BRISBANE MINING
INVESTOR CONFERENCE

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Rare Earths in a Giant Sand Pit

ARK MINES LTD.

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ARK MINES LTD.

SANDY MITCHELL

THE ONLY INLAND SURFACE EXPRESSED PLACER DEPOSITS TO HOST RARE EARTHS ON THE ASX

A **CAPEX LITE** RARE EARTH PROJECT START-UP WITH LOW OPERATIONAL COSTS, **NEAR-TERM DEVELOPMENT AND POTENTIALLY THE LOWEST ENVIRONMENTAL IMPACT**

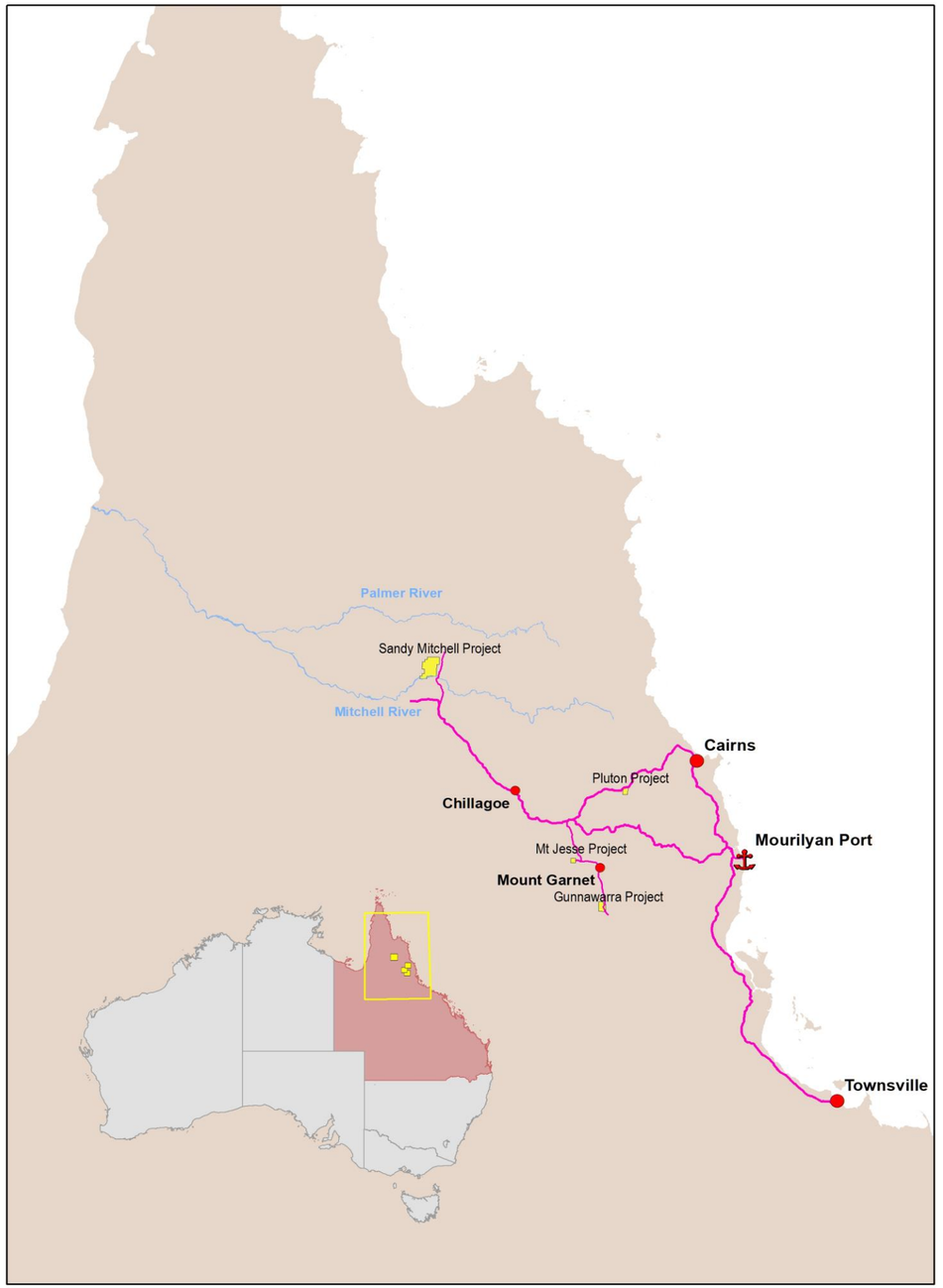
HOSTS ALL THE RARE EARTHS, **HEAVY MINERALS,** AND PHOSPHATE

THE PROJECT HAS ACCESS TO QUALITY NEARBY INFRASTRUCTURE, FAVOURABLE REGULATORY REGIME, SAFE JURISDICTION, EASE OF PERMITTING

UNDERPINNED BY A TEAM WITH MINE DEVELOPMENT, COMMODITIES TRADING, AND EXPLORATION SKILLS

A First Rate Location

300km west of Cairns and 100km North of Chillagoe



Sits on only one station – 750,000 acres in size

A MAJOR NEW RARE EARTH MINERAL PROVINCE FOR NORTH QUEENSLAND

- 147km^2 EPM 2801 with enormous growth potential given < 3% of the radiometric anomaly has been drilled.
- The sand hosts grains of mostly monazite (light rare earths) but also Xenotime (heavy rare earths) and Zirconium's and Titanium's and Niobium
- Results continue to confirm significant Rare Earth Element (REE) and Heavy Mineral (HM) intercepts in every metre sampled, consistent with previous results
- Assays returned on phase 1 drilling have an average grade per-metre for Total Rare Earth Oxide (TREO) + Yttrium (Y) + Scandium (Sc) of 511 parts-per-million (ppm), with a maximum grade of 3525 ppm[1]
- At a cut-off grade of 200 ppm (only material of 200ppm TREO or greater is selected), results in TREO+Y+Sc now upgrade from 510.5 ppm to 535.5 ppm, with rejection of only 6.4% of results. This suggests that the majority of mineralisation in the Stage 1 area may be viable and result in a low-cost bulk mineable resource. [1].
- The average Zirconium oxide grade for every metre assayed is now 445 ppm with a maximum grade of 7170 ppm[1].
