

# BEYONDIE SOP PROJECT

Developing Australia's First Sulphate of Potash Operation



**NOOSA MINING  
& EXPLORATION**  
**INVESTOR CONFERENCE**  
18 JULY 2019

**KALIUM**  
 **LAKES**





**No Production  
in Australia**

## **Kalium Lakes is Developing Australia's First Sulphate of Potash Operation**

- ✓ BFS & FEED Complete
- ✓ Ore Reserve
- ✓ Binding Offtake Agreement
- ✓ Low Cost Financing Credit Approval
- ✓ Approvals and Native Title
- ✓ All Mining Tenure Granted
- ✓ Early Works Construction Underway
- ✓ Low Cost, High Margin, Long Life





# CAPITAL STRUCTURE AND SHARE PRICE



Capital Structure	\$/Shares
Cash Balance (at 30 June 2019)	A\$15.4M
Shares on Issue	238.9M
Share Price (at 17 July 2019)	A\$0.64
Market Capitalisation (at 17 July 2019)	A\$152M
Performance Rights	15.0M
Options	10.6M

Major Shareholders	
Agricultural Investors	34%
Greenstone Resources	19.8%
Directors & Management	8.2%
Other Investors	38%

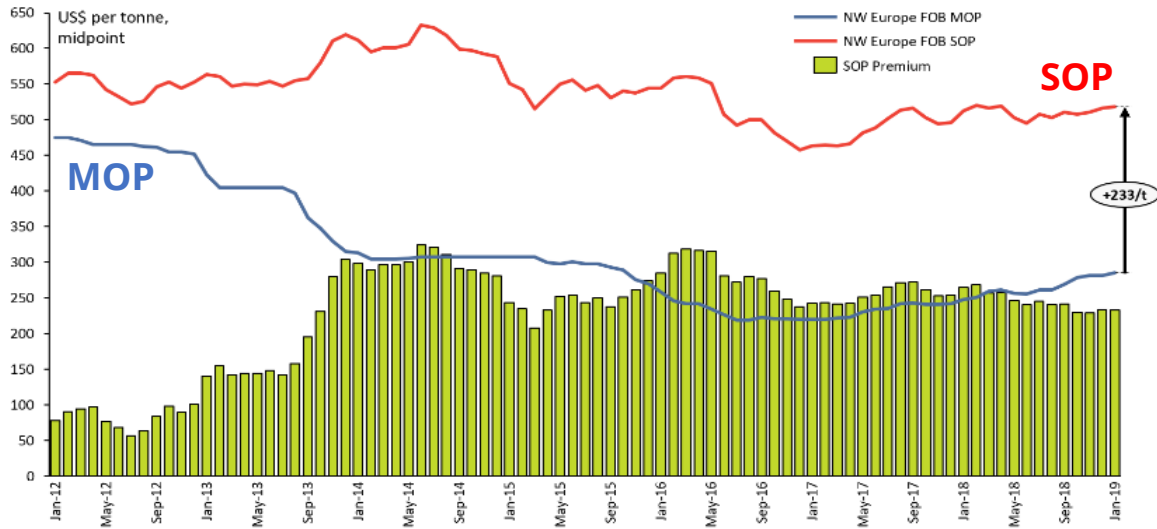
Research Coverage





# LOW COST AND HIGH MARGINS

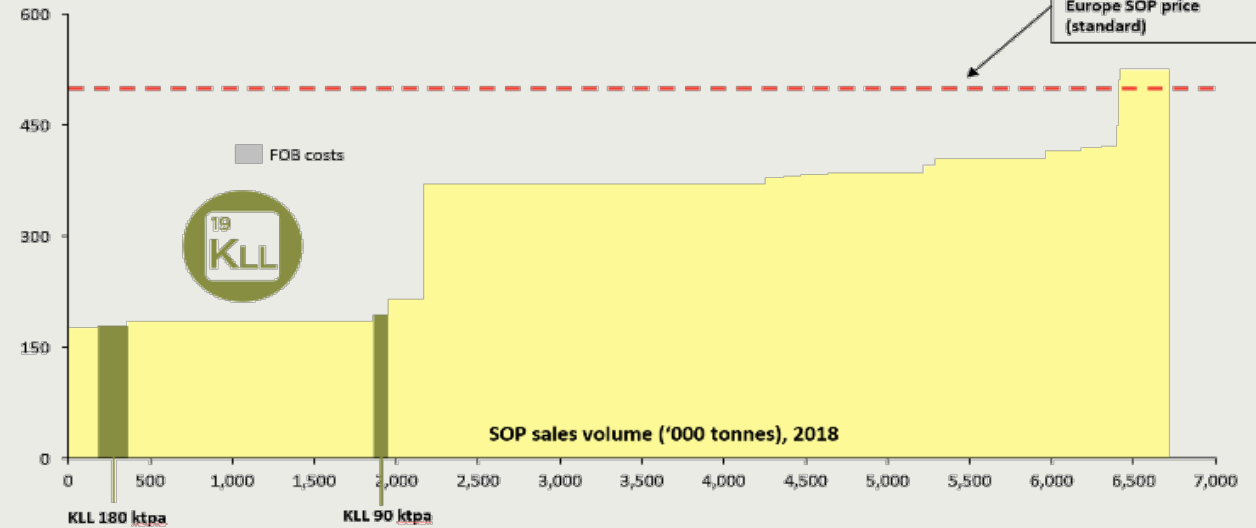
- Strong Market Fundamentals with average SOP ~US\$500/t FOB Europe
