

**Poised to become a  
+100kozpa Australian gold  
producer in the Pilbara  
Region, WA**

Reaping the rewards of our  
aggressive exploration  
commitment and expansion  
strategy at Nullagine

**Peter Cash, CEO**  
Diggers & Dealers  
August 2018



# Disclaimer & Competent Person's Statement



## Disclaimer

This presentation contains only a brief overview of Millennium Minerals Limited ("Millennium"). The contents of this presentation, including matters relating to the geology of Millennium's projects, may rely on various assumptions and subjective interpretations which it is not possible to detail in this presentation and which have not been subject to any independent verification.

This presentation contains a number of forward-looking statements. Known and unknown risks and uncertainties, and factors outside of Millennium's control, may cause the actual results, performance and achievements of Millennium to differ materially from those expressed or implied in this presentation.

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The information contained in this presentation is not suitable for detailed investigation or analysis of any particular issue. Current and potential investors and shareholders should seek independent advice before making any investment decision in regard to Millennium or its activities.

## Competent Person's Statement

The information in this presentation relating to exploration results from the Nullagine Project has been extracted from various Company announcements and are available to view at [www.millenniumminerals.com.au](http://www.millenniumminerals.com.au).

The information in this presentation relating to Mineral Resources or Ore Reserves is extracted from the announcements titled:

1. Mineral Resources and Ore Reserve Statement dated 15 February 2017;
2. Growth strategy gains momentum with maiden underground Resource dated 7 August 2017;
3. Outstanding high-grade intercepts strengthen prospectivity of Bartons open pit and underground dated 2 November 2017;
4. New high-grade oxide discovery at Yates as Bartons underground delivers more exceptional intercepts dated 21 November 2017;
5. Further high-grade results highlight outstanding growth potential at Nullagine dated 23 November 2017;
6. New high-grade intercepts from emerging Redbeard discovery at Nullagine dated 12 December 2017;
7. Bartons underground resource upgrade and maiden reserve paves way for development of first underground mine at Nullagine dated 8 January 2018;
8. Millennium continues outstanding run of exploration success with impressive drilling results dated 22 January 2018;
9. Millennium poised to significantly extend mine life at Nullagine as newly-identified processing option cuts costs dated 5 February 2018; and
10. Millennium delivers 38% interim increase in Ore Reserves to 304,700oz dated 31 July 2018,

and are available to view at [www.millenniumminerals.com.au](http://www.millenniumminerals.com.au)

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the results and estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings as presented have not been materially modified from the original market announcement.

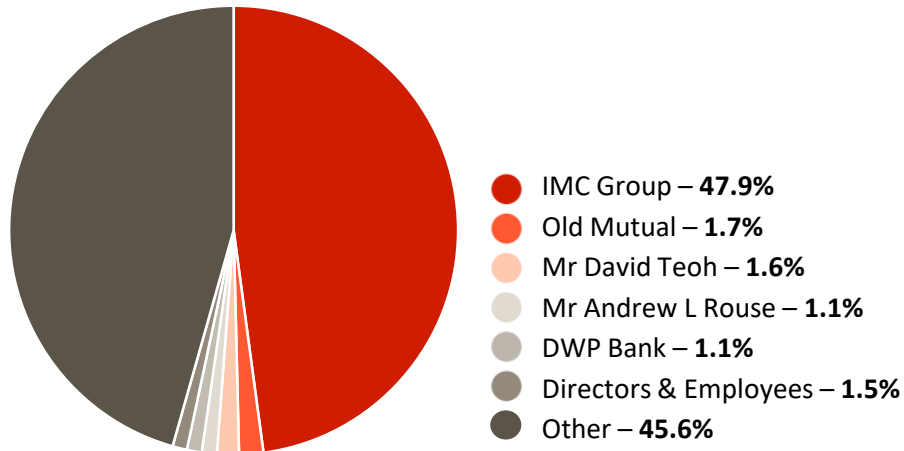
# Corporate Overview



Shares on Issue	Market Cap (A\$0.19/share)
792.0M	~A\$150M
Cash & Bullion (30 Jun 18)	Debt
A\$13.6M	NIL - \$17.5M undrawn
ASX Index	ASX Code
All Ords	MOY



## Key Shareholders



## Board and Management

Greg Bittar	Non-Executive Chairman
Peter Lester	Non-Executive Director
Tim Kennedy	Non-Executive Director
Bruno Lorenzon	Non-Executive Director
Peter Cash	Chief Executive Officer
Dean Will	Chief Operating Officer
Ray Parry	Chief Financial Officer
Michael Poepjes	BD and Technical Services

## Key Consultants and Contractors

Ausenco

MineScope

GBF Underground

Ausdrill Geotechnical

Entech

Strike Drilling

# Millennium Corporate Video

**1**  
NULLAGINE  
OPERATIONS

**2**  
POSITIVE  
EXPANSION  
STUDY

**3**  
MOVING  
UNDERGROUND

**4**  
EXPLORATION

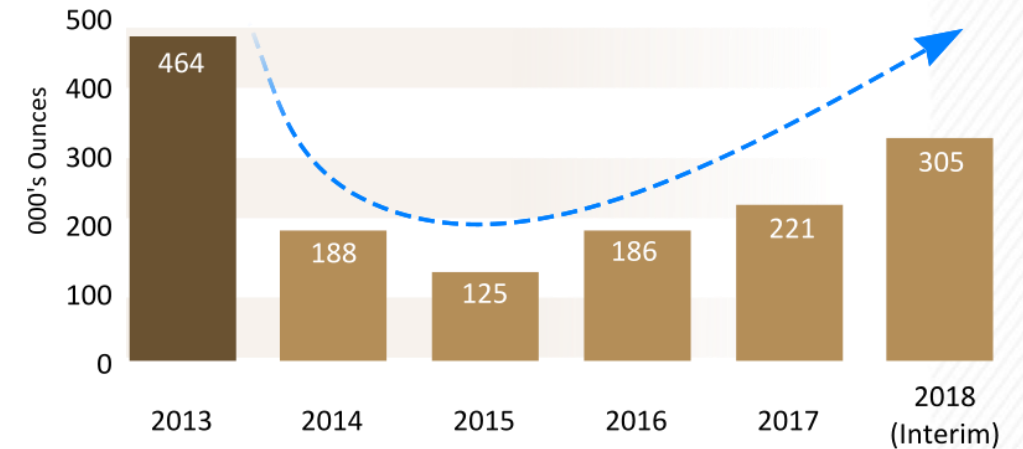


# Nullagine Operations – Strong Production and Cash-flows

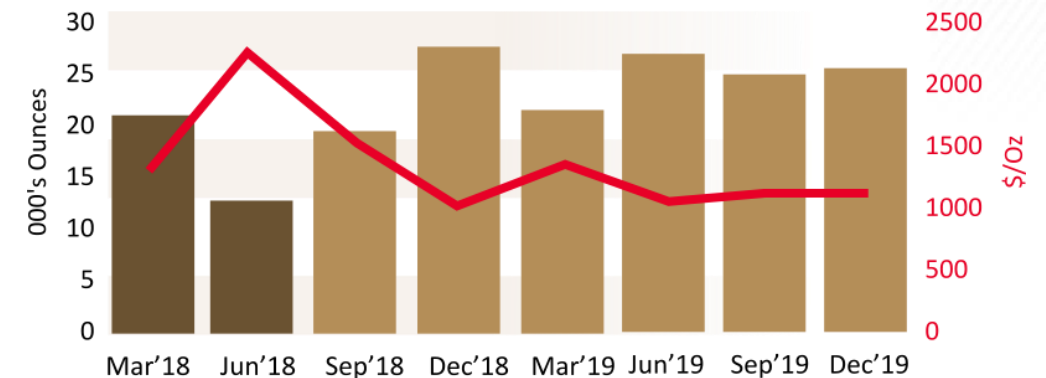


- ▶ Significant operational improvements and upgrades completed:
  - Focus switched to mining larger scale, longer life deposits = more sustainable, lower cost ore sources
  - Mill refurbishment and upgrades completed = better plant availability and reliability
  - Improved mine scheduling and stockpile protection = greater capability to withstand wet season conditions
- ▶ 2018 production guidance of 75-80koz at AISC A\$1280-1350/oz
  - ▶ First half production of 33koz
- ▶ Major increase in production in second half underpinned by new high-grade ore sources at Golden Eagle, Au81 West, Redbeard and Bartons Underground:
  - ▶ September Quarter guidance: 20-22koz
  - ▶ December Quarter guidance: 25koz
- ▶ On track to achieve 100kozpa run-rate in Q4 2018
- ▶ July 2018 Interim Ore Reserve update (305koz) delivers mine life visibility of three years

