



**Savannah Feasibility Study confirms  
low restart cost, +10 year mine life, huge leverage to Ni price**



**East Coast Roadshow  
6-8 February 2017**

ASX: PAN

# Disclaimer

## Cautionary Statements and Important Information

This presentation includes information extracted from Panoramic Resources Limited ASX announcement dated 2 February 2017 entitled “Savannah Feasibility Study – Ten year life with minimal restart capital requirements”. The Savannah Feasibility Study includes approximately 1.1% of material on a contained nickel basis 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.

## No New Information or Data

This presentation contains references to exploration results, Mineral Resource estimates 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 announcement continue to apply and have not materially changed.

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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.

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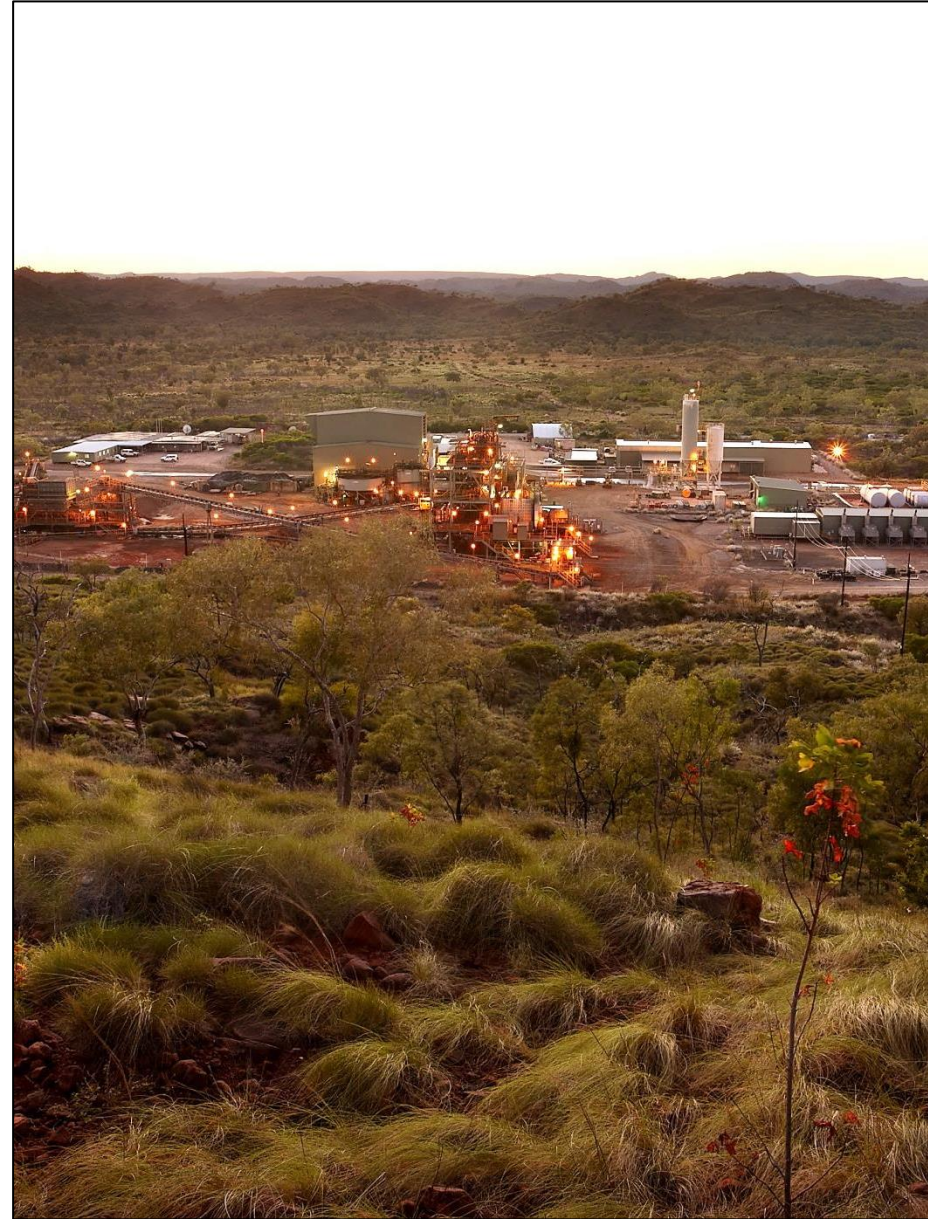
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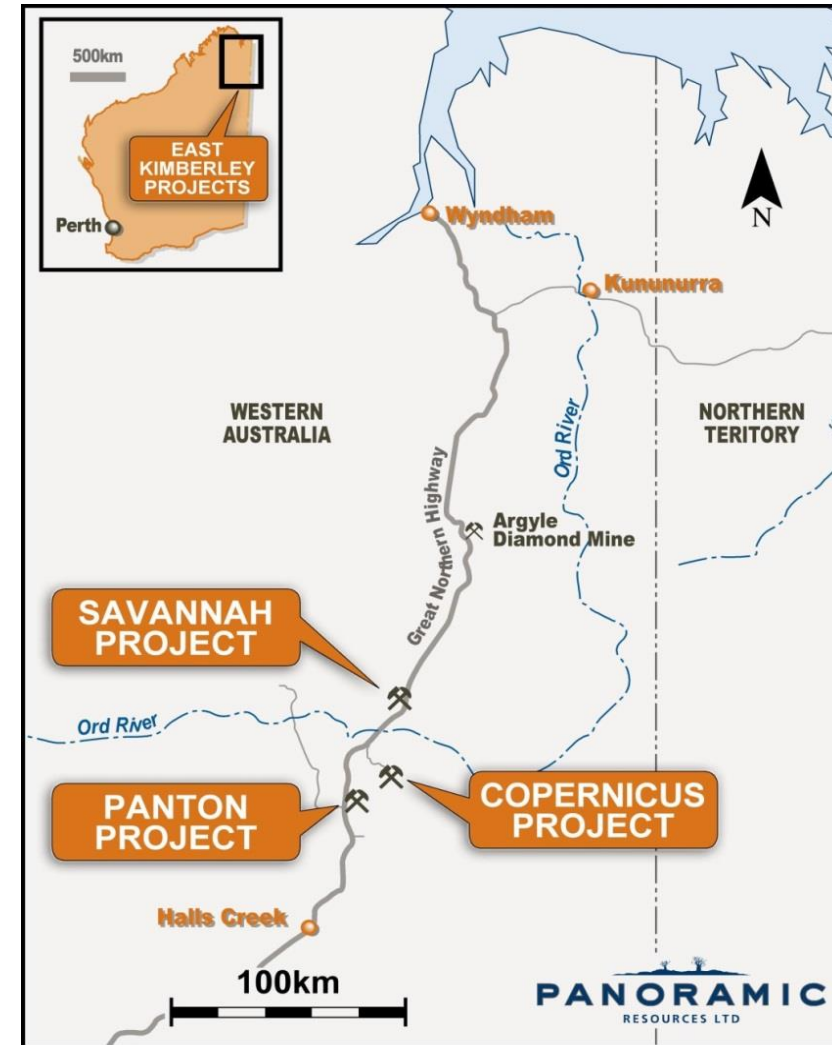




# Savannah Feasibility Study Overview

# Feasibility Study demonstrates ten-year life with minimal restart capex

- **Large Resource** - 226,400t contained Ni
- **Significant production forecast**
  - 99,200t Ni
  - 51,500t Cu
  - 6,900t Co
- **Long mine life** - 10 years
- **Low pre-production capital** - A\$20M
- **Competitive C1 cash costs** - US\$3.30/lb payable Ni
- **Robust project economics** - NPV<sub>8</sub> A\$190M\* @ \$US6/lb
- **Short lead time to first production**
- **Significant opportunities to enhance project value**
- **Considerable exploration upside**



## Cautionary Statement

The Production Target includes approximately 1.1% of material on a contained nickel basis 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.

# Key project statistics

Operating Metric	Result
<b>Mineral Resources</b>	<b>13.9Mt @ 1.63%Ni, 0.75% Cu, 0.11% Co</b> containing: <b>226,400t Ni 104,700t Cu 15,300t Co</b>
<b>Mine Production</b>	<b>8.25Mt @ 1.38% Ni, 0.65% Cu, 0.09% Co</b> containing: <b>114,000t Ni 53,700t Cu 7,700t Co</b>
<b>Mine Life</b>	10.25 years
<b>LOM production</b> <i>(metal in concentrate)</i>	<b>99,200t Ni 51,500t Cu 6,900t Co</b>
<b>Annual production</b> <i>(metal in concentrate)</i>	<b>9,700t Ni 5,000t Cu 670t Co</b>

- **Long mine life ~10 years**  
(excluding future Resource to Reserve conversion and exploration upside potential)
- **Significant nickel production**
  - averaging 10,900t Ni in concentrate for first five years
  - Peaking at 12,500t Ni in year three
- **Significant by-product credits**
  - 5,000tpa Cu
  - 670tpa Co

The Mineral Resources and Ore Reserves underpinning the above production target have been prepared by a competent person or persons in accordance with the requirements of the JORC Code – refer to the Company’s ASX announcements of 24 August 2016, 30 September 2016 and 2 February 2017.

# Financials at various US\$ nickel prices and US\$:A\$ = 0.736

Financial Metric	Units	US\$5.00/lb	US\$6.00/lb	US\$7.00/lb	US\$8.00/lb
<b>Revenue</b>	A\$M	1,300	1,500	1,700	1,900
<b>Initial Capital</b> <i>(Pre-production)</i>	A\$M	20	20	20	20
<b>LOM Capital</b> <i>(inclusive of initial capital)</i>	A\$M	230	230	230	230
<b>Operating costs plus royalties</b>	A\$M	950	960	970	980
<b>Pre-tax cashflow</b>	A\$M	110	300	490	680
<b>Pre-tax NPV</b> <i>(8% discount rate)</i>	<b>A\$M</b>	<b>60</b>	<b>190</b>	<b>320</b>	<b>440</b>
<b>IRR</b>	%	44	115	203	316
<b>C1 cash cost</b> <i>(Ni in concentrate basis)</i>	A\$/lb Ni	2.70	2.70	2.70	2.70
	US\$/lb	2.00	2.00	2.00	2.00
<b>Operating cash costs</b> <i>(payable Ni basis)</i>	A\$/lb Ni	4.50	4.50	4.60	4.70
	<b>US\$/lb</b>	<b>3.30</b>	<b>3.30</b>	<b>3.40</b>	<b>3.40</b>
<b>Sustaining cash costs</b> <i>(payable Ni basis)</i>	A\$/lb Ni	6.00	6.00	6.10	6.10
	US\$/lb	4.40	4.40	4.50	4.50

- Low pre-production capital costs
- Competitive cash operating costs (second quartile)
- Project would deliver very attractive returns on investment at forecast long run US\$ Ni prices and US\$:A\$ exchange rates
- Significant leverage to by-product credits
  - Copper
  - Cobalt



# Geology & Resources



# Geology - Ni-Cu-Co rich massive sulphide mineralisation

Two discrete zones of mineralisation:

