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# Star Zinc Project Update - Geophysics Review

Released 07:00 23-Jul-2018

RNS Number : 3348V  
Galileo Resources PLC  
23 July 2018

**For immediate release  
23 July 2018  
Galileo Resources Plc  
("Galileo" or "the Company")  
Star Zinc Project Update  
Geophysics Review**

The Company is pleased to announce results of an independent review and interpretation ("Review") by Earthmaps Consulting CC Namibia ("Earthmaps") of historical gravity geophysics exploration data ("Geophysics Data") against the Company's recent drilling programme results (announced 14 May, 2018) on its Star Zinc Project in Zambia ("Star Zinc"). The Company, in joint venture with BMR Group plc ("BMR"), has an 85% interest in Star Zinc.

A copy of the Earthmaps report, including relevant diagrams, is available on the Company's website, [www.galileoresources.com](http://www.galileoresources.com).

## Highlights

- Interpretation of historical gravity geophysics data indicates good correlation of the geophysics gravity anomalies with drill-intersected zinc mineralisation ("DZM") on Star Zinc
- This correlation provides a promising tool not only for drill targets in geophysical-tested areas as-yet-undrilled, in the immediate and outlying vicinity of DZM but also for further potential exploration in other areas
- Borehole positions are presented to test gravity highs to the west, north-east and southeast of the DZM for additional zinc mineralization
- Drilling to commence shortly
- Closer spaced ground gravity geophysics being considered to target resource extension drilling
- Directors believe good potential for discovering further zinc mineralisation and extending the mineral resource on Star Zinc

**Colin Bird, Chief Executive Officer, said:** The re-modelling and interpretation of the drillhole data from our recent drilling programme against historical ground geophysics data demonstrates very good correlation with known zinc mineralisation on Star Zinc: the high gravity signatures relate to the high-grade zinc (high-density) willemite mineralisation and the gravity lows to the zinc-bearing (low density) karsts. We will use this modelling data to target new boreholes in our forthcoming second drilling programme.

## Earthmaps Review

The Company commissioned Earthmaps to review Star Zinc's historical geophysics gravity data ("Review") over selected profiles across the Star Zinc deposit with the following aims:

- i. to test whether the willemite-franklinite zinc mineralization recently intersected in the drilling programme has a response in the gravity data; and
- ii. to identify any additional zinc exploration targets either beneath the mineralization already known to date or in the immediate vicinity of the Star Zinc deposit.

Using gravity forward techniques, Earthmaps examined Star Zinc's historical gravity data, covering both the mineralised domain and the areas, as yet undrilled, in the immediate and outlying vicinity of the known mineralised domain, in relation to the recent drilling results (announced 14 May, 2018), in order to assess both its correlation with known mineralisation and its suitability as a tool for drillhole-targeting potential new mineralisation.

The examination demonstrated good correlation of the gravity geophysical responses - "gravity highs" - with the drill-intersected zinc mineralisation. This is "an encouragement to use gravity geophysics as one of the tools to target additional zinc mineralization" with a view to extending potentially the current conceptual grade (15% Zinc) and tonnage (485 000 tonnes) estimate (announced 4 June 2018). The Review recommended new drillhole positions to test gravity highs to the west, northeast and southeast to Star Zinc mineralized domain for zinc mineralization

Seven section lines across the gravity survey were modelled: three lines were along drill sections where zinc ore has been intersected and four lines where there was no drill control i.e. no drilling.

Where drill information existed three models were developed:

1. **Drill Control** model showing the gravity response of the drill intersections as reported with the sections between boreholes interpolated so as to achieve the best match between the observed and the modeled gravity curves.
2. **Gravity Fit** model including minor modifications to the Drill Control model, in order to make the calculated gravity response match the observed gravity response.
3. **Barren model** showing the gravity response of the host rocks only, i.e. the density contributions of the target bodies are turned off.

