

10 August 2023

Lake Resources to Present at The XII International Seminar on Lithium on August 10th, 2023

*Executives to Provide Details on Flagship Kachi Project at
Leading Lithium Industry Event Held in Salta, Argentina*

Lake Resources NL (ASX: LKE; OTC: LLKKF) (Lake) announces that company executives will present at [The XII International Seminar on Lithium](#) in the South American Region (Seminario Internacional de Litio en la región de Sudamérica).

In addition to sponsoring this important industry event, Lake executives will present to attendees on August 10, at 15:50 p.m. ART (GMT-3), providing details on the company's flagship Kachi Project, including the recent operational update on the new phased approach to delivering maximum plant capacity of 50,000 tpa (refer to ASX announcement on June 19, 2023) as well as the innovative, sustainable DLE process that will be used to produce high purity lithium carbonate.

Held this year in Salta, Argentina, the annual event is hosted by Panorama Minero and brings together over 800 participants from major mining companies, suppliers, technology manufacturers, local and international institutions, and authorities across the lithium value chain. The agenda for this year's conference covers:

- Global economic situation and geopolitical analysis 2023-2030
- Panorama of the region and the main producers
- Analysis of the pre-election political-economic situation in Argentina
- Global lithium market: review of prices and expectations of supply and demand
- Status of the lithium industry in Australia, Chile, China and the United States
- Electric vehicle industry news
- Critical Minerals and Battery Production Considerations
- Use of water and technologies linked to the preservation of the environment
- Lithium, environment and decarbonization

Lake will be represented at the conference by Country Manager, Amalia Sáenz, Hydrogeology Manager, Christian Vega, and Senior Vice President of Technology, Strategy and Risk, Scott Munro.

About Lake Resources NL

Lake Resources NL (ASX:LKE) (OTCMKTS:LLKKF) is a clean lithium developer utilising state-of-the-art ion exchange extraction technology for production of sustainable, high purity lithium from its flagship Kachi Project in Catamarca Province within the Lithium Triangle in Argentina among three other projects covering 220,000 ha.

This ion exchange extraction technology delivers a solution for two rising demands - high purity battery materials to avoid performance issues, and more sustainable, responsibly sourced materials with low carbon footprint and significant ESG benefits.

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Kachi Reset & Update

LAKE
RESOURCES

August 10, 2023

Disclaimer

General Statement and Cautionary Statement

This presentation has been prepared by Lake Resources N.L (Lake) for information purposes and meetings with sophisticated and professional investors, institutional investors and brokers and not any particular party. The information in this presentation is based upon public information and internally developed data and reflects prevailing conditions and views as of this date, all of which are accordingly subject to change. The information contained in this presentation is of general nature and is not intended to address the circumstances of any particular individual or entity. There is no guarantee that the information is accurate as of the date it is received or that it will continue to be accurate in the future. No warranties or representations can be made as to the origin, validity, accuracy, completeness, currency or reliability of the information. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation. Lake Resources NL accepts no responsibility or liability to any party in connection with this information or views and Lake disclaims and excludes all liability (to the extent permitted by law) for losses, claims, damages, demands, costs and expenses of whatever nature arising in any way out of or in connection with the information, its accuracy, completeness or by reason of reliance by any person on any of it. The information regarding projects described in this presentation are based on exploration targets, apart from the Kachi project's resource statement. The potential quantity and grade of an exploration target is conceptual in nature, with 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 potentially economic quantities of lithium will be discovered. Some leases are located within and around the Orocobre, Orocobre/Advantage Lithium and Ganfeng/Lithium Americas projects and although data is limited within the properties, the leases may cover potential extensions to the Cauchari/Olaroz projects with potential extensions to aquifers, although this provides no assurance that any resource will be identified on the Lake leases. The lithium pegmatite leases occur adjacent to past producers of spodumene but no potential extension to any mineralisation can be assured.

