For personal use only

**13 July 2022**

# Clermont Project Assay Results indicate the potential for a mineralised porphyry at depth

## Highlights

- Assay results indicate anomalous copper, gold and molybdenum intersections in both of the holes drilled at Clermont
- Diamond drill core show a distinct geochemical zonation indicating the main copper rich zone of the porphyry system may be below the depth of the current drilling
- The copper, silver and gold assays increase with depth, with the highest recorded assays occurring at or towards the base of the holes
- Geochemical modelling, especially of the tin and tungsten assays indicate that both drill holes possibly intersected the porphyry immediately above or adjacent to the expected location of the more mineralised core
- The diamond drill core shows intense alteration increasing with depth with rock types and alteration styles characteristic of a mineralised porphyry system
- Future work on the project is planned to include petrological and geochemical studies to assist in locating a high-grade copper rich zone within the porphyry
- A magnetic survey is also planned to aid in understanding the depth and geometry of the porphyry target

Metallica Minerals Limited (ASX: MLM) has received assay results for two drill diamond holes completed at the Clermont porphyry project in April 2022. Drill holes RDD019 and RDD020 were designed to test an intense magnetic low anomaly which the Company's geologists believed represented an attractive drilling target for porphyry style copper gold mineralisation.

Drill hole parameters are included as Table 1 and drill hole locations are presented in Figure 1.

**Table 1.** Clermont JV (EPM 17968) – Drill Hole Parameters

| Hole Number | Easting | Northing | RL | Dip | Azimuth | Depth (m) |
|---|---|---|---|---|---|---|
| RDD019 | 550,967 | 7,471,548 | 321 | -90 | 000 | 530.40 |
| RDD020 | 551,250 | 7,471, 559 | 320 | -60 | 240 | 501.50 |

Metallica Minerals Executive Chairman Theo Psaros said: "the results from these first drill holes at Clermont are encouraging and warrant further exploration activity. Importantly, this work is being managed by a dedicated team to ensure there are no distractions from our focus on the development of the Cape Flattery Silica Sand project."

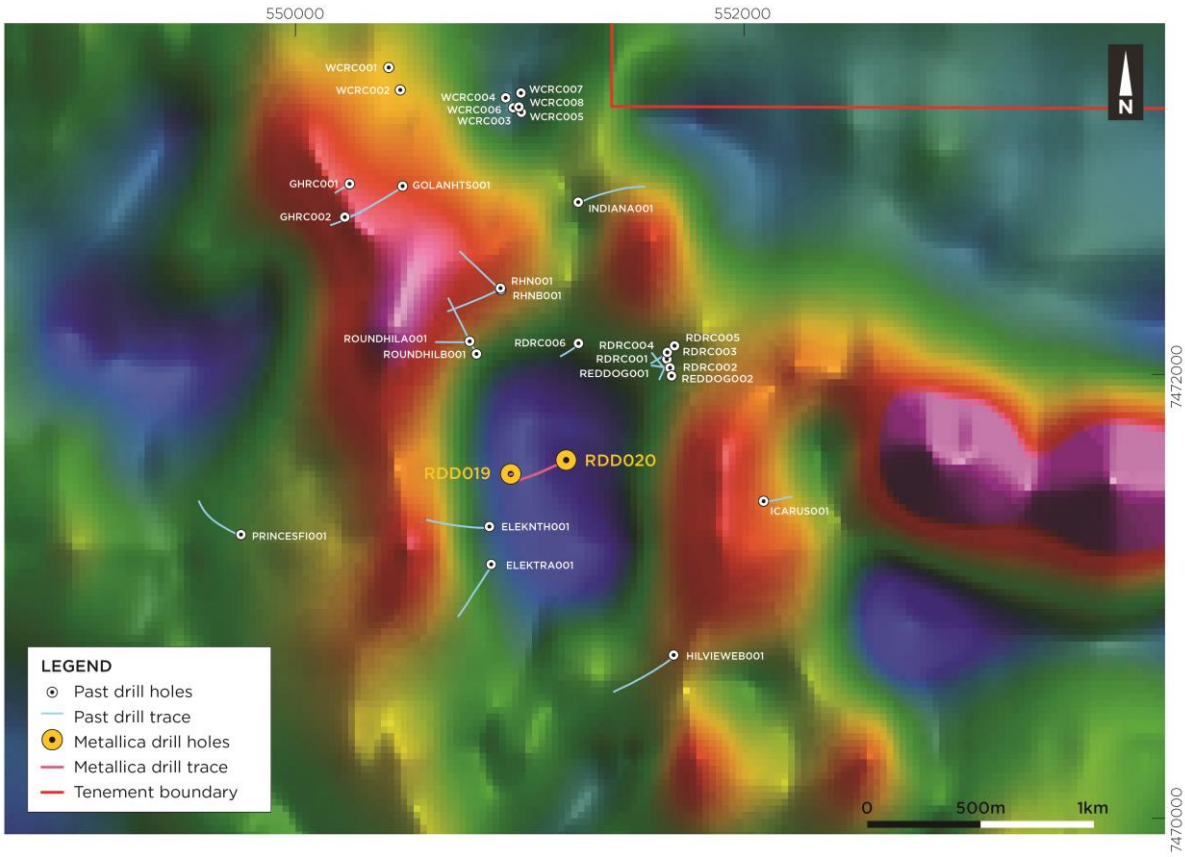



*Figure 1. Clermont Porphyry Prospect – Drill hole locations (superimposed on the TMI image)*

