

## Sal de Vida capacity increased to 45ktpa in two stages

Allkem Limited (ASX|TSX: AKE, **Allkem** or **the Company**) advises an update to its wholly owned Sal de Vida Project located in Catamarca Province in Argentina.

### HIGHLIGHTS

#### Project Summary

- Key changes from the 2021 Feasibility Study includes an increase in total planned capacity to 45,000 tpa, an increase in the capacity of Stage 1 and consolidation of Stages 2 and 3 into a single expansion
- Revised Resource Estimate of 6.85 million tonnes (“**Mt**”) lithium carbonate equivalent (“**LCE**”), a 10% increase from the previous estimate in 2021
- Reserve Estimate of 1.74 Mt LCE supporting a 40-year project life based on reserves only, a 34% increase from the previous statement
- Front-end engineering design continues to confirm globally competitive capital intensity and operating costs

#### Stage 1 - 15ktpa production capacity

- Production capacity of 15,000 tpa Lithium carbonate (“**LC**”) represents a 40% increase to previous production capacity
- Pre-tax Net Present Value (“**NPV**”) of US\$1.23 billion at a 10% discount rate and pre-tax Internal Rate of Return (“**IRR**”) of 50%
- Development capital cost estimate of US\$271 million and cash operating costs of US\$3,612 per tonne, reflecting increased production output and scope
- Payback period of 1.75 years from the start of commercial production

#### Stage 2 Expansion – Additional 30ktpa

- Prefeasibility study completed for stage 2 expansion with the design basis a replication and expansion of Stage 1
- Stage 2 construction scheduled to commence immediately after Stage 1 construction completed
- Pre-tax NPV of US\$1.81 billion and pre-tax IRR of 38% for Stage 2 on a standalone basis
- Revised development capital for Stage 2 of US\$524 million and cash operating costs of US\$3,280 per tonne LCE across both Stages 1 and 2

#### Execution strategy

- Stage 1 construction of the ponds commenced in January 2022 and targeting Stage 1 first production in H2 CY23
- Focus areas for CY22 include completion and filling of first two strings of ponds, and commencing construction of the Process Plant
- Targeting a sustainable energy mix, with at least 30% solar energy for Stage 1 at commencement of production
- Stage 2 construction anticipated to commence upon completion of Stage 1 construction with first Stage 2 production approximately 24 months thereafter

## FINANCIAL METRICS

### Development Capital and Operating Costs

The total initial project development capital expenditure (**CAPEX**) is estimated to be US\$271 million for Stage 1. The estimate includes wellfields to ponds, the lithium carbonate plant, non-process infrastructure and various indirect costs detailed in Table 1.

Operating expenditure (**OPEX**) is estimated to be US\$3,612 per tonne LCE for Stage 1. The OPEX is predominately made up of reagents and also includes labour, energy and transport costs as detailed in Table 1.

**Table 1: Development Capital and Operating Cost Estimates**

Development Capital Costs	US\$ Million	%	Operating Costs	US\$/t LC
<b>Direct</b>			Reagents	1,314
General Engineering & Studies	12	4	Labour	700
Wellfield & Brine Distribution	13	5	Energy	943
Evaporation Ponds & Waste	62	23	General & Administration	250
Lithium Carbonate Plant	119	44	Consumables & Materials	269
Utilities	4	1	Transport & Port	134
Infrastructure	12	4	<b>Total OPEX</b>	<b>3,612</b>
<b>Total Direct CAPEX</b>	<b>221</b>	<b>81</b>	Minor discrepancies may occur due to rounding	
<b>Indirect</b>				
Owners Cost	17	6		
Contingency	15	6		
Commissioning	4	2		
General	13	5		
<b>Total Indirect CAPEX</b>	<b>50</b>	<b>19</b>		
<b>Total CAPEX</b>	<b>271</b>	<b>100</b>		

Minor discrepancies may occur due to rounding

The variance in development capital from the 2021 Feasibility study is largely due to the upgrade from 10.7ktpa to 15ktpa of production capacity, an increase of scope and accuracy for the carbonation plant design and inflationary impacts. The variance of US\$117.2 million includes an additional US\$30 million for the additional string of evaporation ponds and US\$68 million for the construction of the process plant. Cost increases from global inflationary pressures, COVID-19 impacts and longer execution lead times are also incorporated into this variance.

### Lithium carbonate price forecast

Forecast battery grade and technical grade lithium carbonate pricing was provided by Wood Mackenzie who updated near and long-term price outlooks for all products in Q4 CY21.

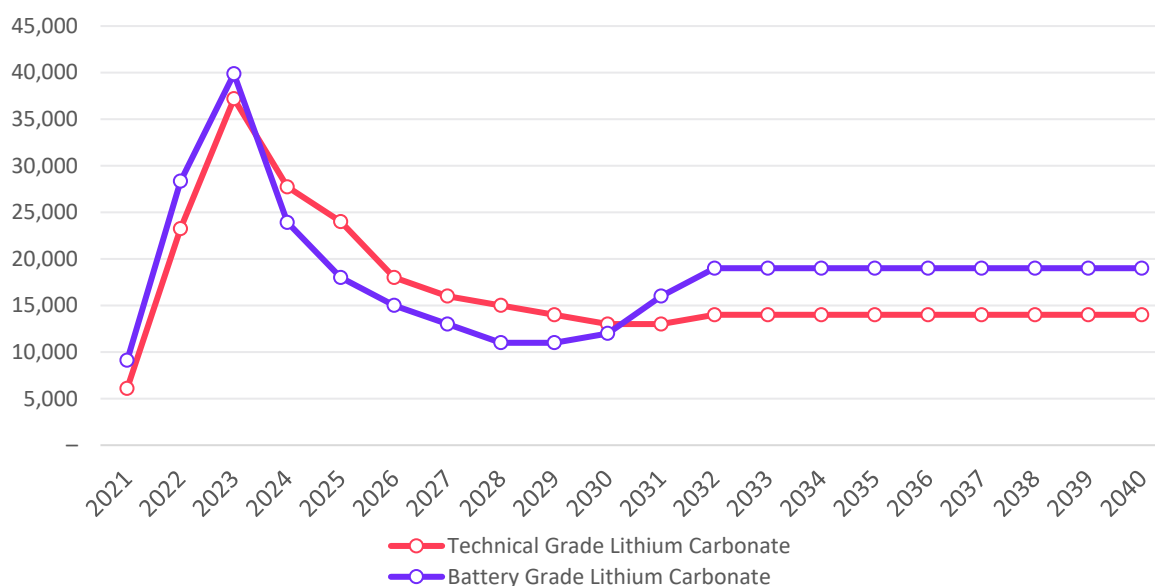
Battery grade carbonate demand increased by 38.6% CAGR between 2015 and 2021 and has remained the most widely consumed lithium compound and is used predominately in lithium-ion batteries in electric vehicles. Technical grade mineral concentrates accounted for a further 9.6% of consumption in 2021 and are used in similar ceramic, glass-ceramic, glass, and metallurgical applications to lithium carbonate.

The rapidly growing use of LFP chemistries for cathodes will result in strong growth for battery-grade lithium carbonate. LFP cathodes are expected to be the fastest growing cathode chemistry, increasing its share from 30% to 47% by 2050, as the Chinese market continues to expand and LFP cathode increasingly become the material of choice for a large number of EV-makers. This will correlate to a growth in lithium carbonate demand of 10.9% CAGR between 2022 and 2032. Over the forecast

period, demand for lithium carbonate is expected to grow at 6.2% CAGR, from 255.2kt LCE in 2022 to 1,381kt LCE by 2050. This demand is likely to be met primarily with supply from brine projects.

Demand for battery grade lithium carbonate is set to exhibit strong growth due to the increasing use of LFP cathode chemistries. As demand growth seen in 2021 starts to slow and new supply enters the market over the next few years, prices are expected to gradually decline to around US\$15,000/t by the mid-2020s. As demand continues to grow, a larger deficit will emerge towards the end of the decade and contract prices will trend towards a long-term price of around US\$19,000/t.

Demand for technical-grade carbonate from industrial sectors is forecast to grow in line with economic growth, technical-grade lithium carbonate, however, lends itself very well to be reprocessed into battery-grade lithium chemicals. This is an established process occurring in Chile, US, China and soon in Japan. The ability to re-process the product into battery-grade lithium chemicals will ensure that prices will increase in line with prices of battery-grade lithium chemicals (Figure 1).



**Figure 1: Lithium Price Forecast, 2021-2040 (contract prices, real terms, CIF Asia, USD/t). Source: Wood Mackenzie**

## PROJECT ECONOMICS

An economic analysis was undertaken using the discounted cash flow method and was based on the data and assumptions for capital and operating costs detailed in this report. The evaluation was undertaken on a 100% equity basis.

A royalty agreement with the Catamarca Provincial Government has been executed, confirming a life of project royalty rate at 3.5% of net sales revenue (revenue less taxes). This agreement also applies to the stage 2 expansion of additional 30ktpa.

The key assumptions and results of the economic evaluation are displayed in Table 2 and Table 3 below.

**Table 2: Key assumptions utilised in the project economics**

Assumption	Units	Stage 1
Project Life Estimate	Years	40
Discount Rate (real)	%	10
Provincial Royalties <sup>1,2</sup>	% of LOM revenue	3.5
Corporate Tax <sup>2</sup>	%	35
Annual Production <sup>3</sup>	t LC	15,000
CAPEX	US\$M	271
OPEX	US\$/ tonne LC	3,612
Average Selling Price <sup>4</sup>	FOB US\$/ tonne LC	17,485

<sup>1</sup> Provincial royalty agreement at 3.5%, export duties, incentives and other taxes are not shown.

<sup>2</sup> There is a risk that the Argentina Government may, from time to time, adjust Corporate tax rates, export duties and incentives that could impact the Project economics

<sup>3</sup> Based on 80% battery grade, 20% technical grade lithium carbonate of annual production

<sup>4</sup> Based on price forecast provided from Wood Mackenzie and targeted production grades stated in Footnote 3 above

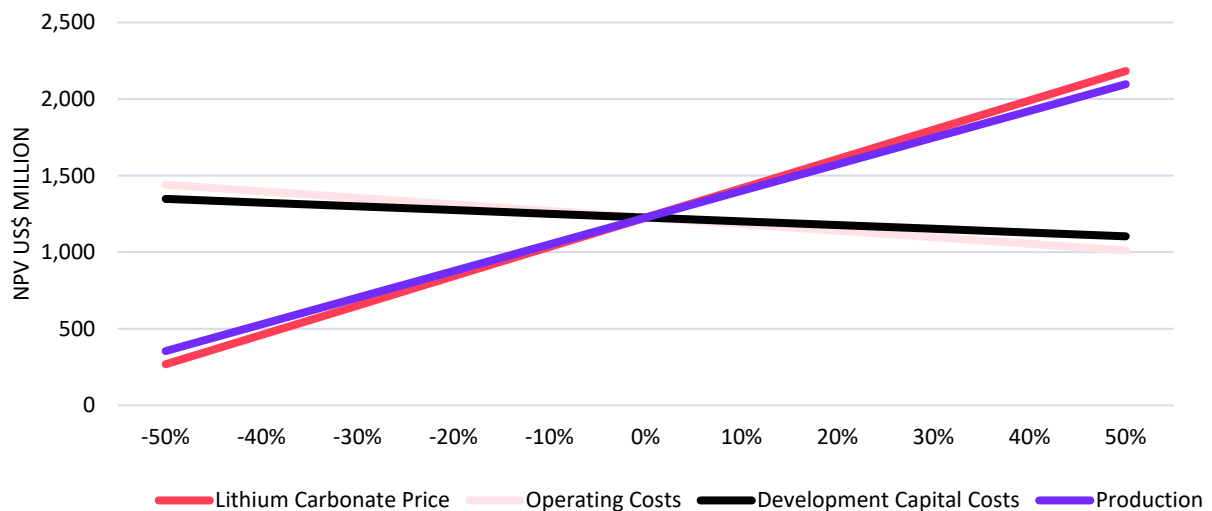
**Table 3: Summary of financials over a 40-year project life**

Financial Summary	Units	Stage 1
NPV (Pre-tax)	US\$M	1,226
NPV (Post-tax)	US\$M	762
IRR (Pre-tax)	%	50
IRR (Post-tax)	%	37
Payback Period <sup>1</sup>	Years	1.75
Development Capital Intensity	US\$/ tpa LC	18,041
Pre-tax NPV: Development CAPEX	X: 1	4.5

<sup>1</sup> payback period is from date of first commercial production

## Sensitivity Analysis

As displayed in Table 3, the feasibility demonstrates strong financial outcomes with a Pre-tax NPV<sub>10%</sub> real of US\$1,226 million and pre-tax IRR of 50%. Figure 2 analyses the impact on pre-tax NPV when pricing, operating cash costs and development CAPEX fluctuate between +/- 50 %.



**Figure 2: NPV Sensitivity Analysis**

## PROJECT BACKGROUND

Allkem is developing the Sal de Vida Project in Catamarca Province on the Salar del Hombre Muerto, approximately 1,400km northwest of Buenos Aires, Argentina. The Sal de Vida deposit lies within the “lithium triangle”, an area encompassing Chile, Bolivia and Argentina that contains a significant portion of the world’s estimated lithium resources (Figure 3). Catamarca is a proven mining jurisdiction, home to several successful mining operations and development projects such as Livent Corp and Minera Alumbrera.

Allkem is de-risking the development of Sal de Vida by adopting a simplified flowsheet, utilising mature technology and by staging development to reduce project risk and allow cash flow generation from Stage 1 and other operations to support development of Stage 2.

The 2022 Feasibility Study focuses on Stage 1, which includes brine extraction, evaporation and processing operations onsite to produce 15,000 tpa of high-grade LC. The layout and development plan for Stage 1 allows for future expansion for subsequent stages. A pre-feasibility study (“PFS”) has been completed for Stage 2, a single staged expansion of 30,000tpa LC to bring the total capacity to 45,000 tpa LC.

A number of experienced engineering and consulting firms were engaged by the Company to assist in the completion of the Feasibility Study and Technical Report in accordance with the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects. Stage 1 engineering has now reached a level of accuracy that is equivalent to the Association for the Advancement of Cost Engineering (ACCE) Class 2 for the wellfield and ponds; and Class 4 for the plant design. Stage 2 estimates are at a Class 4 accuracy level.



