

10 March 2020

## LILAC TAKES DELIVERY OF 20,000 LITRES OF KACHI BRINE FOR PILOT PLANT TESTING

- 20,000 litres of Kachi brine samples arrive at Lake's technology partner, Lilac Solutions' pilot plant in California, USA
- Processing technology to demonstrate ability to produce high purity, battery grade lithium carbonate at volume
- Finished lithium carbonate samples using Kachi brines will be sent to potential off-take partners from April onwards

Lithium explorer and developer **Lake Resources NL (ASX: LKE)** together with its technology partner, Lilac Solutions, confirm that 20,000 litres of brine samples from Lake's Kachi Lithium Brine Project in Argentina have arrived at Lilac's direct extraction ion exchange pilot plant module in Oakland, California (*see Figure 1 below*).

Lilac will process the brine to produce high-purity lithium chloride (starting in March) for conversion to battery-grade lithium carbonate, from April onwards. Lilac has previously demonstrated the ability to produce battery grade lithium carbonate with 99.9% purity, and very low impurities, which is a high priority for battery/cathode producers (refer ASX announcement 9 January 2020).

With these Kachi brines, Lilac will produce multiple kilograms of high purity lithium carbonate samples available for prospective off-takers from late March to start their qualification process. Initially, these brine samples will be used to complete the commissioning of Lilac's pilot-scale ion exchange module.

**Lake's Managing Director Steve Promnitz said:** "Our key focus at this time is to prove conclusively that the Lilac Solutions pilot-scale ion exchange module can consistently process the Kachi brines into high purity, battery grade lithium carbonate at volume, as sought by potential buyers.

*"Thanks to investor support for Lake and our technology partner, Lilac, we are now well positioned to advance our flagship Kachi project and ensure the delivery of a sustainable and scalable solution that is exactly what the market requires."*

Lake aims to produce at Kachi a high quality, low impurity product capable of attracting premium pricing. A pre-feasibility study (PFS) for Kachi is nearing completion and is anticipated to show production costs in the lower part of the global cost curve.

The direct extraction process, together with the Kachi project, offers a sustainable solution for the downstream battery makers by extracting lithium from brines using ion exchange without traditional evaporation ponds. Brine is returned to the aquifer once the lithium has been extracted without changing the brine chemistry. This addresses increasing interest from electric vehicle makers (OEM's) and battery makers to demonstrate they have access to a sustainable scalable supply chain for raw materials.

Lake and Lilac look forward to reporting first finished samples from April onwards.

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**AT THE HEART OF THE  
LITHIUM TRIANGLE**

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**Figure 1:** Kachi Project brines being delivered to the Lilac pilot plant in California, USA.



**Figure 2:** a) Lithium bearing brines pumped into containers at the Kachi Lithium Brine Project for trucking to port for dispatch to California; b) Lithium carbonate product with 99.9% purity and low impurities from the Kachi Lithium Brine Project using Lilac's direct extraction ion exchange process.

### **About Lake Resources NL (ASX:LKE)**

Lake Resources NL (ASX:LKE, Lake) is a lithium exploration and development company focused on developing its three lithium brine projects and a hard rock project in Argentina, all owned 100%. The leases are in a prime location among the lithium sector's largest players within the Lithium Triangle, where 40% of the world's lithium is produced at the lowest cost. Lake holds one of the largest lithium tenement packages in Argentina (~200,000Ha) which provides the potential for consistent security of supply, scalable as required.

