

29 November 2023

## Drilling Completed at Olympus Gravity Target

### Highlights

- Drilling of the Olympus Gravity Target has been completed through the target zone and ending at 519.6 metres.
- Drill core to now undergo geochemical and petrological analysis.

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**Petratherm Limited** (ASX: PTR) (“**PTR**” or “**the Company**”) is pleased to announce that drilling of the Olympus Gravity/EM Target has been completed to the targeted depth. Olympus occurs on PTR’s 100% owned Mabel Creek Project, located along the northern reaches of the Olympic Copper-Gold Province of South Australia (Figure 1).

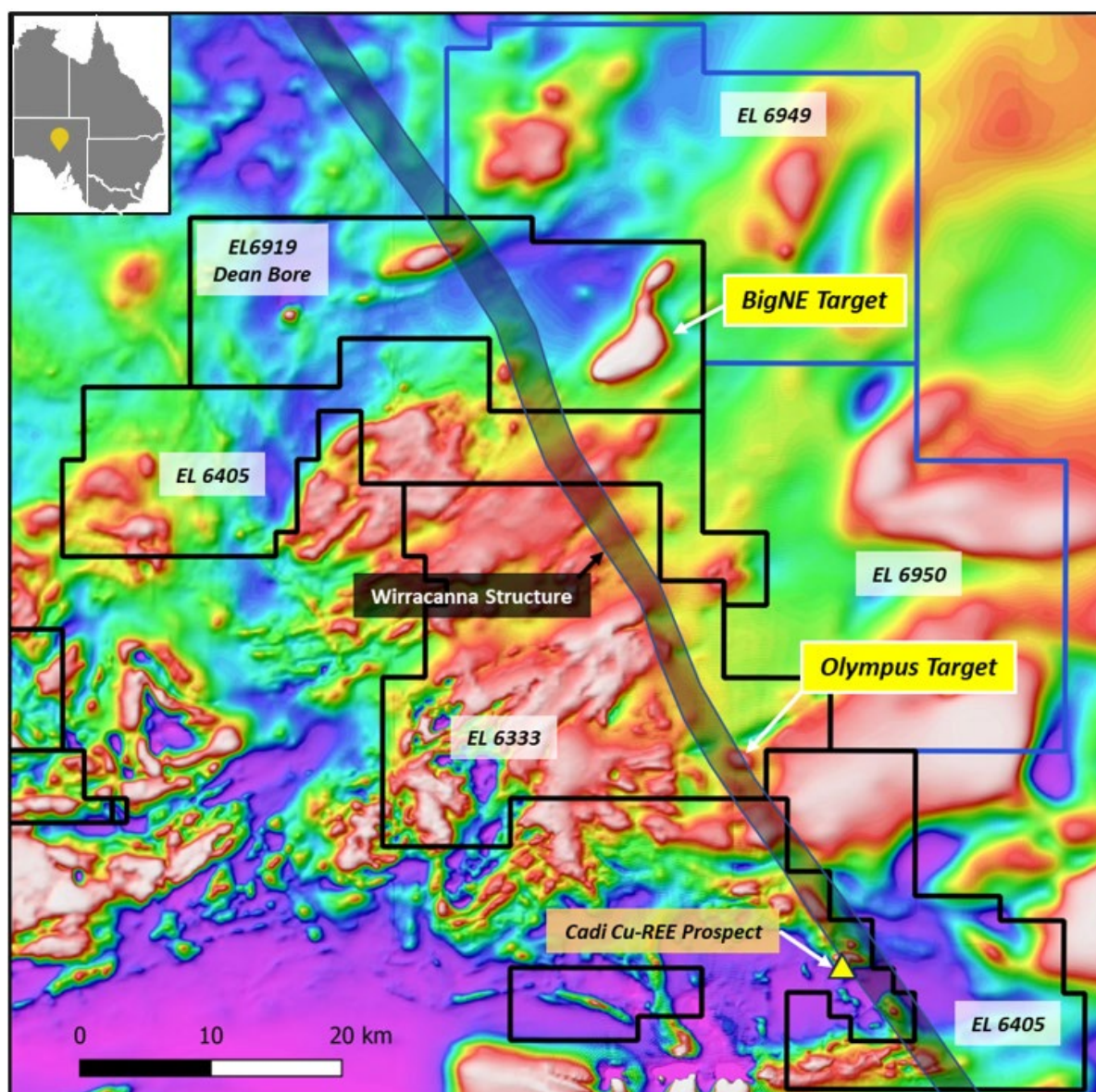
The completed drill hole, 23MCD001, was drilled to test a significant gravity anomaly at Olympus. Drilling involved completing a rotary mud pre-collar through younger covering sediments to a depth of 275.6 metres followed by diamond coring to end of hole at 519.6 metres (refer to Table 1 for collar details).

