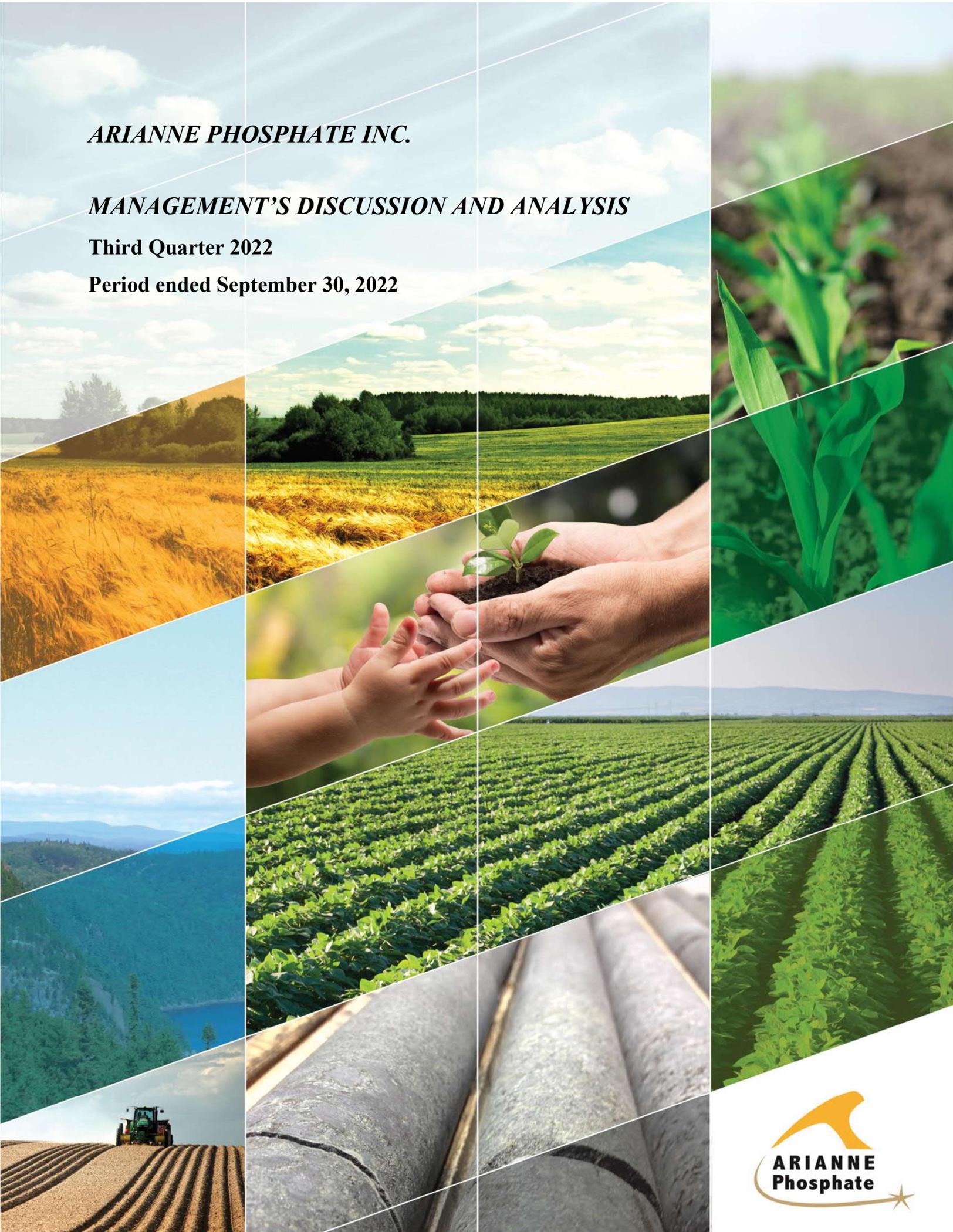


***ARIANNE PHOSPHATE INC.***

***MANAGEMENT'S DISCUSSION AND ANALYSIS***

**Third Quarter 2022**

**Period ended September 30, 2022**



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This Management's Discussion and Analysis ("MD&A") presents an analysis of the financial situation and operations of Arianne Phosphate Inc. ("Arianne" or the "Company") for the period ended September 30, 2022. This report was prepared in compliance with the provisions of Form 51-102, approved by the Board of Directors and dated November 22, 2022. It should be read in conjunction with the unaudited condensed interim consolidated financial statements for the three and nine-month periods ended September 30, 2022, (the "financial statements") and the consolidated audited financial statements for the years ended December 31, 2021, and 2020.