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



Amalia Saenz

SVP, Country Manager
& Argentina
Corporate Affairs



Christian Vega

Hydrogeology
Manager at Kachi

Argentina's Significant Lithium Assets

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)



Strong Community Engagement

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**

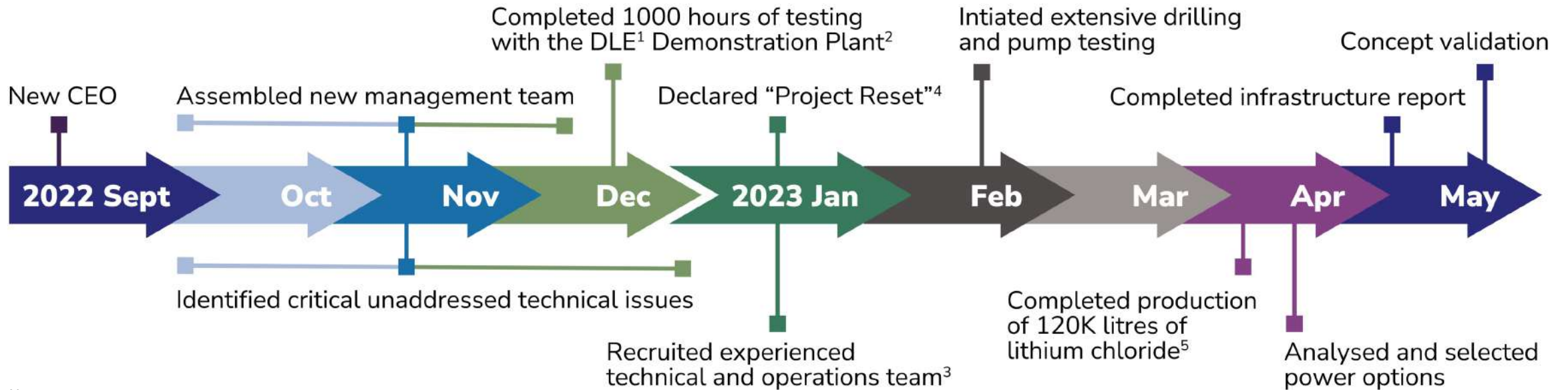


Project Kachi

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

Project Concept Reassessment & Validation

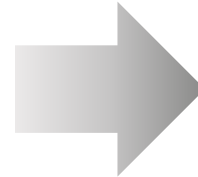
Outcome of Preliminary Assessment

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 target plant capacity of 50,000¹ tpa battery grade lithium carbonate

- Two phases of 25,000 tpa each
- Initial DFS for Phase 1 targeting capacity for 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 delivering capacity for another 25,000 tpa battery grade lithium carbonate

Notes:

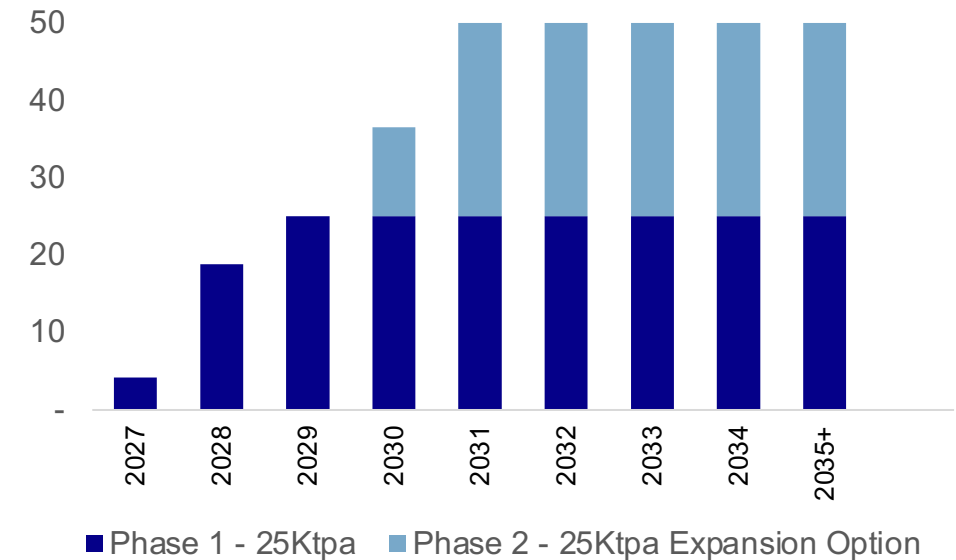
1. Based on maximum plant capacity over two phases and on the information in Lake's JORC update announced on ASX on 15 June 2023 (Measured 2.2Mt, indicated 0.7Mt, inferred 5.18Mt, exploration target 5.2Mt – 21.8Mt). All material assumptions continue to apply and have not materially changed. Not an actual 'production target' (as defined in the ASX Listing Rules), which is subject to completion of a bankable DFS.

