

Investor Update

LAKE
RESOURCES

June 2023



General Statement and Cautionary Statement

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Forward Looking Statements

Certain statements contained in this announcement, including information as to the future financial performance of the projects, are forward-looking statements. Such forward-looking statements are necessarily based upon a number of estimates and assumptions that, while considered reasonable by Lake Resources N.L. are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies; involve known and unknown risks and uncertainties and other factors that could cause actual events or results to differ materially from estimated or anticipated events or results, expressed or implied, reflected in such forward-looking statements; and may include, among other things, statements regarding targets, estimates and assumptions in respect of production and prices, operating costs and results, capital expenditures, reserves and resources and anticipated flow rates, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions and affected by the risk of further changes in government regulations, policies or legislation and that further funding may be required, but unavailable, for the ongoing development of Lake's projects. Lake Resources N.L. disclaims any intent or obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise. The words "believe", "expect", "anticipate", "indicate", "contemplate", "target", "plan", "intends", "continue", "budget", "estimate", "may", "will", "schedule" and similar expressions identify forward-looking statements. All forward-looking statements made in this announcement are qualified by the foregoing cautionary statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein. Lake does not undertake to update any forward-looking information, except in accordance with applicable securities laws.

Compliance Statement

The information contained in this presentation relating to financial forecasts, production targets, exploration results, Measured, Indicated and Inferred resource estimates, project execution, infrastructure and testing work, has been derived from the information in Lake's JORC update announced on ASX on 15 June 2023. Lake Resources N.L. confirms that it is not aware of any information that materially affects the information included in Lake's JORC update announced on ASX on 15 June 2023 and all material assumptions contained in that announcement continue to apply and have not materially changed. On this basis, Lake confirms that the Competent Person's findings in Lake's JORC update announced on ASX on 15 June 2023 have not changed nor been modified in any material respects since that announcement.

Lake Resources NL (ASX:LKE; OTC:LLKKF) is a responsible developer of lithium from its flagship Kachi Project, in the Catamarca Province of Argentina, in addition to owning three other lithium brine assets in Argentina. We have an international team with extensive experience in mining and the development of large-scale, complex projects located across our offices in Australia, Argentina and United States.

Focus of Operational Update

- Significant Resource Growth
- Phased Approach to Production
- Fastest Path to First Lithium

OUR VISION

To become a growing contributor to the energy transition by producing high purity lithium, operating sustainably and improving lives

Industry-Leading Management Expertise



Experienced, well-credentialed and highly motivated management team ready to deliver on Lake's new strategy and accelerate the Company's next growth phase



David Dickson, Managing Director / CEO



Executive experience acquired across technical, financial and project execution



GLENCORE



Argentina is an attractive location for lithium investment on a global scale, not only due to its vast lithium resource base, but also given the supportive regulatory and legal environment. Lake is well positioned to optimize its lithium assets, resources and relationships in Argentina

Kachi – Lake's Flagship Project

- Located in Catamarca region, within the Lithium Triangle which holds ~56% of the world's lithium reserves¹
- Government is committed to speedily developing the country's lithium resources, with investments in Argentina's lithium sector
- Strong relationship with the provincial government of Catamarca. We have had recent site visits by the Governor of Catamarca and the UK Ambassador to Argentina and continue to nurture relationships with other key stakeholders in the government

Notes:

1. US Geological Survey (USGS)

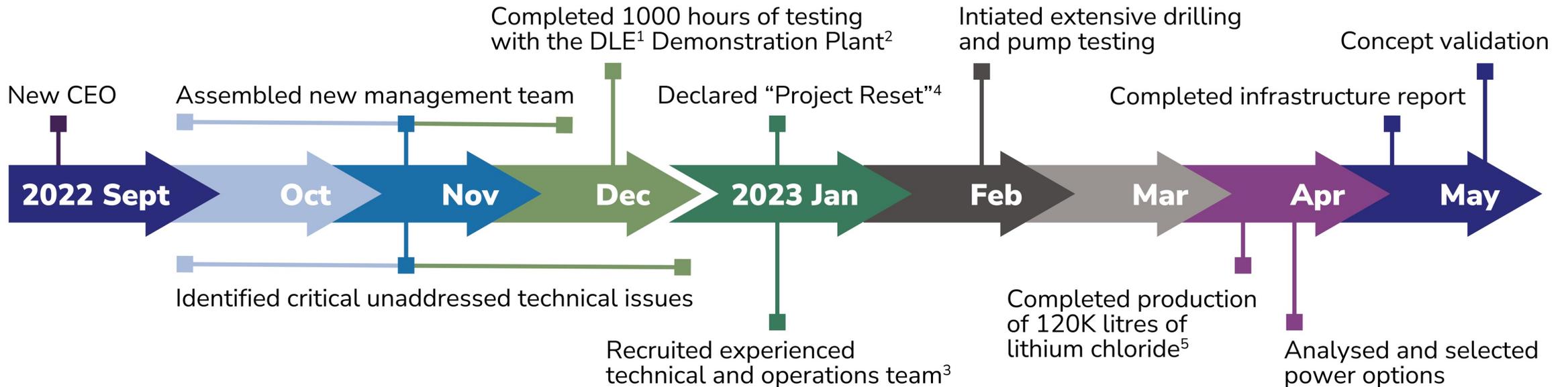


Project Kachi

A New, Phased
Approach



Track record of achievement over nine months



Notes:

