Standard LITHIUM

Management Presentation

Leading a New Era of Responsible Lithium Production

Fall 2023

NYSE.A SLI **TSX.V** SLI **FSE** S5I

Cautionary Statement

This Presentation should be read in conjunction with the Company's news releases and latest management discussion and analysis ("MD&A"), financial statements, technical reports, annual information form ("AIF") and management information circular (collectively, the "Disclosure Documents") for full details of the information referenced throughout this Presentation. The Company's Disclosure Documents are available under the Company's website at https://www.standardlithium.com/ or under the Company's SEDAR+ or EDGAR profile.

This Presentation shall not constitute an offer to sell or a solicitation of an offer to purchase securities, and shall not constitute an offer, solicitation or sale in any state or jurisdiction in which or to any person to whom such an offer, solicitation or sale would be unlawful. Where this Presentation includes information on peer companies and other industry and market data, we have obtained this information from publicly available and other third-party sources as well as the Company's good faith estimates. While the Company believes the information was prepared by reputable sources, the Company did not independently verify the information or the underlying assumptions. No representation or warranty is made as to accuracy, completeness or reasonableness of such information.

This presentation also includes certain estimates and projections that are based on internal models. Although the estimates are based upon assumptions and analysis that we believe to be reasonable, there can be no assurance that actual results will not differ, perhaps materially, from the estimates presented in this presentation.

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Forward-Looking Statements

Except for statements of historical fact, this Presentation contains certain "forward-looking information" within the meaning of applicable Canadian securities legislation and "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995 (collectively referred to herein as "forward-looking information"). The statements relate to future events or the Company's future performance. All statements, other than statements of historical fact, may be forward-looking information. Information concerning mineral resource and mineral reserve estimates also may be deemed to be forward-looking information in that it reflects a prediction of mineralization that would be encountered if a mineral deposit were developed and mined. Forward-looking information generally can be identified by the use of words such as "seek", "anticipate", "plan", "continue",
"estimate", "expect", "may", "will", "project", "predict", "propose", "potential", "target", "intend", "could", "might", "should", "believe", "scheduled", "implement" and similar words or expressions. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking information.

In particular, this Presentation contains forward-looking information, including, without limitation, with respect to the following matters or the Company's expectations relating to such matters: the Company's planned exploration and development programs (including, but not limited to, plans and expectations regarding advancement, testing and operation of the lithium extraction pilot plant); commercial opportunities for lithium products; filing of technical reports; expected results of exploration; accuracy of mineral or resource exploration activity; accuracy of mineral reserves or mineral resources estimates, including the ability to develop and realize on such estimates; whether mineral resources will ever be developed into mineral reserves, and information and underlying assumptions related thereto; budget estimates and expected expenditures by the Company on its properties; regulatory or government requirements or approvals; the reliability of third party information; continued access to mineral properties or infrastructure; payments obligations pursuant to property agreements; fluctuations in the market for lithium and its derivatives; expected timing of the expenditures; performance of the Company's business and operations; changes in exploration costs and government regulation in Canada and the United States; competition for, among other things, capital, acquisitions, undeveloped lands and skilled personnel; changes in commodity prices and exchange rates; currency and interest rate fluctuations; the Company's funding requirements and ability to raise capital; geopolitical instability; war (such as Russia's invasion of Ukraine); the continued impact of the COVID-19 outbreak, including with regard to the health and safety of the Company's workforce; health and safety protocols and their efficacy and impacts on timelines and budgets; and other factors or information.

Forward-looking information does not take into account the effect of transactions or other items announced or occurring after the statements are made. Forward-looking information is based upon a number of expectations and assumptions and is subject to a number of risks and uncertainties, many of which are beyond the Company's control, that could cause actual results to differ materially from those that are disclosed in or implied by such forward-looking information. With respect to forward-looking information listed above, the Company has made assumptions regarding, among other things: current technological trends; ability to fund, advance and develop the Company's properties; the Company's ability to operate in a safe and effective manner; uncertainties with respect to receiving, and maintaining, mining, exploration, environmental and other permits; pricing and demand for lithium, including that such demand is supported by growth in the electric vehicle market; impact of increasing competition; commodity prices, currency rates, interest rates and general economic conditions; the legislative, regulatory and community environments in the jurisdictions where the Company operates; impact of unknown financial contingencies; market prices for lithium products; budgets and estimates of capital and operating costs; estimates of mineral resources and mineral reserves; reliability of technical data; anticipated timing and results of operation and development; inflation; war (such as Russia's invasion of Ukraine); and the impact of health and safety protocols on the Company and its business. Although the Company believes that the assumptions and expectations reflected in such forward-looking information are reasonable, the Company can give no assurance that these assumptions and expectations will prove to be correct. Since forward-looking information inherently involves risks and uncertainties, undue reliance should not be placed on such information.

Cautionary Statement

Forward-looking information involves known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking information. Such factors include, but are not limited to: general economic conditions in Canada, the United States and globally; industry conditions, including the state of the electric vehicle market; governmental regulation of the mining industry, including environmental regulation; geological, technical and drilling problems; unanticipated operating events; competition for and/or inability to retain drilling rigs and other services and to obtain capital, undeveloped lands, skilled personnel, equipment and inputs; the availability of capital on acceptable terms; the need to obtain required approvals from regulatory authorities; uncertainties associated with estimating mineral resources and mineral reserves, including uncertainties relating to the assumptions underlying mineral resource and mineral reserve estimates; whether mineral resources will ever be converted into mineral reserves; uncertainties in estimating capital and operating costs, cash flows and other project economics; liabilities and risks, including environmental liabilities and risks inherent in mineral extraction operations; health and safety risks; risks related to unknown financial contingencies, including litigation costs, on the Company's operations; unanticipated results of exploration activities; unpredictable weather conditions; unanticipated delays in preparing technical studies; inability to generate profitable operations; restrictive covenants in debt instruments; lack of availability of additional financing on terms acceptable to the Company; intellectual property risk; stock market volatility; volatility in market prices for commodities; liabilities inherent in the mining industry; inflation risks; risks related to war (such as Russia's invasion of Ukraine); global pandemics (such as COVID-19); changes in tax laws and incentive programs relating to the mining industry; other risks pertaining to the mining industry; conflicts of interest; dependency on key personnel; and fluctuations in currency and interest rates, as well as those factors discussed in the section entitled "Risk Factors" in the Company's AIF.

Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking information, there may be other factors that cause actions, events or results to differ from those anticipated, estimated or intended.

Readers are cautioned that the foregoing lists of factors are not exhaustive. All forward-looking information in this this Presentation speaks as of the date of this Presentation. The Company does not undertake any obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, except as required by law. All forward-looking information contained in this Presentation is expressly qualified in its entirety by this cautionary statement. Additional information about these assumptions and risks and uncertainties is contained in the Company's filings with securities regulators, including the Company's most recent MD&A for our most recently completed financial year and, if applicable, interim financial period, which are available on SEDAR+ at www.sedar.com and EDGAR at www.sec.gov.

Currency

Except where otherwise indicated, all references to currency in this Presentation are to US Dollars ("$").

NI 43-101 Disclosure

Scientific and technical information in this Presentation has been reviewed and approved by Steve Ross, P. Geol., Vice President Resource Development, of the Company, who is a "qualified person" under National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("NI 43-101").

Further information about the Lanxess Property ("Lanxess") Project, including a description of key assumptions, parameters, methods and risks, is available in the NI 43-101 technical report titled "NI 43-101 Technical Report for the Definitive Feasibility Study for Commercial Lithium Extraction Plant at Lanxess South Plant", dated October 18, 2023 ("Lanxess DFS"), available under the Company's SEDAR+ profile.

Further information about the South West Arkansas ("SWA") Project, including a description of key assumptions, parameters, methods and risks, is available in the NI 43-101 technical report titled "NI 43-101 Technical Report South West Arkansas Project Pre-Feasibility Study" dated September 18, 2023 (the "South West Arkansas PFS"), available under the Company's SEDAR+ profile.

The mineral resources and mineral reserves contained in this Presentation have been prepared in accordance with the requirements of securities laws in effect in Canada, including NI 43-101, which governs Canadian securities law disclosure requirements for mineral properties. NI 43-101 differs from the requirements of the United States Securities and Exchange Commission ("SEC") that are applicable to domestic United States reporting companies. Any mineral resources or reserves reported by the Company herein may not be comparable with information made public by United States companies subject to the SEC's reporting and disclosure requirements.

Non-GAAP Measures

This Presentation includes certain performance measures ("non-GAAP measures") which are not specified, defined, or determined under generally accepted accounting principles (in the Company's case, International Financial Reporting Standards, or "IFRS").

These are common performance measures in the lithium mining industry, but because they do not have any mandated standardized definitions, they may not be comparable to similar measures presented by other issuers. Accordingly, the Company uses such measures to provide additional information and readers should not consider them in isolation or as a substitute for measures of performance prepared in accordance with generally accepted accounting principles ("GAAP").

Why Standard Lithium?

Right Projects, Right Place, Right Time

Meeting U.S. Lithium Needs and Targeting a Growing Addressable Market

Committed to addressing the growing domestic demand, our projects stand out by reinforcing U.S. green energy strategies with the unmatched advantage of robust stakeholder support which is a distinctive feature not commonly found in U.S. projects

North America's Premier Lithium Brine Resource

Brownfield pilot plant located on existing brine operation with over 3-year runtime, completed DFS, established infrastructure, minimal permits, performance warranties and social license to operate

Leading U.S. Lithium Production Strengthened by Strategic Partnerships

Commercial projects in the Smackover Formation set the standard for new and sustainable U.S. produced lithium supported by key partnerships

Phased Development Strategy

Through phased stages of expansion, we ensure responsible and efficient capital deployment. Each stage focuses on de-risking and growth, utilizing a replicable Direct Lithium Extraction ("DLE") process tailored for the Smackover brines

Experienced and Proven Leadership Team

Our leadership team brings extensive experience from a wide spectrum of industries, offering diverse expertise and a track record of successful project execution

Snapshot | Highest Grade Lithium Brine Project Outside of South America

Standard Lithium: Leading the Way to New U.S. Lithium Production with Advanced, Sustainable and Ready-to-Scale DLE Technology

Phase 1A(1)

Location

Brownfield Project, bolt-on with existing commercial brine operations

Key Feature

Existing brine flow: 3,000 GPM source, **217 mg/l lithium**

Significance

Targeting first production in **2026**

Initial production goal of **5,700 TPA** BQ Li_2CO_3

South West Arkansas(2) ("SWA")