Where there was no drill control information three models (plus a Barren model as aforementioned) were generated in order to determine the full range of possible gravity source depths:

1. **Shallowest Depth** model - the shallowest gravity model possible before the match between the observed data and the model response begins to deteriorate and a satisfactory fit is no longer possible, or when the gravity target body outcrops.
2. **Intermediate Depth** model - a likely (realistic) model of intermediate depth, which provides the best fit of the observed gravity data and also tends to be the geologically most reasonable or feasible.
3. **Deepest** model - the deepest gravity model possible before the fit between observed data and model response begins to deteriorate and/or before density contrasts between the target bodies and background become geologically unreasonable. A maximum density of 4.62 g/cc was chosen for the deepest models as this represents a rock composed of 50% willemite (4.05 g/cc) and 50% hematite (5.18 g/cc) from density measurements carried out by the Company's consultant geologists.

A gravity profile from west to east across the MD, with the historic open pit ("Pit") in the middle mirroring a long section drill interpretation to assess any responses under the Pit and / or possible feeder zones was adjusted to account for ore outcrops at the western as well as the eastern ends of the Pit. The match of the observed gravity again is good, but even allowing for some uncertainty in the gravity data in the pit, due to topographic effects that the strong gravity low in the pit can be modeled by a low density fault in part caused by topographic effects due to

the pit shape itself, the view was there is little if any room in the gravity response for additional deep zinc targets such as a feeder zone (however see conclusion below).

## **Earthmaps Conclusions**

Gravity surveying along seven lines at the Star Zinc Prospect has shown:

- Along three drill sections where zinc ore has been intersected, the gravity anomalies reflect the ore distribution quite well. This gives encouragement to use gravity as one of the tools to target additional zinc mineralization in the area.
- Along these three drill sections that were modelled, the gravity data does not indicate any significant drill targets below the depths drilled to date. It appears therefore that the footwall shale is barren. That said, the gravity data inside the historic open pit is not very reliable due to topographic noise (pit shape and so on), and drilling in the pit itself may well be warranted on grounds other than the gravity signature.
- Five borehole positions are presented to test gravity highs to the west, northeast and southeast of mineralized domain for zinc mineralization, with the recommendation to drill these boreholes first and re-assess the results, before embarking on further exploration based on gravity.

This announcement contains inside information for the purposes of Article 7 of Regulation 596/2014.

## **Technical Sign-Off**

Andrew Sarosi, director of Galileo, who holds a B.Sc. Metallurgy and M.Sc. Engineering, University of Witwatersrand and is a member of the Institute of Materials, Minerals and Mining, is a "qualified person" as defined under the AIM Rules for Companies and a competent person under the reporting standards. The technical parts of this announcement have been prepared under Andrew's supervision and he has approved the release of this announcement.

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## **Forward-looking statements**

Certain statements in this announcement, are, or may be deemed to be, forward looking statements. Forward looking statements are identified by their use of terms and phrases such as "believe", "could", "should" "envisage", "estimate", "intend", "may", "plan", "will" or the negative of those, variations or comparable expressions, including references to assumptions. These forward looking statements are not based on historical facts but rather on the Directors' current expectations and assumptions regarding the Company's future growth, results of operations, performance, future capital and other expenditures (including the amount, nature and sources of funding thereof), competitive advantages, business prospects and opportunities. Such forward-looking statements reflect the Directors' current beliefs and assumptions and are based on information currently available to the Directors. A number of factors could cause actual results to differ materially from the results discussed in the forward looking statements including risks associated with vulnerability to general economic and business conditions, competition, environmental and other regulatory changes, actions by governmental authorities, the availability of capital markets, reliance on key personnel, uninsured and underinsured losses and other factors, many of which are beyond the control of the Company. Although any forward looking statements contained in this announcement

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### **Star Zinc Project ("Star Zinc" or "Project")**

Star Zinc is a historical small-scale open pit mine from where, reportedly, low tonnage, high-grade willemite (zinc silicate ore mineral) was extracted intermittently in the 1950s to 1990s.

