



## MANAGEMENT'S DISCUSSION AND ANALYSIS FOR THE YEAR ENDED DECEMBER 31, 2022

*The following management's discussion and analysis ("MD&A") of financial results is dated May 1, 2023 and reviews the business of BacTech Environmental Corporation (the "Company" or "BacTech"), for the year ended December 31, 2022, and should be read in conjunction with the accompanying annual consolidated financial statements and related notes for the year ended December 31, 2022. This MD&A and the accompanying annual consolidated financial statements and related notes for the year ended December 31, 2022 have been reviewed by the Company's Audit Committee and approved by the Company's Board of Directors.*

*This MD&A contains certain forward-looking statements, such as statements regarding potential mineralization, resources and research results, and future plans and objectives of the Company, that are subject to various risks and uncertainties. There can be no assurance that such statements will prove to be accurate, and actual results and future events could differ materially from those anticipated in such statements. Readers are cautioned not to place undue reliance on these forward-looking statements. Forward-looking statements contained herein are made as of the date of this MD&A and the Company disclaims, other than as required by law, any obligation to update any forward-looking statements whether because of new information, results, future events, circumstances, or if management's estimates or opinions should change, or otherwise.*

### **A. Core Business Strategy**

BacTech Environmental Corporation was incorporated by REBgold Corporation ("REBgold" and formerly known as BacTech Mining Corporation) on October 5, 2010 under the *Canada Business Corporations Act*. Through the completion of the Plan of Arrangement, the Company was granted a perpetual, exclusive, royalty free license to use a bioleaching technology ("BACOX") in the remediation business for mining wastes and was listed on what is today the Canadian Stock Exchange under the symbol "BAC".

The BACOX technology utilizes bacteria to liberate precious and base metals and has been traditionally used to treat difficult-to-treat sulphide ores and concentrates. The business plan for the Company is to apply the bioleaching technology to the treatment of concentrates produced by gold mines and reclamation projects to remove harmful elements such as arsenic and sulphur from the environment, where this can be assisted by a positive cash flow from metal recovery. Examples of metals which can be extracted include gold, silver, cobalt, nickel, copper, uranium, and zinc.

Bioleaching is an environmentally friendly process technology for treating difficult-to-treat sulphide ores and concentrates. By replacing smelting and/or roasting with a bioleach process, the production of sulphur dioxide emissions, which is the primary source of acid rain, and arsenic trioxide are eliminated. In addition, the removal of sulphide minerals from tailings compounds reduces the chance of

acid rock drainage into the local environment. Furthermore, the capital and operating costs of a bioleach facility are significantly less when compared to other existing treatment methods.

## **B. Mineral Processing**

### **Tenguel, Ecuador**

BacTech has identified the Ponce Enriquez area of southern Ecuador as an area where the Company's bioleaching technology can be successfully deployed for environmental processing of locally produced concentrates from mining and tailings reclamation. Given the high levels of arsenic contained in the ore from the area, miners receive significantly reduced prices for their concentrates due to penalties applied by the buyers. The buyers tend to be from Asia where concentrates are shipped for conventional smelting and/or roasting. In October 2021, the Chinese government imposed a 13% tax on the import of high arsenic/gold concentrates. The purchasers of concentrates in the Ponce Enriquez market have subsequently passed on this cost to the producer reducing what they pay the miner to roughly 50% of the contained gold values. The concentrates are subject to a 3% export royalty on the gold value payable by the miner to the Government of Ecuador. BacTech believes that by implementing an in-country bioleach solution it can offer superior pricing for these concentrates to the local producers, better payment terms, provide domestic Ecuadorian employment opportunities. It should be noted that the final arsenical product resulting from bioleaching, ferric arsenate, is a US Environmental Protection Agency approved land-fillable form of arsenic.

### **Feasibility Study for Tenguel**

On December 16, 2021, BacTech announced and released the executive summary results of its 3<sup>rd</sup> party produced Bankable Feasibility Study ("BFS") for the staged development of its 100% owner-operated bioleaching facility in Tenguel, Ecuador ("TE"). The results point toward a very robust and economically compelling project with strong performance metrics.

