

Standard Lithium Successfully Produces >99.985% Purity Battery Quality Lithium Carbonate Using OEM Technology and Commences Lithium Hydroxide Conversion Program

HIGHLIGHTS

- >99.985% purity lithium carbonate produced using ‘off-the-shelf’ OEM technology
- Now successfully demonstrated two different flowsheets for producing battery-quality carbonate
- Launch of work converting Arkansas-produced LiCl into battery quality lithium hydroxide

VANCOUVER, British Columbia, March 01, 2021 (GLOBE NEWSWIRE) -- **Standard Lithium Ltd.** (“Standard Lithium” or the “Company”) (TSXV: SLL) (OTCQX: STLHF) (FRA: S5L), an innovative technology and lithium project development company today announced that it has successfully completed the conversion of its Arkansas-produced lithium chloride into 99.985% pure lithium carbonate using OEM technology. The work was completed by Veolia Water Technologies (Veolia) at their facility in Plainfield, Illinois, and demonstrates that the lithium chloride intermediate product produced by Standard Lithium’s industrial scale LiSTR Direct Lithium Extraction (“DLE”) plant in Arkansas can be converted into better-than battery quality lithium carbonate using established OEM carbonation technology.

Dual Track Program for Lithium Carbonate Conversion

As part of a continuous process of derisking the Arkansas Lithium Project, Standard Lithium opted to evaluate two different processes to convert the LiCl solution made by the Arkansas DLE plant into a battery-quality material. The first was using the Company’s own patent-pending SiFT technology as previously reported ([see news release dated December 03rd 2020](#)). The second, as reported here, was via conventional technology, widely used within the industry and performed by Veolia. Concentrated lithium chloride solution produced by Standard Lithium was sent to Veolia and was then converted to lithium carbonate using a conventional flowsheet. This involves additional concentration; chemical softening/purification; initial conversion to solid lithium carbonate; redissolution to a bicarbonate solution and final crystallisation, washing and drying of battery quality lithium carbonate. The material produced was of exceptionally high purity, as shown in Table 1 below where the composition is compared to typical specifications for battery-grade lithium carbonate compiled from a variety of commercial sources and producers’ specifications

Table 1: Analysis of Lithium Carbonate

Element	Specification Target	Standard Lithium Li ₂ CO ₃ Sample
	ppm	ppm
Chloride	<100	<50
Sulphur	<50	<10
Aluminium	<10	<3
Barium	<1	<1
Calcium	<160	<10
Chromium	<10	<1
Copper	<10	<1
Iron	<5	<1
Lead	<10	<1
Magnesium	<70	<10
Manganese	<10	<1
Nickel	<6	<1
Zinc	<5	<1
Sodium	<500	14
Potassium	<10	<10
Boron	<30	<1
Silicon	<40	26
	Total Impurities	<142

The total impurities of <142 ppm implies an overall purity of >99.985%.

The Company has now successfully demonstrated two separate crystallisation flowsheets that can take lithium chloride produced from the Smackover Formation brine and convert it into high purity battery-quality lithium carbonate. As the Company continues to move towards commercialisation, successful demonstration of alternative technologies in key areas of the flowsheet allows it to reduce project execution risk and offers greater flexibility regarding the final flowsheet that will be deployed at commercial scale.

Lithium Hydroxide Conversion Program

Standard Lithium continues to innovate and optimise its flowsheet, and with a view to expanding product offerings from the Smackover resource, it has commenced work to assess the feasibility of directly converting LiCl produced by the LiSTR DLE plant in Arkansas into battery quality lithium hydroxide. This work is ongoing, and the Company will provide results as they become available.

Dr. Andy Robinson, President and COO of Standard Lithium commented *“We’ve now demonstrated that we can convert to battery quality lithium carbonate using the Company’s SiFT technology; that we can get to the same end-product using established technology developed and sold by global OEMs; and now we’re looking to add battery quality lithium hydroxide to the product offering. In the background, we continue to rapidly advance both project and corporate development work. We’re excited about reaching the various milestones ahead of us and, if we’re successful, taking this globally important project into commercialisation.”*

Quality Assurance

Dr. Ron Molnar, Professional Metallurgical Engineer (Ontario P.E.# 100111288), is a qualified person as defined by NI 43-101, is independent of the Company, and has reviewed and approved the scientific and technical information that forms the basis for this news release.

About Standard Lithium Ltd.

Standard Lithium (TSXV: SLL) is an innovative technology and lithium development company. The company's flagship project is located in southern Arkansas, where it is engaged in the testing and proving of the commercial viability of lithium extraction from over 150,000 acres of permitted brine operations. The Company has commissioned its first-of-a-kind industrial scale Direct Lithium Extraction Demonstration Plant at LANXESS' South Plant facility in southern Arkansas. The Demonstration Plant utilizes the Company's proprietary LiSTR technology to selectively extract lithium from LANXESS' tailbrine. The Demonstration Plant is being used for proof-of-concept and commercial feasibility studies. The scalable, environmentally-friendly process eliminates the use of evaporation ponds, reduces processing time from months to hours and greatly increases the effective recovery of lithium. The company is also pursuing the resource development of over 30,000 acres of separate brine leases located in southwestern Arkansas and approximately 45,000 acres of mineral leases located in the Mojave Desert in San Bernardino County, California.

Standard Lithium is listed on the TSX Venture Exchange under the trading symbol "SLL"; quoted on the OTC - Nasdaq Intl Designation under the symbol "STLHF"; and on the Frankfurt Stock Exchange under the symbol "S5L". Please visit the Company's website at www.standardlithium.com

On behalf of the Board of Standard Lithium Ltd.

Robert Mintak, CEO & Director. For further information, contact Anthony Alvaro at (604) 240 4793

Neither TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release. This news release may contain certain "Forward-Looking Statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995 and applicable Canadian securities laws. When used in this news release, the words "anticipate", "believe", "estimate", "expect", "target", "plan", "forecast", "may", "schedule" and other similar words or expressions identify forward-looking statements or information. These forward-looking statements or information may relate to future prices of commodities, accuracy of mineral or resource exploration activity, reserves or resources, regulatory or government requirements or approvals, the reliability of third party information, continued access to mineral properties or infrastructure, fluctuations in the market for lithium and its derivatives, changes in exploration costs and government regulation in Canada and the United States, and other factors or information. Such statements represent the Company's current views with respect to future events and are necessarily based upon a number of assumptions and estimates that, while considered reasonable by the Company, are inherently subject to significant business, economic, competitive, political and social risks, contingencies and uncertainties. Many factors, both known and unknown, could cause results, performance or achievements to be materially different from the results, performance or achievements that are or may be expressed or implied by such forward-looking

statements. The Company does not intend, and does not assume any obligation, to update these forward-looking statements or information to reflect changes in assumptions or changes in circumstances or any other events affecting such statements and information other than as required by applicable laws, rules and regulations.



Source: Standard Lithium