



## Discoveries in the Tasmanides, Mines & Wines, Wagga Wagga

Pyramid Hill Gold Project

K.Frost, 26 September 2019



# Forward looking statements and disclosures

This presentation does not include all available Information on Chalice Gold Mines Limited and should not be used in isolation as a guide to investing in the Company. Any potential investor should also refer to Chalice Gold Mines Limited Annual Reports, filings on [sedar.com](http://sedar.com), and to ASX/TSX/OTCQB releases and take independent professional advice before considering investing in the Company. For further information about Chalice Gold Mines Limited, visit the website at [chalicegold.com](http://chalicegold.com)

## Forward-Looking Statements

This document may contain forward-looking information within the meaning of Canadian securities legislation and forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 (collectively, forward-looking statements). These forward-looking statements are made as of the date of this document and Chalice Gold Mines Limited (the Company) does not intend, and does not assume any obligation, to update these forward-looking statements. Forward-looking statements relate to future events or future performance and reflect Company management's expectations or beliefs regarding future events and include, but are not limited to, the likelihood of exploration success including results of future geophysical surveys, drilling at the Company's projects and other exploration activities; the timing and costs of future exploration activities on the Company's exploration projects; the potential to define future mineral resources and, if successful at any of the Company's exploration projects, the potential viability of any mineral resource so defined; planned expenditures and budgets and the execution thereof; the timing and availability of drill results; potential sites for drilling, that general business and economic conditions will not change in a materially adverse manner; the timing and amount of estimated future production, costs of production, capital expenditures, success of mining operations, environmental risks, unanticipated reclamation expenses, title disputes or claims and limitations on insurance coverage. In certain cases, forward-looking statements can be identified by the use of words such as "plans", "planning", "expects" or "does not expect", "is expected", "will", "may", "would", "potential", "budget", "scheduled", "estimates", "forecasts", "intends", "prospects" "anticipates" or "does not anticipate", "believes", "occur", "be achieved", or variations of such words and phrases or statements that certain actions, events or results may, could, would, might or will be taken, occur or be achieved or the negative of these terms or comparable terminology. By their very nature forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Such factors may include, among others, risks related to actual results of current or planned exploration activities; changes in exploration programmes based upon results of exploration; future prices of commodities; geophysical anomalies may or may not be associated with economic mineralisation; grade or recovery rates; accidents; labour disputes and other risks of the mining industry; delays in obtaining governmental approvals or financing or in the completion of development or construction activities, movements in the price of O3 Mining Inc. and Spectrum Metals Limited securities and future proceeds from potential sale of those securities, the timing and receipt of exploration tax credits as well as those factors detailed from time to time in the Company's interim and annual financial statements, all of which are filed and available for review on SEDAR at [sedar.com](http://sedar.com), ASX at [asx.com.au](http://asx.com.au) and OTC Markets at [otcmarkets.com](http://otcmarkets.com). Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements.

## Competent Person and Qualifying Persons Statement

The Information in this presentation that relates to the exploration results for the Pyramid Hill Project is extracted from ASX announcements entitled "Chalice secures extensive strategic position in highly prospective northern Bendigo region, Victoria", "Chalice identifies two 12km+ gold-in-soil anomalies at Pyramid Hill Project, Bendigo", "Chalice set to drill large-scale gold targets at Pyramid Hill Gold Project, Victoria", "Reconnaissance drilling at Pyramid Hill Gold Project continues to outline high-priority target areas", "Shallow drilling hits gold in basement and outlines three high priority targets for follow-up at the Pyramid Hill Gold Project, Victoria" and "Drilling to recommence at the Pyramid Hill Gold Project in late September" released on 26 February 2018, 12 July 2018, 27 September 2018, 19 March 2019, 8 July 2019 and 2 September 2019 respectively.

The Information in this presentation that relates to exploration results for the King Leopold Project is extracted from ASX announcement entitled "Chalice acquires highly prospective nickel sulphide project in west Kimberley region of WA" and "Strong EM Conductors Identified at King Leopold Project" released on 18 June 2019 and 20 August 2019.

The above announcements are available to view on the Company's website at [chalicegold.com](http://chalicegold.com). The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant original market announcements. The Company confirms that the form and context in which the Competent Person and Qualified Person's findings are presented have not been materially modified from the relevant original market announcements.



1. Company Overview
2. Bendigo Zone – regional datasets and deposit features
3. Bendigo Zone – development during 2017-2019
4. Pyramid Hill – Early-stage exploration results since initial land grab in late 2017
5. Conclusions

A unique, well-funded exploration business



Drilling at Pyramid Hill Gold Project, Dec-2018

## District-scale exploration projects in high-grade provinces of Australia

1

- Tier-1 (>US\$1bn NPV) discovery model
- Gold undercover in Nth Bendigo Zone (Victoria)
- Nickel sulphides in frontier west Kimberley (WA)

## Strong financial position

2

- ~A\$33M in working capital and investments (~A\$0.12 per share)
- No capital raised since 2011

## Track record of value creation

3

- ~A\$107M after-tax proceeds generated from multiple well timed asset sales
- ~A\$36M returned to shareholders since 2012 (A\$0.14 per share)



## 2. Regional datasets and deposit features

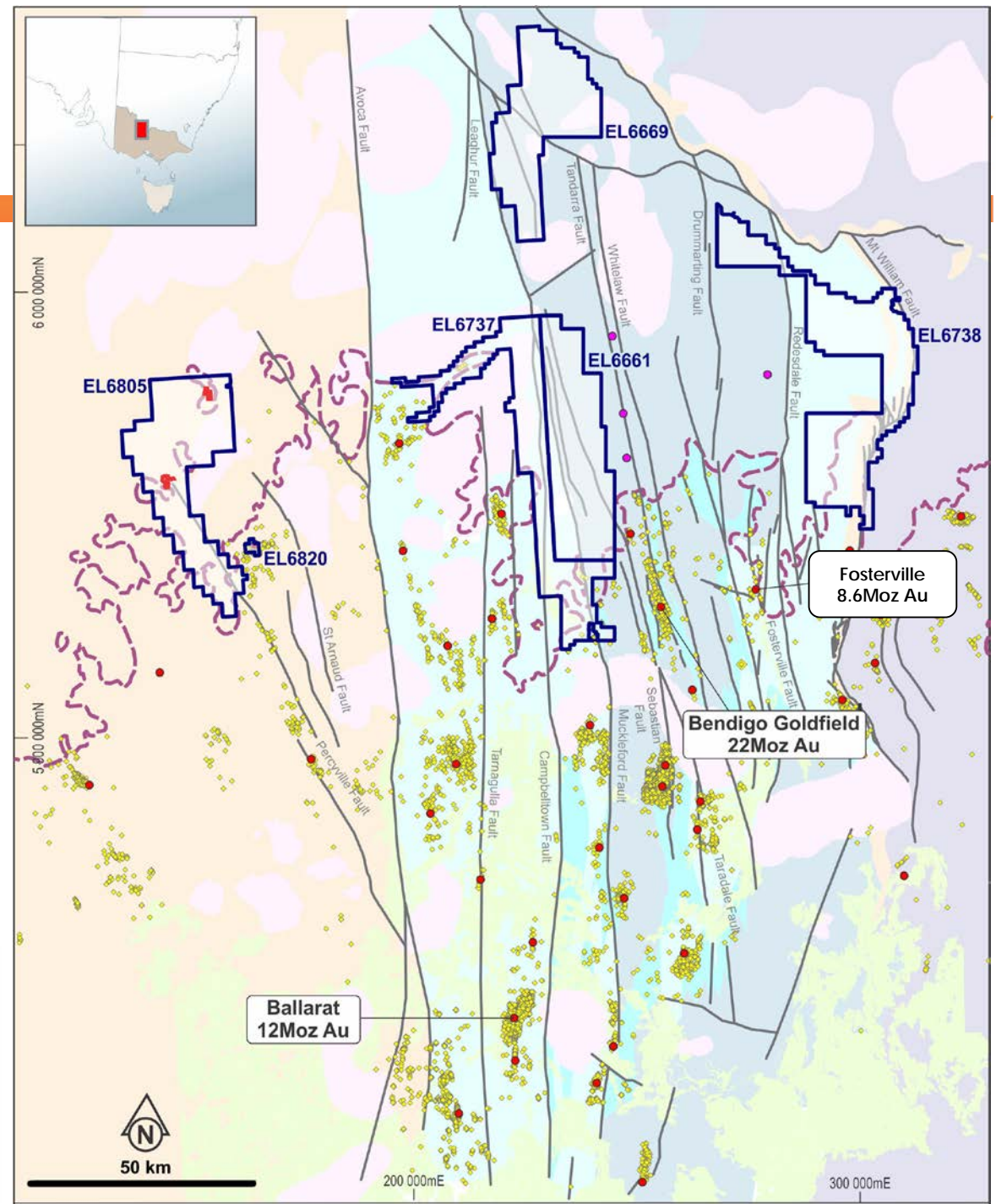
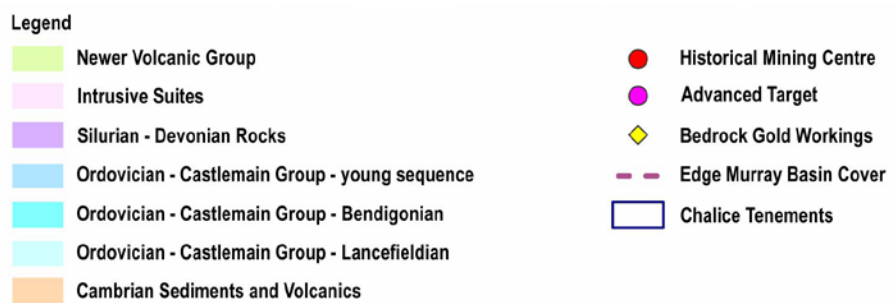
---