The Company's consolidated financial statements have been prepared in accordance with the International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board applicable to the preparation of interim financial statements, including International Accounting Standard ("IAS") 34, *Interim Financial Reporting*. All monetary amounts included in this MD&A are expressed in Canadian dollars, the Company's reporting and functional currency, unless otherwise noted.

The accounting policies followed in the financial statements are consistent with those applied in the Company's annual financial statements for the year ended December 31, 2021, and, where required, in Note 2 of the unaudited condensed interim consolidated financial statements for the three and nine-month periods ended September 30, 2022.

Raphael Gaudreault, mining engineer, chief operating officer of Arianne, qualified person under NI 43-101, has reviewed the following technical disclosure.

Further information regarding the Corporation and its operations are filed electronically on the System for Electronic Document Analysis and Retrieval (SEDAR) in Canada and can be found on [www.sedar.com](http://www.sedar.com).

### **FORWARD-LOOKING INFORMATION**

Certain statements in this MD&A about our current and future plans, expectations and intentions, results, levels of activity, performance, goals or achievements, or any other future events or developments constitute forward-looking statements. The words "may", "will", "would", "should", "could", "expects", "plans", "intends", "trends", "indications", "anticipates", "believes", "likely", "predicts", "estimates" or "potential" or the negative or other variations of these words or other comparable words or phrases, are intended to identify forward-looking statements. Specific forward-looking statements in this MD&A include, but are not limited to, statements with respect to the general development of the business and the eventual start of commercial production and to the liquidity position of the Company. Forward-looking statements are based on information currently available to us and on estimates and assumptions made by us regarding, among other things, general economic conditions and the mining industry in general, in light of our experience and perception of historical trends, current conditions and expected future developments, as well as other factors that we believe are appropriate and reasonable in the circumstances. Although reasonable, the statements can entail known and unknown risks and uncertainties and, accordingly, actual results and future events could differ materially from those anticipated in such statements.

Arianne ensures to comply with all relevant environmental and social laws, regulations and permits in all material respects.

## DESCRIPTION OF THE BUSINESS

Arianne is a company focused on the development of the Lac à Paul phosphate project (Lac à Paul) located in the Saguenay-Lac-St-Jean area, in the province of Quebec. The Company's shares are listed on the TSX Venture Exchange (symbol DAN), on the Frankfurt exchange (symbol JE9N) and on the US Stock Exchange Over-the-Counter (OTC) (symbol DRRSF). The registered office of the Company is located at 393 Racine Street East, Suite 200, Chicoutimi, Québec, Canada G7H 1T2.

