ASX Announcement

Drilling Confirms Deep Extensions to Mineralization at Nolans Project

9 March 2020

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- **Assays from deep drilling at Nolans Bore demonstrate thick intervals of rare earths mineralization beneath the planned mining extents**
- **Hole NBRD1106 in the deposit's North Zone intersects 75.68m @ 2.8% TREO and 11% P_2O_5 from 364.37 metres**

Arafura Resources Limited (**ASX: ARU**) (**Arafura** or the **Company**) is pleased to announce final assay results from the 2019 drilling program at its 100 per cent-owned Nolans Bore Neodymium-Praseodymium (NdPr) deposit in the Northern Territory.

The nine-hole drilling program included four deep exploration holes targeting down-dip extensions to Indicated and Inferred Resources in the deposit's North and Southeast Zones. Three of the four holes (NBRD1102, 1106 and 1109) intersected thick zones of rare earths mineralization up to about 200 metres vertically below the planned final mining pit (Figure 1) presented in the Definitive Feasibility Study *(refer to ASX announcement 7 February 2019)*. Geological/radiometric logging, density (SG) determinations and geochemical analysis of these zones confirm that the mineralized material types and assay grades are consistent with those that constitute the Mineral Resources[1]. On this basis the Company considers there to be reasonable potential to increase the Mineral Resources at depth in the North and Southeast Zones.

The best intercepts from the three holes were as follows:

- 46.76 m @ 1.5% TREO and 7% P_2O_5 from 316.72 m in hole NBRD1102 (Southeast Zone)
- 75.68 m @ 2.8% TREO and 11% P_2O_5 from 364.37 m in hole NBRD1106 (North Zone)
- 65.15 m @ 1.5% TREO and 6% P_2O_5 from 422.88 m in hole NBRD1109 (North Zone).

A total of five shallow infill resource definition core holes (NBDH1103-05, 1107-08) were also drilled across the Southeast Zone of the deposit to confirm detailed geological and material type information which will ultimately be used to refine resource modelling and better inform mine planning. The

[1] *Information in relation to Mineral Resources included in this announcement is extracted from an ASX announcement dated 7 June 2017 (Completion of Detailed Resource Assessment). Arafura Resources confirms that all material assumptions underpinning the Mineral Resources set out in the announcement released on 7 June 2017 continue to apply and have not materially changed.*

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NdPr

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material types and assay results from these holes are consistent with expectations and follow on from previously reported assay and metallurgical data *(refer to ASX announcements 17 and 18 December 2019)*.

Assay highlights from these holes included:

- 60.63 m @ 4.7% TREO and 22% P_2O_5 from 14.81 m in hole NBDH1103
- 56.01 m @ 2.5% TREO and 11% P_2O_5 from 17.00 m in hole NBDH1104
- 35.34 m @ 2.4% TREO and 11% P_2O_5 from 86.63 m in hole NBDH1105
- 26.87 m @ 1.9% TREO and 9% P_2O_5 from 32.33 m in hole NBDH1107
- 49.70 m @ 2.4% TREO and 12% P_2O_5 from 38.10 m in hole NBDH1108.

Arafura's Managing Director Gavin Lockyer said, "The deep drilling results confirm that Nolans Bore is an exceptional orebody in terms of its size, grade consistency and endowment in the magnet-feed rare earths Neodymium and Praseodymium. It is the foundation of a long-term, reliable and sustainable supply of these critical materials from the Northern Territory. In my mind, we have now answered the question on its potential to deliver additional Mineral Resources at depth to support the development of the Nolans Project far into the future."

- ENDS -

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COMPETENT PERSON'S STATEMENT

The information in this report that relates to Exploration Results or Mineral Resources is based on information compiled by Mr Kelvin Hussey (BSc (Hons), FGS), a Competent Person who is a Member of the Australian Institute of Geoscientists (MAIG). Mr Hussey is a full-time employee of Arafura Resources Limited. Mr Hussey 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 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Hussey consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

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Table 1: Significant assay results from the 2019 drilling program

Hole	Depth From (metres)	Depth To (metres)	Interval (metres)	TREO %	NdPr Enrichment %	P_2O_5 %
NBRD1101	253.22	258.12	4.90	1.6	25.9	7
NBRD1102	150.78	181.32	30.54	1.8	26.3	9
NBRD1102	200.80	212.09	11.29	3.0	25.6	12
NBRD1102	221.10	229.41	8.31	1.8	26.7	9
NBRD1102	260.60	264.39	3.79	4.5	25.8	18
NBRD1102	293.34	296.93	3.59	4.9	26.5	23
NBRD1102	**316.72**	**363.48**	**46.76**	**1.5**	**26.7**	**7**
includes	316.72	322.57	5.85	3.3	26.4	15
includes	339.16	352.34	13.18	2.5	26.9	11
includes	358.16	363.48	5.32	2.8	27.2	15
****NBDH1103**	**14.81**	**75.44**	**60.63**	**4.7**	**26.6**	**22**
****includes**	19.00	62.62	43.62	6.0	26.7	28
NBDH1104	**17.00**	**73.01**	**56.01**	**2.5**	**26.1**	**11**
****includes**	17.00	41.24	24.24	3.4	26.7	15
****includes**	49.99	73.01	23.02	2.4	25.2	11
NBDH1105	**86.63**	**121.97**	**35.34**	**2.4**	**26.3**	**11**
NBRD1106	**65**	**76**	**11**	**8.0**	**26.1**	**31**
NBRD1106	254.88	263.05	8.17	2.8	26.2	12
NBRD1106	273.81	279.57	5.76	4.1	25.6	13
NBRD1106	**364.37**	**444.05**	**75.68**	**2.8**	**25.8**	**11**
includes	364.37	384.88	20.51	3.9	25.7	15
includes	390.51	430.43	39.92	3.0	25.8	12
NBDH1107	32.33	59.2	26.87	1.9	26.7	9
NBDH1108	**38.10**	**87.80**	**49.70**	**2.4**	**26.1**	**12**
includes	51.45	83.1	31.65	3.1	26.2	15
NBRD1109	225.89	231.97	6.08	1.8	25.4	6
NBRD1109	304.97	320.9	15.93	2.4	25.1	8
NBRD1109	383.60	394.77	11.17	1.1	26.9	4
NBRD1109	408.05	412.5	4.45	2.2	26.0	9
NBRD1109	**422.88**	**488.03**	**65.15**	**1.5**	**25.8**	**6**
includes	422.88	439.49	16.61	1.3	25.8	5
includes	446.15	453.17	7.02	1.7	26.3	7
includes	465.20	488.03	22.83	2.6	25.7	10

