

Further Broad Copper & Gold Results at Woods Shaft



7 November 2022

Highlights



Results for the final four drill holes have now been received:



Three holes drilled at Woods Shaft and one hole at Mt Chalmers for 435 metres;



Results include further broad high-grade intersections including:

- 25m @ 1.04% CuEq from 30m;
- o 19m @ 1.18% CuEq from 4m; and
- o 11m @ 1.37% Cu Eq from 79m.



Tracker 3 reconnaissance now complete with large gossans identified;



Mt Chalmers Resource Upgrade (Third Resource) expected imminently; and

Woods Shaft maiden Resource (Fourth Resource) expected in Q1-2023.

Overview

QMines Limited (ASX:QML) (QMines or Company) is pleased to provide the following update on exploration and resource drilling operations at its flagship Mt Chalmers Copper and Gold Project, located 17km north-east of Rockhampton, Queensland (Figure 1).

The Company completed an eleven-hole Reverse Circulation (**RC**) drilling program at the Woods Shaft Exploration Target¹ and four additional holes at Mt Chalmers for 1,455 metres drilled. Drilling was completed at the end of September 2022 and results have now been received for the four outstanding holes drilled at Woods Shaft and from one outstanding hole drilled at Mt Chalmers.

¹ QMines Prospectus, Annexure A, Independent Geologist Report, pages 93-104. Exploration Targets are reported in accordance with the JORC 2012 Code & Guidelines. Note: The Potential quantity and grade of the Exploration Target described in this announcement is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Overview (Continued)

Base and precious metal results from the Woods Shaft and Mt Chalmers RC drilling can be seen in Table 1 with Woods Shaft drill collar locations shown in Figures 2 and Mt Chalmers collar locations shown in Figure 3. An updated section AA' from Woods Shaft drilling can be seen in Figure 4.

The drilling results from the Woods Shaft prospect have delivered several broad intersections with exceptional copper equivalent grades up to 8.26% Copper Equivalent (CuEq) and 6.21% CuEq in hole QMWSRC001 and 5.26% CuEq in hole QMWSRC007. The latest results include two broad zones of 25m @ 1.04% CuEq and 11m @ 1.37% CuEq in hole QMWSRC011 which extend the mineralisation towards the north where it remains open.

Results from the last Woods Shaft hole to be drilled, step-out hole QMWSRC011 intersected two mineralised zones 25m @ 1.04% CuEq from 30m and 11m @ 1.37% CuEq from 79m (Figure 4). Mineralisation is open to the north of the recent drilling.

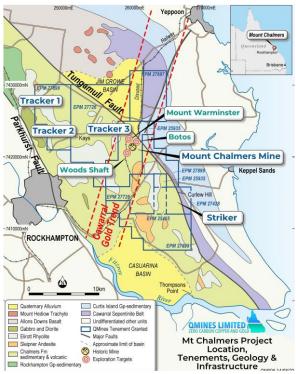


Figure 1: Location of Mt Chalmers Project, tenure, geology & infrastructure.

Management Comment

QMines Executive Chairman, Andrew Sparke, comments;

"We are extremely pleased with the recent results from Woods Shaft which demonstrate the quality of the Mt Chalmers project and its development potential.

The Company has already delivered two resources since listing in May 2022 and has a further two planned in the coming months, with the Mt Chalmers Resource upgrade expected imminently."

Background

The Woods Shaft prospect is situated 0.7km to the southwest of the Mt Chalmers main deposit. It has been defined by historic drilling to be over 250m in strike length and up to 40m wide. Mineralisation is from surface to a depth of 90m in places and contains gold and base metal mineralisation.

The geology of the deposit appears similar to the Mt Chalmers main lode and is dominated by a sulphide stringer zone. Historical resource estimates were compiled by historic explorers for this prospect but were not reported in accordance with JORC 2012.

RC drilling at Woods Shaft has been undertaken by QMines to validate historical drilling completed by previous explorers and to deliver the historical Exploration Target into a JORC 2012 compliant Maiden Resource.¹

¹ QMines Prospectus, Annexure A, Independent Geologist Report, pages 93-104. Exploration Targets are reported in accordance with the JORC 2012 Code & Guidelines. Note: The Potential quantity and grade of the Exploration Target described in this announcement is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.



