



**Ardea Resources Limited**

## **DEVELOPING**

the Kalgoorlie Nickel Project  
starting with Goongarrie Nickel-Cobalt

## **EXPLORING**

for Gold and Nickel Sulphides  
within the Kalgoorlie Nickel Project

**Corporate Update**  
**September 2020**



*The faceted multi-coloured jewels represent the rich heart of WA and its diverse character in terms of landscape, minerals, and where Ardea projects are focused*

# Disclaimer



## Important notice

This presentation contains general information only and is, or is based upon, information which has been released to ASX or is contained in the Ardea Resources Limited (Ardea or the Company) prospectus dated 9 November 2016 (including supplementary prospectuses dated 18 November 2016 and 6 January 2017), the Goongarrie Nickel Cobalt Project Pre-Feasibility Study (dated 28 March 2018) the Goongarrie Expansion Study (24 July 2018), Goongarrie Pilot Plant trial produces battery grade crystals (31 October 2018), Goongarrie Nickel Cobalt Project Update (8 April 2019), Drilling at Gale identifies large scale gold system (11 April 2019), Ardea Quarterly Operations Report, for the quarter ended 31 March 2019 (30 April 2019), Ardea Quarterly Operations Report, for the quarter ended 30 June 2019 (22 July 2019), Nickel sulphide exploration commences at Perrinvale Project (24 July 2019), Ardea Annual Report 2019 (24 October 2019), Ardea Quarterly Operations Report, for the quarter ended 30 September 2019 (31 October 2019), Mulga Plum Exploration Update (25 November 2019), Ardea Quarterly Operations Report, for the quarter ended 31 December 2019 (17 January 2020) Ardea Quarterly Operations Report, for the quarter ended 31 March 2020 (9 April 2020), Maiden Resource for Big Four Gold Project, WA (14 May 2020), Significant gold exploration results from new target at Goongarrie South (25 June 2020), Follow-up RC drilling commences at the Aphrodite North gold target (10 July 2020), Quarterly Activities Report - June 2020 (23 July 2020, CSIRO research commences on gold behaviour within GNCP (12 August 2020), Significant gold in first RC drilling at Aphrodite North (13 August 2020), Gold Exploration Update (20 August 2020), and Ardea BTZ gold exploration success at Lady Charlotte (24 August 2020).

This presentation is not an invitation, offer or recommendation (express or implied) to subscribe for, or apply for the purchase of, or to take any other action in respect of securities of any entity described herein and is not a prospectus, product disclosure statement or disclosure document for the purposes of the Corporations Act 2001 (Cth) and has not been lodged with ASIC. None of Ardea Resources Limited (Ardea or the Company) or its representatives are providing or offering investment advice or services by making this presentation.

Neither Ardea nor its representatives make any representation, warranty or guarantee of any kind, express or implied, as to the accuracy, completeness or reasonableness of the information contained herein or any other written or oral communication transmitted or made available to any person receiving this presentation. To the maximum extent permitted by law, Ardea and representatives expressly disclaim any and all liability based on or arising from, in whole or in part, such information, or any errors or omissions.

This presentation contains forward-looking statements regarding the Company's resources, intentions and future business. These statements reflect current information, expectations, intentions and strategies regarding the future, and are subject to certain risks and uncertainties. Should one or more of these risks or uncertainties materialise, or should any of the underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this presentation. Investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date they are made. Other than where required by law, the Company is under no obligation to revise any forward looking statement to reflect events or circumstances after the date of this presentation or to reflect the occurrence of unanticipated events.

The Goongarrie Project has completed the Pre-Feasibility Study phase and has commenced programs that are part of the Definitive Feasibility Study. Though reasonable care has been taken to ensure that the facts are accurate and/or that the opinions expressed are fair and reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness. Actual results and developments of projects and the market development may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. A key conclusion of the Pre-Feasibility Study and Expansion Study, which is based on forward looking statements, is that the Goongarrie Project is considered to have positive economic potential.

No stock exchange, regulation services provider, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.



# Investment Highlights



- 1 Foundation asset is a 100% interest in the Kalgoorlie Nickel Project (KNP), the premier nickel-cobalt resource in the developed world
- 2 More than 4,000km<sup>2</sup> of 100% controlled mineral tenements located exclusively in Western Australia which are highly prospective for gold but historically under-explored
- 3 Scientifically robust gold target generation process, validated by excellent initial drilling results
- 4 Strong management and Board, with significant experience in the Eastern Goldfields
- 5 Board approved work program underway to unlock Ardea's gold potential
- 6 Potential to spin-out gold assets in an IPO, similar to Godolphin Resources in 2019



# Corporate Snapshot



## Board and Executive Management Team

<b>Mathew Longworth</b> <i>Non-Executive Chair</i>	33 years' experience across exploration, project evaluation/development, operations and corporate management. Invaluable experience on the key Ardea exploration and development projects, being the Bardoc Tectonic Zone gold and Kalgoorlie Nickel Project (KNP) nickel-cobalt.
<b>Andrew Penkethman</b> <i>Managing Director, Chief Executive Officer</i>	Resources sector executive with over 25 years' experience, including mine management, project evaluation, early stage and near mine exploration, resource development, feasibility study management, permitting, stake holder engagement and mine development. ASX, TSX and AIM market experience.
<b>Ian Buchhorn</b> <i>Executive Director</i>	Mineral Economist and Geologist with over 40 years experience, operated as Registered Mine Manager in the Kalgoorlie Goldfields region.
<b>Sam Middlemas</b> <i>Company Secretary and Chief Financial Officer</i>	Chartered Accountant (CA) with more than 30 years experience providing financial and corporate secretarial services.
<b>Dr Matt Painter</b> <i>General Manager – Exploration</i>	Geologist with over 25 years professional experience including managerial, corporate, and on-ground experience across a broad range of commodities including nickel, cobalt, manganese, copper, gold and zinc-lead-silver.

## Capital Structure, as at 2 September 2020

Shares on Issue	117,300,435
Share Price	\$0.58
52 week high / low	\$0.80 / \$0.17
Cash (as at 30 June 2020)	\$10 million
Market Capitalisation	\$68 million
Staff performance rights	3,711,000

## Major Shareholders

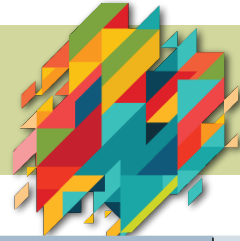
Ian Buchhorn and associates	10.7%
Citicorp Nominees	10.0%
Brian O'Shannassy and associates	7.9%
Top 20 shareholders	58.5%



