

## Wirrulla REE Project under application in South Australia

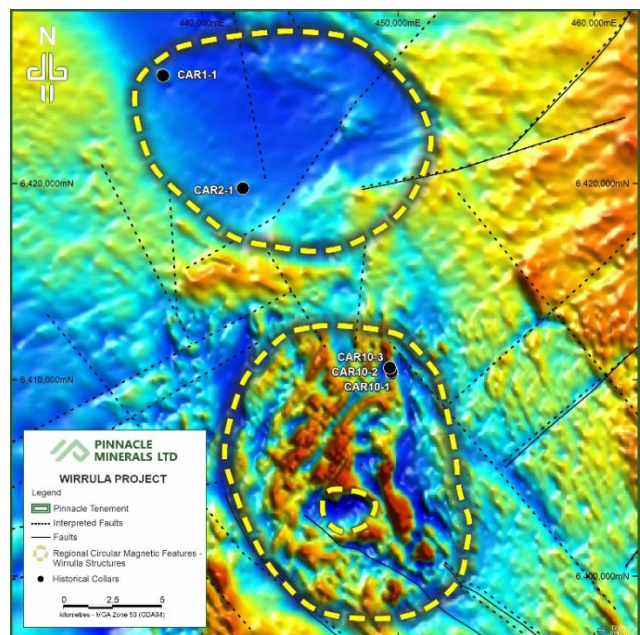
### HIGHLIGHTS

- Project centred on circular magnetic feature resembling a Mount Weld style intrusion currently under application in Wirrulla, South Australia (ELA 2023-00031).
- Rare Earth Element (REE) potential:
  - Apatite > 10%, typical in carbonatites – CAR10-2 & CAR10-3
  - Pegmatites logged in CAR1-1
- Historical exploration by Diamond Ventures in 1995<sup>1</sup> (focussing on locating kimberlites) identified Phosphorous between 2.3% and 3.74% P<sub>2</sub>O<sub>5</sub>
- Petrology report identified corresponding levels of apatite up to 15%, suggesting that the original pre-metamorphic intrusive could have been of Ijolitic composition and may have associated carbonatites
- Underexplored region with only four (4) drill holes reaching basement. The area has primarily been explored for heavy mineral sands<sup>2,3,4</sup> with numerous occurrences of pink – red clays (often associated with REE's)

Pinnacle Minerals Ltd (ASX: **PIM**) ("**Pinnacle**", the "**Company**") is pleased to announce that the Company has applied for the Wirrulla Project (ELA 2023-00031). Historical exploration has indicated prospective Rare Earth Element (REE) mineralisation in both hard rock (carbonatites) and clays.

The project is centred on a circular magnetic feature that resembles a Mount Weld style intrusion where historical exploration by Diamond Ventures on the fringe of the structure identified levels of apatite approaching 15% which is typical in carbonatites. Additionally, a partly graphic granite pegmatite was intercepted in historical drill hole CAR1-1 at a depth of 115.45m. No follow-up work was completed as the primary target was Diamonds.

Whilst the application is under process, the Company intends to conduct reconnaissance soil sampling over areas of interest for benchmarking and delineating new target areas.



**Pinnacle Minerals Managing Director, Nic Matich, commented:**

*"The Wirrulla Project was applied for after an extensive review of historical data and is considered a highly prospective target for both hard rock and clay hosted REE's. The team is excited about the potential of the project and will look to conduct first pass exploration this half to delineate potential targets for follow up in H1 2024."*