Figure 2: Woods Shaft RC drillhole collar locations from September drilling 2022.

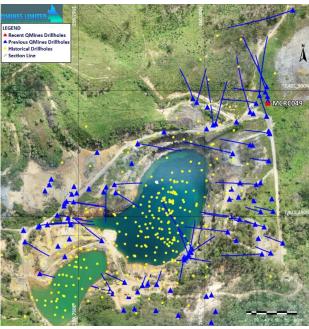


Figure 3: Mt Chalmers RC drill collar locations September drilling 2022.

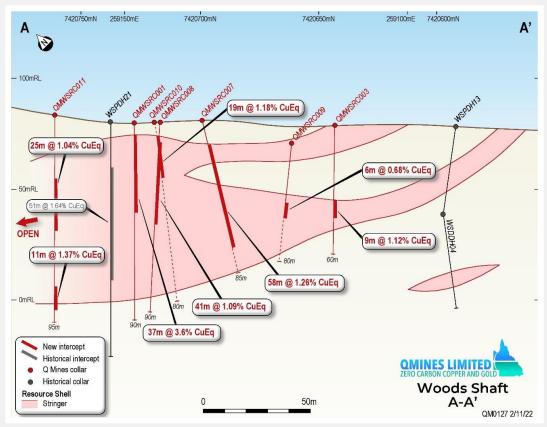


Figure 4: Section AA' Woods Shaft drilling, August-September 2022.

The Woods Shaft drill program has delivered significant broad and high-grade intersections from within areas where minimal drilling was undertaken by previous explorers. The recent drilling will enable the delivery of the maiden JORC 2012 Mineral Resource Estimate (MRE) for this part of the Mt Chalmers Copper project.

Details relating to the original Woods Shaft Exploration Target can be found in the Company's Prospectus, Independent Geologist Report, prepared by H&S Consultants Pty Ltd.¹

¹ QMines Prospectus, Annexure A, Independent Geologist Report, pages 93-104. Exploration Targets are reported in accordance with the JORC 2012 Code & Guidelines. Note: The Potential quantity and grade of the Exploration Target described in this announcement is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource. https://qmines.com.au/prospectus-2/

Tracker 3 Reconnaissance

The Tracker 3 soil anomaly² (Figure 1) was briefly visited and several large surface gossans were identified (Figure 5). Classic boxwork after massive sulphides were identified which may in part explain the associated Cu-Zn soil anomalies. Gossaous stringers have also been identified at high angles to and adjacent to these massive gossans and these may reflect T-shaped stringer zones. The largest gossan identified so far measures some 160m long by 20m wide.

A total of 16 first pass rock chip samples were collected from several gossans (Figure 6) and analysed by ALS Brisbane for gold and other 48 elements. Gold was analysed by 25g fire assay with AAS finish and the remaining 48 element scans were by 4 acid digest with ICP-MS/ES. Results revealed generally low base metal and gold concentrations as is typical of surface depletion in oxidized gossan caps. Better results included 0.53 g/t Ag in sample MCRK014 and 0.1% Cu in samples MCRK007 and MCRK008. Results for selected elements appear in Table 2.

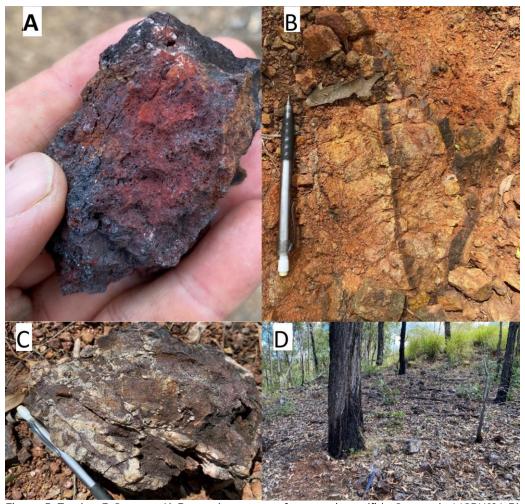


Figure 5: Tracker 3 Gossans A) Boxwork textures after massive sulfides?, sample MCRK014 B) Stringers C) Breccia D) Outcrop.

