



# ASX Announcement

7 January 2019

## COMPANY DETAILS

ABN: 62 147 346 334

## **PRINCIPAL AND REGISTERED OFFICE**

Parkway Minerals NL  
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## **POSTAL ADDRESS**

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## **ASX CODE**

PWN

## **FRANKFURT CODE**

A1JH27

## **CORPORATE INFORMATION**

7 January 2019

595M Ordinary shares  
123M Partly paid shares  
68M Unlisted options

## **BOARD OF DIRECTORS**

**Adrian Griffin**

(Non-Executive Chairman)

**Patrick McManus**

(Managing Director)

**Natalia Streltsova**

(Non-Executive Director)

## **PARKWAY MINERALS ANNOUNCES EXPLORATION TARGET FOR DAMBADGEE PROSPECT WITHIN DANDARAGAN TROUGH PROJECT**

### **HIGHLIGHTS:**

- Exploration Target estimated at Dambadgee
- Complements Dinner Hill JORC Indicated Resource of 630 Million tonnes at 4.4% K<sub>2</sub>O and 1.9% P<sub>2</sub>O<sub>5</sub> (**Note 1**)
- Dambadgee and Dinner Hill tenure to be converted to Retention Licences

(**Note 1** refer [ASX release 26 September 2017](#))

Parkway Minerals NL (“**Parkway**” or the “**Company**”) is pleased to inform shareholders of the upgrade of the Exploration Target for the Dambadgee Prospect and the results of a recent review of the company’s Dandaragan Trough Project.

The Dambadgee Prospect is located approximately 40 km south of the company flagship Dinner Hill Deposit and 8 km southeast of the Dandaragan Township (Figure 1).

### **Exploration Target Statement**

The potash mineralisation within Parkway’s Dambadgee Prospect is reported as being within an **Exploration Target of between 6 billion tonnes and 8 billion tonnes at a grade of between 3.0% and 3.5% K<sub>2</sub>O and between 0.9% and 1.3% P<sub>2</sub>O<sub>5</sub>**. The potential quantities and grades of the target are conceptual in nature, as there has been insufficient exploration to estimate Mineral Resources over their areas and as it is uncertain if further exploration will result in the estimation of one or more Mineral Resources.

Parkway Managing Director, Patrick McManus stated: “The large Exploration Target at Dambadgee, its grade, relative thickness and amenability to low-cost bulk sand mining techniques ([ASX release 21 August 2018](#)), makes it a valuable asset within the Dandaragan Trough Project. This announcement confirms the potential of the Trough as a region containing significant tonneages of fertiliser feedstocks, potash and phosphates. Our K-Max technology will produce Sulphate of Potash and Phosphoric Acid. Both these commodities have a ready demand, both locally and regionally.”



Figure 1 Dandaragan Trough Project location

Parkway had previously released an Exploration Target for the Prospect based on historical drilling and on limited drilling completed by Parkway (refer [ASX release 28 September 2017](#) "New Exploration Targets for Dandaragan Trough").

During May 2018 Parkway undertook a 17 hole (1678 m) air-core program across the Dambadge Prospect. The drilling intersected significant thicknesses of fresh greensands in both the Poison Hill Greensand and the Molecap Greenstone units. In addition, the drilling increased the known extent of the greensand units and greatly improved the company's understanding of the geology and structure of the Prospect (refer [ASX Release 21 August 2018](#) "Recent Dandaragan Trough Drilling").

As a consequence of the success of the program the company engaged its resource consultants Continental Resource Management Pty Ltd ("CRM") to update the Exploration Target for the Dambadge Prospect area incorporating the new drill data. The methodology used to prepare the estimate is detailed below.