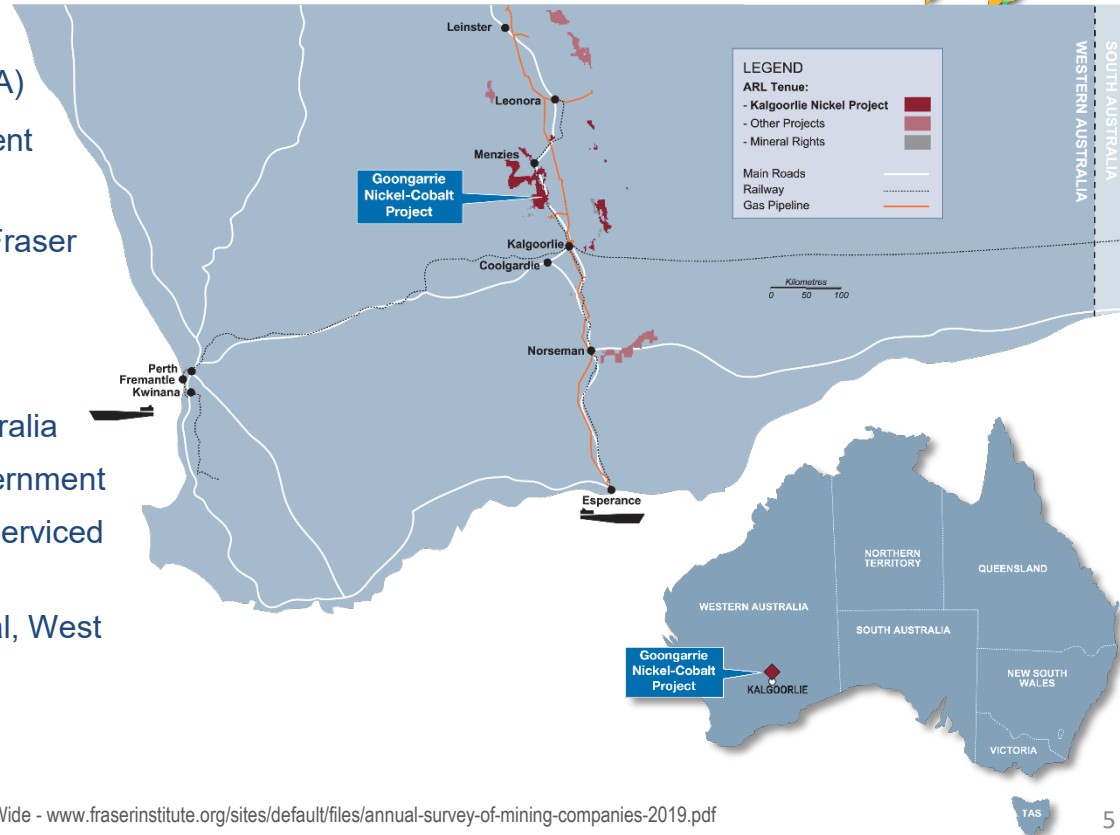
**Ardea has a quality Western Australian project portfolio and the team to make their projects succeed**



# Optimum Location and Jurisdiction



- ❑ All Ardea Projects located in Western Australia (WA)
- ❑ WA is the premier global destination for development of minerals operations
- ❑ WA is the top ranking operating jurisdiction in the Fraser Institute's Annual Survey of Mining Companies - Investment Attractiveness Index\*
- ❑ City of Kalgoorlie-Boulder is the prime resource development and operating destination within Australia
  - Very strong mining support from Local Government
  - Multitude of world-class mining operations serviced from the City
  - All Ardea field programs managed from local, West Kalgoorlie operations office



\*The Fraser Institute is a Canadian Think Tank ranked in the top 15 World Wide - [www.fraserinstitute.org/sites/default/files/annual-survey-of-mining-companies-2019.pdf](http://www.fraserinstitute.org/sites/default/files/annual-survey-of-mining-companies-2019.pdf)

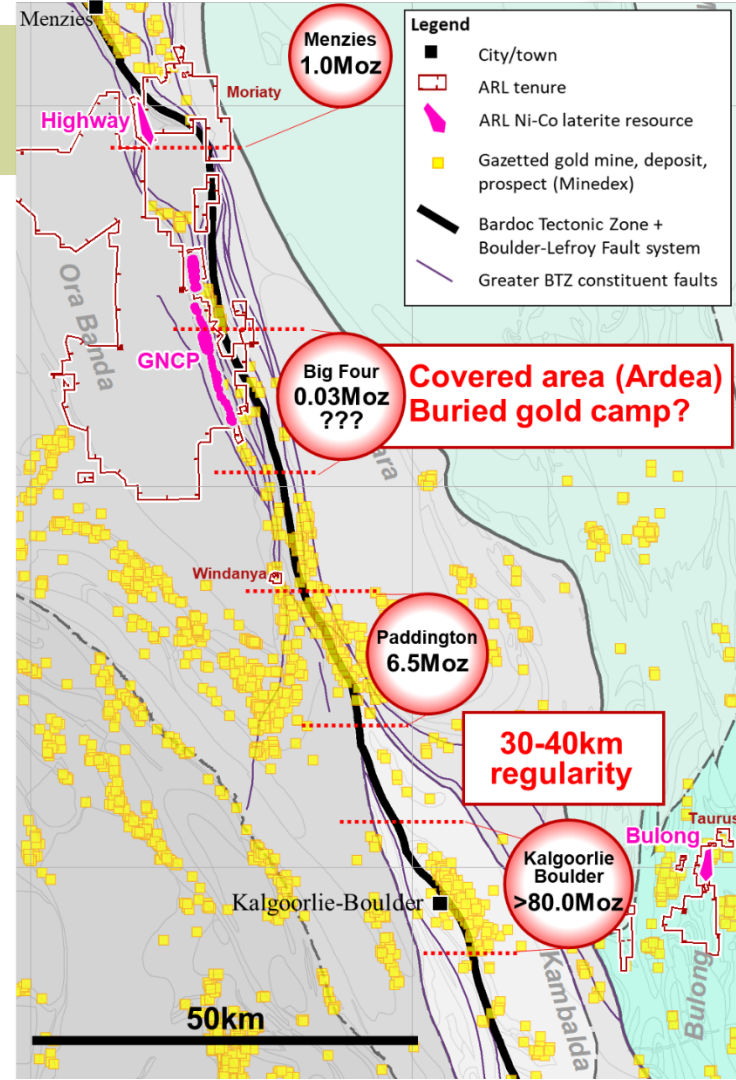


# Ardea's Golden Opportunity

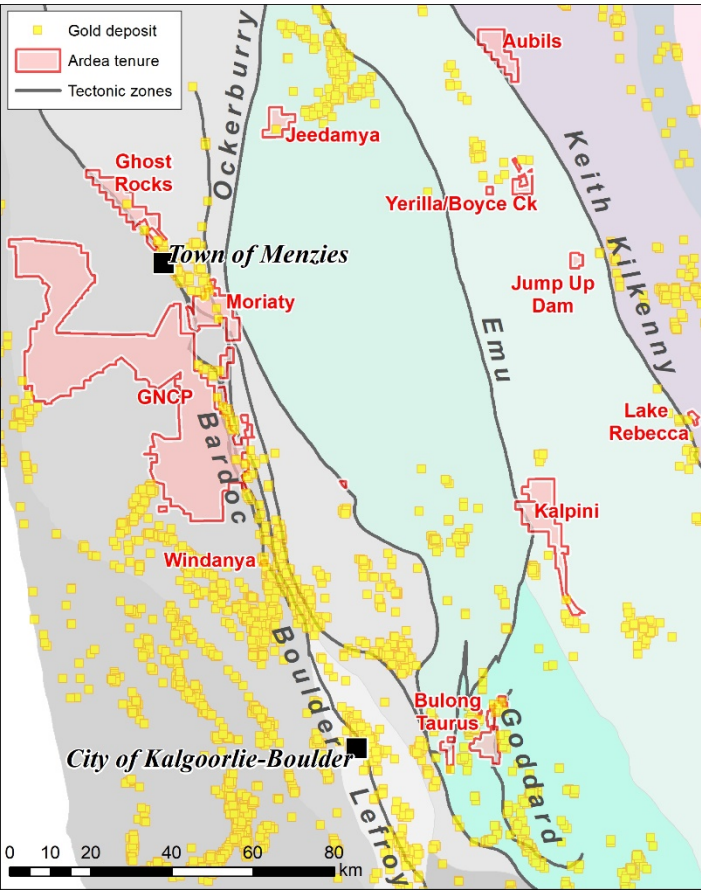
- ❑ Crustal-scale fault system links Menzies to Paddington to Kalgoorlie-Boulder and to St Ives further south, comprising:
  - Bardoc Tectonic Zone (BTZ)
  - Boulder-Lefroy Fault
- ❑ Gold deposits cluster in gold camps focused on this structure
- ❑ Outcrops at Menzies, Paddington and Kalgoorlie-Boulder enabled discovery of world-class gold systems, some mined for over a century
- ❑ Transported cover (sand, alluvium) covers much of the GNCP. Rare exposures are commonly mineralised and show small historic workings
- ❑ We need to test our hypothesis:

***That Ardea's BTZ tenure is emerging as a buried gold camp comparable to major camps along strike***

- ❑ This is consistent with many features including Ardea's in-house interpreted geology, structural constraints, geochemistry, geophysics, and represents an enormous opportunity for Ardea



# Unlocking Value with a Modern Approach



Ardea's tenure encapsulates one of the world's largest nickel-cobalt resources. Our ground is also highly prospective for gold. Let's make the most of that.

- Scientifically robust gold target generation technique, comprising:
  - Major fault systems and interconnected fault networks
  - Prone and indicator rock types
  - Periodicity of major gold mining camps at a 30-40km spacing (reflecting crustal convective cells)
  - Geology, Geochemistry and Geophysics
- Opportunities arise where these features align and then overlap with:
  - Limited or ineffective historic exploration
  - Extensive (though not necessarily deep) transported cover
  - With re-assay of historic KNP nickel drill pulps for gold and pathfinders
- Numerous opportunities to be tested. Ongoing target generation

**Good opportunities** around historic workings. **Greatest opportunities** around new concepts identifying “buried/hidden” gold camps missed by the old-timers

# Quality targets to get moving on gold



Ardea has numerous high-quality, ranked gold exploration targets adjacent to the nickel-cobalt projects. The four main target areas are:

- ❑ **Aphrodite North area**, on GNCP mining lease tenure
  - Conceptual target beneath lake cover (e.g. St Ives, Kundana and Lake Roe), no historic workings or exploration, as no surface gold anomalism
  - Primary orogenic gold intercepted in first drill program is proof of Ardea's target generation methodology
- ❑ **GNCP Gold**, coinciding and adjacent to the nickel-cobalt deposits of the GNCP
  - Broad area, mostly obscured by transported material includes Big Four Gold resource
  - Regular spacing (30 to 40km) along major crustal-scale faults of known gold camps suggests strong potential for a buried gold camp. To be drill tested
  - Minor exposures and old shallow drilling show anomalism over several square km
- ❑ **Windanya**
  - Historic gold mine with historic cutoff of up to 15g/t gold
  - Following Ardea 3D modelling, new ideas for potentially open pittable shallow gold mineralisation and down-plunge extension. To be drill tested shortly
- ❑ **Moriaty**, eastern boundary of Highway nickel-cobalt resource
  - Southern extension of the prolific Menzies goldfield





# Aphrodite North area – concept to discovery?



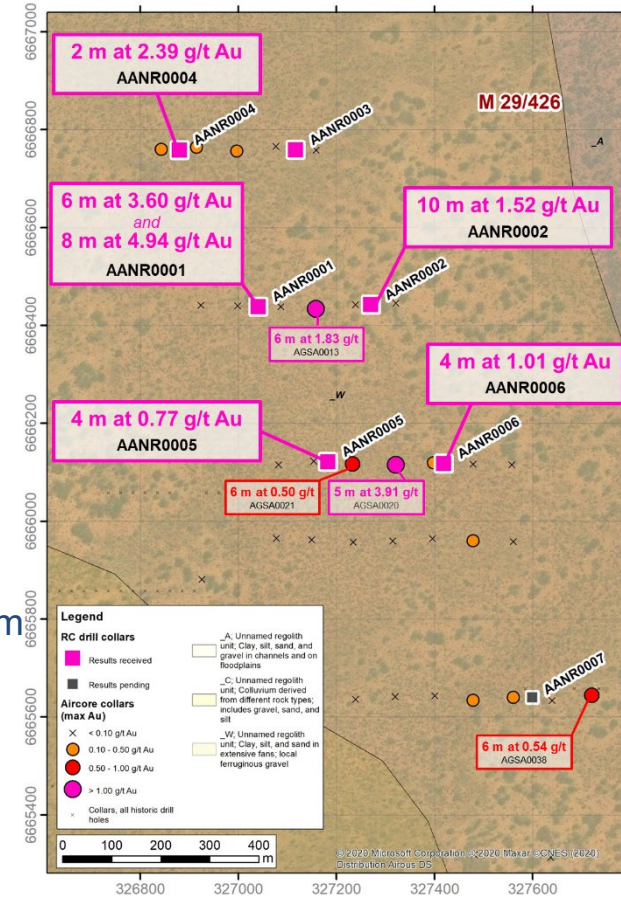
- Aphrodite North area, on GNCP mining tenure
  - Conceptual target beneath lake cover, no historic exploration.  
**First RC drill hole intercepted:**

**AANR0001: 6m at 3.60g/t Au** from 44m from the West 2 Lode  
*including 2m at 9.99g/t Au* from 44m  
 and **8m at 4.94g/t Au** from 172m to 180m EOH in Main Lode  
*including 4m at 9.42g/t Au* from 172m

- Inarguable proof of Ardea's target generation methodology

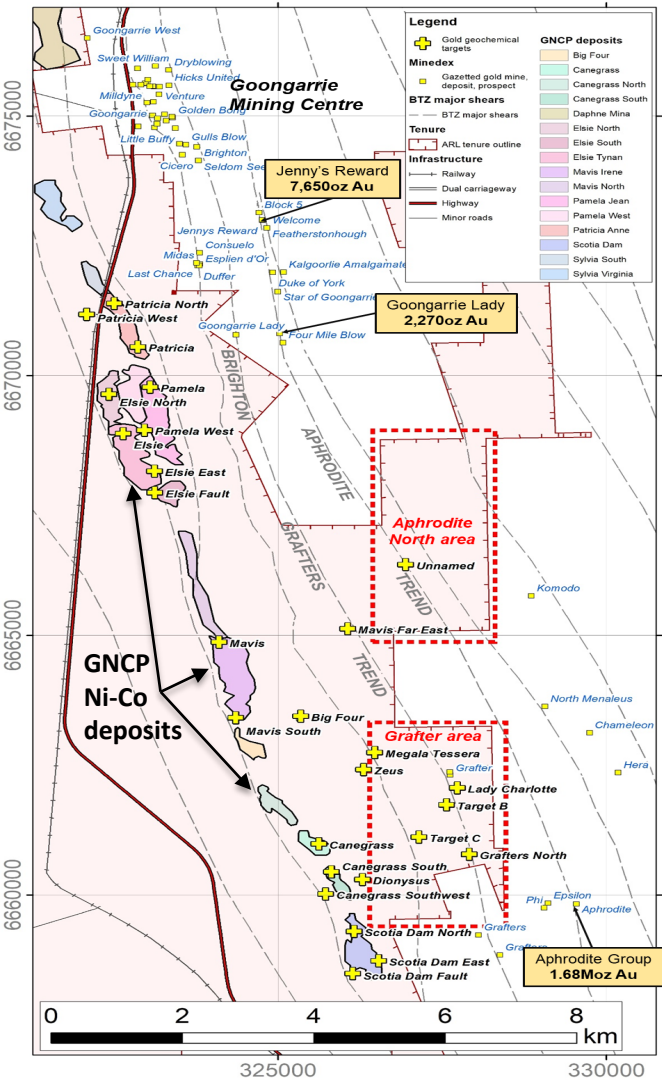
- Rapidly progressing. Only widely-spaced drilling from initial test program to date, but >1,240m strike of primary gold mineralisation. Follow-up program approved, to commence September 2020

