

13 June 2019

## EXCEPTIONAL ECONOMICS OF COMMERCIAL SCALE DEVELOPMENT AT LAKE WAY

**Salt Lake Potash Limited (Salt Lake Potash or Company)** is pleased to report the results of the Company's Scoping Study for a commercial scale Sulphate of Potash (SOP) development at Lake Way (**Lake Way Project or Project**) in Western Australia.

Based on the Scoping Study results, the Project generates exceptional economic returns due to its low capital intensity, bottom quartile operating costs and sustainable operating life.

### **Cautionary Statement**

The Scoping Study referred to in this announcement has been undertaken to determine the potential viability of a Sulphate of Potash (SOP) development at the Lake Way Project. The Scoping Study has been prepared to an accuracy level of  $\pm 30\%$ . The results should not be considered a profit forecast or production forecast.

The Scoping Study is a preliminary technical and economic study of the potential viability of the Lake Way Project. In accordance with the ASX Listing Rules, the Company advises it is based on low-level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further evaluation work including infill drilling and appropriate studies are required before Salt Lake Potash will be able to estimate any ore reserves or to provide any assurance of an economic development case.

Approximately 80% of the total production target is in the Measured resource category, 16% in the Indicated resource category and 4% is in the Inferred resource category. The Inferred resource included in the total production target is located at the southern end of Lake Way and is expected to be the last of the brine extraction system constructed. It does not feature as a significant portion of production either during the payback period or during the life of mine. Accordingly, the Company has concluded that it has reasonable grounds for disclosing a production target which includes a small amount of Inferred material. However, there is a low level of geological confidence associated with Inferred mineral resources and there is no certainty that further exploration work will result in the determination of Indicated mineral resources or that the production target itself will be realised.

The Scoping Study is based on the material assumptions outlined elsewhere in this announcement. These include assumptions about the availability of funding. While Salt Lake Potash considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the range outcomes indicated in the Scoping Study, additional funding will likely be required. Investors should note that there is no certainty that Salt Lake Potash will be able to raise funding when needed. It is also possible that such funding may only be available on terms that dilute or otherwise affect the value of the Salt Lake Potash's existing shares. It is also possible that Salt Lake Potash could pursue other 'value realisation' strategies such as sale, partial sale, or joint venture of the Project. If it does, this could materially reduce Salt Lake Potash's proportionate ownership of the Project.

The Company has concluded it has a reasonable basis for providing the forward looking statements included in this announcement and believes that it has a reasonable basis to expect it will be able to fund the development of the Project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

## EXECUTIVE SUMMARY

Salt Lake Potash is pleased to report the results of the Scoping Study for the commercial scale development of its SOP project at Lake Way. The Scoping Study demonstrates the potential for the Lake Way Project to support a low capital and operating cost operation with annual production of approximately 200,000 tonne of premium grade SOP.



**8.2 MILLION TONNE**  
Mineral Resource Estimate



**200KT PA @ >52% K<sub>2</sub>O**  
Sulphate of Potash



**20YR**  
**20 YEAR**  
Project Life



**A\$381M**  
Post-Tax NPV



**27%**  
Post-Tax IRR



**3.2 YEAR**  
Payback

The Scoping Study demonstrates the compelling economics of the commercial scale development of Lake Way with the ability to support a long mine life:

- Lake Way Project to produce an estimated **200,000 tonnes per year of premium grade SOP (>52% K<sub>2</sub>O)**
- High-grade SOP resource underpins **long Mine Life of 20 years**
- **Lowest operating cost for global SOP producers** with an FOB operating cost estimate of **\$264/t (US\$185/t)**
- **Low development capital** requirements of approximately **A\$237m (US\$166m)** including a growth allowance of ~13% (\$32m) supported by the close proximity to infrastructure
- Exceptional economics with estimated project **post-tax NPV<sub>8</sub> of A\$381m** (pre-tax NPV<sub>8</sub> of A\$580m) and **post-tax IRR of 27%** (pre-tax IRR 33%)
- Steady state **EBITDA of A\$90m** annually and average annual after tax cashflow of A\$64m
- **Strong cashflow** and low capital cost result in early **payback period of 3.2 years**
- **Construction underway on the first phase of Evaporation Ponds** (the Williamson Ponds) which will support the dewatering of the Williamson Pit's super saturated brine with an SOP grade of 25kg/m<sup>3</sup>
- **Plant commissioning expected Q4 2020** utilising salts from the Williamson Pit brine
- **BFS currently underway** with completion expected in Q3 2019 to support project financing

Salt Lake Potash has already significantly de-risked the commercial scale project through the early construction works on the first phase of the Evaporation Ponds (the Williamson Ponds). The dewatering of the Williamson Pit and commencement of evaporation will provide additional insight into the critical evaporation processes which in turn will further de-risk the project.

### Lowest Operating Costs

The results of the study demonstrate the potential for very low operating costs. It is estimated that the Lake Way Project will have the lowest operating costs of any SOP operation globally with an FOB operating cost of \$264/t (US\$185/t).

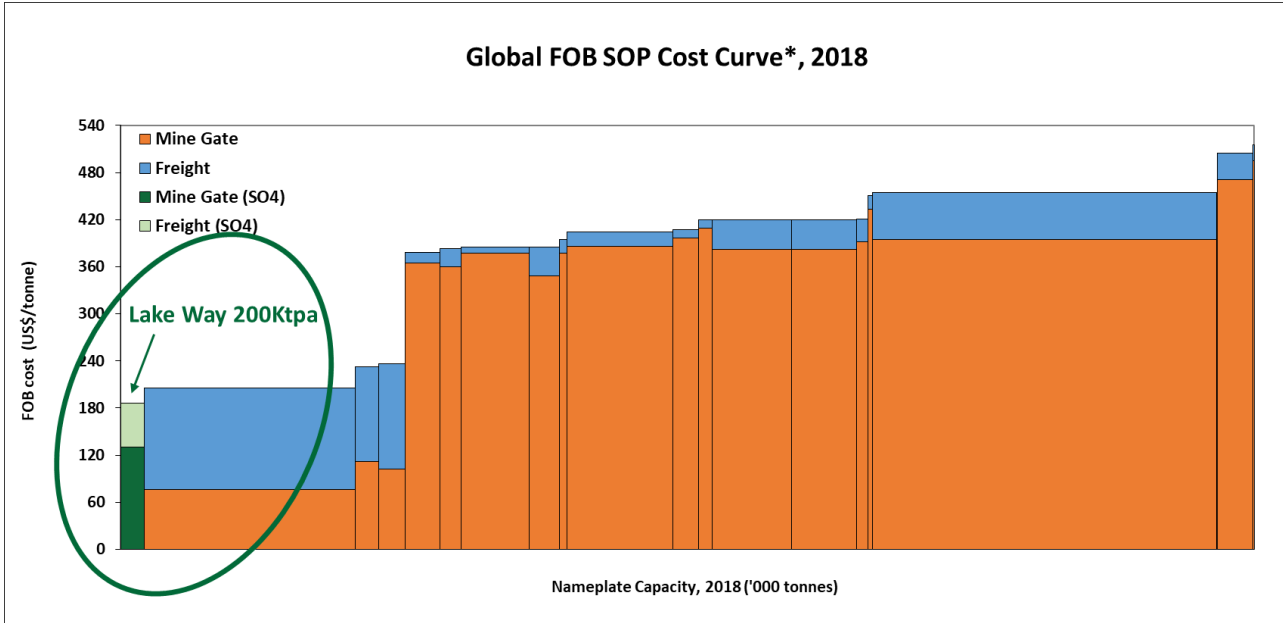


Figure 1: Global FOB SOP Cost Curve (Source - Argus)

### Short Payback period

The low development capital requirements and significant margins received for the Lake Way Project provides a short payback period of just 3.2 years from first production. This will result in full repayment of development capital by 2024.

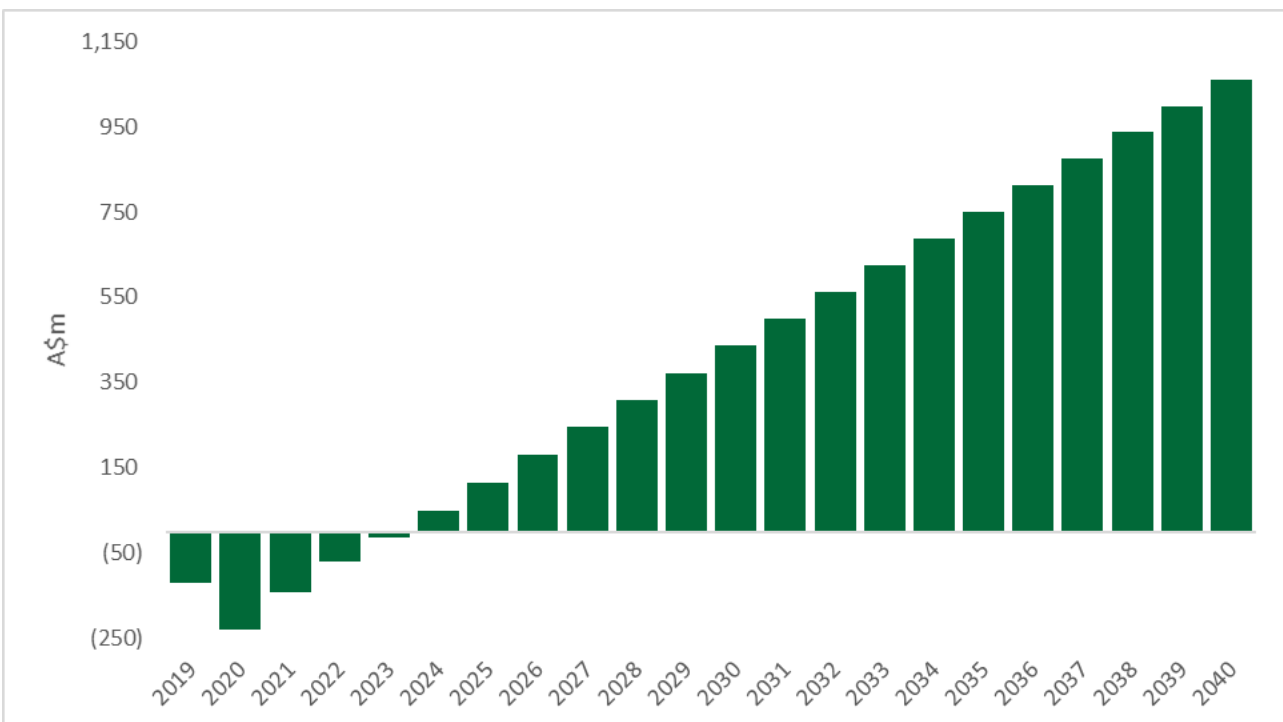


Figure 2: Cumulative Cash Flow

## KCI Addition Opportunity

The resource at Lake Way contains a significant excess of sulphate (SO<sub>4</sub>) which provides the opportunity for the Company to explore value adding measures including a potassium chloride (KCl) reaction phase to the processing stage. Preliminary work has shown significant benefits to the Lake Way Project through the inclusion of the KCl reaction phase in the process, including a potential increase in annual production of SOP and subsequent improvements in financial returns to shareholders. The Company will explore this opportunity as part of the BFS for the Lake Way Project.

## Robust Economics

The Study demonstrates that the Lake Way Project provides exceptional economics even under the most extreme downside pricing scenarios. The breakeven pricing scenario is a significant 40+% decrease in price at US\$323/t.

**Table 1: Pricing Scenarios**

SOP Price	Breakeven US\$323/t	US\$400/t	US\$450/t	US\$500/t	Base US\$550/t	US\$600/t	US\$650/t
NPV (post tax)	-	A\$130m	A\$214m	A\$298m	A\$381m	A\$465m	A\$548m

## Project Funding Advanced

On 6 June 2019, the Company announced that it had received binding commitments for a placement to raise A\$20.25m from strategic investors.

In addition, the Company is in advanced discussions with a debt provider for a debt funding package which will support funding for the Lake Way Project.

## Next Steps

Having completed the successful Scoping Study, Salt Lake Potash has subsequently commenced a Bankable Feasibility Study (BFS) targeted for completion in Q3 2019. The Company has appointed GR Engineering Services Limited (GRES, ASX:GNG) as lead engineer for the BFS. GRES will work with a number of industry experts including Wood Saskatchewan.

The BFS will include the following:

- Further drilling and trenching programs to increase resource definition and confidence levels for the Lake Way Resource including lake playa and paleochannel
- Additional test work at Saskatchewan Research Council (SRC) on the process flow sheet, including completion of two pilot plant test runs
- Review KCl opportunity and determine the options for the possible inclusion of a KCl reaction within the SOP Plant Process
- Refinement of logistics solution and identification of preferred constructors
- Update the trench hydraulic analysis and optimisation of trench design in partnership with Cardno
- Incorporate findings from the first phase of Evaporation Pond construction into the design and construction methodology for the commercial scale project
- On-going design and refinement of the Process Plant including partnering with vendors for major equipment including crystallisers to conduct testwork relevant to their equipment

## SCOPING STUDY RESULTS

The Scoping Study is based on the Mineral Resource Estimate for the Lake Way Project reported in March 2019, comprising 8.2Mt of SOP calculated using Drainable Porosity (73 million tonnes of SOP using Total Porosity).

The Scoping Study assumes a mine life of 20 years with plant commissioning in Q4 2020. The study mine plan, comprising a network of trenches and paleochannel bores, provides for a 200,000tpa production run rate. Table 2 provides a summary of production and cost figures for the Project.

**Table 2: Lake Way Project Overview**

Lake Way Project	Unit	Estimated Value
<b>PHYSICAL</b>		
Mine life	years	20
Annual Production of SOP	tpa	200,000
Mineral Mine Plan		
Measured Resource (Lake Way Playa) 1.8Mt @ 15.2kg/m <sup>3</sup> SOP	%	80
Indicated Resource (Paleochannel) 1.4Mt @ 13.6kg/m <sup>3</sup> SOP	%	16
Inferred Resource (Lake Way Playa & Paleovalley) 5Mt @ 15.2kg/m <sup>3</sup> SOP	%	4
<b>MINING METHOD</b>		
Trenches (production and transport) – average depth 5m	km	<b>130</b>
Bores – average depth 120m	number	<b>14</b>
Brine Chemistry (average Lake Brine SOP grade)	Kg/m <sup>3</sup>	<b>15.2</b>
<b>EVAPORATION PONDS</b>		
Area	ha	<b>1,325</b>
Halite Ponds	ha	<b>1,020</b>
Harvest Ponds	ha	<b>291</b>
Recovery of Potassium from feed brine	%	<b>78</b>
<b>PLANT</b>		
Operating time	hpa	<b>7,600</b>
Recovery of Potassium from feed salt	%	<b>80</b>
<b>OPERATING AND CAPITAL COSTS</b>		
LOM Cash Operating Costs FOB ex-Geraldton port	A\$/t	<b>\$264</b>
Mine Gate Operating Costs	A\$/t	\$184
Transport and handling	A\$/t	\$80
Capital Costs	A\$m	<b>\$237</b>
Direct Costs	A\$m	\$177
Indirect Costs & Growth	A\$m	\$60
<b>FINANCIAL PERFORMANCE – LIFE OF PROJECT</b>		
Price (FOB)	US\$/t	\$550
Exchange Rate	US\$/AUD	0.70
Discount Rate	%	8
<b>EBITDA</b>	<b>A\$m</b>	<b>\$90</b>
<b>Average Annual after-tax cash flow</b>	<b>A\$m</b>	<b>\$64</b>
<b>Post tax Internal Rate of Return (IRR)</b>	<b>%</b>	<b>27</b>
<b>Post tax Net Present Value (NPV) @ 8% discount rate</b>	<b>A\$m</b>	<b>\$381</b>
<b>Pre-tax Internal Rate of Return (IRR)</b>	<b>%</b>	<b>33</b>
<b>Pre-tax Net Present Value (NPV) @ 8% discount rate</b>	<b>A\$m</b>	<b>\$580</b>

## PROJECT OVERVIEW

Lake Way is located in the Northern Goldfields Region of Western Australia, less than 15km south of Wiluna. The surface area of the Lake is over 270km<sup>2</sup>.