- KLL OPEX Costs ~US\$200/t FOB
- High Margin Project ~US\$300/t



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Source: Integer, Argus Media

US\$/tonne (FOB, 2018)



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Source: Integer, Argus Media

Note: Costs refer to cash-operating items and excludes sustaining capital, and royalties

- Global SOP market is ~US\$3-4B annually
- Demand increasing at ~100-200kt SOP pa
- KLL to become a low cost producer
- Floor price of ~US\$400/t SOP



# SIMPLE SOP PRODUCTION PROCESS



**Brine Pumping from Bores and Trenches**  
>260 Million litres successfully pumped to date



**Brine Solar Evaporation**  
Located in high evaporation region ~3,800mm



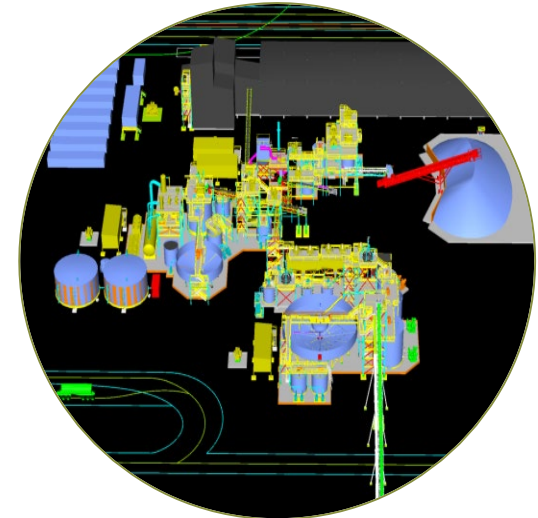
**Salt Harvesting**  
Low cost well proven process in Western Australia



**Agriculture Production**  
Australian and Asian Markets



**Premium SOP Fertiliser**  
High demand, preferred source of potassium for agricultural industry



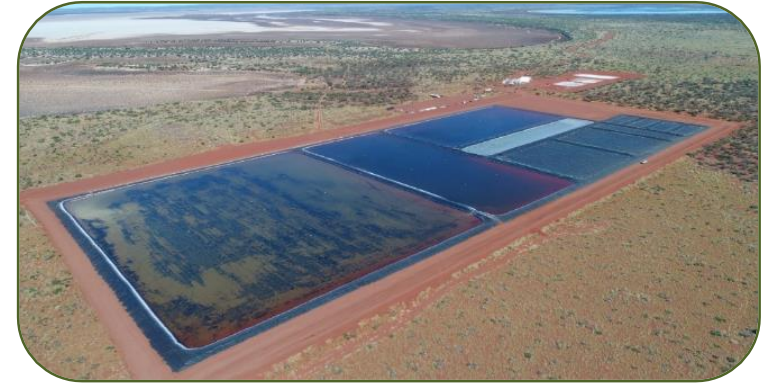
**Purification Processing**  
Using established German SOP technology





