

29 November 2021

## DRILLING AT NEEDLES GOLD PROJECT INTERSECTS PYRITE MINERALISATION CONSISTENT WITH THE DC/IP ANOMALY

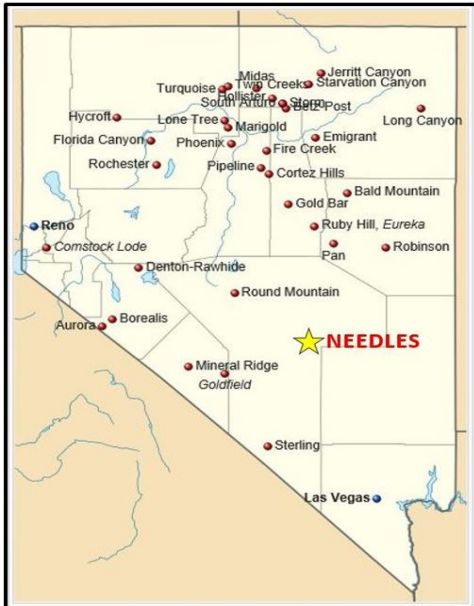
### Key Highlights

- > Drilling of the first diamond core hole (21ND\_001) to test a large DC/IP chargeability anomaly in the centre of the project has progressed to 306 metres
- > The hole has intersected mainly andesitic rocks with propylitic alteration including up to 3-5% disseminated and vein-hosted pyrite, usually accompanied by silicification
- > The hydrothermal alteration and accompanied pyrite mineralisation is consistent with the DC/IP anomaly
- > Interim assaying of selected core will be prioritised to determine if gold mineralization is present

Astro Resources NL (ASX: ARO) (“ARO”, “Astro” or “the Company”) is pleased to provide an update of its drilling at the Needles Gold Project in Nevada, USA (Figure 1).

As previously advised (ASX Announcement; ARO 25 October 2021), drilling recently commenced to test the large, robust DC/IP chargeability anomaly defined at Needles with the plan to drill up to three inclined core-holes, targeting mineralisation between 250m to 500m below surface (Figures 3 and 4). A fourth hole may be drilled targeting potential shallower, high-grade epithermal mineralisation as well as deeper Round Mountain type mineralisation beneath the Tomahawk Shaft.

**Astro’s Chairman, Jacob Khouri commented,** “Whilst it is too early at this stage to confirm whether the core drilled to date contains gold, the often strong alteration and significant percentage of pyrite observed, together with interpretation that drilling appears to be progressing towards the heat source, gives us encouragement that we are testing a mineralised system. We look forward to receiving the preliminary results from assaying which we are fast-tracking”.



**Figure 1.** Needles Project Location and active gold mines

The first drill hole 21ND\_001 (Figures 3 and 4) has reached 306m. From surface to 110m it encountered altered felsic crystal lithic tuffs, including up to 2-3% fine-grained pyrite which was detected by the IP survey (Figure 4). From this point, the rock became harder andesitic volcanics with only traces of pyrite and generally only modest alteration. The lack of a chargeable IP response in this unit reflects the lack of sulphides.

From about 150m down-hole the volcanics display weak to strong propylitic alteration with variable pyrite mineralization both disseminated and locally concentrated in veins accompanying silicification (Figure 5). The overall intensity of alteration and concentration of pyrite generally appears to be increasing down-hole, indicating that the hole is drilling towards the heat source responsible for the alteration and pyrite mineralisation.

Within this zone, the pyrite tenor is often 3-5% and up to 10% in the veins. This level of pyrite mineralization is consistent with the main DC/IP chargeability anomaly shown in Figure 4. Aside from pyrite and minor marcasite, initial logging has not found other sulphide minerals and without assays, it is too early to determine if these rocks contain gold.

Drill hole 21ND\_001 is currently approaching the edge of the 20ms chargeability shell at approximately 330m down hole. This is the most intense part of the chargeability anomaly, which should be reflected in the amount of pyrite mineralization that is expected to be encountered based on information gained from drilling so far.

The Company is conscious of providing timely assay results and will prioritise sampling and assaying of key core intervals.