Salt Lake Potash holds five Exploration Licences (two granted and three under application) covering most of Lake Way and select areas off-lake, including the paleochannel defined by previous exploration. The northern end of the Lake is largely covered by a number of Mining Leases, held by Blackham Resources Limited (Blackham Resources), the owner of the Wiluna Gold Mine.

In April 2019, the Company entered into a binding Split Commodity and Access Agreement (Access Agreement) with Blackham Resources in relation to the development of the Lake Way Project on terms in line with the previously executed MOU announced on 12 March 2018.

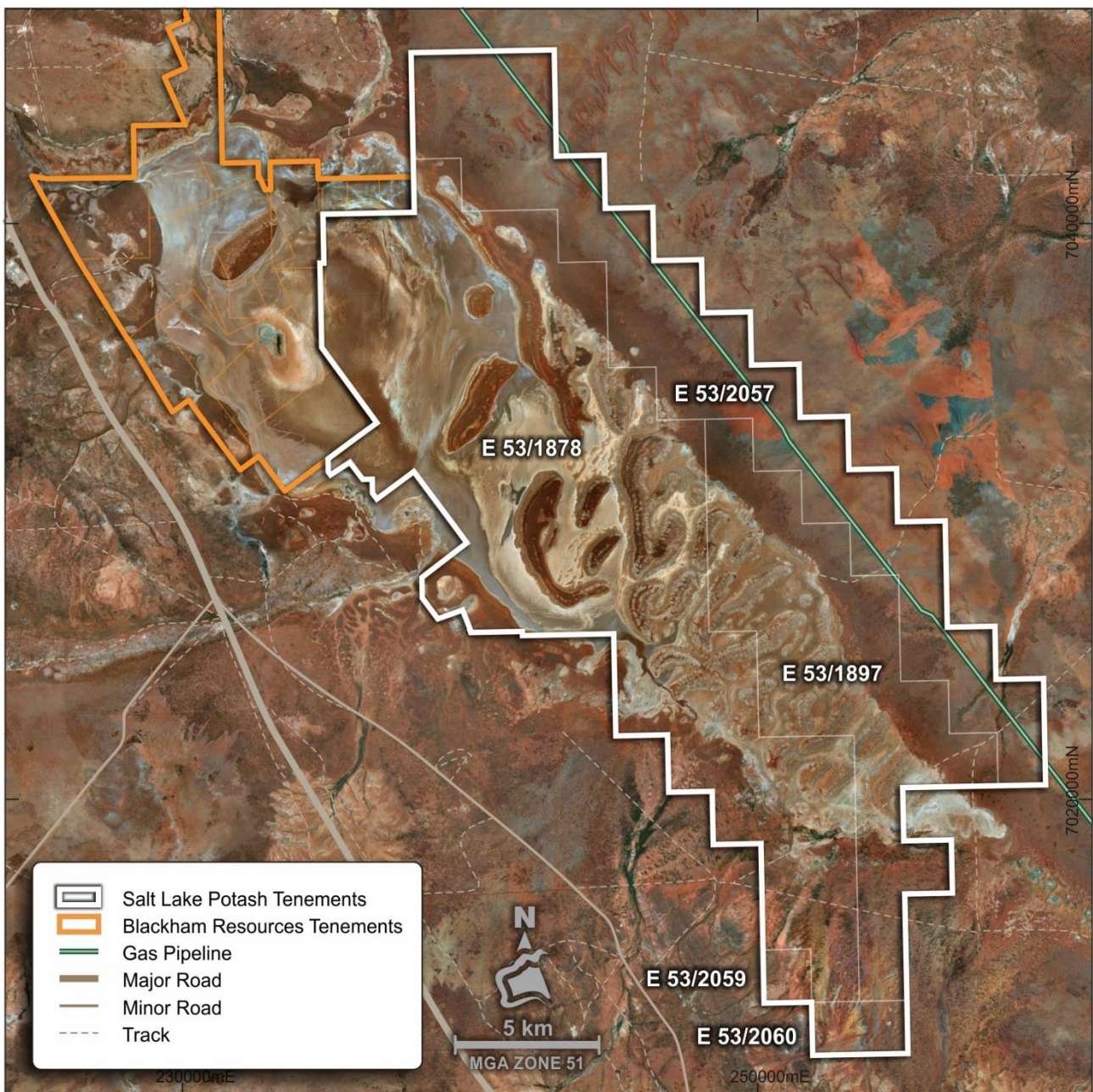


Figure 3: Lake Way Tenement Holdings

Lake Way has a number of compelling advantages which make it an ideal site for Salt Lake Potash’s initial SOP operation, including:

- Access to Blackham Resources’ existing infrastructure (including camps, power and maintenance) to accelerate development.
- The site has excellent freight solutions, being adjacent to the Goldfields Highway, which is permitted for heavy haulage, quad trailer road trains to the railhead at Leonora and then direct rail access to both Esperance and Fremantle Ports, or via other heavy haulage roads to Geraldton Port.
- The Goldfields Gas Pipeline is adjacent to Salt Lake Potash’s tenements, running past the eastern side of the Lake.
- Access to Blackham Resources’ existing Mining Leases provides advanced permitting pathway for early development activity, including the construction of the first phase of Evaporation Ponds (the Williamson Ponds).
- Salt Lake Potash is constructing the first phase of the Evaporation Ponds to enable the Company to commence dewatering from the existing Williamson Pit. The pit contains an estimated 1.2GL of brine at the exceptional grade of **25kg/m<sup>3</sup> of SOP**. This brine is the ideal starter feed for evaporation ponds, having already evaporated from the normal Lake Way brine grade, which averages over 15kg/m<sup>3</sup>.
- The high grade brines at Lake Way will result in lower capital and operating costs due to lower extraction and evaporation requirements.
- The presence of clays in the upper levels of the lake which are amenable to low cost, on-lake evaporation pond construction.

## SCOPING STUDY CONSULTANTS

The Scoping Study was managed by Wood (formerly Amec Foster Wheeler) and is based on information and assumptions provided by a range of leading independent consultants, including the following consultants who have contributed to key components of the Scoping Study.

**Table 3: Lake Way Project Scoping Study Consultants**

Area	Responsibility
Study Manager	Wood
Resource Estimate	Groundwater Science
Brine Evaporation	Ad-Infinitum/ Knight Piesold
Brine Transfer Hydraulics	Cardno
Process Plant: <ul style="list-style-type: none"> <li>- Design basis/criteria</li> <li>- Process Test Work</li> <li>- Process Plant Design</li> </ul>	Carlos Perucca Process Consulting Saskatchewan Research Council Wood
Plant Infrastructure	Wood
Area Infrastructure	Wood/Salt Lake Potash
Environmental & Heritage	Pendragon Environmental Solutions
Capital Estimate Compilation	Wood
Operating Estimate Compilation (Mine Gate)	Wood
Marketing	CRU International/Argus Media
Economics	Salt Lake Potash

## PROJECT GEOLOGY AND MINERAL RESOURCE

### Geological Setting

Lake Way is in the Northern Goldfields Province on the Archaean Yilgarn Craton. The province is characterised by granite–greenstone rocks that exhibit a prominent northwest tectonic trend and low to medium-grade metamorphism. The Archaean rocks are intruded by east–west dolerite dykes of Proterozoic age, and in the eastern area there are small, flat-lying outliers of Proterozoic and Permian sedimentary rocks. The basement rocks are generally poorly exposed owing to low relief, extensive superficial cover, and widespread deep weathering.

A key characteristic of the goldfields is the occurrence of paleochannel aquifers. These palaeodrainages are incised into the Archean basement and in-filled with a mixed Tertiary and Quaternary sedimentary sequence.

The paleochannel sediments of Lake Way are characterised by a mixed sedimentary sequence including sand, silts and clays of lacustrine, aeolian, fluvial and colluvial depositional origins. These near-surface deposits also include chemically-derived sediments of calcrete, silcrete and ferricrete. Beneath eastern parts of the playa, there is a deep paleochannel that is infilled with Tertiary-aged palaeochannel clay and basal sands in the deepest portion.

Figure 4 illustrates the inferred basement and sedimentary structure.

The Sediments infilling the paleochannel are described below:

#### *Lake Bed Sediment*

Recent (Cainozoic), unconsolidated silt, sand and clay sediment containing variable abundance of evaporite minerals, particularly gypsum. The unit is ubiquitous across the salt lake surface. The thickness of the unit ranges from approximately 3 to 20m.

The upper part of the unit comprises unconsolidated, gypsiferous sand and silt from surface to around 1.5m depth. The unit is widespread, homogeneous and continuous with the thickest parts in the centre and southern portion of the lake. This is underlain by well sorted, lacustrine silt and clay.

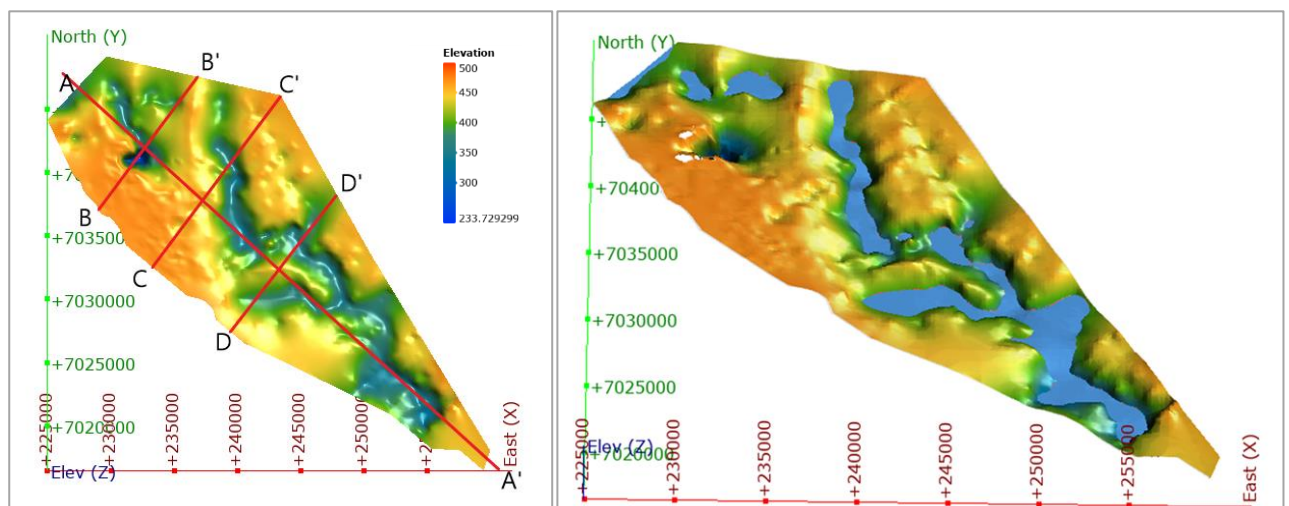
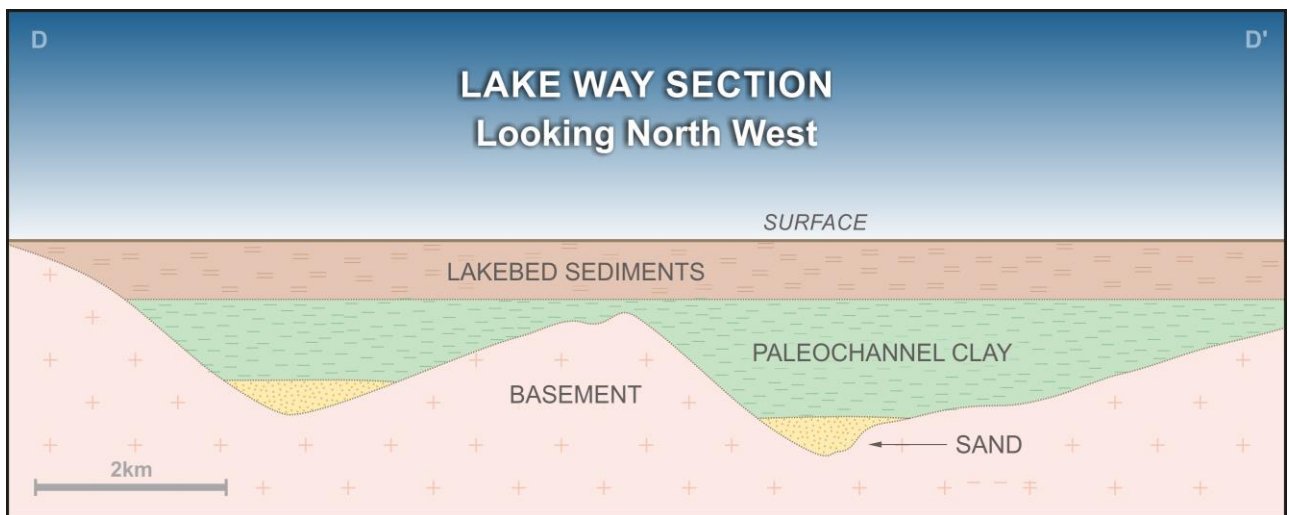
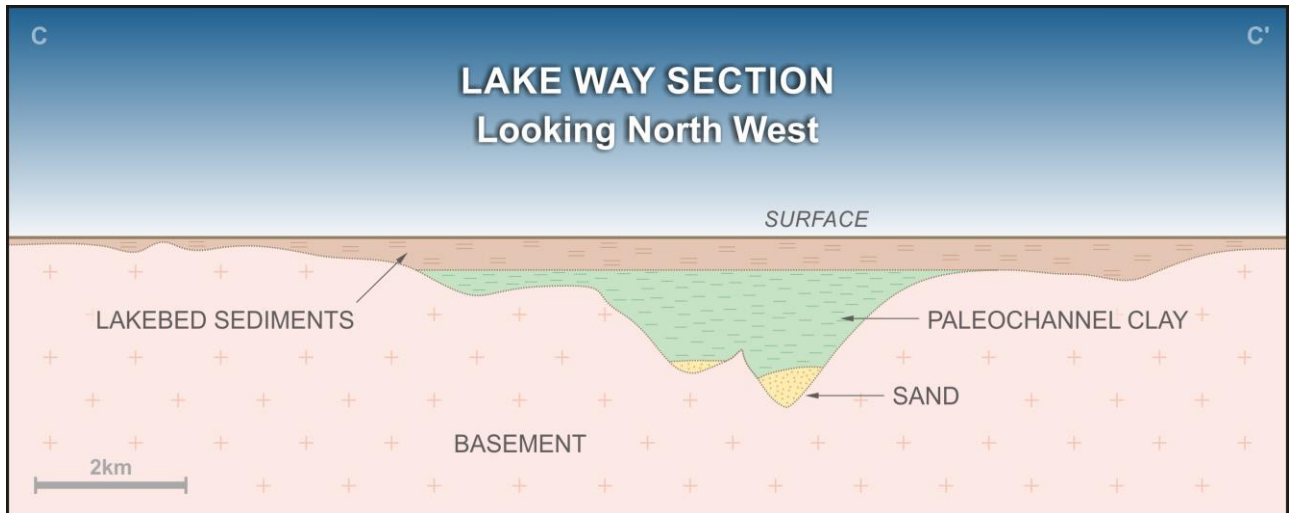
#### *Palaeovalley Sediment*

The Paleovalley sediment consists of Tertiary clay and silt that overlies basement or the Basal Sand.

#### *Paleochannel Basal Sand*

Tertiary, unconsolidated fine, medium to coarse grained sand interbedded with silt, clay and some lignite horizons.