- 3,000m RC program to zoom in, follow, and step out





# Gold targets at GNCP

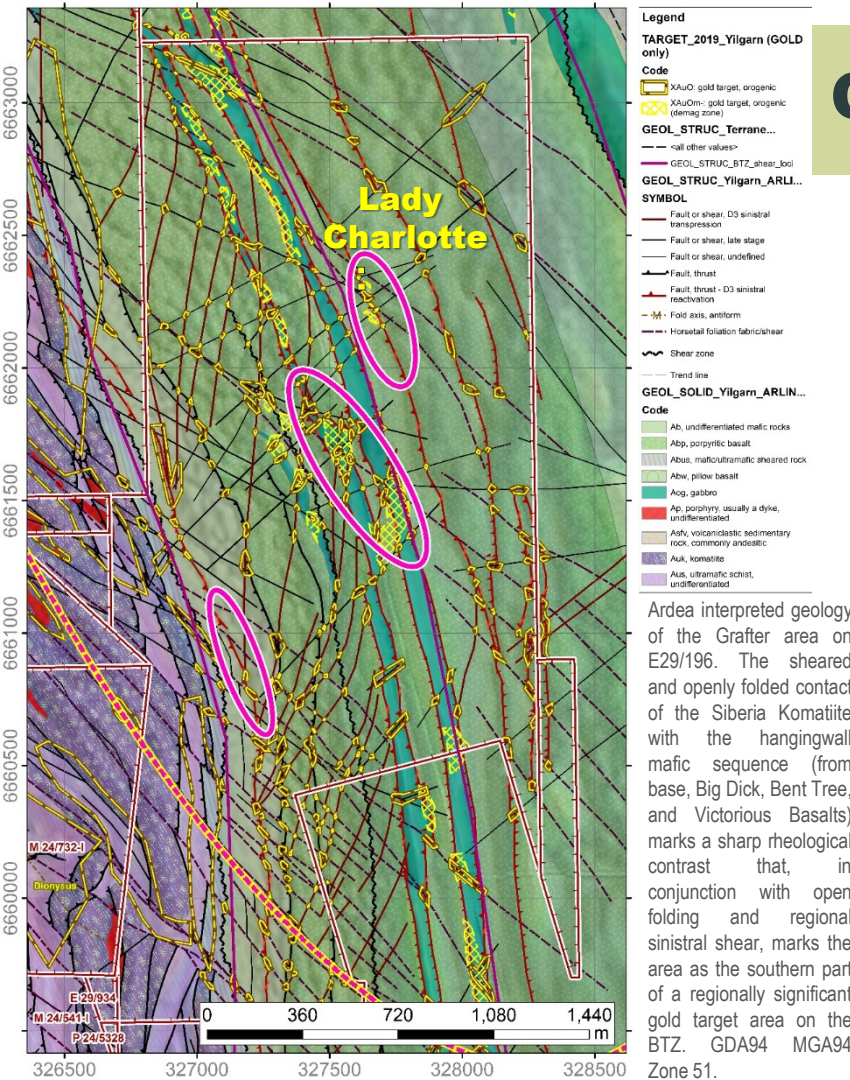


- ❑ Extensive gold anomalism in and around the nickel-cobalt deposits. Our question:
- ❑ **Is this indicative of a largely buried gold camp comprising multiple gold deposits?** There's only one way to find out – **Drill to thrill**
- ❑ Numerous porphyry-associated gold opportunities being systematically generated and evaluated, including:
  - **Big Four Gold:** 178,000t at 2.7g/t gold for 15,300 ounces from surface\*
  - **Zeus**, includes 8m at 3.52g/t Au from 17m\*, open pit opportunity?
  - **Gold in nickel-cobalt laterite** the subject of a collaborative CSIRO study
- ❑ Mafic host rocks of the Kalgoorlie Group east and west of the nickel-cobalt deposits
  - Mafic rocks are the dominant gold bearing host rocks in the Eastern Goldfields of WA
  - Known gold bearing mafic host rocks along Grafters and Aphrodite Trends
  - Proof of concept with **8m at 6.57g/t Au from 24m, at Lady Charlotte\***
- ❑ **BTZ Control** – Ardea controls 65km of strike of BTZ structure

GNCP location plan, showing Ardea tenements and highlighting the location of the Aphrodite North and Grafters (red dashed box) prospects, and main gold trends interpreted from magnetic data. Ardea believes this entire area highly prospective for hosting gold mineralisation concealed by surface cover. GDA94 MGA94 Zone 51. ASX releases: \* 1. Maiden Resource for Big Four Gold Project, WA (14 May 2020); \* 2. DMIRS Open File Data; and \*3. Ardea BTZ gold exploration success at Lady Charlotte (24 August 2020).



# GNCP gold targets (cont.)



## ☐ Mafic host rocks

- **Grafter** area of subcropping gold anomalism, minor shallow workings, rock-chip and immediate Ardea RC exploration success at **Lady Charlotte**
- **Aphrodite North** area and several other similar NNW-striking gold trends (e.g. **Brighton-Grafters**)
- **Conceptual structural targets** based on extensive digitisation of Mines Department records

## ☐ Most targets on Ardea's granted mining leases and offer potential for:

- A rapid pathway to mining
- A cluster of smaller, near-surface discoveries as a single integrated operation
- Proximity to multiple gold camps and production centres if elect to toll mill

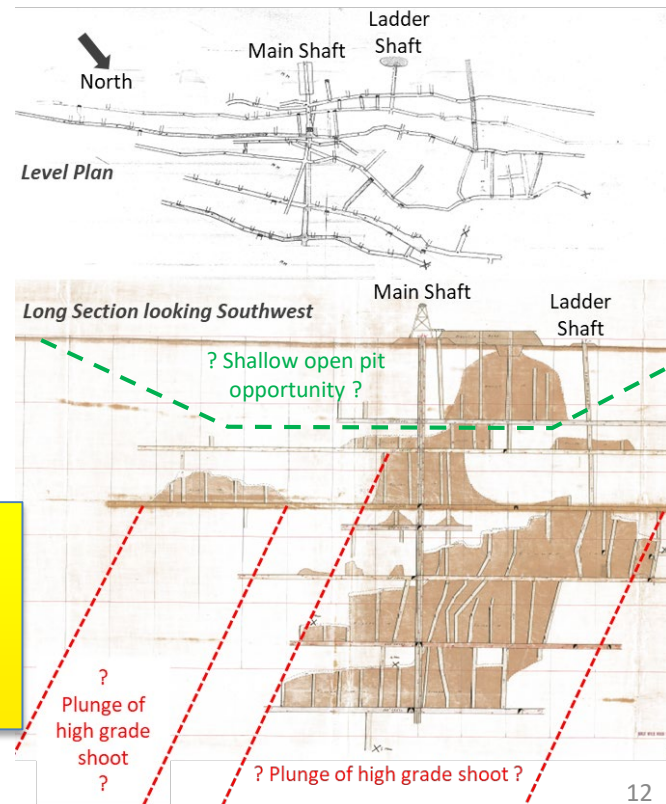
# Windanya – open pit and extension targets



