

Exploration Update

Whaleshark Pilbara Gold Project

HIGHLIGHTS

- ◆ Electromagnetic survey reveals strike extensive anomaly at the Whaleshark Gold-Copper prospect coincident with gold bearing sulphide mineralisation.
- ◆ The first stage of field geophysics completed ahead of schedule.
- ◆ Multiple drill target areas identified for permitting.

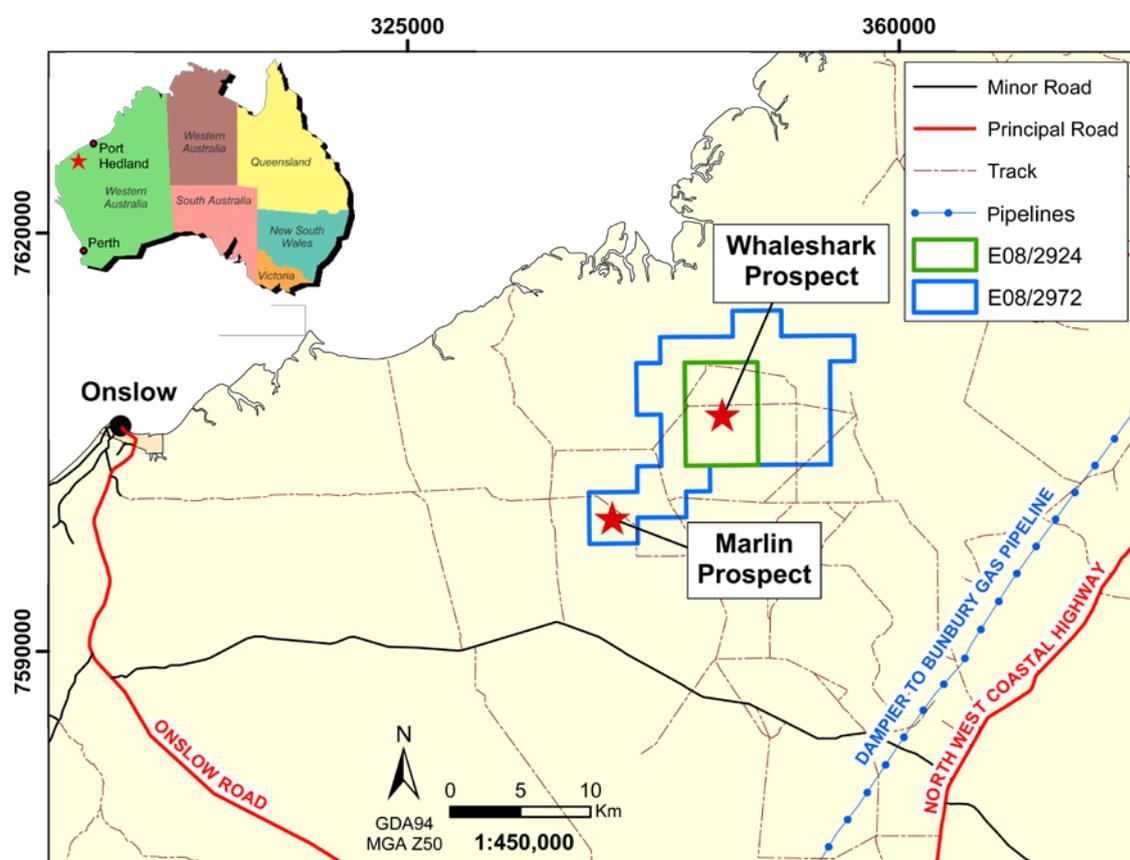


Figure 1. Licence E08 / 2924 & Licence application E08 / 2972 Location.

Spectrum Rare Earths Limited (ASX: **SPX**) is pleased to provide the following exploration update on the progress of field geophysical programs over the highly prospective Whaleshark Project in the Pilbara, Western Australia. (refer announcements on 22 November 2017 and 7 December 2017).

