

02 March 2016

# EXCEPTIONAL HIGH GRADE SURFACE GOLD ROCK CHIPS FROM OYUT ULAAN

#### **HIGHLIGHTS**

- New surface rock chips including 305.8 g/t Au, 171.6 g/t Au and 123.2 g/t Au from newly discovered quartz-carbonate-sulphide veins at Oyut Ulaan;
- Multiple high-grade rock chip samples define three parallel epithermal lode structures within
   1.5km;
- Trench and detailed channel sampling in progress before drilling is planned.

Xanadu Mines Ltd (**ASX: XAM – "Xanadu"**) is pleased to announce that rock chip sampling has identified multiple high-grade gold veins at its 90% owned Oyut Ulaan copper-gold project located within the Dornogovi Province of southern Mongolia, approximately 420km southeast of Ulaanbaatar (Figure 1).

Following the previously reported discovery of potentially significant outcropping quartz-sulphide vein and breccia mineralisation (see XAM's ASX announcement - 29 January 2016) at Oyut Ulaan the Company has undertaken systematic geological mapping and rock chip sampling (Figure 2). This sampling has delivered exceptional gold results including 305.8 g/t Au, 171.6 g/t Au and 123.2 g/t Au confirming the existence of outcropping high-grade gold mineralisation occurring within at least three sub parallel structural zones within 1.5km of each other (Figure 3).

Xanadu's Chief Executive Officer, Dr. Andrew Stewart, said, "It is very exciting to collect true bonanza gold grades from newly discovered mineralisation at Oyut Ulaan. We had the belief the geology displayed all the ingredients required for significant shallow high-grade gold mineralisation, which has been confirmed by this surface sampling. The team is now developing plans for accelerated exploration as there is tremendous scope for a very significant discovery in this area."

The majority of the new results are from sampling surface outcrops and sub crops that occur south of known porphyry mineralisation at Diorite Hill and Stockwork Hill, and the style of mineralisation indicates a potential link between known gold-rich porphyry copper mineralisation and newly discovered veins.

A total of 157 rock chips samples were collected from out cropping and sub cropping veins across three main zones. The majority of samples returned highly anomalous values (57.9% of samples graded more than 1g/t Au; see Table 1; Figures 3 and 4). Significantly a total of 56 samples returned grades high than 10g/t gold and 8 samples returned more than 100g/t gold (up to 305.8g/t Au).

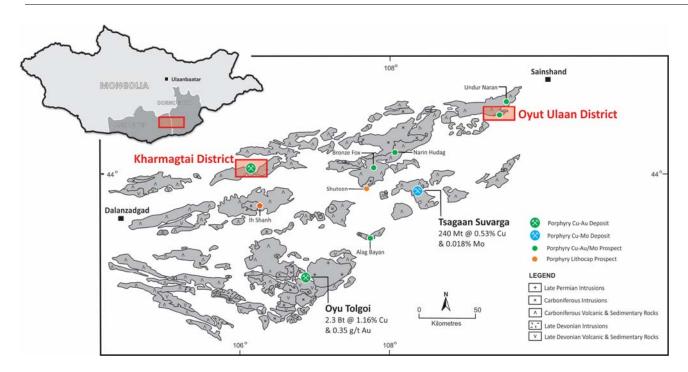
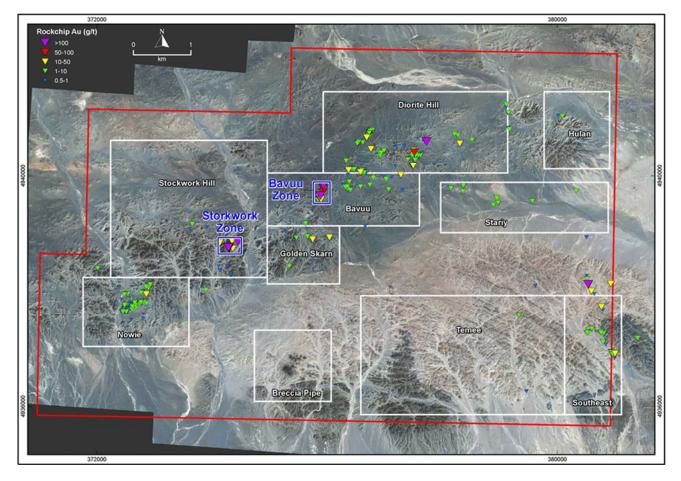


FIGURE 1: South Gobi copper province, showing location of Oyut Ulaan and Kharmagtai.



