

GHANA – WEST AFRICA

**5.1 Moz**

**ORE RESERVE\***

Developer



**ASX - TSX: CDV**

Investor Presentation | September 2019

*\* 138.6 Mt @ 1.13 g/t Au; 0.5 g/t Au cut-off*



# Board and Management



## Kevin Tomlinson

Chairman  
*Banker, geologist*

### Former

- Centamin plc, Orbis Gold, Medusa

### Current

- Infinity Lithium, Samco Gold



## Archie Koimtsidis

MD / CEO  
*Project developer*

### Former

- PMI Gold – Ghana  
(now Asanko Gold)
  - Deputy Country Manager
- **Ghanaian resident**



## Malik Easah

Executive Director  
*Government Liaison*

### Former

- PMI Gold - Ghana  
(now Asanko Gold)
  - ❖ Public Relations Officer
- **Ghanaian citizen**



## Michele Muscillo

Non Executive Director  
*Corporate lawyer*

### Former

- Orbis Gold (now Semafo) – Non-Exec Director

### Current

- Aeris Resources – Non-Exec Director
- Xanadu Mines – Non-Exec Director



## Trevor Schultz

Non Executive Director  
*Mine Construction,  
Development & Operations*

### Former

- AngloGold Ashanti – Ghana - COO
- Centamin plc – Egypt – Exec Director
- BHP – Exec Manager
- Rio Tinto – Exec Manager



## Dr Kenneth Thomas

Non Executive Director  
*Project implementation*

### Former

- Barrick Gold Corp – Senior VP

### Current

- Continental Gold Corp
  - ❖ Non-Exec Director (Technical)



## Dave Anthony

Chief Operating Officer  
*Mine Construction  
Development & Operations*

### Former

- Barrick Gold Corp - Africa - COO
- Kinross – Project Director
  - ❖ Fruita del Norte Mine
- +30 Years Experience
  - ❖ 12 process plant start ups



## Bruce Lilford

Project Manager  
*Extractive Metallurgist*

### Former

- Amec FosterWheeler  
(now Wood Group)
  - ❖ Senior Study Manager

# Corporate Overview

<b>ASX / TSX Code</b>	CDV
<b>Current Share Price<sup>1</sup></b>	A\$ 0.495
<b>Shares on Issue<sup>2</sup></b>	387 M
<b>Listed Options on Issue<sup>3,4</sup></b>	107 M
<b>Market Capitalisation</b>	A\$ 192 M
<b>Cash at Bank<sup>5</sup></b>	A\$ 19 M

1. As at 6<sup>th</sup> September 2019

2. 60 Class C Performance shares on issue. If converted, will total 6 million ordinary shares if certain milestones are achieved. Details of conversion milestones are provided in Cardinal's Annual Report

