

# Mining Meets Oil & Gas: Bringing Lessons Learned to Lithium Production

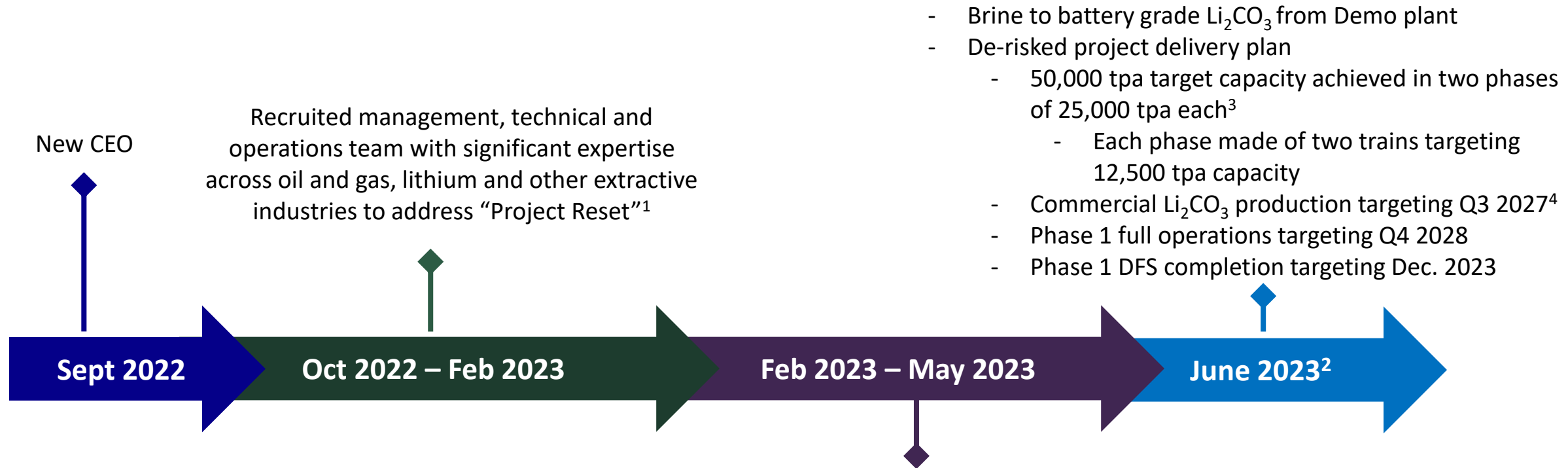
Fastmarkets European Battery Raw Materials Conference  
2023

September 2023

LAKE  
RESOURCES



## Recognizing the clear parallels between lithium extraction via DLE and oil & gas projects helped to shape a prudent re-evaluation and refresh of our approach to developing Kachi