The two holes drilled at Clermont intersected a quartz-monzonite porphyry which exhibited potassic and phyllic alteration which are characteristic of mineralised porphyry systems, with the intensity of alteration increasing with depth. Sulphide mineralisation in the form of iron pyrite, chalcopyrite and molybdenum was also observed in the two holes. The majority of the mineralisation appears confined to fracture surfaces but mineralised quartz bearing veins (pyrite ± chalcopyrite) were observed and fine disseminations of pyrite, chalcopyrite and molybdenum were observed in the rock matrix. Logging and assay results show that total sulphide content of the holes varies between 0% in the top 50m of the drill holes to between 2% to 3% sulphides (S) towards the base of the holes.

Anomalous copper was recorded in both drill holes with grades ranging from 5ppm Cu to 1,840ppm Cu in hole RDD019 and 2ppm to 3,460ppm Cu in RDD020, Molybdenum grades ranged from <1ppm Mo to 312 ppm Mo in RDD019 and from <1ppm Mo to 87ppm Mo in RDD020. Gold grades ranged from <0.01 to 0.11 Au in RDD019 and from <0.01 ppm Au to 1.75 g/t Au in RDD020.

The assay data shows a distinct increase in copper mineralisation with hole depth, with the highest copper assays recorded at the base of each hole, this is shown in Figures 2 and 3. This same trend is also evident with silver assays in RDD020. The highest recorded gold assays occur in the bottom 30m of RDD020, with the highest gold intercept of 2m @ 1.69 g/t Au recorded in hole RDD020 from 475m.

For personal use only

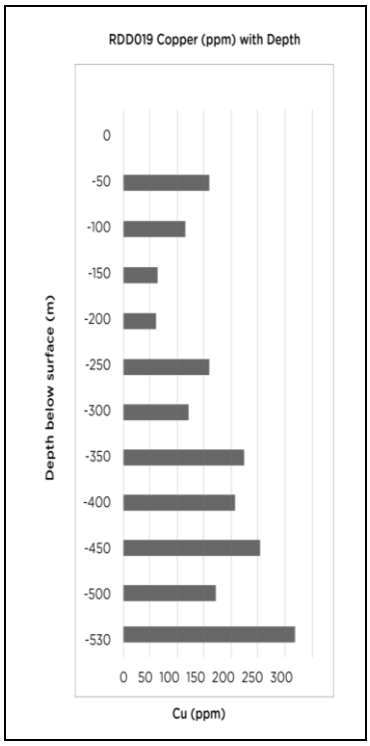
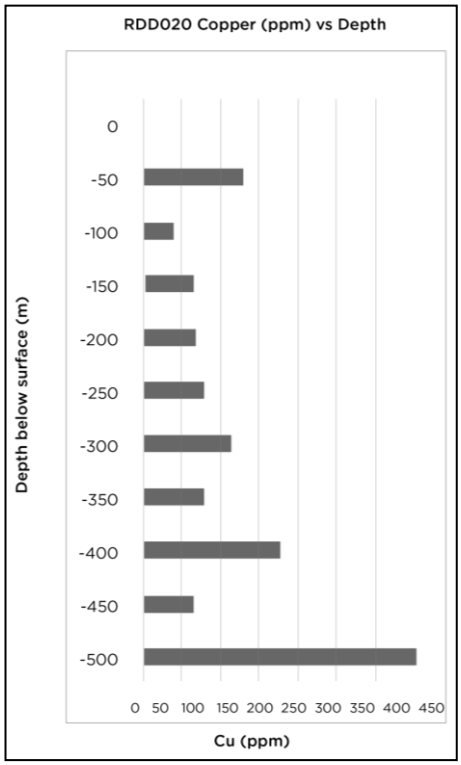