## Reserve History



## Production and AISC



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- 
- The diagram illustrates the process flow of a gold processing plant, highlighting the integration of a new circuit (blue) with an existing circuit (yellow).
- Legend:**
- NEW CIRCUIT:** Blue lines and boxes.
  - EXISTING CIRCUIT:** Yellow lines and boxes.
- Process Flow:**
- ROM BIN:** Raw material is loaded from a truck into the ROM bin.
  - PRIMARY CRUSHER:** Material is crushed and sent to the **CRUSHED ORE STOCKPILE**.
  - CRUSHED ORE STOCKPILE:** Material is stored before being fed into the **SAG MILL**.
  - SAG MILL:** Material is ground and sent to the **GRAVITY CONCENTRATOR**.
  - GRAVITY CONCENTRATOR:** Material is concentrated and sent to the **EXISTING SAFETY SCREEN** (part of the new circuit).
  - EXISTING SAFETY SCREEN:** Material is screened. The **EXISTING SAFETY SCREEN TAILS HOPPER** (existing circuit) sends material to the **TAILINGS THICKENER**. The **NEW CIRCUIT** (blue) bypasses the screen via a **BYPASS LINE** to the **DE-SLIME CYCLONE**.
  - DE-SLIME CYCLONE:** Material is cycloned and sent to the **PRIMARY CONCENTRATOR** (Reichert/Falcon).
  - PRIMARY CONCENTRATOR:** Material is concentrated and sent to the **SPIRALS**.
  - SPIRALS:** Material is processed and sent to the **UFG/ TOWER MILL/ ISA MILL**.
  - UFG/ TOWER MILL/ ISA MILL:** Material is milled and sent to the **INTENSE CYNANIDATION** stage.
  - INTENSE CYNANIDATION:** Material is cyanidated and sent to the **CIL CIRCUIT**.
  - CIL CIRCUIT:** Material is processed in a series of tanks. The **NEW CIRCUIT** (blue) bypasses the CIL circuit and goes directly to the **ELUTION** stage.
  - ELUTION:** Material is eluted and sent to the **ELECTROWINNING** stage.
  - ELECTROWINNING:** Material is electrowon and sent to the **SMELTING FURNACE**.
  - SMELTING FURNACE:** Material is smelted and sent to the **TAILINGS STORAGE FACILITY**.
  - TAILINGS STORAGE FACILITY:** Tailings are stored.
  - SAFE:** The final product is stored in a safe.

[www.millenniumminerals.com.au](http://www.millenniumminerals.com.au)

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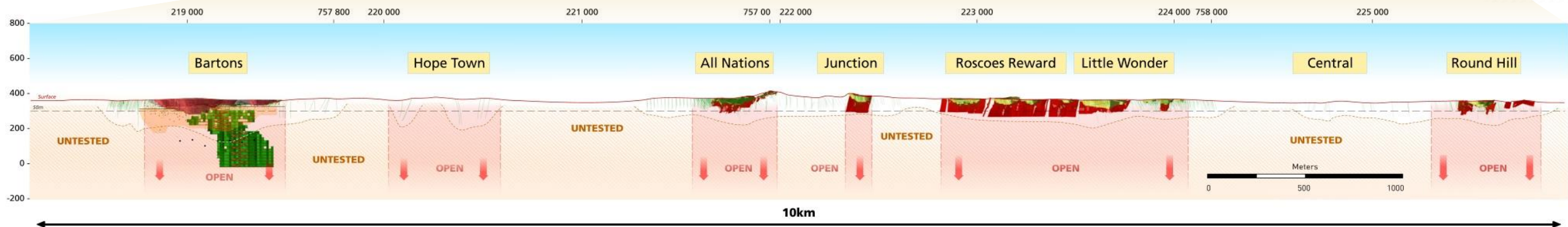
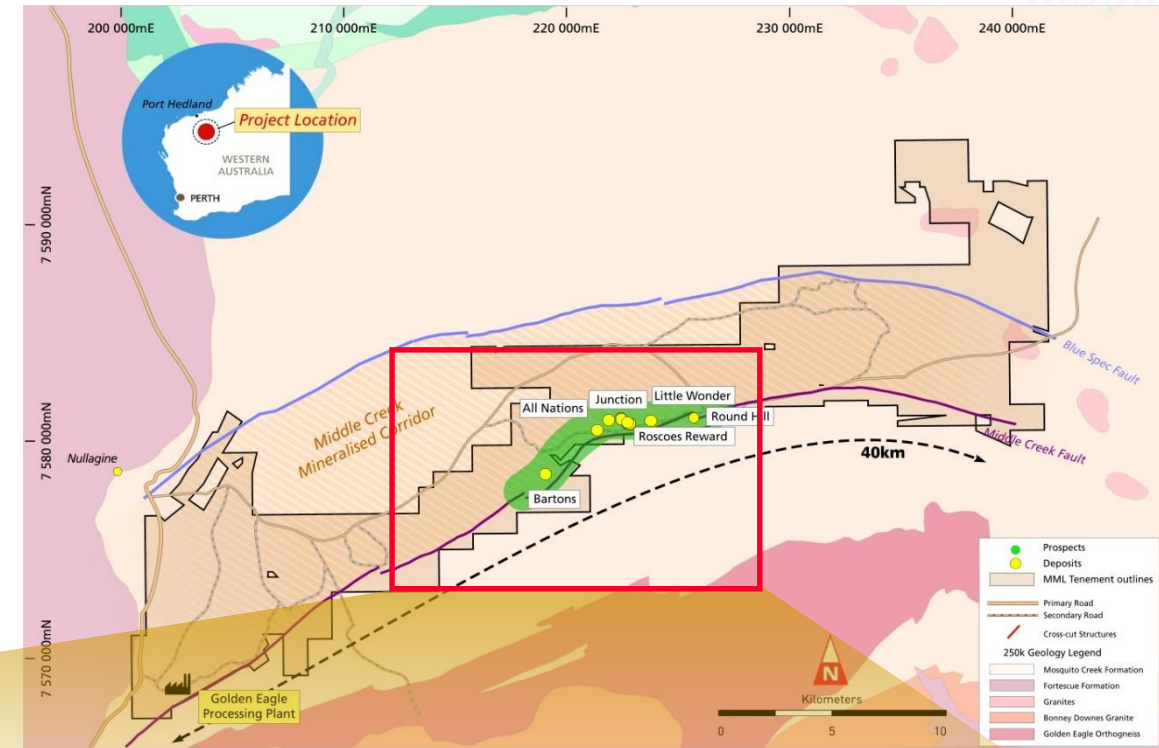