**FIGURE 2:** Oyut Ulaan copper-gold project, showing main prospects and location of new gold mineralisation at Bavuu Zone and Stockwork Zone.



**TABLE 1:** Average grades for newly discovered high grade veins at Bavuu and Stockwork Zones.

	Number of	Au	(g/t)	Cu	As	Δa	Ag Pb	Zn Mo	
Zone	samples taken	Average	The highest	(%)	(ppm)	(g/t)	(ppm)	(ppm)	(ppm)
Bavuu zone	60	27.56	171.6	0.20	2253.06	12.43	123.4	161.55	53.76
Stockwork Zone-I	5	44.40	123.2	0.46	638	12.8	107.4	202	23.6
Stockwork Zone-II	13	98.82	305.8	0.54	352	35.63	96.46	146	27.25

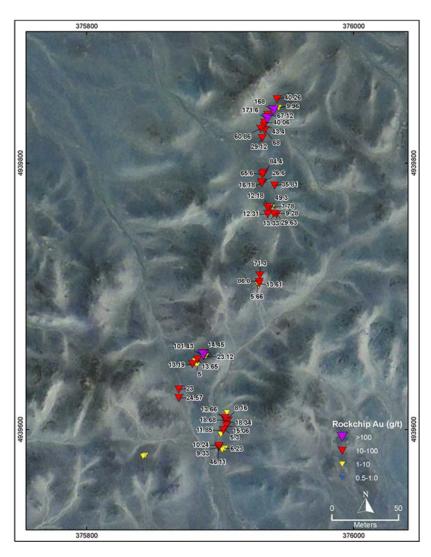


FIGURE 3: Bavuu vein zone, showing location of rock chip samples.



FIGURE 4: Stockwork vein zone, showing location of rock chip samples.

### **BACKGROUND GEOLOGY**

Oyut Ulaan is strategically located within the South Gobi Copper Belt (which hosts the world class Oyu Tolgoi copper-gold project) and 260km east of Xanadu's flagship Kharmagtai copper-gold project (Figure 1). The project comprises a large and underexplored porphyry district (covering approximately  $40 \text{km}^2$ ) and consists of multiple co-genetic porphyry copper-gold centres, mineralised tourmaline breccia pipes and copper-gold/base metal magnetite skarns, which occur within the central part of Mining Licence 17129A (Oyut Ulaan; Figure 2).

The gold mineralisation is typically associated with outcropping quartz-hematite-sulphide veins that range from 40cm to over 1m wide and are hosted by intensely altered volcanic units, which also carry anomalous gold mineralization (varying from 0.1 to 1.0 g/t gold over wide areas) associated with fine quartz and/or hematite veinlets (Figures 5 to 7). The **Bavuu vein zone** strikes at least 300m and from the 60 rock chip samples collected along the entire length the average gold grade is **27.56g/t Au** and the highest grade sample is **171.6g/t Au**. The mineralisation is characterised by moderate silver grades (**averaging 12.43g/t Ag**) and low base metal contents (Table 1).



FIGURE 5: Quartz- carbonate-hematite (after pyrite) vein. XR13173. 67.1g/t Au and 0.1% Cu.



FIGURE 6: Dark-red guartz-hematite breccia. XR13191. 86.8g/t Au and 0.3% Cu.



FIGURE 7: Quartz- carbonate-hematite (after pyrite) vein. XR13190. 29.63g/t Au and 0.11% Cu.

Two sub parallel zones of mineralisation were discovered approximately 1.5km west of Bavuu at Stockwork with higher grade gold mineralisation associated with similar veins styles to the Bavuu zone. The Stockwork II zone recorded very high grades with 13 samples averaging 98.82 g/t Au and one sample recording 305.8 g/t Au.