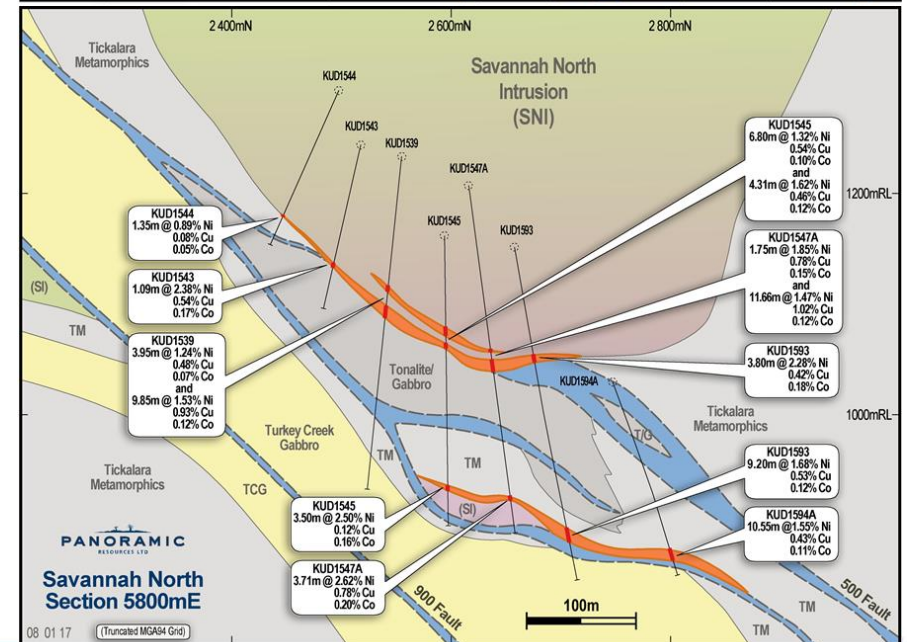
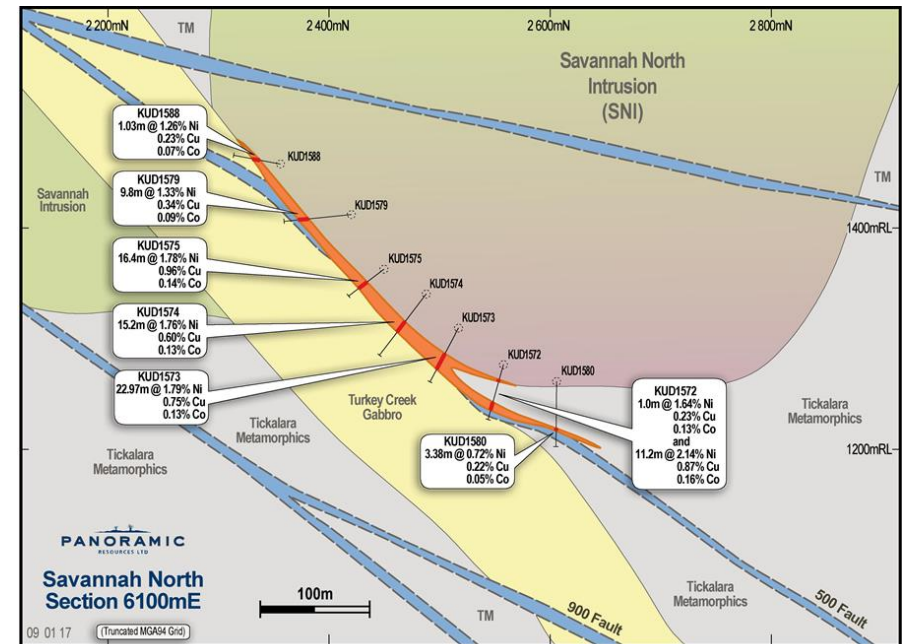
## ■ Upper Zone

- Mineralisation developed at basal contact of SNI
- Typically 5-8m thick (up to 15-20m)
- Dip 5-40 degrees north
- Open up-dip to east and along strike to west

## ■ Lower Zone

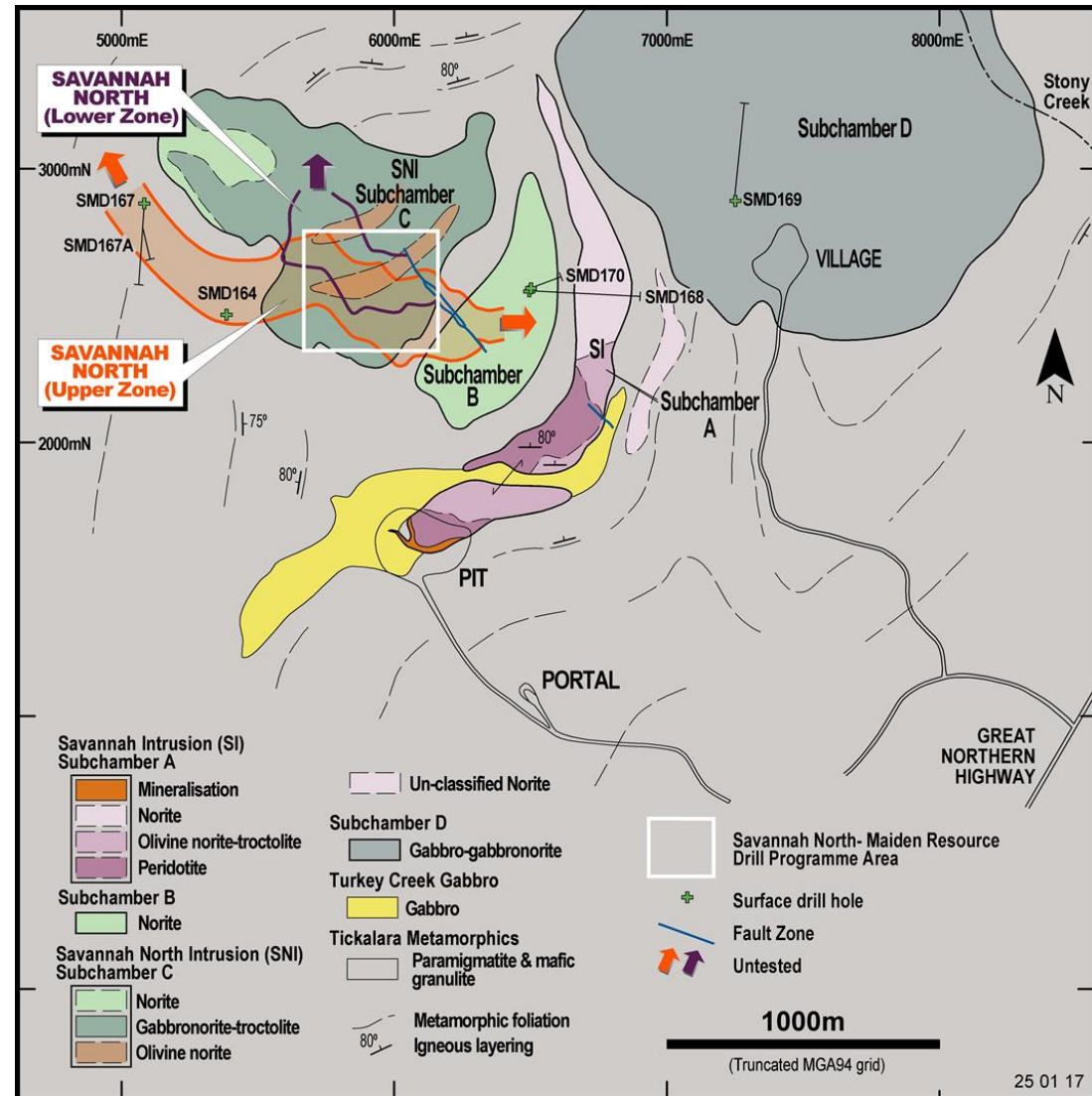
- Consistent zone of higher grade, off-contact massive sulphide mineralisation
- Up to 15m thick
- Dip 50-60 degrees northwest
- Open to the northwest

- Drilling and EM surveys conducted to-date, suggest the potential strike length of the Savannah North system is approximately 2km



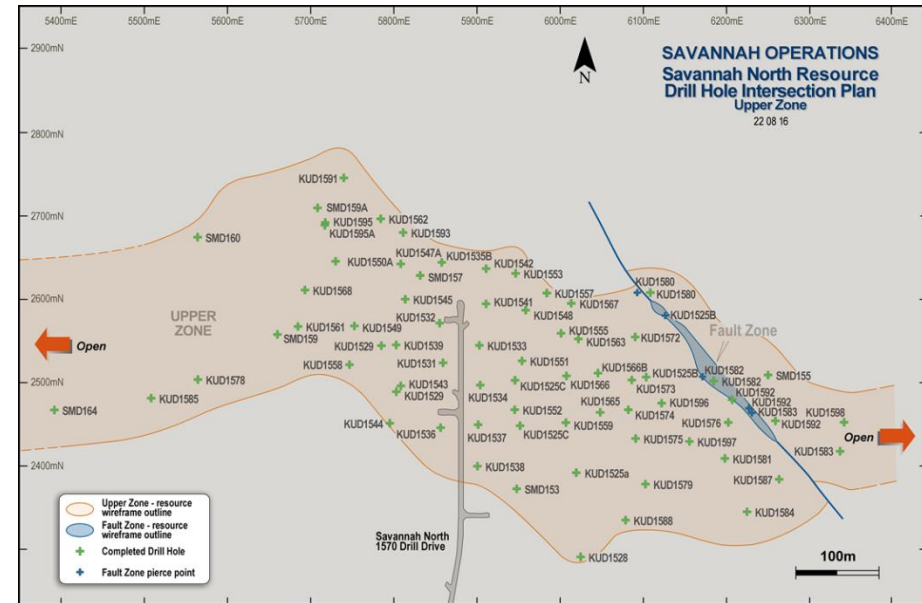
# Upside – potential 2km strike length of mineralisation

- The potential strike length of the Upper Zone is currently understood to be ~2km based on the large, highly conductive on-hole EM responses identified in surface drill holes:
  - SMD164, Section 5400mE
  - SMD167 & SMD167A, Section 5100mE
- Less than 35% of the potential Upper Zone mineralisation has been tested by resource drilling
- The Lower Zone Resource remains open down dip to the northwest
- The 2016 Resource drilling program has not closed off the mineralisation