Despite these low assay results (surface depletion associated with these gossans is not uncommon), QMines considers the presence of gossans to be highly encouraging, and considering their overall size, geometry, and textures, together with the associated Cu-Zn soil anomalies over the prospective Berserker Beds point to a strong VHMS target. It should be noted that the areas visited represent only a small part of the Tracker 3 soil anomaly, and further reconnaissance is required.

Tracker 3 Reconnaissance (Continued)

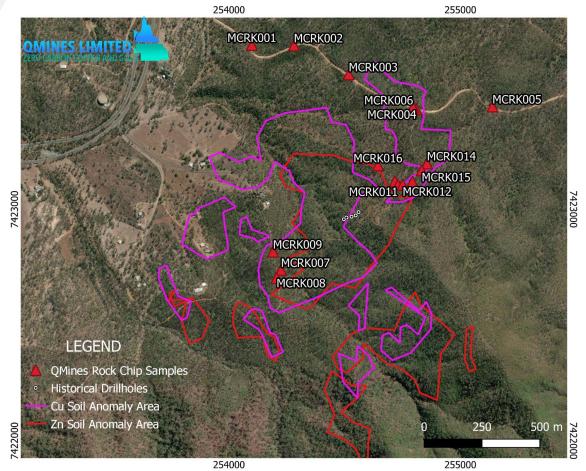


Figure 6: Tracker 3 reconnaissance rock chip sample locations.

What's Next?



Continued drilling operations at Mt Chalmers for the planned 30,000 metre RC and Diamond drilling programs;



Regional airborne electromagnetic (EM) survey over the Mt Chalmers project to improve drill targeting for future drilling campaigns;



Further surface exploration and mapping at Tracker 3, one of four large copper and zinc soil anomalies located in the region;



Deliver a third Mineral Resource Estimate for Mt Chalmers in Q4-2022; and



Deliver a fourth Mineral Resource Estimate for Woods Shaft in Q1-2023.

Hole ID	MGA East*	MGA North*	mRL	Dip	MGA Azi*	Max Depth	From (m)	To (m)	Int (m)	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	CuEq (%)*
QMWSRC009	259140	7420653	81	-60	300	80	42	48	6	0.32	2.3	0.15	0.12	0.54	0.68
QMWSRC010	259136	7420722	79	-80	240	80	4	23	19	0.78	4.1	0.27	0.18	0.48	1.18
QMWSRC011	259165	7420760	84	-90	360	95	30	55	25	0.91	2.0	0.09	0.16	0.35	1.04
and							79	90	11	0.97	3.8	0.50		0.16	1.37
MCRC049	260125	7421475	123.5	-90	360	180	175	179	4	0.07	2.0	0.99			1.03

Table 1: Woods Shaft and Mt Chalmers significant intersections November 2022.

Note: MGA 94_56

- In reported exploration results, length weighted averages are used for any non-uniform intersection sample lengths. Length weighted average is (sum product of interval x corresponding interval assay grade), divided by sum of interval lengths and rounded to two decimal points.
- No top cuts have been considered in reporting of grade results, nor was it deemed necessary for the reporting of significant intersections.
- The value of some of the reported CuEq drill intercepts may be driven by the gold content over the copper content. The results are presented here in CuEq % rather than AuEq g/t for the purposes of consistency with previous releases. Woods Shaft is a satellite deposit to the Mt Chalmers deposit which is copper dominant.

Note: Downhole intersections contained in this announcement in the vertical drill holes reported, represent true widths of the assayed mineralised intersections contained in Table 1.

Note: Downhole intersections contained in the announcement in drill holes at ~60-degree dip, represent approximately 87% true width of the assayed mineralised intersections contained in Table 1.