**Figure 4: Cross sections showing geological units and oblique view showing presence of paleochannel basal sand aquifer.**

## Mineral Resource

The Mineral Resource Estimate underpinning the production target, classified as Measured, Indicated and Inferred, was prepared by a competent person and was reported in accordance with the JORC Code (2012 Edition) on 18 March 2019.

The Company engaged an independent hydrogeological consultant with substantial salt lake brine expertise, Groundwater Science Pty Ltd, to complete the Mineral Resource Estimate for the Lake Way Project.

The Lake Way Mineral Resource Estimate describes a brine hosted resource. The minerals are dissolved in brine, and the brine is contained within pore spaces of the host sediment.

The Mineral Resource Estimate of 73Mt of SOP calculated using Total Porosity and 8.2Mt of SOP calculated using Drainable Porosity is hosted within approximately 15 billion cubic metres of sediment ranging in thickness from a few metres to over 100m, beneath 189km<sup>2</sup> of playa lake surface including the paleochannel basal sand unit of 20m thickness and 30km length.

The Mineral Resource Estimate for Lake Way is divided into resource classifications that are controlled by the host geological units:

- Lake Bed Sediment
- Paleovalley Sediment
- Paleochannel Basal Sands

The mineral resource estimate is summarised in the Tables 4 - 6.

The estimated SOP tonnage represents the SOP within the in-situ contained brine with no recovery factor applied. The amount of contained brine which can be extracted depends on many factors including the permeability of the sediments, the drainable porosity, and the recharge dynamics of the aquifers.

Brines by their nature are not a static resource as they are subject to groundwater movement, dilution and concentration over time. Reporting both total and drainable porosity allows the reflection of this dynamic resource environment, including the consideration of the recharge and physical diffusion impacts on the mine plan and production output.

The impact of the recharge and physical diffusion in the development and long term abstraction of a brine resource is discussed in subsequent sections.

**Table 4: Measured Resource**

	Total Volume (Mm <sup>3</sup> )	Brine Concentration			Mineral Tonnage Calculated from Total Porosity			Mineral Tonnage Calculated from Drainable Porosity		
		K (kg/m <sup>3</sup> )	Mg (kg/m <sup>3</sup> )	So4 (Kg/m <sup>3</sup> )	Total Porosity %	Brine Volume (Mm <sup>3</sup> )	SOP Tonnage (Mt)	Drainable Porosity <sup>1</sup> %	Brine Volume (Mm <sup>3</sup> )	SOP Tonnage (Mt)
<b>North Lakebed (0.4-8.0 m)</b>	1,060	6.8	8.0	27.6	43	456	6.9	11	117	1.8
<b>Williamson Pit</b>	1.26	11.4	14.7	48.0					1.26	0.03
<b>Total</b>							<b>6.9</b>			<b>1.83</b>

**Table 5: Indicated Resource**

	Total Volume (Mm <sup>3</sup> )	Brine Concentration			Mineral Tonnage Calculated from Total Porosity			Mineral Tonnage Calculated from Drainable Porosity		
		K (kg/m <sup>3</sup> )	Mg (kg/m <sup>3</sup> )	So4 (Kg/m <sup>3</sup> )	Total Porosity %	Brine Volume (Mm <sup>3</sup> )	SOP Tonnage (Mt)	Drainable Porosity <sup>1</sup> %	Brine Volume (Mm <sup>3</sup> )	SOP Tonnage (Mt)
<b>Basal Sands (Paleochannel)</b>	686	6.1	8.2	25.0	40	274	<b>3.7</b>	15	103	<b>1.4</b>

**Table 6: Inferred Resource**

	Total Volume (Mm <sup>3</sup> )	Brine Concentration			Mineral Tonnage Calculated from Total Porosity			Mineral Tonnage Calculated from Drainable Porosity		
		K (kg/m <sup>3</sup> )	Mg (kg/m <sup>3</sup> )	So4 (Kg/m <sup>3</sup> )	Total Porosity %	Brine Volume (Mm <sup>3</sup> )	SOP Tonnage (Mt)	Drainable Porosity %	Brine Volume (Mm <sup>3</sup> )	SOP Tonnage (Mt)
<b>South Lakebed (0.4-8.0 m)</b>	316	6.8	8.0	27.6	43	135	2.0	11	35	0.5
<b>Lakebed (8m to Base)</b>	9,900	6.8	8.0	27.6	40	3,960	60.0	3	297	4.5
<b>Total</b>							<b>62.0</b>			<b>5.0</b>

<sup>1</sup> The Drainable Porosity does not include the significant resource potentially available through the recharge cycle.

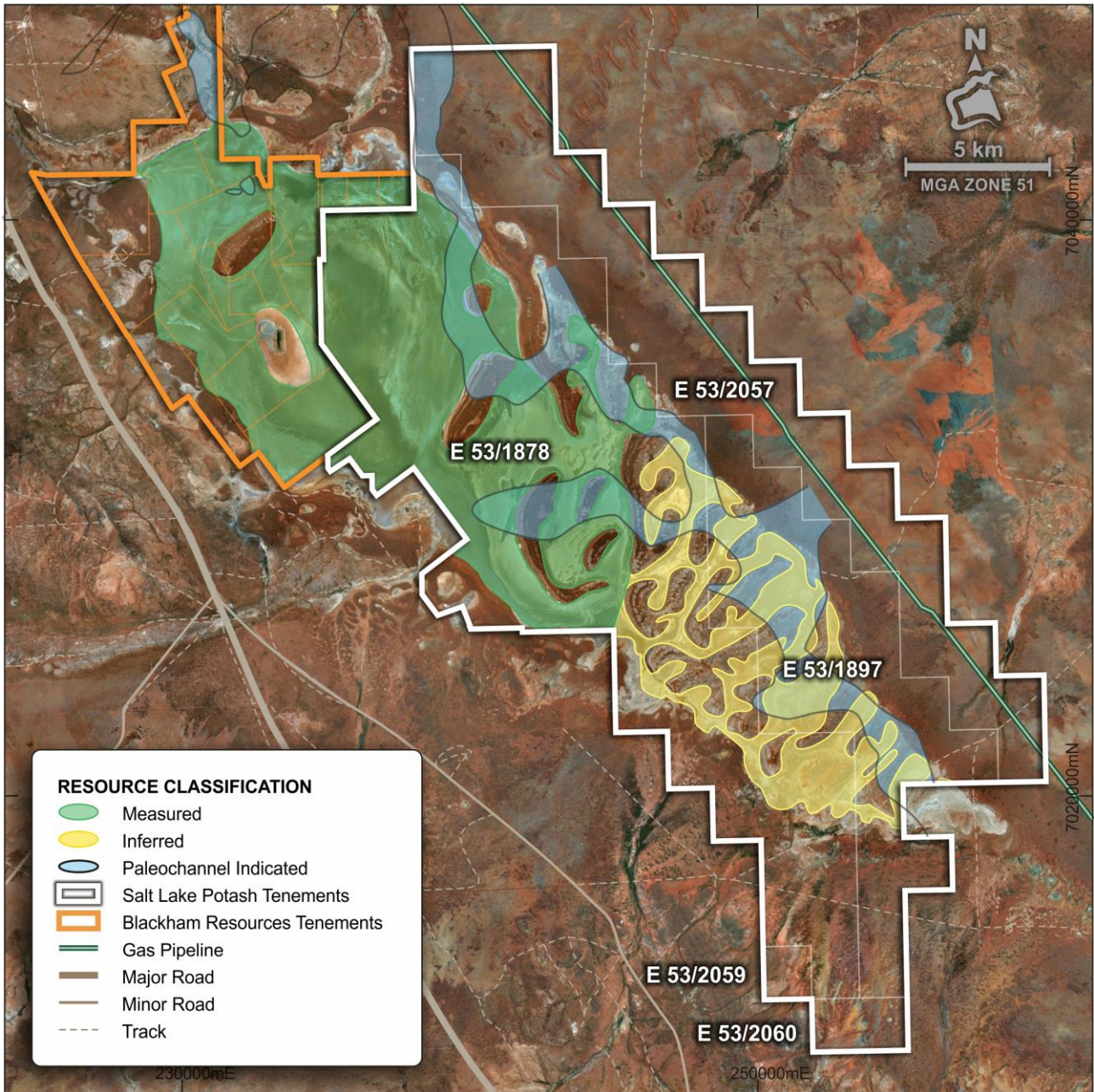


Figure 5: Lake Way Resource Classification

### Mineral Brine Resource Cycle

The production of brine within the lakebed sediment is cyclic as shown in Figure 6 and described below.

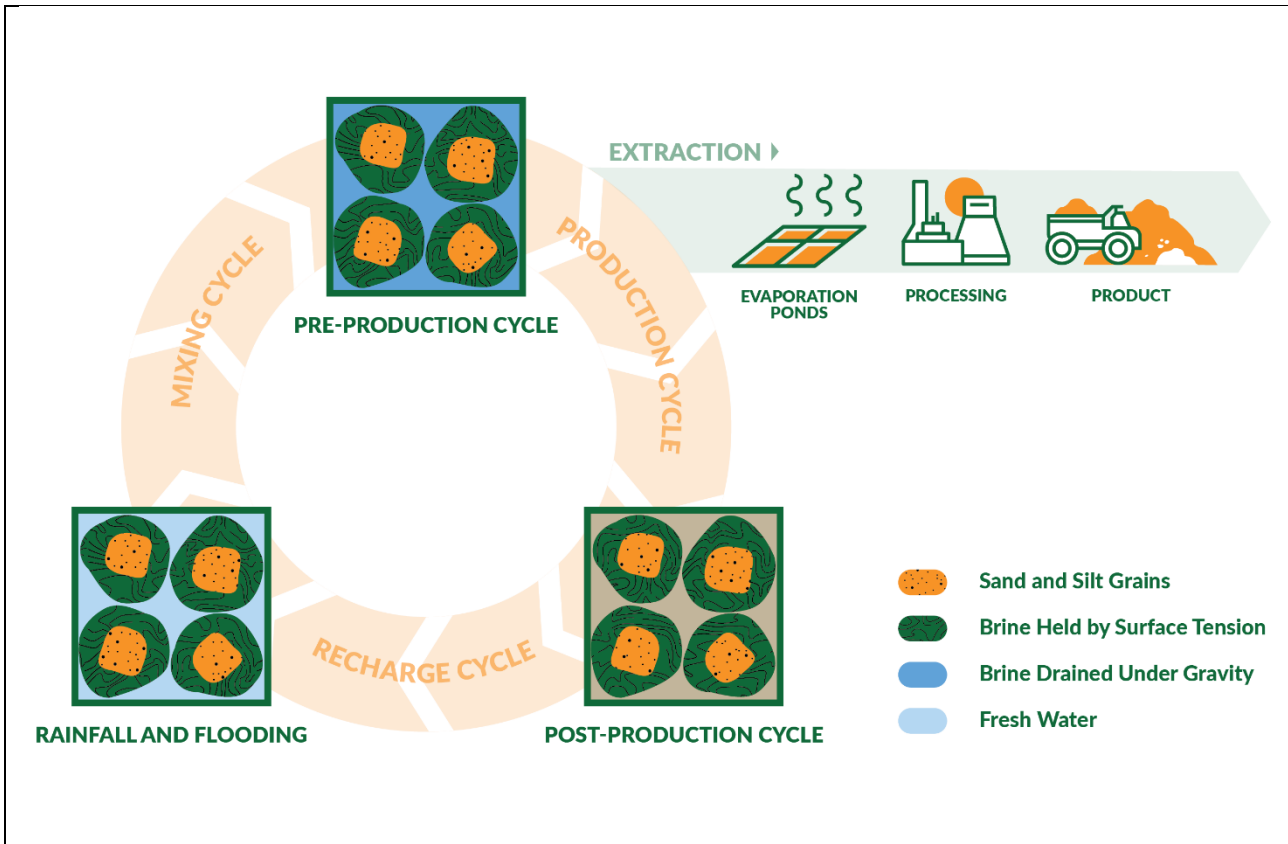


Figure 6: Lake Way Playa - SOP Production Cycle

#### Stage 1 - Initial Resource

The initial brine resource comprises of two distinct porosity categories (Figure 7):

- Brine dissolved in water held in *Drainable Porosity*, (11% of the total aquifer volume).
- Brine dissolved in water held in *Retained Porosity*, (32% of total aquifer volume).

The combined porosity (Total Porosity) then comprises the total SOP brine resource held in the Lake Bed Sediments aquifer.

The remaining volume is occupied by solid material (sand, silt and clay grains comprising approximately 57% of the aquifer volume).

#### Stage 2 - Production Cycle

During production the brine drains under gravity toward the trench and is subsequently removed by pumping. This creates a hydraulic gradient toward the trench and brine is drawn some distance through the aquifer toward the trench (typically hundreds of meters depending on aquifer permeability).

Over time the aquifer immediately surrounding the trench is partially dewatered. This means that the drainable brine has been removed from the sediment, but the retained brine is still held in place by surface tension.

*Stage 3 - Recharge Cycle*

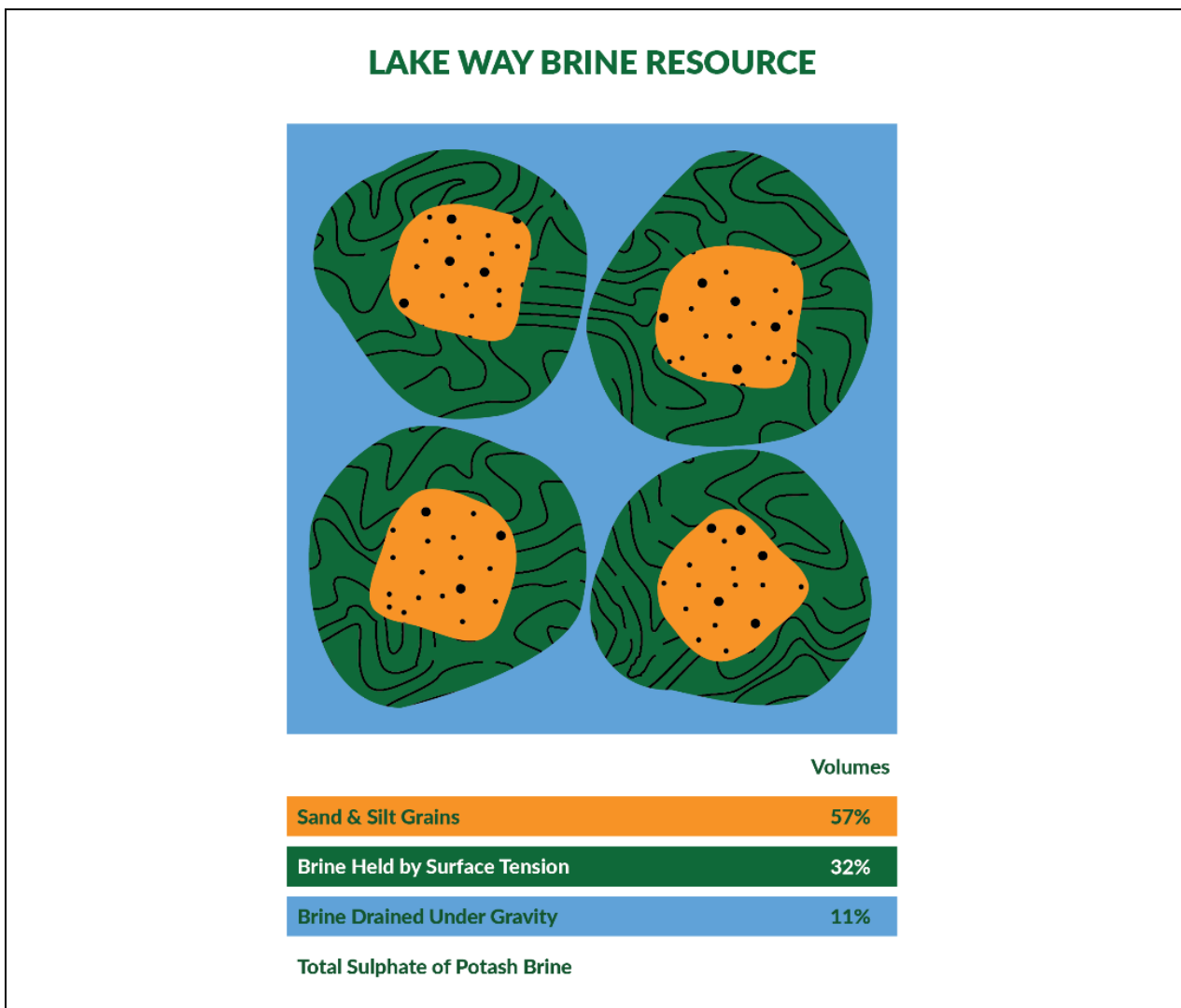
Western Australian Salt Lake playas receive water supply from both direct rainfall and surface run-off annually. Direct rainfall lands on the playa each year, and most years, heavy, cyclonic rain events cause run-off from the surrounding catchment onto the lake playa. This water infiltrates the lake playa surface and re-fills the drainable pores in the aquifer. The larger rainfall events usually occur from January through to March.