- 1. DLE = Direct Lithium Extraction
- 2. Refer to ASX announcement dated 11 January 2023
- 3. Refer to ASX announcement dated 12 January 2023
- 4. Refer to ASX announcement dated 12 January 2023
- 5. Refer to ASX announcement dated 4 April 2023

Exceptional Operational Team

Lake's operational team brings significant technical and construction expertise on major capital projects across the lithium sector and other extractive industries

Jonathan Nielsen
Process Technology
30+ years of experience



Jonah Smith
Drilling and Hydrogeology
25+ years of experience



Jonathan Whittier
Drilling and Hydrogeology
20+ years of experience



Michael Gabora
Drilling and Hydrogeology
25+ years of experience



Michael Nawrocki
Process Technology
15+ years of experience



Alvaro Zumelzu
Engineering
20+ years of experience



Manuel Barreiro
Process Plant
30+ years of experience



George Stapleton
Power
30+ years of experience



Justin McCreavey
Project Controls
25+ years of experience



Darron Jacobs
Contracts
30+ years of experience



Justin Olson
Legal and Compliance
17+ years of experience



Ife Orimoloye
Strategy and Markets
16+ years of experience



Project Concept Reassessment & Validation

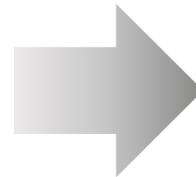
Outcome of Preliminary Assessment

Gaps identified in the following areas

- Power supply and demand
- Resource knowledge and reservoir performance
- Logistics and supporting infrastructure
- Relationship with our technology partner
- Rigor of project concept selection

Project Reset has delivered

- Brine to lithium carbonate process certainty
- Stronger relationship with technology partner, Lilac, now integrated into the team
- Robust plan for completion of reservoir testing
- Progress in securing a power solution
- Re-evaluated project concept and selection of lower-risk delivery option



Phased development to 50,000¹ tpa of battery grade lithium carbonate

- Two phases of 25,000 tpa each
- Initial DFS for Phase 1 targeting 25,000 tpa battery grade lithium carbonate
 - Structured as 2 x 12,500 tpa trains
- DFS for Phase 1 targeting completion in December 2023
 - Revised to address selected concept
 - Completing hydrogeological assessment
 - Delivering certainty on power solution and resource data
 - De-risked project delivery plan
- DFS for Phase 2 targeting completion by Q4 2026 for another 25,000 tpa battery grade lithium carbonate

Notes:

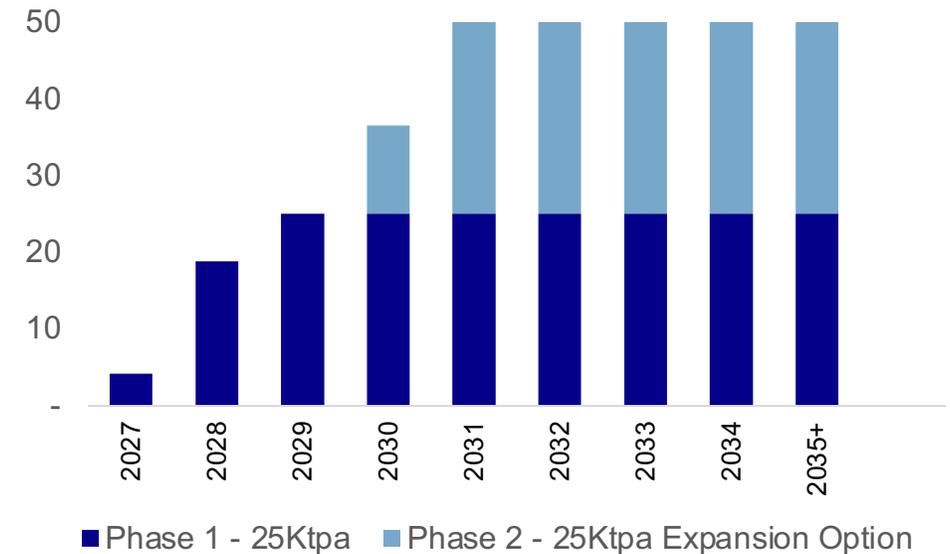
1. Based on information in Lake's JORC update announced on ASX on 15 June 2023 (Measured 2.2Mt, indicated 0.7Mt, inferred 5.18Mt, exploration target 5.2Mt – 21.8Mt). All material assumptions continue to apply and have not materially changed.

tpa = tonnes per annum DFS = Bankable Definitive Feasibility Study

New Production Plan: Two Phases to 50Ktpa target¹

Production Plan	New Plan	Old Plan
Fastest path to first lithium production	✓	✗
Phased multi-train approach de-risks project execution “design-1-build-many”	✓	✗
Reduced reliance on grid connection for plant startup	✓	✗
Enhances productivity from lessons learned	✓	✗
Provides optionality on plant size and product type with adaptability to prevailing market conditions for subsequent phase	✓	✗
Greater operational resilience (multi-train)	✓	✗
Phased ramp-up demonstrates impacts acceptable to regulators and facilitates permitting of future phases	✓	✗

