



# Savannah poised for restart

Euroz Institutional Conference  
14 March 2018

## No New Information or Data

This presentation contains references to exploration results, and Mineral Resource and Ore Reserve estimates, all of which have been cross referenced to previous market announcements made by the Company. 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 and Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.

## Forward Looking Statements

This presentation may contain certain “forward-looking statements” which may not have been based solely on historical facts, but rather may be based on the Company’s current expectations about future events and results. Where the Company expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. However, forward looking statements are subject to risks, uncertainties, assumptions and other factors, which could cause actual results to differ materially from future results expressed, projected or implied by such forward-looking statements. Such risks include, but are not limited to metals price volatility, currency fluctuations, increased production costs and variances in ore grade or recovery rates from those assumed in mining plans, as well as political and operational risks in the Countries and States in which we operate or sell product to, and governmental regulation and judicial outcomes. For a more detailed discussion of such risks and other factors, see the Company’s Annual Reports, as well as the Company’s other filings. The Company does not undertake any obligation to release publicly any revisions to any “forward-looking statement” to reflect events or circumstances after the date of this announcement, or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws.

## Capital Structure and Enterprise Value

ASX Ticker	ASX:PAN
Shares on issue	491.6M
Share Price	\$0.475 (13 March 2018)
Market Cap	~\$234M
Cash*	~\$23M (9 March 2018)
Listed Investments	~\$11M
Bank debt	Nil
Enterprise Value	~\$200M

## Significant Shareholder (at 6 March 2018)

Zeta Resources Limited	30.15%
------------------------	--------

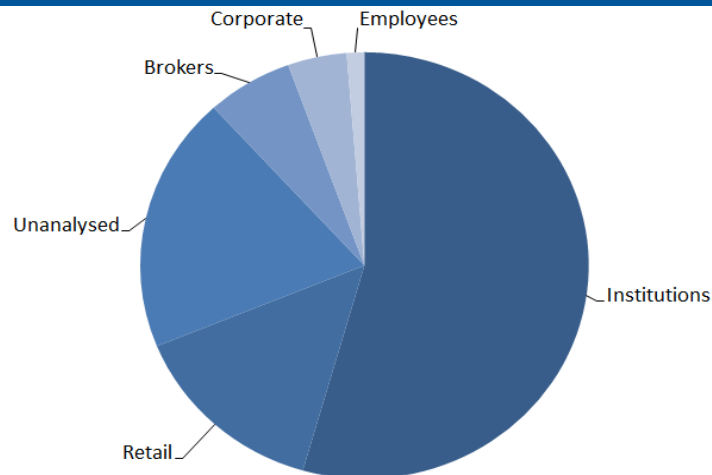
## Volume

30-day average daily volume	850,000
90-day average daily volume	700,000

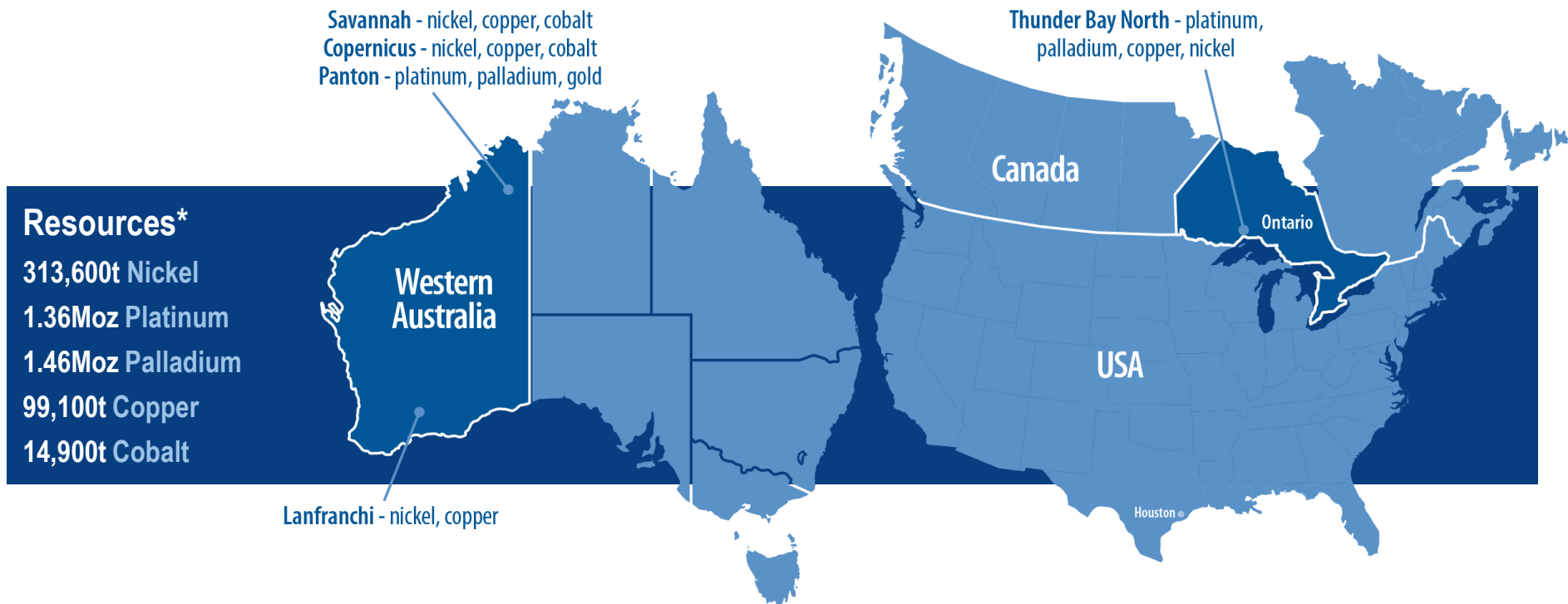
## Board

Brian Phillips	Non Executive Chairman
Peter Harold	Managing Director
John Rowe	Non Executive Director
Peter Sullivan	Non-Executive Director
Trevor Eton	CFO/Company Secretary

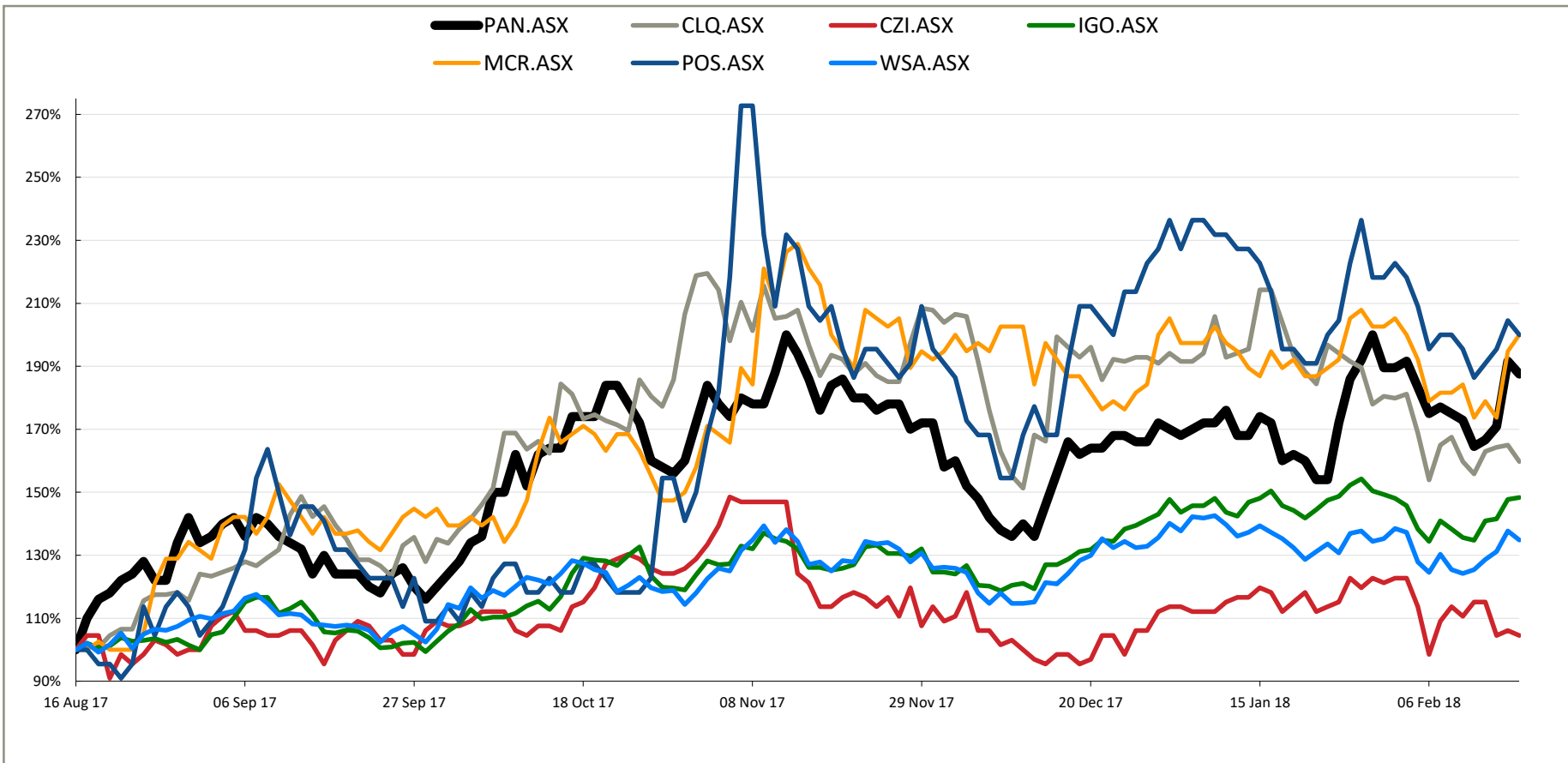
## Shareholder spread +50% institutional



