



**Athena**  
Resources

ACN 113 758 900

21 September 2021

The Company Announcements Office  
Australian Stock Exchange Limited  
4th Floor, 20 Bridge Street  
SYDNEY, NSW 2000

## **BYRO BASE METALS PROJECT**

### **COMMENCEMENT OF DRILLING, FOLLOWING COMPLETION OF TARGET GENERATION AND GROUND PREPARATION**

Athena Resources Limited (the Company) (ASX:AHN) is pleased to announce completion of data collation and interpretation of recently acquired geophysical data at the Company's 100% owned Byro Base Metal Project within its Byro tenements.

Geophysical assessment was completed by Southern Geoscience Consultants and included data collation and interpretation of Fixed Loop and Moving Loop Electromagnetic (FLTEM – MLTEM) data, in correlation with data from the completed infill gravity program.

The geophysical surveys at the Milly Milly Intrusion have highlighted anomalous MLTEM and gravity responses, (Figure 1). Interpretation of FLTEM – MLTEM and gravity surveys at the Moonborough Intrusion have also highlighted anomalous responses. (Figure 3).

Following electromagnetic and gravity interpretation correlated with geological and geochemical data, 5 target areas have been developed. The drill targets are within 3 areas at the Milly Milly intrusion, (Figure 2), and 2 areas within the Moonborough intrusion, (Figure 4.).

The Company has contracted a drilling company to complete a 2,400m Reverse Circulation drilling program to test for prospective lithology (**Drilling Program**).

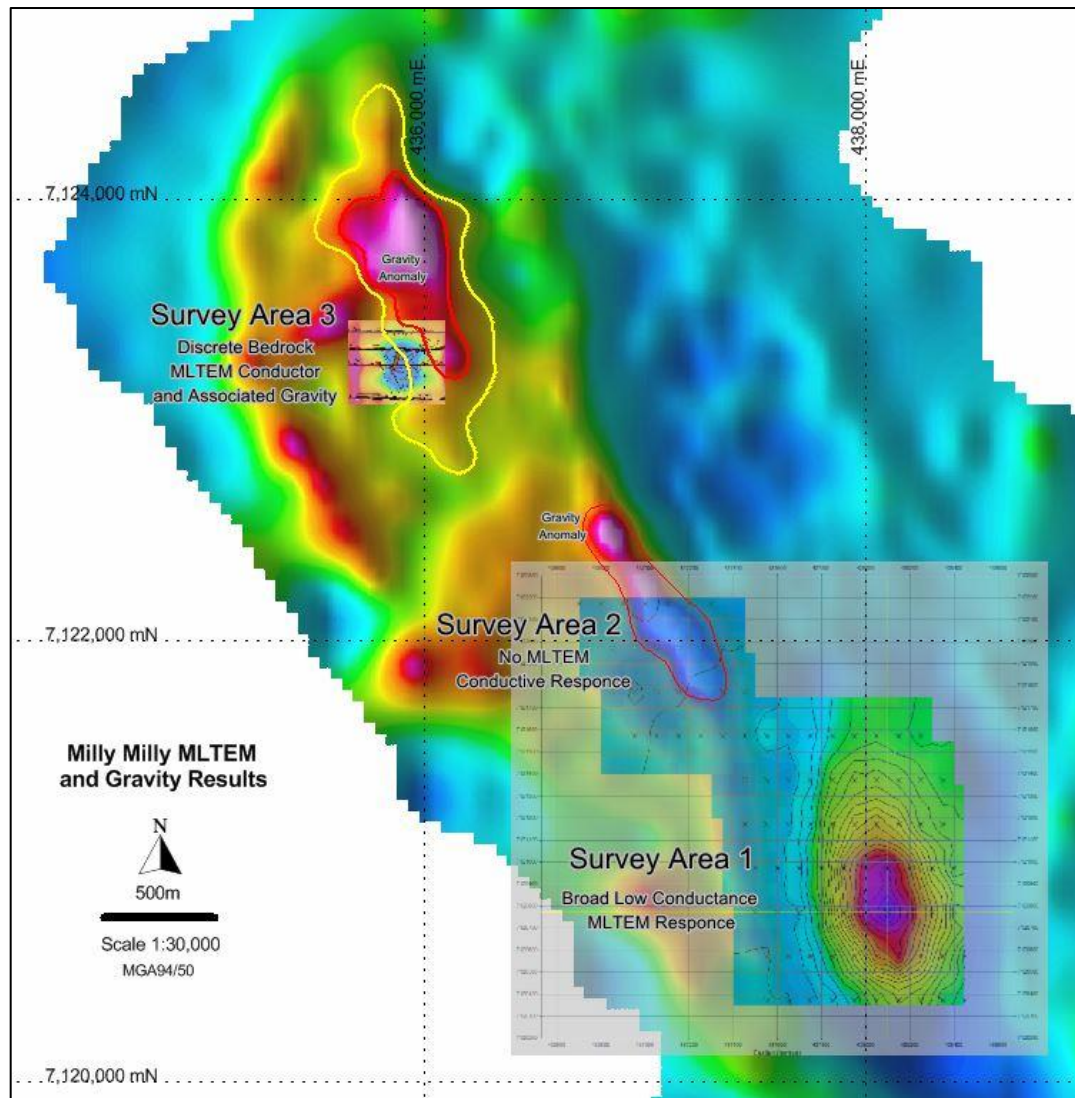
- All areas targeted in this program have had native title clearance completed.
- Tracks and drill pad preparations have been completed and drilling has commenced today.
- The Drilling Program is expected to be completed within two to three weeks.