Drill core from 23MCD001 has been freighted to Adelaide where it will be subject to various test work including XRF geochemical analyses, specific gravity measurements and core cutting and assaying where warranted. The drilled sequence comprised principally granite and garnet rich gneiss showing only low levels of alteration and no visual evidence of mineralisation.

### ***Petratherm Chief Executive Officer, Peter Reid commented:***

*“Whilst no visible mineralisation or significant alteration is evident from the initial field logging, we believe we are in the right geological address on the Mabel Creek Project. We see evidence of this from the extensive hematite alteration present at the BigNE Prospect, northwest of Olympus, and the Cadi Copper – Rare Earth Prospect adjacent to Company’s southern lease area.*

*“We remain excited about what the beginning of 2024 will have in store on this project. The Company is very eager to commence new geophysical surveys and develop additional targets after the recent granting of three new tenements in the second half of 2023 saw Petratherm gain an additional 1,784km<sup>2</sup> of relatively unexplored geology in the Mabel Creek region.”*



**Figure 1** Magnetic Image of Eastern Mabel Creek Project Area – Olympus and BigNE Targets and new Tenement areas (EL6919, EL6949 & EL 6950).

**Table 1 – Mabel Creek Project Drill Hole Details**

Hole ID	Prospect	East	North	Elevation (Metres)	Collar dip (Deg)	Collar azimuth (Deg)	Hole Depth to basement (Metres)	End of hole depth (Metres)
23MCD001	Olympus	528145	6815990	105	65	69 (T)	275	519.6

**ENDS**

This announcement has been authorised for release on the ASX by the Company's Board of Directors.

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**Competent Persons Statement:**

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Peter Reid, who is a Competent Person, and a Member of the Australian Institute of Geoscientists. Mr Reid is not aware of any new information or data that materially affects the historical exploration results included in this report. Mr Reid is an employee of Petratherm Limited. Mr Reid has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## About Petratherm Limited

Petratherm Limited (ASX: PTR) is a critical minerals explorer focused on the discovery of world-class copper-gold and rare earth deposits. The Company has several advanced drill ready projects in the Olympic Copper-Gold Domain of South Australia. PTR recently announced the discovery of significant concentrations of rare earths hosted in clays in the Northern Gawler Craton of South Australia which are undergoing further drill testing.

Exploration drilling at the Comet Project Area has delineated two major REE occurrences. The Meteor and Artemis REE prospects both occur at very shallow depths, include high-grade blankets of mineralisation showing good lateral extent and ore thickness. Less than 10% of the project area has been explored for REE's and a systematic program of advancement of current prospects, testing of new areas and metallurgical recovery test work is ongoing.

PTR has several exciting copper-gold targets at its Mabel Creek and Woomera Projects located within the Olympic Copper-Gold Trend. Targeting work has defined several compelling Copper-Gold targets and PTR anticipates drill testing of targets will begin from late in 2023 calendar period.