South American mining and metallurgical engineering and development firm EPCM Consultores S.R.L. ("EPCMC") was engaged in July 2021 to undertake the independent feasibility study for the Company's proposed bioleach processing plant located in Tenguel, strategically situated for easy accessibility to Ponce Enriquez ("PE") mining operations. The BFS outlines process economics expectations and metrics pointing toward solid and long-term program viability, while considering associated capital and operating costs for the project.

On February 8, 2022, BacTech released updated executive summary results of its third party-produced bankable feasibility study (BFS-II) for the staged development of its 100-per-cent-owner-operated bioleaching facility in Ponce Enriquez (PE), Ecuador. BFS economics have been updated to reflect improved optimization works allowing an increased throughput and improved average gold head grade. All dollar figures are in U.S. dollars unless otherwise indicated. This press release updates the results reported in the December 16, 2021 press release. The latest estimates are reflected in the data that follow:

### Updated key economic highlights:

- Pre-tax net present value (NPV) with 5-per-cent discount rate of \$60.7 million (up 29.4 per cent from \$46.9 million);
- Pre-tax internal rate of return (IRR) of 57.9 per cent (up from 48 per cent);
- Annual gold production of 30,900 ounces (up 19 per cent from 25,900 ounces);
- Capital cost of \$17.0 million (increased from \$15.5 million);
- Bioleach operating cost of \$212 per tonne;
- Assumed purchase prices of concentrate -- 65 per cent of the contained gold value;
- Pre-tax earnings prior to employee bonus -- \$10.9 million (up from \$8.94 million);
- Estimated local employee bonus pool -- \$1.64 million;
- Payback (75-per-cent debt) -- two years.
- All calculations above are based on a gold price of US\$1600 per oz.
- At current price of gold at US\$2000 per oz, anticipated after tax earnings are \$14.9M

The feasibility study contemplates the purchase of concentrates, high in both arsenic and gold levels, from mines located in the Ponce Enriquez area of SW Ecuador. In total, there are over 100 small mines operating in the area. BacTech intends to return local miner compensation back to previous payment levels, prior to a sweeping price reduction imposed by Chinese buyers due to recent import levies on arsenic/gold concentrates entering China.

The Company has acquired 100-acre parcel of land to be used for the operations in Tenguel which formally closed in September 2022. The 100-acre farm contains a commercial cocoa trees plantation. Given the first phase of the project will only make use of 20-acres, it was decided that the current employees of the farm will be offered the opportunity to continue to grow and harvest cocoa and sell the output for their own account. Once the expansion is undertaken all the workers will be offered positions in the expanded facility.

### **Next Steps for Tenguel**

Using the flow sheet developed by the BFS, the final piece of this phase of the project would be detailed engineering. It is our intent to rely heavily on the designs from previous plants that BacTech has built which addressed material with very similar mineralogical structure.

We estimate that the cost to get the project to a “shovel ready” state will be approximately US\$800,000. The actual budget for construction, procurement and material is estimated to be \$US 17M with a 20% variance, based on costs from past projects. The detailed engineering will allow the company to reduce the variance in the budget. The estimated time to complete the pre-construction studies is approximately 12 months. At the end of this process BacTech will actively pursue contractual concentrate feeds from local sources and quite possibly from neighboring countries such as Peru. Once the Company successfully completes the initial plant, it is conceivable we will attract enough feed to exceed the plant’s capacity. The current output from the Ponce Enriquez area is estimated to be 200-250 tpd of gold/arsenic concentrates. This could lead to a straight-forward expansion as BacTech’s plants are modular in design.

### **Permitting**

On October 3, 2022, the Company announced that it had received official ESIA (Environmental and Social Impact Assessment) approval from the Ministry of Environment, Water, and Ecological Transition. This key approval marks a significant milestone with the process taking approximately seven months.

BacTech will now pursue the final community consultation phase, pending further government direction, in order to secure its Environmental License and associated permit approvals for the construction of the Tenguel bioleaching plant. There have been considerable delays on the part of the Ministry of Environment to release the new format for a consultation permit. The consultation permit is the final permit needed by the Company. BacTech remains in close contact with the Ministry of Environment, Water and Ecological Transition as well as the Ministry of Energy and Mines, who are together preparing the community consultation guidelines. The company will continue to work closely with the regulatory authorities, local communities and all other stakeholders to ensure a collaborative agreement.

## **Other Projects**

The Company continues to evaluate other projects in South America and Central America.

