December 19, 2024

SWA Lithium Advances and Derisks DLE Technology with Field-Testing at South West Arkansas Lithium Project

SWA Lithium and Koch Technology Solutions Teams Collaborate to Design, Build, and Operate a Field-Pilot DLE Facility to Confirm Engineering Design for SWA Project

Samples of Battery-Quality Lithium Carbonate Produced from the Field-Based Pilot Will be Used in the Qualification Process with Potential Off-Take Partners

EL DORADO, Ark., Dec. 19, 2024 (GLOBE NEWSWIRE) -- SWA Lithium, the Joint Venture ("JV") between Standard Lithium Ltd. ("Standard Lithium" or the "Company") and Equinor ASA ("Equinor") which is developing the South West Arkansas Project ("SWA" or the "Project"), is pleased to announce that, in partnership with Koch Technology Solutions ("KTS"), it has successfully designed, built, commissioned, and is now operating, a pilot Direct Lithium Extraction ("DLE") plant at the South West Arkansas Project. The pilot DLE plant is processing brine directly from SWA to confirm engineering design parameters for the Project and provide samples of battery-quality lithium carbonate for use in the qualification process with potential off-take partners.

Standard Lithium's Director and President, Dr. Andy Robinson commented: "*The Standard Lithium and Equinor teams, along with our various engineering partners are working hard on the design for our first commercial lithium facility, which will be constructed in southwestern Arkansas in Lafayette and Columbia counties. To date, in order to support that design work, we have been using the huge amount of DLE and flowsheet performance data that we've collected at our demonstration plant, combined with testwork completed by KTS using our SWA Project brines. This field-based pilot DLE plant is the final step in ensuring that we have exactly the right data to confirm our design and be sure that we know how our commercial plant will operate once constructed.*"

"*This pilot DLE plant is using real brine, collected in real-time from one of our Project wells (the IPC well), and we are using the same flowsheet as our commercial lithium facility to produce an intermediate lithium chloride solution, the same as what we do every day in our demonstration plant. We'll then ship this solution to several selected vendor partners so that they can convert the lithium chloride solution to a battery-quality lithium carbonate product. This will serve two functions; first, it will provide us with lithium carbonate samples produced from the Project that we can use in negotiations with possible off-take partners and start the qualification process; second, it can also help the JV in selecting our preferred carbonate equipment vendor as we work through the design and partner evaluation process.*

The success of this pilot DLE plant is due to the great support and collaboration we have with Mission Creek Resources LLC, and reflects our commitment to form close local partnerships and working relationships. We look forward to keeping our investors informed

with data from this important derisking step, and continuing our work towards becoming the first new lithium-from-brine project in North America in over 50 years."

Highlights of this field-based pilot include:

- The heart of the plant is the same KTS Li-Pro™ Lithium Selective Sorption (Li-Pro LSS) technology, as described in our recent news release (28 October 2024);
- Continued support and integration from the KTS team to allow full engineering design and optimization for the JV's first commercial facility;
- Brine is being supplied from the JV's IPC well, which provides a representative brine composition for the SWA Project;
- Brine supply and operation of the pilot DLE plant is ongoing and expected to continue until late-January 2025, at which point sufficient operational experience and design data will have been acquired;
- Concluding operation of the pilot, it is expected to produce approximately 1,000 gallons (3,785 litres) of concentrated and purified lithium chloride solution (6% LiCl solution);
- The 1,000 gallons of 6% LiCl solution will be sent off-site to three separate potential carbonate equipment vendors;
- The three vendors will produce, in total, approximately 30 kg of battery-quality lithium carbonate; and,
- The battery quality lithium carbonate produced will be used for the first phase(s) of qualification with potential off-take partners, and the performance of the vendors will be used to inform the JV with respect to vendor selection for the carbonate portion of the first commercial facility.

Figure 1 – Aerial photo of the field pilot, located at the Mission Creek Resources gasplant in Arkansas.

Figure 2 – Close-up of the brine conditioning and DLE steps at the field-based pilot plant.

