KALIUM LAKES LIMITED (KLL)

Australian potash project very close to go ahead

May 2019

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www.breakawayresearch.com

Recommendation: ***BUY***

Company Information

ASX Code	**KLL**
Share Price (13 May 2019)	A$0.58
Ord Shares	239.0m
Market Cap	**A$143.4m**
Options	25.7m
Market Cap (fully diluted)	**A$158.8m**
Cash (30 April 2019)	A$23.0m
Total Debt	A$0.0m
Enterprise Value	**A$140.3**

Directors and Management

NED Chairman	Malcolm Randall
M.D & CEO	Brett Hazelden
Exec.Director & Chief Development Officier	Rudolph van Niekerk
Director (Non-Exec)	Stephen Dennis
Chief Financial Officier	Chris Achurch
Company Secretary	Gareth Widger

Significant Shareholders (1 May 19)

Smoothy interests	23.5%
Greenstone Resources II	19.8%
Hazelden Interests	6.2%
Coola Station Interests	4.7%

Source: Company

Company Details

Address	Unit 1 152 Balcatta Road Balcatta WA 6021
Phone	+61 8 9240 3200
Web	www.kaliumlakes.com.au

Price Chart to 13 May 2019

Source: ASX

Key Points

- ***Kalium Lakes is likely to be the first commercial Sulphate of Potash producer in Australia, and will be one of the lowest cost producers in the world, close to the strongly growing Asian market.***
- ***Positive global theme of food supply***
  - ***Emerging Market countries' middle class growing strongly***
  - ***Limited agricultural land requires increasing fertilizer use***
  - ***Potash is one of the three major nutrients required in bulk***
- ***Sulphate of Potash a better business than Muriate of Potash***
  - ***Around 50% of SOP supply comes from MOP conversion***
  - ***SOP price margin over MOP at US$233/t as a result***
  - ***Brine based SOP producers have long run cost advantage***
  - ***Chloride (ie MOP) intolerant crop area growing at 3.6%pa***
- ***Kalium Lakes has fundamental and financial advantages***
  - ***Low cost debt from German and Australian Governments***
  - ***Able to start small (90Ktpa) and grow to 180-300ktpa***
  - ***Has a critically important marketing deal with K+S***
  - ***One of lowest cost to FOB globally***
  - ***Estimated gross margin of ~50%***
  - ***Location advantage servicing 70Ktpa Australian and 25Ktpa New Zealand markets***
  - ***Management team has maintained unbroken momentum***
- ***Favourable valuation***
  - ***NPV at 8% WACC A$1.03/sh***
  - ***Cost of debt argues for 4.2% WACC ie NPV of A$2.57/sh***
  - ***At A$1.17/sh, PER is 36x in FY22, 10x FY26 v Market 16.3x***
  - ***No valuation on potential magnesium or salt businesses***

Kalium Lakes management achieved an exceptionally rapid project delivery schedule, including substantial project de-risking through extensive pilot and trail testing. Shareholders should take significant comfort from the arrangement of the debt from German and Australian Governments, which would have entailed extensive due diligence. The interest rate on this debt for the 90Ktpa stage likely to be below 5%pa, with repayment stretching over 10-15yrs, again substantially reducing the risk to equity holders. Once in production, the market is likely to seriously consider using the lower discount rate, which points to a share price some 4x the current price. In the meantime, we believe that the share price should appreciate to our A$1.03/sh NPV at 8% WACC.

Hence, Breakaway Research has a ***BUY*** *recommendation on* ***Kalium Lakes.***

Company Overview & Strategy

Overview and investment proposition

Potash production is a new industry for the Australian resources equity market, and represents an opportunity for investors to benefit from the global trends of rising middle class populations in emerging countries and the reducing amount of farm land per head of population.

Within that macro theme, the production of Sulphate of Potash (Potassium Sulphate or SOP) looks particularly interesting, because of the steepness of the supply cost curve, with 60% of the current 7Mtpa capacity producing at a cash cost of over US$400/t SOP ex works, and more if delivery costs to Asian customers are included (Kalium Lakes costs is forecast to be around US$178-207/t FOB). The strength of the SOP price compared to the historically weaker MOP (Potassium Chloride or Muriate of Potash) price over the last 6 years is particularly encouraging, because it suggests that the marginal cost producers, which use MOP as the base feedstock, are experiencing rising costs, even during periods of falling MOP prices.

The barrier to becoming a SOP producer from a brine source is chemistry. The brine must contain economic grades of both potassium and sulphate, and to be really competitive, the brine must be located in a region of high evaporation.

Of the current crop of Australian projects, Kalium Lakes' Beyondie project has the highest potassium grade (smaller evaporation ponds), excess sulphate availability, the lowest NaCl to Potassium Sulphate ratio (less waste), is situated close to the highest evaporation rates in Australia (and by implication, the world), and is the closest to low cost transport (back haul rates from the Pilbara) and infrastructure (sealed roads, gas pipelines).

Kalium Lakes continues to lead its peer group, being the only project at the time of writing with a completed BFS, binding sales offtake, and non-binding agreements for the debt funding component.

Very strong news flow driving towards project commitment in the June 2019 quarter

Kalium Lakes has finalized Front End Engineering and Design, has all of Phase 1 production covered by a binding offtake, has granted mining leases and environmental approvals. Completion of financing, receipt of final Government approvals, and the Final Investment Decision (FID) are expected in the June 2019 quarter, with construction to take 15 months from FID.

- 8 April 2019 – Western Australian Government Environmental Approval received.
- 3 April 2019 – Greenstone subscribes to A$20M in Kalium Lakes at A$0.44/sh, taking them to 19.99% of KLL. Greenstone representative Stephen Dennis has joined the company's board. Greenstone has an anti-dilution right, and is expected to introduce additional investors to the company. With Greenstone, the project A$216M initial capital cost has A$196M of funding in place.
- 26 March 2019 – Binding offtake with K+S for up to 90Ktpa SOP for 10 years representing 100% of stage 1 production, with pricing linked to K+S realized sales prices less a marketing fee, with K+S to provide technical support in relation to design, construction, and commissioning. The contract includes look through pricing to what K+S is actually selling the product for, and includes a mechanism for managing price downside risk. (Reportedly A$650M in revenue (KLL presentation 7 May 2019).
- 19 March 2019 – Kalium Lakes agreed non-binding terms with KfW IPEX-Bank and Euler Hermes for debt funding of A$102M. This debt is expected to be at a relatively low interest rate for project finance, in the region of 3-5% with the A$60M at the higher end and the insured component of A$42M at the lower end.
- 4 March 2019 – Lower operating costs and increased production flagged with the completion of the Front-End Engineering and Design, with stage 1 production at 90Ktpa (previously 82Ktpa) and opex of US$178-207/t (previously US$226-263/t). A major driver was the decision to build a gas line to the project saving A$31.70/t for stage 1 (source BFS 18 Sep 2018), and own the gas fired power station following the offer of NAIF funding. Pre-production capital costs increased to A$216M including an extra A$29M for the gas pipeline. The combined operating cost saving is estimated at A$65/t.
- 20 February 2019 – Kalium Lakes non-binding agreement for NAIF funding of A$74M including A$48M 15 year term for infrastructure and a project facility of A$26M 10 year term. While the interest rates

on these loans has not been made public, the average interest rate for loan book of the Australian Government's Export Finance and Insurance Corp. is under 5%, and we assume a similar rate will apply here.

- 23 January 2019 – Commonwealth Government Environmental received

Beyondie and Carnegie project locations

Figure 1 Location Map Beyondie and Carnegie Projects

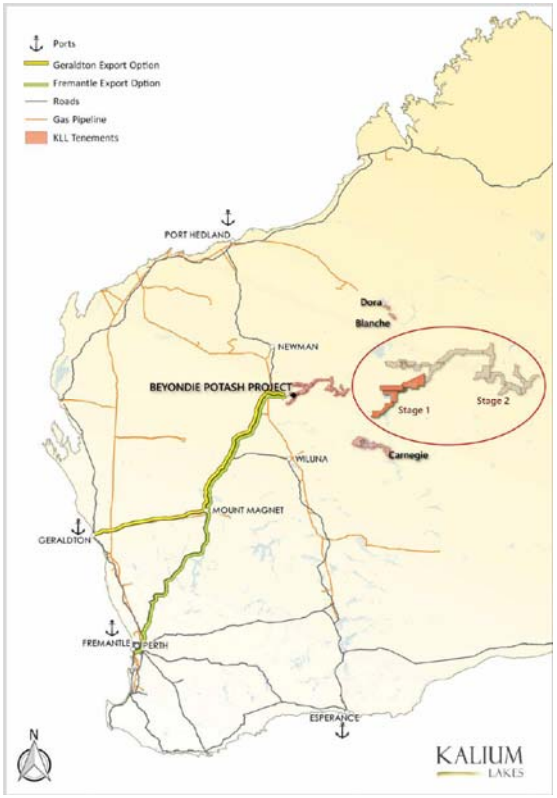
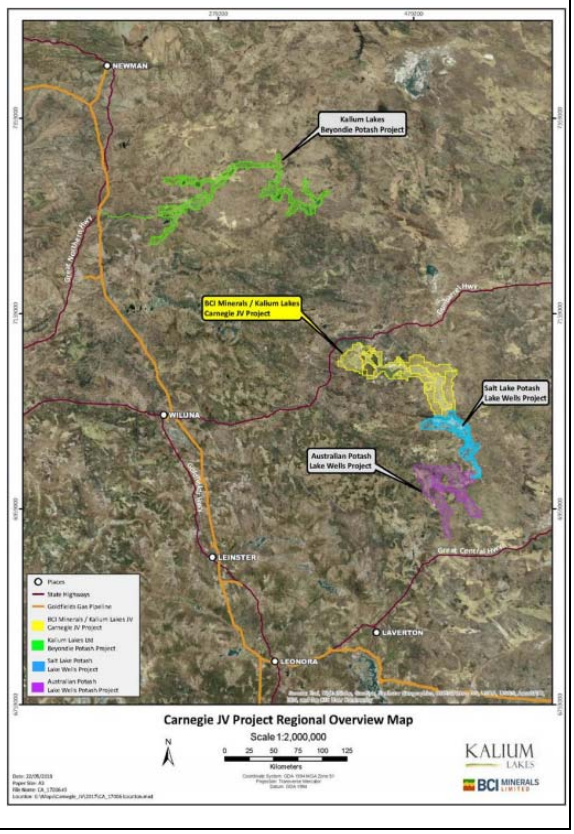


Figure 2 Carnegie relative to APC and SO4 projects



Source: Kalium Lakes 2017 annual report, Carnegie Scoping Study release 27 July 2018

CFR in Australia is US$530-550 currently. And ~$500/t FOB NW Europe. China is about $470 at a rail siding

Beyondie is the company's 100% owned flagship project, planned to produce 90Ktpa to 180Ktpa and potentially 300Ktpa of Sulphate of Potash (SOP). The operation is 700Km trucking distance to Port Hedland, 862Km the port of Geraldton and 1030Km to Fremantle, and the industrial centre of Kwinana. Geraldton Port has signed an MOU with Kalium Lakes.

Carnegie is under Kalium Lakes' ownership and management but is being funded by BCI Minerals, which can earn up to 50% by sole funding A$10.5M in exploration and development expenditure. This project is close to the projects of Salt Lake Potash (SO4) and Australian Potash (APC), 940-968Km trucking distance to port. Australian Potash has a market capitalization of A$27M and SO4's is A$117M, indicating that Carnegie, while not the focus of this report, has a significant value in its own right.

Valuation and Financials

Valuation

In our valuation, the NPV for Beyondie of A$280M after tax and A$479M pre tax, which compares to the company's pre tax NPV of A$606M reported in the release of 4 March 2019, also at a discount rate of 8%.

The valuation of Carnegie is comparable to that implied by that of Australian Potash (APC) which owns a deposit in the same drainage system. Carnegie is earlier in the exploration process and has 40% of the drainable resources of APC, and we have valued it at 40% of APS's market capitalization.

We have attached no value to the potential for recovery of high value magnesium or low value salt (NaCl) byproducts, both of which are currently under assessment.

Table 1 Net Present Value (base case at 8% WACC, but if actual cost of 15yr debt taken into account WACC is 4.2%)

Discount Rate	90Ktpa 8.0%	90Ktpa 4.2%	180Ktpa 8.0%	180Ktpa 4.2%
Beyondie	131.0	393.2	280.0	795.1
Carnegie	11.0	11.0	11.0	11.0
Corporate Overhead	-32.6	-60.5	-32.6	-60.5
Cash on hand	65.4	65.4	65.4	65.4
Debt	0.0	0.0	0.0	0.0
Net Working Capital	-0.2	-0.2	-0.2	-0.2
Valuation A$M	174.5	408.8	323.6	810.7
Valuation A$/sh	0.55	1.30	1.03	2.57

Source: Breakaway estimates, Issued shares assumed to be 315M

We believe that the company will move quickly to commit to and construct Phase 2 180Ktpa, and that should be included in the markets consideration of the company's value, so we believe the appropriate valuation is at least A$1.03/sh, assuming 315M shares on issue post the issue discussed below.

The lower discount rate is the Weighted Average Cost of Capital based on the actual cost of Kalium Lakes cost of debt, and it theoretically the more valid discount rate. At the 4.2% discount rate, the NPV of Phase 1 only is A$1.30/sh. We believe the Kalium Lakes share price will trend to the higher valuation post project delivery, and a price of A$2.57/sh is not out of the question on completion of Phase 2 to 180Ktpa.

If Kalium Lakes traded at a share price of A$1.03/sh, it would be on a PER of 36x FY22 NPAT and 10x FY26 NPAT, on our assumptions, and be on a yield of 6% fully franked in FY25. The ASX 300 average trailing Price Earnings Ratio is 16.3x (source: www.marketindex.com), and Kalium Lakes should be trading on that multiple at least in FY26, or possibly more given it could potentially double production to over 300Ktpa.