Location

40 mi. west of Phase 1A, near Albemarle's brine operations

Key Feature

Lithium grade **437 mg/L,** (2X Phase 1A)

Base case **30,000 TPA** BQ LiOH

Upside **35,000 TPA** BQ LiOH

Significance

Project economics improve directly with lithium grade

Smackover Expansion(3)

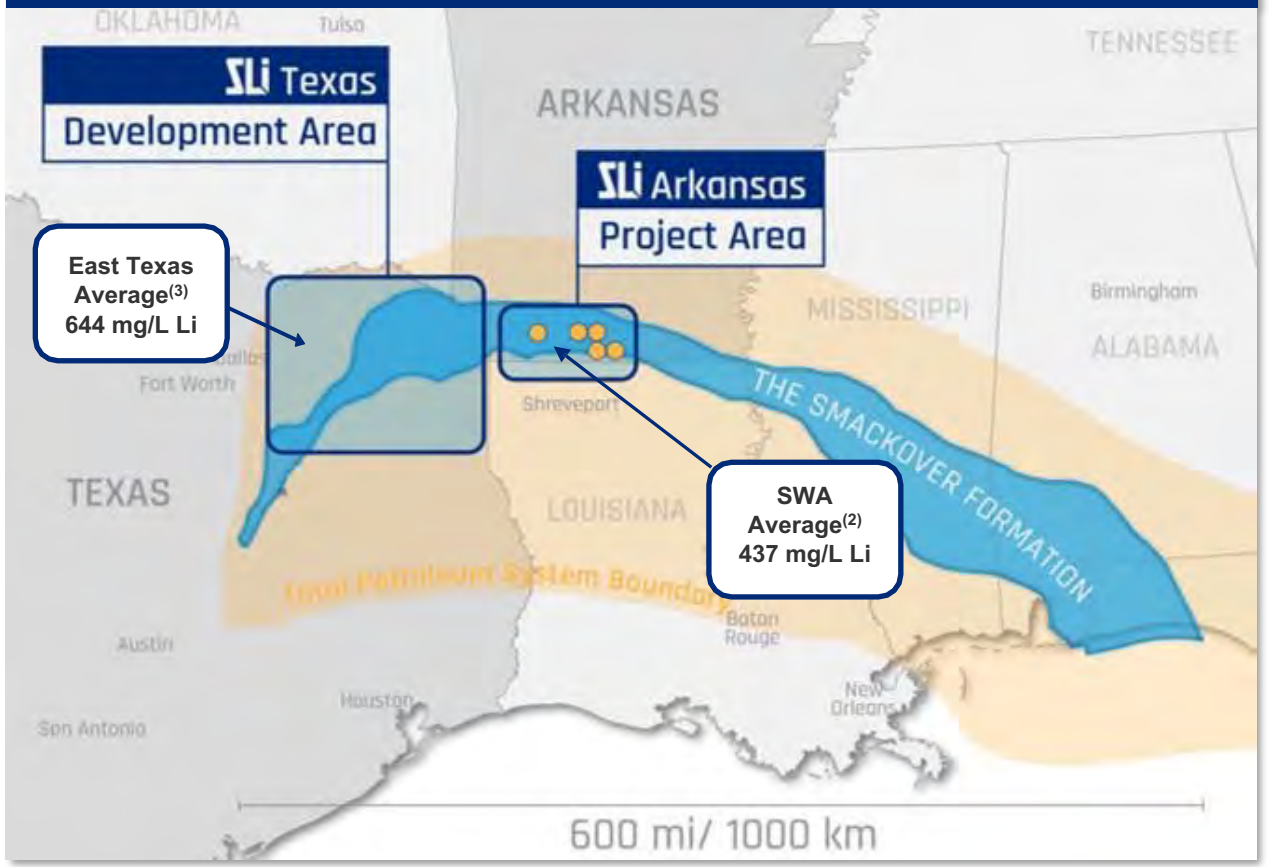
Opportunity

East Texas up to **806 mg/L** amongst world's highest grade, significant potash and bromine values

Objective

Securing a resource-based capacity for the potential production of **100,000+ TPA LCE,** utilizing a replicable DLE process

Asset Base on the Country's Largest Lithium Brine Aquifer



Partnerships Leveraging Infrastructure for Success

Social License Community Engagement for Strong Local Support

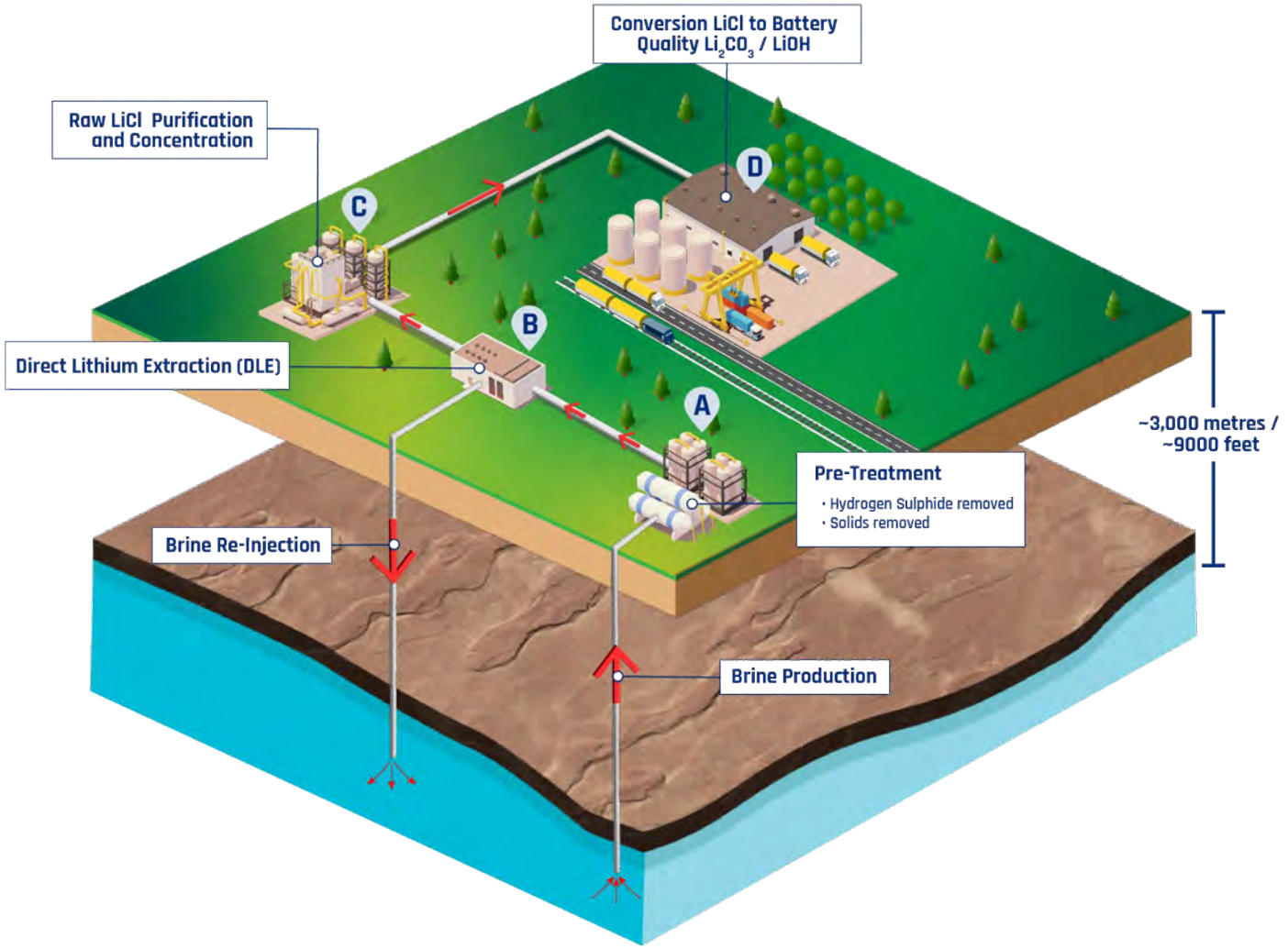
Unlocking Growth Potential with Scalable High-Grade Projects

(1) LANXESS Definitive Feasibility Study, October 18, 2023.
(2) SWA Preliminary Feasibility Study, September 18, 2023.
(3) Recent drilling has shown a range of lithium concentrations; October 25, 2023 company news release.

Direct Lithium Extraction | Technology Overview

Substantial Evolution in Lithium Production

- Continuous pumping of brine, selective extraction of lithium, and re-injection of the brine to the formation
- Higher lithium recovery compared to evaporation ponds (90+% vs 50% and less)
- Ensures consistent final purity through continuous control and optimization
- Smaller footprint than evaporation ponds, efficient closed-loop system ensures sustainability and higher recovery enables robust economic viability
- Proven success in projects across China and South America, with Chile now requiring DLE for new projects



Direct Lithium Extraction | Right Project – Right Place – Right Time

Critical Success Elements

Not all DLE projects are equal. Direct Lithium Extraction demands critical components for commercial lithium production

Formation
Elevated lithium concentrations paired with optimal temperature and reservoir conditions

Technology
Extraction technology developed to fit the brine chemistry and environmental criteria of the resource

Location
Business-friendly state, ample water, and nearby access to necessary chemical reagents

Workforce
A local workforce with requisite skills, including knowledge of chemical processing

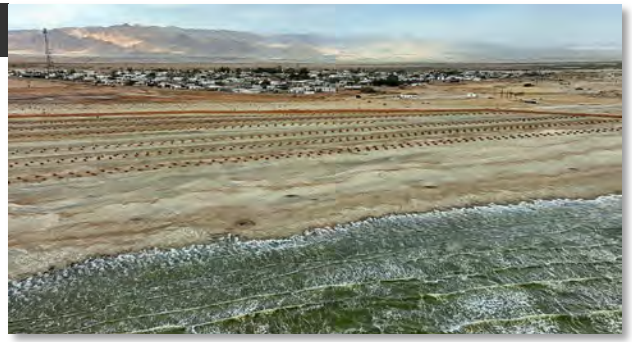
Social License
Support from local communities and government is essential for project success

SMACKOVER BRINES: ARKANSAS/ TEXAS

- ✓ Highest grade lithium brine outside of South America typically 150 − 800+ mg/L
- ✓ Elevated temperature (not hostile like geothermal) improves DLE process
- ✓ Existing brine industry, mature regulatory system for brine supply and disposal wells
- ✓ Significant stakeholder support