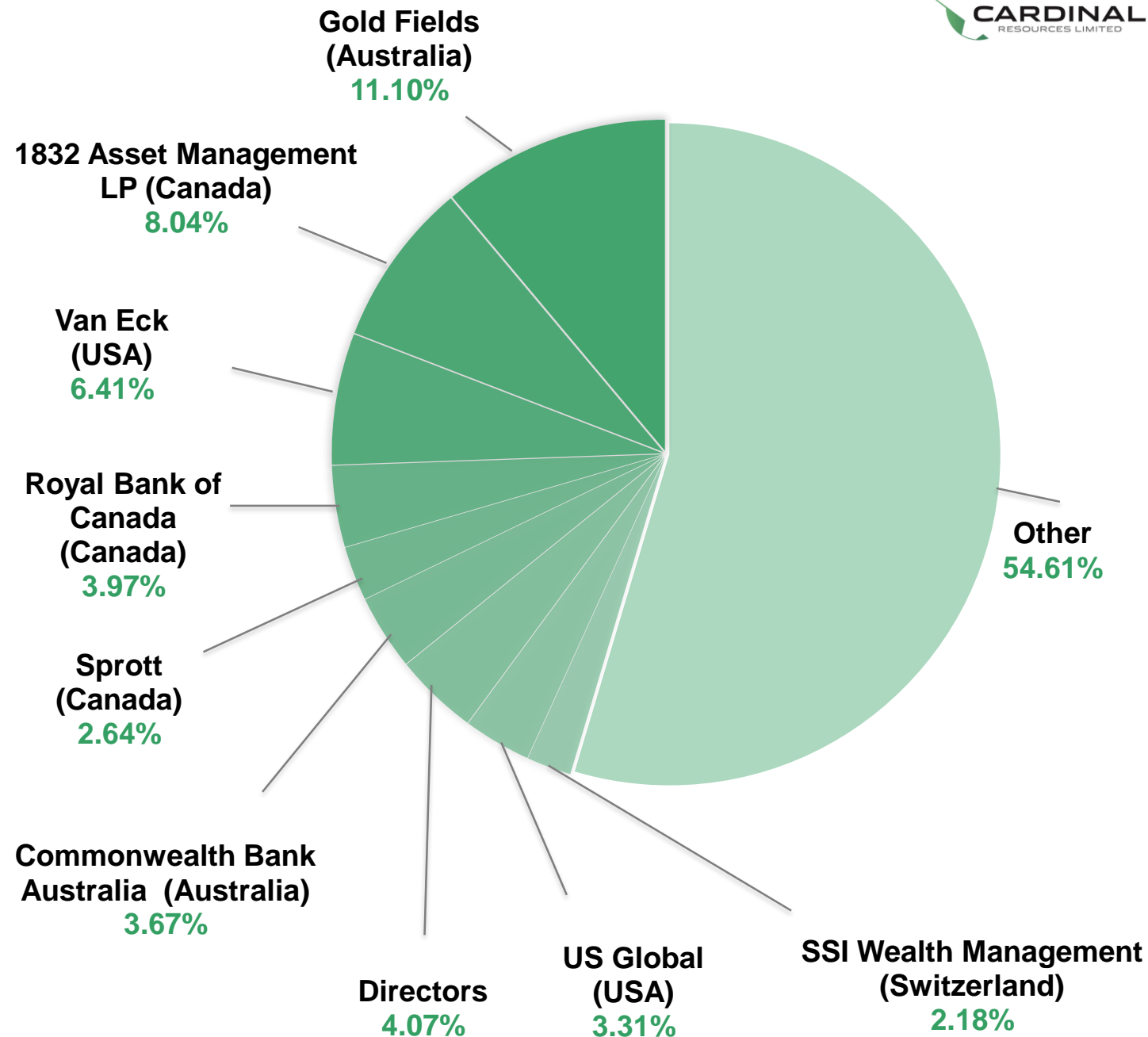
3. Exercise price of A\$ 0.15, Expiry date 30 Sept 2019

4. Additional 33,746,015 unlisted options on issue with various expiry dates and exercise prices

5. Cash as at 30 June 2019

Details of loan facility are provided in press release dated 23 Aug 2018.

<b>Argonaut</b>	(Australia)
<b>Beacon Securities</b>	(Canada)
<b>BMO Capital Markets</b>	(Canada)
<b>Clarus Securities</b>	(Canada)
<b>Cormark Securities</b>	(Canada)
<b>Macquarie Research</b>	(Canada)
<b>Hartleys</b>	(Australia)
<b>RFC Ambrian</b>	(United Kingdom)