The recent discovery of potentially significant gold vein/breccia epithermal mineralisation broadens the range of targets at Kharmagtai and opens up a whole new area for exploration. Given the bonanza grades and significant strike; this style of mineralisation is considered to be a very attractive target. The zonation seen world-wide for this association includes upwards transitions from copper-gold porphyry veins to shallow level Ag-Au systems.



#### **FORWARD PLAN**

The results of this sampling program are extremely encouraging and indicate Oyut Ulaan is developing into one of the most prospective districts in the South Gobi with a series of prospects at different stages of exploration. Xanadu will continue its systematic, low cost exploration at Oyut Ulaan with further reconnaissance exploration, field mapping, and infill sampling ongoing. A detailed trenching/channel sampling program was immediately initiated to better understand the nature and extent of the gold mineralisation. Results from trench channel sampling are expected in early May 2016 and Xanadu expects to bring the new defined gold prospects to drill-ready status over the coming quarter.

#### **COMPETENT PERSON STATEMENT**

The information in this report that relates to Exploration Results is based on information compiled by Dr Andrew Stewart who is responsible for the exploration data, comments on exploration target sizes, QA/QC and geological interpretation and information. Dr Stewart, who is an employee of Xanadu and is a Member of the Australasian Institute of Geoscientists. Dr Stewart has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as the "Competent Person" as defined in the 2012 Edition of the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves". Dr Stewart consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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# **APPENDIX 1: OYUT ULAAN TABLE 1 (JORC 2012)**

Set out below is Section 1 and Section 2 of Table 1 under the JORC Code, 2012 Edition for the Oyut Ulaan project. Data provided by Xanadu. This Table 1 updates the JORC Table 1 disclosure dated 29 January 2016.

## 1.1 JORC TABLE 1 - SECTION 1 - SAMPLING TECHNIQUES AND DATA

(Criteria in this section apply to all succeeding sections).

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> </ul>	<ul> <li>Representative 2 metre samples were taken from trenches (costeans) excavated through colluvial cover to bedrock.</li> <li>Representative 2 meter samples were taken from ½ PQ, HQ and NQ diameter diamond drill core.</li> <li>Visual checks by geologists of sampling confirm sample intervals.</li> <li>Only assay result results from recognised, independent assay laboratories were used in reporting after QAQC was verified.</li> </ul>
Drilling techniques	Drill type and details.	<ul> <li>Diamond drilling of PQ, HQ and NQ diameters has been the primary drilling method.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Diamond core recoveries averaged 98% overall in mineralised zones.</li> <li>In localised areas of faulting and/or fracturing the recoveries decrease; however this is a very small percentage of the overall mineralised zones.</li> <li>Analysis of recovery results vs. grade indicates no significant trends. Indicating bias of grades due to diminished recovery and / or wetness of samples</li> </ul>
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Diamond drill core samples and trenches are logged for geology, alteration and mineralisation using a standardised logging system.</li> <li>Rock quality data (RQD) is collected from all diamond drill core.</li> <li>Diamond drill core and trenches were photographed after being logged by a geologist.</li> <li>All diamond drill cores and trenches have been logged by a competent geologist.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> </ul>	<ul> <li>Trench channel samples are taken from the base of the trench wall (about 10cm above the floor). Samples are approximately 3 kg. The sample is collected with a plastic sheet and tray.</li> <li>Diamond drill core is cut in half with a diamond saw, following the line marked by the geologist.</li> <li>The rock saw is regularly flushed with fresh water.</li> </ul>

• The data is managed XAM geologists.



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company personnel.