The Whaleshark Project is being explored for Gold and Copper mineralisation. Located at the northeastern end of the Carnarvon Basin, which unconformably overlies Archaean and Paleoproterozoic rocks of the Ashburton fold Belt and possibly the Mesoproterozoic Bangemall Basin.

SPX Chairman Mr Hewlett commented that; "It is very pleasing to enter the Christmas period whilst rapidly advancing the development of existing and multiple new drill targets."

Geophysical Program Update

Spectrum has completed a Moving Loop Time Domain Electromagnetic Survey (MLTEM) over three (3) target areas initiating the ground geophysical phase of mineral exploration on its newly granted mineral exploration Licence E08/2924. A total of 7.2 Line kilometers of surveying along 7 lines was undertaken for a combined one hundred and forty-two (142) receiver stations (ZXY components). Figure 2 & 3.



Figure 2. Vortex Geophysics MLTEM field crew on site at the Whaleshark Prospect.

All data was acquired with a VTX-100 transmitter operating at a base frequency of 1Hz and a current of 80 -95A (single turn). The aim of the MLTEM surveying was to; a) detect and delineate discrete bedrock conductors at depth associated with Cu-Au mineralisation; b) reveal any broad scale conductivity associated with sulphide mineralisation and; c) resolve geometrical relationships and structural dynamics of the basement geology and contact under cover.

Whaleshark Prospect

MLTEM completed over the Whaleshark North Prospect is characterised by a broad early- to late time anomaly in the Z component and a distinct cross-over in the X component. The anomaly extends across all five lines, but is strongest over the central three lines where it persists through to the last time channel.

Modelling of the anomaly provided a good fit to the observed response in the late time channels. The modelling results highlight the presence of a strike extensive, moderately conductive (~120S) source with a low angle dip to the southeast.

This conductive anomaly area is coincident with a combined high amplitude magnetic and gravity anomaly interpreted to represent a buried Banded Iron Formation and intrusive complex. The anomaly presents within and below known historical gold bearing sulphide mineralisation (refer ASX release dated 1 June 2017) and gives confidence to the hypothesis that sulphide and related gold mineralisation is strike extensive along the high amplitude magnetic anomaly.

Line	Prospect	Start (GDA94)	End (GDA94)	Length (m)	Stations	Loop Size
1	Whaleshark	348030E, 7607070N	347387.2E, 7607836N	1000	17	400
2	Whaleshark	347723.6E, 7606812.9N	347080.8E, 7607578.9N	1000	18	400
3	Whaleshark	347417.2E, 7606555.8	346774.4E, 7607321.8N	1000	19	400
4	Whaleshark	347110.7E, 7606298.7N	346468E, 7607064.7N	1000	21	400
5	Whaleshark	346804.3E, 7606041.5N	346161.5E, 7606807.6N	1000	21	400
6	Whaleshark Central	346550E, 7604500N	346550E, 7605500N	1000	21	200
7	Whaleshark South	345000E, 7603650N	346039.2E, 7604250N	1200	25	200

Table 1. MLTEM Survey line coordinates, number of stations and loop size.

Reference	Centre top of plate
x	346925
y	7607365
z	-175
Depth_to_top (m)	-171.9
Dip (°)	15
Dip_Direction (°)	140
Length (m)	2000
Depth_Extent (m)	800
Conductivity-Thickness (S)	120

Table 2 – Whaleshark North MLTEM model plate parameters

Whaleshark Central Prospect

A single line of MLTEM was completed at the Whaleshark Central Prospect. A partially-defined, weak and broad early- to mid-time anomaly (346550E, 7605450N) is noted at the northern end of the line that persists through to ~CH25 (19.27ms). The anomaly may represent sulphide mineralisation, displays a geological analogue to and or is possibly sourced by the large shallow dipping conductor detected in the Whaleshark North MLTEM data.

Whaleshark South Prospect

A single line of MLTEM was completed at the Whaleshark South Prospect. Two weak, early- to mid-time anomalies centered at stations 150 (345130E, 7603725N) and 850 (345693E, 7604050N) were observed.

