



# Zenith Minerals Limited

ABN 96 119 397 938

10<sup>th</sup> March 2016

Investor Update

Gold - Copper and Lithium Focus

*Close-up photo of a polished rock specimen containing high-grade lithium from the Mt Alexander Project (purple coloured mineral is the lithium rich mica – lepidolite)*



# Disclaimer

## Forward looking statements

Some statements in this presentation regarding estimates or future events are forward looking statements. They involve risk and uncertainties that could cause actual results to differ from estimated results. Forward-looking statements include estimates of future production, reserve and mineralised material estimates, capital costs, and other estimates or prediction of future activities. They include statements preceded by words such as "believe", "estimate", "expect", "intend", "will" and similar expressions. Actual results could differ materially depending on such things as political events, labour relations, currency fluctuations and other general economic conditions, market prices for Zenith Minerals Limited products, timing of permits and other government approvals and requirements, change in operating conditions, lower than expected ore grades, unexpected ground and mining conditions, availability and cost of materials and equipment, and risks generally inherent in the ownership and operation of mining properties and investment in foreign countries.

## Information presented is a summary

This presentation aims to provide a high level summary of various technical aspects of the Company's projects. For more details on the underlying technical parameters the reader is referred to the ASX Reports on the Zenith Minerals Limited's website: [www.zenithminerals.com.au](http://www.zenithminerals.com.au)

## JORC competent persons statements

The information in this Report that relates to in-situ Mineral Resources at the Develin Creek project is based on information compiled by Ms Fleur Muller an employee of Geostat Services Pty Ltd. Ms Muller takes overall responsibility for the Report. She is a Member of the AusIMM and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity she is undertaking, to qualify as a Competent Person in terms of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 Edition)'. Ms Muller consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.

The information in this report that relates to Zenith Exploration Results is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and an employee of Zenith. Mr Clifford has sufficient experience which is 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 Clifford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



# Corporate Structure

## Capital Structure – ASX: ZNC

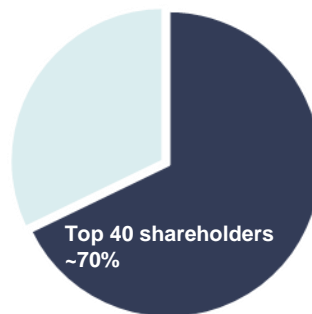
Share Price (as at 8 <sup>th</sup> March 2016)	\$0.044
Shares on Issue (post-rights issue*)	166.3m*
Market Capitalisation (post-rights issue*)	\$8m*
Unlisted Options (\$0.1-\$0.29 Exercise price)	21.1m*
Cash (proforma 31 Dec15 + \$400k capital raise + rights issue )	\$1.8m*

\*On a fully subscribed basis

## Major Shareholders\*\*

HSBC Custody. Nom.	7.8%
Nada Granich	6.4%
Miquilini	5.4%
GDR PL	4.4%

\*\*Pre-rights issue



Directors ~10%

## Mike Joyce – Non-Executive Chairman

Geologist, substantial prior experience at Aberfoyle Resources Ltd (1980-98) then MD at Giralia Resources NL (1998-2011 - \$828m takeover). Chairman of Gascoyne Resources Ltd.

## Mick Clifford - Managing Director

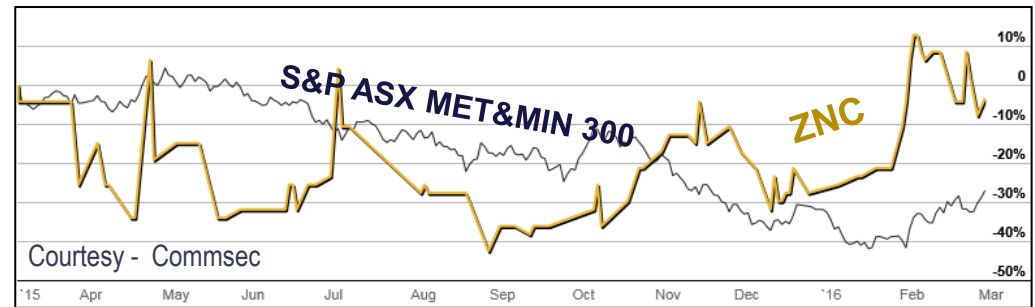
Geologist, >25 years experience, Billiton Australia, Acacia Resources & AngloGold Ashanti. MD of PacMag Metals Ltd (2005 – 2010 - \$50m takeover).

## Stan Macdonald - Non-Executive Director

Industry veteran, founded numerous ASX listed companies including Giralia Resources NL, Director of Gascoyne Resources Ltd.

## Julian Goldsworthy - Non-Executive Director

Geologist, currently GM Business Development at Gascoyne Resources Ltd. Substantial experience with Newcrest Mining, Newmont Australia (1986-2007) and Giralia Resources NL (2007- 2011).



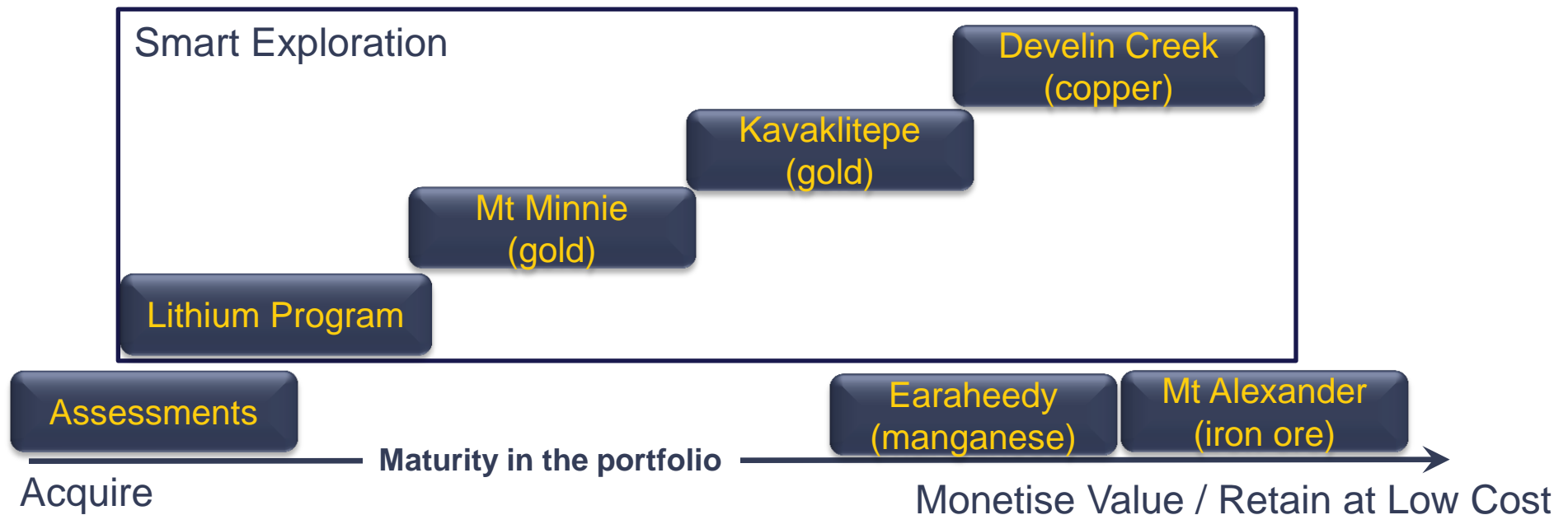


# Clear Strategy for Growth

**Zenith has a clear strategy for adding value for shareholders.**

1. Acquire projects near bottom of market;
2. Undertake low cost smart exploration to add real value;
3. Monetise through development, joint venture, spin out or divestment or retain projects at low cost until market rebounds.