Lake considers it is in a strong position to benefit from the market opportunity in electric vehicles and the batteries that power the energy revolution due to:

1. **High Purity Lithium Carbonate** samples (99.9%) with very low impurities, recently produced from the pilot plant using a direct extraction process (ion exchange);
2. **Increased Engagement with Off-takers** as larger samples are produced, anticipated from late March 2020 onwards, for off-takers to commence qualification testing to then engage to assist in financing;
3. **Kachi Project PFS**, in the final stages of completion which is anticipated to show projected production costs at the lower end of the cost curve similar to current lithium brine producers. The Kachi project has a resource (announced Nov 2018) considered large enough for long term production and could be potentially scaled to a much larger project is required as leases cover an area 10 times Manhattan.
4. **Sustainable and Scalable Future Lithium Production**, demanded by the larger Electric Vehicle makers and an increasing number of battery/cathode makers, who need to show both the quality and provenance of battery materials for ESG/sustainability and carbon footprint reporting. The direct extraction process reinjects brine once the lithium has been removed using ion exchange beads without affecting the chemistry. This means a much smaller footprint and less water usage because evaporation ponds are not used.

The Kachi project covers 70,000 ha over a salt lake south of FMC/Livent's lithium operation in Catamarca Province. Drilling confirmed a large lithium brine bearing basin over 20km long, 15km wide and 400m to 800m deep. Drilling over Kachi produced a maiden indicated and inferred resource of 4.4 Mt LCE (Indicated 1.0Mt, Inferred 3.4Mt) (refer ASX announcement 27 November 2018).

A direct extraction technique has been tested in partnership with Lilac Solutions, supported by Bill Gates – led Breakthrough Fund and MIT's The Engine fund. A pilot plant is being commissioned, which has shown 80-90% recoveries and lithium brine concentrations over 60,000 mg/L lithium. Battery grade lithium carbonate (99.9% purity) has been produced from Kachi brine samples with very low impurities (Fe, B, with <0.001 wt%). Phase 1 Engineering Study results have shown operating costs forecast in the lowest cost quartile (refer ASX announcement 10 December 2018). Test results have been incorporated into a Pre-Feasibility Study (PFS) in the final stages of completion. The Lilac pilot plant in California will produce samples for downstream participants in March/April/May prior to being transported to site to produce larger battery grade lithium samples. Discussions are advanced with downstream entities, mainly battery/cathode makers, as well as financiers, to jointly develop the project.

The Olaroz-Cauchari and Paso brine projects are located adjacent to major world class brine projects either in production or being developed in the highly prospective Jujuy Province. The Olaroz-Cauchari project is located in the same basin as Orocobre's Olaroz lithium production and adjoins the Ganfeng Lithium/Lithium Americas Cauchari project, with high grade lithium (600 mg/L) with high flow rates drilled immediately across the lease boundary.

The Cauchari project has shown lithium brines over 506m interval with high grades averaging 493 mg/L lithium (117-460m) with up to 540 mg/L lithium. These results are similar to lithium brines in adjoining leases scheduled for production in late 2020 and infer an extension and continuity of these brines into Lake's leases (refer ASX announcements 28 May, 12 June 2019).

Significant corporate transactions have occurred in adjacent leases with development of Ganfeng Lithium/Lithium Americas Cauchari project as Ganfeng announced a US\$397 million investment for 50% of the Cauchari project, together with a resource that had doubled to be the largest on the planet. Ganfeng then announced a 10 year lithium supply agreement with Volkswagen on 5 April 2019. Nearby projects of Lithium X were acquired via a takeover offer of C\$265 million completed March 2018. The northern half of Galaxy's Sal de Vida resource was purchased for US\$280 million by POSCO in June-Dec 2018. LSC Lithium was acquired in Jan-Mar 2019 for C\$111 million by a mid-tier oil & gas company with a resource size half of Kachi. Orocobre has announced on 19 Feb 2020 the acquisition of all shares in Advantage Lithium, valued at around C\$63 million, which holds leases next to Lake at Cauchari. These transactions imply an acquisition cost of US\$55-110 million per 1 million tonnes of lithium carbonate equivalent (LCE) in resources.

For more information on Lake, please visit <http://www.lakeresources.com.au/home/>

### **About Lilac Solutions, Inc**

Lilac Solutions is a mining technology company based in Oakland, California, USA. Lilac has developed a patented ion exchange technology that facilitates production of lithium from abundant brine resources with minimal cost and ultra-low environmental footprint. Lilac's mission is to increase lithium supplies needed for electric vehicles and renewable energy storage.