A single station spike at the north-eastern end of the line (346039E, 7604250N) was observed that persists through all time channels. It remains unclear whether the anomaly is a genuine bedrock conductor requiring further follow up.

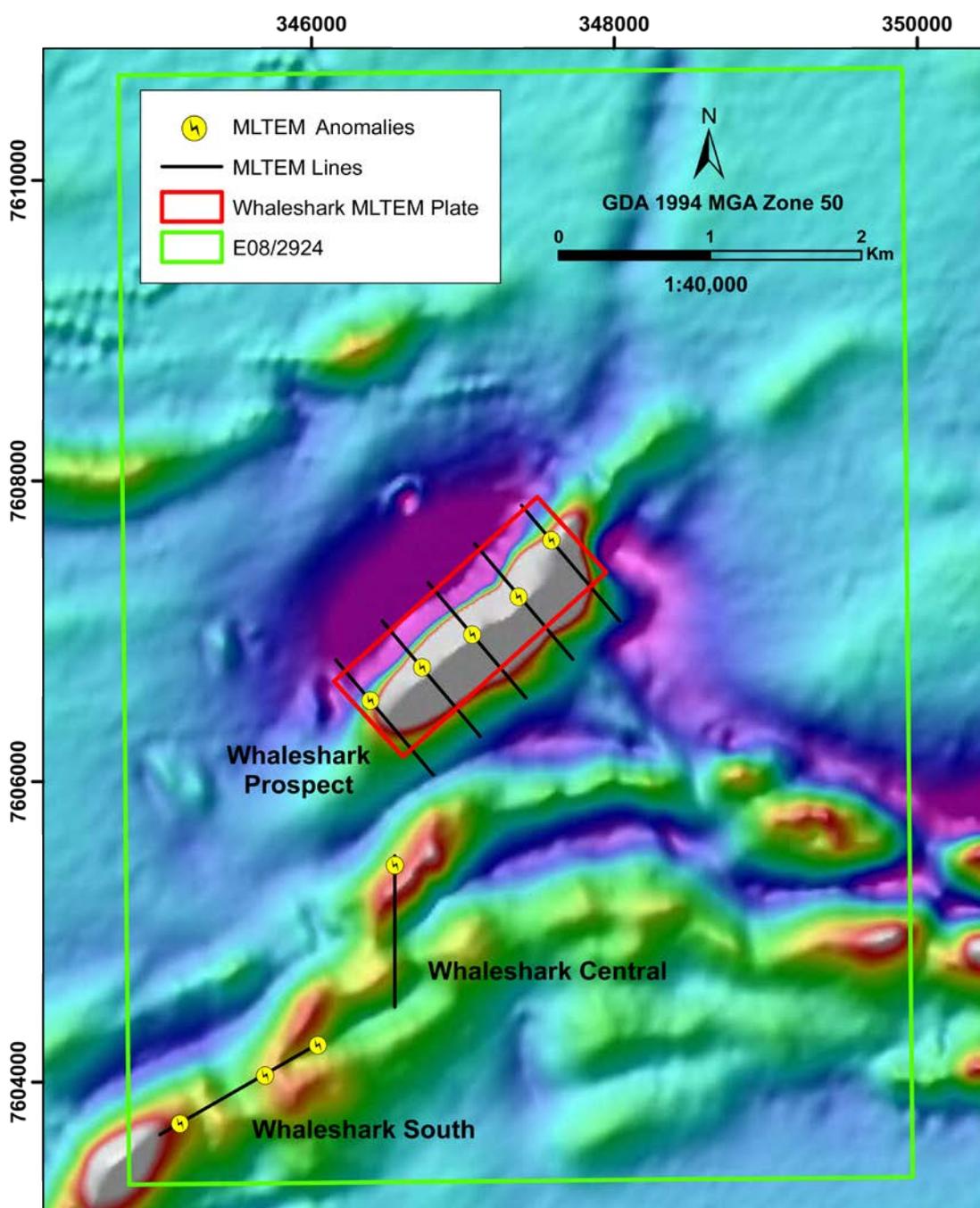


Figure 3. MLTEM lines, anomalies and modelled plate over total magnetic Intensity (reduced to pole, first vertical derivative).