### East Africa

On April 26, 2021, the Company announced that it has executed a strategic Memorandum of Understanding (“MOU”) with Curatio Gold Limited (“Curatio”) to source refractory ores for processing from Eastern Africa. Curatio was recently established to provide funding to support improved metallurgical processing, with the goal of eliminating the dangerous and environmentally unfriendly use of mercury for gold liberation. The group will initially focus its efforts in East Africa on an active Artisanal and Small-scale mining (“ASM”) industry. The principal founders of Curatio have many years of technical mining expertise and are well versed in supporting small and medium-sized businesses in Africa. Curatio CEO Doug Ramsey, R.P.Bio., is a biologist with expertise in environmental mercury concerns and four decades of experience in solving mining related environmental issues. Prior to founding Curatio with Mark Francis, Doug was CEO and VP Sustainability with a junior miner and a consultant to industry and government

## **Research and Development – Patent Development**

### Treatment for Pyrrhotite

The Company announced on May 18, 2022 that Dr. [Nadia Mykytczuk](#), a leader in biomining technology academia and a member of BacTech’s advisory board and Interim CEO and President of MIRARCO Mining Innovation, is leading the development and building of a bioleach pilot plant to be located in Sudbury, Canada. Working closely with BacTech’s scientific team, the pilot plant is for testing the Company’s proposed approach to bioleaching pyrrhotite materials. The pilot plant will simulate a commercial bioleach process consisting of a cascade of reactors operating on a continuous basis. The plant will also include front and back-end equipment operating as separate units for capturing additional revenue sources beyond nickel-cobalt (e.g., elemental sulphur; iron as feed for steel making and oxidised residue conversion for construction materials).

On April 7, 2022, BacTech announced it had filed a provisional patent application documenting its proposed approach to bioleaching pyrrhotite materials. Pyrrhotite is a very volatile sulphide mineral containing nickel and cobalt values that oxidizes rapidly and produces large amounts of iron and sulphur components as by-products which are typically considered as wastes.

Current activities include developing and designing the process for the bench scale testing utilizing BacTech’s existing reactors used in the initial testing of the BacTech’s Tenguel project. Pyrrhotite concentrates for the project have been identified and collected from the Sudbury region for the testing. The bench scale testing is expected to start before year end and should be completed in 2023.

The design of the proposed pilot plant will be based on the bench scale testing. Funding of the pilot plant is expected to be co-funded by BacTech, government grants and/or interested third party groups.

#### Treatment of Rare Earth Elements

The Company announced on January 18, 2022, that it will investigate the use of bioleaching as a tool in liberating Rare Earth Elements (“REEs”).

Interest in the potential use of bioleaching for the metallurgical extraction of REEs has risen in recent months, with media reports that the US is actively seeking steps to end dependency on imports of key metals and minerals from China. REEs are classified as strategic elements by the US government, and the Pentagon has issued a Request for Tender to explore bioleaching opportunities with the goal of establishing a domestic industry and providing REE supply stability. REEs are deemed essential for everything from US national security and energy transition delivery plans, to maintaining supply chain continuity for medical and consumer technologies along with many other everyday products.

Conventional REE processing typically uses harsh chemical environments of concentrated acids or alkalis at high temperatures to extract REEs from a broad variety of minerals. By comparison, the use of bioleaching has potential advantages as the complex nature of REE minerals provides multiple target sites for microbial activity to release metals of value including REE. Bioleaching also represents a more natural and environmentally acceptable processing alternative to conventional processing. Conceptual downstream treatment of REE solutions produced by bioleaching would be similar to existing downstream operations involving separation and purification of individual elements from the liquor. Bioleaching is therefore being proposed as replacing only a current step of leach extraction in an REE flowsheet.

BacTech fully acknowledges that bioleach processing may not be appropriate to all REE projects due to differences in mineralogy, but believes the momentum and interest to pursue environmentally responsible processing alternatives warrants further exploration. As a first objective, BacTech will source materials from REE projects with mineralogy believed to be most amenable to bioleach processing. Positive results from such work would lead to more detailed testing of downstream processing solutions in order to demonstrate proof of concept to specific REE projects.

### **C. Selected Annual Information**

The following table presents selected financial information in Canadian dollars (\$), for each of the three most recently completed financial years and has been prepared in accordance with International Financial Reporting Standards (“IFRS”).