*Figure 2. RDD019 – Average copper values with depth*



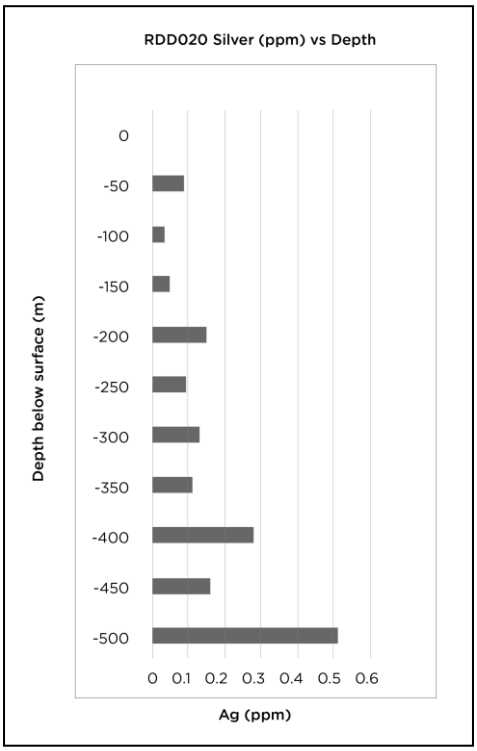




*Figure 3. RDD020 showing increasing copper (LHS) and silver (RHS) values with depth*

*The point values for these graphs were calculated by taking the assay result for each 1m sample and averaging those values for every 50m interval.*

For personal use only

*Figure 4. RDD020, 2m @ 1.69g/t Au, 2.22g/t Ag and 0.17% Cu from 475m*

**Porphyry Model**

It is significant that both RDD019 and RDD020 intersected anomalous Tin (Sn) and Tungsten (W) which can be used in porphyry models to determine which part of the porphyry system has been intersected. Sn and W grades range from 1ppm to 53ppm (Sn) and 2ppm to 179ppm indicating that the zone tested by drilling is close to or adjacent to the copper rich zone of the porphyry system, as illustrated in Figure 5.

Porphyry systems are modelled as having distinct metal zonation around a copper rich core, with, Arsenic (As) Bismuth (Bi) and Tellurium (Te) occurring distal to the copper zone and Sn and W occurring proximal to the copper rich core.