- Low-cost, fast start up, straightforward beneficiation by gravity processing
- Landholder Access Agreements in place
- Phase 1 drilling Resourcing underway

[1]. Refer to AHK ASX Announcement 11th March 2024

Placer REE deposits have major advantages

PLACER DEPOSITS HAVE DISTINCT GRADE ADVANTAGES AS NATURE HAS ALREADY DONE THE CRUSHING & GRINDING

	Ionic Clays	Hard Rocks	PLACER (SANDY MITCHELL)
CAPEX	Reasonable	Capex Heavy, Overburden/strip development costs, Mining costs high	Capex lite and utilizing low-cost skid-mounted gravity plant to deliver a concentrate Mining cost and operating cost – negligible
Scale	Typically, smaller tonnage	Typically require significant scale for economic viability	Potential to be massive tonnage
Exploration	Resources can be defined inexpensively and rapidly given shallow drilling using aircore, auger, push-tube core	Similar to other hard rock base metals requiring substantial drilling, geochemistry, geophysics etc	Resources can be defined inexpensively and rapidly given shallow drilling using aircore, auger, push-tube core
Mining	Stripping and progressive rehabilitation. Many have overburden and some strip ratio	Drill and blast with significant mining fleet. Higher strip ratios or expensive underground mining and development	Stripping and progressive rehabilitation. No Overburden Zero strip ratio. Mined with a wheeled loader only **Ability to produce a commercially viable concentrate based on much lower head grades**
Permitting	Due to water processing and chemicals Environmental challenges will need to be met	Significant environmental impact	Simple in situ gravity processing with the sand put back where it was moved from
Processing	Simple metallurgy; clay is washed with a desorption agent to recover REEs	Strong acids and salts with high temperature +/- pressure. Radioactive tailings	Simple metallurgy; Gravity and magnetic in-situ processing, no water, continuous rehabilitation Nature has already done our crushing and grinding Mineral sands bi-product

