



CARNEGIE POTASH PROJECT

Carnegie Joint Venture – Kalium Lakes Limited (KLL) and BCI Minerals Limited (BCI)

Scoping Study Presentation

July 2018





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The information in this document is extracted from the report titled "CARNEGIE POTASH PROJECT, AUSTRALIA, JORC (2012) and NI 43-101 TECHNICAL REPORT" and dated 30 June 2018 (Report), that relates to Exploration Targets, Exploration Results, Mineral Resources and Mineral 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 Federation 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 and BCI Minerals confirm they are not aware of any new information or data that materially affects the information included in the original announcement regarding the Report and, in the case of estimates of Mineral Resources, which all material assumptions and technical parameters underpinning the estimates in the relevant announcement continue to apply and have not materially changed. Kalium Lakes and BCI Minerals confirm that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original announcement regarding the Report.

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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, BCI Minerals or the Carnegie Potash Project and consequently considers itself to be independent of Kalium Lakes and BCI Minerals.

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 the Report of the matters based on their information in the form and context in which it appears.



SOP Market Highlights



- ✓ Potassium Sulphate (SOP) is a Premium Fertiliser
- ✓ Supply Does Not Meet Demand
- ✓ No Current Production in Australia
- ✓ Leveraged to 'Feeding the World' Thematic
- ✓ Potassium is One of Three Essential Plant Nutrients
- ✓ Global SOP Market is ~6Mtpa, Worth ~US\$3-4Bpa
- ✓ Current SOP Retail Price in Australia is +A\$950/t
- ✓ Existing Brine Producers' Cost of Production ~US\$225/t



MOP – Muriate of Potash or KCl SOP – Sulphate of Potash or K₂SO₄ NOP – Potassium Nitrate SOPM – Sulphate of Potash Magnesia

BCI MINERALS SOP - The Farmers' Choice but ... Subject to Price

- Sulphate of Potash is used principally for specialty crops: fruits, nuts, vegetables, berries, beans, bananas, tobacco, pineapple and cocoa
- MOP is high in chloride leading to seedling toxicity and overall accumulation of salts
- SOP contains minimal chloride, improving plant and soil health
- SOP contains sulphur, a secondary nutrient for healthy plant growth
- SOP commands a significant price premium over the MOP market
- Australian potassic fertiliser demand totalled 300-400ktpa during past 5 years



Source: This content was extracted from the Green Markets report, Global Sulfate of Potash Market 2016-2026. This content is republished here with the express written permission of Kennedy Information, LLC. Copyright ©2016. Further use of, electronic distribution or reproduction of this material, requires the permission of Kennedy Information, LLC.

Potential Target Markets	Australia	China	India	Indonesia	Japan	Malaysia	New Zealand	South Africa	Thailand	USA	Vietnam
Annual Demand ktpa SOP	70	4,100	100	25	100	15	30	45	15	475	15





Carnegie Potash Project Highlights



- Scoping Study, Maiden Resource and Exploration Target confirm the CPP has potential to be a technically and economically viable project.
- Leveraged the knowledge, intellectual property and experience from Kalium Lakes Beyondie Sulphate of Potash Project
- ✓ Inferred Resource of 0.88 Mt @ 3,466 mg/l K (equivalent to 7,729 mg/l SOP) based on only top 1.7 metres of the 27,874 hectare surficial aquifer on granted tenement E38/2995.
- ✓ Exploration Target of 3.46 Mt 7.33 Mt SOP @ 3,410 mg/l K 3,420 mg/l K within the deeper aquifers on granted tenement E38/2995.
- ✓ A further 82,000 hectares of lake surface on pending tenements is not included in the current Inferred Resource and exploration target, providing further resource upside potential.
- Close proximity to other potash explorers with multiple options for ports and road routes utilising existing infrastructure
- Low capital and operating cost estimates for various SOP production cases





SOP Production Methods and Costs



SOP is produced in three main ways:

- Salt lake brine processing via evaporation and purification
- Secondary Process reaction of MOP with sulphate salts
- Mannheim Process reacting MOP with sulphuric acid to produce SOP and hydrochloric acid



Existing Brine Producers have a competitive cost of production – advantage as evaporation is the lowest cost SOP production method worldwide



