Date: 28 May 2020

ASX Code: MAN

Capital Structure
Ordinary Shares: 266,341,510
Unlisted Options:
206,675,077 (3c exercise)
Current Share Price: 3.3c
Market Capitalisation: $8.8M
Cash: $3.45M (Mar 31 2020)
Debt: Nil

Directors

Patrick Burke
Non-Executive Chairman

James Allchurch
Managing Director

Ben Phillips
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Ground Magnetics Highlight Ni-Cu-PGE Prospectivity of Newleyine Anomaly

Highlights

- **Detailed ground magnetic survey further enhances the distinct bullseye magnetic anomaly at the advanced Newleyine prospect in the Jimperding Metamorphic Belt located 70km NE of Perth**
- **The ovoid-shaped Newleyine anomaly contains distinct internal structure, comprising a series of magnetic-high lenses and potential structural offsets, highlighting the Ni-Cu-PGE prospectivity of the ultramafic intrusive(s) at Newleyine**
- **Newleyine is in the same geological terrane and approximately 30km east of Chalice's (ASX:CHN) Julimar Ni-Cu-PGE discovery**
- **Given the demonstrated PGE grades at the Julimar discovery, Mandrake will now move to determine the presence of PGEs at Newleyine through a surface rock chip sampling programme**

Mandrake managing Director James Allchurch commented:

'The ground magnetics at Newleyine demonstrate a distinct internal character. Pleasingly, rather than being a homogenous magnetic feature, the internal structure may be suggestive of ultramafic layering/magmatic differentiation, structure and/or weathering features which enhances the nickel and PGE prospectivity of Newleyine.'

