



Zenith  
Minerals  
Limited

ABN 96 119 397 938

**ASX CODE: ZNC**

#### Activities

Exploration/Development

- Earraheedy Manganese
- Kavaklitepe Gold
- Develin Creek Copper-Zinc
- My Minnie Gold
- Mt Alexander Magnetite Iron

#### Details as at June 2014

Issued Shares	112.3 m
Unlisted options	1.1 m
Mkt. Cap. (\$0.08)	A\$ 9.0m
Cash Jun 14	A\$1.1m
Debt	Nil

#### Directors

Michael Clifford	Managing Director
Mike Joyce	Non Exec Chairman
Stan Macdonald	Non Exec Director
Julian Goldsworthy	Non Exec Director

#### Major Shareholders

HSBC Custod. Nom.	9.3 %
Giralia (Atlas Iron)	9.1%
Miquilini	5.3%
Tilbrook/Grey Willow	5.3%
Nada Granich	4.8%
Yandal Inv. PL	3.0%

#### Contact Us

Zenith Minerals Australia Limited  
Level 2, 33 Ord Street  
WEST PERTH WA 6005

PO Box 1426  
WEST PERTH WA 6872

Telephone: (08) 9226 1110

Facsimile: (08) 9481 0411

Email:  
[information@zenithminerals.com.au](mailto:information@zenithminerals.com.au)

Web: [www.zenithminerals.com.au](http://www.zenithminerals.com.au)

## NEW ACQUISITIONS GIVE ZENITH CONTROL OF ENTIRE WESTERN EARAHEEDY MANGANESE PROVINCE

23<sup>rd</sup> July 2014

### HIGHLIGHTS

**Acquisition of Rio Tinto's (ASX:RIO) Earraheedy tenements and a new application over the promising Blue Cliffs target sees Zenith nearly double its 100% owned holdings over manganese (Mn) target horizons to 130km of strike length, including all known manganese prospects.**

- Previous manganese drilling by Zenith in the Earraheedy Basin has returned intersections including:

#### Red Lake Prospect

- 3 metres @ 41.0% Mn from 5m below surface and
- 3 metres @ 34.8 % Mn, incl. 1 metre @ 42.3% Mn from 19m.

#### Lockeridge Prospect

- 3 metres @ 25.1% Mn from 8m below surface and
- 3 metres @ 20.2% Mn from 27m below surface.

- Manganese mineralisation interpreted to trend into newly acquired Rio Tinto tenure, field work is planned to assess this potential.
- VTEM airborne electromagnetic geophysical survey flown by Rio covering 40km of strike of target area to be processed to assess manganese targets.
- In addition to the acquisition of the Rio Tinto tenure, Zenith has successfully applied for a new exploration licence to cover the Blue Cliff manganese prospect where previous drilling intersected up to:

- 2 metres @ 33.0% Mn from 2m below surface and
- 3 metres @ 26.1% Mn from 22m below surface.

Commenting on the acquisition, Zenith Minerals Limited Chairman - Mike Joyce said;

*"We have been working for some time to consolidate ownership of all of the western Earraheedy manganese prospects, and are delighted to have secured 100% interest in both the Rio Tinto project, and the Blue Cliff target. Zenith first recognized the potential of the Earraheedy Basin in 2010, and to date we have discovered 5 prospects with outcropping high-grade (>40%Mn) DSO style manganese, and drilled and reported a maiden JORC compliant resource at Red Lake. We will get our field crews to work assessing this new ground, which we feel is highly prospective.*

*At Zenith we are continuing to review potential acquisitions to both strengthen our existing projects and add to our project pipeline, as we see the current market weakness as presenting many quality opportunities."*



## EARAHEEDY MANGANESE PROJECT SUMMARY

Zenith was the first mover for manganese in the Proterozoic aged Earaheedy Basin in Western Australia, and has discovered and drill tested several zones of near surface manganese oxide. In 2012 the Company reported the first potential direct shipping ore (“DSO”) grade manganese drill intersections in the Earaheedy Basin and in April 2013 completed a maiden JORC Inferred Resource at the Red Lake deposit, as well as preliminary metallurgical work.