For personal use only

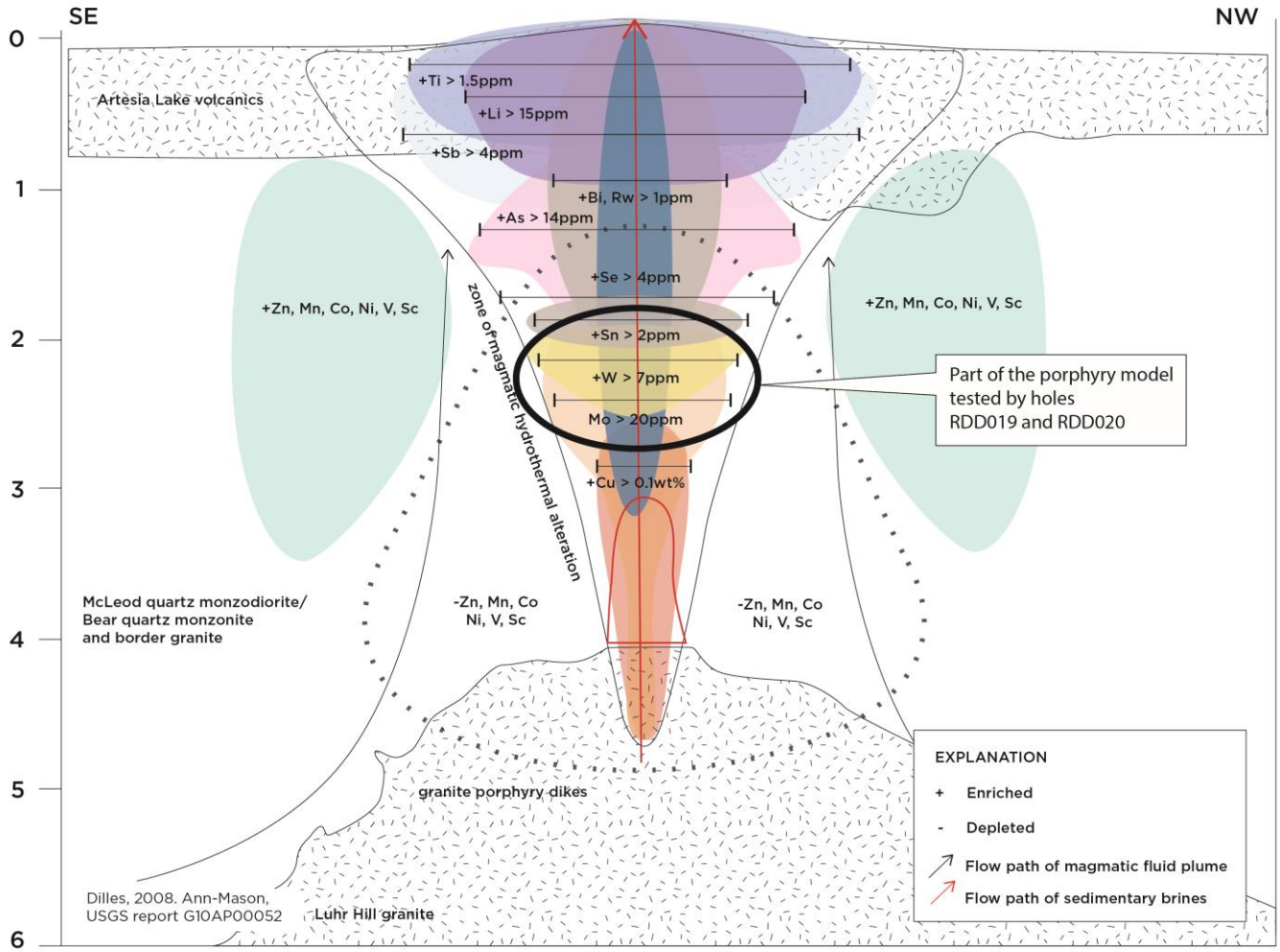



*Figure 5. Drilling at the Clermont Porphyry Prospect and relationship to modelled porphyry geochemistry (from the Ann-Mason copper porphyry - Nevada)*

*The porphyry model in Figure 5 is an example from the Ann-Mason porphyry copper deposit in Nevada, and is an illustration of the geochemical zonation in porphyry systems which maybe relevant to the Clermont quartz- monzonite porphyry*

Drill holes RDD019 and RDD020 were designed to test the modelled magnetic low between 300m to 500m below surface. From the results of the drilling, it is highly likely that the drill holes intersected the upper limits of the magnetic low feature, as illustrated in Figure 6.

