Commercial Monazite and Titanium Products Generated by Concentrate Test Work from Sandy Mitchell Project

HIGHLIGHTS

- IHC Robbins has successfully generated a commercial monazite product sample from a heavy minerals ('HM') gravity concentrate produced from the Sandy Mitchell Sand deposit, North Queensland
    - The feedstock to produce the HM concentrate was wholly derived from the representative bulk retained fraction of AHK's Sandy Mitchell resource drill programme, from holes informing the MRE.
- Outstanding test work delivered a high-grade rare earth concentrate grading 54.8% TREO plus 1.49% Y_2O_3.
    - The proportion of NdPr oxide in TREO was 23.4%.
    - Strong titanium upside was also demonstrated, with production of a premium 73.5% TiO2 leucoxene product from the HMC.
- The study is still in progress, with a second tranche of work to optimise zircon, biotite, muscovite and garnet product streams.
- Findings from this study will inform AHK's main Stage 2 metallurgical testwork, currently in progress.
- The study to date demonstrates generation of saleable and commercial REE and Ti products.

Cautionary Statement: NdPr oxide is Nd_2O_3 + Pr_6O_{11} and is reported as a proportion of the total rare earth oxide (TREO) basket, and not as an NdPr oxide grade.

Ark Mines Limited (ASX: AHK) (AHK or the 'Company') is pleased to announce that IHC Robbins has successfully demonstrated that commercially saleable monazite REE and leucoxene TiO2 products can be separated from a HM gravity concentrate derived from the Company's Sandy Mitchell MRE in North Queensland, Australia.

Managing Director Ben Emery commented: *"This is a really important step forward for AHK's Sandy Mitchell Project. This study bridges the gap between recognising the commercial potential of the Project and demonstrating the potential through the successful production of commercial grade monazite and titanium products. The monazite product achieved 54.8% TREO, placing it near the upper end of the normal commercial specification range. And this is done by simple gravity processes with no chemicals or crushing. Nature does our work.*
Whilst there is still further metallurgical testwork to be completed, these results provide a level of confidence in the quality of the resource, as we look to define the most efficient processing pathway to commercial production.

FURTHER TEST WORK HIGHLIGHTS

- Test work resulted in four product streams:
  - The Highest grade stream (-0.15 mm stream) achieved 54.8% TREO with an NdPr oxide proportion of 23.4%, plus 1.49% Y_2O_3.
  - The coarse stream (-0.5mm to +0.15mm) achieved 52.6% TREO with an NdPr oxide proportion of 23.4%, plus 1.36% Y_2O_3, without additional mineral liberation through grinding.
  - The four stream composite product achieved 52.2% TREO with an NdPr oxide proportion of 23.0%, plus 1.45% Y_2O_3.
  - Both fine and coarse product streams are inside the normal commercial grade range of 45-55% TREO.
- Cerium recovery on all four product streams was 65.43%.
  - Ce recovery is used by metallurgists as a proxy for REE recovery since it can be reliably measured with XRF.
  - IHC note that in a commercial plant, this could be improved by recirculation of intermediate streams.
- The fine monazite con was achieved using reverse magnetic separation and triboelectrostatic separation.
  - These dry processes have positive implications for reduced reagent and water use compared to wet gravity separation and floatation.
  - The triboelectrostatic process may also be suitable for processing Sandy Mitchell's ultra-fine -0.045mm fraction.
- A Ti concentrate HTRS (high tension roll separator) conductor stream of 73.5% TiO_2 leucoxene was also produced from the HM con.
  - The HTRS 73.5% TiO_2 stream had low ZrO_2 of 0.6% and very low monazite contamination.
  - The HTRS middlings graded 65.8% TiO_2 and the Company is doing further work to understand the commerciality of this material.

Sandy Mitchell REE Project Concentrate to Product Testing

In December 2025 AHK created a composite bulk sample from the retained fractions of resource drilling one metre samples, wholly within the MRE. The weighted average grade of this bulk sample was 1170.3 ppm monazite, 127.9 ppm xenotime, 629.0 ppm zircon and 1282.9 ppm Ti-Ox minerals (rutile, leucoxene, and ilmenite). Sample TREO was 379.6 ppm. Overall, the sample was slightly below ROM in monazite and slightly above ROM in Ti-Ox, but generally close to ROM grade and within acceptable mining deviation of ROM.

The sample was dispatched to Currumbin Minerals which operates a commercial HM concentration plant at Currumbin, QLD Australia. The sample was homogenised, deslimed and processed by wet shaker table followed by electrostatic separation to yield a HM concentrate.

In March 2026, AHK's Currumbin concentrate was sent to IHC Robbins to test the generation of product concentrates with the aim of producing commercial grade products for further testing and to help inform AHK's ongoing Stage 2 Sandy Mitchell metallurgical test work programme.

The concentrate was screened into two fractions; -0.15mm and -0.5 to +0.15mm and dried. The fine fraction was passed through a high intensity roll magnetic separator. The non-magnetics were passed through a wet shaker table with the tails recirculated for a second pass. The dried concentrate was sent to a high tension roll separator (HTRS) for electrostatic separation.

The HTRS conductor output yielded a 73.5% TiO2 leucoxene product and the middlings yielded a 65.8% TiO2 stream that may also be commercially viable. The HTRS non-conductors were passed to an induced roll magnetic separator (IRMS) with one stage of recirculation of the non-magnetic fraction.

After drying, assay determined that the non-magnetic IRMS concentrate was contaminated with paramagnetic zircon. The concentrate was then passed through a triboelectric separator with both the positively and negatively charged fractions separately passed through another stage of IRMS. The tribo-negative non-magnetic fraction formed the low-grade concentrate stream 2, and the tribo-positive non-magnetic fraction was fed back through triboelectric separation. The positively charged output yielded the high-grade fine product stream and the negatively charged output yielded the low-grade concentrate stream 1. The grade of these three outputs and their combinations is shown in Table 1.

The coarse fraction underwent dry-drum magnetic separation and the non-magnetic fraction was passed to a wet shaker table with one round of tails recirculation. After drying, the table concentrate was passed to IRMS with the magnetic fraction passing to HTRS. The non-conductors were subsequently cleaned up using heavy liquid separation as a time saving measure, IHC already proving that this size fraction could be treated appropriately by simple wet gravity concentration. The HLS sinks were passed to HTRS with the non-conductors passing to IRMS with one round of recirculation of the magnetic fraction. The non-magnetic fraction yielded the coarse REE product.

The apparent complexity of the process flow is a result of intermediate stage assay and experimental determination of the next logic stage, and not a reflection of the commercial process which, having been informed by this test work, can be optimised and simplified.

Table 1: IHC concentrate test work REE products.

Stream	Product	TREO	LREO	MREO	HREO	Y_2O_3
		%	%	%	%	%
1	-0.15mm REE product	54.8	49.8	2.8	2.2	1.49
2	-0.15mm REE concentrate 1	41.3	37.2	2.1	2.0	1.32
1+2	TOTAL:	52.0	47.2	2.6	2.2	1.45
3	-0.15mm REE concentrate 2	46.4	41.6	2.4	2.5	1.68
1+2+3	TOTAL: -0.15mm REE product streams	52.0	46.2	2.6	2.2	1.49
4	-0.5+0.15mm REE product	52.6	47.7	2.8	2.1	1.36
1+4	TOTAL: REE products	53.8	48.9	2.8	2.2	1.43
1+2+3+4	TOTAL: REE product streams	52.2	46.7	2.7	2.2	1.45

The magnetic and electrostatic processing path has real benefits with respect to water requirements and dry tailings yields, which are important for fine fractions. The triboelectrostatic process is also dry and IHC point out that it may be applicable to the ultra-fine fraction of Sandy Mitchell ore, which they had previously and successfully tested using wet high-intensity magnetic separation (WHIMS). Triboelectrostatic separation is proven technology and commercially available globally through companies such as ST Equipment & Technology.