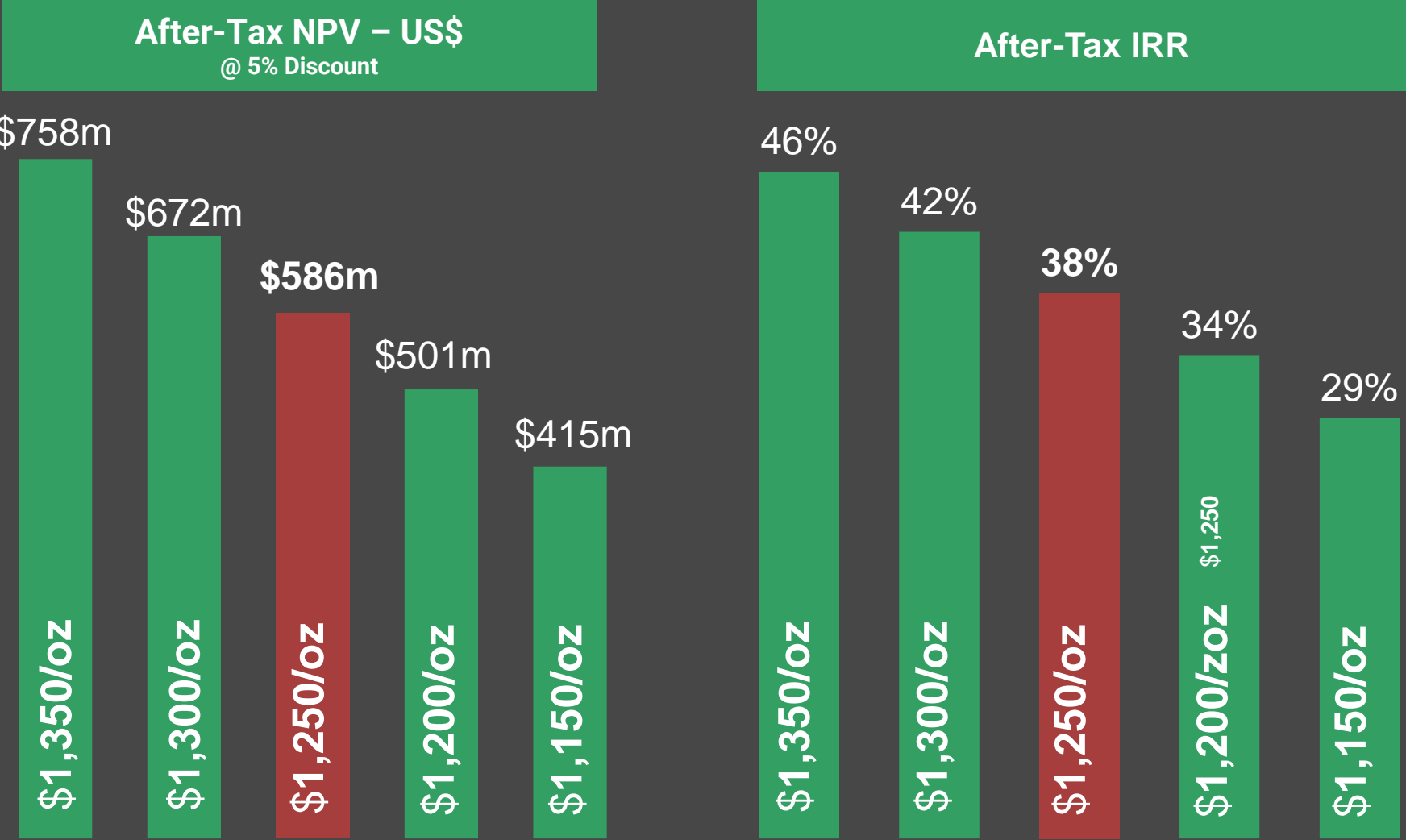


## New Frontier: Northern Ghana

- **Paleoproterozoic Granite-Greenstone Belt**
  - Underexplored compared to Southern Ghana
- **Well-Established Local Infrastructure**
  - **30km** – National HV hydro grid power
  - **7km** – Continuous water supply – White Volta River
  - **25km** – Sealed national highway
- **Excellent Community Relationships**
  - Facilitates rapid development objective
- **Open Savannah Grassland**
  - Low population density
- **Mining License Granted for 15 years renewable**



# PFS Financial Sensitivity







# PFS Financials

	<b>Pit Design</b>		1,105
Gold Price	<b>Financial Model</b>	US\$ / oz	1,250
Development Capital Cost (including 15% contingency and owners costs)		US\$ M	414
All in Sustaining Costs (AISC) <sup>1</sup>	<b>Starter Pit</b>	US\$ / oz	599
	<b>Life of Mine</b>		769
Total Project Payback		years	1.8
Post-Tax NPV (@ 5% discount) <sup>2</sup>		US\$ M	586
Post-Tax IRR		%	38

Table Notes:

<sup>1</sup> Cash Costs + Royalties + Levies + Life Of Mine Sustaining Capital Costs (World Gold Council Standard)

<sup>2</sup> Royalties calculated at a flat rate of 5% - subject to negotiation and corporate tax rate of 35% was used subject to negotiation

# PFS Physicals

ESTIMATED PRODUCTION RESULTS	UNIT	<i>Starter Pit</i>		<i>Life of Mine</i>	
<b>Gold Price – Financial Model</b>	<b>US\$ / oz</b>		1,250		
<b>Gold Produced</b> <i>(Average for full production years)<sup>1</sup></i>	<b>(oz / yr)</b>		361,000		294,000
<b>Gold Produced</b>	<b>(oz)</b>		907,000		3,975,000
<b>Gold Head Grade</b>	<b>g/t Au</b>		1.31		1.14
<b>Gold Recovery</b>	<b>%</b>		86		84
<b>Ore Mined</b> <i>(0.5 g/t cut-off grade)</i>	<b>Tonnes</b>		24,000,000		129,600,000
<b>Strip Ratio</b>	<b>W:O</b>		0.5 : 1		1.4 : 1
<b>Mine Life</b> <i>(Inc ramp-up and mine closure)</i>	<b>years</b>		2.5		14
<b>Development Capital Cost</b> <i>(Including 15% contingency and owners costs)</i>	<b>US\$ M</b>		414		

*Table Notes:*

<sup>1</sup> Excludes ramp-up and for the Life of Mine scenario mine closure (Years where full production is not realised)