# Underground Potential at Nullagine – Multiple Targets Identified

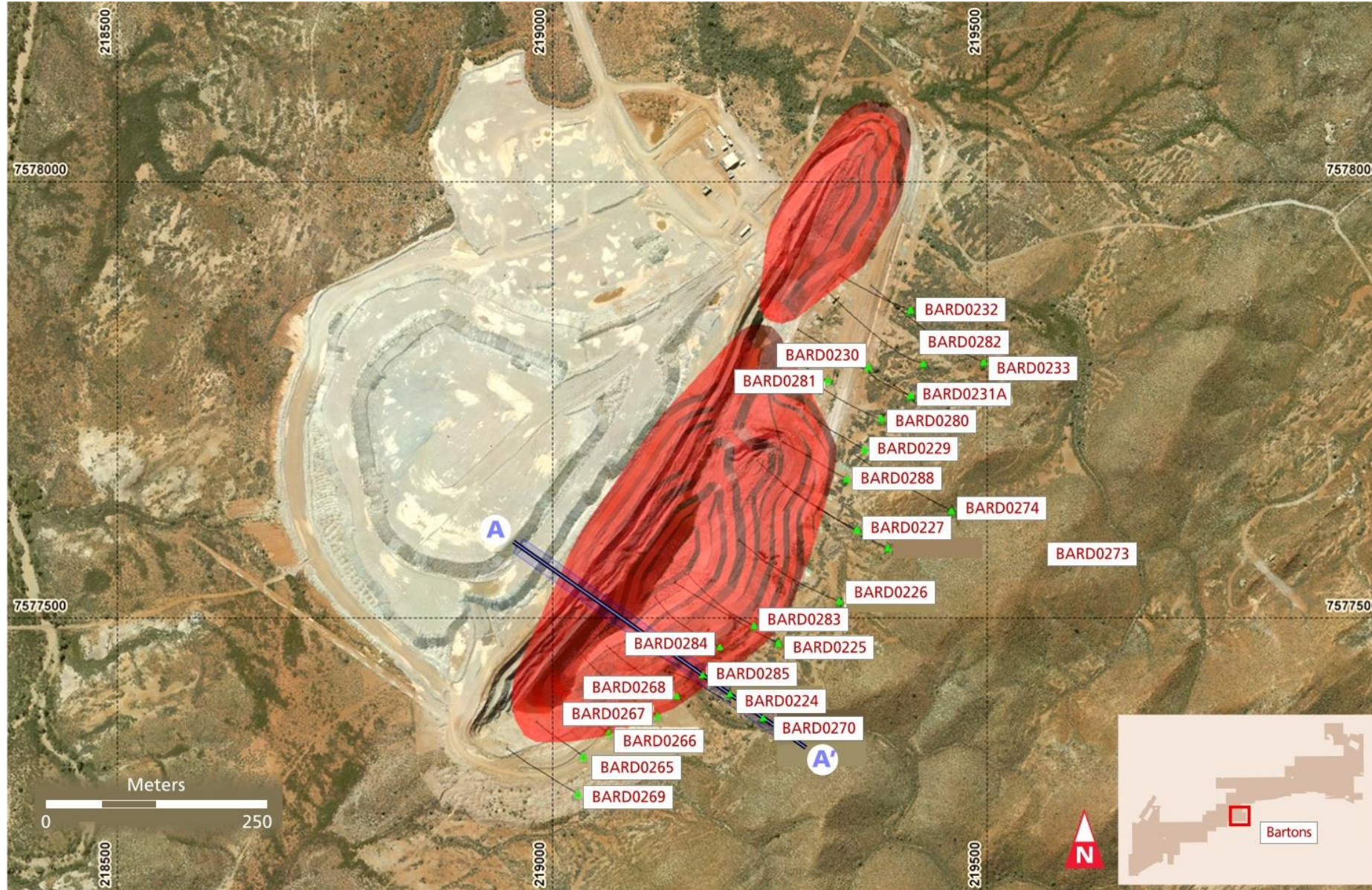


## Potential for substantial increases in Mineral Resources beneath all known deposits:

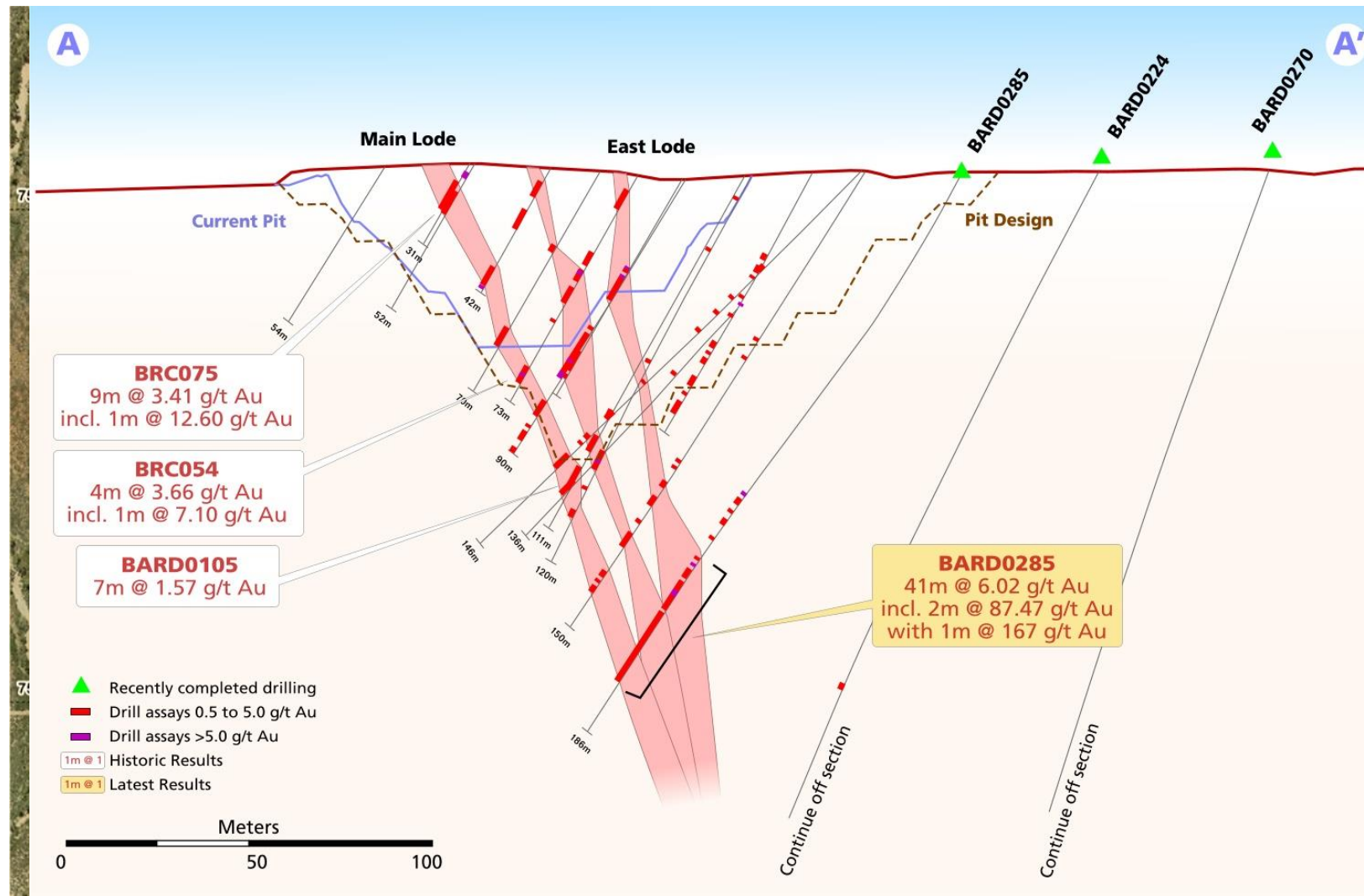
- ▶ Minimal deeper drilling below the + 30 shallow oxide deposits discovered to date – only 4 deposits tested at depth
- ▶ Extensive drilling program underway to grow Mineral Resource inventory below several deposits
- ▶ Drilling has so far confirmed the potential for future underground mines below deposits tested to date
- ▶ Development of first underground mine underway at Bartons
- ▶ Underground studies underway on several additional deposits with more to come