Processing has yielded a 52.2% TREO combined monazite product which sits near the top of the 45% to 55% normal commercial range, and a 73.5% TiO_2 leucoxene product which sits inside the 70% to 90% TiO_2 window of Australian, African, Indian and US leucoxene concentrates.

The HTRS middlings 65.8% TiO_2 stream may also be commercial and the Company is doing further work on this.

Recovery on the REE product streams, measured by Ce, was 65.43% overall; 42.63% from the fine fraction and 22.80% from the coarse fraction. IHC note that recirculation of intermediate streams in a production processing circuit could increase recovery further.

Next Steps

IHC Robbins is currently planning further work to test the concentrate for garnet production and is already planning to integrate the findings of this test work programme into AHK's main Stage 2 metallurgical testing scope to inform plant PFS.

The company is currently investigating test work to have the IHC REE product cracked to rare earth oxides and thorium end products.

This announcement has been approved for release to the ASX by the Board of Ark Mines Limited.

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Appendix A: 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
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.*	Ark Mines May to June 2023 Sandy Mitchell programme sampling techniques: • Samples are rock chips and accompanying bulk fines collected on 1m intervals by air core drill using 100mm bit. • Sample was passed through an 82.5: 12.5 riffle splitter to yield a representative aliquot of approx. 1.5 kg collected in prenumbered calico bag, and a remainder retained in a numbered plastic bag, with recoveries volumetrically estimated with periodic checks by mass using digital scale, compared against laboratory loose bulk density measurements. • Historic works by SGS (SGS Oretest Job No: S0580, 2010 for JOGMEC) shows mineralisation to have grainsize < = 125µm (very fine sand) and thus the sample mass is adequate for representivity. • Sample for total digest assay was sent to North Australian Laboratories for Assay. • Sample for pan concentration was sub-sampled by spade channel through the remainder sample to a mass of approx. 1kg per metre as determined by digital scales. These were then panned to a concentrate and the subsequent concentrates composited per hole. • Pan Con composite samples were sent to IHC Mining where samples were screened to -1mm, heavy minerals were further separated by heavy liquid separation with yields weighed at each stage. • The final heavy mineral concentrate was subject to Portable XRF analysis for a limited indicative assay. • Samples for preliminary metallurgical testing were sent to Downer Mineral Technologies and comprised the entire bulk metre remainder after riffle splitting the representative aliquot and removal of the 1kg pan concentrate aliquot. Ark Mines November to December 2023 Sandy Mitchell programme sampling techniques: • All sampling methodologies were as per the June programme, but the air core bit was exchanged for a reverse circulation face hammer to complete the end of hole, at the same diameter. • The bedrock horizon was determined by geological chip logging supported by driller's run sheet records of penetration. Ark Mines December 2023 Sandy Mitchell auger programme: • All sampling methodologies were as per the June programme, but the drilling was via 100mm auger using 105mm bit sampled on 1m intervals. • Bedrock was not intersected and depth was constrained by penetration. • No concentrate or metallurgical samples were produced Ark Mines August to September 2025 Sandy Mitchell programme sampling techniques: • All sampling methodologies were as per the June 2023 programme, but the air core bit was exchanged for a reverse circulation face hammer to complete the end of hole, at the same diameter.

Criteria	JORC Code explanation	Commentary
		• The bedrock horizon was determined by geological chip logging supported by driller's run sheet records of penetration. • Sample for total digest assay will be sent to NATA accredited Jinning Test and Inspection for Assay with methodologies matched to that of the previous programmes.
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).*	Ark Mines May to June 2023 Sandy Mitchell programme: • Drill was by Comacchio track mounted air core rig using 100mm air core bit. • All holes were vertical and drilled to refusal or 17.5m, whichever came first. Ark Mines November to December 2023 Sandy Mitchell programme: • Drill was by AusRoc 4000 multi-purpose rig using 100mm and changing to slim line 100mm RC face hammer at depth. • All holes were vertical and drilled to complete the final metre in bedrock. Ark Mines November to December 2023 Sandy Mitchell auger programme sampling techniques: • Drilling was by Rockmaster utility mounted auger using 100mm flights and 105mm bit. • All holes were vertical and drilled to refusal whilst still in sands. Ark Mines August to September 2025 Sandy Mitchell programme: • Drill was by AusRoc 4000 multi-purpose rig using 100mm and changing to slim line 100mm RC face hammer at depth. • All holes were vertical and drilled to complete the final metre in bedrock.
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.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • Recoveries were assessed by volumetric estimation by the metre based on total sample weights using a digital scale with comparison made via laboratory loose bulk density measurements. • Sample was passed through a cyclone with a gated chute to allow fines to fall out of the air stream. The chute was kept closed until the end of each metre had been drilled, then opened to collect sample, and closed prior to recommencement of drilling. • No relationship between recovery and grade has been identified. Ark Mines November to December 2023 Sandy Mitchell auger programme sampling techniques: • Recoveries were not estimated and the samples with potential contamination by outside return, are treated as soils. Ark Mines August to September 2025 Sandy Mitchell programme: • Recoveries were assessed by volumetric estimation by the metre based on total sample weights using a digital scale. Further confirmation by laboratory loose bulk density will be carried out.
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.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • Sample was logged by the metre for all drilling, by the site geology team for both qualitative and quantitative criteria. • Drill logs for 100% of drilling are available with overall length of 3914.2m. • Logging is sufficient to support resource estimation, mining and metallurgical studies. Ark Mines November to December 2023 Sandy Mitchell programme sampling techniques:

Criteria	JORC Code explanation	Commentary
		• Sample was logged by the metre for basic qualitative criteria only. Ark Mines August to September 2025 Sandy Mitchell programme: • Sample was logged by the metre for all drilling, by the site geology team for both qualitative and quantitative criteria. • Drill logs for 100% of drilling are available with overall length of 1189.4m.to date • Logging is sufficient to support resource estimation, mining and metallurgical studies.
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.*	Ark Mines May to June 2023 Sandy Mitchell programme: • All sample passed through the drill cyclone dry. • Sub-sampling for laboratory assay was by 87.5:12.5 riffle splitter: the bulk sample was passed evenly through the riffles with the assay aliquot collected in a pre-numbered calico bag, and the reject collected in a numbered plastic bag. • Field duplicates were taken at 1:40 by 50:50 riffle splitter. • Historic works by SGS (SGS Oretest Job No: S0580, 2010 for JOGMEC) shows mineralisation to have grainsize < 125µm (very fine sand) and thus the sample mass is representative. • Sample for pan concentration was sub-sampled by spade channel through the reject to a mass of approx. 1kg per metre as determined by digital scales. • Sample for preliminary metallurgical testing was selected from the 11m twinned hole SMDH 00014b and comprised the entire 87.5% bulk metre sample after riffle splitting to yield the representative sample and removal of the 1kg pan concentrate aliquot. Ark Mines November to December 2023 Sandy Mitchell programme: • All sampling was conducted as per the June 2023 programme, but duplicates at 1 in 40 were taken by passing the total reject sample through an 87.5:12.5 riffle splitter in the same manner as the primary sample. Ark Mines November to December 2023 Sandy Mitchell auger programme sampling techniques: • Sample was funnelled up by spiral flights through a closed steel collar tube, to a collector plate, then funnelled through a chute to a plastic collection tub. • Sub-sampling for laboratory assay was by 87.5:12.5 riffle splitter: the bulk sample was passed evenly through the riffles with the assay aliquot collected in a pre-numbered calico bag, and the reject was allowed to spill. • but duplicates at 1 in 40 were taken by passing the total reject sample through an 87.5:12.5 riffle splitter in the same manner as the primary sample. Ark Mines August to September 2025 Sandy Mitchell programme: • All sampling was conducted as per the June 2023 programme, but duplicates at 1 in 40 were taken by passing the total reject sample through an 87.5:12.5 riffle splitter in the same manner as the primary sample.
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.*	Ark Mines May to June 2023 Sandy Mitchell programme: • Metre samples were sent to North Australian Laboratories (NAL) for total digest assay: • Samples were weighed then kiln dried and re-weighed. • 1 in 5 samples was tested for moisture content. • 1 in 3 samples was tested for dry loose bulk density. • Sample was then pulverization in an LM-5 to 94% passing 75 µm with assay aliquot selected by laboratory splitter. • Al, Ca, Cr, Fe, Mg, P, S, Si and Ti were assayed by sodium peroxide fusion in nickel crucibles with ICP-OES finish.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td>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.</td><td>
Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U, Zr, Hf, Nb, Ta, Sr, Pb and As were assayed by sodium peroxide fusion in nickel crucibles with ICP-MS finish.
Na and K were assayed by 4 acid digest with ICP-OES finish.
Field duplicates were taken at 1:40 by 50:50 riffle split of the assay aliquot.
For total digest samples:
Laboratory repeats were assayed at than 1 in 8.
Standard insertion was carried out by the laboratory at 1 in 24.
Assay of blank quartz flushes was carried out at 1 in 40.
Grind size testing was carried out at 1 in 34.
For pan concentrate samples
Laboratory repeats were requested at no less than 1 in 40.
Standard insertion was requested of the laboratory at no less than 1 in 40.
Assay of blank quartz flushes was requested at 1 in 40.
Total radiometric count was measured on all assay samples using a SAIC Exploranium GR-110G hand held scintillometer, hired from Terra Search Townsville, pre-calibrated.
Reading times were 10 second accumulations, which was the machine maximum, with 100x10 second background accumulations taken per day, per measuring station.
IHC Mining Laboratory procedures for pan concentrate composite samples was:
Creation of duplicates by split at a rate of 1 in 24
Screen to -1mm and weigh
Heavy liquid separation and weigh
Pulverization of the heavy mineral fines by extended grind
Portable XRF analysis of the pulp
QAQC implemented is believed sufficient to establish accuracy and precision with any batches showing QAQC anomalies retested by batch.
Mineral Technologies preliminary met’ samples were processed at bench scale by:
55.2kg of individual samples were combined by rotary homogenisation then split to yield a representative aliquot of 38.3 kg for process testing.
The composite sample was screened to 2000 µm, 500 µm and wet screened at 20 µm with the 500 to 20 µm fraction then passed through 2 stages of gravity separation using Wilfley table (rougher stage).
The Wilfley concentrate was passed through a bromoform heavy liquid separation flask (cleaner stage).
The HLS sinks were attrition cleaned for 5 minutes at a 65% wet weight density and deslimed, then passed through a Geoteknica FM3 froth floatation cell using starch depressant and sodium silicate surfactant.
Both sinks and floats were separately processed through a dry induced Reading magnetic separator.
This yielded 4 final streams of mag and non-mag floats (containing the bulk of REE) and mag and non-mag sinks, containing the bulk of zircon, as well as various tails from each previous stage.
Percentages of material passing or rejecting at each stage were determined by mass.
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Criteria	JORC Code explanation	Commentary

		• The float magnetic fraction was further refined by semi-lift magnetic separator to determine feasibility of individual mineral species separation, but the yields of this process were not assayed due to volumetric limits from this round of processing.
		• Mineral Technologies sent samples of the tails and product concentrates, excluding SLM stage products, to Bureau Veritas Brisbane for assay:
		  • Samples were dried and pulverised using tungsten carbide bowls in a vibrating pulveriser to 90% passing 75 µm with a BQF before each sample.
		  • Sample was fused to a glass bead to determine Fe, Si, Al, Cr, Mg, Mn, P, U, Th, V, Nb, S, Ca, K, Ce, Sn, Ti, and Zr oxides by XRF.
		  • LOI was determined by mass after heating to 105°C (drying temp) and 1000°C (fusing temp).
		  • Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Tm, Y and Yb were determined by laser ablation of fused bead with ICP-MS finish.
		  • Standards were assayed at 1 in 3 to cover all elements in the suite for both assay methods.
		  • Laboratory repeats were carried out at 1 in 4.
		Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme:
		• Metre samples were sent to North Australian Laboratories (NAL) for total digest assay:
		• Samples were weighed then kiln dried and re-weighed.
		• 1 in 10 samples was tested for moisture content.
		• 1 in 10 samples was tested for LOI.
		• 1 in 3 samples was tested for dry loose bulk density.
		• Sample was then pulverization in an LM-5 to 94% passing 75 µm with assay aliquot selected by laboratory splitter.
		• Al, Ca, Cr, Fe, Mg, P, S, Si and Ti were assayed by sodium peroxide fusion in nickel crucibles with ICP-OES finish.
		• Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U, Zr, Hf, Nb, Ta, Sr, Pb and As were assayed by sodium peroxide fusion in nickel crucibles with ICP-MS finish.
		• Na and K were assayed by 4 acid digest with ICP-OES finish.
		• Field duplicates were taken at 1:40 by 87.5:12.5 riffle split of the bulk reject.
		• For total digest samples:
		  • Laboratory repeats were requested at no less than 1 in 40 but carried out by the laboratory at 1 in 8.
		  • Standard insertion was carried out by the laboratory at 1 in 24.
		  • Assay of blank quartz flushes was requested at 1 in 40.
		  • Grind size testing was carries out at 1 in 34.
		• Total radiometric count, K%, U ppm and Th ppm was measured on all assay samples using an RSI RS-230 103 cm^3 bismuth germanate oxide crystal high sensitivity hand held spectrometer, purchased for the Project and, pre-calibrated.
		• Reading times were 30 second accumulations, with 20x30 second background accumulations taken per day, per measuring station, one set before and one set after measurement.
		Ark Mines December 2023 Sandy Mitchell auger programme sampling techniques:
		• Laboratory, analytical procedures, analytes and QC were identical to that described for the AC programme above.
		Ark Mines August to September 2025 Sandy Mitchell programme:
		• Samples from this programme are not yet assayed.

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<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
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<td>Verification of sampling and assaying</td>
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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.