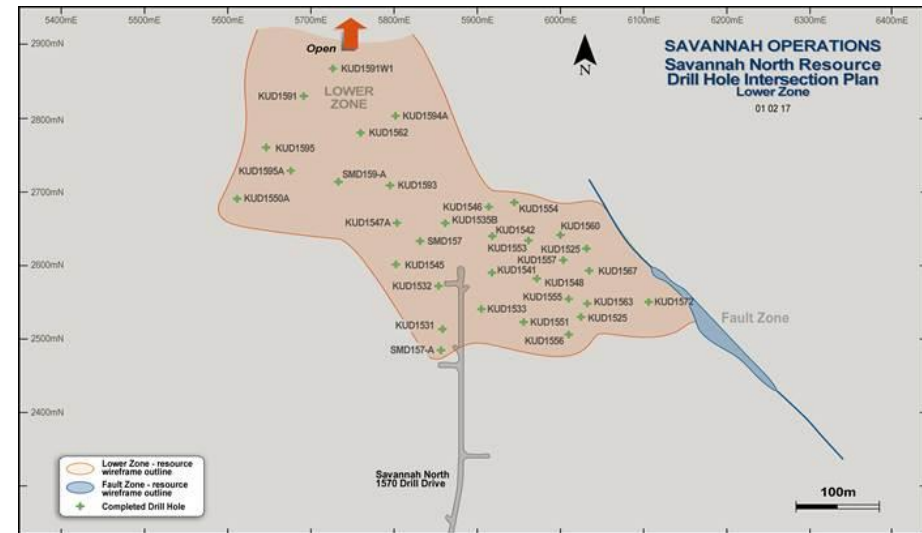


# Resources

- Major Resource upgrade\* for Savannah North delivered in August 2016
  - 10.27Mt @ 1.70% Ni, 0.72% Cu, 0.12% Co containing
    - 175,100t Ni
    - 74,400t Cu
    - 12,700t Co
- Total Savannah Project Resource\* is
  - 13.9Mt @ 1.63%Ni, 0.75% Cu, 0.11% Co containing
    - 226,400t Ni
    - 104,700t Cu
    - 15,300t Co
- Upgraded Resource for Savannah North, plus Savannah above 900F used for Savannah FS



Savannah North Upper Zone Resource and drillhole pierce points

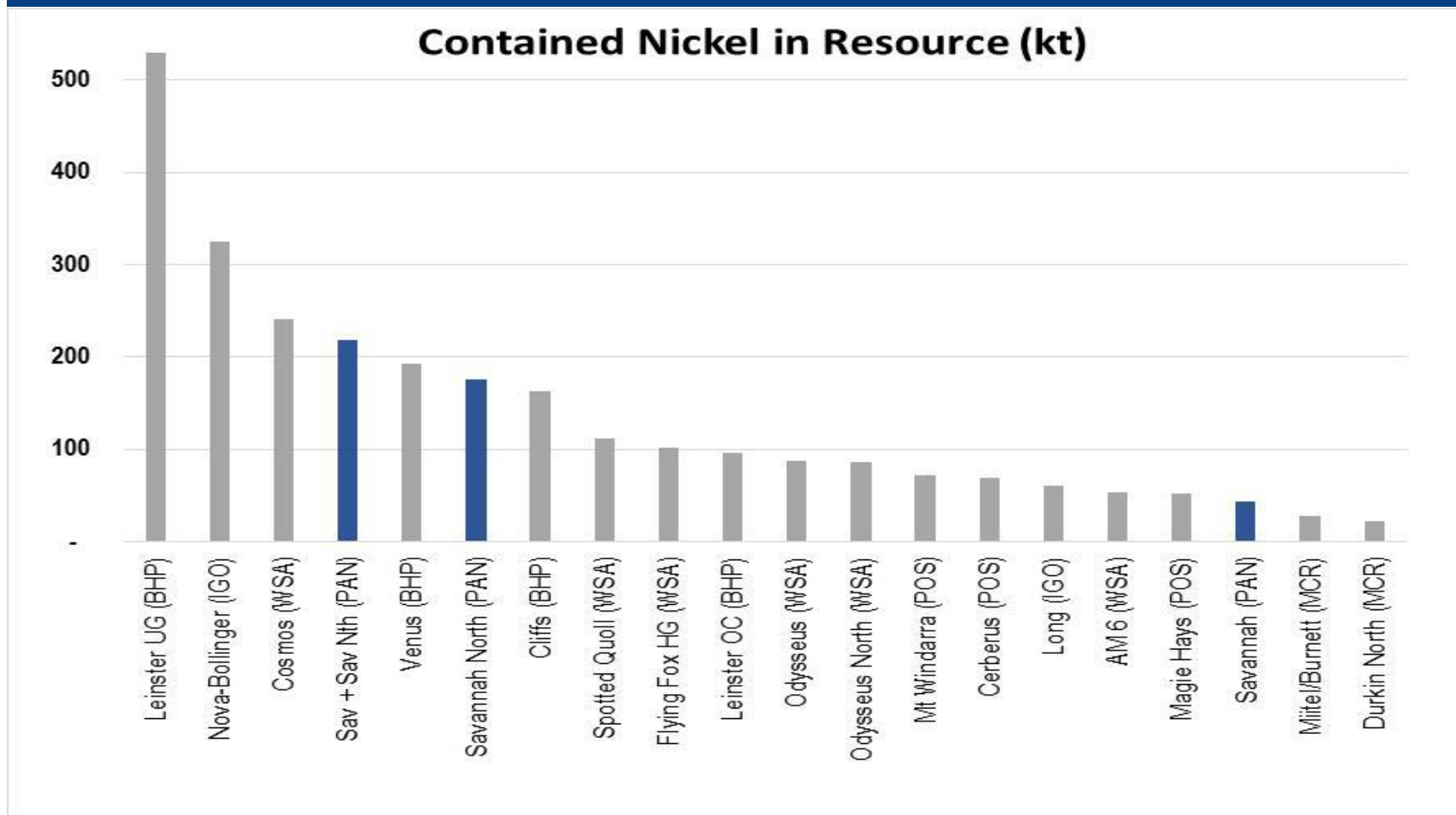


Savannah North Lower Zone Resource and drillhole pierce points

\*Refer to the Appendix and the Company's ASX Announcement of 24 August 2016

# Savannah + Savannah North – a significant Resource

## Australian medium to high-grade nickel sulphide deposits



Source from various company ASX releases



# Mining & Processing

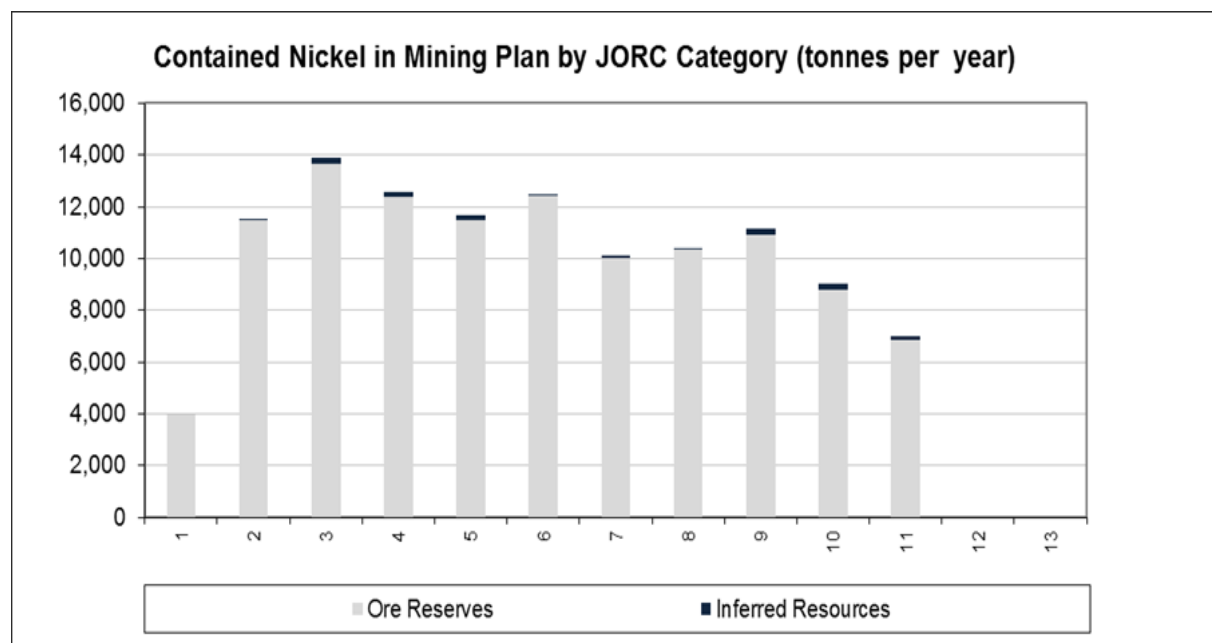
# Mined Material

	Mineralised Material Mt	Grade Ni %	Grade Cu %	Grade Co %	Contained Ni t	Contained Cu t	Contained Co t
<b>Ore Reserves</b>	8.18	1.37	0.65	0.09	112,400	53,200	7,600
<b>Inferred Resource</b>	0.07	1.85	0.67	0.13	1,300	500	100
<b>Total</b>	<b>8.25</b>	<b>1.38</b>	<b>0.65</b>	<b>0.09</b>	<b>113,700</b>	<b>53,700</b>	<b>7,700</b>

- The mine plan only has ~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.



# Ore Reserves

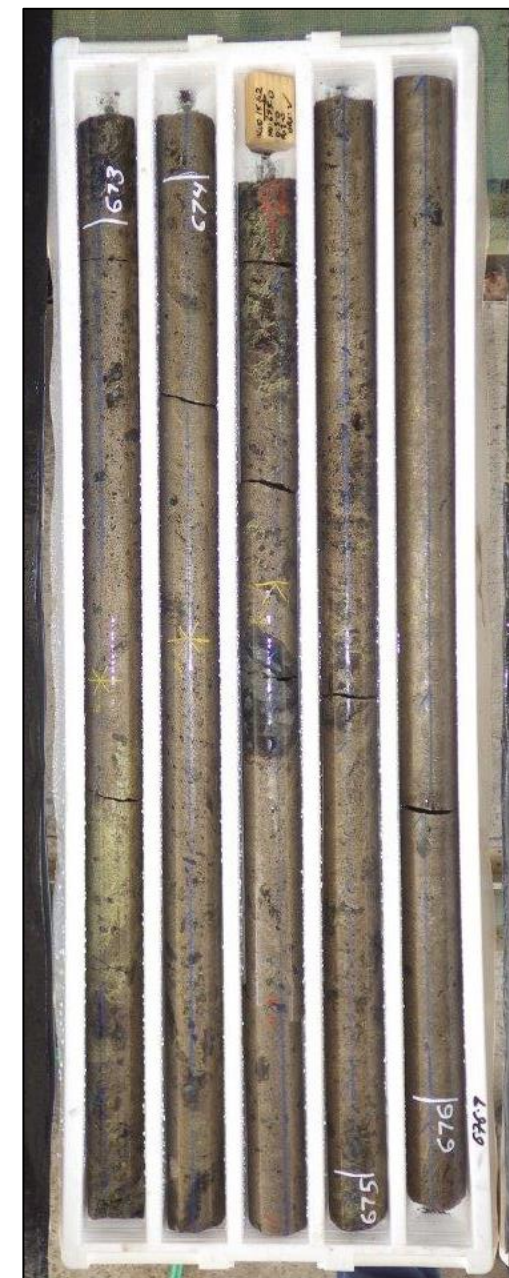
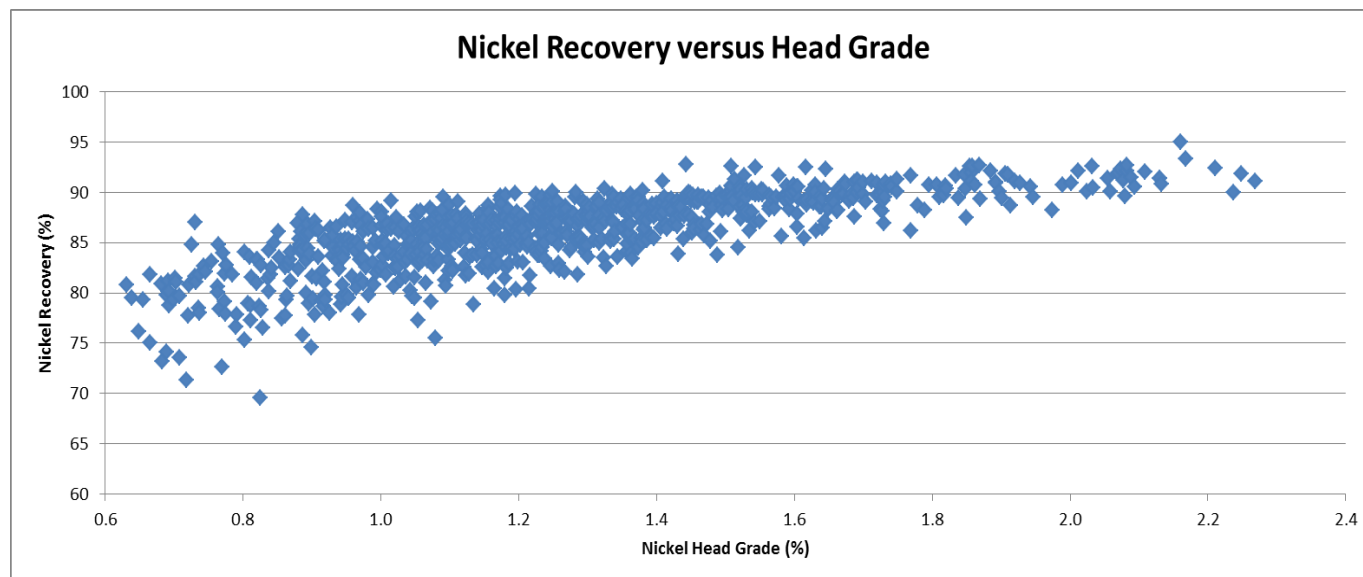
- **Total Savannah Ore Reserve**
  - 8.21Mt @ 1.37% Ni, 0.64% Cu, 0.09% Co
  - 112,600t Ni, 52,400t Cu, 7,600t Co
- **Maiden Savannah North Ore Reserve\***
  - 6.65Mt @ 1.42% Ni, 0.61% Cu , 0.10% Co
  - 94,500t Ni, 40,900t Cu, 6,700t Co
  - Classified as Probable under JORC 2012