Forward-Looking Statements

This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning QMines Limited planned exploration program and other statements that are not historical facts. When used in this document, the words such as "could," "plan," "expect," "intend," "may", "potential," "should," and similar expressions are forward-looking statements. Although QMines believes that its expectations reflected in these forward- looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that further exploration will result in the estimation of a further or larger Mineral Resource.

Competent Person Statement

The information in this document that relates to mineral exploration and exploration targets is based on work compiled under the supervision of Mr Glenn Whalan, a member of the Australian Institute of Geoscientists (AIG). Mr Whalan is QMines' principal geologist and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking 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' (JORC 2012 Mineral Code). Mr Whalan consents to the inclusion in this document of the exploration information in the form and context in which it appears.

Rock Chip Sample Results

Sample ID	MGA East*	MGA North*	Description	Au (ppm)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)
			Hemat - sacch Si altered volc breccia (altered					
			cement). 5% cubic pseudos after py, gossanous					
MCRK001	254099		boxwork voids Sample is 50m grab along road	<0.01	<0.01	9.2	5.6	18
			a.a. 5% ds hem pseudos after py in felsic / Si					
MCRK002	254281	7423708	tuff (breccia?) in roadcut	<0.01	<0.01	13.2	2.9	16
			a.a. 5% ds hem pseudos after py in felsic / Si					
MCRK003	254518	7423583	tuff (breccia?). Small roadcut	0.01	<0.01	17.6	86.9	118
			Gn chlor fmgr tuff & siltst, minor hemat-					
MCRK004	254810	7423431	jarosite-Si rhyol tuff a.a., Sample is 100m grab	<0.01	0.09	106	0.6	57
			White sacch felsic tuff, minor limon, hemat					
MCRK005	255139	7423444	coatings, 1% ds goethite after py.	<0.01	<0.01	4.2	<0.5	2
			Felsic +/- chlor fmgr tuff, hemat ds and					
MCRK006	254796	7423440	stockwork	<0.01	0.07	46.4	<0.5	49
			Rd bk (hem goeth) gossan vn?, subvert str 190-					
MCRK007	254225	7422738	010. Within QFP tuff	<0.01	0.05	1120	14.9	28
MCRK008	254206	7422703	Rd bk FeSi gossan float, 5m x 5m grab	<0.01	0.03	1095	18.5	54
MCRK009	254191	7422817	Rd bk FeSi boxwork gossan sparse float grab	<0.01	0.01	954	9.7	9
			Rd bk FeSi gossan float, 2m x 3m grab	<0.01	0.03	52.6	3.1	43
			Abund rd bk FeSi gossan float, gossan clasts in					
MCRK011	254730		sil cement, metallic hem to friable boxwk	<0.01	0.04	35	7.3	42
			Ridgeline of FeSi gossan float, gossan clasts in					
			sil cement, metallic hem to friable boxwk.					
			Strikes 230-050 deg. 25m chip traverse across					
MCRK012	254751		· ·	<0.01	0.15	68.4	12.9	39
			Same gossan as MKRC012. 15m chip traverse					
MCRK013	254793		•	<0.01	0.06	33.3	7.6	55
			Ferrug tuff blow. Olive mg friable tuff variably		0.00	00.0		
			qtz Fe veined and some gossan zones					
MCRK014	254856		•	<0.01	0.53	239	1.4	99
			Rd friable boxwk gossan grab, along strike of					
MCRK015	254833		main gossan	<0.01	0.04	241	67.8	222
			Fe replacement of tuff, wk brecciated, some				07.0	
MCDKO16	25/6//		Qz Fe Tourmaline vns.	<0.01	0.2	90.3	54.4	120

Table 2: Tracker 3 rock chip sample results - November 2022.

About QMines

QMines Limited (**ASX:QML**) is a Queensland based copper and gold exploration and development company. The Company owns 100% of four advanced projects covering a total area of 1,096km². The Company's flagship project, Mt Chalmers, is located 17km North East of Rockhampton.

Mt Chalmers is a high-grade historic mine that produced 1.2Mt @ 2.0% Cu, 3.6g/t Au and 19g/t Ag between 1898-1982. Mt Chalmers has a Measured, Indicated and Inferred Resource (JORC 2012) of 5.8Mt @ 1.7% CuEg for 101,000t CuEg¹.

