

27 January 2022

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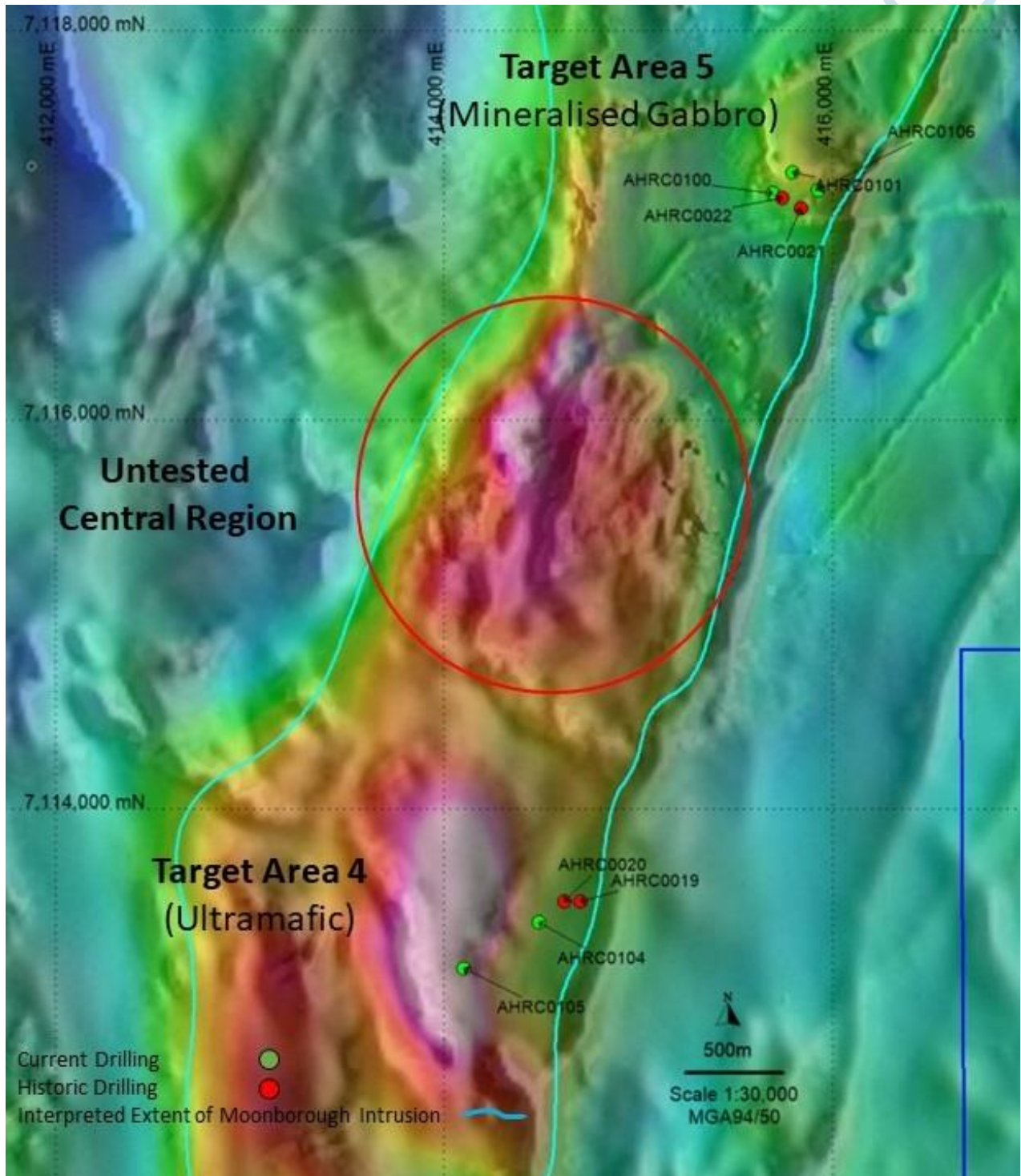
## **COMPLETION OF 3D GRAVITY MODELLING OVER THE MOONBOROUGH INTRUSION**

Further to the completion of a Gravity Infill Survey, announced on 23 October 2021, Athena Resources Limited (the Company) (ASX:AHN) is pleased to announce the completion of data interpretation and development of a 3D inversion model at Moonborough within the Company's 100% owned Byro Base Metal Project.

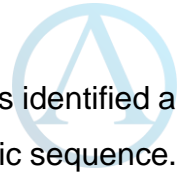
All gravity survey data acquired was quality assessed and modelled by Southern Geoscience Consultants. Results from data interpretation and modelling suggest the near surface gravity anomaly at the Moonborough Intrusion extends to depth and unlikely related to surface regolith conditions as previously interpreted.