## Savannah Project – Ore Reserves as at 2 February 2017\*

Reserve	Metal	Date of Reserve	JORC Compliance	Proven		Probable		Total		Metal Tonnes
				Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	
Above 900 Fault	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
Savannah North	Nickel	Jan-17	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
<b>Total</b>	<b>Nickel</b>							<b>8,208,000</b>	<b>1.37</b>	<b>112,600</b>
	<b>Copper</b>								<b>0.64</b>	<b>52,400</b>
	<b>Cobalt</b>								<b>0.09</b>	<b>7,600</b>

# Metallurgy

- **Savannah North Mineralogy**
  - pyrrhotite-dominant sulphides with sub-ordinate pentlandite and chalcopyrite
  - similar mineralogy to Savannah ore
- **Savannah North flotation testwork**
  - conducted at Savannah using composite samples from Upper and Lower Zones
  - results showed both Zones performed within the range of typical Savannah ore
  - additional testwork underway now at ALS
- **Analysis of historical Savannah production data**
  - consistent relationship between nickel recovery, head grade and concentrate grade
  - best-fit recovery equation developed for the range of expected nickel head grades and targeted concentrate grade of 8% Ni
  - per shift data for 12 years

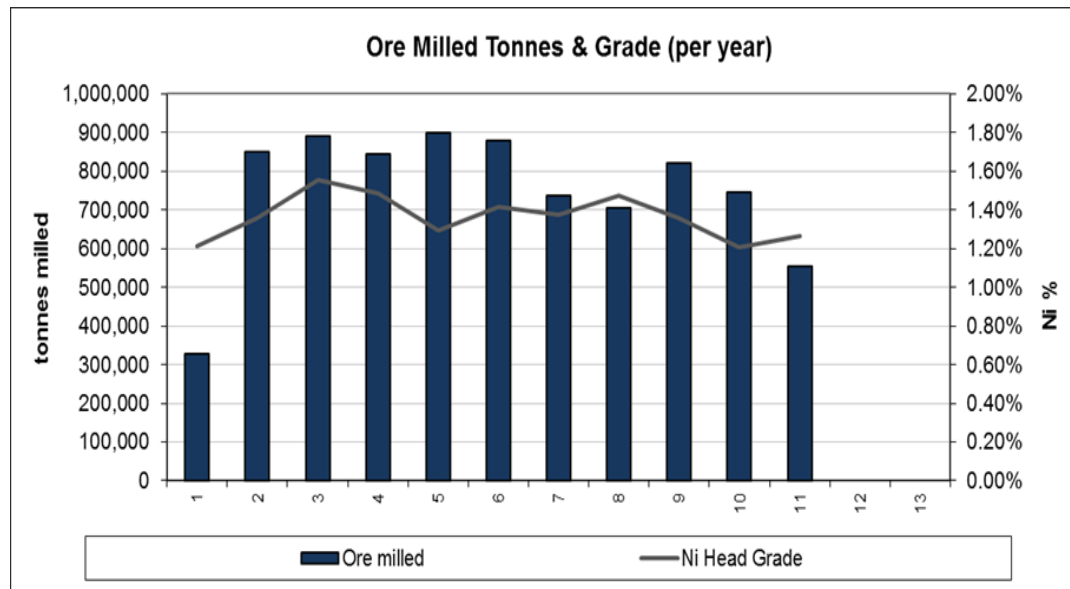


UD1562 intersection between 672.2 – 676.9m  
1.70m @ 2.28% Ni, 1.06% Cu, 0.15% Co



# Processing

- **Utilise existing Savannah processing plant**
  - Conventional crushing, grinding, flotation
  - Nominal throughput capacity 1.0Mtpa
  - Operated continuously for 12 years
- **Forecast mill throughput:**
  - Life-of-mine average 0.8Mtpa
  - Higher throughput of 0.875Mtpa in the first five years
  - Averaging 0.75Mtpa in later years
  - **Life-of-mine head grade averages 1.38% Ni**
  - Lower grades in Year 1, associated with the remnant Ore Reserves at Savannah
- **Processing recoveries**
  - 87% Ni
  - 96% Cu
  - 90% Co
  - Based on historic Savannah plant performance and targeting 8% Ni concentrate grade



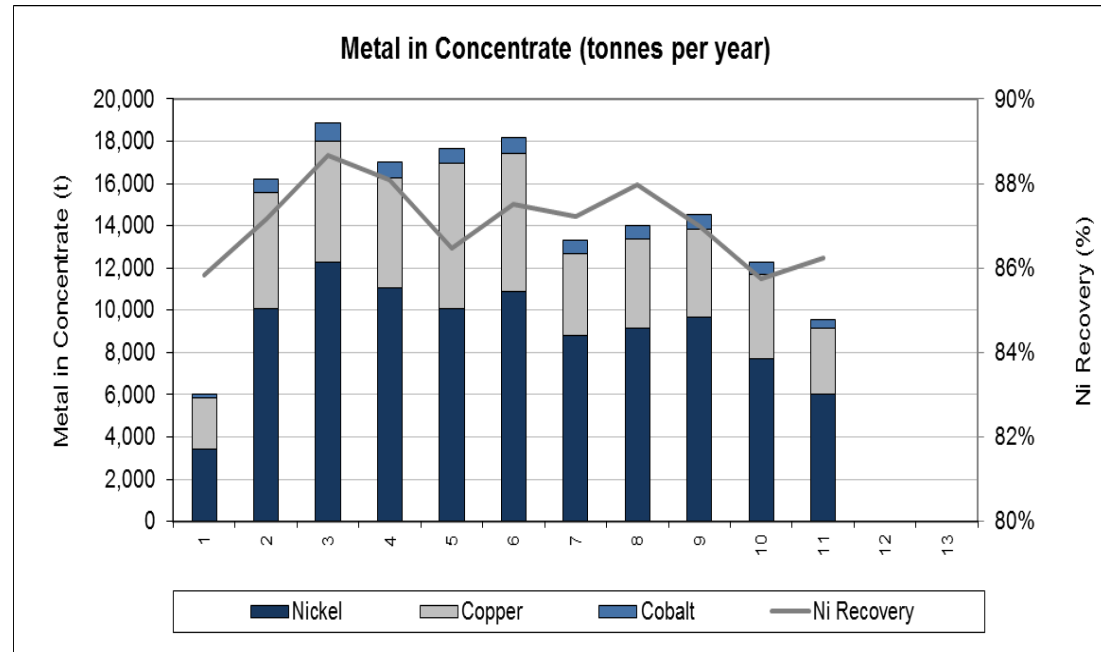
# Concentrate Production

## ■ Product

- Bulk Ni-Cu-Co concentrate
- Minimum grade of 8% Ni
- Prior to going into C&M, the Savannah plant averaged 9% Ni in concentrate

## ■ Metal in concentrate production

- Annual average
  - 9,700t Ni
  - 5,000t Cu
  - 670t Co
- Nickel in concentrate in the first five years averaging 10,900t Ni
- Peaking at 12,300t Ni in Year 3
- Over life of mine
  - 99,200t Ni
  - 51,500t Cu
  - 6,900t Co



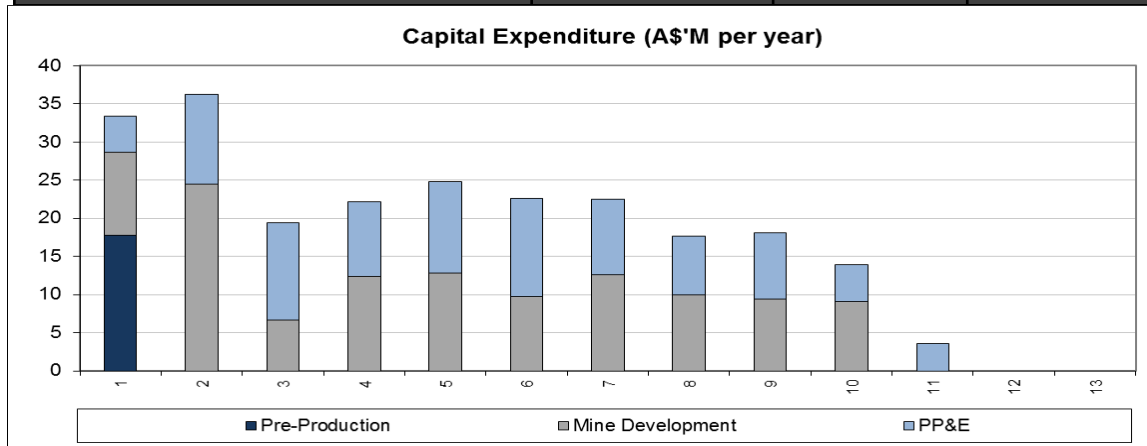


# Estimated Costs & Project Economics

# Capital Costs

- **Low up-front capex of ~A\$20M due to:**
  - Substantial existing infrastructure
  - Short lead time to production
- **Capitalised mining costs**
  - \$2M per month for initial 18 months
  - \$11M for primary ventilation (raise bore)
  - \$12M for lateral development
  - \$10M pa thereafter
- **General sustaining PP&E capital expenditure**
  - \$10Mpa (average)
  - \$98M over life of mine
  - \$42M for leasing and major refurbishment
  - Major one-off capital items
    - \$6.3M for primary ventilation fan
    - \$9.2M for future tailings storage facilities
    - \$7.0M for capping of TSF1 and reshaping the North Waste Dump
- LOM capital estimate does not include closure costs, apart from capping of TSF 1 and reshaping North Waste Dump