*Stage 4 - Mixing Cycle*

The water that has infiltrated and refilled the drainable porosity then mixes (by physical diffusion) with the brine held in retained porosity.

Through repeated production cycles the total brine resource is mined. The concentration of brine pumped from the production trenches will decline over time as the total resource is depleted over repeated production cycles.

The pumping rate is controlled by the hydraulic conductivity of the host sediment. The concentration of produced brine will change over time and will be controlled by the tonnage contained in total porosity and the mechanism of mixing between repeated production cycles.



**Figure 7: Lake Way Playa - SOP Brine Resource**

## MINING AND PRODUCTION TARGET

The estimated production target of 200,000tpa of SOP is supported by the total brine production volume of 23GL/year. A numerical groundwater model was developed to predict water level drawdowns due to brine production from trenches in the superficial lake sediments at Lake Way. The model simulates brine abstraction of 19.3GL/year from a trench network. This is supplemented by an assumed volume of 3.7GL/year of brine from the paleochannel delivering a total brine volume of 23GL/year sufficient to support the production target of 200,000tpa of SOP.

Recharge is a key element of the mining strategy, as it refills the drainable porosity and activates salts contained within the retained porosity by physical diffusion. Direct rainfall recharge has been estimated from water level fluctuations due to rainfall and specific yield (Groundwater Science, 2017). Evaporation from water ponded in the Lake was set to 0.7 x (pan evaporation).

Recharge calculations used in the abstraction model were based on historic (1971 – 1990) precipitation at Wiluna and estimated surface inflows (Groundwater Science, 2018) into the lake for a 20-year production period.

Over the life of mine, 80% of the total brine production volume is sourced from the Measured Mineral Resource (Lake Bed Sediment), 16% from the Indicated Mineral Resource (Paleochannel) and 4% from the Inferred Mineral Resource (Lake Bed Sediment – South). The trenches for abstraction of the Inferred component of brine production is expected to be the last of the brine extraction system constructed. Whilst the Company has a reasonable expectation that the portion of the Inferred Mineral Resource included in total brine production will be capable of upgrade, it does not feature as a significant portion of production either during the payback period or during the life of mine.

## Brine Extraction

The brine extraction methodology and requirements for the Scoping Study are supported by hydrogeological modelling and hydraulic design work undertaken by Cardno Engineering.

The Scoping Study has assumed brine will be extracted from Lake Way using two methods as depicted in the conceptual site model shown in Figure 8:

- *Surface trenching* provides access to brine contained within the playa lake sediments;
- *Vertical bores* provide access to brine from the paleochannel aquifer.

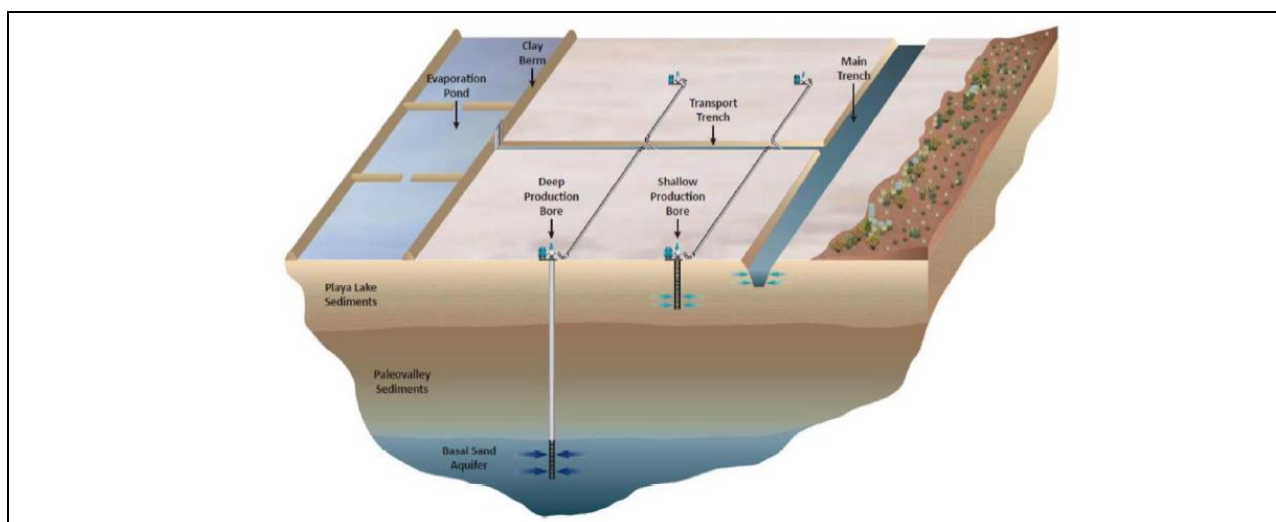


Figure 8: Conceptual Model of Brine Extraction System

The design requirements assumed an average brine demand of 730L/s to be supplied to the halite ponds for the extraction network concept design. The contribution to brine production is approximately 84% from trenching and 16% from bores. The current basis is:

- Bore production rate of 8.4L/s/bore
- Trench yield rate (flow) minimum of 4L/s/km
- Trench yield rate (flow) maximum of 8L/s/km

The hydraulic analysis used a conceptual brine extraction network layout and the proposed evaporation pond locations to determine the likely requirements of the on-lake brine transfer pumping scheme.

Brine extracted from paleochannel bores will be fed directly into nearby trenches. Bore pumps have been sized for a flowrate of approximately 8L/s and a pumping head at 90m.

The location and geometry of the paleochannel has been identified from a passive seismic survey. Bores will be drilled using the mud rotary method through the lake bed sediments and the Tertiary clays into the basal sand terminating in the weathered bedrock horizon.

The bores will be screened across the basal sands section. Gravel pack will be installed across the screened section with a bentonite seal at the top, the annulus will be backfilled to surface.

#### Trench Layout

The trench network designed as part of the Scoping Study stretches a total of 130km across the lake surface and includes two types of trench systems required to maintain the feed brine into the Halite Ponds:

- Extraction trenches provide a low pressure zone for brine contained in the surrounding playa lake sediments to drain into.
- Transport trenches to convey brine into distinct areas as required, and capture brine pumped from the paleochannel bores into the trench network.

#### Trench Flow

The brine extraction pumping systems must provide sufficient brine to meet seasonal pond demand, which is at a peak during the summer months due to solar evaporation.

A hydraulic analysis was undertaken on a conceptual network layout to calculate flowrates, flow velocities, pump requirements and power demand. Typical industry norms for pumped open channels were adopted, maintaining a minimal trench base gradient of 1:5000 and a maximum flow velocity of 0.3m/s.

Pump stations are located on-lake between trench segments, and at entry points into each halite pond. In total, the trench network includes 12 transfer pump stations.

#### Trench Design

The trench design is shown in Figure 9 which provides for approximately a 5m wide trench, with additional width to batter back any surficial loose soils, and from 5m to 6m deep. The trenches will likely be stepped to avoid wall collapse and to assist with constructability. The Scoping Study has assumed a construction methodology using an amphibious excavator.



Trench spoil will be used to create a light vehicle access berm on one side of the trench and include windrows if required. Bunding on the opposite side will be designed with gaps to allow surface water recharge.

The height and layout of the bunds will depend on hydrogeology requirements (i) to ensure regular groundwater recharge from surface water and (ii) to maintain surface water flow of the lake.

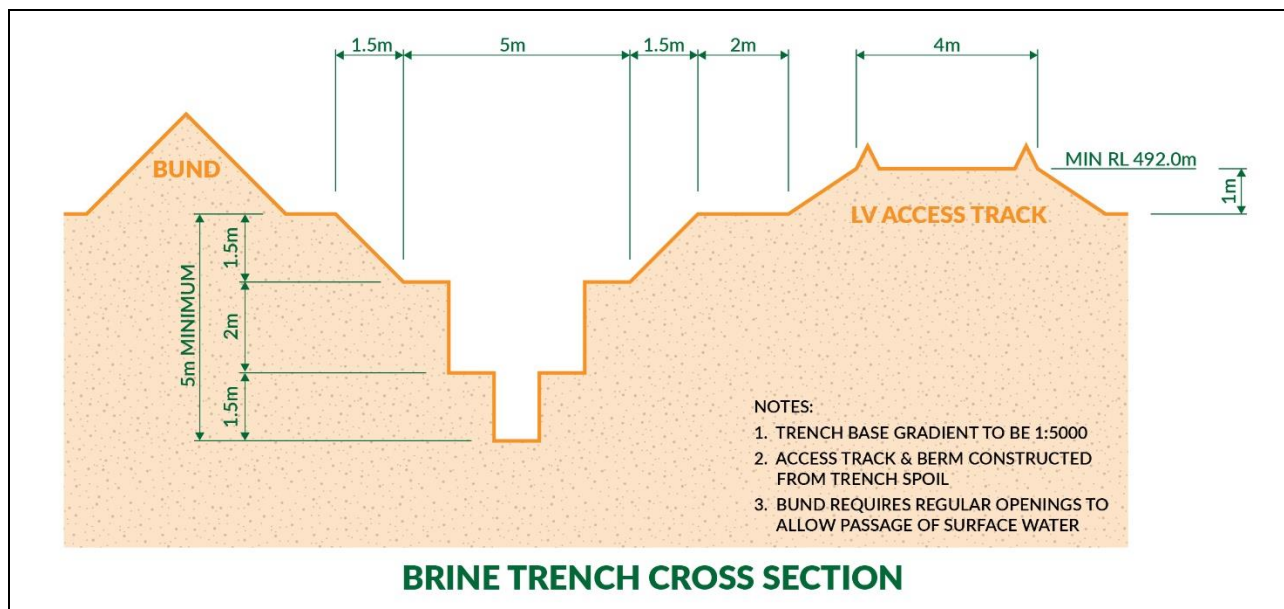


Figure 9: Trench Cross Section

Regular trench maintenance will be required and allowance is made in the maintenance equipment fleet for purchase of excavators and constant coverage of personnel on-site to maintain the trench network.

## BRINE EVAPORATION

Extracted brine is concentrated in a series of solar ponds to induce the sequential precipitation of salts and eventually potassium-containing salts in the harvest ponds. Based on modelling using historical data obtained from nearby weather stations at Wiluna Township and Wiluna Airport, the Lake Way region in Western Australia has an average rainfall of 260mm/a and an average water evaporation rate of 3,504mm/a, making conditions ideal for evaporation processes.

The operational area of the evaporation ponds required for the final 200,000tpa SOP production rate is 13.08km<sup>2</sup>, with area distribution between the various ponds based on mass balance modelling output.

The pond sizing is developed from a simulation using a combination of mathematical and thermodynamic models and is based on the average brine chemistry from the lake and paleochannel. The simulation uses average annual weather conditions to calculate the required brine flow and pond area (size) to meet the targeted 200,000tpa production scenario.

Salt Lake Potash engaged Ad-Infinity to conduct meteorological modelling, evaporation modelling, pond sizing and design for the Lake Way Project. Geotechnical consulting services were provided by Knight Piésold.

### Evaporation Pond Chemistry and Configuration

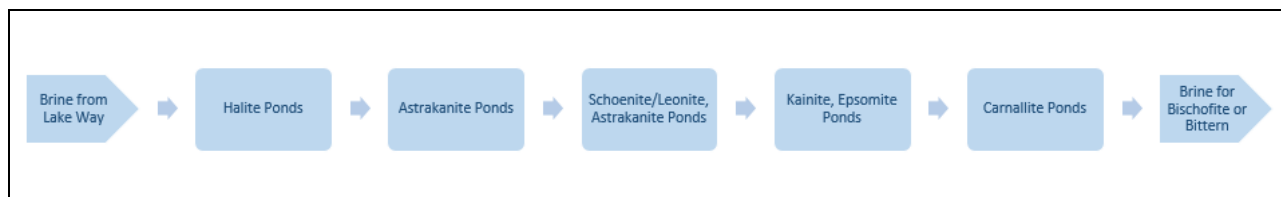
Brine evaporite chemistry is very complex due to the multitude of ions present in brine, however, in an effort to simplify the evaporation pathway representation, a three-component system of the major constituents (Mg-SO<sub>4</sub>-K) is commonly assumed. Sodium and chloride ions are not shown, for simplicity, as they are generally present in abundance in all salt lake brines and form halite in preference to all other salts.

The extraction brine composition used for the Scoping Study evaporation modelling is based on Lake Way sample data and is detailed below. The average brine composition below is based on an assumed 80% brine extracted from the lake playa and 20% brine extracted from the Paleochannel.

**Table 7: Brine Extraction Composition**

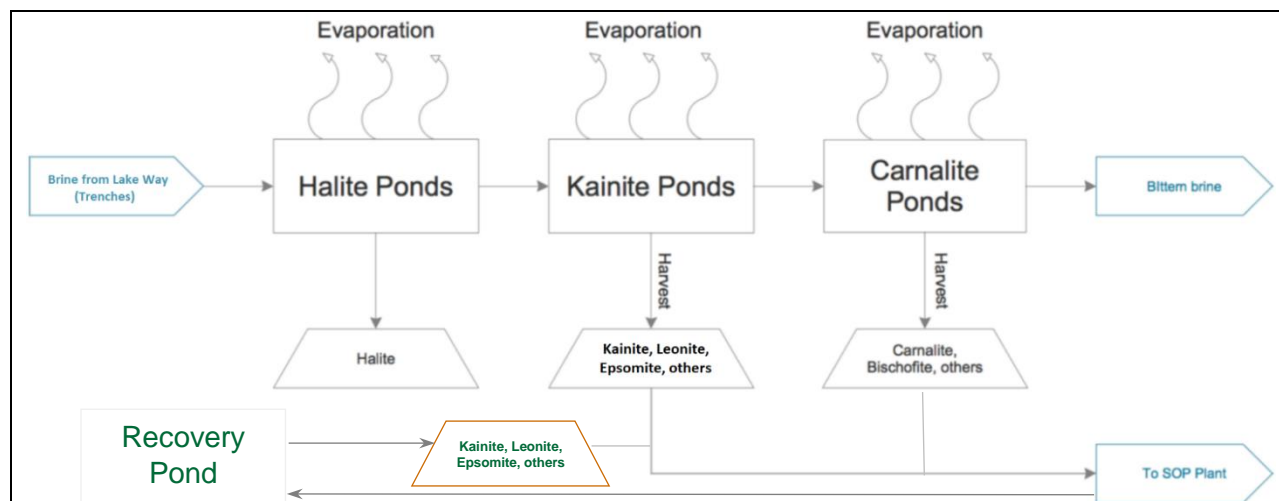
Element	Unit	Value
Na	g/L	74.3
K	g/L	6.5
Mg	g/L	7.4
Ca	g/L	0.5
SO <sub>4</sub>	g/L	26.7
Cl	g/L	122.8

The general evaporation-concentration route can be represented by the following block flow schematic (Figure 10).



