

# th Quarter Report 2015

# **HIGHLIGHTS**

- Successful visit of Algerian Delegation to China
- Increase and extension of Asipac debt facility
- Marketing Agreement for production from Bird-in-Hand Gold Project
- Placement at market price raises \$3 million
- Work underway for completion of revised feasibility study for Tala Hamza Zinc Project
- Continued preparation work for pre-feasibility study and mining lease application for Bird-in-Hand Gold Project



## TALA HAMZA ZINC PROJECT

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 125km² tenement which contains several lead-zinc deposits including the Tala Hamza Zinc deposit.

#### **Update**

During the quarter, Terramin hosted a successful visit of a delegation from ENOF and the Ministry of Mines of Algeria to China. The Algerian delegation was accompanied by Terramin senior management and board members and visited a number of operations relevant to the Tala Hamza Zinc Project. Particularly, the delegation visited the nickel underground mine site No3 in Jinchuan (Northern China) which utilises an underhand drift cut and fill mining method. This mining method was approved by the joint venture partners in June 2015 and forms the basis of the additional work required to complete the revised feasibility study. The visit provided additional confidence to the partners' choice in the mining method and represents a significant step towards a decision to mine.

During the quarter, progress has been made towards the completion of the revised feasibility study. This work was agreed between the partners in the course of 2015. This work, which will provide additional data regarding hydrology, geotechnical, mining infrastructure and tailings, is expected to be completed in the coming months subject to the exploration licence being renewed.

During the guarter the cash expenditure on the project was \$204,500.



Figure 1: Visit of Jinchuan Underground Mine No 3



## **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 Inferred Resource of 557,000 tonnes at 13.0g/t for 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 gold-bearing material. The existing tailings dam at Angas has the capacity to hold all the Bird-in-Hand tailings.

#### **Update**

During the quarter, Terramin continued with environmental monitoring work in the vicinity of the Project. Water monitoring during the summer irrigation season has provided valuable information on the interaction and independence of the fractured rock aquifers of the Inverbrackie catchment. This additional data supports the concept of keeping the water out of the mine through the use of cemented grouts. The environmental studies have focussed on the neighbouring remnant vegetation and the species that are located there. A detailed survey of Terramin's recently acquired land was undertaken to assist in the planning and design, along with a regional view point survey to understand the visual impact of any development. This work will assist during planning to minimise the visibility of the project.

As part of the baseline data collection for the area a soil survey was undertaken with the assistance of TAFE students. This work has been undertaken to assess soil properties resulting from previous land use. In addition, an area was identified to undertake a ground magnetic survey. It is anticipated that the information will provide a picture of other geological structures in proximity of the Bird-in-Hand gold deposit which will assist in mine design and groundwater management.

A revised geological drilling programme is awaiting approval from the regulators. It is expected that this drilling programme will be completed in the first half of 2016. The drilling programme will provide critical geotechnical and hydrological data for mine design, specifically the layout of underground capital infrastructure and location of the portal. A surface design can then be developed to minimise environmental impact.

With the groundwater study undertaken to date, Terramin's aim is to ensure that the project can be implemented without material impact on the quality of the aquifer and the neighbouring irrigators' ability to access water. The ongoing design work will also take into account other community concerns including noise, dust, traffic and visual amenity. To that effect, a landscape architect has been commissioned to design surface components of the project in harmony with the existing land forms and infrastructure. As the project is an underground operation with no processing on site, the surface infrastructure required for the mine will be minimal and it is anticipated that the project will not be visible to the public from most standpoints.

During the guarter the expenditure on the project was \$209,664.



## ADELAIDE HILLS EXPLORATION

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 2). This project area is considered highly 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.

Work was undertaken around several old mines close to Bird-in-Hand Gold Mine (EL 5469) and at the historic Kapunda (EL 5262) and North Rhine (EL 4712) copper mines. Data collected included ground magnetics, ground EM and soil geochemistry.

During the quarter the expenditure on the project was \$24,491.

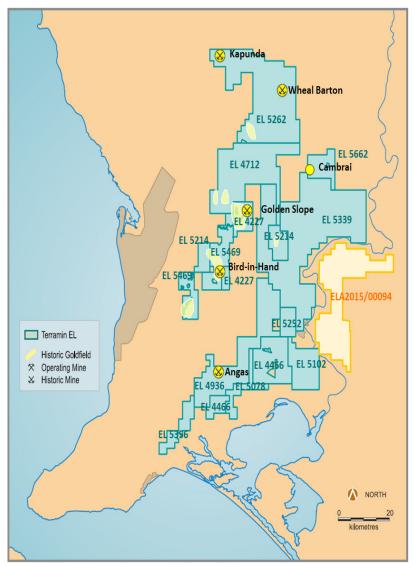


Figure 2. Adelaide Hills tenement holdings.



## ANGAS ZINC MINE

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 its lease conditions. There has been no environmental issue as a result of activities on the Angas site during the quarter. Property maintenance and additional revegetation has occurred with additional trees planted around the existing revegetation sites.