Note: All mineralization has been sampled and assayed in these holes. The composited drill intercepts above contain narrow discrete intervals of both weakly mineralized material and unmineralized host rock. A 1% TREO lower cut-off grade has been adopted for mineralization. No top cut has been applied. The stated intercepts are based on drill metres and they are not a true thickness. "NdPr Enrichment" is the proportion of TREO comprising neodymium oxide Nd_2O_3 and praseodymium oxide Pr_6O_{11}. Host rock dilution reduces the NdPr Enrichment for the mineralized intervals. ** indicates assay results have already been reported *(refer to ASX announcement 17 December 2019)*.

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Figure 1: Schematic cross-section (A-B; see Figure 3 for location) showing the assay results and deep mineralized intervals in holes NBRD1106 (North Zone) and NBRD1102 (Southeast Zone). The mine pit is the maximum extent of the seven pit stages on this section which form the basis of the Ore Reserves production schedule in the Nolans Definitive Feasibility Study. The Mineral Resources outlined here were simplified based an 80m wide window along 9980E. This window is necessary to portray the drill hole deviation within this section and the nature of modelled resources. Consequently some resource bodies are exaggerated in size due to intersection angles and the width of the window.

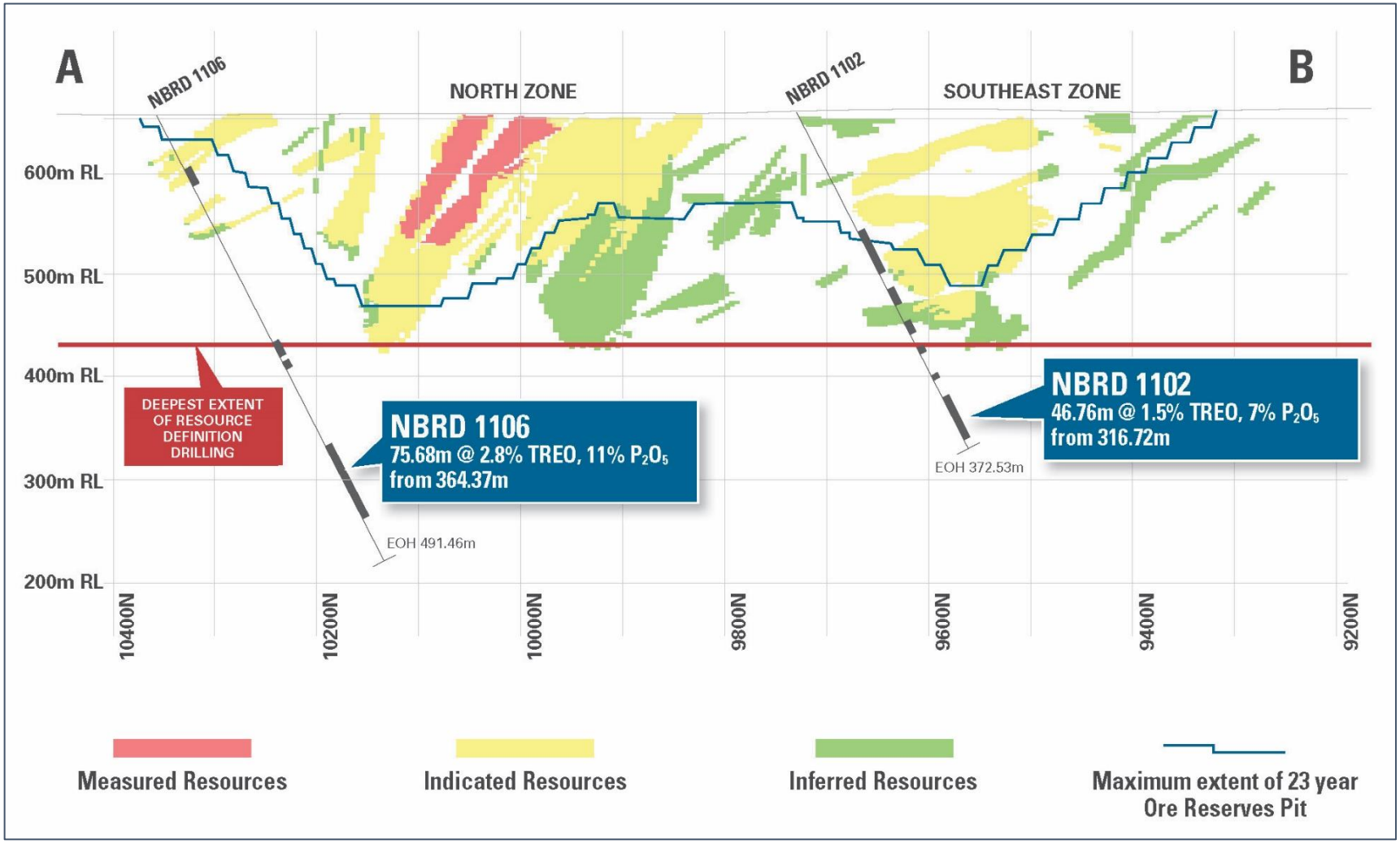

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Figure 2: Apatite-rich mineralization intersected in deep exploration hole NBRD1106 (North Zone). This 8.74 m interval contains about 6% TREO, 25% P_2O_5 and has an NdPr Enrichment of 27.0%.

