



KALGOLD GREENSTONE EXPLORATION

HARMONY'S EXPLORATION FOCUS UNLOCKS VALUE

6 June 2018

Mike Humphries



A DISTINCTIVE EXPLORATION OPPORTUNITY



- Exciting, underexplored Greenstone Belt exploration opportunity
 - initial drill results very encouraging



- Potential to unlock significant value
 - short to medium term and low cost, quality organic growth option



- Existing open pit operation
 - contribute to mine expansion and life of mine extension

KALGOLD – A QUALITY ORGANIC GROWTH PROSPECT

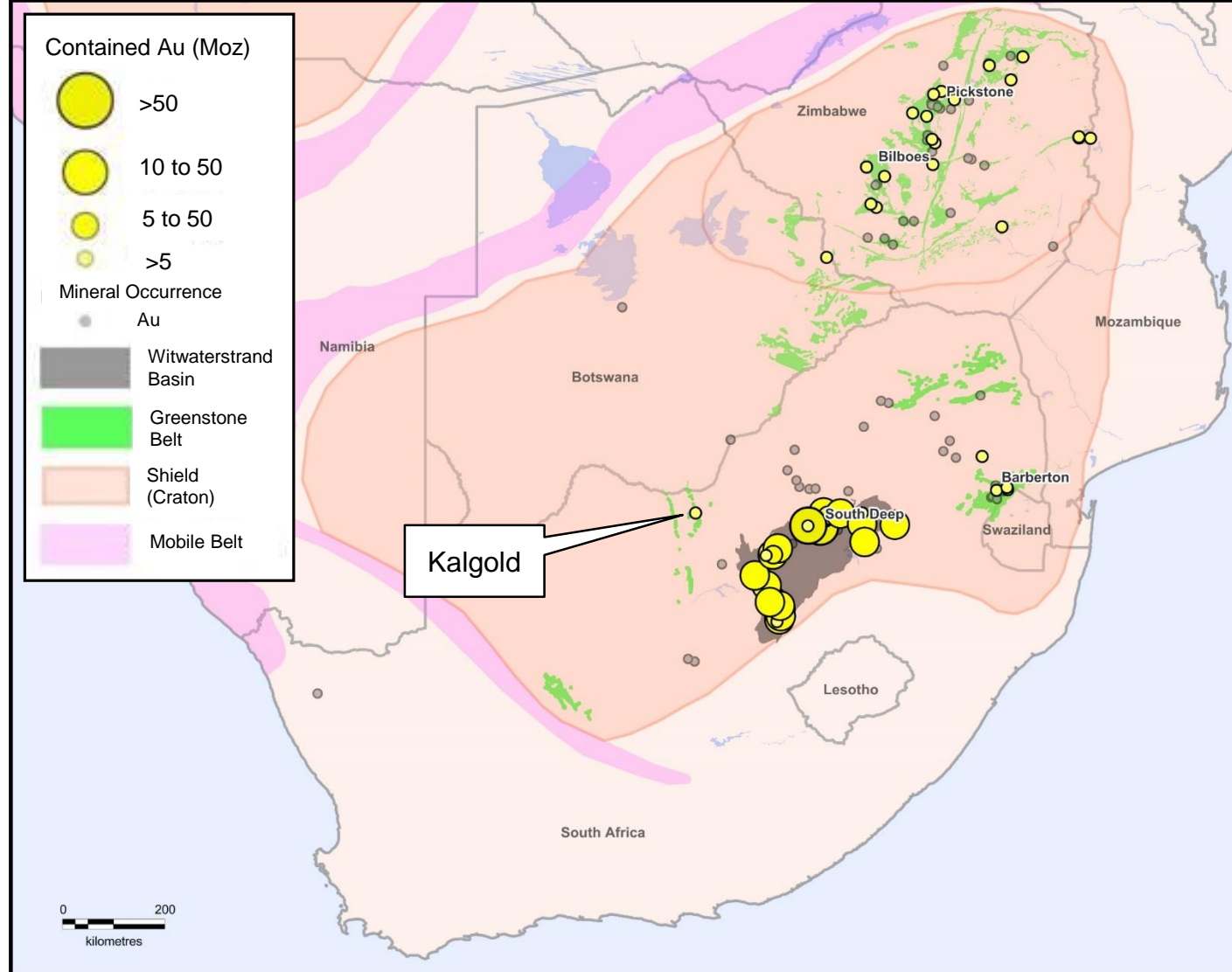


- Open pit operation, located in the North-West province
 - FY17 production approx. 40 000oz
- Area below and surrounding the existing operation presents a brownfields exploration prospect
 - Extensive drilling program planned
 - 54 holes / ~16 400m completed to date
- Targeting an expanded resource base with higher grade zones, in support of re-optimisation and expansion studies
 - Infrastructure in place
 - Flat terrain, room for expansion



REGIONAL CONTEXT: GREENSTONE GOLD AND GEOLOGY AT KALGOLD

SOUTHERN AFRICAN SHIELD AND GREENSTONE GOLD



- Granite-greenstone terrains of the Southern African shield underexplored:
 - Zimbabwe craton
 - Kaapvaal craton
- Excellent exploration opportunity for Harmony:
 - South African operational “hub”
 - Deposit styles amenable to bulk tonnage, high throughput, open pit or mechanised operations
 - Non-refractory / CIL recoverable
 - Deposit styles with comparatively lower capital requirements, shorter timeline to production

Source: Integrated and edited 1:1,000,000 (SA) and 1:5,000,000 (Africa) geology; edited USGS gold deposits database

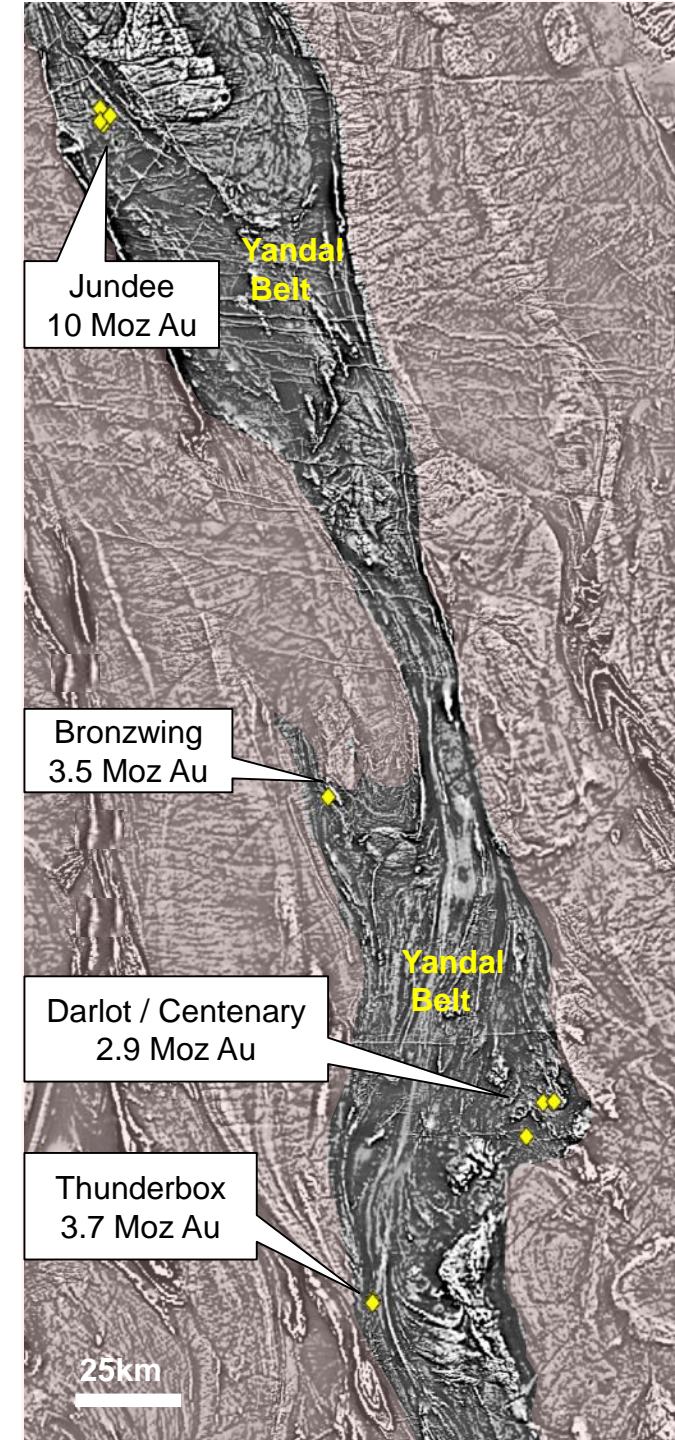
GREENSTONE BELT POTENTIAL

Yandal Belt (Eastern Goldfields region of Australia)

