

**ASX ANNOUNCEMENT**

**25 June 2020**

# **Mabel Creek Project - Drilling Grant Awarded to test Olympic Dam Style Copper-Gold Targets**

## **Key Points**

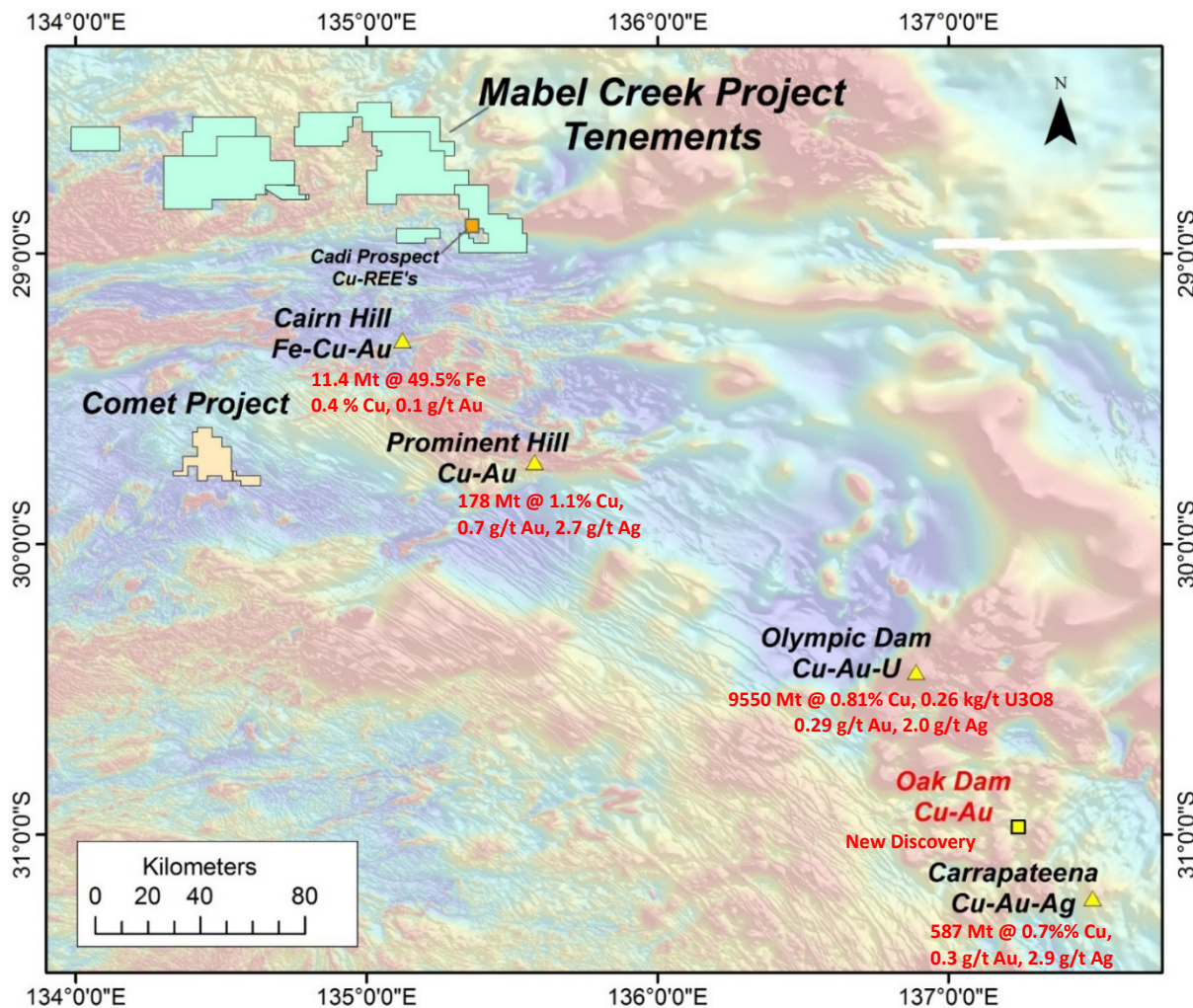
- \$182,000 South Australian Government Exploration Development Initiative Grant Awarded to assist drilling of Olympic Dam Style Copper-Gold targets at Mabel Creek.
- Independent petrological study of drill core confirms strong evidence of Iron Oxide Copper-Gold (IOCG) hydrothermal style alteration at the Mabel Creek Area 5 Prospect.