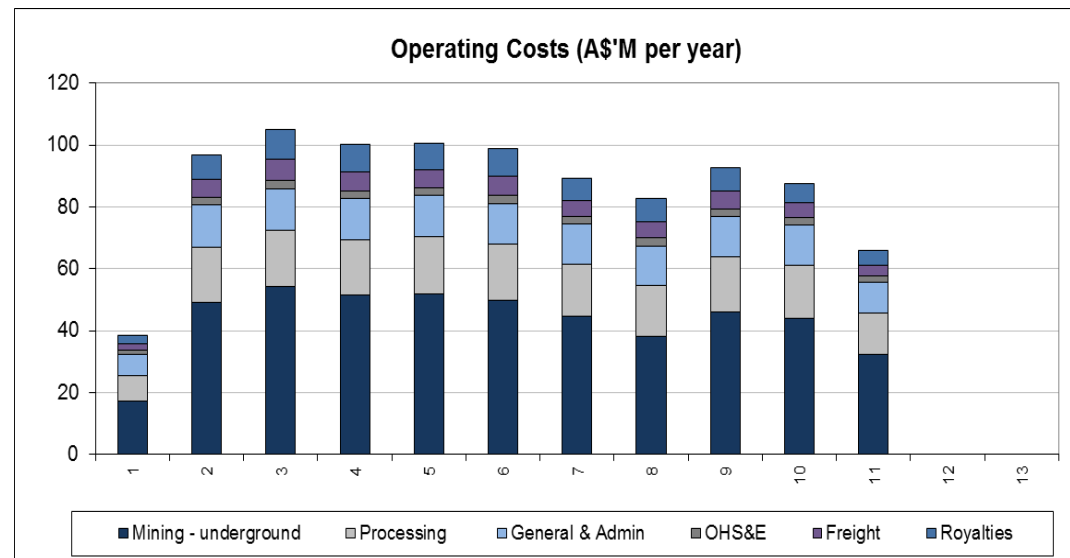
Description	Pre-production \$M	Sustaining \$M	Life of Mine \$M
<b>Pre-Production</b>	<b>17.8</b>	<b>-</b>	<b>17.8</b>
Refurbishment Capex	7.3	-	7.3
Initial Store Inventory	2.0	-	2.0
Capitalised Pre-Production Opex	8.4	-	.4
<b>Mining Development</b>	<b>-</b>	<b>118.2</b>	<b>118.2</b>
Capitalised Development	-	118.2	118.2
<b>Property, plant and equipment</b>	<b>-</b>	<b>98.5</b>	<b>98.5</b>
Mining - Mobile Equipment	-	42.1	42.1
Savannah North primary ventilation	-	6.3	6.3
Tailings facilities construction	-	9.2	9.2
TSF 1 capping	-	7.0	7.0
Other sustaining capital	-	33.9	33.9
<b>TOTAL</b>	<b>17.8</b>	<b>216.7</b>	<b>234.5</b>



# Operating Costs

- **Globally competitive cash costs due to a combination of:**
  - low cost open stope mining
  - conventional processing methods
- **High confidence in cost estimates** based on historical data from twelve years of operations at Savannah
- **Unit costs** - based on recent invoice pricing and current/recent contractor quotes
- **Employment-related costs** - 25% of total operating costs
- **Power and fuel** - 16% of costs largely due to diesel consumption for on-site power generation

Description	LOM cost per tonne milled (A\$/t)
Mining (including Geology)	58
Processing	22
General & Administration	16
OHS&E	3
Concentrate Transport	7
Royalties	10
<b>Total</b>	<b>116</b>

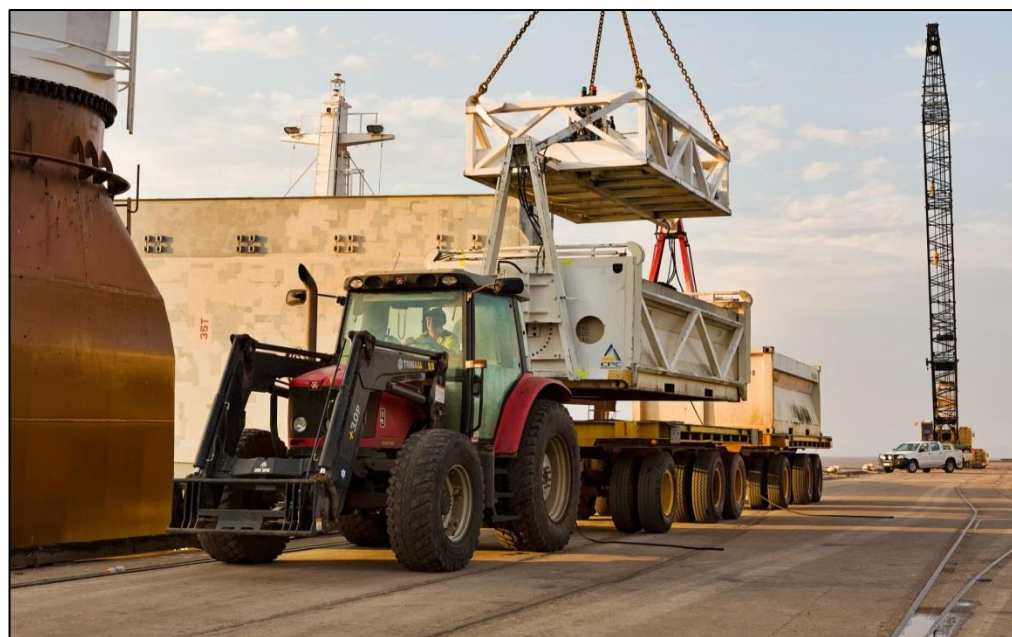


# Financial Assumptions

- Revenue Assumptions based on:
  - Existing Concentrate Sales Agreement which runs until April 2020
  - Terms after April 2020 assumed to be in line with the existing Agreement
- Commodity and FX forecasts

Commodity	Value
Nickel	US\$6.00/lb
Copper	US\$2.57/lb
Cobalt	US\$14.42/lb
US\$:A\$	0.736
Discount rate	8%

- Modelling is pre-tax
- **Tax losses of \$65M** - at 31 December 2016 PAN had accumulated tax losses of approximately \$65M (not included in modelling)

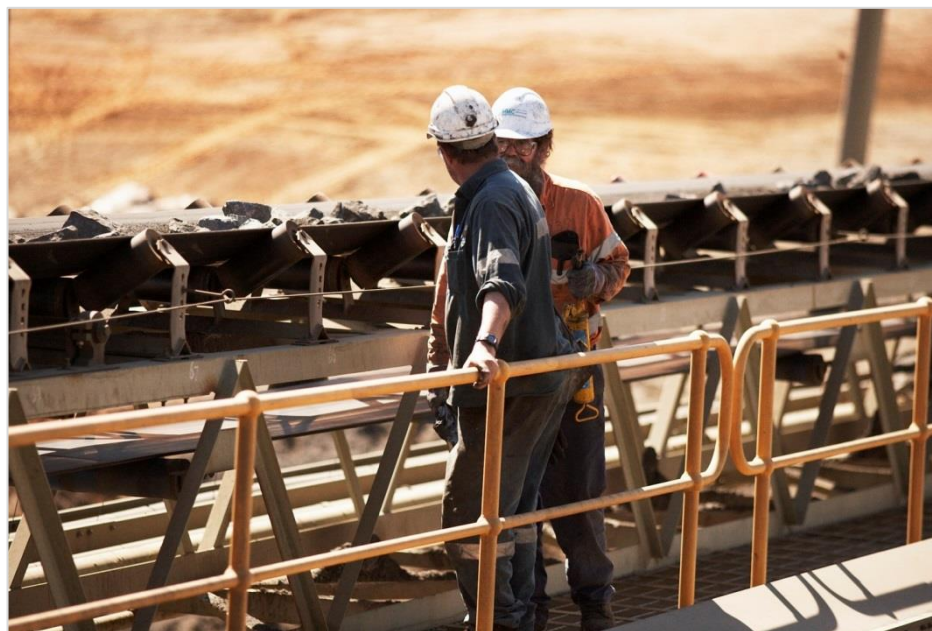
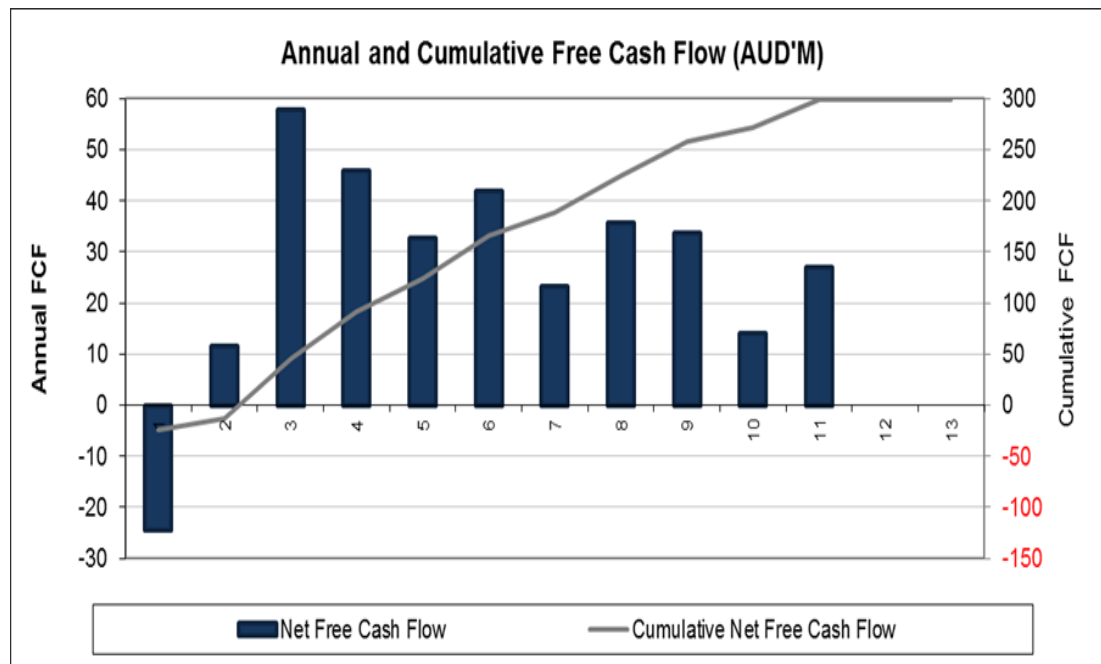