Pyramid Hill Gold Project, Victoria



# Why go exploring undercover in the Bendigo Zone?

- Gold endowment of >60Moz almost entirely from outcropping/surface discoveries
- Gold deposits and occurrences stop at the contact with the Murray Basin cover? ie - traditional exploration techniques (prospecting, direct sampling) hindered by post mineral cover
- Historic exploration shows the same Bendigo Zone host rocks (Castlemaine Group) continue beneath the Murray Basin cover
- Regional gold controlling structures are interpreted to continue undercover
- High-grade gold discoveries north of Bendigo (Tandarra, Four Eagles) are evidence that the same gold event continues undercover
- Next frontier for gold exploration is the Bendigo Zone under Murray Basin cover

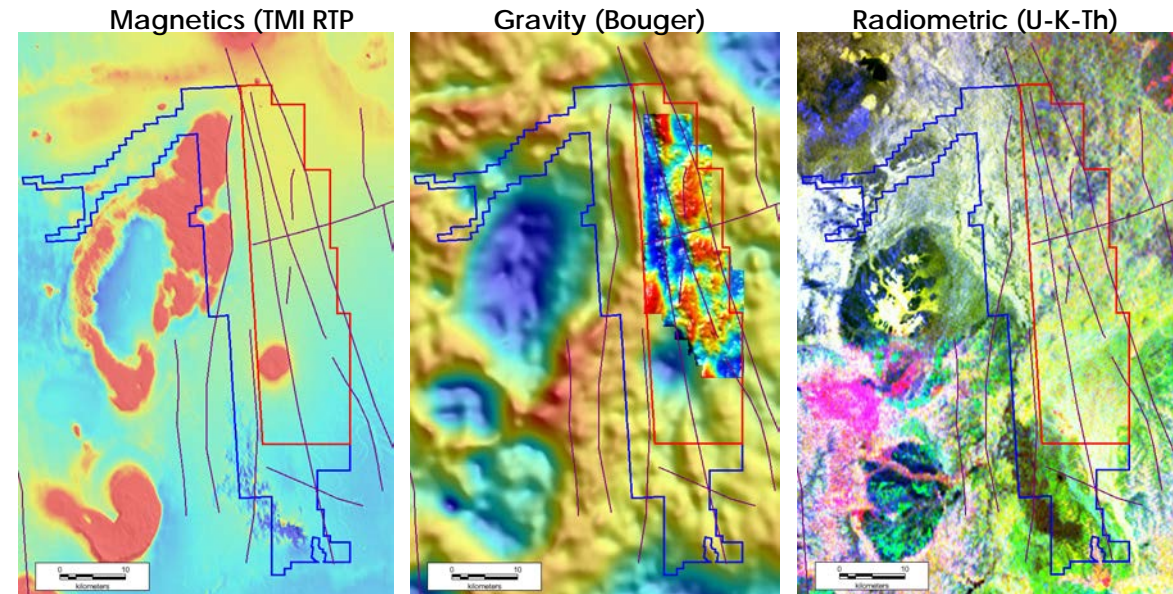
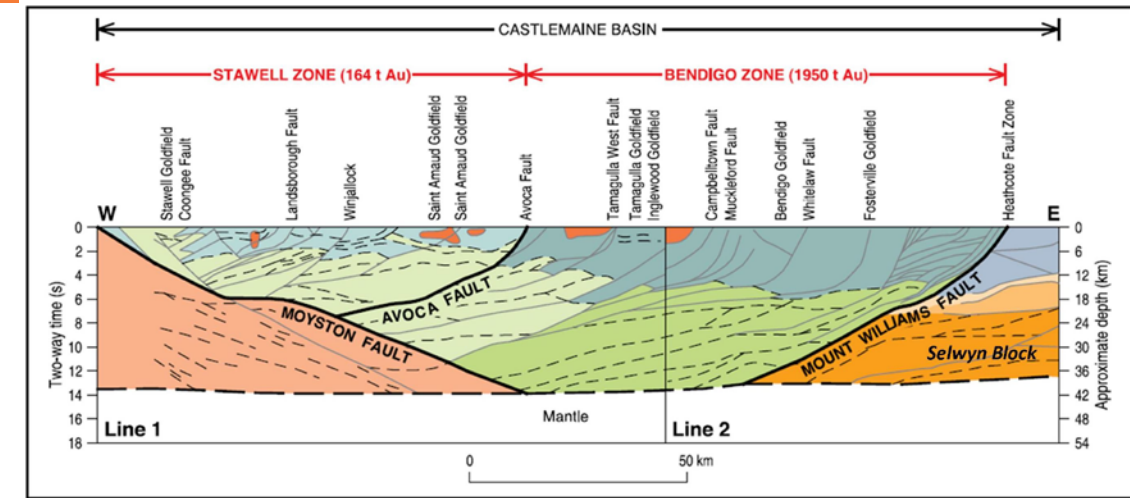