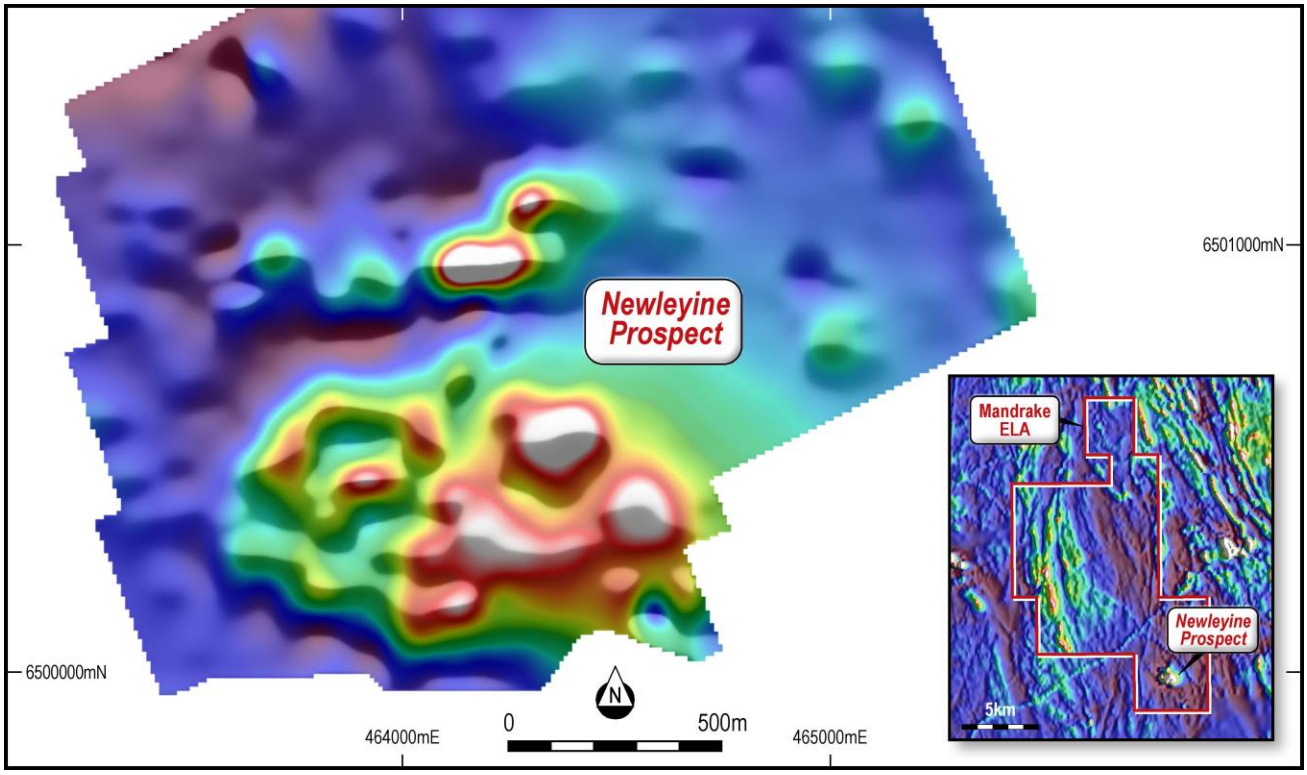

Figure 1 – High resolution RTP ground magnetic image - Newleyine Prospect (inset RTP aeromagnetic image)

Mandrake Resources Limited (ASX: MAN) (Mandrake or the Company) is pleased to advise the results of a ground magnetic survey relating to exploration licence application (ELA) 70/5345 (Jimperding Project), in the Jimperding Metamorphic Belt located 70km north east of Perth, Western Australia.

The Jimperding Project lies approximately 30km east of Chalice Gold Mines Limited's (Chalice) Julimar Ni-Cu-PGE discovery. The 140km^2 ELA comprising the Jimperding Project was applied for on 4 March 2020, prior to the Julimar discovery hole announcement and prior to Chalice pegging over 2,000km^2 of ELAs contiguous to the Jimperding Project.

Ground Magnetic Survey

A distinct bullseye total magnetic intensity anomaly was identified at the Newleyine Prospect from aeromagnetic data corresponding with confirmed ultramafic layered intrusive units and banded iron formation (BIF).

Detailed historic background searches unearthed the raw data pertaining to a ground magnetic survey collected in 2016 at 100 metre line spacing over the Newleyine Prospect.

Geophysical consultants were engaged to complete data processing of the ground magnetic data.

The ground magnetic survey has defined distinct magnetic anomalies coincident with mapped zones of mineralisation and alteration at Newleyine.

The ground magnetic image presented in Figure 1 demonstrates the distinct internal character of the magnetic anomaly at Newleyine. Rather than a homogenous ovoid-shaped magnetic anomaly, Newleyine appears to comprise a series of magnetic high lenses and potential structural offsets. These internal features are encouraging as they may be attributable to layering in the BIF and/or magmatic differentiation in the ultramafic intrusive(s), structural features and localized weathering.

Mandrake is encouraged by the ground magnetic results as they demonstrate the potential for a fertile ultramafic layered intrusive system.

As per the historic drill results and geochemistry outlined below, the Newleyine prospect has discernable nickel and copper anomalism both at surface and at depth. Given the demonstrated platinum and palladium grades at the Julimar discovery, hosted in the same geological terrane as the Newleyine prospect, Mandrake will now move to determine the presence of platinum group elements (PGEs) through a forthcoming surface rock chip sampling programme.

Informed by the surface geochemistry (rock chip sampling), Mandrake will then likely undertaken a moving loop electromagnetic (MLEM) survey to assist with drill targeting.

Historic Drill Results and Geochemistry

Historic drilling of the Newleyine Prospect confirmed nickel grades to 1.18% and copper to 1,200 ppm within the relatively shallow lateritic zone.

Primary Newleyine grades observed from drilling carried values of 0.49% Ni and 0.02% Cu[1]. Crucially, samples were not assayed for PGEs.