# Long Section – Grade Distribution

## Starter Pit

Strip ratio - 0.5 : 1

Probable Ore Reserve\*

**1.06 Moz**

24Mt @ 1.31 g/t Au;  
0.5 g/t cut-off

## Life of Mine Pit

Strip ratio - 1.4 : 1

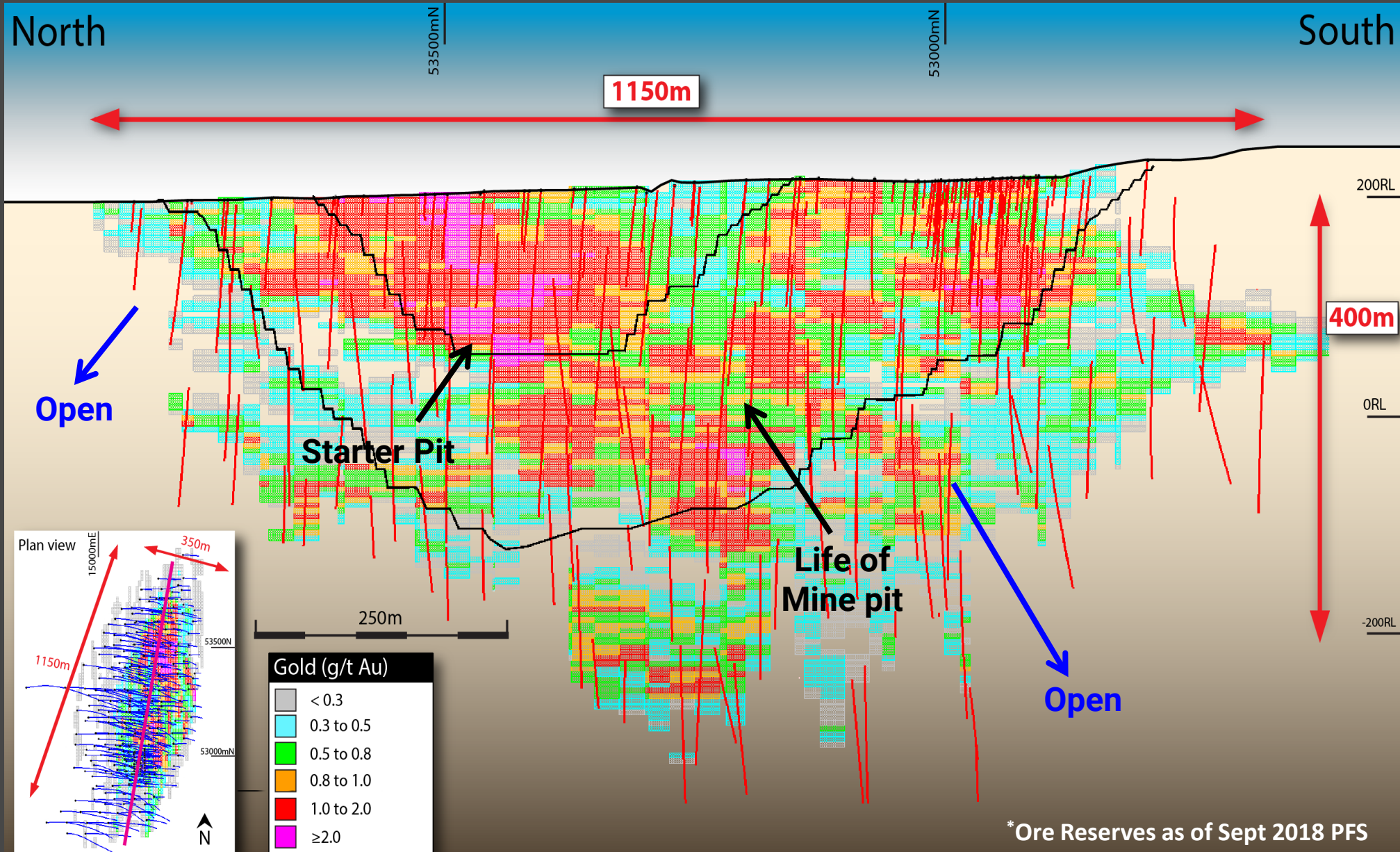
Probable Ore Reserve\*

**4.76 Moz**

129.6Mt @ 1.14 g/t Au;  
0.5 g/t cut off

## Capex Payback

1.8 years





# Cross Section – Grade Distribution

**118,864m**

Drilled since first discovery hole

**64,423m**

HQ size Diamond Drilling

**41,170m**

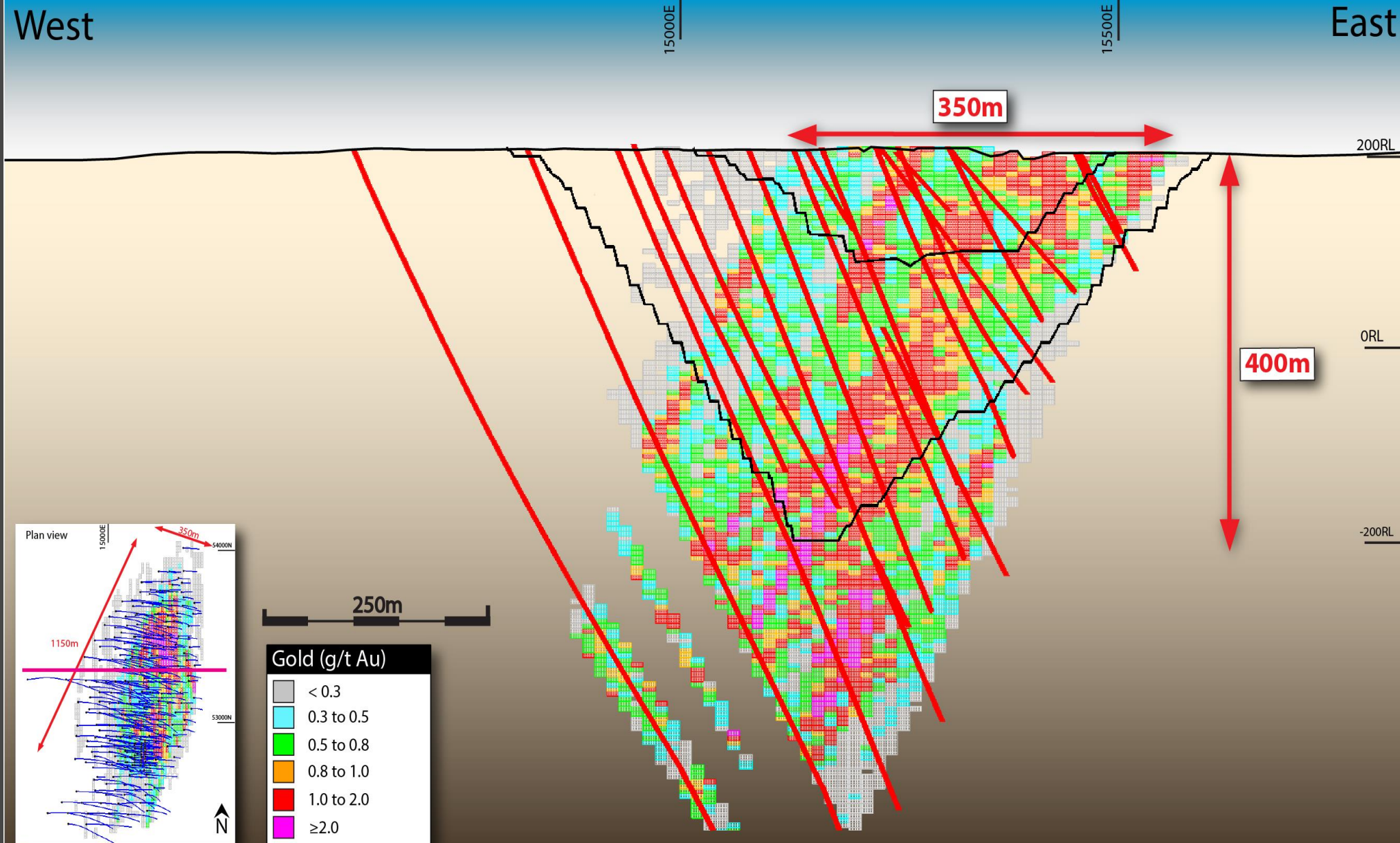
5.5" size RC Drilling

**13,271m**

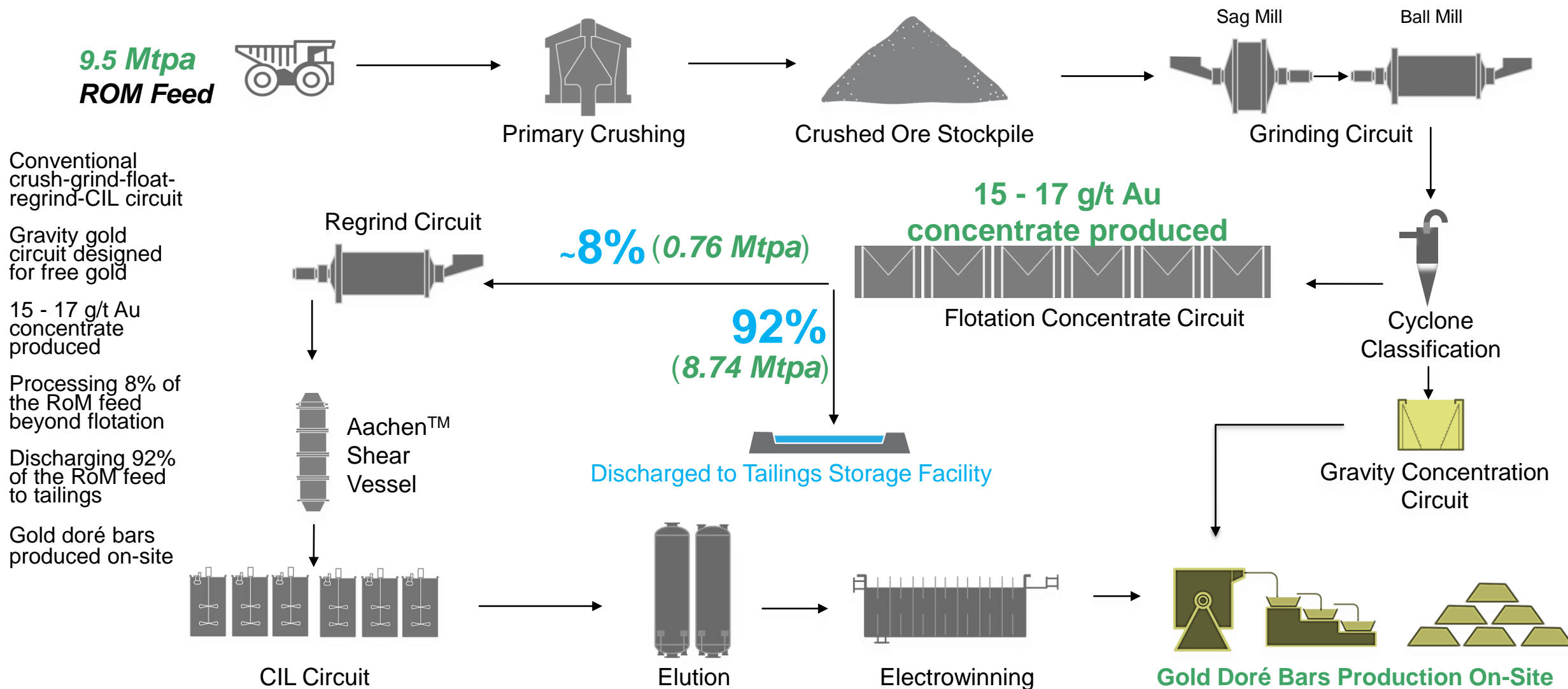
Drilled for Grade Control

**350m**

Average width of mineralisation



# Proposed Process Flowsheet



# Quality Partners

**Lycopodium**



**MPR** *Geological  
Consultants Pty Ltd*





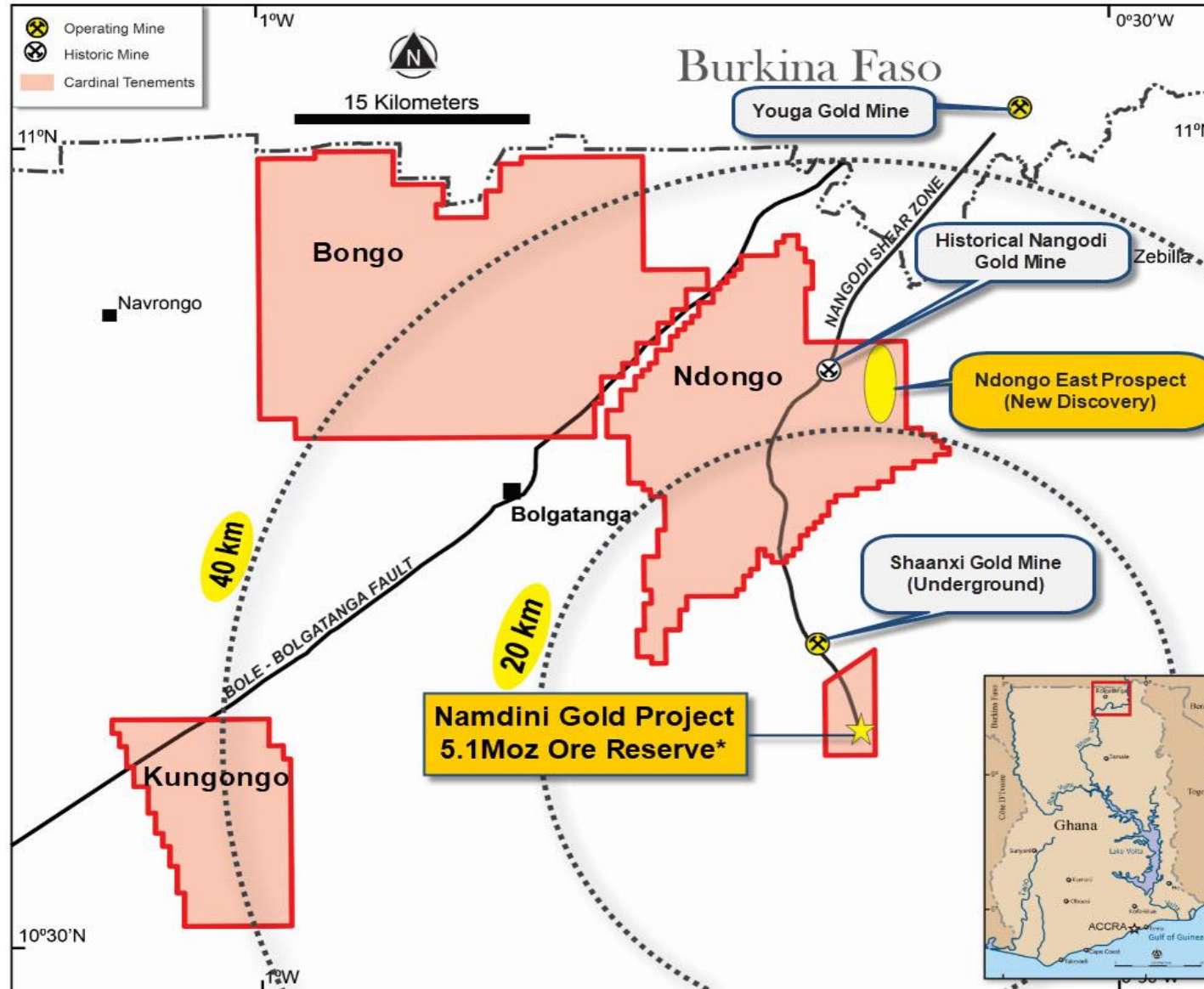
# District Exploration

**Highly prospective land package totals ~900km<sup>2</sup>**










# District Initiatives



\*Ore Reserve as of 3 April 2019

7.4Mt @ 1.31g/t Au for 0.4Moz Au Proved and 131.2Mt @ 1.12g/t Au for 4.7Moz Au Probable; 0.5g/t Au cut off