Table 2: Details of all holes from the 2019 drill program at Nolans Bore. All holes were initially collared at about -60˚ to 145˚ true. Phase 1 holes were drilled as HQ3 diamond core from the surface (infill resource definition) where Phase 2 (deep exploration) holes were drilled using a combination of RC and HQ3 diamond core tails.

Hole	MGA94E (m)	MGA94N (m)	RL (m)	EOH (m)	Phase
NBRD1101	**319318.028**	**7502129.998**	**658.702**	**351.60**	**2**
NBRD1102	**319112.236**	**7501901.098**	**658.766**	**372.53**	**2**
****NBDH1103**	319127.180	7501705.561	658.930	81.10	1
****NBDH1104**	319072.527	7501644.260	658.465	77.10	1
NBDH1105	**319293.413**	**7501886.790**	**659.372**	**125.00**	**1**
NBRD1106	**318736.494**	**7502405.073**	**655.710**	**491.46**	**2**
NBDH1107	**319374.511**	**7501945.157**	**659.441**	**101.70**	**1**
NBDH1108	**319437.242**	**7501960.101**	**659.554**	**101.00**	**1**
NBRD1109	**318477.804**	**7502351.379**	**658.207**	**500.08**	**2**

Note: Drill holes with new assay results being reported here are highlighted in bold text. ** indicates assay results from these holes have already been reported *(refer to ASX announcement 17 December 2019)*.

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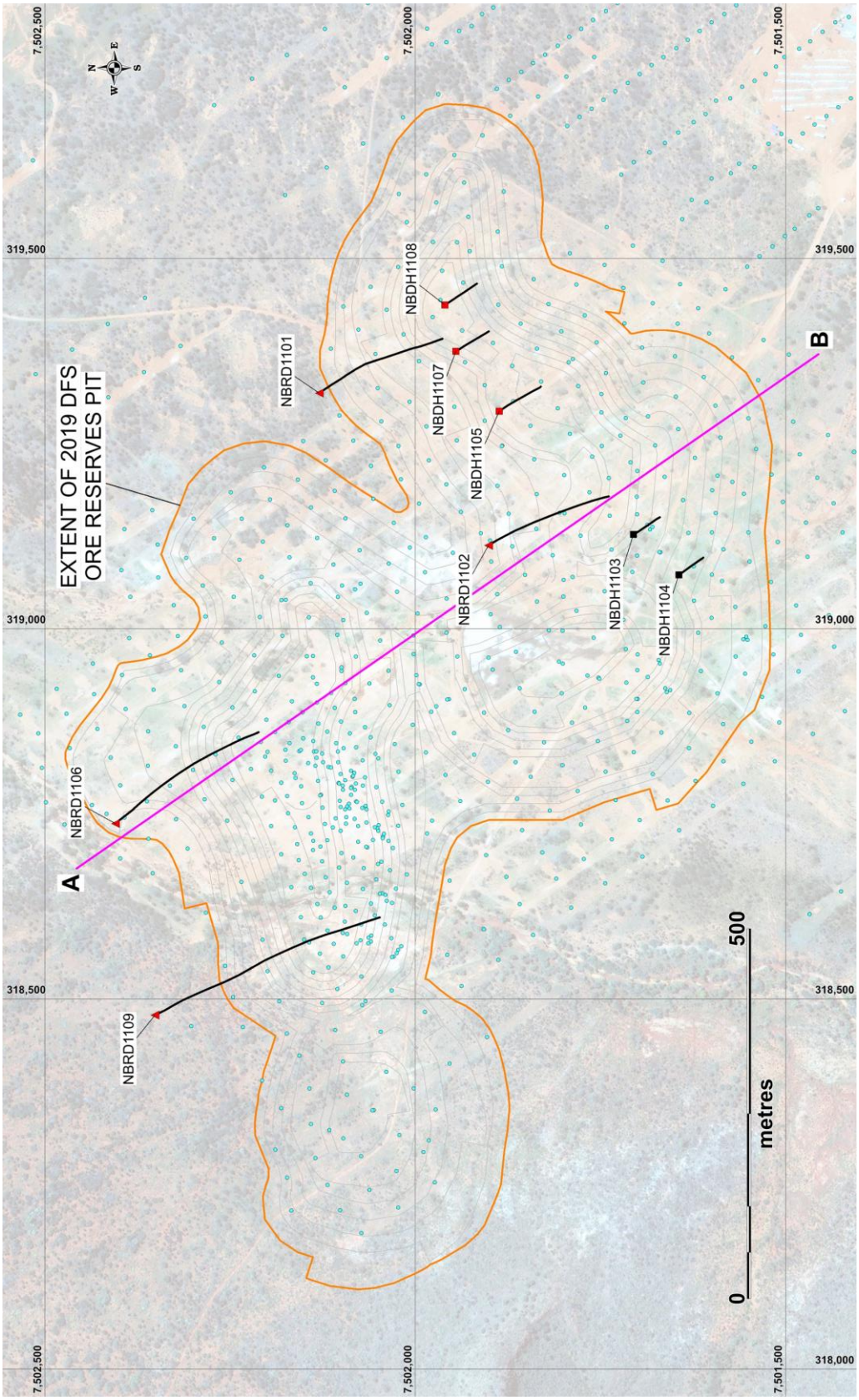
Figure 3: Location of holes in the 2019 Nolans Bore drilling program. Phase 1 (shallow drilling) collars are shown as squares and Phase 2 (deep drilling) collars as triangles. Section A-B is shown in Figure 1.