**Athena Resources Limited**



## 1. MILLY MILLY INTRUSION

### MLTEM Survey Results and Target Areas



**Figure 1.** MLTEM survey results (anomalies are transparency over Gravity Results).

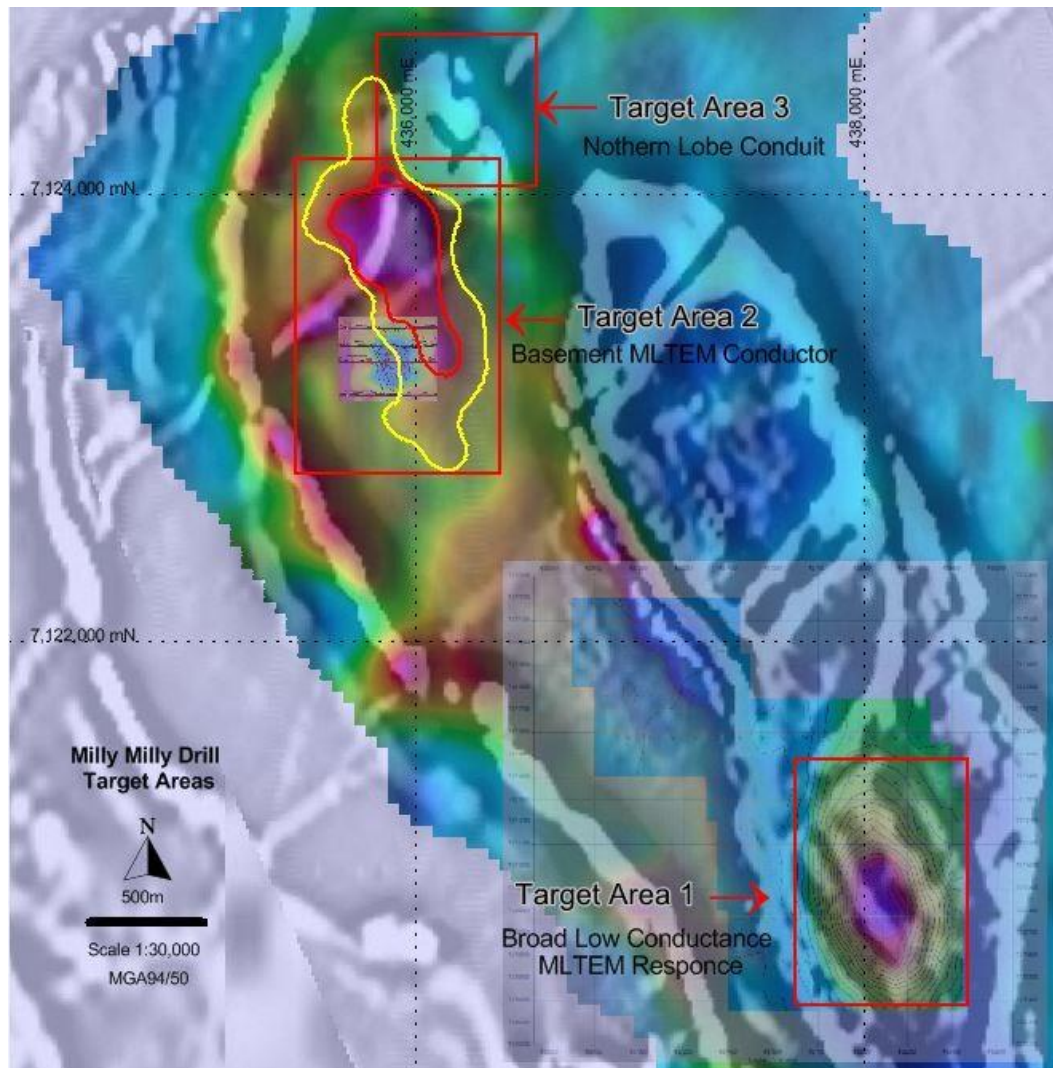
**At Survey Area 1:** A broad shallow kilometer scale conductor of low amplitude was identified.