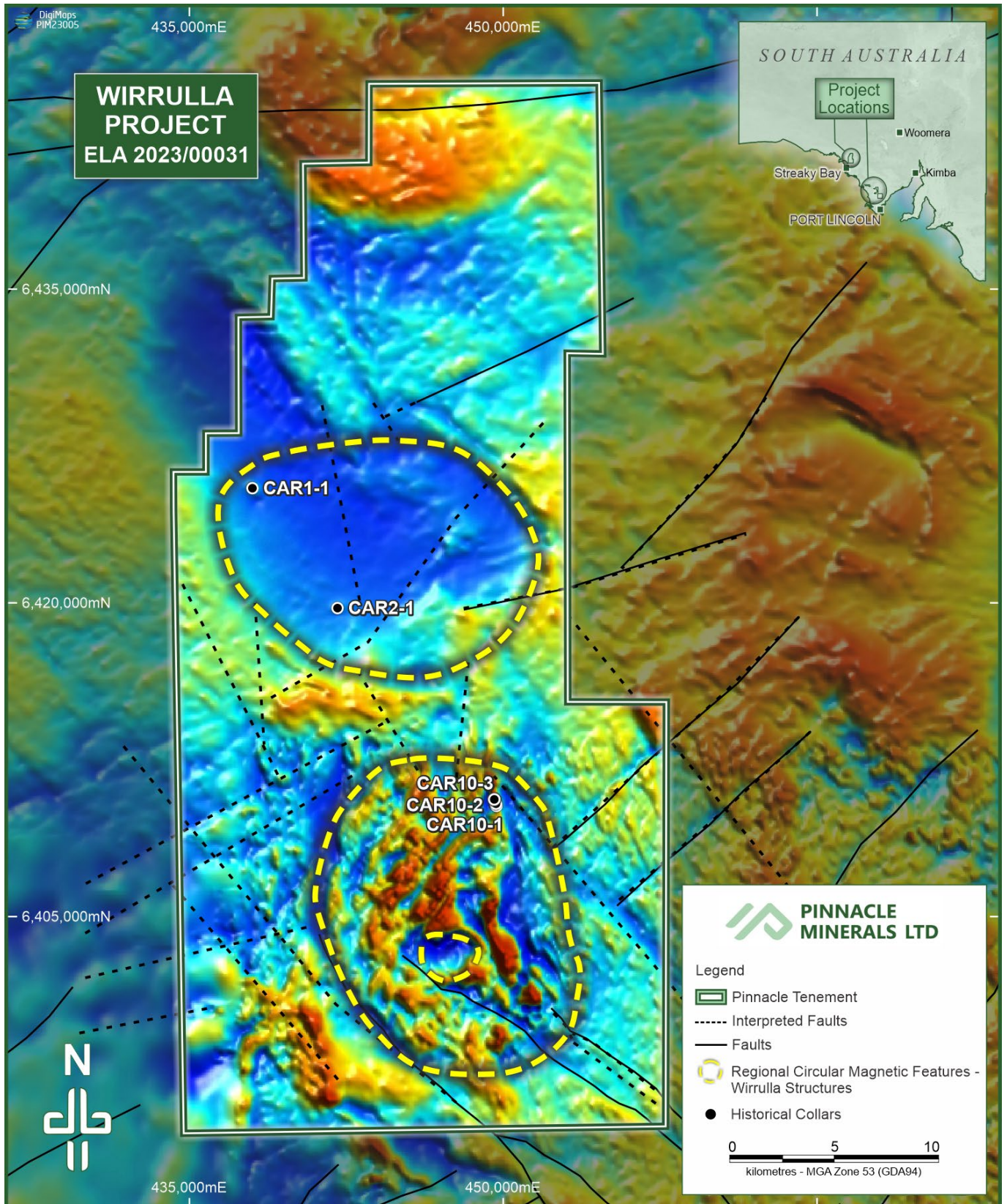


Figure 1: Wurrulla Project highlighting circular magnetic structures and faults.

**References**

- 1 – Open File Envelope Number 8981, EL 1952 Carawa, Annual and final report for the period 27/7/94 to 22/11/95
- 2 – Open File Envelope Number 11094, Els 3163, 3201, 3202, 3267, Iluka Resources Annual Technical Reports for the period 01/07/2004 to 16/06/2016
- 3 – Open File Envelope Number 8230, EL 1605, BHP Minerals, Final Report for the period 18/08/1989 to Dec 1991
- 4 – Open File Envelope Number 4010, Carpentaria Exploration, Combined Quarterly reports for the period 1979 to 1983

This announcement has been authorised for release by the Board of Pinnacle Minerals Ltd.

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**About Pinnacle Minerals**

Pinnacle Minerals Ltd (ASX: PIM) is an ASX listed technology minerals company focused on delivering shareholder value via the systematic exploration and development of its portfolio of kaolin, halloysite, battery metals and Heavy Mineral Sands prospective projects in Western Australia and South Australia. The Company is focused on delineating resources at its Bobalong and Holly Kaolin Projects in the Great Southern region of Western Australia whilst simultaneously expanding its' project portfolio through targeted acquisition of prospective ground. Drilling and a scoping study have been completed at Bobalong, with results indicating the potential for a high value direct shipping ore (DSO) product. The White Knight and Camel Lake Projects are strategically located adjacent to Andromeda Metals' (ASX: ADN) high-grade kaolin-halloysite discoveries in South Australia. The Latham and Tammin projects are adjacent to Chalice Mining Ltd (ASX: CHN) Mid-West Project and Anglo Americans' (LON: AAL) Southwest Yilgarn Exploration Project respectively, which have multi-element exploration potential.