- 1990: little known, obscure greenstone belt
 - shallow workings and production <50Koz from Darlot
- Over 12 Moz of gold was discovered over a 10 year period
 - Bronzwing (1992)
 - Jundee (1993)
 - Centenary Orebody at Darlot (1996)
 - Thunderbox (1999)
- Potential not recognised prior to 1990
 - >50% of the Yandal Belt masked by cover
 - Considered to be a remote insignificant belt
 - regolith weathering complexity

Kraaipan Greenstone Belt

- Represents similar exploration prospect at Kalgold
 - Underexplored, masked by Kalahari sand
 - Multi-million ounce potential



INCREASING VOLUMES - THE OPPORTUNITY FOR KALGOLD

Gruyere:

Resource: 150 Mt @ 1.29 g/t (6.3 Moz)
 Reserve: 97 Mt @ 1.2 g/t (3.7 Moz)
 Strip ratio: 2.8
 Rec. grade: 1.09g/t
 Throughput: **7.5 Mt**
 Production : 270 Koz per annum

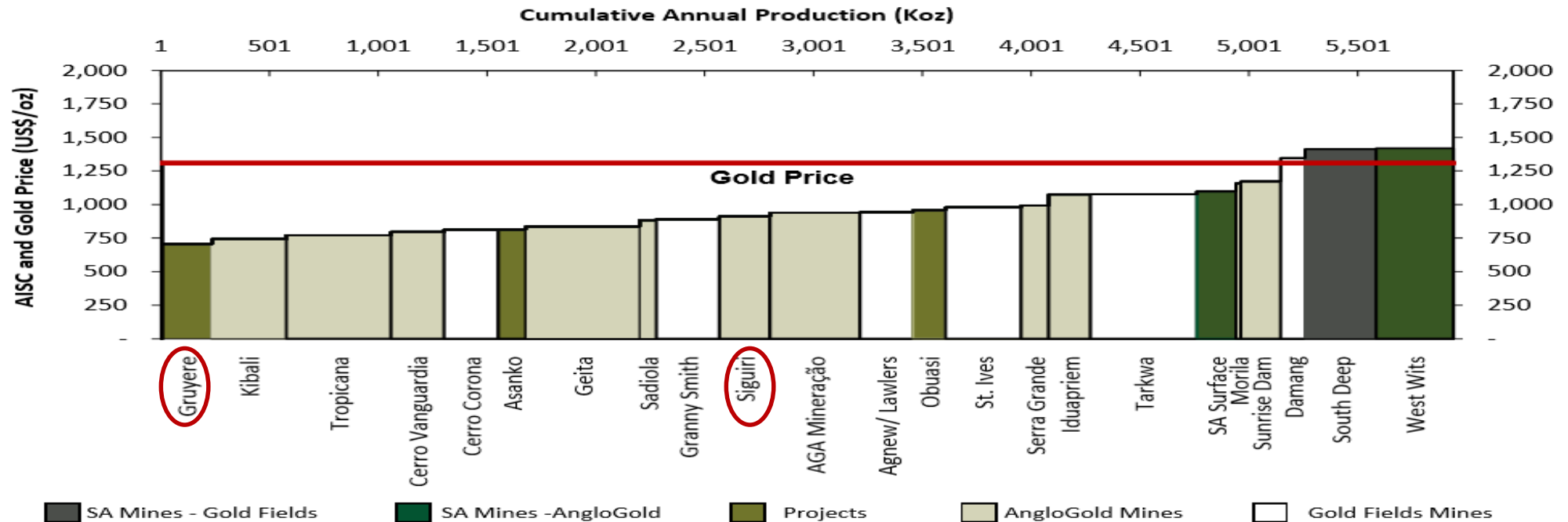
Siguirí:

Resource: 258 Mt @ 0.87 g/t (7.3 Moz)
 Reserve: 87 Mt @ 0.8 g/t (3.7 Moz)
 Rec. grade: 1.1g/t
 Throughput: **10 Mt**
 Production : 320 Koz per annum

Kalgold:

Resource: 41 Mt @ 0.95 g/t (1.2 Moz)
 Reserve: 26.6 Mt @ 1.1 g/t (930 Koz)
 Strip ratio: 1.8
 Rec. grade: 1.0g/t
 Throughput: **1.5 Mt**
 Production : 44 Koz per annum

