Date: 14 July 2021

ASX Code: MAN

Capital Structure
Ordinary Shares: 443,924,843
Unlisted Options: 114,575,077 (3c exercise)
Current Share Price: 14c
Market Capitalisation: $62M
Cash: $4.7M (Mar 31 2021)
Debt: Nil

Directors

Patrick Burke
Non-Executive Chairman

James Allchurch
Managing Director

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Sulphides Intersected at Newleyine

Highlights

- **Two diamond holes completed – MNEWDD002 has recorded zones of disseminated and semi-massive sulphides in mafic-ultramafic rocks**
- **Down-hole electromagnetic (DHEM) survey at MNEWDD001 has identified a very strong, confined, late-time off-hole conductor plate with ~7,000 Siemens conductance - drilling of this new conductor currently underway**

Mandrake Resources Limited (ASX: MAN) (**Mandrake** or **the Company**) advises that two diamond drill holes (MNEWDD001 and MNEWDD002) have been completed at the Newleyine PGE-nickel-copper prospect for a total of 535m.

The drilling programme is testing three discrete, late-time electromagnetic (EM) bedrock anomalies that geophysical interpretation suggests could be the response of massive sulphides consistent with Julimar-style PGE-Ni-Cu mineralisation.

Figure 1 - Semi-massive sulphides in ultramafic – pyrrhotite and minor chalcopyrite at 141.3m in MNEWDD002

Mandrake Resources Managing Director, James Allchurch, commented:

"Newleyine is an underexplored prospect with very little work undertaken since the 1970s when three speculative BQ holes were drilled from the same pad unaided by geophysics.

The appearance of ultramafic rocks containing distinct sulphides, including chalcopyrite, in our second hole is highly encouraging and demonstrates the potential of the Newleyine intrusive. In addition, the compelling off-hole conductor identified by down-hole EM in the first hole is an exciting development, which we are now immediately drill testing with results to be known shortly.

Mandrake's understanding of the Newleyine intrusive system is building rapidly with every metre drilled and each DHEM survey conducted and I look forward to providing further results".

MNEWDD002

In highly encouraging signs for the Newleyine prospect, MNEWDD002 has recorded several zones of disseminated and semi-massive sulphides in mafic-ultramafic rocks.