GEOTHERMAL BRINES: SALTON SEA

- x Low grade typically sub 200 mg/L
- x Highly dissolved with problematic metals and impurities
- x High temperature, 390 – 660 degree Fahrenheit
- x Community resistance from both indigenous and local communities on environmental impact and water use



OIL FIELD BRINES: ALBERTA - PENNSYLVANIA

- x Very low grade typically sub 100 mg/L
- x High contaminant level including heavy metals and organic compounds
- x Because of the very low lithium concentration and volumes of brine required to process, capex and opex become extremely high

Industry Leading Experience

Management team is supported by 30+ highly-trained and experienced operations personnel

20+ years experience

Robert Mintak
CEO

PURE ENERGY MINERALS

20+ years experience

Dr. Andy Robinson
President & COO

VERESEN
Worley

15+ years experience

Salah Gamoudi, CPA
CFO

SANDRIDGE energy
JONES ENERGY

20+ years experience

Mike Barman
CDO

STIFEL

45+ years experience

Dr. Ross Lewis, P.Eng, FEC
VP Engineering & Technology

Advisian ch2m:
Worley

30+ years experience

Steve Ross, P.Geol.
VP Resource Development

Worley

20+ years experience

Jason Tielker, P.Eng
VP Project Delivery

Advisian pte
Worley

20+ years experience

Angus Remfry, CEng.
Project Management

Advisian
Worley
Steelhead LNG

GLOBAL PARTNERS

KOCH DISRUPTIVE TECHNOLOGIES

LANXESS Energizing Chemistry

OPTIMIZED PROCESS DESIGNS LLC

STRATEGIC ADVISORS

David Park
28 years at various Koch entities

Professor Jason Hein
Leads one of the largest chemistry research groups in Canada.

Dr. Ron Molnar
35 years experience, professional metallurgical engineer

Dr. Mike Dry
40 years experience in hydrometallurgy

Craig Brown
45 years experience, recognized global expert in ion exchange

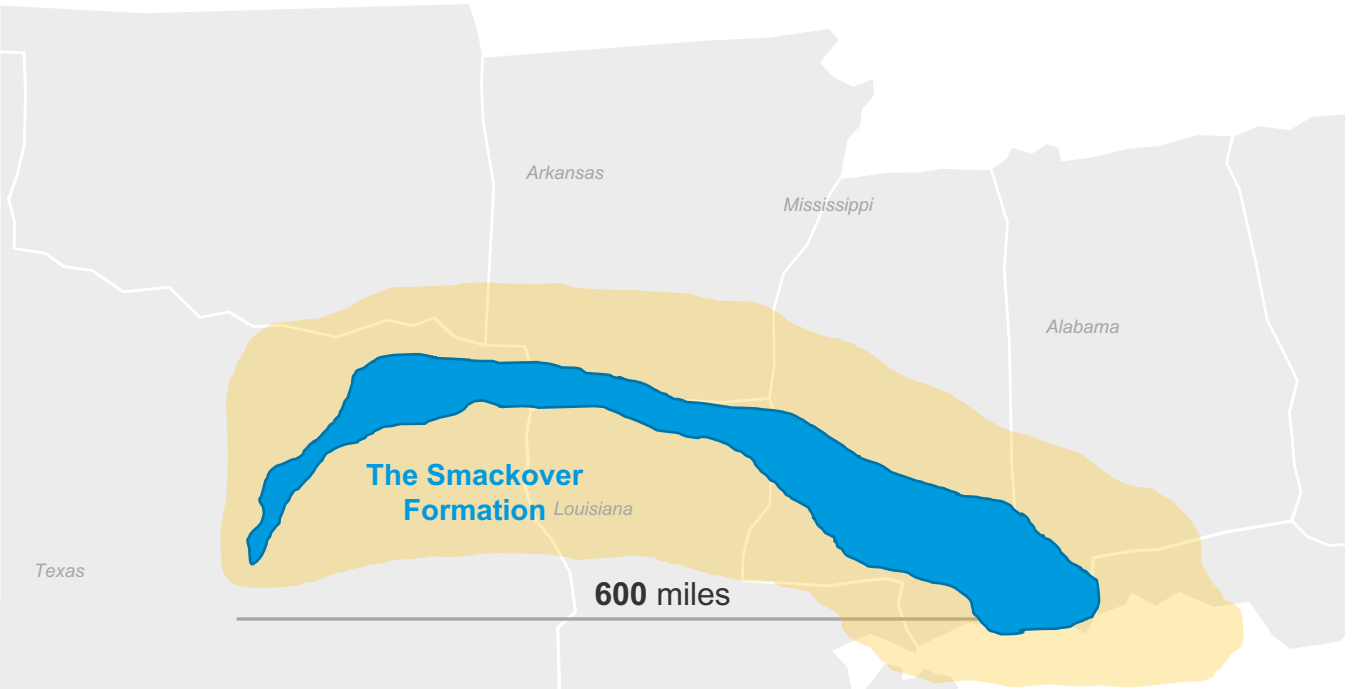
Professor Barry Sharpless
2-time Nobel Peace Prize winner in chemistry

Resource Overview

North America's Premiere Lithium Brine Resource

Smackover Formation: Lithium concentrations comparable to select South American brines

- **Globally Significant Resource:** A pivotal and responsible lithium source, addressing U.S. critical mineral needs
- **Highest-Grade:** Home to North America's only high-grade lithium brines
- **Established Brine Industry:** Arkansas boasts a well-established track record in brine extraction, with six decades of experience, backed by mature operational expertise and a supportive regulatory environment
- **Rich Resource Heritage:** A century-long legacy in energy resource development, provides strong infrastructure and deep geological expertise
- **Business-Friendly:** A secure, supportive region with strong stakeholder support and a solid social license



Smackover Attributes

Ideal Concentrations

Brine has elevated lithium concentrations, typically ranging from 150-800+mg/L

Geology Fundamentals

Geological data from thousands of wells demonstrates regional formation homogeneity in thickness, continuity, and chemistry

Significant Brine Capacity

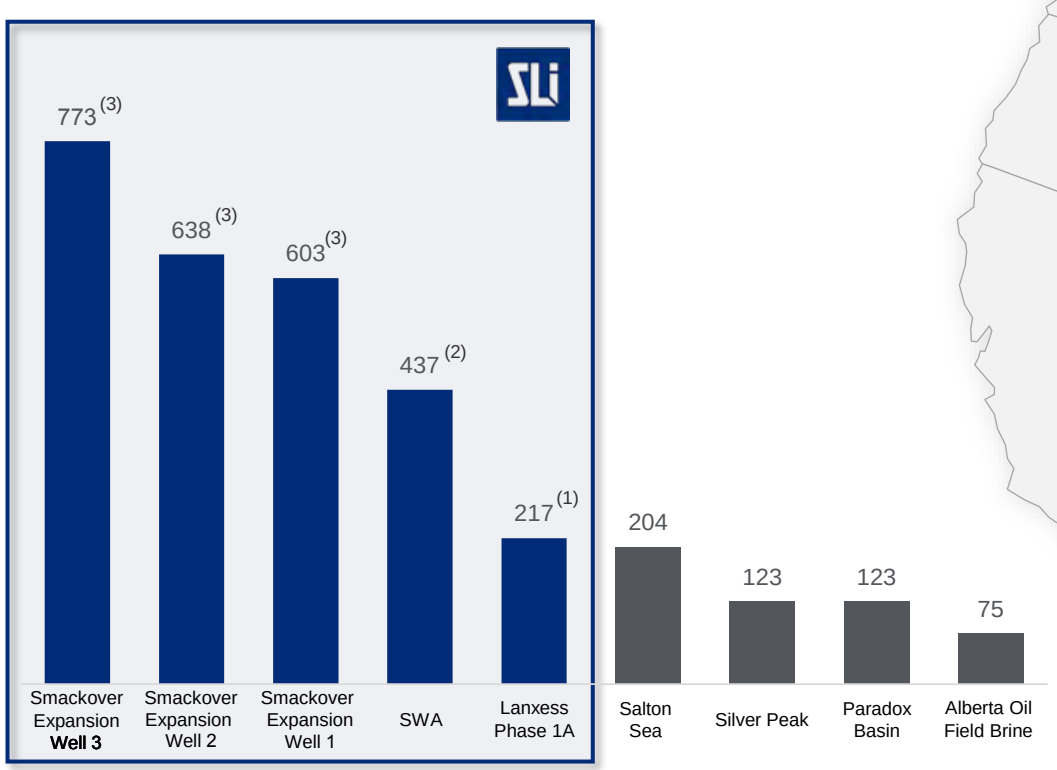
8+ billion gallons of brine pumped, processed and reinjected annually in south Arkansas for bromine