**Figure 3: Sal de Vida project location**

## **GEOLOGY & MINERALISATION**

The salar system in the Hombre Muerto basin is considered to be typical of a mature salar. Several salars in the lithium triangle contain relatively high concentrations of lithium brine due to the presence of lithium-bearing rocks and local geothermal waters associated with Andean volcanic activity. Such systems commonly have a large halite core with brine as the main aquifer fluid in at least the centre and lower parts of the aquifer system.

Sal de Vida's brine chemistry has a high lithium grade, low levels of magnesium, calcium and boron impurities and readily upgrades to battery grade lithium carbonate. Long-term hydrological pump testing under operating conditions has demonstrated excellent brine extraction and aquifer recharge rates to support the production design basis.

## **RESOURCE AND RESERVE ESTIMATES**

### **Production wellfield drilling**

The production wellfield drilling program commenced in late 2020 to construct an additional eight wells in the eastern region of the salar for Stage 1 brine production and to explore the resource at depth. The drilling program which also entailed aquifer and pump testing reached completion in October 2021 and was monitored by consultants Montgomery & Associates ("**Montgomery**") and Allkem personnel. Once drilling was completed, 10-inch diameter PVC casing, and slotted PVC well screen was installed. The constructed wells were air-lifted and clean brine samples were collected at the well head.

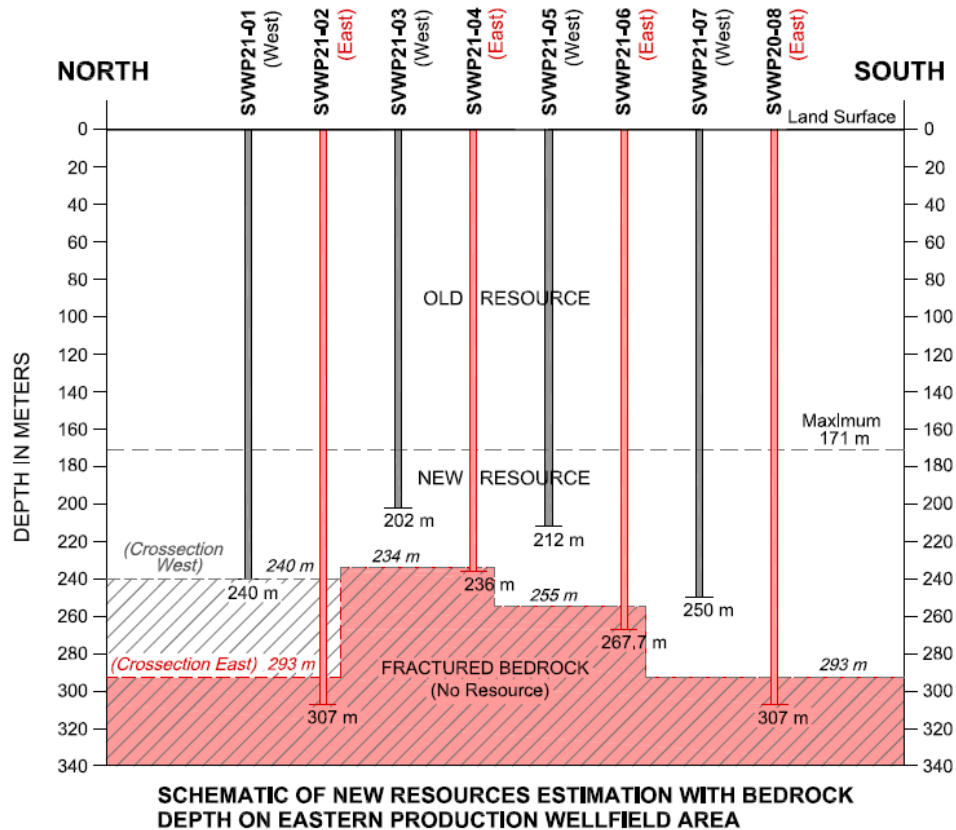
Further exploration and aquifer data on the hydrogeological settings of the salar was also obtained. The wells reached depths between 202 m and 307 m and five out of eight wells reached bedrock. The lithium concentrations recorded were significantly higher than the average lithium resource grade of 754 mg/L and the reserve grade of 805 mg/L (for years 1-6). The wells returned average lithium concentration ranging between 811 mg/L and 936 mg/L. Further drilling information and analytical results from the eight production wells are displayed in Table 4 below and detailed assay data is listed in the Annexure.

A schematic of the cross sections are displayed in Figure 4 and the well locations are displayed in Figure 5.

**Table 4: Production well location, construction details and head brine samples**

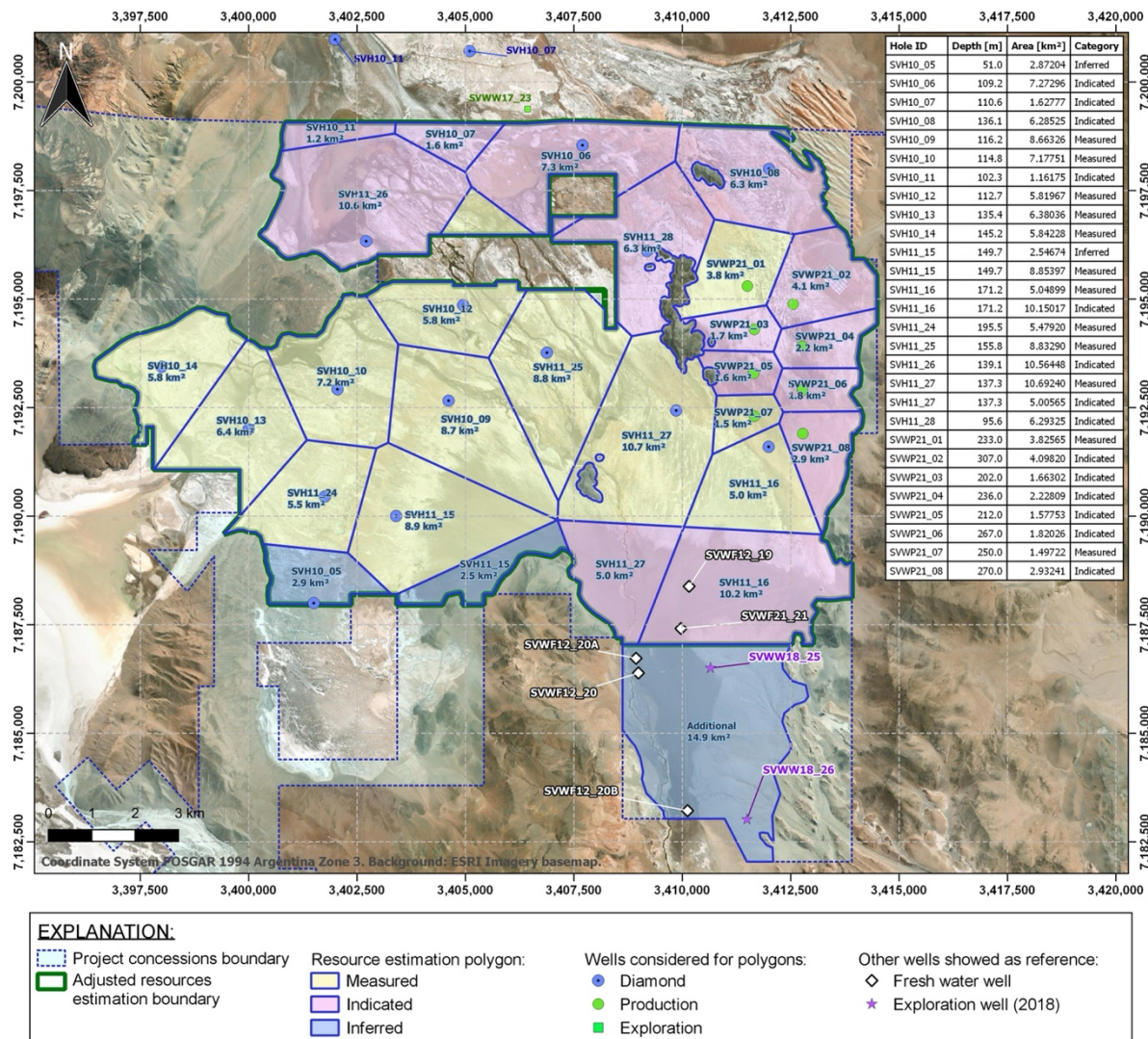
Wellfield Identifier	Location		Borehole		Casing		Screened Interval	Average Li
	Easting	Northing	Diameter	Depth	Diameter	Depth		
			inches	m, b/s	inches	m, b/s	m	Li mg/L AAS
SVWP21-01	3,411,502	7,195,299	24, 18, 16, 8 <sup>3/4</sup>	240	18, 10	230	117.9-223.9	895
SVWP21-02	3,412,559	7,194,884	24, 18, 16, 8 <sup>3/4</sup>	307	18, 10	299.9	123.1-170.2, 176.9-93.78	811
SVWP21-03	3,411,664	7,194,301	24, 18, 16, 8 <sup>3/4</sup>	202	18, 10	177	88.5-135.6, 141.5-171	888
SVWP21-04	3,412,770	7,193,910	24, 18, 16, 8 <sup>3/4</sup>	236	18, 10	226.7	87.8-129.1, 134.9-217.5	932
SVWP21-05	3,411,643	7,193,289	24, 18, 16, 8 <sup>3/4</sup>	212	18, 10	202.2	90.4-137.4, 143.2-190.2	838
SVWP21-06	3,412,771	7,192,906	24, 18, 16, 8 <sup>3/4</sup>	268	18, 10	252.8	87.5-140.6, 148.4-248.4	855
SVWP21-07	3,411,663	7,192,303	24, 18, 16, 8 <sup>3/4</sup>	250	18, 10	235.1	87.4-140.7, 146.3-229	839
SVWP20-08	3,412,781	7,191,901	24, 18, 16, 8 <sup>3/4</sup>	307	18, 10	270.4	111.9-159, 170.8-264.3	937

Note: Easting and Northing shown using Gauss Krüger coordinate system. Posgar 07 is an Argentinian datum. Drilled diameter was 83/4 Inch for the pilot holes. Then consecutive reaming process was conducted to 24 and 18-inch for the surface casing and 16-inch for the final borehole. 18-inch diameter steel surface casing was installed. Once drilling was completed, 10 Inch blank PVC casing, and slotted PVC well screen was installed.



**Figure 4: Schematic cross sections of new resources estimation with bedrock depth in production wellfield drilling area**





**Figure 5: Location map of Measured, Indicated and Inferred Lithium Resources**

## Brine Resource Estimate

Montgomery was engaged to estimate the lithium resources and reserves in brine for various areas within the Salar del Hombre Muerto basin in accordance with the 2012 edition of the JORC code ("JORC 2012"). Although the JORC 2012 standards do not address lithium brines specifically in the guidance documents, Montgomery followed the NI 43-101 guidelines for lithium brines set forth by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM 2014) which Montgomery considers complies with the intent of the JORC 2012 guidelines with respect to providing reliable and accurate information for the lithium brine deposit in the Salar del Hombre Muerto.

Drilling results from eight production wells increased the depth of the basement model and the size of the brine aquifer, leading to an increase in Inferred Mineral Resources of 0.6Mt. The revised Mineral Resource estimate of 6.85 Mt LCE (detailed in Table 5) reflects a ~10% increase to the prior Resource of 6.23 Mt LCE (Table 6).

The different resource categories were assigned based on available data and confidence in the interpolation and extrapolation possible given reasonable assumptions of both geologic and hydrogeologic conditions. Measured, Indicated and Inferred resource polygons; totalling 383 km<sup>2</sup>, are displayed in Figure 5.



**Table 5: Sal de Vida Resource Estimate at April 2022**

Category	Brine volume	Average Li	In Situ Li	Li <sub>2</sub> CO <sub>3</sub> Equivalent	Li <sub>2</sub> CO <sub>3</sub> Variance 2021
	m <sup>3</sup>	mg/l	tonnes	tonnes	%
Measured	6.17 x 10 <sup>8</sup>	757	467,235	2,487,000	27%
Indicated	8.87 x 10 <sup>8</sup>	793	703,201	3,743,000	45%
<b>Measured &amp; Indicated</b>	<b>1.5 x 10<sup>9</sup></b>	<b>775</b>	<b>1,170,437</b>	<b>6,230,000</b>	<b>37%</b>
Inferred	2.1 x 10 <sup>8</sup>	563	116,668	621,000	-63%
<b>Total</b>	<b>1.7 x 10<sup>9</sup></b>	<b>752</b>	<b>1,287,105</b>	<b>6,851,000</b>	<b>10%</b>

Note: Cut-off grade: 500 mg/L lithium. The reader is cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability. Values are inclusive of Reserve estimates, and not "in addition to".

**Table 6: Sal de Vida Resource Estimate at April 2021**

Category	Brine Volume	Average Li	In Situ Li	Li <sub>2</sub> CO <sub>3</sub> Equivalent
	m <sup>3</sup>	mg/l	tonnes	tonnes
Measured	4.9 x 10 <sup>8</sup>	759	369,000	1,964,000
Indicated	6.8 x 10 <sup>8</sup>	717	485,000	2,583,000
<b>Measured &amp; Indicated</b>	<b>1.2 x 10<sup>9</sup></b>	<b>735</b>	<b>854,000</b>	<b>4,547,000</b>
Inferred	3.9 x 10 <sup>8</sup>	811	316,000	1,684,000
<b>Total</b>	<b>1.6 x 10<sup>9</sup></b>	<b>754</b>	<b>1,170,000</b>	<b>6,231,000</b>

Note: Cut-off grade: 500 mg/L lithium. The reader is cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability. Values are inclusive of Reserve estimates, and not "in addition to".

Additional information for the resource estimation can be found in the Annexures.

### Brine Reserve Estimate

The revised reserve estimate of 1.74 Mt LCE for 40 years reflects a 34% increase compared to the previous estimate of 1.3Mt LCE for 44 years. The difference of four years reflects the Company's development approach of two stages, compared to the previous three stages detailed in the 2021 Feasibility Study.

The updated proven and probable lithium brine reserves are displayed in Table 7 and compared to the previous brine reserve statement as shown in Table 8. Based on the modelled hydrogeological system and results of the numerical modelling, the Proven Brine Reserve reflects what is feasible to be pumped to the ponds and recovered through the process plant during the first eight years of operation at each of the wellfields.

The model projects that the wellfields will sustain operable pumping for 40 years; 34 years of pumping from each wellfield has been categorised as a Probable Brine Reserve. The Proven and Probable Reserve estimate of 1.74 Mt LCE represents approximately 28% of the current Measured and Indicated Brine Resource estimate.