## HIGHLIGHTS

- In October 2022, Arianne appointed Ms Geneviève Ayotte as the Company's CFO. Ms Ayotte replaced Pier-Elise Hébert-Tremblay who had held the position since February 2021.
- On September 22, 2022, the Company's shares began trading on the OTCQX under the symbol DRRSF. Upgrading to the OTCQX Market is an important step for Arianne, seeking to provide transparent trading for their U.S. investors.
- In June 2022, the Company announced that it has received positive results from tests that confirm its high-purity phosphate concentrate can be used in the production of technical grade phosphoric acid used in the production of batteries. These tests were designed to confirm that Arianne meets specifications provided by a producer of lithium-based batteries and performed through an independent facility specializing in the production of purified phosphoric acid. The lithium-iron-phosphate battery ("LFP") has emerged as a leading technology in batteries. Many automotive companies are currently or have already announced plans to use LFPs in their cars, following that of many Chinese companies. As well, beyond the automotive market, many industry analysts view the LFP battery as playing a key role in the energy storage market, a market that could exceed automotive demands and continue to drive demand for these battery materials such as phosphate.
- In June 2022, Arianne appointed Mr. Michael Gentile as a strategic advisor to the Company. Mr. Gentile's role will be to advise the Board on matters regarding capital markets and its discussions with potential financial partners and investors. Mr. Gentile has also purchased 4 million shares of Arianne Phosphate in the open market and secured an option, from a private investor, allowing him to purchase an additional 2 million shares at \$0.75 for a period of 18 months.
- In May 2022, the Company announced that it successfully tested an enhanced process that will allow the Company to optimize its high-purity phosphate concentrate for specific end markets. Working with Corem, Arianne produced both a low MER (minor element ratio) and higher MER phosphate concentrate using high intensity magnetic separation. The results demonstrated that Arianne's phosphate concentrate can be further optimized to meet target markets with an easy addition to the process flowsheet. The low MER material is of interest to those looking for specialty phosphate applications, such as high-purity acid used in lithium-iron-phosphate ("LFP") batteries while, the higher MER concentrate would be of interest for direct application fertilizers, as it would be higher in beneficial micronutrients such as iron.
- In April 2022, Arianne entered into a collaboration with Northern Nutrients of Saskatchewan, Canada to advance the use of its high-purity phosphate concentrate in alternatively derived fertilizers. The

benefits of this work would result in the ability to integrate the Company's phosphate concentrate directly into fertilizers without having to first transform it through acidulation.

- On April 1, 2022, the Company issued 4,166,096 common shares at a price of \$0.512 per share, in lieu of cash, as its annual interest payment to Mercury Financing Corp. as at, March 31, 2022. The Company has elected to pay in common shares with these securities issued being subject to a hold period that ended August 2, 2022.
- In February 2022, Arianne initiated a research program in collaboration with the Environmental and Biotechnology Research Group of the Riviere-de-Loup Cegep aimed at the development of a new breed of fertilizers using organic waste and Arianne's high-purity, low-contaminant phosphate concentrate.

## OPERATIONAL REVIEW AND HISTORY

Although 85% of the world's phosphate production is used in fertilizer, there is a growing demand from other specialty applications. Due to the nature of Arianne Phosphate's deposit, it allows the Company to produce a very high-purity, low-contaminant phosphate concentrate that can be used for other applications, as well as, for fertilizer. Arianne has been active in pursuing several opportunities that would allow its product a greater potential customer base.

### **Lithium-Iron-Phosphate (LFP) battery**

Over the last several years, the LFP battery has been gaining greater penetration among certain segments of the automotive industry with, several large companies increasing the number of vehicles using these batteries. A constraint on some of the current battery technologies has been the ability to source both an ample and safe supply of the necessary materials to produce these batteries, a challenge that is impacting the industry. In the case of LFP batteries, both iron and phosphate are easier to source and, should provide for the substantial growth that is expected to come over the next few years.

Arianne's high-purity concentrate could work across a wide spectrum of needs, from fertilizer through to more advanced applications. Based on further tests, LFP could provide a new potential market. As with the fertilizer industry, which is now suffering significant supply disruptions, Arianne's location in a safe geopolitical environment provides security of supply for those looking to source their phosphate

Arianne received positive results from tests that confirm its high-purity phosphate concentrate can be used in the production of technical grade phosphoric acid used in the production of batteries. These tests were designed to confirm that Arianne meets specifications provided by a producer of lithium-based batteries and performed through an independent facility specializing in the production of purified phosphoric acid.

### **Direct application**

Arianne is working with Riviere-du-Loup Cegep on the development of a new breed of fertilizers using organic waste and Arianne's high-purity, low-contaminant phosphate concentrate.

Arianne is also working with Northern Nutrients of Saskatchewan and has provided its phosphate concentrate to be combined into Northern Nutrient's proprietary fertilizer compositions to derive a multi-nutrient fertilizer

that can be directly applied to the farmer's field. Testing of this new and proprietary fertilizer occurred over the summer and the Company is waiting for the results.