QMines' objective is to grow its Resource base, consolidate assets in the region and assess commercialisation options. The Company has commenced an aggressive exploration program (+30,000m) providing shareholders with significant leverage to a growing Resource and exploration success.

Projects & Ownership

Mt Chalmers (100%) Silverwood (100%) Warroo (100%) Herries Range (100%)

QMines Limited

ACN 643 212 104

Directors & Management

ANDREW SPARKE

Executive Chairman

ELISSA HANSEN (Independent)

Non-Executive Director & Company Secretary

PETER CARISTO (Independent)

Non-Executive Director (Technical)

JAMES ANDERSON

General Manager Operations

GLENN WHALAN

Exploration Geologist (Competent Person – Exploration)

Shares on Issue

137,360,102

Unlisted Options

7,950,000 (\$0.375 strike, 3 year term)

Compliance Statement

With reference to previously reported Exploration results and mineral resources, the Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves that all material assumptions and technical parametres underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

This announcement has been approved and authorised by the Board of QMines Limited.

QMines Limited (ASX:QML)

Contact

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JORC Code, 2012 Edition – Table 1 Mt Chalmers Mineral Resources

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 (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information. 	 drilling 4 reverse circulation percussion (RC) holes for 435 metres. This drilling included three holes at the Exploration Target Woods Shaft which is part of the Mt Chalmers Project. RC samples were collected at 1m intervals from an on-rig cyclone cone splitter with 2-3kg, or approximately 10% of the split sample saved in calico bags except for duplicate samples with each being 1-2kg, or approximately 5% of the total sample. During drilling, to avoid contamination, four individual calicos were placed in polyweave bags and sealed for delivery to the assay lab. Samples were sent by road to ALS Laboratories in Brisbane, crushed, pulverised and riffle split delivering 200g pulp for base metal and precious metal assay. Handheld portable XRF (pXRF) measurements of base metals i.e. Cu, Pb and Zn were taken of unsieved RC drilling material at appropriate horizons to check for fine grained, disseminated, base metal, mineralisation.

Criteria	JORC Code explanation	Commentary
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	RC drilling was completed by the company's KWLRC350 rig with booster and auxiliary compressor and using 5 m, 102 mm diameter RC rods and a 143 mm percussion face sampling hammer.
Drill sample recovery	 Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. 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. 	trays and logged. • The majority (>95%) of RC samples were dry. Calico sample bags used in this program are of a sufficiently fine weave as to retain almost all of the sample fine fraction even when saturated.
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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. The total length and percentage of the relevant intersections logged. 	
Sub-sampling techniques	If core, whether cut or sawn and whether quarter, half or all core taken.	RC samples were collected from a cyclone with a cone splitter delivering 10% representative sampling per linear



Criteria	JORC Code explanation	Commentary
and sample preparation	 If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all subsampling stages to maximise representivity of samples. 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. Whether sample sizes are appropriate to the grain size of the material being sampled. 	metre drilled. Duplicate samples were collected every 25 m and 75 m drilled in the drilling sequence with duplicate samples being a 50-50% split sample from the same cone splitter. • ALS Laboratories dry the samples prior to crushing and pulverising. All sample material from each RC sample submission is crushed and pulverized to a nominal 90% passing 75 µm giving a 200 g representative sample from which a sub-sample of 30 g is taken for base metal analysis and a 50 g charge for gold. • Tracker 3 rock chip samples were collected from chip traverses or as grab samples. In each case representative sample material was collected with no high grading. Due to the small number of samples (16) no QAQC samples were inserted in the laboratory batch.
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. 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. 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. 	 All samples for assay were submitted to ALS Laboratories in Brisbane. Ag, As, Ba, Cu, Pb, S and Zn were determined by ALS (ME-ICP61) using ICP-AES on a four-acid digest. Au was determined using ALS method AA25 (fire assay with AAS finish on a 30 g pulp). Sample preparation and base metal analysis was undertaken in Brisbane and Fire Assay undertaken by ALS in Townsville. The Company submits batches to ALS from drill programs as they come to hand. Reporting on QAQC results for all drillhole samples submitted between February 2021 and November 2021 has been undertaken by Lisa Orr of Orr and Associates, who found that QMines' QAQC is consistent with current industry practice for a drill program. Duplicate samples of cone splits are inserted at 50 m intervals and are utilised to monitor laboratory reproducibility. With coefficients of variation under 31% there is no significant bias in assayed results from duplicates assayed.



