OES instrument. Lanfranchi Certified Reference Material (QAQC) samples are routinely inserted in all sample batches submitted to Kalassay.

Geology and Geological Interpretation

All Lanfranchi Resources belong to the "classic Kambalda style" komatiite hosted nickel sulphide deposit. This deposit type has been extensively studied and mined in the Kambalda area since the late 1960s. Due to this knowledge and history, there is a high level of confidence in the geological interpretation of the Lanfranchi Resources. The strongly contrasting character between mineralised and un-mineralised lithologies is readily apparent and easy to identify.

Database

The Lanfranchi geological database is administered on a SQL Server by Panoramic's Database Manager in Perth. All Lanfranchi drill hole and resource samples are logged and recorded using code restricted Excel™ software templates to ensure that only approved data can be entered. The templates are uploaded to the SQL drill-hole database via the "Datashed" software. Uploads to the database on site are automatically replicated to the SQL server in Perth. Once Laboratory assay files have been scrutinised and finalised for QAQC, they are imported directly into the database.

Cut-off Grade

All Lanfranchi Resource models were constructed to a nominal 1.0% Ni cut-off grade. No minimum mining width assumptions were made during the resource wireframing or estimation process, but in some areas minor internal dilution was included to avoid over-complication of the wireframe shape and when it was obvious selective mining was not a realistic option. The 1.0% Ni cut-off grade is a natural grade boundary between Lanfranchi's low grade and high grade mineralisation.

For mine planning, an initial cut-off grade of 1% nickel is used, except for airleg mining areas, which is 2%. An economic analysis is carried out for each planned stope and only stopes with a positive return are included in the Ore Reserve estimate. Commodity price and US$:A$ exchange rate assumptions are based on medium term forecasts compiled from a range of external parties.

Metallurgical and Mining Assumptions

The metallurgical features of the Lanfranchi ore types are well understood as the ores have been processed at the Kambalda Nickel Concentrator since the1970s. As such, no new metallurgical studies were required. The Lanfranchi sulphide rich ores are suitable for processing via flotation to make a nickel concentrate. The Lanfranchi ore is processed under an Ore Tolling and Concentrate Purchase Agreement (OTCPA) with BHP Billiton Nickel West (BHPB) at the Kambalda Concentrator located about 40 kilometres to the north-west of Lanfranchi. Under the OTCPA, metallurgical recovery is determined by BHPB and is related to the average grade delivered on a monthly basis.

Due to favourable geometry and availability of paste backfill, sublevel stoping methods are employed to extract the thicker orebodies, while air-leg mining methods are used in narrower, high-grade ore zones. The hanging wall ultramafic rocks at Lanfranchi are typically weak and therefore all open stopes are extensively cable bolted and all ore development is shotcreted. Ore development is conducted under geological control and is routinely mapped and sampled. Blast-hole drilling is designed to minimise over-break and is set out by survey control.

For all stopes a mining dilution factor of 10% at zero grade was applied. The minimum stoping width is 3.0m and 1.8m for air-leg stopes. A 95% metal recovery factor was applied to all stopes and no Inferred Resources were included in the Ore Reserve.

Estimation methodology

The computer software package Surpac™ was used to develop all Lanfranchi Resource models. All resource models have been estimated using Inverse Distance Squared (ID2) methodology for simplicity and the amount of data available. Models that were run between 2007 and 2010 in parallel using ID2 and Ordinary Kriging methodology, produced very similar estimates, typically within ±4% on tonnes, ±0.3% in grade and <5% difference on a contained nickel basis.

Classification

The Resource classification system adopted at Lanfranchi is based on the level of confidence as set out in the 2012 JORC Code guidelines. The classification relies largely on drill density but with increased confidence in areas of ore development. Measured Resources are defined by areas of the resource with adjacent mining or development. Indicated Resources are assigned to areas of high geological confidence supported by a regular, systematic pattern of drilling.

Proven Ore Reserves are based on Measured Resources subject to economic viability. Probable Ore Reserves are based on Indicated Resources subject to the economic viability.

NICKEL - MINERAL RESOURCES AS AT 30 JUNE 2016

Resource	Equity	Metal	Date of Resource	JORC Compliance	Measured		Indicated		Inferred		Total		Metal Tonnes
					Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	
Savannah Project													
Savannah (above 900)	100%	Nickel	Jun-16	2012	1,275,000	1.51	759,000	1.20			2,034,000	1.39	28,300
		Copper				0.87		0.90				0.88	17,900
		Cobalt				0.07		0.07				0.07	1,400
Savannah (below 900)	100%	Nickel	Jun-16	2012	780,000	1.64	125,000	1.72			905,000	1.65	14,900
		Copper				0.76		0.75				0.76	6,900
		Cobalt				0.10		0.09				0.10	900
Savannah North	100%	Nickel	Jun-16	2012			4,780,000	1.51	2,103,000	1.77	6,883,000	1.59	109,600
		Copper						0.72		0.88		0.77	52,900
		Cobalt						0.11		0.12		0.11	7,800
Copernicus (O/P)	100%	Nickel	Jun-15	2012	132,000	0.97					132,000	0.97	1,300
		Copper				0.52						0.52	700
		Cobalt				0.03						0.03	0
Copernicus (U/G)	100%	Nickel	Jul-10	2004			508,000	1.30	25,000	0.98	532,000	1.29	6,800
		Copper						0.91		0.69		0.90	4,800
		Cobalt						0.05		0.02		0.05	300
Lanfranchi Project	100%	Nickel											
Cruikshank			Apr-11	2004			2,018,000	1.42	611,000	0.79	2,629,000	1.28	33,600
Deacon			Mar-14	2012	89,000	2.99			134,000	1.70	224,000	2.22	5,000
Gigantus			Jul-07	2004					652,000	1.63	652,000	1.63	10,600
Helmut South			May-14	2012									
Helmut South Ext			Apr-14	2012	21,000	4.54	29,000	2.87			50,000	3.59	1,800
John			Jul-07	2004					291,000	1.42	291,000	1.42	4,100
Lanfranchi			Apr-14	2012	40,000	4.12	55,000	4.40	63,000	3.49	158,000	3.97	6,300
Martin			Feb-12	2012			47,000	3.58	7,000	4.16	54,000	3.66	2,000
McComish			Jul-07	2004					992,000	1.49	992,000	1.49	14,800
Metcalfe			Jan-14	2012			280,000	1.99	111,000	1.35	391,000	1.81	7,100
Schmitz			Jul-13	2012	30,000	4.92	23,000	3.93	16,000	2.95	69,000	4.14	2,900
Lower Schmitz			Mar-16	2012			51,000	5.60	79,000	4.80	131,000	5.11	6,700
Winner			Jul-11	2004			14,000	4.40			14,000	4.40	600
Total (Equity)		Nickel											**256,300**
		Copper											**83,200**
		Cobalt											**10,400**

Notes:
- *Figures have been rounded and therefore may not add up exactly to the reported totals*
- *All resources are inclusive of reserves*
- *Savannah Project Resource cutoff grade is 0.50% Ni*
- *Copernicus Project Resource cutoff grade is 0.50% Ni*
- *Lanfranchi Project Resource cutoff grade is 1.00% Ni*

Competent Person Statement

The information in this report that relates to Mineral Resources is based on information compiled by or reviewed by Paul Hetherington (MAusIMM) for the Savannah Project Resource and Copernicus Project Resource and Bradley Robinson (MAusIMM) for the Lanfranchi Project Resources. The aforementioned were formerly full-time employees of Panoramic Resources Limited. The aforementioned have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The aforementioned consent to the inclusion in the release of the matters based on their information in the form and context in which it appears.