## Financial Results – looks very good at >US\$5.50/lb Ni

Financial Metrics	Units	US\$5.00/lb	US\$6.00/lb	US\$7.00/lb	US\$8.00/lb
<b>Revenue</b>	A\$M	1,300	<b>1,500</b>	1,700	<b>1,900</b>
<b>Initial Capital</b> <i>(Pre-production)</i>	A\$M	20	<b>20</b>	20	<b>20</b>
<b>LOM Capital</b> <i>(inclusive of initial capital)</i>	A\$M	230	<b>230</b>	230	<b>230</b>
<b>Operating costs plus royalties</b>	A\$M	950	<b>960</b>	970	<b>980</b>
<b>Pre-tax cashflow</b>	A\$M	110	<b>300</b>	490	<b>670</b>
<b>Pre-tax NPV</b> <i>(8% discount rate)</i>	A\$M	60	<b>190</b>	320	<b>440</b>
<b>IRR</b>	%	44	<b>115</b>	203	<b>316</b>
<b>C1 cash costs</b> <i>(Ni in concentrate basis)</i>	A\$/lb Ni	2.70	<b>2.70</b>	2.70	<b>2.70</b>
	US\$/lb	2.00	<b>2.00</b>	2.00	<b>2.00</b>
<b>Operating cash costs</b> <i>(payable Ni basis)</i>	A\$/lb Ni	4.50	<b>4.50</b>	4.60	<b>4.70</b>
	US\$/lb	3.30	<b>3.30</b>	3.40	<b>3.40</b>
<b>Sustaining cash costs</b> <i>(operating cash costs plus sustaining capital, payable Ni basis)</i>	A\$/lb Ni	6.00	<b>6.00</b>	6.10	<b>6.10</b>
	US\$/lb	4.40	<b>4.40</b>	4.50	<b>4.50</b>

# Cashflow Forecast

- LOM pre-tax cashflow\* - \$300M
- Up-front capex - \$20M
- Maximum funding drawdown - \$30M
- Payback period - less than 2 years
- Cash breakeven Ni price - US\$4.40/lb
- Ni price required for a 20% sustaining cost margin - US\$5.50/lb
- Costs in second quartile of nickel industry cost curve



\* Base case US\$6/lb Ni



# Huge leverage to the Ni price and currency

- **Strongly leveraged to the nickel price and US\$:A\$**
  - US\$1.00/lb increase in Ni price adds ~**A\$125M** to pre-tax NPV
  - A\$0.05 cent decrease in the US\$:A\$ exchange rate adds ~**A\$60M** to pre-tax NPV
- **RBC forecasting\***
  - **US\$6/lb** in 2018
  - **US\$7/lb** in 2019
  - **US\$10/lb** in 2020
  - **US\$8.00/lb** long term

Pre-tax NPV <sub>8</sub> (\$'M)		Nickel Price US\$/lb)				
		4.00	5.00	6.00	7.00	8.00
US\$:A\$ FX Rate	0.60	62	217	372	528	683
	0.65	10	153	297	440	583
	0.70	-35	98	232	365	498
	0.75	-73	51	175	300	424
	0.80	-107	10	126	243	359

\* Source: RBC Metal Prospects Nickel Market Outlook – First Quarter 2017”, dated 30 January 2017



# Next Steps

# Feasibility Study Optimisation

## Workstreams over next 1-3 months

- **Mine planning and scheduling** – detailed review of alternative stope shapes, cut-off grade, and scheduling to lower unit costs, increase production rates and/or improve mined grades
- **Mining productivity** – review opportunities around waste backfill and haulage, shaft versus decline haulage, driverless trucks, hybrid electric/diesel vehicles
- **Product optimisation** – testwork on fine grinding and circuit reconfiguration to improve Ni concentrate grade and recovery. Determine viability of producing split Ni/Co and Cu concs.
- **Power** – the Savannah FS is based on utilising the existing diesel fired power station. Study and cost alternative power options may include solar, gas or a hybrid.
- **Contractor services** – rationalise the number of services currently provided by contractors (ie. camp services, power generation, concentrate haulage, inbound freight, underground mining services, core drilling)
- **Employment and procurement** – utilise local employment and service providers where possible

## Workstreams over next 12 months

- **Growth Resources** – <35% of the potential 2km mineralisation footprint has been tested
- **Matte** – study opportunity to produce Ni/Cu/Co matte in Kimberley (ie. TSL technology)

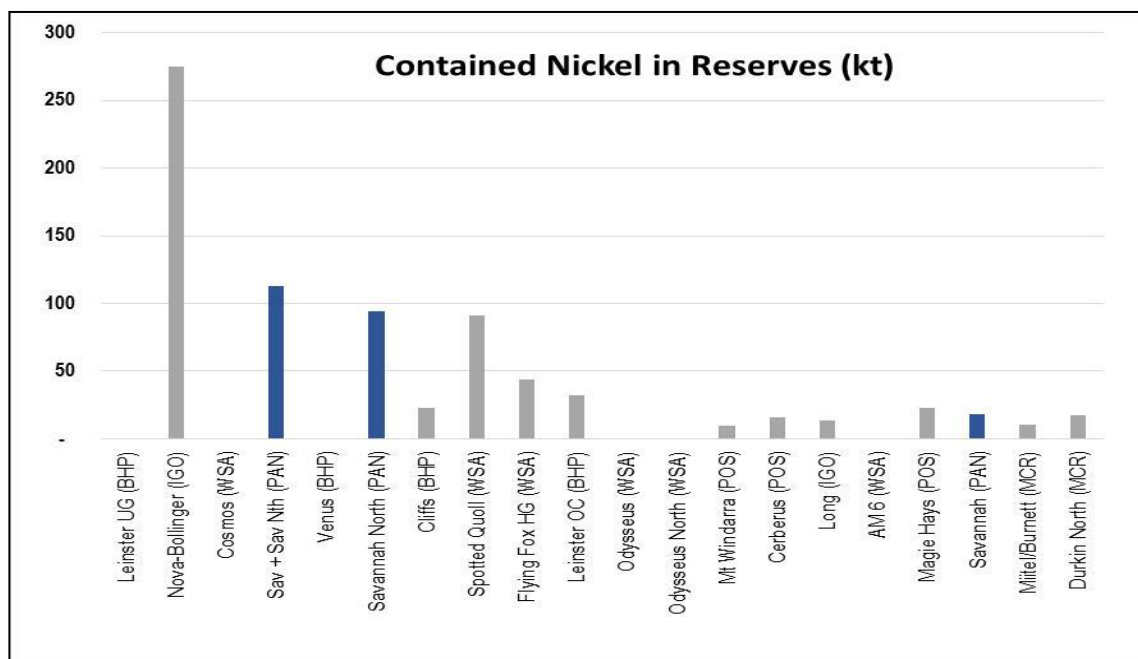
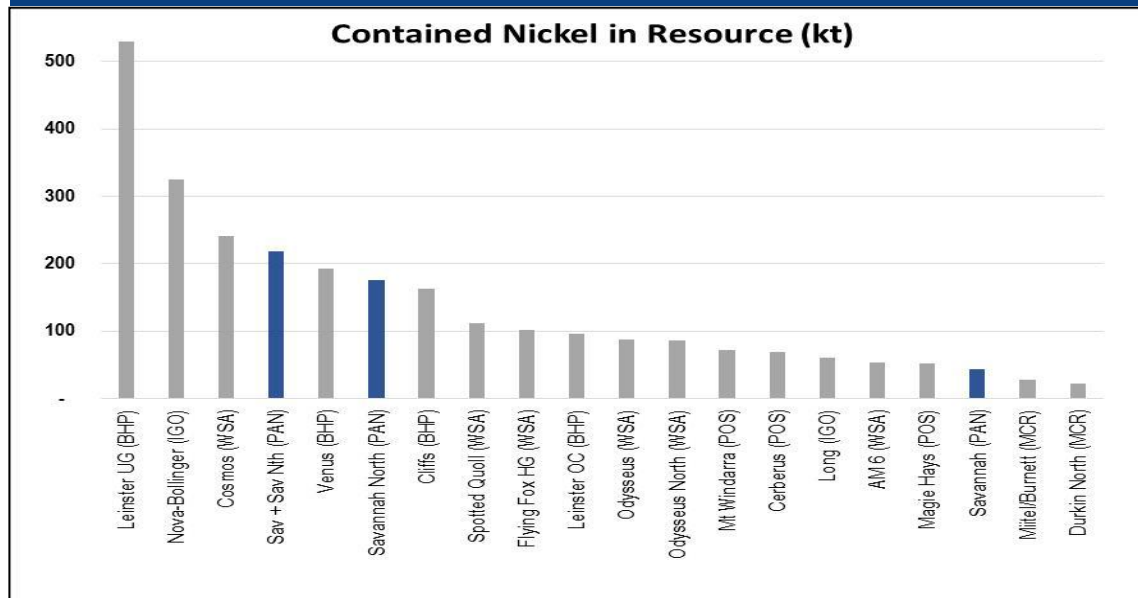


# Summary

# Summary

- Savannah North is a significant Australian nickel sulphide project
- **+10 years of Reserves** most in project's history
- Globally competitive C1 cash costs of **US\$3.30/lb payable Ni**
- **Low re-start capex** only \$20M
- Maximum cash negative **only \$30M**
- **Short timeframe to production** leveraging off existing Savannah infrastructure
- Significant leverage to nickel, copper and cobalt price rises
- Significant opportunities to optimise the project
- Excellent potential for further exploration success and mine life extension

## Australian medium to high-grade nickel sulphide deposits



Source: Various company ASX Announcements



**ASX : PAN**

**[www.panoramicresources.com](http://www.panoramicresources.com)**

### **Mission Statement**

We strive to achieve excellence in all aspects of our business to provide long term capital growth and dividend return to our shareholders, a safe and rewarding work environment for our employees, and opportunities and benefits to the people in the communities we operate in.