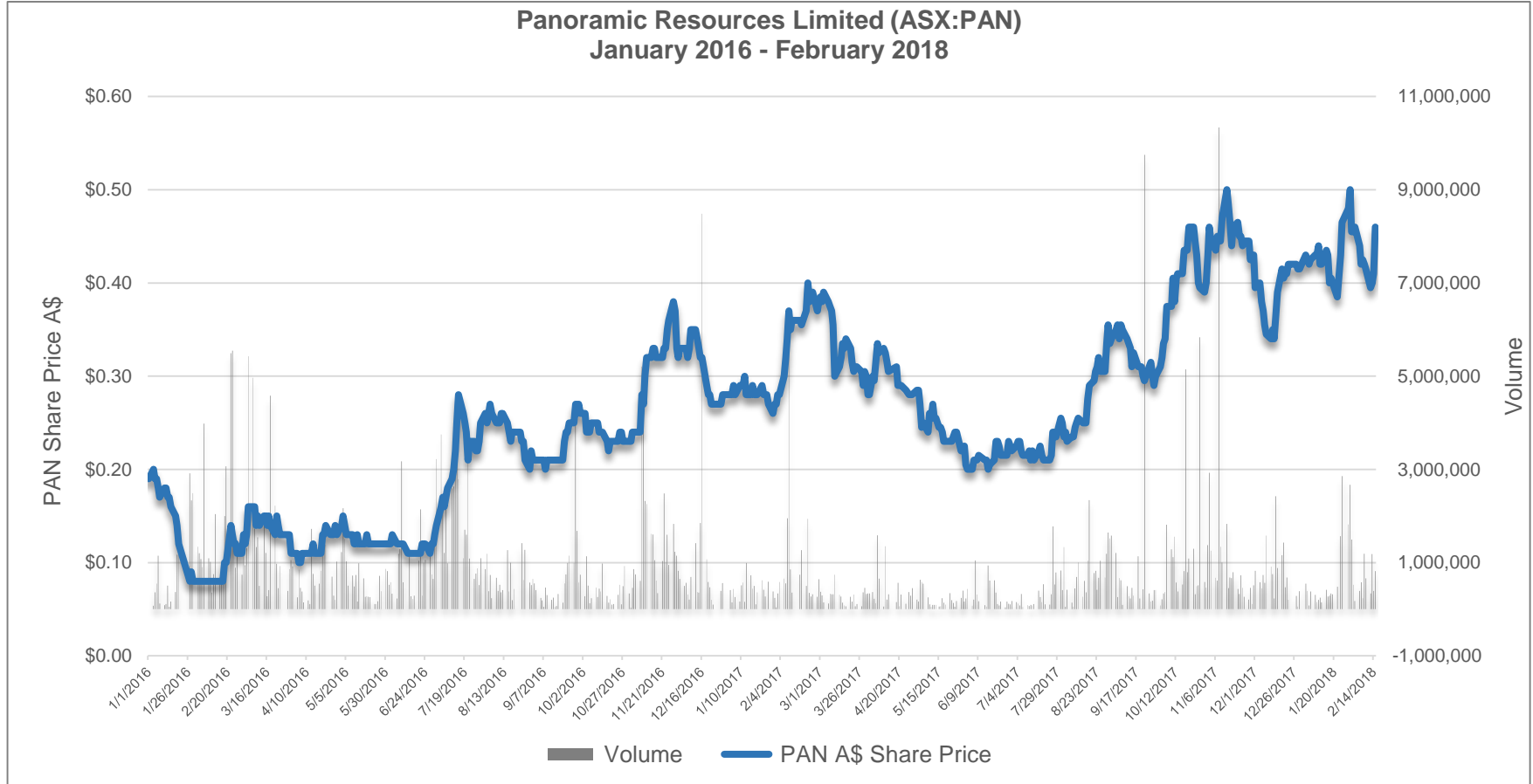
# Significant Resources



# Performance against our peers in last six months



# Solid performance over the last two years





# SAVANNAH



# Savannah - Summary

## UNDERGROUND MINE



## EXPERIENCED TEAM



## Resources

218,300t Ni  
99,100t Cu  
14,900t Co

Only half of interpreted extent of Savannah North Upper Zone tested by drilling

Other known mafic/ultramafic intrusives on the leases have had little or no drilling

## PROCESSING PLANT



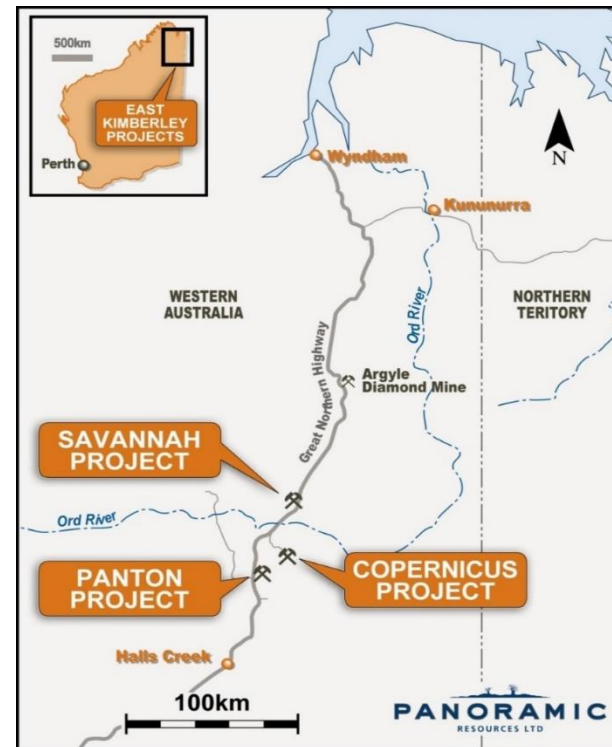
## INFRASTRUCTURE



**MINING FLEET**  
**200 PERSON VILLAGE**

Operated continuously for 12 years  
between 2004-2016 produced

8.5Mt ore milled  
95kt Ni, 53kt Cu, 5kt Co in concentrate





# Positive Feasibility Study

## MINE LIFE



## PRODUCTION PER ANNUM



## NPV



## SUSTAINING CASH COSTS



## RESOURCES



## JOB CREATION



Long mine life with excellent potential for mine life extension through exploration success

### Average annual production forecast\*

10,800t Ni  
6,100t Cu  
800t Co

### Short lead time to production

6-9 months

**Pre-production ramp up capital**  
**\$A36M**

### C1 Cash Costs

US\$2.40/lb payable Ni

### Sustaining Cash Costs

US\$3.50/lb payable Ni

### Impressive financial metrics

\$380M NPV and 200% IRR at  
US\$6.75/lb Ni

### Major Infrastructure in place

Mining Fleet  
200 Person Village  
1Mtpa Process Plant  
Underground Mine – fully developed

### Job Creation

~200 new jobs

**Experienced Management Team  
in place**

#### Cautionary Statement

Approximately 1.1% of nickel in the Production Target is from material classified as Inferred Resource. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised.