# Superb datasets with direct application to gold exploration



## GSV/GA datasets, publications

- **Gold Undercover initiative (2007-2010):**
  - Available exploration datasets suggest the Bendigo Zone geology under Murray Basin cover is the same as that in exposed areas. – ie equivalent Au prospectivity
  - Regional faults have significant strike lengths (+100km) and extend north under Murray Basin cover
  - Assessment of gold endowment shows potential for an undiscovered c.32moz Au in the northern Bendigo Zone
- **Seismic Reflection survey**
  - Provided basis for interpreting crustal-scale geology
  - Regional structures controlling gold deposits are crustal scale west-dipping listric faults
  - Chalice commissioned third party to re-process seismic data over the section 06GA-V2) to enhance shallow features
- **Airborne and ground geophysical datasets:**
  - Crucial for exploring undercover
  - Magnetics: good for defining granite intrusions, poor for defining structure in basement
  - Gravity: excellent datasets for defining shallow features (ie buried basement hills) (1.5km-0.5km stations) very important dataset as magnetics show minimal texture due to nature of Castlemaine Gp turbidites





# Characteristic features of gold deposits in the Bendigo Zone

## Fosterville (Kirkland Lake)

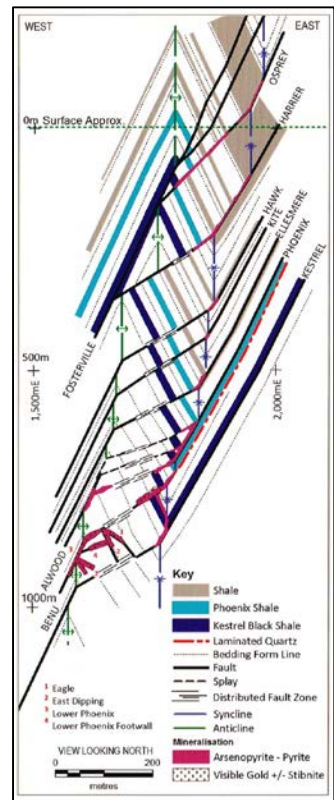
- Moderate-west dipping faults (45-65 °W) propagate from anticlinal hinge zones and show discordant-concordant setting relative to bedding
- 4km trend (Fosterville Fault) of shallow-south plunging ore shoots (15-20°S) typically +1500m down-plunge, 50-150m dip extent, 4-15m thick
- Gold mineralisation hosted in quartz/carbonate veins/stockworks/selvages and associated with either fine-grained sulphide (pyrite, arsenopyrite), stibnite or as VG.

## Tandarra, Four Eagles (Catalyst Metals)

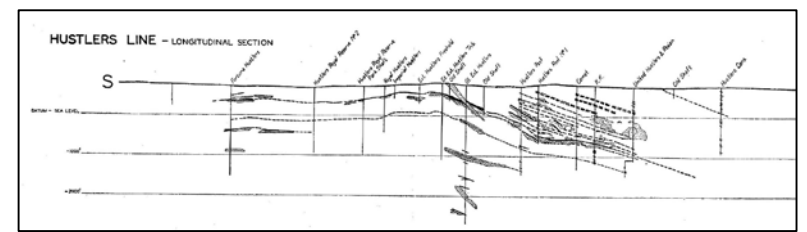
- Steep-west dipping faults (c 50-70 °W) positioned proximal to anticlinal hinge zones
- Shallow-south plunging ore shoots (subhorizontal-10°S) typically +500m-3km along-plunge
- Gold mineralisation hosted in quartz veins/breccias – Au associated with **fine-grained** sulphide (pyrite, arsenopyrite) and VG

## Important guidelines for exploration

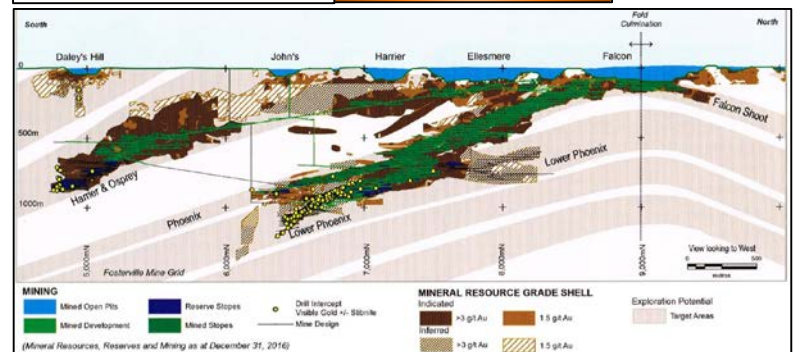
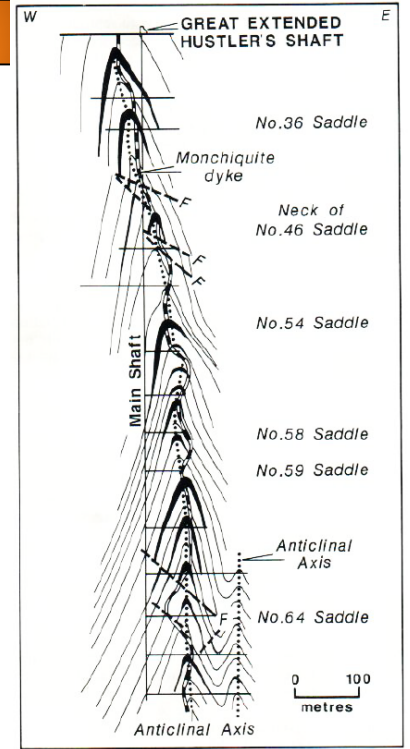
- Drilling on wide-spaced lines (1.5-3km) should intersect at least peripheral mineralisation due to the shallow-plunging orientation of mineralisation lodes
- Ore shoots are narrow with limited depth extent - minimise hole spacing along drill lines (100m or less separation)
- Secondary dispersion of Au at cover/basement interface and within preserved saprolite over Castlemaine Gp basement host



Fosterville



Bendigo







## Kirkland Lake Gold – Fosterville operation

- Jan 2017 – best ever UG drill results from newly discovered Lower Phoenix Footwall Zone (west-dipping fault) demonstrate increasing grade profile with depth:
  - 15.15m @ 1,429 g/t Au (UDH1817)
  - 7.2m @ 356 g/t Au (UDH1943)
- July 2017 – upgraded UG Mineral Reserve 1.03Moz @ 17.9 g/t Au. Includes Swan Zone 532koz @ 58.8g/t Au
- Aug 2017 – impressive drill intercept continue – Chalice pegs c. 3,500km<sup>2</sup> of EL applications
- Fosterville Mineral Resource M+I+I = 8.6Moz Au and Mineral Reserve 2.7Moz @ 31g/t Au (Dec 2018)
- 2019 production guidance 570-610koz p.a. and operating cash costs US\$130-150/oz

## Catalyst Metals – Whitelaw Gold Corridor – incl. Four Eagles (JV with Hancock Prospecting) and Tandarra (JV with Navarre Minerals), North Bendigo