**Focus on lithium and copper-gold projects in the portfolio**







# Zenith's Projects

## Develin Creek – Copper-Zinc-Gold-Silver

- Massive copper-zinc-gold sulphide bodies at Sulphide City and Scorpion
- Inferred Mineral Resource 2.57Mt @ 1.76% copper, 2.01% zinc, 0.24g/t gold & 9.6g/t silver (Feb 2015)
- New drilling indicates potential under-call of historic percussion drilling grades
- Regional geochemical screening continuing (total 10,000 samples to date)
- 3 new prospects identified from soils and mapping (Huntsman Prospect up to 1.1% copper)

## Kavaklitepe Gold

- New JV partner – Teck
- 54m @ 3.33g/t Au in continuous rock chip samples
- Operating licence received, drill & trench permits submitted

## Mt Minnie Gold

- Discovery of high-grade gold in quartz veins (21.5, 17.7 and 11.5 g/t gold)
- New gold in soil anomaly defined (requires trenching/drilling)

## Lithium Program

- Mt Alexander - high-grade lithium surface samples to 4.05%Li<sub>2</sub>O - follow-up planned
- New projects under assessment

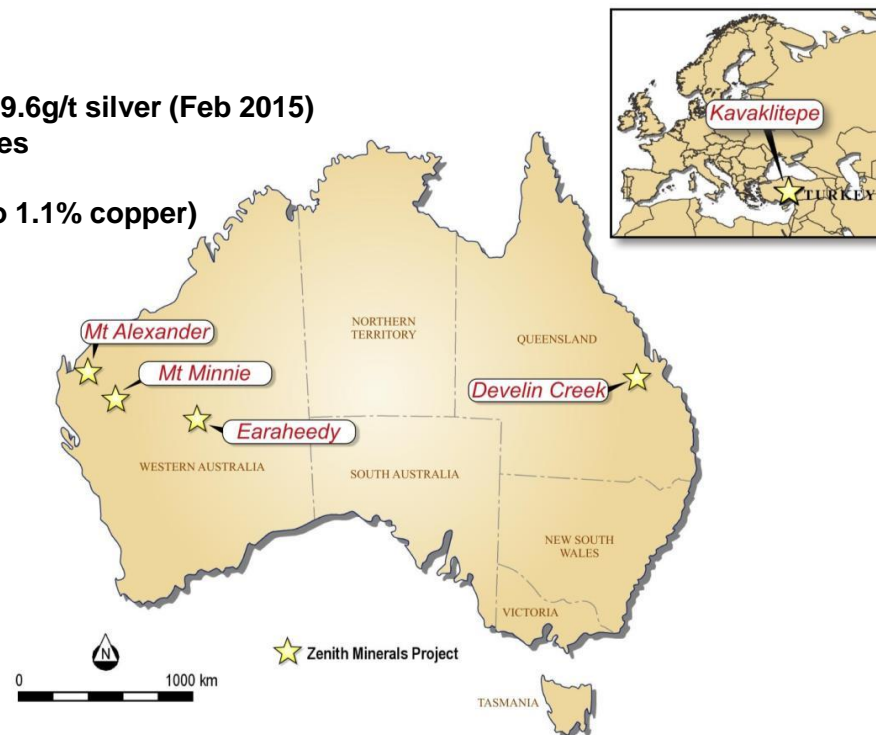
Retention leases/  
applications to  
preserve project  
opportunities at  
low ongoing cost

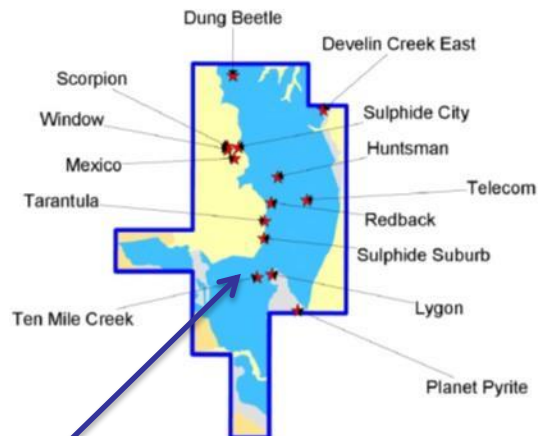
### Earaheedy – Manganese

- Inferred Mineral Resource -Red Lake 1.1Mt @ 20.8% Mn (Sep 2014)
- Inferred Mineral Resource - Lockeridge 2.6Mt @ 20.6% Mn (Apr 2015)

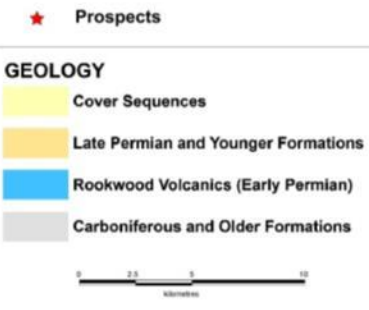
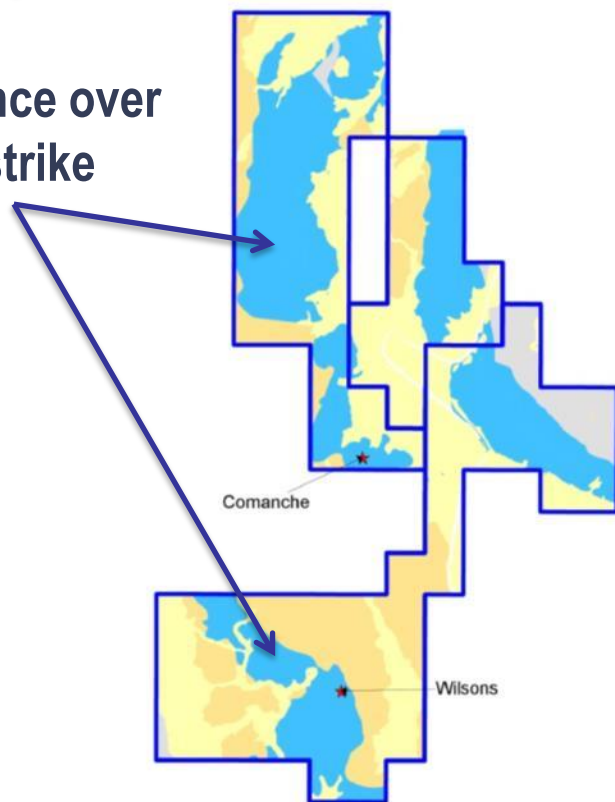
### Mt Alexander – Iron

- Inferred Mineral Resource - Mt Alexander 565.7Mt @ 30.0%Fe (Oct 2015)
- Inferred Mineral Resource - Mt Alexander West 25.9Mt @ 22.7%Fe (Jun 2015)





Target  
sequence over  
50km strike



# Develin Creek

Ownership: 51-100%  
Location: Queensland  
Commodity: Cu-Zn-Ag-Au  
Stage: Resource

