



**ASX/JSE RELEASE: 1 February 2018**

## **Airborne EM Survey on the Areachap Belt, Northern Cape, South Africa completed with positive initial results.**

- ▶ **A 962km<sup>2</sup> high power SkyTEM airborne EM survey completed on 24 January 2018.**
- ▶ **6,018 line km of flights covering the survey area have been completed.**
- ▶ **Numerous discrete anomalies appear in the preliminary data set.**
- ▶ **AEM Anomalies detected over known Zn-Cu VMS and Ni-Cu intrusive deposits.**
- ▶ **A number of AEM anomalies coinciding with a paleo-seafloor, offer immediate follow-up targets.**

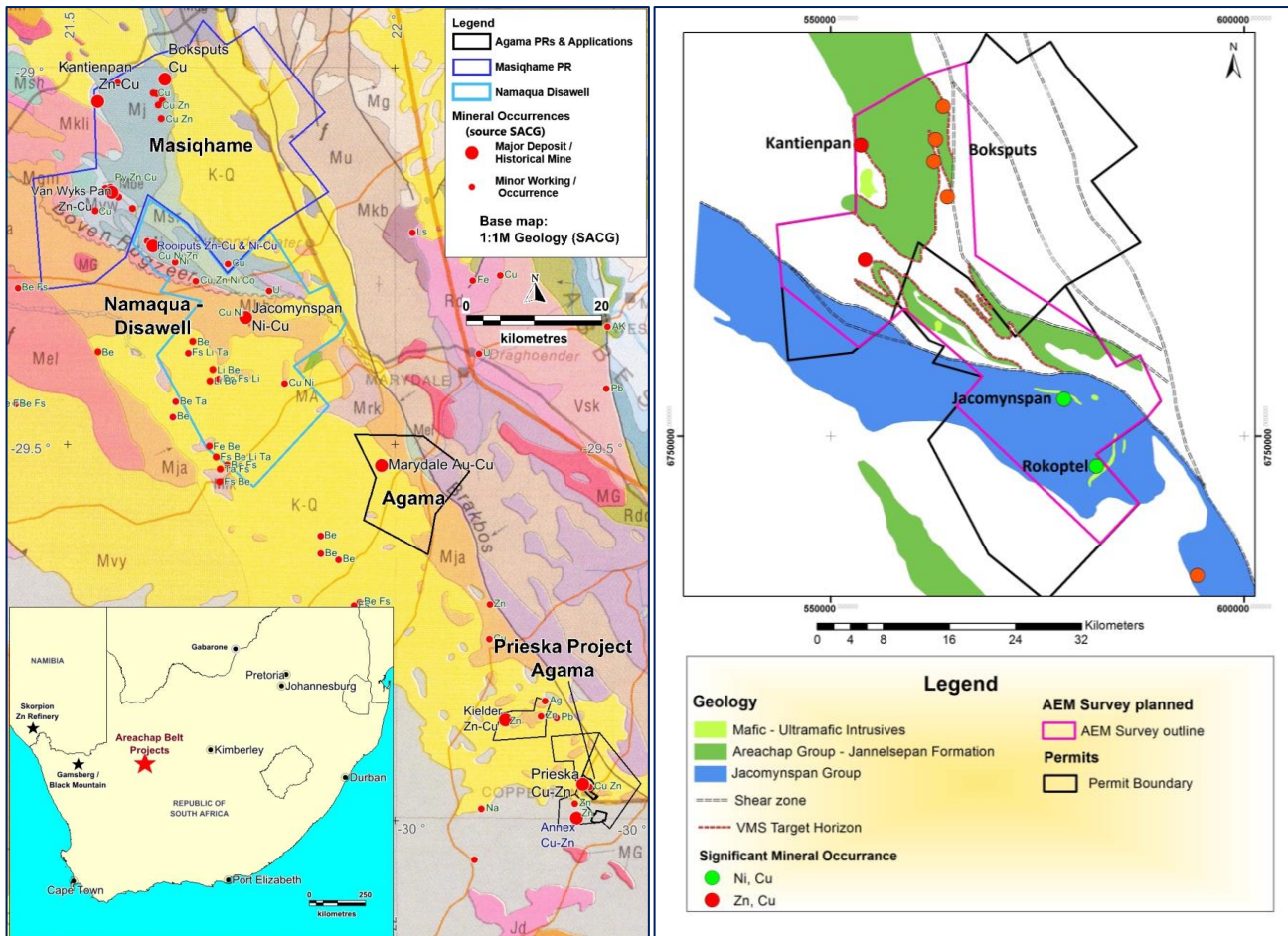
Orion Minerals NL (**ASX/JSE: ORN**) (**Orion** or the **Company**) is pleased to provide an update on its regional exploration activities on the Areachap Belt in South Africa. A helicopter borne magnetic and Electro Magnetic survey (**AEM** or **SkyTEM**) over the Masiqhame and Disawell prospecting permits was completed on 24 January 2018 (Figure 1) (refer ASX release 14 December 2017).

