

**ASX ANNOUNCEMENT** 

20th September 2022

# Diamond drilling continues to highlight large-scale IOCG-style alteration footprint at Helios

# **Highlights:**

- NMR has successfully completed diamond drill hole HELIOS\_DDH002 with the end of hole (EOH) depth at 1020.3m
- Drilling ended in intense IOCG-style alteration with pervasive red hematite staining and hematite infill in heavily altered granites and granite breccias
- IOCG-style, hematite-dominated alteration has now been shown to extend for over 900m between the two diamond drill holes highlighting a much larger alteration footprint than initially anticipated
- Drilling has confirmed that the IOCG-style alteration is part of an extensive Fe-dominated/enriched alteration zone similar to other IOCG deposits such as Ernest Henry
- NMR is currently preparing the drill core for sampling and sample assay results expected October

**Native Mineral Resources Holdings Limited** (ASX: **NMR**), or ("**NMR**" the "**Company**"), is pleased to provide an update on drilling operations at the Company's 100%-owned Helios Project, located in the Nullarbor region of Western Australia.

NMR reports that the Helios\_DDH002 EIS co-funded drill hole has been completed to a total depth of 1020.3m, with initial observations from this drill hole confirming the presence of further pervasive, hematite-dominated IOCG-style alteration system.

The following announcement provides representative photos of the drill core recovered from between 850m depth and the EOH at 1020.3m depth. Diamond drill core is being prepared for sampling and assay with initial results expected in October.

## **Management Commentary**

**NMR's Managing Director, Blake Cannavo, commented:** "We continue to be extremely encouraged with the positive results from our diamond drilling at Helios. The continuation of pervasive hematite alteration is a testament to the potential size of the hematite (Fe)-dominated alteration zone identified. Furthermore, the drilling ended in rocks with abundant hematite and hematite-stained granite and granite breccias indicating that the alteration system is much bigger than we had initially anticipated. The NMR team will be immediately preparing the drill core for assay with results eagerly anticipated in October."



**Figure 1.** Felsic intrusive breccia containing significant hematite alteration with hematite and minor magnetite and pyrite within the matrix (HELIOS\_DDH002). NQ size drill core. Yellow numbering represents down-hole depth in meters.



**Figure 2.** Pervasive iron oxide staining (red) and intergranular hematite (silver grey) in altered granitic host rocks (HELIOS\_DDH002). NQ drill core  $\emptyset \sim 47$ mm.



**Figure 3.** Pervasive iron oxide staining (red) together with hematite (grey) minor magnetite and sericite alteration of the host granite (HELIOS DDH002). NQ drill core  $\emptyset \sim 47$ mm.

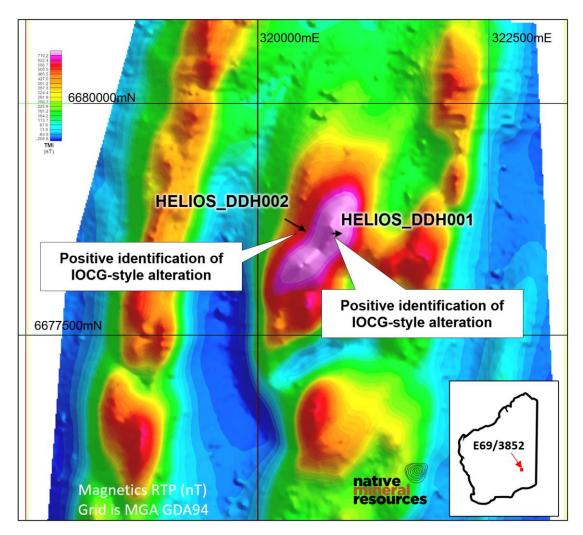
## **Helios targeting**

NMR embarked on an exciting drilling campaign to test a magnetic and gravity anomaly located completely under cover. The depth of cover is around 90-100m in the target area, therefore no outcrop has been available. NMR initially completed a high-resolution drone-based magnetics survey which the company used to generate the first drill target. Following the completion of HDLIOS\_DDH001 and the positive identification of the IOCG-style alteration, the company completed a detailed ground-based gravity survey (refer to announcement 23<sup>rd</sup> May, 2022). The results from the gravity survey helped generate the second drill target.

The results from the two diamond drill holes completed at Helios are considered by NMR to be a phenomenal result with the identification of a hematite-dominated alterations system. The results from the first Helios\_DDH001 drill hole indicate the presence of an IOCG target but this has now been backed up by the intense alteration also identified in the EIS co-funded drill hole Helios\_DDH002. NMR have now proven alteration in drill core located over 900m apart indicating that the alteration system is even larger than first considered.