- Cyprus/Beshi style basalt hosted volcanogenic massive sulphide deposits
- Massive sulphide deposits at Sulphide City and Scorpion
- Footwall stringer copper zone at Window
- >50km of prospective Late Permian age Rookwood Volcanics
- Degrudda-Monty deposits analogy (VMS in basalt-pepperite host rocks)





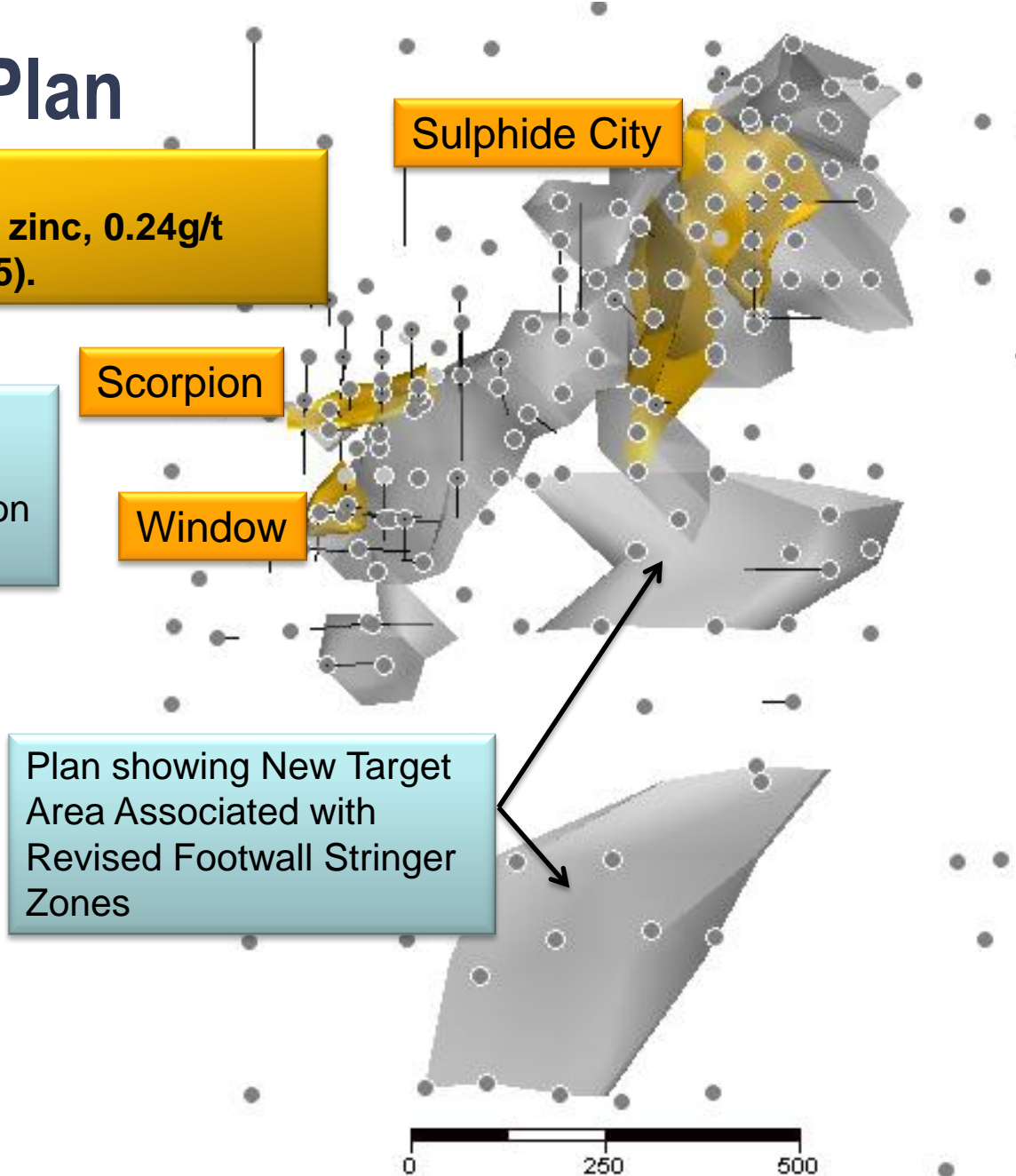
# Develin Creek - Plan

**Inferred Mineral Resource :**  
**2.57Mt @ 1.76% copper, 2.01% zinc, 0.24g/t gold and 9.6g/t silver (Feb 2015).**

Zenith RC drilling indicates potential significant upgrade in copper, zinc, gold and silver grades **(3 to 7 times)** compared with historic percussion drilling – further twin holes planned



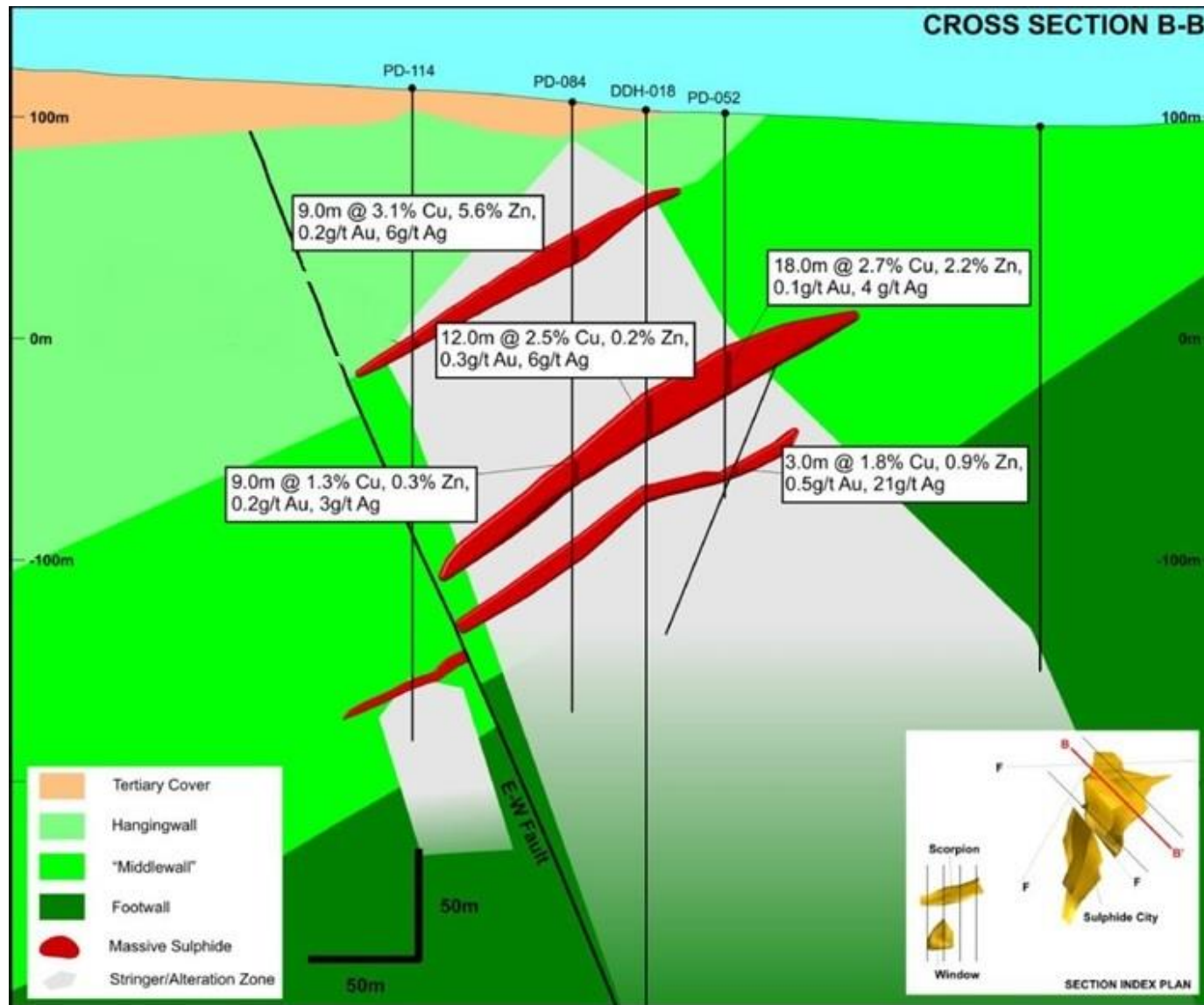
Positive Initial Metallurgical Test Work