### Acquisition of Rio Tinto’s Earaheedy Tenements

The acquisition of Rio Tinto’s Earaheedy tenements extends Zenith’s manganese prospective target horizon from ~75km of strike to ~130km (Figure 1). Previous Zenith drilling immediately south east of the Rio Tinto tenement boundary at the Lockeridge Prospect in 2013 returned: 3 metres @ 25.1% Mn from 8m and 3 metres @ 20.2% Mn from 27m depth in a gently east dipping horizon. Mapping and sampling to the immediate south east of the Rio Tinto tenement boundary indicates a possible extension of the manganese horizon into the Rio Tinto leases. Field work is planned to commence immediately to assess this target area.

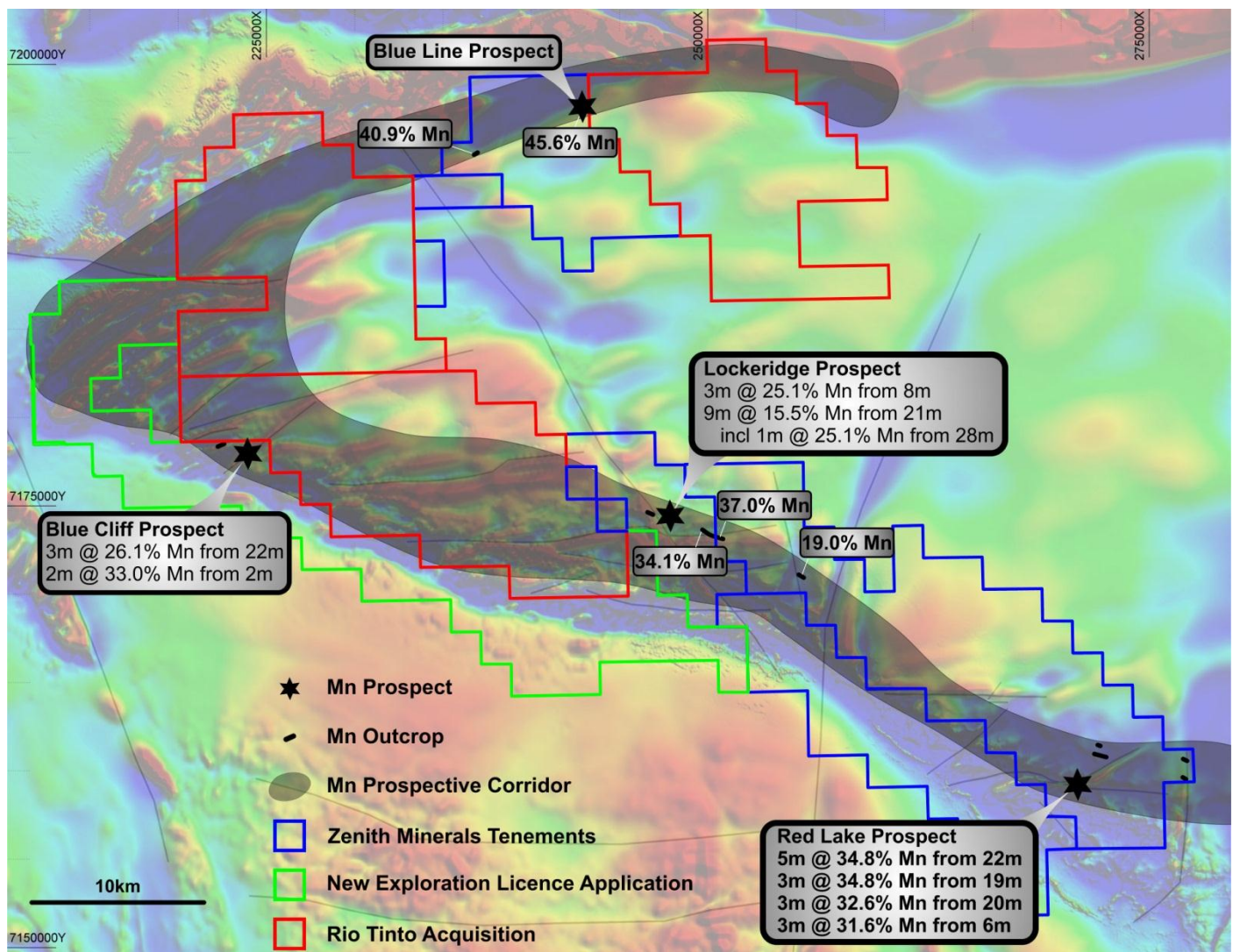


Figure 1: Zenith’s Earaheedy Project Landholdings and Manganese Prospects including the newly acquired Rio Tinto Project and New Exploration Licence Application



Drilling a further 40km along strike at the Red Lake Prospect by Zenith in 2012 and 2013 returned: 3 metres @ 41.0% Mn from 5m and 1 metre @ 42.3% Mn from 3m depth, mineralisation in this Red Lake area has been demonstrated by Zenith to be partly fault controlled, whereas the Lockeridge mineralisation occurring at a lower stratigraphic level is dominantly conformable with bedding providing two distinct end-member target styles to be assessed in the newly acquired ground.

Data included as part of the purchase is a near project wide, VTEM airborne electromagnetic geophysical survey flown by Rio Tinto in 2009, covering 40km of strike of the target area. The replacement value of that survey is estimated at ~\$170k. Importantly, the VTEM geophysical survey flown by Rio Tinto was a more powerful geophysical system than that previously employed by Zenith at its Lockeridge Prospect and according to Zenith's geophysical consultants is more likely to be able to see any conductive manganese bodies beneath the partly conductive thin cover sequence, which overlies portions of the prospect area. Zenith's detailed knowledge of the Earraheedy stratigraphic sequences and the previous drilling and mapping programs conducted by its field teams will allow the Company to quickly put any new geophysical targets into geological context and rank them against existing manganese targets that are yet to be followed up.