Planned modular plant expansion (Ktpa LCE)



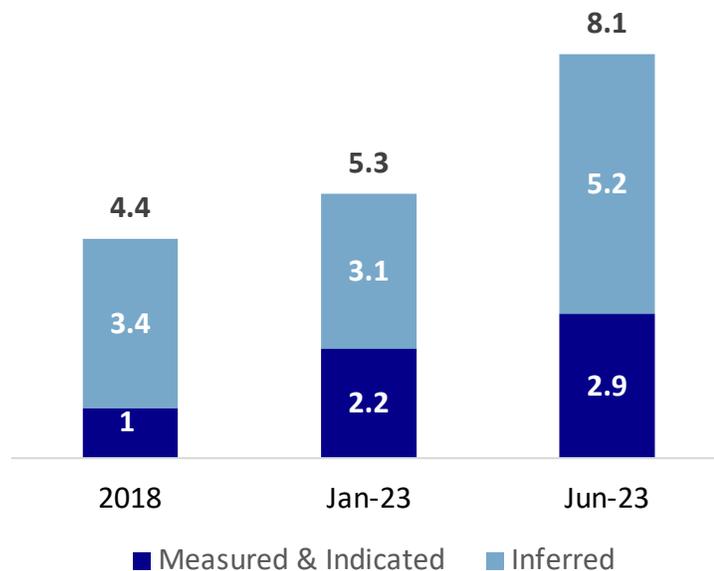
Note

1. Target is based off information in Lake’s JORC update announced on ASX on 15 June 2023 which provides an update on mineral resource estimates and exploration targets. See next slide for further information.

Ktpa = thousand tonnes per annum LCE = Lithium Carbonate Equivalent

True Scale of Deposit is Emerging

Resources in Million Tonnes LCE



Note: Numbers are based on information in Lake's JORC update announced on 15 June 2023

Resource expansion to 8.1 million tonnes LCE from January 2023 update:

- Measured resource has increased ~37% from 1.6 to 2.2 million tonnes LCE
- Indicated resource has increased ~24% from 0.58 to 0.72 million tonnes LCE
- Inferred resource has increased ~67% from 3.1 to 5.2 million tonnes LCE

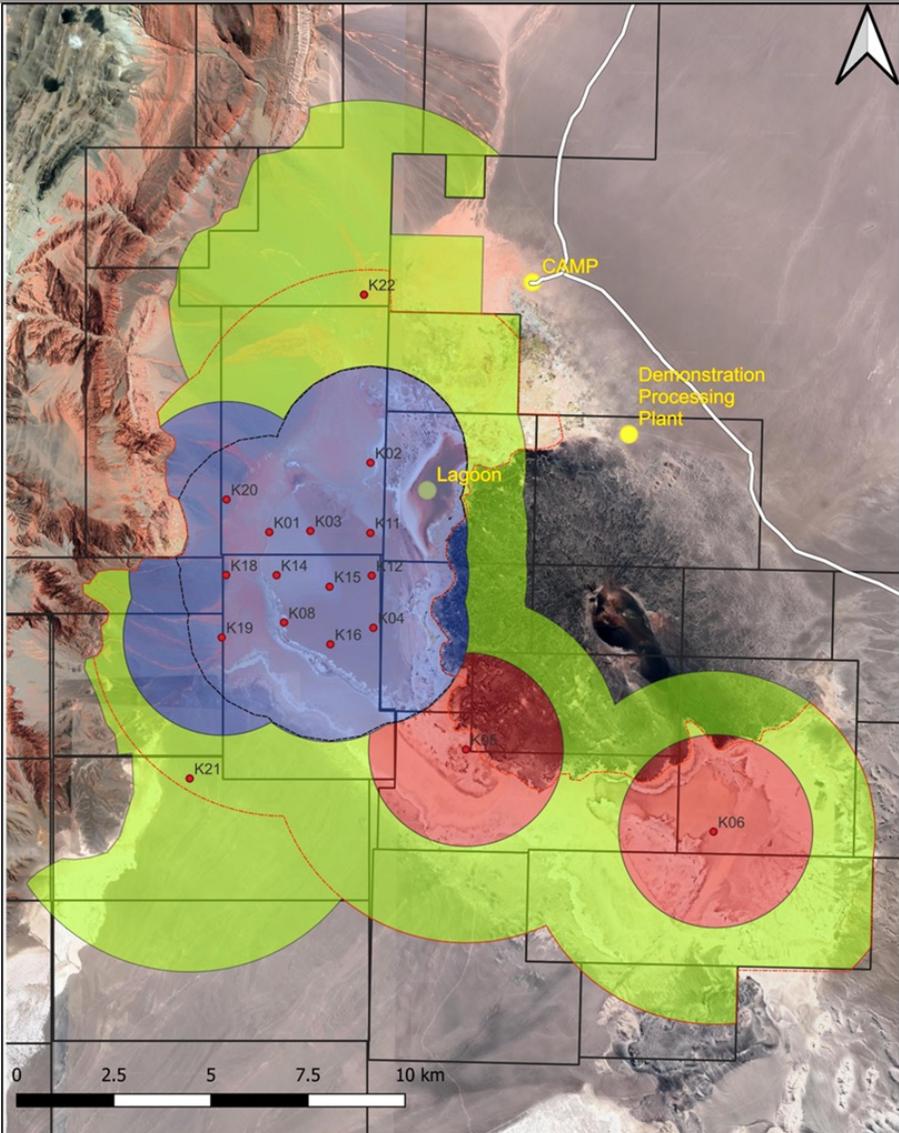
Exploration Target:

- High: 21.8 million tonnes LCE
- Low: 5.2 million tonnes LCE

Positive outcomes from the above exploration and evaluation activities will support Lake Resources' business plan to produce 50,000 tpa of lithium carbonate.