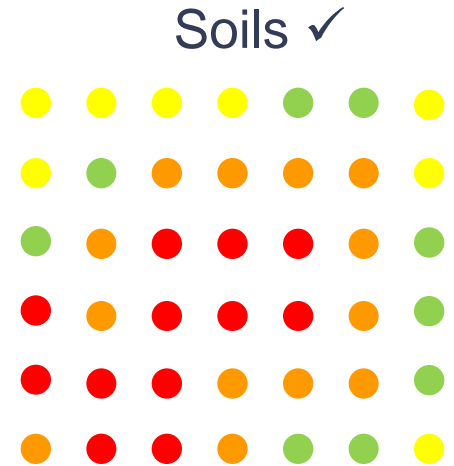
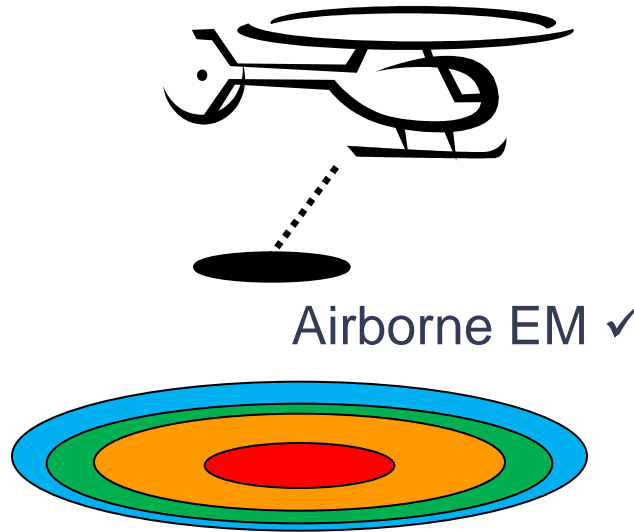
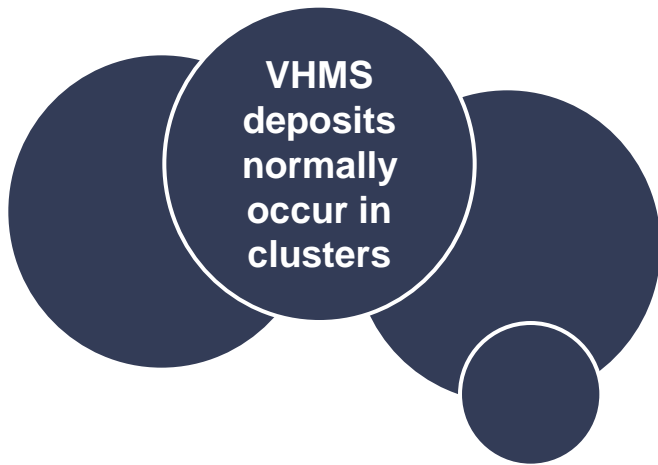
# Develin Creek; Sulphide City - Cross Section







# Exploration Tools

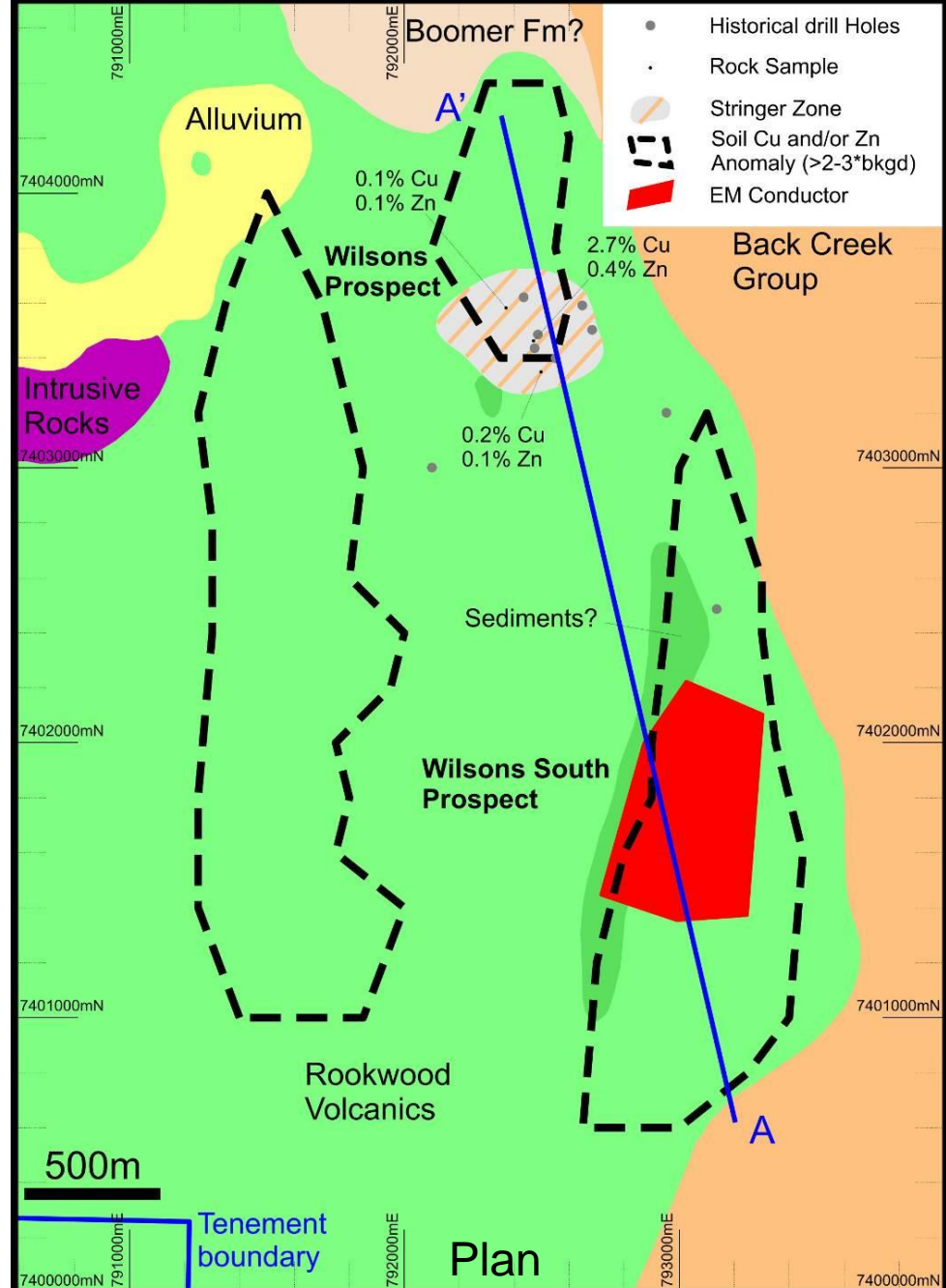
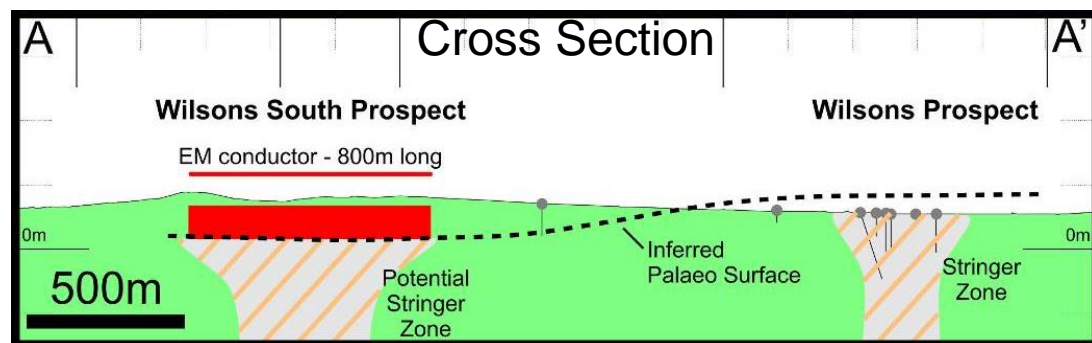