Modest equity issue required to complete funding

To achieve financial close, we assumed an equity issue to raise A$40M at A$0.45/sh resulting in the issue of 89M shares and taking the total shares on issue to 315M shares. Our valuation per share is based on 315M shares. The final issue could be a rights issue, but given the commentary about additional new shareholders following Greenstone onto the register, we expect the most likely path would be a combination of placement and SPP.

Very low cost debt, and typically low industry beta suggests that our WACC is too high

Table 2 Calculation of Kalium Lakes Weighted Average Cost of Capital

Cost of Equity	Kalium Lakes	WACC Used
Beta Range	1.15	1.60
Risk free rate (Rf)	1.96%	1.96%
Market Risk premium (Rm)	4.91%	4.91%
Market premium (Rm)	6.87%	6.87%
Cost of Equity	7.61%	9.82%
Gearing		
Gearing D/(D+E)	76%	24%
Gearing E/(D+E)	24%	76%
Weighted average Cost of Capital		
Cost of Debt Kd	4.51%	4.51%
Tax Rate	30%	30%
Weighted Average Cost of Capital (Ke)	**4.23%**	**8.22%**
Real WACC		
Expected Inflation (per RBE index linked 10yr bond)	0.84%	0.84%
Therefore Real WACC	3.36%	7.32%

Source: Kalium Lakes beta from Yahoo Finance, market risk premium for the Australian Market from www.market-risl-premia.com, risk free rate is the RBA 10yr bond average rate for March 2019, cost of debt being the weighted average of our estimated cost of the Beyondie Project debt book, including normal bank debt for Phase 2.

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We have assumed a discount rate of 8%. However, Weighted Average Cost of Capital calculation would suggest a discount rate of 4.2% would be more appropriate. We believe that there is a strong possibility that the market valuation will gravitate to the lower discount rate as the project is completed, and de-risked ie sometime in 2021. In the meantime, we prefer the more conservative arbitrary 8% discount rate.

The 8% discount assumes two thirds of the debt is repaid, and the company beta is a high 1.6. The debt is 10-15 term, so need not be repaid quickly, and the competitive cost position and high margin of this project, if delivered, means that the company should have relatively stable earnings, even at current SOP prices. We note that fertilizer company Incitec Pivot has a beta of 0.89, and its industry sector beta is 0.91.

Financial Model

Table 3 Profit and Loss

Accounts in A$M	Jun-19	Jun-20	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26
Revenue	0.0	0.0	24.0	66.7	66.8	103.1	130.5	135.7
Operating Costs	0.0	0.0	-11.7	-27.4	-27.8	-41.7	-52.5	-54.9
Corporate OH	-3.0	-3.0	-3.1	-3.1	-3.2	-3.2	-3.3	-3.4
Costs	-3.0	-3.0	-14.8	-30.5	-31.0	-45.0	-55.8	-58.2
EBITDA	-3.0	-3.0	9.3	36.2	35.9	58.1	74.7	77.4
D&A	0.0	0.0	-3.1	-8.8	-8.8	-13.6	-17.1	-17.6
EBIT	-3.0	-3.0	6.1	27.4	27.1	44.6	57.6	59.9
Interest Costs	0.0	-2.6	-5.5	-13.4	-12.2	-11.1	-10.0	-8.9
PBT	-3.0	-5.6	0.6	14.1	14.8	33.4	47.6	50.9
Tax Expense	0.9	1.7	-0.2	-4.2	-4.4	-10.0	-14.3	-15.3
NPAT	-2.1	-3.9	0.4	9.9	10.4	23.4	33.3	35.7
Dividend $M	0.0	0.0	0.0	0.0	0.0	0.0	20.0	21.4
Shares on Issue	315.0	315.0	333.5	335.7	335.7	335.7	340.7	340.7
Diluted Shares on Issue	340.7	340.7	340.7	340.7	340.7	340.7	340.7	340.7
Adj EPS A$/sh	-0.01	-0.01	0.00	0.03	0.03	0.07	0.10	0.10
Options on Issue M	25.7	25.7	7.2	5.0	5.0	5.0	0.0	0.0
Conversion Cash A$M	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0

Source: Breakaway estimates

The major driver of higher earnings is volumes driven by the expansion of volumes as Phase 2 starts up from FY24. US$/t SOP prices firm slightly in real terms, but offset in A$/t by the Australian Dollar appreciation from 0.71 to 0.76. Our AUDUSD forecast is from Consensus Economics.

Table 4 Cash Flow

	Jun-19	Jun-20	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26
Receipts From Customers	7.2	0.0	21.4	62.0	66.8	99.1	127.5	135.1
Payments to Suppliers	-6.5	13.4	-11.2	-37.4	-30.9	-54.7	-54.9	-58.0
Cash Flow from Operations	0.7	13.4	10.2	24.6	35.9	44.5	72.6	77.1
Financing Costs	0.0	-2.6	-5.5	-13.4	-12.2	-11.1	-10.0	-8.9
Taxes Paid	0.0	0.0	0.0	-0.2	-4.2	-4.4	-10.0	-14.3
Net Cash from Operations	0.7	10.9	4.7	11.1	19.4	28.9	52.5	53.9
PP&E	0.0	-100.0	-116.0	-66.0	-66.0	0.0	0.0	0.0
Mine Development	0.0	0.0	-1.4	-3.4	-3.4	-4.0	-5.3	-6.4
Investing Activity	0.0	-100.0	-117.4	-69.4	-69.4	-4.0	-5.3	-6.4
Issue of Equity. Option Conversion	63.1	4.5	0.0	0.0	0.0	0.0	0.0	0.0
Dividends	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-20.0
Net Borrowings	0.0	74.0	102.0	119.8	-23.2	-23.2	-23.2	-23.2
Financing Activity	63.1	78.5	102.0	119.8	-23.2	-23.2	-23.2	-43.2
Net Increase in Cash	63.8	-10.7	-10.8	61.4	-73.2	1.7	24.0	4.3
YE Cash on Hand	65.4	54.7	43.9	105.4	32.2	33.9	57.9	62.1

Source: Breakaway estimates

Likewise the cash flow is driven by Phase 2 180Ktpa sales revenues. Note that the debt repayment schedule is very light, with some 10 years to repay the KfW debt, and the bulk of the NAIF debt repayments start after the KfW debt has been repaid. Dividend payments are forecast to start in FY26, but could be earlier.

Phase 1 only delivers A$24M pa free cash flow (P/FCF = 6.0x) with debt repayments of $10M pa.

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Table 5 Balance Sheet

	Jun-19	Jun-20	Jun-21	Jun-22	Jun-23	Jun-24	Jun-25	Jun-26
Cash	65.4	54.7	43.9	105.4	32.2	33.9	57.9	62.1
Receivables	0.0	0.0	2.6	7.3	7.3	11.3	14.3	14.9
Inventories	0.2	0.2	1.2	2.5	2.5	3.7	4.6	4.8
Total Current Assets	65.6	54.9	47.8	115.2	42.1	48.9	76.8	81.8
PP&E	1.8	101.8	214.7	271.9	329.1	315.5	298.4	280.8
Expln & Mine Devt	0.0	0.0	1.4	4.9	8.3	12.3	17.6	24.0
Deferred Tax Asset	4.1	5.8	5.8	5.8	5.8	5.8	5.8	5.8
Total Non Current Assets	5.9	107.6	221.9	282.5	343.1	333.6	321.8	310.6
Total Assets	**71.5**	**162.5**	**269.7**	**397.7**	**385.2**	**382.4**	**398.5**	**392.4**
Trade Payables	0.5	16.9	21.5	15.9	15.9	7.4	9.2	9.6
Borrowings	0.0	74.0	176.0	295.8	272.6	249.4	226.2	203.0
Current Tax Liabilities	0.0	0.0	0.2	4.2	4.4	10.0	14.3	15.3
Provisions	0.3	0.3	0.3	0.3	0.3	0.3	20.3	21.7
Total Liabilities	0.8	91.3	198.0	316.2	293.3	267.2	270.0	249.6
Net Assets	**70.7**	**71.3**	**71.7**	**81.5**	**91.9**	**115.3**	**128.6**	**142.9**
Issued Capital	92.4	96.9	96.9	96.9	96.9	96.9	96.9	96.9
Reserves	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Retained Profits	-23.9	-27.8	-27.4	-17.5	-7.1	16.2	29.6	43.8
Shareholder Equity	70.7	71.3	71.7	81.5	91.9	115.3	128.6	142.9

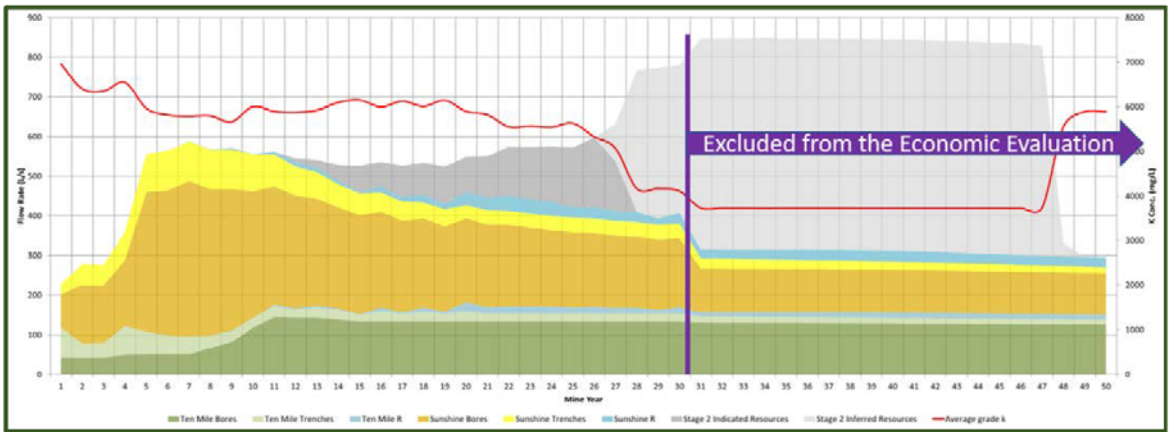
Source: Breakaway estimates

Project Model

The All In Sustaining Costs visible in the model below is higher than the AISC reported by the company in the 4 March 2019 release and in Table 7. This is due to the application of inflation on the 2018 based costs, Breakaway's assumption of higher total G&A plus corporate and head office costs, and an allowance for conservatism in the site operating costs.

The pumping rates and grades have been interpreted from the DFS release of 18 September 2018, adjusted for the BFS update released 4 March 2019. The update highlighted 7.1% higher production rates of SOP, and in increase in recovery from 72% to 91%, ie up 26%, implying pumping volumes are likely to be 18% lower.

Figure 3 Pumping flow rate and average brine grade for the BFS base case



Source: BFS 18 September 2018

The commodity prices selected average US$604/t including inflation over the life of the project, or US$480/t in constant 2018$. The basis for the selection is covered in the commodity section of this report.

The Beyondie Project is expected to produce a number of premium products. The average grade of the SOP produced is expected to be 51-52% K_2O, with negligible chloride and minimal insoluble material. The specification from competing producers is 50% K_2O and 0.8% Chloride (see Table 17). We assume 50% of sales achieve a 10% premium.

We assume work on Phase 2 180Ktpa starts as soon as the ramp up of Phase 1 90Ktpa has been completed. The increased tonnage arrives during 2025, and FY26 is the first full year of production at 180Ktpa.

Table 6 Project model

Year Ended	Sum/Ave	Jun-20	Jul-21	Jul-22	Jul-23	Jul-24	Jul-25	Jul-26
Production Kt SOP	8806	0.00	32.22	90.00	90.00	138.87	175.00	180.00
Granulated Share	50%	50%	50%	50%	50%	50%	50%	50%
MOP US$/t FOB USA		306	313	319	325	332	339	345
SOP US$/t FOB Australia	686	505	513	519	525	532	539	545
US$/A$	0.77	0.58	0.72	0.75	0.76	0.76	0.77	0.77
Granulated Premium	10%	10%	10%	10%	10%	10%	10%	10%
SOP Std Revenue A$M	3924	0.00	11.44	31.06	31.12	48.37	61.43	63.90
SOP Granulated Revenue A$M	4317	0.00	12.58	34.16	34.23	53.21	67.58	70.29
Domestic Premium	8	0.00	0.00	1.50	1.50	1.50	1.50	1.50
Revenue A$M	8248	0.00	24.03	66.72	66.85	103.08	130.51	135.69
Operating Cost $/t								
Ex Works	178.0	115.0	115.0	117.3	119.6	122.0	124.4	126.9
Logistics	161.5	111.4	111.4	112.6	114.2	115.7	117.5	119.5
Corporate	28.1	98.8	98.8	36.1	36.8	24.3	19.7	19.5
Total	367.7	325.2	325.2	266.0	270.6	262.1	261.6	266.0
Royalty %	5.15%	5.15%	5.15%	5.15%	5.15%	5.15%	5.15%	5.15%
Royalty A$/t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AISC	na	na	407.8	342.4	346.7	329.2	330.4	340.6
Operating Cost $M								
Ex Works	1567	0.0	3.7	10.6	10.8	16.9	21.8	22.8
Logistics	1423	0.0	3.6	10.1	10.3	16.1	20.6	21.5
Corporate	248	0.0	3.2	3.2	3.3	3.4	3.4	3.5
Total	3238	0.0	10.5	23.9	24.4	36.4	45.8	47.9
Royalty	425	0.0	1.2	3.4	3.4	5.3	6.7	7.0
COGS	3663	0.0	11.7	27.4	27.8	41.7	52.5	54.9
Capex A$M								
Sustaining Capex A$M	298	0.0	1.4	3.4	3.4	4.0	5.3	6.4
Pre Prodn Capex A$M	348	100.0	116.0	66.0	66.0	0.0	0.0	0.0
Capex	646	100.0	117.4	69.4	69.4	4.0	5.3	6.4
Cumulative Capex		100.0	217.4	286.9	356.3	360.3	365.6	372.0
Profit & Loss								
Revenue	8248	0.0	24.0	66.7	66.8	103.1	130.5	135.7
Costs	-3663	0.0	-11.7	-27.4	-27.8	-41.7	-52.5	-54.9
EBITDA	4586	0.0	12.3	39.3	39.0	61.4	78.0	80.8
Depn	-860	0.0	-3.1	-8.8	-8.8	-13.6	-17.1	-17.6
EBIT	3726	0.0	9.2	30.5	30.3	47.8	60.9	63.2
Tax	-1118	0.0	-2.7	-9.2	-9.1	-14.3	-18.3	-19.0
NPAT	2608	0.0	6.4	21.4	21.2	33.5	42.6	44.3
Tax Rate	30%	30%	30%	30%	30%	30%	30%	30%
Cash Flow								
Capex	646	100.0	117.4	69.4	69.4	4.0	5.3	6.4
Cash Flow pre Tax	3940	-100.0	-105.1	-30.1	-30.4	57.4	72.7	74.4
Cashflow Post Tax	2823	-100.0	-107.9	-39.3	-39.4	43.0	54.4	55.4
NPV pre tax		617.4	771.9	863.8	963.2	982.9	988.9	993.6
NPV post tax		402.4	542.4	625.1	714.6	728.7	732.6	735.8