# Bartons – The First Underground Mine at Nullagine

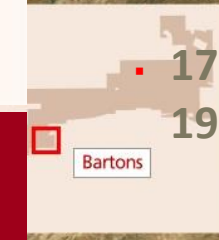


# Bartons – The First Underground Mine at Nullagine



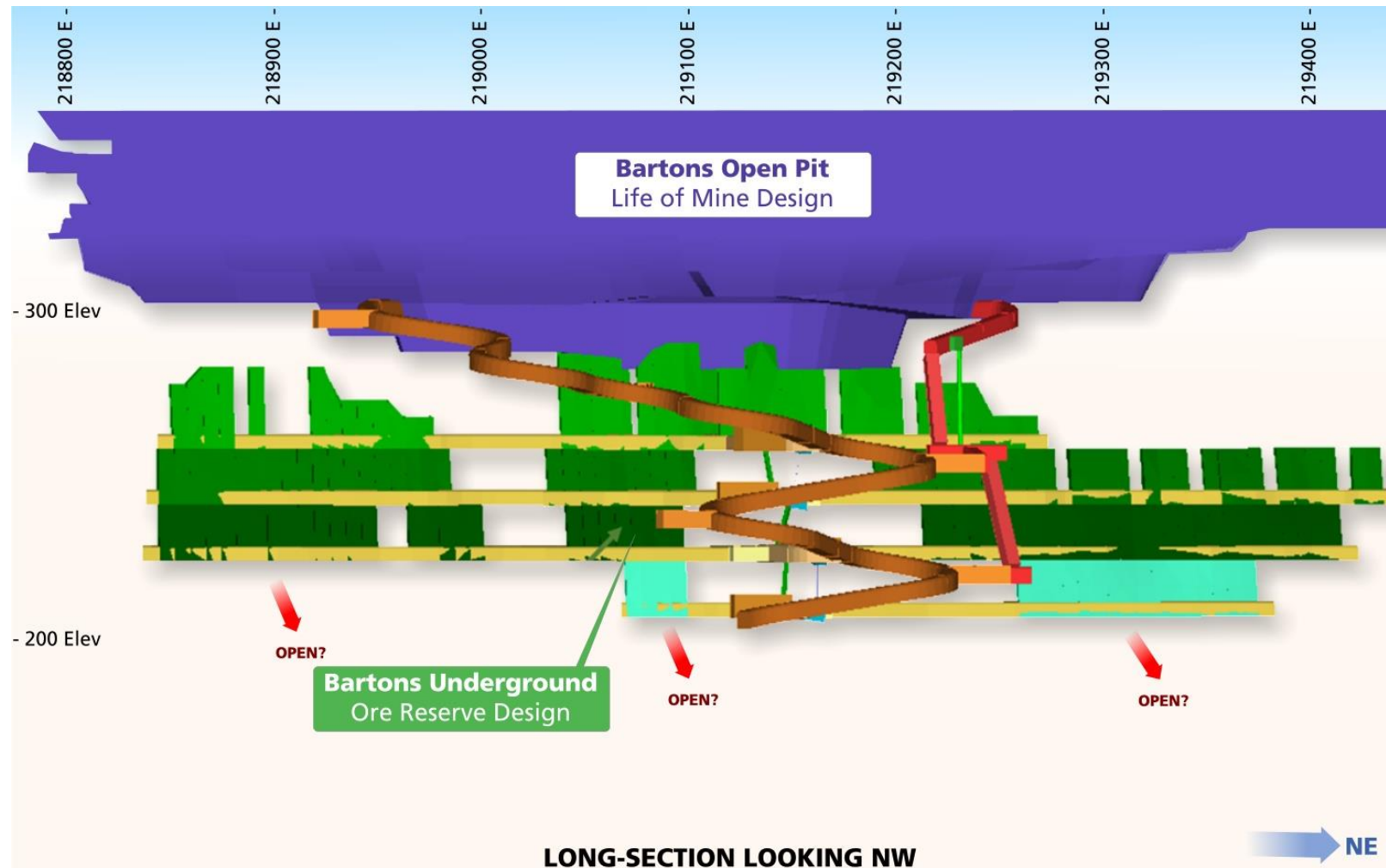
► Outstanding thick, high-grade results from recent deeper drilling, including standout intercepts of:

- 10.5m at 38.64g/t Au, including 5m @ 79.96g/t Au
- 41m at 6.02g/t Au, including 2m @ 87.47g/t and 1m @ 167g/t
- 17m at 3.41g/t Au, including 1m @ 19.9g/t
- 11m @ 21.46g/t including 3m @ 62.17g/t and 3m @ 12.13g/t
- 11m @ 9.34g/t including 6m @ 15.99g/t
- 17m @ 8.97g/t including 7m @ 19.34g/t



Deeper mineralisation at Bartons is free-milling and can be treated through the existing CIL plant with recoveries of up to 90%

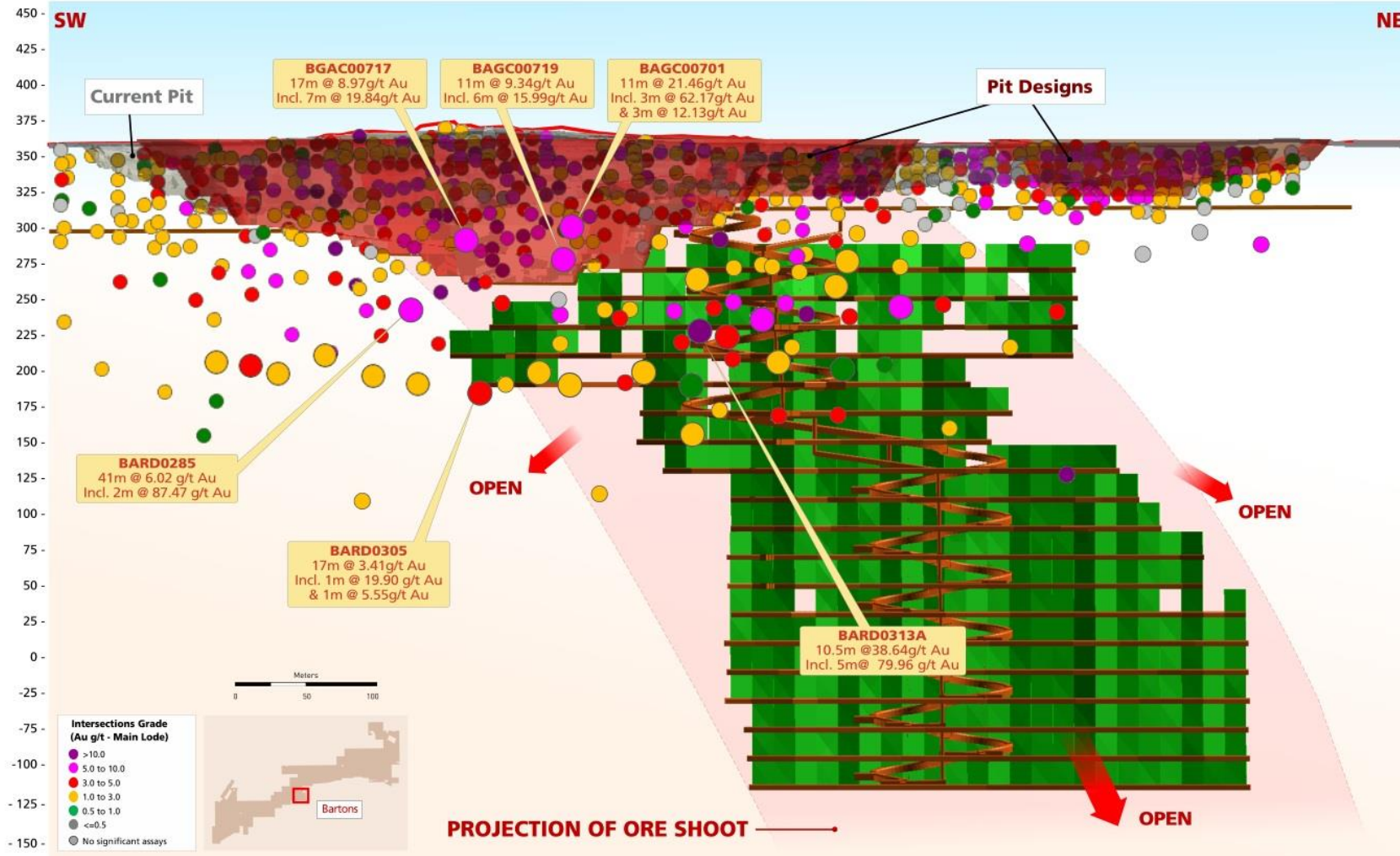
# Bartons – The First Underground Mine at Nullagine