PHASE 1 GRAVITY BENEFICIATION DELIVERS EXCELLENT CONCENTRATE + RECOVERIES

CONCENTRATE ASSAYS RETURNED 52% TREO AND ESTIMATED RECOVERIES OF ~72% WITH >83% POTENTIALLY ACHIEVABLE

- First pass un-optimised beneficiation test work of the Sandy Mitchell Rare Earth sands has produced a high-grade rare earth concentrate
- 50% waste rejection by screening +2mm sand
- The beneficiation test work has shown the greatest upgrade is by simple gravity separation, confirming the material is amenable to straightforward beneficiation by gravity processing
- The final concentrate assays returned 51.9% TREO, and contained mostly La, Ce, Pr and Nd, plus Heavy Rare Earths Dy and Tb, which collectively represents a very high value saleable product [2].
- Direct cerium oxide (CeO_2) recovery from gravity feed to REM concentrate is estimated to be 71.7%, with indications that >83% may be achievable [2].
- Similar upgrade trends are observed for zirconium dioxide (ZrO_2)

[2]. Refer to AHK ASX Announcement 24th November 2023

This product (Heavy Minerals Concentrate) is very sought after feed for across global markets

Monazite Product offtake with Currumbin Minerals

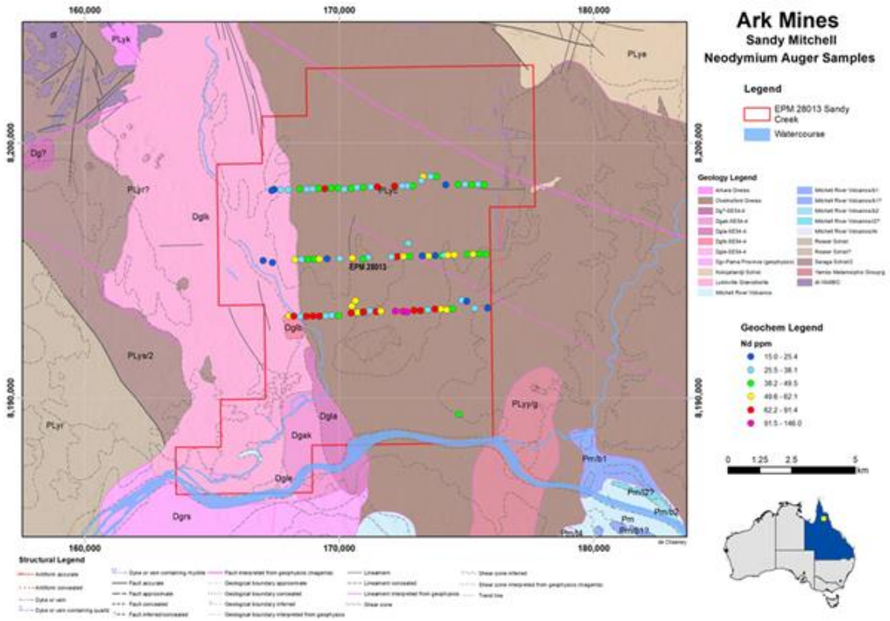
- Signed a MOU with Currumbin Minerals, which sets out a framework for the supply and delivery of Heavy Mineral Sands (HMS) from Sandy Mitchell for processing at CM's licenced treatment plant
- Several groups who are in the market for a high-quality Monazite concentrate, in Australia, Korea and the USA now assessing Sandy Mitchell

