

**ASX RELEASE**

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**ASX CODE**

PNN

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**Australia**  
Eyre Peninsula Kaolin-Halloysite Project

Musgrave Nickel-Copper-Cobalt-PGE Project

## REE discovery confirmed at Eyre Peninsula Kaolin Project

- Drilling confirms new Rare Earth Element (REE<sup>1</sup>) discovery at Dickson Well prospect on EL6681 at Eyre Peninsula Kaolin Project in South Australia (<sup>1-4</sup>refer Glossary)
- Thick zones of elevated REE also intersected in multiple drillholes west of Cungena on EL6681 and on EL6689 in the south-west of the Eyre Peninsula
- Samples from 9 drillholes returned results >1,000ppm Rare Earth Oxide (REO<sup>2</sup>) concentration. Highlight results include;

**EL6681 - Cungena**

- 8m at 1,947ppm Total Rare Earth Oxide (TREO<sup>3</sup>) including 24.5% Heavy Rare Earth Oxide (HREO<sup>4</sup>) from 50m including 1m at 4,201ppm TREO including 21.3% HREO from 54m in drillhole PKD22-119 (Dickson Well)
- 5m at 1,681ppm TREO including 17.9% HREO from 57m including 1m at 3,001ppm TREO with 22.4% HREO from 61m in drillhole PKD22-120 (Dickson Well)
- 5m at 1,229ppm TREO including 13.3% HREO from 29m within a wider 20m zone with 842ppm TREO including 17% HREO from 26m in drillhole PKD22-084

**EL6689 - Kapinnie**

- 3m at 1,684ppm TREO including 13.9% HREO from 18m in drillhole PKD22-057
- Results are from 96 samples submitted for laboratory analysis and confirm presence of significant clay-hosted REE within the Project area
- Results strengthen Power's specialty clay strategy to define high-value mineral products for advanced technology industries

Diversified minerals company Power Minerals Limited (ASX: PNN) (**Power** or **the Company**) is pleased to announce the discovery of significant concentrations of Rare Earth Elements (REE) at the Dickson Well prospect (in EL6681) at its Eyre Peninsula Kaolin Project in South Australia (Figure 1).

Power completed a maiden kaolin-focused drilling program at the Eyre Peninsula Project in the June 2022 quarter (ASX announcement, 31 May 2022) and, in addition to laboratory analysis for kaolin and halloysite, the Company has also now sent a total of 149 clay-rich samples for detailed REE analyses.

The latest results, from 96 samples, are reported in this announcement and continue to confirm the presence of significant elevated clay-hosted REE concentrations across the Eyre Peninsula Project area.

Samples from nine drillholes returned results in excess of 1,000ppm REO concentration, and three distinct areas of significant REE intersections have been identified.

The highlight of the latest results was the discovery of the Dickson Well REE prospect at the Cungena Exploration Licence (EL6681) in the north-west of the Eyre Peninsula, which returned high-grade REE in both drillholes drilled at this target; PKD22-119 and PKD22-120 (Figure 1).

Thick zones of elevated REE concentrations were also intersected in multiple drillholes west of Cungena in EL6681, and also in the Kapinnie Exploration Licence (EL6689) in the south-west of the Eyre Peninsula (Figure 1).

#### **Highlight results include;**

##### **Cungena (EL6681)**

- **8m at 1,947ppm TREO (or 0.2%) including 24.5% HREO from 50m including 1m at 4,201ppm (or 0.42%) TREO including 21.3% HREO from 54m in drillhole PKD22-119**
- **5m at 1,681ppm TREO (or 0.17%) including 17.9% HREO from 57m including 1m at 3,001ppm (or 0.3%) TREO with 22.4% HREO from 61m in drillhole PKD22-120**
- **5m at 1,229ppm TREO including 13.3% HREO from 29m, within a wider 20m zone with 842ppm TREO including 17% HREO from 26m in drillhole PKD22-084**