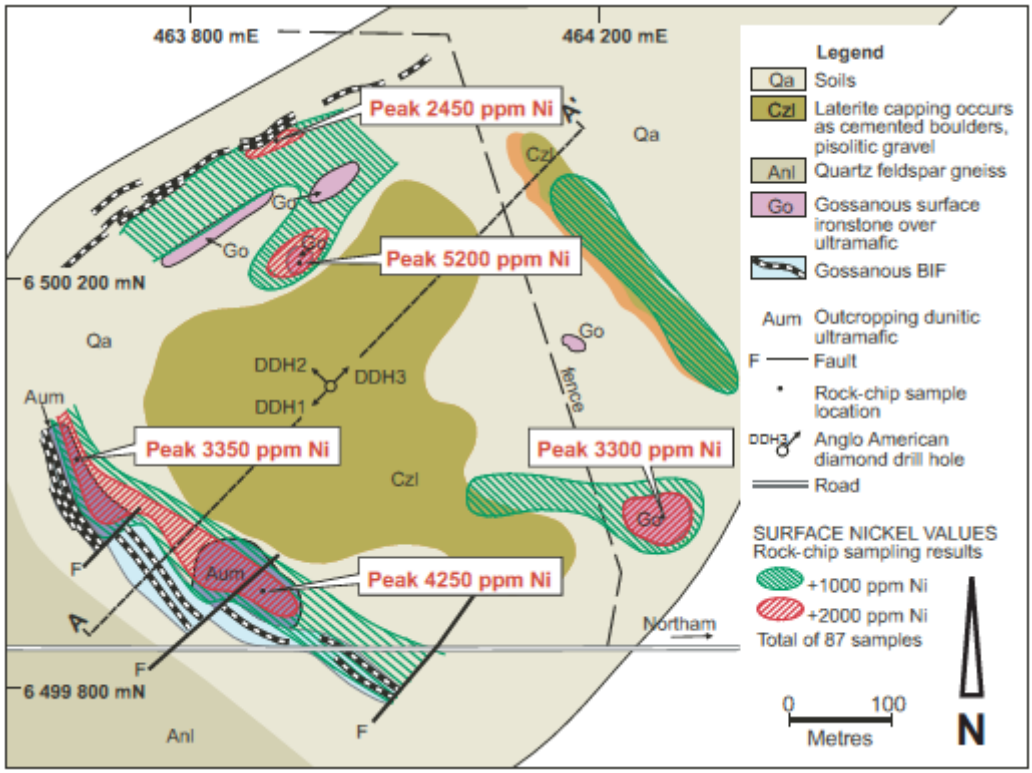

Figure 2 - Newleyine Prospect – Historic Rock Chip Samples and Drill Collar Locations

As well as a high grade component in the lateritic material, drilling at Newleyine also confirmed the presence of widespread Ni-Cu-Fe sulphide mineralisation of 0.24% Ni and 172 ppm Cu over drill widths of up to 240m. (see Mandrake ASX release 14 April 2020). Again, samples were not assayed for PGEs.

Further confirming the Ni/Cu anomalism, historic surface sampling of the Newleyine ultramafic intrusive by way of 90 rock chip samples returned assay values up to 0.52% Ni and 805 ppm Cu (see Mandrake ASX release 14 April 2020).

[1] *Second Quarter Report - North Flinders Mines Limited Joint Venture Prospecting Programme (Fehlberg, 1978.*