- ▶ Outstanding thick, high-grade results from recent deeper drilling, including standout intercepts of:
  - 10.5m at 38.64g/t Au, including 5m @ 79.96g/t Au
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Deeper mineralisation at Bartons is free-milling and can be treated through the existing CIL plant with recoveries of up to 90%

# Bartons – The First Underground Mine at Nullagine



**Bartons will shortly become Millennium's first underground mine at Nullagine, with first high-grade development ore expected in July**

- ▶ UG development well advanced, with 561m of development completed to date
- ▶ First high-grade development ore expected in July, with high-grade stoping ore to commence in Q1 2019
- ▶ Mineralisation remains open at depth and along strike
- ▶ All deeper holes have successfully intersected the main ore zone and continue to define extensions
- ▶ Depth extensions to be targeted from UG drill platforms

# Additional Underground Targets – Pipeline of Organic Growth

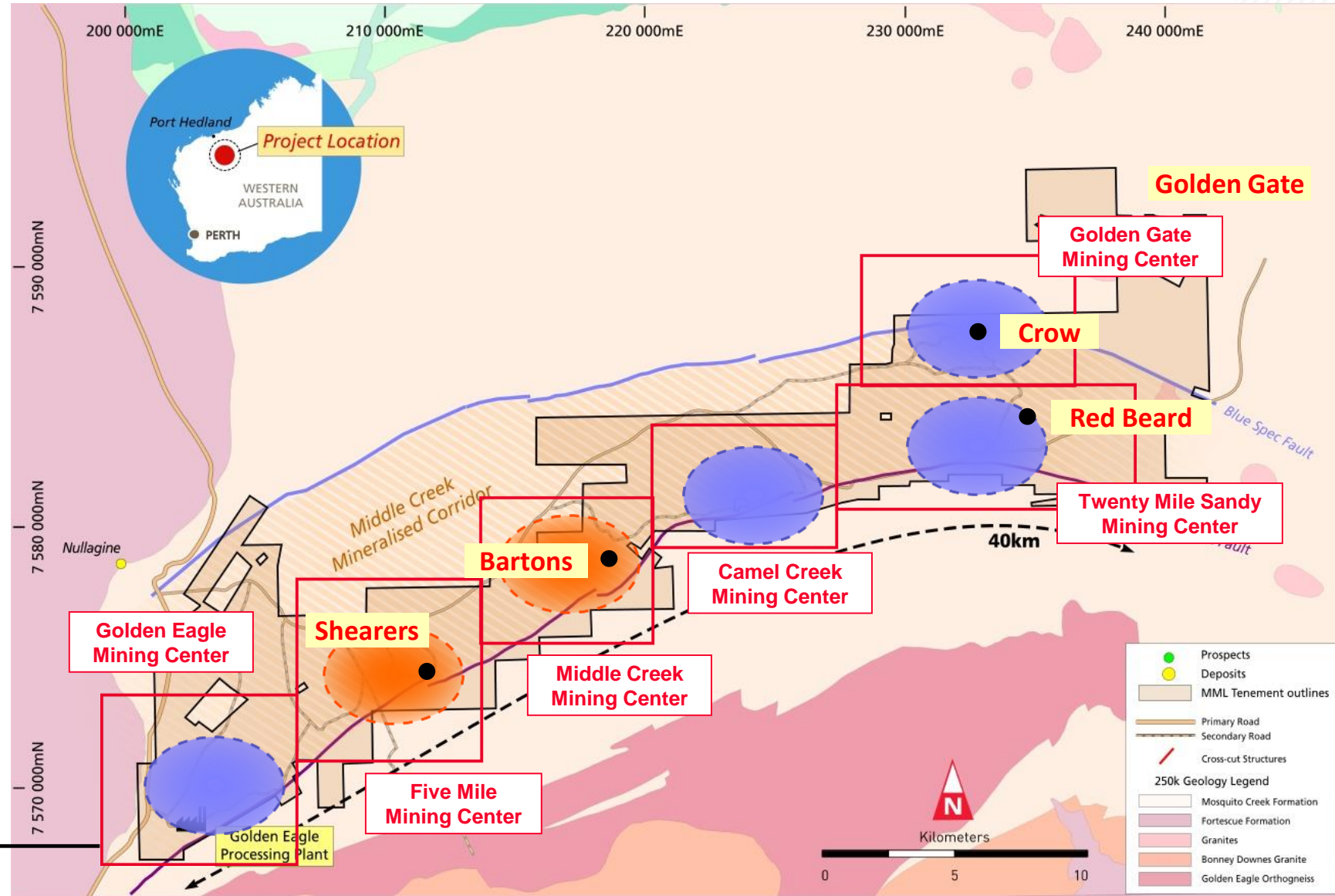


Of the 30 deep targets identified at Nullagine, only four have been tested to date – all delivering highly encouraging results

- Free milling mineralisation at Depth
- Sulphide mineralisation at depth

## Golden Eagle Mining Centre

Pre-stripping and mining activities now underway at the Golden Eagle Mining Centre - first high-grade ore benches on schedule to be accessed in September



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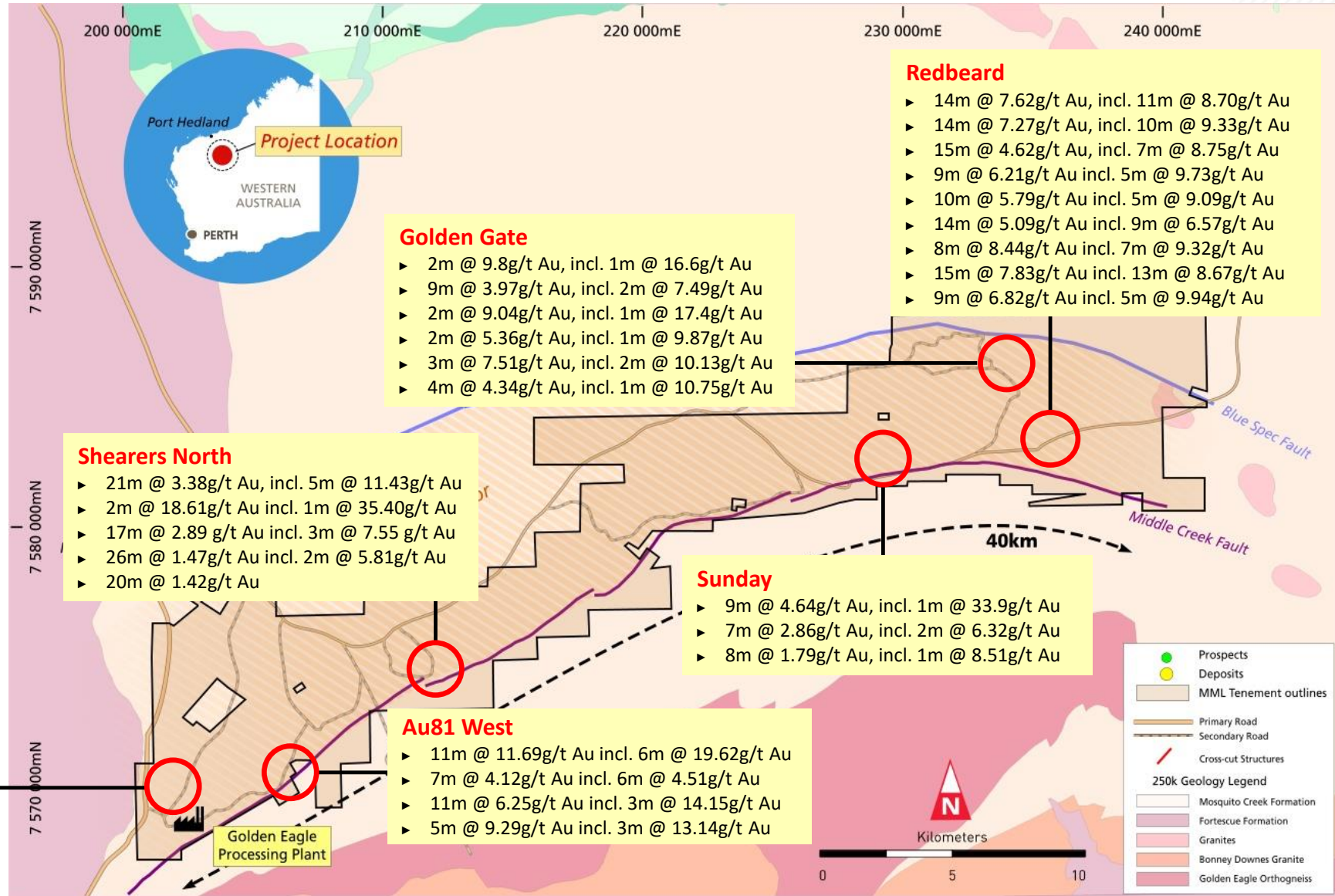
# Exploration – A Key Priority