Criteria	JORC Code Explanation	Commentary
	<ul> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Sample intervals are a constant 2m interval down-hole in length.</li> <li>Routine sample preparation and analyses of diamond drill core and trench samples were carried out by SGS Mongolia LLC (SGS Mongolia) and ALS Mongolia LLC (ALS Geochemistry Mongolia) who operate independent sample preparation and analytical laboratories in Ulaanbaatar.</li> <li>All samples were prepared to meet standard quality control procedures as follows: crushed to 70% less than 2mm, riffle split off 1kg, pulverize split to better than 85% passing 200 mesh (75 microns) and split to 150g.</li> <li>Certified reference materials (CRMs), blanks and pulp duplicate were randomly inserted to manage the quality of data.</li> <li>Sample sizes are well in excess of standard industry requirements.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>All samples were routinely assayed by by SGS Mongolia LLC (SGS Mongolia) and ALS Mongolia LLC (ALS Geochemistry Mongolia) who operate independent sample preparation and analytical laboratories in Ulaanbaatar.</li> <li>Gold is determined using 30g fire assay with aqua regia digestion, followed by an atomic absorption spectroscopy (AAS) finish, with a lower detection (LDL) of 0.01 ppm.</li> <li>48 elements by four-acid-digestion, ICP-MS and ICP-AES (ME-MS61 and ME-MS61m).</li> <li>Four acid digestion is considered near total digestion.</li> <li>Quality assurance was provided by introduction of known certified standards, blanks and duplicate samples on a routine basis.</li> <li>Assay results outside the optimal range for methods were re-analysed by appropriate methods.</li> <li>Ore Research Pty Ltd certified copper and gold standards have been implemented as a part of QAQC procedures, as well as coarse and pulp blanks, and certified matrix matched copper-gold standards.</li> <li>QAQC monitoring is an active and ongoing process on batch by batch basis by which acceptable results is re-assayed as soon</li> </ul>
Verification of sampling and	The verification of significant intersections by either independent or alternative	<ul> <li>All assay data QAQC is checked prior to loading into the data base.</li> </ul>





Criteria	JORC Code Explanation	Commentary
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	<ul> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No twinned drill holes exist, given the early stage of the exploration project.</li> <li>The data base and geological interpretation is collectively managed by XAM.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>All drill hole collars and trenches have been surveyed with a differential global positioning system (DGPS) to within 10cm accuracy.</li> <li>All diamond drill holes have been down hole surveyed to collect the azimuth and inclination at specific depths. Two principal types of survey method have been used over the duration of the drilling programs including Eastman Kodak and Flexit.</li> <li>UTM WGS84 49N grid.</li> <li>The DTM is based on 1 m contours with an accuracy of ±0.01 m.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Trenching has been completed on nominal northwest-southeast and north-south trending sections on widely spaced lines. Channel sampling every 2m of the 1m wide trench.</li> <li>Drilling has been completed on nominal northwest-southeast and north-south trending sections, on 100m spacing within mineralised zones.</li> <li>Vertical spacing of intercepts on the mineralised zones similarly commences at 100m spacing for mineralised zones.</li> <li>Drilling has predominantly occurred with angled holes approximately 70° to 60° inclination below the horizontal and either drilling to north or south, depending on the dip of the target mineralised zone.</li> <li>Holes have been drilled to 400m vertical depth.</li> <li>The data spacing and distribution is not sufficient to establish geological and grade continuity appropriate for the a Mineral Resource estimation.</li> <li>Samples have not been composited.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>Drilling and trenching has been predominantly completed on northwest trending section lines across the strike of the known mineralised zones and from either the north or the south depending on the dip.</li> <li>Vertical dipping mineralised zones were predominantly drilled to the northwest or north.</li> <li>Scissor drilling (drilling from both north and south) has been used in key mineralised zones to achieve unbiased sampling of possible structures and mineralised zones.</li> </ul>





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Criteria	JORC Code Explanation	Commentary
Sample security	The measures taken to ensure sample security.	<ul> <li>Samples are dispatched from site through via company employees to the laboratories.</li> <li>Samples are signed for at the Laboratory with confirmation of receipt emailed through.</li> <li>Samples are then stored at the laboratory and returned to a locked storage site.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>Internal audits of sampling techniques and data management on a regular basis, to ensure industry best practice is employed at all times.</li> </ul>

## 1.2 JORC TABLE 1 - SECTION 2 - REPORTING OF EXPLORATION RESULTS

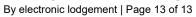
(Criteria in this section apply to all succeeding sections).