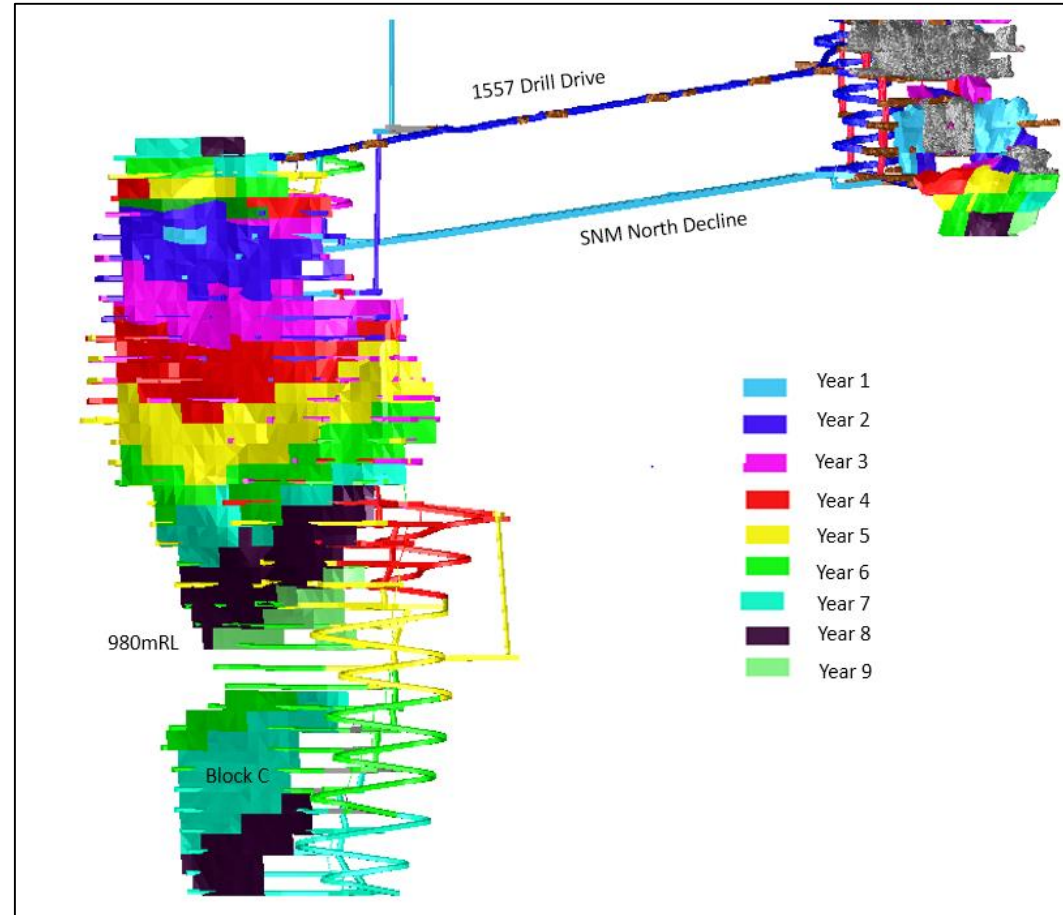
\*Refer Company ASX release 27 October 2017 titled "Updated Savannah Feasibility Study. Enhances fundamentals for a decision to restart"

## Savannah

- Forecast mine production of **1.68Mt @ 1.18% Ni for 19,800t Ni contained**
- Restart mining 100% Savannah ore then transition to Savannah North
- Resources below 900 Fault not included in mine plan (**0.90Mt @ 1.65% Ni for 14,900t Ni**)

## Savannah North

- Forecast mine production of **5.97Mt @ 1.49% Ni for 88,900t Ni contained**
- Commence development immediately on re-start
- First ore 9 months after commencing access development and full production after 15 months



## Product

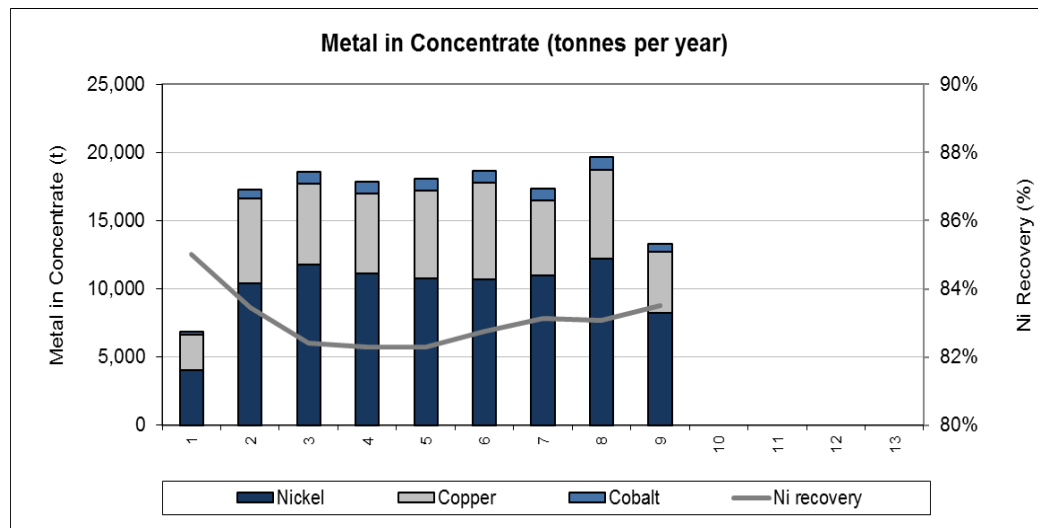
- **Bulk Ni-Cu-Co concentrate**  
Average grade 8% Ni, 5% Cu, 0.6% Co
- Low impurities and attractive Fe:MgO and Ni:Fe ratios
- Ideal feed for Ni smelters

## Annual metal in concentrate

- 10,800t Ni
- 6,100t Cu
- 800t Co

## LOM metal in concentrate

- 90,200t Ni
- 50,700t Cu
- 6,700t Co



# Payable Cash Costs

## OPERATING CASH COSTS



**US\$2.40/lb**  
payable Ni

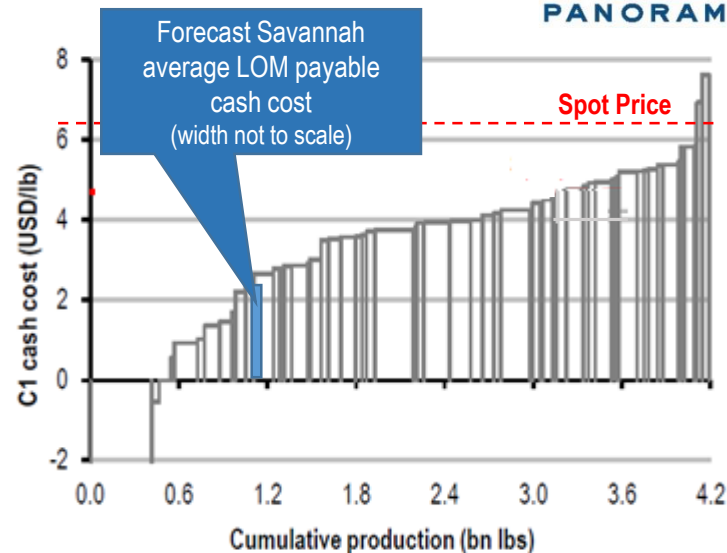
Average over LOM  
Bottom of 2<sup>nd</sup> quartile

## SUSTAINING CASH COSTS

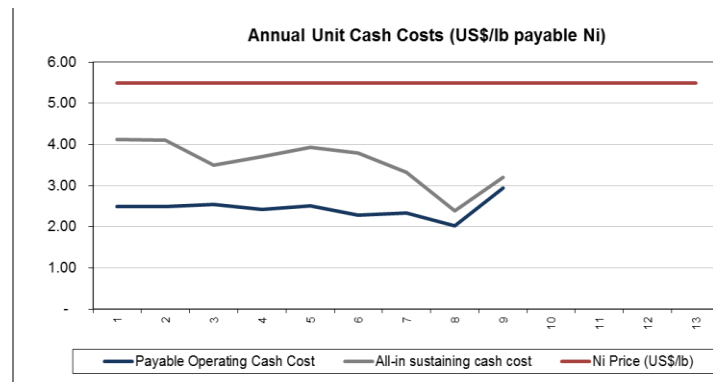


**US\$3.50/lb**  
payable Ni

Average over LOM  
US\$4.20/lb in Years 1 and 2



Source: Wood Mackenzie, HSBC



# Leveraged to commodity prices and currency

## Strongly leveraged to nickel price and US\$:A\$



US\$1.00/lb increase in nickel price adds **~A\$160M** to pre-tax NPV



US\$0.05 cent decrease in the US\$:A\$ exchange rate adds **~A\$50M** to pre-tax NPV