- ❑ Historic mining area (1897-1906) of the Paddington gold camp centred around its largest mine, **Half Mile Reef**
  - 600ft (~180m) deep, multilevel workings
  - Produced **23,480t of ore for 12,993 oz Au at ~17.2g/t Au**
- ❑ 50km NW of Kalgoorlie-Boulder
- ❑ Held by prospectors over recent years, with Ardea the first Company to apply a modern exploration approach
  - First 3D model shows no effective drilling down plunge of the historic production stopes

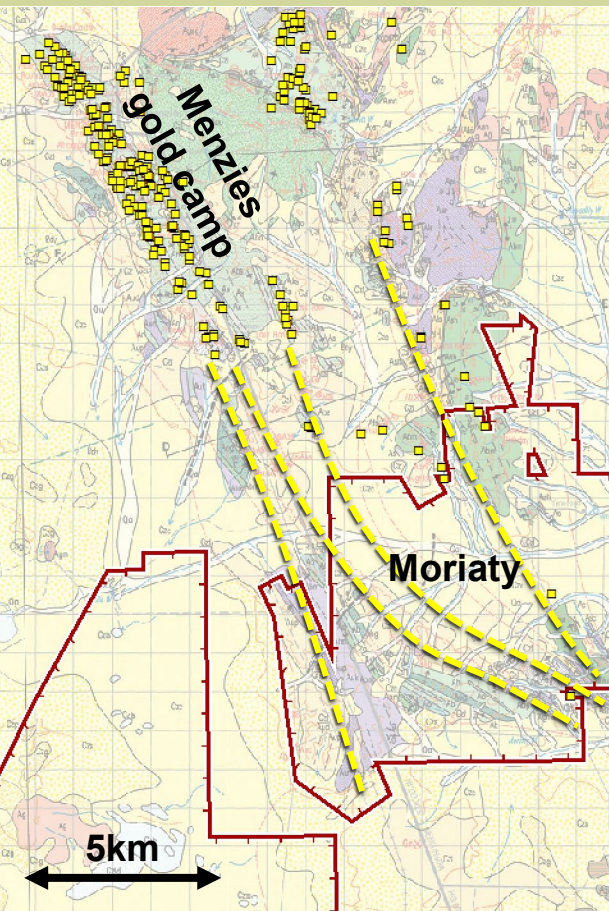
## Target styles

1. Shallow open pit up-dip extensions (*shallow RC drill*)
2. Down-plunge extensions of high grade material (*RC & diamond drill*)

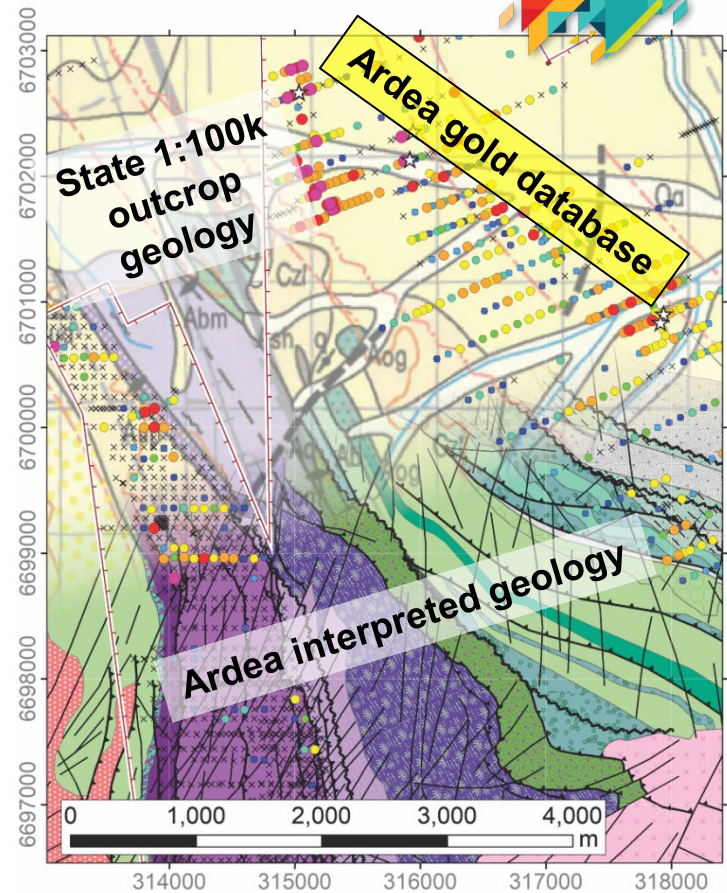




# Moriaty – extension of Menzies goldfield undercover



- ❑ Historic mining area near the Highway nickel-cobalt deposit
  - Southern extension of the Menzies goldfield, largely under transported cover
  - Numerous historic workings as drill targets
  - Extensive data-mining of historic datasets
- ❑ New targets and concepts to be tested, not previously recognised
  - Layered Mafic Complex
  - Structural targets
  - Historic drilling intercepts to follow-up



# Corporate Strategy



KNP with “starter” GNCP offers unrivalled nickel and cobalt scale optionality, in-ground **5.5Mt of nickel and 405kt of cobalt** held by a well-funded and strong technical junior



Globally significant nickel-cobalt resource in an **infrastructure-rich and stable jurisdiction**, provides ability to increase production from multiple processing hubs for the rapidly expanding Critical Minerals/LIB sector



Strategic Partner process current, **100% off-take is available**, with Company leveraged to increasing nickel and cobalt demand



Strategic, **highly prospective landholding** in the **Eastern Goldfields of Western Australia**



WA based Team with track record of exploration success running active exploration programs for **gold** and **nickel sulphides** with a **strong pipeline of targets**



Upcoming news flow to include ongoing gold exploration at Aphrodite North, Lady Charlotte and other targets, metallurgical testwork results from Big Four Gold, KNP and GNCP resource updates and Kalpini nickel sulphide exploration





# Thank you



For further information please visit:

<https://ardearesources.com.au/>

Or contact:

Andrew Penkethman  
Managing Director & CEO

P: +61 8 6244 5136

E: [ardea@ardearesources.com.au](mailto:ardea@ardearesources.com.au)



# Ardea Resources Limited

## DEVELOPING

the Kalgoorlie Nickel Project  
starting with Goongarrie Nickel-Cobalt

## EXPLORING

for Gold and Nickel Sulphides  
within the Kalgoorlie Nickel Project

For further information regarding Ardea,  
please visit [www.ardearesources.com.au](http://www.ardearesources.com.au)

## APPENDICES



*The faceted multi-coloured jewels represent the rich heart of WA and its diverse character in terms of landscape, minerals, and where Ardea projects are focused*



# KNP - Optimum Resource Scale and Location



- ❑ Assumption is a world-leading LIB investor will require a minimum annual output of 40,000tpa nickel metal in product
- ❑ With 5.5Mt contained nickel\*, easily accommodated within the KNP, starting with the GNCP
  - >100 year potential supply of resource within KNP
  - Other undeveloped Australian nickel laterite projects unable to supply even 20 years at 40ktpa
- ❑ KNP well suited for NMC 811 LIB (Ni:Co = 8:1)
  - GNCP resource\* grade 0.71% Ni and 0.06% Co (Ni:Co = 11.8:1)
  - Resource updates based on high grade mine strategy (>1% nickel) in progress and to include maiden scandium and rare earth component, in addition to nickel-cobalt



Aerial image of Ardea's GNCP showing from left to right, rail, road and power infrastructure within the project.