Petratherm Limited (“Petratherm” or “the Company”) (ASX: PTR) is pleased to announce that it has been successful in securing grant funding to a level of \$182,000 through the Accelerated Discovery Initiative (ADI) to assist drilling of Olympic Dam Style Copper Gold geophysical targets on the Company’s Mabel Creek Project Area. The ADI program forms part of the South Australian Government’s Growth State Agenda and aims to accelerate mineral discovery through innovative exploration and research projects in regional and frontier terrains throughout South Australia.

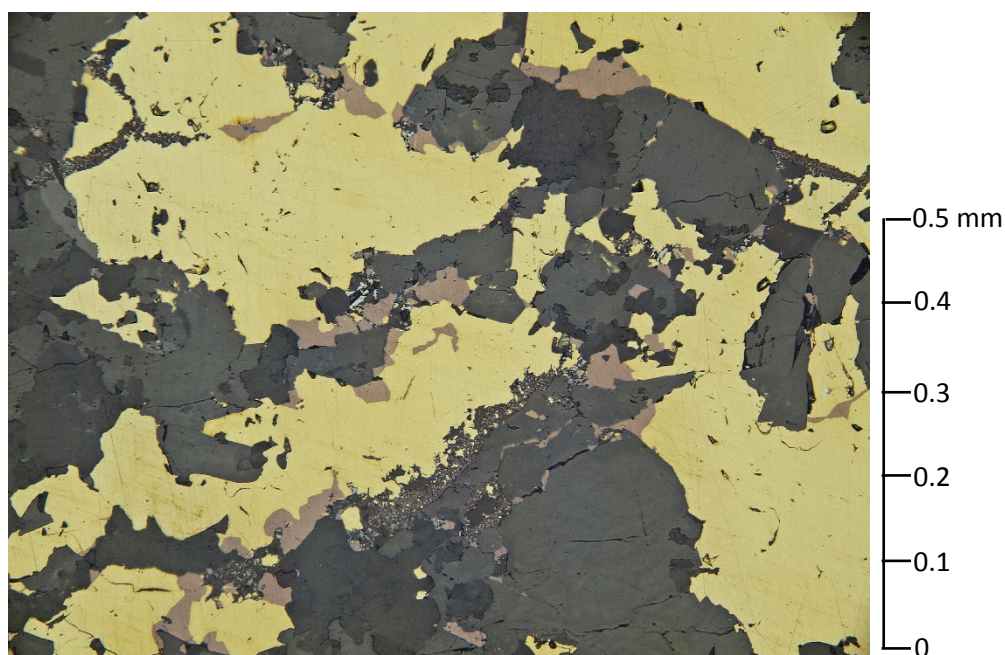
In addition, recent findings from an independent petrological study of the Area 5 drill core, (refer to PTR ASX release 12/05/20 for drilling details) confirm the presence of pervasive Olympic Dam Style Copper-Gold alteration. Area 5 is a large geophysical target, spanning several square kilometres and further exploration and test drilling is warranted.

The Mabel Creek Project, 50 kilometres northeast of Coober Pedy in South Australia, comprises a large tenement holding totalling 2,852 km<sup>2</sup> (Figure 1). The Mabel Creek Ridge is a zone of shallow covered basement rock, which displays high magnetic and gravity relief along the north-eastern margin of the Gawler Craton. The area is considered prospective for hydrothermal iron-oxide systems including, copper-gold, magnetite skarn copper and high value rare earth elements (Figure 1).

Recent first pass drill reconnaissance of anomalous gravity and magnetic target areas by Petratherm in March intersected rocks showing iron-oxide (hematite) enrichment and highly elevated rare earths, typical of IOCG style alteration (refer to PTR ASX release 12/05/20). Subsequent petrological analysis recently completed, describes hydrothermal alteration overprinting all rocks at varied levels of intensity and is comparable to moderately deep, moderate to lower temperature Iron Oxide Copper-Gold (IOCG)-type sodic-calcic alteration. This is particularly evident in the consistent presence of dispersed hematite alteration, and in the presence of high intensity calc-silicate (sodic-calcic) skarn-type alteration containing abundant sulphides (chalcopyrite >> bornite; MCDA5-01, 168.9m; Figure 2) and similar medium-intensity alteration in flanking rocks.