# AUSTRALIA'S LARGEST SCALE PILOT PROGRAM

([Harvest and Process Trials Video Link](#))







## BSOPP BFS AND FEED HIGHLIGHTS

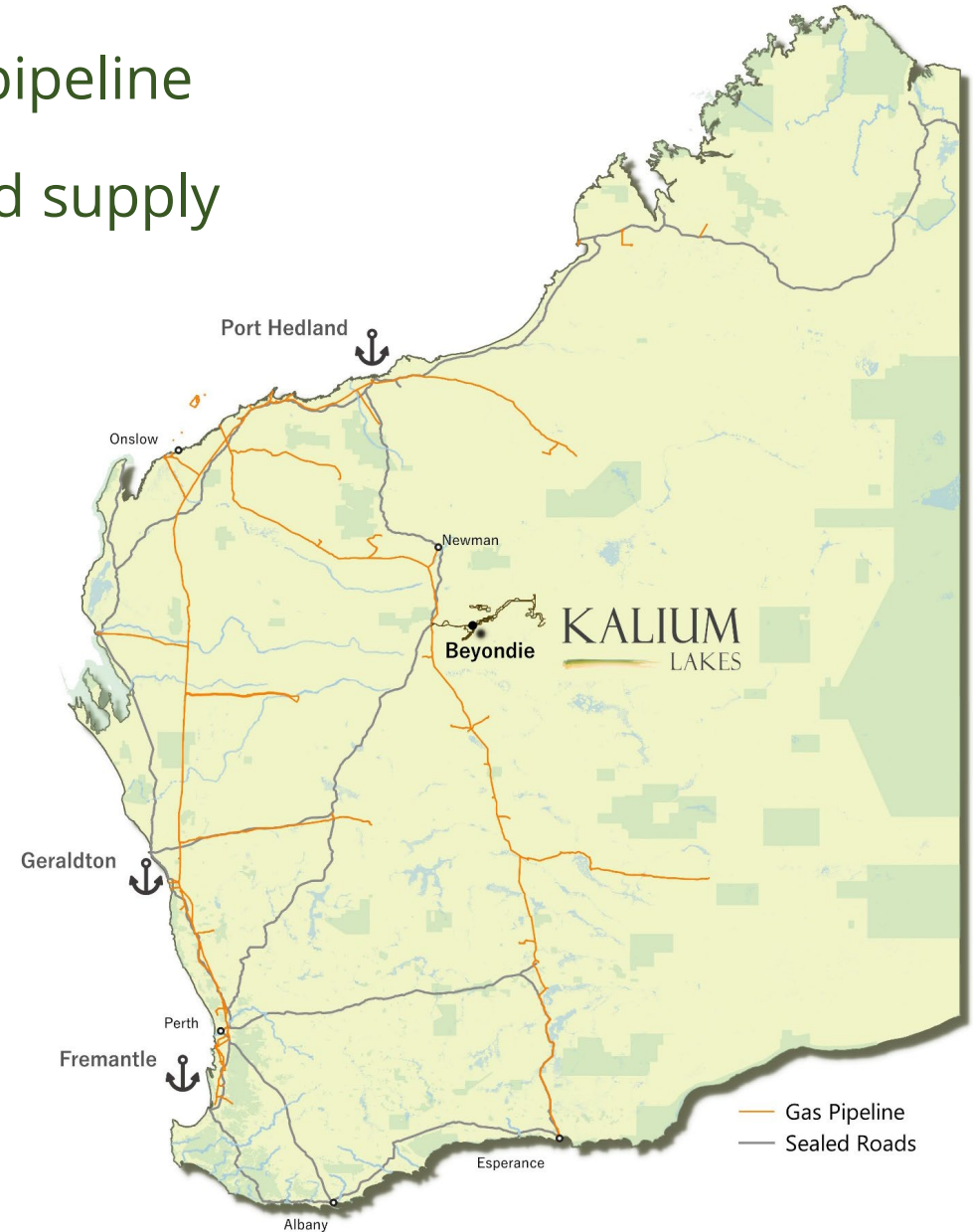
- Ore Reserves 5.1Mt SOP Reserve  
19.6Mt SOP Drainable Brine Resource
- 90ktpa SOP commercial demonstration facility  
ramping up to 180ktpa SOP Full Scale Facility
- Initial Mine Life In Excess of 30 Years (up to 50 years)
- FEED Pre-production Capital Cost of ~A\$216M including  
15.6% (\$29M) contingency per bank requirements
- Low LOM Operating Cost ~US\$178-208/t FOB AISC
- Pre-tax NPV<sub>8</sub> A\$606M, IRR of 20.3%, Average EBITDA of A\$126Mpa,  
EBITDA margin of 61%