Note: The potential quantity and grade of an exploration target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realized.

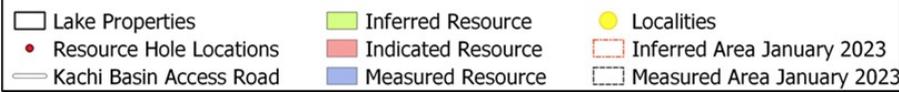
Additional Lithium Discovery



New brine found north and south of previously measured resource

- **283 mg/L** at K22 in northern expansion area
- **219 mg/L** at K21 in southern expansion area
 - K21 is shallow and may have better grades at depth
- Infilling necessary for higher confidence (i.e., indicated and measured)
- Plant design is based on grade 205mg/L

Project grade brine discoveries at planned reinjection areas. Extends lateral extent of reservoir beyond previous internal estimates.



Successful Extraction and ReInjection

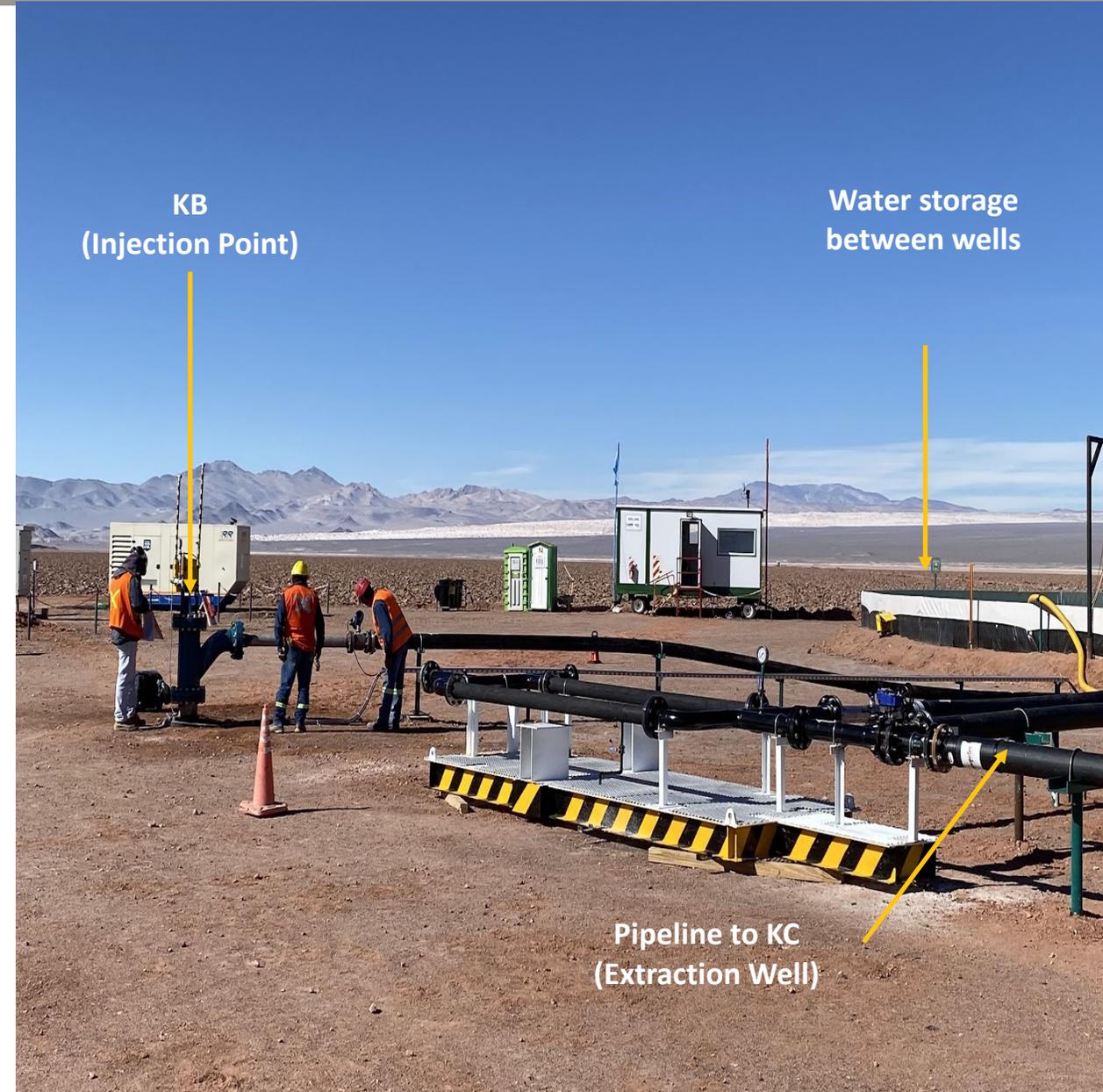
Proven extraction and reinjection without significant disruption to water tables

