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QUARTERLY ACTIVITIES REPORT

QUARTER ENDED DECEMBER 2023

Exploration Activity for the Quarter

Athena Resources Limited (ASX: AHN) ("Athena" or the "Company") is pleased to present its Quarterly Report for the period ending December 31, 2023.

COMPANY HIGHLIGHTS

- Completion of 1,020 sample soil geochemistry survey at the Milly Milly Intrusion, and Byro South (E09/1637, E09/1781-I)
- Fe1. Following strong encouragement of the growing and lucrative Coal Wash Media (CWM) market, and the suitability of magnetite ore from Fe1, further metallurgical testwork was completed including:
  - Cobber Low Intensity Magnetic Separation (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).
  - Development of revised process flowsheet to include Screening and Regrind circuit necessary for CWM as a key input for the Scoping Study

Geochemical Soil Survey

During the Quarter, Athena carried out a 1,020-sample soil geochemistry program across prospective base metal and Rare Earth Element targets at its Byro Project. A total of 994 samples were taken from tenement E09/1637-I, across the Milly Milly ultramafic intrusion, with a further 26 samples taken on test sample lines at the Byro South Project, E09/1781-I.

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At Milly Milly, sampling was carried out from a 400m by 100m grid spacing across the majority of the tenement area. Samples were removed via conventional method, sieved in the field, and sent to Australian Laboratory Services in Malaga for multi element analysis, including the REE suite.

The targeted areas were identified in regional and detailed airborne magnetic data, and bouguer gravity data, which is suggestive of widespread occurrences of intrusive mafic and ultramafic lithologies. This was supported by geological mapping, carried out in conjunction with the sampling program.

Two short test sample lines were also carried out within E09/1781, near the Byro South magnetite target. A total of 26 samples were taken to test for anomalous base metal and REE responses that may be followed up with more detailed and systematic sampling programs. The areas selected are underlain by extensive intrusive mafic and ultramafic lithologies that form part or the Moonborough Intrusion.

Narryer Terrane

The Milly Milly, and Moonborough Intrusions together form part of the mafic/ultramafic intrusions that underly the Byro Project. The Byro Project is located within the Narryer Terrane, along the northwest margin of the Yilgarn Craton. This highly prospective and underexplored region has become the focus of companies searching for intrusion hosted Ni-Cu-PDE-REE mineralisation.

Athena has been exploring within the Narryer Terrane and through geophysical surveys, drilling, and sampling, has identified extensive mafic and ultramafic intrusive units within the project tenements. The primary base metal targets occur at the Milly Milly Intrusion - a large peridotite Intrusion - which hosts disseminated nickel-copper sulphide and elevated PGE's, with strong indicators for REE mineralisation. Presently, Athena are processing results with an announcement describing them scheduled for release during early March Quarter 2024

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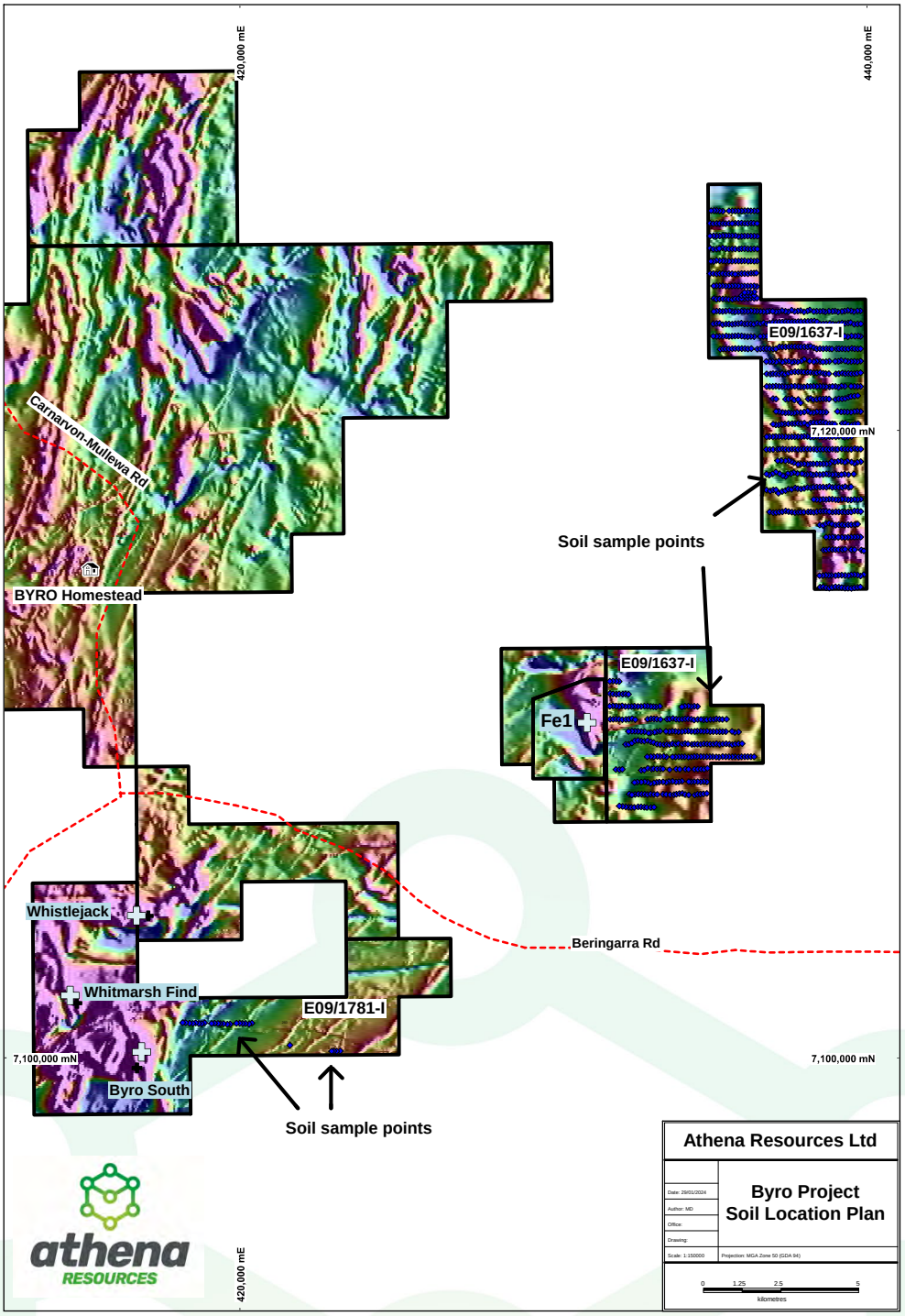