Exploration Program Update

Further data processing is underway with a view to completion prior to the next phase of ground geophysics and in anticipation of grant of Licence E08/2972. This new MLTEM dataset has given much insight into drilling target areas of sufficient size for statutory approvals, depth and dynamics of the basement rocks, related mineralisation and economic metrics.

Spectrum are rapidly advancing the project toward drilling in an expeditious, scientific and targeted manner. Next steps include seismic survey design and execution, planning of further electrical geophysics in new areas, and statutory applications for drilling activities.

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About Spectrum Rare Earths Ltd

Spectrum Rare Earths Limited (ASX: SPX) is a mineral resource exploration and development company. Focussed on identifying and exploring under explored terrain through the use of modern techniques and technology to maximise success.

Competent Person Statement

The information in this announcement as it relates to exploration results and/or geology was compiled by Mr Luke Forti, who is a Member of the Australasian Institute of Mining and Metallurgy ('AusIMM') and a consultant to the Company. Mr. Forti, 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 2012 Edition of the Joint Ore Reserves Committee 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ('JORC Code 2012'). Mr. Forti consents to the inclusion in the announcement of the matters based on the information in the form and context in which it appears.

Forward Looking Statements

Statements regarding Spectrum's plans with respect to its mineral properties and programmes are forward-looking statements. There can be no assurance that Spectrum's plans for development of its mineral properties will proceed as currently expected. There can also be no assurance that Spectrum will be able to confirm the presence of additional mineral resources/reserves, that any mineralisation will prove to be economic or that a mine will successfully be developed on any of Spectrum's mineral properties. The performance of Spectrum may be influenced by a number of factors which are outside the control of the Company and its Directors, staff and contractors.

Appendix 1 – Whaleshark Project

JORC Code (2012) Table 1, Section 1 and 2.

The subject of this release is to report on the E08 / 2924 mineral exploration licence and E08/2972 mineral exploration licence application, the historic Whaleshark copper gold prospect and related geophysical surveys therein. Mr. Luke Forti, compiled the information in Section 1 and Section 2 of the following JORC Table 1 and is the Competent Person for those sections. The following Table and Sections are provided to ensure compliance with the JORC Code (2012 edition) requirements for the reporting of Mineral Resources.

Section 1 Sampling Techniques and Data

*Criteria in this section apply to all succeeding sections in this information release.

Criteria	JORC Code explanation	Commentary
<i>Sampling techniques</i>	<i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i>	No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.

Criteria	JORC Code explanation	Commentary
Sampling techniques	<p>Aspects of the determination of mineralisation that are Material to the Public Report.</p> <p><i>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i></p>	No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.
Drilling techniques	<p><i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</i></p>	No drilling results are being reported in this release; Refer to release dated 1 June 2017.
Drill sample recovery	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></p>	No drilling results are being reported in this release; Refer to release dated 1 June 2017.
Logging	<p><i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.

Criteria	JORC Code explanation	Commentary
<p><i>Sub-sampling techniques and sample preparation</i></p>	<p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p>No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.</p>
<p><i>Quality of assay data and laboratory tests</i></p>	<p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><i>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></p> <p><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<p>No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.</p>
<p><i>Verification of sampling and assaying</i></p>	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<p>No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.</p>