### **New Exploration Licence**

In addition to the Rio Tinto tenure a new exploration licence has been successfully applied for by Zenith to cover the Blue Cliff Manganese prospect where previous drilling by a JV managed by Cazaly Resources Limited intersected: 2 metres @ 33.0% Mn from 2m and 3 metres @ 26.1% Mn from 22m depth (as announced by Cazaly to the ASX - 27 July 2012).

### **Targets**

Zenith's priority target in the Earraheedy Basin is high-grade near surface direct shipping (DSO) manganese. In addition to the high-grade DSO manganese intersected in Zenith drilling to date, screening and metallurgical testwork by Zenith shows potential to significantly upgrade the lower grade manganese horizons and further testwork is planned on coarser sample sizes that will better represent manganese material that may be mined.

## **BACKGROUND**

The Proterozoic aged Earraheedy Basin north of Wiluna in WA is a potential new manganese province with similarities to the giant Kalahari manganese field in South Africa. As first mover Zenith established a strong land position with tenements covering ~75 strike km of prospective stratigraphy, subsequently extended to ~130km with the acquisition of Rio Tinto's Earraheedy tenements. Zenith's priority target is high-grade (>40% Mn) manganese oxide formed by weathering or supergene upgrade of primary carbonate manganese.

Zenith completed the first ever drilling for manganese in the western Earraheedy in late 2010 at the Lockeridge prospect, intersecting a shallow dipping bed of manganese mineralisation extending from surface to 1.2km down dip. Better results from Lockeridge include 12m @ 11.1% Mn from 28m depth, and 3m @ 18.0% Mn from 37m depth. Subsequent drilling returned thick zones of manganese oxide at the Black and Blue prospect; 31m @ 7.9% Mn from surface, incl. 2m @ 17.1 %Mn, 1m @ 22% & 3m @ 14.3 %Mn.

The first DSO grade Mn drill intersections recorded in the Earraheedy Basin were reported by Zenith in 2012 at the Red Lake prospect. Drilling results include; 3m @ 41% Mn (within 5m @ 34.8% Mn from 22m depth), and **3 metres @ 34.8% Mn from 19 metres (ZLRC057), including 1m @ 42.3% Mn.**

A maiden resource estimate for the Red Lake prospect was reported to the ASX on 9 April 2013. The tonnage/grade estimates are tabulated below at both a 5% and a 10% Mn cut-off grade.