Criteria	JORC Code explanation	Commentary
		 Certified Reference Materials (CRM) are supplied by OREAS and GEOSTATS Pty Ltd and are inserted at 20 m intervals with suitable CRMs being used to monitor laboratory accuracy. With 252 out of 265 CRMs reporting within 3 standard deviations of certified values a success rate of 95.1% was achieved. Blank samples of barren gravel are inserted at 33 m intervals. Internal laboratory QAQC reports are delivered by ALS with certification of assay method used and certified assay results. These results are delivered to the principal geologist, database manager and the Company A Thermo Scientific Niton XL3t handheld portable pXRF unit was used as a first pass check for fine grained disseminated base metal mineralisation in RC drilling material. Reading times were 20 seconds. The device has automatic calibration after switch on, and 4 CRM standards were also used to test for precision. Tracker 3 rock chip samples were dispatched to ALS Brisbane for 48 element scans (ME-MS61) using ICP-MS on a four-acid digest. Au was determined using ALS method AA25 (fire assay with AAS finish on a 30 g pulp). Sample preparation and base metal analysis was undertaken in Brisbane and Fire Assay undertaken by ALS in Townsville.
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	data has been undertaken by the company database manager, Lisa Orr of Orr and Associates. The drill hole database is stored as an Access database and housed
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. Specification of the grid system used. 	mine surveyors of all historical drill collar surveys and local



Criteria	JORC Code explanation	Commentary
	Quality and adequacy of topographic control.	 Zone 56. Some drill hole collars positions listed in this release were located by handheld GPS with accuracy of +/-3 m and these will be later picked up by and validated by the site surveyors. The Company has flown a Digital Terrain Model (DTM) using drone survey technology. The quality and accuracy of the DTM has been validated and processed independently of the data capture by MINECOP Surveying. Tracker 3 rock chip sample locations were determined by handheld GPS (+/- 3m accuracy).
Data spacing and distribution	 Data spacing for reporting of Exploration Results. 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. Whether sample compositing has been applied. 	and make new discoveriesLine and drill hole spacing is not applicable
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. 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. 	 vertical to give an optimal intersection angle with mineralisation. Angled holes from the current program have been oriented to reach otherwise inaccessible targets. Downhole intersections contained in this announcement



Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	 Samples were collected directly from the cone splitter into individual numbered calico sample bags, then 4 calico bags are inserted into polyweave bags, sealed and tied. Polyweave bags were numbered in sequence and placed in large bulka bags. The bulka bags were then delivered by Company staff to a commercial freight depot in Rockhampton and shipped directly to the ALS Laboratory in Brisbane overnight.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	 Sampling techniques were established by the Company geologist. Results were reviewed and validated by the Company database geology manager. Exploration results are not audited independently.

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. 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. 	Gold Pty Ltd and Rocky Copper Pty Ltd, through which the Company has a 100% beneficial interest in the Mt Chalmers Project. The Mt Chalmers Project is held in EPM 25935 and EPM 27428 located 25 kilometres east of the City of Rockhampton in coastal central Queensland, Australia. The project covers an area of historic gold and copper mining, which comprises an area of 198 km2.