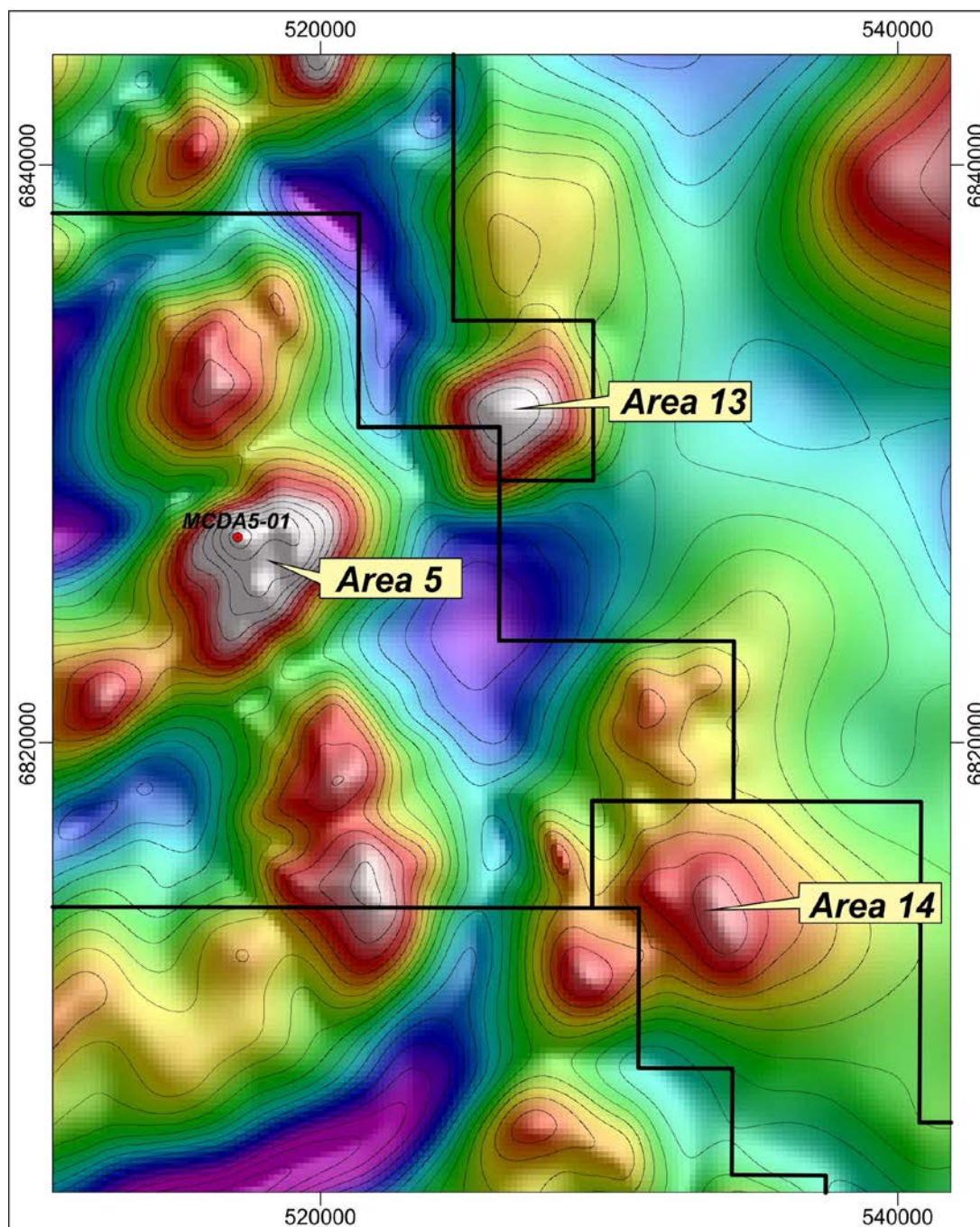


**Figure 1-** Location map of Mabel Creek Project Tenements, IOCG mines and related prospects, overlaid on a regional reduced to pole aeromagnetic image (compiled from Sth. Aust. Government data).