Criteria	JORC Code explanation	Commentary
<i>Location of data points</i>	<p><i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></p> <p><i>Specification of the grid system used.</i></p> <p><i>Quality and adequacy of topographic control.</i></p>	<p>Geophysical survey transmitter loop and receiver coil positions are determined using handheld GPS (+/- 5m).</p> <p>Coordinate system MGA (Zone 50) / GDA94</p> <p>Topographic control from Digital Terrain models & publicly available topography.</p> <p>Geographic positioning control appropriate for exploration survey lines</p>
<i>Data spacing and distribution</i>	<p><i>Data spacing for reporting of Exploration Results.</i></p> <p><i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></p> <p><i>Whether sample compositing has been applied.</i></p>	<p>Moving loop electro-magnetic survey 200x200m and 400x400m transmitter loops & receiver coils spaced along survey lines at 50m and 100m centers.</p> <p>Survey lines variably positioned to test geological targets based on detailed aeromagnetic data.</p> <p>Survey lines positioned to minimise environmental disturbance.</p>
<i>Orientation of data in relation to geological structure</i>	<p><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></p> <p><i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></p>	<p>Survey lines oriented along strike extents and or cross cutting geological features.</p> <p>Positioning of survey lines appropriate for first-pass surveying over the Whaleshark Central and South Projects. Believed to be the most effective test available on the market to test for bedrock conductors over the Whaleshark Prospect.</p>
<i>Sample security</i>	<p><i>The measures taken to ensure sample security.</i></p>	<p>Survey data collected and collated by Vortex Geophysics and securely distributed via electronic communications to Core Geophysics and Kinematex for validation and assessment.</p>
<i>Audits or reviews</i>	<p><i>The results of any audits or reviews of sampling techniques and data.</i></p>	<p>Data collection, processing and analysis protocols aligned with industry best practice. Utilising Maxwell Software.</p>

Section 2 Reporting of Exploration Results

*Criteria listed in the preceding section also apply to this section.

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<p><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></p> <p><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></p>	<p>Exploration Licence application E08/2924 and E08/2972 is held by Zebra Minerals Pty Ltd a 100% owned subsidiary of Spectrum Resources Ltd.</p> <p>Exploration Licence E08/2972 is currently subject to a public and native title objection period.</p>
<i>Exploration done by other parties</i>	<p><i>Acknowledgment and appraisal of exploration by other parties.</i></p>	<p>Early exploration was undertaken by Hematite Petroleum Pty Ltd from 1972, WMC Resources Limited from 1993 in conjunction with successive explorer Onslow Iron Ore Syndicate chaired by Mr. W.J. Evans and furthermore, FMG explored until surrender in 2016.</p>
<i>Geology</i>	<p><i>Deposit type, geological setting and style of mineralisation.</i></p>	<p>The mineralisation style discussed in this release refers to Iron-Oxide Copper Gold (IOCG) and Iron formation hosted Gold.</p>
<i>Drill hole Information</i>	<p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i></p> <ul style="list-style-type: none"> ○ <i>easting and northing of the drill hole collar</i> ○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> ○ <i>dip and azimuth of the hole</i> ○ <i>down hole length and interception depth</i> ○ <i>hole length.</i> <p><i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></p>	<p>No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.</p>

Criteria	JORC Code explanation	Commentary
<p><i>Data aggregation methods</i></p>	<p><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i></p> <p><i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<p>No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.</p>
<p><i>Relationship between mineralisation widths and intercept lengths</i></p>	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></p>	<p>No drilling or sampling results are being reported in this release; Refer to release dated 1 June 2017.</p>
<p><i>Diagrams</i></p>	<p><i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></p>	<p>See attached figures 1 -2.</p>
<p><i>Balanced reporting</i></p>	<p><i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></p>	<p>Refer to release.</p>

Criteria	JORC Code explanation	Commentary
<p><i>Other substantive exploration data</i></p>	<p><i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></p>	<p>The target conductors over the Whaleshark Central and South Prospects have not been intersected or confirmed by drilling and downhole electromagnetics and the nature of the conductive features is currently unknown and untested.</p> <p>The Modelled MLTEM plate is observed within and beneath historical drilling completed by WMC Limited with Sulphide mineralisation reported above and below the modelled plate.</p>
<p><i>Further work</i></p>	<p><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	<p>Further work proposed;</p> <ul style="list-style-type: none"> • Data Processing and geological interpretation. • Electromagnetic surveying over new drill target areas developed from structural interpretation. • Review and or execution of a broad scale (250m x 250m Magnetotelluric survey. • A 2D Seismic Survey. • Drill area permitting. • RC Drilling and downhole geophysics. • Commercial and portable geochemical and mineral analysis.