# Development Timeline

	2019 Q3	2019 Q4	2020 H1	2020 H2	2021	2022 H2
Feasibility Study (FS)*						
Decision to Mine						
Construction Development						
Gold Production						
District Exploration						
<i>- Subject to result success and seasonal influences</i>						

\* The Company continues to aim for delivery of the Feasibility Study by end of Q3 2019 upon receiving completed laboratory testwork, checks and sign-offs being delivered by Maelgwyn using its Aachen Process (ASX/TSX press release 4 June 2019).



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A large, stylized star graphic composed of several triangular segments in green, red, and dark grey. The text "Thank you" is written in white across the right side of the star.

# Thank you

# Disclaimer and Forward Looking Statements

## FORWARD LOOKING STATEMENTS

This presentation contains “forward-looking statements”, within the meaning of Section 27A of the United States Securities Act of 1933, as amended and Section 21E of the United States Exchange Act of 1934, as amended and forward-looking information as defined under applicable Canadian securities legislation (collectively, “forward-looking statements”). These forward-looking statements relate to, among other things, the objectives, goals, strategies, beliefs, intentions, plans, estimates and outlook of Cardinal Resources. Ltd (“Cardinal Resources” or the “Company”). Forward-looking statements can generally be identified by the use of words such as “believe,” “anticipate,” “expect,” “intend,” “plan,” “goal,” “will,” “may,” “target,” “potential” and other similar expressions. In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances are forward-looking statements. Forward-looking statements are based on estimates and assumptions made by Cardinal Resources in light of its experience and perception of historical trends, current conditions and expected future developments, as well as other factors Cardinal Resources believes are appropriate in the circumstances. These estimates and assumptions are inherently subject to significant business, economic, competitive and other uncertainties and contingencies, many of which, with respect to future events, are subject to change. Although Cardinal Resources believes that the expectations reflected in such forward-looking statements are reasonable, undue reliance should not be placed on such statements.

In making the forward-looking statements in this presentation, Cardinal Resources has made several assumptions, including, but not limited to assumptions concerning: production costs; statements with respect to the future price of gold, the estimation of mineral reserves and resources, the realization of mineral reserve estimates, the timing and amount of estimated future production, costs of production, capital expenditures, costs and timing of the development of new deposits, success of exploration activities, permitting time lines, currency exchange rate fluctuations, requirements of additional capital, government regulation of mining operations, environmental risks, costs of closure of various operations and changes to the political stability or government regulation in the country in which Cardinal Resources operates.