The information in this report that relates Mineral Resources at Lower Schmitz is based on information compiled by Mr Paul Payne. Mr Payne is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) and consultant working for Payne Geological Services Pty Ltd (PayneGeo). Mr Payne has sufficient experience that is relevant to the style of mineralisation and type of target/deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Payne consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

NICKEL - ORE RESERVE AS AT 30 JUNE 2016

Reserve	Equity	Metal	Date of Reserve	JORC Compliance	Proven		Probable		Total		Metal Tonnes
					Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	
Savannah Project											
Above 900 Fault	100%	Nickel	Jun-16	2012	1,365,000	1.15	194,000	1.24	1,558,000	1.16	18,100
		Copper				0.66		1.28		0.74	11,500
		Cobalt				0.06		0.07		0.06	900
Below 900 Fault	100%	Nickel	Jun-16	2012							
		Copper									
		Cobalt									
Copernicus Open Pit	100%	Nickel	Jun-16	2004							
		Copper									
		Cobalt									
Lanfranchi Project	100%	Nickel									
Deacon			Jun-16	2012			42,000	2.67	42,000	2.67	1,100
Metcalfe			Jun-16	2012			113,000	1.57	113,000	1.57	1,800
Lanfranchi			Jun-16	2012			11,000	2.56	11,000	2.56	300
Schmitz			Jun-16	2012			15,000	2.96	15,000	2.96	500
Helmut Sth Ext			Jun-16	2012			27,000	2.19	27,000	2.19	600
Total (Equity)		**Nickel**									**22,300**
		Copper									**11,500**
		Cobalt									**900**

Notes:
- *Figures have been rounded and therefore may not add up exactly to the reported totals*
- *All reserves are inclusive of resources*
- *Savannah Project Reserve cutoff grade is 0.80% Ni*
- *Lanfranchi Project Reserve cutoff grade is 1.00% Ni except for airleg mining which is 2.00% Ni*

Competent Person Statement

Information in this report relating to Ore Reserves has been compiled by or reviewed by Lilong Chen (MAusIMM). The aforementioned is a full-time employee of Panoramic Resources Limited. The aforementioned has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The aforementioned consents to the inclusion in the release of the matters based on his information in the form and context in which it appears.

GOLD - MINERAL RESOURCES AS AT 30 JUNE 2016

Resource	Equity	Metal	Date of Resource	JORC Compliance	Measured		Indicated		Inferred		Total		Metal (Au oz)
					Tonnes	Au (g/t)	Tonnes	Au (g/t)	Tonnes	Au (g/t)	Tonnes	Au (g/t)	
Gum Creek Project	100%	Gold											
Swan OC			Jun-15	2012			2,250,000	2.57	990,000	2.36	3,240,000	2.51	261,100
Heron South			Oct-12	2004			1,000,000	2.31	136,000	1.41	1,136,000	2.20	80,300
Howards			Jul-13	2012			5,255,000	1.07	716,000	1.01	5,971,000	1.06	204,000
Specimen Well			Mar-06	2004			289,000	2.06	72,000	1.79	361,000	2.00	23,200
Toedter			Mar-06	2004					661,000	1.62	661,000	1.62	34,400
Eagles Peak			Mar-06	2004			13,000	3.46			13,000	3.46	1,400
Orion			Mar-06	2004			22,000	3.04			22,000	3.04	2,200
Deep South			Mar-06	2004			20,000	3.02			20,000	3.02	1,900
Shiraz			Jul-13	2012			2,476,000	0.84	440,000	0.76	2,916,000	0.83	77,600
Swan UG			Jun-15	2012			207,000	8.71	77,000	11.25	284,000	9.40	85,800
Swift UG			Jun-15	2012					46,000	10.25	46,000	10.25	15,200
Omega UG			Mar-06	2004			31,000	9.20			31,000	9.20	9,200
Kingfisher UG			Mar-04	2004			390,000	6.80			390,000	6.80	85,300
Wilsons UG			Jul-13	2012			2,131,000	5.33	136,000	5.97	2,267,000	5.37	391,500
Total (Equity)		**Gold**			**-**	**-**	**14,084,000**	**2.32**	**3,274,000**	**2.12**	**17,358,000**	**2.28**	**1,273,100**

Notes:

- *Swan OC resource cutoff grade is 0.7 g/t. The resources have been partially diluted over a minimum mining width of 2.5m and confined to a A$2,000 Whittle pit shell*
- *Eagles Peak Resource cutoff grade is 1.2 g/t*
- *Orion Resource cutoff grade is 1.3 g/t*
- *Deep South Resource cutoff grade is 1.2 g/t*
- *Swan UG Resource cutoff grade is 4.0 g/t for resource wireframes near historic workings and 6.0 g/t for resource wireframes away from historic workings. The resource is based on an approximate 2.5m minimum vertical mining width.*
- *Swift UG Resource cutoff grade is 6.0 g/t.*
- *Omega UG Resource cutoff grade is 3.0 g/t*
- *Kingfisher UG Resource cutoff grade is 3.0 g/t*
- *Heron South resource cutoff grade is 0.5 g/t*
- *Howards resource cutoff grade is 0.4g/t*
- *Specimen Well resource cutoff grade is 0.5 g/t*
- *Toedter resource cutoff grade is 0.5 g/t*
- *Wilsons resource cutoff grade is 1.0 g/t for lower grade domains and 2.0g/t for high grade domains*

Cross references to previous market announcements:

- *Swan, Swift, Howards, Shiraz, Wilsons – refer ASX announcement dated 30 September 2015 titled "Mineral Resources and Ore Reserves at 30 June 2015"*
- *Heron South – refer ASX announcement dated 17 October 2012 titled "Gidgee Resource Upgrade – Howards and Heron South"*
- *Specimen Well, Toedter – refer ASX announcement dated 21 June 2012 titled "Significant Upgrade in Gold Resource at Gidgee"*
- *Eagles Peak, Orion, Deep South, Omega UG, Kingfisher UG – refer Legend Mining Limited (ASX:LEG) announcement dated 19 March 2007 titled "Legend Mining Limited Annual Report 31st December 2006"*

No New Information or Data

The Gold Mineral Resource estimates tabled above have been previously reported, and the relevant market announcements cross referenced. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