Diamond drill hole HELIOS\_DDH002 was terminated at a total depth of 1020.3m which is one of the deepest drill holes ever completed in this truly frontier region of Australia. The initial identification of alteration is a ground-breaking result for a terrane/geological province (Madura Province) with very little previous drilling.

Initial visual inspection of drill core has revealed the presence of multiphase alteration including minerals hematite, magnetite, pyrite, biotite, chlorite, sericite. First-pass observations and interpreted alteration paragenesis indicate that locally potassic alteration and magnetite alteration is followed by hematite, hematite-pyrite, and pyrite-quartz-magnetite veins. Detailed petrography will be completed in order to confirm the field observations. The observations presented here and in previous updates from the Helios project help support similarities with other well-studied and documented occurrences of IOCG alteration, in particular, Ernest Henry located in Northern Queensland.



**Figure 4.** Location of collar HELIOS\_DDH001 and 002 overlain on magnetics TMI RTP image. Drilling has targeted the magnetic and gravity (not shown here) highs identified in geophysics.

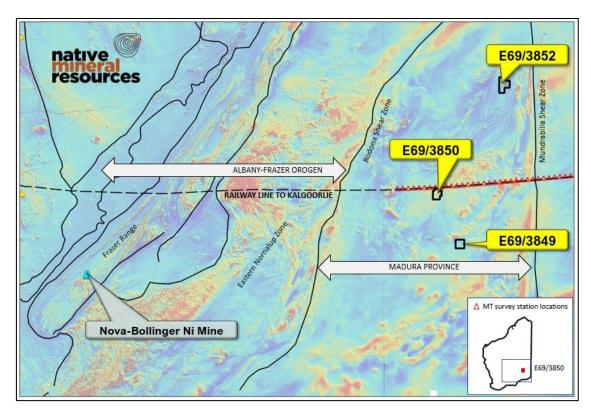
#### NORTHERN NULLARBOR - HELIOS IOCG TARGET, WA (E69-3852)

NMR has been granted three tenements in the Nullarbor region of SE Western Australia(E69/3849, E69/3850 and E69/3852) (**Figure 5**). The three tenements are located over potential iron-oxide copper-gold (IOCG)- and porphyrystyle mineralisation.

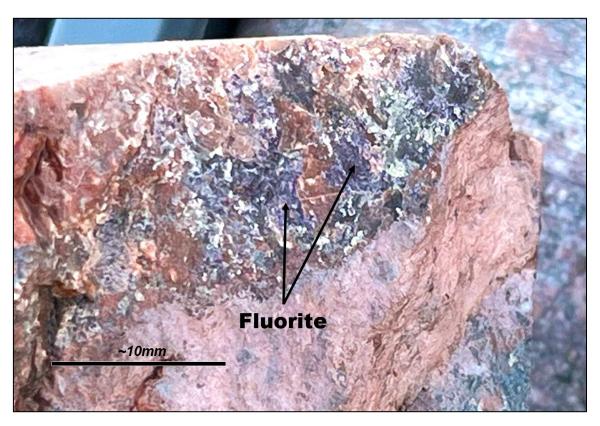
As reported on 16th May and 2022, NMR completed its maiden diamond drilling program at the Helios Project and intersected what the company considers to be significant IOCG-style alteration including felsic breccias with hematite, magnetite, and pervasive hematite alteration of host granites.

A common signature or "fingerprint" of IOCG systems is the close association between magnetic highs and gravity highs. Deposits such as Ernest Henry, Prominent Hill, and Brumby are examples where this correlation is observed. As described above, NMR is targeting the central gravity high derived from the modelling of a ground-based gravity survey over the Helios project area.

NMR have just completed drilling its second diamond drill hole. This announcement is an update only to inform of the end of the drilling with several photos of the drill core shown from HELIOS\_DDH002 as drilled between the 5<sup>th</sup> of September at approximately 800m depth and the end of hole at 1020.3m depth.



**Figure 5.** Map of the three IOCG target tenements managed and currently being explored by NMR in the underexplored Madura Province.



**Figure 6.** Photo of s section of NQ drill core containing the mineral fluorite.



**Figure 7.** Photo of drill core (HELIOS\_DDH002) at approximately 990m depth. The image photo shows the broken nature of the granite with hematite alteration. NQ drill core  $\emptyset$  ~47mm.



**Figure 8.** Section of drill core from HELIOS\_DDH002 (NQ diameter) showing the contact between a pegmatitic (coarse-grained) part of the host granite and the altered, sericite, hematite, and hematite altered granite. NQ drill core  $\emptyset$  ~47mm.