- Geology – including understanding host sequences, deposit morphology
- Geophysics – IP, EM & spectral - ASD
- Geochemistry – surface geochem, gossan signatures, multi-element geochem & lithogeochem
- Integrated approach



# Wilsons South Drill Target

Coincident EM and Geochemical Anomaly



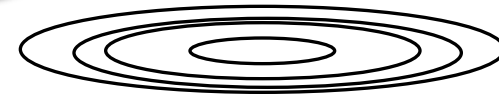


# Kavaklitepe

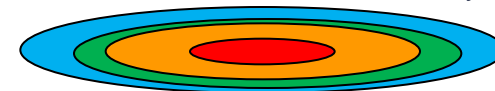
Ownership: Teck Earning 70%  
 Location: Turkey  
 Commodity: Gold  
 Stage: Drill Target



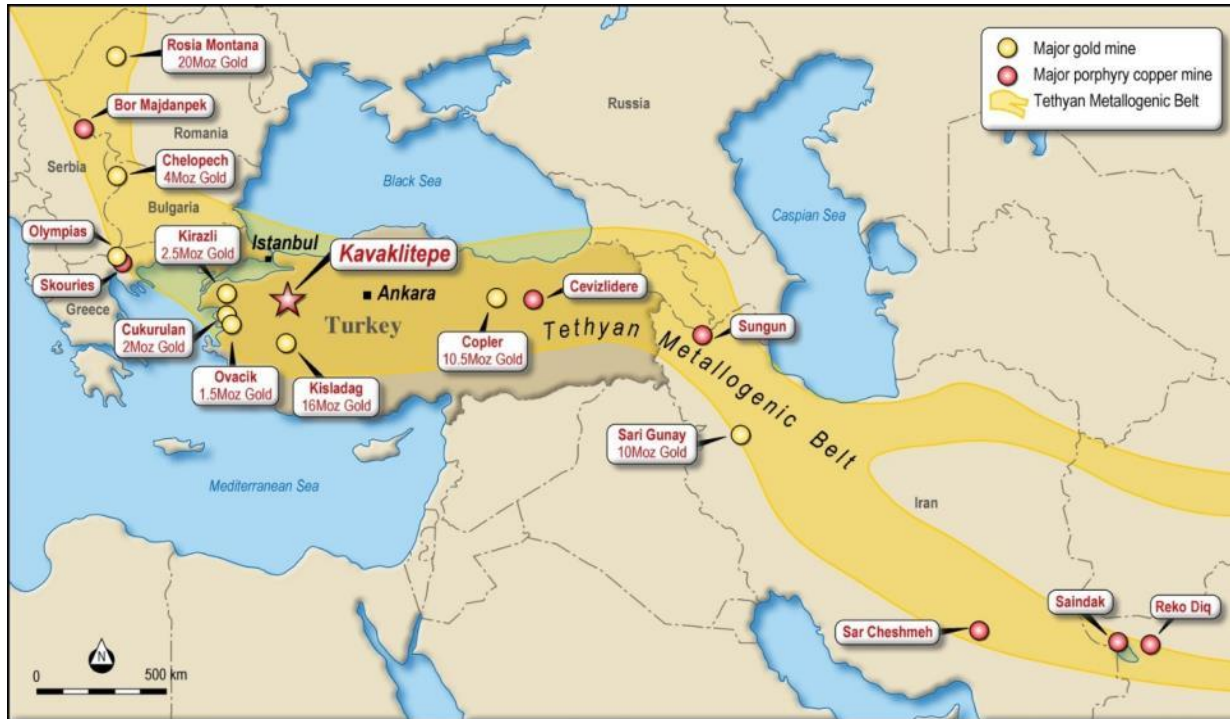
Discovered  
in 2013



Coincident IP and rock/soil anomaly



New JV Partner – Teck  
 Zenith free carried for first \$700k of expenditure  
 Awaiting drill permits from Turkish Govt  
 No drilling Teck/Zenith planning first holes