PLATINUM GROUP METALS (PGM) - MINERAL RESOURCES AS AT 30 JUNE 2016

Thunder Bay North Project

Resource	Equity	Date of Resource	JORC Compliance	Tonnage	Grade									Metal (oz)	
					Pt (g/t)	Pd (g/t)	Rh (g/t)	Au (g/t)	Ag (g/t)	Cu (%)	Ni (%)	Co %	Pt-Eq (g/t)	Pt (oz ,000)	Pd (oz ,000)
Open Pit	**100%**	**Jan-11**	**2004**												
Indicated				8,460,000	1.04	0.98	0.04	0.07	1.50	0.25	0.18	0.014	2.13	283	267
Inferred				53,000	0.96	0.89	0.04	0.07	1.60	0.22	0.18	0.014	2.00	2	2
Underground	**100%**	**Feb-12**	**2004**												
Indicated				1,369,000	1.65	1.54	0.08	0.11	2.60	0.43	0.24	0.016	3.67	73	68
Inferred				472,000	1.32	1.25	0.06	0.09	2.10	0.36	0.19	0.011	2.97	20	19
Total (Equity)				**10,354,000**										**377**	**355**

Notes - Open Pit Resource:

The open pit Mineral Resource is reported at a cut-off grade of 0.59 g/t Pt-Eq within a Lerchs-Grossman resource pit shell optimized on Pt-Eq. The strip ratio (waste:ore) of this pit is 9.5:1. The platinum-equivalency formula is based on assumed metal prices and overall recoveries. The Pt-Eq formula is: Pt-Eq g/t = Pt g/t + Pd g/t x 0.3204 + Au g/t x 0.6379 + Ag g/t x 0.0062 + Cu g/t x 0.00011 + Total Ni g/t x 0.000195 + Total Co g/t x 0.000124 + Rh g/t x 2.1816. The conversion factor shown in the formula for each metal represents the conversion from each metal to platinum on a recovered value basis. The assumed metal prices used in the Pt-Eq formula are: Pt US$1,595/oz, Pd US$512/oz, Au US$1,015/oz, Ag US$15.74/oz, Cu US$2.20/lb, Ni US$7.71/lb, Co US$7.71/lb and Rh US$3,479/oz. The assumed combined flotation and PlatsolTM process recoveries used in the Pt-Eq formula are: Pt 76%, Pd 75%, Au 76%, Ag 55%, Cu 86%, Ni 44%, Co 28% and Rh 76%. The assumed refinery payables are: Pt 98%, Pd 98%, Au 97%, Ag 85%, Cu 100%, Ni 100%, Co 100% and Rh 98%.

Notes - Underground Resources:

The underground mineral resource is reported at a cut-off grade of 1.94g/t Pt-Eq. The Pt-Eq formula is: Pt-Eq g/t = Pt g/t + Pd g/t x 0.2721 + Au g/t x 0.3968 + Ag g/t x 0.0084 + Cu g/t x 0.000118 + Sulphide Ni g/t x 0.000433 + Sulphide Co g/t x 0.000428 + Rh g/t x 2.7211. The assumed metal prices used in the Pt-Eq formula are: Pt US$1,470/oz, Pd US$400/oz, Rh US$4,000/oz, Au US$875/oz, Ag US$14.30/oz, Cu US$2.10/lb, Ni US$7.30/lb and Co US$13.00/lb. The assumed process recoveries used in the Pt-Eq formula are: Pt 75%, Pd 75%, Rh 75%, Au 50%, Ag 50%, Cu 90%, and Ni and Co in sulphide 90%. The assumed smelter recoveries used in the Pt-Eq formula are Pt 85%, Pd 85%, Rh 85%, Au 85%, Ag 85%, Cu 85%, Ni 90% and Co 50%. Ni and Co in sulphide were estimated by linear regression of MgO to total Ni and total Co respectively. The regression formula for Ni in sulphide (NiSx) is: NiSx = Ni - (MgO% x 60.35 - 551.43). The regression formula for Co in sulphide (CoSx) is: CoSx = Co - (MgO% x 4.45 - 9.25).

Cross references to previous market announcements:

- *Open pit Resources – refer Magma Metals Limited (ASX:MMW) announcement dated 7 February 2011 titled "Positive Scoping Study for Thunder Bay North Project"*
- *Underground Resources – refer Magma Metals Limited (ASX:MMW) announcement dated 23 February 2012 titled "Magma Metals Increases Mineral Resources at TBN to 790,000 Platinum-Equivalent Ounces"*

No New Information or Data

The Thunder Bay North Mineral Resource estimates tabled above have been previously reported, and the relevant market announcements cross referenced. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

PLATINUM GROUP METALS (PGM) - MINERAL RESOURCES AS AT 30 JUNE 2016

Panton Project

Resource	Equity	Date of Resource	JORC Compliance	Tonnage	Grade					Metal (oz)	
					Pt (g/t)	Pd (g/t)	Au (g/t)	Ni (%)	Cu (%)	Pt (oz ,000)	Pd (oz ,000)
Top Reef	**100%**	**Mar-12**	**2012**								
Measured				4,400,000	2.46	2.83	0.42	0.28	0.08	348	400
Indicated				4,130,000	2.73	3.21	0.38	0.31	0.09	363	426
Inferred				1,560,000	2.10	2.35	0.38	0.36	0.13	105	118
Middle Reef	**100%**	**Mar-12**	**2012**								
Measured				2,130,000	1.36	1.09	0.10	0.18	0.03	93	75
Indicated				1,500,000	1.56	1.28	0.10	0.19	0.04	75	62
Inferred				600,000	1.22	1.07	0.10	0.19	0.05	24	21
Total (Equity)				**14,320,000**	**2.19**	**2.39**	**0.31**	**0.27**	**0.08**	**984**	**1,081**

Cross references to previous market announcements:

- *refer ASX announcement dated 30 September 2015 titled "Mineral Resources and Ore Reserves at 30 June 2015"*

No New Information or Data

The Panton Mineral Resource estimates tabled above have been previously reported, and the relevant market announcements cross referenced. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