	<b>2022</b>	<b>2021</b>	<b>2020</b>
	<b>\$</b>	<b>\$</b>	<b>\$</b>
Gain from forgiveness of debt	Nil	Nil	1,219,674
Gain from debenture conversion	Nil	Nil	163,162
Net income (loss) for the year	(3,370,855)	(1,596,395)	861,145
Net income (loss) per share	(0.02)	(0.01)	0.01
Total assets <sup>(1)</sup>	1,137,688	234,969	33,673
Total current liabilities	2,906,889	1,471,031	2,653,880

<sup>(1)</sup>The Company does not capitalize any of its developmental expenditures notwithstanding that they may have enduring value in future operations.

In fiscal 2022, the rise in total assets was the result of the land acquisition for \$980,564. The land will be used for the future site of the facility in Ecuador. The rise of the current liabilities is directly due to the costs incurred for the development of the Ecuador project that remained unpaid at year end.

In fiscal 2021, the Company reached agreements with 83.1% of its current debenture and loan holders to convert \$642,500 of the Company's outstanding debt and \$557,585 accrued interest into 12,000,854 Units, comprised as above. Each Unit, priced at \$0.10 per Unit, is comprised of one common share and one common share purchase warrant in the capital of the Company. Through additional and separate transactions, the Company repaid additional debentures totaling \$100,000 in principal and \$27,300 accrued interest.

In fiscal 2020, certain officers and a consultant of the Company forgave the debts owing to them totalling \$1,219,674 from accrued salaries and management fees effective June 30, 2020. As a result, no salaries or fees were earned in the six months ended June 30, 2020 and all related debts owing to them from accrued salaries from previous years in the amount of \$1,219,674 were written down to \$Nil and resulted in a gain from forgiveness of debt for the year ended December 31, 2020. In addition, during 2020, a total of \$287,000 of debentures and related accrued interest of \$120,480 were settled through the issuance of common shares of the Company. From these two transactions, involving the forgiveness debt for salaries and wages owing and the settlement of debentures and interest payable, the outstanding total current liabilities have been significantly reduced.

#### **D. Results of Operations**

This analysis of the results of the Company's operations should be read in conjunction with the Company's annual consolidated financial statements for the year ended December 31, 2022.

##### **Revenues**

The Company has no revenue or sources of recurring revenues.

##### **Operating and Administrative Costs**

Operating and administrative expenses increased to \$2,242,994 for the year ended December 31, 2022 from \$1,115,435 last year. Significant components of this expense include:

1. Salaries and management fees increased to \$618,637 for the year ended December 31, 2022 from \$178,509 last year. These costs are for the salaries and management fees incurred directly in managing and operating the business of the Company. The main reason for the significant increase in the management fees is from the hiring of a Chief Operation Officer (COO) at the start of the first quarter of 2022 and the hiring of a country manager in Ecuador. The mandate for the COO is manage the building and development of the Ecuador facilities.
2. Share-based payments, as explained in note 11 to the annual consolidated financial statements, were \$400,187 for the year ended December 31, 2022 and \$398,300 for year ended December 31, 2021. Yearly fluctuations in stock option expense are dependent on several factors including, but not limited to, number of options issued, valuation of options, vesting period and timing. For the year ended December 31, 2022, there were 4,800,000 options granted. For the year ended December 31, 2021, the Company granted 4,100,000 options.
3. Professional fees increased to \$497,628 for the year ended December 31, 2022 from \$322,907 last year. The increase in professional fees is due to an increase in activity pursuing the

development of the Ecuador project. These expenses are indirect expenses for legal, strategic advisory, and consulting and not included in project costs.

4. Travel costs increased to \$109,442 for the year ended December 31, 2022, from \$32,356 last year. For Fiscal 2021, the travel expenditures were reduced and kept to a minimum because of the current COVID 19 pandemic. With the easing of the travel restrictions, travel expenditures have increased and are solely focused on Ecuador project in the current period; and
5. Shareholder information and filing fees expenses increased to \$477,977 for the year ended December 31, 2022, from \$135,865 last year. This type of expense was reduced, starting in fiscal 2019, and the trend had continued until mid 2021. Starting in mid 2021 and continuing into the current period, additional expenditures have been incurred to update the company video in multiple languages, update and improve the website, improve distribution of news flow to international, including European and South American investors, and attending conferences and trade shows, and engaging in newsletter writers. The Company is now listed on the OTCQBB and the costs to be listed on the exchange are reflected in this item.