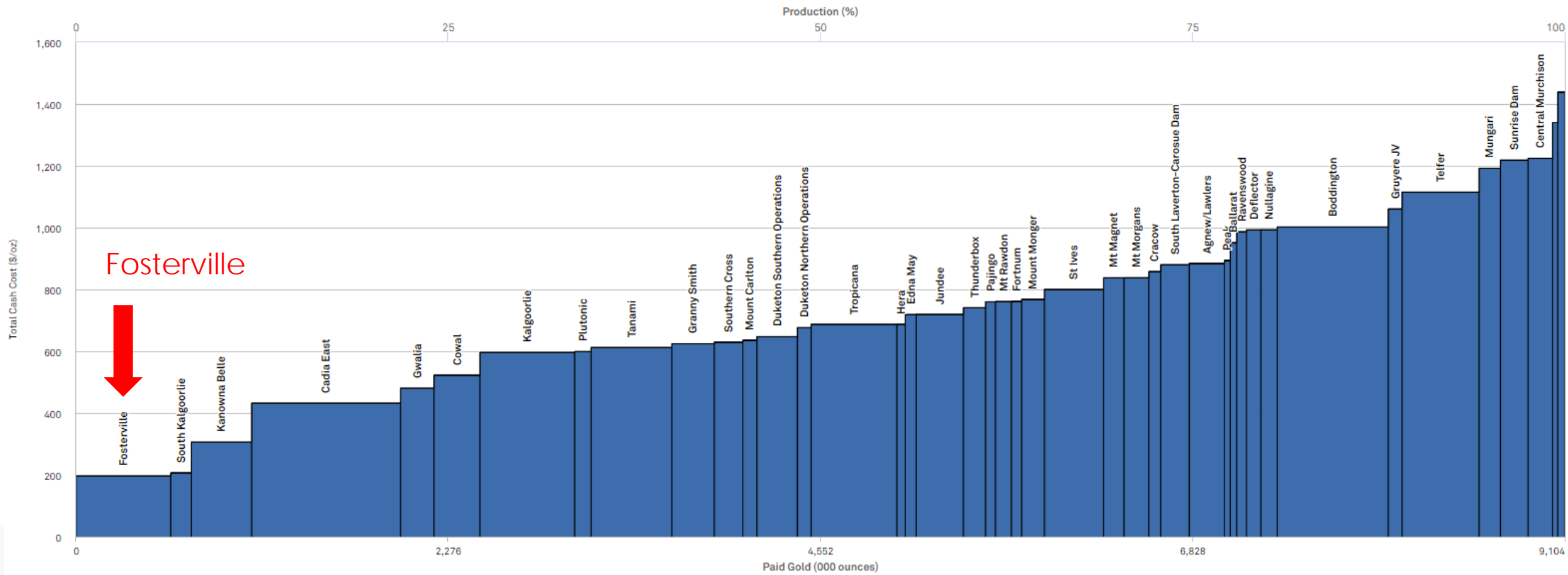
- Impressive high-grade and shallow exploration drill results continued in 2018-2019
  - Four Eagles Project: Au mineralisation intersected over c. 2.5km strike length; 20m @ 21.4g/t Au; 22m @ 36.5g/t Au (Hayanmi)
- Gold mineralisation proven to extend north of Bendigo under Murray Basin cover along strike from known gold deposits/camps!!
- Gold mostly fine with low nugget effect
- Exploration can be successful under Murray Basin cover!

# Australian Primary Gold Operations cost curve (US\$)



2019 Gold Production Ranked on Total Cash Cost\*

Scenario: Market Intelligence 2018 Constant USD





### 3. Exploration Results

---

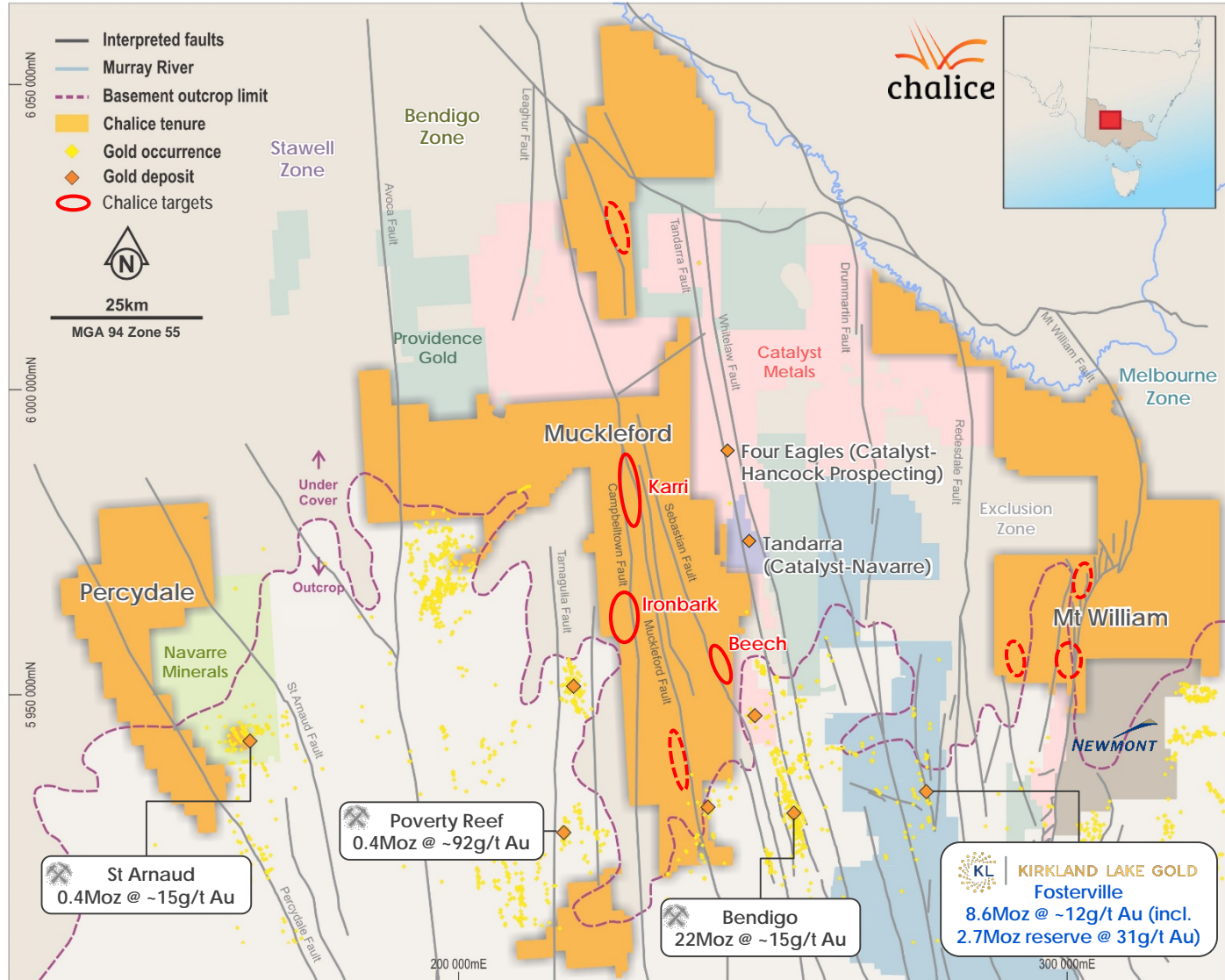
Pyramid Hill Gold Project, Victoria





# Tenure and access

- Chalice’s tenure covers three key undercover districts, with minimal historic exploration:
  - **Muckleford:** W / NW of Bendigo, Chalice’s initial focus
  - **Mt William:** NE of Fosterville
  - **Percydale:** NW of St Arnaud
- Land use is predominantly low intensity agriculture (mix of crops and grazing)
- Private land accessible all year round
- Cropping on certain areas restricts drilling for 3-4 months a year
- **All access agreements in place** for next phase of drilling to commence in late Sept 2019