Appendix 1
JORC Code 2012 Edition - Compliance Tables

Table 1 - Savannah Nickel Mine
Section 1 - Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	• The deposit was sampled by diamond drilling techniques. Over 1500 holes have been drilled for a total in excess of 220,000m. The majority of holes were drilled from underground drill platforms. • The drillhole spacing is a nominal 25 x 25 metre grid spacing over the extent of the mineralization, except for Savannah North where the nominal spacing is a 50 x 50 metre grid spacing.. • All drillhole collars were surveyed using Leica Total Station survey equipment by a registered surveyor. Downhole surveys were typically performed every 30 metres using either "Reflex EZ Shot" or "Flexit Smart Tools". • All diamond core was geologically logged with samples (typically between 0.2 metre to 1 metre long) defined by geological contacts. Analytical samples included a mix of full and sawn half core samples. Sample preparation included pulverising to 90% passing 75 µm followed by total 4 acid digest and analysis by ICP OES.
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	• A mix of LTK60 and NQ2 sized diamond drilling has been used to obtain >90% of the data used in the estimate. Some RC drilling has been used historically for the upper part of the resource.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Diamond core recoveries are logged and recorded in the database. Overall recoveries are >99% and there are no apparent core loss issues or significant sample recovery problems. • Depths checked against core blocks, regular rod counts, driller breaks checked by fitting core together. • No relationship exists between sample recovery and grade
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged.	• All holes have been geologically logged in full. Geotechnical logging was carried out on all diamond drillholes for recovery and RQD. Number of defects (per interval) and roughness was carried out around the ore zones. Structure type, alpha angle, infill, texture and healing is stored in the structure table of the database. • Recorded core logging attributes include lithology, colour, mineralisation, structural and other features. • All core is photographed. • All drillholes were logged in full.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• Analytical core samples are dominantly sawn half NQ2 samples. • All resource definition samples are diamond core only.. • All core sampling and sample preparation followed industry best practice. • QC involved the addition of Savannah derived CRM assay standards, blanks, and duplicates. At least one form of QC was inserted in most sample batches. • Original versus duplicate assay results have always shown strong correlation due to massive sulphide rich nature of the orebody. • Sample sizes are considered appropriate to represent the Savannah style of mineralisation.
Quality of assay	• The nature, quality and appropriateness of the assaying	• The Savannah Nickel Mine (SNM) onsite laboratory

Criteria	JORC Code explanation	Commentary
data and laboratory tests	and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	standard analytical technique is a 3-acid digest with an AAS finish. The method best approaches total dissolution for most minerals The onsite exploration sample analytical method for Ni,Cu,Co is AAS 22S. The onsite laboratory is run by SGS Laboratory Services. Exploration samples sent off-site are analysed using a 4-acid digest with either ICP OES or AAS finish (AAS for ore grade samples). • No other analytical tools or techniques are employed. • The onsite laboratory carries out sizing checks, uses internal standards, duplicates, replicates, blanks and repeats. A selection of roughly 10% of pulps was sent to external laboratories for repeat analysis and sizing checks. No bias has been identified.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• Drill hole intercepts are automatically reported from the SQL drill hole database. Significant intercepts are manually checked before reporting. • Throughout the life of the mine, there have been several instances where holes have been twinned, confirming intersections and continuity. • Holes are logged into Excel templates on laptops, data is then entered into MS Access database with user data entry front end built in. Data is ultimately transferred to SQL server from Perth office. Data periodically validated by site personnel. • No adjustments have been made to assay data.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• All diamond drillhole collars were surveyed using Leica Total Station survey equipment by a registered surveyor. "Reflex EZ Shot" or "Flexit Smart Tool" was used for downhole surveys at approximately every 30m. Visual inspection in a 3D graphics environment using "Surpac" software failed to identify any obvious errors regarding the spatial position of drillhole collars or downhole surveys • The mine grid is a truncated 4 digit (MGA94) grid system. Conversion from local grid to MGA GDA94 Zone 52 is calculated by applying truncated factor to local coords:E: +390000, N: +8080000N • Topographic control is well established, RL equals AHD + 2,000m.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• Exploration drill holes are spaced on a geological basis as opposed to a nominal drill hole spacing. • For the most part, resource drilling is conducted on a regular spacing, sufficient to achieve the objectives of the drill program. For Savannah this is a nominal 25m x 25m grid pattern. For the Savannah North Resource definition programs the nominal spacing is 50m x 50m. • The mineralized domains delineated by the drill spacing show enough continuity to support the classification applied under the 2012 JORC Code. • No sample compositing has been undertaken.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• Where possible drill hole orientation is largely perpendicular to the orebody. Underground drill access limitations prevents this occurring in some areas. • No orientation sampling bias has been identified.
Sample security	• The measures taken to ensure sample security.	• Samples transported to onsite lab by Panoramic staff. Samples sent off site are road freighted by a third party freight contractor and tracked using spreadsheets onsite.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• No audits/reviews of the sampling techniques have been undertaken in recent time. The procedures used are considered to be industry standard. Mine to mill reconciliation records throughout the life of the Savannah Project provide confidence in the sampling procedures.

Section 3 - Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. • Data validation procedures used.	• An Excel™ software logging template with lookup tables and fixed formatting is used for logging and data collection. • Data validation checks are performed every time a drillhole is entered to the database using a checklist.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The competent person was formerly a site based, full time employee of Panoramic.
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• The confidence of the geological interpretation is high which has been confirmed by mapping and greater than 10 years of operational experience. • No other interpretations have been considered as the current model is demonstrably robust. • Geological controls were used to create the domains, namely, lithology, massive sulphide content, major structures • One of the main domains is affected by 2 major cross-cutting mafic dykes, the geometry and thickness of which are well understood.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The resource is 350m along strike (east), varies in thickness from 1 to 50m and averages 8m thick, from the surface to 900m depth.
Estimation and modelling techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping.	• Ordinary Kriging was employed using Surpac™ software to estimate Ni, Co, Cu and Density into a 3D block model. Top cut analysis was undertaken for each domain using grade histograms, no extreme values were detected and therefore no top cuts applied. Variography was calculated for the domain with the largest sample population and the resultant variogram models were adapted for the remaining domains. • Check estimates by Panoramic staff using Inverse Distance squared method has yielded similar results. The estimate has been updated periodically since mining began in 2004, differences in tonnage for each successive update have been accounted for by new drilling, depletion for mining, and new resource areas. Grade correlation between updated estimates has always remained high. • By-product credits for copper and cobalt form part of the off-take agreement between Panoramic and Jinchuan. • No deleterious elements have been modeled in the resource estimate; the Savannah orebody has low MgO and negligible Arsenic levels. • All block estimates were based on interpolation into 4m N x 20m E x 10m RL parent cells, sub celling to 0.5m N x 2.5m E x 1.25m RL. Block discretisation points were set to 2(Y) x 5(X) x 4(Z) points. The block dimensions are over half the average drill spacing of 25m. A search radius of 150m was used with a minimum of 8 samples and a maximum of 50 samples for all domains. • No selective mining units were assumed in the estimate. • Nickel and cobalt show a very strong correlation. Nickel and copper are more variable. • The geological interpretation was used to derive the domains using massive sulphide content, lithology and structural boundaries. These were wireframed and used as hard boundaries to flag sample data for estimation. • Statistical analysis of the grade populations indicated no

