

4 April 2023

## Ultrafine Soil Sampling program confirms Titan Gold prospect and defines elevated copper in the Greater Carlow Project Area

### Highlights:

- Elevated gold in soils with assay results up to 101.3 ppb gold have been defined at the Titan gold prospect over an area of 750 m by 550 m some 1.8 km northeast of the Carlow Mineral Resource.
- Gold anomaly corresponds with elevated arsenic over a similar area.
- Elevated soil assays align with 1.25 g/t gold rock sample collected from banded chert at the time of soil program.
- Further ground truthing including mapping, rock sampling and geophysics to commence in the coming weeks to further confirm prospectivity of Titan gold prospect.
- Elevated copper <100 ppm identified just off Europa gravity anomaly, Titan gold prospect and east along strike from the Carlow Mineral Resource.
- JORC Exploration Target for Carlow Castle and exploration strategy within Greater Carlow being finalised for release by mid-April.

Artemis Resources Limited (ASX: ARV) is pleased to advise that results of the Ultrafine Fraction (UFF) soil program within the Greater Carlow tenement E47/1797, 35 km east of Karratha have been received and interpreted defining a strong coincident gold (Au) and arsenic (As) anomaly over the Titan (Titan) gold prospect (Figure 1). Titan is located 1.8 km northeast of the Carlow Au-Cu-Co Mineral Resource (704,000 Koz Au Eq.: refer ASX release of 13 October 2022<sup>1</sup>).

A total of 432 UFF samples were collected from three locations within the immediate vicinity of the Regal Thrust and associated splay structures with sampling occurring in late 2022 along with a small extension program in February 2023.

Labwest in conjunction with the CSIRO have developed the Ultrafine geochemical analysis as a method of detecting anomalies against a normalised background by completing a full analytical digest via a -2 micron clay fraction. Ultrafine soil particles such as clays and iron oxides, have more surface area which can bind gold and other metals that move through the environment, enabling the ultrafine particles to effectively trap and hold geochemical signatures of bedrock covered by transported cover while removing the effect of spikey data.

The approach has been shown to be effective with cover up to 20 m, which makes it an ideal method for the Greater Carlow project.

<sup>1</sup>The Company is not aware of any new information or data that materially affects the information included in this market announcement, and in the case of mineral resources, all material assumptions and technical parameters underpinning the estimates in this announcement continue to apply and have not materially changed.