## **Tenement Consolidation and Rationalisation.**

With the definition of a substantial exploration target at Dambadgee, as well as the existing JORC 2012 resources of potash and phosphate at Dinner Hill, the company has defined sufficient resources of greensand material to support a long-life fertiliser manufacturing project. In order to maximise the use of funds going forward, the company has decided to relinquish lesser prospective ground to concentrate on its two core areas at Dinner Hill and Dambadgee. The company has commenced the process of converting the Dinner Hill tenure to retention status and will shortly commence converting Dambadgee to similar status. The result will be the company's landholding in the Dandaragan Trough will reduce to approximately 150 sq km. This will result in substantially lower holding costs of the Project. The Company will continue to refine the process flow sheet to improve recoveries, as well as to complete further metallurgical testwork to attempt to extract greater value from the magnesium, aluminium and iron, which are not optimised in the current K-Max® flowsheet.

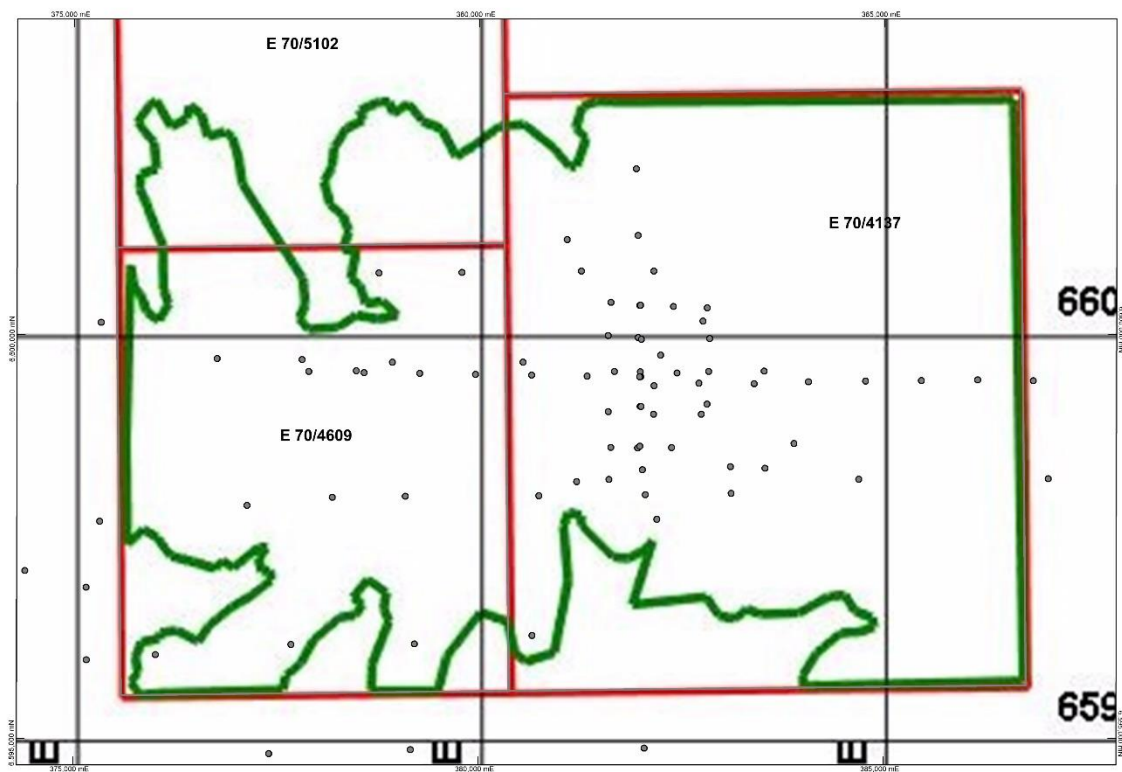
## **EXPLORATION TARGET ESTIMATION**

The methodology used in the estimation of the Exploration Target for the Dambadgee Prospect is provided below. The estimation methodology differs from the September 2017 estimation in two aspects. The September 2017 estimation was confined only to material within what was regarded as fresh Molecap Greensand, whereas this estimation includes all material in the Poison Hill Greensand, the Gingin Chalk and the Molecap Greensand that meet set criteria. The current estimation reports Phosphate content within the overall Potash wireframe, whereas the earlier estimate generated separate estimates for Potash and Phosphate mineralisation.