**Figure 9.** Photo of drill core (HELIOS\_DDH002) at approximately 1000m depth. The image photo shows the broken nature of the granite with hematite alteration. NQ drill core  $\emptyset$  ~47mm.

#### -Ends-

The Board of Native Mineral Resources Holdings Ltd authorised this announcement to be lodged with the ASX.

This announcement refers to information contained within previous ASX announcements

2<sup>nd</sup> May, 2022 - NMR awarded a \$220,000 EIS grant to drill a follow-up hole at its Helios project.

16th May, 2022 Iron-Oxide Copper Gold (IOCG) style alteration intercepted in frontier drilling at Helios

23<sup>rd</sup> May, 2022 – Gravity survey to begin at Helios following the identification of Iron Oxide Coopper-Gold (IOCG)-style alteration

18th August, 2022 - Phase 2 diamond drilling underway at Helios targeting IOCG-style mineralisation

7<sup>th</sup> September, 2022 - Diamond drilling extended at Helios after second hole expands IOCG-style target

For more information, please visit www.nmresources.com.au or contact:

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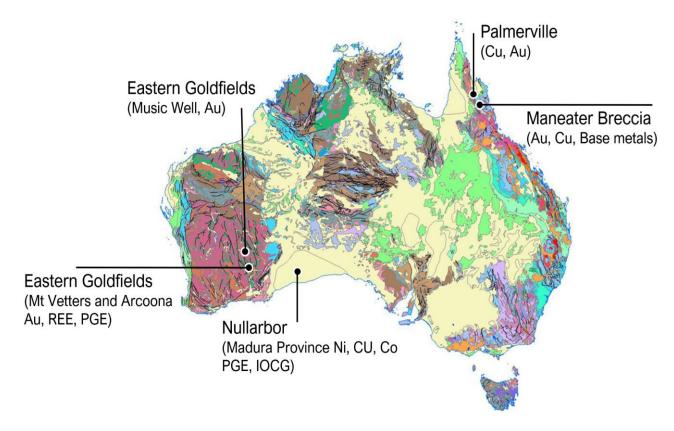
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## **Competent Person Statement:**

The information in this report relating to Exploration Results is based on information provided to Dr Simon Richards, a Competent Person who is a Member of the Australian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy. Dr Simon Richards is a full-time employee of Native Mineral Resources. Dr Richards has sufficient experience that is relevant to the styles of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Richards has no potential conflict of interest in accepting Competent Person responsibility for the information presented in this report and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### **About Native Mineral Resources:**

**Native Mineral Resources** (ASX: NMR) is an Australian publicly listed minerals exploration company established to explore for copper and gold deposits in the Palmerville region in North Queensland and for gold, Ni and IOCG deposits in the Eastern Goldfields and Nullarbor region in Western Australia.



**Figure 10.** Native Mineral Resources' exploration portfolio focussed on Cu, Au, Ni and PGE in key geological provinces of Australia

#### **Palmerville Project**

The Palmerville Project is the Company's principal exploration asset and covers a near continuous strike length of 130km over an area of ~1,820km<sup>2</sup> centred 200km west-northwest of Cairns in North Queensland. The Project is considered prospective for the following deposit styles:

- Copper-zinc-gold volcanic massive Sulfide or vein-style mineralisation.
- Porphyry- and skarn-associated copper-zinc-gold mineralisation in Chillagoe Formation limestone-dominant strata.
- Porphyry-related copper-gold mineralisation in non-carbonate lithologies.
- Orogenic-style gold-antimony mineralisation.
- Epithermal gold mineralisation distal to porphyry intrusions
- Alluvial gold akin to the historic Palmerville Goldfield.

Exploration results released in May 2021 (see ASX release "High-grade Copper confirmed within NMR's Palmerville project" 04 May 2021)

#### **Eastern Goldfield Project**

The Yilgarn Craton is one of Australia's premier mineral provinces and host to major deposits of gold, nickel, zinc, silver, tantalum and iron ore and other commodities. Recent exploration success has discovered new gold deposits that are intrusion-related gold systems (IRGS), which has led to a greater exploration focus in areas that have received little exploration focus.

NMR has a landholding of 540km<sup>2</sup> in the Eastern Goldfields between Kalgoorlie and Leonora, in areas of prospective intrusive rocks, close to operating gold mines. The tenements are underexplored and offer opportunities to discover relatively new concepts of gold mineralisation.

#### **Nullarbor Greenfields Ni and IOCG exploration**

NMR have completed its first diamond drill hole on tenement E69/3852 and announced the discovery of significant IOCG-style hematite, magnetite, sericite alteration. NMR was awarded an EIS government co-funded grant of up to \$220,000 to complete a second hole at the Helios target which will begin Q3-Q4 CY 2022.