**Table 7: Sal de Vida Reserve Estimate at April 2022**

Category	Time Period	Li Total Mass	Li <sub>2</sub> CO <sub>3</sub> Equivalent	Li <sub>2</sub> CO <sub>3</sub> Variance to 2021
	years	tonnes	tonnes	%
Proven	1-8	50,725	270,000	39%
Probable	7-40	276,193	1,470,118	34%
<b>Total</b>	<b>40</b>	<b>326,919</b>	<b>1,740,199</b>	<b>35%</b>

Note: Assumes 500 mg/L Li cut-off, 70% Li process recovery

**Table 8: Sal de Vida Reserve Estimate at April 2021**

Category	Time period	Li Total Mass	Li <sub>2</sub> CO <sub>3</sub> Equivalent
	years	tonnes	tonnes
Proven	1-10	36,559	194,595
Probable	7-44	205,839	1,095,635
<b>Total</b>	<b>44</b>	<b>242,397</b>	<b>1,290,229</b>

Note: Assumes 500 mg/L Li cut-off, 68.7% Li process recovery

Table 6 shows the summary of total pumped brine and projected average grade of the Probable and Proven brine reserves.

**Table 9: Total pumped and projected average grade of probable and proven brine reserves**

Reserve Category	Wellfield	Time Period	Projected Total Brine Pumped	Projected Average Grade Li
		Years	m <sup>3</sup>	mg/L
Proven	East	1-6	30,735,453	786
Proven	Southwest	3-8	59,325,003	814
<b>Total Proven</b>		<b>1-8</b>	<b>90,060,456</b>	<b>805</b>
Probable	East	7-40	184,440,674	743
Probable	Southwest	9-40	326,624,728	790
<b>Total Probable</b>		<b>7-40</b>	<b>511,065,402</b>	<b>773</b>
<b>Total Proven and Probable</b>		<b>40</b>	<b>601,125,858</b>	<b>778 (*)</b>

The current numerical model projections suggest that additional brine could be pumped from the basin from the proposed wellfields past a period of 40 years. However, recalibration of the model would be required after start-up pumping of each wellfield to refine the model and support this projection.

Additional information for the reserve estimation can be found in the Annexures.

## BRINE EXTRACTION AND PROCESSING

Front-end engineering design (“FEED”) work for Stage 1’s wellfields to process plant and non-process infrastructure has been completed for an initial production capacity of 15ktpa, later expanding in Stage 2. A summary of the key physicals is displayed in Table 10.

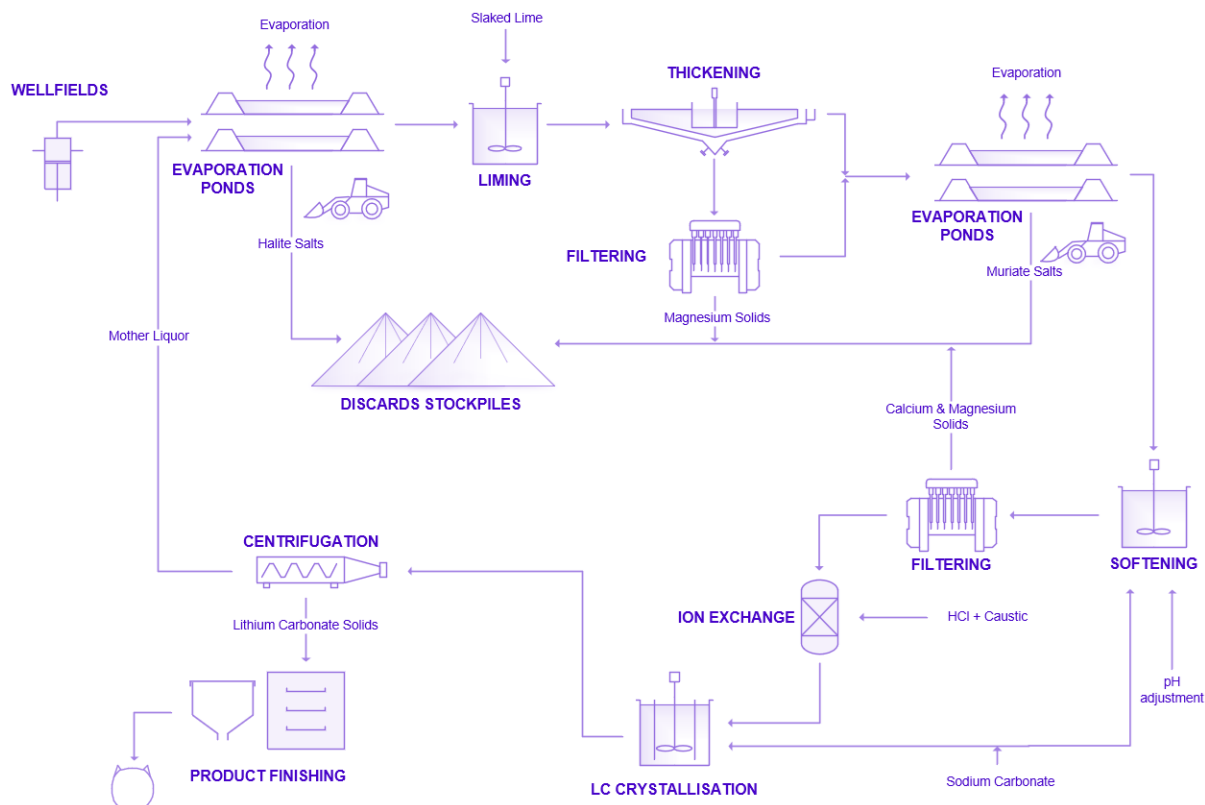
**Table 10: Stage 1 - Summary of Stage 1 physicals for a 40-year project life**

Key Physicals	UoM	
Lithium Carbonate Produced life of mine	t LC	595,385
Lithium Carbonate Produced (annual average) – Stage 1	t LC	15,000
Pond grade feed into process plant	Wt % Li	1.7
Pond Recovery	%	83.8
Plant Recovery	%	83.9
Average Product grade <sup>1</sup>	% Li <sub>2</sub> CO <sub>3</sub>	99.65

<sup>1</sup> Product mix entails 80% battery grade, 20% technical grade

The process commences with brine extracted from wells extending to a depth of up to 280m in the salar. Brine will be pumped to a series of evaporation ponds, where it will be evaporated and

processed at the onsite lithium carbonate plant. Project facilities are divided into four main areas including wellfield and brine distribution, evaporation ponds, the lithium carbonate plant and discard stockpiles. The process flowsheet is described below and summarised in Figure 6.



**Figure 6: Sal de Vida process flowsheet**

### Wellfield and brine distribution

There are two wellfields considered for production; one in the East and one in the Southwest. For Stage 1, only wells from the East wellfield will be used, while Stage 2 will utilise the Southwest wellfield. The location of the production wells were selected to reduce long-term freshwater level drawdown and maintain the highest possible brine grade.

Nine wells have been constructed for Stage 1, of which eight will be operational during the maximum brine pumping season, and one will be on stand-by. All wells will be connected through pipelines to a booster station that will be situated in a central location to the wellfield. The booster station will mix brine from the different wells and act as a brine pumping station to reach the ponds and provide a buffer for seasonal flow changes. The average flow from the brine wells to the first evaporation ponds will be approximately 159 litres per second (“L/s”) for Stage 1.

### Evaporation ponds

The solar evaporation pond system will consist of a series of halite and muriate ponds, which will concentrate brine suitable for feeding the lithium carbonate plant. The ponds for Stage 1 will cover a total area of approximately 450 ha and Stage 2 will cover a total of 850 ha. These areas were calculated based on the expected evaporation rates and the production well flow rates.

Halite ponds for Stage 1 will be arranged in three strings which will operate in parallel, each string will contain six cells plus a buffer pond with the flow from one pond to the next in series. Ponds of the

same type will be connected through weirs, which will allow for constant natural flow from one pond to the next, maintaining brine levels in all ponds and reducing pump usage.

Evaporation will result from the combination of solar radiation, wind, temperature and relative humidity. Halite salts (primarily sodium chloride) will precipitate at the bottom of the pond, harvested periodically and stockpiled in accordance with environmental requirements. The muriate ponds will have the same design basis and be located adjacent to the halite ponds. When the brine reaches a concentration of 21 g/L, it will be stored in a set of concentrated brine storage ponds, from where the brine would be fed to the lithium carbonate plant.

#### *Liming*

The halite ponds will feed evaporated brine to the liming stage to partially remove magnesium. A solution of milk-of-lime will be added to the brine inside mixing tanks, precipitating magnesium and removing other impurities such as boron and sulphates. The solids will be separated from the brine and pumped to a discard facility. The limed brine will be fed to a series of muriate ponds for further concentration. It will then be stored in the concentrated brine storage ponds to act as buffer ponds before the process plant, to accommodate seasonal flow variations and provide consistent feed to the process plant.

#### **Lithium carbonate plant**

The lithium carbonate plant is designed to produce 15,000 tpa of lithium carbonate in Stage 1, with Stage 2 enabling the production of an additional 30,000 tpa. This design is based on average brine supply of 920 m<sup>3</sup>/hr for Stage 1, and an average lithium concentration of 21 g/L in the softening feed. The plant will operate continuously with a design availability of 91%.

#### *Softening*

Brine from the concentrated brine storage ponds will re-enter the process plant in the softening stage to further remove magnesium and calcium. The brine will be heated and sent to a series of six softening and mixing tanks to allow the brine to react with all reagents. The reagents will enable the precipitation of magnesium hydroxide, magnesium carbonate and calcium carbonate, as solids within the brine. Press filters and polish filters will separate the liquid brine and precipitated solids to remove all solid contaminants. The lithium-concentrated brine will then be sent to storage tanks to feed the crystallisation stage. Solid contaminants will be sent to a filter cake tank to be re-pulped with the liming discards before reporting to the discard facility.

#### *Ion exchange*

Softened brine will report to a typical ion exchange ("IX") circuit feed tank to remove the remaining calcium and magnesium ions and meet battery grade specifications. Hydrochloric acid will be used for stripping and sodium hydroxide or water will be used for regeneration of the IX resin.

#### *Crystallisation*

Lithium-concentrated brine from the IX stage will be combined with sodium carbonate at elevated temperatures to produce lithium carbonate. The heated brine will feed a group of four crystallisation mixing tanks that will operate in series, precipitating lithium carbonate as a solid inside the solution. The solution will feed a thickener then a crystallisation cyclone cluster, to further remove liquid from the final product. The lithium carbonate solids will be recovered while the liquor will be recycled back into the process.

### *Product finishing*

The purpose of the product finishing circuit is to perform the final physical operations required to make the lithium carbonate suitable for transport to customers. First, the lithium carbonate solids will be dried to <1% moisture, before being filtered and cooled. The solids will be micronised and iron contaminants will be removed magnetically. The micronised product will then be bagged for transport.

### **Salt waste disposal**

During the evaporation phase the build-up of solid sodium chloride, magnesium, boron and sulphates will occur in the ponds. Over time the solids will build to a level where their removal is required to maintain a working liquid volume within the ponds. All ponds will be harvested on average once per year with the solids placed in storage facilities adjacent to the ponds. The estimated annual total of salt harvested and stockpile from the halite ponds is 1.4 million t/a, and from the muriate ponds is 79,000 tpa for Stage 1 of the Project. For Stage 2, the annual salt harvest will be 2.8 million tpa and 158,000 tpa for halite and muriate ponds respectively.

The salt disposal facility covers ~300 ha for Stage 1 and 600 ha for Stage 2 and will consist of halite, muriate, and co-disposal stockpiles surrounding the halite ponds. All salt waste is of similar chemistry to the surrounding salar and no adverse environmental impacts are expected.

From year two of production onward, both liquid and solid wastes from the process plant will be mixed in a tank located near the production plant and will be sent as a pulp to the co-disposal area. This setup will operate for the remainder of the Project life. Some halite salts will be stockpiled separately to be used as construction material for future evaporation ponds, further reprocessing or sold as a by-product.

The infrastructure in the salt waste stockpile and co-disposal areas will consist of:

- Access roads to each stockpile and co-disposal area, accessible by trucks and light vehicles; and
- Containment system such as low-height berms, for any liquids that may permeate from the salt stockpiles.

### **Final product**

Piloting activities and operations at the pilot pond and pilot plant have continued to meet and exceed battery grade specifications and design parameters in line with commercial operations. Instrumentation and equipment were assessed, and continuous softening-IX-crystallisation operation was also achieved.

Project economics are based on a production and sales volume mix comprising 80% battery grade and 20% technical grade. The operating intention is to maximise the production of battery grade however the 20% allowance for lower grade products is a prudent approach at this stage of the development.

## **SITE LAYOUT & INFRASTRUCTURE**

The Project's tenements cover 26,253 ha and all process facilities will be located in the southeastern sector of the Salar del Hombre Muerto. As seen in Figure 7, the East Wellfield for Stage 1 will be located directly above the eastern sub-basin of the Salar del Hombre Muerto over the salt pan, and the ponds for Stage 1 will be located in two areas directly south. Stage 2 will be located southeast of the Southwest wellfield.



The brine distribution system will traverse the salar towards the evaporation ponds will be located. The location of the ponds has been determined based on a number of factors including optimal constructability properties and minimising earthworks, environmental impact and risk of flooding.

