## TERRAMIN AUSTRALIA LIMITED

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# Quarter Report 2015

## HIGHLIGHTS

- Continued positive discussions with Algerian partner and Algerian government leading to technical meeting in May
- Conversion of US\$11m of debt into shares
- Bird-in-Hand hydrological studies showing positive results
- Commendation award for Environmental Excellence at Angas
- Government grant awarded for exploration drilling at Wheal Barton

TERRAMIN AUSTRALIA LIMITED ABN 67 062 576 238

27 April 2015



100% owned by Western Mediterranean Zinc Spa (WMZ)

Terramin holds a 65% shareholding in WMZ. The remaining 35% is held by two Algerian government-owned companies: Enterprise Nationale des Produits Miniers Non-Ferreux et des Substances Utiles Spa (ENOF) (32.5%) and Office National de Recherche Géologique et Minière (ORGM) (2.5%). The Oued Amizour Exploration Permit 5225PE is a 125km<sup>2</sup> tenement which contains several lead-zinc deposits including the Tala Hamza deposit.

#### Update

ENOF and the Algerian government have advised that they are pursuing their review of the revised feasibility study submitted by Terramin with the assistance of China Non-Ferrous Metal Industry's Foreign Engineering and Construction Company (NFC). The parties have continued to have positive exchanges about specific aspects of the feasibility study including the financial parameters of the feasibility study and Terramin has provided additional information to its partners in this respect. ENOF, Terramin and NFC will meet in May 2015 to discuss the outcomes of the revised feasibility study and the path forward towards the development of Tala Hamza.

During the quarter the cash expenditure on the project was \$216,572.



**BIRD-IN-HAND GOLD PROJECT** 

100% owned by Terramin subsidiary Terramin Exploration Pty Ltd

The Bird-in-Hand Gold Project is located approximately 30km north of Terramin's existing mining and processing facilities at the Angas Zinc Mine. The project has a high grade Resource of 233,000 ounces of gold which is amendable to underground mining.

It is anticipated that subject to required regulatory approvals, the Bird-in-Hand material will be processed utilising the facilities at Angas which can be modified to process goldbearing material. The existing tailings dam at Angas has the capacity to hold all the Bird-in-Hand tailings.

### **Update**

During the quarter, evaluation and investigation work continued at the Bird-in-Hand Gold Project as Terramin continues to progress the Preliminary Feasibility Study (**PFS**).

Terramin has undertaken, in consultation with the Department of State Development (**DSD**), Department for Environment, Water and Natural Resources (**DEWNR**) and the Environmental Protection Authority (**EPA**), the most comprehensive aquifer investigation ever conducted in the Western Mount Lofty Ranges catchment area. Its purpose is to determine the aquifer properties including permeability, flow rates and groundwater interaction to feed into a hydrological model which will be utilised to assess the potential impact of mining on groundwater and to identify water management techniques.

This groundwater investigation has been undertaken by expert hydrogeological consultants, Australian Groundwater Technology. It included the construction of specific investigation bores, pump tests and a regional groundwater survey (including 55 surrounding bores in agreement with 36 landholders). A comprehensive data base has been compiled to ensure that all elements of the regional water interaction are measured. The collection of water data acquired since Terramin obtained the project and the data from two consecutive irrigation seasons establishes the baseline health of the local ground water system.

These studies have shown that the water flows are significantly lower than what anecdotal information from the 1880's had led to believe. Permeability of geological rock units is very low, approximately 0.5l/s to 2l/s with the groundwater being predominantly held within concise fractured rock aquifers (faults). These fractured rock aquifers have high groundwater permeability, measured up to 36l/s. Importantly, the limestone geological structure which contains the Bird-in-Hand orebody exhibits very low permeability and we expect that mining will occur well away from the high groundwater fractured rock aquifers. Preliminary results show that without any groundwater mitigation or management that the mine would incur inflows of between 8l/s and 18l/s. However, as the fractured rock aquifers are well defined and bounded by low permeability rock the investigation has revealed that the water can be prevented from flowing into the mine by the use of cemented grouts. The fractured zone will likely be grouted prior to excavation to improve ground conditions and fill any voids.