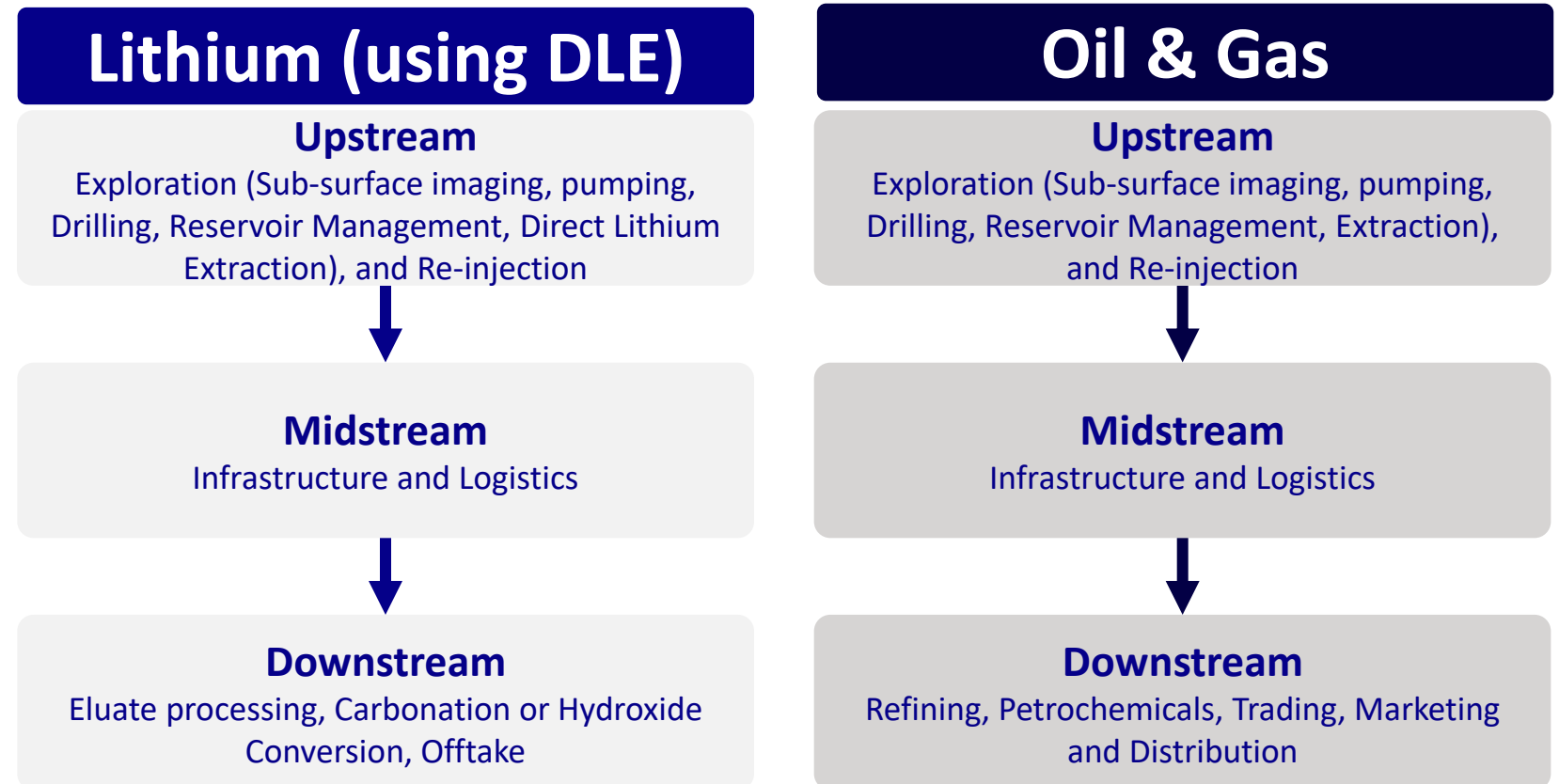
Tpa = tonnes per annum    DFS = Definitive Feasibility Study

1. Refer to ASX announcement dated 12 January 2023
2. Refer to ASX announcement dated 19 June 2023
3. 50,000 tpa target capacity made up of Phase 1 (25,000 tpa) + Phase 2 (25,000 tpa)
4. When first train (12,500 tpa) in Phase 1 commences operation

The process of producing lithium using DLE is a natural fit for those with oil & gas experience (particularly in specialty chemicals) to leverage expertise in

- Drilling
- Subsurface pumping
- Large, complex capital project execution (permitting, costing, execution, scheduling)
- Supply chain knowledge
- Risk management
- Expertise in logistics and transporting liquids
- Expertise chemicals processing and refining, including technology development

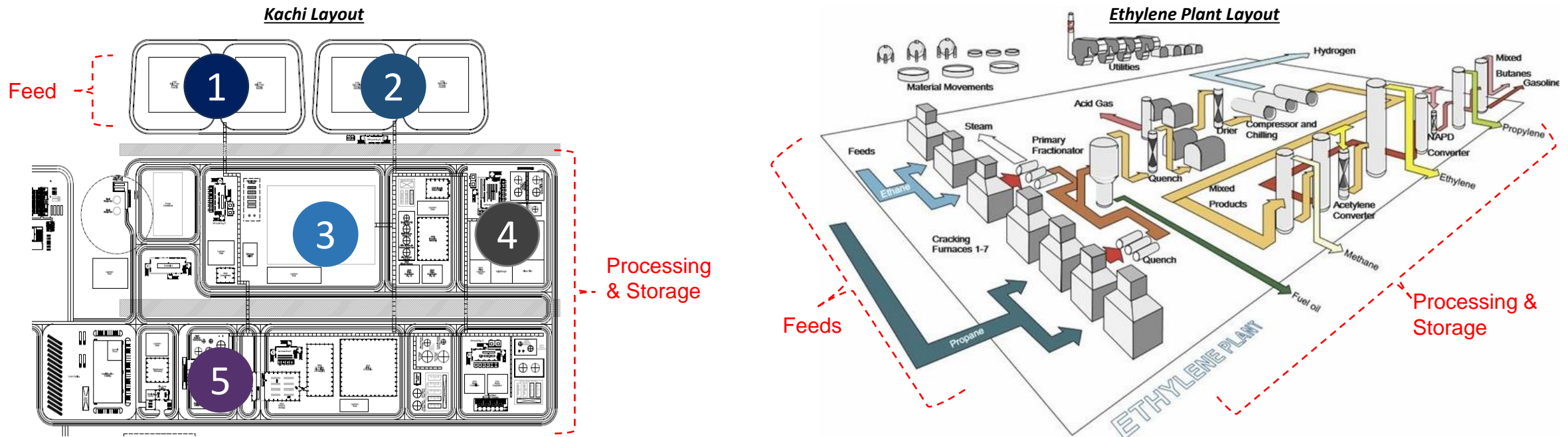
The Lake Resources management and operations team bring all these skills to bear in progressing the development of Kachi