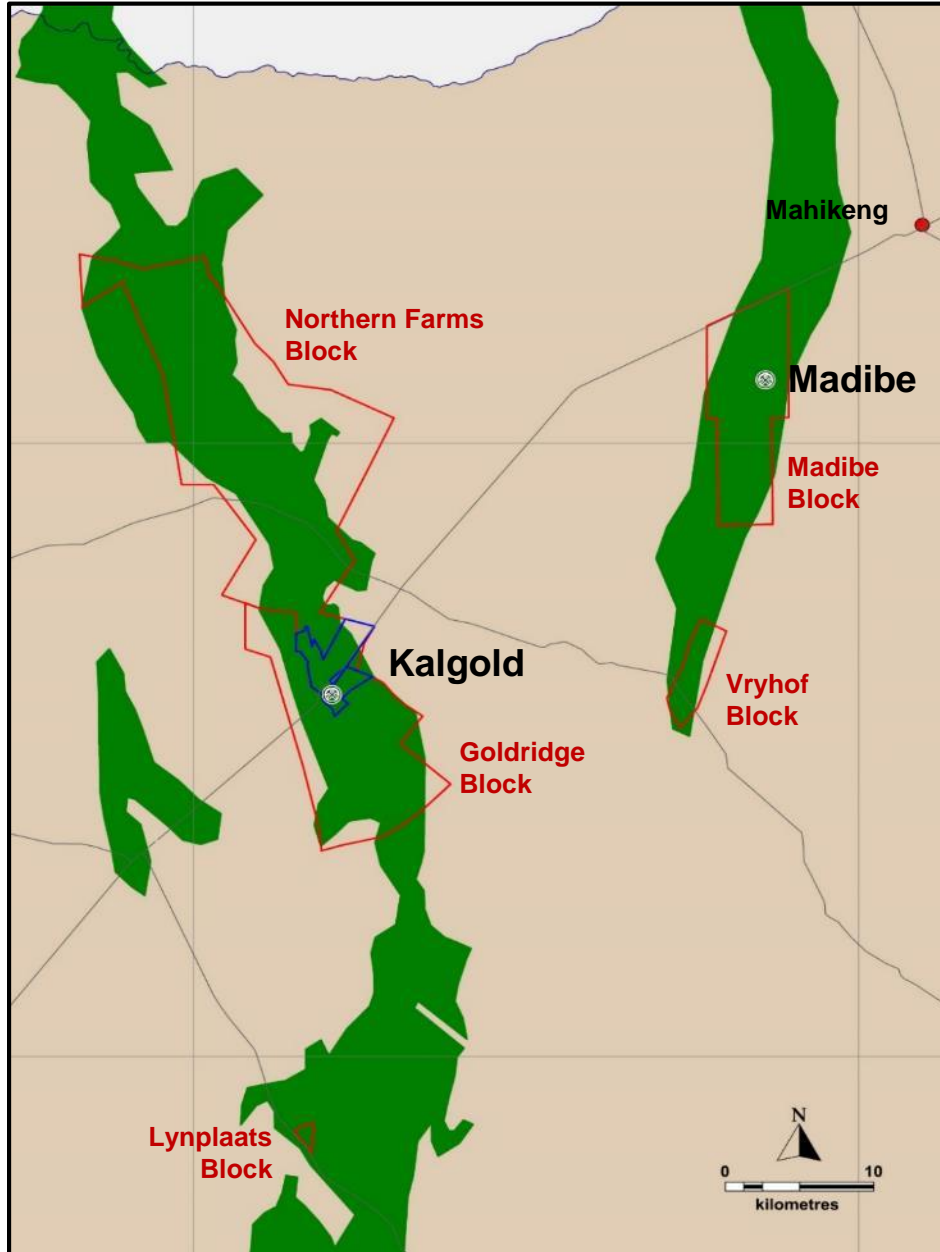
Combined cost curve



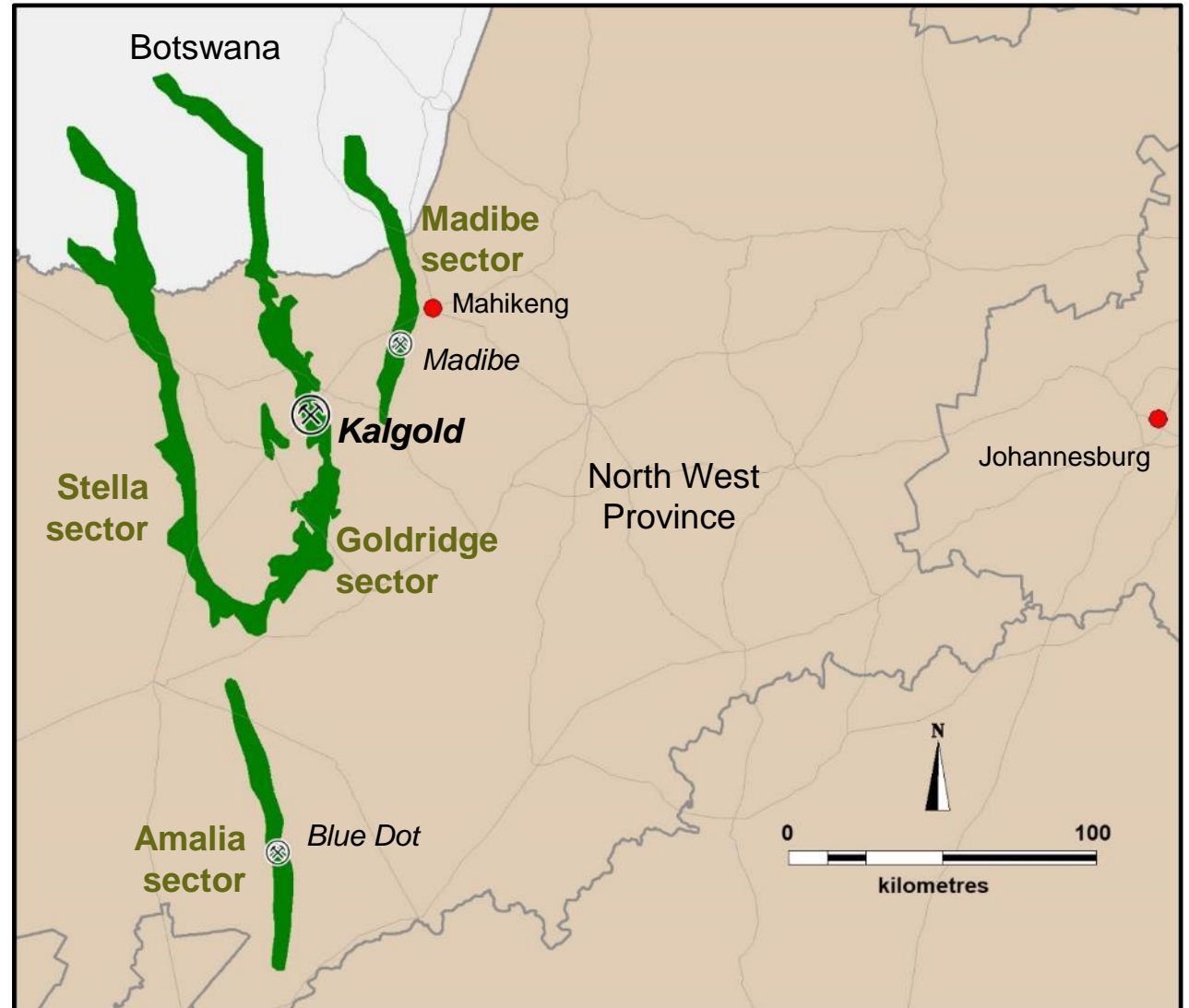
Operating mines are based on 2018 Estimates; Gruyere, Asanko and Obuasi are based on 2020 estimates

Source: Nedbank research report "Liars next to holes in the ground", Leon Esterhuizen May 2018

KRAAIPAN GREENSTONE BELT



- Located 276 km west of Johannesburg
- Harmony holds 448 square kilometres of granted tenure