Source: Kalium Lakes BFS 18 September 2018, Lower Costs BFS update 4 March 2019, AUDUSD forecast from Consensus Economics, and the rest from Breakaway estimates

Capital Costs

Table 7 Capital costs including adjustments for BFS update

	Phase 1 82Ktpa	Phase 2 164Ktpa	Extra	Phase 1 90Ktpa	Phase 2 180Ktpa
Ponds	34.7	32.8	-3.6	31.1	29.4
Purification	54.4	47.9	1.0	55.4	57.6
Infrastructure	9.4	5.2	10.0	19.4	5.2
Accommodation	2.5	0.2		2.5	0.2
Offsite Infrastructure	5.3	0.4	29.0	34.3	0.4
EPCM	30.5	21.7	6.0	36.5	21.7
Owners	7.8	7.1		7.8	7.1
Contingency	15	10	14.0	29.0	10.0
Total	159.6	125.3	56.4	216.0	131.6

Source: BFS Release 18 September 2018, BFS update 4 March 2019, Breakaway estimates

In the table above, we have adjusted the detailed information from the 2018 BFS using the commentary in the March 2019 release, which split out the higher contingency and EPCM. For the rest:

1. evaporation pond area was reduced from 445 ha to 399ha, reducing pond capex,
2. the additional A$29M spend on the gas pipeline,
3. the up front payment for the power station of A$10M, and
4. the balance, to get to the guidance capex of A$216M is assumed to be on additional purification back end capacity to handle the increased tonnage.

The Phase 2 capex has been adjusted reflecting our estimate of the extra cost given the increase in capacity.

Operating Costs

Table 8 Derivation of operating costs (excluding sea freight to market and royalties) in 2018 Australian Dollars

DFS 2018	A$/t 82Ktpa	A$/t 164Ktpa	A$Mpa 82Ktpa	A$Mpa 164Ktpa	A$/t 90Ktpa	A$/t 180Ktpa
Site from Y6+	182.0	151.8	14.9	24.9	165.8	138.3
Power Station Charge Y1-5	31.7	18.9	2.6	3.1		
Extra Cost if no gas line	31.5	33.9	2.6	5.6		
Site Total	245.2	204.6	20.1	33.6	165.8	138.3
Haulage	39.9	42.9	3.3	7.0	39.9	42.9
Port	27.6	27.3	2.3	4.5	27.6	27.3
Cash Costs	312.7	274.8	25.6	45.1	233.3	208.5
Corp	31.7	23.1	2.6	3.8	28.9	21.0
Total	344.4	297.9	28.2	48.9	262.2	229.5
Sustaining Capex	16.5	12.3	1.4	2.0	15.0	11.2
AISC excluding royalties	360.9	310.2	29.6	50.9	**277.2**	**240.7**
AISC (release 4 Mar 2019)					**283.6**	**243.8**
SOP Prodn Ktpa	82	164	82	164	90	180

Source: BFS Release 18 September 2018, BFS update 4 March 2019 (AISC means All In Sustaining Costs)

Our financial model costs are based on the cost data from p128 of the 2018 BFS. Note that in the 2018 BFS, costs fall once the BOOT power station is paid off and transferred to Kalium Lakes ownership from year 6 In the 2018 BFS. While the BFS update of 4 March 2019 does not provide a cost breakdown, it provides overall cost guidance of US$178-207/t FOB assuming an exchange rate of 0.73 (ie A$243.8-283.6/t FOB).

The unit costs in the last two columns of the table above assume that the A$Mpa costs of the DFS still apply, but the unit costs are reduced due to the higher recovery and resultant higher output, and by the cost reduction in A$M related to the installation of the gas pipeline and ownership of the power Station (BOOT) from day one. These derived unit costs are within 3% of the guidance (see table above, bold figures), largely explained by WA State royalties.

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In addition, our model includes our estimated 5% marketing fee payable to K+S, and higher royalty rates.

Royalties

The Government of WA as at May 2018 had not clarified the royalty arrangements for potash producers. Industrial salt (sodium chloride) producers pay A$0.73/tonne royalty, while finished minerals like gold attract 2.5%. A tentative ruling by the WA Government was reported by Reward of a 3.75% royalty on SOP (Reward Minerals release 1 May 2018 p11).

In the KLL BFS of 18 September 2018 p131, Kalium Lakes assumed a WA state royalty rate of A$0.73/t for SOP, the same as applies to salt (Sodium Chloride), plus a Native Title royalty of 0.75% and a founders royalty of 1.9%.

We understand there has been no final ruling on WA State Royalties. In our modelling we have assumed a WA state royalty of 2.5%, giving a total royalty of 5.15%. If the 3.75% WA state royalty applies, our NPV would be reduced by A$14M, and if the A$0.73/t salt royalty applies, the NPV would be increased by A$26M.

Risks and Risk Management

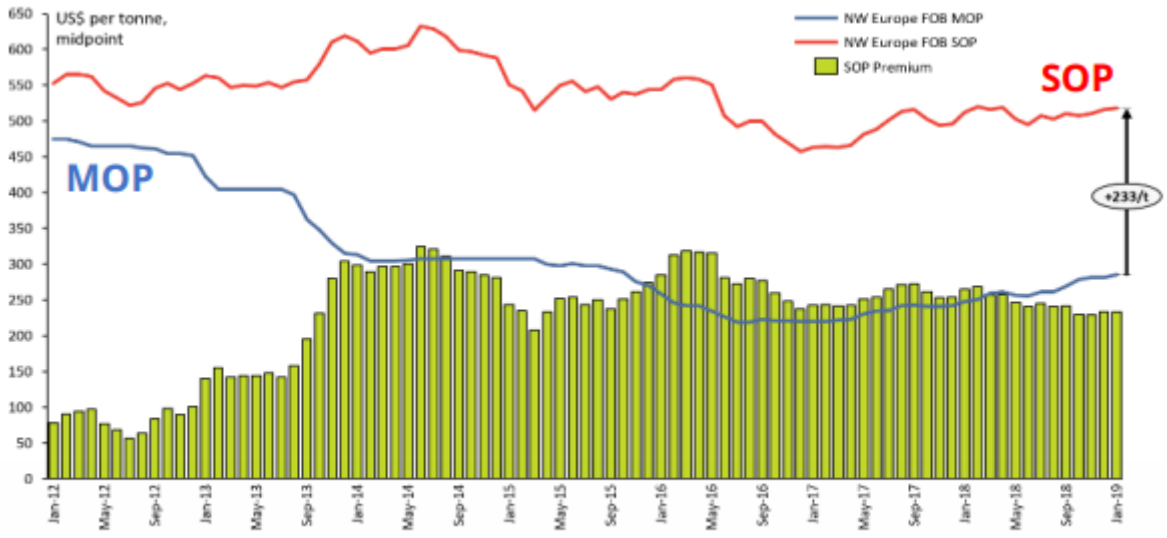
Risks and Risk Management

The major risk elements are now the completion of financing, the delivery and performance of the project and the market and price for SOP. We take comfort in the due diligence required by the debt providers.

Pricing risk (A$10/t fall in SOP price results in A$15.9M reduction in NPV)

The market for SOP in currently growing at 100-200Ktpa and has historically been well supplied by high cost Mannheim producers which convert MOP into SOP. Mannheim capacity is likely to be displaced at the margin by new lower cost brine based producers like Kalium Lakes and Danikali that are now progressing to financial close on their final funding. Mannheim capacity supplies over 50% of SOP and will remain the marginal cost source for the foreseeable future. The hydrochloric acid waste product of the Mannheim process is facing increasing environmental disposal restrictions and costs in all jurisdictions, suggesting the cost of Mannheim supply will trend upwards over time. The industry and pricing outlook is discussed in depth later in this report.

Figure 4 Sulphate of Potash (SOP) price and premium over Muriate of Potash (MOP)



Source: Kalium Lakes presentation 7 May 2019

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Marketing risk

Quite separate to the price risk is gaining access to market. SOP is an industrial product rather than a fungible commodity like gold or copper. There is no terminal market to dump onto. SOP must be placed into the market via specific sales contracts with offtakers. Kalium Lakes has managed this risk in two ways.

The first is starting with a small project (90Ktpa SOP) which is big enough to demonstrate capability, but small enough to be distributed through the market without offtakers taking too much risk in the event of an off specification start up.

The second is the contracting with K+S. K+S is one of the largest suppliers of SOP globally. It runs a dedicated logistics system, and is providing Kalium Lakes secure and bankable offtake for the first 90Ktpa, with see through pricing to market for a fee. We believe this will provide Kalium Lakes with very secure access to market.

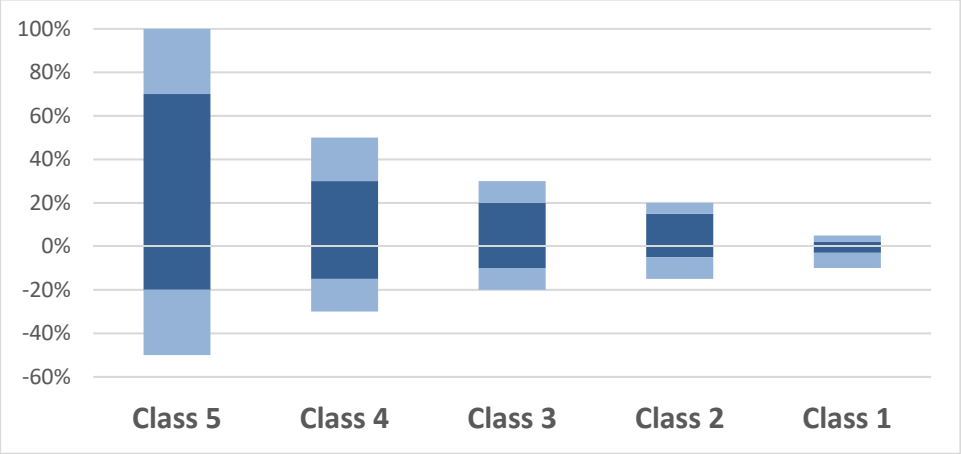
We have not included any upside in the event that Kalium Lakes, as the first mover in Australia, becomes the supplier of the 70Ktpa Australian market, which could earn it a sales premium of up to US$100/t in freight benefit. We are unclear how the K+S contract would work in this respect, but the company's latest presentation (7 May 19) indicates that K+S supplies around 50% of the Australian and New Zealand markets.

Pre-production capital and construction risk (A$10M increase in capex cuts NPV by A$8.4M)

The accuracy of the initial capital cost estimates are considered by the company to be AACE Class 2 or +/- 5% for the FEED costings reported in the BFS update of 4 March 2019. The long lead capital items have been ordered on fixed price contracts, from technically very strong suppliers, with strong histories of after sales support.

The main risks are now in execution with weather being the biggest variable. Surface and foundation works must be timed with respect to the wet season (December to April).

Figure 5 American Association of Cost Engineers classes of cost reliability and accuracy ranges



Source: AACE project costing classification (18R-97)

Processing risk and operating costs (A$10/t SOP cost increase reduces NPV by A$16.5M)

Processing costs have been subject to extensive pilot testing, including large scale on-site evaporation ponds. It will be important that the high 91% overall recovery now expected is achieved post ramp up.

Relative to most other equivalent projects, Kalium Lakes has taken a number of steps to engineer as predictable a project as possible. The use of off lake evaporation PVC lined ponds has added to the capital cost, but has increased pond performance predictability. If an unlined pond on lake were to have a significant undetected leak, there would be immediate loss of throughput, and additional capital for remediation requiring additional working capital. The Beyondie project is being constructed from processing units purchased from European suppliers, who are providing various forms of process guarantees, and with very well established post installation technical support services, in contrast to much lower cost equipment where the buyer carries all the performance risk.

Financing risk

This is discussed elsewhere in this report, but the bulk of the funding is in place, and the final equity tranch could well be a last opportunity for new investors to gain access to this company in size. Once in production, future funding is likely to come from cash flow, main street bank lending, and rights issues to existing shareholders.

Competitive Position vs Other Australian Projects

Kalium Lakes has one of the lowest ratios of initial capex/market capitalization of any of its Australian of overseas peers. Kalium Lakes has already announced its debt funding, leaving a relatively manageable equity raising to reach financial close and start construction. Only Danikali and Crystal Peak are at FEED stage and have capital estimated at under +/-15% accuracy, and they are still seeking debt funding.

Kalium Lake's initial capex excluding the gas pipeline and power station is 1.26x the company's market capitalization. We have removed the pipeline and power station because the other projects assume this is provided by contractors, and because Kalium Lakes has these assets funded by low cost long term debt.

Salt Lake (SO4) has a lower Capex/capitalization ratio at 0.4, but this relates to a demonstration plant at scoping study level and with a three year life. Salt Lakes 200Ktpa project is based on a 2016 scoping study, which makes it at the lower end of cost reliability.

The other projects have very large stage 1 production rates of typically over 400Ktpa. This is a large tonnage to be placed into a chemical product market by a new and unproven supplier, which alone is a barrier, but the attendant high initial capital cost relative to the share price also points to an equity market funding challenge.

Danikali is the best placed, at a capex/capitalization ratio of 1.09, but only if its 50% JV partner provides its share of the equity. Given the partner is government, this is unlikely , so the ratio is more likely to be 2.1.