tpa = tonnes per annum DFS = Bankable Definitive Feasibility Study

New Production Plan: Two Phases to 50Ktpa Target Capacity¹

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)

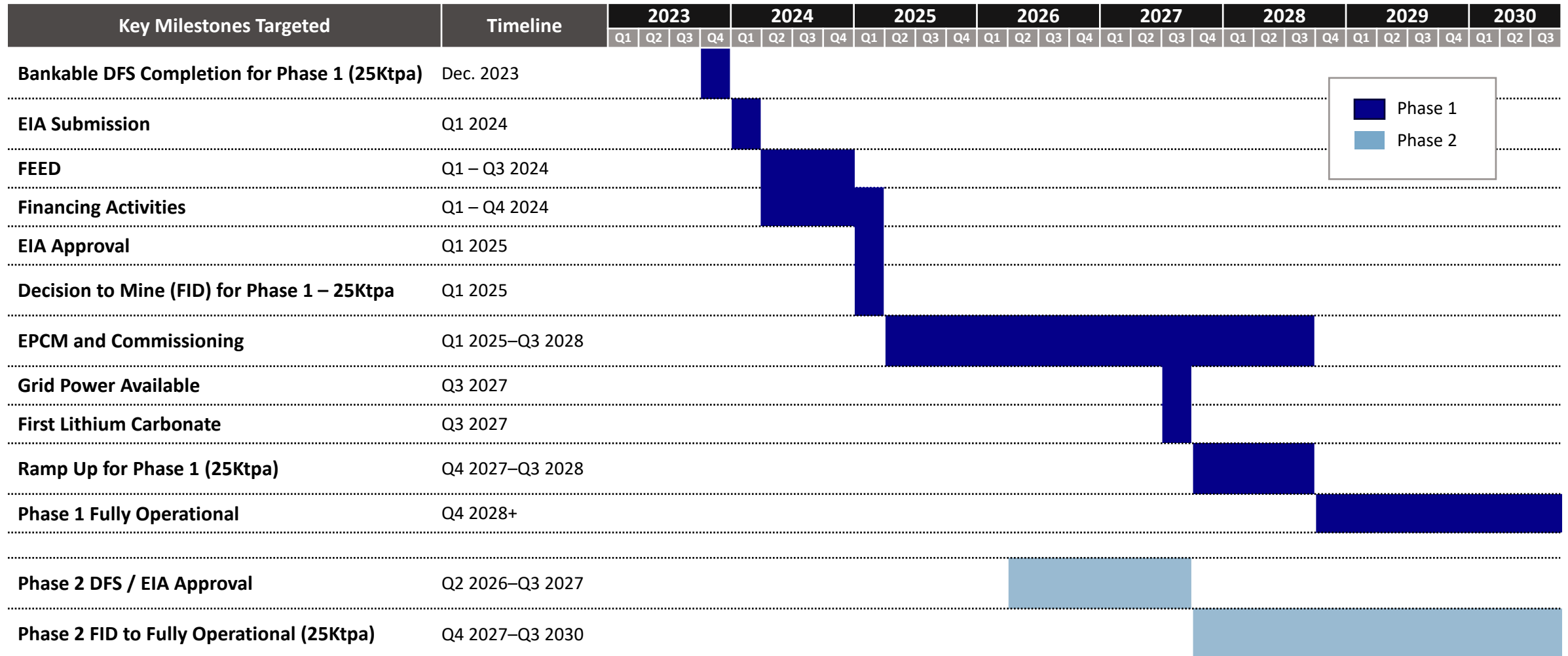


Note

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. Not an actual 'production target' (as defined in the ASX Listing Rules), which is subject to completion of a bankable DFS.