Pre-tax NPV <sub>8</sub> (\$'M)		Nickel Price US\$/lb)					
		5.00	6.00	7.00	8.00	9.00	10.00
US\$:A\$ FX Rate	0.65	270	453	635	790	946	1,102
	0.70	207	377	546	690	835	979
	0.75	153	312	469	604	739	874
	0.80	105	254	401	528	654	781
	0.85	63	203	342	461	580	699



# Continuous Exploration Success

## Kimberley

■ Savannah North	175,100t Ni, 74,400t Cu, 12,700t Co
■ Savannah Lower Zone	50,120t Ni, 28,200t Cu, 2,400t Co
■ Savannah Sub 900 Fault	14,900t Ni, 6,900t Cu, 900t Co
■ Copernicus	10,600t Ni, 6,900t Cu, 400t Co

## Lanfranchi

■ Deacon	71,800t Ni, 6,300t Cu, 1,900t Co
■ Jury-Metcalf	6,400t Ni, 1,300t Cu, 100t Co
■ Lower Schmitz	6,700t Ni, 500t Cu, 100t Co

## Gum Creek *(now owned by Horizon Gold Limited ASX:HRN)*

- Combined Howards, Heron South, Swan, Swift and Wilsons

**342,700 tonnes Nickel**  
**125,000 tonnes Copper**  
**18,700 tonnes Cobalt**

**630,000 ounces Gold**

*New Resources discovered since 2006 - refer Company Annual Reports*

## EXPLORATION



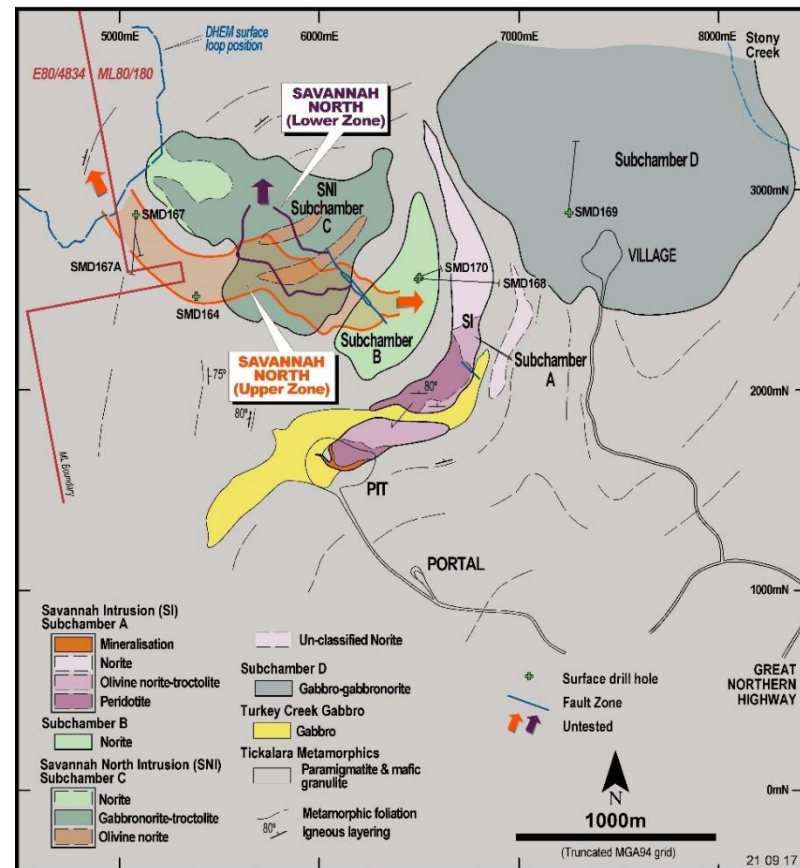
**Excellent potential  
for mine life  
extension through  
exploration success**





# Upside – potential 2km strike at Savannah North

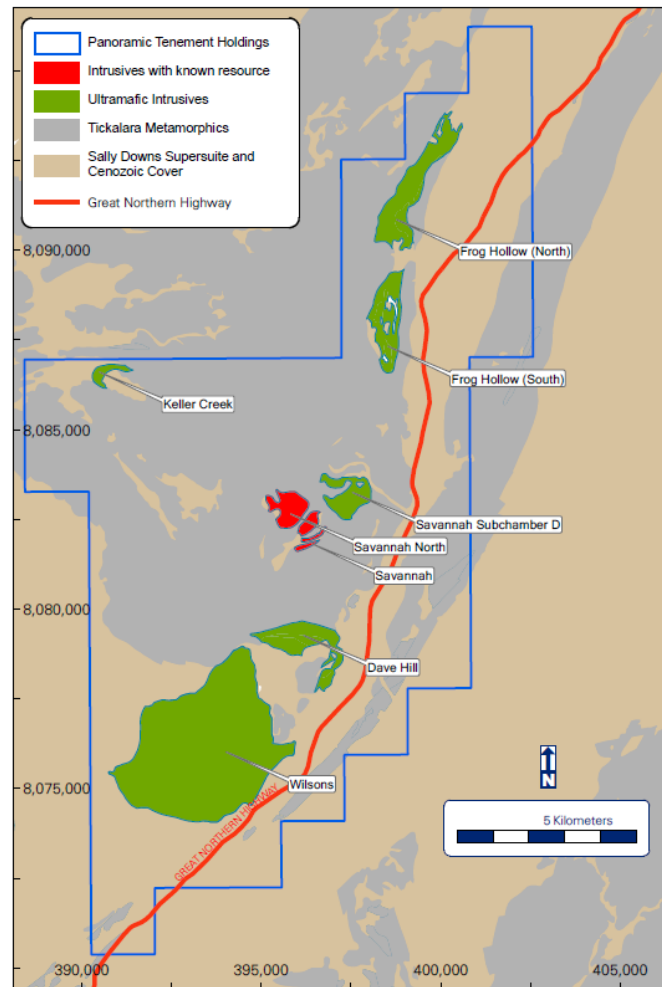
- **Resource open** - Savannah North Resource drilling programs have not closed off the mineralisation
- **Potential strike length of the Upper Zone is ~2km** based on the large, highly conductive on-hole EM responses identified in surface drill holes:
  - SMD164, Section 5400mE
  - SMD167 & SMD167A, Section 5100mE
- **Only half of the potential Upper Zone mineralisation has been tested by resource drilling**
- **The Lower Zone Resource remains open down dip to the northwest**





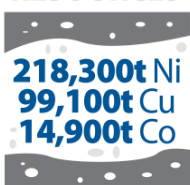
# Upside – Other Intrusions

- A number of other mafic/ultramafic intrusive bodies occur at the Savannah Project
  - **Dave Hill**
  - **Wilsons**
  - **Subchamber D**
  - **Frog Hollow**
- CSIRO age dating indicate these are part of the same magmatic event as the Savannah / Savannah North mineralised bodies
- Dave Hill and Wilsons bodies are known to contain magmatic sulphides
- Past drilling has been minimal and has **not tested** the most prospective basal parts of these intrusives
  - **Dave Hill** - one 700m deep and five shallow core holes
  - **Wilsons** - one core and seven shallow RC holes
  - **Subchamber D** - one core hole
  - **Frog Hollow** - never been drilled