- ▶ Substantial ongoing commitment to exploration
- ▶ Exploration strategy focused on:
  - Oxide exploration – continuing to successfully replace mined ounces and extend mine life
  - “Sulphide ore” exploration (open pit and underground) to support expansion studies

**Golden Eagle South West**

- ▶ 3m @ 8.06g/t Au incl. 1m @ 21.1 g/t Au
- ▶ 10m @ 2.35g/t Au
- ▶ 8m @ 2.92g/t Au incl. 1m @ 7.65g/t Au

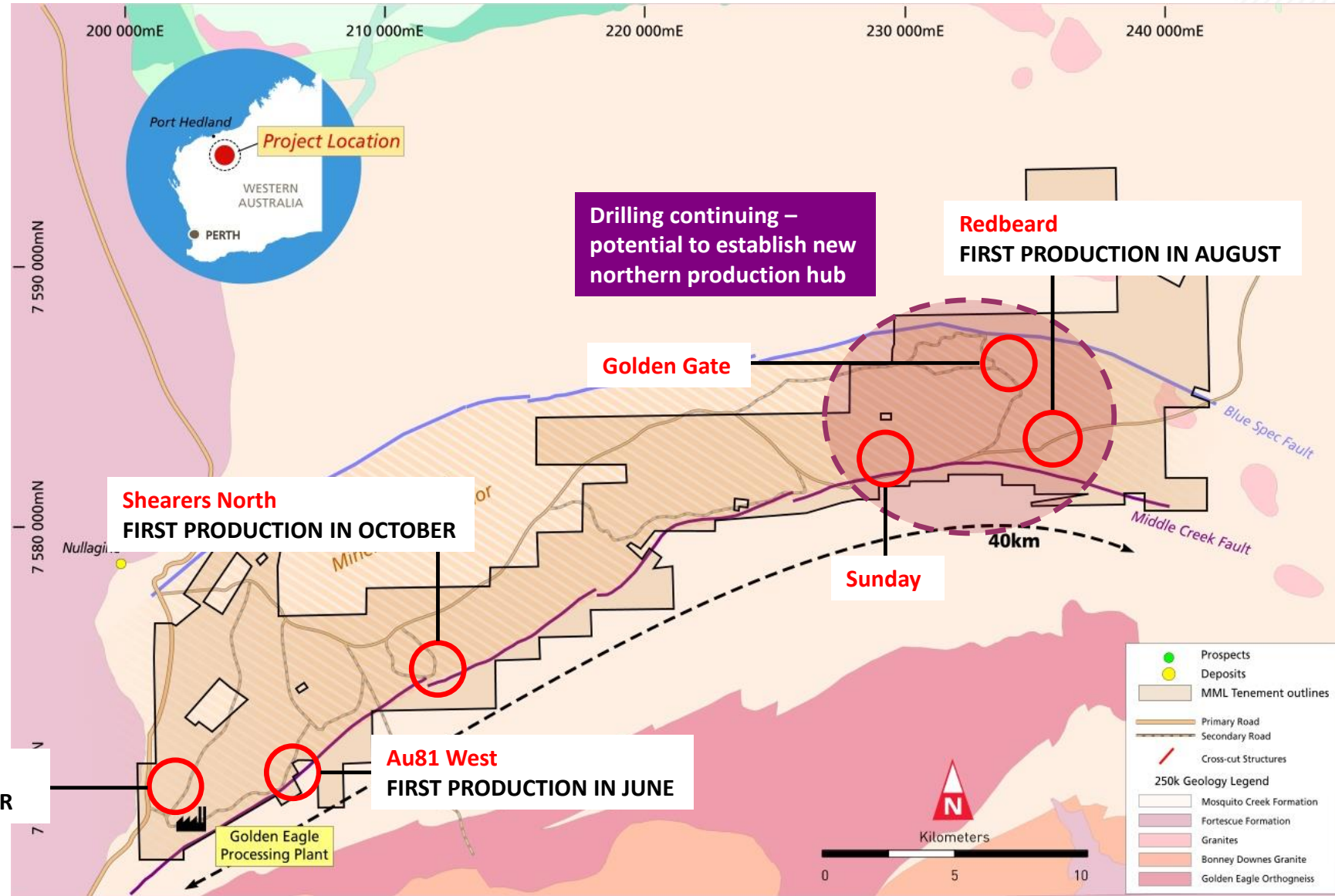


# Exploration – A Key Priority

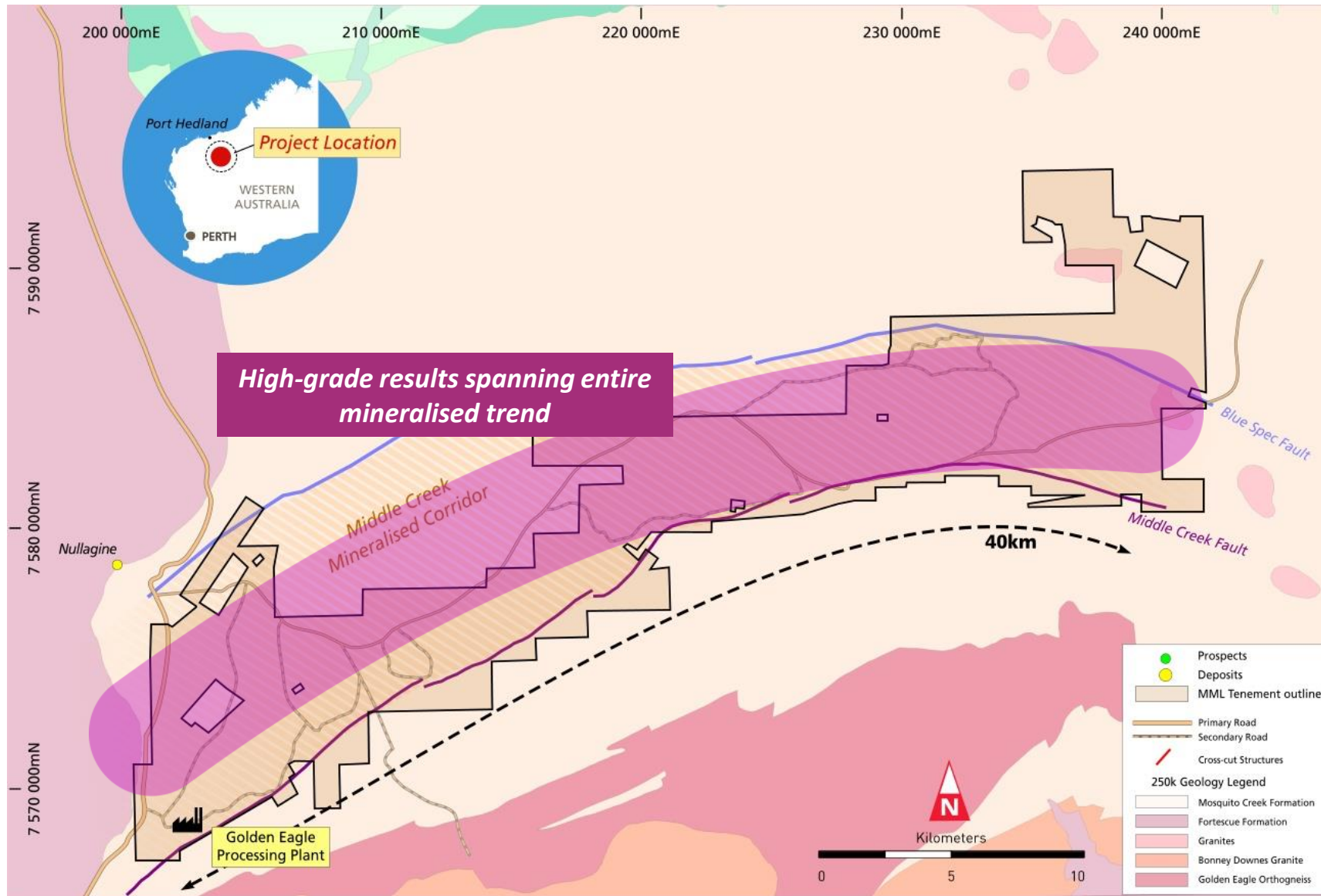


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**Golden Eagle South West**  
FIRST PRODUCTION IN SEPTEMBER