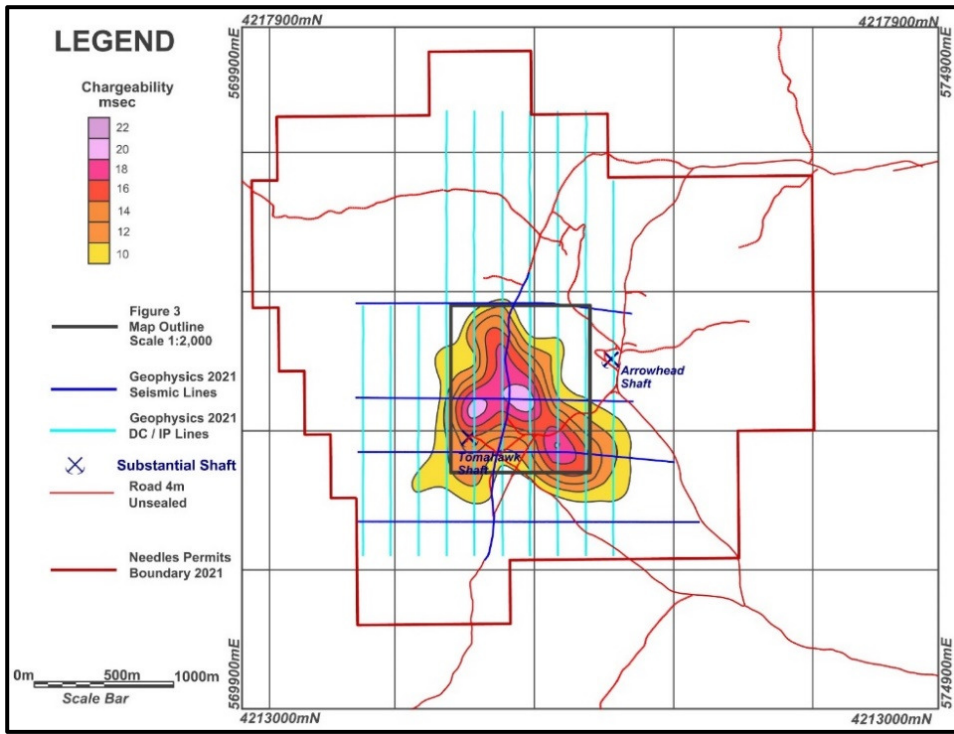


Figure 2. Map of Needles Property showing DC/IP and seismic survey lines and the chargeability anomaly