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Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme (including auger):

Significant intersections have not been separately determined or reported.
11 twin holes have been drilled for a total of 104.85 twin metres Two of these twins are using power auger to twin air core, to support both resource and reconnaissance works.
Data was entered into MS excel then verified against hard copy data, followed by import into Datamine Studio RM for validation.
Primary data is stored as hard copy, electronic tables in CSV format and Datamine format.
Assay data yielding elemental concentrations for rare earths (REE) within the sample are converted to their stoichiometric oxides (REO) in a calculation performed using the conversion factors in the table below.
Rare Earth oxide is the industry accepted form for reporting rare earths. The following calculations have been used for reporting:

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
CREO = Nd_2O_3 + Eu_2O_3 + Tb_4O_7 + Dy_2O_3 + Y_2O_3
LREO = La_2O_3 + CeO_2 + Pr_6O_{11}
HREO = 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
MagREO = Pr_6O_{11} + Nd_2O_3 + Tb_4O_7 + Dy_2O_3
Where stated as +Y and or +Sc, the calculated values above have the addition of Y_2O_3 and or Sc_2O_3
ND/Pr = Nd_2O_3 + Pr_6O_{11}
TREO – Ce = TREO – CeO_2
%NdPr + NdPr/TREO

Economic heavy minerals, monazite, xenotime, zircon, rutile and ilmenite are potentially marketable materials contained in the mineralisation as demonstrated by IHC pan concentrate work and Downer Mineral Technologies gravity concentration work to date.
Assay data yielding elemental concentrations for rare earths (REE), Zr, Hf and Ti within the sample are converted to their stoichiometric mineralogy in a calculation performed using the conversion factors in the table below. For elements that occur in more than one mineral, the proportions of occurrence in each were reported by SGS (SGS Oretest Job No: S0580, 2010 for JOGMEC) and the assayed element is assigned by a percentage determined by these proportion, into the appropriate mineral species.
The following calculated mineralogy has been used for reporting:

Monazite = $La(PO_4)$ + $Ce(PO_4)$ + $Pr(PO_4)$ + $Nd(PO_4)$ + $Sm(PO_4)$ + (91.12/100 x $Y(PO_4)$) + $Th(PO_4)$ + $CaU(PO_4)_2$
Xenotime = $Eu(PO_4)$ + $Gd(PO_4)$ + $Tb(PO_4)$ + $Dy(PO_4)$ + $Ho(PO_4)$ + $Er(PO_4)$ + $Tm(PO_4)$ + $Yb(PO_4)$ + $Lu(PO_4)$ + (8.88/100 x $Y(PO_4)$_ppm)
Zircon = $Zr(SiO_4)$ + $Hf(SiO_4)$
Rutile = 9.42/100 x Ti as TiO_2
Ilmenite = 90.58/100 x Ti as $FeTiO_3$

Stoichiometric Oxide Table:
<table>
<tr><th>Element Name</th><th>Element Oxide</th><th>Oxide Factor</th></tr>
<tr><td>Ce</td><td>CeO_2</td><td>1.2284</td></tr>
<tr><td>Dy</td><td>Dy_2O_3</td><td>1.1477</td></tr>
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Criteria	JORC Code explanation	Commentary

Er	Er2O3	1.1435
Eu	Eu2O3	1.1579
Gd	Gd2O3	1.1526
Ho	Ho2O3	1.1455
La	La2O3	1.1728
Lu	Lu2O3	1.1371
Nd	Nd2O3	1.1664
Pr	Pr6O11	1.2081
Sc	Sc2O3	1.5338
Sm	Sm2O3	1.1596
Tb	Tb4O7	1.1762
Th	ThO2	1.1379
Tm	Tm2O3	1.1421
U	U3O8	1.1793
Y	Y2O3	1.2699
Yb	Yb2O3	1.1387

- Stoichiometric Mineral Table:

Mineral Name	Assay Element	Chemical Formula	Stoichiometric Factor
Monazite	Y	Y(PO4)	2.0682
Monazite	La	La(PO4)	1.6837
Monazite	Ce	Ce(PO4)	1.6778
Monazite	Pr	Pr(PO4)	1.6740
Monazite	Nd	Nd(PO4)	1.6584
Monazite	Sm	Sm(PO4)	1.6316
Monazite	Th	Th(PO4)	1.4093
Monazite	U	CaU(PO4)2	1.9663
Xenotime	Y	Y(PO4)	2.0682
Xenotime	Sc	Sc(PO4)	3.1125
Xenotime	Eu	Eu(PO4)	1.6250
Xenotime	Gd	Gd(PO4)	1.6039
Xenotime	Tb	Tb(PO4)	1.5976
Xenotime	Dy	Dy(PO4)	1.5844
Xenotime	Ho	Ho(PO4)	1.5758
Xenotime	Er	Er(PO4)	1.5678
Xenotime	Tm	Tm(PO4)	1.5622
Xenotime	Yb	Yb(PO4)	1.5488
Xenotime	Lu	Lu(PO4)	1.5428
Zircon	Zr	Zr(SiO4)	2.0094
Zircon	Hf	Hf(SiO4)	1.5159
Rutile	Ti	TiO2	1.6685
Ilmenite	Ti	FeTiO3	3.1694

- Because other elements can occur in both xenotime and monazite, the calculation for these minerals should be considered the minimum.
- Because Ti and to a lesser extent Zr, can occur in other minerals no included in calculation, the calculated mineralogy for these elements should be considered a maximum.

Ark Mines August to September 2025 Sandy Mitchell programme:

- Significant intersections have not been separately determined or reported.
- 2 twin holes have been planned for drilled but not yet drilled.
- Data was entered into MS excel then verified against hard copy data, followed by import into Datamine Studio RM for validation.
- Primary data is stored as hard copy, electronic tables in CSV format and Datamine format.

Criteria	JORC Code explanation	Commentary
		• Assay is still in progress.
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.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • An initial collar survey by hand held GPS was conducted as a failsafe, with expected accuracy of ±5000mm in x and y, and ±50000mm in z. • Full survey by Twine Surveys was subsequently carried out using RTKdGPS with accuracy of ±20mm in x and y, and ±200mm in z • Twine's professional RTK survey was implemented between drill collars and used to generate a digital terrain model for high quality topographic control. • All survey data is recorded in MGA 2020 zone 54 and AHD. Ark Mines December 2023 Sandy Mitchell auger programme: • Collar survey was by hand held GPS with expected accuracy of ±5000mm in x and y, and ±50000mm in z. Ark Mines August to September 2025 Sandy Mitchell programme: • An initial collar survey by hand held GPS was conducted as a failsafe, with expected accuracy of ±5000mm in x and y, and ±50000mm in z. • Full survey by Twine Surveys was subsequently carried out using RTKdGPS with accuracy of ±20mm in x and y, and ±200mm in z • Survey data is recorded in MGA 2020 UTM zone 54.
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.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • Data spacing for 3 lines of drilling is 60m x 120m. • Data spacing for the remaining 13 lines is 120m x 120m • No compositing has been applied to 1m samples for total digest assay. • Pan concentrates were composited per drill hole. • Preliminary metallurgical sample was composited as discussed under *Laboratory Tests.* • Representative metre samples for total digest assay were not composited, residual sub-metre hole ends were similarly assayed separately to preserve geometric representation. Ark Mines December 2023 Sandy Mitchell auger programme: • Data spacing was approx. 360m. • Representative metre samples for total digest assay were not composited, residual sub-metre hole ends were similarly assayed separately to preserve geometric representation. Ark Mines August to September 2025 Sandy Mitchell programme: • Data spacing for 18 lines of drilling is 280m x 2800m, staggered. • No compositing has been applied to 1m samples. • Variographic analysis of the May to June 2023 and November to December 2023 programme data shows the sample spacing and distribution is appropriate for geological and grade continuity to support future mineral resource estimation.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this*	Ark Mines May to June 2023, November to December 2023 (including auger), and August to September 2025 Sandy Mitchell programme: • Deposit type is unconsolidated restite sand derived by in-situ weathering, sometimes called saprolite sand, with minor perturbation by small scale fluvial channels. • The applied vertical sampling is the optimal orientation for the deposit type. • No bias by orientation or spatial relationships has been identified.