Preliminary results for magnetic and SkyTEM data have been received and reviewed. The survey succeeded in acquiring high quality data and initial indications are positive for the identification of priority follow-up targets. Advanced processing is underway and is expected to assist in target ranking and identification of possible additional, more obscure anomalies. Once targets have been ranked, the Company intends to start expanding its exploration activities over the area in the March 2018 Quarter which will include ground proving and drilling the anomalies to test for Zn – Cu rich Volcanogenic Massive Sulphide (**VMS**) and Ni – Cu magmatic deposits.

The survey demonstrates the value of applying modern airborne EM methods in the highly prospective Areachap Belt. The Areachap Belt was the focus of only two short lived exploration booms in the 1970's and early 1980's (following the discovery of the Prieska VMS deposit by Anglovaal in 1968). During this period, several VMS and Ni-Cu occurrences were discovered. In recent decades the geological understanding of the style of volcanogenic mineralisation found in the Areachap Belt, has led to numerous discoveries worldwide of clusters of massive sulphides in "camps" surrounding known major deposits. The Areachap Belt was not explored during the modern era of exploration and Orion now has the advantage of applying the improved geological understanding of VMS deposits, combined with modern geophysical exploration tools to achieve similar discoveries.

### **Details of SkyTEM survey undertaken**

The SkyTEM survey covered 962km<sup>2</sup> over the Masiqhame and Namaqua-Disawell Prospecting Permits. The survey was flown with the highly innovative SkyTEM312 high power technology for deep target imaging. This high power system, with a peak moment up to 1,000,000 NIA, is optimised to provide an exceptional depth of investigation, due to the high moment mode with high current and low base frequency of 12.5 Hz.



**Figure 1: Locality plan for the 962km² SkyTEM (AEM) survey area. The contact with the geological unit indicated in green on the right hand diagram represents the priority target area.**

Numerous AEM anomalies were identified during a preliminary review of the data by Orion's Perth based geophysical consultants, Southern Geoscience Consultants (Figure 2). Where the survey covered the known VMS deposits Kantienpan and Bokspits and the Jacomynspan Magmatic Ni-Cu deposit, conductors were detected, proving AEM to be effective for these deposits in the survey area.

Advanced processing of the data is ongoing. Following final processing of the data, the next step will be to prioritise the AEM anomalies by:

- integration with existing geological data;
- reinterpretation of the regional geology aided by the newly acquired magnetic data; and
- detailed field mapping to confirm the geological setting taking into account the characteristics of VMS deposits, including, spatial association with the paleo-seafloor, presence of alteration and structural setting.

In addition to the AEM data, the accompanying magnetic data will significantly improve our understanding of the geology and structure in this area of poor outcrop. A paleo-seafloor position was interpreted from available regional geological data and mapped into a geographic information system (GIS) package for comparison to the magnetic data. Current interpretations show that the magnetic signature associated with the paleo-seafloor contact is prominent in the high quality magnetic data and provides a valuable additional tool in the regional evaluation and ranking of the EM anomalies detected. A total of 19 AEM anomalies spatially associated with the paleo-seafloor offer immediate targets for follow-up (Figure 3).