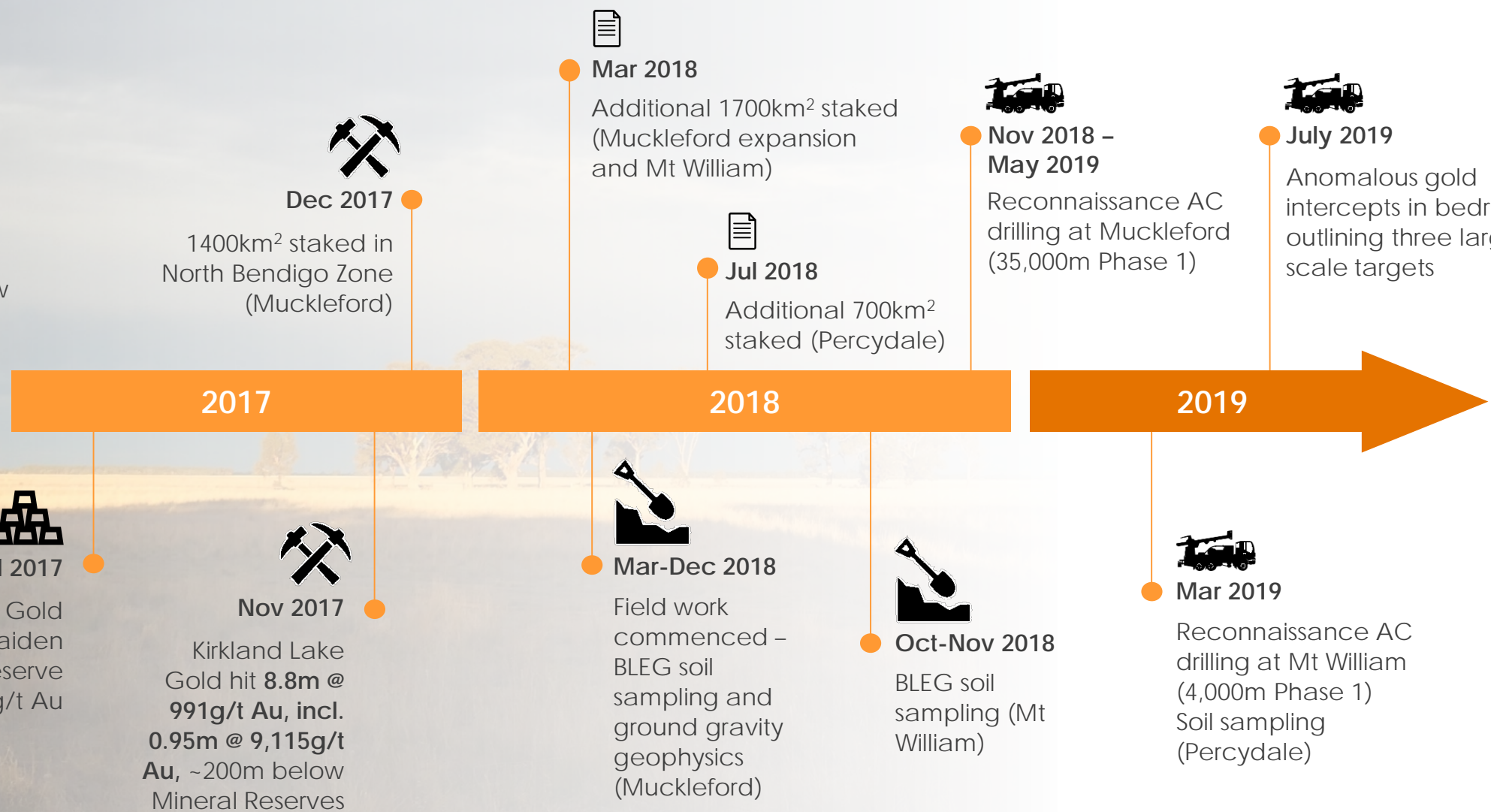


# Project advanced from a largely conceptual play to an active greenfields project over the last 18 months



## Pre-Chalice

Minimal modern exploration and limited attempts at shallow drilling undercover – very few effective drill holes



**Jul 2017**  
Kirkland Lake Gold announced maiden Swan Zone reserve 532koz @ 58.8g/t Au

**Nov 2017**  
Kirkland Lake Gold hit **8.8m @ 991g/t Au, incl. 0.95m @ 9,115g/t Au**, ~200m below Mineral Reserves

**Dec 2017**  
1400km<sup>2</sup> staked in North Bendigo Zone (Muckleford)

**Mar 2018**  
Additional 1700km<sup>2</sup> staked (Muckleford expansion and Mt William)

**Jul 2018**  
Additional 700km<sup>2</sup> staked (Percydale)

**Mar-Dec 2018**  
Field work commenced – BLEG soil sampling and ground gravity geophysics (Muckleford)

**Oct-Nov 2018**  
BLEG soil sampling (Mt William)

**Nov 2018 – May 2019**  
Reconnaissance AC drilling at Muckleford (35,000m Phase 1)

**Mar 2019**  
Reconnaissance AC drilling at Mt William (4,000m Phase 1)  
Soil sampling (Percydale)

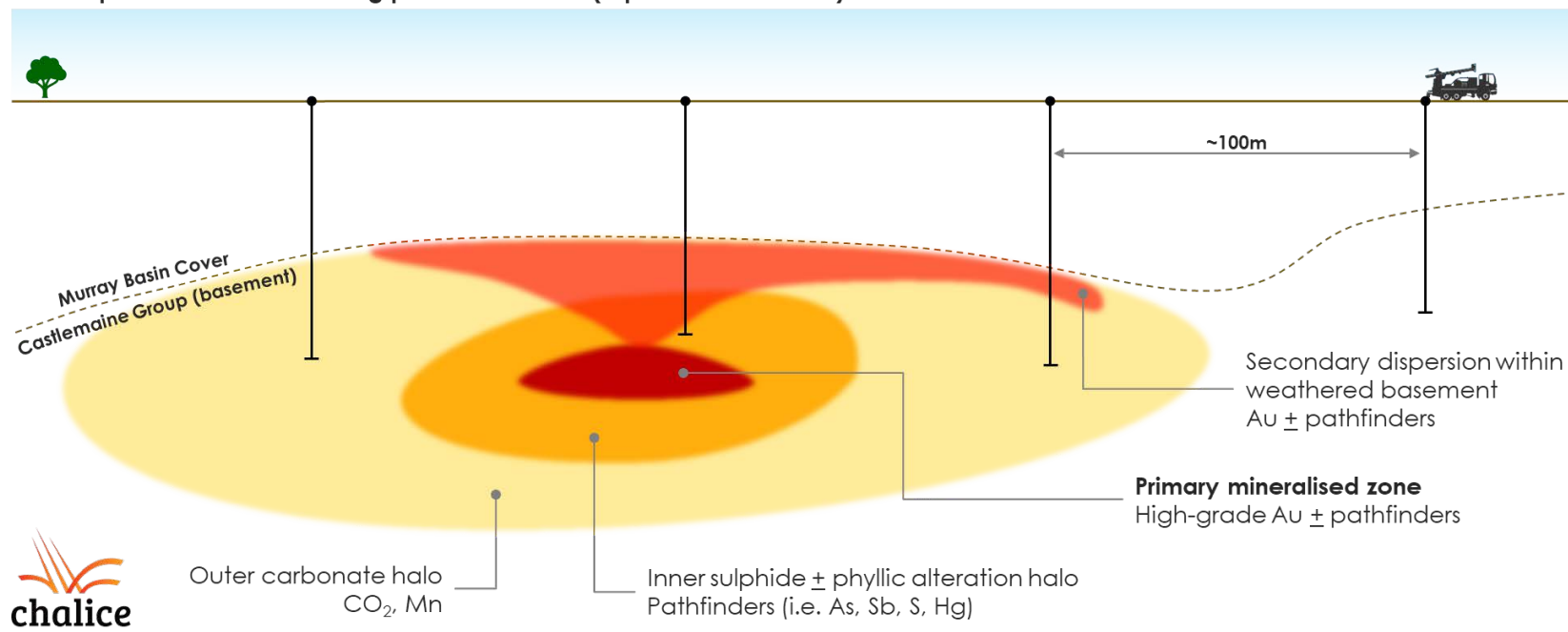
**July 2019**  
Anomalous gold intercepts in bedrock outlining three large-scale targets