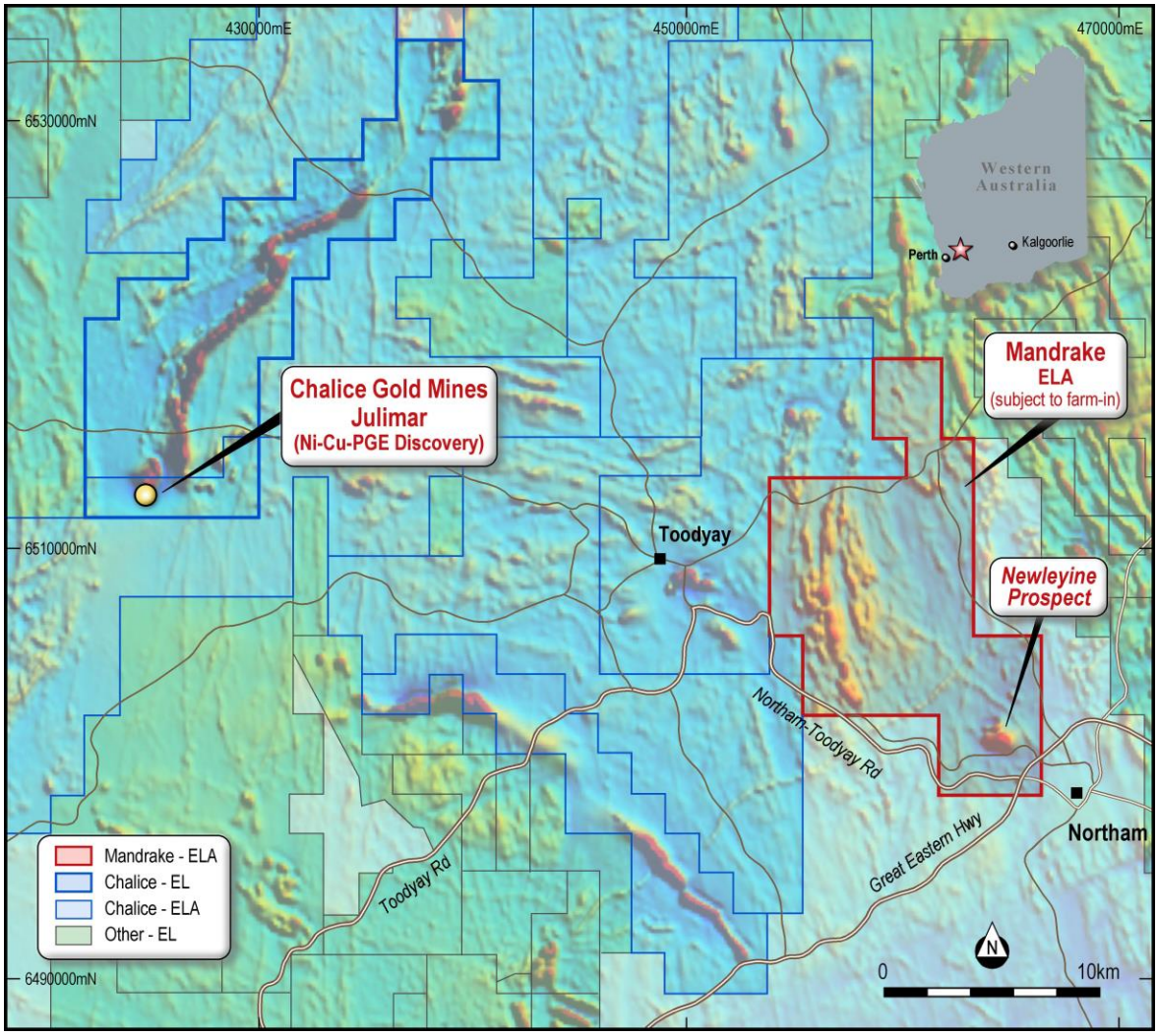

Figure 3 - Regional aeromagnetics – Jimperding Project

Exploration Activities - Berinka Pine Creek Project

Preparations for a drilling programme targeting gold mineralisation at Mandrake's 100%-owned 289km^2 Berinka Pine Creek gold project have been finalized with drilling expected to be underway in late July 2020.

Mandrake notes that drilling is contingent on current travel restrictions enforced by the Northern Territory and Western Australian state governments pursuant to the Covid-19 pandemic as well as any further requirements from local indigenous communities.

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

Berinka Pine Creek Project - Background

Gold mineralisation at the project is associated with >10km strike of poorly tested structurally controlled igneous units of the Proterozoic Pine Creek Orogen. Previous reverse circulation (RC) drilling has intersected gold mineralisation associated with sulphide rich veins and is open at depth and along strike at the Terrys prospect with a best intersection of 4m @ 6.56g/t from 32m (TRP-018). A complete list of all historic drill intercepts is contained in the Mandrake Resources prospectus lodged with the ASX on 24 May 2019.

About Mandrake Resources

Mandrake is a junior exploration company established with the purpose of exploring and developing gold, nickel, copper and PGM opportunities. The Company recently entered into an agreement to earn-in to exploration tenure prospective for Ni/Cu/PGMs 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

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 Harry Mees, consulting geologist to Mandrake Resources. Mr Mees 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 Mees consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