North America's Premiere Lithium Brine Resource

Smackover Formation: A Grade Above the Rest In North America

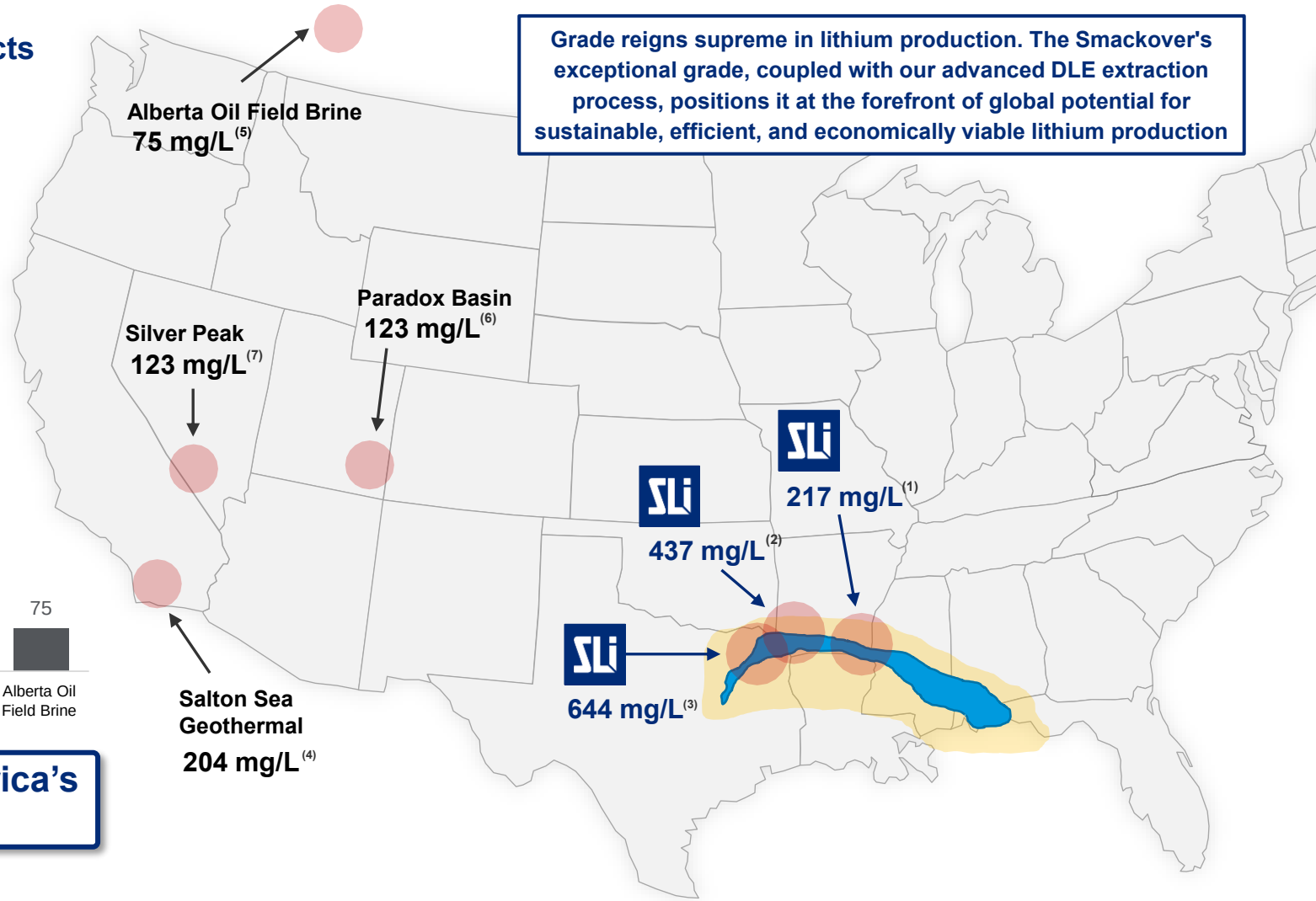
Average Lithium Concentration Amongst NAM Projects

(mg / L)



Standard Lithium's assets are on North America's highest quality brine aquifer

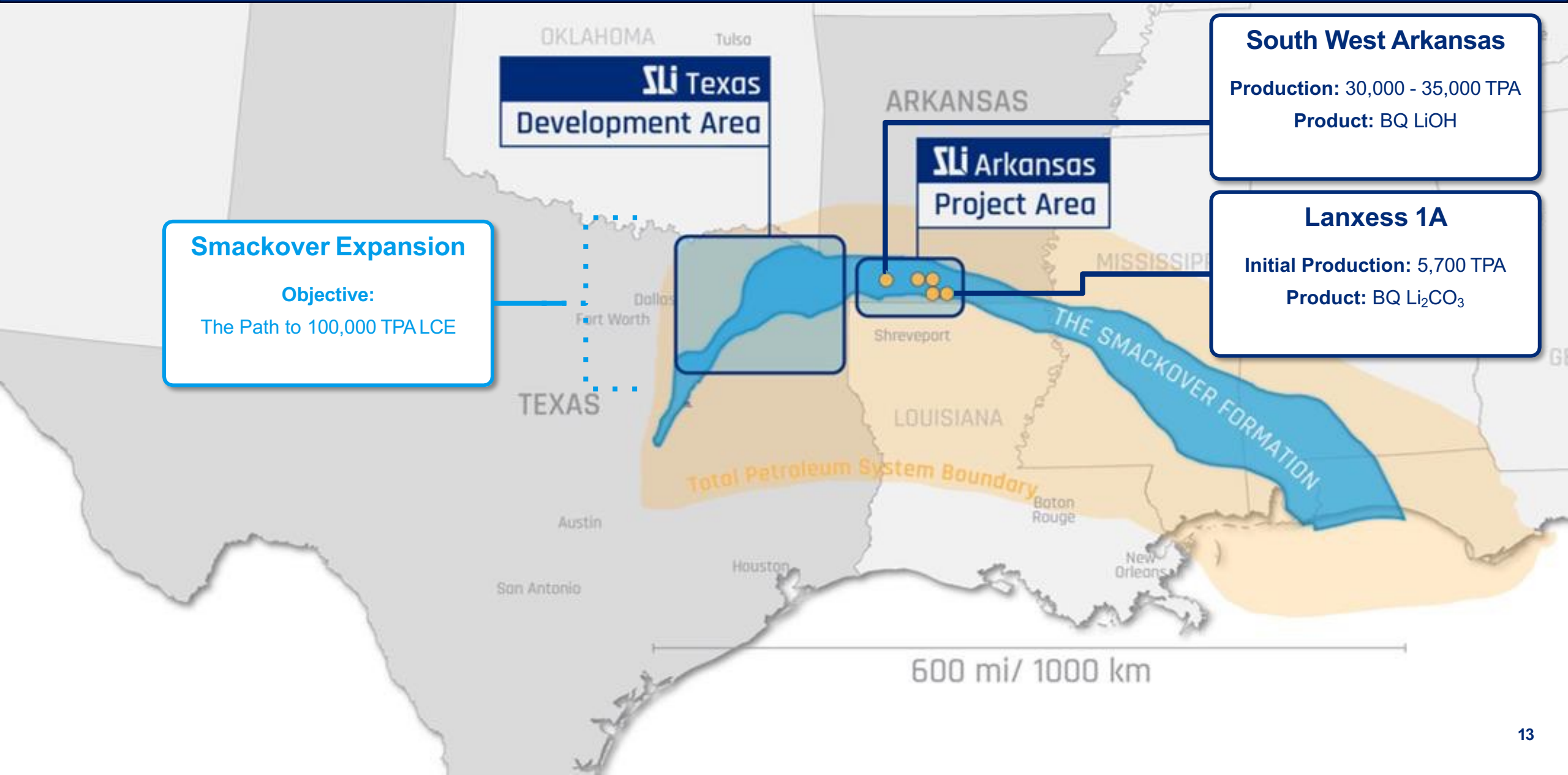
Grade reigns supreme in lithium production. The Smackover's exceptional grade, coupled with our advanced DLE extraction process, positions it at the forefront of global potential for sustainable, efficient, and economically viable lithium production



(1) LANXESS Definitive Feasibility Study, October 18, 2023.
(2) SWA Preliminary Feasibility Study, September 18, 2023.
(3) Recent drilling has shown a range of lithium concentrations; October 25, 2023 company news release.
(4) Average brine sample from Salton Sea, Table 1, Warren 2021. Techno-Economic Analysis of Lithium Extraction from Geothermal Brines. Golden, CO: National.
(5) Average brine analysis from Table 7, E3 Lithium 43-101 Technical Report: Lithium Resource Estimate, Bashaw District Project, central Alberta, Report date: August 23, 2022, Effective date: July 11, 2022.
(6) Indicated Resource Concentration, Anson Resources, Paradox Lithium Project, Total JORC Mineral Resource estimation, DFS, September 2022.
(7) Average Clayton Valley lithium brine composition, Table 14-3, Pure Energy Minerals, Preliminary Economic Assessment (Rev. 1) of the Clayton Valley Lithium Renewable Energy Laboratory. NREL/TP-5700-79178. Project Esmeralda County, Nevada, March 23, 2018.

Projects Overview

Projects Map



South West Arkansas

Production: 30,000 - 35,000 TPA

Product: BQ LiOH

Lanxess 1A

Initial Production: 5,700 TPA

Product: BQ Li_2CO_3

Smackover Expansion

Objective:

The Path to 100,000 TPA LCE

Why Arkansas | The Optimal Starting Point

Arkansas is the ideal location to develop a new U.S. commercial lithium business. The state's established brine operations, led by industry leaders like Albemarle and LANXESS, provide a solid foundation for the application Direct Lithium Extraction (DLE) technology. With a legacy of oil and gas experience, and six decades of brine processing for bromine, Arkansas offers an environment optimized for successful DLE lithium extraction.

Efficient Permitting & Regulatory Compliance

Oversight by the state-level Arkansas Oil and Gas Commission (AOGC) ensures streamlined permitting, a key factor for expeditious project development

Proven Expertise in Closed- Loop Brine Systems

Arkansas' extensive experience in maintaining closed-loop brine systems aligns perfectly with DLE requirements, minimizing environmental impact and maximizing operational efficiency

Standard Lithium and Lanxess Partnership

The two companies have an established framework that leverages Lanxess' existing brine infrastructure and permits to fast-track lithium production