For personal use only

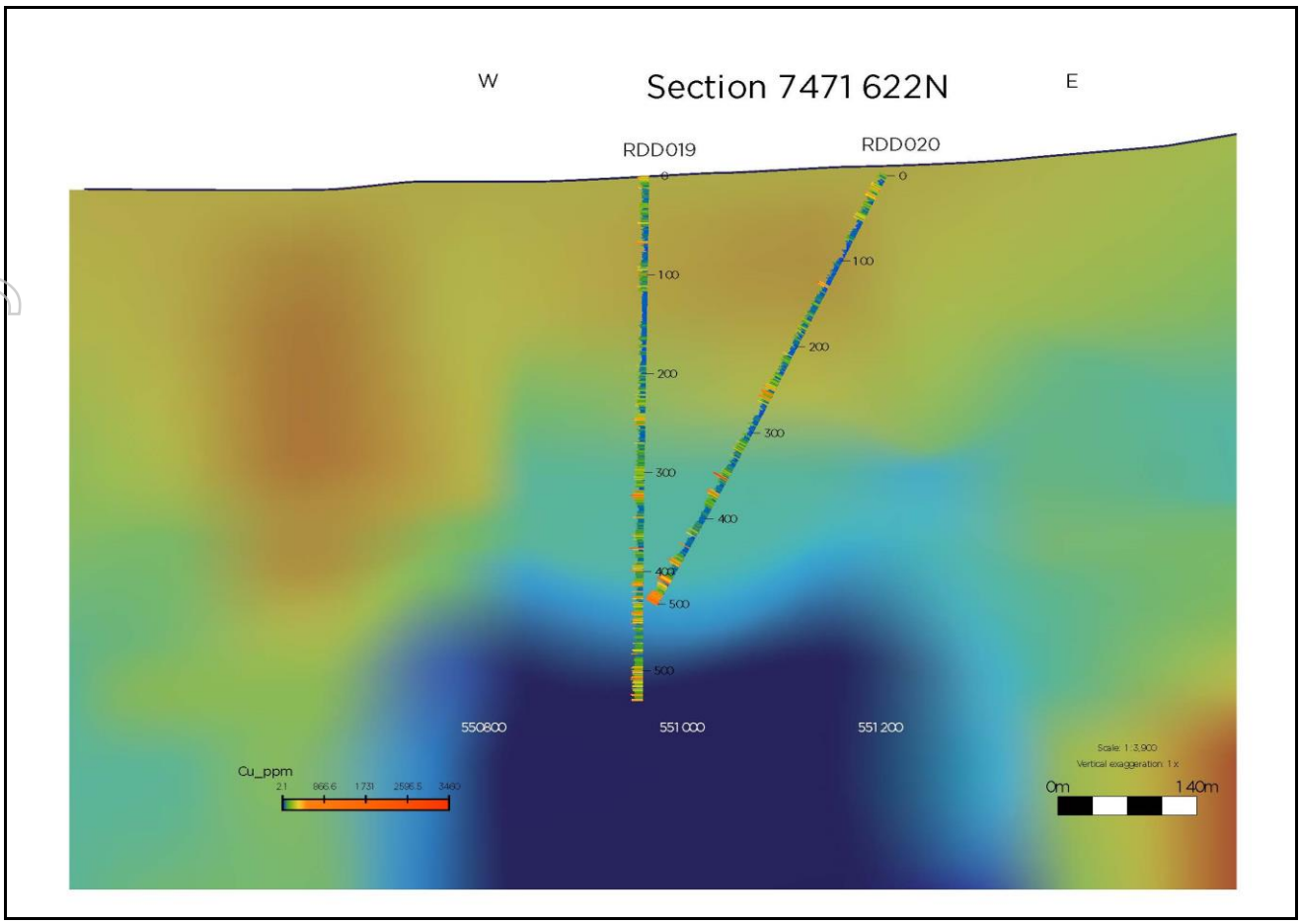



*Figure 6.Idealised section projecting both holes onto the modelled magnetic low anomaly at the Clermont Porphyry Prospect*

**Proposed Future Work**

It is planned to review geochemical and petrological data from RDD019 and RDD020 in conjunction with data available from historical holes drilled on periphery of the magnetic low. This is expected to further assist in identifying which part of the mineralised porphyry system has been intersected and to aid in recommending further exploration activity.

A ground magnetic survey is also expected to be undertaken over the magnetic low feature to improve understanding of the geometry of the anomaly.

This announcement has been approved for release by the Board of Metallica Minerals Ltd.

For further information, please contact:

**Mr Theo Psaros**
**Executive Chairman**
**+61 (7) 3249 3000**

**Mr Scott Waddell**
**CFO & Company Secretary**
**+61 (7) 3249 3000**

For personal use only

**About the Clermont Project**

The project comprises EPM 17968 and consists of 80 sub-blocks, (approximately 240 km$^2$) and is located south of the township of Clermont in Central Queensland. The project is held by Chalcophile Resources Pty Ltd, a 100% owned subsidiary of DRX and was granted in October 2015 for a period of five years. It has subsequently renewed for an additional 5 years and now expires in October 2025.

The Project area lies within the Anakie Inlier of east central Queensland **Figure 6** and contains known gold and copper mineralisation and historical copper and gold mine workings. There are three main targets within the EPM (**Figure** ) which MLM will assess during the due diligence phase to determine how prospective each target is and whether significant copper or gold mineralisation can be identified at the target areas which can then potentially be progressed rapidly to JORC status.