### **Project Expenditures**

The project expenditures are all related to the Ecuador project and include additional bioleaching test work and trade off studies, feasibility study, fees, and consultant costs for permitting which is now 90% complete and the detailed engineering work which is now 90% complete.

### **Finance Charges and Debentures**

Finance charges are made up of interest charged by suppliers and vendors, loans payable and the debentures payable.

Between April 19, 2017, and September 26, 2017, BacTech completed three tranches of a debenture financing for gross proceeds of \$445,000. This debenture included bonus interest in the form of common shares. This debenture has generated interest expense of \$12,000 and accretion expense of \$NIL for the year ended December 31, 2022. The remaining principal portion of these debentures is \$100,000 as of December 31, 2022.

On April 25, 2022, BacTech completed a debenture financing for gross proceeds of \$1,000,000. This debenture has generated interest expense of \$53,333 and accretion expense of \$97,174 for the year ended December 31, 2022.

### **Cash Flow Comparison**

Cash flow from financing activities: For the year ended December 31, 2022, the Company completed three equity private placements for gross proceeds of \$2,166,200, one debenture financing for gross proceeds of \$1,000,000 and from the exercise of warrant received proceeds of \$252,663.

Cash flow from operating activities: This represents the cash paid for overhead expenditures and project expenditures. These payments were financed from the sources of cash in financing activities.

Cash flow from investing activities: The land acquisition shows the cash used to acquire a parcel of land in Ecuador for \$980,564. This is the full capital cost of purchasing the land for the future site of the facility in Ecuador.

## **E. Liquidity and Capital Resources**

At December 31, 2022, the Company had cash of \$10,148 and a working capital deficit of \$1,769,201.

Subsequent to year end on March 27, 2023, BacTech announced the closing of the first tranche for \$732,000 in gross proceeds of its recently announced financing on March 13, 2023 for a \$1.0 million equity financing.

Subsequent to year end on March 14, 2023, BacTech announced the closing of a \$250,000 Convertible Debenture with an existing strategic investor who previously completed a \$1.0 million convertible debenture on April 21, 2022.

On December 9, 2022, the Company completed a private placement for gross proceeds of \$56,200 through the issuance of 851,515 Units. Each Unit, priced at \$0.66 per Unit, is comprised of one common share and one common share purchase warrant in the capital of the Company. Each whole Warrant entitles the holder to acquire one additional common share in the capital of the Company at a price of \$0.132 for a period of two years from the date the Units are issued. If, during the exercise period of the Warrants, the Company's shares trade at \$0.15 per share or higher for a period of 10 consecutive trading days.

On April 21, 2022, the Company announced that it had completed \$1.0 million debenture with an existing strategic investor. The terms of the convertible debentures call for a conversion at \$0.15 per share, an annual interest rate of 8% and a term of 18 months. Net cash proceeds of the debenture were \$940,000.

On February 28, 2022, the Company closed the first tranche of its previously announced financing for gross proceeds of \$1.21 million through the issuance of 6,050,000 Units at a price of \$0.20 per Unit. On May 5, 2022, the Company completed the second tranche of the non-brokered private placement for gross proceeds of \$900,000 through the issuance of 4,500,000 Units. The total financing under this private placement from the two tranches is \$2,110,000. The issue price of the Units was \$0.20 per unit. Units are comprised of (i) one common share, (ii) one transferable common share purchase warrant (each whole warrant entitles the holder to acquire one additional common share at a price of \$0.30 per warrant for a period of twenty-four months from the date of closing), and (iii) a Royalty Certificate representing the Royalty Incentive. If the holder of the warrant exercises the warrant in the first six months, they will participate in an additional royalty to be issued by the Company. Only the people who exercise the warrant would participate in the new royalty to be issued.

On November 1, 2021, BacTech announced that it had reached agreements with 83.1% of its current debenture and loan payable holders to convert \$642,500 of the Company's outstanding debt and \$557,585 accrued interest into 12,000,854 Units. Each Unit, priced at \$0.10 per Unit, is comprised of one common share and one common share purchase warrant, exercisable at \$0.20 for two years, in the capital of the Company.