The Central Target has been derived using the geophysical criteria that have led to the discovery of other IOCG-style deposits, particularly those in South Australia. NMR's drone-based magnetic survey has confirmed the presence of a significant anomaly -1,200m long and 400m wide - with a relative peak of over 760nT.

## 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
	<ul> <li>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.</li> </ul>	Only drill core has been collected at this stage and no samples of core have been taken. The ASX announcement is an update only at the EOH. Only photographs of representative core samples are provided as a visual update. No samples were collected by NMR at this stage. Photographs are of representative sections of the drill core only and are provided as an update to drilling activities. No assays are provided, and now new material data are provided other than photographs of the drill core. Announcements containing sample assays and geochemistry will accompany a following ASX announcements once complete.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	The samples shown here are just a few representative sections of the drill core just recovered from HELIOS_DDHC002 between 850m depth and EOH at 1020.3m depth. No reference has been made at this stage to any material mineralisation. The photos shown here are a small, but representative collection of some of the rocks recovered in the most recent drilling. The drill hole has not been completed at this stage and no geology log has been finalised.
	Aspects of the determination of mineralisation that are Material to the Public Report.	No reference to any material mineralisation has been made at this stage. NMR are awaiting assays before speculating on composition and grade of the drill core. Thie announcement is an update only with some preliminary observations only. NMR will await the results from assaying before reporting on mineralisation.
	• 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 30g 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.	As described above, no samples have been collected and no assays or geochemistry provided. Only photographs are provided here in order to provide an update.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary aid 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 orientated and if so by what method, etc.).	Drilling through basement rock was diamond HQ and NQ. The current drill hole from which these photographs are taken has not yet been completed. All photograph[hs shown here are NQ diameter which is approximately 47-47.5mm but may vary.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	No sampling of drill core has been completed at this time. A full suite of core photos and sections of core will be collected upon the completion of the drill hole.
	Measures taken to maximise sample recovery and ensure representative nature of samples	N/A
	Whether a relationship exists between sample recovery and grade and whether sample bias may	N/A

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	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.	Drill logs are currently being completed as the drill hole is continuing. Rock types are based on visual logging only and no assays or geochemistry have yet been obtained. Mineral and rock type identification has been aided by the geochemistry and other information gained from nearby drill hole HELIOS_DDH001 which contains similar rock types and rock relationships.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.,) photography.	Logging of the drill core at this stage is ongoing and only a qualitative log will is being generated. Quantitative analysis, include pXRF and assays from selected sections of interest will be undertaken following the completion of the hole.
	The total length and percentage of the relevant intersections logged.	N/A
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken	N/A
	If non-core, whether riffles, tube sampled, rotary split, etc., and whether sampled wet or dry	N/A
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Photos of the core were taken under natural light with all efforts made to show the true colours of the core. The drill core is currently in the field at the drill site, therefore the photographs are likely to vary slightly due to environmental conditions. NMR pay particular attention to capturing clear, focussed images that are as close to true to colour as possible to avoid any misrepresentation of the rocks due to a lack of image focus for example.
	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	The images provided are selected sections of core showing details that are of interest at the time of drilling. Only small sections of core are provided in order to capture the important details of the rock type and to allow for independent assessment of the rocks. This announcement is an update only and a comprehensive update including assays and geochemistry, representative geology log will be provided once the hole is complete.
	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.	N/A
	Whether sample sizes are appropriate to the grain size of the material being sampled.	N/A
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.	N/A
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instruments make and model, reading times, calibrations factors applied and their derivation, etc.	N/A
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory	N/A