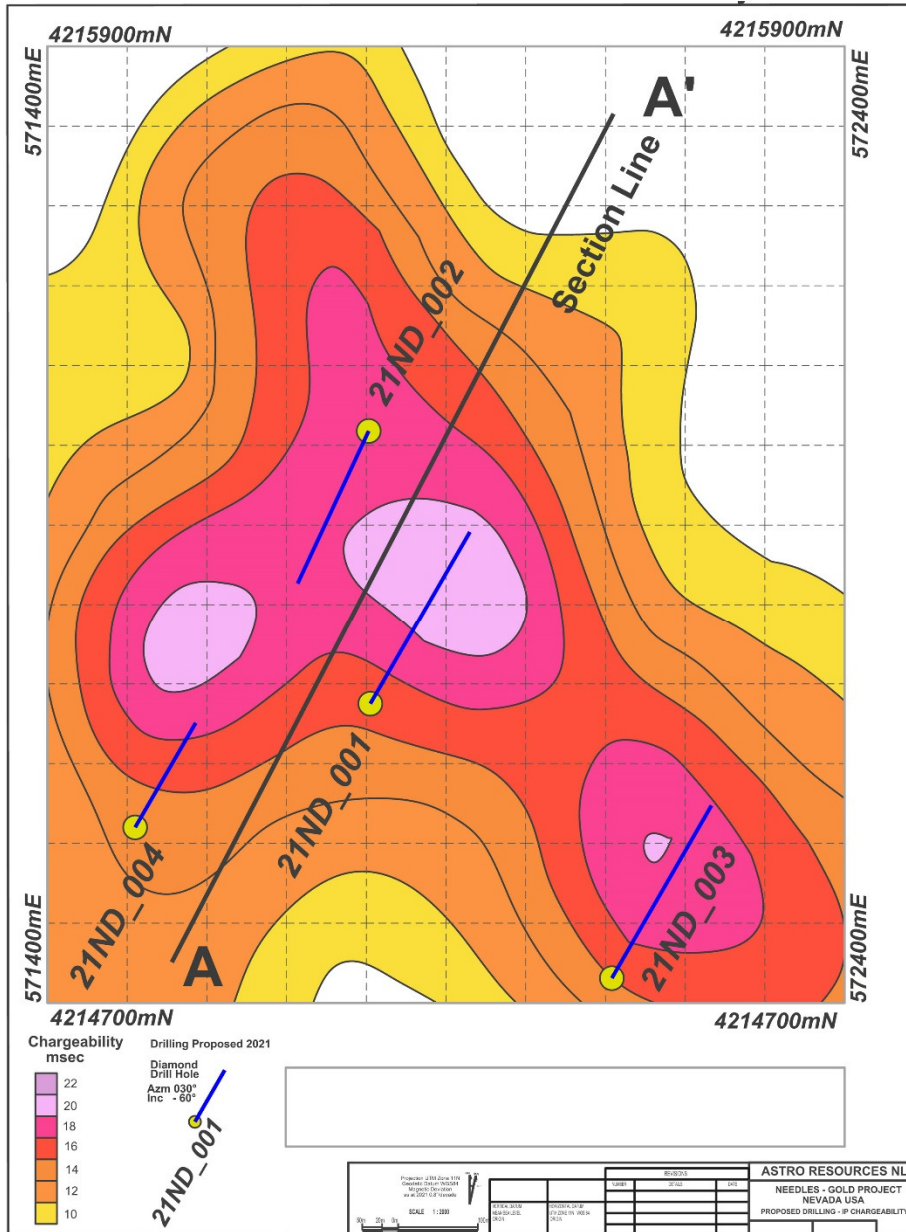
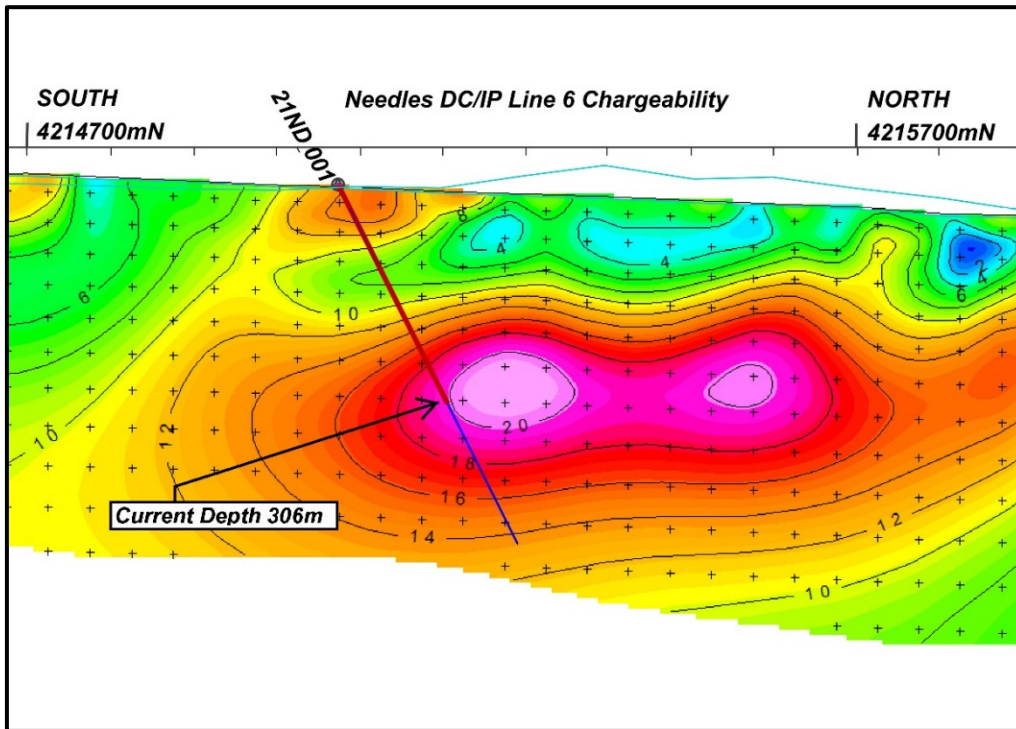


Figure 3. DC/IP chargeability anomaly at 200m below surface showing planned drill-holes



**Figure 4.** DC/IP Section Line 6 Chargeability with 21ND-001 drill hole trace



**Figure 5.** Core photo from 924ft to 934ft (281.6m to 284.7m) in hole 21ND\_001 showing silicified and propylitically altered andesites containing disseminated and vein-hosted pyrite (dark grey).

## Authorised for Release

This announcement has been authorised for release by the Board.