As part of the PFS a number of specific surveys have been undertaken to establish baseline data. In addition to the hydrological studies the Company undertook meteorological and weather conditions, dust and noise monitoring, surface water flows, traffic monitoring, flora and fauna surveys.

Community consultation has started with a number of meetings of local residents and interested parties. These meetings are an opportunity for the Company to address concerns from the community about water and the general impact of the mine. The Company continues to engage with residents and reassure them that the impact of the operation will be minimal as there will be no surface mining, no processing on site, use of cyanide or acid leaching. Dust generation is expected to be less than existing businesses in the region. The mine is expected to have little visual impact as it can be sympathetically integrated in the landscape. Traffic surveys undertaken along the roads proposed to be used for haulage to Strathalbyn reveal that only 9% additional traffic will be generated by the mine on the minor roads and only 2% on the major roads. The community consultation process will continue as the Bird-in-Hand Gold Project plan develops.



In accordance with the requirement of the Environmental Protection and Biodiversity Conservation (EPBC) Act (Cth) the project area was surveyed during the spring break in October/November 2014 for State and Commonwealth listed venerable or rare species. Only one identified specie (the Crested Shriketit) requires conservation support which will be achieved by increasing the buffer zone around the remaining native scrub area and providing an increased habitat with corridors of native vegetation linking existing wooded areas. Terramin has started concept design work with a landscape architect consultancy and as part of the initial work, ordered 600 native plants to start revegetating the Woodside property for the purpose of increasing the habitat for the Crested Shriketit.

In the December quarter, Terramin entered into a binding agreement to acquire a strategic parcel of land. This agreement allowed the Company to have immediate and unrestricted access to the land and enable to plan early environmental and design works.

Preparation has commenced to undertake the approved 6,600 metre investigation drilling program. This program will allow more detailed mine design and infrastructure placement to be completed. This will also be used in the PFS to determine critical project components including the surface footprint which is critical to commence the community impact assessment and social acceptability surveys.

An update on the project including the outcomes of the water studies, was provided to the regulators, DSD, EPA and DEWNR during the quarter. Similarly, a presentation on the project was also given to the Adelaide Hills Council for their information.

During the quarter the cash expenditure on the project was \$280,357.





#### 100% owned by Terramin and Terramin Subsidiary Terramin Exploration Pty Ltd

# The Adelaide Hills project consists of twelve contiguous exploration tenements that cover 3492km<sup>2</sup> stretching 120km between Victor Harbor and Kapunda. (Figure 1). This project area is considered prospective for gold, copper, lead, zinc and rare earth elements.

### Update

The Adelaide Hills has a long history of mining and was the site of Australia's first base metals mine (Glen Osmond, 1841) and first gold mine (Victoria Mine, 1846). From 1841 to 1851 virtually all of Australia's metalliferous mines were located in South Australia. Over 250 historic gold and copper mines and prospects are located on Terramin's Adelaide Hills tenements.

Terramin has been awarded a SA-Government backed PACE drilling grant of \$45,000 to explore Terramin's 100% owned Wheal Barton copper project. The first ever drilling at the project will target beneath and along strike of the historic mine workings.



Figure 1. Adelaide Hills tenement holdings.



During the reporting period Terramin applied for tenement ELA2015/00027, located near the township of Cambrai, 70km NE of Adelaide (Figure 1). The application covers an area of voluminous post Delamerian (Cambro-Ordovician) mafic-ultramafic layered intrusions that are considered prospective for Voisey's Bay style nickel sulphide mineralisation. The targeted mafic/ultramafic intrusive suite is known as the "Black Hills Gabbroic Complex".