Red Lake Mn Mineral Resource estimate								
Classification	Reporting Cut-off Grade	Tonnes (Mt)	Mn %	Fe %	Si %	Al <sub>2</sub> O <sub>3</sub> %	P %	S %
Inferred	5 % Mn	1.6	15.7	21	23.1	9.8	0.25	0.11
Inferred	10% Mn	1.2	19.0	19.1	20.8	9.4	0.26	0.13
<i>Note: The CSA Mineral Resource was estimated within constraining wireframe solids based on the specified nominal lower cut-off grade for Mn. The Mineral Resource is quoted from all blocks above the specified Mn cut-off grade %. Differences may occur due to rounding.</i>								

The resource estimate encompasses a fault-bounded sub-horizontal manganese oxide horizon with a lateral extent of ~400 metres by 300 metres, up to 4 metres in true thickness.

The Earraheedy project also includes a 30 km long zone of carbonate-hosted zinc (Zn) and lead (Pb) mineralisation in the Yelma Formation at the base of the Earraheedy Basin stratigraphy. Broadly spaced drilling by RGC Exploration from 1992 to 1996 defined several prospects containing drill intersections of oxidised and primary Zn-Pb mineralisation, including;

- Navajoh: 7.3 m @ 6.1 % Zn, 0.77% Pb (incl. 3.3 m @ 11.2% Zn, and 0.93% Pb)
- Magazine: 5 m @ 5.6% Zn +Pb (incl. 2 m @ 8.2% Zn, 2.8% Pb)
- Chinook: 6 metres @ 3.63% Pb +Zn.

*The information in this report that relates to Exploration Results is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists. 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 2004 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. The information relating to the Cazaly Resources Blue Cliffs drilling results was prepared and first disclosed to ASX on 27 July 2012 under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. The Company has advised that it is not aware of any new information or data that materially affects the information included in the 27 July 2012 market announcement, and that all material assumptions and technical parameters underpinning the Exploration results in the 27 July 2012 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 are presented have not been materially modified from the original market announcement.*

*The information in this Report that relates to in-situ Mineral Resources at Zenith Minerals Limited's Red Lake project is extracted from the 9 April 2013 ASX release entitled "Maiden Manganese Resource Estimate for Earraheedy Project" which is available to view on the Zenith Minerals website ([www.zenithminerals.com.au](http://www.zenithminerals.com.au)). The Mineral Resource estimate was prepared and first disclosed under the JORC Code 2004, and is based on information compiled by Grant Louw an employee of CSA Global. Grant Louw takes overall responsibility for the Mineral Resource estimate. He is a Member of the Australian Institute of Geoscientists and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he 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 2004 and 2012 Editions). Mr Louw consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. This information was prepared and first disclosed to ASX on 9 April 2012 under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. The Company has advised that it is not aware of any new information or data that materially affects the information included in the 9 April 2013 market announcement, and that all material assumptions and technical parameters underpinning the Mineral Resource estimate in the 9 April 2013 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 are presented have not been materially modified from the original market announcement.*



## DEAL TERMS

Key Terms of the Earraheedy Rio Tinto Agreement are as follows:

- Up-front share payment of \$100k of ordinary Zenith Minerals Limited shares to purchase 100% equity in the 3 tenements,
- If Zenith's exploration expenditure in relation to the Rio Tinto tenements exceeds an expenditure total of \$3,000,000 then it must issue to Rio Tinto the greater of 3 million ordinary Zenith Minerals Limited shares or \$500,000,
- If Zenith sells the Rio Tinto project to a 3<sup>rd</sup> party within a 5 year period, then Zenith must pay to Rio Tinto 10% of any consideration it receives from such a sale event,
- Other industry standard terms and conditions that would be common in an agreement of this style.

**Zenith Minerals Limited**

**23<sup>rd</sup> July 2014**

**For further information contact;**

**Directors Michael Clifford or Mike Joyce**

**Phone 08 9226 1110**