# AC Drill Targeting

- AC drilling has proven the most effective tool for identifying secondary/primary basement gold mineralisation
- Same targeting approach has proven successful with the discovery of Au mineralisation elsewhere in the Bendigo undercover region
- Gold/pathfinder metals concentrate as a secondary (supergene) dispersion zone within a redox zone in saprolite after basement
- Primary gold mineralisation identified at one target (Ironbark)

Conceptual cross section along phase 1 drill lines (representative scale)



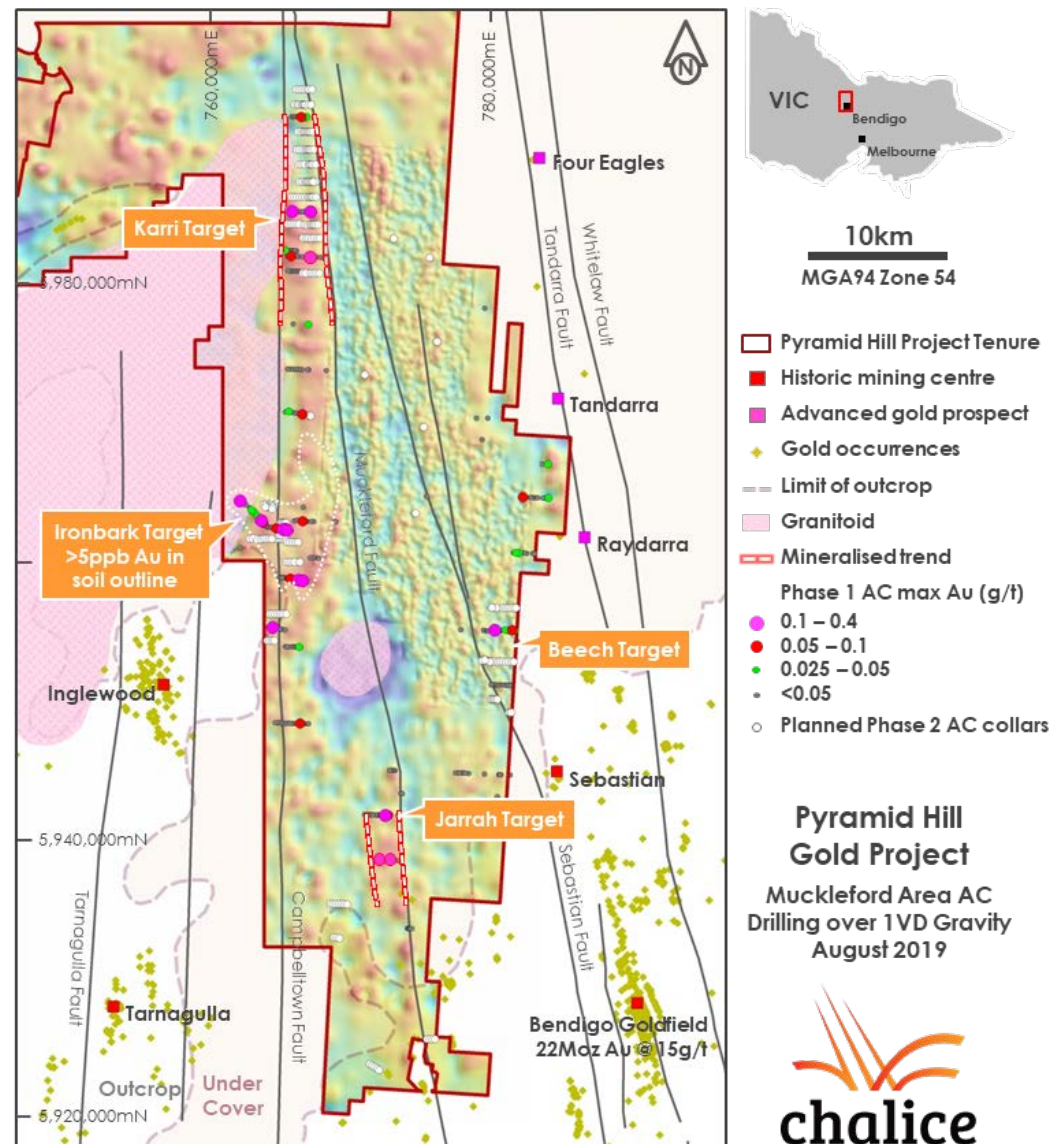
Adapted from Arne et al. (2008). *Lithogeochemical haloes surrounding central Victorian gold deposits (Geoscience Victoria Gold Undercover Report 4)*. Department of Primary Industries, Victoria.

AC drilling assists with geological interpretation to define broad lithological units including sandstones, shale-topped sands, shales and carbonaceous shales



# Muckleford - Ironbark and Karri Targets

- ~39km of shallow recon AC drilling completed with the focus on targets localised adjacent to the major regional structures (Campbelltown, Muckleford, Sebastian faults)
- Gold intersected both in saprolite and weakly weathered diorite indicates the gold is from a primary bedrock source
- Ironbark is associated with a strong and extensive gold + pathfinder soil anomaly and centred over several interpreted diorite intrusions
- Shallow gold intersections on drill lines kilometres apart at Karri potentially indicates a strike extensive gold system
- Favourable structural setting adjacent to the Campbelltown and Muckleford faults

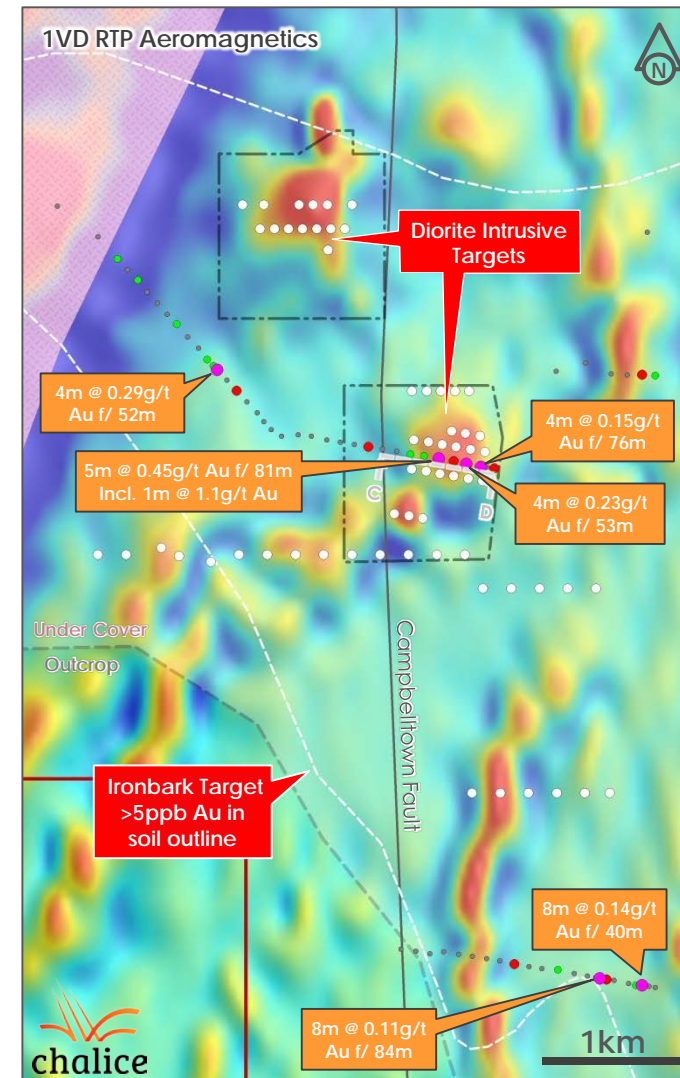




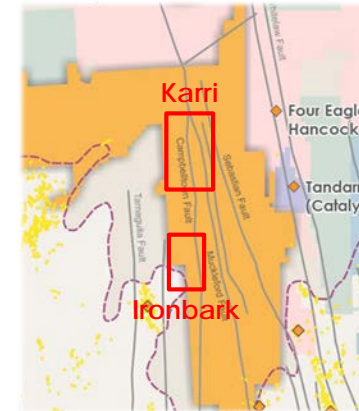
# Ironbark Target (Muckleford Area)