Table 9 Kalium Lakes peer comparison (Share prices at 10 May 2019)

Project	Kalium Lakes	Kalium Lakes	Agrimin	Reward	Salt Lake	Salt Lake	Aust. Potash	Danikali	Crystal Peak
Stock Code	KLL	KLL	AMN	RWD	SO4	SO4	APC	DNK	CPM
Prod Ktpa	90	180	426	408	50	200	150	472	338
Share	100%	100%	100%	100%	100%	100%	100%	50%	100%
Local FX	AUD	AUD	AUD	AUD	AUD	AUD	AUD	AUD	CAD
Price Local/sh	0.60	0.60	0.60	0.10	0.60	0.60	0.08	0.75	0.16
Shares M	234	234	171	163	205	205	358	264	263
Mkt Cap A$M	140	140	102	16	123	123	27	198	42
Study Status	FEED	BFS	PFS	PFS	Scope	Scope	Scope	FEED	BFS
AACE Class	2	2	4	4			5		3
Cost Accuracy	+/-5%	+/-5%	+/-25%	+/-20%	+/-30%	+/-30%	+/-35%	+/-10%	+/-15%
Capex A$M	216	348	545	405	49	191	175	431	589
Less gas/power station A$M	39	39	0	0	0	0	0	0	0
Adjusted Initial Capital A$M	177	309	545	451	49	191	175	431	589
Capital Intensity A$/tpa capacity	1967	1714	1280	1106	980	955	1166	914	1744
Capex/Mkt Cap	**1.26**	**NA**	**5.33**	**27.71**	**0.40**	**1.55**	**6.52**	**1.09**	**13.99**
AISC A$/t FOB	**284**	**244**	**341**	**353**	**387**	**241**	**368**	**396**	**377**

Source: Company releases – KLL 4 Mar 2019, AMN 7 May 2018, APC Mar 2017, RWD 13 Jul 2018, SO4 50ktpa 31 Jul 2018, SO4 200ktpa 29 Aug 2016, DNK 29 Jan 2018, CPM 21 Feb 2018. Notes: AACE class ranking the reliability of the capital estimates shown in the Reliability percentages, AISC = All in Sustaining Costs ie including sustaining capital, Gas Pipeline and Power Station capital deducted from KLL for comparability to other cost estimates.

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On operating costs, Kalium Lakes is now at the bottom of the cost curve, relative to almost all these other projects, if the cost savings of owning the gas pipeline and power station are included. The Salt Lake 200Ktpa project is lower, but as noted before, is a 2016 scoping study, with a +/-30% accuracy.

Project Description and Key Elements

19.6Mt Resource and 5.1Mt reserve capable of supporting expansions to 300Ktpa plus

The detailed table below is from the BFS and is what our model is based on. The presentation of 7 May 2019 quotes 19.6Mt vs the BFS resource of 18.7Mt.

Table 10 Resource of 18.7Mt SOP with an exploration target of an additional 21Mt of SOP at time of BFS

Lithology	Vol. 10^6 m^3	Porosity	Brine Vol. 10^6 m^3	Specific Yield	DBV[1] 10^6 m^3	K mg/L	K Mt	SO_4 mg/L	SO_4 Mt	SOP Grade kg/m^3	SOP Mass Mt
Measured											
Lake Sediments	118	0.47	56	0.17	20	7116	0.14	19292	0.39	15.9	0.32
Alluvium	96	0.33	32	0.12	11	2940	0.03	7959	0.09	6.6	0.07
Palaeovalley Clay	799	0.35	282	0.06	47	4609	0.22	14475	0.68	10.3	0.48
Sand and Silcrete	228	0.33	75	0.21	48	5643	0.27	17282	0.83	12.6	0.60
Bedrock	304	0.24	72	0.08	23	4648	0.11	14995	0.34	10.4	0.24
Total	1546					5155	0.77	15606	2.33	11.5	1.72
Indicated											
Lake Sediments	477	0.45	215	0.11	53	5993	0.32	18526	0.98	13.4	0.71
Alluvium	1380	0.36	494	0.13	186	5090	0.95	14151	2.63	11.4	2.11
Palaeovalley Clay	1478	0.33	494	0.07	101	6000	0.61	16876	1.70	13.4	1.35
Sand and Silcrete	332	0.31	104	0.21	69	4833	0.33	13841	0.96	10.8	0.74
Bedrock	5506	0.23	1243	0.06	325	5846	1.90	17277	5.62	13.0	4.24
Total	9173				765	5591	4.10	16197	11.89	12.5	9.15
Inferred											
Lake Sediments											
Alluvium	2064	0.45	929	0.11	98	6239	0.61	18663	1.83	13.9	1.36
Palaeovalley Clay	22929	0.35	8025	0.05	401	5724	2.30	17185	6.89	12.8	5.12
Sand and Silcrete	1785	0.31	553	0.21	116	5073	0.59	15384	1.78	11.3	1.31
Bedrock											
Total	1546		9507		615	5683	3.50	17079	10.50	12.7	7.79
Total											
Lake Sediments	595	0.46	271	0.12	73	7116	0.46	18736	1.37	14.0	1.03
Alluvium	3540	0.41	1455	0.08	295	2940	1.59	15419	4.55	12.0	3.55
Palaeovalley Clay	25206	0.35	8801	0.02	549	4609	3.12	16896	9.28	12.7	6.95
Sand and Silcrete	2345	0.31	732	0.10	233	5643	1.19	15318	3.57	11.4	2.66
Bedrock	5810	0.23	1315	0.06	348	4648	2.01	17126	5.96	12.9	4.48
Total	12265		9507		1380	5155	8.37	17914	24.72	13.5	18.7
Expln Target			32998		2831	3328	9.42		25.91		21.0

Source: Resource per BFS release 4 September 2018 (1. DBV = Drainable Brine Volume)

Kalium Lakes has adopted the AMEC/CIM standard and now JORC for resource reporting where resource volume is calculated from aquifer volume x Specific Yield (Sy) and is the standard used by Australian Potash (APC), Reward Minerals (RWD) and Agrimin (AMN), but not Salt Lake (SO4). The alternative is to use aquifer volume x porosity. Porosity measures 100% of the brine held within the aquifer, while Specific Yield estimated that amount of brine that will leave the aquifer under conditions of gravity drainage, and in Kalium Lakes' case, the drainable brine generated using Specific Yield is ~9% of the total brine that would be generated by the porosity calculation. The remaining brine is held in the aquifer by capillary action and is effectively not commercially extractable.

Kalium Lakes was the first of the Australian brine project developers to report a reserve, signed off by independent potash industry expert K-UTEC and also independently reviewed by Advisian. The requirements for reserve reporting are more restrictive that resource reporting. The reserve covers 57 years' production at 90Ktpa or 28.5 years' at 180Ktpa prior to including the sizable remaining Indicated and Inferred Resources.

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Table 11 Reserves of 5.1Mt of SOP or over 30 years life at 180Ktpa SOP

Abstraction Point	Volume 10^6 m^3	Pumping days	Ave Pumping rate	K mg/L Min	K mg/L Max	K mg/L Ave	K Mt	SO_4 Mt	SOP Mt
Ten Mile Bores	104	10942	1124	5084	10686	8078	0.79	2.25	1.75
Ten Mile Trench Pumps	28	9887	850	3371	9385	7037	0.21	0.60	0.46
Sunshine Bores	226	10396	832	2500	7414	5226	0.96	2.78	2.14
Sunshine Trench Pump	55	9356	1636	2500	7513	6305	0.35	0.96	0.78
Total							2.30	6.59	5.13
Proven Reserves	119					6207	0.74	2.14	1.65
Probable Reserves	295					5306	1.57	4.46	3.49
Total 2P Reserves	414					5565	2.30	6.60	5.13

Source: BFS 18 September 2018

The SO_4 content is significant, because it determines whether the brine will produce MOP or the higher value SOP. The minimum SO_4:K ration for SOP production is 1.23:1 vs Beyondie at 3:1.

The Sodium Potassium (Na:K) ratio for the Beyondie Project is 8.8 vs 15-22:1 for other deposits. Sodium chloride is table salt or swimming pools additive, and sells in bulk form for around US$35-65/t which is less than the cost of transport from most of the Australian brine potash projects, so it is a waste product. It has to be excavated from the ponds and disposed of at regular intervals, and is a cost to potash production. Selling salt is a potential option for KLL given cheap back haulage rates of A$40/t.

The SO_4 to calcium ratio is also important, with a minimum SO_4:Ca ratio of 2.4:1 required for SOP production. These ratios are discussed in the Kalium Lakes prospectus of 28 November 2016, on p22 of the expert report by Snowden, quoting potash industry expert K-UTEC.

Beyondie Potash Project – Description of Process Route

- Brine collection by trenching the surface (surface aquifer) and basal aquifer drainage by pumped boreholes (paleochannel aquifer).
- Solar evaporation of brine. In the first set of ponds, the waste products of gypsum, halite (ie NaCl or table salt) and astrakainite precipitate out and are left in the ponds, to be harvested when full. The remaining brine crystallizes out in the next set of ponds, producing separate leonitic, schoenitic and carnallitic mixed salts which are harvested and stored separately. The remaining bittern can be sent to further ponds for extraction of by-products, including epsomite ($MgSO_4$) and other magnesium products.
- Pre-treatment of raw salt to separate NaCl and $MgCl_2$. The mixed salts still contain halite (NaCl), and that is removed at this stage to produce a pure schoenite. Schoenite is a hydrated mix of potassium and magnesium sulphates ($K_2SO_4MgSO_4.6H_2O$). The schoenite is separated out using flotation, hydrocycloning and filtration, followed by leaching.
- Schoenite decomposed into SOP. Following pre-treatment, the schoenite is broken down using processes of heating and recrystallization.
- Possible production of magnesium products such as epsomite and bischofite from the remaining bittern from the evaporation ponds.

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Key Volume Metrics and Change from BFS to FEED Estimates

Table 12 Comparison of project at BFS and FEED stages

	Per FEED	Per BFS	Change
Initial Production Rate Ktpa	90	82	9.8%
Initial No of Bores	20	36	-44.4%
Initial Trenching Km	21	58	-63.8%
Initial Yearly Brine Volume Glpa	7	9	-22.2%
Evaporation Pond Area ha	399	445	-10.3%
Primary Pond Recovery	94.0%	94.0%	0.0%
Purification Plant Recovery	96.0%	77.0%	24.7%
Overall Recovery	91.0%	72.0%	26.4%

Source: BFS Update

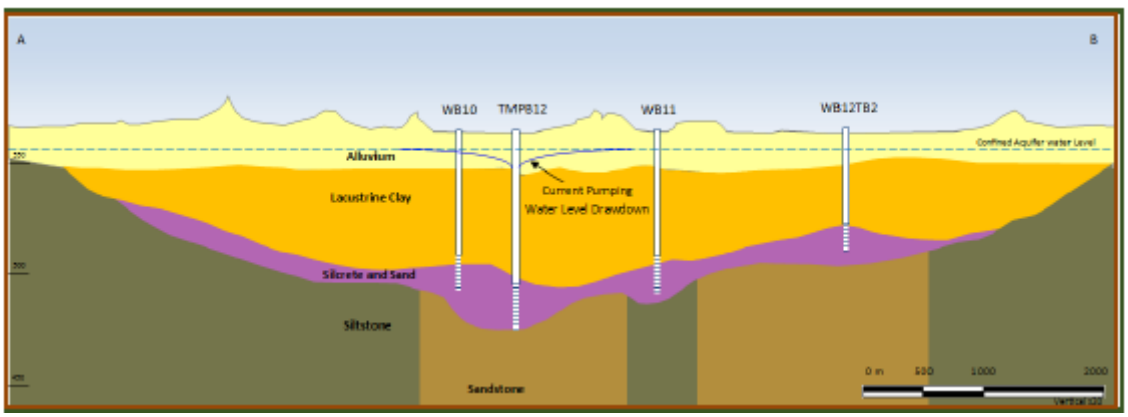
The major difference between the project at BFS and FEED (Front End Engineering and Design) stages is that there has been a 26.4% increase in recovery, feeding into a 9.8% increase in output, and a 10.3% reduction in evaporation pond area. The Brine volumes are 22.2% lower initially but are unchanged later at 14Glpa for both FEED and BFS, giving a lower Life of Mine change.

First Major Issue: It is all about recoverable brine - Testwork has been extensive and intensive

- 632 auger and drill holes across the resource
- 12 large diameter (200-250mm) cased boreholes
- 13 mini aquifer tests
- 1640m of trenches installed up to 5m in depth with 60 days of trench pumping
- 11 weeks of trial trench test pumping
- 45 weeks of trial pond pumping
- Over 260 million litres of brine pumped from aquifers

In relation to the specific wells involved in the pumping trails, the volume of pumping has provided first hand performance on the aquifer water level drawdown. During the period of pumping 10-20L/sec, the water level was drawn down 17m between August 2017 and October 2017, while pumping at 6-12L/sec in March and April 2018 held the drawdown at a relatively constant 6m. This data confirms the modelling of the reserves, and provides confidence in the capital costs allocated to the development of the required bore field.

Figure 6 Deposit cross section showing both deeper paleochannels and near surface aquifers



Source: BFS release 18 September 2018

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Second issue: Evaporation pond performance

The Australian projects benefit from having the world's best evaporation rates, with three times the evaporation rate available in the USA. China's Luobupo in the Gobi Desert has high evaporation rates overall, but strongly biased to summer due to the freezing conditions in winter. The Atacama in Chile/Argentina appears to have similar evaporation rates to the USA. While sunshine is free, for a given production output, the evaporation rate determines the size of the ponds and the residence time in the ponds, given the same brine grades.

Table 13 Selected evaporation rates

	Kalium	Agrimin	Reward	Salt Lake	Aust. Potash	Luobupo China	Compass USA	Crystal Peak US
Evaporation Rate mm pa	3800	3400	4100	3200	3200	3500	1300	1219

Source: Company reports

The evaporation of over 260 megalitres of brine and processing of the concentrate on site and in the K-UTEK plant in Germany is likely to have resulted in a very well understood project, in what is not new technology. The PCV lined off lake ponds add performance certainty as discussed below.