On October 15, 2021, BacTech announced it had closed its previously announced private placement for gross proceeds of \$331,250 through the issue of 3,312,500 Units. Each Unit, priced at \$0.10 per Unit, is comprised of one common share and one common share purchase warrant in the capital of the Company.

During the year ended December 31, 2021, a total of 1,800,000 common share stock options were exercised at various prices providing gross proceeds of \$140,000 to the Company. Furthermore, a total of 11,631,157 common share purchase warrants were exercised providing gross proceeds of \$581,559 to the Company.



On February 2, 2021, BacTech announced the closing of the second round of financing using the Regulation “A” exemption. In this round the Company raised US\$94,500 (\$121,577) at US\$0.015 per share through the issuance of 6,300,000 common shares.

On February 5, 2021, BacTech announced that it closed the previously announced, non-brokered private placement. A total of \$153,500 was raised through the issuance of 5,116,666 common shares priced at \$0.03 per share. Four insiders of BacTech participated in this financing for a total of \$39,000 resulting in the issuance of 1,300,000 common shares.

<b>Share Capital</b>	<b>December 31, 2022</b>		<b>December 31, 2021</b>	
	<b>Number of shares</b>	<b>\$ Amount</b>	<b>Number of shares</b>	<b>\$ Amount</b>
Balance, beginning of period	157,755,559	7,830,802	116,914,372	5,787,147
Shares issued from private placements	6,050,000	1,210,000	5,116,666	153,500
Shares issued from private placements	4,500,000	900,000	3,312,500	175,600
Shares issued from private placements	851,515	56,200	-	-
Shares issued from Reg A financing	-	-	6,300,000	121,557
Shares issued from debenture conversion	-	-	680,000	71,400
Shares pursuant to exercise of warrants and options	5,053,260	252,663	13,431,167	721,559
Shares issued for repayment of debentures and Loans payable	-	-	12,000,854	632,425
Fair value of warrants and options	-	108,018	-	184,725
Less share issue costs				
Fair value of warrants and debenture instruments	-	(799,477)	-	-
Share issue costs	-	(195,520)	-	(17,111)
<b>Balance, end of period</b>	<b>174,210,334</b>	<b>9,362,686</b>	<b>157,755,559</b>	<b>7,830,802</b>

For a description of the outstanding warrants and stock options that are outstanding to purchase common shares of the Company, please refer to Note 9 - Share Capital, Note 10 – Warrant Reserve, and Note 11 – Stock Options of the annual consolidated financial statements.

## F. Quarterly Information

Selected quarterly information for the most recently completed quarter is presented below in Canadian currency (\$), and in accordance with International Financial Reporting Standards.

	2022				2021			
	Q4 \$000's	Q3 \$000's	Q2 \$000's	Q1 \$000's	Q4 \$000's	Q3 \$000's	Q2 \$000's	Q1 \$000's
Ecuador Direct project Expenditures	(529)	(152)	(163)	(110)	(97)	(39)	(41)	(31)
Net Loss for the period	(1,313)	(792)	(715)	(550)	(519)	(427)	(252)	(398)
Loss per share (0.00)	(0.01)	(0.005)	(0.005)	0.00	0.00	(0.005)	0.00	(0.005)

## G. Fourth Quarter

The trend in increasing administrative and project related expenses continued through the fourth quarter as the Company continued to advance the project in Ecuador. In the fourth quarter of 2022 part of the increase in net loss was attributed to share based payments reported was \$271,500 and increase in project expenditures.

## H. Off-Balance Sheet Arrangements

The Company had no off-balance sheet arrangements as of December 31, 2022.

## I. Financial Instruments

The Company has not entered any specialized financial arrangements to minimize its investment risk, currency risk or commodity risk.

## J. Outlook

With the breakout of war between Ukraine and Russia, global equity markets have become extremely volatile., The resource sector has relatively fallen from favour with investors making capital raising in the sector more difficult than it has traditionally been for junior companies in the resource sector and in the remediation and reclamation of mine waste and tailings. There can be no assurance that the Company will be successful in attracting either new financing or new opportunities to apply its technology.

## K. Risks

The Company's strategy emphasizes developing projects to leverage its intellectual property to create shareholder value. This strategy has required, and continues to require, significant financings, and is subject to risks associated with mineral prices, mineral resources, and operations. Due to the nature of the Company's business, the present stage of development of its projects, and the constraints placed upon the Company's ability to move forward by its current liquidity situation, readers should carefully review and consider the financial, environmental and operational risk factors affecting the Company.