The Angas Zinc Mine closure plan (**Closure Plan**) has been updated with the latest regulator feedback and requirements. The mine entrance void filling geotechnical design was completed including a detailed method of construction to ensure that there will be no surface subsidence associated with the mine voids once the mine has been closed. The engineered soil cover (Phytocap) proposed in the Closure Plan was chosen after analysis of other cover system options showed that the engineered soil was the best solution to achieve successful closure with the least risk to the environment. The regulators' consultants are reviewing the model. Other outstanding work included the soil erodibility assessment for the box cut. The geotechnical analysis work was completed in conjunction with the University of Adelaide and the report to support the design has been included in the Closure Plan. The final outstanding assessment relates to the risk associated with remnant contamination left after clean up of the site. A report from an independent consultant was obtained to provide an assessment of the risk. This report concludes that there is little risk that any impact will occur to the environment as a result of contamination once closure is completed. This report has been included in the Closure Plan.

During the quarter the expenditure on the project was \$249,523.

## **GAWLER RANGES PROJECT**

100% owned by Terramin subsidiary Menninnie Metals Pty Ltd

Terramin's Gawler Ranges Project is located along the southern margin of the Gawler Ranges, northern Eyre Peninsula, South Australia. The project comprises a group of ten Exploration Licences totalling 4539km² and one Exploration Licence Application covering 214km². The Project area is prospective for a range of deposit styles that host combinations of gold, silver, copper, molybdenum, lead, zinc, rare earth elements, graphite, and tin ± tungsten. The Project hosts the Menninnie Dam deposit, the largest undeveloped lead-zinc deposit in South Australia. The lodes at Menninnie Central and Viper have been combined to estimate a JORC 2004 compliant Inferred Resource totalling: 7.7Mt @ 3.1% Zn, 2.6% Pb and 27g/t Ag, at a 2.5% Pb+Zn cut-off (ASX: TZN 1st March 2011).



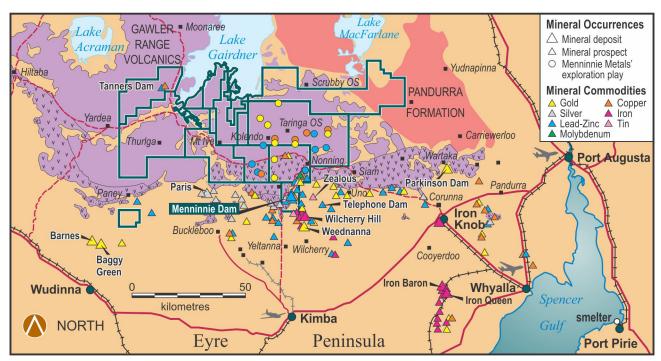


Figure 3: Gawler Ranges Project - geological setting.

#### **Update**

Field mapping and sampling on the tenements continued throughout the quarter. This work focused on epithermal quartz (± hematite) vein systems, sericite-clay altered shear zones and strongly altered tuffaceous units. Terramin considers these features to be near-surface expressions of IOCG hydrothermal systems that developed breccia deposits within and beneath the Gawler Range Volcanics, which cover most of the project area (Figure 3). Multiphase hematitic breccias comparable to those characterising IOCG deposits crop out in the project area, highlighting the potential for the related vein systems to lead to discovery of near-surface well-mineralised IOCG deposits. Recognition of this potential has been the main driver in Terramin's progressive expansion of its activities in the region. <sup>1</sup>

During the quarter the cash expenditure on the project was \$87,776.

# **CORPORATE**

During the reporting period, Terramin raised \$3 million by way of a share placement to two new local investors. A total of 16,638,935 shares were issued at a 5 day volume average weighted price of Terramin shares prior to issue.

During the quarter, the Company and Asipac Group agreed to extend and increase the debt facilities provided by Asipac Group. The \$4.0 million Corporate Facility entered by Terramin (**Corporate Facility**) and the \$4.3 million Bird-in-Hand Facility entered by Terramin Exploration (**BIH Facility**) have been increased to \$5.0 million each for a two year term. The terms of these

This information was prepared and first disclosed 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.



new facilities are on commercial arm's length terms and are broadly the same as the maturing Corporate and BIH Facilities. Under the terms of the facility agreements, if Terramin raises capital of more than \$3.0 million during the two year term, the borrowers must, upon request by Asipac, apply some of the funds raised above \$3.0 million to repay any of the Facilities. Following repayment, Terramin may redraw under the Facilities up to \$8.0 million. The security structure for each Facility is unchanged, however, under the terms of the Bird-in-Hand Facility, Terramin Exploration has granted a mortgage over recently acquired land for the Bird-in-Hand Gold project to Asipac Group. For additional information please refer to the ASX Announcement dated 6 November 2015.

In addition, during the quarter, Terramin Exploration Pty Ltd selected Asipac Capital Pty Ltd, a related party of Asipac Group, as its marketing agent for the sale of gold products in Asian markets and China in particular. Under the Agreement, Asipac Capital will market gold products to be produced from the Bird-in-Hand Gold Project. This agreement leverages on Asipac's extensive network and presents an opportunity for Terramin Exploration to maximise sales for its gold products in the future. For additional information please refer to the Announcement dated 6 November 2015.

As at 31 December 2015 the Company's cash balance was \$2,601,103.

#### **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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Non-Executive Chairman

Non-Executive Director

Non-Executive Director

# **DIRECTORS AND MANAGEMENT**

Feng (Bruce) Sheng Michael H Kennedy Kevin McGuinness Angelo Siciliano Xie Yaheng

Martin Janes Joe Ranford Stéphane Gauducheau Non-Executive Director

Chief Executive Officer

Non-Executive Deputy Chairman

General Manager - Chief Technical Officer Legal Counsel and Company Secretary

# **CAPITAL STRUCTURE**

as at 29 January 2015

Shares on issue 1,795,043,184 Unlisted Options 3,800,000