Terramin has reviewed previous exploration results from within and near ELA2015/00027 and has concluded that the area contains a very large untested nickel-copper-PGM (Platinum Group Metals) target. Key features include:

- Coincidence of three geophysical anomalies an "IP effect" identified by BHP Minerals Pty Ltd (2001) in an EM survey, a zone of gravity contrast (data collected by Inco Resources Pty Ltd, 2006), and the southern edge of a flat plate-shaped magnetic body modelled by CSIRO (C. Foss, 2011).
- The CSIRO magnetic plate is 500m deep, well beneath existing drilling, and is modelled as being 250m thick.
- Falcon Minerals NL (2004) drilled two shallow holes over the "IP effect" but both holes; BH09005 and BH09006 were abandoned in Tertiary cover. Hole BH09005 intercepted from 50m, 5m @ 0.1% copper and 0.1% nickel and no samples were assayed from BH09006.
- Large target area, 3000m E-W (based on length of southern edge of CSIRO plate), +100m N-S based on BHP EM survey.
- Drilling by North Broken Hill Limited (1975-1977) 1km south of the primary target zone intercepted broad low grade mineralized zones of copper and nickel e.g. hole S019 from 234.39m intercepted 23.78m @ 0.12% copper, 0.03% nickel and from 299.6m, 0.3m @ 0.78% copper, 0.19% nickel and 0.379g/t palladium.

During the quarter the cash expenditure on the project was \$65,779.

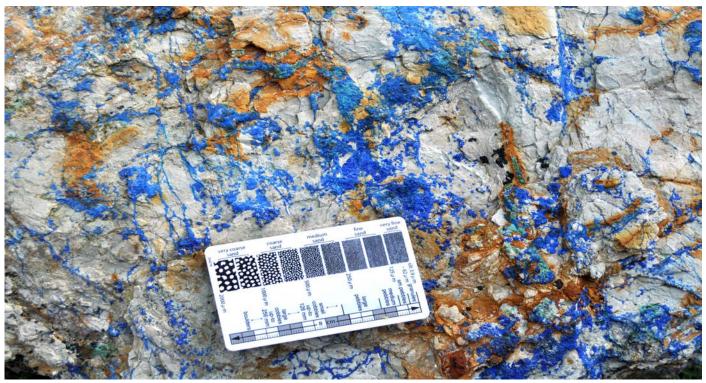


Figure 2. Wheal Barton copper mineralisation.



100% owned and operated by Terramin

# A 400,000 tpa operation that produced zinc and lead-copper-silver-gold concentrates currently in care and maintenance. The processing operations are expected to resume upon the start of mining of the Bird-in-Hand deposit.

### Update

The Angas Zinc mine remains in care and maintenance. The site remains in compliance with all lease conditions. There have been no environmental issues from the site during the quarter.

The Angas Mine closure plan (**Closure Plan**) and the tailings storage facility cover system (**Cover System**) was submitted during the quarter. The Closure Plan included scientific studies into vegetation, soil rheology, plant growth, root systems and engineering design and modelling. The Cover System was developed in accordance with best practice in conjunction with the Company's consultants, DSD and their consultants. At the last Strathalbyn Community Consultative Committee (**SCCC**) meeting, DSD confirmed their support of the use of an engineered soil cover system (phytocap) to replace the approved plastic liner on the tailing storage facility. Terramin is currently awaiting feedback from DSD regarding the revised Closure Plan and programme for environment protection and rehabilitation (**PEPR**).

Terramin is pleased to report that the work into the Cover System was recently recognised with a commendation (the highest distinction awarded this year) in the SA Premier's Awards for Environmental Excellence on 13<sup>th</sup> April 2015.

The Quarterly Environmental Report has been completed with no issues reported. The regular quarterly meeting was held with the SCCC during which the Closure Plan and the updated PEPR were discussed. An overview of the Bird-in-Hand Gold Project was also given to the group confirming the Company's plan to process the ore at Angas.

During the quarter the cash expenditure on the project was \$140,570.





100% owned by Terramin subsidiary Menninnie Metals Pty Ltd

The Menninnie Project comprises a group of five Exploration Licences covering a contiguous area of 2,471km<sup>2</sup> in the Southern Gawler Ranges, South Australia. Menninnie Metals has entered into a Farm-in and Joint Venture Agreement with Musgrave Minerals Ltd (Musgrave) (ASX:MGV) regarding the Menninnie Project. Musgrave can earn up to 51% by spending \$6m in the first phase and, if Menninnie Metals does not contribute, up to 75% by spending an additional \$3m.



Figure 3. Tenements comprising the Menninnie Project.