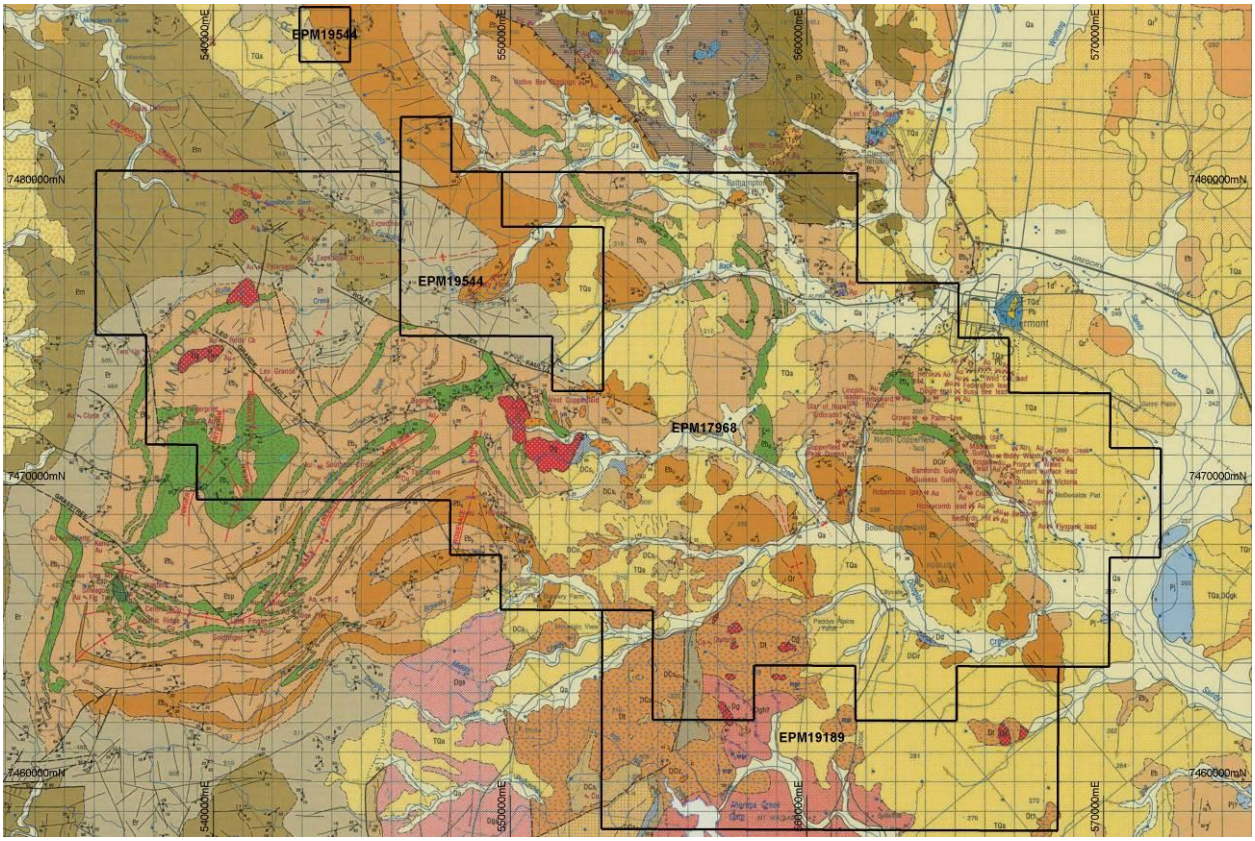



***Figure 6*** *EPM17968 Geology*

The three targets are:

- The Rosevale Porphyry Corridor (RPC) which has the potential for porphyry related copper, gold and molybdenum mineralisation (Central part of the EPM) and which contains the Clermont porphyry target.
- Structurally controlled gold (vein) mineralisation (Western and Eastern part of EPM 17968)
- VMS related base metal mineralisation associated with the historic Peak Downs copper mine (a VMS style deposit)

For personal use only

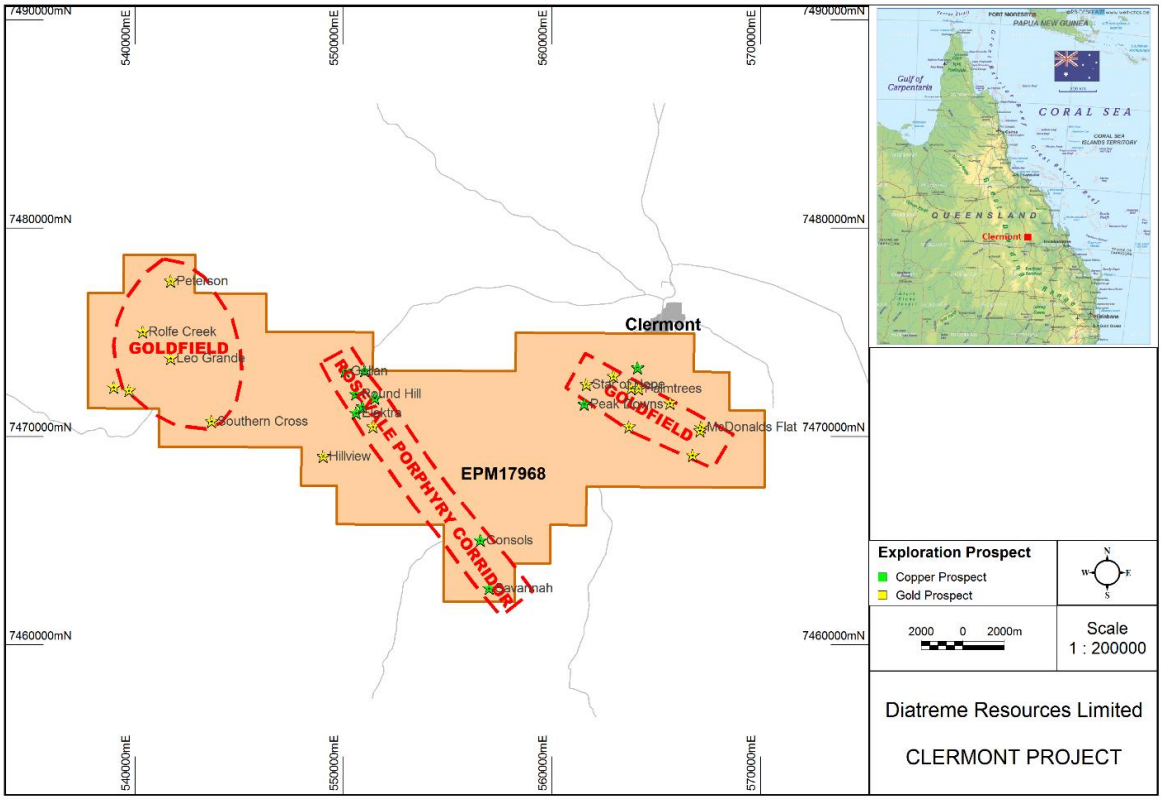



***Figure 7*** *EPM 17968, Exploration Targets*

Metallica recently announced it had met the expenditure commitment (undertaken in accordance with the MOU with Diatreme Resources Ltd, ASX: DRX) to earn 25% of the Clermont project (refer ASX Release 5 August 2021 "Diatreme agrees farm-out on Clermont Copper/Gold Project"). In addition, the Company has made the decision to move to the second stage of the earn in phase of the agreement and increase Metallica's share to 51% of the project through a further $700,000 spend on exploration activity at the Clermont Project prior to 27 April 2023 (refer ASX Release 29 April 2022 "Metallica moves toward 51% ownership of the Clermont JV").