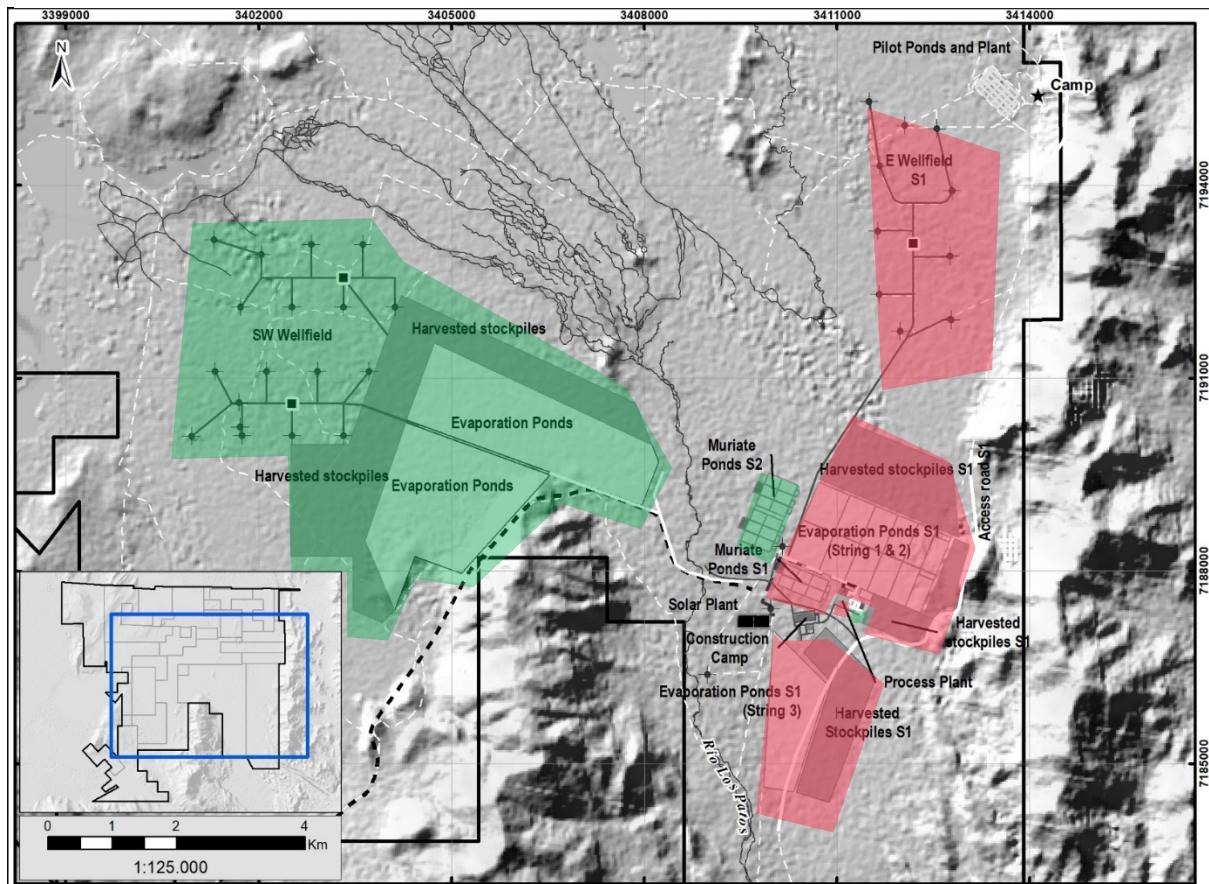
The processing plant for all stages will be located in the centre of to Stage 1's evaporation ponds. A road system, including ramps and causeways, will connect the processing facilities and provide access to all working areas.

### **Supporting infrastructure & logistics**

The following main facilities are planned for the Project:

- Raw water system
- Power generation and distribution
- Fuel storage and dispensing
- Construction camp to accommodate up to 600 people
- Sewage treatment plant
- Fire protection system
- Buildings for the process plant, reagent and product storage
- Various buildings for administration & site services
- Site roads, causeways, and river crossings
- Communications & mobile equipment
- Steam generation, water heating and & compressed air system
- Drainage system

**Figure 7: Site layout for Stage 1 (red) and Stage 2 expansion (green)**



Early construction commenced in late 2020, constructing key roads to the main process areas and upgrading the accommodation camp to host up to 330 people which is currently used by staff and contractors. The Project is also serviced by key infrastructure including major roads, rail, air and multiple seaports in Argentina and Chile.

The main route to the Project site is from the city of Catamarca via national route 40 to Belen, then provincial route 43 through Antofagasta de la Sierra to the Salar del Hombre Muerto. The road is mostly paved to Antofagasta de la Sierra and continues unpaved for the last 145 km to Salar del Hombre Muerto. This road is well maintained and also serves Livent Corporation's Fenix lithium operations and Galan Lithium Ltd.'s Hombre Muerto Project.

The Ferrocarril Belgrano railway line is located 100 km to the north of the Project and the use of rail during later Project stages is a possibility. A public airstrip is located in Antofagasta de La Sierra and a private airstrip is located at Livent's Salar del Hombre Muerto operations.

International cargo for Sal de Vida could use a combination of ports in Buenos Aires, Argentina and Chile. The Ports of Antofagasta and Angamos consist of deep-water port facilities serving the mining industry in northern Chile. The Ports of Rosario, Campana and Buenos Aires consist of large port facilities serving multiple industries in Argentina's main economic hubs.

## ENVIRONMENTAL AND SOCIAL IMPACTS

### Carbon emissions management

Allkem is committed to the transition to net zero emissions by 2035 and is progressively implementing actions across the group to achieve this target. Each project within the group will contribute to this target in a different, but site appropriate manner.

In prior studies, power generation at Sal de Vida was designed to be sourced from diesel generators whilst simultaneously pursuing and maximising a photovoltaic energy solution. Despite diesel power generation remaining in the current study, Allkem is targeting 30% of power generation for Stage 1 production to be sourced from photovoltaic energy generated by a site-based solar farm. The Company is currently in a tender process to install this hybrid solution for day 1 of Stage 1 production and this will be defined further in H2 CY22.

Allkem will seek to further decarbonise the project by maximising this renewable energy source through its life. A standalone study for Stage 2 will also be undertaken with the intention of replacing all remaining site-based diesel generated power with natural gas. The design basis and infrastructure allows the project to move to a 100% photovoltaic energy solution when battery storage technology is certified to work at altitude.

### Environment

Allkem is committed to the responsible use of water resources and minimising environmental impacts. The internally developed process flowsheet was selected partly on the basis it consumed significantly less energy and water than other conventional technologies.

The Sal de Vida Project will consume minor amounts of raw water, equivalent to 1-2% of the groundwater recharge to the system. There is no expected loss of water to communities in either their groundwater or surface water usage. Water monitoring takes place at seven different control points alongside nearby rivers in addition to periodic sampling to test flow rates, chemical and physical properties.

An environmental baseline study was performed covering areas such as water, flora, fauna, hydrogeology, hydrology, climate, landscape, ecosystem characterisation, and socio-economic considerations. This study was used to support the EIA and will be used to monitor any impacts from constructions and/or operations. Collaborative and community water samplings continue with local communities and provincial regulators.

A physical climate change impact risk study was completed in 2020. Overall, no material climate change risks were identified, and projections will continue to be used to inform project design.

### Community engagement

Allkem is committed to regularly engaging with community stakeholders and providing positive, lasting benefits through employment opportunities, local procurement, and educational and health initiatives. As part of a two-year corporate social responsibility program agreed in 2019, the Company funded three projects to support the communities nearest to Sal de Vida. This includes the construction of the high school in El Peñón village, expansion of the primary school in Antofagasta de la Sierra and construction of a first aid facility in Cienaga La Redonda. A community office was established in Antofagasta de la Sierra in January 2020. Separately, a social baseline study including a perceptions test returned positive results about the Company and the Sal de Vida Project.

Since 2021, Sal de Vida has been developing a "Completion of education" programme that benefits employees of the project, the communities of Ciénaga Redonda and Antofalla. This programme is carried out jointly through an agreement signed with Catamarca Education Ministry. Allkem aims to support local communities by maximising health, wellbeing and the procurement of local goods and services whilst upskilling and providing future employment opportunities. During CY21 Allkem undertook a number of initiatives including:

- Industrial technical training program in Antofagasta de La Sierra, carrying out more than 43 courses attended by more than 600 people;
- The development of local suppliers in Antofagasta de La Sierra, establishing a local laundry service for Sal de Vida project;
- Implementation of Health and Wellbeing seminars in Antofagasta de la Sierra villages, which involved talks by medical professionals about the prevention and care of different conditions and pathologies in all communities

As at 31 March 2022, over 70% of the local employees are from Catamarca and Stage 1 will create approximately 900 full-time positions in the peak of construction and 170 full time position during stable Stage 1 operations.

Further engagement with the provincial government and stakeholders, including the communities of Antofagasta de La Sierra, continue in relation to project updates.

### **Regulations and permitting**

Sal de Vida Stage 1 of 10.7ktpa is fully permitted after receiving approval from regulators in December 2021. This permit is being used for construction activities which commenced in January 2022 to build the first two string of ponds, the brine distribution system, additional camp capacity, process plant and non-process infrastructure.

The Stage 1 expansion to 15ktpa requires a permit for the additional, third string of evaporation ponds which covers an extra ~150ha. The revised EIA has already been submitted to regulators and is expected to be approved by August 2022. The plant requires minimum changes from the upgraded capacity and therefore consultation with regulators is straightforward.

Stage 2 will require a new EIA approval that will be submitted once the front-end engineering design and technical studies to this stage are completed. A ground water permit is also in place, providing sufficient supply of water for all stages of operations.

## **PRE-FEASIBILITY STUDY ON STAGE 2 EXPANSION**

Since the merger of Galaxy Resources and Orocobre Limited, Stages 2 and 3 from the 2021 Feasibility Study have been combined into a single expansion with production increasing to 30ktpa, a 40% increase compared to the previous combined capacity. The PFS has used the Canadian Institute of Mining, Metallurgy and Petroleum as the minimum engineering standard to be achieved and this is a prerequisite for the conversion of Mineral Resources to Mineral Reserves.

Development of Stage 2 is supported by the design basis of Stage 1 and the additional processing capacity will be achieved by adding to the existing plant in a staged approach. Synergies are expected with labour, reagents and product handling. The PFS confirms capital and operating assumptions for the processing plant expansion and additional evaporation ponds according to ACCE Class 4. Project delivery synergies from continuity of engineering, and allocated contingency have not yet been determined and are expected to be realised as further work is completed.

## Development capital and operating costs

Project development capital expenditure for both stages combined is estimated to be US\$794 million and includes the same key design assumptions as Stage 1. OPEX for all stages is estimated to be US\$3,280 per tonne LC, an 8% decrease compared to Stage 1 on a standalone basis.

While the fundamental approach is to replicate Stage 1 with increased wells, pumps, evaporation ponds and plant capacity, it is expected that many synergies will be realised including project delivery and development capital and operating costs. Continuity of people, systems and processes, engineering efficiencies and targeted allocation of contingency are expected. However, the PFS level does not accommodate these expected additional synergies other than minor indirect cost reductions. Further upside is expected as more detailed engineering on these stages advance.

## Project Economics

The Feasibility for all stages demonstrates strong financial outcomes with a Pre-tax NPV<sub>10% real</sub> of US\$ US\$3.0 billion. Further project economics are summarised in Table 11.

**Table 11: Stage 1 & 2 - Summary of financials over a 40-year project life**

Financial Summary	Units	Stage 1 Feasibility Study	Stage 2 Pre-feasibility Study	Total
NPV (Pre-tax)	US\$M	1,226	1,810	3,036
NPV (Post-tax)	US\$M	762	1,101	1,863
IRR (Pre-tax)	%	50	38	44
IRR (Post-tax)	%	37	30	38
Payback Period <sup>1</sup>	Years	1.75	3.0	3.75
Development Capital Intensity	US\$ / tpa LC	18,041	17,451	17,648
Pre-tax NPV: Dev CAPEX	X: 1	4.5	3.5	3.8

<sup>1</sup> payback period is from date of first commercial production

## EXECUTION STRATEGY

### Project Schedule

Stage Pond construction commenced in January 2022 and Stage 1 first production is expected in H2 CY23. To achieve this, key focus areas in CY22 for Stage 1 include:

- Construction of non-process infrastructure, ponds and the lime plant
- Procurement for long lead items to meet the construction schedule
- Completion of tendering process for a 30% photovoltaic energy solution
- Progression of updated regulatory approvals to reflect the increased production capacity of Stage 1

Project execution later in the year will focus on commissioning the first string of operational ponds before commencing the plant construction and progressing towards operational readiness. This schedule allows for brine evaporation to occur during plant construction, allowing evaporated brine to feed the plant once commissioned.

It is proposed that once the commissioning of Stage 1 commences, the development of Stage 2 will occur in parallel.



## Funding

Funding is expected to be provided through one or more of the following:


- existing corporate cash;
- existing or new corporate debt or project finance facilities;
- cash flow from operations;
- strategic offtake partner(s).

## Offtake Strategy

Allkem continues discussions with prospective customers. In line with the Project execution schedule, these discussions are expected to advance to negotiations throughout the course of the project. Interest and demand remains strong against the backdrop of a tight market, and Allkem seeks to target high growth regions and determine the optimal contracting arrangement at the time of product qualification.

**ENDS**

This release was authorised by Mr Martin Perez de Solay, CEO and Managing Director of Allkem Limited.

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## IMPORTANT NOTICES

This investor ASX/TSX release ("**Release**") has been prepared by Allkem Limited (ACN 112 589 910) (the "**Company**" or "**Allkem**"). It contains general information about the Company as at the date of this Release. The information in this Release should not be considered to be comprehensive or to comprise all of the material which a shareholder or potential investor in the Company may require in order to determine whether to deal in Shares of Allkem. The information in this Release is of a general nature only and does not purport to be complete. It should be read in conjunction with the Company's periodic and continuous disclosure announcements which are available at [allkem.co](http://allkem.co) and with the Australian Securities Exchange ("**ASX**") announcements, which are available at [www.asx.com.au](http://www.asx.com.au).

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### Forward Looking Statements

Forward-looking statements are based on current expectations and beliefs and, by their nature, are subject to a number of known and unknown risks and uncertainties that could cause the actual results, performances and achievements to differ materially from any expected future results, performances or achievements expressed or implied by such forward-looking statements, including but not limited to, the risk of further changes in government regulations, policies or legislation; risks that further funding may be required, but unavailable, for the ongoing development of the Company's projects; fluctuations or decreases in commodity prices; uncertainty in the estimation, economic viability, recoverability and processing of mineral resources; risks associated with development of the Company Projects; unexpected capital or operating cost increases; uncertainty of meeting anticipated program milestones at the Company's Projects; risks associated with investment in publicly listed companies, such as the Company; and risks associated with general economic conditions.

Subject to any continuing obligation under applicable law or relevant listing rules of the ASX, the Company disclaims any obligation or undertaking to disseminate any updates or revisions to any forward-looking statements in this Release to reflect any change in expectations in relation to any forward-looking statements or any change in events, conditions or circumstances on which any such

statements are based. Nothing in this Release shall under any circumstances (including by reason of this Release remaining available and not being superseded or replaced by any other Release or publication with respect to the subject matter of this Release), create an implication that there has been no change in the affairs of the Company since the date of this Release.