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JORC Code, 2012 Edition – Table 1 report

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 mineralization 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 mineralization types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• The 2019 sampling program employed both Reverse Circulation (RC) and diamond core drilling techniques to obtain representative material for geological logging and assays. The locations of these drill holes and end of hole depths are provided in Table 2 of the main body of this report. All nine holes in this program were systematically drilled towards the southeast (collars set up at about -60 to 145 degrees true). • This report focusses on the results from the final three shallow HQ3 diamond core holes that were cored from surface and four deeper exploration holes that involved a combination of RC drilling and diamond core tails. Results from the first two holes have been previously reported (see ASX:ARU 17/12/19) • The lithology, mineralogy and colour of Nolans Bore-type mineralization is distinct from the host rocks and aids in the identification and the sampling of all mineralized intervals. Radioactivity is also a diagnostic feature of Nolans Bore-type mineralization and a key tool used to identify mineralized intervals. A calibrated Atomex AT6130 Geiger meter was used to systematically measure and record the radioactivity of all recovered material in the 2019 program. • The Competent Person ensured all sampling was to industry standard and in-line with previous sampling protocols. Sample quality and all relevant sampling details were continuously monitored and recorded.
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.).*	• Drilling techniques were RC and diamond core. The shallow core drilling program (Phase 1) was carried out by GMP Exploration Drilling under contract to United Drilling Services and utilized a Hankins 35 multi-purpose track mounted rig. These five holes were cored from surface in areas dominated by previous RC drilling and were drilled as infill resource definition holes specifically targeted to obtain material for metallurgical test work and confirm the resource model. The deeper exploration drilling (Phase 2) was carried out by United Drilling Services and utilized a Sandvik DE840 multi-purpose rig. At both rigs, core drilling employed a HQ3 triple-tube configuration and the systematic use of REFLEX Act III tools to provide the maximum likelihood of reliable bottom of hole (BOH) orientation marks and the best possible core recovery. The RC drilling used a standard 5 3/4" (146mm) drill bit and a separate sampling system with inbuilt dust suppression. • Drill collar locations were pegged by professional surveyor prior to drilling. Holes were generally set up close to the pegged location however one hole was shifted due to the

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		proximity to a creek bank and the need for substantial earth works at the proposed site. Final collar positions of all holes were accurately surveyed by a professional surveyor at the end of the program.
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.*	• The core was cleaned and carefully reconstructed before being marked up with BOH orientation lines, metre-marks and depths for geological and geotechnical logging. A core block was inserted in the tray by the drillers showing the drilled depth, interval and amount of core recovered in each run, with additional blocks inserted by the field crew to indicate intervals of core loss in the reconstructed core layout. • Diamond core recoveries are measured for each core run and recorded on paper log sheets. Recovery is also recorded via digital photography of all reconstructed core trays. • Drill core was typically reassembled fully intact with good core recovery achieved in most core runs. Apart from one small interval (0.3m) in NBRD1102, there was no core loss in the deep exploration core tails (NBRD1101, NBRD1106, NBRD1109) although small cavities were identified by the drillers in some holes and were evidenced by minerals growing into open-spaced vugs in the core. Open-spaced vugs are not unusual at Nolans Bore. The shallow core holes penetrated weathered broken ground with numerous short runs showing minor core loss. Nevertheless, overall core recovery was generally very good in these shallow holes with recoveries exceeding 96% in NBDH1105, NBDH1107 and NBDH1108. This is typical of most shallow core drilling programs at Nolans Bore. • Intervals of core were unable to be re-orientated in parts due to the broken or clayey nature of the recovered core and Arafura's strict mark-up protocols. • Care was taken to ensure the core was representatively sampled in the broken or friable zones and that sample intervals aligned with core loss. • The RC residues and individual assay sample splits from two of the four RC holes were weighed to determine and estimate typical RC recoveries for the drill program. Measured weighs are consistent with previous RC drill program recoveries, averaging about 32 kg and a visual comparison indicates similar recoveries across all RC drill samples in 2019. A small number of very large RC residue samples were produced. These were attributed to a build up of moist clay-rich material inside the sample splitter and dust suppression system and immediately followed an RC residue sample with a very low sample weight. RC residue sizes were carefully monitored by the geologist and field crew, and the sample splitter and dust suppression system cleaned and cleared as necessary to limit this problem.
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*	• Drill core and RC chips have been logged to the same standard as previous exploration and resource definition holes used in the current Mineral Resource and Ore Reserves for Nolans Bore. • All core and RC chips have been geologically logged. • The RC chips are quantitatively logged for lithological, mineralogical, radiological, and qualitatively logged for sample quality and recovery data.