Simple SOP Production Process





Brine Pumping from Bores and Trenches >160 Million litres successfully pumped to date



Brine Solar Evaporation Located in high evaporation region



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



Carnegie Potash Project

The Project comprises:

- A combination of shallow trenches and production bores
- Staged evaporation ponds
- Purification plant
- Product and excess salt storage areas
- Administration, utilities and facilities
- Accommodation facility
- Export via Geraldton, Esperance or Fremantle Ports











Extensive Hydrogeological Data Collection



A hydrogeological data collection program has been undertaken, comprising:

- 64 auger-hole drilling program completed up to 2 metres deep on an approximate 2 to 3.5 kilometre sample grid
- 4 Air Core holes completed to depths between 63 and 123 metres, encountering a typical palaeovalley geological sequence
- 120 kilometres of geophysical traverses completed, identifying a potential paleochannel









Extensive Hydrogeological Data Collection









Mineral Resource and Exploration Target



JORC / CIM Resource	Drainable Brine Volume (M m ³)	K Grade (mg/l)	K (Mt)	SO ₄ (Mt)	Drainable Brine SOP (Mt)	Total Brine Volume SOP (Mt)
Inferred Resource	113.55	3,466	0.39	1.33	0.88	1.46
Exploration Target	459 - 960	3,410 - 3,420	1.57 – 3.29	5.77 – 12.30	3.46 - 7.33	41.23 – 83.14

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-UTEC 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

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 Carnegie 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.



Bench Scale Metallurgical Testing



Discrete metallurgical test work undertaken:

- KLP conducted bench-scale evaporation testing using knowledge gained from prior testwork performed during the metallurgical test work for the Beyondie Sulphate Of Potash Project.
- K-UTEC evaluated the evaporation pond and purification process design requirements to produce potentially saleable SOP.





BCI MINERALS Utilising Kalium Lakes IP, Knowledge and Experience KALIUM

Experience and work undertaken on the Beyondie Sulphate of Potash Project that relates to the CPP includes:

- Pilot works to verify evaporation pond and purification process design
- Extensive field trials of lined and unlined ponds
- Examined processes to enhance product quality
- Preparation of Capital Expenditure (CAPEX) estimates
- Preparation of Operational Expenditure (OPEX) estimates
- Experience and understanding of approval requirements





Scoping Study Team – Phased Study Approach







Carnegie Join Venture





BC Iron and Kalium Lakes have entered into the Carnegie Joint Venture (CJV) on the Carnegie Potash Project (CPP) in February 2017.

Under the terms of the agreement BCI can earn up to a 50% interest in the CJV by sole-funding \$10.5M for 3 development stages of project studies expenditure:

- Stage 1 Complete. BCI earned 30% interest by sole funding the \$1.5M Scoping Study Phase
- Stage 2 BCI can elect to earn a further 10% interest by sole funding a further \$3.5M Pre-Feasibility Study Phase
- Stage 3 BCI can elect to earn a further 10% interest by sole-funding a further \$5.5M Feasibility Study Phase

By end of the Feasibility Study the CJV would have an ownership of 50% KLL and 50% BCI



Carnegie Potash Project - Upside



 A further 82,000 hectares of lake surface in the pending tenements area
not included in the current Inferred Resource and exploration target.

 Close proximity to other potash explorers with multiple options for ports and road routes utilising existing infrastructure.





Conclusion and Next Steps



Conclusion

The results of the Scoping Study confirm that the Carnegie Potash Project is fundamentally viable and financially attractive (subject to a number of sensitivities and modifying factors) and justify commencing a staged Pre-Feasibility Study.

Key Next Steps include:

- Native Title agreements and Section18 Heritage approvals
- Various stakeholder discussions, approvals and permits to allow PFS field works to be undertaken, including Programme of Work approvals, Native Vegetation Clearing Permits and 26D and 5C water bore approvals
- Secure the grant of the exploration tenement applications to facilitate a PFS on the full extent of the Carnegie lake system
- Drilling, trenching and test pumping to expand the current Resource
- Pond, purification plant and infrastructure design
- Completion of a PFS

Notes	KALIUM LAKE