**Competent Person Statement for Clermont Exploration Results**

The information in this report that relates to the Exploration Sampling and Exploration Results is based on information compiled by Mr Patrick Smith, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy.

Mr Smith is the owner and sole Director of PSGS Pty Ltd and is contracted to Metallica Minerals as their Exploration Manager. Mr Smith confirms there is no potential for a conflict of interest in acting as the Competent Person. Mr Smith has sufficient experience that is relevant to the style of mineralisation and type of deposits 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 Smith consents to the inclusion of this information in the form and context in which it appears in this release/report.

For personal use only

For personal use only

**JORC Code, 2012 Edition – Table 1**

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling techniques* | • *Nature and quality of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* | • Drilling was completed using a truck mounted UDR1200,<br>• The samples were collected every 1m. The samples are half core samples, obtained by cutting the HQ core in half using a core saw which was set up on the drill site<br>• The half core sample was collected on site and dispatched to the laboratory for crushing and pulverising prior to assay<br>• Samples were submitted to ALS Laboratories in Townsville and Brisbane for assay for gold Au-AA25 method and for multi-element analysis ME-MS61<br>• Laboratory reference material was used for QA/QC purposes, MLM did not submit any standards or blanks with these samples due to the exploratory nature of the drilling campaign |
| *Drilling techniques* | • *Drill type and details.* | • The drilling technique used was diamond drilling, which was undertaken by Eagle Drilling using a truck mounted UDR1200. The diamond core drilled was HQ (triple tube) from surface to EOH.<br>• The holes were terminated at a pre-determined depth based on geophysical modelling |
| *Drill sample recovery* | • *Method of recording and assessing core and chip sample recoveries and results assessed.* | • Visual assessment and logging of sample recovery and sample quality.<br>• Diamond drilling is low disturbance and low impact, minimising drill hole wall impact and contamination.<br>• No sample bias occurred between sample recovery and grade.<br>• The consistent weight of the samples indicates that recovery of between 90 to 100% was achieved, lower recoveries (less than 80%) were recorded in the top 1m of each hole due to the presence of organic matter, topsoil and unconsolidated weathered bedrock |

For personal use only

| | | |
|---|---|---|
| *Logging* | • *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.*<br>• *Whether logging is qualitative or quantitative in nature.*<br>• *The total length and percentage of the relevant intersections logged* | • Geological logging of the total hole by field geologist, with retention of half core in the core boxes to allow for further review of the core at a later date<br>• The total hole was logged, logging includes qualitative descriptions of colour, grain size, alteration style, observations on any mineralisation present and estimates of the sulphide content in the core<br>• Magnetic susceptibility readings were recorded in addition to the core logging and core orientation work was undertaken on core from the angled hole (RDD020)<br>• Photographs of the core in each core tray was taken so a digital visual record of each of the drill holes was obtained<br>• Logging has been captured through field drill log sheets and transferred through to an excel spreadsheet which is then transferred to a central database and storage. |
| *Sub-sampling techniques and sample preparation* | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • Half core samples were submitted for analysis.<br>• The HQ core was sampled at 1m intervals, the core was cut in half, with one half dispatched for assay and the remaining half core kept in the core boxes and stored at a core storage facility near to where the drilling was undertaken<br>• The half core sample was placed in a numbered calico bag, prior to being placed in a poly-weave sack for dispatch to the laboratory<br>• Each sample weighed between 3.05 to 4.0Kg.<br>• The Competent Person considers the sample preparation to be appropriate for drilling of this nature<br>• The Competent Person considers the sample sizes to be appropriate for the type of material being sampled. Appropriate sample sizes and pulverisation of the entire sample support good representivity |

For personal use only

| | | |
|---|---|---|
| *Quality of assay data and laboratory tests* | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *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.*<br>• *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.* | • Drilling samples were submitted to ALS Brisbane, where they were dried, weighed and split.<br>• Analysis was undertaken by ALS Brisbane, samples were assayed for gold using a Fire Assay method with an AAS finish (Au - AA25).<br>• Multi-element analysis was undertaken utilising the ME-MS61 method<br>• QC procedures - No duplicate samples were collected in the field and no standards were submitted by MLM, MLM reviewed the duplicate and standard samples that were undertaken as part of the laboratories QA/QC procedures and no obvious bias or inaccuracies were identified |
| *Verification of sampling and assaying* | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • All intercepts were verified by a third-party consultant<br>• No holes have been twinned<br>• All data captured and stored in both hard copy and electronic format. No assay data was adjusted<br>• All digital data is verified by the Competent Person.<br>• No adjustments were made to assay data. |
| *Location of data points* | • *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.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • All holes initially located using handheld GPS with an accuracy of 5m for X, Y.<br>• UTM coordinates, Zone 55L, GDA94 datum.<br>• There is no detailed topographic survey data available for the prospect, and all RL's were recorded using a handheld GPS, the topography of the area is flat |