Criteria	JORC Code explanation	Commentary
Exploration	Acknowledgment and appraisal of exploration by	· · · · · · · · · · · · · · · · · · ·
done by other parties	other parties.	 highly competent exploration companies that used appropriate techniques for the time. Written logs and hardcopy sections of their work are considered good. Federation was a small explorer that was entirely focused on defining the Mt Chalmers resource. They used a very competent geologist, Alex Taube, for the drilling program. Alex Taube is widely respected for his knowledge about VHMS deposits in North Queensland.
Geology	Deposit type, geological setting and style of mineralisation.	 Both Mt Chalmers and Tracker 3 are situated in the early Permian Berserker Beds, which occur in the fault-bounded Berserker Graben, a structure 120 km long and up to 15 km wide. The graben is juxtaposed along its eastern margin with the Tungamull Fault and in the west, with the Parkhurst Fault. The Berserker Beds consist mainly of acid to intermediate volcanics, tuffaceous sandstone and mudstone (Kirkegaard



Criteria	JORC Code explanation	Commentary
		and Murray 1970). The strata are generally flat lying, but locally folded. Most common are rhyolitic and andesitic lavas, ignimbrites or ash flow tuffs with numerous breccia zones. Rocks of the Berserker Beds are weakly metamorphosed and, for the most part, have not been subjected to major tectonic disturbance, except for normal faults that are interpreted to have developed during and after basin formation. • Late Permian to early Triassic gabbroic and dioritic intrusions occur parallel to the Parkhurst Fault. Smaller dolerite sills and dykes are common throughout the region and the Berserker Beds. • Researchers have shown that the Mt Chalmers mineralization is a well-preserved, volcanic-hosted massive-sulphide ("VHMS – Kuroko style") mineralized system containing zinc, copper, lead, gold and silver. Mineral deposits of this type are syngenetic and formed contemporaneously on, or in close proximity to, the sea floor during the deposition of the host-rock units deposited from hydrothermal fumaroles, direct chemical sediments or replacements (massive sulphides), together with disseminated and stringer zones within these host rocks. • The oldest rocks in the area, the 'footwall sequence' of pyritic tuffs, are seen only in the Mt Chalmers open pit and in drill holes away from the mine. The rock is usually a light coloured eutaxitic tuff with coarse fragments, mainly of chert, porphyritic volcanics and chloritic fiamme (fiamme are aligned, "flame-like" lenses found in welded ignimbrite) and other pyroclastic rocks and indicate subaerial deposition. Eutaxitic texture, the layered or banded texture in this unit, is commonly caused by the compaction and flattening of glass shards and pumice fragments around undeformed crystals). The alteration (silicification, sericitization and pyritization) of this basal unit becomes more intense close to mineralization.



Criteria	JORC Code explanation	Commentary
		 The 'mineralized sequence' overlying the 'footwall sequence' consists mainly of tuffs, siltstones and shales and contains stratiform massive sulphide mineralization and associated exhalites: thin barite beds, chert and occasionally jasper, hematitic shale and thin layers of bedded disseminated sulphides. Dolomite has been recorded in the mineralized sequence close to massive sulphides. This sequence represents a hiatus in volcanic activity and a period of water-lain deposition. The 'hanging wall sequence' is a complex bedded series of unaltered crystal and lithic rhyolitic tuffs and sediments with breccia zones and occasional chert and jasper. A mainly conformable body of andesite, ranging from 10 m to 250 m thick, intrudes the sequence; it usually occurs just above the 'mineralized sequence'. A quartz-feldspar porphyry body intrudes the volcanic sequence and in places intrudes the andesite. The rocks in the mine area are gently dipping, about 20° to the north in the Main Lode mine area and similarly dipping south at the West Lode: the predominant structure is a broad anticline trending north-north-east. Slaty cleavage is strongly developed in some of the rocks, notably in sediments and along fold axes. Such cleavage is prominent in areas close to the mineralization. Doming of the rocks close to the mineralization has been interpreted by detailed work in the open cut to be largely due to localized horst block-faulting (Taube 1990), but the doming might also be a primary feature in part. Steep dips are localized and usually the result of block faulting. The Main Lode outcrop and West Lode outcrop are variably silicified rocks which, by one interpretation, may have been pushed up through overlying rocks in the manner of a Mont Pelée spine (Taube 1990), but in any case, form a dome of rhyolite / high level intrusions of the Ellrott Rhyolite. The surrounding mineralized horizon is draped upon the flanks