The gravity anomaly occurs within the interpreted extent of the Moonborough intrusion where prospective rock types with elevated base metals and path finder elements have been identified. Refer ASX announcement Base Metal Review, results announced 23 March 2021.

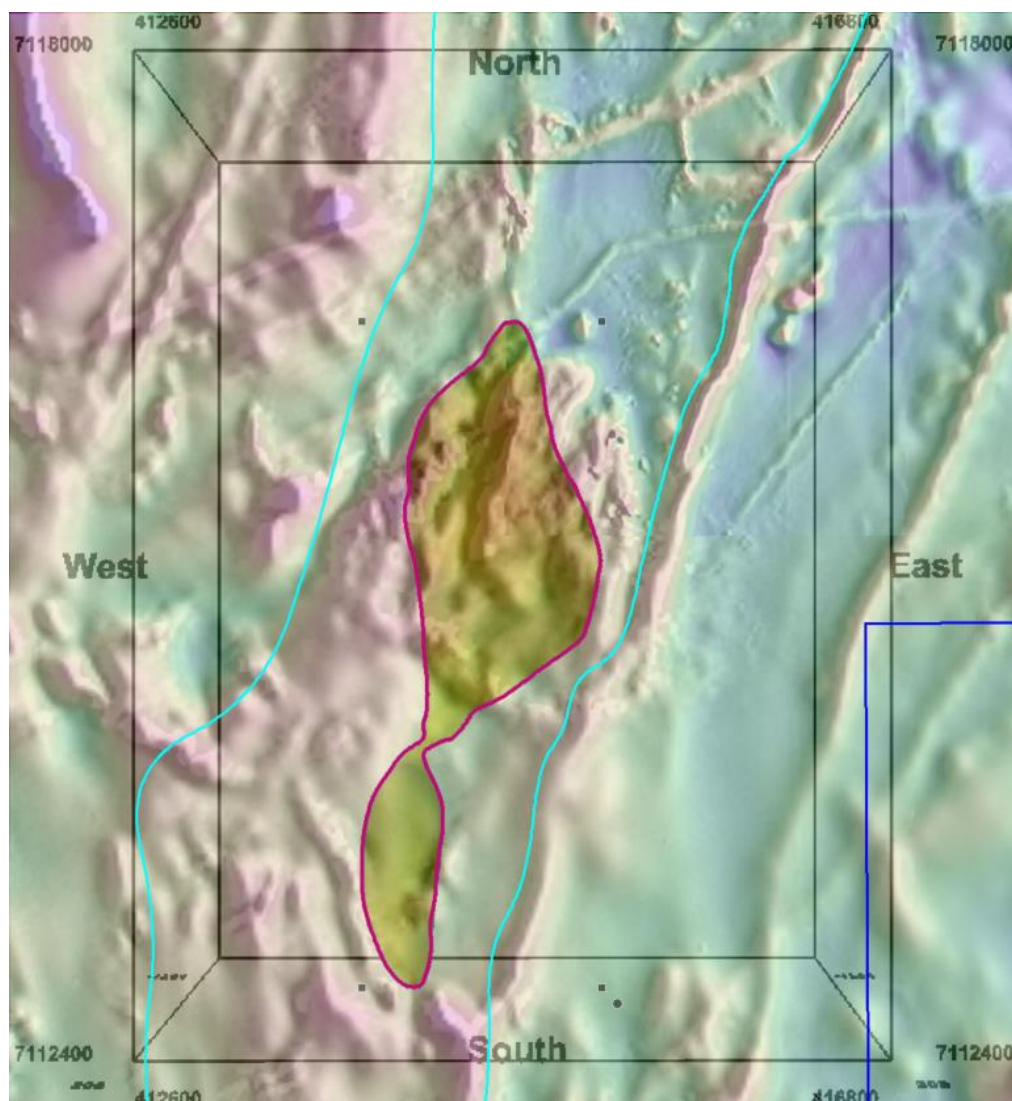
An untested central region of the Moonborough intrusion coincident with the gravity anomaly is also coincident with a VTEM anomaly. Planned drilling will test this area once heritage survey and Native Title clearance is complete.