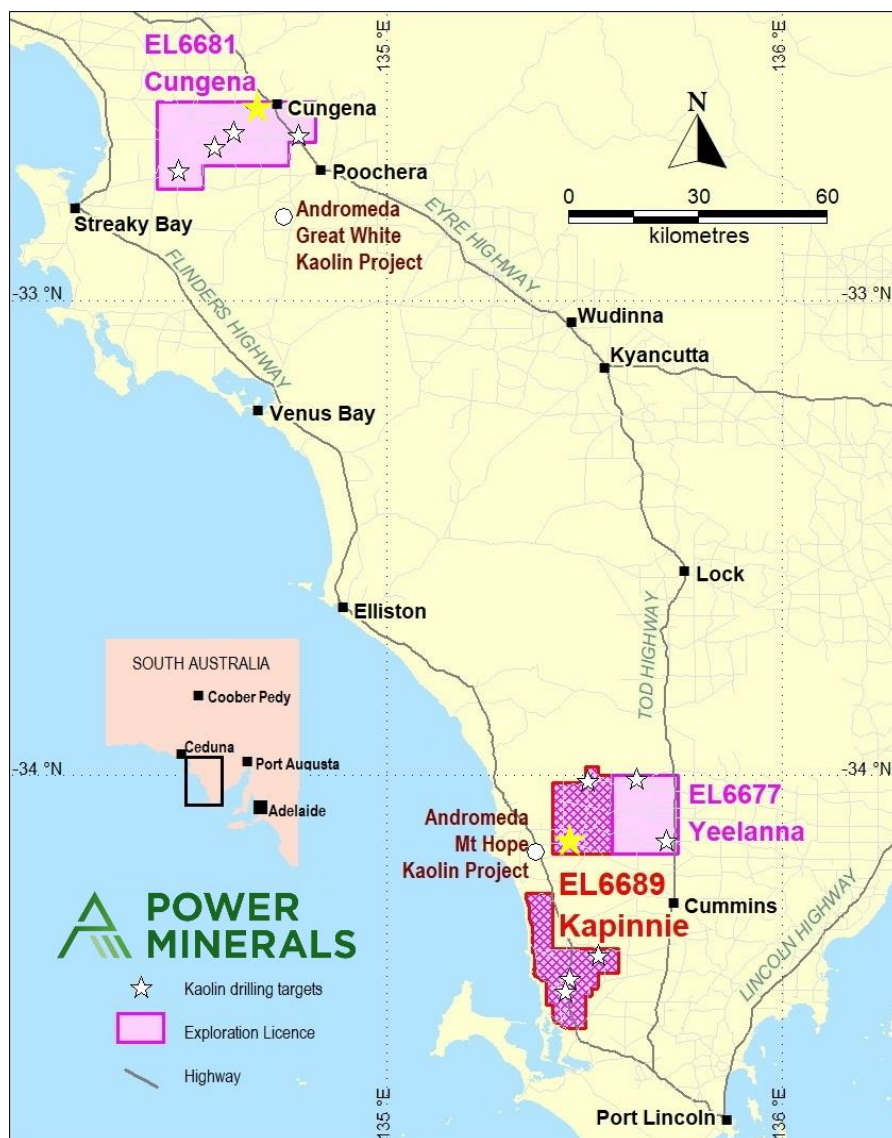
##### **Kapinnie (EL6689)**

- **3m at 1,684ppm TREO including 13.9% HREO from 18m in drillhole PKD22-057**

It is noted that these REE results were completed on raw, unscreened clay samples. It is likely that screening the material to fine fraction, similar to kaolin samples, may result in further increased REE concentrations. Further material is required before this can be tested.

"The results from two batches of sampling have now confirmed the existence of elevated clay-hosted REE concentrations at the Eyre Peninsula Project. This is an exciting, emerging development as it continues to validate and strengthen the Project's REE potential as a component of Power's specialty clay strategy, in conjunction with the kaolin and halloysite prospectivity, to assess the opportunity to develop and produce high-margin, value-added products to supply advanced technology applications."

Power Minerals Executive Director, Mena Habib



**Figure 1:** Eyre Peninsula Project location map

## Next Steps

Based on the outstanding results at the Dickson Well REE prospect in EL6681, the systematic drilling of this target is now a high priority. Grid drilling around the Dickson Well anomaly is planned in order to further test and extend its REE footprint.

At EL6689 to the south, the nearest drillhole to the elevated REE results in drillhole PKD22-057 is 400 metres away, and further drilling is warranted to confirm the extent of REE mineralisation in and around this target.

Power plans to provide details on plans for its next phase of drilling and fieldwork at the Eyre Peninsula Project in due course.

## REE Background and Rationale

Power has previously reported high-grade REE results at the Eyre Peninsula Project. The initial results came from 53 samples selected from seven drillholes which were sent for laboratory analysis at ALS mineral laboratory (ASX announcement, 18 August 2022).