Turkey -  
Europe's  
largest gold  
producer

Highly endowed  
Tethyan  
Metallogenic Belt

Ranked 8  
out of 96 by  
Frazer  
Institute

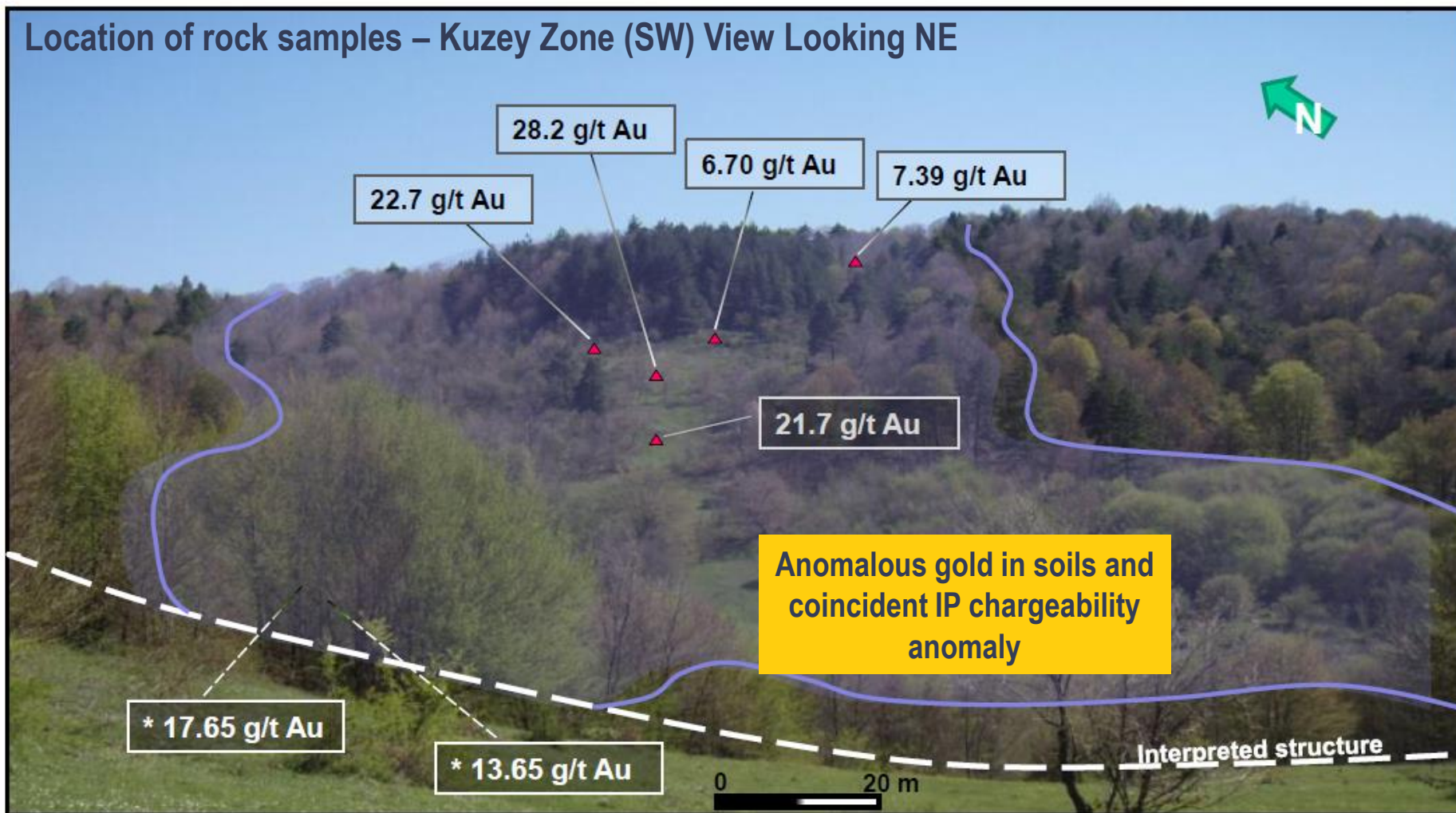






# Kavaklitepe

Ownership: Teck Earning 70%  
Location: Turkey  
Commodity: Gold  
Stage: Drill Target



\* Samples behind trees





# Kavaklitepe

Ownership: Teck Earning 70%  
Location: Turkey  
Commodity: Gold  
Stage: Drill Target

## Kuzey Zone

54m @ 3.33g/t Au incl  
21.5m @ 7.2g/t Au  
(continuous rock chip)

KUZEY ZONE  
54m @ 3.33 g/t Au  
Incl.  
21.5m @ 7.2 g/t Au  
Continuous Rock Chips

camera location  
(previous slide)

## Guney Zone

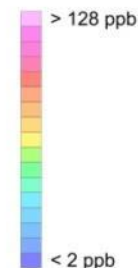
1000m strike length  
Coincident IP anomaly

GUNEY ZONE

Rock samples  
7.39g/t, 5.03g/t

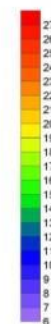
IP Surveys

Soil Image Legend Gradient IP Legend



Gold in Soil  
Anomaly

Chargeability, Mv/v



DISCOVERY ZONE  
21m @ 2.67 g/t Au  
Continuous Rock Chips

## Discovery Zone

400m strike length  
21m @ 2.67g/t Au  
(continuous rock chip)

Rock Samples - Au (g/t)

- ▲ 2 to 28.7
- 0.5 to 2
- ▲ < 0.5

Soil Samples - Au (ppb)

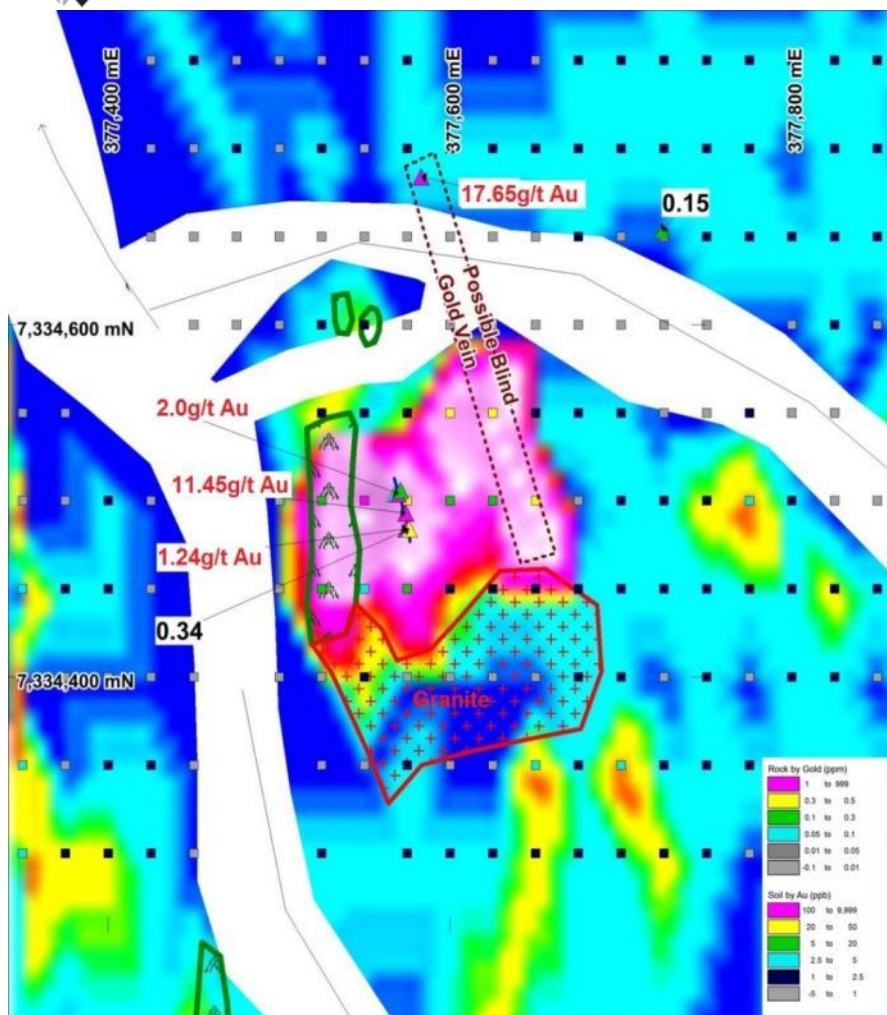
- 128 to > 1,000
- 64 to 128
- 32 to 64
- 16 to 32
- 8 to 16
- < 8