# Savannah - Summary

## RESOURCES



- Savannah is a significant Australian base metal project

## PROJECT FINANCIALS



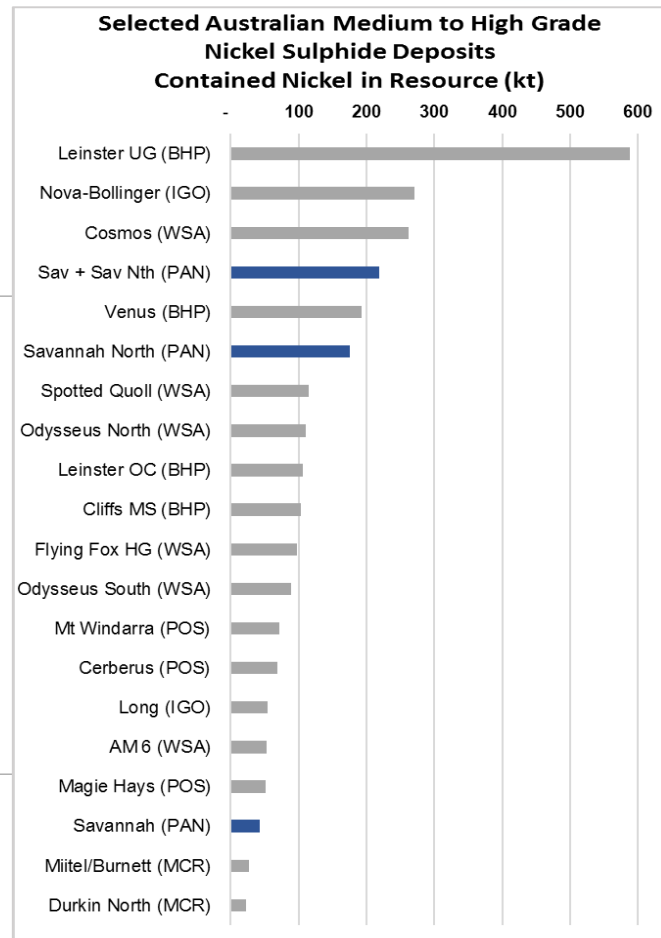
### Updated Oct 2017 Feasibility Study confirms

- +8 year mine life
- Very robust at current commodity prices and US\$:A\$ FX
- Globally competitive cash costs of US\$2.40/lb payable Ni
- Low re-start capex
- Short timeframe to production leveraging off existing Savannah infrastructure
- Significant leverage to nickel, copper and cobalt prices

## EXPLORATION



- Excellent potential for further exploration success and mine life extension



Refer to Resource Appendices

# OTHER ASSETS





# Lanfranchi - Summary

## MINING



- Fully developed underground mine
- Large mining fleet, village & associated infrastructure
- Mined continuously by PAN for 10 years (2005-2015)
- **3.85Mt ore mined containing 94kt Ni (PAN production)**
- Care and maintenance from November 2015
- Quick re-start to mine Jury-Metcalf, Deacon, Schmitz
- Offtake with BHP Nickel West to February 2019

## RESOURCE

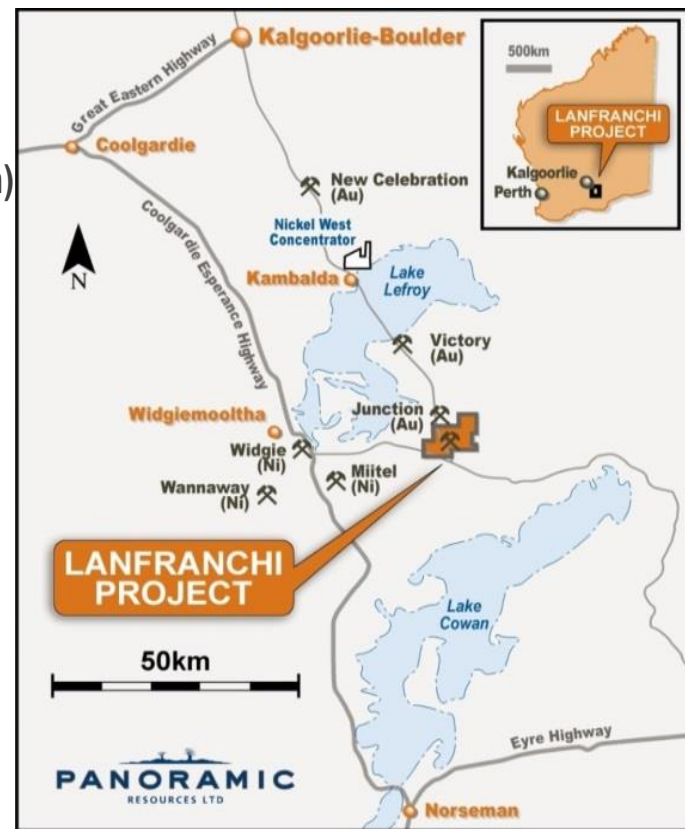


- **Total Resources of 95,500t contained Ni**
- Lower Schmitz high-grade Resource of 6,700t contained Ni at **5.1% Ni**

## EXPLORATION



- Significant exploration potential
- Multiple targets identified



# Horizon Gold (ASX:HRN) - Gum Creek Gold Project

## RESOURCE



### IPO of Horizon, spun out from Panoramic

- Shares on issue 76.5M
- Market capitalisation \$17M
- Cash (31 Dec 2017) \$8.4M
- Enterprise value \$8.6M
- Panoramic interest 51%

## PRODUCTION



**Historic production** - >1Moz gold

**Location** – 640km NE of Perth, Western Australia

**Large tenement package** - covering large portion of the Gum Creek Greenstone belt

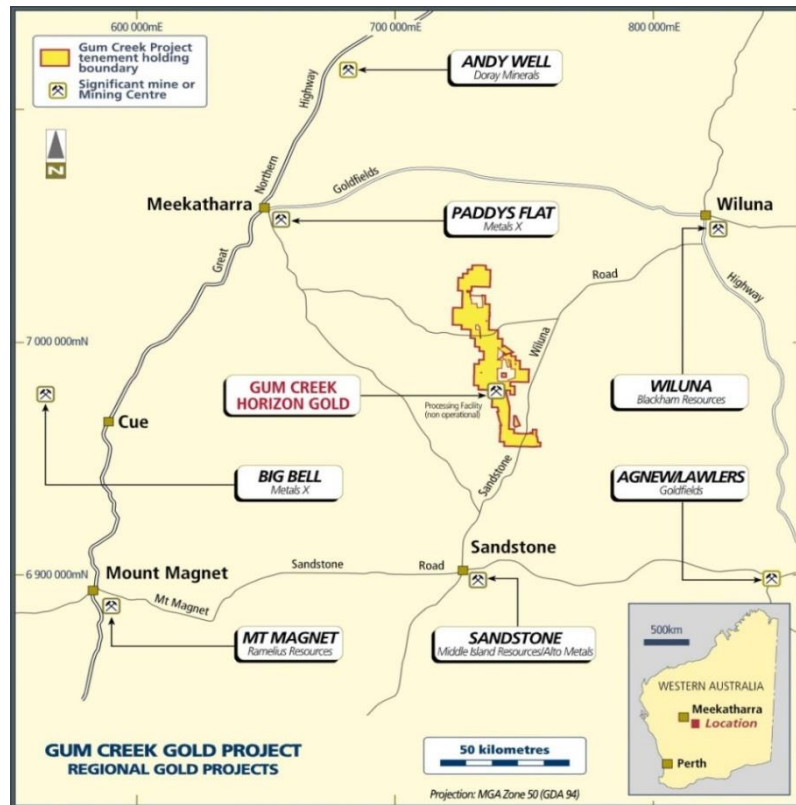
## EXPLORATION



**Drilling targets** – twenty prospect areas identified for follow-up RC and aircore drill testing

**Recent results** – drilling at Psi prospect returned 7m @ 4.94g/t Au from 55m in GWRC462\*

**Follow-up drilling planned**



\*Refer relevant HRN ASX Release



## Panton

- Located 60km from Savannah

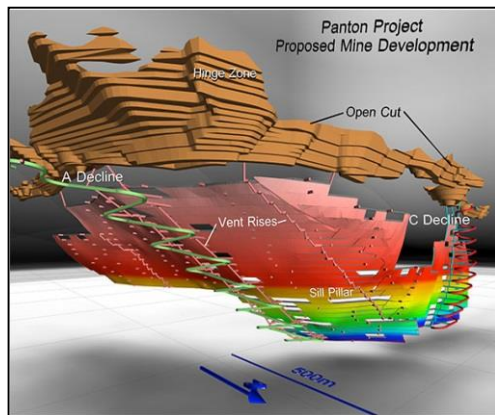
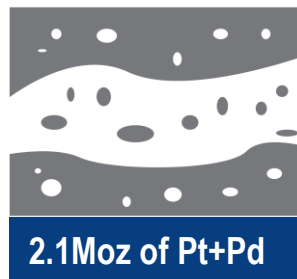
### Feasibility Study by previous owner