**At Survey Area 2:** No conductive response was identified. Further work is required to test the gravity anomaly which continues to the north of area 2 with future MLTEM.

**Athena Resources Limited**



**At Survey Area 3:** A discrete moderate to high conductance has been confirmed in close proximity to a well-defined high gravity anomaly.



**Figure 2.** Interpreted Target Areas at the Milly Milly Intrusion

Follow-up drilling has been designed within 3 targets Areas at the Milly Milly intrusion based on the coincidence of MLTEM conductors, gravity anomalies, aeromagnetic data and geochemical path finder elements. All holes will be cased for routine Down Hole Electromagnetic, (DHEM) surveys on completion.

**Target Area 1:** The broad, kilometer scale low conductance MLTEM response was identified at 50m to 100m below surface. Previous drilling has identified prospective lithology with anomalous copper, nickel and PGE elements. The EM anomaly extends from the weathered zone at 50m depth to 100m depth in fresh rock. Drilling will test if the anomaly is associated with a reef style disseminated nickel/copper sulphide occurrence



common to the Bushveld type layered intrusive model.

**Target Area 2:** A discrete moderate to high conductance has been identified in close proximity to a well-defined high gravity anomaly that strikes adjacent and to the north of the conductor. The conductor is proximal to favorable lithology and path finder elements from previous drilling and geochemistry.