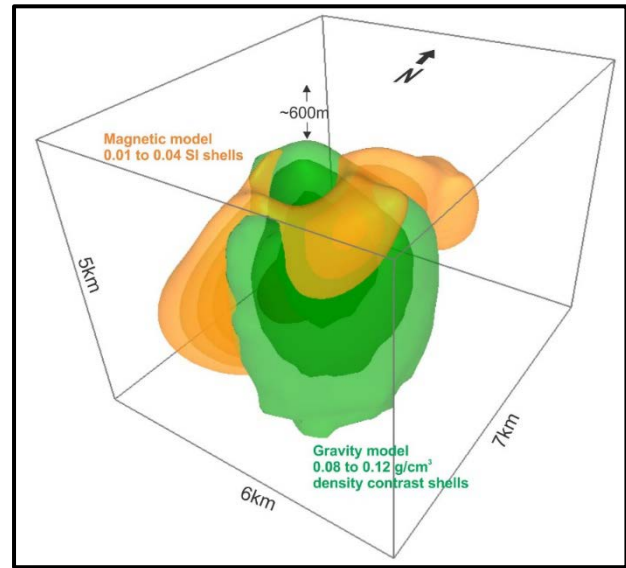
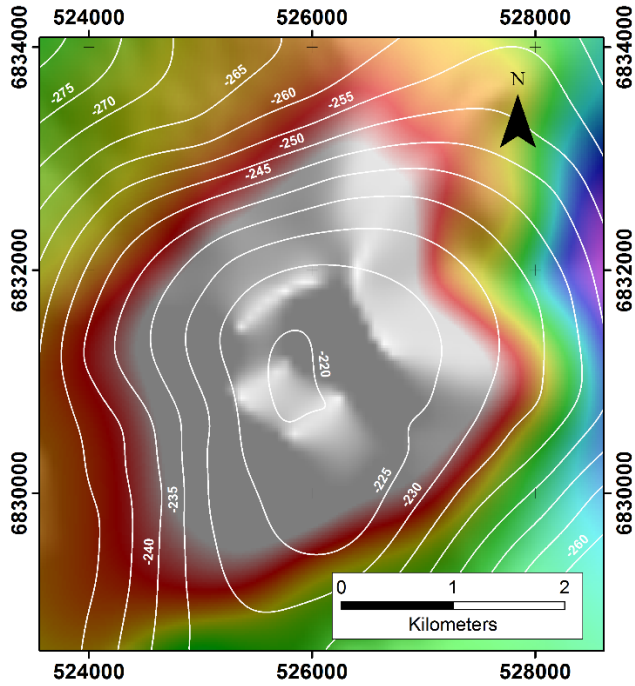


**Figure 2** Sample PTR-A5, 168.9m (Reflected plane polarised light). View of copper alteration sulphides, illustrating the close physical relationship between abundant chalcopyrite (yellow) and minor bornite (mauvish brown).