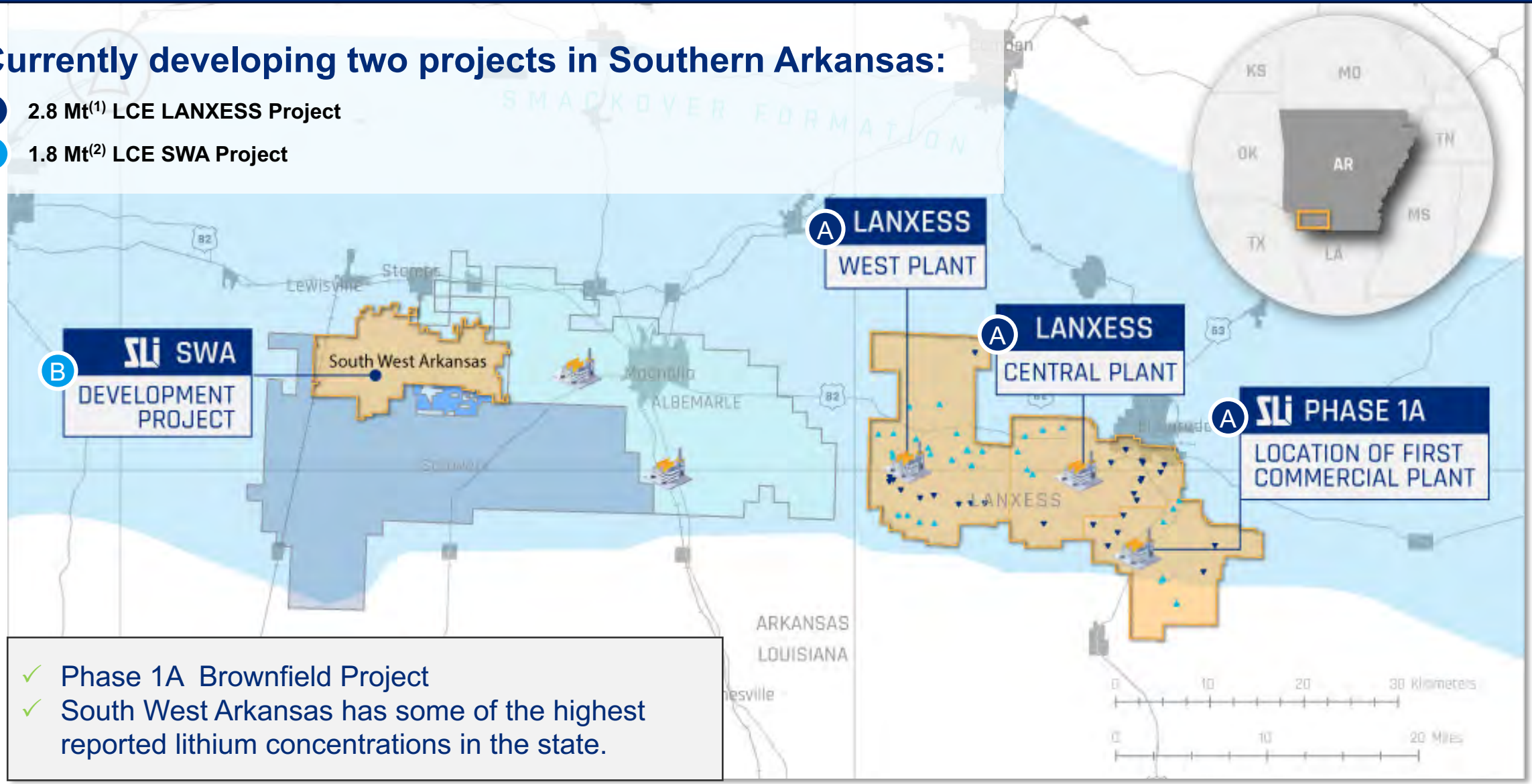
Historical DLE Initiatives

Albemarle, the world's largest lithium producer, ran a DLE pilot in 2011, underscoring the region's potential

Arkansas Projects Asset Map

Currently developing two projects in Southern Arkansas:

- **A** **2.8 Mt[1] LCE LANXESS Project**
- **B** **1.8 Mt[2] LCE SWA Project**



- ✓ Phase 1A Brownfield Project
- ✓ South West Arkansas has some of the highest reported lithium concentrations in the state.

(1) Definitive Feasibility Study October 18, 2023, LANXESS Lease Holding: 2.8Mt Measured and Indicated LCE; Phase 1A Resource: 208Kt Proven and Probable Reserve LCE.
(2) SWA Preliminary Feasibility Study, September 18, 2023. 1.4Mt LCE Indicated Resource 0.4Mt LCE Inferred Resource.

A Why Phase 1A | Optimal Launchpad for First Commercial DLE Plant

A Why Phase 1A | Optimal Launchpad for First Commercial DLE Plant

Phase 1A is the ideal launchpad for commercial DLE production, utilizing a well-established brownfield site with six decades of brine and bromine extraction operations, accompanied by an existing 3,000 GPM brine supply and extensive on-site amenities.

Access to Existing Resources:

- Brine Supply & Disposal Network
- Electricity
- Fresh Water
- Natural Gas
- Paved Highway
- Rail
- Skilled Labor
- 60+ years of brine production and mine life

Project has local support and license to operate:

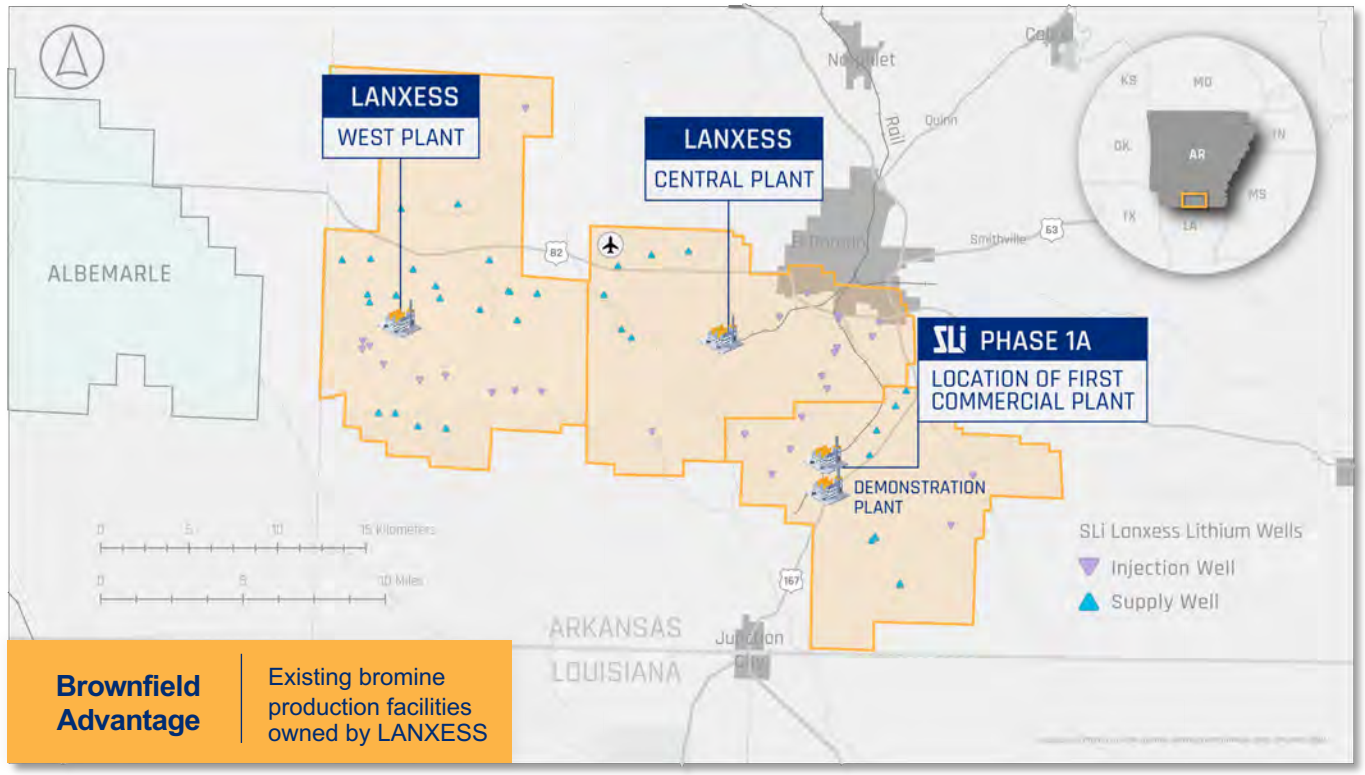
- Not subject to local planning and zoning ordinances
- Union County does not regulate industrial siting and construction
- Minimal permits required

Source: Lanxess Definitive Feasibility Study October 18, 2023.

A Why Phase 1A | Optimal Launchpad for First Commercial DLE Plant

One of the industry's most advanced large-scale lithium extraction projects over the country's highest-grade lithium brine aquifer

Summary Metrics (USD)[1]	
Average Annual Production[2]	**5,400 tonnes Li_2CO_3**
Proven and Probable Reserves	**208 Kt LCE**
Development Capex[3]	**$365 million**
Operating Life	**25 years**
Average Opex[4]	**$6,810 per tonne**
NPV (8%) Pre-Tax	**$772 million**
IRR Pre-Tax	**29.5%**



3¼
Years in operation for Industrial Scale Demo Plant

40
Staff Operators and Engineers on Site

Modest Scale-up Required

50 gpm – 3,000 gpm
gpm scale up from existing brine supply and disposal system

Koch Engineered Solutions
JDA in place on DLE with performance warranty

(1)) Lanxess Definitive Feasibility Study October 18, 2023; all model outputs are expressed on a 100% project ownership basis.
(2) Average Annual Production over operating life, Lanxess Definitive Feasibility Study October 18, 2023.
(3) Includes 15% contingency on both direct and indirect capital costs.
(4) Assumed flat prices and operating cost per ton over life of the project.

B South West Arkansas Project

With lithium grades averaging 437 mg/L, double those of Phase 1A, this project marks a significant step in our de-risked expansion, solidifying the region as a sustainable U.S. lithium hub – and there is still room to grow

Location

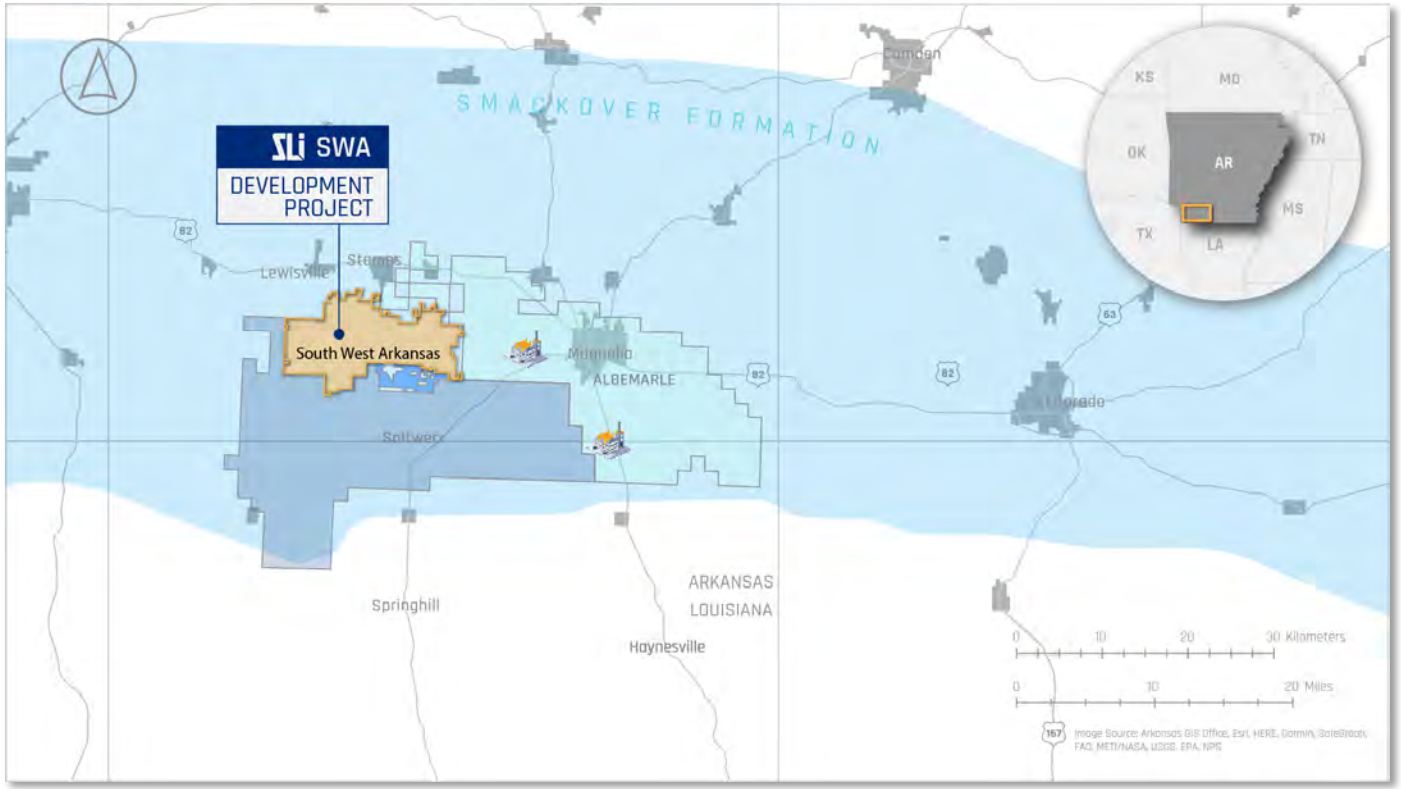
- Adjacent to Albemarle's existing brine operations, the SWA project benefits from the same regional expertise and regulatory advantages