The estimate is based on air-core drilling undertaken by Parkway Minerals between 2011 and 2018, and earlier drilling by other parties. Relevant holes are listed in Appendix 2. A plan showing the Exploration Target areas and drill locations is provided as Figure 2.

The criteria used to select suitable material is based on metallurgical studies undertaken on the Dinner Hill Deposit for potassium. The criteria set for potentially economic mineralisation used in the estimation are a lower cut-off of 2.0% K<sub>2</sub>O, and a Fe<sub>2</sub>O<sub>3</sub>:K<sub>2</sub>O ratio of less than 9. Six separate wireframes were constructed. Three separate wireframes were constructed west of the Dambadgee Fault (for the Poison Hill Greensand, the Gingin Chalk, and Molecap Greensand). Two wireframes were constructed for fresh Molecap Greensand within the Dambadgee Fault Zone. East of the fault, a single wireframe was constructed for fresh Molecap Greensand.

The boundaries of the estimated mineralisation were constrained by the tenement boundaries and a surface RL contour of 190m, below which erosion has removed the greensand bearing formations. Figure 2 shows a drill plan with the Exploration Target boundary.



**Figure 2 Dambadge Prospect showing Drilling and Exploration Target outline (green)**

The estimation was carried out using Micromine software. Tonnage was calculated by multiplying the wireframe volume by the relevant dry specific gravity of 1.5 for Poison Hill Greensand and the Gingin Chalk and 1.63 for Molecap Greensand.

The grade of each body was estimated from the average grade of all drill hole intersections within each wireframe.

For further information, please contact:

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## COMPETENT PERSON'S STATEMENT

The information in this report that relates to the estimation and reporting of the Exploration Target and Mineral Resources is based on and fairly represents information and supporting documentation prepared by J.J.G. Doepel, who is a member of the Australasian Institute of Mining and Metallurgy. Mr. Doepel, Principal Geologist of the independent consultancy Continental Resource Management Pty Ltd, has sufficient experience relevant to the style of mineralisation and type of deposit under consideration. He is qualified as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". This report is issued with Mr. Doepel's consent as to the form and context in which the Exploration Target appears.

### **About Parkway Minerals**

*Parkway Minerals (ASX: PWN) is a company focused on developing fertiliser feedstock projects.*

*The Company has a major land holding over one of the world's largest known glauconite deposits, with exploration licenses and applications covering an area of over 1,050km<sup>2</sup> in the greensand deposits of the Dandaragan Trough, in Western Australia's Perth Basin. The area is prospective for both phosphate and potash. Previous exploration indicates glauconite sediments are widespread for more than 150km along strike and 30km in width. The project is well situated in relation to infrastructure, with close access to rail, power and gas. A successful commercial outcome will allow the Company to become a major contributor to the potash and phosphate markets at a time of heightened regional demand.*

*The Company owns 44M shares (31%) of Davenport Resources, which owns a potash exploration project in the South Harz region of Thuringia, in Central Germany. The region has been a potash producing area for over 100 years.*