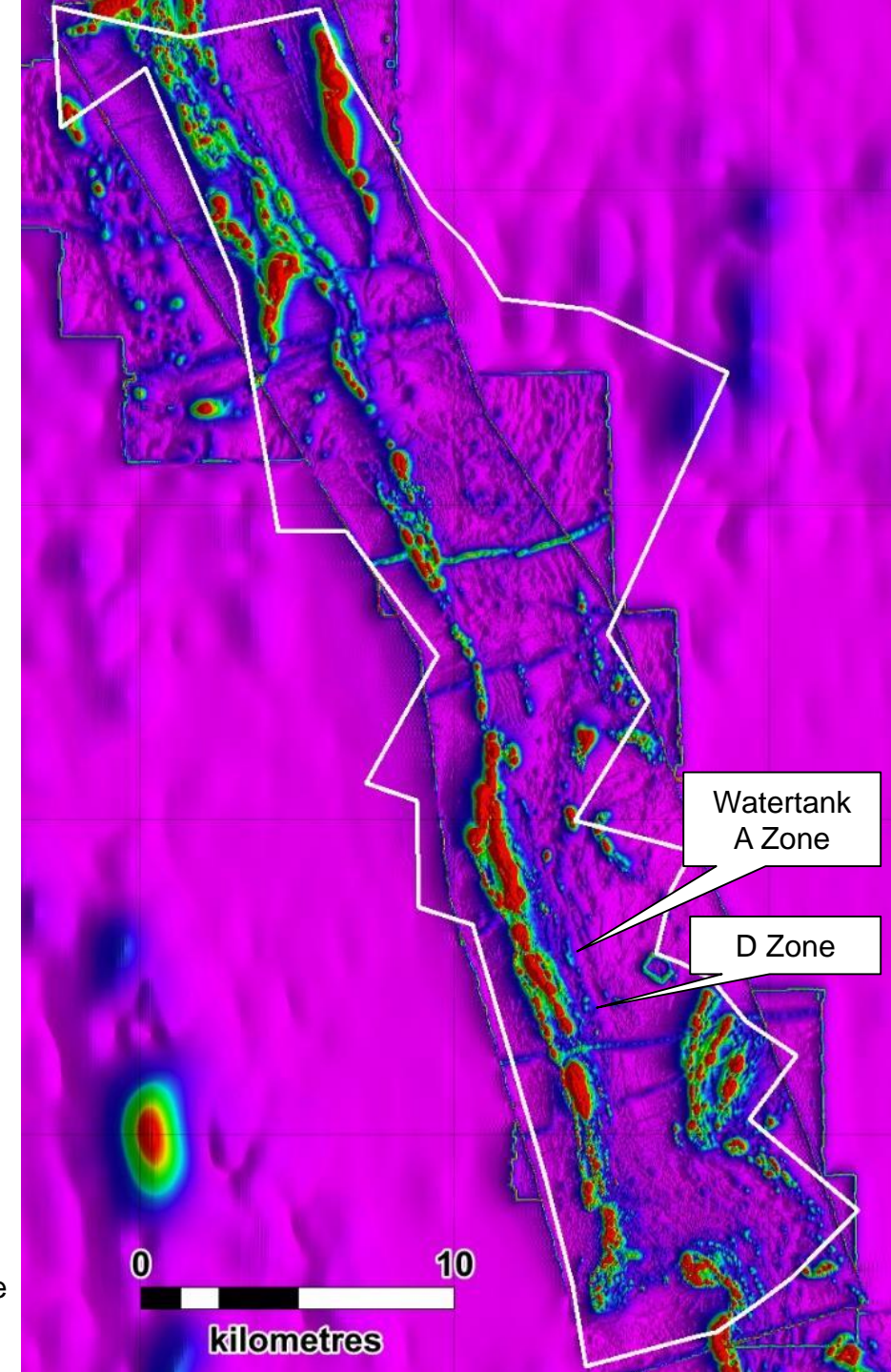
KRAAIPAN GREENSTONE Belt *continued*

- Little known, neglected greenstone belt:
 - Extensive Kalahari sand cover
 - Sparse outcrop, few gold occurrences
 - Historically insignificant gold production

- No complete regional stratigraphic succession:
 - Belt location guided largely on aeromagnetic and gravity interpretation

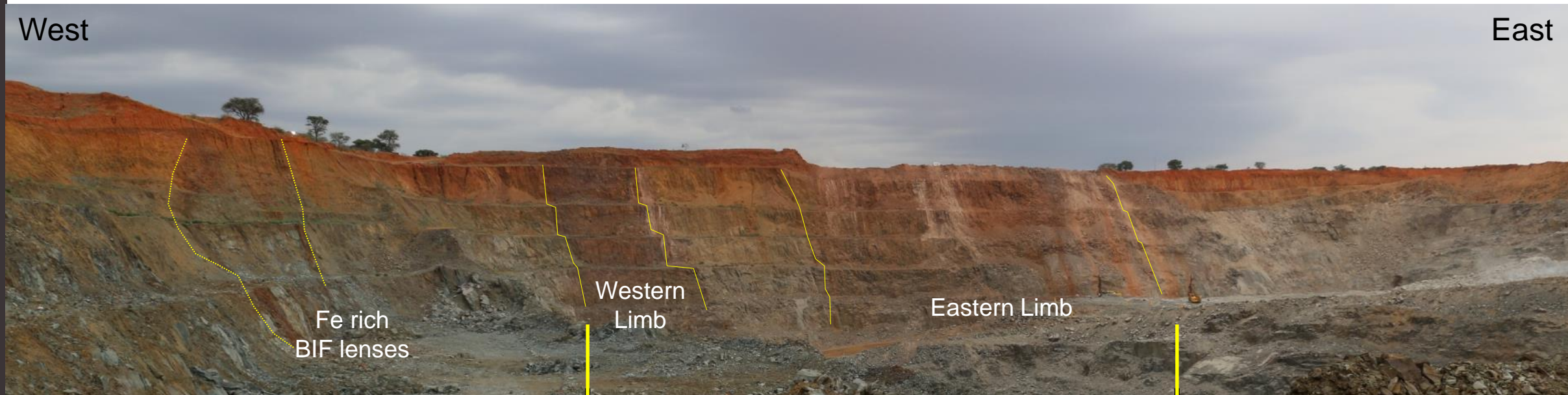
- Goldridge sector:
 - Shell exploration divided sequence into Lower Magnetite quartzite / Central iron rich banded iron formation (BIF) / Upper cherty BIF units
 - Cross-cutting dykes have an impact on mineralisation

Image: Analytic signal of the total magnetic intensity



GREENSTONE GEOLOGY AT KALGOLD

A Zone pit looking north; sequence dips $\sim 70^\circ$ to the east



Footwall mafic schist

- Meta-quartz dolerite
- Chlorite schist
- Chemical sedimentary horizons which can carry mineralisation: Fe rich BIF

Mine host sequence

- Meta-laminated chemical sediments: chert and cherty BIF
- Shale, meta mudstones, meta sandy mudstones
- Mica schist (intermediate schist)

Hangingwall metasediments

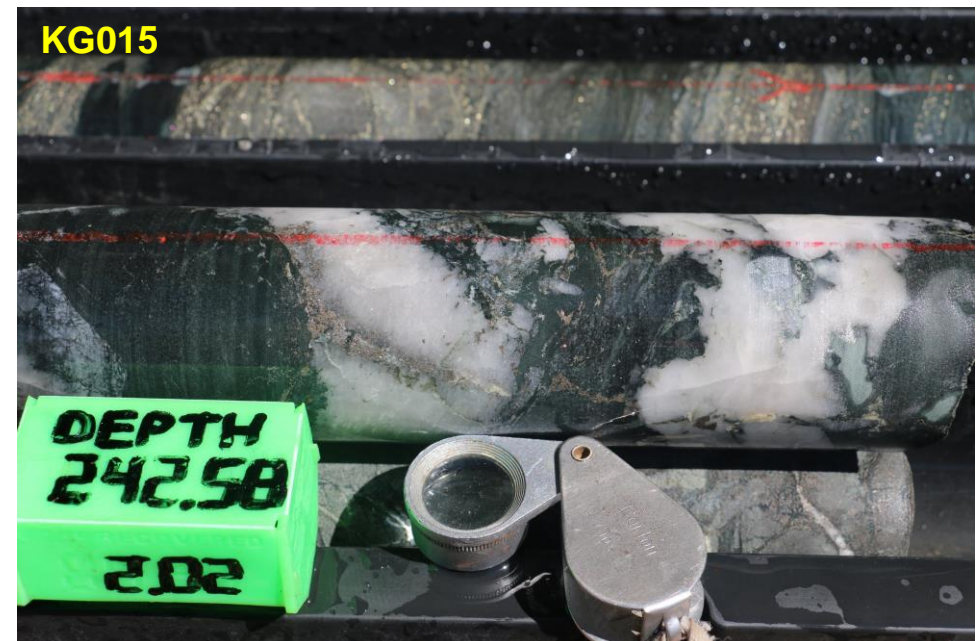
- Meta-greywacke
- Metamorphosed polymictic conglomerate includes mineralised BIF clasts
- Pelites / Phyllites

Brittle ductile deformation has played an important role in focussing fluid into competent, chemically reactive host rocks