Third issue: Cost cutting vs risk reduction

Kalium Lakes has decided to build lined ponds away from the lake surface, because the brine losses from unlined ponds observed during its pond verification trials were considered unacceptable, and the delay in accessing lake ponds is also an issue for consideration. This is an interesting decision, because this is the only brine project in Australia to choose this approach. All the others are proposing on-lake unlined ponds for all or most of their ponds, relying on compaction of surface clays to retain the brine during the evaporation process.

Unlined ponds have been observed to experience significant leakage, and leakage rates of 0.25mm/day translate into potash recovery losses of 7-15% of brine pumped. Kalium is assuming 94% recovery in the evaporation ponds, where the other Australian projects Reward Minerals assumes 0.25mm/day on lake unlined pond leakage in its PFS of 1 May 2018.

Lake sediment is sufficiently boggy that to generate sufficient surface hardness to support heavy salt harvesters, the evaporation pond would have to build up a thick salt bed, which in turn requires higher pond retaining walls, and thicker salt accumulation as a base, which requires time.

Each project will decide what works in its specific environment. Some projects (eg Australian Potash) are planning to have the initial halite ponds unlined on-lake, with downstream ponds with the higher concentration potassium brines in lined off-lake ponds. Having bitten the cost bullet, the Kalium Lakes' all off-lake lined pond approach costs more, but it results in a higher degree of technical deliverability, lower risk to investors, and increased bankability from a lender's perspective.

Kalium Lakes' higher grade also means that it requires a smaller pond area to produce its target production rates, and so can afford the additional expense of lining its ponds.

The benefit of lined ponds is increased efficiency. SO4 states that seepage of less than 0.25mm/day is acceptable, that their ponds are designed to achieve less than 0.125mm/day, and SO4 claim this has been achieved in actual tests, but have not reported any details. However, for a high grade project like Beyondie, that would mean pumping an extra 1.2GL per year, and more for the other lower grade projects. The pump rate increases significantly if the losses are from the later ponds in the sequence, containing greater concentrations of potassium.

The Beyondie Project has estimated its recoveries at 94% in the evaporation stage and 96% in the processing stage for a total recovery of 91%. The pond recovery is reasonable given the pond construction compared to the Crystal Peak's Sevier Lake Project, USA, which reports pond recovery of 85% (unlined on-

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lake ponds) and plant recovery of 80%. Kalium has lifted its plant recovery from 80% to 96% in the recent BFS update, reportedly due to increased efficiency in flotation recovery of potassium from the tailings stream. This was known at the time if the 2018 BFS but held back until confirmed in early 2019.

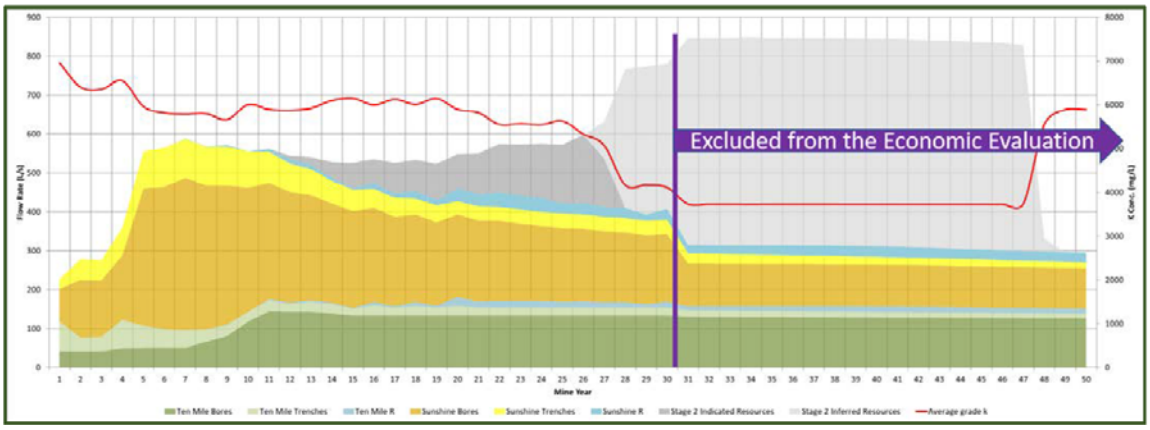
On Kalium Lakes' estimates, a 0.125mm/day leakage would result in an evaporation pond recovery of potassium from total brine pumped of around 80%. Combined with 80% plant recovery, the implied total recovery would be 64% of brine delivered to the ponds. Note this is not the recovery from the resource, given that leakage from on lake ponds can be recovered, but it would mean that additional brine delivery back into the ponds to support the SOP production capacity. Given the stated recoveries of SO4 and Agrimin of 70% with unlined ponds, they must be expecting extremely low rates of leakage. Note we are not disputing the reported expected leakages, but we do believe that lined ponds with the leakage detection systems proposed by Kalium Lakes provides more management control and lower risk to investors.

Brine source modelling for the 90Ktpa expanding to 180Ktpa project

The figure below shows the proposed brine sources for a 50 year life project, starting at 90Ktpa SOP and ramping up to 180Ktpa SOP. Our financial model assumes a faster step up to 180Ktpa.

The two green layers represent bore and trench supply from Beyondie and 10 Mile Lake (bore reserves) and the brighter yellow layers represent bore and trench supply from Sunshine Lake (trench reserves). The grey bands represent trenches and bore sources from White Lake, Central, and Aerodrome Lake. The light yellow bands include Yanneri Lake, Terminal Lake, North Sunshine.

Figure 7 Brine source and volumes for 24-164Ktpa project (the 90-180ktpa revised project requires lower volumes)



Source: Kalium Lakes BFS 18 September 2018

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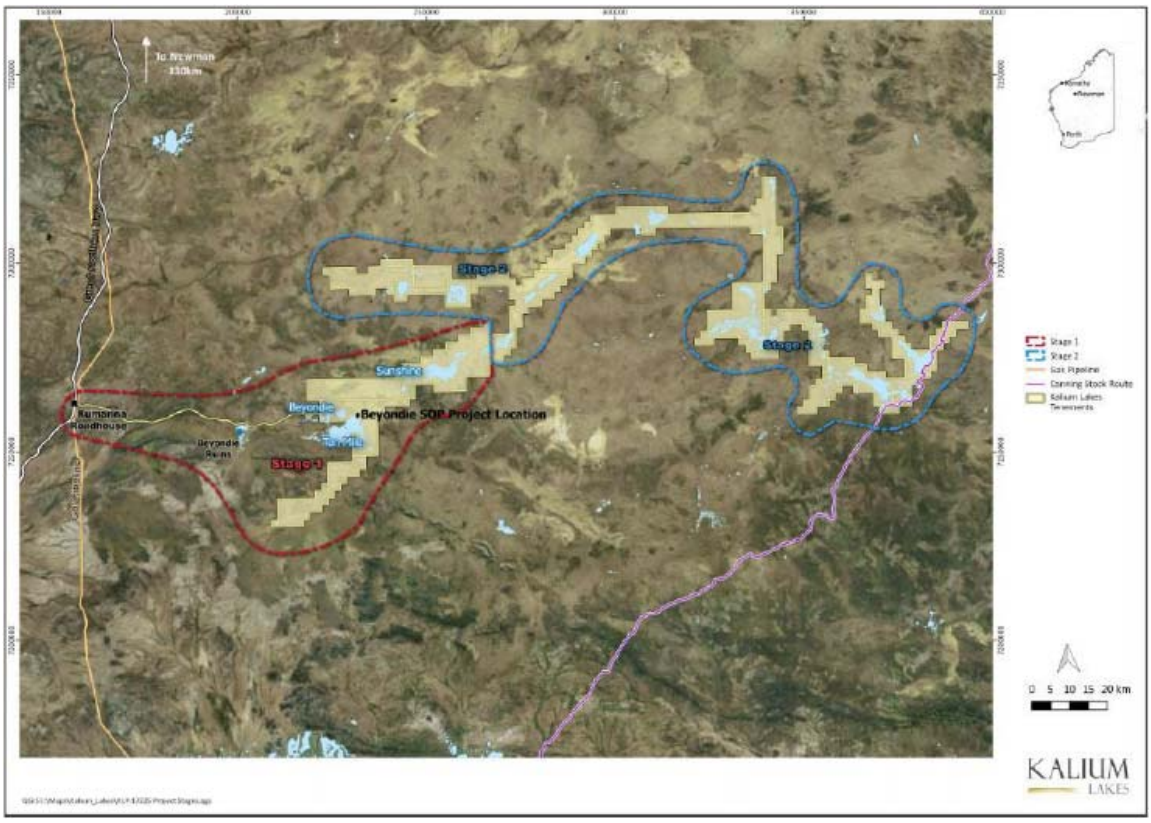
Figure 8 Locations of brine sources for 180Ktpa project



Source: Kalium Lakes BFS release 18 September 2018

Resource and reserve sufficient to grow production to 300Ktpa or more

The business will be scalable. Once the Phase 1 90Ktpa stage demonstrates product quality, and competitive cost, the project will be able to grow with the market using its own cash flow, limited only by its resource and reserve base.

The current reserve is entirely within Beyondie/10 Mile and Sunshine due to drilling density and where pump testing has been carried out to satisfy both JORC and the elevated reporting requirements of the CIM guidelines.

We believe the current resources are likely to be sufficient to support a 300Ktpa SOP operation for 20yrs, and any success from the stated exploration target would extend that life.

Fourth Issue: Processing plant performance

The performance of the processing plant comes down to the experience of the designers, K-UTEC, is a worldwide active engineering and research institute, working for 60 years in all fields of salt minerals: exploration, engineering and design, mining and production.

The group works on international mining standards (CIM, JORC, PERC etc.), covering expertise in geology, geophysics, hydrogeology, processing, and owns and operates large testing facilities for all steps of salt processing in a pilot scale, with facilities for testing compaction, magnetic separation, and a climate chamber for solar evaporation simulation.

K-UTEC has worked on a number of projects in recent years eg Archean's Gujarat 130Ktpa SOP operation, Salines 20ktpa SOP plant in Austria and a number of lithium brine projects.

The banks have required SRK and K+S to independently verify the test work.

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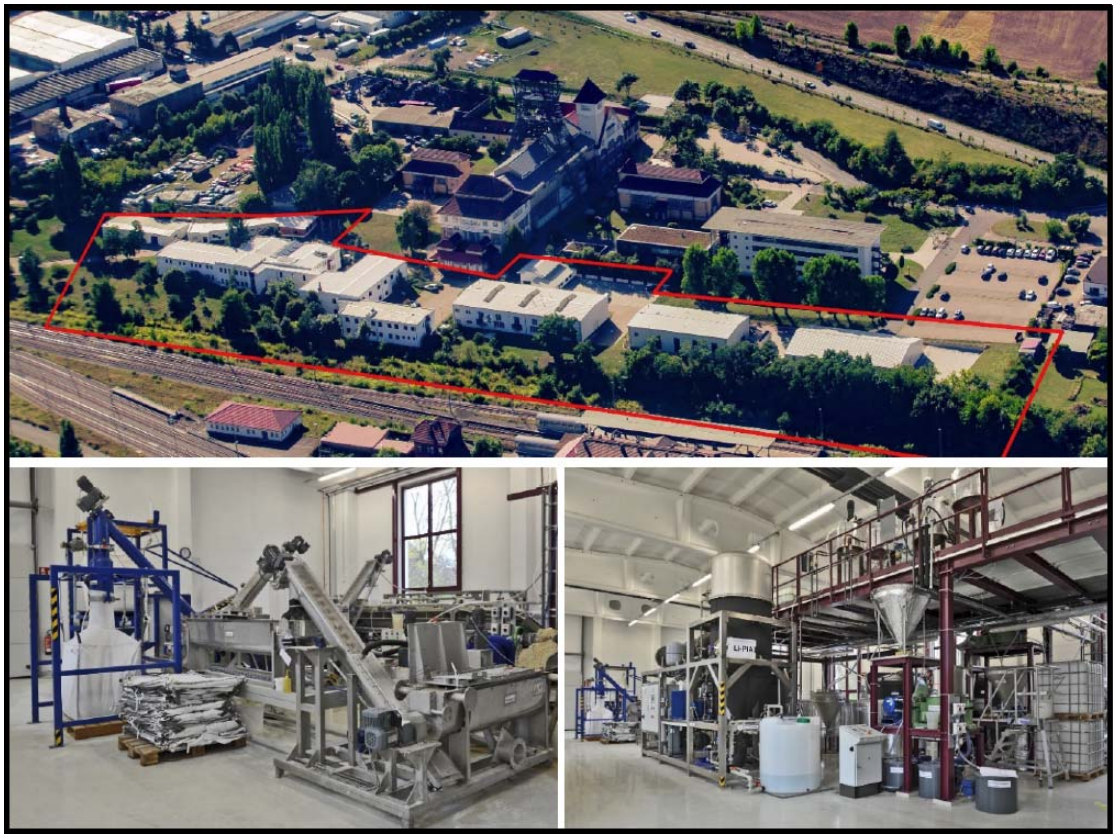
Figure 9 K-UTEC pilot plant testing facility, Germany



Source: BFS 18 September 2018

Figure 10 Demonstration ponds (white rectangle at top centre is a light vehicle)

Source: KLL presentation 22 August 2018

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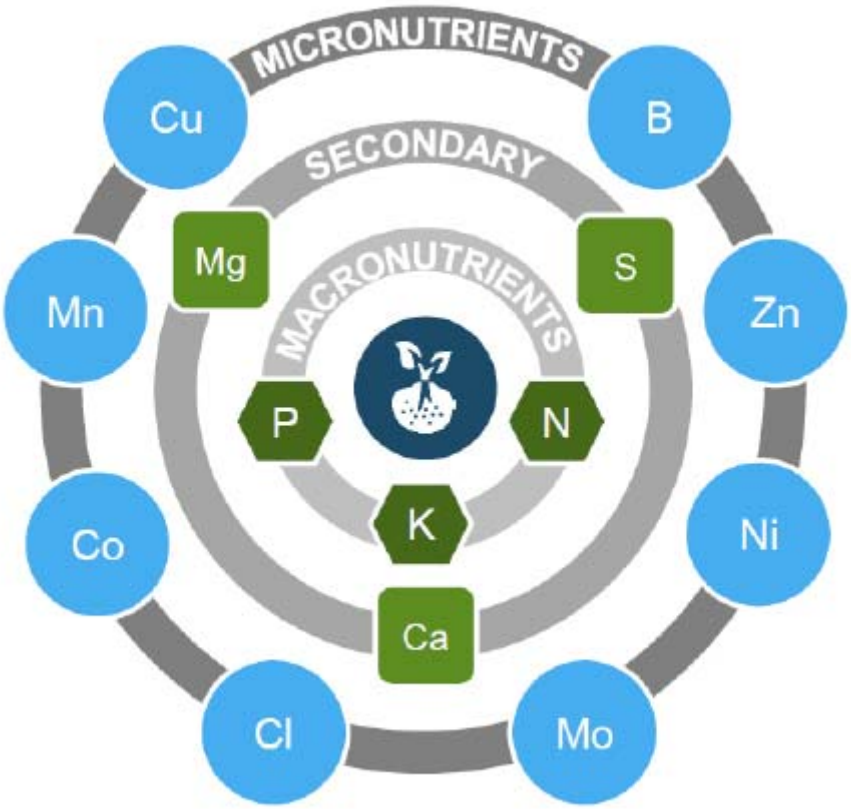
Potassium is one of the big three macronutrients that make up fertilizers

The increasing demand for food is increasing the demand for fertilizers of which potassium (atomic symbol K) is one part. Potassium is classed as a major nutrient, as opposed to a trace element, and is required in quantity. In regions of heavy cropping, potassium is required each cropping cycle.