Trenching/drilling planned 2016



# Mt Minnie

Ownership: 100%  
Location: WA  
Commodity: Gold  
Stage: Reconnaissance



**Woods Prospect Gold in Soil Anomaly (Triangles = rock samples, squares = soil samples, green polygons = dolerite dykes, red hatched polygons = granite outcrop)**

New geological model prospective for reduced intrusion related gold deposits

Mid-Proterozoic granite host

High-grade rock samples include: 21.5, 17.7 and 11.5 g/t gold

New gold in soil anomaly in predominantly sand covered area

Trenching/drilling planned in 2016

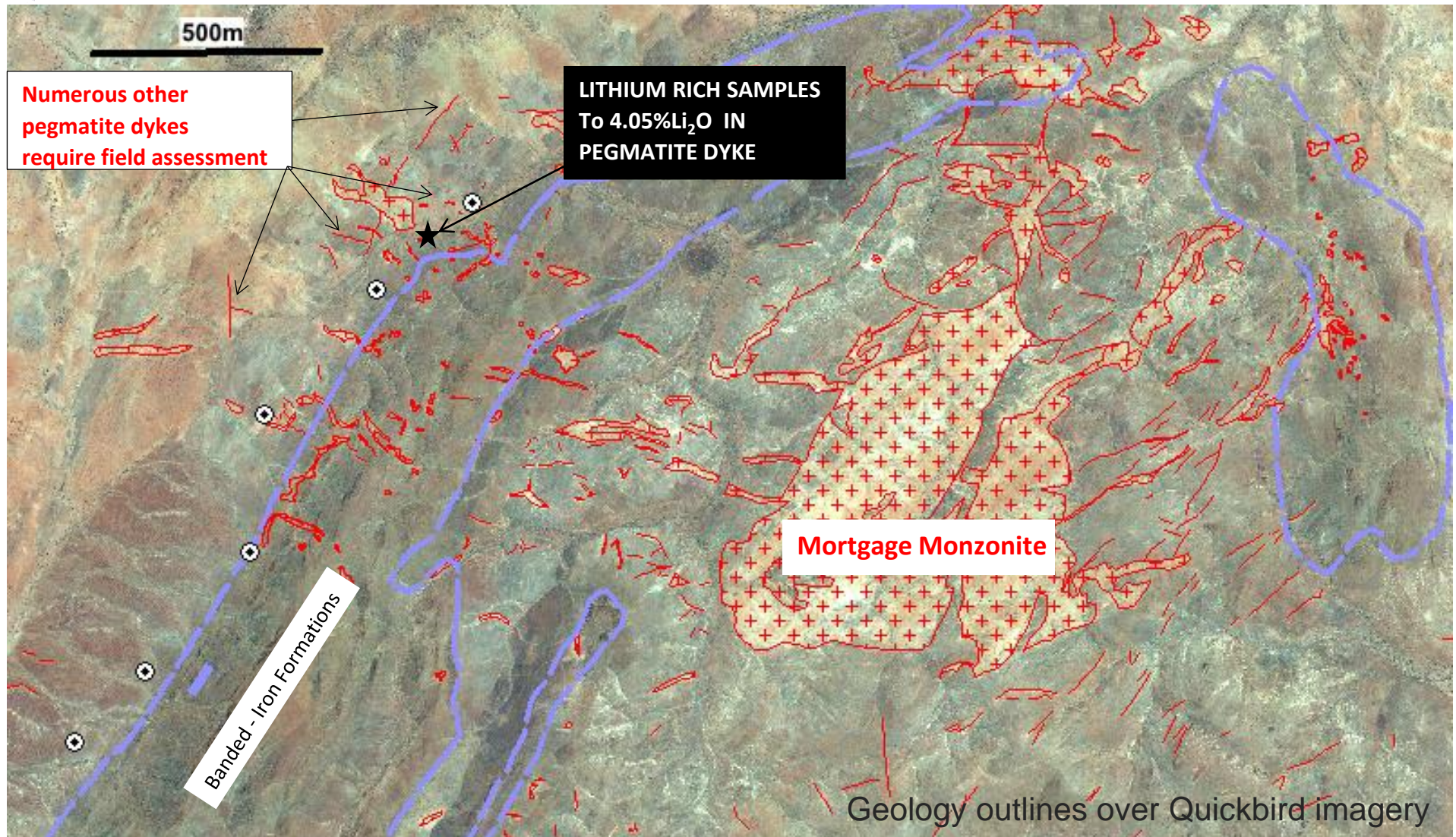






# Mt Alexander - Lithium

Ownership: 100%  
Location: WA  
Commodity: Lithium  
Stage: Reconnaissance





# High-Grade Lithium - Mt Alexander

- High-grade lithium samples (up to 4.05%  $\text{Li}_2\text{O}$ ) at Zenith's 100% owned Mt Alexander Project;
- Seven rock chip samples with lithium oxide assays ranging from 3.38%  $\text{Li}_2\text{O}$  to 4.05%  $\text{Li}_2\text{O}$  and tantalum oxide assays from 0.023%  $\text{Ta}_2\text{O}_5$  to 0.034%  $\text{Ta}_2\text{O}_5$  from a reported lepidolite rich pegmatite dyke;
- The pegmatite dyke that has been sampled is one of more than 100 pegmatite and granite dykes that form a 2 kilometre x 2.5 kilometre radiating swarm surrounding the Mortgage Monzonite intrusive stock. The other pegmatite dykes do not appear to have been systematically mapped or sampled for lithium or tantalum;
- The seven samples are from a batch of only 10 samples known to have been analysed for lithium from the Mt Alexander Project, where the recent focus by Zenith has been on iron ore; and
- Surface mapping and sampling along with an assessment of existing drill samples is planned as pegmatite was recorded in multiple drill holes during the Mt Alexander iron ore resource drilling programs.





# Investment Summary

Massive copper-zinc sulphides  
Wilsons South EM-geochem drill target  
Drilling for metallurgy samples at Sulphide City  
Drilling planned – 3rd<sup>d</sup> qtr 2016

**Develin Creek  
(copper)**

High-grade lithium  
Rocks, soils and  
mapping planned 2016

**Mt Alexander  
(lithium)**

High-grade gold  
Rock chips and soils  
Trenching & drilling planned 2016

**Kavaklitepe  
(gold)**

High-grade gold  
Rocks and soils  
Trenching / drilling planned 2016

**Mt Minnie  
(gold)**

Ongoing  
Upgrades to portfolio – new lithium focus

**Assessments**

High-grade Mn resources  
Retention status

**Earaheedy  
(manganese)**

Large, well located iron resource  
Retention status

**Mt Alexander  
(iron ore)**

Acquire ————— Maturity in the portfolio ————— Monetise Value / Retention at Low Cost



# Contact Details

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ASX Code:

ZNC



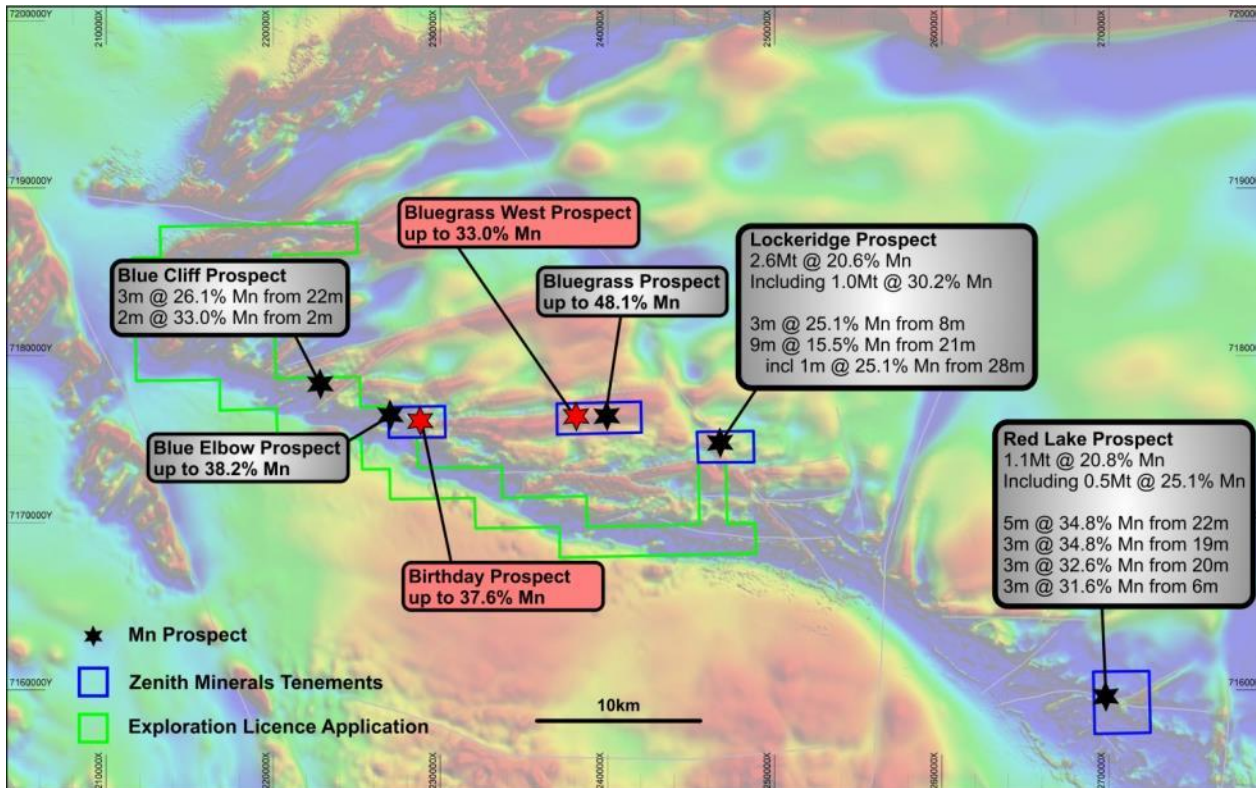
# Supplementary Slides





# Earaheedy Manganese

Ownership: 100%  
Location: WA  
Commodity: Manganese  
Stage: Resources



Zenith completed first drilling for Mn in Earaheedy

- Shallow dipping oxide; and
- Carbonate (Kalahari Basin style) mineralisation

Manganese both structurally controlled and stratiform.

Inferred Mineral Resources:

- Red Lake 1.1Mt @ 20.8% Mn (Sep 2014)
- Lockeridge 2.6Mt @ 20.6% Mn (Apr 2015)

Drill intersections include:

- 3m @ 41.0% Mn within 5m @ 34.8% Mn from 22m
- 1m @ 40.2% Mn within 3m @ 30.7% Mn from 3m
- 2m @ 38.4% Mn within 3m @ 32.6% Mn from 20m
- 1m @ 42.3% Mn within 3m @ 34.8% Mn from 19m

New discoveries:

- Bluegrass, Bluegrass West, Blue Elbow & Birthday

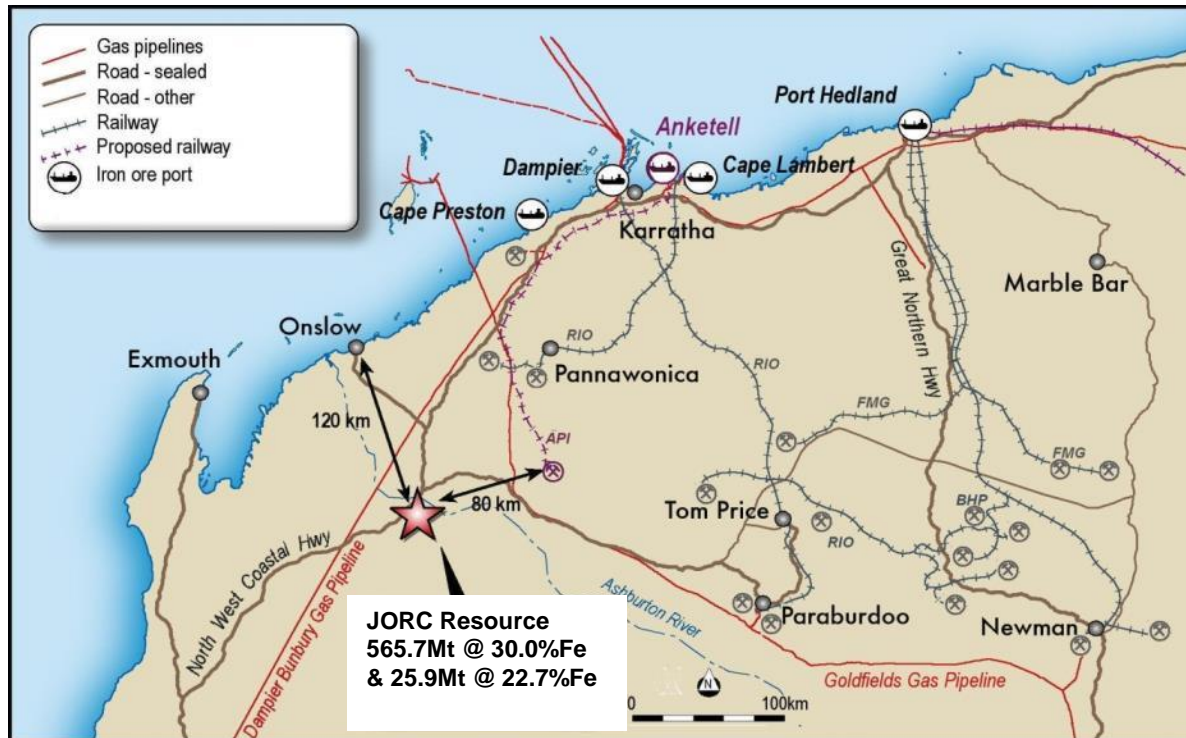
Focused tenement strategy





# Mt Alexander Magnetite

Ownership: 100%  
Location: WA  
Commodity: Iron Ore  
Stage: Resources



Well located close to – sealed roads, gas pipelines, only 120km from coast near Onslow (Mitsui, Chevron ports)

Base case in 2011 Scoping study - slurry pipeline, tranship by barge to vessel offshore

Only 80km to API JV (Baosteel -AMCI) West Pilbara proposed railway to Anketell Port – third party access.

Advantages over other WA magnetite deposits:

- location close to coast and infrastructure
- coarser grained = better beneficiation +40 micron grind size

Inferred Mineral Resources:

- Mt Alexander 565.7Mt @ 30.0%Fe (Oct 2015)
- Mt Alexander West 25.9Mt @ 22.7%Fe (Jun 2015)

Additional very large exploration target

Key tenure retained