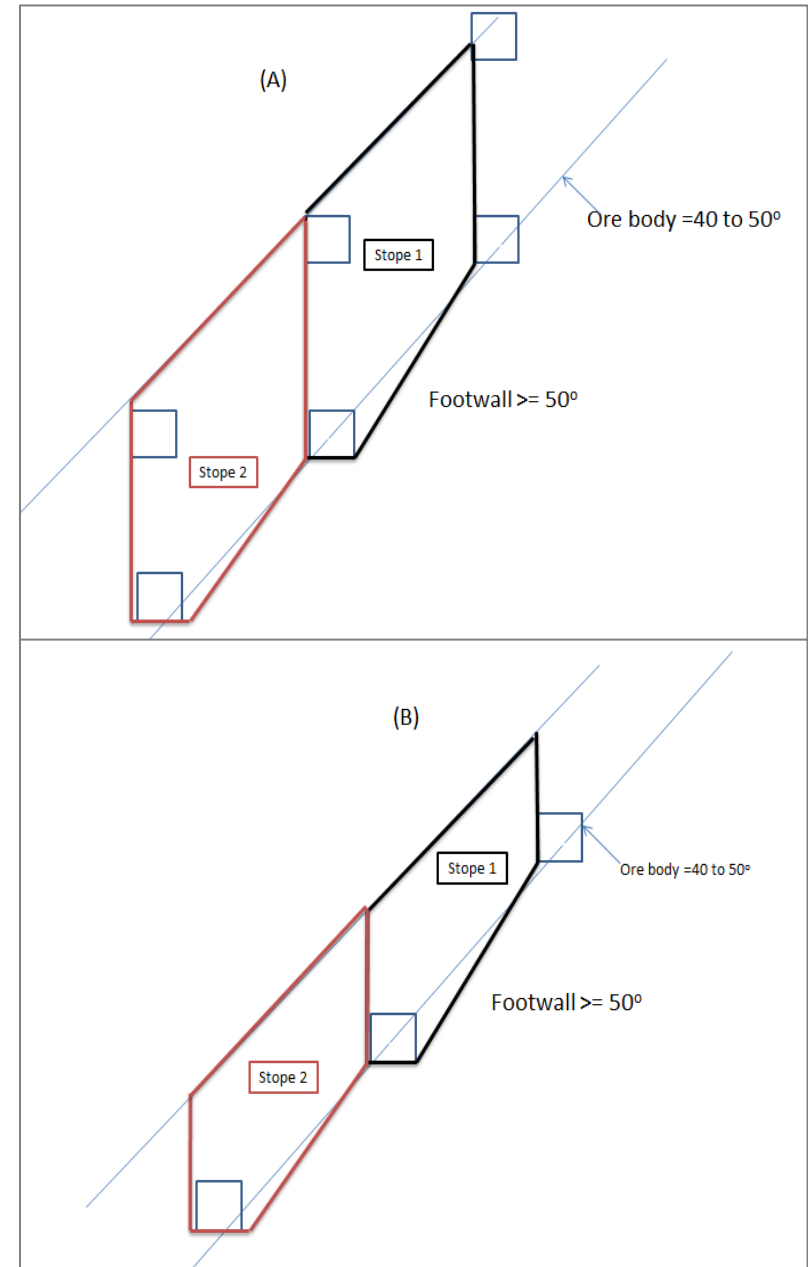
# Appendices

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

# Mine Design

<b>Mining Method</b>	Long hole open stoping
<b>Sub-level interval</b>	20m
<b>Minimum footwall angle</b>	50 degrees
<b>Minimum mining width</b>	3m
<b>Stope dilution</b>	10-20%
<b>Stope mining recovery</b>	80-90%
<b>Development dilution</b>	10%
<b>Development recovery</b>	95%

- A range of different sequencing and mine design options were considered for Savannah North including:
  - accessing the deposit at either the 1380-1360 level or top-down
  - “centre out” versus “east to west stope retreat” sequences
  - “centre out” option was selected as the preferred option



Stope shapes for wide (>15m) ore zones (A) and narrow (<15m) ore zones (B)



# Mine Scheduling

Ore mining	85,000t per month
Paste curing time	7 days
Paste fill rate	1,000m <sup>3</sup> per day, with a monthly cap of 23,000m <sup>3</sup>
Bogging rate	1,000t per day
Jumbo development rate	500m per month, with a limit of 100m per heading per month
Production drilling	300m per day

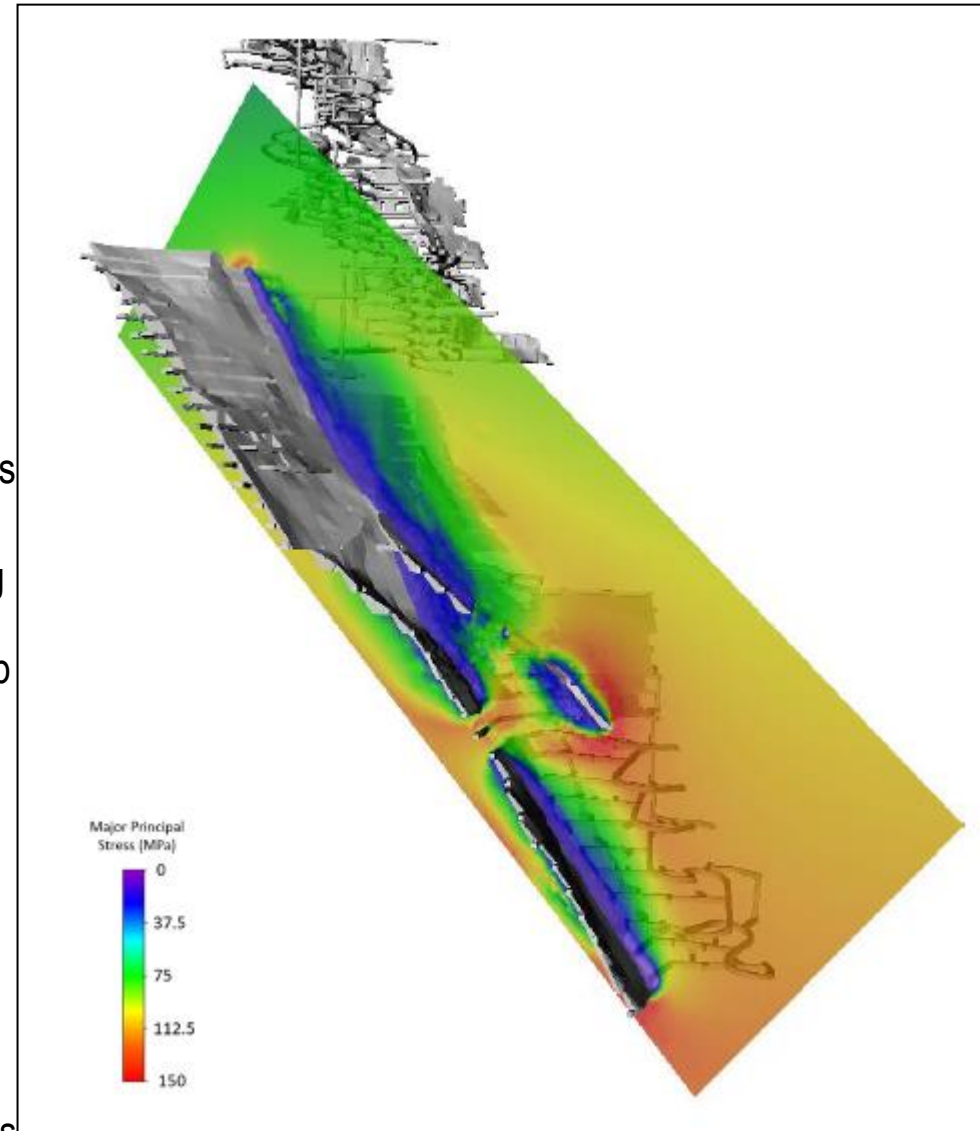


- **Various rate parameters tested** - paste curing time, paste fill rate, bogging rate, production drilling rate and jumbo development rate
- **Maximum rate** - 85,000t ore per month, reflecting current mill capacity (~1Mtpa)
- **Timing scenarios considered including**
  - recommencing mining at Savannah concurrently with development to Savannah North
  - delaying mining at Savannah until access development to Savannah North is complete
- **Outcome** - concurrent development option has the clear advantage of being cash-generating almost immediately, and is therefore the most appropriate schedule for the Savannah FS

# Geotechnical

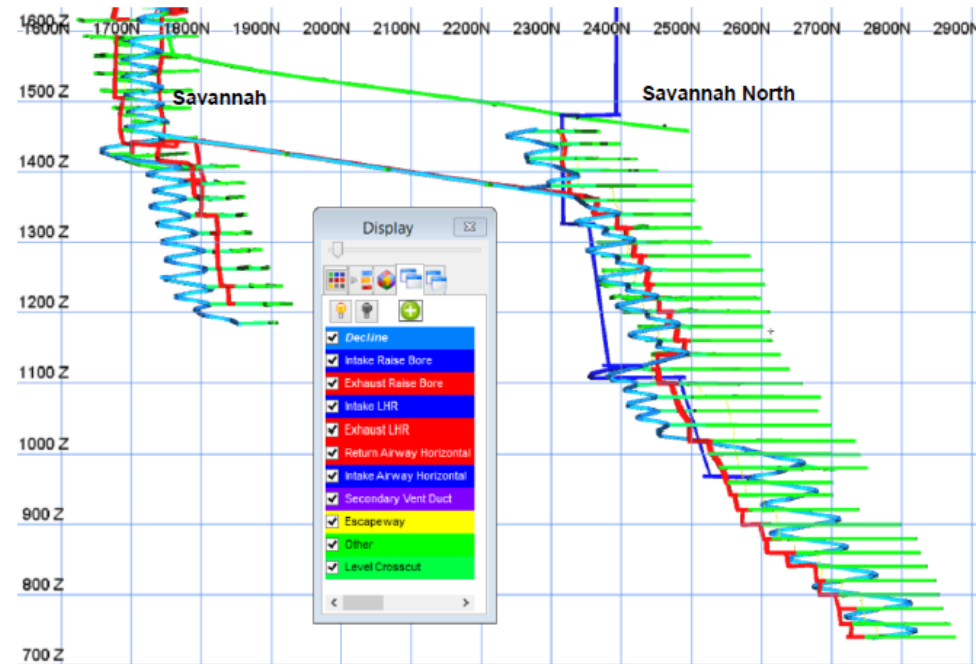
- Beck Engineering using Discontinuum Finite Element method
- **Two mining sequences modelled**
  - “centre out” and “east to west stope retreat” sequences
  - no definitive geotechnical difference between mining sequences as both maintain an inclined continuous mining front and avoid retreating to pillars.
- **Upper Zone is expected to have good mining conditions**
  - some localised areas of potential rock mass damage
  - at 1300m below surface there is potential for increased footwall and hanging wall damage, due to increasing stress with depth
  - geotechnical risks can be mitigated by stope design taking into account geological structures, hanging wall shape, hanging wall ground support & consideration for leaving rib pillars, if dilution is increased
- **Lower Zone has more challenging mining conditions**
  - due to the magnitude of the stress forecast with depth and the current understanding of the rock mass strength
  - to counter this stoping dilution was increased from 10% to 20% and stope mining recovery reduced from 90 to 80%
  - the “centre out” stoping sequence was confirmed as the preferred option as it maximises the stoping areas per level, reduces pressure on decline development and allows more time to assess geotechnical risks before developing the Lower Zone