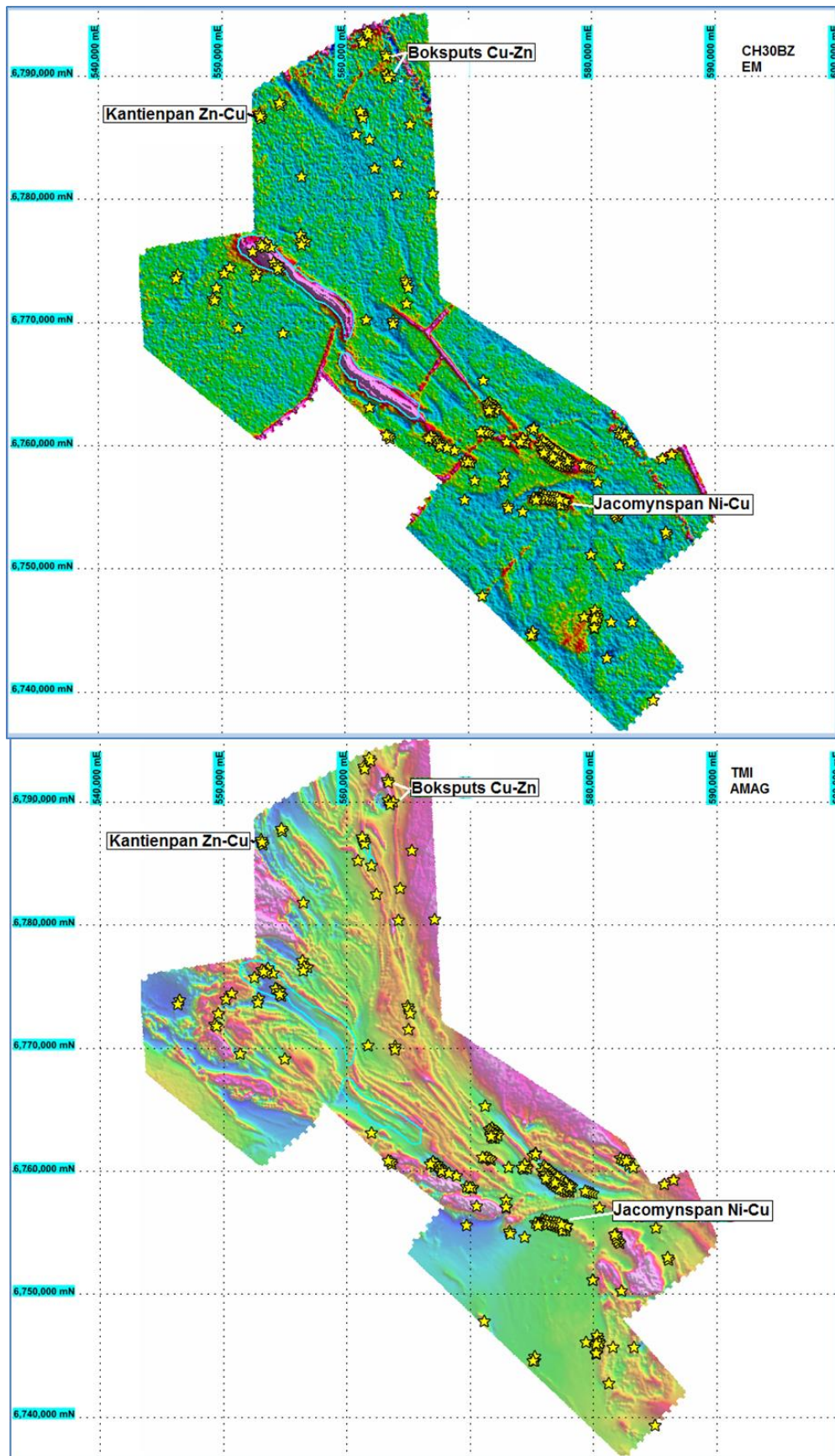
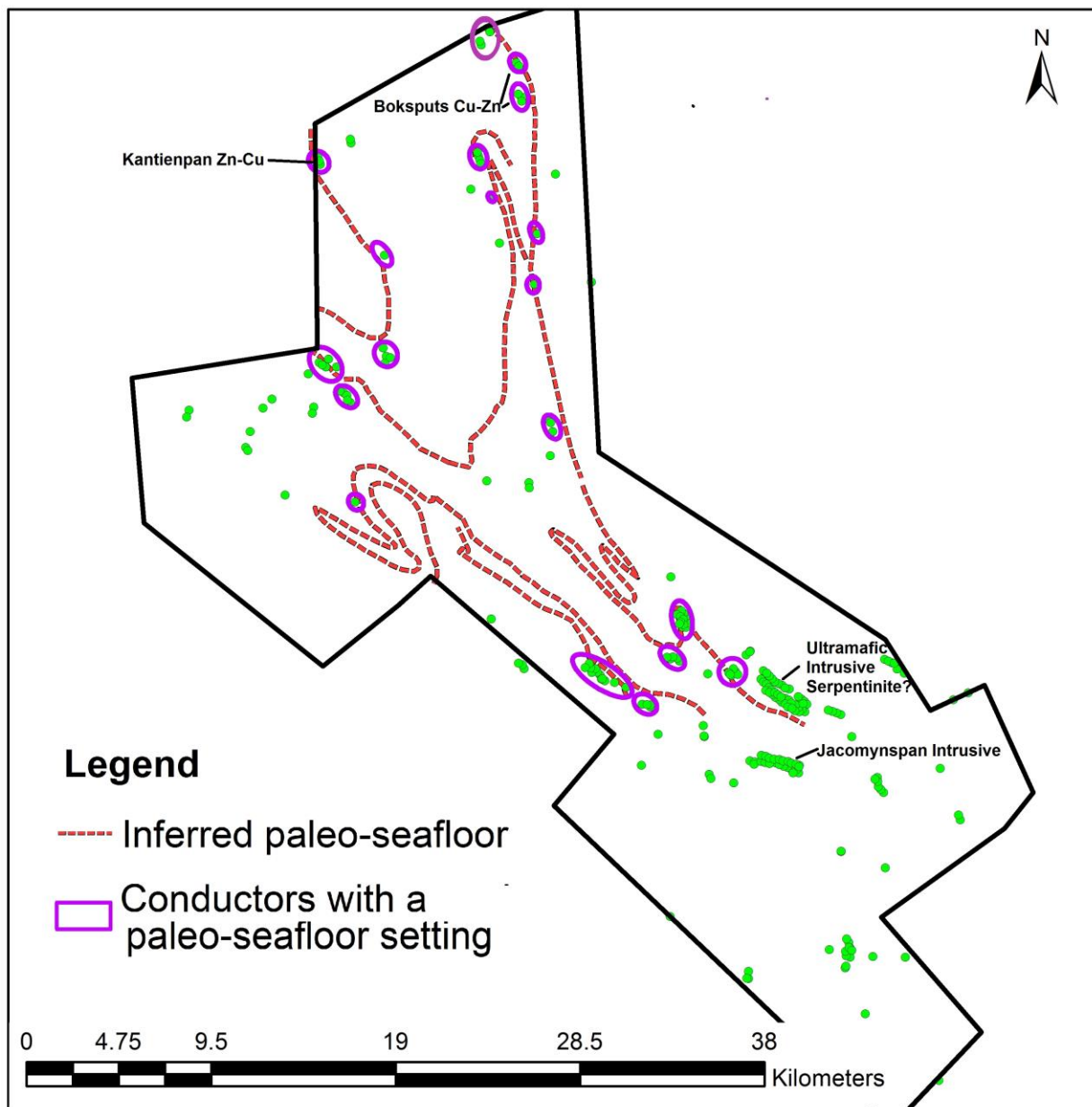


Figure 2: Airborne EM anomalies shown on the AEM Map above and the magnetic map below.

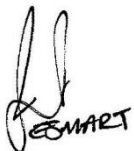




**Figure 3: Plans showing conductors spatially associated with the interpreted paleo-seafloor.**

**Orion's Managing Director and CEO, Errol Smart, commented:**

"The results from our advanced airborne survey are extremely gratifying and are providing encouragement for continued exploration using modern techniques in the highly prospective Areachap Belt. We look forward to drill testing the highest priority targets in 2018."

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**Errol Smart**  
**Managing Director and CEO**

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The information in this report that relates to Orion's Exploration Results at the Maisqhame Project and Namaqua-Disawell Project, complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC Code**) and has been compiled and assessed under the supervision of Mr Errol Smart, Orion Minerals Managing Director. Mr Smart (PrSciNat) is registered with the South African Council for Natural Scientific Professionals, a Recognised Overseas Professional Organisation (ROPO) for JORC purposes and 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 JORC Code. Mr Smart consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears. The Exploration Results are based on standard industry practises for drilling, logging, sampling, assay methods.

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