Criteria	JORC Code explanation	Commentary
	should be assessed and reported if material.	
Sample security	• *The measures taken to ensure sample security.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme (including auger): • Samples were collected after logging and transported at the end of each day to the company locked storage in Chillagoe. • Samples were boxed in closed pumpkin crates, wrapped in plastic for shipping by courier to the laboratory in Pine Creek, NT. • Samples for IHC Mining and Downer Mineral Technologies were similarly boxed, wrapped and couriered to the laboratories, but prior to shipping were stored on site at the Ark fenced bulk bag farm. • Bagged reject was stored on site in Ark's fenced secure bag farm and covered in UV resistant tarping for future use except for auger samples where rejects were not collected. Ark Mines August to September 2025 Sandy Mitchell programme: • Samples were collected after logging and transported at the end of each day to storage on site, then periodically transported in bulk to the company locked storage in Chillagoe. • Bagged reject was stored on site in Ark's fenced secure bag farm and covered in UV resistant tarping for future use.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • Full audit of sampling techniques and data available to date was carried out by geological consultants, Empirical Earth Science. • EES notes that the composited concentrate samples results in assay representing diluted material with no internal separation possible. • EES noted that the hand panning process of such fine material is prone to heavy mineral loss, with the possibility that concentrates underrepresent the total heavy mineral fraction. • ESS noted that the pXRF technique used in initial concentrate assays is not suited to yield full REE data, but that the results can inform approximate proxy calculations for the full REE suite. • EES noted that none of these factors apply to the representative metre samples and total digest assays, which meet best practice. • EES noted that the preliminary metallurgy was of insufficient volume and source dispersion to represent the entire eventual resource, but was well suited to its stated purpose of proof of concept, testing recovery technique, and process to inform the next stage of bulk metallurgy. • EES also noted that the preliminary metallurgy was selected by reviewing pan con composite results, representing a median grade material within that data set, and is thus a reasonable preliminary representation of grade and recovery performance. • EES noted that the extensive QAQC was of good quality without significant bias, and showed that the data was fit for use in resource estimation. • EES noted that the auger data correlated within acceptable limits with the AC data and showed no undue bias or significant contamination, given the short hole depths, metre sampling and full QC suite. Ark Mines August to September 2025 Sandy Mitchell programme: • Full audit of sampling and logging techniques has been carried out by geological consultants, Empirical Earth Science. • Further audits are planned post assay.

SECTION 2 REPORTING OF EXPLORATION RESULTS

(Criteria in this section apply to all succeeding sections.)

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.*	• EPM 28013 Sandy Mitchell is 100% owned by Ark Mines Limited and was purchased on the 23rd of February 2023. • This tenement was formally EPM18308. • There are no third party agreements. • No known issues impeding on the security of the tenure of Ark Mines ability to operate in the area exist.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	A number of companies and individuals have explored the area for gold and base metals and for heavy minerals. The summaries presented below are from the IRTM source: • ATP 597M was granted to Laskan Minerals Pty Ltd in 1969 over the Reid Creek area, north of the Mitchell River. From assays of rock chip and stream sediment samples, it was concluded that there was little chance of economic mineralisation occurring in the Authority. Although good monazite grades were obtained, the samples were from creeks with little available wash. Good concentrations of monazite and ilmenite were present in large areas of sandy, alluvial sheet wash in the Reid's Creek area. It was believed that there was a potential for economic exploitation if the monazite concentrations occurred in a large enough volume of sandy material. No further work was reported. • In 1970, Altarama Search Pty Ltd was granted ATP 833M over the Mitchell River in the Reid Creek, Sandy Creek and Mount Mulgrave Homestead area. Four hundred stream sediment samples, at an average density of 1.25 samples/km ^{2}, were collected for assay. Copper and lead contents were low. Half of the zinc results were considered to be possibly anomalous. A two population distribution was obtained for zinc, with a standard threshold of about 15 ppm. It was suggested that the two population distributions represented normal background ranges present in different strata. No other work was carried out. • ATP 2580M was granted to Tacam Pty Ltd over Sandy Creek and its tributaries. Stream sediment samples averaged 0.18% monazite (0.01 to 0.45%), 0.07% rutile (0.15% in terraces), and 0.06% zircon (0.14% in terraces). The area had low economic potential and the Authority was abandoned in August 1981. • The principals involved in Tacam Pty Ltd combined with Metcalfe Holdings Pty Ltd in 1986 to take up 4 Authorities to Prospect - 4400,4401,4402 and 4403 centred on Mt Mulgrave, Arkara Creek, Sandy Creek and the Kennedy River respectively. The investigations were for the possibility of locating large-scale heavy minerals in association with

Criteria	JORC Code explanation	Commentary
		major drainages and lower slope eluvial deposits associated with Cretaceous weathering as indicated in previous investigations. EPM 4400, 4401, 4402 and 4403 • Barron and O'Toole focused on Mt Mulgrave for Ilmenite, rutile, REE, Monzonite, Zircon, and Gold.Tenement EPM 4400 consisted of 96 sub-blocks centred on Mount Mulgrave (7665, 7765), EPM 4401 consisted of 97 sub-blocks centred on Arkara Creek (7665), EPM 4402 consisted of 100 sub-blocks centred on Sandy Creek (7665) and EPM 4403 consisted of 86 sub-blocks centred on Kennedy River (7666, 7766) were granted to P.T.C. Barron, A. O'Toole and Metcalfe Holdings Pty Ltd on 22 September 1986 to explore for heavy minerals and precious metals. After three years of exploration the EPMs were surrendered on 22 August 1989. • Tenement EPM 10185 consisted of 157 sub-blocks was granted to Palmer Gold Pty Ltd on 25 October 1994 for an initial 2 year period. The exploration permit was renewed for a further 3 years on 25 October 1996 and surrendered on 3 October 2001. The tenement was situated 200km west of Cooktown. Rationale Significant gold-silver, tin and base metal deposits are known from the Georgetown and southern Dargalong Inliers to the south of EPM 10185 (e.g. Etheridge, Croydon and Oaks goldfields), from the Hodgkinson Province to the east (e.g. Palmer, Hodgkinson, Russell River, Starcke, Jordon Ck, Mareeba and Mount Peter goldfields, and Herberton-Mt Garnet tinfield), and the Coen Inlier to the north (e.g. Alice River & Potallah goldfields). However, other than brief reference to sub-economic alluvial gold occurrences near the junction of the Palmer and Mitchell Rivers, and in the Staaten, Lynd and Walsh Rivers (Culpeper 1993), no precious or base metal deposits are known to occur within rocks of the Yambo Inlier. Application for the area was made after structural interpretation of the region showed prospectivity for gold occurrence. Base metal anomalies delineated from previous exploration were also targeted for follow-up work. • In 2007 exploration activity was carried out by BHP Billiton Minerals Pty Ltd under an extremely large area (2,850 sub-blocks) of the Coen Yambo area from 2005 to 2007. EPM's 14438 and 14445 covered the majority of the Yambo Inlier. BHP targeted Ni sulphide and PGM and carried out AEM surveying, field mapping and sampling and drilling. The AEM targets were found to be related to sedimentary lithological units or obvious shear zones. • In 2007 - 2009 - MTY Resources Ltd undertook bulk sampling program along with a Panned Concentrate sampling program. • In 2012 Waverley Nominees undertook an Augur sampling program.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The tenement covers a portion of the southern extent of the Yambo Inlier, one of the several Proterozoic inliers to the west of the Palmerville Fault System. Rocks of the Yambo Inlier covered by the tenement comprise those of the middle