DLE = Direct Lithium Extraction

# DLE processing vs. chemical plant layout

## The Kachi plant layout is similar to a typical ethylene plant



1. Extraction Brine Buffer Pond<sup>1</sup>
2. Depleted Brine Buffer Pond<sup>1</sup>
3. Lilac Ion Exchange
4. Chlor-Alkali & Reagents
5. Carbonation and Product Storage

- The processing plant accounts for ~80% of capex while drilling/mining costs account for ~20%
- DLE technology has the potential to mature to become licensable technology, in the way proprietary process technologies are licensed in petrochemical, refining, and gas processing<sup>2,3</sup>

Image source: Siemens: Evolution of a digital twin with ethylene plant as an example, Whitepaper, January 2020

1. Buffer pond size for Kachi target 50Ktpa plant capacity is more than 100x smaller than evaporation ponds required for same output

## Multiple factors are pushing oil and gas companies into energy transition

- The proliferation of climate-related policies and regulation, progressively cheaper low-carbon alternatives, investor pressure, and changing consumer preferences are driving oil and gas companies to energy transition. **IEA<sup>1</sup> forecasts peak oil demand by 2030**
- **Oil and gas players reinventing as “energy” companies and making significant investments in offshore wind, hydrogen, CCUS<sup>2</sup>, sustainable fuels, and circular economy, to name a few**
- Producing lithium from salars is similar to the crude oil extraction and petrochemical process with some obvious advantages for lithium such as shorter well depths, lower safety risks, smaller plants, lower complexity handling non-flammable liquids at lower pressures, etc.
- Oil and gas talent continue to seek new opportunities in energy transition industries. **A significant portion of Lake’s resource pool are ex-oil and gas**

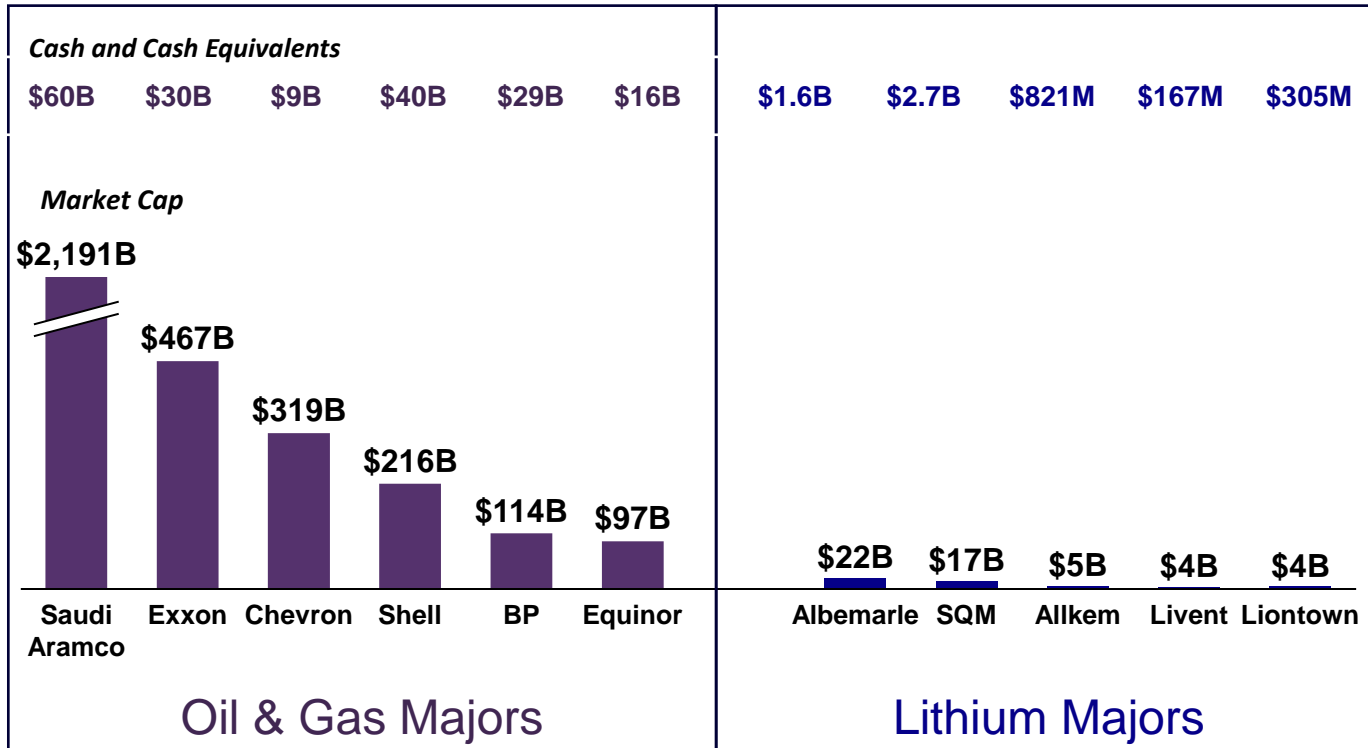
1. IEA = International Energy Agency  
2. CCUS = Carbon Capture, Utilization and Storage

