

ARIANNE PHOSPHATE EXPLORING THE USE OF PHOSPHATE IN HYDROGEN-BASED TECHNOLOGIES

-Company is working with the University of Quebec at Three-Rivers in the use of phosphate in electrolyzers and energy cells

DAN: TSX-V (Canada)

JE9N: FSE (Germany)

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SAGUENAY, QC, Dec. 15, 2021 /CNW Telbec/ - **Arianne Phosphate (the "Company" or "Arianne")** (TSXV: DAN) (OTC: DRRSF) (FRANKFURT: JE9N), a development-stage phosphate mining company, advancing its Lac à Paul project in Quebec's Saguenay-Lac-Saint-Jean region, is pleased to announce that it is working with the University of Quebec at Three-Rivers ("UQTR") to assess the use of Arianne's high-purity phosphate concentrate in electrolyzers that produce hydrogen for use in hydrogen fuel cells.

UQTR's work is focusing on designs around the proton exchange membrane ("PEM") within electrolyzers that produce hydrogen for use in fuel cells. Currently, electrolyzers have three main challenges for mass production: performance, durability and cost. The current research centers on the use of phosphate-based materials in the components of the electrolyser and would address these challenges. Phosphate does allow for greater ionic conductivity and will optimize hydrogen production. Heading this work will be Dr. Samaneh Shahgaldi, an Associate Professor and Canadian Research Chair at UQTR and, Adjunct Associate Professor at the University of Waterloo. Dr. Shahgaldi has also served in industrial and commercial roles, acting as Senior Research Scientist at Cummins/Hydrogenics.

"Although early in the process, electrolyzers, as well as our recently announced work with LFP batteries, continues to demonstrate the increasing demands for phosphate beyond the agricultural sector," said Brian Ostroff, President of Arianne Phosphate. "Arianne's high-purity phosphate is ideal to meet the world's growing demand for phosphate as it very well-suited for applications of all sorts; from fertilizer to advanced energy applications. Further, with the project located in Quebec, Canada, it addresses many offtakers' concerns around security of supply; an issue that has, and continues to, affect the global availability of phosphate."

In partnering with UQTR and Dr. Shahgaldi, Arianne continues its involvement with groups looking to use high-purity phosphate for specialty applications. Green hydrogen production is an industry that the Province of Quebec believes has a bright future and, the Government recently announced that it is currently assessing plans to move the industry forward.

Similarly, with regards to lithium-iron-phosphate ("LFP") batteries, Quebec has been aggressively backing initiatives to be a major center for materials, technology, and production, having initiated discussions with many industry players. Aside from this separate initiative involving electrolyzers for hydrogen fuel cells, Arianne announced last month ([see Press Release dated November 3, 2021](#)) that it is currently testing its high-purity phosphate concentrate to meet battery-grade specifications for LFP battery production.

As well, Arianne today has announced a grant of 595,000 stock options to members of the Board of Directors. Each Option entitles the holder to purchase one common share of the Company until December 14, 2031 at a price of \$0.41 per share, this being the closing price of the Company's shares on the trading day preceding the date of the grant. The Options are subject to a vesting

period and are also subject to regulatory approval.

Qualified Person

Raphael Gaudreault, eng. Qualified Person by NI 43-101, has approved this release. Mr. Gaudreault is also the Company's Chief Operating Officer.

About Arianne Phosphate

Arianne Phosphate ("Arianne Phosphate Inc.") (www.arianne-inc.com) is developing the Lac à Paul phosphate deposits located approximately 200 km north of the Saguenay/Lac St. Jean area of Quebec, Canada. These deposits will produce a high-quality igneous apatite concentrate grading 39% P₂O₅ with little or no contaminants (Feasibility Study released in 2013). The Company has 185,464,469 shares outstanding.

Neither TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

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Cautionary Statements Regarding Forward Looking Information

This news release contains "forward-looking statements" and "forward-looking information" within the meaning of applicable securities regulations in Canada and the United States (collectively, "forward-looking information"). Forward-looking information includes, but is not limited to, anticipated quality and production of the apatite concentrate at the Lac à Paul project. Often, but not always, forward-looking information can be identified by the use of words such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes", or the negatives thereof or variations of such words and phrases or statements that certain actions, events or results "may", "could", "would", "might", or "will" be taken, occur or be achieved. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to: volatile stock price; risks related to changes in commodity prices; sources and cost of power facilities; the estimation of initial and sustaining capital requirements; the estimation of labour and operating costs; the general global markets and economic conditions; the risk associated with exploration, development and operations of mineral deposits; the estimation of mineral reserves and resources; the risks associated with uninsurable risks arising during the course of exploration, development and production; risks associated with currency fluctuations; environmental risks; competition faced in securing experienced personnel; access to adequate infrastructure to support mining, processing, development and exploration activities; the risks associated with changes in the mining regulatory regime governing the Company; completion of the environmental assessment process; risks related to regulatory and permitting delays; risks related to potential conflicts of interest; the reliance on key personnel; financing, capitalization and liquidity risks including the risk that the financing necessary to fund continued exploration and development activities at Lac à Paul project may not be available on satisfactory terms, or at all; the risk of potential dilution through the issue of common shares; the risk of

litigation. Forward-looking information is based on assumptions management believes to be reasonable at the time such statements are made, including but not limited to, continued exploration activities, no material adverse change in commodity prices, exploration and development plans proceeding in accordance with plans and such plans achieving their stated expected outcomes, receipt of required regulatory approvals, and such other assumptions and factors as set out herein. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in the forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such forward-looking information. Accordingly, readers should not place undue reliance on forward-looking information. Forward-looking information is made as of the date of this press release, and the Company does not undertake to update such forward-looking information except in accordance with applicable securities laws.

SOURCE Arianne Phosphate Inc.

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For further information: Source : Raphael Gaudreault, COO., Tél. : 418-549-7316, raphael.gaudreault@arianne-inc.com; Info: Brian Ostroff, President, Tel.: 514-908-4202, brian.ostroff@arianne-inc.com

CO: Arianne Phosphate Inc.

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