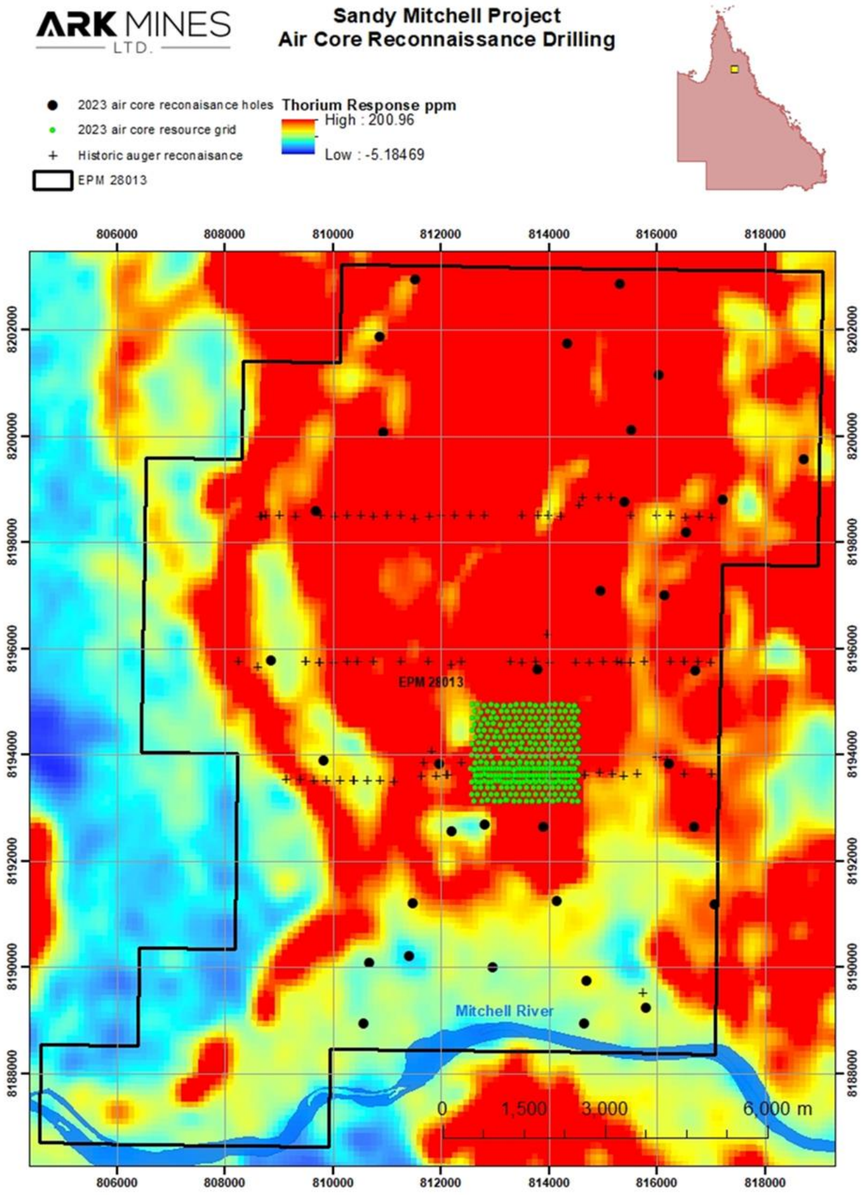
Currumbin Minerals' new state-of-the-art processing & separation plant

Refer to AHK ASX Announcement 12th January 2024

SCALE

- The size of the thorium anomaly correlating with REE enriched alluvial sands within the Project tenement is 10,067 ha. Or 110km^2
- Sands with Heavy Minerals and Rare Earths are eroded from Sandstones to the North . These sandstones were paleao beach settings where the rare earths and Heavy's were sorted through wave actions. They are also mixed with sands weathered from the metamorphic basement rocks.
- The tenement is 147km^2 and a further 138 km 2 has been pegged to the North.
- The anomalous rare earth historical augur drilling shows and anomalous area of 35km 2. (refer to the figure below)