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Criteria	JORC Code explanation	Commentary
	intersections logged.	• The core is quantitatively logged for lithological, mineralogical, radiological, and recovery and geotechnical data. • 815 representative sticks of core totalling 197.41m or about 9% of the total drill core were systematically selected and measured for SG determinations in 2019. The number of samples equates to an average of one SG determination every 2.7m. The aim was about 2-3 samples per tray in mineralization and one or two per tray in host rocks. A single competent stick of core was used as a control standard throughout. This standard was measured at the start and end of each session and systematically repeated as every 10th determination. The results of 103 determinations on the standard reveal two obvious measurement errors with the total population showing a standard deviation of 0.015g/cm3 and COV of 0.006. The SG measurements and relevant sample data were recorded on paper log sheets with the SG values immediately calculated at the end of each session by the site geologist. Problem or unusual SG results were re-measured. The results from the 2019 core demonstrates that the average SG of apatite rich mineralization doesn't vary with depth or changes in oxidation state, averaging 3.04 g/cm3 from surface to 500m drilled depth. The average SG of calcsilicate rich mineralization slightly increases with drilling depth from about 2.82-2.95 g/cm3 and averages 2.90. These SG results are consistent with previous determinations from Nolans Bore. • Structural data has been systematically logged with alpha and beta measurements recorded where the core is able to be fully orientated. Arafura's mark-up procedures require three consecutive BOH marks to align within 5˚. Alpha angles are recorded where accurate re-alignment was not possible. • About 62% of the drilling was geophysically logged via open hole wireline methods using Dual Laterolog (Resistivity)-Natural Gamma-Magnetic Deviation, Natural Gamma-Formation Density-Caliper, Fibre Optic Gyro Deviation, Optical Scanner and Acoustic Scanner probes. Magnetic deviation results are referenced to magnetic North whereas the fibre optic gyro deviation results are referenced to True North. All down hole geophysical probes were run through Arafura's calibration test hole at Nolans Bore to confirm their accuracy prior to use elsewhere.
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*	• Core was sampled by cutting to geological or material type boundaries using a diamond saw. • Intervals of about 0.25-2m of core were cut in half lengthwise along pre-determined cut-lines. Cut samples collected into pre-numbered calico bags. Friable core was sampled in half lengthwise using spoons/scoops to minimize the disturbance to the remainder. Duplicate samples were systematically collected as quarter core samples matching the same interval as the routine half-core sample. • All core samples are treated individual assay samples irrespective of their sample interval. Care was taken to ensure the assigned sample ID is unique, and that the corresponding drill hole and sample interval were accurately recorded on the sample log sheet. Routine assay samples employ a sequential 7-digit number. Field duplicates and checks use a 5-digit number. This process ensures the incorporated check samples are assayed blind as a check on sampling protocols.

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Criteria	JORC Code explanation	Commentary
	of the material being sampled.	• All core samples are representative of their geological and material type. Larger,1-2m half core samples are preferred wherever possible, however this is not always possible due to geological variability. Core sample intervals have typically averaged about 1.3-1.5 metres across all drill programs at Nolans Bore. The average core sample length for the 2019 core program is 1.25m. This is slightly smaller than previous programs however it can be argued that sample volumes are similar or bigger given previous deep drilling often utilized NQ or NQ3 sized core. • Duplicates are selected and taken at about every 20th assay samples. Experience gained at this deposit indicates that the chosen sample size is typically representative and assay results reproducible in most duplicate samples. • At least one-quarter core remains after sampling, except where half core samples were collected for metallurgical test work. • RC assay samples were collected into calico bags using an automated cone splitter off the dust suppression system and represent one-metre drill intervals. Two separate splits were collected for each metre. Care was taken to ensure the base of the cone splitter was level and that sample was correctly and evenly split. The second split was collected after drilling and retained in case the sample was needed for subsequent tests. The primary assay samples typically weighed about 3-4kg. Field duplicate assay samples were manually collected using a 50/50 riffle splitter to obtain a similar sized sample split from the remaining RC residue. Individual one metre RC assay samples were processed and milled in the laboratory, and where requested composited into 2 metre assay samples combining two individual sample pulps on an equal weight basis. • The assay sample sizes are appropriate to the material being sampled. Duplicate assays show that routine assay results are typically repeatable to within acceptable tolerance limits. This demonstrates that sampling protocols are generally under control however there are rare occasions where the assay results of the quarter core duplicate samples differ significantly from their routine half core counterparts. These differences occur in samples with smaller sample intervals and/or geological variability. Geological variability and larger sample sizes are the principal reason why half core is preferred for all routine assay samples at Nolans Bore.
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.*	• The assay methods are considered appropriate for this style of mineralization and consistent with those used for the current Mineral Resource estimate. • RC and core samples were submitted to Intertek NTEL in Darwin for assay sample preparation. Prepared 50g assay pulps were then transported to Intertek Genalysis Perth for assay. Master pulps have been retained. • All pulps were assayed using combination of fusion/XRF (method FB1/XRF74-901 for Al_2O_3, BaO, CaO, CeO_2, Eu_2O_3, Fe_2O_3, Gd_2O_3, K_2O, La_2O_3, MgO, MnO, Na_2O, Nd_2O_3, P_2O_5, SrO, Pr_6O_{11}, SO_3, SiO_2, Sm_2O_3, ThO_2, TiO_2, U_3O_8 and Y_2O_3), LOI at 1000˚C and fusion/ICPMS