**APPENDIX 1 - JORC CODE, 2012 EDITION – TABLE 1****Section 1 Sampling Techniques and Data**

<b>Criteria</b>	<b>Commentary</b>
<b><i>Sampling techniques</i></b>	<ul style="list-style-type: none"> <li>• Air-core drilling was used to obtain 1m or 2m samples from target horizons;</li> <li>• 3kg sub-samples were split by rotary splitter or by scoop sampling. Sub-sample size 3 to 4kg.</li> </ul>
<b><i>Drilling techniques</i></b>	<ul style="list-style-type: none"> <li>• Vertical NQ Air-core</li> </ul>
<b><i>Drill sample recovery</i></b>	<ul style="list-style-type: none"> <li>• Clay content of moist greensands ensured total recovery and retention of all size fractions;</li> <li>• Holes were conditioned at completion and cyclone opened and cleaned before next hole drilled</li> </ul>
<b><i>Logging</i></b>	<ul style="list-style-type: none"> <li>• All intervals geologically logged directly into a field computer using a database designed to capture relevant data including, oxidation, grainsize, rounding, sorting, mineralisation, hardness, colour and stratigraphic unit. All logging sample layouts are photographed and chip trays stored for future reference.</li> </ul>
<b><i>Sub-sampling techniques and sample preparation</i></b>	<ul style="list-style-type: none"> <li>• Duplicate field splits at a 1:18 ratio returned R<sup>2</sup> correlation coefficient of 0.96 for P<sub>2</sub>O<sub>5</sub> for 2012 drilling and 0.98 for more recent drilling, indicating robustness of sampling process;</li> <li>• Duplicate field splits at a 1:18 ratio returned R<sup>2</sup> correlation coefficient of 0.99 for K<sub>2</sub>O for 2012 drilling and 0.98 for more recent drilling, again indicating robustness of sampling process;</li> <li>• Sample preparation by Genalysis Laboratory Services Pty Ltd via drying and total pulverisation</li> </ul>
<b><i>Quality of assay data and laboratory tests</i></b>	<ul style="list-style-type: none"> <li>• Analysis by Genalysis Laboratory Services Pty Ltd by Phosphate Major Element Suite FB1 method (XRF after lithium borate fusion);</li> <li>• Three alternate phosphate standards were submitted with samples at a 1:18 ratio. For the P<sub>2</sub>O<sub>5</sub> analyses the respective means of the analytical results of the standards were 19.3%, 9.74%, and 4.94% as against the nominal standard means of 19.3%, 9.72%, and 4.94%;</li> <li>• Three alternate potash standards were submitted with samples at a 1:18 ratio. For the K<sub>2</sub>O analyses the respective means of the analytical results of the standards were 1.55%, 3.02%, and 3.76% as against the nominal standard means of 1.55%, 3.02%, and 3.75%;</li> <li>•</li> </ul>
<b><i>Verification of sampling and assaying</i></b>	<ul style="list-style-type: none"> <li>• Sampling and logging verified by site visits by Exploration Manager and Independent Consultant. Logging checked against major element assays and sample photography;</li> <li>• Assay entry by digital capture of laboratory files, with later verification of significant intervals against original files.</li> </ul>
<b><i>Location of data points</i></b>	<ul style="list-style-type: none"> <li>• Holes located by GPS;</li> <li>• Grid MGA_GDA94, Zone 50;</li> <li>• Elevation data is based on a topographic contour set produced from SRTM imagery at 5m vertical resolution.</li> </ul>
<b><i>Data spacing and distribution</i></b>	<ul style="list-style-type: none"> <li>• 1m or 2m samples collected and analysed throughout mineralized horizons;</li> <li>• Geological continuity across mineralisation.</li> </ul>
<b><i>Orientation of data in relation</i></b>	<ul style="list-style-type: none"> <li>• Vertical drilling through virtually horizontal stratigraphy resulted in intersected thicknesses equivalent to true thickness.</li> </ul>