Lithium Grade

- The SWA Project boasts a lithium grade of 437 mg/L, substantially higher than the Lanxess 1A Project

Significance

- Projected base case production of **30,000 tonnes per annum** of battery-quality LiOH, with an upside **potential of 35,000 tonnes** per annum. This earlier-stage project leverages the same regional expertise and regulatory advantages, building upon the success of Phase 1A

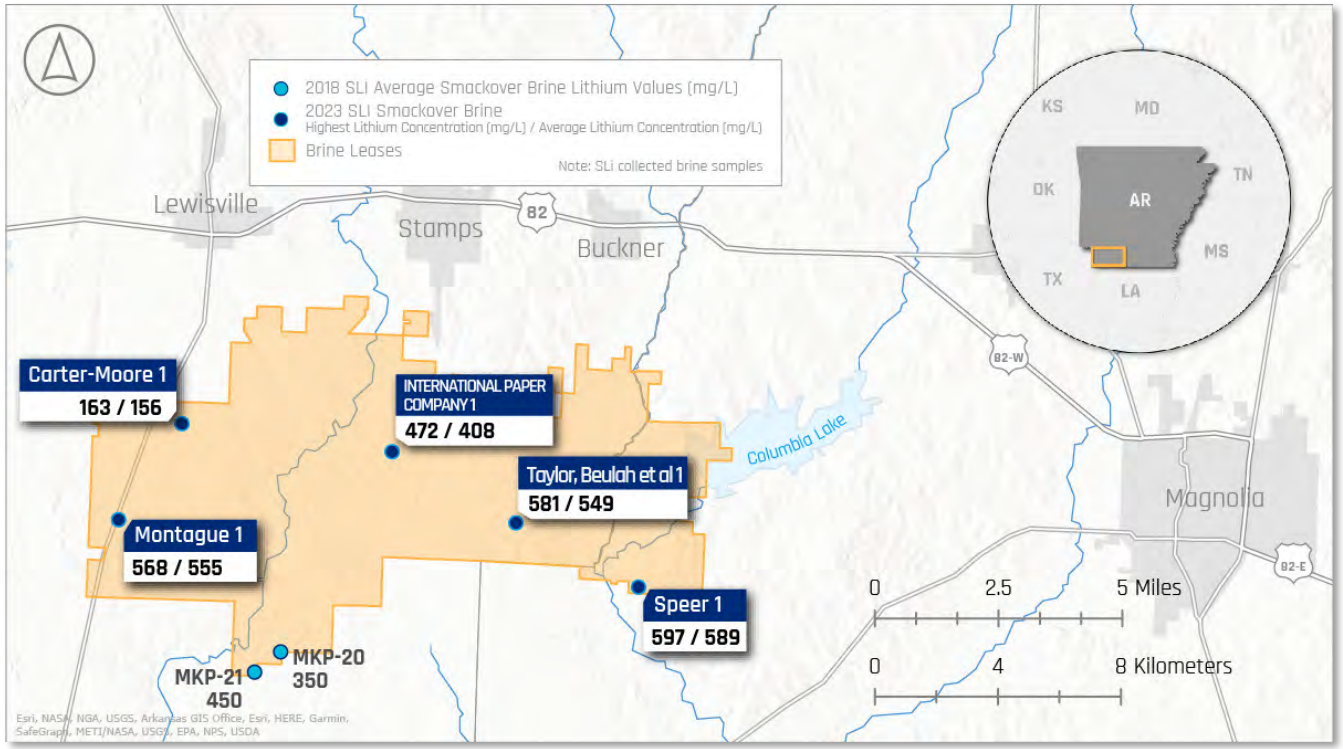


Source: SWA Preliminary Feasibility Study September 18, 2023.

B South West Arkansas Project

25 miles west of the Lanxess Projects, Standard Lithium has drilled one of the highest confirmed lithium grade brine in Arkansas

Summary Metrics (USD)[1]	Base Case	High Case
Annual Production	**30,000 tonnes LiOH**	**35,000 tonnes LiOH**
Estimated Resource[2]	**1.8 Mt LCE**	**1.8 Mt LCE**
Development Capex[3]	**$1.274 billion**	**$1.360 billion**
Operating Life	**20 years**	**20 years**
Average Opex[4]	**$4,073 per tonne**	**$3,964 per tonne**
NPV (8%) Pre-Tax	**$4.5 billion**	**$5.4 billion**
IRR Pre-Tax	**41.3%**	**44.4%**



437 mg/L
Average Concentration[2]

36k+
Acres of Proposed Unitized Brine Leases

2,444
Wells Drilled in Area

(1) SWA Preliminary Feasibility Study September 18, 2023; all model outputs are expressed on a 100% project ownership basis.
(2) Includes Indicated Resource of 1.4Mt and Inferred Resource of 0.4Mt lithium hydroxide equivalent ("LiOH") at an average grade of 437 mg/L.
(3) Includes 20% contingency on capital costs.
(4) Operating cost per tonne over life of the project.

B South West Arkansas Project | Recent Developments

The 118-acre parcel, strategically located in Lafayette County, near state highway 29, has a history of use for logging operations. This site has been carefully selected for its ideal location, setting the stage for potential future developments

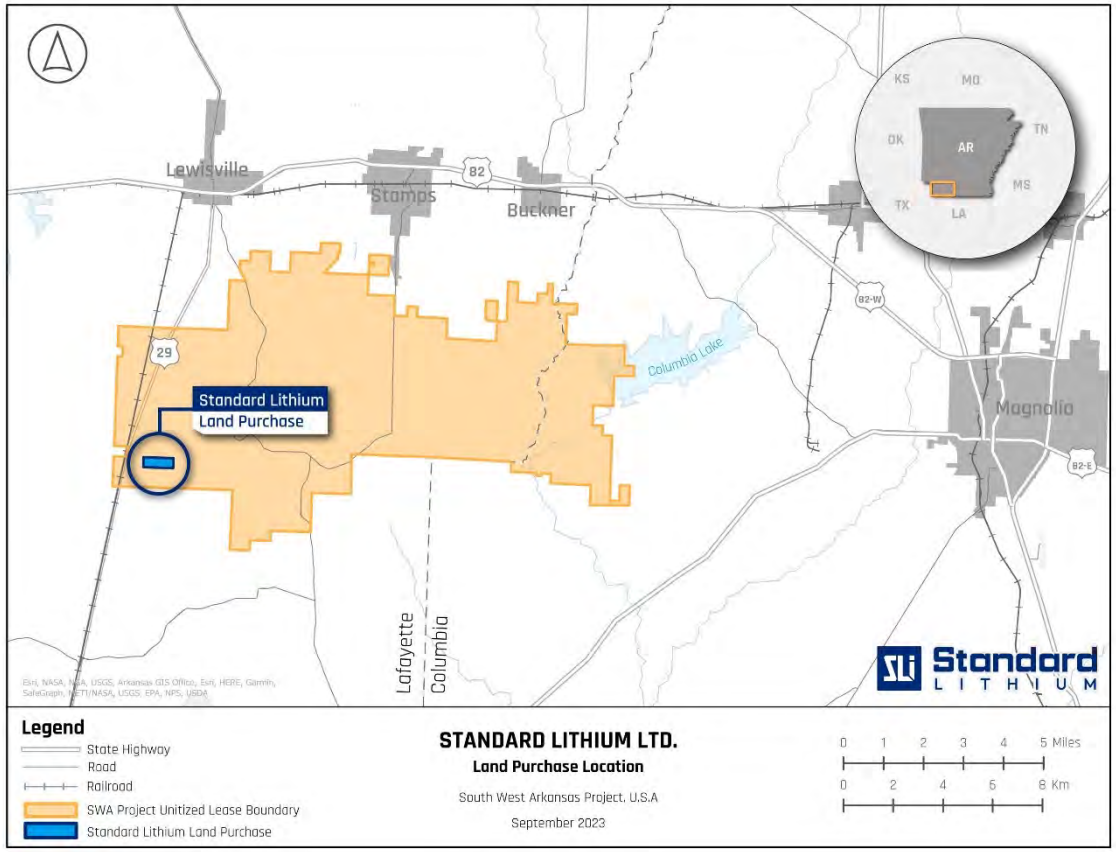
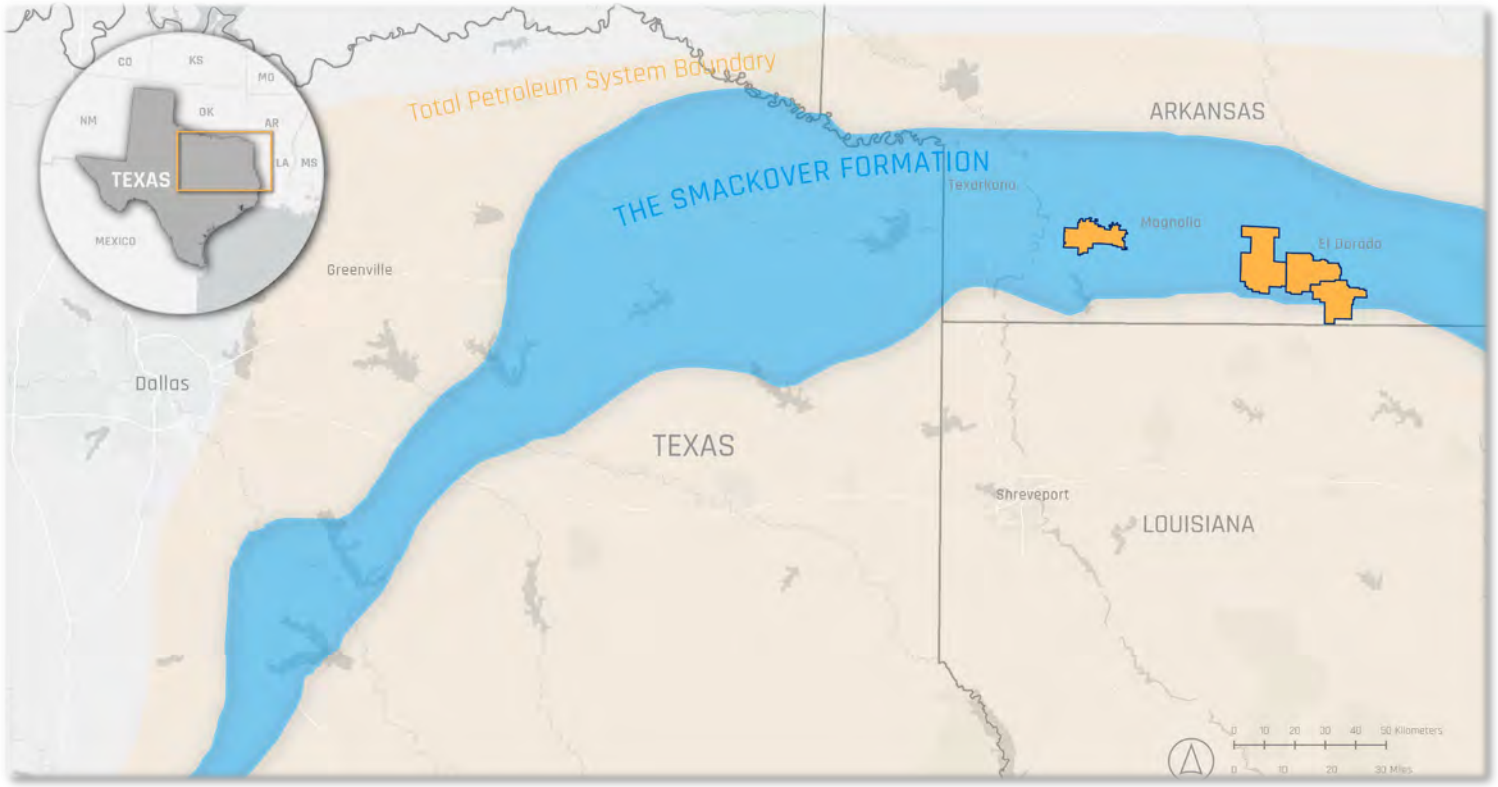