## Geotech modelling

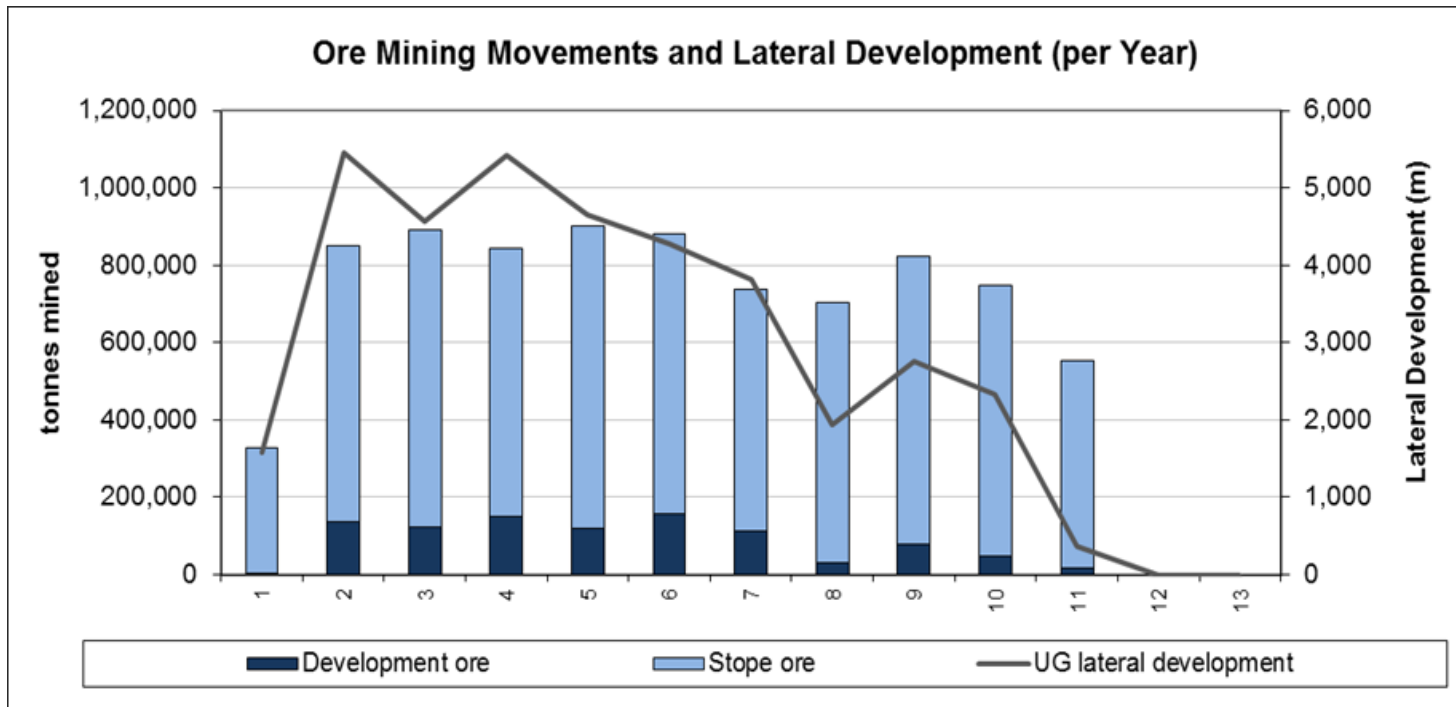


# Ventilation

- Ventilation study by Ozvent
- **Recommended airflow strategy**
  - establishing air-change locations along the decline where hot air is replaced with fresh chilled airflow from FARs
  - a new Savannah North surface FAR and the conversion of Savannah FAR2 to a RAR (with a new primary ventilation fan) are required
  - max airflow rate of  $530\text{m}^3/\text{s}$  is required by Year 5
  - establishment of the Savannah North FAR and conversion of Savannah FAR2 to an RAR is required for full production from Sav Nth ( $450\text{m}^3/\text{s}$ )
  - Savannah North surface FAR preferred option is a 900m long, 5m diameter shaft to the 1570 exploration drive with a separate 100m extension to the initial stoping level
- Construction of the Savannah North surface FAR and new surface fan to convert FAR2 to an RAR will be prioritised
- Exhaust airflow transfer from Savannah North to Savannah is via an exhaust drive, which will be mined in parallel to and concurrently with the Sav Nth decline
- Cooling requirements are initially 6.0MW and increase up to 11MW at full LOM depth



# Mine Development and Production



- **Access development** - first ore from Savannah North ~9 months
- **Full production** - from Savannah North ~15 months after commencement of development
- **Total lateral development** - yearly maximum of 5.4km, above 4.5km for four years
- **Mining rates**
  - 0.8Mtpa over LOM
  - 0.87Mtpa in early years (max. 0.9Mtpa)
  - 0.75Mtpa in later years
- **Split of production** - 88% from conventional long-hole open stoping, balance from jumbo development
- **Upside** - production in later years may be supplemented from future resource growth

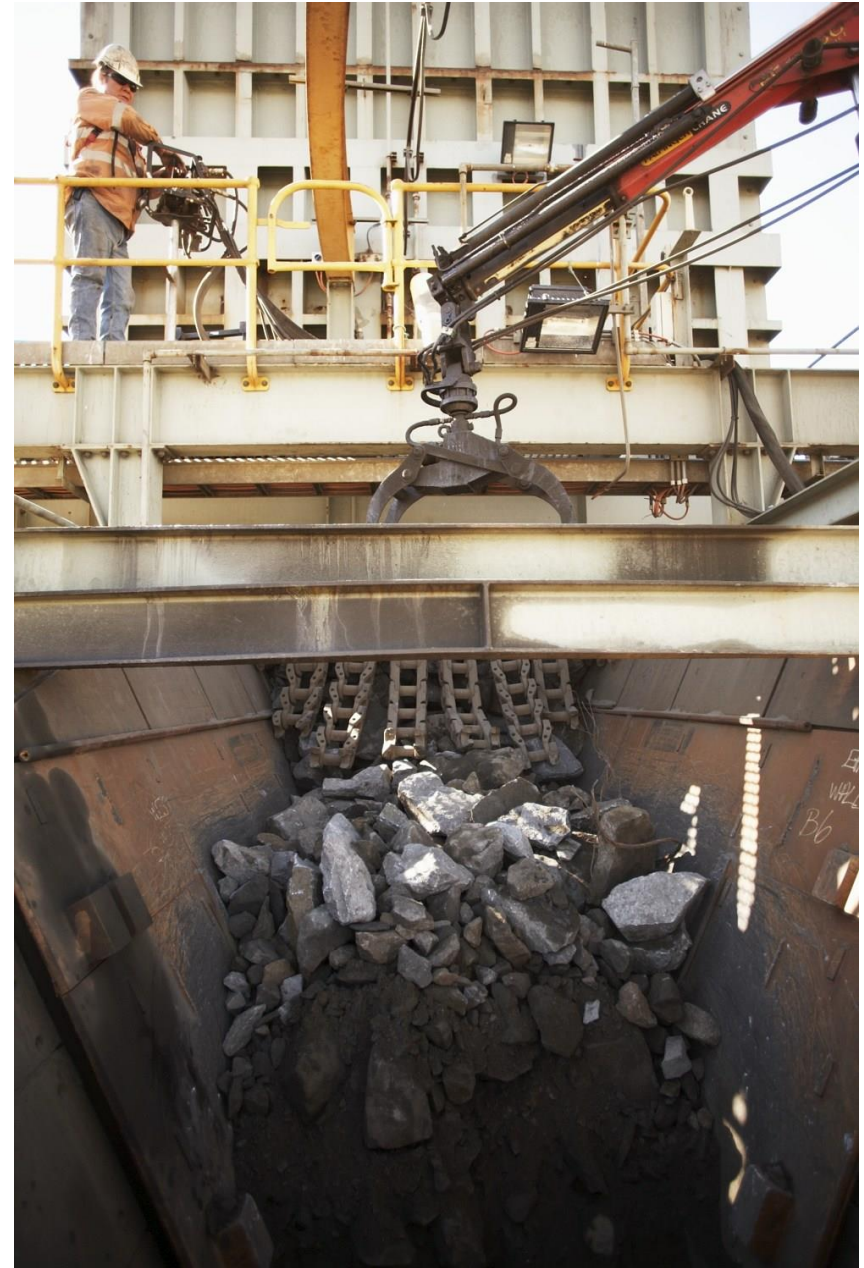
# Opportunities

- **Future Resource growth** – less than 35% of the potential 2km mineralisation footprint has been tested. Priority areas for potential resource additions include east and west extensions to the Upper Zone in close proximity to proposed development
- **Mine planning and scheduling** – review alternative stope shapes, cut-off grade, and scheduling to lower unit costs, increase production rates and/or improve mined grades
- **Mining productivity** – improved information management systems, waste backfill and haulage, shaft versus decline haulage, driverless trucks, hybrid electric/diesel vehicles
- **Product optimisation** – fine grinding and circuit reconfiguration to improve Ni concentrate grade and recovery. Opportunity to produce split Ni/Co and Cu concentrates and/or produce matte in the Kimberley (ie.TSL)
- **Power** – the Savannah FS is based on utilising the existing diesel fired power station. Alternative power options may include solar, gas or hybrid.
- **Contractor services** – rationalise the number of services to be provided by contractors (ie. camp services, power generation, concentrate haulage, inbound freight, underground mining services, core drilling)
- **Employment and procurement** – utilise local employment and service providers, where possible



# Risks

- **Geological model** - interpretation of number and location of major structures
- **Resource estimate** - wider hole spacing in Lower Zone c/f Lower Zone
- **Ventilation** - establishment of Savannah North FAR and its impact on transition from Savannah to Savannah North
- **Geotechnical** - risks associated with mining Savannah North, particularly the Lower Zone
- **Metallurgical** - risks associated with processing of Savannah North mineralisation
- **Recommissioning** - risks associated with re-establishment of underground workings and recommissioning of major plant and equipment
- **Maximum cash drawdown** - amount and timing of pre-production costs, production and development rates, and working capital movements over the initial 18 months
- **Costs** - unit costs, which are based on historical or recent actual Savannah costs, may not reflect the actual costs of mining and processing Savannah North ore
- **Concentrate marketing** - current Savannah concentrate offtake agreement expires in April 2020, and future renewals and applicable terms are subject to negotiation
- **Macro-economic** - commodity prices and exchange rate



# SAVANNAH PROJECT - MINERAL RESOURCES AS AT 24 AUGUST 2016\*

\*Refer to the Company's ASX Announcement of 24 August 2016

Resource	Metal	Resource Date	JORC	Measured		Indicated		Inferred		Total		Metal Tonnes
				Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	
<b>Savannah</b>												
Above 900F	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
Below 900F	Nickel	Jun-15	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	Nickel	Aug-16	2012			<b>7,168,000</b>	<b>1.78</b>	<b>3,104,000</b>	<b>1.53</b>	<b>10,272,000</b>	<b>1.70</b>	<b>175,100</b>
	Copper						<b>0.77</b>		<b>0.62</b>		<b>0.72</b>	<b>74,400</b>
	Cobalt						<b>0.13</b>		<b>0.11</b>		<b>0.12</b>	<b>12,700</b>
<b>Copernicus</b>												
Open Pit	Nickel	Jun-16	2004	132,000	0.97					132,000	0.97	1,300
	Copper				0.52						0.52	700
	Cobalt				0.03						0.03	-
Underground	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
<b>Total Savannah Project</b>	Nickel											<b>226,400</b>
	Copper											<b>104,700</b>
	Cobalt											<b>15,300</b>

## Notes:

- Figures have been rounded and therefore may not add up exactly to the reported totals
- All resources are inclusive of reserves
- Resource cut-off grade is 0.50% Ni

# SAVANNAH PROJECT - ORE RESERVE AS AT 2 FEBRUARY 2017\*

\*Refer to the Company's ASX Announcements of 30 September 2016 and 2 February 2017

Reserve	Metal	Date of Reserve	JORC Compliance	Proven		Probable		Total		Metal Tonnes
				Tonnes	(%)	Tonnes	(%)	Tonnes	(%)	
Above 900 Fault	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
Savannah North	Nickel	Jan-17	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
Total	Nickel							8,208,000	1.37	112,600
	Copper								0.64	52,400
	Cobalt								0.09	7,600

## Notes:

- Figures have been rounded and therefore may not add up exactly to the reported totals
- Cut-off grade is 0.8% Ni