**Figure 10: Block Flow Schematic of the Theoretical Evaporation Pathway**

Experience from numerous evaporation trials for Lake Way and Lake Wells has shown that astrakanite does not form, most likely because the kinetics of the formation are too slow for a dynamic pond system. Accordingly, the Scoping Study process has adopted this view and assumed that astrakanite will not form within the pond system. Instead, the composition of the solution will move directly towards the leonite-schoenite field to produce potassium sulphate salts, followed by the epsomite-kainite field where these salts precipitate. Finally, the carnallite field is reached as seen in the block flow diagram below (Figure 11).



**Figure 11: Pond Block Flow Diagram**

Harvest salts from the kainite pond and carnallite pond are used for SOP production. Concentrated brine from the carnallite pond is sent to the bittern pond for additional concentration and store as a waste by-product.

### Evaporation Pond Layout

The specific site conditions were reviewed to assess the most suitable evaporation pond locations (Figure 12):

- Halite ponds (1020ha) are located on-lake, to make use of the in situ low permeability clays and avoid the need for HDPE lining.
- Bitterns Pond (14ha) is located on-lake and unlined.
- Kainite (200ha), Carnallite (11ha) and Recovery Ponds (80ha) are located on-lake.

### On-Lake Ponds

All ponds are located on-lake providing significant benefits for both cost and operational efficiency. The on-lake evaporation pond system has been located to:

- Avoid locating ponds in areas of high brine yield, to minimise pond footprints sterilising the available brine resource.
- Where possible, avoid low lying areas subject to long periods of inundation resulting from surface water flow. Some ponds that span inundated areas will require specific design considerations.
- Ensure availability of in situ clays beneath the pond footprint, proven to be of low permeability and will limit seepage of unlined ponds.
- Ensure availability of good quality lake clays that are a potential source of embankment construction materials to allow a cut-to-fill method for pond construction.
- Avoid disturbance of the lake edge due to environmental and heritage requirements.

The on-lake evaporation pond location and layout is shown in Figure 12 and pond sizes are detailed in Table 8.

Table 8: On-lake Ponds

	Halite	Bitterns	Kainite	Carnallite	Recovery
Area (ha)	1,020	14	200	11	80

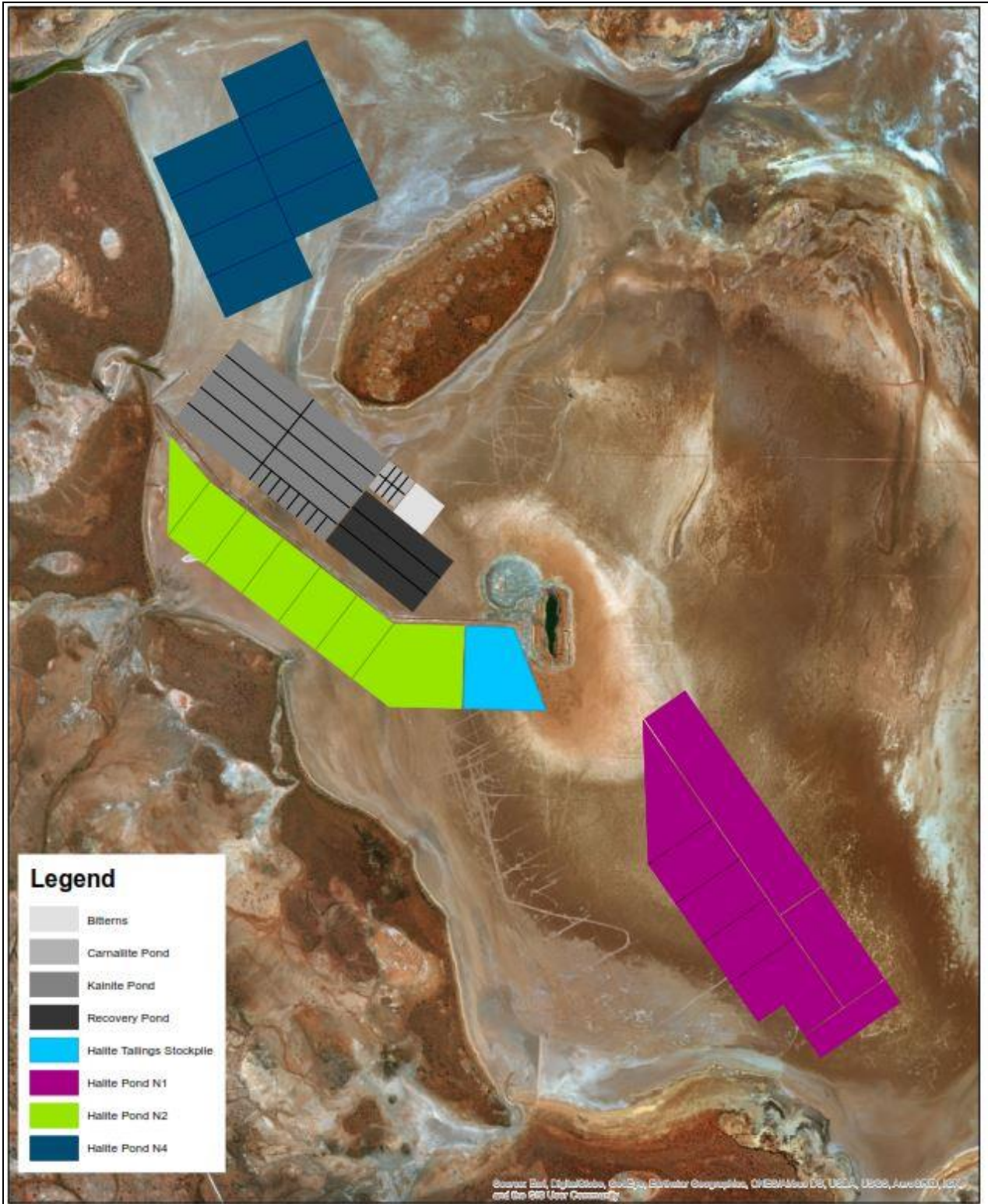


Figure 12: On-Lake Evaporation Pond Locations

### Evaporation Pond Construction

On-lake construction requires specialist equipment given the challenges trafficking and placing fill on the soft lake surface. Construction material will either be clay sourced from borrow pits immediately adjacent to the embankments, or imported materials source from existing mining waste materials or planned mine pre-stripping.

The general construction methodology is currently being trialled and proven up as part of the first phase of the Evaporation Pond construction currently underway at Lake Way. This will provide important information to ensure an efficient construction methodology is implemented for the remaining pond construction operations at Lake Way.

### Salt Harvesting

The harvest ponds have been designed to allow for up to 12 months of salt growth before harvest. Harvests may be made more frequently in the kainite ponds during plant start-up and operation. The carnallite and recovery ponds will also be harvested and salt processed through the plant.

Sulphate salts are to be recovered from the harvest ponds (kainite, carnallite and recovery) by grader and front end loader. Dump trucks are loaded to transport the salt to the process plant, where it is stockpiled in separate areas to allow for a blended feed to the process plant.

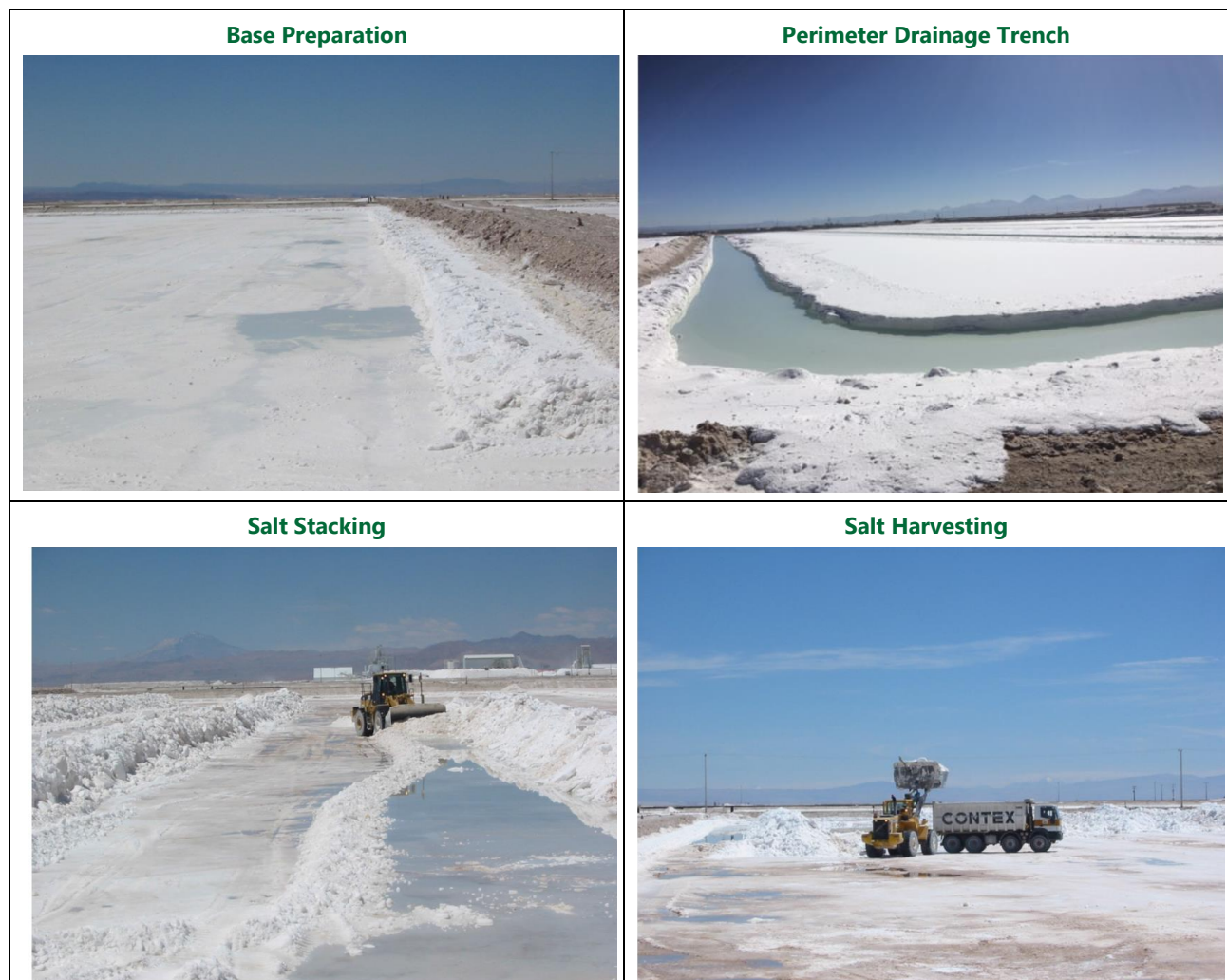


Figure 13: Example of Salt Harvesting Process

## PROCESS PLANT

The potassium salts harvested from the solar evaporation ponds will be treated in a processing plant to convert these salts into sulphate of potash (SOP or  $K_2SO_4$ ), while minimising deportment of chlorides to the product.

Salt Lake Potash has conducted extensive testing of lake brines and harvest salts from its salt lake projects, predominantly Lake Way and Lake Wells, in order to confirm the evaporation and associated harvested salt processing operations. The testing thus far has proven that lake brine can be concentrated economically, via solar evaporation, to produce mixed potassium sulphate double salts. It has also been shown that these salts, when harvested, can be economically converted into a valuable, high purity SOP fertiliser product.

The SOP production process consists of:

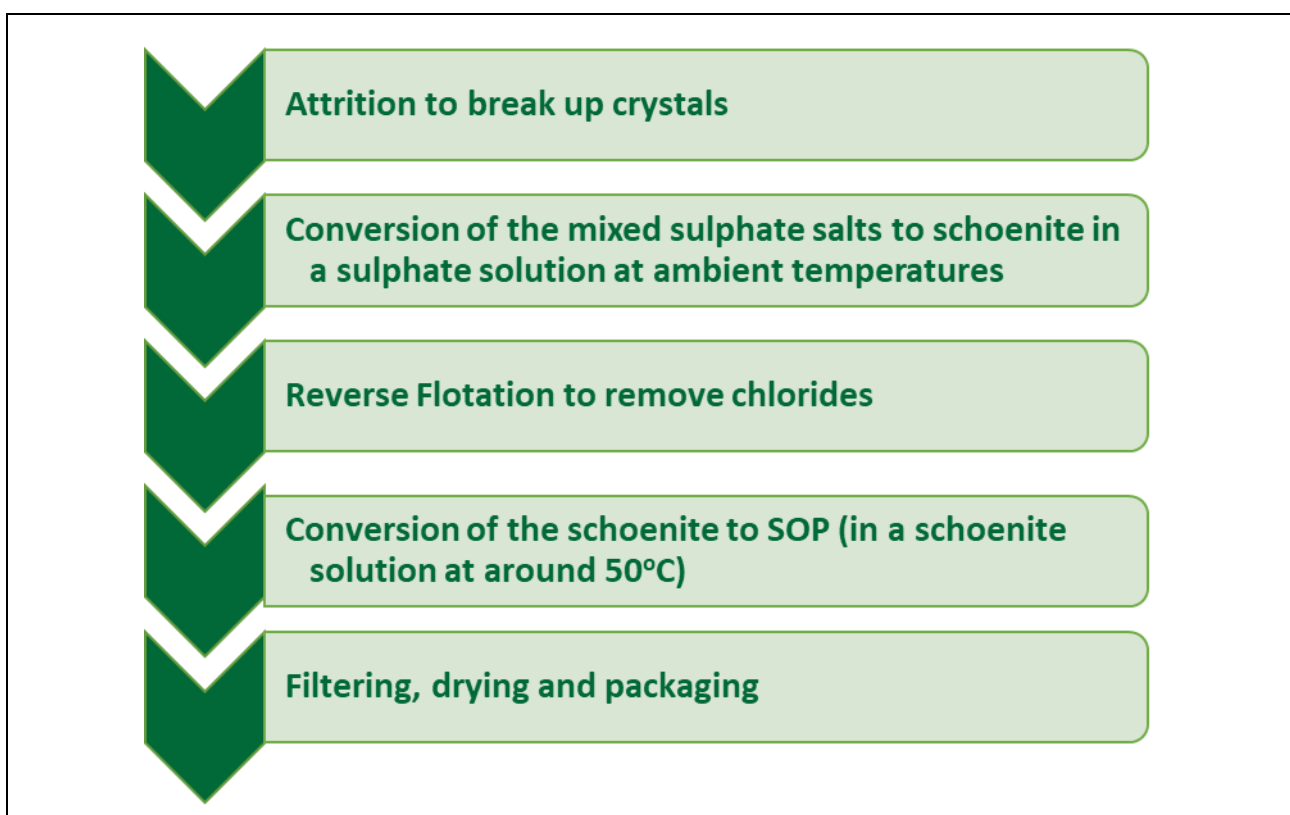


Figure 14: SOP Production Process

The proposed Lake Way flowsheet is shown in Figure 15.