In 2015, FAO estimated demand for nitrogen was 288Mt (as N), phosphate 64.7Mt (P2O5) and potassium 64.7Mt (as K2O or potash). Of the secondary elements, sulphur consumption as fertilizer was 16Mt in the same year (The Sulphur Institute).

Figure 11 Required Crop Nutrients



Source: Compass Minerals' 2016 Annual Report

Potassium has many different roles in plants:

In photosynthesis, potassium regulates the opening and closing of stomata, and therefore regulates CO2 uptake.

Potassium triggers activation of enzymes and is essential for production of Adenosine Triphosphate (ATP). ATP is an important energy source for many chemical processes taking place in plant tissues.

Potassium plays a major role in the regulation of water in plants (osmo-regulation). Both uptake of water through plant roots and its loss through the stomata are affected by potassium. Increased potassium is known to improve drought resistance.

Protein and starch synthesis in plants require potassium as well. Potassium is essential at almost every step of the protein synthesis. In starch synthesis, the enzyme responsible for the process is activated by potassium. Potassium has an important role in the activation of many growth related enzymes in plants.

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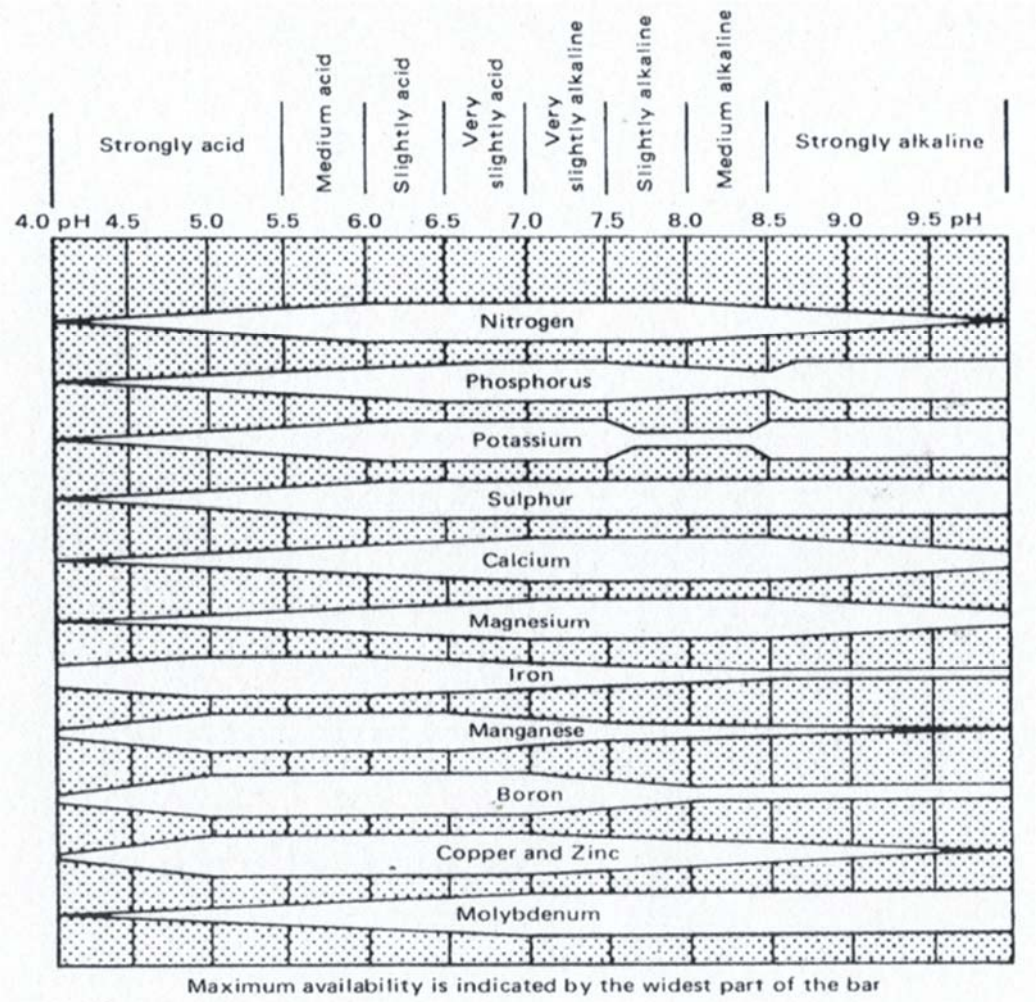
Effective nutrient delivery depends on balance

When applying fertilizer, more is not necessarily better, and this is where SOP has special advantages. Soil acidity and competition for uptake between competing elements affect the plants' ability to absorb specific minerals, and different fertilizer products release their minerals over different time frames (eg slow release fertilizer products).

Figure 12 Effect of soil acidity on the take up of minerals



Source: Discovering Soils CSIRO 1977

The figure above demonstrates the impact of acidity on mineral uptake. In acid soils (pH below 5.5) the plant's ability to absorb nitrogen, phosphorus and potassium is reduced, and ability to take up iron, manganese and boron is increased, reducing yield and in extreme cases rendering the plant poisonous. Where acidity is an issue, SOP is preferred over MOP because of the absence of chloride. Soil acidity is cumulative, and very expensive to reduce, so cumulative build-up is to be avoided.

There is also some strange behaviour if the soils become too alkali, and at marginally alkali levels of over 7.5, the take up of potassium is severely restricted. Alkalinity can be increased by the presence of ions like calcium (adding calcium carbonate is the most common way to reduce acidity or increase alkalinity). We will discuss polyhalite later, but the calcium in polyhalite could be a problem in some soils, preventing the take up of potassium.

For some crops, root and leaf structures are sensitive to chloride burn and so MOP is not used.

Fertilizer is a cost to farmers, so there can be a preference for applying the minimum as late in the cropping cycle as possible. That typically means application during the period of peak growth, and only apply the minerals required. In the potash context, this factor is why MOP is generally preferred, because it is the simplest and most concentrated form of potassium available, if the chemistry allows its use.

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Sources of potassium to agriculture

The major sources are Muriate of Potash (MOP) and Sulphate of Potash (SOP). Other sources available to agriculture include Nitrate of Potash (NOP), and potash in various forms with trace elements like magnesium (SOPM). Polyhalite is a new product that emerged in 2011.

MOP is the cheapest source of potassium, and has the greatest market share. However, MOP cannot be used in soils where acidity is an issue, or for a number of plant types. Where soil chloride levels are higher than 600 mg/kg in the top 30 cm, the use of MOP should be avoided. Soil acidity is a major control over a plants' ability to absorb nutrients. The acidity issue means that SOP is effectively serving a separate market to MOP. Generally, the more arid the environment, the bigger an issue chlorine and acidity becomes.

SOP also provides sulphur, which is also essential for plant growth.

Polyhalite – a risk to supply, but a manageable risk

Polyhalite is typically 6-10% water in the crystal lattice with 14% potash (K2O) 19% sulphur, 6% magnesia (MgO) and 17% calcium oxide (CaO). Polyhalite contains virtually no chloride.

Some polyhalite was produced in the US during World War II but ceased when MOP became plentiful. The only operating polyhalite mine in the world at present in the Boulby operation of ICL in the UK. This mine started potash production in 1969. It first produced a polyhalite product in April 2011, and reached one million tonnes of cumulative production in August 2017. Boulby is ramping up from 130Ktpa to 600Ktpa, and produced 450Ktpa in 2017.

Sirius is proposing a 10Mtpa polyhalite mine close to Boulby, and has reported negotiating 3.6Mtpa in take or pay contracts. In its 2017 prospectus, Sirius indicated it intended to sell its product at US$130-160/t FOB Teeside. At 14% potash, that is around US$1000/t of contained potash (K2O) vs US$320/t for potash in MOP and US$1200/t for potash in SOP.

The company has engaged JP Morgan to raise US$3800M to fund the project starting with a US$400M equity issue at 15-18p that was underway at time of writing (6 May 2019).

The availability of polyhalite is likely to create new markets for fertilizer. Polyhalite sells itself as a package of minerals (potassium, sulphur, magnesium, calcium) and for certain applications it should be a very useful product. An example may be the very sandy and highly leached soils in the Brazilian Amazon Basin, where polyhalite may have a role as a relatively cheap, complete soil builder, and a supplier of a large range of minerals missing from the native soil.

Sirius has established the Poly4 website with technical studies of polyhalite application and benefits. From a review of this site, a large number of studies appear to be targeting MOP markets. The strategy appears to be to recommend a blend of MOP and polyhalite (in say a 75:25 split). The polyhalite inclusion would reduce the MOP usage and add a number of other elements to the soil, and it is this overall balance that produces higher crop yields. This would impact the MOP market rather than the SOP market.

There will be a significant amount of the production from Sirius that will end up competing directly with SOP. This impact would be start around 2023 and 2024 as the project ramps up to the 10Mtpa rate. However, in a number of environments, the high calcium content may take the soil into the alkali range where uptake of potassium is virtually shut down. We believe this is likely to be the case in typical Australian soils, for example.

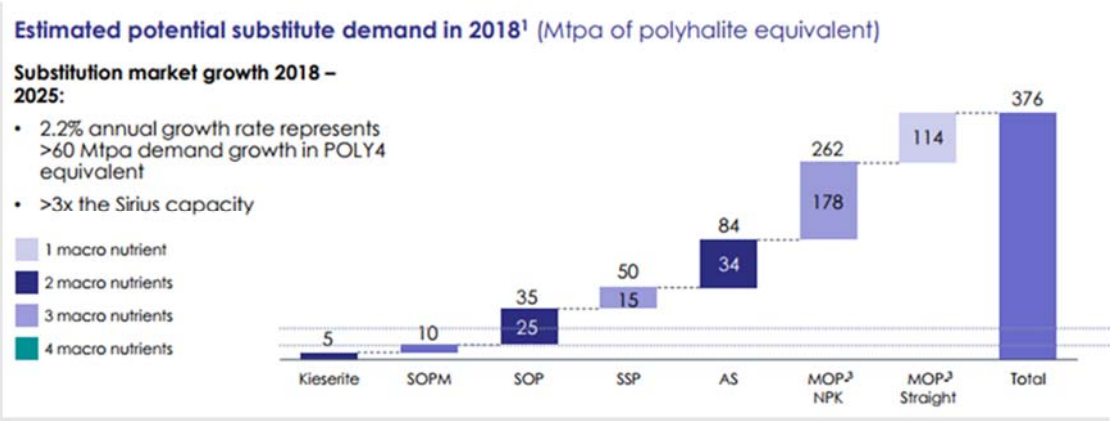
If a grower is seeking potassium specifically, MOP and SOP are likely to be preferred. MOP is a significantly cheaper source of potassium, and while SOP is currently comparable to polyhalite in cost of contained potassium, it is a third of the volume so cheaper to handle and spread, and it does not have the additional elements that could damage soil chemistry.

Polyhalite is less soluble than MOP or SOP. There are some applications where this could be a major issue, but for most applications, solubility rate is less of an issue as long as differences in application timing and technique are adjusted. (https://juniperpublishers.com/artoaj/pdf/ARTOAJ.MS.ID.555690.pdf).

Sirius has made their own estimates of where the substitution markets may be, as shown in the figure below. They estimated that total polyhalite equivalent demand in 2018 would be 376Mt, and the SOP/SOPM markets would amount to 45Mt (SOP +SOPM) or 12%. If Sirius' full production is placed on this

basis, 12% of the initial 10Mtpa would be 1.2Mtpa of polyhalite, or 340ktpa of SOP equivalent directed at existing SOP users, which the SOP market would find very manageable in our view.