- Open pit plus underground mining
- 600,000tpa throughput rate
- ~80,000oz Pt+Pd+Au per year

### Recent positive test work by Panoraminc

- Improved recovery and concentrate grade
- Ore sorting

## RESOURCE



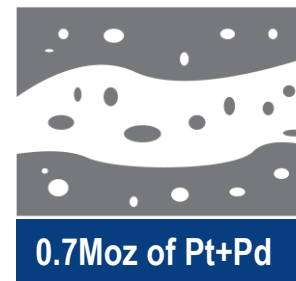
## Thunder Bay North

- Located in Ontario, Canada
- PEA completed by previous owner

### Rio Tinto earn in and JV option

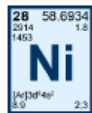
- Consolidates PAN's Thunder Bay North Project and Rio's Escape Lake Project
- Earn in Option - Rio spending up to C\$20M over 5½ years to earn 70% interest

## RESOURCE

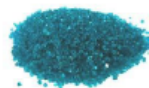


## Nickel and cobalt are key ingredients for the manufacture of lithium-ion batteries

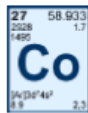
An example of  
a Nickel-Cobalt-  
Aluminum  
(NCA) battery



↓ 8 parts



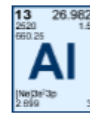
Nickel  
Sulphate



↓ 1 part



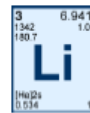
Cobalt  
Sulphate



↓ 1 part



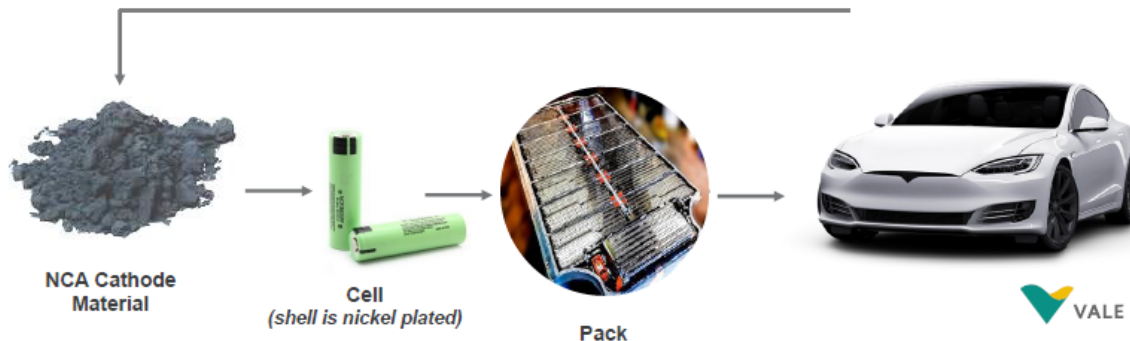
Aluminum  
Sulphate



↓ 1 part

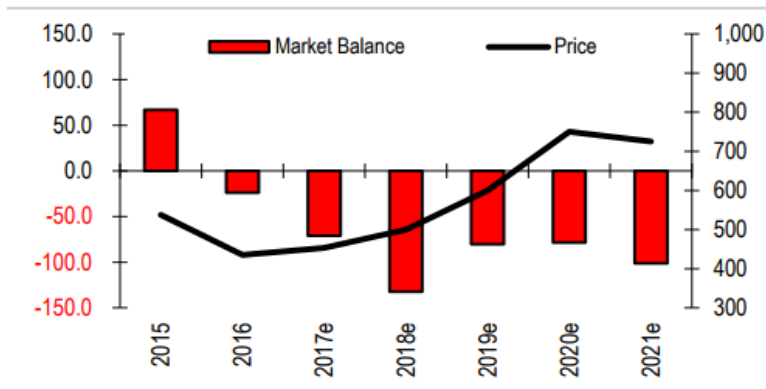


Lithium  
Carbonate



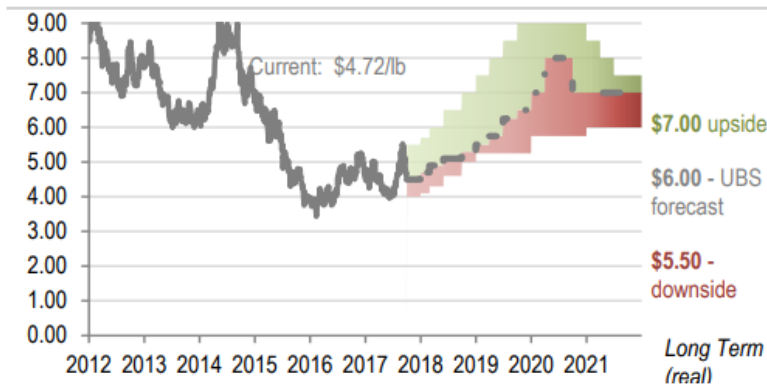
Source: Vale Analysis

Price & supply/demand balance (Mt & US\$/lb)



Source: UBS Research.

Price forecasts & Upside/Downside (US\$/lb)



Source: UBS & Bloomberg.

## Macquarie Nickel Price Forecasts

- 2018 - \$5.73/lb
- 2019 - \$6.18/lb
- 2020 - \$6.80/lb
- 2021 - \$7.26/lb
- Long Term - \$7.94/lb

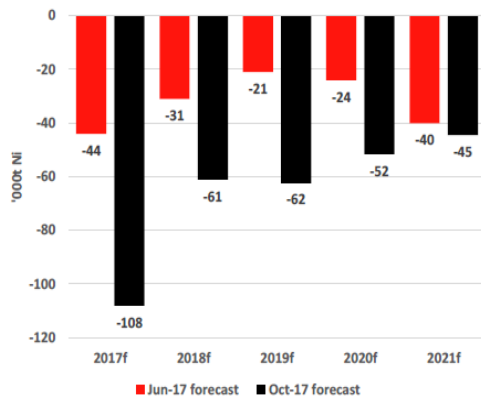
Source: Macquarie Bank – February 2018

**EV metals have a bright future – Macquarie Bank, Oct 17**  
Price Forecast Updates – “.....price outlook upgrade for some of the key **battery metals**, including lithium, cobalt and nickel. The biggest price revisions are in the long term: we increased our long-term price for lithium from \$7,000/t to \$9,000/t, cobalt from \$16.5/lb to \$26/lb and nickel from \$13,000/t to \$17,500/t”

# Important facts about nickel

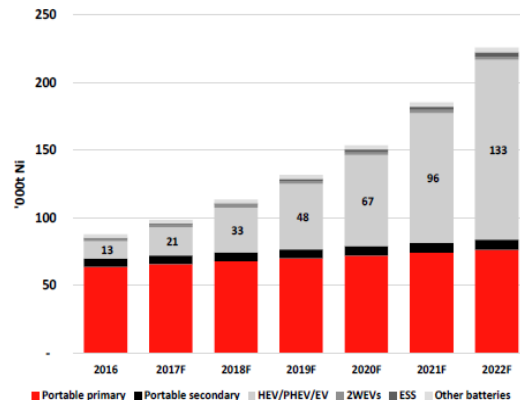
- Nickel market currently in deficit, LME stockpile down from 470kt (April '15) to 340kt now
- EV vehicles driving major changes to nickel demand and price outlook
- A large percentage of nickel in the global supply is not suitable for battery production
- Specific types of nickel ore are needed for nickel sulphate production and there could be shortages in the future
- ✓ **Panoramic has the right nickel to supply the growing demand for batteries in EVs**