Criteria	JORC Code explanation	Commentary
	• The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	extreme values and a low coefficient of variation. • Validation included comparing the raw data statistics to block estimates, volumes of wireframes to block model volumes, drillholes and block model value plots were produced for a visual check of the grades. Good reconciliation data exists between mined and milled figures.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages estimated on a dry basis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• 0.5%Ni was used as a cut-off when defining the mineralised wireframes. Generally, this is the grade boundary between strongly disseminated sulphides and the ultramafic footwall unit.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• Mining at Savannah has been ongoing since 2004 and has a proven history of well reconciled Resource to Reserve to Production reconciliation therefore mining factors are typically only applied during Ore Reserve conversion.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	• Savannah ore has been successfully treated through a 1MTPA SAG mill and flotation circuit since commissioning in 2004. The metallurgical nature of the mineral resource in this estimate has not changed. Metallurgical factors are addressed in Ore Reserve conversion.
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• SNM operates under the conditions set out by an environmental license to operate.
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Bulk density determinations are routinely performed. Most determinations involved calculating the core volume and weighing the core in air. Regular checks using the water immersion technique are also carried out to derive a regression formula of measured density versus nickel grade. The regression formula is used to populate missing density values. • Voids within the mineralized zones are non-existent • The search parameters for density were the same as nickel for all domains. Waste material was assigned a value of 2.88, determined from the regression formula.
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in	• The classification adopted is based on the level of confidence as set out in the JORC 2012 guidelines. • Measured Resources are defined by areas supported by strong drilling and confined up and down dip by mine development such that confidence in lode volume and

Criteria	JORC Code explanation	Commentary
	continuity of geology and metal values, quality, quantity and distribution of the data).	continuity and grade is very high. Indicated Resources are defined by areas where geological confidence is high and drilling support is strong (equal to or greater than 25m x 25m grid spacing).
	• Whether the result appropriately reflects the Competent Person's view of the deposit.	• The estimate appropriately reflects the view of the competent person.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• The resource estimate has been peer reviewed on site and by Panoramic's corporate technical team.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	• The relative accuracy of the resource estimate is considered robust as it has been compiled as per the guidelines of the 2012 JORC Code, and knowledge gained from extensive operational history of the mine.
	• The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	• The statement relates to global estimates of tonnes and grade.
	• These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• Mine to mill reconciliation records throughout the life of the Savannah Project provide confidence in the accuracy of the resource estimate.

Section 4 - Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. • Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	• The Savannah 2015 Resource models were used as the basis for conversion to an Ore Reserve. • These models were updated due to mining depletion, sterilisation and geological interpretations based on results from ore development, face sampling, drive mapping and pre-production drilling. • Mineral Resources are inclusive of Ore Reserves.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The competent person is a full time Panoramic Resources employee who conducts routine site visits as part of normal working duties.
Study status	• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. • The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	• Underground mining commenced in January 2005 and has continued for over 10 years until being placed in care and maintenance in May 2016. • The current mine design, mining method, operating parameters, modifying factors, actual costs and knowledge gained from over 10 years of production are used in the Ore Reserve estimate.
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	• An initial cut-off grade of 0.8% nickel is used based on an economic assessment and current operating and market parameters. • Economic analysis is carried out for each planned stope and only stopes with a positive return are included in the Ore Reserve estimate.
Mining factors or assumptions	• The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). • The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. • The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.	• The Savannah mine predominantly applies an open stoping with paste fill mining method. • Detailed stope designs are used where access has been developed otherwise preliminary stope designs are used. • A seismic monitoring and management system has been in place for over 10 years of mine production. • Stress and structural models have been developed and are used to identify appropriate mining sequences, stope spans and ground support requirements. • Routine site visits and inspections are conducted by consultant geotechnical engineers.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>• The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).
• The mining dilution factors used.
• The mining recovery factors used.
• Any minimum mining widths used.
• The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.
• The infrastructure requirements of the selected mining methods.</td><td>• Grade control assumptions are in line with practice developed over the previous 10 years of operation including ore development is routinely mapped and sampled, stope production is routinely sampled, and monthly mine production is reconciled to milled tonnes and grade.
• Mining dilution at zero grade is applied to stopes and ore development.
• Minimum underground development width is 4.8m and minimum stoping width is 3.0m.
• Mining dilution and recovery factors are applied to development and the detailed and preliminary stope designs as per below:

<table><tr><th>Type</th><th>Dilution</th><th>Mining recovery</th></tr><tr><td>Development</td><td>10%</td><td>95%</td></tr><tr><td>Above 500 fault
-Primary and Secondary stopes
-Sill pillar under paste
-Pit Pillar</td><td>
10%

20%
20%</td><td>
95%

95%
75%</td></tr><tr><td>Below 500 fault
-Primary and Secondary stopes
-Sill Pillars
-Sill Pillars & Stopes with no fill</td><td>
7.5 to 15%

15%
10%</td><td>
95%

90 to 95%
75%</td></tr><tr><td>Below 900 fault
-All stopes</td><td>
10%</td><td>
95%</td></tr></table>
• No Inferred Resources are included in the Ore Reserve estimate.
• Infrastructure requirements (other than future capital development) for the selected mining method are established.</td></tr>
<tr><td>Metallurgical factors or assumptions</td><td>• The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.
• Whether the metallurgical process is well-tested technology or novel in nature.
• The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.
• Any assumptions or allowances made for deleterious elements.
• The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.
• For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</td><td>• The metallurgical process is a conventional nickel sulphide flotation technique involving crushing, grinding and flotation to produce a bulk nickel, copper and cobalt concentrate.
• Savannah ore has been successfully treated through a 1MTPA SAG mill and flotation circuit since commissioning in 2004.
• The metallurgical nature is consistent throughout the resource and as such no domaining has been applied.
• Metallurgical recoveries are calculated from plant feed grades in the LOM plan and are based on over 10 years of historical plant performance. Metallurgical recoveries approximate 86% for Nickel, 95% for Copper and 88% for Cobalt.
• Savannah produces a clean bulk nickel, copper and cobalt concentrate and since commissioning in 2004 there have been no deleterious material penalties. As such no allowance has been made for deleterious material.
• The Ore Reserve estimate has been based on appropriate mineralogy and metallurgical factors to meet the existing concentrate off-take specifications.</td></tr>
<tr><td>Environmental</td><td>• The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</td><td>• Savannah operates under the conditions set out by an environmental license to operate.
• Waste is placed on approved waste dumps or used as backfill in mined voids.</td></tr>
<tr><td>Infrastructure</td><td>• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour,</td><td>• The Savannah mine has substantial infrastructure in place including a paste fill plant, major electrical and pumping networks, a 1Mtpa throughput plant, a fully</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	accommodation; or the ease with which the infrastructure can be provided, or accessed.	equipped laboratory, extensive workshop, administration facilities and a 215 person single person quarters camp and tailings storage facility.
Costs	• The derivation of, or assumptions made, regarding projected capital costs in the study. • The methodology used to estimate operating costs. • Allowances made for the content of deleterious elements. • The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. • The source of exchange rates used in the study. • Derivation of transportation charges. • The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. • The allowances made for royalties payable, both Government and private.	• Costs are based on actual costs occurred in mining, processing and transportation over the FY2016 financial year to May 2016 when the mine was placed in care and maintenance. • Capital underground development costs are derived from the LOM plan and actual costs as per above. • Other capital costs are related to equipment and infrastructure costs and are based on quotes or historical actual costs. • Closure costs have not been included. • Metal prices and exchange rate assumptions are based on the median of a range of external market analysts medium term forecasts. • Flat rate metal prices for nickel of USD6.00/lb, copper of USD2.50/lb and cobalt of USD11.83/lb were used. • Flat rate USD/AUD exchange rate of 0.74 was used. • Net Smelter Return (NSR) factors were sourced from the existing concentrate off-take contract. • WA government and Traditional Owner royalties are included.
Revenue factors	• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. • The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	• Revenue factors are based on metal production in concentrate from the LOM plan, flat rate metal prices for nickel, copper and cobalt (above), flat rate USD/AUD exchange rate (above) and the NSR factors in the existing concentrate off-take contract.
Market assessment	• The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. • A customer and competitor analysis along with the identification of likely market windows for the product. • Price and volume forecasts and the basis for these forecasts. • For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	• The concentrate is contracted for sale to Jinchuan Group of China until April 2020. The Savannah concentrate will be trucked to Wyndham Port and then shipped to Jinchuan's smelter/refinery in the Gansu province, northwest China upon a re-commencement of operations.
Economic	• The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. • NPV ranges and sensitivity to variations in the significant assumptions and inputs.	• Internal cash flow estimates apply an 8% real discount rate for NPV analysis and only economically viable ores are considered for mining. • Sensitivity analysis of key financial and physical parameters is applied to the LOM plan.
Social	• The status of agreements with key stakeholders and matters leading to social licence to operate.	• The Savannah mine is fully permitted and has a co-existence agreement in place with Traditional Owners.
Other	• To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: • Any identified material naturally occurring risks. • The status of material legal agreements and marketing arrangements. • The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	• No significant unresolved material matters relating to naturally occurring risks, third party agreements or governmental/statutory approvals currently exist.
Classification	• The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit.	• The classification adopted is based on the level of confidence as set out in the 2012 JORC guidelines • Proven Ore Reserves are based on Measured Resources subject to economic viability.