Figure 13 Sirius estimate of substitute demand for polyhalite

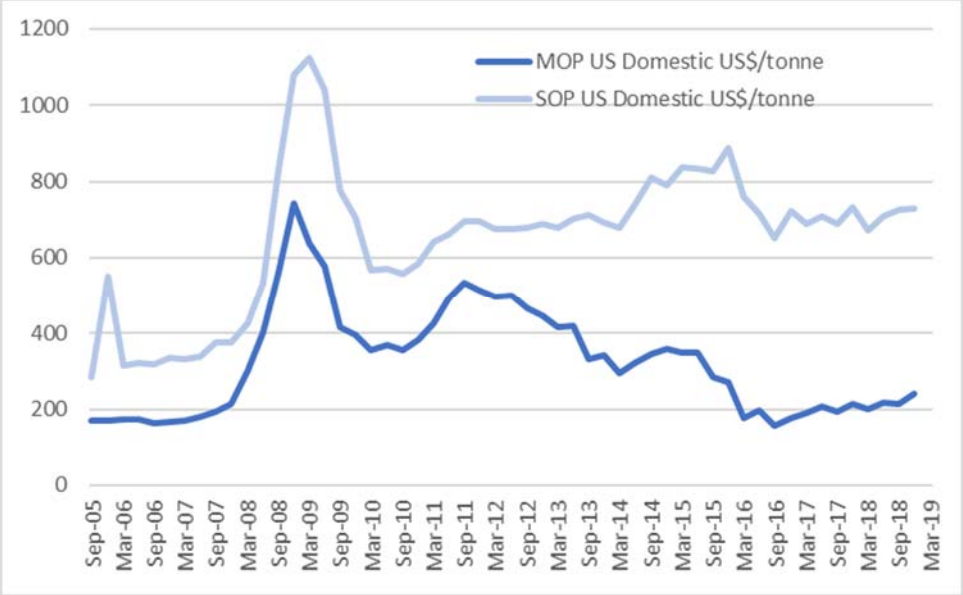


Source: Sirius presentation September 2017

Sulphate of Potash (SOP) Price Outlook

Price history points to a US$400-500/t premium of SOP over MOP driven by costs

Figure 14 US Domestic Prices for SOP and MOP



Source: Compass and Nutrien quarterly filings

Muriate of Potassium (MOP) and Sulphate of Potassium (SOP) are markets with surprisingly separate price dynamics. The evidence for this is the stability of the SOP price since 2010, in a period of falling MOP prices.

Until 30 July 2013, major and low cost MOP producers Uralkali and Beloruskali were part of a common marketing agreement (BCP). That agreement ended on that date, and the impact of the collapse on supplier discipline resulted the MOP price weakness in the chart above.

SOP can be produced from MOP using the Mannheim process, accounting for almost 50% of current supply. The cash cost of the Mannheim is typically in the range of US$400-500/t FOB but depending on the cost of MOP, energy and by-product disposal. Most of this capacity is in China. As a rule of thumb, Mannheim SOP carries a cost burden of US$150-200/t plus the MOP price.

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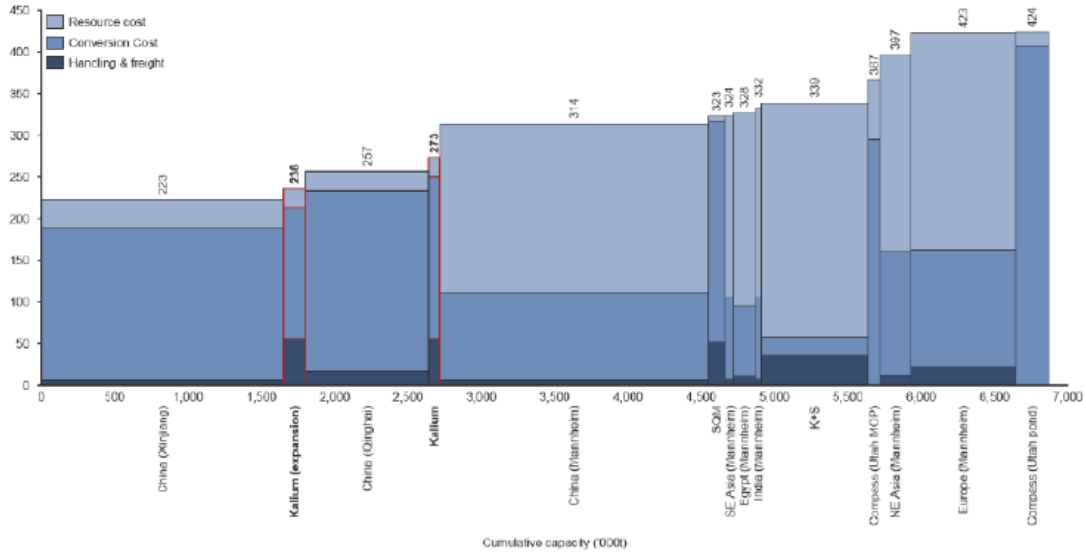
Figure 15 SOP cost curve to which must be added around US$100/t freight to markets (KLL A$284/t or US$200/t)



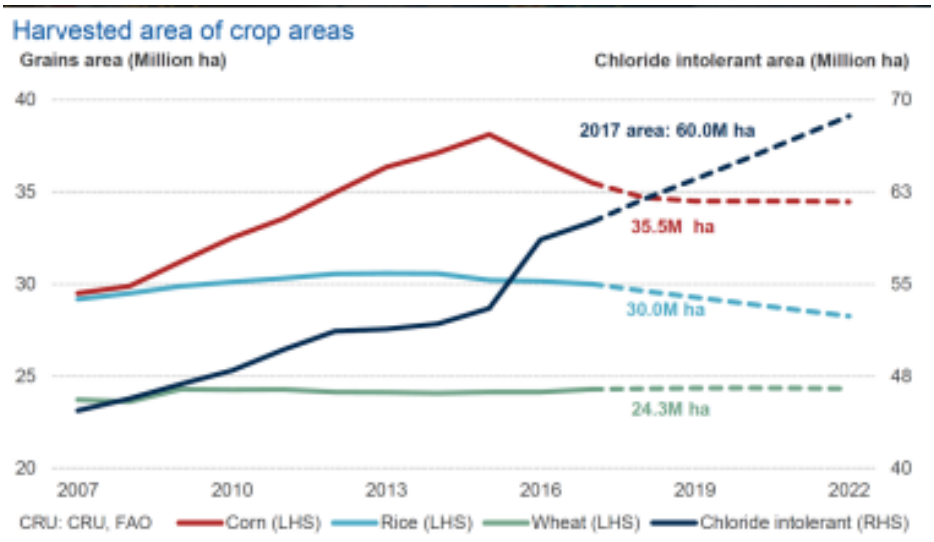
Source: Kalium Lakes BFS 18 September 2018 p129

The current powder SOP price (52% K_2O ex works NW China is RMB 3050/t or US$445/t. Allowing US$100/t transport to Asian markets gives a price consistent with the current Australian price of around US$530/t CIF for exporters or A$530/t FOB for importers

The long term SOP price we have used in our valuation is US$480/t in 2018 dollars, which is supported by the cost curve in the figure above

Chloride intolerant acreage growing at faster rate

Figure 16 Growth in harvested acreage highlights strong relative growth of SOP consuming crops



Source: Agrimin presentation March 2019 from CRU

The strength of acreage growth may be a reason for sustaining longer term premiums for SOP.

Market commentators forecast this premium will erode, without saying why it is currently so large. We believe there are some very powerful messages in the current price level, including:

1. The strength of chloride intolerant acreage growth leading to shortage of supply
2. Rising costs of waste disposal, being the disposal of hydrochloric acid from the Mannheim process.

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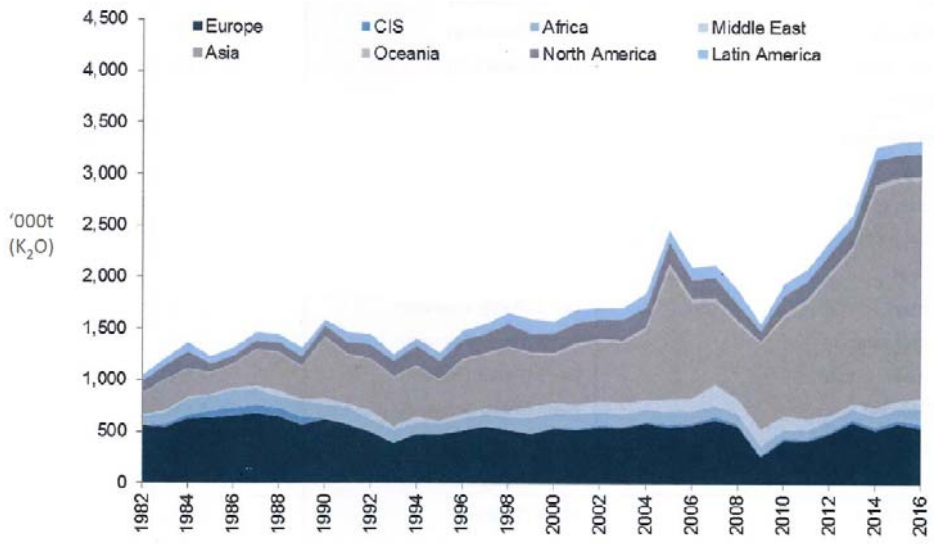
We believe that as a result of these factors, the premium may not erode as much or as fast as we are assuming in our US$500/t estimate.

The MOP market

Average December 2018 quarter realized MOP price reported by Potash Corp was US$242/tonne and SOP price reported by Compass Minerals was US$730/tonne. Shipping costs to Australia are of the order of US$100/t, which will work in favour of Australian producers when selling to the local market.

The global potash market (MOP + SOP) is well supplied over the next two years. This means that the current upward trend in MOP prices could be capped, and consensus appears to take the view that a MOP price of US$300/t ex works represents a long term balance, to which freight should be added.

Figure 17 SOP demand in Potash equivalent tonnes by region with Asia the big growth driver



Source: Fertecon, from Agrimin presentation 4 August 2017

The SOP market

Consumers of SOP have little or no ability to switch to MOP either because they are cropping in more arid environments where acidity is an issue, their crops are intolerant of chloride, or where MOP would cause unacceptable leaf and root damage.

To the extent that switching has occurred, that happened some time ago, and if anything, a reduction in the SOP premium over MOP would probably add additional SOP demand as those users switched back. Soil acidity is cumulative, and while there can be some short term switching, permanent use of the wrong potash product can cause irreversible damage to the soil chemistry.

The SOP demand has seen very strong growth, doubling since 2010 (figure above).

The usual premium of US$200-300/tonne generally relates to the differential in cost of production. About 50% or 3Mtpa of current SOP supply comes from Mannheim furnaces consuming MOP, pure sulfuric acid, and a significant amount of energy, and producing SOP and 1.1t of hydrochloric acid per tonne SOP.

The stability of the SOP price in the face of falling MOP (a feedstock) and lower oil and gas prices suggests that something else is at work.

- First is the very strong growth in SOP demand over the period from 2009, driven by Asia and particularly China (See figure above).
- Second, the cash cost curve is either wrong, or is correct in terms of cash cost of production, but does not reflect the incentive price required to encourage new supply, ie adding the capital service charge to the A$200/t operating cost differential. This means that today we are seeing the incentive cost of building additional Mannheim furnaces, probably in China.
- The cost curve may be wrong in that it is very hard to cost the impact of waste hydrochloric acid disposal, which has become an increasing issue in China in recent years. A number of Mannheim

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producers in China are adding calcium chloride circuits to deal with the HCl disposal issue, adding capital cost and operating cost.

The current SOP price levels are encouraging new supply to enter the market, and the operating cost of these new mines is likely to be substantially lower than the Mannheim producers. It will be important that the Mannheim production remains the marginal cost source of supply, to maintain the SOP price premium over MOP, otherwise we will see a structural change in the SOP market price formation mechanism, and the premium would be at risk.

The risk of SOP premium falling below US$300/t is low for three reasons.

- The 3Mtpa of current Mannheim production is large relative to the new SOP supply proposed.
- SOP demand is growing relatively strongly. Major new supply additions are still some years away.
- A moderate lowering in the SOP price relative to the MOP price is likely to boost demand for SOP from current levels, creating more room for the new entrants, because anyone who can substitute SOP with MOP is likely to have done so.
- Most of the new SOP projects are in the hands of new entrants, rather than incumbent producers, and the incumbents are likely to acquire the new producers and manage supply in due course.

Supply Demand forecast for potash in all forms

Table 14 Global potash supply demand balance

'000 tonnes	2015A	2016A	2017F	2018F	2019F	2020F
WORLD						
K_2O capacity	52942	55974	58111	61576	62136	64486
K_2O supply capability	43571	42772	44868	47249	48898	49545
Non-fertilizer K_2O demand	5626	5524	5586	5654	5720	5886
K_2O available for fertilizer	37945	37249	39281	41596	43178	43659
K_2O fertilizer demand	32838	33149	34048	34894	35978	37042
Potential K2O balance	5107	4100	5233	6701	7200	6617
Capability/Capacity	82.3%	76.4%	77.2%	76.7%	78.7%	76.8%
Balance/Capability	11.7%	9.6%	11.7%	14.2%	14.7%	13.4%
Demand Growth						
Non-fertilizer	nc	-1.8%	1.1%	1.2%	1.2%	2.9%
Fertilizer	nc	0.9%	2.7%	2.5%	3.1%	3.0%
OCEANIA						
K_2O Supply Capability	0	0	0	0	0	0
Non-fertilizer K2O demand	8	8	8	8	8	8
K_2O available for fertilizer	-8	-8	-8	-8	-8	-8
K_2O fertilizer demand	392	378	379	385	388	393
Potential K_2O balance	-400	-386	-387	-393	-396	-401
Demand Growth						
Non-fertilizer	nc	0.0%	0.0%	0.0%	0.0%	0.0%
Fertilizer	nc	-3.6%	0.3%	1.6%	0.8%	1.3%
Oceania + Asia balance	**-9454**	**-9282**	**-9186**	**-9435**	**-9932**	**-10528**

Source: Food & Agriculture Organization of the UN – World Fertilizer Trends and Outlook to 2020 (2017)

The Australian market is entirely supplied by imports. The Australian domestic demand is around 70Ktpa of SOP (and New Zealand 25Ktpa). Kalium Lakes is targeting that market for its initial 90Ktpa of production. Kalium Lakes would have a strong freight advantage delivering into the Western Australian market.

The Food & Agriculture Organization of the United Nations provides forecasts of fertilizer supply demand and capacity each year. We have included the 2017 forecast in the tables below.

The data does not separate SOP from MOP. In general terms, about 40Mtpa is MOP and 3.5Mtpa is SOP measured on terms of potash or K2O. In straight tonnage of SOP, that works out to be 7Mtpa.