\* See Appendix for resource breakdown.

# A High Quality Nickel and Cobalt Project



## Outstanding results delivered from PFS\* and Expansion Studies completed in 2018:

	1.0Mtpa	1.5Mtpa	2.25Mtpa
<i>Status</i>	PFS	PFS	ES
<i>No. Trains</i>	1	1	1
<i>Pre Tax NPV<sub>8</sub></i>	US\$ 1.13 billion	US\$ 1.52 billion	<b>US\$ 2.4 billion</b>
<i>Pre Tax IRR</i>	29 %	29 %	<b>31%</b>
<i>CAPEX</i>	US\$ 472 million	US\$ 588 million	<b>US\$918 million</b>
<i>C1 cash cost</i>	US\$ 0.42 / lb	US\$ 0.45 / lb	<b>US\$ (0.34) / lb</b>
<i>Payback</i>	5.3 years	5.6 years	<b>5.1 years</b>
<i>Cobalt sulphate</i>	5,500tpa	6,900tpa	<b>10,000tpa</b>
<i>Nickel sulphate</i>	41,500tpa	55,300tpa	<b>81,000tpa</b>

- ✓ PFS of 1Mtpa and 1.5Mtpa base case over a 25-year mine life completed
- ✓ Expansion study of 2.25Mtpa with a 25-year mine life completed
- ✓ 94.5% nickel and 95.5% cobalt recovery – life of mine
- ✓ Pre-cobalt credit C1 costs in line with current worldwide operators
- ✓ Pressure Acid Leach (PAL) 5th generation plant is a proven design, successfully operated in other laterite projects globally
- ✓ 2.25Mtpa case based on only 26% of Goongarrie Resource



The information shown on this slide has been previously released on the ASX platform by Ardea in ASX releases, \*Goongarrie Nickel Cobalt Project, PFS study, 28 March 2018 & +Goongarrie Expansion Study, 24 July 2018. All the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continue to apply and have not materially changed.

# KNP Resource Breakdown



## KNP nickel-cobalt JORC Code (2012) Mineral Resource

Resource category	Size (Mt)	Nickel (%)	Cobalt (%)	Contained metal Ni (t)	Co (t)
Measured	9.6	1.02	0.10	98,800	9,700
Indicated	232.9	0.75	0.06	1,759,700	141,200
Inferred	530.5	0.68	0.05	3,600,000	254,400
<b>TOTAL</b>	<b>773.0</b>	<b>0.70</b>	<b>0.05</b>	<b>5,458,400</b>	<b>405,400</b>

Note: 0.5% nickel cutoff grade used to report resources. Note figures are rounded to reflect degree of certainty and may not tally. The information shown on this slide has been previously released on the ASX platform by Ardea in ASX release, Ardea Annual Report 2019, 24 October 2019.

In accordance with the Australian Securities Exchange Limited Listing Rules Appendix 5A:

The information in this report that relates to Mineral Resources for the Highway, Goongarrie Hill, Goongarrie South, Big Four, Aubils and Boyce Creek Prospects is based on information originally compiled in-house and validated by Steve Jones in 2013. Steve Jones is a member of the Australasian Institute of Mining and Metallurgy. Steve Jones is a full time employee of Heron Resources Limited and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the resource estimation activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Steve Jones consents to the inclusion in this report of the matters based on his information in the form and context that it appears. Note that Mineral Resources that are not Ore Reserves do not have demonstrated viability.

The information in this report that relates to Mineral Resources for the Siberia North, Bulong East, Siberia, Black Range, Taurus and Jump Up Dam Prospects is based on information compiled by Snowden Mining Industry Consultants by members of the Australian Institute of Mining and Metallurgy. Snowden Mining Industry Consultants had sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the resource estimation activity. All resources were internally audited by Snowden and signed off by a person of sufficient experience to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Steve Jones has validated the original resource estimates during 2013. Steve Jones consents to the inclusion in this report of the matters based on his information in the form and context that it appears. Note that Mineral Resources that are not Ore Reserves do not have demonstrated viability.



# Goongarrie Nickel Cobalt Project Resources



Summary of total mineral Nickel Cobalt Project area, comprising resources at Goongarrie Hill, Goongarrie South, resources within the Goongarrie Big Four, and Scotia Dam (ASX release 14 March 2018).

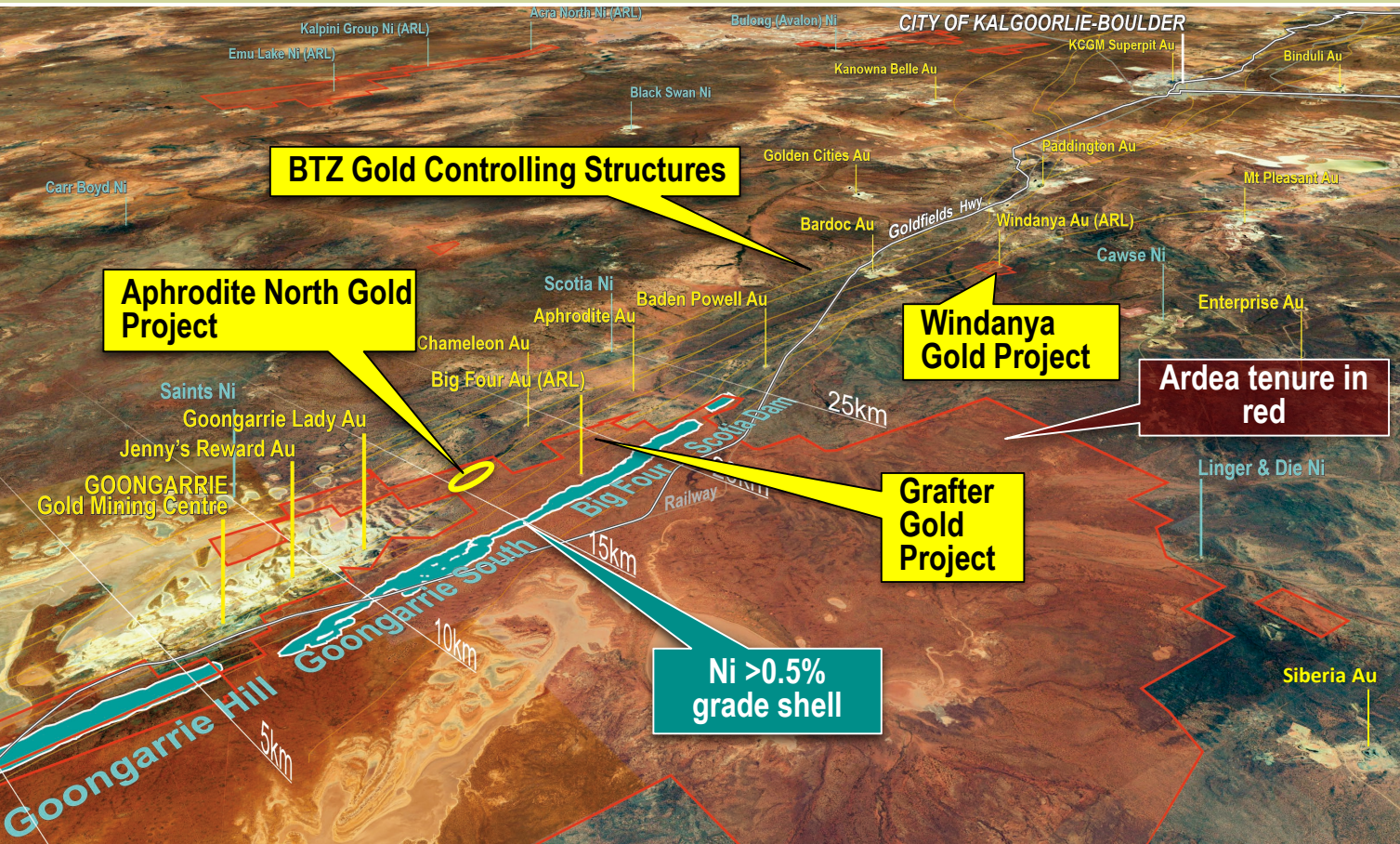
Camp	Domains	Cut-off %	Resource category	Size (Mt)	Nickel (%)	Cobalt (%)	Contained Ni (t)	metal Co (t)
Goongarrie Hill	Ni & Co	≥ 0.5% Ni or > 0.08% Co	Inferred	52.5	0.65	0.04	340,400	21,600
			Subtotal	52.5	0.65	0.04	340,400	21,600
Goongarrie South	Ni & Co	≥ 0.5%Ni or > 0.08% Co	Measured	10.3	0.98	0.10	101,200	10,200
			Indicated	56.2	0.72	0.07	407,000	37,200
			Inferred	32.2	0.69	0.06	221,200	20,300
			Subtotal	98.7	0.74	0.07	729,300	67,700
Big Four	Ni & Co	≥ 0.5%Ni or > 0.08% Co	Indicated	45.5	0.71	0.06	320,700	28,200
			Inferred	9.9	0.63	0.06	61,900	6,100
			Subtotal	55.4	0.69	0.06	382,700	34,300
Scotia Dam	Ni & Co	≥ 0.5% Ni or > 0.08% Co	Indicated	3.3	0.81	0.09	26,900	3,000
			Inferred	5.7	0.76	0.07	43,300	4,100
			Subtotal	9.0	0.78	0.08	70,200	7,100
Total	All	≥ 0.5% Ni or > 0.08% Co	Measured	10.3	0.98	0.10	101,200	10,200
			Indicated	105.0	0.72	0.07	754,600	68,400
			Inferred	100.3	0.67	0.05	666,900	52,100
Goongarrie Resource Global			TOTAL	215.6	0.71	0.06	1,522,700	130,700