**ENDS**

## More Information

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The information in this report that relates to Exploration Results for the Needles Property is based on information compiled by Richard Newport, principal partner of Richard Newport & Associates – Consultant Geoscientists. Mr Newport is a member of the Australian Institute of Geoscientists and 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 under the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Newport consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

# APPENDIX 1 - JORC Code, 2012 Edition – Table 1

## Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg 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.</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> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Core will be cut into five-foot sections with each section cut to give two half-core pieces.</li> <li>One half will be totally pulverised for assay and the other half retained.</li> <li>Gold assay to be fire-assay of 500gram charge at ALS Laboratory Reno</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).</li> </ul>	<ul style="list-style-type: none"> <li>Drilling program is in Nevada USA – all lengths reported in feet in this table</li> <li>Diamond Core triple tube</li> <li>PQ for initial 500ft then HQ to TD at approximately 1650ft.</li> <li>HQ core back end oriented with Reflex ACT II™ tool</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Drillers marks record depths and length of each core run and core recovered.</li> <li>Drillers marks independently assessed by the Company representative for QA/QC during core box mark up.</li> <li>Core and core box mark up consists of marking an orientation reference line where appropriate, regular 5ft intervals marked on the core for sampling purposes core boxes labelled with drill hole name, start and finish depth</li> <li>A photographic record of all core boxes made with core marks clearly visible.</li> <li>Drilling procedures with a full drilling mud system and appropriate drill bit system designed to maximize drill core recovery.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All drill core geologically logged to a level of detail that can support a Mineral Resource estimation if it is warranted</li> <li>Logging is quantitative with lithological description, photography and structural measurements of oriented core.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <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> <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 style="list-style-type: none"> <li>Selected sections of the core to be sawn in half for sampling and assay of the full half core.</li> <li>All samples collected at regular, adjacent intervals along the core at 5ft intervals.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>NA</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <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 style="list-style-type: none"> <li>All data collected on hard copy sheets recording pertinent information relating to drill sample location and description.</li> <li>All relevant data provided by the Consultant Geologist tasked with the logging and sampling and provided in electronic format and retained by the Company.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All drill hole collars to be surveyed in utilizing a hand held GPS instrument and recorded in NAD27 datum. These locations transformed into WGS84 UTMZ11N. Elevations were derived from SRTM digital terrain model using a Geoid 09 height datum. Estimated x and y error 5m. Estimated z error 10m. All downhole measurements have been carried out using a gyroscopic survey system.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Sampling of core is at a regular interval of 5ft, which is appropriate for the mineralization.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Sampling of the core was carried out on a regular interval basis and was unbiased to mineralizing structures.</li> <li>The drill holes were oriented to intersect DC/IP-seismic anomalies at considerable depth. The sampling of these anomalies is unbiased</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Under the direction of the Consultant Geologist, the whole core to be transported by the Certified Laboratory to its facility in Reno, and sampled under his specification. Coarse and pulp reject is stored at the Certified Laboratory under secure conditions</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No external audits have been done.</li> </ul>



## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</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 style="list-style-type: none"> <li>ARO holds 139 unpatented lode mining claims in Nevada via a wholly owned US subsidiary. These claims are referred to as the "Needles Property".</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Previous exploration has been summarised in the NI43-101 Report available on SEDAR titled "NI 43-101 TECHNICAL REPORT on THE NEEDLES Au-Ag PROPERTY Arrowhead Mining District, NYE COUNTY, NEVADA, USA" (2010) MPH Consulting Ltd.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Primary target is a combination of low sulphidation epithermal bonanza lode gold vein mineralization and associated "Round Mountain" style epithermal stratabound gold within sub-horizontal volcanic tuffs.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </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 report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>All historic information is available in the NI 43-101 referenced above and in the JORC 2012 table included in the Astro announcement dated 19<sup>th</sup> December 2019 titled "Needles Drilling"</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>NA</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>NA</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Included in ASX announcement</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <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 results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>Interpretations have been received of the January 2021 DC/IP data and of the seismic survey on the Needles Property. The interpretations confirm the presence of a significant chargeability anomaly within a specific structural location.</li> <li>Baseline environmental studies have commenced of chargeability anomaly</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Base line studies to enable a Plan of Operation to be submitted for the area of interpreted mineralisation</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Initial drill testing of chargeability anomaly and of Tomahawk mineralisation is underway and continuing.</li> </ul>