Criteria	JORC Code explanation	Commentary
		Proterozoic Yambo Metamorphic Group of mainly amphibolites and gneisses ranging in age from ~1690 Ma to ~1585 Ma. • The dominant Yambo member on the tenement is the Chelmsford Gneiss, and this is the source of REE sands. • These rocks have been intruded by Silurian-Devonian granites of the Lukinville Suite which form an integral part of the Cape York Batholith. Within the tenement they form a belt roughly 10 km wide trending NNW. • Extensive intrusions of Carboniferous-Permian dolerites occur throughout the Inlier, with only a few occurrences within the tenement. • The tenement appears largely gold deficient to date, except for the gold reporting to sediments within the Palmer River to the north. Recent Governmental radiometric surveys have highlighted areas of anomalous radiometric emission within the Yambo Inlier. The project tenements cover the majority of the anomalous radiometric areas. • The project area in the tenement has a 3 to 33m, average 10.0m (stage 3 drilling) to 12.3m (stage 2 drilling), covering of disaggregated fine to very fine sand with sparse pebble or cobble horizons. These sands carry REE as monazite and lesser xenotime, zircon, rutile, illmenite and garnet. The sands are believed to derive from weathering of the Chelmsford Gneiss, with minimal fluvial transport largely constrained to the upper 2m. There is minor clay in the top 1 to 2m of sand which extends from daylight to the bedrock.

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.*
		• Relevant drill data, refer to ASX: AHK 2 OCT 2024, Sandy Mitchell Measured Resource of 71.8Mt @ 1,732.7ppm MzEq, table in Appendix C: Sandy Mitchell Stage 1 complete assay return.

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*	Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme: • No high or Low-grade top/bottom-cut has been applied to the data. • Calculated mineralogy reduced by the deportment percentages is used to derive a monazite equivalent, which represents the economic heavy minerals proportional to their value (as determined by an analysis of extensive market data), with respect the concentration of monazite. • The assayed elements, coupled with QEMSCAN element proportions in ALS Job No: *MIN6934*, 2024 for Downer Mineral Technologies, allow calculation of monazite, xenotime, zircon, rutile, high titanium leucoxene, low titanium

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
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such aggregations should be shown in detail.

- *The assumptions used for any reporting of metal equivalent values should be clearly stated.*

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<td>

leucoxene, altered ilmanite and ilmenite concentrations stoichiometrically, as described in Table 1 Part 1

- The ratio of 5 year median values of these minerals to monazite, yields a table of unitless factors:

Mineral		Ratio
monazite		1.000
xenotime		1.000
zircon		0.361
rutile	$TiO_2 > 95\%$	0.281
hi Ti leucoxene	$TiO_2 > 85\%$	0.165
lo Ti leucoxene	$TiO_2 > 70\%$	0.126
altered ilmenite	$TiO_2 > 55\%$	0.072
ilmenite	$TiO_2 > 50\%$	0.065

- These factors are applied to the corresponding separate mineral concentrations in PPM for a given element assay, and the results are summed to give a monazite equivalent in PPM for that assay:

MzEq = 1.000 * monazite + 1.000 * xenotime + 0.361 * zircon + 0.281 * rutile + 0.165 * hi Ti leucoxene + 0.126 * lo Ti leucoxene + 0.072 * altered ilmenite + 0.065 * ilmenite

- If the stoichiometric conversions to mineral mass, the QEM deportment to economic heavy minerals, and the monazite equivalent factors are applied as a single equation, this can be expressed as:

MzEq = 1.000 * ((98.7 / 100 * La) * 1.6837 + (98.7 / 100 * Ce) * 1.6778 + (99.4 /100 * Pr) * 1.6740 + (99.4 / 100 * Nd) * 1.6584 + (99.4 / 100 * Sm) * 1.6316 + (99.4 / 100 * Eu) * 1.6250 + (99.4 / 100 * Gd) * 1.6039 + (99.8 / 100 * Th) * 1.4093 + (0.97 / 100 * Ca) * 3.3696) + 1.000 * ((99.8 / 100 * Sc) * 3.1125 + (99.8 / 100 * Y) * 2.0682 + (99.8 / 100 * Tb) * 1.5976 + (99.8 / 100 * Dy) * 1.5844 + (99.8 / 100 * Ho) * 1.5758 + (99.8 / 100 * Er) * 1.5678 + (99.8 / 100 * Tm) * 1.5622 + (99.8 / 100 * Yb) * 1.5488 + (99.8 / 100 * Lu) * 1.5428) + 0.361 * ((100 / 100 * Hf) * 1.5159 + (100 / 100 * Zr) * 2.0094) + 0.281 * ((1.66 / 100 * Ti) * 1.6685) + 0.165 * ((4.10 / 100 * Ti) * 1.9507) + 0.126 * ((2.48 / 100 * Ti) * 2.0448) + 0.072 * ((2.97 / 100 * Ti) * 2.7805) + 0.065 * ((2.82 / 100 * Ti) * 3.1694)

- The basket of heavy mineral concentrations is equated proportional to monazite concentration. These proportions are set by their respective average market values across the 2024 financial year, which was found to be well representative of the market data set from 2016 to date when outliers had been excluded as calculated using the Z test.
- The monazite equivalent purpose is to afford relative data and grade comparison and assessment as a concertation, and does not directly represent actual product value. Its main benefit is simplification of interpretation of a complex data set and reduction of human error.
- The cutoff grade is calculated on monazite equivalent (Mz Eq) which allows the value in the potentially saleable commodities to be tied together in a single calculation, and visible in the drill data in a single instance.
- The cutoff grade applied is 700 ppm Mz Eq.

Ark Mines August to September 2025 Sandy Mitchell programme:

- No high or Low-grade top/bottom-cut has been applied to the data presented in Appendix B, which is the total data set available to date.

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Criteria	JORC Code explanation	Commentary
		• As no assay has been complete on the 2025 data, the preceding discussion of metal equivalents is not applicable to this data set.
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').*	• Ark Mines May to June 2023 and November to December 2023 Sandy Mitchell programme drill data shows no regular variation in REE distribution beyond the top 1m where obvious and avoidable fluvial action may result in some supergene enrichment. • The mineralisation is essentially flat lying, and thus intercept width on the vertical holes drilled is at or approaching the geometric minimum width, which is optimal. • Consequently, only down hole length are reported and these are equivalent to true thickness. • These relationships appear to hold for the 2025 data, as would be expected for the same mineralisation system, as seen in logging, and confirmation awaits assay.
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.*	• Diagrams as appropriate accompany the report/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.*	• Relevant drill data, refer to ASX: AHK 2 OCT 2024, Sandy Mitchell Measured Resource of 71.8Mt @ 1,732.7ppm MzEq, table in Appendix C: Sandy Mitchell Stage 1 complete assay return.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• All data material to this report that has been collected to date has been reported textually, graphically or both.
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.*	• Ark plans further resource estimation based on the August to September 2025 drilling when assays are returned. • Ark plans further metallurgical test work on a larger sample basis, investigating several different techniques to determine optimal processing. • Ark also plans pilot plant test work and prefeasibility studies. • Ak plans further auger reconnaissance works across the tenement.

SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

(Criteria in this section apply to all succeeding sections.)