The Project is located approximately 18km NNW of Lusaka (see Figure 3.1 below), and is accessible via the tarred "Great North Road" and a good all weather graded road, with the journey time from central Lusaka of approximately 30 minutes (traffic allowing).

There is adequate power, water, rail & telecommunications, with the International Airport at Lusaka, less than 45 minutes away.

The Mines and Minerals Development Act No. 11 of 2015, which grants a Large Scale Prospecting Licence provides for an initial 4 years with a further two 3-year extensions totalling 10 years, with a mandatory 50% reduction of licence area at the completion of the 1st grant and 2nd grant periods respectively. The first renewal period initially expired 13 August 2016 but was extended to 13 August 2018. The Company has submitted an application for the next renewal period.

Several geologists of the Northern Rhodesia (now Zambia) Geological Survey mapped Star Zinc in the 1960s.

At Star Zinc, two main fracture trends are present, one E - W, and another N - S. Both sets of fractures are nearly vertical and are irregularly mineralised. Willemite generally replaces the host rock marbles in the form of massive ore bodies, but it occurs also in veins

In addition, karstic (mineralisation and red soils (terra rossa) are locally heavily mineralised with detrital willemite and supergene zinc minerals. Zinc values measured in soils at Star Zinc reach up to 15,600 ppm and are accompanied by the pathfinder elements Ag (silver), Pb (lead), Ba (barium), Sb (antimony) and Cd (cadmium). The karst infill has a zinc content up to 45wt.% Zn, up to 35wt.% Fe and up to 5g/t Ag.

The mineralogical assemblage non-sulphide zinc minerals includes a whole number of minerals, but the main economic phases present are Zn-silicates (willemite, hemimorphite, Zn-bearing clays), Zn- Pb carbonates (smithsonite, cerussite), hydrated Zn- Pb carbonates (hydrozincite, hydrocerussite) and Zn- Mn- Fe- oxides (zincite, franklinite, gahnite).

Limited independent metallurgical testwork by others has clearly shown that the willemite present at Star Zinc is amenable to acid leaching with positive results for two samples tested. Zinc leaching efficiencies obtained ranged from 89% and 92%. The testwork indicated polymerisation of dissolved silica in the leachate.

An independent competent person's report commissioned by BMR concluded. In summary, the Star Zinc project has good potential to become a viable project.

Note: the information about Star Zinc is sourced primarily from Competent Person's Report for the Star Zinc Project, Zambia; Wardell Armstrong, January 2016

#### Glossary

|                     |   |
|---------------------|---|
| <b>Argillaceous</b> | pertaining to argillite   |
| <b>Argillite</b>    | rocks or sediment consisting of or containing clay                                |
| <b>Detrital</b>     | loose fragments or grains that have been worn away from rock                      |
| <b>Calcite</b>      | mineral of calcium carbonate  |
| <b>Dolomite</b>     | mineral composed of calcium magnesium carbonate                                   |
| <b>Dolomitic</b>    | pertaining to dolomite  |
| <b>Floats</b>       | pieces of rock that have been removed and transported from their original outcrop |
| <b>Franklinite</b>  | a zinc-ferric oxide mineral   |
| <b>Hematite</b>     | reddish-black mineral consisting of ferric (iron) oxide.                          |

**ICP-OES/MS** inductively coupled plasma - optical emission spectrometry /mass spectrometry  
**Karst** landscape underlain by limestone (calcium carbonate), which has been eroded by dissolution, producing ridges, fissures and so on

**Karstic** pertaining to karst

**Laterite** a soil and rock type rich in iron and aluminium  
**Leaching** chemical process of solubilising metals in rock into solution  
**Pisolite** a rock comprising pea-sized concentric formations within a fine matrix  
**Pisolitic** pertaining to pisolite  
**ppm** parts per million  
**XRF Spectrometer** analytical instrument for determining chemical composition using x-ray fluorescence

**Supergene** pertaining to processes or enrichment that occurs relatively near surface  
**Willemite** zinc silicate ore mineral

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