Currently, the industry practice is to take mined phosphate concentrate and ship it to a phosphoric acid facility. There, it is combined with sulphuric acid and other ingredients to make 'downstream' phosphate-based fertilizers such as MAP and DAP. By working with both research and commercial organizations, Arianne is looking at ways to alter the traditional process and combine its concentrate with organic waste or other bacteria that would allow its phosphate concentrate to effectively be used in farming without the requirement of traditional acidulated fertilizer products.

For the agricultural industry, it could allow the farmer the ability to move away from acid-based processes and, by integrating with organic waste, allow for a more circular and environmentally friendly process. Logistically, it would also allow Arianne to be less reliant on downstream facilities to purchase its phosphate and transform it into fertilizers.

### **Hydrogen-based technology**

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.

Arianne Phosphate is working with the Université du Québec à Trois-Rivières 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").

### **Off-take agreements**

In September and December 2018, the Company announced the formal execution of two off-take agreements. Under the terms of those agreements, the buyers have entered into long-term contracts to purchase Arianne's high-purity phosphate concentrate which will be shipped to the buyers' processing plant for further processing into downstream phosphate products. The off-take agreements also have a mechanism whereby it can be extended beyond the initial contract period and applies pricing that accounts for the high quality of Arianne's concentrate. The Company is conducting ongoing discussion and negotiations with addition potential customers and off-takers.

At the end of 2021 and beginning of 2022, Arianne had extended the existing offtake agreements, which demonstrates the interest of the market in our rock and the support we receive from our future clients.

## **PHOSPHATE INDUSTRY TRENDS**

The ongoing conflict between Russia and Ukraine has disrupted the supply of many commodities from Russia and has created huge implications for the fertilizer market. Russia is a very large producer and exporter of various fertilizers, including phosphate. The Lac à Paul project can offer a domestic supply for North America, as well as export to other areas globally. This continues to highlight the importance of a safe geopolitical jurisdiction.

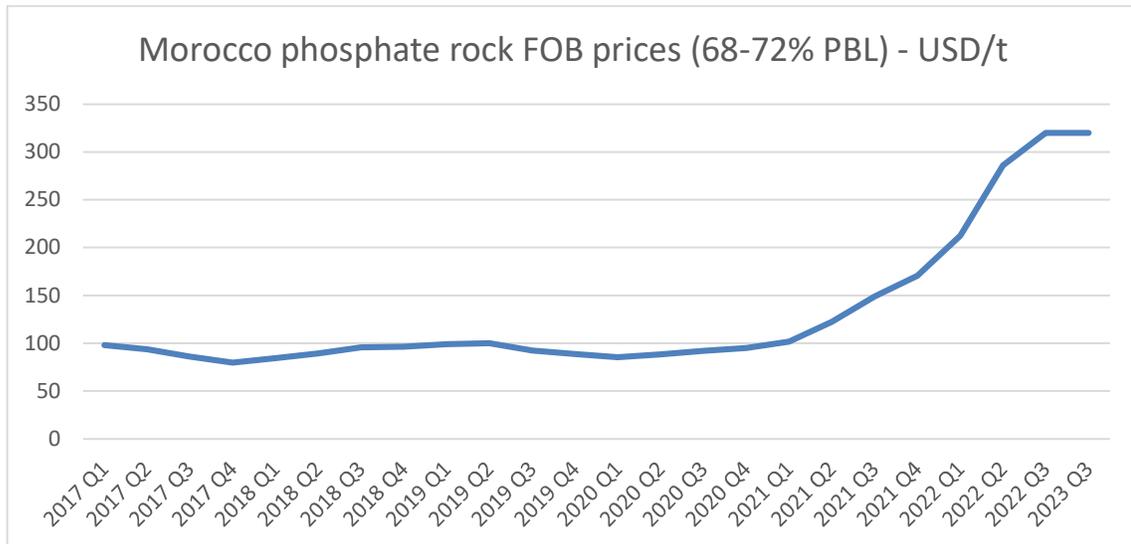
Global demand for phosphate is expected to increase over the medium and long term due to global population growth and a shift in dietary habits towards more protein-rich foods.