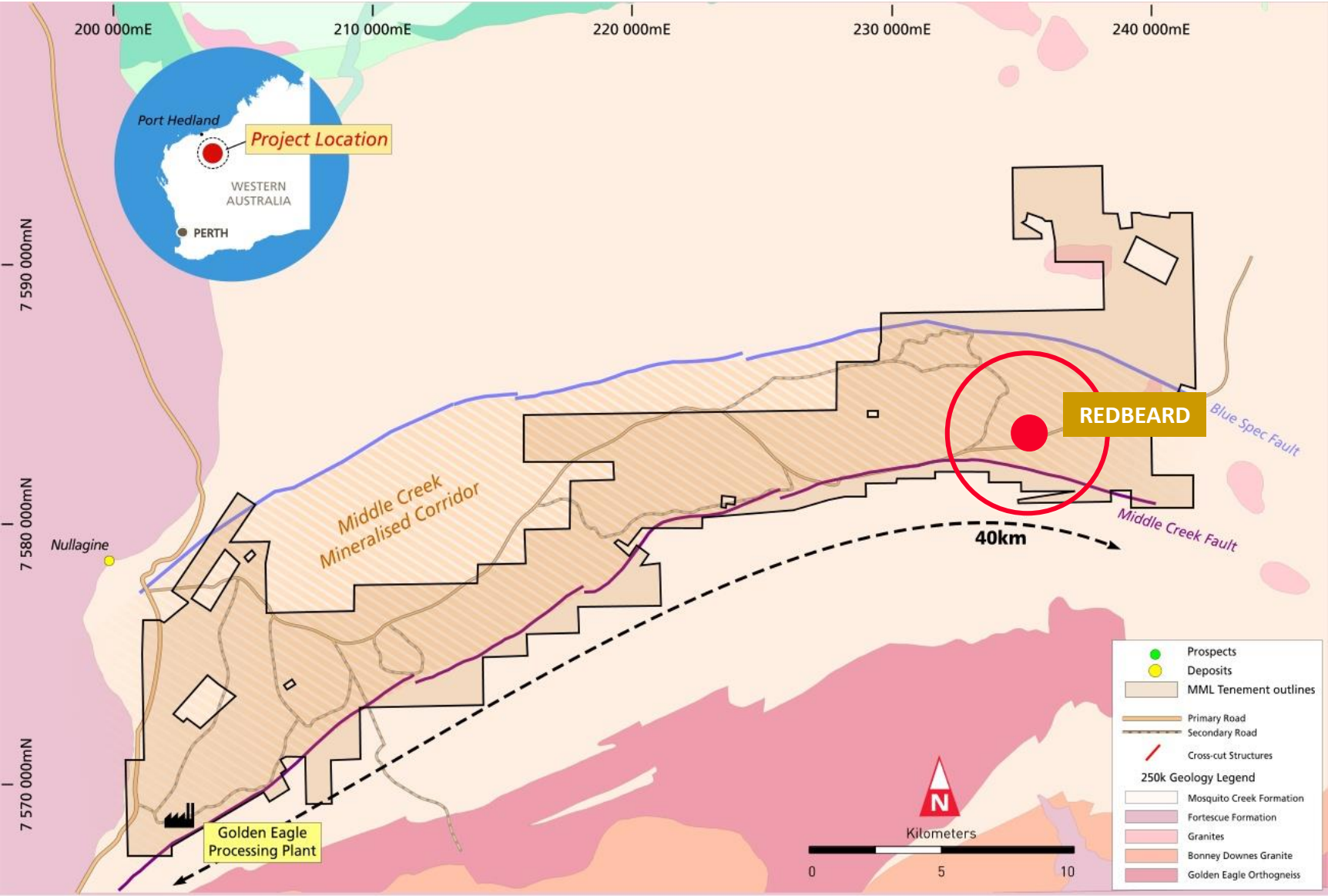


# Oxide Exploration – Remains a Key Priority

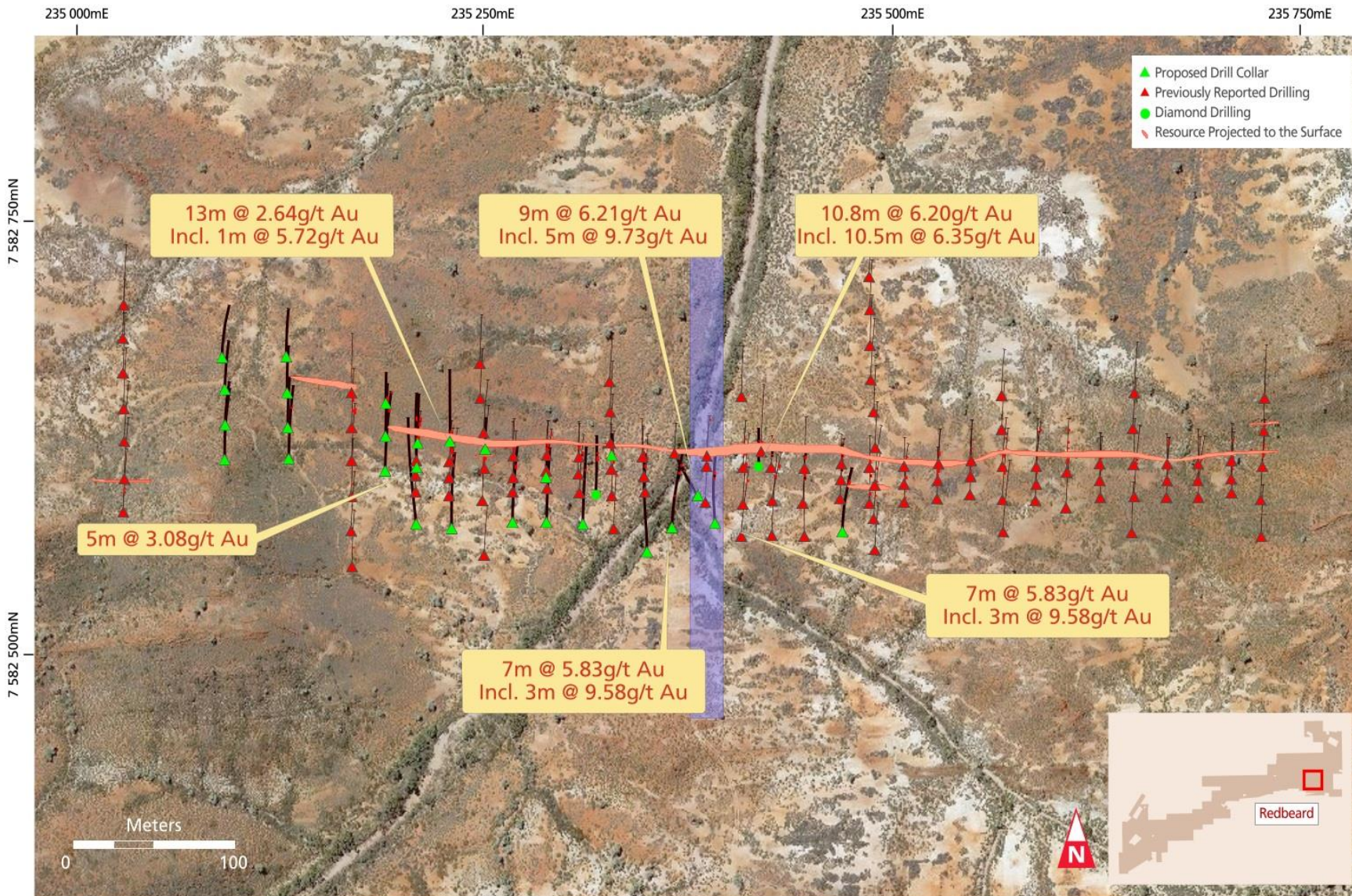


- ▶ Oxide exploration targeting incremental ounces:
  - Near-mine, shallow targets including extensions adjacent to existing pits
  - New brownfields discoveries
- ▶ Drilling continues to deliver thick, high-grade intersections across the entire mineralised trend:
  - Outstanding recent results from Shearers, Shearers North, Au81 West and Redbeard

# Redbeard – From Discovery to Production in just 9 Months!



# Redbeard – From Discovery to Production in just 9 Months!



- ▶ High-grade Ore Reserve:
  - 153,000t @ 3.5g/t Au for 17,200oz
- ▶ Highest grade open pit deposit defined at Nullagine to date
- ▶ Mining at Redbeard to commence August 2018 – 9 months after initial discovery
- ▶ Exploration now focused on deeper drilling to assess UG potential

# Key Investment Takeaways



- ▶ **Nullagine Gold Project** – generating consistent production and strong cash-flows
- ▶ **Strong, debt-free balance sheet** – maximises free cash-flow and minimises risk
- ▶ **Quality-driven mining strategy** – focusing on larger, more sustainable ore sources
- ▶ **Increasing production and mine life** – 100kozpa run rate on-track for Dec Q; 3-yr mine life growing to +5 yrs
- ▶ **Expansion study completed** – fully-funded to unlock large Sulphide Resource
- ▶ **Expanding UG resource base** – Bartons UG development underway, more UG deposits to follow
- ▶ **Ongoing exploration program continues to deliver** – high-grade intersections across the entire project
- ▶ **Nullagine now moving rapidly to the next level** – unlocking the significant value of all ore types



# Resources & Reserves



Nullagine Gold Project - Mineral Resource Statement								
Deposit	Measured		Indicated		Inferred		Total Remaining	
	Million Tonnes	Grade g/t Au	Million Tonnes	Grade g/t Au	Million Tonnes	Grade g/t Au	Million Tonnes	Au Ounces
Agate <sup>3</sup>			0.23	1.2	0.11	1.1	0.34	12,800
All Nations <sup>3</sup>	0.26	1.6	0.44	1.2	0.27	1.1	0.97	39,900
Anne de Vidia <sup>3</sup>	0.09	1.7	0.38	1.1	0.21	1.1	0.68	25,800
Angela <sup>3</sup>			0.82	1.3	0.29	1.3	1.11	46,400
Au81 <sup>2</sup>	0.15	1.6	0.28	1.2	0.89	0.9	1.32	44,300
Au81 West <sup>3</sup>	0.04	1.3	0.24	1.6	0.19	1.2	0.47	21,400
Bartons Open Pit <sup>3</sup>	0.16	2.7	0.17	1.5	0.11	1.2	0.44	26,400