**Competent person statement**

The information in this announcement that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by William Witham, a Competent Person who is a Member of The Australian Institute of Geoscientists (AIG). William Witham is a director of Pinnacle Minerals Ltd. William Witham 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'. William Witham consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.

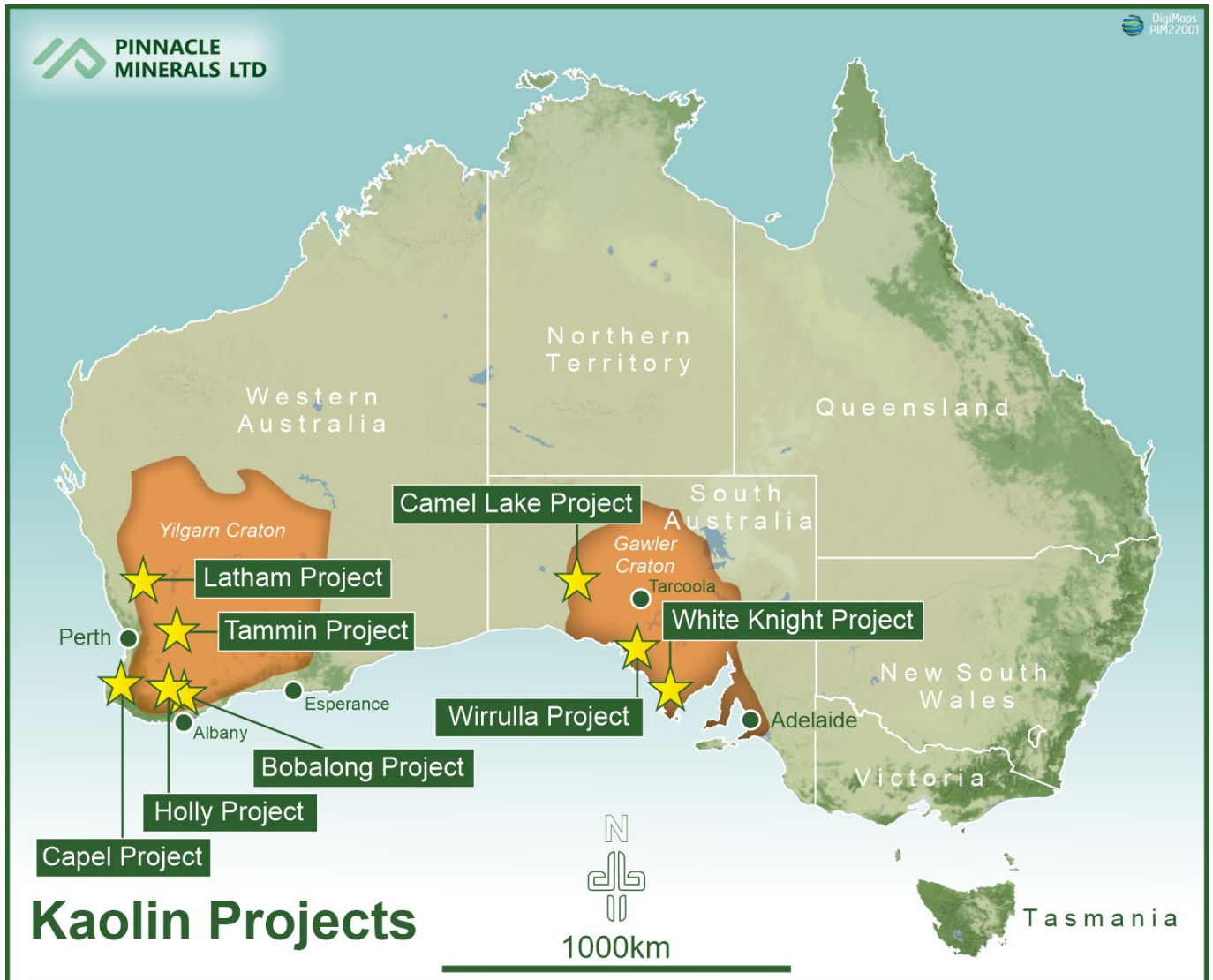


Figure 2: Pinnacle Minerals Projects' Location Map

#### Appendix 1 Collar Summary – Referenced Drill Holes

Hole ID	Easting (AMG Zone 53H)	Northing (AMG Zone 53H)	RL (m)	EOH (m)	Orientation
CAR10-1	449545	6410125	-	25.9	Vertical
CAR10-2	449525	6410227	-	33.4	Vertical
CAR10-3	449443	6410435	-	49	60° towards 90° magnetic
CAR1-1	437896	6425317	-	128.6	Vertical
CAR2-1	441956	6419574	-	51.7	Vertical