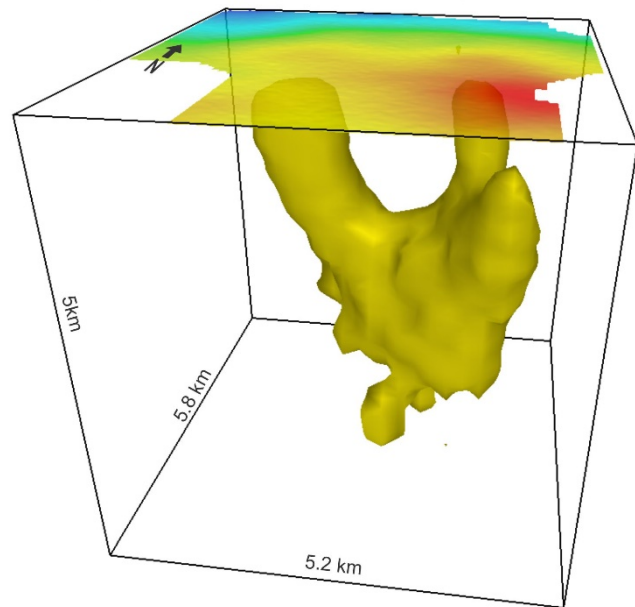
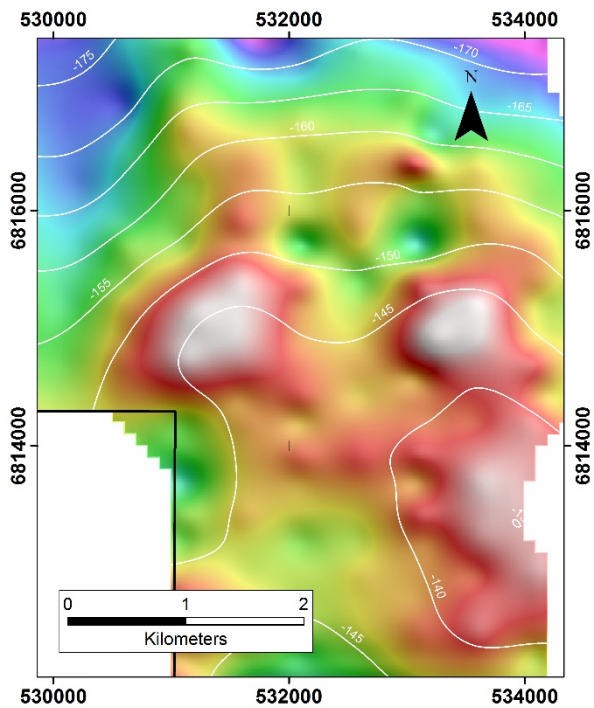
The ADI grant monies will be used to assist drill testing of two IOCG style geophysical targets the Company has defined on the eastern side of the Mabel Creek Project Area where cover thickness increases due to down faulting of the prospective basement rock (refer to PTR ASX release 30/01/2020; Figure 3). The Area 13 target is a large 5 milligal gravity anomaly coincident with a magnetic feature which modelling suggests starts at approximately 600 metres depth (Figure 4). The Area 14 gravity target comprises 3 dense zones within a broader anomalous area. 3D inversion modelling shows 3 pipe-like bodies coincident with the 3 denser gravity features identified. Depth to top of interpreted targets is modelled at approximately 550 metres (Figure 5).



**Figure 3** Mabel Creek Project Area Residual gravity image (0.5 Millgal gravity contours). Area 5 Prospect anomaly and MCDA5-01 collar position shown, along with the Area 13 and 14 gravity targets, which have ADI grant funding.



**Figure 4** Area 13 Gravity Target. Left - 0.5 milligal gravity contours overlain on reduced to pole magnetic image. Right - 3D Inversion of the magnetic and gravity Bodies. Area 13 target is a 5 milligal gravity anomaly with the dense body starting at a modelled depth of 600 metres.



**Figure 5** - Area 14 Gravity Target. Gradient Gravity Image (left) with 0.5 milligal bouguer gravity contours. Gradient image highlights 3 dense bodies within a broader anomalous area. The 3D inversion model (right) shows 3 pipe-like bodies coincident with the 3 denser gravity features identified. Depth to top of interpreted targets is modelled at approximately 550 metres.

## PETRATHERM LIMITED

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The Company is greatly encouraged by the petrological findings supporting the high prospectivity of the Mabel Creek area for copper-gold and the ADI grant assistance to aid future drilling. Given the number and large area size of the gravity anomalies identified at Mabel Creek to date (refer to PTR ASX release 30/01/2020), the Company is considering undertaking IP surface geophysical surveying over current anomalies ahead of further drill testing. IOCG style deposits elsewhere have proven to provide an IP chargeable response, when geological cover conditions allow such as is expected at Mabel Creek. This will be an effective screening tool to determine which gravity anomalies may be mineralised and would also provide additional vector control to aid drill targeting the most prospective portions of these anomalies.