Ktpa = thousand tonnes per annum LCE = Lithium Carbonate Equivalent

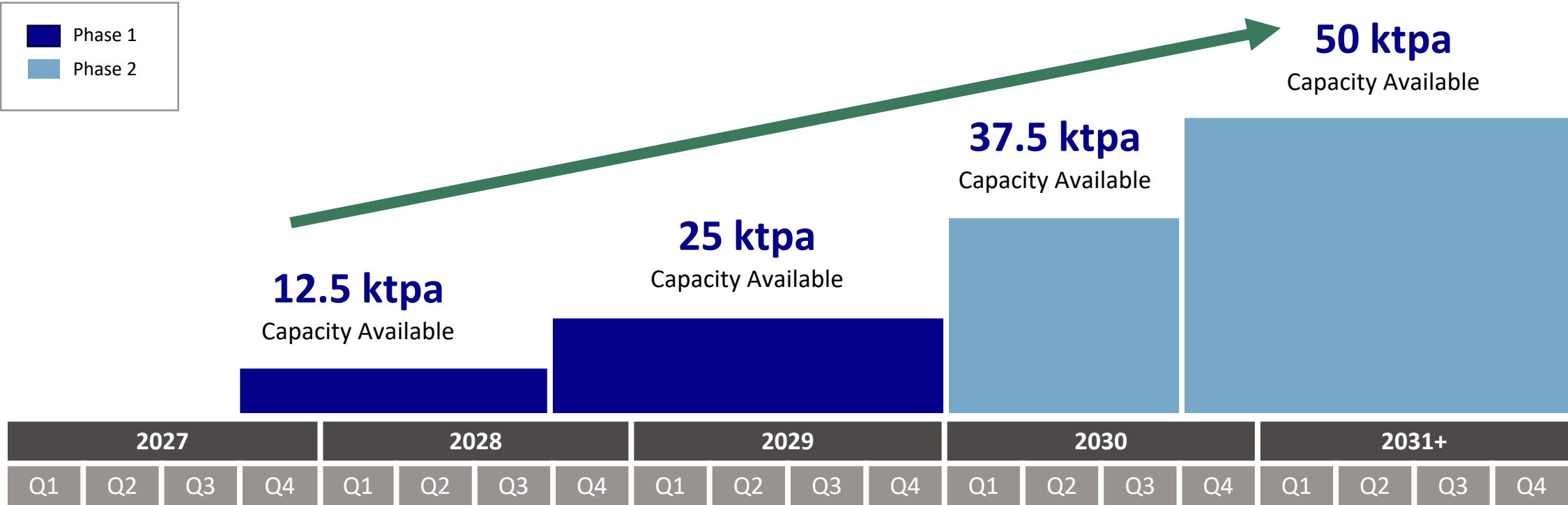
Kachi Development Timeline



Note: DFS = Definitive Feasibility Study EIA = Environmental Impact Assessment FEED = Front End Engineering & Design FID = Final Investment Decision EPCM = Engineering, Procurement and Construction Management

Phased Approach Reduces Risk And Unlocks Value

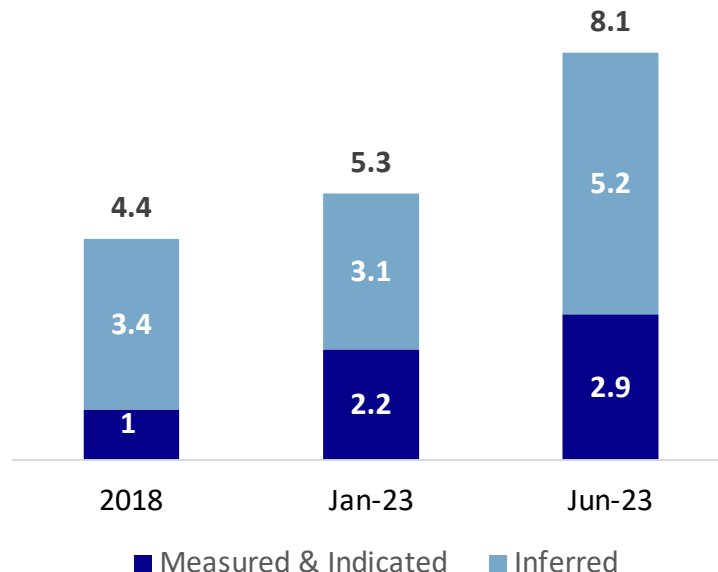
3-year ramp up to 50ktpa Target Capacity by 2030



Significant Resource Growth

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. All material assumptions continue to apply and have not materially changed.