- Tested upper reservoir
- High reservoir permeability
- Extrapolates to high well production rates (~65 liters per second)

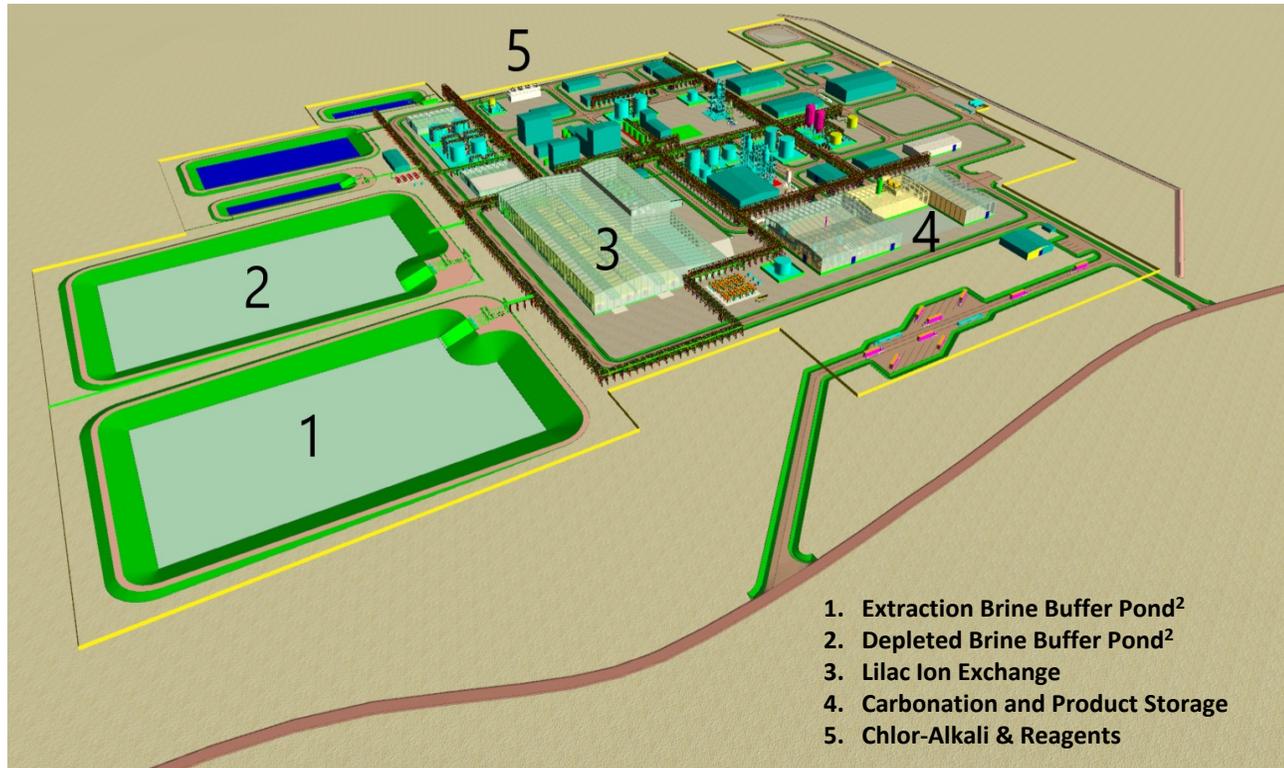
Indicative of high conversion rates from resource to reserve

- Proven Injectivity
 - Injected >12 million liters at KC
 - Injected >19 million liters at KB

First successful reinjection in Catamarca Province



Process flow sheet proven from brine to battery grade lithium carbonate



Major Milestones Achieved in Kachi Demonstration Plant using Lilac DLE Technology

- DLE demonstration plant continuously operational for more than 2,500 hours with 90% uptime
- Highly selective process with consistent results on sample testing
 - > 90% impurity removal
 - > 80%¹ lithium recovery
- Produced 120,000 liters of eluate containing more than 2,500kg of LCE
- Lithium Carbonate exceeds battery grade requirements > 99.8% purity
- Initial offtake samples shipped
- Lithium carbonate demonstration plant currently producing

Notes:

1. For DLE recovery only; >76% for total plant
2. Buffer pond size for our target 50Ktpa plant capacity is more than 100x smaller than evaporation ponds required for same output

Cleaner Lithium by Design

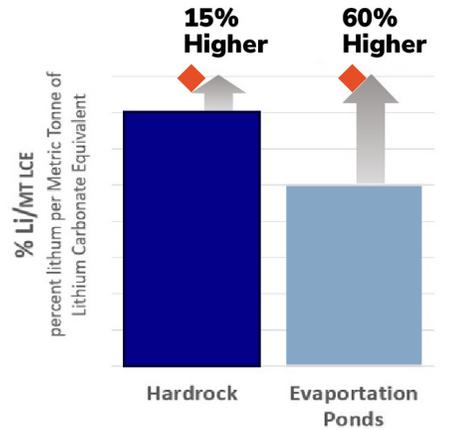
Four key pillars underpin our quality-conscious commitment to sustainability