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	• *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.*	(method FB6/MS) for Ba, Be, Ce, Dy, Er, Eu, Ga, Gd, Hf, Ho, La, Lu, Nb, Nd, Pr, Sm, Sn, Ta, Tb, Th, Tm, U, W, Y, Yb and Zr). A small subset of samples was targeted for F and C assays. • Arafura requested the laboratory assay specified Certified Reference Material (CRM) with each assay job. The chosen CRM cover the typical range of rare earth and phosphate results expected at Nolans Bore. Arafura also systematically inserted its own CRM and internal standards into assay jobs as blind standards together with host rock blanks and field duplicates. The results of all standards and duplicates were carefully assessed to ensure the reported results are acceptable and within recommended tolerance limits. On occasions, it was noted that individual analytes in a standard were flagged as being low or high but the results were mostly within allowable tolerance limits in the other standards or by the other assay method used in this job. The initial ICPMS results for 4/10 jobs failed Arafura's detailed QAQC with Arafura's blind standard consistently reported as being too low for numerous REE elements. All samples from these failed jobs were re-assayed and the new results accepted. • Arafura's control standard was systematically assayed blind across all jobs and detailed analysis demonstrates most results are accurate to within 5% of recommended values. The reported fusion/ICPMS results for Sm are acceptable and within tolerance limits however the Sm_2O_3 results are about 13% too low via fusion/XRF. The fusion/ICPMS results for Lu are also about 10% too low however this is essentially immaterial as Lu is only present in trace amounts in Nolans Bore type mineralization. The values for La_2O_3, CeO_2 and Nd_2O_3 are within 3% of recommended values and are the most critical here as they account for about 90% of the TREO in Nolans Bore mineralization. • The Competent Person is satisfied that the accuracy and precision of reported results for the control standards and the blind standard means the final routine results are acceptable although they are still subject to confirmatory inter-laboratory check assays. • The ICPMS data has been used instead of the XRF grades where comparative plots show the accuracy, precision and use of the low grade XRF data is questionable. • A calibrated Atomex AT6130 Geiger meter was used to systematically measure and record the radioactivity of all recovered core. Activities were measured and recorded after instrument stabilized and the stated accuracy of the readings dropped to 10% or less. The radioactivity is used together with the distinct mineralogy to determine samples for assay.
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.*	• These drill holes are a mix of infill Resource Definition and deep exploration holes drilled into the Nolans Bore deposit. The location of the samples and sampling intervals were verified by alternative company personnel. • Primary geological and sampling data was recorded on paper log sheets. These have been scanned and all relevant data loaded into spreadsheets, for uploading into the company database. All drill core was photographed wet and dry as marked up with sampling information prior to cutting and sampling. • The assay data were received electronically from the laboratory in two forms (i.e. a spreadsheet of results and a pdf copy of the final report). A comprehensive digital record all data is stored on the Company's server. • REE oxides were calculated for all reported ICPMS results. The oxides were calculated

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		according the following factors listed below: ○ La_2O_3: 1.173 (i.e. ppm La x 1.173 = ppm La_2O_3); CeO_2: 1.228; Pr_6O_{11}: 1.208; Nd_2O_3: 1.166; Sm_2O_3: 1.160; Eu_2O_3: 1.158; Gd_2O_3: 1.153; Tb_4O_7: 1.176; Dy_2O_3: 1.148; Ho_2O_3: 1.146; Er_2O_3: 1.143; Tm_2O_3: 1.142; Yb_2O_3: 1.139; Lu_2O_3: 1.137; Y_2O_3: 1.270 • Total rare earth oxide is the industry standard and accepted form of reporting rare earths. The TREO (Total Rare Earth Oxide) is calculated as follows: • TREO = $La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + Y_2O_3$ • The La_2O_3, CeO_2 and Nd_2O_3 XRF assay data are typically used for all samples of Nolans Bore type mineralization where TREO exceeds about 1% and the Pr_6O_{11} XRF result used where TREO exceeds about 2%. The remainder of the rare earth assay values come from ICPMS determinations which have been converted to oxides using the above formulae. Because the XRF rare earth results are often too low, the ICPMS assay values are typically used for host rocks and low-grade mineralization. The ICPMS data was used for all Sm results because the standards indicated the XRF results were slightly too low.
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.*	• The drill collars have been accurately surveyed by a professional surveyor using the Nolans Bore base station and RTK methods. The reported coordinates use GDA94 and are in MGA94 Zone 53. • The local grid is based on the original section "O" being 10,000m E. The NW end of section "O" occurs at 318579.7mE 7502623.7mN in MGA94 Zone 53 coordinates and corresponds to 10000mE 10630mN in the local grid. The SE end of section "O" occurs at 319579.9mE 7501201mN in MGA94 Zone 53 coordinates and corresponds to 10000mE 8890.898mN in the local grid. • Hole paths have been systematically surveyed at 30m intervals by the drillers. Down hole geophysical data, including azimuth and orientation data have been systematically collected using open hole wireline survey methods. The down hole surveys were confirmed by checking survey data collected from the Nolans Bore calibration hole and gyroscopic orientation surveys. The down hole gyroscopic survey data demonstrates that the magnetitic interference affects in these holes are small or insignificant. Nevertheless, fibre optic gyroscopic determination are used as a priority followed by the down hole magnetic orientation surveys and finally the drillers surveys.
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.*	• The results being reported here are a mix of infill Resource Definition and deep exploration data and will eventually be added to the next Mineral Resource estimate. • All Nolans Bore type mineralization, associated alteration and adjacent intervals of host rock have been sampled and assayed. Most core samples have been cut to geological and material type boundaries with sample lengths varying from core sample to core sample. RC drilling has been sampled using metre-based intervals. Some RC samples have been composited into 2m samples at the laboratory for assay purposes.