Projected global nickel market balance

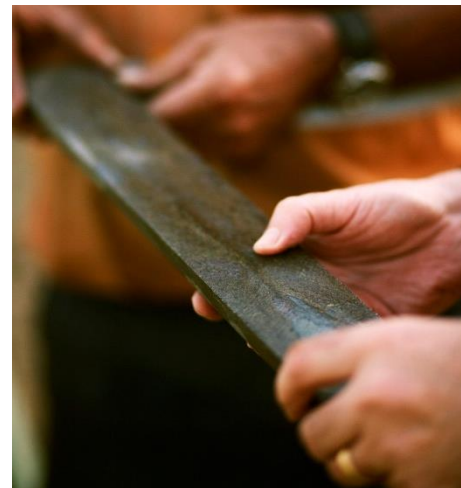


Source: INSG, Macquarie Research, October 2017

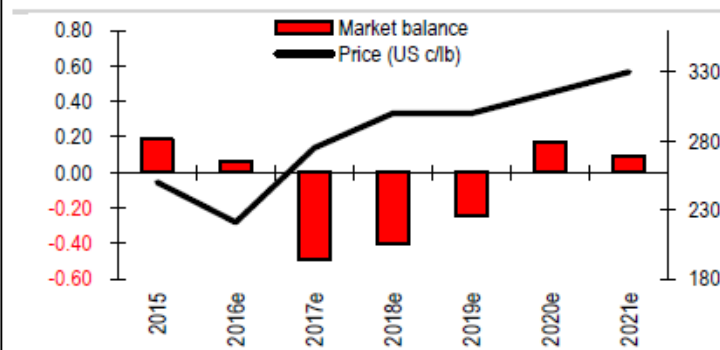
Primary nickel use in batteries



Source: LME, Macquarie Research, October 2017

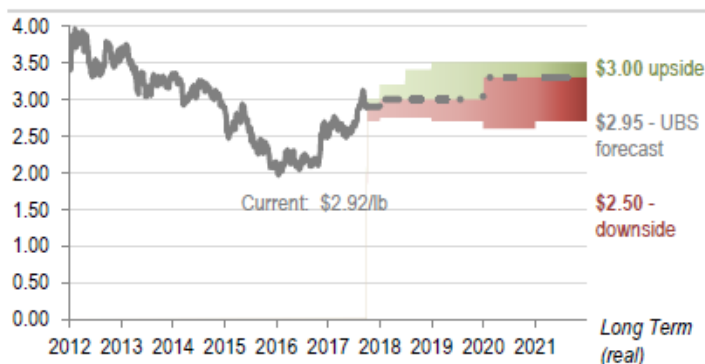


**Figure 52: Price & supply/demand balance (Mt & USc/lb)**



Source: UBS Research.

**Figure 53: Upside/Downside**



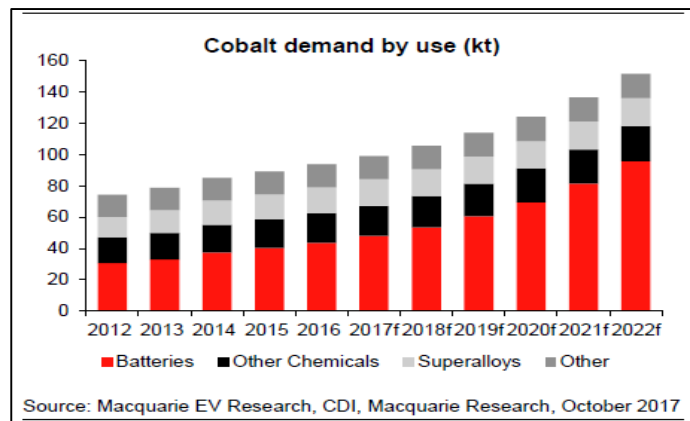
Source: UBS & Bloomberg.

## Macquarie Copper Price Forecasts

- 2018 - \$3.14/lb
- 2019 - \$3.02/lb
- 2020 - \$3.18/lb
- 2021 - \$3.44/lb
- Long Term - \$2.68/lb

“Beyond the near term, we think EV’s & the promise of accelerating demand underpin the case for an incentive price of ~US\$3/lb (real)”. (UBS 5/10/17)

Source: Macquarie Bank – February 2018



## Consensus Cobalt Price Forecasts

- 2018 - \$29.55/lb
- 2019 - \$27.16/lb
- 2020 - \$26.08/lb
- 2021 - \$23.89/lb
- Long Term - \$18.65/lb

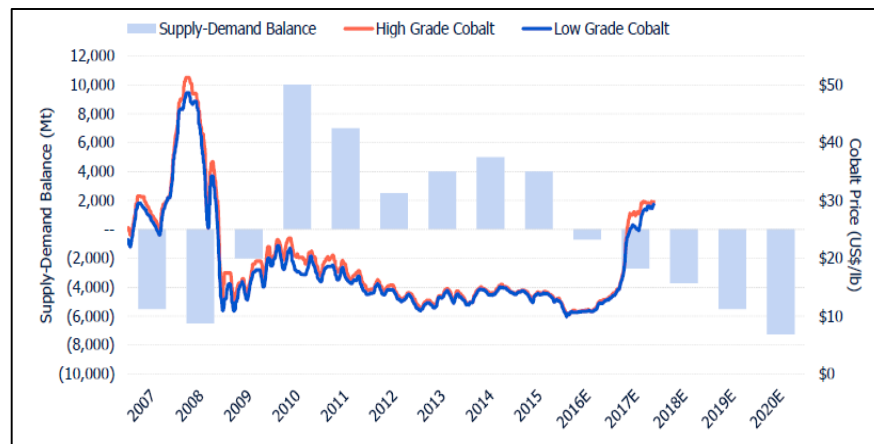
Sources:

Macquarie Research – February 2018

Cobalt 27 Capital Corp - corporate presentation, 20 September 2017

## Cobalt 27 Capital Corp comments

- Cobalt demand in lithium-ion batteries forecast to grow at 11.7% CAGR to 2022
- Supply currently concentrated in the DRC (65% of 2016 mine output)
  - Relatively politically unstable country
  - Lack of infrastructure
  - ~15% of DRC output from unregulated artisanal mining





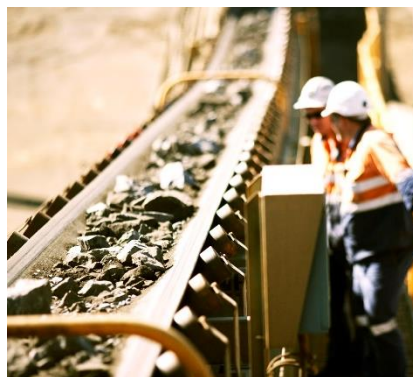
# Vision



Restart Production



Build Resources



Grow the Business

Commodity Focus

Ni

Cu

Co

Pt+Pd



Commitment

SAFELY HOME  
EVERY DAY



Goal

CAPITAL GROWTH  
& DIVIDENDS

# Appendices



*Note: further 2012 Edition JORC compliance tables are referenced in the PAN ASX announcement dated 30 September 2016*



# INFERRED RESOURCES IN MINE PLAN

# Material in Updated FS mine plan

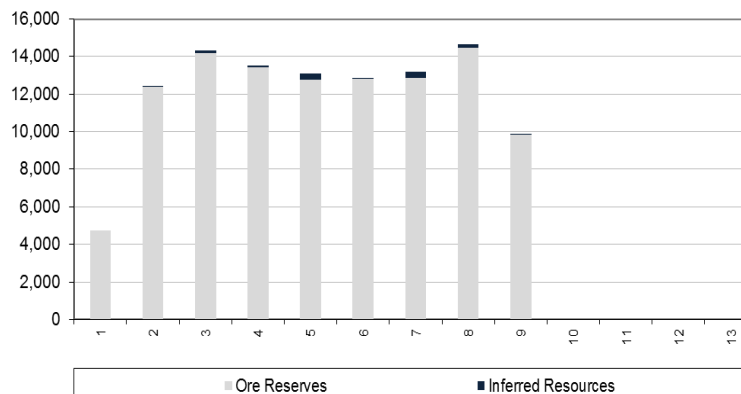
Classification	Tonnage Mt	Grade Ni%	Grade Cu%	Grade Co%	Contained Ni (t)	Contained Cu (t)	Contained Co (t)
Ore Reserves	7.58	1.42	0.68	0.09	107,500	51,200	7,200
Inferred Resource	0.06	1.91	0.69	0.13	1,200	400	100
<b>Total</b>	<b>7.65</b>	<b>1.42</b>	<b>0.68</b>	<b>0.10</b>	<b>108,700</b>	<b>51,700</b>	<b>7,300</b>

The Updated FS mine plan has only ~1.1% material classified as Inferred Resource

## Cautionary Statement

There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised.

Contained Nickel in Mining Plan by JORC Category (tonnes per year)



A light gray silhouette of two baobab trees on a horizon line, set against a white background.