**Figure 1.** Updated Gravity Data on Magnetic Imagery with drill Collars,

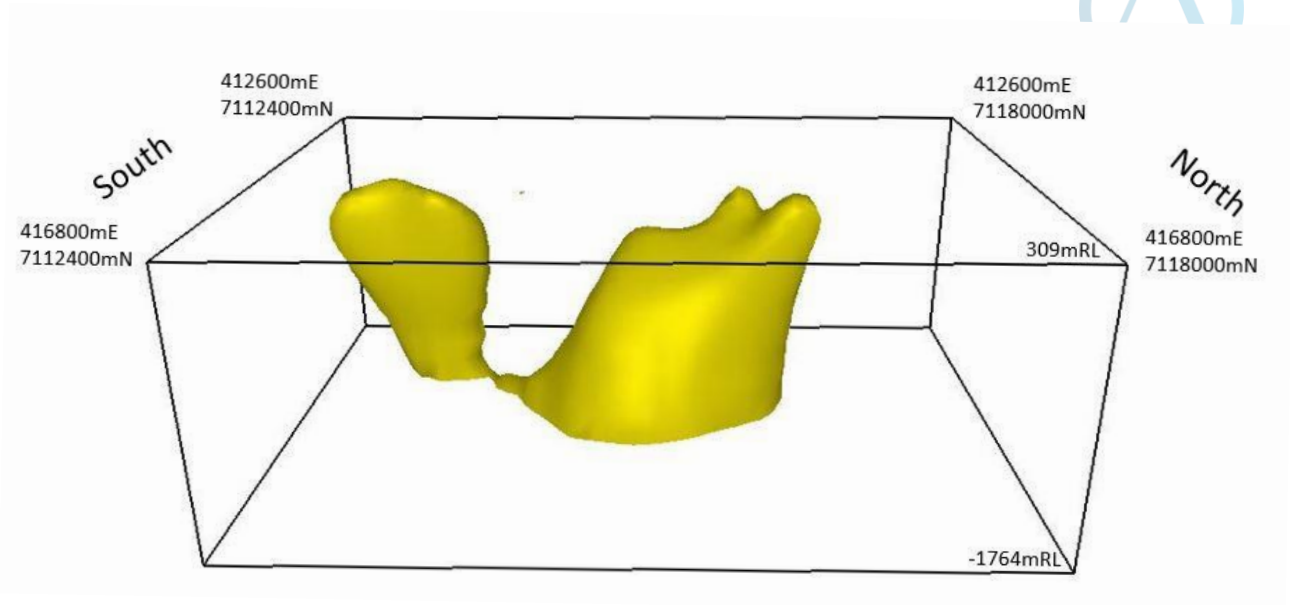


Exploration to date at the Moonborough intrusion is at an early stage and has identified a compelling data set of prospective lithologies within a layered mafic/ultramafic sequence. Analysis of the gravity data clearly confirms a discrete large body of relatively high density rock mass compared to the surrounding gneissic terrain, which is consistent with a layered intrusive complex. The gravity survey has highlighted three areas of anomalism within the enveloping high density zone. Area 4 and Area 5 Targets have recently been drill tested with the central region yet to be drill tested. Assay results from the completed drilling are delayed due to interstate COVID-19 staffing issues and are currently expected at the end of February