# INFRASTRUCTURE AND LOGISTICS COMPETITIVE ADVANTAGE

- Close proximity to existing sealed road and gas pipeline
- Offtake consumer preference is for containerised supply with minor bulk ship hatch supply
- Fremantle Port – containerised shipping
- Kwinana Port – bulk ship hatch







# CAPITAL & OPERATING COST ESTIMATES (BFS/FEED)

## Capital Cost Estimate

DESCRIPTION	Initial Phase 1 90 ktpa SOP A\$M
Brine Supply, Ponds & Harvesting	30.3
SOP Purification Plant	73.6
Infrastructure & Village	19.6
Gas Pipeline	20.4
Offsite Infrastructure	3.8
Construction Indirects	20.2
Project Management	11.8
Owners Costs	7.8
Contingency	29.3
<b>TOTAL CAPITAL COST <sup>(1,2)</sup></b>	<b>216.8</b>

## Key Contracts Awarded



- EPCM for overall project delivery



- Engineering and Procurement for purification plant plus supervision and commissioning services



- Engineering and Supply of compaction plant for production of granular SOP



- WHS implementation across BSOPP in accordance with OFSC



- HDPE pond liner supply and install

Refer to Bankable Feasibility Study Complete ASX announcement dated 18 September 2018 ; [https://www.kaliumlakes.com.au/site/wp-content/uploads/austocks/kll/2018\\_09\\_18\\_KLL\\_1537276260.pdf](https://www.kaliumlakes.com.au/site/wp-content/uploads/austocks/kll/2018_09_18_KLL_1537276260.pdf)

Refer to Front End Engineering Design (FEED) ASX announcement dated 4 March 2019; [https://www.kaliumlakes.com.au/site/wp-content/uploads/austocks/kll/2019\\_03\\_04\\_KLL\\_1551648600.pdf](https://www.kaliumlakes.com.au/site/wp-content/uploads/austocks/kll/2019_03_04_KLL_1551648600.pdf)

### Notes

(1) Capital Cost Figures are shown as incremental costs for each Phase and exclude Financing Costs

(2) Only Phase 1 Capital Cost is shown with Phase 2 expansion from 90 to 180 ktpa SOP estimated to cost A\$154M



# CAPITAL & OPERATING COST ESTIMATES (BFS/FEED)

## Operating Cost Estimate

DESCRIPTION	90 ktpa A\$/t SOP
Ex Works	171.4
Haulage	39.9
Port (FCA Containers, FOB Bulk)	27.7
<b>CASH COSTS</b>	<b>238.9</b>
Corporate Costs	30.8
<b>CASH + CORPORATE COSTS</b>	<b>269.8</b>
Sustaining Capex	21.0
<b>ALL IN SUSTAINING COSTS <sup>(1,2)</sup></b>	<b>290.8</b>
<b>AISC US\$/t (@ current USD:AUD)</b>	<b>US\$ 208 /t</b>