- Hardrock¹
- Evaporation Ponds
- ◆ Kachi DLE⁶

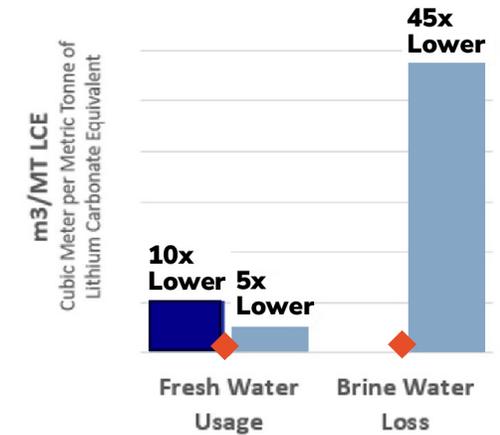
Note

1. Hard rock based on mining, processing, and refining 1% spodumene ore (6% concentrate)
2. Internal Lake Estimates
3. Hard rock values for concentration and refining of 1% spodumene ore
4. "Environmental Impact of Direct Lithium Extraction from Brines", February 2023, <https://www.nature.com/articles/s43017-022-00387-5>
5. Nsenergybusiness.com – Greenbushes Lithium Mine <https://www.nsenergybusiness.com/projects/greenbushes-lithium-mine/>
6. Kachi DLE Project values are indicative of values at full production (steady state)

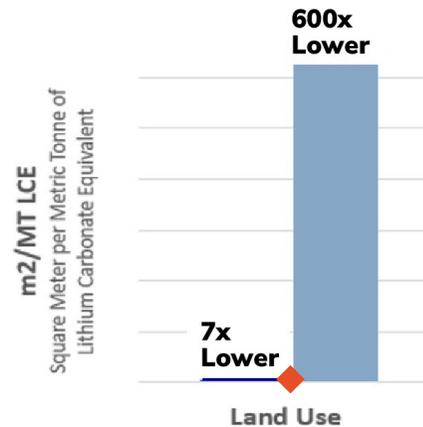
Higher Lithium Recovery



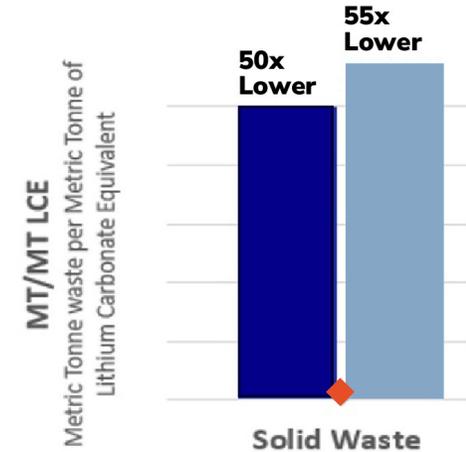
Lower Water Usage²



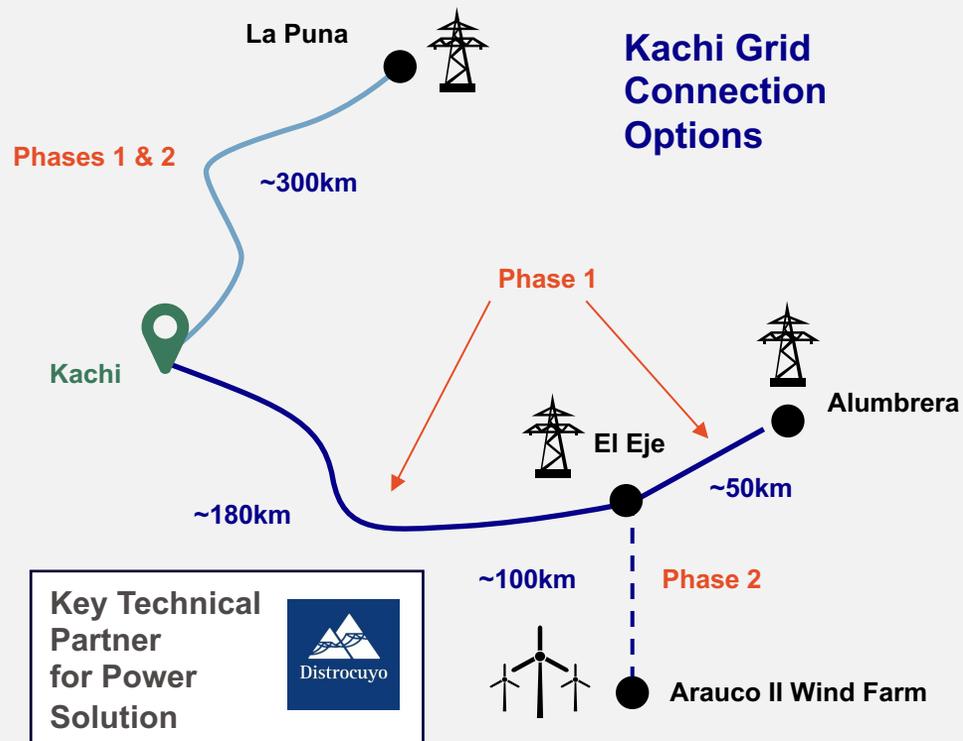
Lower Land Usage^{2,5}



Lower Solid Waste Volume^{3,4}



Lake plans to have an off-grid power solution in Phase 1 for commissioning, start-up and emergency backup, followed by a transition to grid power