#### **Competent Person Statement**

The information in this report that relates to Sal de Vida's Exploration Results, Mineral Resources and Reserves is based on information compiled by Michael Rosko, MS PG, a Competent Person who is a Registered Member of the Society for Mining, Metallurgy and Exploration, Inc (SME), a 'Recognised Professional Organisation' (RPO) included in a list posted on the ASX website from time to time. Mike Rosko is a full-time employee of E.L Montgomery and Associates and has 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 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mike Rosko consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The scientific and technical information contained in this announcement has been reviewed and approved by, Michael Rosko, MSc. Geology (Montgomery and Associates), as it relates to geology, modelling and resource reserve estimates; Michael Gunn, BSc. Chemical Engineering (Gunn Metals), as it relates to processing, facilities, infrastructure, project economics, capital and operating cost estimates; Scott Weston, BSc. (Hons) and MBA in Mineral Resources Management (Ausenco), as it relates to permitting and environmental and social studies. The scientific and technical information contained in this release will be supported by a technical report to be prepared in accordance with National Instrument 43-101 – Standards for Disclosure for Mineral Projects. The Technical Report will be filed within 45 days of this release and will be available for review under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

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## ANNEXURE A

### ADDITIONAL RESOURCE & RESERVE INFORMATION

#### Additional information for the resource estimation

Diamond drill cores were obtained in the field for both drainable and total porosity. Porosity samples were sealed in plastic tubes and shipped to Core Laboratories in Houston, Texas, for analysis. Depth-specific brine samples were collected from the in-situ formation, ahead of the core bit. Four additional methods were used to obtain brine samples. Brine samples used to support the reliability of the depth-specific samples included analyses of brine centrifuged from core samples, brine obtained from low flow sampling of the exploration core holes, brine samples obtained near the end of the pumping tests in the exploration wells, and brine samples obtained during reverse- circulation air drilling. After the samples were sealed on site, they were stored in a cool location, then shipped in sealed containers to the laboratories for analysis.

Borehole and well spacing is in general about 4 km in most areas, and is consistent with guidelines determined by Houston et al., 2011 for evaluation of brine-based lithium resources in salar-type systems. The drilling density was sufficient to demonstrate a high degree of confidence in the understanding of the location and nature of the aquifer, and brine grade both horizontally and vertically. The Sal de Vida area has been drilled and logged with vertical exploration boreholes and wells.

The resource was estimated using the polygon method. To estimate total amount of lithium in the brine, the basin was first sectioned into polygons based on the location of exploration drilling. Polygon sizes were variable. Each polygon block contained one diamond drill exploration hole that was analysed for both depth specific brine chemistry and drainable porosity. Boundaries between polygon blocks are generally equidistant from diamond drill holes. For some polygon blocks, outer boundaries are the same as basin boundaries, as discussed above.

Within each polygon shown on the surface, the subsurface lithologic column was separated into hydrogeologic units. Each unit was assigned a specific thickness based on core descriptions and was given a value for drainable porosity and average lithium content based on laboratory analyses of samples collected during exploration drilling. Correlation between depth and lithium concentration in the brine was observed further increasing confidence in the method. The computed resource for each polygon was the sum of the products of saturated hydrogeologic unit thickness, polygon area, drainable porosity and lithium content.

A cut-off grade of 500 mg/L of lithium was used. Hydrogeologic units within each polygon with lithium content less than cut-off grade were not included in the lithium resource calculations. The resource computed for each polygon is independent of adjacent polygons, but adjacent borehole geology was used to confirm stratigraphic continuity of the units surrounding each borehole.

Mining methodology ultimately would be via well pumping in areas identified as favourable for brine extraction. An on-site pilot plant demonstrated the ability to extract the lithium from the brine.

Drilling information from the production well extensions have resulted in the increased depth of the basement model and have increased the volume of the lithium brine hosting aquifer. Locations of all drill holes used for the estimation is shown in in the table below.

**Table 12: Location of drill holes**

Hole ID	Easting	Northing	Elevation	Depth	Drilling Method	Azimuth	Dip
SVH10_05	3,401,501	7,187,997	3,967	51	Diamond	0	-90°
SVH10_06	3,407,698	7,198,544	3,966	109.21	Diamond	0	-90°
SVH10_07	3,405,096	7,200,713	3,972	110.60	Diamond	0	-90°
SVH10_08	3,412,000	7,198,004	3,970	136.10	Diamond	0	-90°
SVH10_09	3,404,610	7,192,659	3,969	116.17	Diamond	0	-90°
SVH10_10	3,402,046	7,192,921	3,967	114.76	Diamond	0	-90°
SVH10_11	3,401,991	7,200,980	3,969	102.35	Diamond	0	-90°
SVH10_12	3,404,945	7,194,862	3,968	112.72	Diamond	0	-90°
SVH10_13	3,399,997	7,192,002	3,966	135.37	Diamond	0	-90°
SVH10_14	3,397,992	7,193,440	3,966	145.15	Diamond	0	-90°
SVH11_15	3,403,401	7,190,002	3,969	149.00	Diamond	0	-90°
SVH11_16	3,411,992	7,191,599	3,974	171.23	Diamond	0	-90°
SVH11_24	3,401,757	7,190,453	3,967	195.54	Diamond	0	-90°
SVH11_25	3,406,876	7,193,763	3,970	155.77	Diamond	0	-90°
SVH11_26	3,402,708	7,196,334	3,966	139.09	Diamond	0	-90°
SVH11_27	3,409,861	7,192,435	3,973	137.31	Diamond	0	-90°
SVH11_28	3,409,188	7,196,108	3,969	95.62	Diamond	0	-90°
SVH11_28	3,409,188	7,196,108	3,969	95.62	Diamond	0	-90°
SVWP21-01	3,411,502	7,195,299	3,972	240	Rotary	0	-90°
SVWP21-02	3,412,559	7,194,884	3,973	307	Rotary	0	-90°
SVWP21-03	3,411,664	7,194,301	3,974	202	Rotary	0	-90°
SVWP21_04	3,412,788	7,193,901	3,973	236	Rotary	0	-90°
SVWP21_05	3,411,643	7,193,289	3,973	212	Rotary	0	-90°
SVWP21_06	3,412,771	7,192,906	3,974	267.7	Rotary	0	-90°
SVWP21_07	3,411,663	7,192,303	3,974	250	Rotary	0	-90°
SVWP20_08	3,412,781	7,191,991	3,976	307	Rotary	0	-90°

Note: Easting and Northing shown using Gauss Krüger coordinate system, Posgar 94 datum.

### Additional information for the reserve estimation

The methodology used to develop the estimated resources, is different to the methodology used to estimate the reserves, but consistent with the informal guidelines for lithium brines developed by Houston et al., 2012. Their document provides informal guidelines for estimation of Brine Resources and Brine Reserves, and their methodology is consistent with industry standards for characterisation of aquifers and wellfields.

The document states that key variables, “*hydraulic conductivity, recovery, brine behaviour and grade variation over time, etc. and fluid flow simulation models*” are considered when estimating the Brine Reserve and determining economic extraction. Given the nature of brine, the same guidelines regarding well spacing and grade cannot be applied as if the deposit was a stationary (i.e. static) orebody. The guidelines regarding lithium brine deposits, as suggested by the Ontario Securities



Commission (2011), were considered acceptable and applied by Montgomery during construction of the groundwater flow model used to estimate the reserve.

Where previous methods were used to estimate the total amount of brine, and therefore lithium in storage that could be theoretically drained in the entire mining concession, the method used for reserve estimation is completely different and focuses on the potential for retrieval of lithium via wellfield pumping in selected areas where pumping at relatively large abstraction rates have been demonstrated. As the brine is a mobile fluid, it is necessary to use a calibrated numerical groundwater flow model, respective of fluid density, to project future wellfield production and projected future brine grade.

Due to various levels of uncertainty in conceptualizing any hydrogeological system, all groundwater flow models necessarily incorporate inherent uncertainty. To lessen the effects of uncertainty, good model calibration to observed field conditions is essential for judging confidence in model projections. However, even with reasonable short-term model calibration to 30-day, hydraulic testing of the brine aquifer that was conducted in late 2012 and in 2020, long-term model projections are less certain because of outstanding variables. These variables include locations of aquifer boundaries, lateral continuity of key aquifer zones, presence of fresh and brackish water that have the potential to dilute the brine in the wellfield area, and the uniformity of aquifer parameters within specific aquifer units. Although the numerical model was constructed to be reasonably conservative when data are scarce or assumed (i.e., law of parsimony), there is always a level of uncertainty associated with projections of long-term outcomes. Therefore, it is appropriate to categorize the pumping from the first six years of pumping at each wellfield as a Proven Brine Reserve. Although projections of long-term pumping past the first six years from the wellfields are less certain. There is a reasonable understanding of the hydrogeological system that over the long-term the projected pumped brine can be categorized as a Probable Brine Reserve for the remaining 34 years of pumping at each wellfield.

It is standard in the industry to recalibrate and update numerical groundwater models after start-up and during operation of the production wellfields. As the wellfields are pumped, long-term data for pumping rates, water levels, and brine chemistry are generated; calibration to these new data will improve the reliability and predictive capabilities of the model. Future probable reserve estimates may also be modified based on production pumping results, and projections from the recalibrated model may result in confidence category upgrades of Probable Brine Reserves to Proven Brine Reserves.

### **Statement of Brine Reserves**

The groundwater model simulates concentrations of TDS, which are used to derive concentrations of lithium by linear relationships developed for each wellfield. It is assumed that the relationship between TDS and lithium content is constant during 40-year period of brine production from the East and Southwest wellfields. In this manner, the concentrations of lithium on model projections of TDS in the brine produced from pumping wells in each production wellfield are estimated.

Using the numerical groundwater flow model projections, total lithium to be extracted from the proposed Southwest and East wellfields was calculated for a total period of 40 years, considering the three stages of the project and taking into account that each wellfield will be pumping for 40 years with a gap of two years between wellfields (East, Southwest (South) and Southwest (North)). The model projections used to determine the Brine Reserve that assumed increasing pumping from both wellfields, indicate that the proposed wellfields should be able to produce a reliable quantity of brine at an average annual rate of approximately 10,000 m<sup>3</sup>/d (about 116 L/s) in the case of the East wellfield and 18,000 m<sup>3</sup>/d in the case of Southwest wellfield (about 208 L/s). The average grade at start-up

calculated from the initial model simulations used to estimate the Brine Reserve is expected to be about 810 mg/L of lithium (East wellfield); average final grade after 40 years of pumping is projected to be 778 mg/L of lithium (Southwest wellfield). Depending on how the wellfields are ultimately operated, these rates and grades may be different.

Using the groundwater model, the average TDS content of brine was estimated for each pumping cycle for each wellfield. After estimating the total lithium content for each time step and summing the amounts of lithium projected to be pumped during those time steps, a total mass of unprocessed lithium to be pumped from the wellfields was estimated. The results are summarised in Table 13.

**Table 13: Summary of total projected lithium carbonate pumped during 40 years of wellfield operations.**

Time Period	Years	Active Wellfield	Lithium Total Mass (Tonnes)	Li <sub>2</sub> CO <sub>3</sub> Equivalent (Tonnes)
1	1-2	East	8,052	42,857
2	3-40	East+Southwest	458,975	2,443,027
<b>Total</b>			467,027	2,485,884

Total mass values in 1,000-kilogram units (tonnes) of lithium were then converted to lithium carbonate equivalent (LCE) units using 5.3228 as the conversion factor. Therefore, the amount of lithium in the brine supplied to the ponds in 40 years of pumping is estimated to be about 2.48 Mt LCE, assuming no losses during processing.

Modelling results indicate that during the 40-year pumping period, brine will be diluted by fresh and brackish water, so the pumping rates increase slightly with time, to meet the anticipated LCE tonnes per year for each wellfield.

During the evaporation and concentration process of the brines, there will be anticipated losses of lithium. Therefore, because the total amounts provided in Table 13 do not include anticipated loss of lithium due to process losses and leakages, those values cannot be used for determination of the economic reserve. The amount of recoverable lithium in the brine feed is calculated to be about 68.7% of the total brine supplied to the ponds.

## ANNEXURE B

### JORC Code, 2012 Edition – Table 1 Report

#### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li><i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></li> <li><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li><i>In cases where ‘industry standard’ work has been done this would be relatively simple (eg ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay’). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<p>Diamond drill cores were obtained in the field for both drainable and total porosity. Porosity samples were sealed in plastic tubes and shipped to Core Laboratories in Houston, Texas, for analysis.</p> <p>Depth-specific brine samples were collected from the in situ formation, ahead of the core bit. Four additional methods were used to obtain brine samples. Brine samples used to support the reliability of the depth-specific samples included analyses of the following:</p> <ul style="list-style-type: none"> <li>• brine centrifuged from core samples,</li> <li>• brine obtained from low flow sampling of the exploration coreholes,</li> <li>• brine samples obtained near the end of the pumping tests in the exploration wells, and</li> <li>• brine samples obtained during reverse-circulation air drilling</li> </ul> <p>Neither porosity samples (core) nor chemistry samples (brine) were subjected to any further preparation prior to shipment to participating laboratories. After the samples were sealed on site, they were stored in a cool location, then shipped in sealed containers to the laboratories for analysis.</p>

<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>• <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></li> </ul>	<p>Core size was either HQ or NQ. For each drill core, recovery percentage was recorded. Core was logged on site and stored in labeled plastic core boxes. Once drill operation is completed, 2-inch schedule 80 PVC, and Slot-40 (1 mm) PVC screen is installed in the coreholes.</p> <p>Production wells SVWP21-01, SVWP21-02, SVWP21-03, SVWP21-04, SVWP21-05, SVWP21-06, SVWP21-07 and SVWP20-08 were drilled by conventional circulation mud rotary. Drilling fluid was polymer mixed with native brine and bentonite. A 5-meter length of 39-inch diameter steel surface casing was installed in the wells. Drilled diameter was 8<sup>3/4</sup> inch for the pilot borehole. Then consecutive reaming process was conducted to 24 and 18 inch for the surface casing, and 16 inch for the final borehole.</p> <p>For each exploration well, time to drill 1 meter was recorded to monitor penetration rate. Once drilling was completed, 10-inch blank PVC casing, and slotted PVC well screen was installed (slot size 0.75 mm).. Gravel pack (1-3 mm diameter) was installed in the annular space surrounding the well screen. Above the gravel pack a bentonite seal was installed and fill material was installed to land surface.</p>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></li> </ul>	<p>Diamond core and RC cuttings recoveries were monitored closely, recorded and assessed regularly over the duration of the drilling programs.</p> <p>Diamond core is drilled slowly to maximise recovery; core loss is recorded in the field.</p> <p>In general, decreased clay content and cementation result in increased core loss. Therefore, some of the most permeable and porous aquifer zones may not be represented in the drainable porosity samples due to inability to conduct testing on loose sediment. However, this would tend to underestimate the average drainable porosity values, resulting in conservatively smaller values.</p>
<b>Logging</b>	<ul style="list-style-type: none"> <li>• <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<p>Core and chip samples were logged in accordance with guidelines developed by the hydrogeologists. All drill holes were logged in full. Geological logging was qualitative.</p> <p>Recording of core recovery was quantitative.</p> <p>All DD core was photographed. Representative 2m samples of drill cuttings from rotary drilling were collected in chip trays for future</p>

		reference and photographed.
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<p>Only un-split core samples were submitted for testing due to the nature of the laboratory porosity analysis.</p> <p>The sample sizes and integrity of the core samples submitted for testing were considered appropriate by the laboratory for the analytical methods used.</p> <p>Sub-sampling of brine samples only occurred at the laboratory as needed to obtain specific sample size required for analyses. Sample sizes for brine submitted for chemical analyses were in accordance with recommended volumes required by the laboratory.</p>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory</i></li> </ul>	<p>Porosity analyses were conducted by Core Laboratories Petroleum Services Division, Houston, Texas. Selected representative samples were submitted for laboratory analyses. Brine chemistry samples from Sal de Vida were analysed by Alex Stewart Assayers of Jujuy, Argentina, who have extensive experience analysing lithium-bearing brines. Selected duplicate samples were sent to the University of Antofagasta, Chile, and other labs as part of the QA/QC procedure.</p> <p>Standard analyses indicate acceptable accuracy and precision</p>

*checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*

through the expected range of grades for analyses conducted at Alex Stewart laboratory. Sample and laboratory duplicate analyses indicate acceptable precision for Li, K and Mg analyses conducted at Alex Stewart laboratory. The Alex Stewart analyses also show acceptable accuracy and precision, and anion-cation balance for resource estimation.