## Key Contracts Awarded



- Supply of gas to the purification plant at Beyondie mine site



- Gas transportation services through the Goldfields Gas Pipeline and associated metering stations



- Production collection and haulage from Beyondie mine site to Perth. Inventory management, container loading and delivery for shipping in Fremantle or Kwinana Ports

Refer to Bankable Feasibility Study Complete ASX announcement dated 18 September 2018 ; [https://www.kaliumlakes.com.au/site/wp-content/uploads/austocks/kll/2018\\_09\\_18\\_KLL\\_1537276260.pdf](https://www.kaliumlakes.com.au/site/wp-content/uploads/austocks/kll/2018_09_18_KLL_1537276260.pdf)

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### Notes

(1) AISC – All In Sustaining Cost Excludes Royalties and Taxes which are detailed in the Economic Analysis

(2) Only Phase 1 Operating Cost is shown with Phase 2 expansion from 90 to 180 ktpa SOP estimated to cost A\$249.8/t SOP AISC or US\$187/t SOP





## OFFTAKE AND SALES

- Binding Offtake Agreement executed with German fertiliser producer and distributor K+S
- 10 year term, 100% of Start-up Volume
- Represents ~\$650M revenue over first 10 years
- Positive due diligence completed during a five month period
- K+S to provide unparalleled expertise and technical support in relation to design, construction and commissioning
- K+S currently supplies over 50% of the Australian and New Zealand SOP markets





## FINANCING

- Low Cost Financing Identified
- Long tenor (up to 15 years) at attractive rates
- Technical Due Diligence is complete
- NAIF has made an Investment Decision for A\$74M of Debt Funding
- KfW IPEX-Bank credit approval for A\$102M of Debt Funding
- German Government Export Credit Agency (ECA) guarantee proposed for 50% of KfW loan – Euler Hermes



Australian Government



Northern Australia Infrastructure Facility



EULER HERMES

KFW IPEX-Bank





# APPROVALS AND TENURE

- All Native Title Agreements in place
- Mining Tenure granted
- Federal Environmental Approval received
- State Environmental Approval received
- Gas Pipeline Licence approved
- Early works approvals in place
- Progressive receipt of secondary approvals – DWER, DMIRS







# EARLY WORKS CONSTRUCTION UNDERWAY



**Access Road Upgrade Complete**



**Fresh Water & Brine Production Bore Drilling**



**Production Bore Equipment Supply Ordered**



**Village Earthworks Complete**



**Accommodation Rooms Installation Commenced**



**Communications Installed**



**Engineering Design and Procurement Advanced**



**Evaporation Pond Area**



**Liner Progressively Being Received**





## NEXT STEPS – PROJECT TIMING

- Commence Early Works Construction Activities Q3 2018  Commenced
- Complete Front-End Engineering Design (FEED) Q1 2019  Complete
- Finalise Binding Offtake Agreement Q1 2019  Complete
- Finance Due Diligence Complete Q2 2019  Complete
- Award EPC/M and Lump Sum Contracts Q2 2019  Complete
- Receive Final Approvals for Government Agencies Q2 2019  Complete
- Project Credit Approvals July 2019  Complete
- Final Investment Decision (FID) mid 2019
- Full Construction Activities ~15 Months from FID
- Commissioning and Ramp Up to Name Plate Throughput Q4 2020



# ADDITIONAL INFORMATION





# EXPERIENCED BOARD OF DIRECTORS AND SENIOR MANAGEMENT



**Malcolm Randall, Non-Executive Chairman  
(B.Chem, FAICD)**

An experienced company director and chairman with extensive experience in corporate management and marketing in the resources sector. Mal's experience extends over a broad range of commodities both in Australia and internationally.