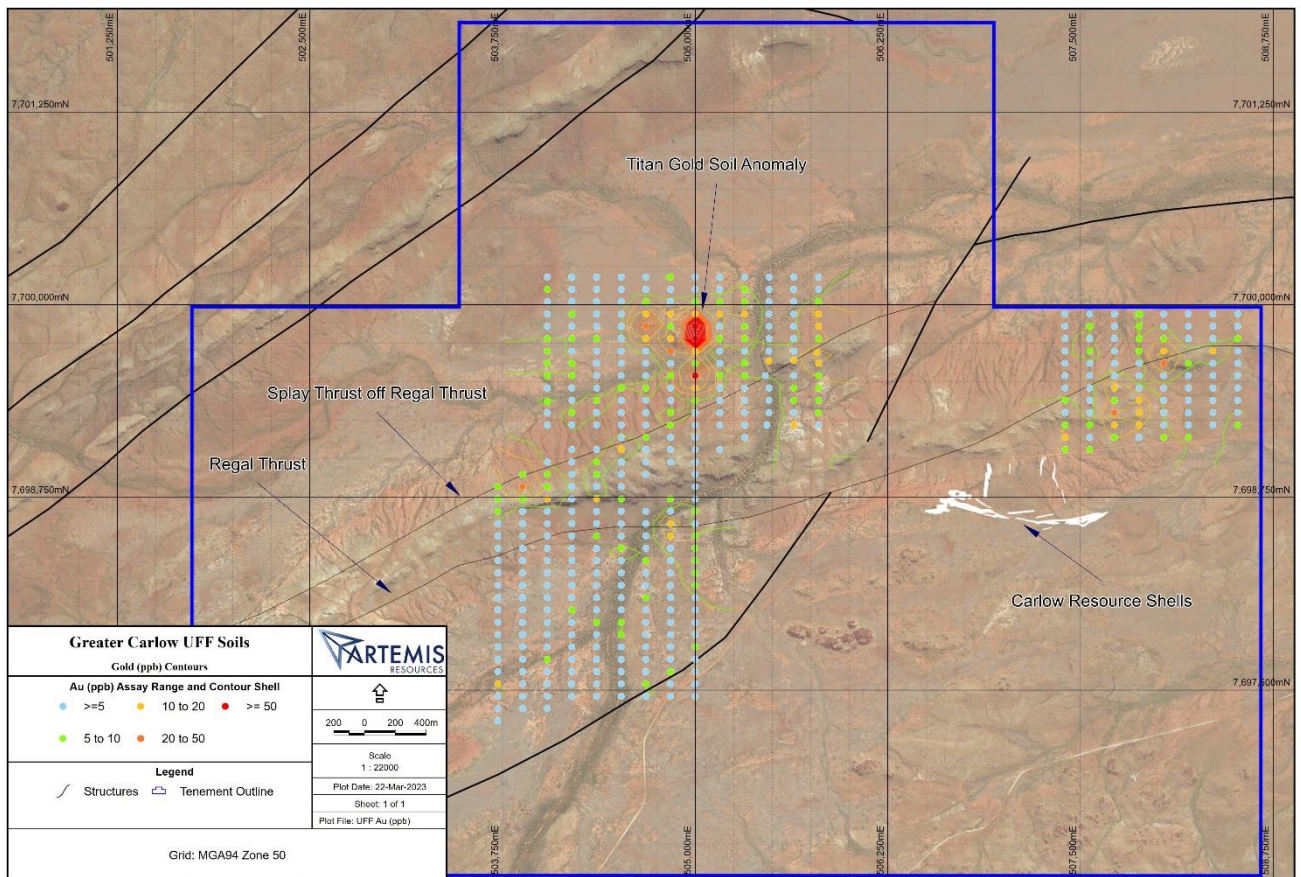


Figure 1: UFF Soil location map displaying Au range and contours in ppb.

During the UFF soil sample program numerous prospector digs were noted in the vicinity of the Titan prospect resulting in two rock chip samples from a banded chert outcrop being collected, as announced in the December 2022 Quarterly Report. One of the two samples collected (TIT002) recorded a gold grade of 1.25 g/t Au. Details of the rock samples are recorded in Table 1.

Table 1: Titan gold prospect rock sample details

Sample Id	Easting (MGA94)	Northing (MGA94)	Au (g/t)	Description
TIT002	504927	7699709	1.25	Banded Chert. Highly Silicified

Anomalous copper in the order of 100 ppm was also recorded along the north-western margin of the Europa target where basement rock begins to sub-crop (Figure 2). The interpretation for the lack of signal over the main Europa target has been interpreted to be a result of a modern drainage system depositing fresh sediments over the main target area. Artemis believes the recently deposited sediments are masking the geochemical signature resulting in a benign geochemical response.

The Europa target is located approximately 1.7 km south-west along strike of the Carlow deposit. It is situated within a structurally bound gravity high on the southern side of the Regal Thrust within the prospective Roebourne Complex. Its structural and gravity signature are of a similar nature to the Carlow deposit and has been identified by Artemis as requiring additional exploration focus.



On the eastern side of the project area, immediately north of the Marillion EM target anomalous copper has also been identified with peak Cu in soils of 258 ppm (Figure 2). This occurrence is situated near the tenement boundary and is likely associated with the Au-Cu mineralisation identified by Novo Resource Corp at their Morto Largo prospect.