## Recent investments by select oil and gas companies

	Exxon acquired 48.5 hectares of oilfield brines containing lithium in Arkansas for \$100M in cash
	Equinor took a stake in Lithium de France – a lithium developer
	Occidental owns TerraLithium – a lithium technology group
	Chevron is looking at opportunities to produce lithium for EV batteries
	Shell signed MOU with Kreisel Electric, an Austrian EV battery developer
	SLB invested in EnergySource to accelerate the development of ILiAD – a DLE platform to be deployed towards its goal of building a full-scale commercial lithium production facility in Nevada
	Saudi Aramco signed a JV with APB (a Japanese battery startup), purchased equity stakes in Energy Vault and Form Energy (both energy storage companies)

## The lithium brine industry's nascency and lack of product standardization may present initial hurdles to major oil & gas entrants, but not for long

Cash<sup>1</sup> and Market Capitalization<sup>2</sup>



- **Fragmented lithium industry presents opportunity for consolidation and scaling up** as seen in recent M&A announcements
- **Adjacency of lithium extraction (using DLE) to oil and specialty chemicals production, in addition to robust balance sheets, presents opportunities for oil & gas players to enter lithium market** in the drive to diversify into clean energy

1. Cash balance as of most recent publicly reported financial statements – June 30, 2023 for Exxon, Chevron, Albemarle, Livent and Liontown; December 31, 2022 for Saudi Aramco, Shell, BP, Equinor, and SQM; FY23 Annual report for Allkem  
 2. Market Capitalization as of Sept 15, 2023

- **Oil & gas companies are looking for energy transition opportunities and provide**
  - Access to capital from robust balance sheets
  - Operating expertise without the need for offtake
  - Ability to accelerate the scaling up of lithium production
- **Lithium industry's fragmentation presents opportunities for consolidation and entry**
- **Greater collaboration with oil & gas peers can help DLE producers leverage transferable expertise across**
  - Drilling
  - Capital project execution
  - Supply chain management
  - Risk management
  - Permitting
  - Logistics and transport
  - Chemicals processing and refining, including process technology development, etc.
- **Collaboration and cooperation across both industries will help achievement of long term sustainability goals**

# Appendix







**David Dickson**, Managing Director / CEO

David was appointed Managing Director and CEO of Lake Resources in September 2022

He is an industry leader with over 30 years' experience in process technology, engineering, construction and EPC cost management, across the energy sector. He has a proven track record in delivering multi-billion-dollar resource projects

David spent over seven years as CEO of global engineering and construction firm McDermott International, building a strong leadership team that steered the company into profitable new markets. He ultimately grew the business to over 30,000 employees across 54 international markets

Prior to McDermott he was President of Technip USA, overseeing marketing and operations in North, Central, and South America

David serves on the Advisory Board of private equity firm, Quantum Energy Partners, a leading global provider of private capital to the responsibly sourced energy and energy transition and decarbonization sectors. Additionally, he has served as Executive Advisor to strategic investment firm, The Chatterjee Group and is a former Board member of the U.S. National Safety Council

# Lake Resources Overview

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

## Capital Structure and Financials

<b>A\$256.04M</b> Market Capitalization (15 Sept 2023)	<b>A\$0.157 - A\$1.205</b> 52 Week Range (15 Sept 2023)	<b>1,422,444,707</b> Shares
<b>A\$90.1M</b> Cash (30 June 2023)	<b>Debt</b> Nil	

## Key Projects

<b>Kachi</b>	<b>Lake 80% / Lilac 20%<sup>1</sup></b>	<b>Lithium Carbonate</b>	<b>Flagship Project</b>
Olaroz	Lake 100%	Lithium	
Cauchari West	Lake 100%	Lithium	
JAMA	Lake 100%	Lithium	

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

Notes:

1. Lilac Solutions Inc., our technology partner on Kachi, is entitled to earn up 25% interest in the Kachi project, contingent on the achievement of agreed project milestones

# Lake Resources Leadership Team



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



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## 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.



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Thank you!