Criteria	Commentary
<b><i>to geological structure</i></b>	
<b><i>Sample security</i></b>	<ul style="list-style-type: none"> <li>• Samples transported from site to laboratory by Parkway staff.</li> </ul>
<b><i>Audits or reviews</i></b>	<ul style="list-style-type: none"> <li>• Sample techniques, logs, and data reviewed positively by independent consultant geologist.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	Commentary
<b><i>Mineral tenement and land tenure status</i></b>	<ul style="list-style-type: none"> <li>• The Exploration Target is within the granted Exploration Licences E70/4137, 4609, and 5102, registered in the name of Parkway Minerals NL;</li> <li>• E70/4137 was granted on 22/05/2012 for a period of five years and an extension of a further five years has been approved. The required first six years' expenditures have been met;</li> <li>• E70/4609 was granted on 31/03/2015 for a period of five years. The required first three years' expenditures have been met;</li> <li>• E70/5102 was granted on 7/12/2017 for a period of five years.</li> </ul>
<b><i>Exploration done by other parties</i></b>	<ul style="list-style-type: none"> <li>• Drilling has been carried out within the area by Dempsey Minerals Ltd, by Agerton Phosphate Pty Ltd, and by Australian Fertilizers Ltd;</li> <li>• Results from these programmes have been incorporated into Parkway's database and into the Exploration Target estimations.</li> </ul>
<b><i>Geology</i></b>	<ul style="list-style-type: none"> <li>• The phosphate is present as fluorapatite nodules and grains concentrated within particular horizons of horizontal greensand and chalk formations;</li> <li>• The potash is present as the mineral glauconite, which is a major constituent of the Molecap and Poison Hill Greensands and a minor constituent of the Gingin Chalk.</li> </ul>
<b><i>Drill hole Information</i></b>	<ul style="list-style-type: none"> <li>• See Appendix 2.</li> </ul>
<b><i>Data aggregation methods</i></b>	<ul style="list-style-type: none"> <li>• No data aggregation of analyses used;</li> <li>• No metal equivalent values used.</li> </ul>
<b><i>Relationship between mineralisation widths and intercept lengths</i></b>	<ul style="list-style-type: none"> <li>• Vertical drilling through virtually horizontal stratigraphy resulted in intersected thicknesses equivalent to true thickness.</li> </ul>
<b><i>Diagrams</i></b>	<ul style="list-style-type: none"> <li>• Diagrams are included in the report.</li> </ul>
<b><i>Balanced reporting</i></b>	<ul style="list-style-type: none"> <li>• Grades are consistent across deposit;</li> <li>• Intersection grades show consistent hole to hole grades.</li> </ul>
<b><i>Other substantive exploration data</i></b>	<ul style="list-style-type: none"> <li>• There is no unreported substantive exploration data.</li> </ul>
<b><i>Further work</i></b>	<ul style="list-style-type: none"> <li>• Further metallurgical test-work is expected to be carried out to confirm expected recoveries of potash and phosphate.</li> <li>• Further drilling is expected to be carried out in order to enable the estimation of Mineral Resources.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

Criteria	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>Assay data copied digitally from laboratory files; significant intersections checked; Micromine drill-hole verification performed.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Competent person visited project area during drilling programmes in June and August 2012, April 2013, and in March 2015.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>High degree of confidence in geological interpretation, as stratigraphy is both visually and chemically distinct and continuous.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>The Dambadgee Exploration Target has a north-south length of 7.5km and an east-west width of 11km.</li> <li>The mineralisation is beneath an east-west trending set of low-hills and is constrained by tenure and by weathering and erosion to the west, north, and south;</li> <li>The fresh potash mineralisation has an average thickness of 62m and is about 45m below surface.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>Estimation of Exploration Target K<sub>2</sub>O grade by weighted average of grades within wireframes based on fresh mineralisation above 2% K<sub>2</sub>O;</li> <li>Estimation of Exploration Target P<sub>2</sub>O<sub>5</sub> grade by weighted average of grades within wireframes based on fresh potash mineralisation above 2% K<sub>2</sub>O.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Tonnages estimated on dry basis.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>Exploration Target Potash mineralisation has Fe<sub>2</sub>O<sub>3</sub>:K<sub>2</sub>O ratio &lt;9.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>Glaucosite to be retained during process by wet high intensity magnetic separation (WHIMS) and stockpiled for later production of potash products within K-Max plant;</li> <li>The processing route for production of single superphosphate is conventional; consisting of wet scrubbing, screening, desliming, magnetic separation, grinding, flotation, and reaction with sulphuric acid to produce single superphosphate.</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>Not applicable.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Density determinations carried out on 93 PQ core samples by Metallurgy Pty Ltd and reported as dry densities;</li> <li>Poison Hill Greensand: 12 samples, median SG 1.45, mean SG 1.55, SG of 1.50 used;</li> <li>Gingin Chalk: 7 samples, median SG 1.53, mean SG 1.50, SG of 1.50 used;</li> <li>Molecap Greensand: 68 samples, median SG 1.64, mean SG 1.64, SG of 1.63 used;</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>All mineralisation is classified as an Exploration Target, as it is the Competent Person's view that the drill-holes from which the target is estimated are not spaced closely enough to imply both geological and grade continuity throughout the area.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>Exploration Target estimation peer reviewed by Parkway Exploration Manager</li> </ul>