Analytical quality was monitored through the use of randomly inserted quality control samples, including standards, blanks and duplicates, as well as check assays at independent laboratories. Each batch of samples submitted to the laboratory contained at least one blank, one low grade standard, one high grade standard and two sample duplicates. Approximately 38 percent of the samples submitted for analysis were quality control samples.

#### **Verification of sampling and assaying**

- *The verification of significant intersections by either independent or alternative company personnel.*
- *The use of twinned holes.*
- *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*
- *Discuss any adjustment to assay data.*

Significant intersection of brine at depth was verified internally through the implementation of several different methods to verify aquifer chemistry with respect to depth. These methods included depth-specific sampling (primary), micro samples of brine obtained from centrifuge of core submitted to the laboratory for porosity valuation, down-hole electrical conductivity logging (correlated to total dissolved solids and lithium concentration), low flow sampling of near surface water, and brine samples obtained during reverse-circulation air drilling. Brine chemistry was also confirmed by analysis fluid produced during 24-hour and 30-day pumping tests.

Although twinned holes were not specifically used, adjacent boreholes and wells typically demonstrated good correlation both stratigraphically and with respect to depth grade of lithium and potassium values.

Allkem implements a series of industry standard routine



verifications to ensure the collection of reliable exploration data. Documented exploration procedures exist to guide most exploration tasks to ensure the consistency and reliability of exploration data. The data generated in the field are transferred by the field personnel into customized data entry templates. Field data are verified before being loaded into the Access Database.

The Access Database was reviewed by Allkem, Montgomery & Associates, and by Geochemical Applications International.

Laboratory assay certificates are loaded directly into the Access database by use of an import tool. Quality Control reports are generated automatically for every imported assay certificate and reviewed by the Qualified Person to ensure compliance acceptable quality control standards. The Qualified Persons have verified the drainable porosity and chemistry data.

In addition to the use of randomly inserted quality control samples, including standards, blanks and duplicates, brine samples sent to the Alex Stewart analyses show acceptable accuracy and precision for Li and K analyses resource estimation based on check analyses at University of Antofagasta and ACME that validated the results.

No adjustments were made to any laboratory porosity or brine results.

#### ***Location of data points***

- *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*
- *Specification of the grid system used.*
- *Quality and adequacy of topographic control.*

The topographic surveys were carried out by PDOP-Topografía Minera of Salta using differential GPS. Equipment included two Trimble R3 units with a minimum horizontal precision of 10 mm ( $\pm 0.5$  parts per million (ppm)) and a minimum vertical precision of 20 mm ( $\pm 1.0$  ppm). Data was obtained and processed according to the GPS Geodetic Standard of 1996 and Trimble Navigation Standards ([www.trimble.com](http://www.trimble.com)).

The survey was tied-in to P.A.S.M.A. Punto 08-008 (Vega del Hombre Muerto) of the Argentine grid, using POSGAR 94 with the Gauss-Kruger Projection. The coordinates for this point are:

- 7,179,539.06 meters North
- 3,400,524.96 meters East
- Elevation: 4,018.827 meters above land surface (masl)

The following locations were professionally surveyed using the Trimble differential GPS:

- coreholes SVH10\_05 through SVH11\_28,
- exploration wells SVWW11\_01 through SVWW11\_13, and
- reverse circulation boreholes SVRC11\_02 and SVRC11\_03
- observation and production wells SVWM12\_14, SVWP12\_14 through SVWP12\_17
- fresh water wells SVWF12\_19 and SVWF12\_20
- fresh water well VSWF21\_21, and
- production wells SVWP21-01 through SVWP20\_08.

		The remaining exploration wells and fresh water well SVWF12_18 were surveyed using hand-held portable GPS equipment.
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	Borehole and well spacing is in general 4 kilometres or less in most areas, and is consistent with guidelines determined by Houston et al., 2011) for evaluation of brine-based lithium resources in salar-type systems. The drilling density was sufficient to demonstrate a high degree of confidence in the understanding of the location and nature of the aquifer, and brine grade both horizontally and vertically.
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	The Sal de Vida area has been drilled and logged with vertical exploration boreholes and wells. Because salar sediments are effectively deposited horizontally, angled boreholes were determined to be of little value. No sampling bias has been identified based on drilling orientation
<b>Sample security</b>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<p>Core samples for porosity evaluation were not subjected to any preparation prior to shipment to the participating laboratories. The samples were sealed on site and stored in a cool location, then shipped in sealed coolers to the laboratory for analysis.</p> <p>All brine samples were labelled with permanent marker, sealed with tape and stored at a secure site until transported to the laboratory for analysis. Samples were packed into secured boxes with chain of custody forms and shipped to laboratories in Jujuy and Mendoza, Argentina.</p>

#### Audits or reviews

- The results of any audits or reviews of sampling techniques and data.

An internal peer review of the existing Mineral Resource Estimates was conducted by Montgomery & Associates to verify the calculated values. In addition, a 3<sup>rd</sup> party review was conducted by a Qualified Person experienced in lithium brine resources in Argentina.

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>• The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<p>The majority of the land controlled for the Sal de Vida project was secured under agreement with pre-existing owners and claimants. The first such agreement involved securing mining licenses (minas) covering an area of some 13,560 hectares. The minas were secured under a purchase option from a local ulexite miner focused on the exploration for, exploitation and marketing of ulexite, a sodium-calcium borate mineral mainly used for the production of boric acid. Ulexite is produced from shallow surface mining, not by extraction of brines. The mineral rights to the brine on the miner's claims are transferred 100 percent to Galaxy (wholly owned Allkem subsidiary) under this agreement; there is no retained royalty. Most of the agreements follow the same model. Only one of the properties has an associated royalty.</p> <p>Seven of the twenty agreements include usufructs or terms for rights to continue surface ulexite mining by the original owners/operators. The Company has retained the option to buy out any of these usufructs should it be necessary.</p> <p>An additional 9,496 hectares have been secured by acquiring or staking new exploration cateos. One such group of cateos in Catamarca province was acquired by outright purchase from the holder, three others in Salta province were secured by application directly by Galaxy's and Allkem's predecessor, Lithium One. Cateo Vittone was converted to Mina Montserrat in May 21, 2012.</p> <p>There is no habitation on the Resource area.</p>

Allkem is not aware of the extent of wilderness, historical sites, national parks or environmental settings over the areas.

The license is in good standing and there are no known impediments to obtaining a license to operate in the area.

Galaxy (prior to merger into Allkem) announced a sale of tenements in Salta Province on 28 August, 2018. Please refer to (ASX:GXY dated 28 August, 2018) for detail. Allkem has a 292.63km<sup>2</sup> of tenure in Catamarca Province.

N°	File	Tenement	Date	Area (Hectares)
1	78-1986	La Redonda 4	1986	599.39
2	210-1994	Los Patos	1994	549.65
3	261-1997	Centenario	1997	89.18
4	77-1999	Barreal 1	1999	599.49
5	27-2000	Maktub XXIII	2000	968.78
6	54-2000	Aurelio	2000	399.66
7	55-2000	La Redonda I	2000	599.45
8	56-2000	Don Carlos	2000	499.10
9	161-2002	Redonda 5	2002	399.73
10	162-2002	Don Pepe	2002	499.56
11	168-2002	Agostina	2002	205.30
12	185-2002	Chachita	2002	553.84
13	398-2003	Delia	2003	99.90
14	787-2005	Juan Luis	2005	199.98
15	788-2005	Maria Lucia	2005	99.81
16	913-2005	Maria Clara	2005	479.20
17	914-2005	Maria Clara 1	2005	593.82

<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	All known exploration for lithium at Sal de Vida properties was conducted by Galaxy prior to merging into Allkem or by Galaxy's predecessor Lithium One.
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<p>The average elevation of the Puna is 3,700 masl (meters above sea level) and covers parts of the Argentinean provinces of Jujuy, Salta, Catamarca, La Rioja y Tucuman. The Altiplano-Puna Volcanic Complex (APVC) is located between the Altiplano and Puna, and is associated with numerous stratovolcanoes and calderas. Recent studies have shown that the APVC is underlain by an extensive magma chamber at 4-8 km depth (de Silva et al., 2006). It is likely that this could be the ultimate source of the anomalously high values of lithium in the area.</p> <p>Northern Argentina has experienced a semi-arid to arid climate since at least 150 Ma as a result of its stable location relative to the Hadley circulation (Hartley et al., 2005), but as a result of Andean uplift almost all flow of moisture from Amazonia to the northeast has been blocked, leading to increased aridity since at least 10-15 Ma. Consequently, given the zonally high radiation and evaporation levels, the reduction in precipitation has led to the development of increased aridity in the Puna. The combination of</p>



		<p>internal drainage and arid climate led to the deposition of evaporite precipitates in many of the Puna basins. The physiography of the region is characterized by basins separated by ranges, with marginal canyons cutting through the Western and Eastern Cordilleras and numerous volcanic centres, particularly in the Western Cordillera. Abundant dry salt lakes (salares) fill many basins, and these basins contain subsurface brines.</p> <p>Brine prospects differ from solid phase industrial mineral prospects by virtue of their fluid nature. Therefore, the term ‘mineralization’ is not strictly relevant to a brine prospect. Because of the mobility of the brine, the flow regime and other factors such as the hydraulic properties of the aquifer material are considered to be just as important as the chemical constituents of the brine. The clastic, basin fill sediments in Salar de Hombre Muerto are the target units for brine retrieval.</p>
<p><b>Drill hole Information</b></p>	<ul style="list-style-type: none"> <li>• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes: <ul style="list-style-type: none"> <li>◦ easting and northing of the drill hole collar</li> <li>◦ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>◦ dip and azimuth of the hole</li> <li>◦ down hole length and interception depth</li> <li>◦ hole length.</li> </ul> </li> <li>• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<p>Drilling and sampling occurred in several phases, including corehole drilling and sampling, and well construction and testing. Drilling and sampling that has occurred solely in the current Allkem holdings include:</p> <ul style="list-style-type: none"> <li>· 15 diamond drill holes ranging in depth from 51 to 195.54 m, cased with 2-inch PVC</li> <li>· 208 diamond core samples analysed for drainable porosity</li> </ul> <p>220 depth specific brine samples collected from diamond coreholes using drivepoint sampling; 17 of the cased diamond drillholes were also pumped and sampled using a shallow set small diameter submersible electric pump.</p> <ul style="list-style-type: none"> <li>· Downhole electrical conductivity and temperature surveys were conducted at 17 of the cased diamond drill holes</li> <li>· 13 brine exploration wells were constructed, ranging in depth from 51 to 165 m, cased with 6-inch and 8-inch PVC</li> <li>· 1 reverse circulation boreholes with brine samples collected by airlift during drilling, cased with 2-inch PVC</li> <li>· Pumping equipment was installed in the brine exploration wells, and 12 short-term pumping tests were conducted to determine aquifer transmissivity and to obtain composite aquifer brine samples</li> </ul>

		<p>Four additional monitor wells and two production wells were completed and tested in proposed wellfield locations; and long-term pumping tests were conducted in proposed wellfield areas.</p> <p>All drillholes and wells are vertical. Collar elevations are not tabulated as all wells and coreholes were constructed on a salar surface of low relief.</p> <p>Depths for all down-hole samples have been recorded.</p> <p>This update includes eight additional wells, SVWP21-01, WVWP21-02, SVWP21-03, SVWP21-04, SVWP21-05, SVWP21-06, SVWP21-07 and SVWP20-08</p> <p>During long-term pumping tests at wells SVWP17_21, two brine samples were collected.</p> <p>During testing well SVWP21-01, 11 brine samples were collected.</p> <p>During testing well SVWP21-02, 11 brine samples were collected.</p> <p>During testing well SVWP21-03, 11 brine samples were collected.</p> <p>During testing well SVWP21-04, 18 brine samples were collected.</p> <p>During testing well SVWP21-05, 11 brine samples were collected.</p> <p>During testing well SVWP21-06, 10 brine samples were collected.</p> <p>During testing well SVWP21-07, 13 brine samples were collected.</p> <p>During testing well SVWP20-08, 6 brine samples were collected.</p> <p>Total brine samples collected during testing were 91.</p> <p>A total of 14 hydrasleeves brine samples were collected throughout different wells during this drilling campaign year 2021.</p>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li><i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<p>Calculations for in-situ drainable porosity and brine chemistry were made using averages of discrete drainable porosity and depth-specific brine samples collected by drivepoint from coreholes at multiple depths during construction. Brine chemistry was confirmed by centrifuge brine extraction from selected core samples, low-flow pumping of coreholes, and construction and testing of wells, including long-term (30-day) tests.</p> <p>No metal equivalents have been reported.</p>
<b>Relationship between mineralisation widths and intercept</b>	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole</i></li> </ul>	<p>The Mineral Resource and Mineral Reserves reported for Sal de Vida project occur as brine. As stated previously, brine prospects differ from solid phase industrial mineral prospects by virtue of their fluid nature. The relationship between mineralization width and intercept length has no meaning in this context.</p>

<b>lengths</b>	<i>length, true width not known’).</i>	
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	Explanatory maps are included in the text above
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	These results are from production wells SVWP21-01 through SVWP20-08.
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<p>Brine sampling from trenches, and gravity and vertical electrical sounding (VES) surveys have been conducted at the Sal de Vida project.</p> <p>A total of 249 brine samples from trenches were collected.</p> <p>Gravity surveys were conducted in two phases, in 2009 (53.6 km) and 2010 (42.7 km), by Quantec Ltda. A total of 50 vertical electric soundings (SEV) were conducted in August 2010, by Geophysical Exploration and Consulting S.A., (GEC), Mendoza, Argentina (GEC, 2010).</p> <p>No new geophysical surveys are reported in this release.</p> <p>Along with lithium and potassium, the pumped brine is projected to contain significant quantities of magnesium, calcium, sulfate, and to a lesser degree, boron. These constituents must be removed from the brine to enable effective retrieval of the lithium and potassium.</p>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Further wellfield programming is under planification.

## Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<p>All data produced in the Sal de Vida project were transferred into a central data repository managed by Galaxy lithium and located in Denver, Colorado. Data for the Sal de Vida project was then synchronized with a data repository in the Allkem office in Catamarca, Argentina, and a separate data repository at Montgomery &amp; Associates in Tucson, Arizona. Raw data from the project were transferred into a customized Access Database, and used to generate diverse types of reports as needed.</p> <p>The data generated in the field were transferred by the field personnel into customized data entry templates. Field data were verified before being loaded into the Access database. The data contained in the templates is loaded by use of an import tool, which eliminates reformatting of the data. Data were reviewed after entry into the database.</p> <p>Laboratory assay certificates were loaded directly into the Access database, by use of an import tool. Quality Control reports were generated automatically for every imported assay certificate and reviewed by the Competent Persons to ensure compliance acceptable quality control standards. Failures were reported to the laboratory for correction.</p>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<p>Regular site visits were undertaken by Mr. Michael Rosko and Dr. Jeff Jaacks over the duration of the project. Mike Rosko visited the property four times during the course of the program. April 5 to 10, 2010, August 11 to 16, 2010, January 16 to 26, 2011 and June 22 to 28, 2011 and again during August 15 - 20, 2011 to oversee aspects of all drilling techniques, logging, sampling and other technical procedures. Jeff Jaacks visited the property on October 11-19, 2009 and again on January 18-22, 2011 to review sampling procedures, quality assurance programs and sample storage protocols.</p> <p>Michael Rosko visited the project areas again in September, 2018.</p> <p>M&amp;A field personnel visit site during December 2020 until April 2021, for data collection during construction and testing of wells SVWP20-08, SVWP21-04 and SVWP21-02.</p>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> </ul>	<p>The salar is developed in a graben-like intermontane basin in the foreland of the greater Andes. It comprises a complex architecture of recent alluvial fan and volcanoclastic rocks that are either aquifers or aquitards depending on grain size and cementation. The lithium and potassium bearing brine occurs in the pore space of sediments and test work has established the relationships between brine chemistry, brine density and total dissolved solids. Horizontal effective permeability is ~10x vertical permeability.</p>

	<ul style="list-style-type: none"> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<p>Considerable efforts have gone into the development of the conceptual geological and hydrogeological model for the basin. Stratigraphic correlation of units was considered sufficient to establish a high degree of confidence in the conceptualization.</p> <p>Geological interpretation of cross sections was prepared by Montgomery &amp; Associates using available drilling results. Geologic information then imported into a block model to create a three dimensional geological model of the lithologies and hydrogeologic units which was ultimately used to assist in construction of the numerical groundwater flow model.</p> <p>The current geological interpretation is believed to be robust and it is not considered that an alternative interpretation would have a significant impact on the outcome of the Resource.</p> <p>Geologic factors do not affect grade, but do affect the Resource estimation as the Resource estimation is partially controlled by the hydraulic conductivity of hydrogeologic units. Lithology of hydrogeologic units affects both volume of brine in storage and the ability to remove brine via pumping</p>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<p>Because the Resource is a mobile brine, the dimensions are effectively the identified aquifer located in the eastern half of the Salar de Hombre Muerto basin. Allkem has mineral rights ownership of a total 38,159.04 hectares in the east half of Salar del Hombre Muerto. The Resource calculation was restricted to only brine located within the mineral rights ownership area.</p> <p>Hard rock areas on the basin edges were considered no-flow boundaries. Maximum depth drilled was 307 meters; however, the Resource was computed for polygons only to the maximum depth drilled at that location, even though additional aquifer may occur at a greater depth.</p> <p>The brine field is constrained by crystalline basement to the east and Tertiary hard rock to the west, possibly fault bounded.</p>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> </ul>	<p>The resource was estimated using the polygon method and a spreadsheet. To estimate the total amount of lithium the brine was first sectioned the basin into polygons based on location of exploration drilling. Polygon sizes were variable. Each polygon block contained one diamond drill exploration hole that was analysed for both depth specific brine chemistry and drainable porosity. Boundaries between polygon blocks are generally equidistant from diamond drill holes. For some polygon blocks, outer boundaries are the same as basin boundaries, as discussed above.</p>

	<ul style="list-style-type: none"> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li>• <i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li>• <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<p>Within each polygon shown on the surface, the subsurface lithologic column was separated into hydrogeologic units. Each unit was assigned a specific thickness based on core descriptions, and was given a value for drainable porosity and average lithium content based on laboratory analyses of samples collected during exploration drilling. Correlation between depth and lithium concentration in the brine was observed and lent increased confidence in the method. The computed resource for each polygon was the sum of the products of saturated hydrogeologic unit thickness, polygon area, drainable porosity, and lithium content.</p> <p>A cutoff grade of 500 mg/L of lithium was used. Hydrogeologic units within each polygon with lithium content less than cutoff grade were not included in the lithium resource calculations. The resource computed for each polygon is independent of adjacent polygons, but adjacent borehole geology was used to confirm stratigraphic continuity of the units surrounding each borehole.</p>
Moisture	<ul style="list-style-type: none"> <li>• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<p>Resource values are computed based on total amount of lithium in the extractable brine volume.</p>
Cut-off parameters	<ul style="list-style-type: none"> <li>• The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<p>A conservatively high cut-off grade of 500 mg/L in the brine was selected based on the projection that brine with 500 mg/L or larger would be available for a 40-year period.</p>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<p>Mining/extraction methodology ultimately would be via well pumping in areas identified as favourable for brine extraction.</p>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<p>An on-site pilot plant demonstrated the ability to extract the lithium from the brine.</p>



Environmental factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	An industrial process has been designed for the removal of magnesium, calcium sulfate and boron.
Bulk density	<ul style="list-style-type: none"> <li><i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i></li> <li><i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</i></li> <li><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	Density for the brine containing over 500 mg/L ranged from 1.14 to 1.21Kg/L. Concentration of lithium is linearly correlated total dissolved solids, and with brine density.
Classification	<ul style="list-style-type: none"> <li><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li><i>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></li> <li><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<p>Relevant factors include the spatial positioning of lithium brine concentrations, spatial understanding of hydrogeologic units, measured values for specific yield (drainable porosity), location of boundaries, and location of fresh and brackish water with low lithium concentration. Because several measurement techniques were used to obtain samples and evaluate the key parameters a high level of confidence in the values used to estimate the Resource, particularly the spatial location for the target brine has been achieved. In addition, statistical evaluation of the measurements has been done to provide additional support for the methods used.</p> <p>In the opinion of the competent person responsible for the production of the Mineral Resource Estimates, the results appropriately reflect the view of the deposit.</p>
Audits or reviews	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	An internal peer review of the existing Mineral Resource Estimates was conducted by Montgomery & Associates to verify the calculated values. In addition, a 3 <sup>rd</sup> party review was conducted by a Qualified Person experienced in lithium brine resources in Argentina.
Discussion of relative accuracy/	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent</i></li> </ul>	The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. In general, where key evaluation parameters were sparse or lacking, standard

#### confidence

Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.

- The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.
- These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.

values (such as specific capacity) used in hydrogeological analyses were used. However, in all cases, the values selected were considered to be conservatively low, as to not artificially increase the Resource.

## Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
<b>Mineral Resource estimate for conversion to Ore Reserves</b>	<ul style="list-style-type: none"> <li>• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>• Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	<p>As brines are fluids and mobile in the subsurface, the Reserve values have been determined using the groundwater numerical flow model for the Sal De Vida project covering the areas included in the Mineral Resource estimate.</p> <p>The Reserve values provided are included in the Resource estimates; they are not “in addition to” the Resource values.</p>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>• Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>• If no site visits have been undertaken indicate why this is the case.</li> </ul>	Regular site visits were undertaken by Mr. Michael Rosko and Dr. Jeff Jaacks over the duration of the project.
<b>Study status</b>	<ul style="list-style-type: none"> <li>• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>• The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have</li> </ul>	In addition to the understanding of the aquifer during the exploration phases of the project as detailed above, 12 short-term aquifer tests and two 30-day aquifer tests were conducted, in the basin and in the proposed west and east wellfields. Results from these tests provide important technical support and input parameters that allowed transient calibration of the numerical groundwater flow model, and ultimately development of that Reserve.

*determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*

<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li><i>The basis of the cut-off grade(s) or quality parameters applied.</i></li> <li><i>Any assumptions or allowances made for deleterious elements.</i></li> <li><i>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</i></li> <li><i>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</i></li> </ul>	<p>A conservatively high cut-off grade of 500 mg/L in the brine was selected based on the projection that brine with 500 mg/L or large would be available for a 40-year period. Numerical model simulations show that lithium grade for brine pumped from each wellfield during the simulated life of the mine does not fall below the cut-off grade of 500 mg/L.</p> <p>During the evaporation and concentration process of the brines, there will be anticipated losses of both lithium and potassium. With reference to the pilot plant testing work, which adopted the same lithium carbonate flowsheet, the estimated amount of recoverable lithium in the brine feed is calculated to be about 68.7% of the total brine supplied to the ponds</p>
<b>Environmental</b>	<ul style="list-style-type: none"> <li><i>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i></li> </ul>	<p>The objectives of the Environmental Impact Study of the Sal de Vida Project were in accordance with Nacional Law Nº 24,585, consisting of the following:</p> <p>a) to prepare the Environmental and Social Impact Study for the "Implementation of Sal de Vida Project", Galaxy Lithium (Sal de Vida) S.A. b) to comply with National Law Nº24,585- Mining Code- Environmental Protection for Mining Activities, c) to conduct a comprehensive survey of the environmental components existing in the project area for future environmental manage plan and monitoring work.</p>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li><i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.</i></li> </ul>	<p>Infrastructure has been considered and evaluated in two distinct categories; on-site and off-site. On-site infrastructure includes the accommodation camp, workshops, power station, utilities, site roads, water supply, water treatment plant and sewage treatment. Off-site infrastructure includes access roads, natural gas pipeline from Pocitos, airstrip, lime kiln at Los Tilianes and communication systems that support the site.</p> <p>The labour policy is to recruit from Salta and Catamarca, in accordance to requests from the provincial governments for contracting local labour. In general, recruitment will follow the principals of competitive selection against specified job performance criteria (ie "best person for the job"). Selection processes will be non discriminatory: gender, culture and religious</p>

		orientation neutral. Both provinces (Salta and Catamarca) have universities which may provide technical training in areas relevant to the company's needs, including technical and administrative degrees.
<b>Costs</b>	<ul style="list-style-type: none"> <li>• <i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></li> <li>• <i>The methodology used to estimate operating costs.</i></li> <li>• <i>Allowances made for the content of deleterious elements.</i></li> <li>• <i>The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.</i></li> <li>• <i>The source of exchange rates used in the study.</i></li> <li>• <i>Derivation of transportation charges.</i></li> <li>• <i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li>• <i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	With reference to the original financial costings included in the DFS of 2013, updated capital and operating cost estimates have been reviewed by Techint Engineering & Construction and Resource Engineering, taking into account current market conditions, inflation, currency devaluation and generally, supporting information sourced from equipment and material suppliers, and service providers.
<b>Revenue factors</b>	<ul style="list-style-type: none"> <li>• <i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</i></li> <li>• <i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	Production revenues have been revised using several lithium carbonate price scenarios and production schedules as prepared by Global Lithium LLC.
<b>Market assessment</b>	<ul style="list-style-type: none"> <li>• <i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></li> <li>• <i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></li> </ul>	The market for Lithium is well established and the price is increasing as the demand for Lithium batteries increases. Lithium is not sold on the open market and as such there is no public information available regarding the price. The actual product price achieved depends on negotiated contracts.

	<ul style="list-style-type: none"> <li>• Price and volume forecasts and the basis for these forecasts.</li> <li>• For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	
<b>Economic</b>	<ul style="list-style-type: none"> <li>• The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>• NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	The economic analysis included revenue inputs from assumed pricing scenarios for lithium carbonate, major cost inputs included those for reagents, transportation costs, energy, manpower, as well as general and administrative costs – the source of these estimates were based on supporting information from equipment and material suppliers, and other service providers. NPV analysis was reviewed for sensitivity assuming varying discount rates, tax and pricing scenarios. A review on these NPV calculations was conducted by ACSI Engineering.
<b>Social</b>	<ul style="list-style-type: none"> <li>• The status of agreements with key stakeholders and matters leading to social licence to operate.</li> </ul>	Not applicable.
<b>Other</b>	<ul style="list-style-type: none"> <li>• To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>• Any identified material naturally occurring risks.</li> <li>• The status of material legal agreements and marketing arrangements.</li> <li>• The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul>	<p>No material naturally occurring risks have been identified.</p> <p>No material legal or marketing agreements have been entered into. Mining leases over the tenements containing the Ore Reserves have been approved.</p> <p>The project has been under development since October 2009 with all necessary approvals, until to date of this report.</p>
<b>Classification</b>	<ul style="list-style-type: none"> <li>• The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>• Whether the result</li> </ul>	Although the numerical model was constructed to be reasonably conservative when data are scarce or assumed, there is always a level of uncertainty associated with projections of long-term outcomes. Therefore, it is believed that it is appropriate to categorize the pumping from

	<p><i>appropriately reflects the Competent Person's view of the deposit.</i></p> <ul style="list-style-type: none"> <li><i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i></li> </ul>	<p>the first, 6- year pumping cycle as a Proven Reserve. Although projections of long-term pumping past the first 6-year cycle from the well fields are less certain, as a reasonable understanding of the hydrogeologic system has been obtained, it is believed that over the long-term the projected pumped brine resource can be categorised as a Probable reserve for the remaining 34 years of pumping.</p> <p>The estimated Reserves are, in the opinion of the Competent Persons, appropriate for this deposit.</p>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Ore Reserve estimates.</i></li> </ul>	<p>An internal peer review of the existing Mineral Reserve Estimate was conducted by Montgomery &amp; Associates to verify the calculated values</p>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li><i>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</i></li> <li><i>It is recognised that this may not be possible or appropriate in all circumstances. These statements of</i></li> </ul>	<p>JORC has not provided guidance for evaluation of brine prospects. Therefore, the methodology used to calculate the Mineral Reserve is consistent with the NI 43-101 guidelines for lithium brines developed by the Corporate Finance Branch of the Ontario Securities Commission (OSC, 2011). Their document provides guidelines for calculation of brine resource and reserves and follows NI 43-101 standards. The document states that key variables, "hydraulic conductivity, recovery, brine behaviour and grade variation over time, etc. and fluid flow simulation models" be considered when computing the reserve estimate and determining economic extraction. Because of the nature of brine, the same guidelines regarding well spacing and grade cannot be applied as if the deposit was a stationary orebody. The guidelines regarding lithium brine deposits as suggested by the OSC (2011) have been adopted. The reserve values provided in this section are included in the resource estimates; they are not "in addition to" the resource values provided in earlier reports.</p> <p>Similar methodology for evaluation of brine prospects has been recommended in peer-reviewed journals. See Houston, J., Butcher, A., Ehren, P., Evans, K., and Godfrey, L., 2011, The Evaluation of Brine Prospects. Economic Geology.</p>



relative accuracy and confidence of the estimate should be compared with production data, where available.