CONTINUOUS REHABILITATION AT SANDY MITCHELL

LOW IMPACT MINING

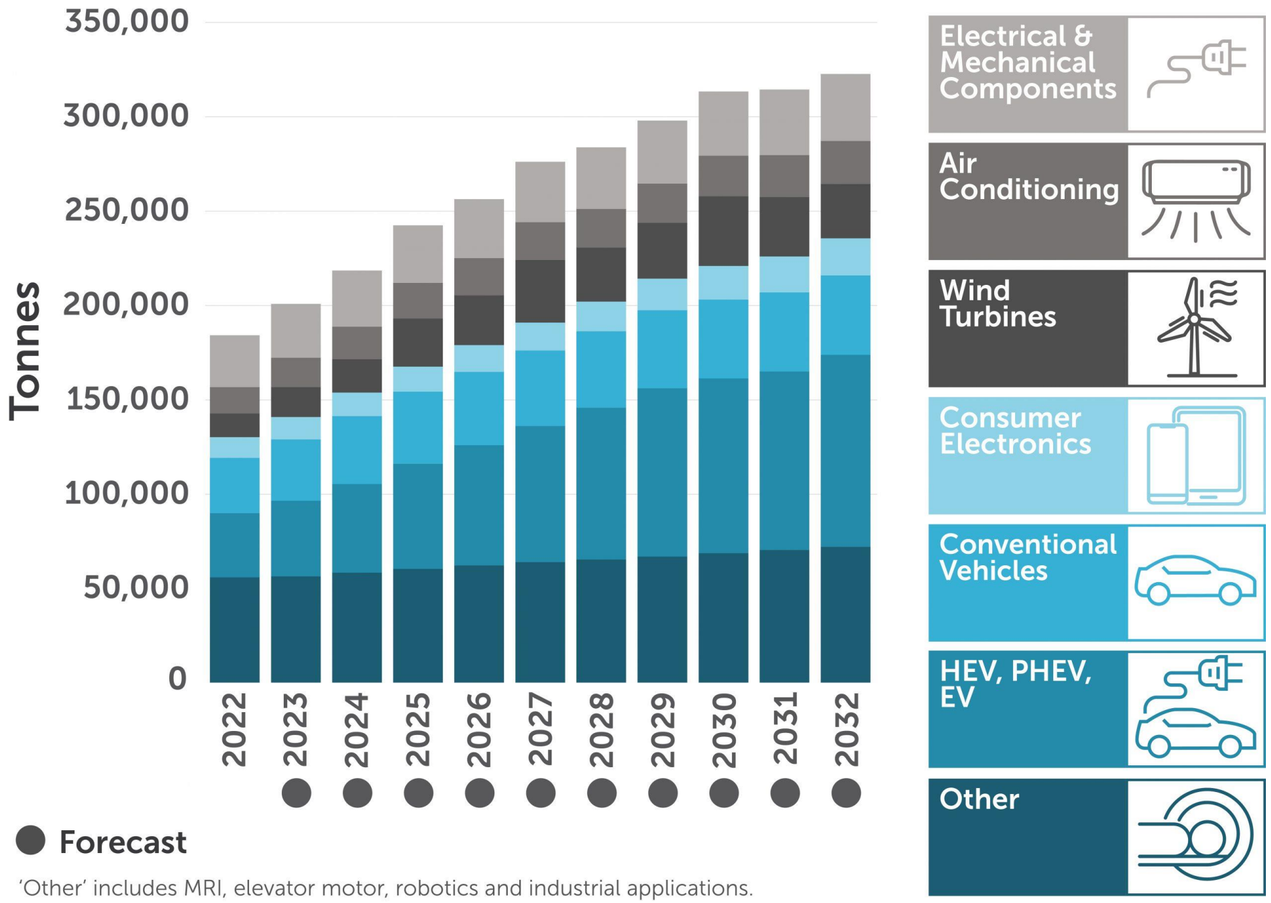
- No Drill and Blast
- No overburden
- No clay to deal with
- Only 10m deep
- At 10m – you can selectively mine
- No tails dam
- No waste piles

LOW ENVIRONMENTAL IMPACT

- No Chemicals
- No Salts No Acids
- Simple digging
- In situ processing with gravity only
- No impact on farm country – subsidence
- The landform will be the same after mining as before
- Rehabbed to the Landholder liking by only seeding the ground down

Favorable market dynamics and macro outlook

Forecast NdFeB Magnet Consumption by Segment



'Other' includes MRI, elevator motor, robotics and industrial applications.

Source: Wood Mackenzie

Multiple near-term value drivers

- Phase 2 drilling assays soon to be received for Sandy Mitchell.
- Declaration of Maiden Mineral Resource Estimate and Exploration Target thereafter
- Advancing processing and off-take discussions – considerable interest in Sandy Mitchell from local processors and customers seeking concentrate
- Targeting production within 18 months
- Ark expects to report further updates on metallurgy before year end, including ore characterisation and HMC production evaluation (including suitability of beneficiation by gravity).