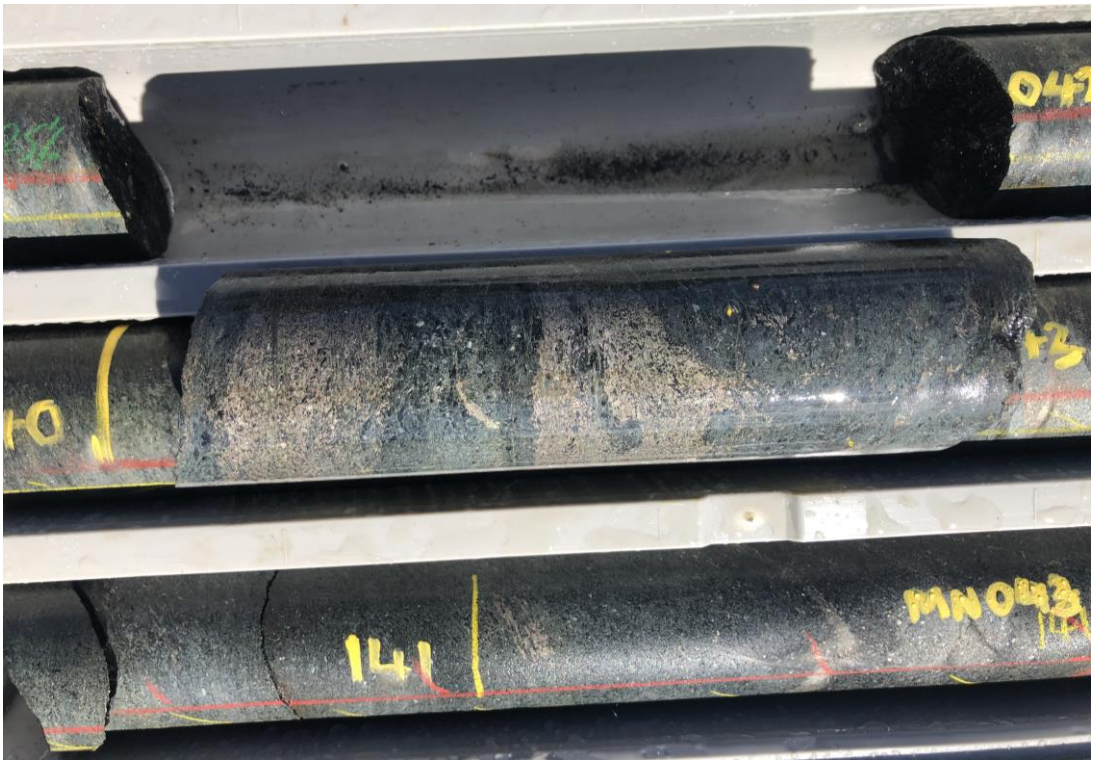

Figure 2 - Sulphide rich zone including bands of pyrrhotite with minor chalcopyrite - MNEWDD002 139.2m (60% sulphide content in bands)

MNEWDD002 included a broad serpentinite zone with consistent disseminated sulphides (primarily pyrite) up to 2% by volume from 43m to 119m followed by another serpentine intersection from 121 – 130.5m containing 1-3% sulphides.

At 130.5m a 4.5m zone comprising amphibolite with 5-10% disseminated sulphide (primarily pyrrhotite) was followed by a further 2.9m wide zone from 138.4m containing 15% sulphides by volume (including minor chalcopyrite) as well as several semi-massive sulphide bands (60% sulphides) up to 10cm in thickness.

A banded magnetite iron formation, containing bands of near massive sulphide was intersected immediately below the sulphide ultramafic unit at 143.6m.

MNEWDD001

MNEWDD001, targeting the eastern-most conductor plate B, encountered almost exclusively ultramafic rock (serpentinite) with regular zones of disseminated and vein-filled sulphides (primarily pyrite and pyrrhotite) up to 4% by volume sulphides.

The down-hole electromagnetic (DHEM) survey at MNEWDD001 identified a very strong, late-time off-hole conductor plate with ~7,000 Siemens conductance. The conductor is strongly confined and measures approximately of 60 x 80m.

Drilling is now underway targeting the new off-hole conductor.

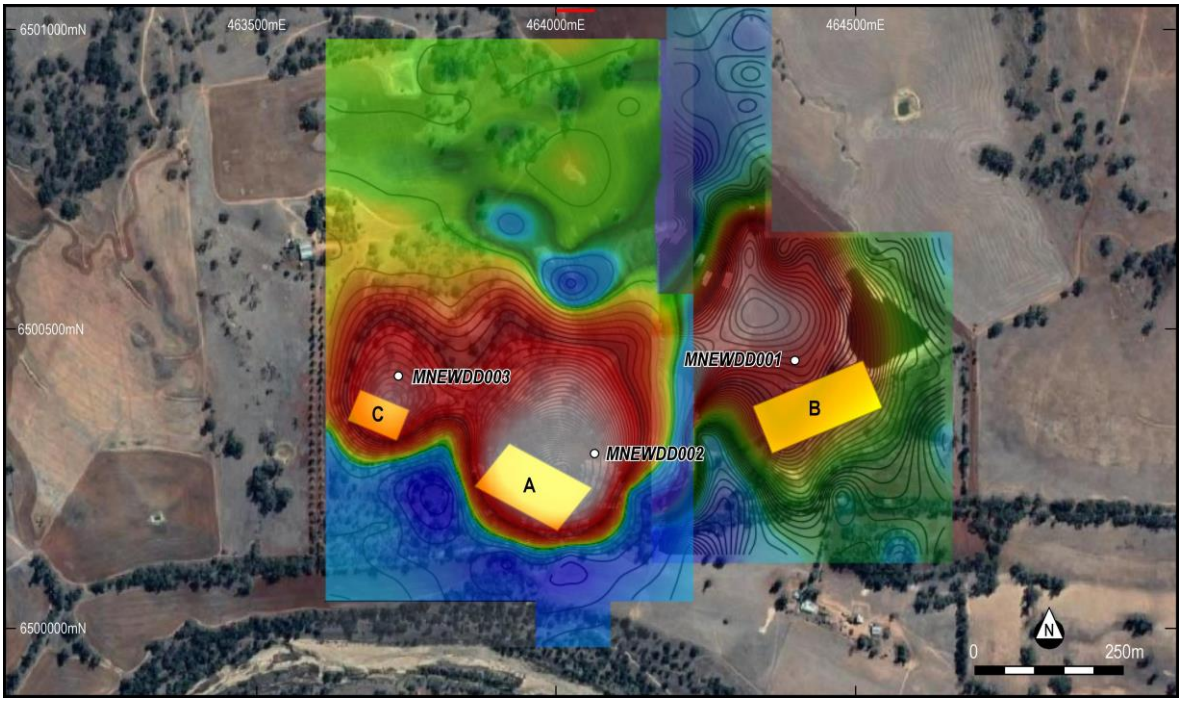

Figure 3 – Newleyine prospect showing FLEM EM conductors (A, B and C) and drill holes

Next Steps

The drilling programme has been expanded with an additional hole targeting the new off-hole conductor at MNEWDD001 now underway ahead of moving to MNEWDD003 to drill EM conductor plate C.