## ANNEXURE C ASSAY RESULTS

**Table 1: SVWP21\_01 Assay Results**

N° Muestra	Pozo	Lab	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Sr
SV-08137	PT SVWP21_01 EBCV	T01			946.00		10208.00	914.00	2454.00			
SV-08138	PT SVWP21_01 EBCV	T01			944.00		10175.00	898.00	2447.00			
SV-08139	PT SVWP21_01 EBCV	T01			974.00		10241.00	902.00	2571.00			
SV-08140	PT SVWP21_01 EBCV	T01			937.00		10320.00	909.00	2399.00			
SV-08141	PT SVWP21_01 EBCC	T01			945.00		10227.00	921.00	2437.00		115865.00	
SV-08141	PT SVWP21_01 EBCC	ASA	535	<0.1	893	<3	9157	859.00	2469	2.07	107017.00	17.2
SV-08142	PT SVWP21_01 EBCC	T01			942.00		10142.00	924.00	2440.00		116790.00	
SV-08142	PT SVWP21_01 EBCC	ASA	526	<0.1	887	<3	9180	852.00	2458	2.06	108238.00	17.1
SV-08143	PT SVWP21_01 EBCC	T01			931.00		10087.00	918.00	2546.00		112773.00	
SV-08144	PT SVWP21_01 EBCC	T01			910.00		10734.00	861.00	2446.00			
SV-08145	PT SVWP21_01 EBCC	T01			917.00		10403.00	853.00	2401.00			

**Table 2: SVWP21\_02 Assay Results**

N° Muestra	Pozo	Lab	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Sr
SV_08118	PT SVWP21_02 (Bomba 84 HP)	T01	520.00		774.00			843.00	2575.00		107079.00	
SV_08119	PT SVWP21_02 (Bomba 84 HP)	T01	517.00		785.00			844.00	2598.00		106422.00	

SV_08119	PT SVWP21_02 (Bomba 84 HP)	ASA	544.00	<0.1	814.00	<3	9121.00	807.00	2587.00	8.42	107875.00	17.20
SV_08120	PT SVWP21_02 (Bomba 84 HP)	T01	535.00		785.00			848.00	2670.00		106349.00	
SV_08120	PT SVWP21_02 (Bomba 84 HP)	ASA	546.00	<0.1	817.00	<3	9146.00	812.00	2603.00	8.47	109704.00	17.20
SV_08121	PT SVWP21_02 (Bomba 84 HP)	T01	553.00		782.00			853.00	2644.00		106763.00	
SV_08121	PT SVWP21_02 (Bomba 84 HP)	ASA	557.00	<0.1	820.00	<3	9125.00	812.00	2614.00	8.47	109775.00	17.30
SV_08123	PT SVWP21_02 (Bomba 84 HP)	T01						857.00	2513.00			
SV_08123	PT SVWP21_02 (Bomba 84 HP)	ASA	553.00	<0.1	823.00	<3	9101.00	815.00	2626.00	8.49	110192.00	17.30
SV_08124	PT SVWP21_02 (Bomba 84 HP)	T01						830.00	2550.00			
SV_08125	PT SVWP21_02 (Bomba 84 HP)	T01						826.00	2588.00			

**Table 3: SVWP21\_03 Assay Results**

N° Muestra	Pozo	Lab	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Sr
SV_08127	PT SVWP21_03 EBCV	T01	536.00		893.00		9866.00	849.00	2462.00			15.00
SV_08128	PT SVWP21_03 EBCV	T01	538.00		877.00		9396.00	863.00	2499.00			15.00
SV_08129	PT SVWP21_03 EBCV	T01	523.00		858.00		9597.00	852.00	2413.00			15.00
SV_08130	PT SVWP21_03 EBCV	T01	538.00		883.00		9600.00	848.00	2498.00			15.00
SV_08131	PT SVWP21_03 EBCC	T01	665.00		1136.00		10608.00	927.00	2787.00		106619.00	
SV_08132	PT SVWP21_03 EBCV	T01	648.00		1124.00		10502.00	935.00	2770.00		109004.00	

SV_08132	PT SVWP21_03 EBCC	ASA	543.00	<0.1	998.00	<3	10083.00	908.00	2424.00	1.91	106665.00	18.60
SV_08133	PT SVWP21_03 EBCV	T01	660.00		1165.00		11113.00	932.00	2717.00		110325.00	
SV_08133	PT SVWP21_03 EBCC	ASA	543.00	<0.1	988.00	<3	10117.00	905.00	2423.00	1.90	104088.00	18.60
SV_08135	PT SVWP21_03 EBCC	T01	624.00		1130.00		10479.00	929.00	2764.00		108872.00	
SV_08137	PT SVWP21_03 EBCC	T01	628.00		1116.00		10619.00	926.00	2730.00		108809.00	

**Table 4: SVWP21\_04 Assay Results**

N° Muestra	Pozo	Lab	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Sr
SV_08108	PT SVWP21_04 (Bomba 84 HP)	T01	550.00		879.00		9444.00	965.00	2824.00			
SV_08108	PT SVWP21_04 (Bomba 84 HP)	ASA	570.00	<0.2	779.00	<6.0	9004.00	935.00	2752.00	17.10	107551.00	14.40
SV_08109	PT SVWP21_04 (Bomba 84 HP)	T01	570.00		742.00		9856.00	911.00	2938.00			
SV_08110	PT SVWP21_04 (Bomba 84 HP)	T01	560.00		763.00		9734.00	927.00	2898.00			
SV_08112	PT SVWP21_04 (Bomba 84 HP)	T01	559.00		786.00		10008.00	926.00	2951.00			
SV_08113	PT SVWP21_04 (Bomba 84 HP)	T01	545.00		752.00		9705.00	908.00	2862.00			
SV_08115	PT SVWP21_04 (Bomba 84 HP)	T01	552.00		777.00		9400.00	931.00	2741.00			
SV_08115	PT SVWP21_04 (Bomba 84 HP)	ASA	574.00	<0.2	775.00	<6.0	9041.00	936.00	2793.00	16.99	108786.00	14.50
SV_08116	PT SVWP21_04 (Bomba 84 HP)	T01	550.00		760.00		9661.00	962.00	2849.00			
SV_08117	PT SVWP21_04 (Bomba 84 HP)	T01	551.00		742.00		10072.00	929.00	2974.00			
SV-08146	PT SVWP21_04 EBCC	T01	501.00		655.00		9242.00	981.00	2749.00			
SV-08146	PT SVWP21_04 EBCC	ASA	559.00	<0.1	772.00	<3	9238.00	957.00	2960.00	13.11	107166.00	14.00
SV-08147	PT SVWP21_04 EBCC	T01	504.00		642.00		9178.00	980.00	2743.00			
SV-08147	PT SVWP21_04 EBCC	ASA	555.00	<0.1	768.00	<3	9197.00	941.00	2960.00	13.76	107802.00	13.90

SV-08148	PT SVWP21_04 EBCC	T01	502.00		642.00		9057.00	978.00	2711.00			
SV-08148	PT SVWP21_04 EBCC	ASA	554.00	<0.1	769.00	<3	9077.00	932.00	2945.00	13.68	108122.00	13.80
SV-08149	PT SVWP21_04 EBCC	T01			656.00		8928.00	975.00	2648.00			
SV-08150	PT SVWP21_04 EBCC	T01			648.00		8925.00	964.00	2610.00			

**Table 5: SVWP21\_05 Assay Results**

N° Muestra	Pozo	Lab	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Sr
SV-08151	PT SVWP21_05 EBCV	T01	542.00		861.00		8508.00	863.00	2260.00		110377.00	12.00
SV-08152	PT SVWP21_05 EBCV	T01	534.00		884.00		8689.00	858.00	2268.00		110728.00	13.00
SV-08153	PT SVWP21_05 EBCV	T01	529.00		893.00		8689.00	873.00	2358.00		110072.00	13.00
SV-08154	PT SVWP21_05 EBCV	T01	533.00		893.00		8771.00	868.00	2377.00		113349.00	13.00
SV-08155	PT SVWP21_05 EBCC	T01	509.00		900.00		8990.00	847.00	2252.00		116008.00	14.00
SV-08155	PT SVWP21_05 EBCC	ASA	544.00	<0.1	867.00	<3	8858.00	837.00	2486.00	2.44	108504.00	15.90
SV-08156	PT SVWP21_05 EBCC	T01	490.00		876.00		8501.00	821.00	2311.00		117075.00	14.00
SV-08157	PT SVWP21_05 EBCC	T01	495.00		884.00		8525.00	832.00	2316.00		118283.00	14.00
SV-08158	PT SVWP21_05 EBCC	T01	531.00		858.00		8289.00	830.00	2342.00		115985.00	14.00
SV-08159	PT SVWP21_05 EBCC	T01	553.00		868.00		8582.00	835.00	2326.00		115663.00	14.00
SV-08159	PT SVWP21_05 EBCC	ASA	556.00	<0.1	878.00	<3	9041.00	845.00	2507.00	2.47	107502.00	16.10

**Table 6: SVWP21\_06 Assay Results**

N° Muestra	Pozo	Lab	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Sr
SV-08171	PT SVWP21_06 EBCV	T01						874.00	2325.00			
SV-08172	PT SVWP21_06 EBCV	T01						876.00	2285.00			
SV-08173	PT SVWP21_06 EBCV	T01						875.00	2398.00			
SV-08174	PT SVWP21_06 EBCC	T01						868.00	2382.00			
SV-08174	PT SVWP21_06 EBCC	ASA	588.00	<0.1	821.00	<3	9012.00	821.00	2634.00	2.75	104995.00	15.50
SV-08175	PT SVWP21_06 EBCC	T01						862.00	2323.00			

SV-08175	PT SVWP21_06 EBCC	ASA	603.00	<0.1	843.00	<3	8951.00	828.00	2676.00	3.03	107389.00	15.90
SV-08176	PT SVWP21_06 EBCC	T01						856.00	2391.00			
SV-08177	PT SVWP21_06 EBCC	T01						852.00	2198.00			
SV-08178	PT SVWP21_06 EBCC	T01						837.00	2307.00			

**Table 7: SVWP21\_07 Assay Results**

N° Muestra	Pozo	Lab	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Sr
SV-08160	PT SVWP21_07 EBCV	T01			907.00		9820.00	856.00	2286.00		112105.00	
SV-08161	PT SVWP21_07 EBCV	T01			903.00		9817.00	837.00	2294.00		110264.00	
SV-08162	PT SVWP21_07 EBCV	T01			896.00		9837.00	844.00	2282.00		114117.00	
SV-08163	PT SVWP21_07 EBCV	T01			897.00		9907.00	857.00	2268.00		111637.00	
SV-08164	PT SVWP21_07 EBCC	T01			904.00		9772.00	838.00	2290.00		107892.00	
SV-08165	PT SVWP21_07 EBCC	T01			901.00		9712.00	846.00	2272.00		116813.00	
SV-08165	PT SVWP21_07 EBCC	ASA	581.00	<0.1	883.00	5.60	8707.00	832.00	2333.00	1.65	105344.00	16.50
SV-08166	PT SVWP21_07 EBCC	T01			895.00		9714.00	843.00	2273.00		115823.00	
SV-08166	PT SVWP21_07 EBCC	ASA	582.00	<0.1	889.00	4.90	7890.00	831.00	2341.00	1.65	106375.00	16.70
SV-08167	PT SVWP21_07 EBCC	T01			898.00		9711.00	839.00	2269.00		111544.00	
SV-08168	PT SVWP21_07 EBCC	T01			895.00		9976.00	834.00	2317.00		112516.00	
SV-08169	PT SVWP21_07 EBCC	T01			903.00		9937.00	835.00	2374.00		111983.00	
SV-08170	PT SVWP21_07 EBCC	T01			902.00		9950.00	835.00	2344.00		111837.00	

**Table 8: SVWP20\_08 Assay Results**

N° Muestra	Pozo	Lab	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Sr
SV_08100	PT SVWP20_08 (Bomba 84 HP)	T01	546.00		646.00		9406.00	953.00	2639.00		113579.00	
SV_08101	PT SVWP20_08 (Bomba 84 HP)	T01	557.00		633.00		9246.00	937.00	2673.00		111486.00	
SV_08102	PT SVWP20_08 (Bomba 84 HP)	ASA	583.00	<0.2	815.00	<6	8912.00	906.00	2546.00	4.90	105639.00	15.30

SV_08103	PT SVWP20_08 (Bomba 84 HP)	<b>ASA</b>	375.00	<0.2	<40	<6	2740.00	860.00	2489.00	0.33	5287.00	<10
SV_08105	PT SVWP20_08 (Bomba 84 HP)	<b>ASA</b>	586.00	<0.2	797.00	<6	8812.00	922.00	2531.00	4.90	107285.00	15.40
SV_08106	PT SVWP20_08 (Bomba 84 HP)	T01	561.00		658.00		9395.00	965.00	2641.00		114365.00	<10