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		• Drilling has been completed across most of the deposit at nominal 40m x 40m spacing on a local grid pattern with infill to 20m x 20m in the central parts of the North Zone (CNZ). Wider spaced exploration RC drilling occurs on the periphery. 10 vertical RC holes have been drilled into Nolans Bore and are used to abstract or monitor groundwater. 25 inclined diamond core holes have been drilled nominally east or west (true) on 100 metre-spaced sections to resolve complexities in the geological model in the Central Zone. 19 inclined core holes have been drilled in various other directions. The quantum of drilling and drill core at Nolans Bore is sufficiently high and widespread to ensure adequate sampling and a geological understanding of the deposit.
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 mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Drilling was consistent with the principal drilling direction across the deposit with most new holes between or near existing holes. • The reported interval is not a true thickness because the deposit is a complex 3D shape. It is based on the length of the drill intercept. • The results are considered unbiased and consistent with historic data including those holes drilled in different directions.
Sample security	• *The measures taken to ensure sample security.*	• Core was collected daily for the rig and transported to Arafura's nearby core processing and logging facility where it is temporarily stored in readiness for processing. This processing site is securely fenced and remote to prevent interference by animals and other people. The assay samples were immediately placed into pre-numbered bags and stored in steel drums in readiness for transport to the lab. • Chain of custody documentation including a list of all samples was included with the assay job.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No external audits or reviews have been done on this data. • The geological and assay data from these holes were checked and reviewed by the Competent Person using the database and core photographs.

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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	• *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 Nolans Bore deposit is located wholly within Exploration Licence (EL) 28473 which is 100% owned by Arafura Resources Limited. The deposit lies within Mineral Lease (ML) application 26659 which is 100% owned by Arafura Rare Earths Pty Ltd., a wholly owned subsidiary of Arafura Resources Limited. Mineral Lease applications 30702, 30703 and 30704 have been lodged over the sites of the proposed process plant, residue storage facilities and accommodation village. These are also 100% owned by Arafura Rare Earths Pty Ltd. Arafura Resources Limited also has 100% ownership of ELs which cover all proposed project infrastructure, including the bore field (ELs 28498, 29509, 31224, 31284 and 31957) • The deposit is situated on Pastoral Land with known mineralization spanning the boundary between Aileron (PPL 1097) and Pine Hill (PPL 1030) Stations. All stated Mineral Resources and Ore Reserves lie on Aileron. • Arafura Resources has executed a Native Title Exploration Agreement with the Central Land Council (CLC) on behalf of the Native Title Holders for this tenement. The Nolans project is subject to Native Title claims. In February 2020 Arafura reached an in-principle agreement with the Native Title Holder groups for the Nolans Project (ASX: ARU 02/03/2020). • Arafura was issued Sacred Site Clearance Certificates which provides clearance for the exploration and drilling activities conducted at Nolans Bore. A comprehensive clearance has recently been issued for the project area. • Arafura Rare Earths has also applied for a water abstraction licence to support the development of this project. • At the time of reporting, there are no known impediments to obtaining a license to operate in the area and the tenement is in good standing.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• PNC Exploration (Australia) Pty Ltd explored the project area in 1994-1996. They discovered the Nolans Bore prospect by following up a substantial airborne radiometric anomaly. PNC completed ground radiometric surveys and they sampled and assayed the surface outcrops. No other exploration work has been done at Nolans Bore by other parties.
Geology	• *Deposit type, geological setting and style of mineralization.*	• The Nolans Bore REE-P-U deposit is a complex, 3D stockwork vein-style deposit which occurs in the Aileron Province of the Arunta Region in the Northern Territory, Australia. Small isolated parts of the deposit crop out, but most of it is concealed beneath a thin layer of alluvial and colluvial transported cover. • The deposit is characterised by massive fluorapatite mineralization which ranges from discrete narrow fine-grained veins to wide intervals of massive coarse-grained zones and breccias. The massive fluorapatite-rich rocks contain up to about 95% fluorapatite and typically contain

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		abundant fine-grained REE-bearing mineral inclusions, such as monazite group minerals, allanite, thorite and numerous other REE phosphates, silicates and carbonates. The fluorapatite itself contains variable amounts of REE but a higher proportion of REE is hosted in the fine-grained mineral inclusions. The associated calcsilicate style of mineralization can contain fluorapatite and other REE-bearing minerals and is typically dominated by pyroxene, amphibole, epidote-allanite, carbonate, quartz, plagioclase, zeolites, garnet, scapolite and titanite. The calcsilicate rocks are strongly associated with the massive fluorapatite mineralization but tend to be lower grade where mineralized. • The Nolans Bore deposit is hosted by metamorphosed Palaeoproterozoic igneous and sedimentary rocks of the Aileron Province. Some of these host rocks also contain low grade REE mineralization (e.g. the coarse-grained to pegmatitic granitoids and granitic gneisses in the area commonly contain up to 0.3% REE and can locally exceed 1% REE, present as metamorphic monazite) but these rock types and REE grades and mix markedly contrast with the typical Nolans Bore mineralization and have not been included in the resource estimate. • The metamorphosed Palaeoproterozoic sedimentary and igneous rock units that host the deposit have undergone high-grade metamorphism during the 1600-1525Ma Chewings Orogeny and are interpreted to be parts of the Aileron Metamorphics, Lander Rock beds and the Boothby Orthogneiss as mapped in nearby outcrops. Large intrusive bodies of coarse-grained to pegmatitic granitoid form a major component of the host country rocks at Nolans Bore. These units can be traced as coherent bodies (dykes and sills) and can be differentiated from the other host rocks and mineralization. As such, these rocks form important marker units. The interpreted geological distribution suggests these granitoid bodies are mutually exclusive of mineralization. However, drill core relationships clearly indicate the mineralization postdates the granitoids. The currently favoured geological model suggests that mineralization is preferentially formed in strain zones within the country rock gneisses and schists adjacent to the more competent, massive coherent coarse-grained to pegmatitic granitoid bodies. This structural relationship was first proposed in 2006 and is still supported. • Nolans Bore-type mineralization and its associated alteration is geologically and geochemically distinct from the surrounding host rocks and clearly post-dates the high-grade metamorphism in the host rocks. Large parts of the deposit remain relatively undeformed however some (all) parts are overprinted by the Devonian-Carboniferous Alice Springs Orogeny. Cainozoic weathering and oxidation also occurs. Despite localized overprinting effects, the geochemistry of the mineralization is similar throughout. Hence the mineralization is defined by an enveloping surface which encompasses all Nolans Bore-type mineralization at a cut-off of >0.5% TREO. • Systematic drilling indicates the widespread presence of mineralized veins up to tens of metres in thickness and hundreds of metres in length, extending below 250 m drilled depth across parts of the deposit. The extent of the deposit is yet to be fully outlined.