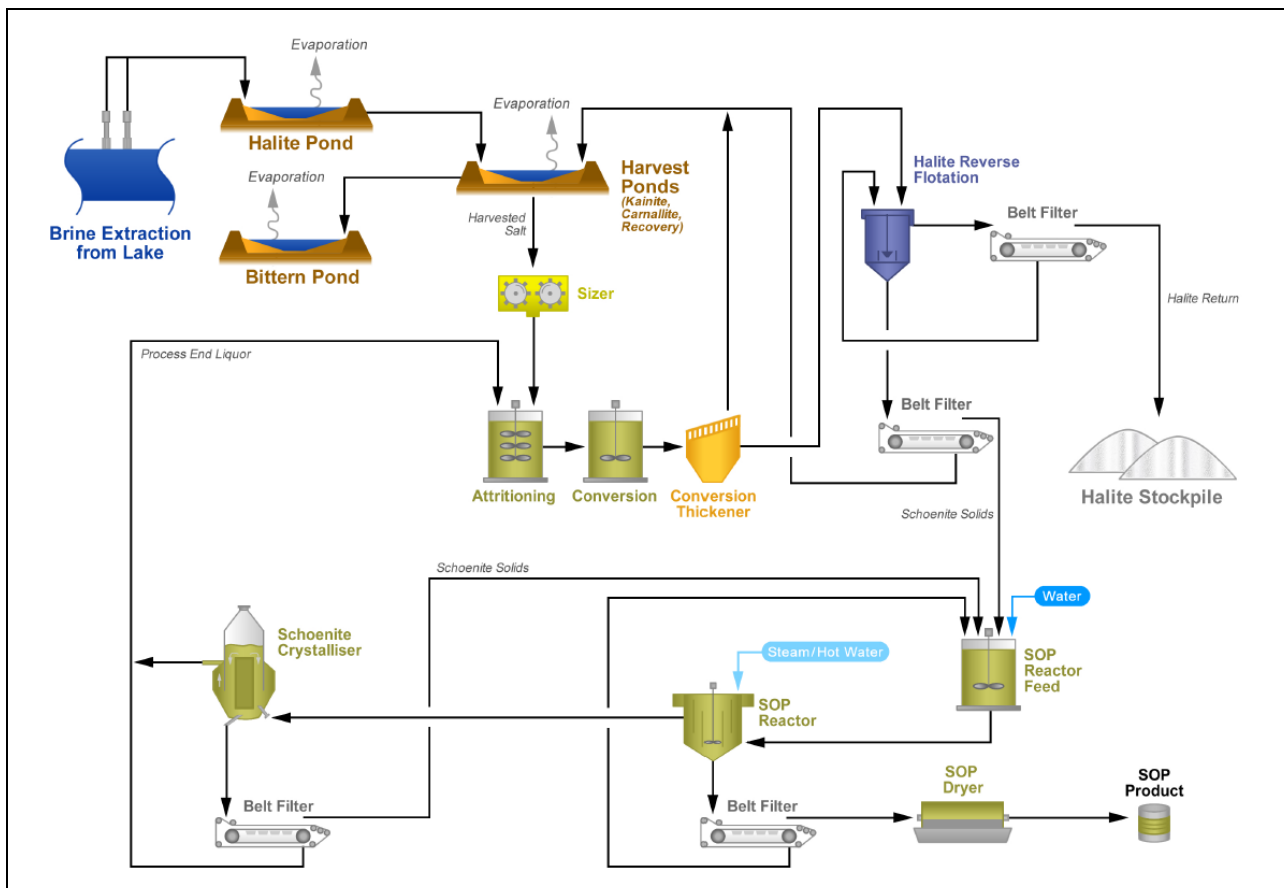


Figure 15: Preliminary Lake Way Flowsheet

The key design parameters are shown in Table 9.

Table 9: Design Basis

Parameter	Value
Flowsheet configuration	Feed preparation, conversion, reverse flotation and SOP crystallisation.
SOP production	200,000tpa
Process plant potassium recovery	80%
<b>Operating Time</b>	
Brine extraction; evaporation ponds and harvesting	8200h/a
Process plant	7600h/a
<b>Product Composition</b>	
SOP Grade	>96%
%K <sub>2</sub> O equivalent	>52%
Target Cl Content	<0.5%
Target Mg Content	<0.2%

The harvested salt is crushed in a roll mill to break up lump material and is further broken down and scrubbed in attritioning cells. The resulting slurry is pumped to the conversion circuit where the potassium harvest salts are converted to schoenite prior to flotation.

The conversion tanks' discharge slurry is transferred to the conversion thickener, an inclined plate unit. The conversion thickener underflow slurry, now predominantly schoenite, reports to the reverse flotation circuit.

The converted harvest salts still contain an appreciable amount of halite which needs to be removed to minimise chloride and sodium reporting to the product. Therefore a reverse flotation configuration is used employing self-aspirated columns to remove the halite. The resulting halite slurry is filtered, then stockpiled for disposal back on the lake. The flotation product is a Schoenite slurry which is filtered, to remove excess flotation brine, and is presented to the crystalliser circuit. The filtered flotation brine, which is saturated in potassium, is internally recycled with any excess brine sent to the recovery pond.

The purified schoenite salt from flotation is re-slurried with a calculated amount of dilution water and then pumped into the SOP crystalliser which is maintained at 50°C to convert to the schoenite to SOP by dissolving the magnesium sulphate from the double salt. The SOP crystalliser mother liquor reports to a cooling crystalliser where schoenite is precipitated from the liquor by cooling the liquor to 20°C with a chiller system. The secondary schoenite produced by the cooling crystalliser is recycled to the SOP crystalliser along with the primary schoenite from flotation.

The SOP crystalliser produces fine SOP crystals which are first dewatered, then the SOP cake is dried in a rotary drier and then conveyed to the product storage shelter. Product is periodically reclaimed by an FEL and transferred into a loadout hopper for transportation to port.

## MAJOR INFRASTRUCTURE

The Lake Way Project is located in the Goldfields region of Western Australia approximately 15km south of Wiluna. The Project is located in close proximity to the Goldfields Highway which is a state highway that extends 800km from south of Kambalda in the Goldfields to Meekatharra in the Mid-West. Given the proximity to the Goldfields Highway which supports quad road trains, road haulage options include either travelling south toward Leonora or west to Geraldton.

The process plant is located 5km from the evaporation ponds and connected by an existing haul road that services the Williamson Pit. A 1.4km haul road from the Williamson pit causeway to the Williamson pond has been constructed as part of the first phase of Evaporation Pond construction. Unsealed access roads will be required for access to the Goldfield Gas Pipeline, raw water borefield and paleochannel bores.

The Project power requirements will be provided by a standalone natural gas power station located near the process plant under a build, own, operate (BOO) arrangement and local diesel generators at remote locations.

The Project requires natural gas for the power station and for process requirements such as the boiler. Natural gas will be supplied from the Goldfields Gas Pipeline which runs along the eastern side of Lake Way. The distance from the process plant to the gas pipeline is approximately 27km.

Water required for the Project will be sourced from a nearby borefield. Raw water will be extracted from the borefield by bore pumps. The total raw water requirement for the Project is 2.0GL/a.

A fly in/fly out (FIFO) workforce has been adopted for the Lake Way Project using the Wiluna Airport which is located 5km south of the main township. A permanent accommodation village with a capacity for 100 workers has been assumed. The village will be expanded to include 180 construction workers during the construction phase.



## PRODUCT TRANSPORT AND LOGISTICS

Salt Lake Potash engaged several highly qualified transport logistic companies to assist with defining the optimal logistics solution for transportation of 200,000tpa of SOP from Lake Way to port. An assessment of numerous haulage options was undertaken, applying a fixed origin and modelling multiple potential destinations including Geraldton, Fremantle and Esperance. This assessment has included a road direct assessment, rail direct assessment, and intermodal hub and spoke solution incorporating both road and rail.

The road direct solution to Geraldton has been established as the most cost-effective option to use for the product transport logistics for the standalone 200,000tpa SOP project from Lake Way to underpin the overall economic assessment for the Scoping Study.

The relatively close proximity to the Geraldton Port facilities (780km) and the ability to leverage off the established sealed highway network from Lake Way to Geraldton provides cost effective access into the Geraldton port facility.

The transportation solution will consist of truck loading at Lake Way site via Front End Loader. The transport from Lake Way to Geraldton will be undertaken by trucks suitable for quad combinations. The Mainroads Restricted Access Vehicles (RAV) approvals for quad combination transport covers the entire route from Lake Way all the way into Geraldton Port.



**Figure 16: Quad Road Train on the Goldfields Highway**

Geraldton Port is capable of handling fully loaded Panamax size vessels up to 70,000 tonnes and 225m in length. The Port handles approximately 19 million tonnes per annum of trade per year with significant excess capacity available for handling and storage.



Figure 17: Aerial View of Geraldton Port

## PRODUCT QUALITY AND MARKETING

Fertilisers consist of essential plant nutrients that are applied to farmed crops in order to achieve favourable quality and yield. They replace the nutrients that crops remove from the soil, thereby sustaining the quality of crops, and are considered the most effective means for growers to increase yields.

The key components of agricultural fertilisers are nitrogen (ammonia and urea), phosphates (ammonium phosphates), and potassium (muriate of potash and sulphate of potash). In addition, sulphate has gained increased attention over the past several years due to soils becoming deficient in sulphur (the 'fourth macronutrient').

Global fertiliser demand is expected to increase significantly in the coming years due to the world population growth accompanied by decreasing arable land per capita, changes in diet and growth in income. These increases will provide an incentive for farmers to increase fertiliser use for improved yields and quality.

The most widely available source of potassium used by growers is Muriate of Potash (MOP or KCl), with around 65 million tonnes consumed annually. SOP is a speciality type of potassium fertilisers that is produced and consumed on a smaller scale.

MOP is widely used in all types of farming, however it can be detrimental to some plants, especially fruits and vegetables, due to its chloride content. SOP is primarily used as a source of potassium for crops intolerant to chloride. SOP is priced at a premium to MOP, due to supply constraints, high production costs and because of its ability to be used on chloride intolerant crops (such as fruits, vegetables, beans, nuts, potatoes, tea, tobacco and turf grass), which typically sell at sufficiently higher prices to absorb the premium cost.

SOP can be used in most applications where MOP is used and is preferred in many circumstances as it enhances yield and quality, shelf life and improves taste. SOP generally outperforms MOP in terms of crop quality and yield. SOP performs particularly well with crops that have a low tolerance to the chloride in MOP and in arid, saline and heavily cultivated soils. The low volume of SOP consumption relative to market demand is partly a result of the scarcity of reliable SOP supply.

SOP's premium to the MOP price is correlated to the conversion costs from MOP to SOP (Mannheim Process) where MOP is used as an input in the process. The premium has been around 60% for the past decade. In recent years, this premium has expanded significantly, as decreases in the MOP price have not translated to similar declines in the price of SOP, indicating that the SOP market is supply constrained.

SOP can be sold as a standard powder, premium granular or soluble product. Granular and soluble SOP generally attracts a price premium. Salt Lake Potash plans to sell at a premium to the market price as a certified organic producer and also with a soluble product offering. The premium achievable for a soluble product can be upwards of 20%<sup>2</sup>.

The Company has engaged Argus Media (Argus) and CRU International Group to provide market analysis on both the broader SOP market and also specifically the Lake Way Project. The current SOP price averages between US\$525/t (NW Europe – Standard bulk)<sup>3</sup> and US\$625 (California)<sup>4</sup> with Salt Lake Potash utilising a life of mine SOP price of US\$550/t (FOB) for the Scoping Study.

The Company will initially be targeting both global and domestic markets for its premium grade SOP product. SOP production is not easily substitutable and is in supply deficit, therefore the Company is confident in the current and forecasted levels of demand.

## MINING TENURE

The Lake Way Project site has been secured with a mixture of contractual rights with Blackham Resources under the Access Agreement and Salt Lake Potash's own exploration and mining tenements and applications. The Company's and Blackham Resources mineral exploration and mining tenement locations are shown on Figure 3 and detailed in Table 10.

Salt Lake Potash is optimising the tenure approval process by staging the required approvals to ensure construction will be undertaken in line with the project schedule.

In addition to the exploration and mining tenements the Company is progressing the approval for various miscellaneous licences for non-process infrastructure, including water and power.

---

<sup>2</sup> CRU SOP Market Study May 2019

<sup>3</sup> Argus Media 6 June 2019

<sup>4</sup> Greenmarkets 31 May 2019

Table 10: Tenure Summary

Tenement	Status	Holding Name
E53/1878	Live	Piper Preston Pty Ltd
E53/1897	Live	Piper Preston Pty Ltd
E53/2057	Pending	Piper Preston Pty Ltd
E53/2059	Pending	Piper Preston Pty Ltd
E53/2060	Pending	Piper Preston Pty Ltd
L53/208	Pending	Piper Preston Pty Ltd
M53/1102	Pending	Piper Preston Pty Ltd
E53/1862	Live	Kimba Resources Pty Ltd
E53/1905	Pending	Matilda Operations Pty Ltd
E53/1952	Pending	Kimba Resources Pty Ltd
M53/121	Live	Kimba Resources Pty Ltd
M53/122	Live	Kimba Resources Pty Ltd
M53/123	Live	Kimba Resources Pty Ltd
M53/147	Live	Kimba Resources Pty Ltd
M53/253	Live	Kimba Resources Pty Ltd
M53/796	Live	Kimba Resources Pty Ltd
M53/797	Live	Kimba Resources Pty Ltd
M53/798	Live	Kimba Resources Pty Ltd
M53/910	Live	Kimba Resources Pty Ltd
P53/1642	Live	Kimba Resources Pty Ltd
P53/1646	Live	Kimba Resources Pty Ltd
P53/1666	Live	Matilda Operations Pty Ltd
P53/1667	Live	Matilda Operations Pty Ltd
P53/1668	Live	Matilda Operations Pty Ltd

## ENVIRONMENTAL

Salt Lake Potash has engaged Pendragon Environmental Solutions (Pendragon) and a number of specialist ecological consultants to provide assistance with the necessary approvals for the Lake Way Project.

The Company has identified the key environmental risks for Lake Way Project and has commenced and completed its own studies to obtain the necessary information for the Company to complete environmental impact assessment/referral documentation as required under the Environmental Protection Act 1986 (EPA Act). In addition to the studies commissioned by the Company, the arrangement Salt Lake Potash has established with Blackham Resources has afforded the Company access to an extensive range of environmental studies completed by Blackham Resources across the Lake Way region. Refer Table 11 below for a summary of the key relevant studies completed by the Company and Blackham Resources to date.

The early environmental study information available, has greatly improved the Company's understanding of the local and regional environment. This has allowed the Company to optimise and de-risk the development to minimise environmental impacts and constraints.

**Table 11: Surveys Completed**

Report Title	Area	Date	Study Description
Flora and Vegetation Assessment Lake Way Demonstration Plant Project	Lake Way and Surrounds	2019	Level 1 and Field Survey
Demonstration Plant Flood study	Lake Way	2019	Flood study
Lake Way Acid Sulphate Soil investigation	Lake Way	2019	Acid Sulphate investigation
Lake Way Fauna assessment of proposed project area	Lake Way and Surrounds	2019	Level 1 and Field Survey
Fauna Survey	Lake Way and Surrounds	2019	Targeted Night Parrot Survey
Lake Way Potash Project Subterranean Fauna Baseline Survey	Lake Way and Surrounds	2017	Level 1 Baseline survey
Detailed Flora and Vegetation Survey Lake Way Potash Project	West of Lake Way	2017	Level 1
Lake Way Potash Project Wetland Ecology Baseline Survey	Lake Way and Surrounds	2017	Level 1 Base line Survey
Fauna Survey Lake Way Potash	Lake Way and Surrounds	2017	Level 2
Fauna Assessment Lake Way Project Area	Lake Way and Surrounds	2016	Level 1
Flora & Vegetation Survey Lake Way	Lake and Surrounds	2015	Level 1
Matilda Gold Project Murchison Western Australia	Williamson Pit, Matilda Operations and Wiluna	2015	Level 1 Biological Survey
Matilda Gold Project Murchison Western Australia	Williamson Pit, Matilda Operations and Wiluna	2015	Field survey for Landscape Function Analysis Survey
Biological Assessment of Lake Way 2009	Lake Way and Surrounds and E53/1897	2010	Field Investigation of Lake Way discharge environment

## NATIVE TITLE AND HERITAGE

The Lake Way Project is located in the Wiluna Peoples' native title determination area (WCD2013/004). The Determination first took effect 23 January 2015, covering an area of approximately 40,665 km<sup>2</sup>. The determination area includes a number of pastoral leases, parts of the township of Wiluna, parts of the Canning Stock Route, areas of unallocated Crown Land and the Lake Way Project area.