Criteria	JORC Code explanation	Commentary
	• The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	• Probable Ore Reserves are based on Indicated Resources subject to the economic viability. • The estimate appropriately reflects the view of the competent person. • No Inferred Resources are included in the Ore Reserve estimate.
Audits or reviews	• The results of any audits or reviews of Ore Reserve estimates.	• The Ore Reserve estimate, parent data and economic evaluation is reviewed by Panoramic Resources senior management.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. • It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• The relative accuracy of the Ore Reserve estimate is considered robust as it is based on the knowledge gained from extensive operational history of the mine. • All currently reported Ore Reserve estimations are considered representative on a global scale. • Mine to mill reconciliation records throughout the life of the Savannah Mine provide confidence in the accuracy of the Ore Reserve estimate.

Table 1 – Lanfranchi Nickel Mine

Section 1 - Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	• All sampling for resource estimation purposes at Lanfranchi Nickel Mine (LNM) is based on diamond drill core. Sample selection is based on geological core logging. Individual samples typically vary between 0.2m and 1.2m in length.
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	• Diamond drilling at LNM is typically NQ2 or LTK60 size. Occasionally BQ and HQ core size holes have been drilled.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• All recovered diamond core is metre marked by on site geologists; any core loss is determined and recorded as part of the geological logging process. Core recovery is typically 100 percent. • No relationship exists between core recovery and grade.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged.	• All core is geologically and geotechnically logged to a standard appropriate for mineral resource estimation purposes. Core is logged from start to end of hole without gaps. Core photography is not undertaken. Drillholes are logged using Excel templates that are code restricted to ensure that only approved data can be entered. The Excel templates are then uploaded to the Lanfranchi SQL Server drillhole database via Datashed.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• All diamond core is cut using a clipper brick saw and half core sampled for assay. Quarter core samples are sent as part of the LNM QAQC process for check assaying. Sample intervals typically vary between 0.2m and 1.2m and are positioned as to not cross geological boundaries.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	• All LNM drillhole samples are analysed by Kalassay Group's Kalgoorlie laboratory. The Laboratory process for LNM samples involves: Crush sample to <3mm, pulverise to 90% passing 75um (lab blanks introduced and pulverised at this point). From the pulverised sample, a 0.2g assay aliquot is taken and weighed then digested by 4-Acid digest and

Criteria	JORC Code explanation	Commentary
		analysed by ICP-OES instrument. Laboratory QA/QC is performed on standards, blanks and duplicates. The LNM policy is to scrutinize the results for QA/QC standards and blanks when assay jobs are reported and to request re-runs if result are ± 1SD from the expected value.
	• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	• No other geophysical or analytical tools have been used to estimate grade.
	• Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	• Certified Reference Material (QAQC) samples are routinely inserted during all sampling at LNM. In addition samples are routinely sent for check analysis at a different Laboratory. The QAQC results indicate that the diamond core assays being used for resource estimation at LNM are a fair representation of the material that has been sampled.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel.	• Significant intersections are calculated by mine geologists and verified/reported on a monthly basis by the Geology Manager.
	• The use of twinned holes.	• Twinning of drillholes is not performed at LNM
	• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	• Assay data are imported directly from the Kalassay assay files and QA/QC validated via Datashed to the LNM SQL drillhole database.
	• Discuss any adjustment to assay data.	• No adjustment to assay data is made.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	• Drillhole collars are accurately surveyed for X,Y,Z and azimuth & Dip by site Surveyors using "Total Station" control. Older holes may/may not have collar azimuth/dip measurements. Downhole surveys are generally conducted using single shot or reflex multishot tools at 15m, 30m and every 30m thereafter.
	• Specification of the grid system used.	• The LNM drillhole database contains both MGA94 and local mine grid (KNO) coordinates. All site geological and mine planning work is performed in the local KNO grid system. • Conversion from KNO grid to MGA GDA94 Zone 51 is based on a two point transformation: 389084.61E, 513790.88N = 389351.47E, 6513980.38N 389044.77E, 513543.54N = 389313.70E, 6513732.77N
	• Quality and adequacy of topographic control.	
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• LNM resource estimation drill holes are typically drilled on a regular grid spacing that varies according to the size and consistency of the resource being drilled. Due to the consistent grade and low Coefficient of Variation of nickel mineralisation generally, resource definition drilling at LNM is more for volume estimation purposes than grade estimation.
	• Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	• Data spacing is deemed to be sufficient for Mineral Resource estimation and reporting.
	• Whether sample compositing has been applied.	• No sample compositing is undertaken; all core samples are logged and analysed in full.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	• Underground drill sites are not always ideally positioned for resource definition drilling however no sampling orientation bias is evident. The Ni grade is typically very consistent within individual resource domains and therefore drill orientation is not a determinant for reliable grade estimation
	• If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	
Sample security	• The measures taken to ensure sample security.	• All diamond core samples are taken directly from site to Kalassay for analysis via a local courier service. Sample security is considered adequate.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• No audits/reviews of the sampling techniques have been undertaken in recent time. The procedures used are considered to be industry standard. Mine to mill reconciliation records throughout the life of the Project provide confidence in the sampling procedures.