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		• Nolans Bore-type mineralization and associated alteration has been recognised in exploration drilling and surface exposures over an area of about 4 km x 3 km.
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.*	• See Tables 1 and 2 in the main body of this report
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.*	• The reported exploration results are length-weighted averages based on individual sample intervals and grades. A 1% TREO lower cut-off grade has been applied to all reported grades and considers the geology and material types included in each mineralized interval. Dilution has been kept to a minimum (maximum of 6m) and only included where the grade carries. The geological model for Nolans Bore encompasses bodies of mineralization to a 0.5% TREO lower cut-off grade. This geological boundary is often coincident with the 1% TREO cut-off because there is typically a sharp drop-off in grades for Nolans Bore-type mineralization. The incorporated internal dilution is consistent with the Resource/Reserve model however additional material is occasionally included within the geological model due to a lack of infill drill hole data and 3D modelling difficulties. • No intervals of extreme high-grade mineralization were encountered in this drill program. • No metal equivalents have been used.
Relationship between mineralization widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralization 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 (e.g. 'down hole length, true width not known').*	• The widths of mineralization reported in this announcement are not true widths. They are based on drill intercepts. The geological model for the deposit is complex three-dimension shape. The drill holes reported here penetrate the mineralized bodies at moderate to high angles.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should*	• See Figures 1 and 3 and Tables 1 and 2 in the main body of this report.

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	include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
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 drill intercepts of mineralization in these drill holes have been assayed and 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.*	• Arafura has drilled 548 RC and diamond core holes into Nolans Bore between 2001 and 2013, for a total of 87,081 metres. These holes together with data from 9 costeans (1,112m) have been used to outline and define the identified Mineral Resources at Nolans Bore. In addition to these Arafura has drilled 48 wide-diameter (780mm) holes (1,658m) into the deposit and excavated a number of small pits for exploration and geotechnical purposes in and around Nolans Bore. Additional drilling has been done to the N, SE and SW of the deposit. • Arafura acquired a detailed low-level, 50m spaced N-S airborne magnetic and radiometric survey over Nolans Bore and surrounds in 2008. Additional adjoining 100m spaced N-S regional airborne surveys were acquired across other parts of the Aileron-Reynolds project area in 2011 and 2013. • A detailed airborne hyperspectral survey was acquired over most of the Aileron-Reynolds project area in 2008. This survey covers the Nolans Bore and surrounds and was used to explore the regional for similar mineralogy. • Arafura acquired aerial photography over the deposit in 2008. This resulted in a detailed orthophoto coincident with a professionally surveyed detailed DEM over most of ML26659. This detailed DEM has been updated and revised several times based on new survey data. • Arafura acquired detailed World View 2 satellite imagery (0.5m pixel resolution) over Nolans Bore in 2012. Additional regional and less detailed SPOT5 satellite imagery (2.5m pixel resolution) was also purchased over the project area in 2012 for the EIS and regional exploration. Arafura also acquired additional World View imagery covering the proposed developments to the S and SE of Nolans Bore in 2013. • Arafura acquired detailed imagery via a drone survey with an associated DEM over the main project area in 2018. • Arafura has collected extensive geological, geotechnical and metallurgical data from the Nolans Bore deposit and surrounds in support of its exploration and resource definition programs. • Arafura has collected a substantial biogeochemical dataset over the Nolans Bore deposit and surrounds and has used this to assist in targeting exploration in areas of cover (*e.g.* Mulga prospect ASX: ARU 08/11/2013). • Arafura discovered substantial ground water resources to S and SW of Nolans Bore and has applied for a water abstraction licence with the Northern Territory Department of Environment and Natural Resources (ASX: ARU 22/10/2014).

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		• Arafura's EIS for the Nolans project gained regulatory approval from the Northern Territory Environment Protection Authority (NTEPA) in December 2017 (ASX: ARU 05/01/2018) and from the Australian Government's Department of Environment and Energy in May 2018 (ASX: ARU 14/05/2018). Amendments to the project configuration were also approved by the NTEPA in September 2019. • Arafura has acquired onsite environmental data since 2008 (dust and weather information). Arafura has also routinely collected baseline groundwater information since 2010. Additional baseline environmental data (chemical and radiation) was collected from 25 sites during EIS studies. • Arafura investigated the sulfide content of the waste rocks during the EIS completed AMD studies. As expected, the results were very low however twelve representative samples have been subjected to barrel leach test work to satisfy the Northern Territory Department of Primary Industry and Resources and NTEPA. • Arafura obtained additional representative whole rock assays and updated the material types and Mineral Resources in 2016-18. • Arafura completed detailed metallurgical and mining studies resulting in a Definitive Feasibility Study (DFS) and updated Ore Reserves for the Nolans Bore deposit in 2019 (ASX: ARU 07/02/2019).
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The host rocks are currently being reviewed in light of the 2019 drill program and assay results. • Arafura is intending to mine and process this world-class rare earth deposit with additional work likely as the project develops.