1. Not an actual 'production target' (as defined in the ASX Listing Rules), which is subject to completion of a bankable DFS.

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

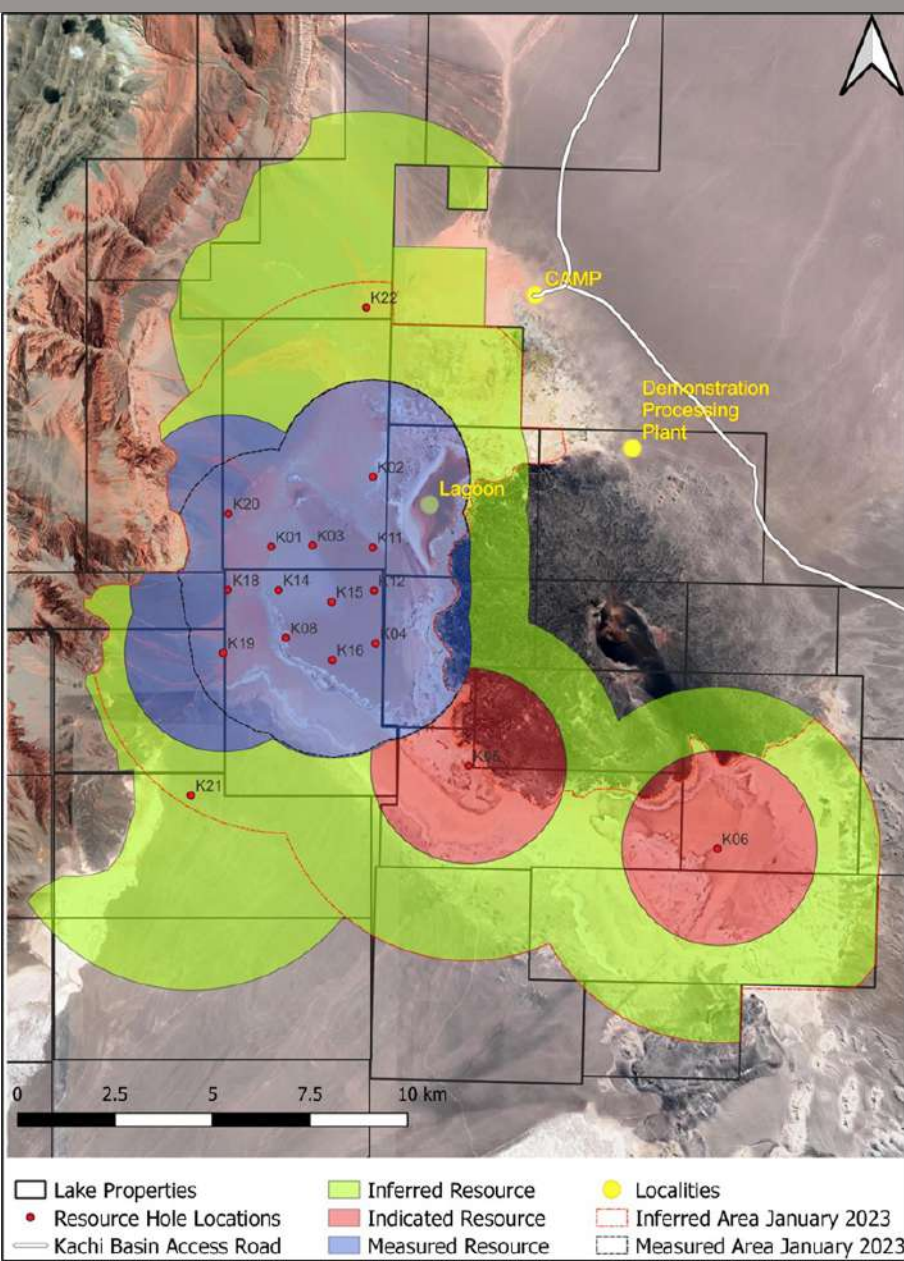
- Measured resource has increased ~**37%** from **1.6 to 2.2 million tonnes LCE**
- Indicated resource has increased ~**24%** from **0.58 to 0.72 million tonnes LCE**
- Inferred resource has increased ~**67%** from **3.1 to 5.2 million tonnes LCE**

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 deliver target plant capacity of 50,000 tpa of lithium carbonate¹.