These initial results returned a range of REO concentrations, including a highlight result of; **3m at 1,236ppm TREO, including 18% HREO from 32m in drillhole PKD22-084**. In total, 12 samples (from the 53 submitted) recorded a TREO concentration of greater than 500ppm.

The results provided the Company with confidence in its sampling and screening process, and a second batch of 101 new, clay-rich samples (including standards) were sent to ALS for REE analyses.

Final certified results for the second batch of samples submitted to ALS for REE analysis have now been returned, and are reported in this announcement. The second batch of samples sent to ALS were analysed using method ME-MS81D. This method uses lithium borate fusion and provides concentrations for 45 elements, including quantitative results of all REE elements, including those encapsulated in resistive minerals. The samples were small in weight, but given the material is clay-sized particles and very homogeneous, this was not considered an issue. This has been confirmed with thirteen samples that were duplicated with the first batch of samples having reported values acceptably close to the previous duplicated samples.

PNN is pleased with the concentration percentage of HREO in the samples. Currently Ion Adsorption Clays (IAC) are the dominant source for HREO. The average total REO ore grades of ion-adsorption type deposits are low (<0.2% REO approximately) but can have a large proportion of HREO and a simpler extraction technique than other types of REE deposits. Due to their increasing use in advanced technology HREO command a much higher pricing.

Authorised for release by the Board of Power Minerals Limited.

## **Glossary**

**REE:** Rare Earth Element

**REO:** Rare Earth Element Oxide

**TREO:** Total Rare Earth Element Oxides

**HREO:** Heavy Rare Earth Element Oxide

**-ENDS-**

## **For further information please contact:**

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## **About Power Minerals Limited**

Power Minerals Limited is a diversified ASX-listed mineral resources exploration company with a portfolio of projects in demand driven commodities. It is focused on the systematic exploration and development of its projects. These include the Salta Lithium Brine Project in the prolific lithium triangle in the Salta Province in Argentina, the Eyre Peninsula Kaolin-Halloysite Project, strategically located on the Eyre Peninsula in South Australia, and the Musgrave Nickel-Copper-Cobalt-PGE Project in the Musgrave Province in northern South Australia. The Company also holds the Santa Ines Copper-Gold Project in Argentina, located in the same geological setting as BHP's world-class, nearby Escondida Copper-Gold Mine in Chile.

## **Competent Persons Statement**

The information in this document that relates to the kaolin project has been prepared with information compiled by Steven Cooper, FAusIMM. Mr Steven Cooper is the Australian Exploration Manager and is a full-time employee of the Company. Mr Steven Cooper has sufficient experience which 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 Steven Cooper consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears.

### Forward looking Statements

This announcement contains 'forward-looking information' that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.



SAMPLE	Drillhole	From_m	To_m	East_WGS84	North_WGS84	Elevation	Total depth	Dip	Comments
PR-043	PKD22-017	22	23	542347	6222177	90	23	-90	
PR-035	PKD22-029	30	31	542824	6222021	84	48	-90	
PR-051	PKD22-034	12	13	541096	6222850	96	27	-90	
PR-056	PKD22-057	18	19	543776	6223190	57	21	-90	
PR-058	PKD22-057	20	21	543776	6223190	57	21	-90	
PR-092	PKD22-076	66	67	469677	6395011	76	75	-90	
PR-093	PKD22-076	67	68	469677	6395011	76	75	-90	
PR-062	PKD22-084	29	30	471067	6394408	82	46	-90	
PR-063	PKD22-084	30	31	471067	6394408	82	46	-90	
PR-065	PKD22-084	32	33	471067	6394408	82	46	-90	
PKD22-084 33m	PKD22-084	32	33	471067	6394408	82	46	-90	Duplicate of PR-065
PR-066	PKD22-084	33	34	471067	6394408	82	46	-90	
PKD22-084 34m	PKD22-084	33	34	471067	6394408	82	46	-90	Duplicate of PR-066
PKD22-084 35m	PKD22-084	34	35	471067	6394408	82	46	-90	Duplicate of PR-067
PR-080	PKD22-085	36	37	471199	6393860	85	41	-90	
PR-081	PKD22-085	37	38	471199	6393860	85	41	-90	
PR-001	PKD22-119	36	37	477314	6389889	75	63	-90	
PR-006	PKD22-119	44	45	477314	6389889	75	63	-90	
PR-008	PKD22-119	46	47	477314	6389889	75	63	-90	
PR-012	PKD22-119	50	51	477314	6389889	75	63	-90	
PR-013	PKD22-119	51	52	477314	6389889	75	63	-90	
PR-014	PKD22-119	52	53	477314	6389889	75	63	-90	
PR-015	PKD22-119	53	54	477314	6389889	75	63	-90	
PR-016	PKD22-119	54	55	477314	6389889	75	63	-90	
PR-017	PKD22-119	55	56	477314	6389889	75	63	-90	
PR-018	PKD22-119	56	57	477314	6389889	75	63	-90	
PR-019	PKD22-119	57	58	477314	6389889	75	63	-90	
PR-023	PKD22-119	60	61	477314	6389889	75	63	-90	
PR-027	PKD22-120	57	58	477238	6389940	81	63	-90	
PR-028	PKD22-120	58	59	477238	6389940	81	63	-90	
PR-029	PKD22-120	59	60	477238	6389940	81	63	-90	
PR-030	PKD22-120	60	61	477238	6389940	81	63	-90	
PR-031	PKD22-120	61	62	477238	6389940	81	63	-90	