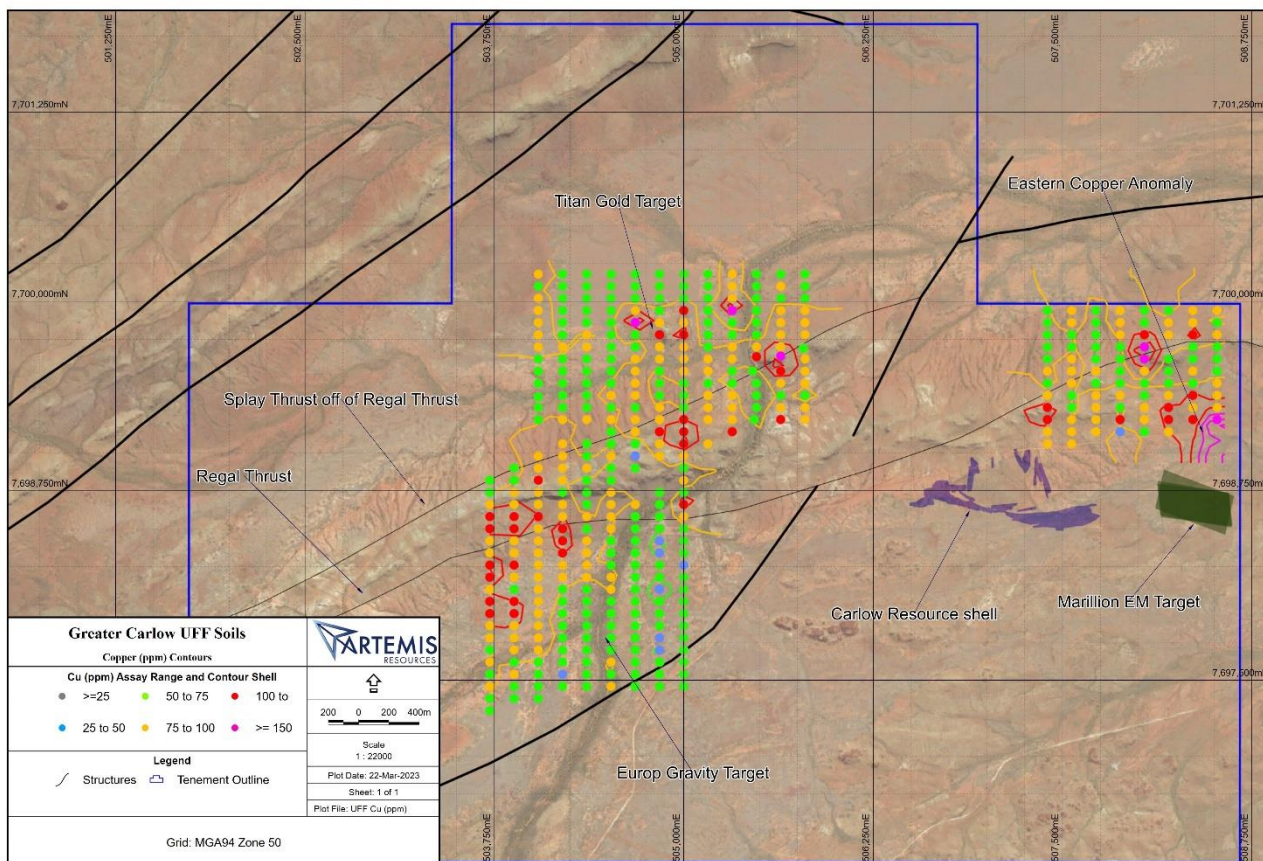


Figure 2: UFF Soil location map displaying Cu range and contours in ppm

### Next Steps

Mapping and rock sampling will commence at Titan in April, followed by geophysics to better understand the controls of mineralisation and to determine if the mineralised trend continues undercover. It was noted during the soil sample program that the southern portion of the Titan prospect was covered in a modern drainage line like Europa, and this may be masking any geochemical signal.

Artemis plans to further assess the potential for mineralisation under cover and will announce to the market its exploration plans in the Greater Carlow project area in the coming weeks.

This announcement was approved for release by the Board.

For further information contact:

Dr Simon Dominy

Technical Director

[info@artemisresources.com.au](mailto:info@artemisresources.com.au)

## About Artemis Resources

Artemis Resources (ASX/AIM: ARV; FRA: ATY; US: ARTTF) is a Perth-based exploration and development company, led by an experienced team that has a singular focus on delivering shareholder value from its Pilbara projects – the Greater Carlow project in the West Pilbara and the Paterson Central exploration project in the East Pilbara.