**Stephen Dennis, Non-Executive Director  
(BCom, LLB)**

With a career spanning more than 30 years as an experienced and well regarded company director, Stephen is currently the non-executive chairman of several ASX listed resource companies, including Heron Resources Limited, Rox Resources Limited, EHR Resources Limited and Graphex Mining Limited.



**Brett Hazelden, Managing Director  
(B.Sc, MBA, GAICD)**

A Metallurgist who brings more than 21 years of experience, in project management, engineering design and operations serving the Australasian resources industry. Brett has been involved in a broad range of commodities including numerous mergers, acquisitions and due diligence reviews. As well as other roles, he has held senior positions at Rio Tinto, Fluor, Newcrest Mining and Iron Ore Holdings.



**Chris Achurch, Chief Financial Officer  
(BCom, CA)**

Chris has worked with a number of major businesses across the exploration, mining and agricultural sectors. He possesses a comprehensive understanding of commercial accounting and audit functions, International Financial Reporting Standards and Australian Accounting Standards.



**Rudolph van Niekerk, Chief Development Officer /  
Executive Director (B.Eng, GAICD)**

A Mechanical Engineer with more than 13 years experience in project management, operations, construction, commissioning, production ramp-up and project hand-over. Rudolph has a broad range of commodities experience both in Australia and internationally. Previous positions include senior engineering roles for DRA, Ausenco, AngloGold Ashanti and BC Iron.



**Gareth Widger, Company Secretary  
(BA, GIA (Cert))**

With almost four decades of experience, Gareth's career includes managing corporate administration and strategic communication activities for public and private companies across many different industry sectors.





# MINERAL RESOURCES AND ORE RESERVES

JORC / CIM Resource	Drainable Brine Volume (M m <sup>3</sup> )	K Grade (mg/l)	K (Mt)	SO <sub>4</sub> (Mt)	Drainable Brine SOP (Mt)	Total Brine Volume SOP (Mt)
<b>Measured Resource</b>	149	5,155	0.77	2.33	<b>1.72</b>	5.67
<b>Indicated Resource</b>	735	5,591	4.11	11.91	<b>9.17</b>	32.42
<b>Inferred Resource</b>	695	5,647	3.92	11.86	<b>8.75</b>	121.61
<b>Total Mineral Resource</b>	<b>1,579</b>	<b>5,585</b>	<b>8.80</b>	<b>26.10</b>	<b>19.64</b>	<b>159.70</b>
<b>Exploration Target</b>	920 - 2,810	1,800 - 3,300	1.6 - 9.3	5.0 - 25.6	<b>3.7 - 20.7</b>	40 - 250

Drainable Brine Mineral Resource complies with the Canadian (CIM, 43-101) standards and guidelines for brine deposits, as well as JORC Code (2012). German consultants K-UTECH have signed off as the Competent Persons. KLL is also part of the Association of Mining and Exploration Companies (AMEC) Potash Working Group which has developed guidelines to define a brine Mineral Resource and Ore Reserve, in order to increase the certainty, clarity and transparency in reporting of these resources, which was recently accepted by JORC. Total Brine Volume (Porosity) Estimates are provided for comparative purposes with other Australian Listed Companies who do not report Resources on a Drainable Brine basis.

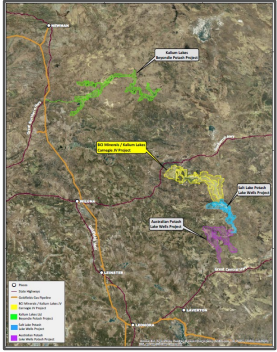
Refer to Disclaimer & Compliance Statement. The Kalium Lakes Beyondie Potash Project Exploration Target is based on a number of assumptions and limitations and is conceptual in nature. It is not an indication of a Mineral Resource Estimate in accordance with the JORC Code (2012) and it is uncertain if future exploration will result in the determination of a Mineral Resource.