Note: All nickel and cobalt domains are included and are encapsulated by an envelope defined by nickel grades equal to or greater than 0.5%.  
Note figures are rounded to reflect degree of certainty and may not tally.





# Our Flagship Goongarrie Nickel - Cobalt Project



Goongarrie JORC  
Resource

**215.6 Mt at  
0.71% nickel  
and 0.06%  
cobalt**

Reserves optimised for  
25 year mine life only,  
less than  
20% of Goongarrie  
resource utilised  
at this scale  
(40.1 Mt at 0.82% Nickel  
& 0.09% Cobalt\*)

# Reserves Defined for Goongarrie Nickel Cobalt Project\*



Goongarrie Nickel Cobalt Project, Ore Reserves based on 25 year mine life at 1.5 Mtpa.

Deposits	Class	Size (Mt)	Nickel (%)	Cobalt (%)
Goongarrie South	Proven	8.95	0.96%	0.10%
	Probable	17.26	0.79%	0.09%
	<b>Total</b>	<b>26.22</b>	<b>0.85%</b>	<b>0.10%</b>
Big Four	Proven	—	—	—
	Probable	13.92	0.77%	0.09%
	<b>Total</b>	<b>13.92</b>	<b>0.77%</b>	<b>0.09%</b>
TOTAL	<b>Proven</b>	<b>8.95</b>	<b>0.96%</b>	<b>0.10%</b>
	<b>Probable</b>	<b>31.18</b>	<b>0.78%</b>	<b>0.09%</b>
	<b>Total</b>	<b>40.13</b>	<b>0.82%</b>	<b>0.09%</b>

Using a nickel equivalent cut of >0.81%, which used inputs of A\$18,900/t nickel and A\$120,750/t cobalt. (US\$15,120/t Ni and US\$96,600/t Co, 0.8 exchange rate). Nickel equivalent (Nieq %) = .

Prices used are US\$15,120/t for nickel and US\$96,600/t for cobalt. No assumption about recovery is included here. Recoveries are addressed elsewhere throughout the mining schedule and financial model.

\*The information shown on this slide has been previously released on the ASX platform by Ardea in ASX release, Goongarrie Nickel Cobalt Project, PFS study, 28 March 2018. The information in this report that relates to Ore Reserves for the Goongarrie South and Big deposits of the Goongarrie Nickel Cobalt Project is based on information compiled by Mr Steve Lampron who is a Member of the Australasian Institute of Mining and Metallurgy and who has provided expert guidance on mine planning and Ore Reserve estimation. Mr Lampron is a director of Auralia Mining Consulting and has sufficient experience 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 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Lampron consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.



# Resource Comparison



	RESOURCES - AUSTRALIAN BULK TONNAGE NICKEL					
Ardea <sup>1</sup>	Kalgoorlie Nickel Project, WA			Nickel Laterite		
Classification	Mt	% Ni	% Co	ppm Sc	tonne Ni	tonne Co
Measured	9.6	1.03	0.10	not quoted	98,800	9,700
Indicated	232.9	0.76	0.06	not quoted	1,759,600	141,200
Inferred	530.5	0.68	0.05	not quoted	3,600,000	254,400
Total	773.0	0.71	0.05	not quoted	5,458,400	405,400
Glencore <sup>2</sup>	Murrin Murrin Operation, WA			Nickel Laterite		
Measured	144.5	1.01	0.07	not quoted	1,459,450	105,485
Indicated	75.5	0.99	0.08	not quoted	747,450	63,420
Inferred	17.0	0.90	0.07	not quoted	153,000	11,900
Total	237.0	1.00	0.08	not quoted	2,359,900	180,805
BHP <sup>3</sup>	Nickel West Operation, WA			Nickel Sulphide		
Measured	327.1	0.70	not quoted	not quoted	2,278,040	
Indicated	280.2	0.66	not quoted	not quoted	1,843,450	
Inferred	324.8	0.68	not quoted	not quoted	2,213,720	
Total	932.1	0.68	not quoted	not quoted	6,335,210	
Clean TeQ <sup>4</sup>	Sunrise Project, NSW			Nickel Laterite		
Measured	40	0.75	0.15	not quoted	299,000	59,000
Indicated	47	0.55	0.12	not quoted	259,000	58,000
Inferred	14	0.24	0.11	not quoted	35,000	16,000
Total	101	0.59	0.13	not quoted	593,000	133,000
Australian Mines <sup>5</sup>	Sconi Project, Qld			Nickel Laterite		
Measured	19.7	0.80	0.07	not quoted	157,981	13,425
Indicated	73.8	0.62	0.06	not quoted	456,632	47,326
Inferred	22.3	0.54	0.05	not quoted	121,320	10,476
Total	115.8	0.64	0.06	not quoted	735,933	71,227

## Data Sources

1. Ardea 2019 Annual Report to 30 June 2019.
2. Glencore Annual Report 2019, page 246, Resource Statement 31 December 2019.
3. BHP Limited, 2019 Annual Report to 30 June 2019, page 288.
4. NI 43-101 Technical Report, 25 June 2018.
5. Australian Mines Quarterly Report March 2020, ASX Announcement 18 May 2020.



