

ASX ANNOUNCEMENT

TESTWORK RESULTS AND STATUS OF SCOPING STUDY

Further to our announcement on 3rd October 2023 Athena has continued work on a 1.5mtpa processing model yielding 418,500 tonnes of 70% concentrate at a specification suited to the Coal Wash market.

Dense Media Separation using high quality Magnetite reduces the pollution impact of coal by removing significant levels of wasteful coal ash prior to burning.

Our recent attendance at the International Coal Preparation Congress, held this month on the Gold Coast, has confirmed our belief in this growing and lucrative market.

Magnetite suitable for the Coal Washing process is in short supply both in Australia and overseas and our initial testwork to produce CWM has proved to be successful.

PROGRESS STEPS

Since the announcement regarding successful results from coarse Wet Low Intensity Magnetic Separation (Cobber LIMS) testwork on feed at a coarse -1mm size, Athena has completed additional testwork including: -

- Cobber LIMS tests on coarser feed at -3mm.
- Screening and Regrinding of -150um high-grade magnetite concentrate to produce a finer concentrate at -63um considered suitable for sales into the Coal Washing Industry as Coal Wash Media (CWM).

As a result of the fine screening testwork, a revised Process Flowsheet has been developed to include the Screening and Regrind circuit necessary to produce the fine magnetite for CWM and enable the completion of the Scoping Study. Athena has engaged with a number of Engineering vendors to assess and comment on the flowsheet and propose leading edge equipment.

About Athena Resources: AHN is an Australian ASX listed explorer and developer of highgrade iron ore assets in Western Australia. The Company is focused on its Byro Project, strategically located in the Mid-West region 410km from the Port of Geraldton. The Byro Iron Ore Project has potential to mine and supply premium grade, low impurity magnetite (>70% Iron Content) for the production of Dense Media Separation material, Green Steel and other Industrial Mineral applications. The Byro Project also contains exciting base metal potential.

Directors: Ed Edwards, Peter Newcomb, Hau Wan Wai, Terry Weston, Jeff Swingler • **Company Secretary:** Peter Newcomb • **Athena Resources Limited** ACN 113 758 900

The current work towards completing the Scoping Study has highlighted several benefits including: -

- Treatment rate has been reduced to 1.5Mtpa from 5Mtpa.
- The Mineral Resource Estimate (JORC compliant 2012) of 29.3 million tonnes at a grade of 24.7% Fe within the FE1 Mining Licence provides a mine life of greater than ten years prior to other Athena deposits being brought on stream.
- Current investigations of the revised flowsheet and mass balance indicates treating 1.5Mtpa at a head grade of 24.7% Fe will produce 418,500tpa of high-grade magnetite concentrate at 70.0% Fe grade with an Fe recovery of 79.07%.
- Road transport to Geraldton port of this tonnage of concentrate has few practical limitations.

MARKET PRICING

Due to its physical properties CWM demands a higher market price than magnetite sold into the Iron Ore/Steel making market, CWM pricing is considered less volatile than sales into the steel industry.

According, the testwork table below is an excellent result for the Byro Magnetite Project as it opens addition sales opportunities into the international Coal Washing Industry.

RESULTS

- Results from Cobber LIMS on -3mm feed indicated there was no improved benefit above that achieved on -1mm feed. (Summary of Results and comments thereon attached.)
- Results from producing a high-grade magnetite at -63um size was successful. Assays and SG determinations indicate this fine concentrate is suitable for sales as CWM.

This announcement is Authorised by the Board

Ed Edwards
Managing Director
25 October 2023

SUMMARY OF RESULTS

Hole & Sample ID	Size	P80	FeO	SiO ₂	Al ₂ O ₃	SG
AHRC0107 - F	-150um	106um	70.4%	1.78%	0.23%	4.80
AHRC0107 - F	-63um	47um	70.4%	1.78%	0.23%	4.80
AHRC0110 - F	-150um	106um	70.0%	1.78%	0.39%	4.95
AHRC0110 - F	-63um	47um	70.0%	1.78%	0.39%	4.95

Comment on LIMS at -3mm

Where the LIMS on -1mm feed rejected 48% of the mass into the Non-Magnetic product with the Magnetic product recovering 88.6% of the Fe into 52% of the mass, LIMS on -3mm feed rejected only 35% of the mass into the Non-Magnetic product while the Magnetic product recovered was 91.5% of the Fe into 65% of the mass.

The cost of secondary grinding of an extra 13% of mass is greater than any benefit from the additional 2.9% of Fe recovered.

Links to previous relevant announcements

24/07/2023	LIMS Optimisation Testwork Results
03/10/2023	Exploration Update
04/10/2023	International Coal Preparation Congress
05/10/2023	Geochemical Soil Sampling Program
16/10/2023	Rare Earth and Base Metal Soil Sampling Commences