Figure 1: Overview of South West Arkansas Project and Land Purchase

Figure 2: 118-acre Land Purchase Bird's Eye View

Smackover Expansion Opportunity | East Texas

- Secured land, drilled and sampled lithium brine showing significant potential
- Nearly four years spent securing geological data, analyzing brine samples and reviewing mineral ownership
- Defined areas of the Smackover Formation with optimal brine conditions
- Collaborating with state authorities
- Clear vision for the future
- Significant Potash and Bromine Opportunity



Sampled the highest confirmed grade lithium brine in North America

644 mg/L
Average Concentration(1)

3.5+ years
Of Work Completed to Date

(1) Recent drilling has shown a range of lithium concentrations; October 25, 2023 news release.

Smackover Expansion Opportunity | East Texas

Targeting locations over optimal brine resources to secure a foothold for large-scale production.

Status: Confirming Resource

- Team of Smackover specialists have been working for the past 3.5 years to identify the most prospective areas to secure high-quality brine resources in East Texas
- Acquiring prospective brine rights in key project areas
- Acquired the rights to one existing well
- Samples collected to date were tested by third parties to confirm **lithium concentrations ranging from 298 to 806 mg/L,** with an average of **644 mg/L**(1) from three newly drilled wells
- To the understanding of management, these are the **highest tested lithium brine concentrations in North America**
- Significant Potash and Bromine concentrations

(1) East Texas samples from October 25, 2023 news release.

Most Advantaged Lithium Projects in the US

US needs significant supply growth to meet forecasted demand, augmented by Inflation Reduction Act ("IRA")

- **IRA Requirements:** >40% of the value of critical minerals must be regionally sourced[1], increasing to 80% by 2027
- SLI's assets are adjacent to target lithium customers, simplifying logistics and reducing costs

SLI Assets Near End Market

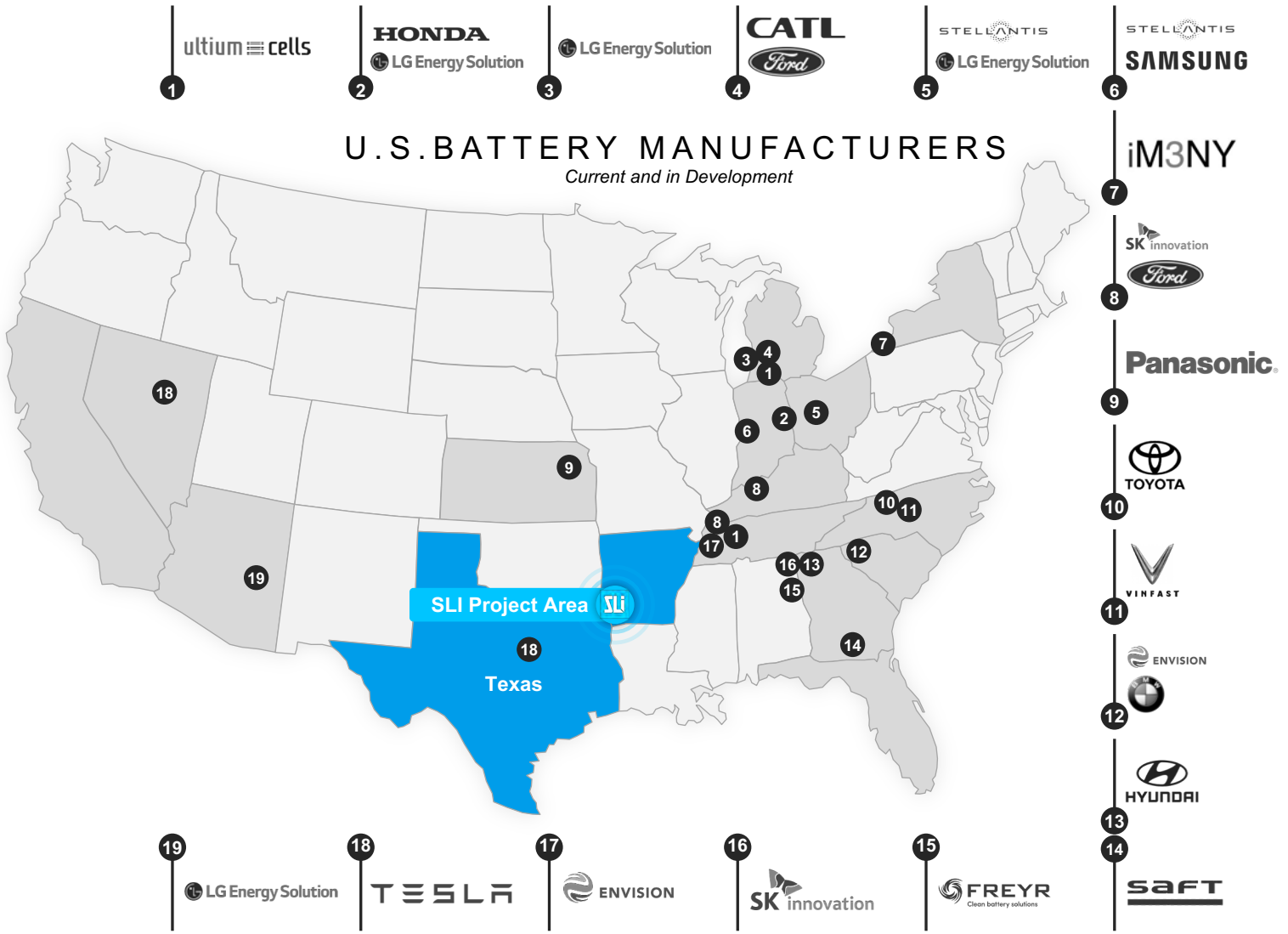
~100 Miles to TX

~700 Miles to TN

~1,000 Miles to MI

Current Supply Chain

20,000+ Nautical Miles to US Manufacturing [1]



(1) Extracted or processed in any country with which the US has a free trade agreement in effect, or to be recycled in North America.
(2) Assumes mining location in western South America or Australia, refining in China, cathode production in Korea, and OEM destination in the US.

Standard LITHIUM

Stakeholder Engagement & Sustainability

Stakeholder Engagement | Being a Good Neighbor

Building Together: Respectful Engagement and Benefits

Fostering EV-Friendly Communities

Standard Lithium proudly sponsors south Arkansas first downtown EV charging station at South Ark College Campus, with Governor Asa Hutchinson inaugurating the station by plugging in an electric vehicle

Unlocking Potential: STEM Education and Employment Training Initiatives

Empowering Futures: We support workforce development through the Catalyst program and inspire STEM education with employee volunteerism in our community.