**TABLE 1: All drillhole samples with TREO over 1000ppm.**

SAMPLE	La2O3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Y2O3	TREO	CREO	LREO	HREO	%HREO
PR-043	301.4	681.8	76.5	265.9	47.08	7.32	27.66	3.36	15.38	2.26	5.73	0.95	5.1	0.61	49	1490.1	341	1325.6	164.5	11.0%
PR-035	518.4	1092	113.3	416.4	75.95	16.27	51.98	6.77	33.4	5.06	12.86	1.66	8.8	1	116.2	2470.1	589	2140.1	330	13.4%
PR-051	233.4	508.6	57.5	219.9	43.25	3.35	26.28	2.62	10.86	1.39	3.19	0.39	1.6	0.19	33.8	1146.3	270.5	1019.4	126.9	11.1%
PR-056	521.9	1412.7	177.6	744.2	144.37	27.79	88.17	9.86	41.78	5.66	13.15	1.51	8.5	0.88	122.8	3320.9	946.4	2856.4	464.5	14.0%
PR-058	199.4	503.6	62.1	235.6	41.28	4.84	22.88	2.58	11.59	1.64	4.21	0.61	3.3	0.33	44.8	1138.8	299.4	1000.7	138.1	12.1%
PR-092	320.2	761.6	82.4	290.4	43.02	7.42	25.7	3.72	20.03	3.39	9.59	1.32	8.4	1.16	101.7	1680.1	423.3	1454.6	225.5	13.4%
PR-093	265.1	511	63.6	235.6	36.64	6.08	24.2	3.28	18.65	3.4	8.95	1.27	7.6	1.11	98.4	1284.9	362	1075.3	209.6	16.3%
PR-062	409.3	604.4	92.3	278.8	33.86	4.79	18.15	2.62	14.4	2.26	5.69	0.74	4.6	0.6	49.8	1522.3	350.4	1384.8	137.5	9.0%
PR-063	179.4	558.9	50.5	193	30.5	4.6	19.08	2.52	14.4	2.25	5.32	0.69	4.3	0.56	48.3	1114.3	262.8	981.8	132.5	11.9%
PR-065	219.9	733.4	65.4	278.8	45.8	7.07	30.89	4.38	23.53	3.76	10.66	1.39	7.9	1.01	90.5	1524.4	404.3	1297.5	226.9	14.9%
PKD22-084 33m	186.5	589.6	63.7	258.9	44.53	6.91	31.12	4.3	22.04	3.79	9.06	1.2	7	0.9	85	1314.6	377.2	1098.7	215.9	16.4%
PR-066	194.7	614.2	52.3	214.6	33.86	5.37	24.9	3.65	20.6	3.83	11.55	1.46	10.1	1.28	104.4	1296.8	348.6	1075.8	221	17.0%
PKD22-084 34m	184.1	589.6	50.5	196	30.96	4.85	21.61	3.14	17.62	3.38	8.86	1.22	7.9	1.14	91.1	1212	312.7	1020.2	191.8	15.8%
PKD22-084 35m	167.1	538	44.9	172.6	30.03	5.13	25.36	3.85	23.18	4.8	13.78	2.01	13.2	1.98	136.5	1182.4	341.3	922.6	259.8	22.0%
PR-080	217.6	380.8	52.3	187.2	32.58	5.49	21.55	3.41	18.48	3.25	9.43	1.32	8.5	1.24	98.5	1041.7	313.1	837.9	203.8	19.6%
PR-081	269.7	471.7	68.9	243.8	40.82	6.5	25.01	3.14	15.38	2.66	7.42	0.91	5.9	0.75	71.9	1234.5	340.7	1054.1	180.4	14.6%