Section 3 - Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Database integrity</td><td>• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
• Data validation procedures used.</td><td>• All LNM drillhole and resource samples are logged and recorded using MS Excel templates that are code restricted to ensure that only approved data can be entered. The Excel templates are uploaded to the LNM SQL drillhole database via Datashed software, this also ensures only approved data can be entered into the database. Once Laboratory assays files have been scrutinised and finalised for QAQC they are imported directly into database to ensure there are no transcription errors.</td></tr>
<tr><td>Site visits</td><td>• Comment on any site visits undertaken by the Competent Person and the outcome of those visits.
• If no site visits have been undertaken indicate why this is the case.</td><td>• The competent person (except Lower Schmitz) was formerly a site based Panoramic employee on a rostered, FIFO arrangement.
• The competent person for the 2016 Lower Schmitz Resource estimate is Mr Paul Payne of Payne Geological Services Pty Ltd. A site visit was not undertaken due to the project being on care and maintenance.</td></tr>
<tr><td>Geological interpretation</td><td>• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.
• Nature of the data used and of any assumptions made.
• The effect, if any, of alternative interpretations on Mineral Resource estimation.
• The use of geology in guiding and controlling Mineral Resource estimation.
• The factors affecting continuity both of grade and geology.</td><td>• There is a high level of confidence in the geological interpretation of all LNM resources due to; the extensive operating experience, and the readily recognizable, strongly contrasting mineralised and un-mineralised lithologies. Composites are individually selected for each drillhole based on logging and cut-off grade boundaries rather than using an intercept method. This method ensures where drillholes skim in and out of mineralisation along a resource edge the mineralised grades for the hole are used in the estimation process even though due to the complexity of the wireframe interpretation they may fall just outside the wireframe shape. The standard composite length is 1m. Wireframes are based on drillhole intercepts, survey pick-ups, face mapping and sludge sampling where available. Although rock chip, grab and sludge hole data is also available, they are not used in the estimation process to ensure clustering of lower quality does not bias the estimation process, as such only diamond drilling samples are used for estimation. Wireframes are used to constrain the estimation process to ensure rigid geological boundaries are adhered to. All wireframes are constructed to a 1.0% Ni cut-off grade</td></tr>
<tr><td>Dimensions</td><td>• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td>
<table>
<tr><th rowspan="2">Resource</th><th rowspan="2">Length</th><th rowspan="2">Width</th><th colspan="2">Depth below surface (limit)</th></tr>
<tr><th>Upper</th><th>Lower</th></tr>
<tr><td>Deacon</td><td>915</td><td>115</td><td>850</td><td>1315</td></tr>
<tr><td>Helmut South Extension</td><td>185</td><td>40</td><td>935</td><td>1160</td></tr>
<tr><td>Lanfranchi</td><td>185</td><td>80</td><td>630</td><td>820</td></tr>
<tr><td>Metcalfe</td><td>285</td><td>40</td><td>810</td><td>935</td></tr>
<tr><td>Martin</td><td>160</td><td>40</td><td>275</td><td>440</td></tr>
<tr><td>Lower Schmitz</td><td>200</td><td>75</td><td>1100</td><td></td></tr>
<tr><td>Cruickshank</td><td>800</td><td>100</td><td>0</td><td>450</td></tr>
<tr><td>Gigantus</td><td>300</td><td>250</td><td>200</td><td>450</td></tr>
</table>
</td></tr>
<tr><td>Estimation and modelling techniques</td><td>• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of</td><td>• The computer software package "Surpac" was used for all resource models. All resource models have been estimated using ID2 methodology for simplicity and the amount of data available. Previous models run between 2007 and 2010 had run ID2 and OK models in parallel. This approach produced very similar estimates that were,</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	typically within ±4% on tonnes, ±0.3% in grade and <5% difference on a contained nickel basis. Confidence in the modelling process is also high due to good reconciliation with production data over many years, especially within the Deacon resource. Block model parent cell sizes are matched to drillhole spacing for each resource model with search ellipses aligned parallel to mineralisation trends. Estimated elements in all resource models are as follows: Ni, As, Cu, Co, Fe, MgO, S. Domaining within the model is based upon primary lithology types and separate estimation passes are conducted to ensure both composites and search ellipses are realistic for each rock type. In the case of the Helmut South Extension (HSE) resource, geostatistical analysis of the ore population identified two distinct sample populations. Due to the complexity of the two populations within the main ore shape, they were unable to be domained separately. In this case a top-cut was applied to ensure that overestimation of the resource did not occur. The top-cut was established following an audit of the HSE resource model by BM Geological Services. Minimal stoping has been completed in the HSE resource to adequately study the estimation versus actual data. No other top-cuts were applied across the other resource models. Validation of the resource estimate was completed by onscreen visual validation of block grades vs. drillhole assays in sectional view and via Swanson plots of composites grades vs. block grades. In the case of the Deacon resource, the model composites and block model reports were compared in 100m increments along strike with very good correlation between "data in" and "data out".
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on a dry basis.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• All LNM resource models are modelled to a nominal cut-off grade of 1% Ni. In some cases, minor internal dilution was included in the intercept to avoid over-complication of the wireframe shape.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• No minimum mining width assumptions are made during the resource wireframing or estimation process. Mining parameters, including minimum mining width assumptions are applied during the conversion to Ore Reserves. Internal dilution is included during the resource estimation process when it is obvious selective mining is not a realistic option.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	• No metallurgical factors or assumptions are made during the Resource estimation process. These matters are addressed during conversion to Ore Reserve.
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts,	• No environmental factors or assumptions are made during the Resource estimation process.

Criteria	JORC Code explanation	Commentary
	particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. • The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• For all LNM Resources a nickel vs. SG correlation plot is generated using all available SG data. All samples without an SG measurement are assigned a calculated SG value based on the regression analysis. During the estimation process, actual SG measurements were given priority over calculated values. LNM has an extensive SG database, generated over many years of operating experience. Determinations have typically been performed using the water immersion technique. The technique is adequate due to low core porosity, fresh rock underground environment of the LNM operation.
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	• Classification of the LNM resource models are based primarily on drill density in conjunction with increased confidence from existing ore development. Significant ore development has been completed within the Deacon Resource which enables a Measured category to be applied to most parts of this Resource.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• In March 2013, BM Geological Services (BMGS) conducted an independent review of all LNM Resource estimates. The review covered the building and interpolation of grades in the relevant block models and their representation of grades based on the composite files. Overall BMGS concluded the resource models grades compared favourably with drill hole composite grades. Concern was expressed however about the representivity of the Helmut South Extension (HSE) Resource estimation, and the potential for overcalling of grades within the BM. To alleviate this issue, top-cuts were applied by BMGS and the model re-run.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• A high level of confidence exists for all LNM Resource estimates. The estimates are based on many years of operating experience. Recent mine production was derived from 4 of the 6 underground resources with good reconciled agreement between Resource/Reserve grades and mine production. • All estimates are global estimates of tonnes and grade.