### Update

Musgrave focused on data compilation, annual statutory reporting and drill site rehabilitation during the quarter. Musgrave has advised that it has no field investigations planned for the Menninnie Project during the coming quarter.



100% owned and operated by Terramin subsidiary Menninnie Metals Pty Ltd

The Mount lve Project comprises five Exploration Licences covering a contiguous area of 2283km<sup>2</sup> in the Southern Gawler Ranges, South Australia. (Figure 4). The project area is adjacent to the western margin of the Menninnie Project (cf. Figure 3) and its southern boundary lies 6km to the north of the Paris silver deposit. The area is prospective for gold, silver, copper, lead, zinc and tin.

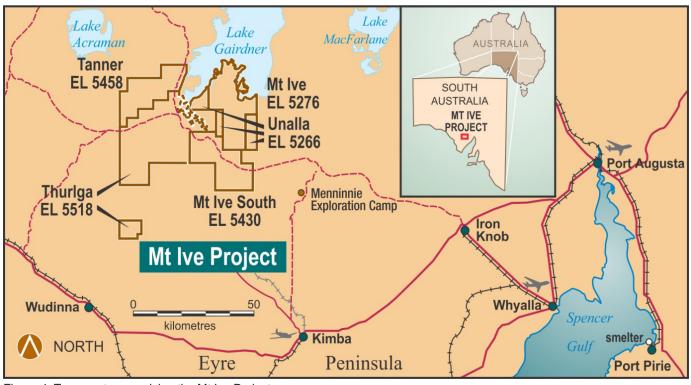


Figure 4. Tenements comprising the Mt Ive Project.

### **Update**

Reconnaissance field investigations commenced on the more recently granted tenements (EL 5518 and EL 5430) in the project area. This work will continue throughout the next quarter.

During the quarter the cash expenditure on the project was \$23,585.





During the quarter a US\$ convertible note holder exercised its right to convert its US\$11,000,000 convertible notes having a face value of US\$0.10 each (**Notes**) into shares. In accordance with the terms of a convertible notes deed poll, the Notes were converted in 110,000,000 fully paid ordinary shares. In addition, the Company issued 1,083,558 fully paid ordinary shares in satisfaction of interest payable on the Notes as at the conversion date. Please refer to the announcement dated 4 February for additional details. This is a significant event for the Company as it reduced the company debt significantly and places it in better footing to attract additional capital to develop its Bird-in-Hand Gold and Tala Hamza Zinc projects. The overall debt of the Company has now reduced from approximately \$35 million in April 2014 to approximately \$20 million in April 2015. Most of the company's debt is long term and all the debt is held by the Asipac Group, a significant shareholder.

Also during the quarter, the Company was advised that Wanshe Holdings Pty Ltd completed a restructure of its holding in the Company by organising a transfer of shares to its shareholders: Ms Wang and Mr Sheng. Subsequent to this distribution, Ms Wang and Asipac Group Pty Ltd (a company controlled by Mr Sheng) hold 15.85% and 23.56% respectively in the Company.

As at 31 March the Company's cash balance was \$291,000. Notwithstanding the low cash balance at the end of the quarter, the company has available an undrawn debt facility balance of up to \$1.75 million. The company has initiated discussion regarding the extension of the Bird-in-Hand and Corporate loan facilities provided by Asipac Group.

### **Competent Person Statement**

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Eric Whittaker, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Whittaker is a full time employee of Terramin Australia Limited. Mr Whittaker has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Whittaker consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



### **CORPORATE INFORMATION**

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### **DIRECTORS AND MANAGEMENT**

Michael H Kennedy Kevin McGuinness Feng Sheng Angelo Siciliano Xie Yaheng

Martin Janes Joe Ranford Stéphane Gauducheau

### **CAPITAL STRUCTURE**

as at 27 April 2015 Shares on issue

Unlisted Options Unlisted Convertible/redeemable notes: Non-Executive Chairman Non-Executive Director Non-Executive Director Non-Executive Director Non-Executive Director

Chief Executive Officer General Manager - Chief Technical Officer Legal Counsel and Company Secretary

1,515,092,595

3,800,000 249,825,703 Notes Convertible at A\$0.065 (maturity: October 2016)