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 a production target itself will be realized.



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

Demonstrated extraction and reinjection in the resource area

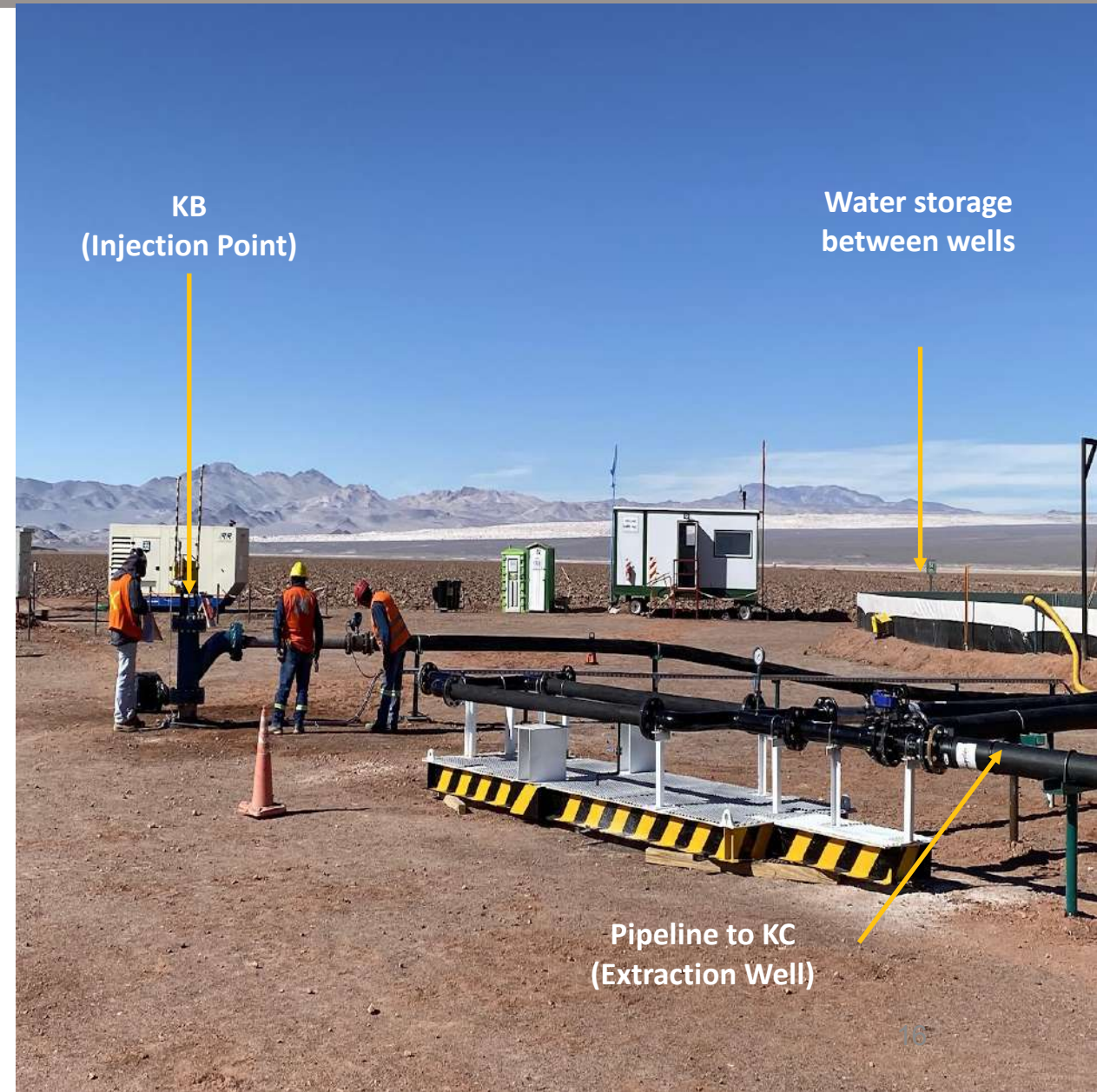
- Tested upper reservoir
- High reservoir permeability
- Extrapolates to high well production rates (~65 liters per second)