MINERALISATION AND ALTERATION STYLE AT KALGOLD

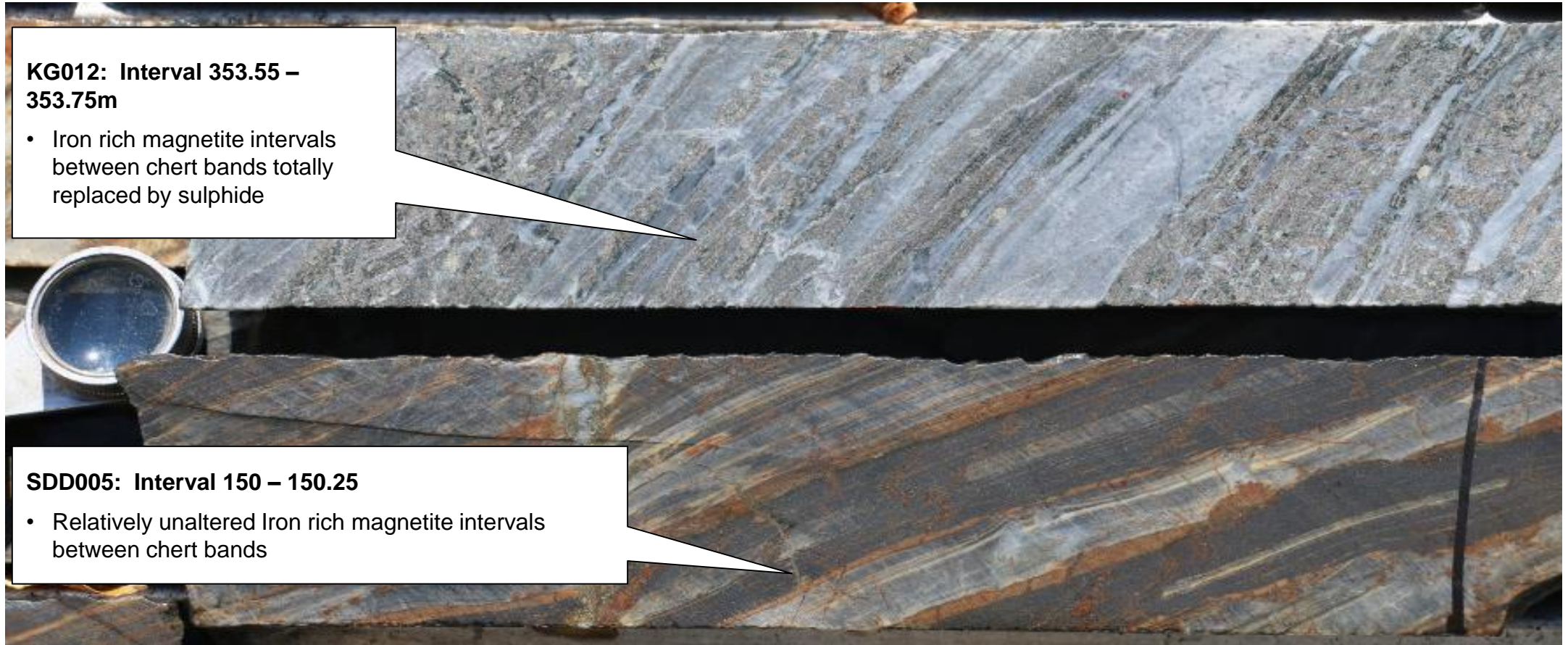
Two main gold mineralisation events / styles recognised:

1. Pyrrhotite replacement of cherty BIF associated with early “ladder veins”
 - Sulphides: Pyrrhotite >>pyrite>>chalcopyrite.
 - Alteration: Stilpnomelaine, chlorite, magnetite, carbonates (siderite) and quartz
2. Discordant quartz sulphide veins
 - Sulphides: commonly pyrite>pyrrhotite (trace chalcopyrite and sphalerite)
 - Alteration: carbonate, chlorite
 - Occasionally with native gold and bismuth



SULPHIDISED AND MINERALISED BIF

- Typical sulphide replacement assemblage: Pyrrhotite>>Pyrite>>Chalcopyrite
- Massive pyrrhotite bodies are magnetic and conductive: mineralisation style lends itself to direct detection by electromagnetic (EM) geophysical surveys





THE JOURNEY THUS FAR

WORK PROGRAM UPDATE

- Project initiated June 2017, targeting:
 - new mining areas for operational flexibility
 - delineate higher grade ore
 - develop a large, robust, resource footprint that supports re-optimisation and expansion
- Over 54 holes collared, 16 400m drilled; drilling ongoing with 3 drill rigs
- Drill results:

KG016: 84m @ 1.5 g/t Au from 257m

KG029: 24m @ 2.1 g/t Au from 201m

KG034: 34m @ 2.2 g/t Au from 322m

KG035: 24m @ 1.7 g/t Au from 90m

KG037: 42m @ 1.3 g/t Au from 47m

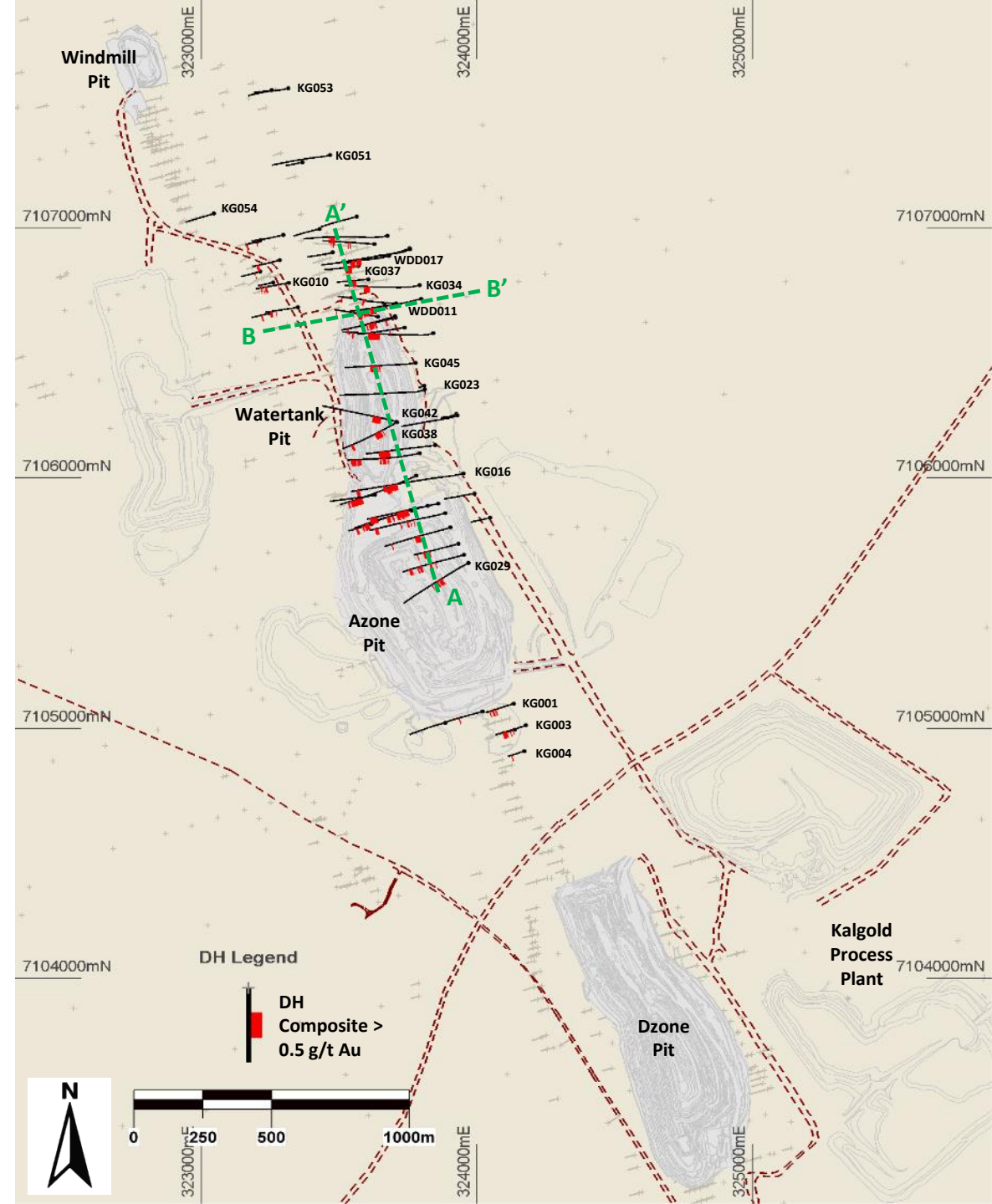
KG038: 47m @ 1.77 g/t Au from 138m

KG042: 55m @ 2.01 g/t Au from 106m

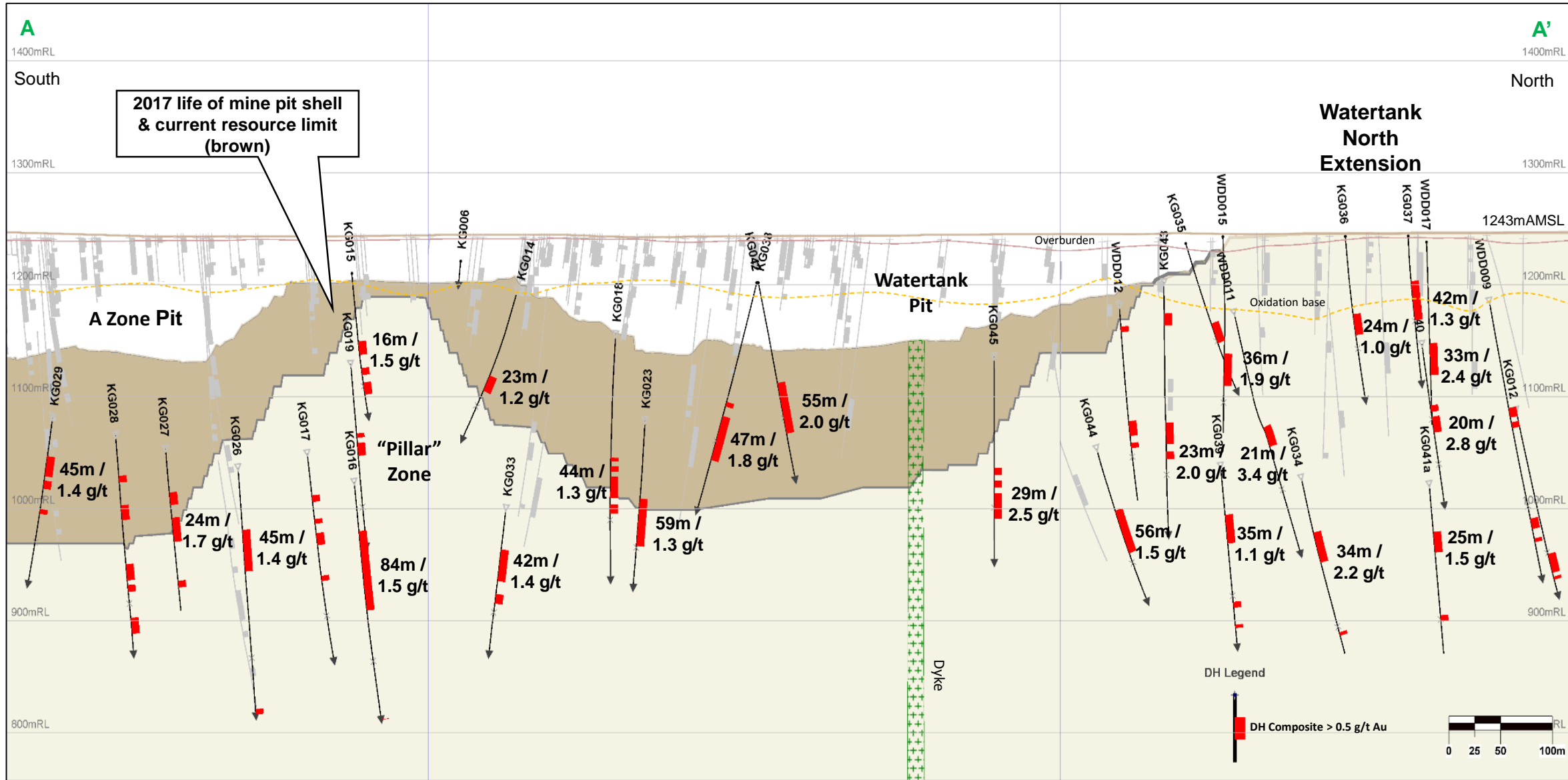
KG045: 29m @ 2.49 g/t Au from 273m

WDD011: 21m @ 3.4 g/t Au from 203m

WDD017: 33m @ 2.4 g/t Au from 106m



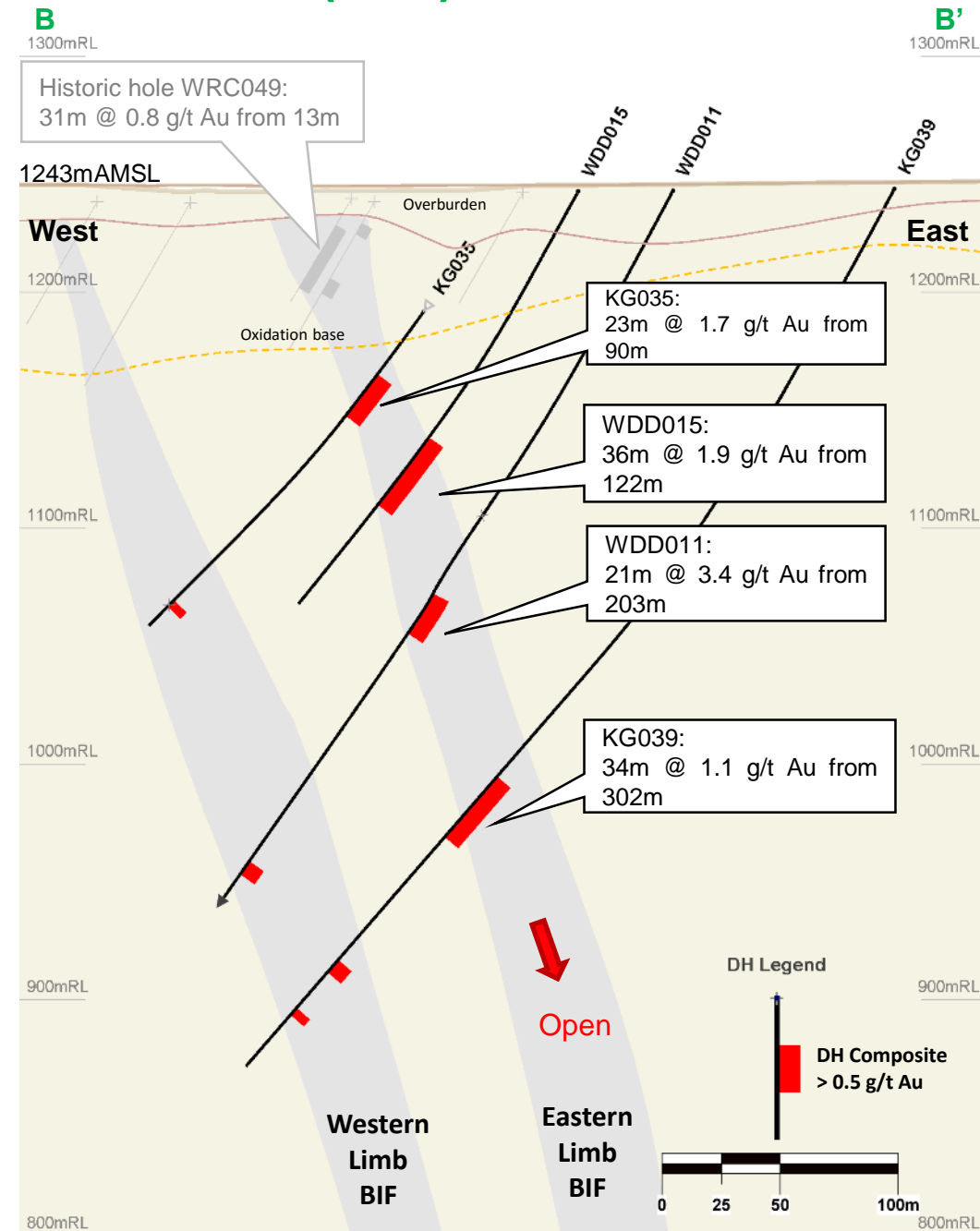
SCHEMATIC LONGSECTION SHOWING EASTERN LIMB INTERCEPTS (AA')



CROSS-SECTION WATERTANK NORTH EXTENSION (BB')