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		 of domal structures and dissected by at least three major faults. At Woods Shaft sulfide stringer mineralization is the main mineralization style with massive sulfides not detected to date. Hosted by volcanics of the Berserker Beds, the geology is similar to that of Mt Chalmers but with greater siltstone thicknesses suggesting more distal deposition under lower energy conditions. The sulfide stringer zone at Woods Shaft is largely restricted to siliceous pyroclastics underlying this siltstone. As such, a similar temporal and spatial mineralizing event to that of Mt Chalmers is recognized. The geometry of the Woods Shaft mineralization is so far less clear than at Mt Chalmers due to less drillhole data. Surface mapping and drill data suggest a mineralized dome structure which has been slightly modified by folding to produce a north-south trending anticline (dome) with a mineralized core. It is envisaged that this dome has formed similarly to the domal uplift at the core of the Mt Chalmers mineral system.
Drill hole Information	 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. 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 	



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	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. 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. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	 In reported exploration results, length weighted averages are used for any non-uniform intersection sample lengths. Length weighted average is (sum product of interval x corresponding interval assay grade), divided by sum of interval lengths and rounded to two decimal points. No top cuts have been considered in reporting of grade results, nor was it deemed necessary for the reporting of significant intersections. All Copper Equivalent (CuEq) figures included in this announcement are calculated based on the following formula: CuEq(%) = (Cu grade x Cu recovery) + ((Pb grade x Pb recovery x Pb price)/Cu Price) + (Zn grade x Zn price x Zn recovery)/Cu price) + ((Au grade x Au price x Au recovery)/Cu price) + ((Ag grade x Ag price x Ag recovery)/Cu price). All grades are converted to % and prices converted to \$/T prior to calculating CuEq. Commodity price used: Au price of US\$1,900/oz, Ag price of US\$25/oz, Cu price of US\$6,655/t, Pb price of US\$2,450/t, and Zn price of US\$3,450/t. The following metallurgical recoveries have been applied: 87% Au, 70.5% Ag, 97.0% Cu, 85.0% Pb and 77.0% Zn. Mt Chalmers VHMS is a polymetallic base and precious metal mineral system, cut off grades used by the Company in calculating reported mineralized intersections are 0.2% Cu, 0.1 ppm Au and 1 ppm Ag, 0.2% Zn and 0.2% Pb. Metal Price Assumptions and Recovery data used in calculating the Copper Equivalent has been reported to the market in December 2021 and is contained in the Mt Chalmers Resource Upgrade Report and can be seen on the Company Website; https://wcsecure.weblink.com.au/pdf/QML/02460632.pdf
Relationship between mineralisatio n widths and	 These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to 	 At Mt Chalmers, the drilling has generally intersected the mineralization at high angles. The majority of holes drilled at Mt Chalmers Copper Project are vertical in nature.



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intercept lengths	 the drill hole angle is known, its nature should be reported. 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'). 	Holes drilled on other dips are reported in the Significant Intercepts table. True widths in e.g. 60-degree dipping holes are not reported. True width at 60 degrees is approximately 87% of the down hole intersection.
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.	Maps, sections, mineralized intersections, plans and drill collar locations are included in the body of the relevant announcement.
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.	Tables 1 and 2 in the body of the announcement
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.	 CEC and Geopeko completed some brownfields exploration to assist with defining the resource including Induced Polarization surveys and Sirotem (electromagnetic method) surveys. Federation concentrated on defining the resource estimates. INAL completed greenfields exploration in the 1960's and 1970's. Exploration included geological mapping, soil and rock chip sampling, costeaning and rotary percussion drilling. In 2021 QMines digitized the results of soil geochemical grids obtained from the Geological Survey of Queensland consisting of 19,000 samples collected by various workers for its use in ongoing target generation. Mitre Geophysics Pty Ltd completed a downhole EM survey in June 2022, results of which are described in the body of the announcement including a link to the relevant report. No other exploration data is considered meaningful at this



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Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or	upgrade and potentially expand the current resour
	 large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	 estimates. Additional Downhole EM survey work is planned. An airborne VTEM survey is being considered. Follow up surface exploration at Tracker 3 is planned.