Indicative of high conversion rates from resource to reserve

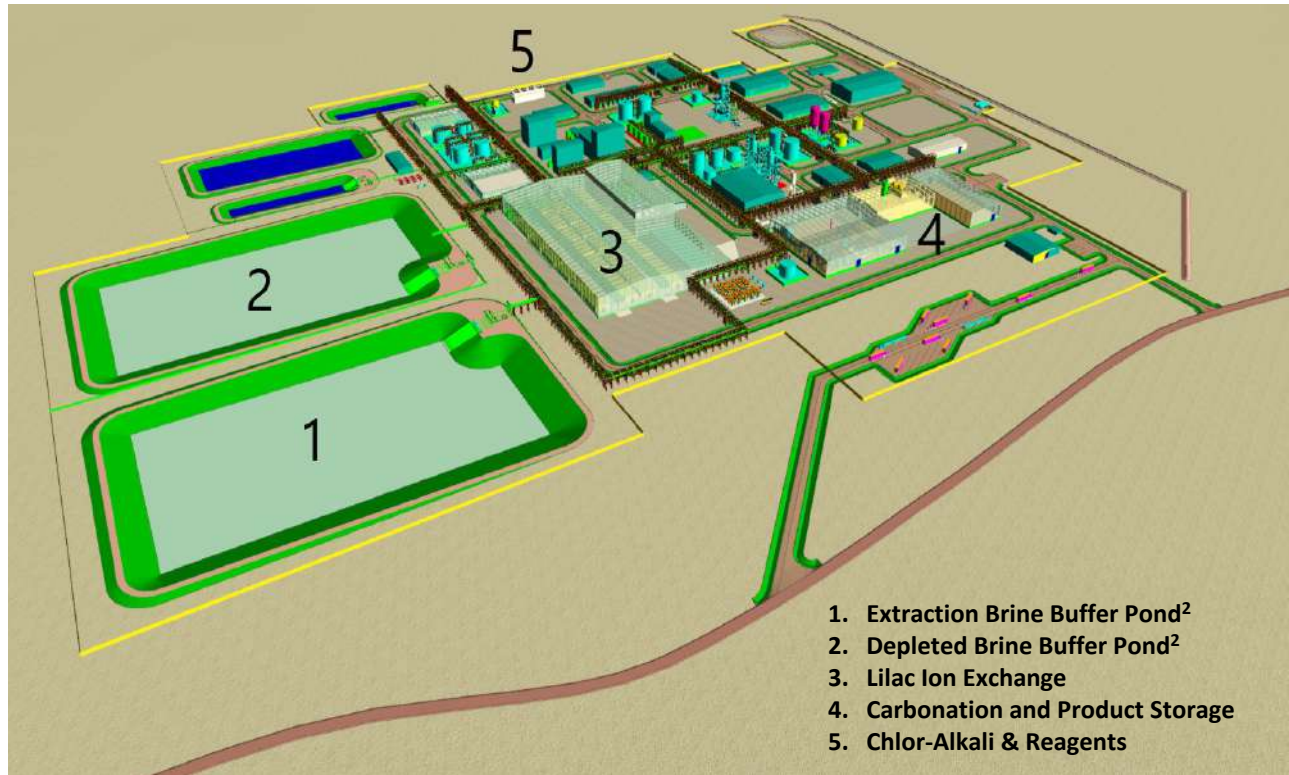
Proven Injectivity

- 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

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	<ul style="list-style-type: none">■ 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	<ul style="list-style-type: none">■ Proven DLE technology■ Significant progress with power solution■ Visibility to First Lithium with clear milestones
Phased Approach to Production	<ul style="list-style-type: none">■ 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!