Figure 1 Geochemical soil sample points on TMI aeromagnetic image

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Metallurgical Testwork Update

During the Quarter, Athena explored the prospects of producing a model for a magnetite product suitable for 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 quarter 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.

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). After further discussions with the Coal Washing Industry it was decided the CWM should be -53um. Achieving satisfactory testwork results at -63um indicates results at -53um should be no worse but more likely to be slightly better due to the additional liberating of the magnetite at the finer grind size.

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 with budget quotes obtained for the larger items of equipment.

The benefits of this work, toward completing the Scoping Study, include:

- The plant throughput of 5Mtpa from the GRES (2011) and the review (March 2023) has been reduced to a tonnage more in line with the requirement from the Coal Washing Industry.
- The Mineral Resource at Fe1 provides a potential mine life of >10 years
- The target concentrate required for CWM is targeted to be 70% Fe with a fine size of -53um.

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Results

- Results from Cobber LIMS on -3mm feed indicated there was no improved benefit above that achieved on -1mm feed.
- 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.

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. 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.

Hole & Sample ID	Size	P80	FeO	SiO2	Al2O3	SG
AHRC0107 - F	-150um	106um	70.40%	1.78%	0.23%	4.80
AHRC0107 - F	-63um	47um	70.40%	1.78%	0.23%	4.80
AHRC0110 - F	-150um	106um	70.00%	1.78%	0.39%	4.95
AHRC0110 - F	-63um	47um	70.00%	1.78%	0.39%	4.95

The LIMS on -1mm feed rejected 48% of the mass into non-magnetic product, while the magnetic product recovered 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 91.5% of the Fe into 65% of the mass.

The above results have been incorporated into the design criteria where the Primary Classification will be at 1mm, with the -1mm product feeding the Cobber LIMS.

Scoping Study Progress

Results from discussions with the CWM industry advised concentrate for CWM needs to be -53um, which has been incorporated into the study design criteria.

All testwork has been completed allowing the development of a processing flowsheet.

Sedgman Pty Limited reviewed the development of the flowsheet and assisted in selection of major equipment required for crushing and grinding.

At end of December the development of capital and operating cost was 95% complete enabling the commencement of drafting the scoping study report.

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Links to relevant Exploration Announcements during the Quarter

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
26/10/2023	Testwork Results and Status of Scoping Study
26/10/2023	Retraction of Production Targets

Corporate Activity for the Quarter

Management and Board

At the Annual General Meeting held on 29 November 2023, Directors Terry Weston and Jeff Swingler, having been appointed during the year, automatically retired. Terry Weston, being eligible, offered himself for re-election and was duly re-elected.

Jeff Swingler advised in late November that due to increasing business commitments he was no longer seeking re-election. This was announced on 28 November 2023.

Other Corporate

During the quarter meetings were held with several companies to discuss potential offtake agreements and/or collaborations.

Shares and Options

No Shares or Options have been issued during the quarter.