PR-001	537.1	213.7	107.2	331.3	45.22	5.81	26.05	3.6	17.39	2.69	6.44	0.77	4.8	0.57	50.4	1353	408.5	1189.3	163.7	12.1%
PR-006	214.6	692.8	36.1	110.9	16.64	1.67	13.49	1.98	10.29	1.84	5.09	0.61	4	0.59	51.6	1162.2	176.4	1054.4	107.8	9.3%
PR-008	472.6	831.6	87.8	246.1	34.56	3.18	16.31	2.11	10.34	1.5	3.61	0.45	3.1	0.38	30.7	1744.3	292.4	1638.1	106.2	6.1%
PR-012	146	1046.6	46.4	177.3	35.25	3.1	25.24	3.94	22.9	4.1	10.93	1.51	10.1	1.38	92.3	1627.1	299.5	1416.3	210.8	13.0%
PR-013	156	823	46.4	188.4	38.96	3.49	35.96	5.93	37.64	7.17	20.07	2.79	17.7	2.32	200.6	1586.4	436.1	1213.8	372.6	23.5%
PR-014	309.6	1345.1	78.7	311.4	61.11	5.09	56.94	9.1	57.27	11.23	30.87	4.23	26.9	3.7	321.3	2632.5	704.2	2044.8	587.7	22.3%
PR-015	180.6	636.3	45.1	173.8	31.89	2.65	32.85	4.99	30.41	5.95	16.29	2.19	14.2	1.81	167	1346	378.9	1035.8	310.2	23.0%
PR-016	540.7	2045.3	147.4	572.7	117.12	9.91	102.24	16.11	94.69	17.47	46.54	6.49	41.8	5.33	436.8	4200.6	1130.2	3306.1	894.5	21.3%
PR-017	177.1	525.8	54	208.8	46.15	2.84	46.22	7.86	51.88	10.1	28.36	3.83	23.5	3.02	275.6	1465.1	547	965.7	499.4	34.1%
PR-018	177.1	601.9	55.7	212.3	48.59	3.38	44.03	7.7	49.92	9.91	29.27	3.92	25.5	3.48	270.5	1543.2	543.8	1047	496.2	32.2%
PR-019	174.2	482.8	42.9	164.5	31.77	2.79	30.89	4.9	29.95	6.15	17.21	2.19	14.3	1.88	170.2	1176.6	372.3	864.4	312.2	26.5%
PR-023	208.2	443.5	49.1	183.1	35.48	2.39	36.65	5.65	36.61	7.71	22.01	3.04	18.6	2.59	264.1	1318.7	491.9	883.9	434.8	33.0%
PR-027	286.2	485.2	64.2	187.8	31.77	2.4	22.48	2.95	15.67	2.58	6.54	0.91	5.4	0.73	68.2	1183	277	1023.4	159.6	13.5%
PR-028	354.2	594.5	67.2	217.5	38.03	2.29	34.35	4.73	29.61	6.07	17.61	2.19	13.7	2.01	200	1584	454.1	1233.4	350.6	22.1%
PR-029	300.2	671.9	67.9	237.9	41.05	2.78	31.24	4.39	24.22	4.47	11.78	1.74	10.5	1.22	122	1533.3	391.3	1277.9	255.4	16.7%
PR-030	287.3	439.8	52	161	26.67	1.9	22.01	3.03	17.62	2.96	7.79	1.02	6.4	0.89	70.5	1100.9	254.1	940.1	160.8	14.6%
PR-031	538.3	1115.4	147.4	528.4	100.07	6.37	78.03	11.68	69.55	12.83	33.28	4.68	28.2	3.31	323.8	3001.3	939.8	2329.5	671.8	22.4%

TABLE 2: REO concentrations in ppm for all drillhole samples with TREO over 1000ppm (or 0.1%).