# RESOURCES AND RESERVES

## **No New Information or Data**

*The Mineral Resource and Ore Reserve estimates tabled below 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 and Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.*

# Nickel, Copper, Cobalt – Resources at 30 June 2017

Resource	Equity	Metal	JORC Compliance	Measured		Indicated		Inferred		Total		Metal Tonnes
				Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	
Savannah Project												
Savannah (above 900)	100%	Nickel	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	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 (Upper)	100%	Nickel	2012	-	-	4,229,000	1.64	1,759,000	1.25	5,987,000	1.53	91,300
		Copper			-		0.65		0.49		0.60	36,100
		Cobalt			-		0.12		0.10		0.11	6,800
Savannah North (Lower)	100%	Nickel	2012	-	-	2,697,000	1.96	853,000	2.02	3,549,000	1.97	70,100
		Copper			-		0.98		0.93		0.97	34,400
		Cobalt			-		0.14		0.13		0.14	4,900
Savannah North (Other)	100%	Nickel	2012	-	-	242,000	2.22	493,000	1.67	735,000	1.85	13,600
		Copper			-		0.50		0.53		0.52	3,800
		Cobalt			-		0.14		0.11		0.12	900
Lanfranchi Project												
Cruikshank	100%	Nickel	2004	-	-	2,018,000	1.42	611,000	0.79	2,629,000	1.28	33,600
Deacon	100%	Nickel	2012	89,000	2.99	-	-	134,000	1.70	224,000	2.22	5,000
Gigantus	100%	Nickel	2004	-	-	-	-	652,000	1.63	652,000	1.63	10,600
Helmut South Ext	100%	Nickel	2012	21,000	4.54	29,000	2.87	-	-	50,000	3.59	1,800
John	100%	Nickel	2004	-	-	-	-	291,000	1.42	291,000	1.42	4,100
Lanfranchi	100%	Nickel	2012	40,000	4.12	55,000	4.40	63,000	3.49	158,000	3.97	6,300
Martin	100%	Nickel	2012	-	-	47,000	3.58	7,000	4.16	54,000	3.66	2,000
McComish	100%	Nickel	2004	-	-	-	-	992,000	1.49	992,000	1.49	14,800
Metcalfe	100%	Nickel	2012	-	-	280,000	1.99	111,000	1.35	391,000	1.81	7,100
Schmitz	100%	Nickel	2012	30,000	4.92	23,000	3.93	16,000	2.95	69,000	4.14	2,900
Lower Schmitz	100%	Nickel	2012	-	-	51,000	5.60	79,000	4.80	131,000	5.11	6,700
Winner	100%	Nickel	2004	-	-	14,000	4.40	-	-	14,000	4.40	600
Total (Equity)		Nickel										
		Copper										
		Cobalt										



## Qualifying Statement and Notes

### 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*
- *Lanfranchi Project Resource cutoff grade is 1.00% Ni*

### Cross references to previous market announcements:

- *Savannah (above 900) - refer ASX announcement dated 30 September 2016 titled "Mineral Resources and Ore Reserves at 30 June 2016"*
- *Savannah (below 900) - refer ASX announcement dated 30 September 2015 titled "Mineral Resources and Ore Reserves at 30 June 2015"*
- *Savannah North – refer ASX announcement dated 24 August 2016 titled "Major Resource Upgrade for Savannah North"*
- *Cruickshank - refer ASX announcement dated 28 April 2011 titled "Cruickshank Resource Upgraded 26% to 33,560t Ni"*
- *Deacon, Helmut South Ext, Lanfranchi, Metcalfe - refer ASX announcement dated 30 September 2016 titled "Mineral Resources and Ore Reserves at 30 June 2016"*
- *Gigantus, John, McComish, Winner - refer ASX announcement dated 12 October 2011 titled "Business Review 2011"*
- *Martin - refer ASX announcement dated 13 September 2013 titled "Resources and Reserves at 30 June 2013 and Exploration Update"*
- *Schmitz - refer ASX announcement dated 30 September 2015 titled "Mineral Resources and Ore Reserves at 30 June 2015"*
- *Lower Schmitz - refer ASX announcement dated 28 April 2016 titled "Quarterly Report for the period ending 31 March 2016"*

# Nickel, Copper, Cobalt – Reserves at 30 June 2017

Reserve	Equity	Metal	JORC Compliance	Proven		Probable		Total		Metal Tonnes	
				Tonnes	(%)	Tonnes	(%)	Tonnes	(%)		
Savannah Project											
Above 900 Fault	100%	Nickel	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	
Savannah North	100%	Nickel	2012	-	-	6,650,000	1.42	6,650,000	1.42	94,500	
		Copper			-		0.61		0.61	40,900	
		Cobalt			-		0.10		0.10	6,700	
Lanfranchi Project											
Deacon	100%	Nickel	2012			42,000	2.67	42,000	2.67	1,100	
Metcalfe	100%	Nickel	2012			113,000	1.57	113,000	1.57	1,800	
Lanfranchi	100%	Nickel	2012			11,000	2.56	11,000	2.56	300	
Schmitz	100%	Nickel	2012			15,000	2.96	15,000	2.96	500	
Helmut Sth Ext	100%	Nickel	2012			27,000	2.19	27,000	2.19	600	
Total (Equity)		Nickel									116,800
		Copper									52,400
		Cobalt									7,600

## Notes:

- Figures have been rounded and therefore may not add up exactly to the reported totals
- 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

## Cross references to previous market announcements:

- refer to ASX announcement dated 30 September 2016 titled "Mineral Resources and Ore Reserves at 30 June 2016"
- refer to ASX announcement dated 2 February 2017 titled "Savannah Feasibility Study. Ten year life with minimal restart capital requirements"

# Platinum Group Metals – Resources at 30 June 2017

Resource	Equity	JORC Compliance	Tonnage	Grade									Contained Metal	
				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)
Thunder Bay North														
Open Pit	100%	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%	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
Sub-total – Thunder Bay North (Equity)			10,354,000	1.13	1.07								377	355
Panton														
Top Reef	100%	2012												
Measured			4,400,000	2.46	2.83	-	0.42	-	0.08	0.28	-	-	348	400
Indicated			4,130,000	2.73	3.21	-	0.38	-	0.09	0.31	-	-	363	426
Inferred			1,560,000	2.10	2.35	-	0.38	-	0.13	0.36	-	-	105	118
Middle Reef	100%	2012												
Measured			2,130,000	1.36	1.09	-	0.10	-	0.03	0.18	-	-	93	75
Indicated			1,500,000	1.56	1.28	-	0.10	-	0.04	0.19	-	-	75	62
Inferred			600,000	1.22	1.07	-	0.10	-	0.05	0.19	-	-	24	21
Sub-total – Panton (Equity)			14,320,000	2.19	2.39								1,008	1,102
Total - PGM (Equity)													1,385	1,456

# Platinum Group Metals – Resources at 30 June 2017

## Qualifying Statements and Notes

### Notes

*Thunder Bay North 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:  $\text{Pt-Eq g/t} = \text{Pt g/t} + \text{Pd g/t} \times 0.3204 + \text{Au g/t} \times 0.6379 + \text{Ag g/t} \times 0.0062 + \text{Cu g/t} \times 0.00011 + \text{Total Ni g/t} \times 0.000195 + \text{Total Co g/t} \times 0.000124 + \text{Rh g/t} \times 2.1816$ . 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%.*

*Thunder Bay North Underground Resource: The underground mineral resource is reported at a cut-off grade of 1.94g/t Pt-Eq. The Pt-Eq formula is:  $\text{Pt-Eq g/t} = \text{Pt g/t} + \text{Pd g/t} \times 0.2721 + \text{Au g/t} \times 0.3968 + \text{Ag g/t} \times 0.0084 + \text{Cu g/t} \times 0.000118 + \text{Sulphide Ni g/t} \times 0.000433 + \text{Sulphide Co g/t} \times 0.000428 + \text{Rh g/t} \times 2.7211$ . 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:  $\text{NiSx} = \text{Ni} - (\text{MgO}\% \times 60.35 - 551.43)$ . The regression formula for Co in sulphide (CoSx) is:  $\text{CoSx} = \text{Co} - (\text{MgO}\% \times 4.45 - 9.25)$ .*

### Cross references to previous market announcements:

- Thunder Bay North Open Pit Resources – refer Magma Metals Limited (ASX:MMW) announcement dated 7 February 2011 titled “Positive Scoping Study for Thunder Bay North Project”
- Thunder Bay North 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”
- Panton - refer ASX announcement dated 30 September 2015 titled “Mineral Resources and Ore Reserves at 30 June 2015”