# Reserve Comparison



	RESERVES - AUSTRALIAN BULK TONNAGE NICKEL						
<b>Ardea<sup>1</sup></b>	<b>Kalgoorlie Nickel Project, WA</b>			<b>Nickel Laterite</b>			
<b>Classification</b>	<b>Mt</b>	<b>% Ni</b>	<b>% Co</b>	<b>ppm Sc</b>	<b>tonne Ni</b>	<b>tonne Co</b>	<b>tonne Sc</b>
Proved	9.0	0.96	0.10	not quoted	85,920	8,950	
Probable	31.18	0.78	0.09	not quoted	243,538	28,062	
<b>Total</b>	<b>40.1</b>	<b>0.82</b>	<b>0.09</b>	not quoted	<b>329,458</b>	<b>37,012</b>	
<b>Glencore<sup>2</sup></b>	<b>Murrin Murrin Operation, WA</b>			<b>Nickel Laterite</b>			
Proved	103.6	1.03	0.08	not quoted	1,070,188	82,880	
Probable	37.80	1.04	0.10	not quoted	393,120	38,934	
<b>Total</b>	<b>141.4</b>	<b>1.03</b>	<b>0.09</b>	not quoted	<b>1,463,308</b>	<b>121,814</b>	
<b>BHP<sup>3</sup></b>	<b>Nickel West Operation, WA</b>			<b>Nickel Sulphide</b>			
Proved	182.0	0.57	not quoted	not quoted	1,028,950		
Probable	77.35	0.73	not quoted	not quoted	562,170		
<b>Total</b>	<b>258.4</b>	<b>0.62</b>	<b>not quoted</b>	not quoted	<b>1,591,120</b>		
<b>Clean TeQ<sup>4</sup></b>	<b>Sunrise Project, NSW</b>			<b>Nickel Laterite</b>			
Proved	65.5	0.65	0.10	48	422,475	67,465	31
Probable	81.9	0.49	0.08	57	403,767	68,796	47
<b>Total</b>	<b>147.4</b>	<b>0.56</b>	<b>0.09</b>	53	<b>826,242</b>	<b>136,261</b>	<b>78</b>
<b>Australian Mines<sup>5</sup></b>	<b>Sconi Project, Qld</b>			<b>Nickel Laterite</b>			
Proved	8.1	0.72	0.09	44	57,940	7,286	4
Probable	49.2	0.55	0.08	33	273,417	37,195	16
<b>Total</b>	<b>57.3</b>	<b>0.58</b>	<b>0.08</b>	35	<b>331,357</b>	<b>44,481</b>	<b>20</b>

## Data Sources

1. Ardea ASX Announcement, 28 March 2018, "Ardea Delivers Outstanding Pre-Feasibility Study for the Goongarrie Nickel Cobalt Project with Significant Expansion Potential".
2. Glencore Annual Report 2019, page 246, Resource Statement 31 December 2019.
3. BHP Limited, 2019 Annual Report to 30 June 2019, page 288.
4. NI 43-101 Technical Report, 25 June 2018.
5. Australian Mines Quarterly Report March 2020, ASX Announcement 18 May 2020.



# Big Four Gold Resource



Big Four Gold, (JORC 2012) Mineral Resource (14 May 2020)

	Cut-off Au g/t	Tonnes	Grade Au g/t	Contained gold (oz)
	≥ 0.00	194,000	2.5	15,400
	<b>≥ 0.50</b>	<b>178,000</b>	<b>2.7</b>	<b>15,300</b>
Inferred Resource	≥ 1.00	151,000	3.0	14,600
	≥ 1.5	118,000	3.5	13,300
	≥ 2.00	92,000	4.0	11,800

Inferred resource estimate and cut-off sensitivity for the Big Four Gold deposit, reported above different Au cut-off values. The base case estimate (highlighted) uses a 0.5 g/t Au cut-off. The tonnage figures have been rounded to the nearest thousand tonnes. Au grades rounded to the nearest decimal. Contained gold is rounded to the nearest 100 oz.

In accordance with the Australian Securities Exchange Limited Listing Rules Appendix 5A:

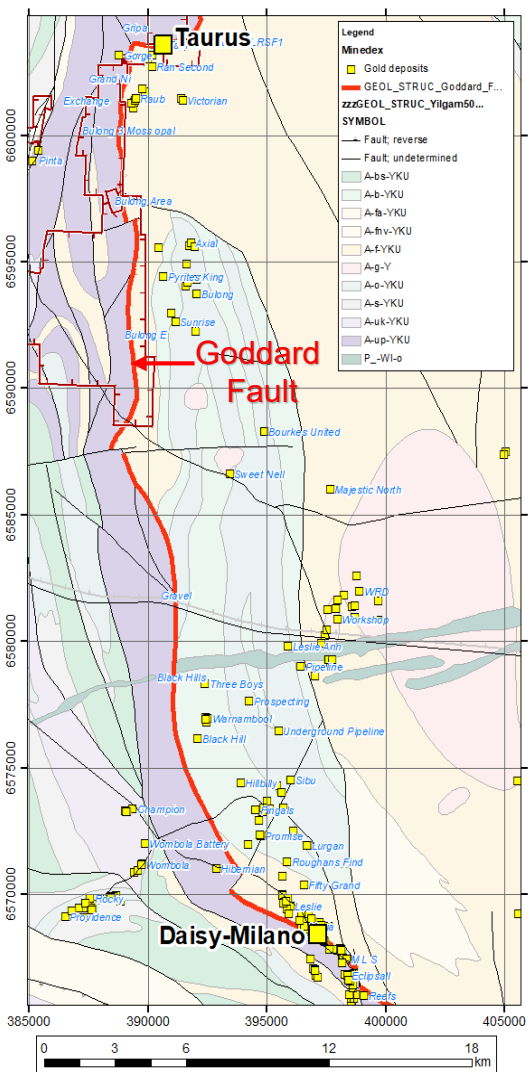
The information in this report that relates to Mineral Resources or Ore Reserves is based on information compiled by James Ridley, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Ridley is a full-time employee of Ardea Resources Limited and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Ridley consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.







# Gold Exploration Project Pipeline - Bulong



- ❑ Located approximately 30km east of the City of Kalgoorlie-Boulder
- ❑ The regionally significant crustal scale gold controlling structure, the Goddard Fault, trends north-south and passes through Ardea's Bulong tenure (shown in red in the adjacent plan)
- ❑ This structure represents a northern splay of the regionally significant Mount Monger Fault, which hosts gold mineralisation to the south, with the best known operating mine in the area at Daisy Milano
- ❑ Historically, the focus on the Bulong tenements has been on laterite hosted nickel-cobalt mineralisation, with limited historical gold exploration completed by Ardea
- ❑ Detailed mapping and sampling program around the historic Taurus underlay shaft and multiple workings in the area has helped refine the controls on gold mineralisation
- ❑ Ardea continues to work with Kalgoorlie-Boulder prospectors who have been recovering alluvial eluvial and primary gold in the area which is assisting with target generation and furthering the understanding of the controls on gold mineralisation
- ❑ In addition to the significant nickel-cobalt resources hosted at Bulong (54.1Mt @ 0.88% Ni and 0.05% Co, for 476.1kt Ni and 28.8kt Co – Ardea 2019 Annual Report), **36 exploration targets have been defined**. These are predominantly gold, but also include PGE's and base metals (nickel, copper, lead and zinc)