Celebrating Together: Our Partnership in Local Festivities

Our sponsorship of local festivities, including music festivals, Santa visits, fireworks displays, and the Mayhaw festival, brings joy to our community

Sustainability | A Science Based Approach

- Leveraging innovative technologies like DLE for sustainable practises
- Utilizing real world data to understand and address our environmental footprint
- Exploring partnerships to enhance regional sustainability efforts
- Investing in innovative Carbon Capture technology

Sustainability | A Science Based Approach

SLI's 2022 investment in Aqualung Carbon Capture aligns with our science-based sustainability approach. The Aqualung technology is highly efficient, eco-friendly, and scalable, presenting an opportunity to implement it in our projects to reduce our carbon footprint

Standard LITHIUM $ aqualung

Addition of Aqualung technology has potential to capture for use or sequester significant volumes of CO_2

AQUALUNG TECHNOLOGY

Core membrane technology is the culmination of over 20 years of research from Norwegian University of Science and Technology

Technology has been demonstrated, both in lab and at pilot scale, to **accelerate decarbonization while mitigating carbon costs across value chains.**

SYNERGIES FOR STANDARD LITHIUM

- ✓ CO_2 sequestration technology integrates into existing brine reinjection process
- ✓ Sequestered CO_2 can generate revenue through carbon credit sales
- ✓ Reduces supply chain complexity and reduces reagent cost by utilizing project-sourced CO_2 for use as a reagent
- ✓ Opportunity exists for CO_2 sourced from large regional emitters to be permanently sequestered as part of normal brine reinjection activities

Partnerships

KOCH DISRUPTIVE TECHNOLOGIES

Formerly Koch Strategic Platforms

Koch Disruptive Technologies is a subsidiary of Koch Investments Group within Koch Industries ("Koch"). Koch is **one of the leading producers of petrochemicals and other industrial materials in the world**

- **$100M USD direct equity investment (US$7.42/sh)**
- Alignment with several Koch Industries business units: Koch Minerals and Trading, Koch Engineered Solutions, and Optimized Process Designs ("OPD")
- Phase 1A Front End Engineering Design ("FEED") and Definitive Feasibility Study ("DFS") awarded to Koch's internal engineering, procurement, and construction subsidiary
- Joint Development Agreement with Koch Technology Solutions ("KTS") collaborate on technology & process solutions for DLE commercialization including performance warranties to further derisk commercial development

LANXESS
Energizing Chemistry

LANXESS is a global specialty chemical company with 60+ chemical production sites. The three Arkansas brine facilities, acquired by LANXESS in 2017 have been in operation for six decades

- **Owner and operator of one of the largest commercial brine operations in south Arkansas**
- Memorandum of Understanding (MOU) in place for phased commercial lithium development across LANXESS Arkansas brine facilities
- Ability for Standard Lithium to utilize the existing permitted brine infrastructure and operations to expedite and de-risk project execution

Leveraging major strategic partnerships to de-risk and accelerate time to production

Standard Lithium is actively exploring additional strategic partnerships to further de-risk and expedite its commercial development strategy.

Future Growth Catalysts

MILESTONE

Operate Industrial Scale Demonstration Plant

Operated start-to-finish direct lithium extraction process at demonstration plant for over three years. Produced >99.9% purity battery-grade lithium carbonate using fully integrated process.

MILESTONE

Secured Right Strategic Investor

Received Koch Industries $100mm direct investment, while initiating relationships with several other Koch divisions including Koch Engineering Solutions, Koch Minerals and Trading, and Koch Technology Solutions

MILESTONE

East Texas Portfolio Expansion

Significantly expands resource beyond Arkansas into the East Texas Smackover region and sampled, to the best of its knowledge, the highest confirmed lithium grade brine in North America (806 mg/L)

MILESTONE

JDA with Koch Technology Solutions ("KTS")

Signed joint development agreement with KTS to develop and commercialize an integrated lithium brine processing flowsheets for SLI's exclusive use in the Smackover Formation (KTS providing select performance guarantees)

MILESTONE

Completion of PFS for SWA

Reported the completion of PFS for SWA Project showing robust economics and a larger resource

MILESTONE

Completion of DFS for Lanxess Phase 1A

Reported the completion of the DFS for Phase 1A Project showing strong economics and an upgraded measured resource

MILESTONE

East Texas Produces Promising Results

Samples collected to date were tested by third parties to confirm lithium concentrations ranging from 298 to 806 mg/L, with an average of 644 mg/L[(1)] from three newly drilled wells

CATALYST

Secure Project Financing

Standard Lithium has retained BNP Paribas to lead debt advisory services for the first commercial project, Phase 1A

CATALYST

Explore Non-Dilutive Funding

Actively explore opportunities within the U.S. Critical Minerals initiatives and the Inflation Reduction Act

CATALYST

Phase 1A Construction and SWA DFS

Initiation of Phase 1A construction, positioning the company as a near-term producer and initiate DFS for SWA Project

CATALYST

Secure Additional Partnerships

Standard Lithium is actively seeking and evaluating potential strategic partners for project development expertise and potential offtake contracts

CATALYST

Texas Expansion

Standard Lithium to continue adding Texas leases to build a significant resource in an extremely high lithium concentration area

(1) East Texas samples from March 23, 2023 and October 10, 2023 and October 25, 2023 press releases.

Why Standard Lithium?

Right Projects, Right Place, Right Time

Meeting U.S. Lithium Needs and Targeting a Growing Addressable Market

Committed to addressing the growing domestic demand, our projects stand out by reinforcing U.S. green energy strategies with the unmatched advantage of robust stakeholder support which is a distinctive feature not commonly found in U.S. projects

North America's Premier Lithium Brine Resource

Brownfield pilot plant located on existing brine operation with over 3-year runtime, completed DFS, established infrastructure, minimal permits, performance warranties and social license to operate

Leading U.S. Lithium Production Strengthened by Strategic Partnerships

Commercial projects in the Smackover Formation set the standard for new and sustainable U.S. produced lithium supported by key partnerships

Phased Development Strategy

Through phased stages of expansion, we ensure responsible and efficient capital deployment. Each stage focuses on de-risking and growth, utilizing a replicable Direct Lithium Extraction ("DLE") process tailored for the Smackover brines

Experienced and Proven Leadership Team

Our leadership team brings extensive experience from a wide spectrum of industries, offering diverse expertise and a track record of successful project execution

Standard LITHIUM

Appendix

Board of Directors & Advisors

The Board of Directors comprises Robert Mintak, CEO and Andy Robinson, COO and President of Standard Lithium, along with:

ROBERT CROSS
Non-exec Chairman

An engineer with 25 years of experience as a company builder. He co-founded and serves as Chairman of B2Gold, which will achieve over one million ounces of low-cost gold production in 2022. Mr. Cross has an Engineering Degree from the University of Waterloo (1982) and received an MBA from Harvard.

JEFF BARBER
Independent Director

Jeff is a CFA charter holder and holds a master's degree in Finance and Economics from the University of Alberta. He has extensive capital market experience as an investment banker with both Canaccord Genuity and Raymond James and an economist at Deloitte.

DR. VOLKER BERL
Independent Director

Former Head of a Process Development Laboratory at BASF AG, Germany where he built the Fine Chemical Division's pharmaceutical contract manufacturing business. Holds an M.B.A. from Concordia University and completed a postdoctoral chemistry fellowship at Stanford University before earning his Ph.D. in Strasbourg.

ANCA RUSU
Independent Director

Anca Rusu is a strategic leader with 20+ years of experience in global energy capital projects. Formerly a Special Advisor at Shell, she helped reposition the Projects organization for the energy transition. She held key roles, including VP for Safety and Environment Excellence and VP for Projects at Shell Chemical Appalachia. Anca serves on the National Board of the Project Management Association of Canada and advises Moss Lake Partners LP. She holds a Professional Engineer Designation, an MBA from York University, and a BSc in Chemical and Mechanical Engineering.

ANTHONY ALVARO
Director

Anthony has over two decades capital markets experience that included roles within wealth management, corporate finance, institutional sales, M&A, venture capital and private equity. To date, Anthony Alvaro has helped a number of companies across multiple industry sectors raise in excess of $500 million in aggregate.

CLAUDIA DORAZIO
Independent Director

Claudia D'Orazio, CPA, is an accomplished executive with diverse leadership experience in industries such as oil and gas, energy, mining, audit, and finance. She serves as the Vice President and Chief HR & Tech Officer at Centerra Gold Inc. Previously, she held leadership roles at Pembina Pipeline Corporation. With a CPA designation and a B.Com in Accounting and MIS from McGill University, she's also a board member at the Canadian Mineral Industry Education Foundation.

Strategic Advisors

Standard Lithium's strategic advisor representatives are comprised of an accomplished list of industry professionals.

DAVID PARK

David Park brings over 28 years of extensive experience in the energy and industrial sectors to his role as an adviser. As a former President of Koch Strategic Platforms and Senior Vice President at Georgia-Pacific, LLC, he possesses a remarkable track record in strategy, business development, and acquisitions. With academic qualifications in economics from renowned institutions, Mr. Park offers a blend of industry expertise and academic rigor to our advisory team.

PROF. JASON HEIN

Professor Jason Hein is a distinguished expert with a solid foundation in both chemistry and engineering, boasting a robust academic background. He stands at the forefront of the AI and robotics realm, particularly in the context of reaction optimization. Driven by an unwavering commitment to innovation, his contributions at Standard Lithium seamlessly blend academic excellence with cutting-edge technology, making groundbreaking strides in the industry.

PROF. BARRY SHARPLESS

Professor Barry Sharpless is a world-renowned chemist and recipient of 2 Nobel Prizes, celebrated for his groundbreaking work in the field of chemistry. His exceptional expertise and contributions to catalysis and click chemistry have paved the way for significant advancements in various industries. His advisory role at Standard Lithium brings invaluable insights and innovation to the forefront of our projects.

CRAIG BROWN

Craig Brown, a highly regarded hydrometallurgical expert with 45+ years' experience, is renowned for his pioneering work in ion exchange technology. His contributions span industries, he holds numerous patents and publications. Combining technical prowess with extensive business acumen. A University of Toronto graduate, enriches Standard Lithium's advisory team, bringing a wealth of industry knowledge.

DR. RON MOLNAR

Dr. Ron Molnar, Director of Technical Services at Amplus LLC, is a distinguished metallurgical engineer with a career spanning over three decades. With a Bachelor's in Engineering (Metallurgy) from McGill University and a Ph.D. in Metallurgy from Imperial College, London, he excels in hydrometallurgy. His expertise encompasses solvent extraction, ion exchange, pilot plant design, and data analysis, making him a valuable asset to Standard Lithium.

DR. MIKE DRY

Dr. Mike Dry, a seasoned metallurgical engineer, brings over two decades of expertise in hydrometallurgy and chemical engineering. With a Ph.D. from Imperial College, London, and extensive experience in process modeling, data reconciliation, and process optimization, he is a valuable addition to Standard Lithium's advisory team, focusing on sustainable solutions and resource efficiency.

Glossary Terms

BQ	Battery Quality
DFS	Definitive Feasibility Study
DLE	Direct Lithium Extraction
DPA	Defense Production Act
FEED	Front-End Engineering and Design
IRA	Inflation Reduction Act
LCE	Lithium Carbonate Equivalent
Li_2CO_3	Lithium Carbonate
LiCl	Lithium Chloride
LiOH	Lithium Hydroxide
LiSTR	Lithium Stirred Tank Reactor
LSTK	Lump Sum Turn-Key
OPD	Optimized Process Designs LLC
PFS	Preliminary Feasibility Study
SiFT	Select inline Flow Technology

NYSE : SLI | TSX.V : SLI | FSE : 5LI

Leading a new era of **responsible lithium production** in America

SCIENCE • SCALE • SPEED

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