**Appendix 2 JORC Tables**
**Section 1 Historical Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g., 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 (e.g., 'reverse circulation drilling was used to obtain 1m 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>NQ diamond core was used to obtain samples for analysis at 1m intervals</li> <li>Strata Exploration Pty Ltd conducted the drilling</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g., 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>NQ diamond core was used to obtain samples for analysis at 1m intervals</li> <li>Diamond core drilling is considered a standard industry technique for hard rock drilling</li> <li>NQ diameter (76mm) drill bits and rods were used</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>Meter-by-meter basis of sampling is not expected to alter the interpretation of the results.</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> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>The diamond core samples were each qualitatively logged by the onsite geologist.</li> <li>The samples were logged quantitatively as being representative of hole lithology</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 core 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> </ul>	<ul style="list-style-type: none"> <li>1/2 core samples were cut. No further details on sample handling are available.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <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>	
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 (e.g., 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>Petrological examinations were made on representative samples from the core samples by Dr. Jane Barron. The sample from drillhole CAR10-1, 25.8m was also examined by J.Stiefenhofer from AARL (Pty) Limited.</li> <li>Assays were performed by Australian Laboratory Services (ALS) using the IC587 method, Au was assayed by the PM201 method.</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>All results were reviewed by the Competent Person</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>Data points were taken from Open File Envelope Number 8981, EL 1952 Carawa, Annual and final report for the period 27/7/94 to 22/11/95</li> <li>CRS utilised was AMG Zone 53H, local grids established using a Ensign GPS and 99 reading average. Drill collars located on local grids.</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) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>The drilling program was conducted to test magnetic targets for the presence of diamond mineralisation</li> <li>No mineralisation was intersected</li> <li>Drill logs reviewed for presence of indicator minerals and samples submitted for indicator mineral analysis.</li> </ul>
Orientation of data in relation to geological structure	<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</li> </ul>	<ul style="list-style-type: none"> <li>Drill holes were primarily vertical as the aim of the campaign was to test basement material to vector in on diamond occurrences</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>introduced a sampling bias, this should be assessed and reported if material.</i>	<ul style="list-style-type: none"> <li>1m meter samples are sufficient to define basement material</li> <li>The orientation of the drilling is considered appropriate for testing the basement material</li> </ul>
<i>Sample security</i>	<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>Unknown security of samples</li> </ul>
<i>Audits or reviews</i>	<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 independent audits or reviews of sampling techniques and data has been conducted.</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>Historical drilling within the granted exploration licence ELA 250-93- .</li> <li>At the time of reporting Pinnacle has applied for ELA 2023-0003 which encompasses all drill collars referenced in this release</li> </ul>
<b>Exploration done by other parties</b>	<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>Diamond Ventures explored for diamonds targeting magnetic anomalies thought to represent kimberlites. Diamond drill core from 8 targets was assessed by petrology and geochemistry.</li> <li>National Mineral Sands (1989-91), Peko Exploration (1991-1992), BHP (1989-1992) and Iluka (2005-2016) all explored the area for Heavy Mineral Sands.</li> <li>Carpentaria (1981-83) explored for sedimentary uranium.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>Basement rocks are the Archean Sleaford Complex of the Gawler Craton consisting of metamorphosed granites, mafic volcanics and gneisses. The Archean</li> </ul>

Criteria	JORC Code explanation	Commentary
		rocks are overlain by remnant units of the Eocene and/or Miocene littoral marine sediments of the Eucla and Polda Basins.
<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>All significant drill results and drill hole collar locations have been identified in Appendices 2 and 3 respectively of this report.</li> <li>No relevant material data has been excluded from this report.</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 (e.g., 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>There are no data aggregation methods applied</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 (e.g., 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>No mineralised widths and intercept lengths have been 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 collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Figures and plans are displayed in the main text of the Release</li> </ul>
<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>Reporting of historical rock chips which were selected randomly</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>All information has been provided as available</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> </ul>	<ul style="list-style-type: none"> <li>Reconnaissance soil sampling over areas of interest for benchmarking</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <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>	<p>and delineating new target areas.</p> <ul style="list-style-type: none"> <li>• Drilling to target potential carbonatite and kaolinite mineralisation.</li> <li>• Exploration by geophysical analysis and drilling is planned on other parts of the tenement.</li> <li>• Refer to the main body of the release for further information regarding diagrams</li> </ul>