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.*	• Three diamond drill holes were drilled in approximately 1968 by Australian Anglo American as reported in the WAMEX sourced '*Second Quarter Report – North Flinders Mines Limited Joint Venture Prospecting Programme (Barry Fehlberg, 1978)' and* '*Third Quarter Report – North Flinders Mines Limited Joint Venture Prospecting Programme (Barry Fehlberg, 1978)'.* The information in this report is regarded as reliable as pertaining to the historic exploration results. • Based on the knowledge of operating procedures of both North Flinders Mines NL (NFM) and Australian Anglo American (AAA) in use at the time, the Company believes the sampling techniques to be industry standard. • Ground magnetic survey conducted by Magnetic Resources on 20 April 2016. Line spacing of 100m with line direction of 160 – 340 degrees. • Raw data processed by Southern Geoscience Consultants - data has been filtered on a line to line basis then final grids have been upward continued by 5m to remove high frequency surface noise. Both filtered and raw data has been provided in the deliverable database.
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 performed. Precise details of drilling techniques/contractor(s) used not provided. • Drilling techniques utilized by AAA expected to be in line with industry standards.
Drill sample	• *Method of recording and assessing core and chip sample recoveries*	• Details for drill sample recoveries are not available.

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.*	
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.*	• No original drilling records have been sighted however lithologies and structures are discussed in the WAMEX sourced '*Second Quarter Report – North Flinders Mines Limited Joint Venture Prospecting Programme (Barry Fehlberg, 1978)' and 'Third Quarter Report – North Flinders Mines Limited Joint Venture Prospecting Programme (Barry Fehlberg, 1978)'.* • On the basis of the written accounts cited above it is assumed operating procedures of NFM and AAA in use at the time were appropriate.
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 being sampled.*	• Details of sample preparation and processing techniques are not provided however it is assumed laboratory and assay procedures of NFM and AAA and their contractors were industry standard.
Quality of	• *The nature, quality and appropriateness of the assaying and*	• Assay and laboratory procedures are not provided however it is

Criteria	JORC Code explanation	Commentary
assay data and laboratory tests	*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.*	assumed laboratory and assay procedures of NFM and AAA and their contractors were industry standard and thus the data reliable.
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.*	• Verification procedures for sampling and assaying are not documented with the historic drilling results.
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 hole locations have been gleaned from plan geological maps using co-ordinates.
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.*	• According to historic plans, drilling appears to have been perpendicular to the strike of the identified intrusive. • No drilling orientation and/or sampling bias has been recognized at this time. • Ground magnetic survey conducted at a line spacing of 100m with line direction of 160 – 340 degrees.
Orientation of data in	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering*	• Three diamond drill holes were drilled from the same drill pad at azimuths differing by 90 degrees in order to investigate anomalous

Criteria	JORC Code explanation	Commentary
relation to geological structure	*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.*	rock chips collected from a saucer-shaped intrusive associated with a BIF.
Sample security	• *The measures taken to ensure sample security.*	• No information is available on the sample security protocols for the historical drilling.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The data reported is all historical data. No reviews have been undertaken to this point. Mandrake is currently seeking supporting information.

• 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.*	• The diamond drill holes are located on exploration licence application ELA 70/5345 which is held 100% by AER • The tenure is in application – application lodged 4 March 2020.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Rock chip sampling undertaken by BHP in the mid-1990s. • Various geophysical surveys and sporadic surface sampling undertaken by junior mining companies.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Ultramafic intrusive associated with a banded iron formation. Ni-Cu-Fe mineralisation within a serpentinised dunite. Archaean Jimperding Metamorphic Belt
Drill hole	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information*	• See Table 1.

Criteria	JORC Code explanation	Commentary
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.*	
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.* • *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.*	• No maximum or minimum grades cut-offs have been applied to the historical results. • No metal equivalent values have been reported.
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').*	• Three diamond drill holes were drilled from the same drill pad at azimuths differing by 90 degrees in order to investigate anomalous rock chips collected from a saucer-shaped intrusive associated with a BIF. The drill hole azimuths are roughly perpendicular to the targeted intrusive. • True width not known.

Criteria	JORC Code explanation	Commentary
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.*	• The results reported diagrammatically (rock chips) are considered a balanced reporting of the understanding of the Exploration results and potential
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.*	• Available data from historic or previous exploration parties includes some surface mapping, surface geochemical surveys and geophysical surveys. Mandrake is continuing to seek primary sources of data. • Southern Geoscience Consultants were engaged as geophysical consultants to conduct magnetic, radiometric and digital terrain data processing of open-file airborne geophysical data.
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, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• As Mandrake work towards granting of the Jimperding Project a detailed desktop review and database compilation will occur along with land access negotiations and targeting work.