Incentive Grant

The Company has also granted 863,852 stock options, 423,325 restricted share units ("RSUs"), and 182,040 deferred share units ("DSUs") to management and directors under the Company's shareholder-approved incentive plans.

The stock options, exercisable at USD$1.42 per share expire in 60 months. A portion of the options vest in equal thirds over thirty-six months, with the balance vesting immediately. The RSUs will also vest in equal thirds over 36 months. DSUs will vest after 12 months and settle in common shares upon the holder's departure from the Company or a change of control.

The grant of the incentive securities is intended to align compensation of directors and management with the interests of shareholders. For further information regarding the shareholder-approved incentive plans, readers are encouraged to review the management information circular prepared for the annual general meeting of the Company which includes summaries of the incentive plans and which is available under the profile for the Company on SEDAR+ (www.sedarplus.com) and by visiting the Company's website (www.standardlithium.com).

About Standard Lithium Ltd.

Standard Lithium is a leading near-commercial lithium development company focused on the sustainable development of a portfolio of lithium-brine bearing properties in the United States. The Company prioritizes brine projects characterized by high-grade resources, robust infrastructure, skilled labor, and streamlined permitting. The Company aims to achieve sustainable, commercial-scale lithium production via the application of a scalable and fully-integrated Direct Lithium Extraction ("DLE") and purification process. The Company's signature project, the South West Arkansas (SWA) Project, is located on the Smackover Formation in southern Arkansas, a region with a longstanding and established brine processing industry. The Company has also identified a number of highly prospective lithium brine project areas in the Smackover Formation in East Texas ("ETX") and is conducting an extensive brine leasing program in this region. The Company is developing the SWA Project and the ETX project in a 55:45 Joint Venture with Equinor. In addition, the Company has an interest in certain mineral leases located in the Mojave Desert in San Bernardino County, California.

Standard Lithium trades on both the TSX Venture Exchange ("TSXV") and the NYSE American under the symbol "SLI"; and on the Frankfurt Stock Exchange under the symbol "S5L". Please visit the Company's website at www.standardlithium.com for more information.

About Equinor

Equinor is an international energy company committed to long-term value creation in a low-carbon future. Equinor's portfolio of projects encompasses oil and gas, renewables and low-carbon solutions, with an ambition of becoming a net-zero energy company by 2050. Headquartered in Norway, Equinor is the leading operator on the Norwegian continental shelf and is present in around 30 countries worldwide. Our partnership with Standard Lithium to mature DLE projects builds on our broad US energy portfolio of oil and gas, offshore wind, low carbon solutions and battery storage projects.

For more information on Equinor in the US, please visit:Equinor in the US - Equinor.

About Koch Technology Solutions (KTS)

Koch Technology Solutions is the technology licensing business of Koch Engineered Solutions (KES). KTS creates value for its customers across a growing portfolio of technologies including direct lithium extraction, the polyester value chain, and 1,4-Butananediol plus its derivates. KTS combines its exclusive technologies, expertise, and capabilities with those of other KES companies to provide overall solutions to optimize customer's capital investments and existing manufacturing assets.

Neither the TSXV nor its Regulation Services Provider (as that term is defined in policies of the TSXV) 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 "forward looking information" within the meaning of 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 intended

development timelines, future prices of commodities, accuracy of mineral or resource exploration activity, reserves or resources, continued operation of the demonstration plant and the pilot DLE plant, regulatory or government requirements or approvals, the reliability of third party information, continued production of lithium chloride solutions, 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 or information. 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.

Photos accompanying this announcement are available at
https://www.globenewswire.com/NewsRoom/AttachmentNg/1fd56018-dcc3-4cac-8f02-ecce53fbd713

https://www.globenewswire.com/NewsRoom/AttachmentNg/d37d5d46-73e2-4279-aa3e-ee2d48665aa5

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Source: Standard Lithium

Figure 1

Aerial photo of the field pilot, located at the Mission Creek Resources gasplant in Arkansas.

Figure 2

Close-up of the brine conditioning and DLE steps at the field-based pilot plant.