Power Solution Six-Month Plan

Grid power solution expected to be available on site in H2 2027

- **Completed** initial technical feasibility study
- **Selecting** from two options available for Lake's grid power supply

1. Northern Option

Third party constructs 300KM power line from La Puna to Kachi

2. Southern Option

Phase 1: ~180KM line from El Eje to Kachi plus 50KM line from Alumbraera to Kachi

Phase 2: Additional ~100KM power line from Arauco II wind farm to El Eje to Kachi

- **Engaging** with Independent Power Providers (IPP) in Argentina's power market
- **Completing** onboarding of Transaction Advisor to support Power Purchase Agreement (PPA) negotiation

Note: Map not drawn to scale. Note(s): Phase 1: 25ktpa, Phase 2: 25ktpa

Outputs from Internal Preliminary Analysis

(Not DFS Numbers)

All numbers in USD

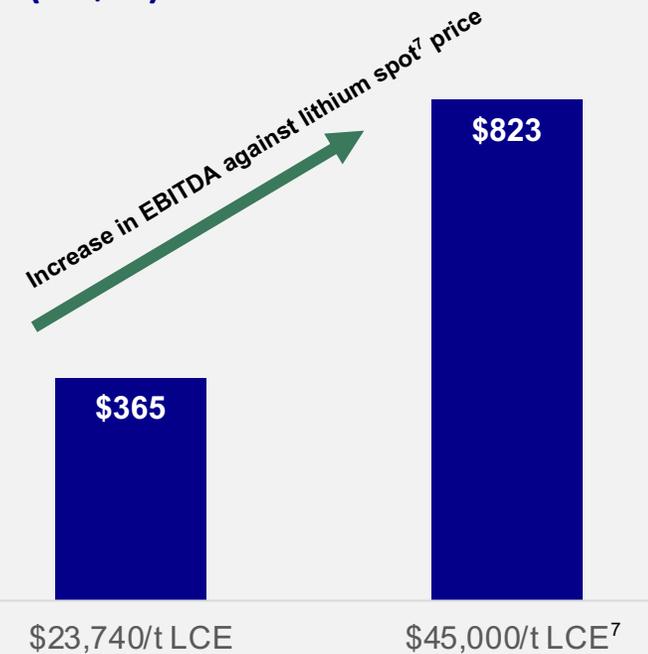
Phase 1 – 25Ktpa LCE Target Production Capacity		
\$365M Annual Average EBITDA ^{2,3,5}	\$1.4B - \$2.1B Pre-Tax NPV ^{2,3,6}	17% - 24% Pre-Tax IRR ^{2,3}
25 years Life of Mine	\$1.1B - \$1.5B Capital Cost ¹	\$4.70 - \$7.10/kg Run Rate Operating Cost ⁴
50Ktpa LCE ⁸ Phases 1 and 2 Total Target Production Capacity		

Note:

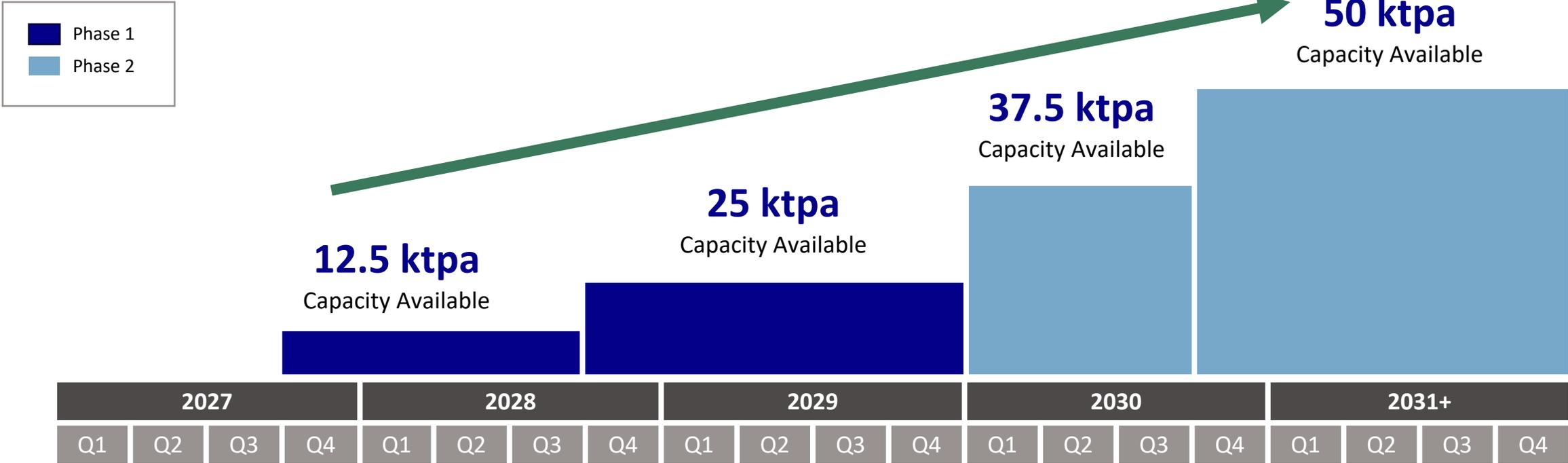
All numbers are preliminary internal estimates from the project reset and are not outputs from the completed DFS, which for Phase 1, is still in progress. Numbers exclude the potential impact of Withholding Tax and Value Added Tax and are subject to updates following the DFS for Phase 1, and ultimately the DFS for Phase 2