The tables are expressed in terms of Potash (K_2O), and highlight that there are industrial (ie non food related) uses of potassium, and that there appears to be a continuing large surplus of capacity.

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Given the MOP prices have been falling since 2011, there has been excess capacity, but we believe that much of the capacity that has been unused over a period as long as 5 years, is likely to be significantly degraded and some is likely to have been permanently withdrawn from the market. Typically, the plant owners find a new use for the assets.

The rise in MOP prices since September 2017 suggests that idled MOP capacity is being incentivised to restart production, and if there has been the expected degrading, prices strength could surprise to the upside.

Globally, the FAO forecast is for a rising surplus of capacity in the next few years. At present, most of this capacity is MOP production out of Canada and Russia/Belorussia.

Getting a picture of the SOP market on its own is much harder, which is why we pay more attention to the behaviour of the SOP price relative to the MOP price as discussed above.

The current MOP price is low, equal to levels of 10 years ago, and at the present time the weakness is likely due to the arrival of new low cost capacity. Once this surge in new capacity is digested, we expect a lift in MOP prices from current levels into the US$300-400/t range.

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Table 15 Asian and Americas potash supply demand balance - Increasing deficit

	2015A	2016A	2017F	2018F	2019F	2020F
ASIA						
K_2O capacity	10307	10453	11556	11556	11956	12076
K_2O supply capability	10082	10152	10773	11031	11072	11180
Non-fertilizer K_2O demand	3112	2964	2978	2995	3011	3125
K_2O available for fertilizer	6969	7187	7795	8035	8060	8055
K_2O fertilizer demand	16023	16084	16593	17077	14597	18182
Potential K_2O balance	-9054	-8896	-8799	-9042	-9536	-10127
West Asia						
K_2O capacity	3995	3995	4030	4030	4050	4080
K_2O Supply Capability	3656	3671	3704	3704	3723	3831
Non-fertilizer K2O demand	97	100	103	106	110	113
K_2O available for fertilizer	3558	3570	3601	3597	3613	3718
K_2O fertilizer demand	260	276	291	308	326	347
Potential K_2O balance	3298	3295	3309	3290	3287	3371
South Asia						
K_2O capacity	65	65	65	65	65	65
K_2O supply capability	16	33	49	49	49	49
Non-fertilizer K_2O demand	415	364	375	389	401	412
K_2O available for fertilizer	-399	-331	-326	-340	-353	-363
K_2O fertilizer demand	2958	2991	3226	3407	612	3812
Potential K_2O balance	-3357	-3322	-3552	-3748	-3964	-4175
East Asia						
K_2O capacity	6247	6393	7461	7461	7841	7931
K_2O Supply Capability	6410	6448	7020	7278	7300	7300
Non-fertilizer K2O demand	2600	2500	2500	2500	2500	2600
K_2O available for fertilizer	3810	3948	4520	4778	4800	4700
K_2O fertilizer demand	12805	12817	13076	13362	13659	14023
Potential K_2O balance	-8995	-8869	-8556	-8584	-8859	-9323
AMERICAS						
K_2O capacity	22305	25185	25225	25780	25780	25780
K_2O supply capability	16085	15476	16582	17407	17842	17942
Non-fertilizer K_2O demand	1759	1792	1825	1859	1895	1931
K_2O available for fertilizer	14326	13684	14756	15548	15947	16011
K_2O fertilizer demand	11589	11833	11977	12129	12488	12830
Potential K_2O balance	2736	1851	2779	3419	3461	3181
North America						
K_2O capacity	20180	23060	23100	23655	23655	23655
K_2O Supply Capability	14381	13720	14826	15565	16000	16100
Non-fertilizer K2O demand	1159	1192	1225	1259	1295	1331
K_2O available for fertilizer	13222	12528	13600	14306	14705	14769
K_2O fertilizer demand	4856	4916	4929	4951	4978	4989
Potential K_2O balance	8366	7612	8671	9354	9728	9780
Latin America & Caribbean						
K_2O capacity	2125	2125	2125	2125	2125	2125
K_2O supply capability	1704	1756	1756	1842	1842	1842
Non-fertilizer K_2O demand	600	600	600	600	600	600
K_2O available for fertilizer	1104	1156	1156	1242	1242	1242
K_2O fertilizer demand	6733	6917	7048	7178	7510	7841
Potential K_2O balance	-5630	-5761	-5892	-5935	-6267	-6599

Source: Food & Agriculture Organization of the UN – World Fertilizer Trends and Outlook to 2020 (2017)

West Asia is essentially China. The rest of Asia is heavily dependent on imports and would be a natural market for Australian production.

Table 16 European potash supply demand balance - Major surplus region

	2015A	2016A	2017F	2018F	2019F	2020F
EUROPE						
K_2O capacity	20330	20336	21330	24240	24100	26330
K_2O supply capability	17405	17146	17514	18812	19969	20423
Non-fertilizer K_2O demand	647	660	676	691	706	721
K_2O available for fertilizer	16758	16486	16839	18120	19263	19702
K_2O fertilizer demand	4187	4193	4390	4539	4669	4741
Potential K_2O balance	12571	12293	12449	13581	14594	14961
Central Europe						
K_2O capacity						
K_2O Supply Capability						
Non-fertilizer K2O demand	52	53	54	56	57	58
K_2O available for fertilizer	-52	-53	-54	-56	-57	-58
K_2O fertilizer demand	650	650	700	750	780	800
Potential K_2O balance	-702	-703	-754	-806	-837	-858
West Europe						
K_2O capacity	5630	4946	4940	4840	4840	4640
K_2O supply capability	4088	3593	3589	3538	3569	3423
Non-fertilizer K_2O demand	495	507	522	535	549	563
K_2O available for fertilizer	3593	3086	3068	3002	3020	2860
K_2O fertilizer demand	2150	2100	2200	2250	2300	2300
Potential K_2O balance	1443	986	868	752	720	560
East Europe and Central Asia						
K_2O capacity	14700	15390	16390	19400	19260	21690
K_2O Supply Capability	13317	13553	13925	15274	16400	17000
Non-fertilizer K2O demand	100	100	100	100	100	100
K_2O available for fertilizer	13217	13453	13825	15174	16300	16900
K_2O fertilizer demand	1387	1443	1490	1539	1589	1641
Potential K_2O balance	11830	12010	12335	13635	14711	15259
AFRICA						
K_2O capacity					300	300
K_2O supply capability					15	
Non-fertilizer K_2O demand	100	100	100	100	100	100
K_2O available for fertilizer	-100	-100	-100	-100	-85	-100
K_2O fertilizer demand	647	662	708	765	838	897
Potential K_2O balance	-747	-762	-808	-865	-923	-997

Source: Food & Agriculture Organization of the UN – World Fertilizer Trends and Outlook to 2020 (2017)

Eastern Europe and Central Asia is the major supplier within the region.

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Sulphate of Potash SOP products and applications

Table 17 SOP product specifications and uses

Name/Grade	Min. K2O	Min. SO4	Max. Cl	Applications
Compass Minerals USA				
Soluble Fines SOP Organic	50.0%	17.0%	0.8%	For liquid fertilizer solutions and suspensions.
Standard Fines SOP	50.0%	17.0%	0.8%	For solutions that will either be decanted or filtered.
Standard Fines SOP Organic	50.0%	17.0%	0.8%	For solutions that will either be decanted or filtered.
Industrial Fines SOP	50.0%	17.0%	0.8%	A sugar- fine crystalline SOP used industrial applications.
Greensgrade SOP	50.0%	17.0%	0.8%	For micro-sized blends or direct application (eg golf greens).
Choice Granular SOP	50.0%	17.0%	0.8%	Typically used by the turf and ornamental markets.
Choice Granular SOP Organic	50.0%	17.0%	0.8%	Typically used by the turf and ornamental markets.
Mid Granular SOP	50.0%	17.0%	0.8%	Sized for use by turf and ornamental markets.
Mid Granular SOP Organic	50.0%	17.0%	0.8%	Sized for use by turf and ornamental markets.
Ag Granular SOP	50.0%	17.0%	0.8%	For agricultural grade nutrient sources in broadcast spreaders.
Ag Granular SOP Organic	50.0%	17.0%	0.8%	For agricultural grade nutrient sources in broadcast spreaders.
K&S Germany				
Sulphate of Potash granular	50.0%	18.0%	1.0%	For mechanised spreading and bulk blending
Sulphate of Potash standard	50.0%	18.0%	1.0%	For manufacture of compound fertilizers
Sulphate of Potash low chloride	51.0%	18.0%	0.5%	For horticulture and making compound fertilizers
HORTISUL	52.0%	18.0%	0.5%	Virtually free of chloride for fertigation and foliar spray
Tessendelo Chemie Belgium				
SOP Standard	50.3%	52.6%	2.1%	For direct application or manufacture of compound fertilizers
GranuPotasse	50.3%	52.6%	2.1%	For bulk blending or for direct application
SoluPotasse	50.9%	55.8%	0.6%	A fast dissolving highly soluble form for fertigation
K-Leaf	52.0%	55.8%	0.2%	A very fast dissolving, highly soluble for foliar application
SQM Chile				
Agricultural Grade - Granular	51.0%	54.0%	1.5%	Agricultural Grade - Granular
Soluble Grade – Crystallized	51.0%	54.0%	1.0%	Soluble Grade - Crystallized
Ultrasol SOP-52	52.0%	53.0%	1.0%	Ultrasol SOP-52

Source: http://www.sopib.com/characteristics.html with Compass ma chloride adjusted to reflect Compass spec.

SOP is a combination of the two essential nutrients, potassium and sulphur, forming a highly concentrated fertilizer. As both nutrients are soluble in water SOP is considered as a quick acting fertilizer to prevent potassium and sulphur undersupply, to correct existing nutrient deficiencies in crops, and imbalances in soils.

In the soil, sulphate of potash immediately dissociates into the cation K^+ and the anion SO_4^{2-}; nutrient forms which are readily available for plant uptake. As no oxidation or reduction processes are involved to release these nutrients into the soil an application of SOP has no impact on soil pH.

All grades and forms of SOP offered in the market have a maximum content of 1 % chloride which makes SOP the best source of potassium for chloride sensitive crops and intensive cropping systems.

Grades of fine, standard or granulated SOP fertilizers are suited for mechanized spreading, bulk blending or straight application. Special grades of highly concentrated crystalline SOP are available for liquid formulations, foliar application and fertigation systems.

The Beyondie Potash project will produce standard, soluble and granulated products

Financial Structure

Issued Securities

Table 18 Share structure

	Million
Issued Shares 1 May 2019	238.966
Of which Shares escrowed until 26 Oct 2019	5.000
Performance Shares	15.000
Options Excersise 25cps until 16 Dec 2019	3.500
Options Exercise 42.5cps until 29 Sept 2020	0.331
Options Exercise 52.5c 22 Jan 2020	0.844
Option Exercise 52.5cps 11 Jan 2021	1.000
Option Exercise 50cps 30 June 2019	5.000
Total Diluted Capital	264.641

Source: ASX release 1 May 2019

Ownership of Issued Ordinary Shares

Table 19 Major shareholders

Major Shareholders	%	Ords M
Smoothy Interests	23.5%	56.21
Greenstone Resources II	19.8%	47.31
Hazelden Interests	6.2%	14.72
Coola Station Interests	4.7%	11.23

Source: 2018 annual report, substantial shareholder releases 1 May 2019

Board and Management

Mr Malcolm Randall, Mon Executive Chairman (Dip Applied Chem, FAICD)

Mr Randall holds a Bachelor of Applied Chemistry Degree and has more than 45 years' of extensive experience in corporate, management and marketing in the resources sector, including more than 25 years with the Rio Tinto group of companies. His experience has covered a diverse range of commodities including iron ore, base metals, uranium, mineral sands and coal. Mr Randall has held the position of chairman and director of a number of ASX listed companies. Past directorships include Consolidated Minerals Limited, Titan Resources Limited, Northern Mining Limited, Iron Ore Holdings Limited and United Minerals Corporation NL. Current directorships include Argosy Minerals Limited, Ora Gold Limited, Hastings Technology Metal Limited, and Magnetite Mines Limited.

Brett Hazelden, Managing Director and Chief Executive Officer (B.Sc. MBA GAICD)

Mr Hazelden is a Metallurgist who brings more than 19 years' experience in project management, engineering design and operations servicing the Australasian resources industry. His previous responsibilities include project management, feasibility study evaluation, engineering and design, estimating, financial evaluation, cost control, scheduling, contracts and procurement, business risk and strategic development. As well as other roles, he has held senior positions at Rio Tinto, Fluor, Newcrest Mining and Iron Ore Holdings. Brett Hazelden has studied, managed and executed projects from small scale works up to multi-billion dollar complex developments. He has been responsible for environmental permitting and approvals, heritage, native title negotiations, external relations, as well as tenure

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management. Brett has also been involved in numerous mergers, acquisitions and due diligence reviews in recent years.

Rudolph van Niekerk Executive Director (B.Eng. Mechanical GAICD)

Mr van Niekerk is a professional in the mining and resources industry with more than 12 years' experience in project and business management. Previous positions include senior engineering roles for Ausenco, Anglo Gold Ashanti and BC Iron. During his career Rudolph van Niekerk has held a range of different roles in the management of projects and operations. His various responsibilities have included financial evaluation, risk review and management, project management, development of capital and operating cost estimates, budget development and cost control, design management, planning, reporting, contract administration, quality control, expediting, construction, commissioning, production ramp-up and project hand-over to operations.

Mr Stephen Dennis Non Executive Director (BCom, LLB, GDipAppFin(Finsia), CFTP)

Mr Stephen Dennis has a career spanning more than 30 years as an experienced and well regarded company director and has been appointed on a number of senior boards in the Australian and international resources sector. Mr Dennis was the Managing Director and Chief Executive Officer of CBH Resources Limited and 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. He has also held senior operational and commercial positions in MIM Holdings Limited, Minara Resources Limited, and Brambles Australia Limited.

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Analyst Verification

I, **Michael Harrowell**, as the Research Analyst, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

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We acknowledge that Senior Resource Analyst, Michael Harrowell, holds no shares nor options in Kalium Lakes Limited**.**

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