# JORC Code, 2012 Edition – Table 1 report

## Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li><i>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 (eg submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<ul style="list-style-type: none"> <li>All samples were collected from the aircore blade drilling, through a cyclone directly into large plastic bags at one metre intervals.</li> <li>Initial sample preparation was carried out on-site by spooning representative mixed material into standard chip trays in one meter intervals. Care was taken to ensure the sample was visually representative during the process by hand mixing. Later in Adelaide, three quarters of each chip tray interval was separated into numbered small Kraft paper GEOCHEM bags.</li> <li>The sample sizes are considered appropriate for the very fine grained and homogeneous material being sampled.</li> <li>Even though this method is considered an inappropriate and not a standard method for full representative sample splitting, the Competent Person considers it acceptable for this material, given the low natural inherent variability of the drilled material.</li> <li>The laboratory pulverised each sample to 85% passing &lt;75um.</li> <li>The Competent Person has reviewed referenced publicly sourced information through the report and considers that sampling was commensurate with industry standards current at the time of drilling and is only appropriate for the indication of the presence of mineralisation.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li><i>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).</i></li> </ul>	<ul style="list-style-type: none"> <li>McLeod Drilling used a Reverse Circulation Aircore drill rig mounted on a 6-wheel drive Toyota Landcruiser.</li> <li>Aircore drilling uses an 76mm aircore bit with 3 tungsten carbide blades and is a form of drilling where the sample is collected at the face and returned inside the inner tube. The drill cuttings are removed by the injection of compressed air into the hole via the annular area between the inner tube and the drill rod.</li> <li>Aircore drill rods are 3 m NQ rods.</li> <li>All aircore drill holes were between 4m and 75m in length.</li> <li>The Competent Person has inspected the drilling program and considers that drilling techniques was commensurate with industry standards current at the time of drilling and is appropriate for the</li> </ul>