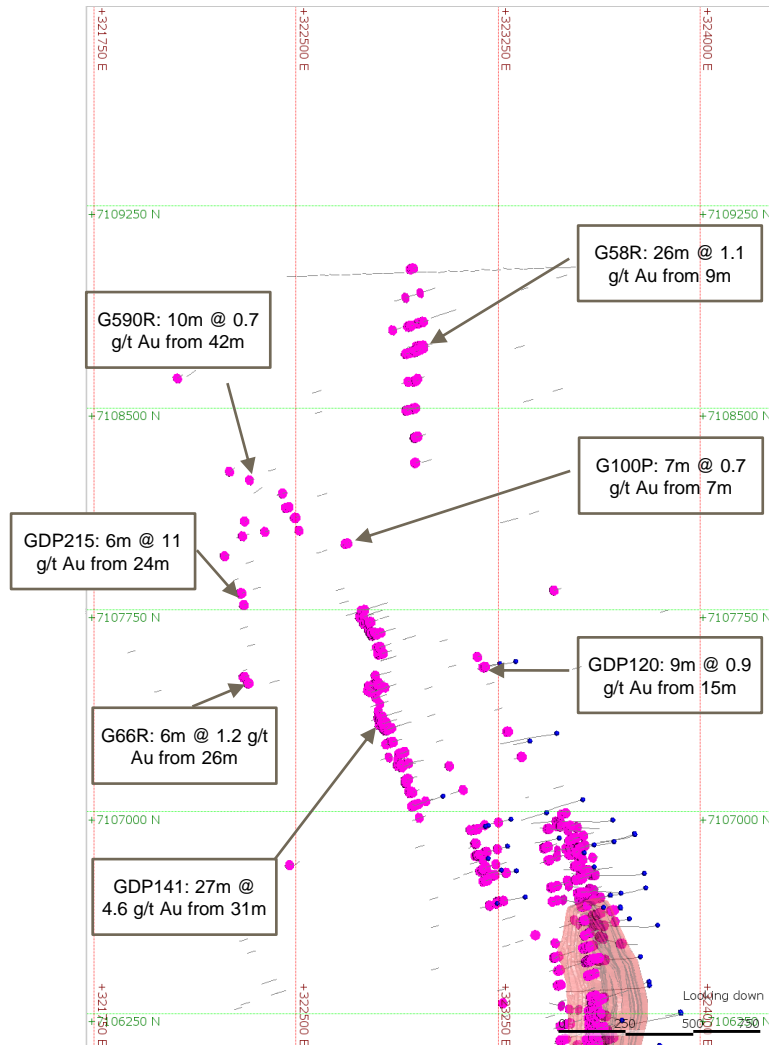


Watertank Pit (looking north)



BROWNFIELD EXTENSION AND SATELLITE TARGETS

Drill traces with >1 g/t assays (purple)



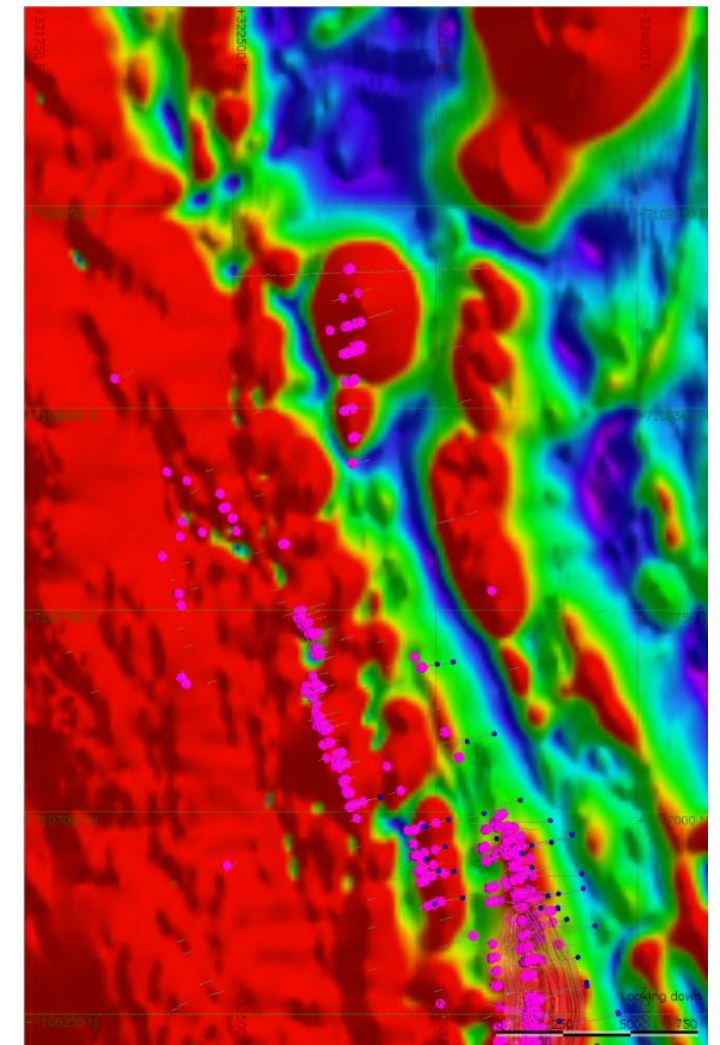
- Historic work focussed on outcropping BIF and guided by geochemistry
- Drill density / coverage wide open

Aerial photo with >1 g/t assays (purple)



- Historic work focussed on shallow oxide (in depletion zone)
- Geochem ineffective in agricultural areas with sand cover

Magnetics with >1 g/t assays (purple)



- Strike extensions / multiple magnetic targets under cover untested
- Patchy oxide intercepts from existing prospects untested



CONCLUSION

LOCAL IS LEKKER

- Kalgold exploration team:
 - 4 geologists and 3 local field assistants
 - Training provided: safe work systems, regolith and geology interpretation, core processing including digital logging, QAQC, software skills, hand held XRF, GPS, drill contractor management
- Local investment (incl. use of BEE compliant providers/contractors):
 - Major drilling: 38 staff onsite at Kalgold (20 local), capital investment in new ancillary equipment, training in risk assessment and safe work procedures
 - Assay laboratories: capital investment associated with upgrade of Randfontein laboratory for Kalgold's program: LM5 mills / exploration preparation facility; additional shifts and training. Assay pills & rigorous QAQC monitoring
- Globally competitive exploration costs:
 - Drill core 30%-40% cheaper than PNG/AUS drilling