Criteria	Commentary
<b><i>Discussion of relative accuracy / confidence</i></b>	<ul style="list-style-type: none"><li>• The relative accuracy of the Exploration Target estimate is reflected in the reporting of the Exploration Target as per the guidelines of the 2012 JORC Code.</li></ul>

## APPENDIX 2 –DRILL-HOLE DETAILS

Table 4 details the drill-holes used for the exploration target estimate.

**Table 1 Dambadgee Drill-hole Locations (all holes vertical)**

HOLE	EASTING	NORTHING	RL	DEPTH
DGAC0002	378486	6599551	261	90
DGAC0003	375338	6600150	257	84
G1	382018	6598325	253	66
G2	383106	6598362	217	60
G3	383531	6598343	245	66
G4	382379	6598600	237	51
G5	382000	6599107	242	60
G6	382445	6599522	231	48
G7	382834	6599543	239	72
G8	382241	6599744	232	57
G9	382846	6599949	250	63
G10	382816	6600329	254	72
G11	382398	6600347	251	69
G12	381983	6600359	249	60
G14	381992	6599538	244	66
G15	381607	6598205	246	75
G16	381207	6598178	237	50
G17	381960	6598596	246	66
G18	381629	6598601	249	72
G19	381595	6599045	245	66
G20	383890	6598651	233	60
MA1	381672	6599541	254	66
MA2	381964	6599961	244	54
MA3	381937	6602051	241	51
MA4	381960	6601226	260	63
MA5	381627	6600397	265	69
MA6	381594	6599987	256	63
MA7	381084	6601175	250	57
PWAC133	375324	6597689	219	39
PWAC297	381986	6598617	245	72
PWAC298	381989	6599109	243	87
PWAC299	381983	6599477	247	108
PWAC300	382002	6599939	243	75
PWAC301	381991	6600362	249	78
PWAC516	377206	6599582	243	110
PWAC517	377899	6599542	264	125
PWAC518	378582	6599527	263	140
PWAC519	379269	6599518	225	62
PWAC520	379958	6599505	246	140
PWAC521	380650	6599497	265	149

PWAC522	381334	6599485	262	149
PWAC523	381995	6599478	244	132
PWAC524	382714	6599397	231	80
PWAC525	383396	6599390	237	97
PWAC526	384066	6599414	245	110
PWAC527	384771	6599422	246	85
PWAC528	385459	6599429	247	80
PWAC529	386155	6599438	262	88
PWAC530	386841	6599426	260	86
WAD9	376769	6599701	276	55
WAD10	382161	6599366	240	74
WAD13B	378932	6599658	245	77
WAD35B	380543	6599658	259	87
WAD36	383518	6599546	245	64
WAD37	382056	6598015	236	88
WAD38B	380742	6598003	232	68
WAD39	383116	6598034	220	38
WAD46	379211	6596168	238	75
WAD47	380661	6596274	229	63
WAD54	377816	6599689	251	81
WAD55	382762	6600166	254	90
WAD57	382155	6599013	234	54
WAD58	382198	6597712	221	60
WAD59	377141	6597885	242	75
WAD60	376013	6596038	233	60
WAD70	378765	6600761	243	50
WAD71	382155	6600786	262	66
WAD72	381262	6600786	262	81
WAD73	379787	6600767	253	62
WAD74	379093	6597997	247	80
WAD75	378194	6597984	267	83
WAD76	377686	6596162	230	77