| | | |
|---|---|---|
| *Data spacing and distribution* | • *Data spacing for reporting of Exploration Results.*<br>• *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.*<br>• *Whether sample compositing has been applied.* | • The two drill holes are exploration holes, and were targeted to test a large magnetic low feature which has a modelled depth to top of 300 to 500m below surface<br>• Drill spacing, and distribution is sufficient to allow valid interpretation of geological.<br>• There has been no sample compositing. |
| *Orientation of data in relation to geological structure* | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *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.* | • The orientation of the mineralisation is currently unknown due to the early stage of exploration, the sampling is therefore considered to be unbiased, the target is a large porphyry system and the mineralisation is not confined to large structures or specific horizons and is more likely to be disseminated<br>• These are the first two holes drilled into the targeted magnetic low, and the relationship between any mineralisation and the orientation of key structures is currently unknown |
| *Sample security* | • *The measures taken to ensure sample security.* | • Sample collection and transport for RDD019 was from the field was undertaken by contractors working for Metallica, the samples were put into crates and delivered to ALS in Townsville by the contractors. ALS in Townsville transhipped the samples to ALS in Brisbane due to a large backlog in Townsville. Samples from RDD020 were sent directly to Brisbane from Clermont due to less congestion at the Brisbane laboratory |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | • No audit of results has been undertaken, as the drilling is early exploration in nature the sample techniques and data compilation is considered appropriate by the Competent person |

For personal use only

For personal use only

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Mineral tenement and land tenure status* | • *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.*<br>• *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.* | • The Clermont Porphyry copper – gold project is contained within EPM 17968 in Central Queensland, The tenement is currently held by Chalcophile Pty Ltd a 100% subsidiary of Diatreme Resources Ltd (DRX)<br>• Metallica Minerals Ltd through its 100% held subsidiary, Touchstone Resources Pty Ltd is currently earning into the project, with the first earn in milestone being met, whereby MLM spends $300,000 to earn a 25% interest in the EPM.<br>• MLM are now moving towards 51% ownership of the project by expending an additional $700,000 by April 2023<br>• MLM are managing the project during the earn in phase of the JV<br>• The tenement is in good standing and there are no impediments to conduct exploration programs on the tenements. |
| *Exploration done by other parties* | • *Acknowledgment and appraisal of exploration by other parties.* | • All current exploration programs are managed by Metallica Minerals |
| *Geology* | • *Deposit type, geological setting, and style of mineralisation.* | • The Clermont project is located in the Anakie Inlier of east central Queensland and contains known gold and copper mineralisation and historical copper and gold mine workings.<br>• The style of mineralisation being targeted, is copper-gold-molybdenum porphyry mineralisation. |
| *Drill hole Information* | • *A summary of all information material to the understanding of the exploration results*<br>• *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* | • A tabulation of the material drill holes is included in the body of this report as Table 1. The magnetic data used is from a widespread aeromagnetic survey which was flown at 400m line spacings. The geophysical data was modelled by RAMA geophysics |

For personal use only

| | | |
|---|---|---|
| | *understanding of the report, the Competent Person should clearly explain why this is the case.* | |
| *Data aggregation methods* | • *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.*<br>• *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.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • To weighting or averaging of samples has been undertaken<br>• No top cut has been applied to any samples or intercepts reported<br>• No sample aggregation has been done<br>• There are no equivalency results reported |
| *Relationship between mineralisation widths and intercept lengths* | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *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').* | • At this stage there is no indication of the true width of the intercepts; mineralisation is predominantly confided to fracture surfaces, with the fractures in the hole occurring at various orientations. The fracture orientation does not appear to have a bearing on the mineralisation. |

For personal use only

| | | |
|---|---|---|
| *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.* | • A map of the drill collar locations is incorporated with the main body of the 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.* | • All exploration results are reported in a balanced manner. All results are supported by clear and extensive diagrams and descriptions. No assays or other relevant information for interpreting the results have been omitted. |
| *Other substantive exploration data* | • *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.* | • All exploration results detailed in attached report. |
| *Further work* | • *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive* | • Future work planned includes but is not limited to;<br>• A detailed ground magnetic survey, petrological analysis of the samples from RDD019 and RDD020, detailed analysis of the geochemical data when it comes to hand, and potentially drilling of at least two more holes at the prospect within the next 12 months |