- Wide-spaced AC drilling (3km-spaced lines) undertaken to test a coincident gravity anomaly and surface BLEG soil anomaly (West Anomaly) in vicinity of the Campbelltown fault
- AC drilling along West Loddon Rd (roadside verge drilling) traversed from the eastern margin of the Wedderburn Granite through the presumed Castlemaine Group sediments below Murray Basin cover (<70m thick)
- Three AC holes intersected an equigranular hornblende-plagioclase intrusive
- Gold intersected in weathered basement indicates the gold is from a primary bedrock source
- Ironbark target associated with large gold + pathfinder soil anomaly (700m across strike at +25ppb Au) centred around several interpreted intrusions
- Subsequently undertaken ground magnetics surveys over Ironbark and another target 3km NW which has a similar intrusion-like outline. Potentially dyke-like mag anomalies that occur in same vicinity – potentially more extensive intrusions

### Ironbark Target (25-75m cover)



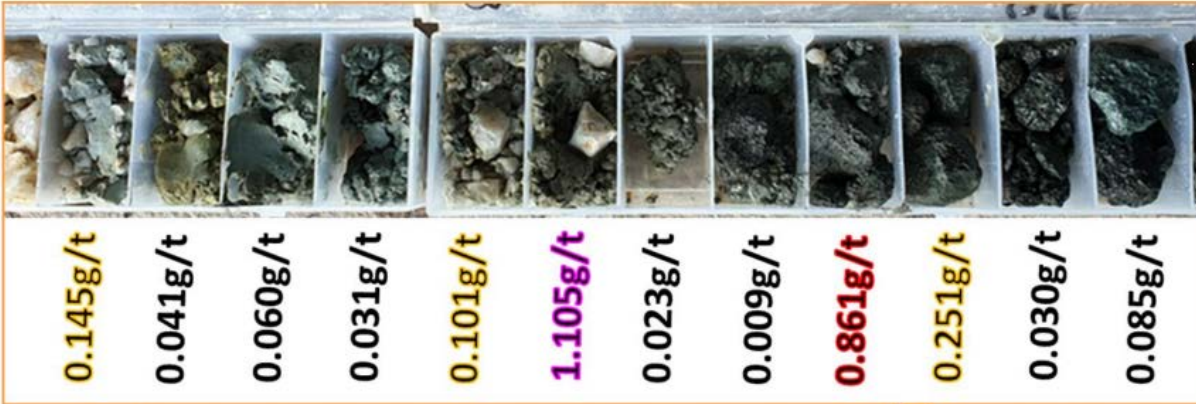
### Muckleford Area



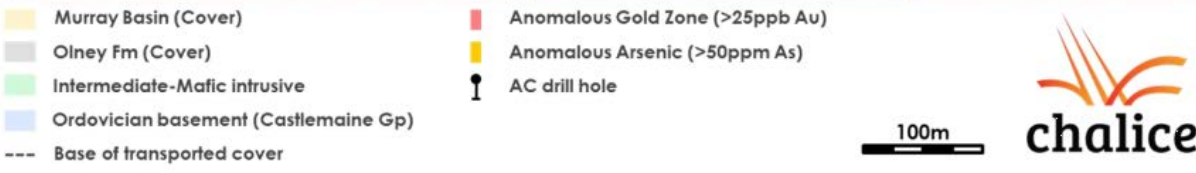
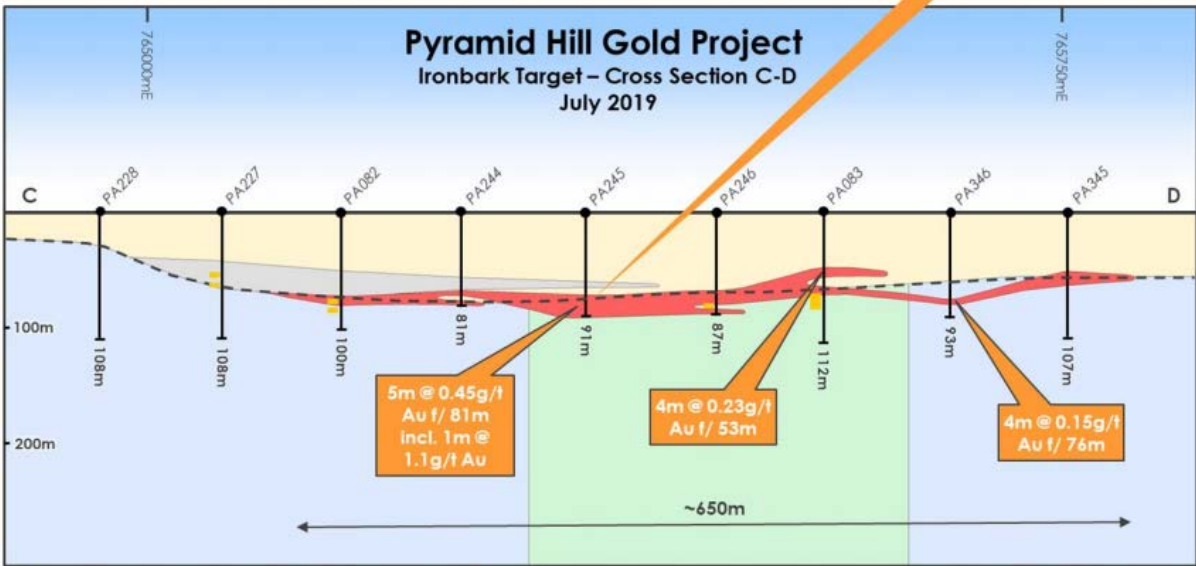
- ▭ Pyramid Hill Project Tenure
- - - Limit of outcrop
- Granitoid
- ▭ Mineralised trend
- ▭ Planned ground mag svy
- Planned Phase 2 AC collars
- Phase 1 AC max Au (g/t)
  - 0.1 – 0.4
  - 0.05 – 0.1
  - 0.025 – 0.05
  - <0.05
- ▭ Chalice drill intercept
- ▭ Historic drill intercept



# Ironbark Target (Muckleford Area)



- Petrography confirms the intrusion is a highly prospective Fe-rich, hydrous diorite
- Hole PA-245 intersected gold bearing quartz veining in diorite
- Diorite-gabbro dykes (Woods Point dyke swarm) either directly host or are closely associated with the Woods Point-Walhalla goldfield (6Moz). The historic Cohen's Reef deposit (~1.5Moz at ~32g/t Au) and other intrusion-hosted deposits including Woods Point, A1 (Melbourne Zone).
- The Au mineralisation at Ironbark is hosted by compositionally similar hornblende quartz diorites, and on the assumption that the newly discovered diorite intrusions are of similar age to the Woods Point dyke swarm (375Ma), then the gold event is clearly young – possibly Fosterville age