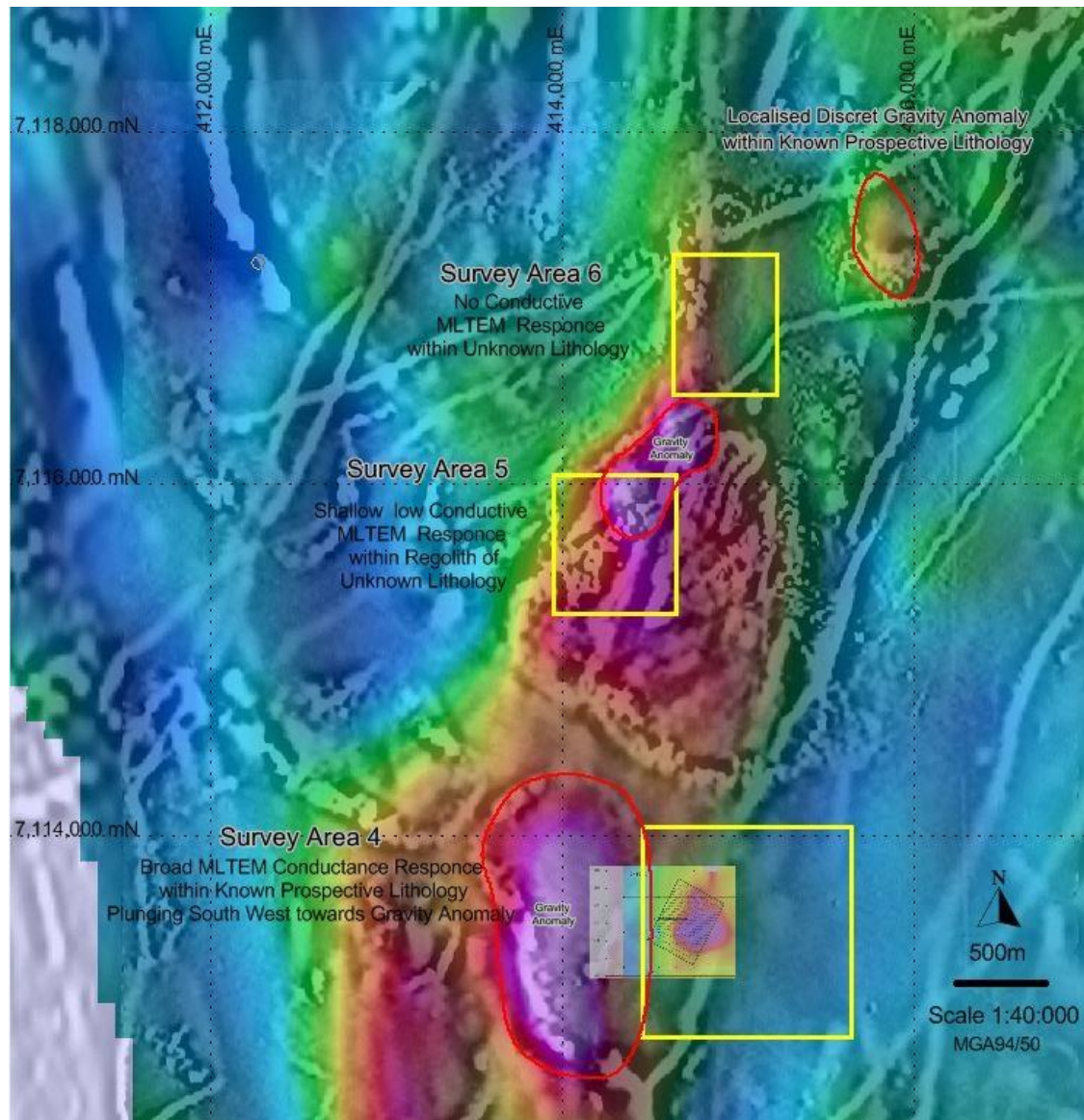
**Target Area 3:** The Conduit target has remained untested and will be included in the current program to identify related stratigraphy. The target contains coincident anomalous surface geochemistry, favorable aeromagnetic data and has been structurally identified as a potential feeder conduit associated with the Milly Milly intrusion.





## 2. MOONBOROUGH INTRUSION

### MLTEM Survey Results and Target Areas



**Figure 3.** MLTEM/FLTEM and Gravity survey results.

EM anomalies are transparency over Gravity Results. (MLTEM Survey area - yellow boxes, constrained gravity anomalies – red circles).

**Survey Area 4:** A broad MLTEM Conductive Response was identified within known





Follow-up drilling has been designed within 2 Targets Areas at the Moonborough intrusion based on the coincidence of MLTEM conductors, gravity anomalies, aeromagnetic data and geochemical path finder elements. All holes will be cased for routine Down Hole Electromagnetic, (DHEM) surveys on completion,

**Target Area 4:** A broad south west plunging conductor of low amplitude was identified confirming earlier VTEM data. The anomaly plunges to the south west of the MLTEM survey area. Previous drilling had intersected prospective lithology and path finder elements that justify further drill testing. Drilling will test if a significant bedrock conductor could extend at depth to the south west from the MLTEM conductor towards a defined gravity anomaly.

**Target Area 5:** a Localised discrete gravity anomaly was identified coincident with aeromagnetic data within known prospective lithology with anomalous path finder elements.