Criteria	JORC Code explanation	Commentary
		indication of the presence of mineralisation.
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>All initial one metre interval samples were weighted to check consistency.</li> <li>All efforts were made to ensure the sample was representative.</li> <li>No relationship is believed to exist, but no work has been completed to confirm this.</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>All samples were geologically logged to include details such as colour, grain size, rock type etc which is naturally qualitative in nature.</li> <li>All samples have quantitative magnetic susceptibility and pXRF measurements taken to support the geological logging.</li> <li>Representative chip tray samples of all intervals were collected and photographed.</li> <li>All samples were one meter vertical intervals.</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> <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>All drill chip samples were collected through a cyclone into large plastic bags at 1 metre intervals, and then subsampled into standard chip trays by careful spooning after mixing. From selected one meter intervals a large portion of the chip tray sample was placed in numbered Kraft paper bags, which have been sent for chemical analyses.</li> <li>A full profile of the bag contents was subsampled by hand mixing to maximise representivity. This was checked visually.</li> <li>All samples were moist soft clay.</li> <li>Samples were initially selected based on pXRF data which provides an approximate field value supporting the laboratory concentrations.</li> <li>Sample sizes are appropriate to the clay grain size of the material being sampled.</li> <li>Samples were not screened before sample laboratory submission and analyses represent raw material.</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> </ul>	<ul style="list-style-type: none"> <li>Drill samples were submitted to ALS Mineral laboratory in Adelaide, SA. Entire sample were crushed and pulverised to 85% passing &lt;75um, then analysed following lithium borate fusion on 0.1g sample using ICP-MS and ICP-AES (ALS Method ME-MS81D). This method provides concentrations for 45 elements, including REE.</li> <li>Lithium borate fusion provides quantitative results of all elements, including those encapsulated in resistive minerals.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <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>ALS Laboratories used in-house blanks, standards and duplicates and the results were provided in QC Certificates.</li> <li>Sample batch included five REE hosting CRM's from Ore Research &amp; Exploration Pty Ltd (Melbourne), three were OREAS 101b and two were OREAS 102a. These standards were chosen as REE concentrations were comparable with those expected and oxidised. The REE values reported by ALS for the CRM's were within acceptable range.</li> <li>Thirteen samples are duplicate samples with the same drillhole and same single metre interval as REE results released 18 August 2022 by PNN. The samples show similar ranges of REE values.</li> </ul>
Verification of sampling and assaying	<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>There was no external verification of sampling and no use of twinned drillholes.</li> <li>Data is exploratory in nature and is compiled into in-house relational database after verification. Original laboratory supplied pdf reports and spreadsheets retained.</li> <li>Rare earth element analyses were originally reported in elemental form but have been converted to relevant oxide concentrations using industry standard factors. Abbreviation definitions used:  <b>TREO</b> = <math>\text{La}_2\text{O}_3 + \text{CeO}_2 + \text{Pr}_6\text{O}_{11} + \text{Nd}_2\text{O}_3 + \text{Sm}_2\text{O}_3 + \text{Eu}_2\text{O}_3 + \text{Gd}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3 + \text{Ho}_2\text{O}_3 + \text{Er}_2\text{O}_3 + \text{Tm}_2\text{O}_3 + \text{Yb}_2\text{O}_3 + \text{Lu}_2\text{O}_3 + \text{Y}_2\text{O}_3</math>  <b>CREO</b> = <math>\text{Nd}_2\text{O}_3 + \text{Eu}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3 + \text{Y}_2\text{O}_3</math>  <b>LREO</b> = <math>\text{La}_2\text{O}_3 + \text{CeO}_2 + \text{Pr}_6\text{O}_{11} + \text{Nd}_2\text{O}_3</math>  <b>HREO</b> = <math>\text{Sm}_2\text{O}_3 + \text{Eu}_2\text{O}_3 + \text{Gd}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3 + \text{Ho}_2\text{O}_3 + \text{Er}_2\text{O}_3 + \text{Tm}_2\text{O}_3 + \text{Yb}_2\text{O}_3 + \text{Lu}_2\text{O}_3 + \text{Y}_2\text{O}_3</math>  <b>NdPr</b> = <math>\text{Nd}_2\text{O}_3 + \text{Pr}_6\text{O}_{11}</math>  <b>TREO-Ce</b> = TREO - <math>\text{CeO}_2</math>  <b>% NdPr</b> = <math>\text{NdPr}/\text{TREO}</math>  <b>%HREO</b> = <math>\text{HREO}/\text{TREO}</math>  <b>%LREO</b> = <math>\text{LREO}/\text{TREO}</math> </li> </ul>
Location of data points	<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>The location of drillhole collars was undertaken using a Garmin multi-band GPS in extended averaging mode which has an accuracy of +/- 1m using UTM MGA94 Zone 53.</li> <li>The quality and adequacy are appropriate for this level of exploration.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Data spacing and distribution</i>	<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>There is no systematic pattern to the drilling and the spacing is defined by access for the drill rig, geological parameters, and land surface.</li> <li>Sample representation, data spacing and distribution are <b>not</b> sufficient to establish the degree of geological and grade continuity or for resource reporting. The data spacing and quality only provides guide for future drill planning.</li> <li>No sample compositing has been applied.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<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>It is believed that the drilling has intersected the geology at right angles; however, it is unknown whether the drill holes have interested the mineralisation in a perpendicular manner. The mineralised horizon is obscured by a veneer of transported material.</li> <li>It is believed no bias has been introduced due to drilling orientation.</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>All samples have been in the custody of PNN employees since drilling. Sealed samples and chip trays were transported to Adelaide within PNN vehicles and stored in the secure PNN private property in Smithfield with no access from the public.</li> <li>Representative chip tray samples of all intervals were collected and photographed. These chip trays and photographs are stored securely.</li> <li>Best practices were undertaken at the time.</li> <li>All residual sample material (pulp) is stored securely</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>None undertaken.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<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</i></li> </ul>	<ul style="list-style-type: none"> <li>Drilling was completed within Exploration Licences 6681 and 6689, both held by Pepinnini Kaolin Pty Ltd (a wholly owned subsidiary of PNN). These two licences are in JV with Seattle Capital Pty Ltd, Aerobotics Pty Ltd, and Kaolin SA Pty Ltd which together holds 20% interest.</li> </ul>