Section 4 - Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve • Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	• The Lanfranchi 2015 Resource models were used as the basis for conversion to an Ore Reserve. • These models were updated due to mining depletion, sterilisation and geological interpretations based on results from ore development, face sampling, drive mapping and pre-production drilling. • Mineral resources are inclusive of the Ore Reserves.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The competent person is a full time Panoramic Resources employee who conducts routine site visits as part of normal working duties.
Study status	• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. • The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	• Underground mining recommenced in 2005 and has continued for over 10 years until being placed in care and maintenance in November 2015. • The current mine design, mining method, operating parameters, modifying factors, actual costs and knowledge gained from over 10 years of production are used in the Ore Reserve estimate.
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	• For mine planning, an initial cut-off grade of 1% Ni is used, except for air-leg mining which is 2.0%Ni. • Economic analysis is carried out for each planned stope, and only stopes with a positive return are included in the Ore Reserve estimate.
Mining factors or assumptions	• The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). • The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. • The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling. • The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). • The mining dilution factors used. • The mining recovery factors used. • Any minimum mining widths used. • The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. • The infrastructure requirements of the selected mining methods.	• Wide ore zones from Deacon, HSE and Metcalfe are extracted using an open stoping with paste fill mining method. • Narrow high grade ore zones from Lanfranchi and Schmitz are mined using air-leg mining methods. • Detailed stope designs are used where access has been developed otherwise preliminary stope designs are used. • A seismic monitoring and management system is in place. • Stress models are regularly updated and used to determine appropriate mining sequences, stope spans and ground support requirements. • Routine site visits and inspections are conducted by consultant geotechnical engineers. • Grade control assumptions are in line with practice developed over the previous 10 years of operation including ore development is routinely mapped and sampled, stope production is routinely sampled and monthly mine production is reconciled to milled tonnes and grade. • Mining dilution of 10% at zero grade is applied to stopes; • Mining dilution of 4% at zero grade is applied to jumbo ore development; • 95% metal recovery is applied to stopes. • 99% metal recovery is applied to jumbo ore development. • 70% extraction factor is used for air-leg mining where pillars are used to support the hanging wall. • Minimum stoping width is 3.0m. • Minimum air-leg stope width is 1.8m. • No Inferred Resources are included in the Ore Reserve estimate. • Infrastructure requirements (other than future capital development) for the selected mining method are established.
Metallurgical factors or assumptions	• The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. • Whether the metallurgical process is well-tested technology or novel in nature.	• Lanfranchi ore is a nickel sulphide that can be treated using conventional nickel sulphide techniques involving crushing, grinding and flotation to produce a concentrate. The ore has been processed at the Kambalda Concentrator since the 1970's. • The Lanfranchi ore is processed under an Ore Tolling and

Criteria	JORC Code explanation	Commentary
	• The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. • Any assumptions or allowances made for deleterious elements. • The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Concentrate Purchase Agreement (OTCPA) with BHP Billiton Nickel West (BHP) until February 2019. • Recovery is defined in the OTCPA and is based on the averaged nickel head grade delivered on a monthly basis. • There are insignificant amounts of deleterious elements in the current Resources.
Environmental	• The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	• Lanfranchi operates under the conditions set out by an environmental license to operate. • Waste rock is inert basalt and classified as NAF. • Waste is placed on approved waste dumps or used as backfill in mined voids.
Infrastructure	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	• The Lanfranchi mine has substantial mine infrastructure in place, including a paste fill plant, major electrical and pumping networks, administration facilities and a 150 persons accommodation village.
Costs	• The derivation of, or assumptions made, regarding projected capital costs in the study. • The methodology used to estimate operating costs. • Allowances made for the content of deleterious elements. • The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products. • The source of exchange rates used in the study. • Derivation of transportation charges. • The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. • The allowances made for royalties payable, both Government and private.	• Capital costs are related to the renewal of existing mining equipment and are based on quotes from equipment suppliers or historical actual costs. • Operating costs are based on actual mining and transportation costs over the FY2015 financial year. • Processing costs are based on the OTCPA with BHP. • Closure costs have not been included. • Metal prices and exchange rate assumptions are based on the median of a range of external market analysts medium term forecasts. • Flat rate metal prices for nickel of USD6.00/lb and copper of USD2.50/lb were used. • Flat rate USD/AUD exchange rate of 0.74 was used. • Payability and penalties for delivering off-spec ore are defined in the OTCPA. Based on operating history and the extremely low-levels of deleterious elements any occurrence of such penalties is considered highly unlikely. • WA government royalties are included.
Revenue factors	• The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. • The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	• The head-grade is derived from the LOM plan and the geological model (with suitable modifying factors applied). • Revenue is calculated from the flat rate nickel and copper prices (above), flat rate USD/AUD exchange rate (above) and the recovery and NSR factors as defined in the OTCPA.
Market assessment	• The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. • A customer and competitor analysis along with the identification of likely market windows for the product. • Price and volume forecasts and the basis for these forecasts. • For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	• The OTCPA to purchase the ore is in place with BHP until February 2019.
Economic	• The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. • NPV ranges and sensitivity to variations in the significant assumptions and inputs.	• Internal cash flow estimates apply an 8% real discount rate for NPV analysis and only economically viable ores are considered for mining. • Sensitivity analysis of key financial and physical parameters is undertaken as part of the Ore Reserve process
Social	• The status of agreements with key stakeholders and matters leading to social licence to operate.	• Licence to operate from WA State Government. • Pre native title mining tenements for current Ore Reserves. • Good relationships with local community and strong

Criteria	JORC Code explanation	Commentary
		cooperation with neighbouring mining operations.
Other	• To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: • Any identified material naturally occurring risks. • The status of material legal agreements and marketing arrangements. • The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	• No significant unresolved material matters relating to either naturally occurring risks, third party agreements or governmental/statutory approvals, currently exist. • The OTCPA to purchase the ore is in place with BHP until February 2019.
Classification	• The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	• The classification adopted is based on the level of confidence as set out in the JORC 2012 guidelines • Proven Ore Reserves are based on Measured Resources subject to economic viability. • Probable Ore Reserves are based on Indicated Resources subject to economic viability. • The estimate appropriately reflects the view of the competent person. • No Inferred Resources are used in the Ore Reserve estimate.
Audits or reviews	• The results of any audits or reviews of Ore Reserve estimates.	• The Ore Reserve estimate, parent data and economic evaluation is reviewed by Panoramic Resources senior management.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. • It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• The relative accuracy of the Ore Reserve estimate is considered robust as it is based on the knowledge gained from extensive operational history of the mine. • All currently reported Ore Reserve estimations are considered representative on a global scale. • Mine to mill reconciliation records throughout the life of Lanfranchi provide confidence in the accuracy of the Ore Reserve estimate.