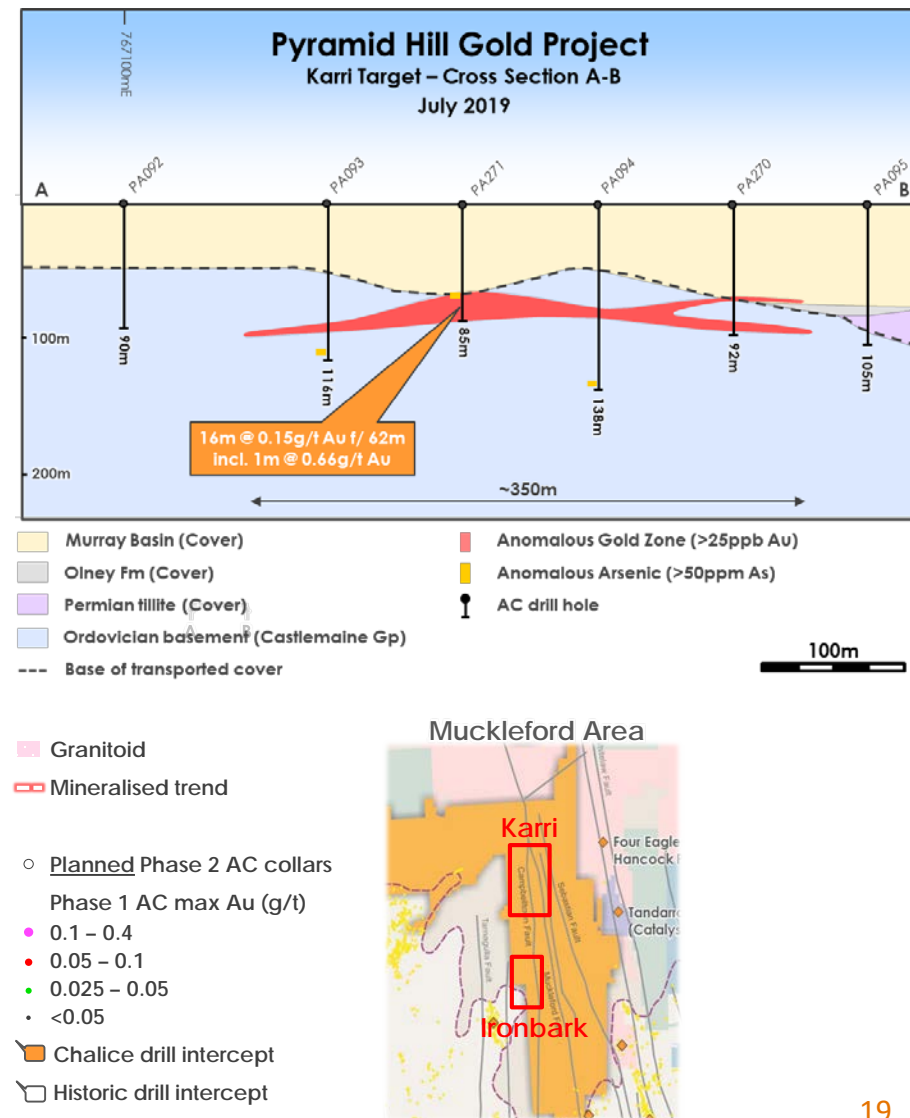
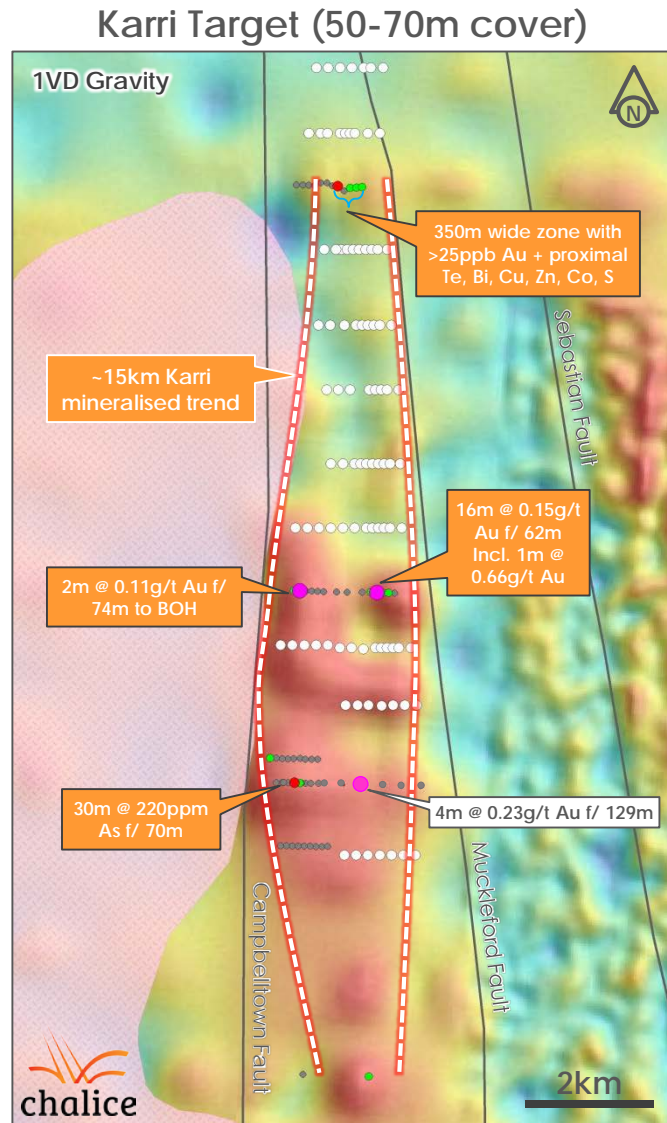
Quite unique for Bendigo Zone → a new high priority target style

Hornblende-biotite quartz diorite: PA-245; 85-86m



# Karri Target (Muckleford Area)

- Target located 25km north of Ironbark
- Wide-spaced AC drilling (7km-spaced lines) targeted a prominent gravity anomaly located adjacent to Campbelltown fault
- AC drilling along east-west roads (roadside verge drilling) traversed from the eastern margin of the Wedderburn Granite through the presumed Castlemaine Group sediments below Murray Basin cover
- Two lines of AC holes intersected supergene gold (16m @ 0.15 g/t Au; 4m @ 0.23 g/t Au) within a zone of strong As and/or Te, Bi anomalism within the weathered top of Castlemaine Group sediments
- Plan to infill AC drilling on 1km-0.5km spaced sections to refine footprint of supergene zone and test for basement mineralisation





# Conclusions

- Chalice recognised an early opportunity to acquire prospective ground in a Tier-1 goldfield
- Previous explorers found difficulty defining targets under Murray Basin cover – large proportion of historic drilling failed to drill/sample basement
- Chalice drilling to date has targeted strike extensions of regional faults which control gold mineralisation in the Bendigo Zone
- Bendigo Zone (Castlemaine Gp) effectively sampled beneath Murray Basin/Permian tillite cover
- Chalice approach is to screen for large gold systems through well conceived exploration models based on the footprint of known gold camps – initial drilling targeted secondary dispersion footprint
- New diorite-hosted Au mineralisation discovered in first drilling at Ironbark – implications for a new style of gold mineralisation at Muckleford
- Phase 2 AC drilling (~25,000m) to commence shortly at Ironbark and Karri and other targets to refine search space











---

Thank You

---

-  Level 2, 1292 Hay Street, West Perth WA 6005, Australia
-  +61 8 9322 3960
-  [info@chalicegold.com](mailto:info@chalicegold.com)
-  [www.chalicegold.com](http://www.chalicegold.com)
-  [linkedin.com/company/chalice-gold-mines](https://linkedin.com/company/chalice-gold-mines)
-  [twitter.com/chalicegold](https://twitter.com/chalicegold)