For more information, please visit [www.artemisresources.com.au](http://www.artemisresources.com.au)

## Announcements Related to this Release.

30/01/2023	December 2022 Quarterly Activities Report
14/11/2022	Greater Carlow Regional Growth Plan – High Priority Targets
13/10/2022	High-grade gold-copper-cobalt Inferred Mineral resource lays foundation for a robust Greater Carlow project.
05/11/2018	Three New Gold Discoveries in the West Pilbara

## Competent Person's Statement

### **Exploration Results**

*The information in this report that relates to exploration results is based on, and fairly represents information supporting documentation prepared by Mr Luke Meter, a Competent Person who is a Member of both the Australasian Institute of Geoscientists (AIG) and Australasian Institute of Mining and Metallurgy (AusIMM). Mr Meter is employed by Artemis Resources as Exploration Manager. Mr Meter 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 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Meter Consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

## Table JORC Code, 2012 Edition

### Section 1 Sampling Techniques and Data

(Criteria in this section applies to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<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>• Soil samples were collected in the field by removing any surface vegetation and topsoil and then digging down to the horizon change (generally 10 – 15 cm) from which the sample was taken.</li> <li>• Samples for UFF analysis were sieved at the sample site in the field to -2 mm and approximately 350 g of material was collected and bagged with a unique sample identification number.</li> <li>• Each sample soil type was logged, and coordinates recorded against the sample number with a hand held GPS receiver.</li> </ul>
Drilling techniques	<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>• No drilling undertaken as part of this program.</li> </ul>
Drill sample recovery	<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>• No drilling undertaken as part of this program.</li> </ul>
Logging	<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> </ul>	<ul style="list-style-type: none"> <li>• No drilling undertaken as part of this program Soil Sample type was recorded, and coordinates of each sample site recorded against unique sample</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <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>	identification number.
Sub-sampling techniques and sample preparation	<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>UFF+ soil sampling is used to obtain an ultrafine fraction of the soil (-2µm), this is analysed to identify elemental concentrations.</li> <li>Soil samples are collected using a steel shovel, these samples are sieved passing -2 mm in the field to produce a nominal 350 g field sample, this sample is processed using the CSIRO UFF+ workflow to produce an ultrafine fraction to analyse for gold and multi-elements. The sample preparation employed by LabWest has been developed in collaboration with CSIRO.</li> </ul>
Quality of assay data and laboratory tests	<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>Samples were submitted to Labwest for processing and analysis with standards being inserted by the company in-house.</li> <li>LabWest is a commercial independent certified laboratory in Perth, Western Australia.</li> <li>The -2 µm fraction of the soil samples were analysed for Ag, Al, As, Au, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Fe, Ga, Ge, Hf, Hg, In, K, La, Li, &lt;g, Mn, Mo, Nb, Ni, Pb, Pt, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn, and Zr via LabWest's Ultrafine + microwave digest with an ICP EOS/MS finish.</li> </ul>
Verification of sampling and assaying	<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>Sample results and standards were reviewed by Artemis Exploration Manager and geologists.</li> <li>Sample results and standards QAQC checked and uploaded into data base by independent data base managers Expedio.</li> </ul>
Location of data points	<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>Soil sample locations are located by handheld GPS receiver to an accuracy of +/- 5 m.</li> <li>Locations are given in GDA94 Zone 50.</li> <li>Diagrams showing sample locations are provided in the report.</li> </ul>
Data spacing	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>The soil samples were taken on north-south orientated lines spaced 160 m</li> </ul>



Criteria	JORC Code explanation	Commentary
<i>and distribution</i>	<ul style="list-style-type: none"> <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>	apart with individual samples taken on a nominal 80 m sample spacing along the lines.
<i>Orientation of data in relation to geological structure</i>	<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>• Surface soil sampling on a grid basis. The grid was designed to sample across the interpreted zones at a high angle.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>• Chain of Custody for soil samples is maintained by Artemis personnel and contractors. Soil samples were collected and stored in seal top polyethylene sample bags which were then stored in numbered storage boxes. These boxes were then transported by Artemis personnel to Bishops Transport in Karratha, who subsequently transported the samples to LabWest in Perth, Western Australia. Sample submission documents listing the batch number and sample number series accompany the samples at each stage. Samples are checked by LabWest to confirm receipt of all samples and check the condition of the sample Batch.</li> </ul>
<i>Audits or reviews</i>	<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 Audits have been completed.</li> </ul>