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Database integrity</td><td>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.
Data validation procedures used.</td><td>The database was created by HGS Australia for the purpose of conducting a resource evaluation.
The resource evaluation was conducted by HGS Australia</td></tr>
<tr><td>Site visits</td><td>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.
If no site visits have been undertaken indicate why this is the case.</td><td>No site visits were conducted by HGS Australia</td></tr>
<tr><td>Geological interpretation</td><td>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.
Nature of the data used and of any assumptions made.
The effect, if any, of alternative interpretations on Mineral Resource estimation.
The use of geology in guiding and controlling Mineral Resource estimation.
The factors affecting continuity both of grade and geology.</td><td>The resource area has been sufficiently interpreted by geological consultants and the geology matches grade and geological interpretations as anticipated.
Criteria used in the interpretations were:
Interpretations were based on the MzEq (monzonite equivalent) grade defined from element ratios and formulas.
A nominal 700ppm MzEq lower cut-off grade with flexibility for geological continuity.
Sections extended half the distance from the previous section.</td></tr>
<tr><td>Dimensions</td><td>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td>Mineralised outlines were interpreted by HGS within the coordinates:
8193000N – 8193900N
812400E – 814700E
140mRL – 176mRL</td></tr>
<tr><td>Estimation and modelling techniques</td><td>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data</td><td>The models were created using Surpac software.
Reported Interpolation method used is Ordinary Kriging
Interpolation validation method of inverse distance squared was conducted as a check.
Grade cutting was variable within the 24 elements due to significant outliers. A list of the cut elements are as follows:
<table><tr><th>Element</th><th>High Grade Cut Used</th><th>Comments</th></tr><tr><td>Sc</td><td>46</td><td></td></tr></table></td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	(see tables below)

Y	87	
La	280	Uneven distribution. No values between 429ppm and 4902ppm
Ce	450	
Pr	50	
Nd	168	
Sm	30	
Eu	3.6	
Gd	19	
Tb	No cutting	
Dy	14	
Ho	No cutting	
Er	8	
Tm	No cutting	
Yb	9	
Lu	No cutting	
Th	105	
U	8	
Zr	1100	
Hf	46	
Nb	66	
As	32	
Ti	12700	
S	3800	

Type	Northing	Easting	Elevation
Minimum Coordinates	8193000	812400	140
Maximum Coordinates	8193900	814700	176
User Block Size	50	25	2
Min. Block Size	12.5	6.25	0.5
Rotation	0	0	0
Total Blocks	138511		
Storage Efficiency %	92.73		

• Model sizes and parameters are:

Attribute Name	Type	Decimals	Background	Description
creo	Float	-	0	calculated CREO
hreo	Float	-	0	calculated HREO
lode	Integer	-	0	Lode = 1
lreo	Float	-	0	calculated LREO
magreo	Float	-	0	calculated MagREO
monazite	Float	-	0	Calculated monazite

Criteria	JORC Code explanation	Commentary

mzeq	Float	-	0	Calculated Monazite Equivilent MzEq
ok1	Float	2	0	Sc interpolation using Ordinary Kriging
ok10	Float	2	0	Tb interpolation using Ordinary Kriging
ok11	Float	2	0	Dy interpolation using Ordinary Kriging
ok12	Float	2	0	Ho interpolation using Ordinary Kriging
ok13	Float	2	0	Er interpolation using Ordinary Kriging
ok14	Float	2	0	Tm interpolation using Ordinary Kriging
ok15	Float	2	0	Yb interpolation using Ordinary Kriging
ok16	Float	2	0	Lu interpolation using Ordinary Kriging
ok17	Float	2	0	Th interpolation using Ordinary Kriging
ok18	Float	2	0	U interpolation using Ordinary Kriging
ok19	Float	2	0	Zr interpolation using Ordinary Kriging
ok2	Float	2	0	Y interpolation using Ordinary Kriging
ok20	Float	2	0	Hf interpolation using Ordinary Kriging
ok21	Float	2	0	Nb interpolation using Ordinary Kriging
ok22	Float	2	0	As interpolation using Ordinary Kriging
ok23	Float	2	0	Ti interpolation using Ordinary Kriging
ok24	Float	2	0	S interpolation using Ordinary Kriging
ok3	Float	2	0	La interpolation using Ordinary Kriging
ok4	Float	2	0	Ce interpolation using Ordinary Kriging
ok5	Float	2	0	Pr interpolation using Ordinary Kriging
ok6	Float	2	0	Nd interpolation using Ordinary Kriging
ok7	Float	2	0	Sm interpolation using Ordinary Kriging
ok8	Float	2	0	Eu interpolation using Ordinary Kriging
ok9	Float	2	0	Gd interpolation using Ordinary Kriging
rutile_ilmenite	Float	-	0	calculated rutile & ilmenite
sg	Float	2	0	interpolated density data
treo	Float	-	0	calculated TREO
treo_y_sc	Float	-	0	calculated TREO + Y + Sc
xenotime	Float	-	0	calculated xenotime
zircon	Float	-	0	calculated zircon

- The interpolation pass parameters used are as follows for all elements:

Criteria	JORC Code explanation	Commentary
		• Pass 1: 6-30 samples 100m max search • Pass 2: 3-30 samples 200m max search • Pass 3: 1-30 samples 500m max search
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were estimated as dry basis
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Univariate statistics were conducted. Upper cut determinations were conducted from histograms and probability plots.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• Resource economics identifies the probable lower cut-off to be 700ppm MzEq • The resource is flat and exposes the surface to a max depth of 15m. The anticipated mining method will be either loader, excavator, continuous minor or scrapers. Blasting is not required. A large scale cheap mining method can be employed and all mineralisation will be considered for this evaluation.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	**Background and Scope** • Phase 2 metallurgical testwork (Variation 1) was conducted by IHC Mining (IHC) on a composite heavy mineral concentrate (HMC) sample derived from Ark Mines' Sandy Mitchell project (EPM28013), North Queensland. The testwork comprised Tests T01–T17 and T101–T112 on the -0.15mm and -0.5+0.15mm HMC size fractions respectively. • The objective of Variation 1 was to evaluate an alternative processing flowsheet to further upgrade rare earth element (REE) products, particularly through triboelectrostatic separation, to achieve higher Total Rare Earth Oxide (TREO) grades. **Sample** • Variation 1 Metallurgical test samples were composited from representative drill hole material. Relevant drill data, refer to ASX: AHK 2 OCT 2024, Sandy Mitchell Measured Resource of 71.8Mt @ 1,732.7ppm MzEq, table in Appendix C: Sandy Mitchell Stage 1 complete assay return. • Representative sample was deslimed, wet gravity concentrated over shaker table and electrostatically separated by Currumbin Minerals. • Sample preparation was conducted by IHC Mining in accordance with standard laboratory protocols. Feed material was dried and weighed at each stage of the flowsheet, with mass distributions calculated by weighing of all products and tailings • Variation 1 testwork was conducted at bench scale. Scale-up factors and plant-scale variability have not yet been characterised and will be subject to further testwork including pilot plant studies. • The sample volume used is considered appropriate for the current stage of project development (proof-of-concept and flowsheet optimisation).