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, over riding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>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.</li> </ul>	<ul> <li>The Project comprises 1 Mining Licences (MV-17129A).</li> <li>Xanadu now owns 90% of Vantage LLC, the 100% owner of the Oyut Ulaan mining license.</li> <li>The Mongolian Minerals Law (2006 and Mongolian Land Law (2002) govern exploration, mining and land use rights for the project.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	Previous exploration was conducted by Ivanhoe Mines Ltd and Vantage LLC including surface mapping and geochemistry, diamond drilling and geophysics.
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The mineralisation is characterised as porphyry copper-gold type.</li> <li>Porphyry copper-gold deposits are formed from magmatic hydrothermal fluids typically associated with felsic intrusive stocks that have deposited metals as sulphides both within the intrusive and the intruded host rocks. Quartz stockwork veining is typically associated with sulphides occurring both within the quartz veinlets and disseminated thought out the wall rock. Porphyry deposits are typically large tonnage deposits ranging from low to high grade and are generally mined by large scale open pit or underground bulk mining methods. The prospects at Oyut Ulaan are atypical in that they are associated with intermediate intrusions of diorite to quartz diorite composition, however the deposits are in terms of contained gold significant, and similar gold-rich porphyry deposits globally.</li> </ul>
Drill hole information	<ul> <li>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: easting and northing of the drill hole collar, elevation or RL Reduced Level – elevation above sea level in metres) of the drill hole collar, dip and azimuth of the hole, down hole length and interception depth, hole length.</li> <li>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</li> </ul>	No new drill hole data is reported.



Criteria	JORC Code Explanation	Commentary
	report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>A nominal cut-off of 0.1% Cu is used for identification of potentially significant intercepts for reporting purposes.</li> <li>Most of the reported intercepts are shown in sufficient detail to allow the reader to make an assessment of the balance of high and low grades in the intercept.</li> <li>The copper equivalent (CuEq) calculation represents the total metal value for each metal, multiplied by the conversion factor, summed and expressed in equivalent copper percentage. Grades have not been adjusted for metallurgical or refining recoveries and the copper equivalent grades are of an exploration nature only and intended for summarising grade. The copper equivalent calculation is intended as an indicative value only. The following copper equivalent conversion factors and long term price assumptions have been adopted: Copper Equivalent Formula (CuEq) = Cu% + Ag (g/t) x 0.012 + Au (g/t) x 0.625 Assumptions- Cu (US\$7,500/t), Ag (US\$30/oz) and Au (US\$1,500/oz).</li> </ul>
Relationship between mineralisation on widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul> <li>Mineralised structures are variable in orientation, and therefore drill orientations have been adjusted from place to place in order to allow intersection angles as close as possible to true widths.</li> <li>Exploration results have been reported as an interval with 'from' and 'to' stated in tables of significant economic intercepts.</li> <li>Tables clearly indicate that true widths will generally be narrower than those reported.</li> </ul>
Diagrams	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.	See figures in main report.
Balanced reporting	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.	<ul> <li>Exploration results have been reported at a range of grades, predominantly above a minimum for potentially significant intercepts for reporting purposes.</li> </ul>
Other substantive exploration data	<ul> <li>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</li> </ul>	<ul> <li>Extensive work in this area has been done, and is reported separately.</li> <li>Detailed geological mapping.</li> <li>Surface geochemistry (1,253 rock-chip samples).</li> </ul>







Criteria	JORC Code Explanation	Commentary
	results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>Geophysics includes ground magnetics (332 km).</li> <li>Diamond drill includes 17 holes (5000 metres).</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work.</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>The mineralisation is open at depth and along strike.</li> <li>A multi-disciplinary exploration program is planned to test areas previously drilled with high-grade, near-surface results, which have the potential to host further mineralisation at depth and along strike; and test the many untested geophysical and geochemical anomalies remain within the Oyut Ulaan area district, as there is a strong possibility of discovering additional mineralised porphyry centres.</li> <li>Exploration on going.</li> </ul>