Tarlka Matuwa Piarku Aboriginal Corporation RNTBC (TMPAC) manage the Wiluna Peoples native title rights over their determined area.

In December 2018, the Company signed a Native Title Land Access and Brine Minerals Exploration Agreement (the Agreement) with TMPAC, on behalf of the Wiluna People, covering the Lake Way Project area and providing consent to the grant of its exploration licences and for the area required for the construction and operation of the first phase of Evaporation Ponds.

The Company is continuing extensive consultation with TMPAC to achieve a Native Title Mining Agreement to provide consent to the grant of its mining lease and for the ongoing mining operation. The Native Title Mining Agreement negotiations are advanced and the Native Title Mining Agreement is expected to be finalised and signed in the near future.

The Aboriginal Cultural Material Committee (ACMC) is of the view that Lake Way is an Aboriginal Site for the purposes for the Aboriginal Heritage Act 1972. The Company's full and ongoing consultation with TMPAC, will enable the Project to take into consideration TMPAC's heritage requirements. The Company has, with the support of TMPAC, established a framework for obtaining consents under the Aboriginal Heritage Act 1972 necessary to ensure continuity of works on the Lake.

## ECONOMICS

### Operating Costs

Operating costs have been estimated for the Lake Way Project based on the production rate of 200,000tpa to an accuracy of  $\pm 30\%$ .

The estimated cash operating costs were built up by creating cost schedules for the following categories:

**Table 12: Operating Costs**

Area	Cost per tonne (\$A)
Labour	\$ 49
Power	\$ 33
Maintenance	\$ 17
Reagents	\$ 3
Consumables	\$ 37
Miscellaneous	\$ 27
General and Administration	\$ 18
<b>Total (Operating Costs per tonne) Mine Gate</b>	<b>\$ 184</b>
Transportation	\$ 80
<b>Total (Operating Costs per tonne)</b>	<b>\$ 264</b>

Figure 18 shows the breakdown of cash costs by major operational area across the Lake Way Project.

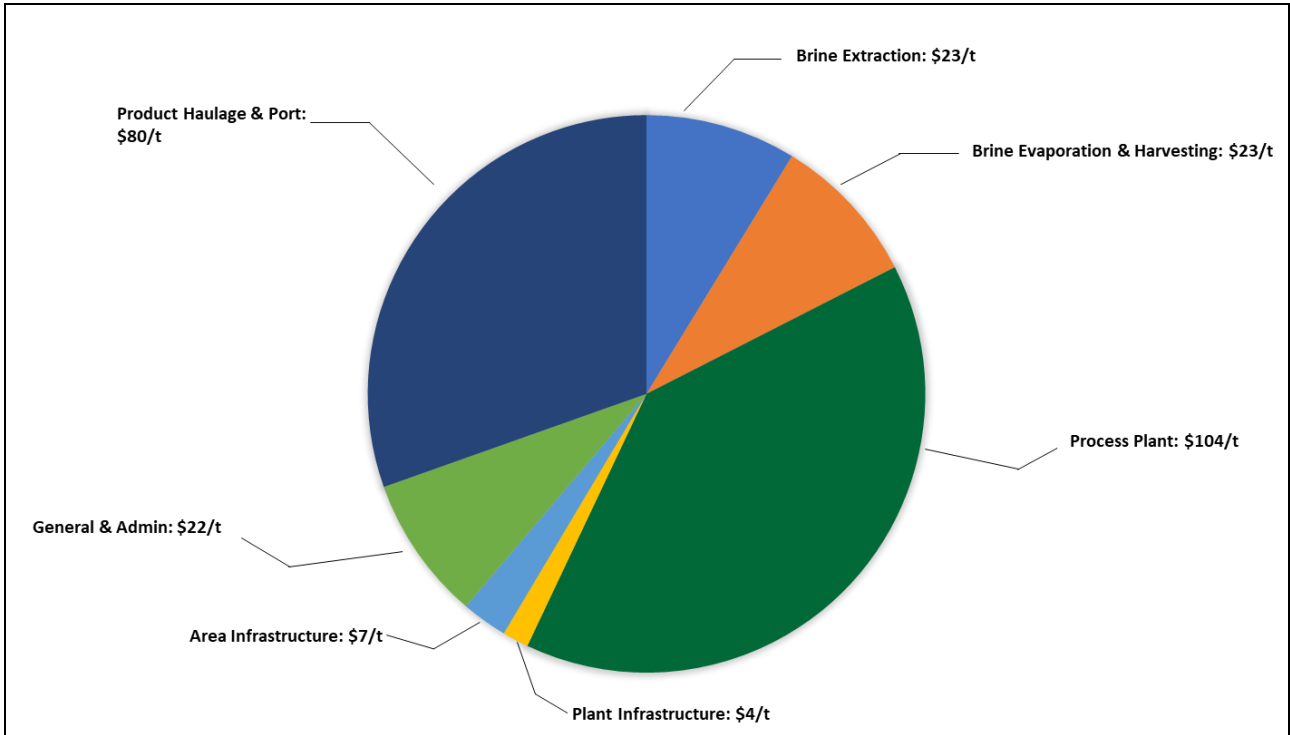


Figure 18: Cash costs for Lake Way Project

The total operating cash cost estimate of \$264/t places the Lake Way Project as the lowest cost producer globally for SOP projects.

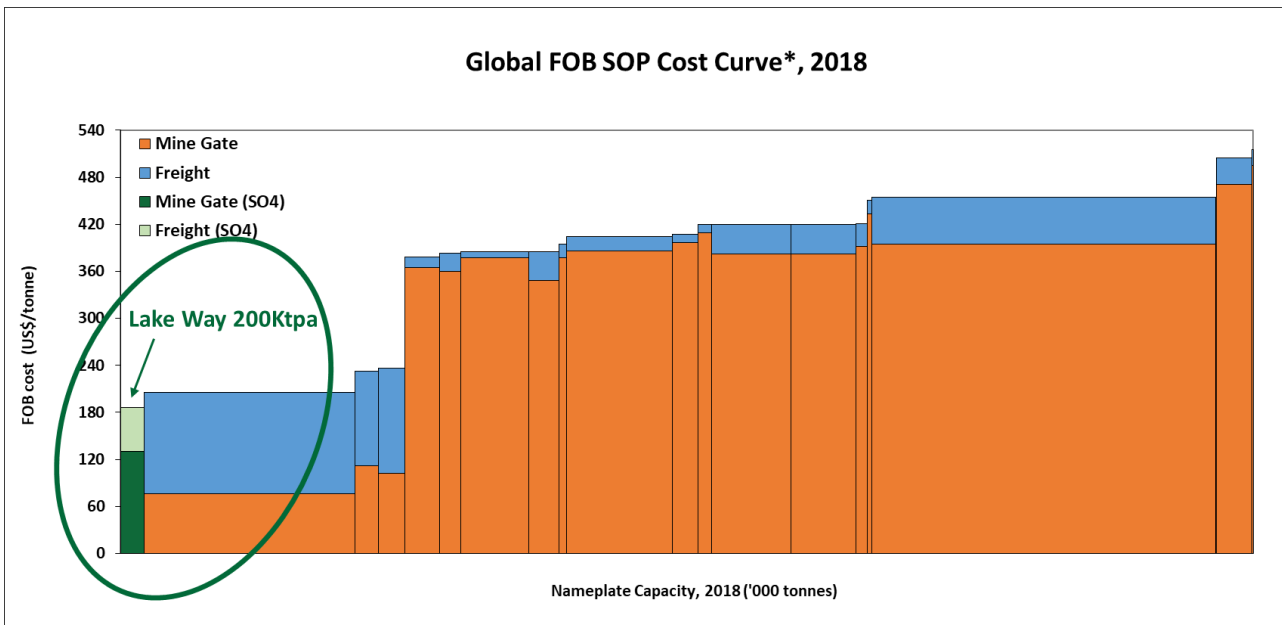


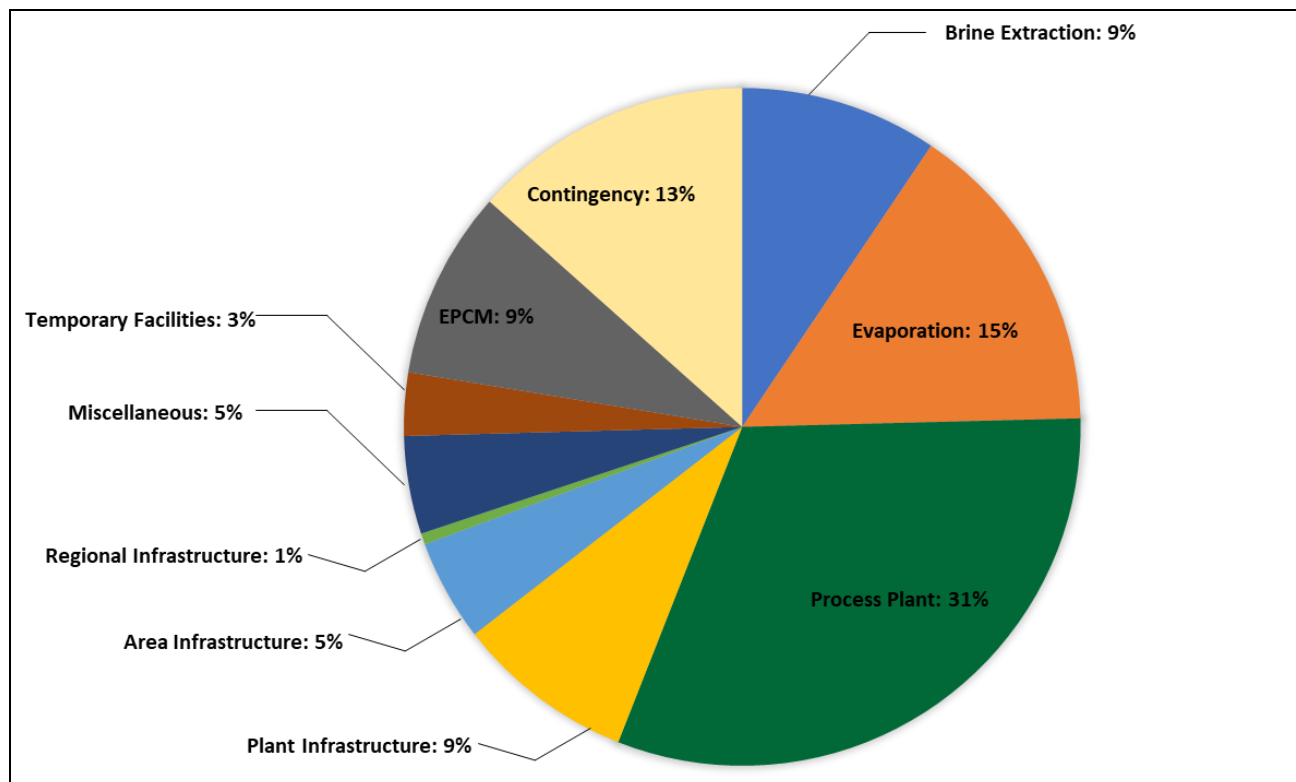
Figure 19: Global FOB SOP Cost Curve (Source - Argus)

### Capital Costs

Salt Lake Potash estimates the total capital cost to construct the brine extraction, evaporation and process plant and associated infrastructure to produce 200,000tpa SOP at \$237 million.

**Table 13: Capital Costs**

Area	\$Am
Brine Extraction	22
Evaporation	36
Process Plant	75
Plant Infrastructure	20
Area Infrastructure	12
Regional Infrastructure	1
Miscellaneous	11
<b>Total Direct</b>	<b>177</b>
Temporary Facilities	7
EPCM	21
<b>Total Indirect</b>	<b>28</b>
<b>Total Bare</b>	<b>205</b>
Growth Allowance	32
<b>Total Initial Capital</b>	<b>237</b>



**Figure 20: Capital Costs Breakdown**



## Royalties, Taxes, Depreciation, and Depletion

The Scoping Study project economics include the following key parameters related to royalties, tax, depreciation, and depletion allowances:

- State Government Royalties are 2.5% of Gross Revenue
- Other Royalties up to 4.9% of Gross Revenue
- Tax rate of 30% is applied
- Depreciation is assumed on a diminishing basis over the life of the assets

## Financial Modelling

An economic model has been prepared which reflects the proposed mine life for the Lake Way Project of 20 years. The Scoping Study assumes first production to occur in Q4 2020 with a gradual ramp up to full name plate capacity of 200,000tpa over the year 2021. This assumes completion of the BFS in Q3 2019 and a development timeframe of 12-15 months subject to availability of funding and in accordance with required approvals.

Financial modelling of the Lake Way Project highlights exceptional economic returns with a post tax NPV<sub>8</sub> of \$381m (pre-tax NPV<sub>8</sub> A\$580m) and a post tax IRR of 27% (pre-tax IRR of 33%). Table 2 provides a summary of production and cost figures for the Lake Way Project.

## Payback Period

Payback period for the initial development capital for the Lake Way Project is 3.2 years. The payback period is based on free-cash flow, after taxes.

## Sensitivity Analysis

The Scoping Study was prepared at a ±30% accuracy to investigate the technical and economic parameters of a SOP production operation at Lake Way.

The Company has modelled numerous scenarios during the study process to evaluate the impact of key inputs to the Lake Way Project economics. The modelling has highlighted the robustness of the project with the findings detailed in Table 14 and 15 below.

**Table 14: Scenario Analysis - NPV**

Sensivities (NPV)	-20%	-15%	-10%	-5%	Base	5%	10%	15%	20%
Price	197	243	289	335	381	427	473	519	565
FX	611	543	483	430	381	338	298	261	228
Operating Costs	449	432	415	398	381	364	347	331	314
Capital Costs	420	410	401	391	381	372	362	352	343

**Table 15: Scenario Analysis - IRR**

Sensivities (IRR)	-20%	-15%	-10%	-5%	Base	5%	10%	15%	20%
Price	19%	21%	23%	25%	27%	29%	31%	32%	34%
FX	36%	33%	31%	29%	27%	25%	23%	22%	20%
Operating Costs	30%	29%	28%	28%	27%	26%	25%	25%	24%
Capital Costs	33%	31%	30%	28%	27%	26%	25%	24%	23%

## NEXT STEPS

On the back of the outstanding results from the Scoping Study, the Company has commenced a Bankable Feasibility Study (BFS). Due to the advanced nature of the Scoping Study the Company expects to deliver the BFS within Q3 2019.

Salt Lake Potash is in advanced discussions with a debt provider for a debt funding package which will support funding for the Lake Way Project.

In parallel with work being undertaken on the BFS and utilising experience gained from the construction of the initial Evaporation Ponds, the Company is moving into a Front End Engineering Design (FEED).