Detailed logging has been completed for MNEWDD001 and MNEWDD002 and the Company is currently in the process of preparing samples for assay.

This announcement has been authorized by the board of directors of Mandrake.

About Mandrake Resources

Mandrake is a junior exploration company established with the purpose of exploring and developing gold, nickel, copper and PGE opportunities. The Company controls 100% of a 140km^2 exploration licence prospective for PGE-Ni-Cu in the exciting Jimperding Metamorphic Belt, 70km NE of Perth.

Mandrake also owns a mineral exploration project located in the prolific Pine Creek Orogen of the Northern Territory prospective for gold, silver and base metals.

For further information visit www.mandrakeresources.com.au

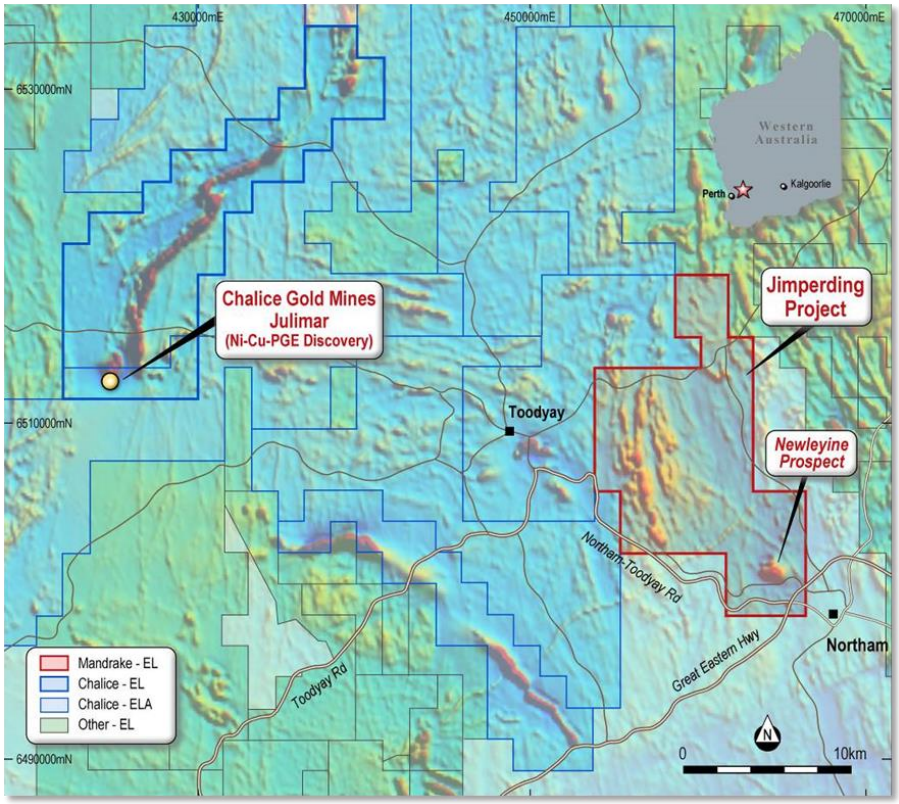

Figure 4 - Regional aeromagnetics – Jimperding Project

Competent Persons Statement

The technical information in this announcement complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) and has been compiled and assessed under the supervision of Mr James Allchurch, Managing Director of Mandrake Resources. Mr Allchurch is a Member of the Australian Institute of Geoscientists. He 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 JORC Code. Mr Allchurch consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Table 1: Drill Hole Details and Observations