JORC / CIM Reserve	Drainable Brine Volume (M m <sup>3</sup> )	K Grade (mg/l)	K (Mt)	SO <sub>4</sub> (Mt)	Drainable Brine SOP (Mt)
<b>Proved Reserve</b>	119	6,207	0.74	2.14	<b>1.65</b>
<b>Probable Reserve</b>	295	5,306	1.57	4.46	<b>3.49</b>
<b>Total Ore Reserve</b>	<b>414</b>	<b>5,565</b>	<b>2.30</b>	<b>6.60</b>	<b>5.13</b>

The Ore Reserve estimate has been developed using detailed integrated groundwater flow and solute transport finite element modelling in FEFLOW, an industry standard numerical groundwater modelling platform. The models have been used to simulate the Ore Reserve estimate and develop mine plans for the Beyondie SOP Project. Proved and Probable Reserve volumes were derived from the capture zones originating from the Measured and Indicated Resource zones respectively. The impacts of lake surface recharge have been determined by comparing the differences of the mine plan with and without recharge. The Ore Reserve estimate does not include any recharge. A cut-off grade of 2,500 mg/L potassium has been applied to the Ore Reserve.



## POTENTIAL UPSIDE



- KLL and BCI completed a positive Scoping Study in 2018 in relation to the Carnegie Potash Project Joint Venture. A significant initial Inferred Resource and Exploration Target have been stated with a further 82,000 hectares of lake surface on pending tenements not included in the figures providing further resource upside potential.



- WA Salt Koolyanobbing and Kalium Lakes have signed a Letter of Intent to evaluate and assess the recovery of Sodium Chloride (NaCl) salt products from the Beyondie SOP Project.



- Residual Evaporation Pond Brine can be converted to a Potential High Value Magnesium By-Product worth > \$1,000/t





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The information in this document is extracted from the report titled "TECHNICAL REPORT FOR THE BEYONDIE POTASH PROJECT, AUSTRALIA, JORC (2012) and NI 43-101 Technical Report – Bankable Feasibility Study" dated 17 September 2018 (Report) and ASX announcement titled "Lower Operating Cos and Increased Production for BSOPP" dated 4 March 2019 (Announcement), that relates to Exploration Targets, Exploration Results, Mineral Resources and Ore Reserves and is based on information compiled by Thomas Schicht, a Competent Person who is a Member of a 'Recognised Professional Organisation' (RPO), the European Federation of Geologists, and a registered "European Geologist" (Registration Number 1077) and Anke Penndorf, a Competent Person who is a Member of a RPO, the European Federation of Geologists, and a registered "European Geologist" (Registration Number 1152). Kalium Lakes confirms that it is not aware of any new information or data that materially affects the information included the Report and Announcement and, in the case of estimates of Exploration Targets, Exploration Results, Mineral Resources and Ore Reserves, which all material assumptions and technical parameters underpinning the estimates in the Report and Announcement continue to apply and have not materially changed. Kalium Lakes confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the Report and Announcement. Thomas Schicht and Anke Penndorf are full-term employees of K-UTEC AG Salt Technologies (K-UTEC). K-UTEC, Thomas Schicht and Anke Penndorf are not associates or affiliates of Kalium Lakes or any of its affiliates. K-UTEC will receive a fee for the preparation of the Report in accordance with normal professional consulting practices. This fee is not contingent on the conclusions of the Report and K-UTEC, Thomas Schicht and Anke Penndorf will receive no other benefit for the preparation of the Report. Thomas Schicht and Anke Penndorf do not have any pecuniary or other interests that could reasonably be regarded as capable of affecting their ability to provide an unbiased opinion in relation to the Beyondie Potash Project. K-UTEC does not have, at the date of the Report, and has not had within the previous years, any shareholding in or other relationship with Kalium Lakes or the Beyondie Potash Project and consequently considers itself to be independent of Kalium Lakes.

Thomas Schicht and Anke Penndorf have 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 JORC 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Thomas Schicht and Anke Penndorf consent to the inclusion in this document of the matters based on their information in the form and context in which it appears.