**Figure 2.** Plan View of the 3D Inversion Footprint





**Figure 3.** 3D View of the Gravity Inversion Showing Interpreted Depth Extent of the Intrusion

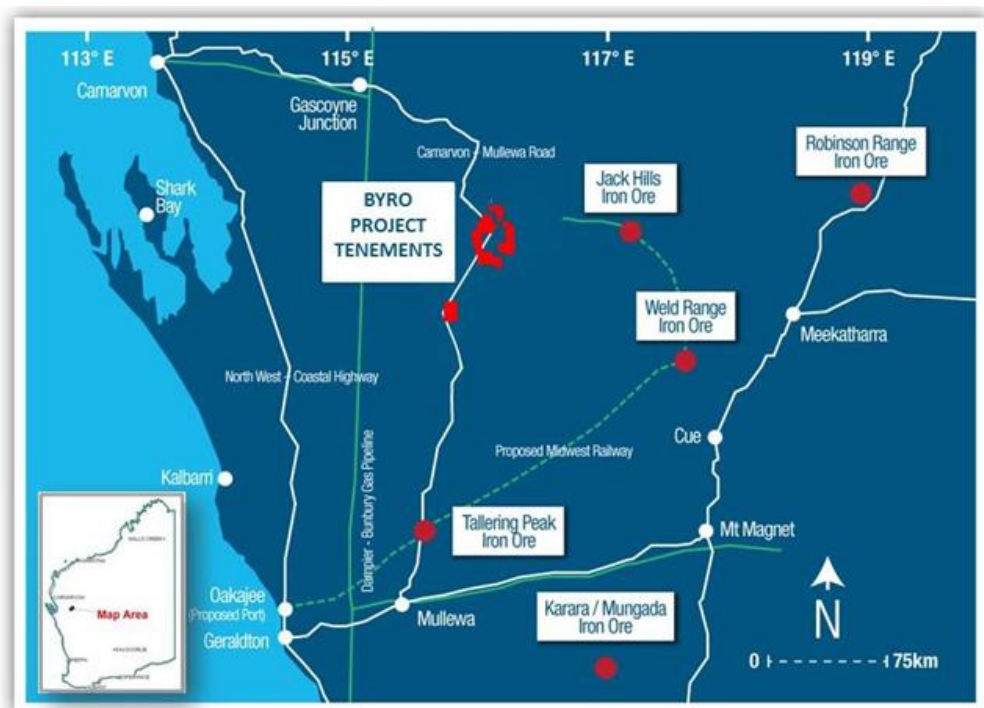
A VTEM conductor was identified within the untested central region coincident with the now refined gravity anomaly. The surface expressions of the VTEM anomaly was initially interpreted to be within the regolith. The 3D inversion of the gravity data highlights the potential that the relatively shallow (<100m) depth of the VTEM anomaly could be associated with the layered intrusion bedrock.

Planned drilling will test this area once heritage survey and Native Title clearance is complete.



## ABOUT ATHENA RESOURCES LIMITED

Athena Resources Limited (ASX:AHN), which is based in Perth was listed on the ASX in 2006 and currently has 813 million shares on issue. Athena owns a 100% interest in the Byro Project through its subsidiaries Complex Exploration and Byro Exploration where it is exploring for copper, nickel, PGE's and iron ore.



**Figure 4.** Project Location

## INTERESTS IN MINING TENEMENTS

**Table 1.** Mineral tenement and land tenure status

Athena Resources Limited 100%	Tenement Type
<b>Byro Exploration</b>	E – Exploration License
E09/1507	
E09/1552	
E09/1637	
E09/1781	
E09/1938	
<b>Byro Project Mining</b>	M - Mining Lease
M09/166	
M09/168	

Submissions for extension of terms for tenements E09/1507 and E09/1552 were granted by the Department of Mines, Industry Regulation and Safety for a further 2-year term.

**Athena Resources Limited**



**ENDS**

This announcement was authorised by the Board.

Yours faithfully

E W Edwards  
Executive Director



Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Refer Table 1</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>All gravity data was checked for quality and modelled by Southern Geoscience Consultancy.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Upper amphibolite to granulite metamorphic facies with mafic to ultramafic intrusive. Granite and migmatite are common</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling referred to in the body of the text and Figure 1 was announced 19/10/2021</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>No data aggregation methods were presented in this report</li> </ul>



Criteria	JORC Code explanation	Commentary
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• 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').</li> </ul>	<ul style="list-style-type: none"> <li>• No Relationship between mineralisation widths and intercept lengths are referred to in this report.</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Refer Figures 1, 2, 3</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• The information contained is not related to grades or mineral widths.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Gravity data acquisition was completed by Atlas Geophysics and all data was assessed and modelled by Southern Geoscience Consultancy. The 3D Inversion model is constructed using mathematical algorithms</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<p>The location of further work referred to in the text is reliant on further information and native title survey outcomes.</p>





## CAUTIONARY NOTES AND DISCLOSURES

### **Disclosures**

*All data and Information of material nature referred to within this Quarterly Report with reference to the Byro South Mineralisation Report and the Milly Milly intrusion have previously been reported on the ASX platform in compliance with 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.*

### **JORC Code Compliance Statement**

*Some of the information contained in this announcement is historic data that have not been updated to comply with the 2012 JORC Code. The 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 Kelly is an employee of Athena Resources and currently holds securities in the company.*

### **Competent Person Statement**

*The information included in the report was compiled by Mr Liam Kelly, an employee of Athena Resources Limited. Mr Kelly has had over twenty years’ experience as a geologist in mining and exploration and is a Member of the Australasian Institute of Mining and Metallurgy, (306501). Mr Kelly has sufficient relevant experience in the styles of mineralisation and deposit styles under consideration 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)”. The historical information included is compliant with the relevant JORC Code, 2004 Edition, and new information announced post that version of the JORC Code is compliant with the JORC Code 2012 Edition. Mr Kelly consents to the inclusion of the information in the report in the context and format in which it appears.*

**Athena Resources Limited**