Hole ID	Easting*	Northing*	RL	Dip	Azi	Depth (m)	Interval (m)	Description
MNEWDD001	**464397**	**6500470**	**146**	**65**	**160**	**320.2**	0-2.6	Colluvial ferruginous soil
							2.6-3.5	Alluvial clays and gravels
							3.5-49.75	Weathered granitic-gneiss
							49.75-91.94	Serpentinite with occasional minor granite dykes. 54.3-54.4m – 2% pyrite py/po in veins and disseminated. 54.9-55m - 2% py in vein
							91.94-96.4	Granite
							96.4-121.5	Serpentinite with occasional minor granite dykes
							121.5-125.1	Pegmatitic granite dyke
							125.1-141.19	Serpentinite to dunite with occasional granite-pegmatite dykes.125.1-127.3 - 0.5% py/po disseminated; 127.4-127.8 – 0.5% py/po stringers; 130.42-130.82 – 4% po/py disseminated (almost matrix sulphides); 132.5-133.75 – 1% po/py disseminated; 134.37-134.52 – 0.5% po disseminated; 134.7-135.4 – 0.5% po disseminated; 135.73-136.94 - 0.3% po disseminated; 136.94-138.25 - 0.5% po disseminated
							141.19-145.4	Pegmatitic granite dyke
							145.4-148	Serpentinite
							148-155.47	Variable granite to pegmatite, some amphibolite
							155.47-177.25	Serpentinite with frequent granite-pegmatite dykes
							177.25-183.83	Serpentinite with frequent granite-pegmatite dykes. 178.4-179.51 – 2% py in veinlets
							183.83-206.4	Serpentinite with frequent pegmatite-granite dykes
							206.4-212.82	Serpentinite

							212.82-219.08	Amphibolite with some lamprophyre dykes
							219.08-254.94	Serpentinite with minor granite/pegmatite dykes. 219.08-219.25 – 1.5% py in veinlets interlinking. 241.43-241.73 – 1% py disseminated
							254.94-255.36	Lamprophyre dyke
							255.36-274.66	Serpentinite with minor granite-pegmatite dykes
							274.66-283.74	Amphibolite with granite-pegmatite dykes
							283.74-296.28	Serpentinite, minor granite-pegmatite dykes
							296.28-301.4	Pegmatite dyke with minor metased
							301.4-305.55	Serpentinite
							305.55-314.6	Magnetite-quartz gneiss iron formation
							314.6-315.4	Granite/granitic gneiss
							315.4-320.2	Massive serpentinite, faulted contact with above
MNEWDD002	**464064**	**6500292**	**165**	**58**	**240**	**214.75**	0-4.7	Lateritic gravels and ferruginous mottled zone
							4.7-21	Saprolite after serpentinite
							21-43	Serpentinite, variable weathering
							43-119	Serpentinite 0.2-2% disseminated pyrite (95-108m 2% sulphide)
							119-121	Granite dyke
							121-130.6	Serpentinite 1-3% disseminated pyrite
							130.5-135	Foliated mafic-ultramafic amphibolite 5-10% disseminated pyrrhotite
							135-138.5m	Granite dyke
							138.4-141.3	Mafic-ultramafic foliated amphibolite with bands of matrix fill sulphides (15% sulphide over whole interval) up to 10cm wide bands up to 60% pyrrhotite, chalcopyrite

141.3-143.6	Foliated amphibolite-sediment, 3% disseminated pyrrhotite
143.6-147.3	Chert-magnetite iron formation, 10-15% pyrrhotite in bands of near massive sulphide up to 5cm wide.
147.3-158.4	Granite dyke
158.4-158.8	Contorted magnetite iron formation, 10-15% py-po. Enclave in dyke
158.8-161.7	Granite dyke
161.7-183	Magnetite iron formation, well bedded, folded, 20-30% magnetite. Fold axes sub-horizontal, ENE trending. Bedding variable, commonly shallow E or ESE dipping.
183-188	Granite and granitic gneiss
188-191	Amphibolite gneiss, intruded by minor late dolerite dyke
191-214.75	Granitic gneiss, minor dolerite dyke at 199m.