	checks) and whether acceptable levels of accuracy	
	(i.e. lack of bias) and precision have been	
	established.	
Verification	The verification of significant intersections by either	N/A
of sampling	independent or alternative company personnel.	
and assaying	The use of twinned holes.	N/A
	Documentation of primary data, data entry	N/A.
	procedures, data verification, data storage (physical	
	and electronic) protocols.	
	Discuss any adjustment to assay data.	N/A
Location of	<ul> <li>Accuracy and quality of surveys used to locate drill</li> </ul>	The drill hole collar has been obtained using a handheld
data points	holes (collar and down-hole surveys) trenches, mine	GPS with approximately +/- 2m position accuracy.
	workings and other locations used in Mineral	
	Resource estimation.	
	Specification of the grid system used.	In all cases, unless otherwise stated, grid references are
		provided in GDA94 MGA Zone 52J (Southern
		Hemisphere).
	Quality and adequacy of topographic control.	No topographic information has been provided.
Data spacing	Data spacing for reporting of Exploration Results.	No new data has been presented. The information
and		contained is an update only with just a few
distribution		representative photos of drill core being recovered at the time of writing. The announcement is also aimed at
		informing the audience that NMR plan to continue the
		drill hole to 1000m based on current rock types being
		intersected. No new data have been obtained.
	Whether the data spacing and distribution is	Exploration targets only. No reference to grade or
	sufficient to establish the degree of geological and	resource has been provided until assays and
	grade continuity appropriate for the Mineral	geochemistry have been completed on the recovered
	Resource and Ore Reserve estimation procedures and	drill core.
	classifications applied.	
		N/A
	Whether sample compositing has been applied.	N/A
Orientation	Whether the orientation of sampling achieves	N/A
of data in	unbiased sampling of possible structures and the	
relation to	extent to which this is known, considering the	
geological	deposit type.	
structure.	If the relationship between drilling orientation and	Drilling was completed to test a gravity anomaly. The
	the orientation of key mineralized structures is	orientation of the drill hole was aimed to drill into the
	considered to have introduced a sampling bias, this	center of the gravity model G1 presented in previous
	should be assessed and reported if material.	announcements and in the investor presentation. The drill core was oriented oblique to the anomaly with the
		aim of intersecting any planar structures at an angle and
		avoid, for example, drilling down a structure and
		obtaining a representative result. Based on the results
		obtained so far, the complexity of structures and
		intrusives obtained in the drill core is such that the
		orientation did not generate any sample or rock-type
		intersection bias. A detailed description of rock types and
		relationships will be provided following the completion of the drill core.
Sample	The measures taken to ensure sample security.	N/A
security	- The measures taken to ensure sumple security.	
Audits and	The results of any audits or reviews of sampling	N/A
review	techniques and data.	
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# **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	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	Information contained within the related document is for an exploration permit E69/3852. The tenement is wholly owned and operated by NMR and is compliant in all aspects.  The current drill hole is a co-funded drill hole supported by the DMIRS.  The exploration permits are current and drilling was undertaken following the granting, for example of appropriate permits such as PoW.
Exploration done by other parties	Acknowledgement and appraisal of exploration by other parties	No other exploration has been undertaken on or near this tenement.
Geology	Deposit type, geological setting and style of mineralisation	The target deposit style is IOCG-type and the current drill hole a "follow-up" hole after the successful identification of IOCG-style hematite-dominated alteration in Helios_DDH001. A full description of the target geology has been provided in multiple previous ASX announcements as referred to at the end of the body text and within the body text where pertinent.
Drill hole information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all material drill holes;</li> <li>Easting and northing of the drill hole collar</li> <li>Elevation or RL (reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>Dip and azimuth of the hole</li> <li>Down hole length and interception depth</li> <li>Hole length</li> </ul>	Drill hole Helios_DDH002 52J 320300, 6678743mN Precise elevation awaiting differential survey collar pickup. Drill hole orientation is approximately 75 dips to 120 (magnetic)  EOH updated (this announcement) to 1020.3m
	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.	N/A
Data aggregation methods	<ul> <li>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.</li> </ul>	N/A
	Where aggregate intercepts incorporate short lengths of high-grade results and	N/A

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	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.	
	<ul> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	N/A
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results</li> </ul>	No mineralisation is reported here. The information contained within the announcement is an update only on current drilling. Mineralisation will only be reported following the acquisition of assays. NMR will not speculate on potential mineralisation. This announcement presents photographs only and is an update to inform the audience that the drill hole has ended in alteration at a depth of 1020.3m.
	<ul> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported</li> </ul>	No mineralisation or intercepts are reported here.
	<ul> <li>If it is known and only the down hole lengths reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	Only rock types are reported here. Material mineralisation is not presented until assays and geochemical data are obtained from a certified laboratory.
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	All maps are provided with grid references in meters East and South aligned with grid references in GDA94 MGA Zone 52J.
Balanced Reporting	<ul> <li>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</li> </ul>	N/A
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, ground water, geotechnical and rock characteristics; potential deleterious or contaminating substances.	N/A — Update only. Drilling is currently ongoing and a full ASX announcement will be released in the future after the drill hole is completed.
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extension or depth extensions or large-scale step-out drilling).</li> </ul>	Drill core is being logged and will be transported to NMR core facility for markup, cutting and pXRF analysis. Samples will be sent for assay and geochemical analysis at a registered laboratory in Western Australia. Results from the geochemistry will be released following QAQC.

<ul> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	N/A