**Enquiries:**                    **Tony Swiericzuk (Perth)**  
Telephone: +61 (8) 6559 5800

**Jo Battershill (London)**  
Telephone: +44 7540 366000

### Forward Looking Statements

*This announcement may include forward-looking statements. These forward-looking statements are based on Salt Lake Potash's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Salt Lake Potash, which could cause actual results to differ materially from such statements. Salt Lake Potash makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of that announcement.*

### Competent Persons Statement

*The information in this Announcement that relates to Mineral Resources is extracted from the report entitled 'Significant High-Grade SOP Resource Delineated at Lake Way' dated 18 March 2019. This announcement is available to view on [www.so4.com.au](http://www.so4.com.au). The information in the original ASX Announcement that related to Mineral Resources was based on, and fairly represents, information compiled by Mr Ben Jeuken, who is a member Australasian Institute of Mining and Metallurgy (AusIMM) and a member of the International Association of Hydrogeologists. Mr Jeuken is employed by Groundwater Science Pty Ltd, an independent consulting company. Mr Jeuken has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which he is undertaking 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'. Salt Lake Potash Limited confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. Salt Lake Potash Limited confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.*

*The information in this announcement that relates to Process Testwork Results is extracted from the report entitled 'Field Trials at Lake Way Confirm Salt Production Process' dated 29 January 2019. This announcement is available to view on [www.so4.com.au](http://www.so4.com.au). The information in the original ASX Announcement that related to Process Testwork Results was based on, and fairly represents, information compiled by Mr Bryn Jones, BAppSc (Chem), MEng (Mining) who is a Fellow of the AusIMM. Mr Jones is a Director of Salt Lake Potash Limited. Mr Jones has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking, 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'. Salt Lake Potash Limited confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement. Salt Lake Potash Limited confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.*

*The information in this report that relates to the Process Plant, Non-Process Infrastructure and Capital and Operating Costs are based on information compiled by Mr Peter Nofal, who is a fellow of AusIMM. Mr Nofal is employed by Wood, an independent consulting company. Mr Nofal has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which he is undertaking 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'. Mr Nofal consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

## SUMMARY OF MODIFYING FACTORS AND MATERIAL ASSUMPTIONS

The Modifying Factors included in the JORC Code have been assessed as part of the Scoping Study, including mining (brine extraction), processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and government factors. The Company has received advice from appropriate experts when assessing each Modifying Factor.

A summary assessment of each relevant Modifying Factor is provided below.

**Mining (Brine Extraction)** – refer to sections entitled ‘Project Geology and Mineral Resource’ and ‘Mining and Production Target’ in the Announcement.

Salt Lake Potash has conducted extensive exploration programs across Lake Way involving numerous evaluation methods.

To evaluate the lake bed sediments, sampling and data collation for the exploration field programme comprised extended pumping trials at 5 trenches across the lake for hydraulic parameter determination of drainable porosity and hydraulic conductivity (permeability). Separately, 49 test pits were developed and evaluated to assess variations in geology, brine grade and hydraulic parameters (determined from recovery testing and laboratory testing of in situ samples) across the Lake and 13 auger holes were developed to assess the deeper layers of the lake bed sediments validating the variations in geology and hydraulic parameters.

Salt Lake Potash undertook work in relation to the paleochannel which comprised a volumetric calculation from the geophysics and aquifer parameters and brine grade from the test pumping.

The Company engaged an independent hydrogeological consultant with substantial salt lake brine expertise, Groundwater Science Pty Ltd, to complete the Mineral Resource Estimate for the Lake Way Project. The Principal Hydrogeologist of Groundwater Science, Mr Jeuken, has over 10 years of experience in groundwater resources assessment and management for mining. He has experience in salt lake brine potash evaluation, aquifer testing, wellfield planning and installation for mining, and the development of conceptual hydrogeological models.

Refer to ASX Announcement dated 18 March 2019 for further details on the Mineral Resource Estimate upon which the production target is based.

The hydrological model was produced by the Company in consultation with independent experts. The two methods of extraction outlined in the Announcement are common practice for brine extraction. These extraction methods are used by the three main current operations which include Great Salt Lake in the US, Lop Nur Salt Lake (Luobupo) and SQM in Chile.

Recharge is a key element of the mining strategy, as it refills the drainable porosity and activates salts contained within the retained porosity by physical diffusion. Direct rainfall recharge has been estimated from water level fluctuations due to rainfall and specific yield (Groundwater Science, 2017). Evaporation from water ponded in the Lake was set to 0.7 x (pan evaporation).

Recharge calculations used in the abstraction model were based on historic (1971 – 1990) precipitation at Wiluna and estimated surface inflows (Groundwater Science, 2018) into the lake for a 20-year production period.

Importantly, over the life of mine, 96% of the total production target is in the Measured and Indicated resource categories:

- Lake Bed Sediment (84% of the total production target)
  - o 80% Measured resource category
  - o 4% Inferred resources category
- Paleochannel Basel Sands
  - o 16% Indicated resource category

The Inferred resource included in the total production target is located at the southern end of Lake Way and is expected to be the last of the brine extraction system constructed. Whilst the Company has a reasonable expectation that this portion of the Inferred Mineral Resource will be capable of resource category upgrade, it does not feature as a significant portion of production either during the payback period or during the life of mine.

**Processing (including Metallurgical)** – refer to sections entitled ‘Brine Evaporation’ and ‘Process Plant’ in the Announcement.

The Company engaged brine-processing experts Carlos Perucca Processing Consulting Ltd (CPPC) and AD Infinitum Ltd (AD Infinitum) and their principals Mr Perucca and Mr Bravo, who are highly regarded international experts in the potash industry. Mr Bravo previously worked as Process Manager Engineer at SQM, the third largest salt lake SOP producer globally. He specialises in the front end of brine processing from feed brine through to the crystallisation of harvest salts. Mr Perucca has over 25 years of experience in mineral process engineering and will provide high-level expertise with respect to plant operations for the processing of harvest salts through to final SOP product. AD Infinitum and CPPC were responsible for the brine evaporation and salt processing components in the Scoping Study.

Lake Way’s process development relied heavily on experience applied by Wood, SRC and specialist consultants (CPPC and Ad Infinitum) who are well experienced from working on similar operations. Production of SOP from lake brines is well understood and a well-established process.

Salt Lake Potash has conducted extensive testing of lake brines and harvest salts from its salt lake projects, predominantly Lake Way and Lake Wells. The testing conducted to date supports that lake brine can be concentrated economically, via solar evaporation, to produce mixed potassium sulphate double salts. It has also been shown that these salts, when harvested, can be economically converted into a valuable, high purity SOP fertiliser product.

In early 2018, modelling of the Lake Way evaporation pathway was completed by solar evaporation experts, Ad-Infinitum. The modelling revealed that the salts produced by solar evaporation were suitable for processing into SOP. The potassium harvest salts were predicted to include leonite ( $K_2SO_4 \cdot MgSO_4 \cdot 4H_2O$ ), schoenite ( $K_2SO_4 \cdot MgSO_4 \cdot 6H_2O$ ) and kainite ( $KCl \cdot MgSO_4 \cdot 2.75H_2O$ ), which are all amenable to the conversion to SOP via the process developed for Lake Wells.

In March 2018, laboratory scale (wind tunnel) evaporation tests were initiated on brine from both the Williamson Pit and Lake Way brine. These tests were compared to the brine evaporation chemistry predicted by Ad-Infinitum showing an excellent correlation to the model. The tests also confirmed the Williamson Pit brine to be a pre-concentrated form of Lake Way brine with similar evaporation brine chemistry.

In April 2018, field evaporation tests were initiated at Lake Way as part of the Lake Way Site Evaporation Trials. These tests consisted of small batch tests designed to duplicate wind tunnel tests

at site conditions, and larger batch tests including a specific evaporation rate trial to validate the Ad-Infinitum evaporation modelling.

Three small batch tests were completed in December 2018 using Lake Way playa brine and Williamson pit brine (INT-LY, INT-WP and INT-WP2). Each batch began with a single fill of brine and was subject to evaporation until the brine was exhausted of economic levels of potassium. The volume of brine was moved into progressively smaller ponds throughout the trial and the residual salts were harvested. The harvest salts were homogenised and sampled for analysis and characterisation.

A number of larger batch evaporation tests using larger evaporation ponds were conducted in parallel, and further batch evaporation testing has been continued throughout 2019.

These large batches began with over 100 tonnes of Lake Way playa brine and were operated in a similar manner to the smaller trials. Over 5 tonnes have been harvested from these batch trials. Throughout the trial, brine concentration was monitored and a portion was removed at various concentrations for use in an evaporation rate trial, consisting of multiple class "A" evaporation pans of varying brine concentrations.

The nearby weather station at Wiluna Airport, operated and maintained by the Bureau of Meteorology, provides meteorological conditions to correlate brine evaporation performance for the test work.

Harvest salts from laboratory evaporation tests have been sent to Saskatchewan Research Council (SRC) in Canada to perform a flowsheet testing program for the Lake Way Project. The program's objective was to verify the suitability of the previous process flowsheet conditions developed for the Lake Wells project. The testing program involved:

- Mineralogical characterisation
- Conversion of mixed harvest salts to schoenite
- Reverse flotation of halite from converted salts
- Crystallisation tests to produce high purity SOP.

It was found that the type of potassium salts present in the Lake Way harvests were similar to Lake Wells (Kainite, Leonite and Schoenite) albeit in different ratios and therefore the process flowsheet remains very similar to Lake Wells. It was also found that potassium was present in both fine and coarse size fractions in the laboratory produced harvest salt sample, therefore finer crushing was required to achieve similar flotation results to Lake Wells. On-going tests are being undertaken on the site generated harvest salt to confirm mineralogy, size fraction and hence crushing size.

The program demonstrated that Lake Way harvest salt can be successfully converted to SOP using the identified process flowsheet, including; attritioning, crushing, conversion, flotation and crystallisation to produce an SOP product of very good chemical quality (>52% K<sub>2</sub>O equivalent).

**Infrastructure** – refer to sections entitled 'Major Infrastructure' and 'Product Transport and Logistics' in the Announcement.

Lake Way's proximity to the West Australian goldfields means relatively minor area infrastructure upgrades and modifications are required.

The Scoping Study was managed by Wood. Wood is a recognised global leader in potash projects with capabilities extending to detailed engineering, procurement and construction management.

Wood are able to leverage an international network, including access to its Centre of Potash Excellence located in Saskatoon, Canada.

Salt Lake Potash engaged several highly qualified transport logistic companies to assist with defining the optimal logistics solution for transportation of SOP to port facilities. The transport cost estimates have been derived directly from transport providers who have extensive knowledge of the Western Australian logistics market.

**Marketing** – refer to section entitled ‘Product Quality and Marketing’ in the Announcement.

Independent potash market forecasts and assessments were provided by experts CRU International and Argus Media.

These reports emphasised that the specifications proposed by Salt Lake Potash of a K<sub>2</sub>O content of >52% and Chloride content of <0.1% placed the product into the premium range. The reports confirmed that it would be feasible for Salt Lake Potash to monetise the high level of K<sub>2</sub>O content in its product relative to the more commonly traded specifications of 50-51% K<sub>2</sub>O. There is also a market for premium pricing for low chloride content where the chloride content can consistently be produced at levels below 0.5%.

The Company has previously entered MOUs with Mitsubishi Australia Limited and Sinofert Holdings Limited setting out the basis for binding offtake agreements. The Company continues to progress discussions with these parties and others with a view to signing binding offtake and marketing agreements for the future sale of its product.

**Economic** – refer to sections entitled ‘Economics’ in the Announcement.

Capital Estimates have been prepared by Salt Lake Potash and Wood, a global expert in engineering, using a combination of cost estimates from suppliers, historical data, reference to recent comparable projects, and benchmarked construction costs for Western Australia. Costs are presented in real 2019 terms and are exclusive of escalation. The overall accuracy is deemed to be ± 30%.

Capital costs include the cost of all services, direct costs, contractor indirects, EPCM expenses, non-process infrastructure, area infrastructure, sustaining capital and other facilities used for the operation of the Mine and Process Plant.

Operating costs have been estimated by Salt Lake Potash and Wood. Operating costs are based on a combination of first principles build-up, direct supplier quotes, and experience on similar projects with unit rates benchmarked to costs attributable to Western Australia.

Labour costs have been developed based on a first-principles build-up of staffing requirements with labour rates from bench marks for the Western Australian region.

Government royalties have been assumed at a 2.5% FOB gross revenue basis for the life of the project. Private royalties associated with Blackham Resources and Native Title are up to 4.9% gross revenue depending on the level of brine derived from Blackham Resources tenure.

Royalties account for an average life of mine cost of A\$20/t per annum.

Rehabilitation and mine closure costs are included within the discounted cash flow modelling based on 10% of initial development capital and incurred at the end of mine life.

A detailed financial model and discounted cash flow (DCF) analysis has been prepared in order to demonstrate the economic viability of the Project. The DCF analysis demonstrated compelling economics of the Lake Way Project, with an NPV (ungeared, after-tax, at an 8% discount rate) of A\$382 million, assuming a LOM Sulphate of Potash price of US\$550/t and an (ungeared) IRR of 27%.

The Scoping Study assumes first production to occur in Q4 2020 with a gradual ramp up to full name plate capacity of 200,000tpa over the year 2021. This assumes completion of the BFS in Q3 2019 and a development timeframe of 12-15 months subject to availability of funding and in accordance with required approvals.

Sensitivity analysis was performed on all key assumptions used including price operating and capital costs and exchange rate. The sensitivity analysis highlighted the robustness of the project with the breakeven pricing calculated at US\$323/t being a greater than 40% discount to central pricing assumptions.

Payback period for the Lake Way Project is 3.2 years. The payback period is based on free-cash flow, after taxes.

Salt Lake Potash is confident in being able to secure the required funding to develop the Lake Way Project. The Company is in advanced discussions with a debt provider for a debt funding package which will support funding for the Lake Way Project. This is also supported by the recent capital raising of A\$20.25m (ASX announcement 6 June 2019).

**Environmental** – refer to section entitled ‘Environmental’ in the Announcement.

An opportunities and constraints assessment was completed for the Project by Pendragon Environmental, a leading Western Australian environmental management consultancy. Based on the Project’s stage of development, Pendragon Environmental confirmed there are no current impediments on the Project.

To date, Salt Lake Potash has only undertaken preliminary desktop studies for the purposes of identifying potential environmental opportunities and constraints. Extensive data is available across the Scoping Project area from work undertaken historically by Blackham Resources. The further development of the Project may require additional detailed flora, fauna and other studies; this is dependent on the final design criteria.

**Social, Legal and Governmental** – refer to sections entitled ‘Mining Tenure’ and ‘Native Title and Heritage’ in the Announcement.

The Company has taken legal advice in relation to relevant Modifying Factors.



## Material Assumptions

Project Start Date	Q4 2020
Cost and Pricing Basis	2019 Dollars
Currency	Australian Dollars (unless otherwise stated)
Cost Escalation	0%
Revenue Escalation	0%
Scoping Study Accuracy	±30%
Capex Growth and Allowance	13%
<b>Mining &amp; Processing</b>	
Mineral Resource (Drainable Porosity)	8.2Mt
Portion of Production Target – Measured	80%
Portion of Production Target – Indicated	16%
Portion of Production Target – Inferred	4%
Trenches (production and transport) – average depth 5m	130km
Bores – average depth 120m	14
Bore Production rate	8.4L/s/bore
Trench yield rate (flow) – minimum	4L/s/km
Trench yield rate (flow) – maximum	8L/s/km
Brine Chemistry (average Lake Brine SOP grade)	15.2Kg/m <sup>3</sup>
Annual Production (steady state)	200ktpa
Life of mine	20 Years
Pond Recovery	78%
Plant Recovery	80%
<b>Pricing</b>	
Sulphate of Potash (FOB)	US\$550/t
<b>Operating Costs</b>	
Brine Extraction	A\$23/t
Brine Evaporation & Harvesting	A\$23/t
Process Plant	A\$104/t
Plant Infrastructure	A\$4/t
Area Infrastructure	A\$7/t
General & Administration	A\$22/t
Transportation	A\$80/t
<b>Capital</b>	
Brine Extraction	A\$22 million
Evaporation	A\$36 million
Process Plant	A\$75 million
Plant Infrastructure	A\$20 million
Area Infrastructure	A\$12 million
Regional Infrastructure	A\$1 million
Miscellaneous	A\$11 million
Indirect Costs & Growth	A\$60 million
<b>Other</b>	
Royalties	Govt – 2.5% Other – 4.9%
Corporate tax rate	30%
Discount rate	8%