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		Test Methods • Tests T01–T17 addressed the -0.15mm HMC fraction; Tests T101–T112 addressed the -0.5+0.15mm HMC fraction. • Separation stages applied: (1) Wet screening at 0.5mm and 0.15mm; (2) Dry RE drum magnetic separation (REDMS, 1–2 passes); (3) Wet shaking tables (up to 4 stages); (4) Dry induced roll magnetic separation (IRMS, 1–8 passes); (5) High tension roll separation (HTRS, 3 passes with nonconductor retreatment); (6) Heavy liquid separation (HLS) at 4.05 SG (applied to selected -0.5+0.15mm streams); (7) Tribo-electrostatic separation (Tribo-ESPS, 1–2 passes). • All mass distributions, XRF assays (TiO_2, ZrO_2) and ICP assays (Ce, Y, and full REE suite) were determined on product and tailing streams from each separation stage. • Assay methods: XRF for major oxides (TiO_2, ZrO_2, SiO_2, Fe_2O_3, Al_2O_3 and others); ICP-MS/ICP-OES for full REE suite (La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Y), Th, U and trace elements. **Flowsheet Overview** • The Variation 1 flowsheet (IHC Project 2734) applied sequential separation stages to both the -0.15mm and -0.5+0.15mm HMC fractions, including: wet screening and drying; dry magnetic separation (REDMS); wet shaking tables; induced roll magnetic separation (IRMS, multiple passes); high-tension roll separation (HTRS); heavy liquid separation (HLS) at 4.05 SG (applied to selected -0.5+0.15mm streams); and triboelectrostatic separation (Tribo-ESPS, applied to -0.15mm REE concentrate streams). **REE Product Grades and Mass** • Four final REE product/concentrate streams were generated: • -0.15mm REE product: 0.29% mass distribution, 20.6% Ce, TREO 54.8% — the highest-grade product achieved, produced via reverse magnetic separation followed by triboelectrostatic separation. • -0.15mm REE concentrate 1: 0.08% mass distribution, 15.3% Ce, TREO 41.3%. • -0.15mm REE concentrate 2: 0.08% mass distribution, 17.1% Ce, TREO 46.4%. • -0.5+0.15mm REE product: 0.23% mass distribution, 19.7% Ce, TREO 52.6%. • Combined total mass of all four REE product/concentrate streams is approximately 570 g (0.67% of head feed). The expected blended TREO grade of all four streams combined is approximately 52.2% TREO. **Key Metallurgical Findings** • Triboelectrostatic separation (Tribo-ESPS) was proven as an effective and preferred method for separating REE minerals from magnetically similar zircon in the -0.15mm fraction, achieving >54% TREO in the final REE product. This method is considered superior to wet gravity separation and flotation for this application. • Magnetic zircon (zircon with elevated magnetic susceptibility) was identified as the primary challenge limiting achievement of high-grade (>54% TREO) REE products. • The -0.15mm REE product (54.8% TREO) was achieved by combining "reverse" magnetic separation with triboelectrostatic separation of lower-grade (37–48% TREO) REE concentrates. • Triboelectrostatic separation may also be applicable to ultrafine (-0.045mm) particle size fractions, providing a prospective processing method for Sandy Mitchell ultrafine product streams. • Gravity separation of all -0.15mm product streams was conducted using wet shaking tables only (without HLS). HLS was applied to one -0.5+0.15mm product stream for operational efficiency. • Generation of saleable REE products from the -0.5+0.15mm HMC was demonstrated without requiring grinding of the entire fraction. Only selected final by-products may require grinding for improved mineral liberation and reprocessing.

Criteria	JORC Code explanation	Commentary
		• Generation of a >70% TiO_2 product within the -0.15mm process circuit was demonstrated, confirming potential for saleable titanium dioxide products. **Recovery of Cerium (Ce)** • Overall recovery of Ce into the four REE product streams was 65.43% (42.63% from the -0.15mm fraction and 22.80% from the -0.5+0.15mm fraction). • Particle-size based Ce recovery was 70.79% in the -0.15mm process circuit and 58.36% in the -0.5+0.15mm circuit (reflecting lower mineral liberation in the coarser fraction). • These recovery levels are expected to be increased under plant conditions through recirculation of intermediate streams and/or grinding and reprocessing of selected -0.5+0.15mm final product streams. **REE Product Elemental Composition** • The -0.15mm REE product (highest grade, 54.8% TREO) contains: Ce 20.6%, La 10.0%, Nd 8.57%, Pr 2.31%, Sm 1.50%, Y 1.17%, Dy 3,527 ppm, Gd 8,460 ppm, Er 820 ppm, Eu 326 ppm. • Heavy rare earth oxide (HREO) content of the combined -0.15mm REE product streams is approximately 2.2%; medium REE oxides (MREO) approximately 0.5%; light REE oxides (LREO) approximately 49.8%; with Nd_2O_3+Pr_6O_{11} approximately 12.8%. • Gangue mineralogy in the -0.15mm REE product includes: SiO_2 26.2%, TiO_2 5.17%, ZrO_2 6.55%, Fe_2O_3 0.6%, with minor Al_2O_3, CaO, Cr_2O_3, HfO_2. **Metallurgical Balance Summary (-0.15mm HMC)** • -0.15mm REE product: 1.56% mass, Ce distribution 49.71%, TREO 54.8%. • -0.15mm REE concentrate 1 + 2: 0.84% combined mass, Ce distribution ~18% combined. • -0.15mm HTRS conductors: 6.29% mass, TiO_2 73.5%, high-grade titanium product stream. • -0.15mm IRMS nonmagnetics 1: 18.98% mass, ZrO_2 48.9%, primary zircon stream. **Metallurgical Balance Summary (-0.5+0.15mm HMC)** • -0.5+0.15mm REE product: 0.30% mass (of -0.5+0.15mm HMC), Ce distribution 58.36%. • -0.5+0.15mm IRMS nonmagnetics 1: 3.74% mass, ZrO_2 17.3%, primary zircon stream. • -0.5+0.15mm HTRS conductors 1 & 2: combined 0.48% mass, HTRS conductors 1 assays 37.1% TiO_2 and conductors 2 assays 104,000 ppm Ce. **Recovery** • Recovery levels are considered conservative relative to expected plant-scale performance, as intermediate product streams that were retained as separate fractions in bench-scale testing would normally be recycled in a continuous plant operation. • Previous Phase 1 testwork (Mineral Technologies, 2024) indicated overall Ce recovery of approximately 71.7% (direct) to 83.8% (including recycling of intermediate streams). Phase 2 Variation 1 results are consistent with and build upon these findings. **Implications for Resource Reporting** • The testwork confirms that REE mineral products meeting commercial grade thresholds can be produced from the Sandy Mitchell HMC without full-stream grinding, supporting the economic basis for the existing Mineral Resource Estimate. • The testwork re-prioritises the -0.5+0.15mm process circuit (from second to first priority) within the overall test program, given demonstrated production of saleable REE products without grinding of the full stream. • The testwork confirms the need to reassess production of saleable TiO_2 products as part of the overall project processing strategy.

Criteria	JORC Code explanation	Commentary
		The metallurgical assumptions underpinning the current Mineral Resource Estimate remain reasonable and consistent with Phase 2 Variation 1 results. Further testwork will be used to refine metallurgical factors in subsequent resource updates and feasibility studies.
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• No assessments have been made yet
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk densities for 495 samples were conducted from the drill program and interpolated into the model. Densities ranged from 1.24t/m³ to 1.92 t/m³ with an average of 1.52 t/m³
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• The classification for this resource is conducted according to JORC 2012 guidelines. HGS considers the resource to be sufficiently drilled to be classified as indicated. The reasons are: • Quality control and quality assurance of the drilling is to industry standard that can identify issues in drilling methods and laboratory assaying.

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	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Collar pickups were conducted by a qualified surveyor. • Drill density is sufficient to have good understanding mineralisation controls. • There is recognition of the geological controls on the mineralisation. • Variability in the grade distribution is sufficient to create quality variograms. • A degree of metallurgical understanding. • A measured resource is not given due to some lone element high grade anomalies that will, although, have minimal impact on the overall resource, may have a local impact on grade distribution. • The results reflect the competent person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No available
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The competent person has confidence in the interpretation with regards to accuracy for the classification announced. • The interpolation process was run in inverse distance squared to compare a complex algorithm to a simple one.