Within this context, the Lac à Paul project can satisfy a portion of this growing demand and provide a reliable and secure supply of high-quality phosphate rock.

Phosphate has no substitute and is a key component essential to life. It helps root development and drought resistance in plants.

Phosphate purchasers (potential customers) are concerned with the security of supplies and are aware of the beneficial geopolitical situation regarding the region where the mine is located. The Lac à Paul project is located in a politically stable mining-friendly jurisdiction. As well, as a result of European legislation and environmental issues in North America, there has been a growing awareness surrounding the nature of the phosphate concentrate that is used in the production of fertilizer and other applications. Due to these growing concerns, the interest in higher purity phosphate rock, such as Arianne's, is projected to increase. Supply has also been constrained by China's export ban on phosphate fertilizers and now, the restriction on exports from Russia. Further, recent events surrounding the COVID-19 virus should continue to focus attention on both the food chain and supply chain and thus, the attractiveness of the Lac à Paul project.

Since the beginning of 2021, the market for fertilizer has seen many disturbances. This is reflected on the pricing of the phosphate rock which had been increasing significantly since the beginning of 2021.



Source: CRU

## FINANCIAL POSITION ANALYSIS

As at September 30, 2022, total assets were \$66,861,561 compared to \$67,853,084 as at December 31, 2021. The primary reason for the decrease is the cash dedicated to operating activities.

Current assets of \$3,850,705 as at September 30, 2022 have decreased from \$5,243,870 as at December 31, 2021. This decrease is the result of cash used in operating and investing activities.

Current liabilities of \$2,289,914 as at September 30, 2022 have decreased from \$2,456,663 as at December 31, 2021, mainly due to the decrease in accounts payable and accrued liabilities.

### **CASHFLOWS, LIQUIDITY AND CAPITAL MANAGEMENT**

As at September 30, 2022, the Company had a working capital of \$1,560,791. Management believes that it has sufficient funds to maintain the status of its current obligations and keep its properties in good standing, to pay its ongoing general and administrative expenses, development expenditures and to meet its liabilities, obligations and existing commitments beyond the ensuing 12 months as they fall due. In assessing whether the going concern assumption is appropriate, management takes into account all available information about the future. To continue the Company's future operations and fund its development expenditures, the Company will periodically need to raise additional funds, which may be completed in a number of ways, including, but not limited to, the issuance of new equity, debt financing or securing capital from potential partners. While management has been successful in securing financing in the past, there can be no assurance that it will be able to do so in the future or that these sources of funding or initiatives will be available to the Company or that they will be available on terms which are acceptable to the Company.

Cash flows provided by (used in)	Period ended September 30, 2022 \$	Period ended September 30, 2021 \$
Operating activities	(1,098,363)	(1,487,978)
Investment activities	(478,692)	737,901
Financing activities	173,702	5,540,375
Increase (decrease) in cash and cash equivalents	(1,403,623)	4,790,298

#### **Operating activities**

For the period ended September 30, 2022, cash outflow from operating activities totalled \$1.1M, while there were outflows of \$1.5M for the same period in 2021. The operating activities are lower than 2021, mostly explained by the professional fees paid in 2021 regarding the extension of the credit line, the conversion of the loans and working capital facility.

#### **Investment activities**

For the period ended September 30, 2022, cash outflow from investing activities was \$0.5M, whereas \$0.7M was received in the comparative period, both reflecting costs capitalized for property, plant and equipment. The difference is the reception of \$0.9M in tax credit proceeds for the period ended September 30, 2021.

#### **Financing activities**

For the period ended September 30, 2022, \$0.2M of cash inflow was provided by the issuance of shares from exercise of broker warrants. For the period ended September 30, 2021, \$5.7M of cash inflow was provided by the issuance of shares from private placement and \$0.4M of cash inflow was provided by the issuance of shares from warrants exercise, offset by \$0.5M of share insurance expenses.