- Capex estimates exclude capital cost of grid connection and are assumed to be incurred three years prior to First Lithium based on a spend waterfall; Power capex consists of solar + diesel generator back up for hook-up and commissioning and grid power to come online thereafter. End-of-life plant closure cost assumed to be \$30M
- Economics based on leading industry market consultant lithium price outlook for first quarter 2023. Average price forecast of \$23,740 per tonne lithium carbonate, net marketing costs
- Please see "Non-GAAP Financial Measures" in the Appendix
- Operating costs include labor, maintenance materials and supplies, raw materials including reagents, outside services, among others; Royalties – 3.5% of revenue; Export Duty – 4.5% of revenue
- Average annual EBITDA based on mid-point of operating cost range
- Discount Rate – 8% discount rate assumed
- Spot price for battery grade lithium carbonate as of June 8th, 2023
- Based on mineral resource estimates and exploration targets in Lake's JORC update announced on ASX on 15 June 2023. All material assumptions continue to apply and have not materially changed. The potential quantity and grade of an exploration target is conceptual in nature, there has been insufficient exploration to determine a mineral resource and there is no certainty that further exploration work will result in the determination of mineral resources or that the production target itself will be realized

Illustrative Phase 1 EBITDA
Impact of Lithium Prices
(US\$M)



3-year ramp up to 50ktpa Target Capacity by 2030



Project Stakeholders' Continued Support

These project stakeholders are supportive of our new execution plan

Technology



Project Finance



JPMORGAN CHASE & CO.

Offtake



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Building a strong relationship with surrounding communities

- Daily work to **maintain** and monitor Lake's **Social License to Operate**
- Committed to ensuring our people and our project are understood and accepted by all members of the communities in which we plan to operate
- Held first Public Information Meeting in May which was well attended by the local community, and the information we shared was well received
- Have obtained **new jobs for members of the Carachi Pampa community**
- Working with provincial authorities to **promote essential training** for the community and the development of the project
- Emphasis on trainings directly related to the **future construction phase**



Project Kachi

Next Steps



Next Six Months

Reservoir	<ul style="list-style-type: none">■ Completion of DFS Field Test Work (end of pumping)■ Complete Groundwater Model
Lithium Carbonate Demo Plant	<ul style="list-style-type: none">■ Completion of demo plant test work
EPCM	<ul style="list-style-type: none">■ Select FEED / EPCM Contract Partner
Bankable DFS	<ul style="list-style-type: none">■ DFS for Phase 1 Complete
Power	<ul style="list-style-type: none">■ Power solution selected
Funding	<ul style="list-style-type: none">■ Data room open for ECA backed Debt project stakeholders
Offtake	<ul style="list-style-type: none">■ Commence negotiations on binding Offtake agreements
EIA	<ul style="list-style-type: none">■ Preparation for submission of EIA in Q1 2024

Credible, Achievable and De-risked

Significant Resource Growth

- Potential resource expansion to 8.2 million tonnes LCE
- ~40% increase in Measured and Indicated Resource and 67% increase in Inferred Resource
- Higher lithium grades from new discoveries
- Brine footprint expanding horizontally and vertically. DFS timing is consistent with increasing reserves base

Achievable Timeline to Lithium Production

- Proven DLE technology
- Significant progress with power solution
- Visibility to First Lithium with clear milestones

Phased Approach for Production

- Phased approach of 2 x 25Ktpa plants de-risks project execution
- Accelerates first commercial lithium carbonate production
- Managing Infrastructure and logistics
- High level of management expertise and exceptional quality standards



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Thank you!

Appendix



Definitions

Note: These financial definitions are alternative performance measures that are not defined or specified under IFRS or AASC standards and for which there are no generally accepted reporting formats

- EBITDA = Earnings before Interest, Taxes, Depreciation and Amortization
- IRR = Internal Rate of Return
- NPV = Net Present Value

This presentation includes certain non-GAAP financial measures or ratios, including the average annual EBITDA regarding the results of the internal preliminary analysis. These measures have no standardized meaning under IFRS and may not be comparable to similar measures used by other issuers. The Company believes these measures and ratios provide investors with an improved ability to evaluate the Company's prospects, and in particular the Kachi Project. As the Kachi Project is not in production, the prospective non-GAAP financial measures or ratios presented may not be reconciled to the nearest comparable measure under IFRS and the equivalent historical non-GAAP financial measure for the prospective non-GAAP financial measures or ratios discussed herein is nil.