*PTR's Project Locations in South Australia*

## EL 6333 (Mabel Creek Project) JORC Table 1

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<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 Au that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Not Applicable – no sampling has been undertaken</li> <li>Visual descriptions are reported in main body of the report only.</li> <li>The drill core will undergo test work including XRF and geochemical analysis where warranted.</li> </ul>
<b>Drilling techniques</b>	<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>Rotary Mud Collar with orientated, NQ diamond tail. Down hole surveys approximately every 30m, using a TruCore UPIX orientation system.</li> </ul>
<b>Drill sample recovery</b>	<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>Core recovery process involves comparison of drillers recorded depth against the length of core recovered. Rock Formations drilled were competent and no significant core loss was observed.</li> </ul>
<b>Logging</b>	<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> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Core logging is carried out by qualified geologists using project specific logging procedures. Data recorded includes, but is not limited to, lithology, structure, recovery, alteration, sulphide mineralogy. Logging is at a sufficient level of detail to support appropriate mineral resource estimation and mining studies.</li> <li>No visual mineralisation has been observed.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• Drill logging is both qualitative by geological features and quantitative by geotechnical parameters in nature. Photographs are taken of all core trays (dry and wet) of core.</li> <li>• All drill intervals are logged and recorded as standard operating practice.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable – no sampling has been undertaken</li> <li>• Drill core will undergo test work including XRF and geochemical analysis where warranted.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable – No assaying has been undertaken.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable – no assays undertaken</li> <li>• Petratherm's geologists have reviewed the core.</li> <li>• No twinned holes</li> <li>• Drilling information is handwritten then digitally entered and stored following documented core handling procedures and back up electronically.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All collar locations are in UTM grid (GDA94 Z53) and have been measured by hand-held GPS with a lateral accuracy of <math>\pm 4</math> metres and a vertical accuracy <math>\pm 5</math>m.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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) and classifications applied.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Only a single drill hole has been reported so data spacing is not applicable.</li> <li>• Data spacing is insufficient to establish the degree of geological and grade continuity required for a Mineral Resource estimation.</li> <li>• No sample compositing has been applied.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<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>• No visual mineralisation has been identified.</li> <li>• The relationship between the drilling orientation and the orientation of any potential mineralised structures is unknown.</li> </ul>
<b>Sample security</b>	<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>• A secure custody protocol is established. The core was transported to a secure third-party facility for detailed logging and future analysis.</li> </ul>
<b>Audits or reviews</b>	<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>• No review has been undertaken at this time.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<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>• EL 6333 was granted to Petrathern (100%) on the 29/03/2019.</li> <li>• EL 6333 is located approximately 50km northeast of Coober Pedy overlapping Mount Barry, Nilpinna and Anna Creek Pastoral Stations.</li> <li>• The southern half of the tenement overlaps the Woomera Prohibited Area (Green Zone).</li> <li>• <b>Native Title Claims:</b> SCD2012/002 Arabana &amp; SCD2011/001 Antakirinja Matu-Yankunytjatjara.</li> <li>• The tenement is in good standing and no known impediments exist.</li> </ul>

Criteria	JORC Code explanation	Commentary
<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>Previous exploration work includes;  <b>Airborne Geophysics:</b> Magnetics, Radiometrics and MCR.  <b>Ground Geophysics:</b> Magnetics and Gravity.  <b>Exploration Drilling:</b> 2 Rotary, 2 Rotary Percussion, 5 Reverse Circulation.</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>Petrathern is primarily exploring for Fe-Oxide-Copper-Gold mineralisation (e.g. Olympic Dam-style) within the Peake &amp; Denison Domain of the Gawler Craton, South Australia.</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>Summary table of drill hole details included in Table 1.</li> <li>No intercepts are reported.</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>Not Applicable – No reporting of assays</li> <li>No mineralisation reported</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<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>Not Applicable – no mineralisation reported</li> </ul>
<b>Diagrams</b>	<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</li> </ul>	<ul style="list-style-type: none"> <li>No mineralisation was intersected.</li> <li>Insufficient drilling has been undertaken to be</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>collar locations and appropriate sectional views.</i>	able to provide geological sections.
<b>Balanced reporting</b>	<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 reporting is considered balanced. This announcement details visual estimate of results from the testing of a gravity target by the Company. No evidence of mineralisation was encountered.</li> <li>Comprehensive reporting of all historical exploration results has occurred when appropriate.</li> </ul>
<b>Other substantive exploration data</b>	<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>Regional and infill ground gravity surveying was conducted over EL 6333. This work defined the Olympus gravity anomaly which formed the basis of drill targeting.</li> <li>Results of the gravity survey model are contained in PTR ASX release dated 03/10/2023.</li> </ul>
<b>Further work</b>	<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>A range of exploration techniques are being considered to progress exploration including geophysical surveying to aid drill targeting and further drilling.</li> </ul>