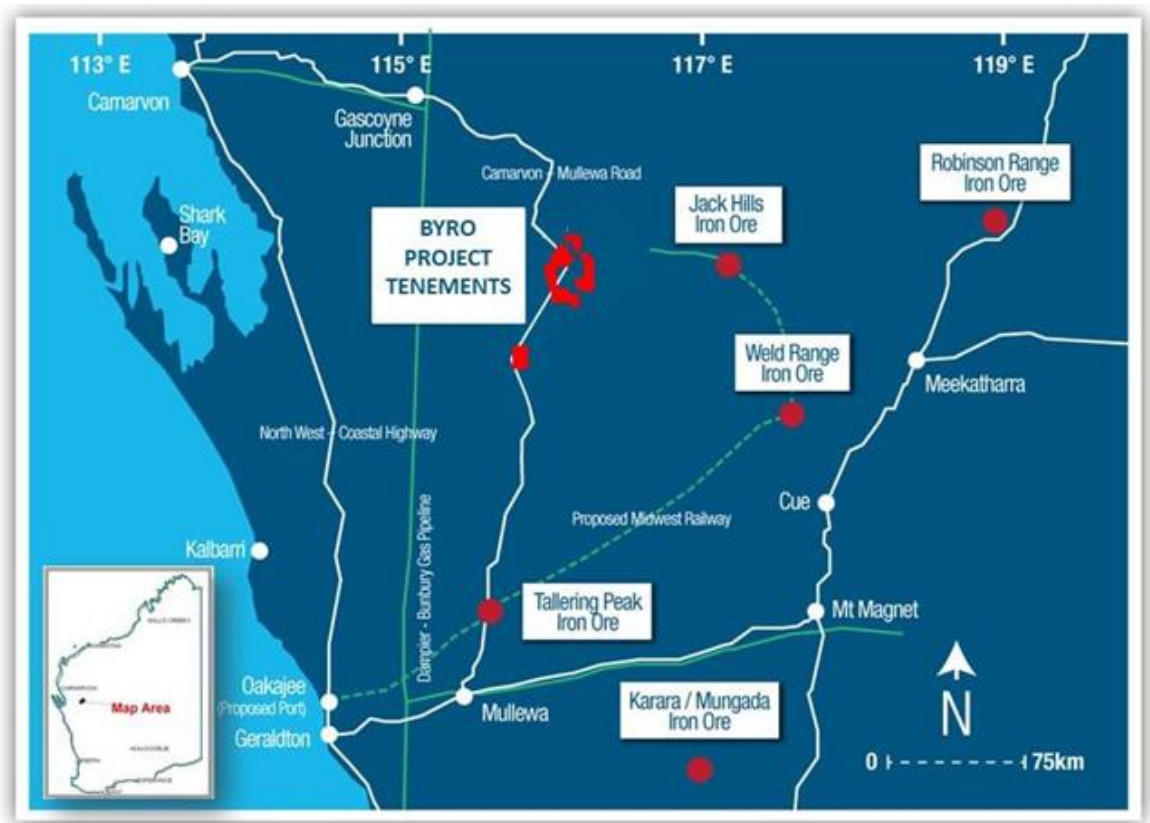




## ABOUT ATHENA RESOURCES LIMITED

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.

### Regional Project Location



This announcement was authorised by the Board.

Yours faithfully

E W Edwards  
Executive Director

**Athena Resources Limited**



# JORC Code, 2012 Edition - Table 1

## Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Fixed and Moving Loop Transient Electromagnetic (<b>FLTEM /MLTEM</b>) ground surveys along with Gravity infill surveys were completed over 6 survey areas. The surveys initiated over selected high priority areas, identified from previous VTEM™ airborne survey and historic gravity surveys and geochemical assessment. The F/MLTEM surveys were completed early August 2021 and gravity infill completed late August 2021, with all 6 survey areas completed. Orientation is in E–W direction over EM targets of the Milly Milly Intrusion and Moonborough Intrusion, identified by UTS Geophysics/Geotech consultants from a previous VTEM airborne survey.</li> </ul> <p><b>FLTEM configuration:</b></p> <ul style="list-style-type: none"> <li>NORDICem24 receiver</li> <li>CSIRO LANDTEM HT SQUID B-field sensor</li> <li>ORE_HPTX transmitter</li> <li>Loop sizes – 400x550m up to 750x750m</li> </ul> <p><b>Specs:</b></p> <ul style="list-style-type: none"> <li>100-150m line spacing</li> <li>50m station spacing.</li> <li>0.5Hz base frequency</li> <li>80A current</li> <li>~1msec ramp time</li> <li>Multiple readings at 64 stacks</li> </ul> <ul style="list-style-type: none"> <li>FLTEM surveys are an industry standard practice for follow-up testing subsequent to an airborne WM survey, for bedrock conductors representing potential mineralised conductive sulphide bodies.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>Not relevant for F/MLTEM or Gravity survey</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Not relevant for F/MLTEM survey</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> </ul>	<ul style="list-style-type: none"> <li>Not relevant for F/MLTEM survey</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all cores taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Not relevant for F/MLTEM survey</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>F/MLTEM system calibrated prior to commencement of the survey.</li> <li>All digital data is inspected daily by the Geotech site crew and the Company's consultant geophysicist.</li> <li>The Company receives a daily report on production and of any equipment issues.</li> <li>The data is reviewed real time by the consultant geophysicist on the ground and any lines are re-walked if necessary.</li> <li>The data presented is being conducted and processed by Southern Geoscience consultants. Upon completion, the Company's consultant geophysicist completed a QA/QC of these data to consider them suitable for public release.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Daily data independently checked by Company's consultant geophysicist</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Real-time GPS navigation system. Coordinates presented are in WGS84, GDA94 Zone 50S.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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)</li> </ul>	<ul style="list-style-type: none"> <li>Spacing between survey lines is 100-150m with station readings taken approximately every 50m along lines. Multiple readings at 64 stacks.</li> <li>Data spacing is optimum to establish geological continuity.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>and classifications applied.</i></p> <ul style="list-style-type: none"> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The survey lines are approximately perpendicular to any known strike direction of geological formations and which orientation, is sufficient to further interrogate the discrete conductive anomalies previously identified by the VTEM Max survey.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All data acquired by GEM Geophysics was reported to the Company's consultant geophysicist</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The data was independently verified by the Company's consultant geophysicist Russell Mortimer of Southern Geoscience Consultants</li> </ul>

## Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Tenements E09/1507 and E09/1637</li> <li>• Held by Complex Exploration Pty Ltd and Byro Exploration Pty Ltd, both 100% owned subsidiaries of Athena Resources Ltd.</li> <li>• Tenement is in good standing, and operating within native title heritage agreement with Wajarri Yamaji Aboriginal Corporation (RNTBC) and no known historical or environmentally sensitive areas are within the tenement areas</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historic exploration within the greater project area largely confined to south of a line extending from Imagi Well to the Byro East intrusion (Melun Bore). The earliest work with any bearing on Athena's activities is that of Electrolic Zinc Co (1969) exploring for chromitite at Imagi Well, followed closely by Jododex Australia (1970-1974) at Byro East. Much of the exploration of a more regional nature is of limited use either because of the vagaries of the accuracy of positional information and the limited range of elements analysed. More recent surveys pertinent to Athena's current investigations include that of Redback Mining (1996-2002), Yilgarn Mining Limited (2003-2008) and Mithril (2007, JV with Yilgarn) at Byro East, and Western Mining Corporation (1976-1979) and Precious Metals Australia at Imagi Well. Newcrest Mining carried out a limited reconnaissance RAB drilling programme for platinum just to the east of Byro homestead (1998-1990).</li> </ul>
Geology	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and mineralisation.</i></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>
Drill hole information	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>• <i>easting and northing of the drill hole collar</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• It is expected historic exploration by previous explorers used best practice for that time.</li> <li>• The use of any data is recommended for indicative purposes only in terms of potential Ni- Cu-PGE mineralisation and for developing exploration targets.</li> <li>• No drilling has been undertaken through the course</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>elevation or RL (<i>Reduced Level – elevation above sea level in metres</i>) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth hole length.</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>of the work reported in this announcement</li> <li>No information has been excluded.</li> </ul>
Data aggregation methods	<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 metal equivalent values have been quoted</li> </ul>
Relationship between mineralisation widths and intercept lengths	<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 drilling has been undertaken through the course of the work reported in this announcement</li> <li>There is no relationship between widths and intercept lengths from the interpretation of the geophysical data.</li> </ul>
Diagrams	<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>Appropriate maps and tabulations are presented in the body of the announcement</li> </ul>
Balanced reporting	<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>This report contains all meaningful results to date.</li> </ul>
Other substantive exploration data	<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>Work completed is of an early explorative stage in the areas subject to this report. All historical and previous exploration results reported on the ASX platform and available from the DMIRS.</li> </ul>
Further work	<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>	<ul style="list-style-type: none"> <li>Targets generated from the F/MLTEM and gravity surveys will be followed up with a reverse circulation drilling programs within the 5 target areas disclosed within this report</li> <li>Exploration is at an early stage and future work will depend on results.</li> </ul>

## INTERESTS IN MINING TENEMENTS

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	

### **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*