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Exploration expenditure

	This quarter	Financial Year to Date	Calendar Year to Date
Information Systems	10,500	44,500	101,000
Travel	9,000	13,000	23,500
Field Camp	8,500	12,000	18,500
Surface Exploration	80,500	99,000	124,000
Geophysics and Remote Sensing	0	0	500
Ground Surveys	40,000	40,500	41,000
RC Drilling	500	1,000	2,000
Diamond Drilling	500	4,000	5,500
Metallurgy and Project Management	112,500	218,500	505,000
Tenement administration	3,500	34,500	64,500
Rent and Rates	42,500	84,500	167,500
	308,000	551,500	1,053,000

This expenditure is reported on an accrual basis.

Related Party Payments

During the period under review payments were made to related parties as follows:

During the period under review payments of fees and arrears were made to related parties in the sum of $175,225 as follows:

Director	Services provided	b/fwd $	Payable $	Paid $
Ed Edwards	Directors Fees	-	15,000	15,000
Ed Edwards	Management	-	30,000	30,000
Hau Wan Wai	Directors Fees (NED)	-	15,000	15,000
Jeff Swingler (resigned)	Directors Fees (NED)	-	10,000	10,000
Peter Newcomb	Consultancy invoiced	16,688	40,812	55,575
Terry Weston	Consultancy invoiced	10,200	52,950	49,650
		26,888	163,762	175,225

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Payables outstanding to related parties at the end of the quarter amounted to $15,425.This expenditure is reported on a payments basis excluding GST.

Links to relevant Corporate Announcements during the Quarter:

Announced on	ASX Title and Hyperlink to ASX site
27/10/2023	Notice of Annual General Meeting/Proxy Form
29/11/2023	Results of Meeting
22/12/2023	Change in substantial holding

In addition to these specific announcements, the September Quarterly Activities Report and Quarterly Appendix 5B Cash Flow Report were lodged on 31 October 2023.

All Company announcements are available here:

This announcement was authorised by the Board.

Yours faithfully

Ed Edwards
Managing Director

CAUTIONARY NOTES AND DISCLOSURES

Disclosures

All data and Information of material nature referred to within this Report with reference to the Byro FE1 ore body have previously been reported on the ASX platform to meet the guidelines of the relevant JORC compliance reporting format at the time of data acquisition.

Cautionary Notes and Forward Looking Statements

This announcement contains certain statements that may constitute "forward looking statements". Such statements are only predictions and are subject to inherent risks and uncertainties, which could cause actual values, results, performance achievements to differ materially from those expressed, implied or projected in any forward looking statements.

The Byro South, Whistlejack and the Mt Narryer ore bodies have had extensive drilling and metallurgical studies, drilling to date at the ore bodies supports aspects of the forward looking statement above. The quantity and grade reported for Byro South, Whistlejack and the Mt Narryer ore bodies are conceptual in nature. There has been insufficient exploration to define a mineral resource for each of the ore bodies. Further exploration is warranted to improve understanding and reduce uncertainty.

JORC Code Compliance Statement

Some of the information contained in this announcement is historic data that have not been updated to meet the 2012 JORC Code guidelines. Some information referred to in the announcement was prepared and first disclosed under the JORC Code 2004 edition. It has not been updated since to comply with the JORC Code 2012 edition on the basis that the information has not materially changed since it was last reported.

Competent Persons Disclosure

Mr Martin Dormer is an employee of Athena Resources and currently holds securities in the company. Mr Terry Weston is a Director of Athena Resources and currently holds securities in the company

Competent Person Statement – Martin Dormer - Geology

The geological information included in the report is based on information compiled by Mr Martin Dormer, a consultant to Athena Resources Limited. Mr Dormer is a Member of the Australasian Institute of Mining and Metallurgy (Member ID 304615), and the Australian Institute of Geoscientists (Member ID 7370). Mr Dormer has sufficient relevant experience in the styles of mineralisation and deposit type under consideration, and to the activity which he is undertaking, to qualify as a Competent Person as defined in "The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 Edition)".

Mr Dormer consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Competent Person Statement – Terry Weston - Metallurgy

The metallurgical information included in the report was compiled by Mr Terence Weston, a consultant to Athena Resources Limited. Mr Weston has sufficient experience as a metallurgist in mining and processing and is a Member of the Australasian Institute of Mining and Metallurgy (#106114).

Mr Weston consents to the inclusion of the information in the report in the context and format in which it appears.

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INTERESTS IN MINING TENEMENTS

Athena Resources Limited 100%	Tenement Type
Byro Exploration	E – Exploration License
E09/1507	
E09/1552	
E09/1637	
E09/1781	
E09/1938	
Byro Project Mining	M - Mining Lease
M09/166	
M09/168	
Byro Project Water	
L09/112	L – Miscellaneous Licence

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