***For further information, please contact:***

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This ASX announcement has been approved by Petratherm's Board of Directors and authorised for release by Petratherm's Chairman Derek Carter

**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 Ltd. 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.

## EL 6333 (Mount Barry 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>10 samples of the drill core from MCDA5-01 were taken and polished thin sections made. Independent expert petrological work, was performed by, Mason Geoscience Pty Ltd.</li> <li>Samples were collected at relatively regular intervals down the entire length of the cored hole and record representative rock types, mineralisation, rare-earth geochemical anomalism or evidence of mineral alteration.</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>Not applicable - refer PTR ASX release 12/05/20 for previous JORC Table 1 drilling details.</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>Not applicable - refer PTR ASX release 12/05/20 for previous JORC Table 1 drilling details</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. This is supervised by the exploration manager familiar with the geology and alteration / mineralisation style and nature. Logging is at a sufficient level of detail to</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>support appropriate mineral resource estimation and mining studies.</p> <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>• Drill core was cut and both quarter core and one third core was collected for submission for petrological work</li> <li>• Sampling of sections of representative core from MCDA5-01 as well as zones determined to show evidence of alteration underwent analysis.</li> <li>• No duplicates were sampled as the sample size was considered appropriate for the early stage of exploration.</li> <li>• Sample size as defined above is considered appropriate to the material sampled.</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>• The sampling method is considered appropriate and industry standard.</li> <li>• No use of portable XRF is reported.</li> <li>• Not applicable - no assay data are reported, only qualitative petrological findings.</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>• At least 2 geologists have reviewed the core and has been verified by the Petratherm's exploration manager.</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>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>No primary assay data is reported.</li> </ul>
<b>Location of data points</b>	<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>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>
<b>Data spacing and distribution</b>	<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) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Only single drill holes are reported testing different targets 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>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <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>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>A secure custody protocol was established from the field to delivery at the Laboratory. The core was been transported to a secure third-party facility for detailed logging and sampling. Petratherm geologists supervised the cutting and sampling program to ensure sample security.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</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>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> </ul>	<ul style="list-style-type: none"> <li>EL 6333 was granted to Petratherm (100%) on the 29/03/2019.</li> <li>EL 6333 is located approximately 50km northeast of Coober Pedy</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <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>	<p>overlapping Mount Barry, Nilpinna and Anna Creek Pastoral Stations.</p> <ul style="list-style-type: none"> <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>
<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; <ul style="list-style-type: none"> <li><b>Airborne Geophysics:</b> Magnetics and Radiometrics.</li> <li><b>Ground Geophysics:</b> Magnetics and Gravity.</li> <li><b>Exploration Drilling:</b> 2 Rotary, 2 Rotary Percussion, 5 Reverse Circulation.</li> </ul> </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>Petratherm 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>Refer PTR ASX release 12/05/20 for previous summary table of drill hole details included in Appendix 1.</li> <li>True widths of intercepts reported is not yet known.</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</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable</li> <li>No mineralised grades of significance have been reported, only evidence of alteration.</li> <li>No metal equivalents have been used.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>equivalent values should be clearly stated.</i>	
<b><i>Relationship between mineralisation widths and intercept lengths</i></b>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>• <i>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').</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable - Refer PTR ASX release 12/05/20 for previous JORC Table 1 drilling details.</li> </ul>
<b><i>Diagrams</i></b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Plan view of MCDA5-01 drill collar location has been shown in the body of this report. Section view has also been previously provided for the one hole (MCDA5-01) which returned material exploration results (refer to Refer PTR ASX release 12/05/20).</li> </ul>
<b><i>Balanced reporting</i></b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The reporting is considered balanced.</li> <li>• Comprehensive reporting of all historical exploration results has occurred when appropriate.</li> </ul>
<b><i>Other substantive exploration data</i></b>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Regional and infill ground gravity surveying was conducted over EL 6333. This work defined several gravity anomalies which formed the basis of initial drill targeting.</li> <li>• Results of gravity surveying and defined drilled targets are contained in PTR ASX releases dated 14/08/2019, 15/10/2019 &amp; 30/01/2020</li> <li>• Drilling of 4 geophysical targets occurred in March-April 2020 and full results are contained in PTR ASX release 12/05/20</li> </ul>
<b><i>Further work</i></b>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></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>