* Coordinates are in GDA94, MGA Z52
Py – pyrite
Po - pyrrhotite

JORC Code, 2012 Edition – Table 1 report template

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 (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.* • *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 (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.*	• Reporting on observations in diamond drill core that at the date of reporting is still to be sampled. • Downhole Electromagnetic (DHEM) surveys were designed and managed by Southern Geoscience Consultants (SGC). DHEM data were acquired by SGC Niche Acquisition with the following survey parameters: • Transmitter loops (x3): 200m x 200-300m • Current: 50-60A • 1 Hz base frequency • Transmitter: DRTX • Receiver: SMARTem24 • Probe: DigiAtlantis 3-component fluxgate • Min. 2 repeatable readings / 32-64 stack
Drilling techniques	• *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).*	• Diamond core drilling from surface • Un-oriented standard HQ core from surface to 50-60m followed by oriented NQ2 core to end of hole. • Core is orientated by Reflex electronic orientation tool. • Holes were cased with 40mm PVC for DHEM surveying
Drill sample	• *Method of recording and assessing core and chip sample recoveries*	• Recoveries are physically measured by tape measure for each

Criteria	JORC Code explanation	Commentary
recovery	*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.*	core run. Core is pieced together for measurement and orientation. • Recoveries averaged over 93%. Most core loss is in the first 60m, with almost 100% recovery in competent un-weathered rock. • During drilling various additives are used to condition the hole to maximize core recoveries. • There is no significant core loss observed in any potentially mineralized zones logged.
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.*	• Each hole was geologically and geotechnically logged over its entire drilled length. Holes were logged for lithology, mineralogy, structure and weathering. • Logging is both qualitative and quantitative, and captured downhole depth, colour, lithology, mineralogy, mineralization, texture and structure. • All core was photographed in core trays after mark-up and orientation.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *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 sub-sampling 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*	• Core is marked up for half core sampling, but at time of reporting core cutting had not commenced.

Criteria	JORC Code explanation	Commentary
	being sampled.	
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• At time of reporting sampling had not commenced.
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.*	• Core was logged by an independent geological contractor. Mandrake management visually verified the main mineralized zones reported. • Geological data was captured in the field in spreadsheets on a notebook computer.
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.* • *Quality and adequacy of topographic control.*	• Drill collars were located using hand held GPS with accuracy of +-3m. Elevations are estimated with a +-10m accuracy from a DTM generated from airborne survey data. This is considered appropriate for exploration drill-holes. • The grid system used is MGA GDA94 Zone 50 • Diamond holes were downhole surveyed at 5m intervals using a north-seeking Reflex Sprint IQ Gyroscope, with a stated accuracy of +-1 ^{o} in azimuth and +-3^{o} in dip.
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*	• Drillhole spacing is variable, reflecting the targeting of separate conductive bodies.

Criteria	JORC Code explanation	Commentary
	Resource and Ore Reserve estimation procedure(s) and classifications applied. • *Whether sample compositing has been applied.*	• Drilling is exploratory in nature. • No sample compositing has been applied • 3-component DHEM data were measured at minimum 10m spacings and infilled to 5m and 2.5m, as required, through conductive features to sufficiently define anomalies of interest. • All DHEM loops were designed to optimally couple with the FLEM and DHEM modelled plates targeted by the drillholes.
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.*	• No sampling has been carried out as yet. • Drilling is first pass in nature; there is significant uncertainty about the orientation of mineralized structures.
Sample security	• *The measures taken to ensure sample security.*	• Core is stored on private land with restricted access near the drill site.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Geophysical data is managed, quality checked, and processed by Perth geophysical consultants, Southern Geoscience Consultants (SGC). All data collected and interpretations are peer reviewed. • No sampling has been carried out as yet.

• 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*	• The drill-holes are located on E70/5345 which is 100% beneficially held by Mandrake Resources. • The tenement is in good standing with no known impediments.

Criteria	JORC Code explanation	Commentary
	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.*	• Land access and purchase option agreement in place for Newleyine farm.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Nickel-copper mineralization at Newleyine was investigated by Australia Anglo American/North Flinders Mines during 1978. Three diamond core holes were drilled, but no individual assay values were reported. It is unknown if PGE elements were assayed for.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Newleyine is located in the Jimperding Metamorphic belt. • Newleyine is considered prospective for magmatic sulphide Ni-Cu-PGE associated with a pipe like dunitic intrusive body.

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 of the report, the Competent Person should clearly explain why this is the case.*
		• The drill hole collar information is provided in Table 1 of this announcement

Data aggregation methods	• *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.*	• No length weighting or cut-off grades have been applied • No metal equivalent values have been reported.

Criteria	JORC Code explanation	Commentary
	• *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.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to 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 (eg 'down hole length, true width not known').*	• Only downhole lengths are reported, true widths are not yet known.
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.*	• Refer to figures in 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.*	• All significant and relevant intercepts are reported.
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 meaningful information provided.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions,*	• Diamond drilling and downhole EM are continuing at Newleyine.

Criteria	JORC Code explanation	Commentary
	including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	