NEXT STEPS

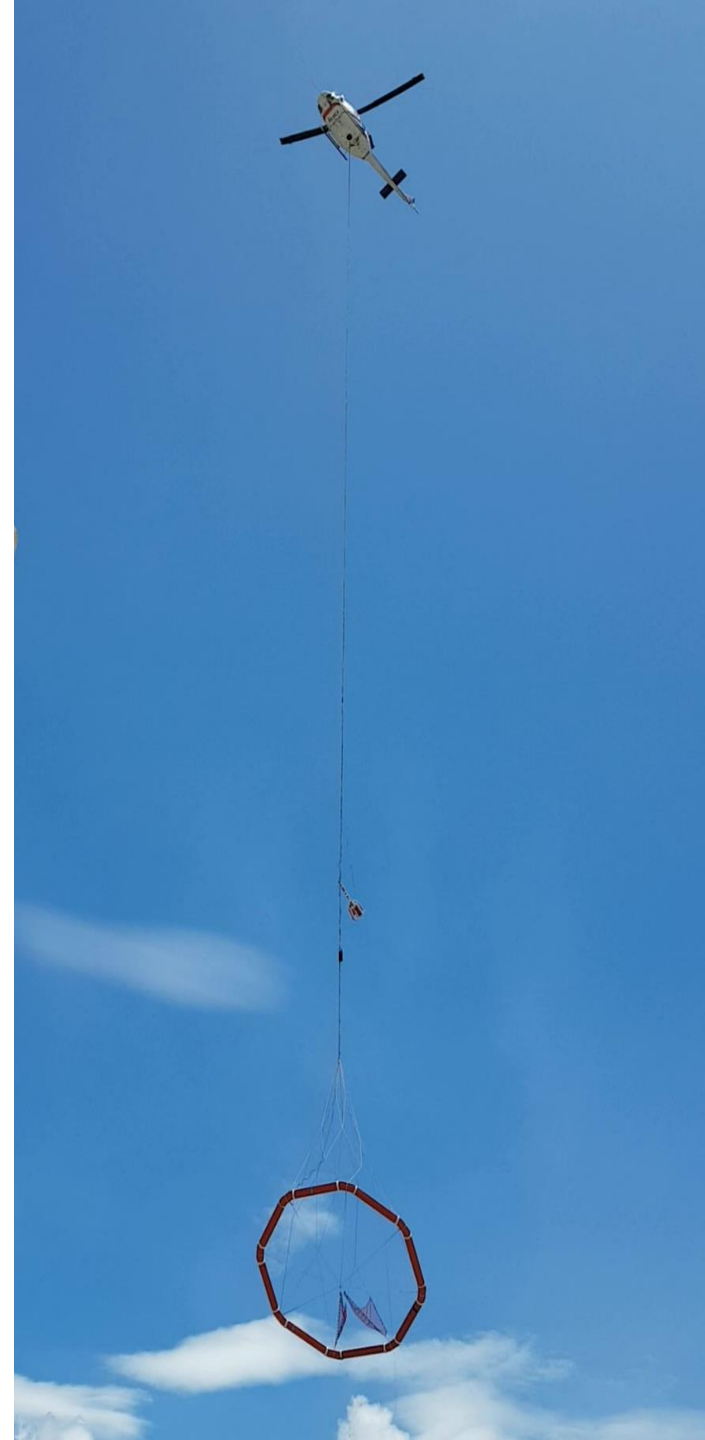
FY18

- Ongoing exploration drilling
 - complete planned holes at Windmill / Windmill south, Watertank north extensions
- Close off database mid June 2018
 - mineral resource update

FY19

- Transition to prefeasibility drilling
 - 15 000m (infill drilling for resource classification, geotech and metallurgical etc.)
- Exploration drilling
 - 3 000m to test prioritised near mine targets
- Target generation
 - Airborne EM (electromagnetic) survey

Picture: airborne geophysical survey (Wafi-Golpu JV, 2017)



BROWNFIELDS EXPLORATION CREATES VALUE

- **Lower cost, lower risk growth option**
 - Enhances viability of operation
 - Short production conversion time
 - Leverage existing infrastructure - less capital intensive

- **Potential to contribute to Harmony's strategy to increase margins**
 - Increase quality of reserves
 - Low discovery cost per resource ounce

- **Boost and sustain group production**
 - Short term reserve replacement
 - Expand the group's mechanised open pit/surface production profile



APPENDIX

KALGOLD OVERVIEW



- Location: 55km southwest of Mahikeng in the North West Province
- Geology: Kraaipan Greenstone Belt
- History: mining started in December 1995, acquired by Harmony in 1999
- Nature of operation: open-pit
- Processing: carbon-in-leach plant (CIL)
- Plant capacity: 130,000 tonnes per month
- Life of mine: 21 years
- FY17 performance:
 - Volumes milled: 1.5 million tonnes
 - Gold produced: 38 700 ounces
 - Recovered grade: 0.8g/t

Gold – Mineral reserves

| | Proved reserves | | | | Probable reserves | | | | Total mineral reserves | | | |
|----------|-----------------|-------|---------|---------|-------------------|-------|---------|---------|------------------------|-------|---------|---------|
| | Tonnes | | Gold | | Tonnes | | Gold | | Tonnes | | Gold | |
| | (Mt) | (g/t) | (000kg) | (000oz) | (Mt) | (g/t) | (000kg) | (000oz) | (Mt) | (g/t) | (000kg) | (000oz) |
| Kalgold | | | | | | | | | | | | |
| Open pit | 4.5 | 0.96 | 4 | 138 | 22.1 | 1.12 | 25 | 796 | 26.6 | 1.09 | 29 | 934 |

For full resource and reserve declarations at 30 June 2017 please refer to www.harmony.co.za

LEAD COMPETENT PERSON: JACO BOSHOFF



- Jaco Boshoff (BSc (Hons), MSc, MBA, Pr. Sci. Nat, MSAIMM, MGSSA)
- South Africa, executive: ore reserve management
- Over 22 years relevant experience
- Registered with the South African Council for Natural Scientific Professions (SACNASP) and a member of the Geological Society of South Africa (GSSA)
- Joined Harmony in 1996

Competent persons statement

The information in this report that relates to Mineral Resources and Reserves is based on information compiled by Mr Jaco Boshoff. Mr Boshoff is a full time employee of Harmony and a member of both the South African Council for Natural Scientific Professions (SACNASP) and a member of the Geological Society of South Africa (GSSA). Mr Boshoff has sufficient experience that is relevant to the styles 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 SAMREC (2016 Edition). Mr Boshoff consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

BIO: MIKE HUMPHRIES



- Mike Humphries (BSc Honours)
- South-East Asia, executive general manager: exploration
- Over 26 years experience in minerals exploration, particularly in greenstone-hosted gold, porphyry copper-gold and epithermal gold systems
- Joined Harmony group in 2000
- Previous experience: CRA Exploration, Rio Tinto, and New Hampton Goldfields Limited

Competent persons statement

The information in the presentation that relates to Exploration Results was compiled by Mike Humphries. Mr Humphries is a full time employee of Harmony Gold Mining Company Limited. Mr Humphries is a member of the Australian Institute of Geologists and has sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the “JORC Code” and SAMREC (2016 Edition). Mr Humphries consents to the inclusion in this presentation of the matters based on this information in the form and context in which they appear.

PRIVATE SECURITIES LITIGATION REFORM ACT SAFE HARBOUR STATEMENT

FORWARD LOOKING STATEMENTS

This presentation contains forward-looking statements within the meaning of the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended, with respect to our financial condition, results of operations, business strategies, operating efficiencies, competitive positions, growth opportunities for existing services, plans and objectives of management, markets for stock and other matters. These include all statements other than statements of historical fact, including, without limitation, any statements preceded by, followed by, or that include the words “targets”, “believes”, “expects”, “aims”, “intends”, “will”, “may”, “anticipates”, “would”, “should”, “could”, “estimates”, “forecast”, “predict”, “continue” or similar expressions or the negative thereof.

These forward-looking statements, including, among others, those relating to our future business prospects, revenues and income, wherever they may occur in this report and the exhibits to this report, are essentially estimates reflecting the best judgment of our senior management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. As a consequence, these forward-looking statements should be considered in light of various important factors, including those set forth in this presentation. Important factors that could cause actual results to differ materially from estimates or projections contained in the forward-looking statements include, without limitation: overall economic and business conditions in South Africa, Papua New Guinea, Australia and elsewhere, estimates of future earnings, and the sensitivity of earnings to the gold and other metals prices, estimates of future gold and other metals production and sales, estimates of future cash costs, estimates of future cash flows, and the sensitivity of cash flows to the gold and other metals prices, statements regarding future debt repayments, estimates of future capital expenditures, the success of our business strategy, development activities and other initiatives, estimates of reserves statements regarding future exploration results and the replacement of reserves, the ability to achieve anticipated efficiencies and other cost savings in connection with past and future acquisitions, fluctuations in the market price of gold, the occurrence of hazards associated with underground and surface gold mining, the occurrence of labor disruptions, power cost increases as well as power stoppages, fluctuations and usage constraints, supply chain shortages and increases in the prices of production imports, availability, terms and deployment of capital, changes in government regulation, particularly mining rights and environmental regulation, fluctuations in exchange rates, the adequacy of the Group’s insurance coverage and socio-economic or political instability in South Africa and Papua New Guinea and other countries in which we operate.

For a more detailed discussion of such risks and other factors (such as availability of credit or other sources of financing), see the Company’s latest Integrated Annual Report and Form 20-F which is on file with the Securities and Exchange Commission, as well as the Company’s other Securities and Exchange Commission filings. The Company undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this presentation or to reflect the occurrence of unanticipated events, except as required by law.

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