## FINANCING

### Working capital

The working capital was \$1,560,791 on September 30, 2022, compared to \$2,787,207 on December 31, 2021. The working capital as at Q3 2022 is lower than as at December 31, 2021 as cash has been spent on operating and investing activities since the last financing of 2021.

### SUMMARY OF QUARTERLY RESULTS

	December 31, 2020	March 31, 2021 (a)	June 30, 2021	September 30, 2021	December 31, 2021	March 31, 2022	June 30, 2022	September 30, 2022
Net loss	(1,666,391)	(4,396,059)	(1,506,590)	(1,158,719)	(1,768,745)	(1,359,798)	(1,929,889)	(1,300,448)
Basic and diluted loss per share	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)

For each quarter in fiscal 2022 and 2021, the information contained in the summary of quarterly results is presented in accordance with IFRS. Amounts in this table are presented in Canadian dollars which is also the functional currency.

- (a) During the first quarter of 2021, the Company extended its credit line and converted loans into shares, resulting in an additional loss on conversion of \$3.5M.

### SUMMARY OF FINANCIAL ACTIVITIES FOR THE THREE-MONTH PERIOD ENDED SEPTEMBER 30, 2022

The net loss for the three-month period ended September 30, 2022, was \$1,300,448 compared to a net loss of \$1,158,719 for the three-month period ended September 30, 2021. This is the result of an increase in share-based compensation and communication expenses and an increase of the finance costs.

### SUMMARY OF FINANCIAL ACTIVITIES FOR THE NINE-MONTH PERIOD ENDED SEPTEMBER 30, 2022

The net loss for the nine-month period ended September 30, 2022, was \$4,590,135 compared to a net loss of \$7,061,371 for the nine-month period ended September 30, 2021. The operating loss in 2022 of \$1,397,895 was higher compared to \$1,197,786 in 2021 because of increases in share-based compensation costs and communication expenses, offset by a decrease in professional and consultant fees relating to the negotiation of the credit line extension and loans conversion that occurred in 2021.

As at September 30, 2021 the Company had restructured its debts and the interest rate on the remaining debt had decrease from 15% to 8%, which explains the finance costs reduction from \$5,747,526 to \$3,093,123. In 2021, it also contained a loss of \$3.5M on conversion of loans in shares.

### **RELATED PARTY TRANSACTIONS**

During the three-month period ended September 30, 2022, Windermere Capital ceased to be a related party to the Company, as the president of Arianne, Brian Ostroff, left Windermere.

### **OFF BALANCE SHEET ARRANGEMENTS**

As of the date of this MD&A, the Company does not have any off-balance sheet arrangements that have, or are reasonably likely to have, a current or future effect on the results of operations or financial condition of the Company, including, and without limitation, such considerations as liquidity and capital resources.

### **APPLICATION OF NEW IFRS AND CRITICAL ACCOUNTING ESTIMATES**

Refer to note 2 in the condensed interim consolidated financial statements for the three and nine-month periods ended September 30, 2022 and notes 2, 3 and 4 in the Company's audited financial statements for the year ended December 31, 2021.

### **INFORMATION ON SHARES OUTSTANDING**

As at November 22, 2022, 190,187,348 common shares are issued and outstanding. There are 7,089,000 stock options, 43,364,125 warrants and 250,717 broker warrants outstanding.

(s) Raphael Gaudreault  
Raphael Gaudreault  
Chief Operating Officer

(s) Geneviève Ayotte  
Geneviève Ayotte, CPA  
Chief Financial Officer

## **Board of Directors and Officers**

**Dominique Bouchard**, Executive Chairman of the Board of Director

**Jeffrey Beck**, Chief Executive Officer and Director

**Brian Ostroff**, Director and President

**Jim Cowley**, Director

**Steven L. Pinney**, Director

**Siva J. Pillay**, Director

**Marco Gagnon**, Director

**Claude Lafleur**, Director

**Raphael Gaudreault**, Chief Operating Officer

**Geneviève Ayotte**, Chief Financial Officer

## **Ticker symbols**

DAN: TSX-V (Canada)

JE9N: FSE (Germany)

DRRSF: OTC (USA)

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