## 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</i>	<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> </ul>	<ul style="list-style-type: none"> <li>• The Greater Carlow Project is in Exploration Licence E47/1797, held by KML No2, a 100% owned subsidiary of Artemis Resources.</li> <li>• E47/1797 is within the Ngarluma Native Title Determination Area. The tenure is subject to an agreement allowing mining</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>status</i>	<ul style="list-style-type: none"> <li><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></li> </ul>	<p>activities including exploration.</p> <ul style="list-style-type: none"> <li>There are no historical cultural sites or environment protected areas that would prevent the Company from substantially exploring the licence.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>The most significant work to have been completed historically in the Greater Carlow area was completed by Open Pit Mining Limited between 1985 and 1987, and subsequently Legend Mining NL between 1995 and 2008.</li> <li>Work completed by Open Pit consisted of geological mapping, geophysical surveying (IP), and RC drilling and sampling.</li> <li>Work completed by Legend Mining Ltd consisted of geological mapping and further RC drilling.</li> <li>Legend also completed an airborne ATEM survey over the project area, with follow up ground-based FLTEM surveying. Re-processing of this data was completed by Artemis and was critical in developing drill targets for the completed RC drilling.</li> <li>Compilation and assessment of historic drilling and mapping data completed by both Open Pit and Legend has indicated that this data compares well with data collected to date by Artemis. Validation and compilation of historic data is ongoing.</li> <li>All exploration and analysis techniques conducted by both Open Pit and Legend are considered to have been appropriate for the style of deposit.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>Gold mineralisation is predominately associated with shears and breccias associated with the Regal Thrust within greenstones sequences of the Roebourne and Regal Complexes.</li> <li>The greenstone package includes mafic to ultramafic volcanic rocks along with sedimentary units including chert.</li> <li>The greenstones are intruded by the Andover Intrusive Complex, consisting of a series of gabbro and pyroxenite intrusions.</li> <li>Sulphide mineralisation consisting of chalcopyrite, cobaltite, pyrrhotite, pentlandite and pyrite appear to localise</li> </ul>



Criteria	JORC Code explanation	Commentary
		in varying quantities near some of these intrusion, particularly when associated with an earlier shear or splay associated with the Regal Thrust.
<i>Drill hole Information</i>	<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>• No drilling undertaken as part of this program.</li> </ul>
<i>Data aggregation methods</i>	<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>• No data aggregation or intercept calculations are included in this release.</li> </ul>
<i>Relationship between mineralisation widths and intercept lengths</i>	<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>• No drilling undertaken as part of this program.</li> </ul>
<i>Diagrams</i>	<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>• Representative plans are provided in this report.</li> </ul>
<i>Balanced</i>	<ul style="list-style-type: none"> <li>• Where comprehensive reporting of all Exploration Results is not practicable,</li> </ul>	<ul style="list-style-type: none"> <li>• The report is considered balanced and provided in context.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>reporting</i>	<i>representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i>	<ul style="list-style-type: none"> <li>Further exploration including geophysical surveys, mapping, sampling, and other exploration activities are required to fully understand the results in greater detail.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Historical data collected by Artemis Resources was used to choose the sites for the Ultrafine soils program.</li> <li>Europa Gravity and Marillion EM targets announced 14 November 2022.</li> <li>Titan identified as potential gold exploration target from 2018 ionic soils program announced 5 November 2018.</li> </ul>
<i>Further work</i>	<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>The Company plans to complete mapping, geochemical sampling including rock and Ultrafine soil sampling and geophysical surveys to further investigate the potential for the Greater Carlow project to host additional mineralisation including gold, copper, cobalt and nickel.</li> </ul>