Criteria	JORC Code explanation	Commentary																																																																								
	<i>any known impediments to obtaining a licence to operate in the area.</i>	<ul style="list-style-type: none"><li>The tenements are in good standing with no known impediments.</li></ul>																																																																								
<i>Exploration done by other parties</i>	<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>Relevant previous exploration has been undertaken by BHP Minerals Pty Ltd and Iluka Resources Ltd, both for mineral sands only in the area west from Cungena (EL6681).</li><li>Historical drilling was restricted to along roads and provides additional limited stratigraphic information.</li></ul>																																																																								
<i>Geology</i>	<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>The tenements are within the Gawler Craton, South Australia.</li><li>PNN is exploring for kaolin and halloysite deposits and associated possible REE mineralisation.</li><li>This release refers to kaolin mineralisation and possible ion adsorption rare earth elements mineralisation (IS-REE) related to lateritic weathering processes on basement rock of the Gawler Craton, in particular the Palaeoproterozoic Moody Suite granitic and the Sleaford and St Peter Suite granitic gneiss.</li></ul>																																																																								
<i>Drill hole Information</i>	<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><li><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li><li><i>dip and azimuth of the hole</i></li><li><i>down hole length and interception depth</i></li><li><i>hole length.</i></li></ul></li><li><i>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.</i></li></ul>	<ul style="list-style-type: none"><li>PNN completed a 128 drillhole program in May 2022 on the western Eyre Peninsula. Based on pXRF measurements samples were selected from thirteen drillholes located in separate areas. The thirteen drillholes analysed for REE are:<table><tr><th>Drillhole</th><th>Easting (m)</th><th>Northing (m)</th><th>Elevation (m)</th><th>Total Depth</th><th>Sampled interval</th></tr><tr><td>PKD22-008</td><td>542894</td><td>6222058</td><td>72</td><td>41</td><td>36-37m</td></tr><tr><td>PKD22-013</td><td>542154</td><td>6222460</td><td>84</td><td>30</td><td>28-30m</td></tr><tr><td>PKD22-017</td><td>542347</td><td>6222177</td><td>90</td><td>23</td><td>17-23m</td></tr><tr><td>PKD22-029</td><td>542534</td><td>6222391</td><td>83</td><td>42</td><td>30-31m</td></tr><tr><td>PKD22-034</td><td>541096</td><td>6222850</td><td>96</td><td>27</td><td>10-13m</td></tr><tr><td>PKD22-057</td><td>543776</td><td>6223190</td><td>57</td><td>21</td><td>15-21m</td></tr><tr><td>PKD22-076</td><td>469677</td><td>6395011</td><td>76</td><td>75</td><td>62-75m</td></tr><tr><td>PKD22-078</td><td>469248</td><td>6394517</td><td>78</td><td>47</td><td>42-46m</td></tr><tr><td>PKD22-084</td><td>471067</td><td>6394408</td><td>82</td><td>46</td><td>26-46m</td></tr><tr><td>PKD22-085</td><td>471199</td><td>6393860</td><td>85</td><td>41</td><td>35-39m</td></tr><tr><td>PKD22-117</td><td>475609</td><td>6393959</td><td>95</td><td>46</td><td>39-44m</td></tr></table></li></ul>	Drillhole	Easting (m)	Northing (m)	Elevation (m)	Total Depth	Sampled interval	PKD22-008	542894	6222058	72	41	36-37m	PKD22-013	542154	6222460	84	30	28-30m	PKD22-017	542347	6222177	90	23	17-23m	PKD22-029	542534	6222391	83	42	30-31m	PKD22-034	541096	6222850	96	27	10-13m	PKD22-057	543776	6223190	57	21	15-21m	PKD22-076	469677	6395011	76	75	62-75m	PKD22-078	469248	6394517	78	47	42-46m	PKD22-084	471067	6394408	82	46	26-46m	PKD22-085	471199	6393860	85	41	35-39m	PKD22-117	475609	6393959	95	46	39-44m
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		PKD22-119	477314	6389889	75	63	36-37, 40-63m
		PKD22-120	477238	6389940	81	63	56-53m
		<ul style="list-style-type: none"> <li>All holes were vertical, all samples one metre intervals.</li> <li>Location datum is UTM MGA94 Zone 53.</li> </ul>					
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>If REE analysis intervals are aggregated (results presented over more than one metre) then this is using downhole sample length weighted averages with no lower or upper limit cut-off applied.</li> </ul>					
<b>Relationship between mineralisation widths and intercept lengths</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>All holes are believed to intersect the mineralisation at 90 degrees and therefore represent true widths</li> <li>All intercepts reported are down hole lengths</li> </ul>					
<b>Diagrams</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>See main body of report.</li> </ul>					
<b>Balanced reporting</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>All other relevant data has been reported.</li> <li>The reporting is considered to be balanced.</li> <li>Where data has been excluded, it is not considered material.</li> </ul>					
<b>Other substantive exploration data</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>The target areas have been the subject of no previous exploration except west from Cungena with minor exploration for mineral sands along road reserves.</li> <li>The reported results are from samples collected at a very early stage in the drilling program sample examination that pXRF measurements indicated could contain elevated REE. This selection was not fully representative but was completed to obtain early confirmation on possible clay hosted REE.</li> </ul>					



Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>All relevant exploration data has been included in this report</li> </ul>
Further work	<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>Further exploration geochemical sampling and drilling is required.</li> </ul>