Actual results may differ materially from those expressed or implied in the forward-looking statements contained in this presentation. Important factors that could cause actual results to differ materially from these expectations are discussed in greater detail under the heading “Risk Factors” in Cardinal Resource’s annual information form for the current year available on [www.sedar.com](http://www.sedar.com). When relying on forward-looking statements to make decisions with respect to Cardinal Resources, carefully consider these risk factors and other uncertainties and potential events. Cardinal Resources undertakes no obligation to update or revise any forward-looking statement, except as required by law.

Although Cardinal Resources has carefully prepared and verified the Mineral Resource and Ore Reserve figures presented herein, such figures are estimates, which are, in part, based on forward-looking information and no assurance can be given that the indicated level of gold will be produced. Estimated Mineral Resources and Ore Reserves may have to be recalculated based on actual production experience. Market price fluctuations of gold as well as increased production costs or reduced recovery rates and other factors may render the present Probable Ore Reserves unprofitable to develop at a particular site or sites for periods of time.

## PRE-FEASIBILITY STUDY – CAUTIONARY STATEMENT (REFER PRESS RELEASE DATED 18 SEPTEMBER 2018)

The PFS is based upon a Probable Ore Reserve derived from Indicated Mineral Resources. No Inferred Mineral Resources have been included in the estimation of Ore Reserves. The Company advises that the Probable Ore Reserve provides 100% of the total tonnage and 100% of the total gold metal underpinning the forecast production target and financial projections. No Inferred Mineral Resource material is included in the Life of Mine plan. The PFS is based on material assumptions outlined in the PFS Report. The Company has concluded it has a reasonable basis for providing the forward-looking statements in this document.

# Competent Person's Statement and Disclaimer

## QUALIFIED PERSON - COMPETENT PERSON'S STATEMENT

**Mr. Daryl Evans**, who is a full time employee of Independent Metallurgical Operations Pty Ltd, is a Qualified Person as defined by National Instrument 43-101- Standards of Disclosure for Mineral Projects ("NI43-101"). Mr. Evans holds a Qualified Professional status being a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM). Mr. Evans is an independent consultant appointed by Cardinal. Mr Evans has no economic, financial or pecuniary interest in the company

**Mr Nicolas Johnson**, a member of the Australian Institute of Geoscientists, who is an employee of MPR Geological Consultants Pty Ltd, has compiled the information relating to the Mineral Resources in the Resource Summary of the Namdini Project. Mr Johnson has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person, as defined in the JORC Code and a Qualified Person as defined by the NI43-101 instrument. Mr Johnson has no economic, financial or pecuniary interest in the company.

**Mr. Richard Bray** is a Registered Professional Geologist with the Australian Institute of Geoscientists. Mr Bray has compiled the information in this presentation that relates to the Exploration Results and Mineral Resources. Mr. Bray has more than 5 years' experience relevant to the styles of mineralisation and type of deposit under consideration and to the activity which is 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" and as a Qualified Person as defined by the NI43-101 instrument. Mr. Bray is a fulltime employee of Cardinal Resources Limited and holds equity securities in the Company.

**Mr. Ekow Taylor** is a Chartered Professional Geologist with the Australasian Institute of Mining and Metallurgy. Mr Taylor has compiled the information in this presentation that relates to the Exploration Results and Mineral Resources. Mr. Taylor has more than 5 years' experience relevant to the styles of mineralisation and type of deposit under consideration and to the activity which is 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" and as a Qualified Person as defined by the NI43-101 instrument. Mr. Taylor is a fulltime employee of Cardinal Resources Limited and holds equity securities in the Company.

**Mr Glenn Turnbull**, a Competent Person who is a Chartered Engineer and a Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Golder Associates Pty Ltd has compiled the information relating to the Ore Reserves in the Ore Reserve Summary. Mr Turnbull has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the JORC Code 2012 and is a qualified person for the purposes of NI43-101. Mr Turnbull has no economic, financial or pecuniary interest in the company

## NO NEW INFORMATION

This Presentation contains information extracted from ASX and TSX market announcements reported in accordance with the JORC Code (2012) and NI 43-101 and available for viewing at [www.cardinalresources.com.au](http://www.cardinalresources.com.au)

Cardinal Resources Limited ("Cardinal" or the "Company") confirms that it is not aware of any new information or data that materially affects the information included in any original ASX market announcements carried out at the Company's projects and that all material assumptions and technical parameters underpinning the exploration activities and estimates of Mineral Resources in the relevant market announcements continue to apply and have not been materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

Please also refer to the Company's Annual and Quarterly Reports for further background information which are available on the Company's website.