Bartons UG <sup>5</sup>			0.41	5.6	0.22	3.5	0.63	98,600
Bow Bells <sup>3</sup>			0.21	1.5			0.21	10,200
Condor <sup>5</sup>			0.06	4.3	0.02	4	0.08	10,500
Condor North-West <sup>3</sup>			0.06	3.3	0.01	2.7	0.07	7,300
Crossing <sup>3</sup>			0.3	1.2	0.06	1.3	0.36	14,100
Crow <sup>5</sup>			0.04	5	0.02	5.3	0.06	9,900
Falcon <sup>4</sup>	0.06	3	0.02	2.4			0.08	7,400
Gambols Hill <sup>3</sup>			0.13	1.6	0.17	1.6	0.3	15,500
Golden Gate G Reef <sup>5</sup>			0.01	3.6	0.001	2.4	0.011	1,300
Golden Eagle <sup>3</sup>	3.34	1.3	2.16	1.3	2.02	1.5	7.52	327,300
Golden Gate ABC Reef + Harrier <sup>5</sup>			0.08	6.4	0.11	4.6	0.19	32,800
Golden Gate D Reef <sup>5</sup>			0.04	5.3	0.02	5.8	0.06	10,600
Hopetoun-Endeavour <sup>3</sup>			0.17	1.4	0.5	1.4	0.67	30,200
Hut <sup>3</sup>			0.29	1.2	0.09	1	0.38	14,100
Junction <sup>3</sup>	0.05	1.9	0.06	1.5	0.04	1.5	0.15	7,900
Little Annie <sup>3</sup>					0.12	1.4	0.12	5,500
Little Wonder <sup>3</sup>	0.06	1.5	0.29	1.5	0.81	1.7	1.16	61,200
Majuba <sup>3</sup>			0.31	1.4	0.05	1.5	0.36	16,400
Mundalla <sup>3</sup>			0.13	1.4	0.18	1.3	0.31	13,400
Mustang <sup>3</sup>			0.07	2	0.11	1.3	0.18	9,100
Otways <sup>3</sup>	0.48	1.1	0.76	1.1	0.54	1	1.78	61,300
Red Beard <sup>3</sup>			0.13	3.5	0.11	1.6	0.24	20,300
Roscoes Reward <sup>3</sup>			0.58	1.4	0.32	1.3	0.9	39,500
Round Hill <sup>3</sup>			0.3	2	0.1	2.1	0.4	26,100
Shearers <sup>3</sup>			0.54	1.5	0.27	1.2	0.81	36,500
Shearers North <sup>3</sup>			0.22	1.4	0.22	1.1	0.44	17,700
<b>Total</b>	<b>4.69</b>	<b>1.4</b>	<b>9.93</b>	<b>1.7</b>	<b>8.18</b>	<b>1.5</b>	<b>22.8</b>	<b>1,121,700</b>

## Notes:

- Figures in Table may not sum due to rounding.
- The Au81 deposit was estimated using ordinary kriging methodology for grade estimation by CSA Global
- Agate, All Nations, Angela, Anne de Vidia, Au81 West Bartons Open Pit, Bow Bells, Crossing, Condor North-West, Gambols Hill, Golden Eagle, Hopetoun-Endeavour, Hut, Junction, Little Annie, Little Wonder, Majuba, Mustang, Otways, Roscoes Reward, Round Hill, Shearers and Shearers North were estimated by ordinary kriging by Millennium Minerals Ltd.
- Golden Gate satellite deposit, Falcon, was estimated using ordinary kriging by Dampier Consulting.
- Barton Underground and Golden Gate open pit and underground deposits reported by Entech Pty Ltd.

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