### **Need for Additional Financing**

The Company currently has no source of operating cash flow, and there is no assurance that additional funding will be available to the Company as and when needed for further assessment and evaluation, as well as development of its projects, or to fulfill its obligations to its existing creditors. Volatile markets may make it difficult or impossible for the Company to obtain adequate debt or equity financing in the future, or on terms acceptable to the Company. The failure to obtain additional financing could force the Company to liquidate its assets to satisfy creditor claims.

### **Dependence on Management**

The Company's business and operations are dependent on recruiting and retaining the services of a small number of key members of management and qualified personnel. The success of the operations and activities of the Company are dependent, to a significant extent, on the efforts and abilities of the management of the Company. Investors must be willing to rely, to a significant extent, on the discretion and judgment of the management of the Company. Furthermore, while the Company believes that it will be successful in attracting qualified personnel and retaining its current management team, there can be no assurance of such success. The Company does not maintain key employee insurance on any of its employees.

### **Competition**

The Company competes with other engineering companies for the acquisition of mineral rich mine tailings and mine waste that can be developed economically. The Company competes with other engineering companies that have greater financial and technical resources and experience. Such competition may result in the Company being unable to acquire desired properties, to recruit or retain qualified employees, or to acquire the capital necessary to fund its operations and develop its properties. The inability of the Company to compete with other engineering companies for these resources would have a material adverse effect on the Company's results of operations and business.

Currently, the Company's bioleaching technology does not operate in an overly competitive marketplace; however, the Company anticipates that it may face increased competition in the future, as advanced technologies become available. While management believes that the Company's technology is more advanced, commercially proven and better situated than its competitors, there can be no assurance that the Company will be able to effectively compete with companies who have or may develop similar technologies and may possess greater financial resources and technical facilities. Competitive pressures, or the inability of the Company to successfully license its technology on terms that are acceptable, may have a material adverse effect on the Company's business, operating results and financial condition.

### **Protection of Intellectual Property Rights**

The Company is dependent not only on its ability to protect its intellectual property rights, but also upon the protection of rights of third parties from which it may license intellectual property rights. The Company currently holds patent rights and has pending patent applications. In addition, the Company relies upon certain other technologies, ideas; know how, secrets or other information, which it may not be able to protect. Notwithstanding precautions the Company may take to protect its rights, third parties may copy or obtain and use the Company's proprietary and licensed or optioned technologies, ideas, know how, secrets and other proprietary information without authorization or independently develop technologies similar or superior to the Company's proprietary and licensed or optioned technologies. The Company enters confidentiality and restriction on use agreements with its employees, strategic partners, and others; however, these agreements may not provide meaningful protection of the Company's proprietary and licensed or optioned technologies or other intellectual property in the event of unauthorized use or disclosure. Policing unauthorized use of such technologies and intellectual property is extremely difficult, and the cost of enforcing the Company's rights through litigation may be prohibitive. Further, the laws of

jurisdictions other than Canada and the United States may not provide meaningful protection of the intellectual property rights of the Company and such third parties.

### **Obtaining and Enforcing Patents**

The patent positions of technology firms, including the Company, are generally uncertain and involve complex legal and factual questions. The Company's success in utilizing and licensing its bioleaching technology will depend, in part, on its ability to obtain, enforce and maintain patent protection for its technology worldwide. The Company cannot be assured that patents will issue from any pending applications or that claims now or in the future allowed under issued patents will be sufficiently broad to protect its technology. In addition, no assurance can be given that any patents issued to or licensed by the Company will not be challenged, invalidated, infringed, or circumvented, or that the rights granted thereunder will provide continuing competitive advantages to the Company. Furthermore, there is no assurance that the patents of others will not impede the ability of the Company to do business or that others will not independently develop similar products or technologies, duplicate any of the Company's products or technologies or, if patents are issued and licensed to the Company, design around the Company's patented product or technology.

Accordingly, the Company may not be able to obtain and enforce effective patents to protect its proprietary rights from use by competitors, and the patents of other parties could require the Company to stop using or pay to use certain intellectual property, and as such, the Company's competitive position and profitability could suffer as a result.

### **Claims of Infringement of Proprietary Rights of Others**

The Company is not currently aware of any claims asserted by third parties that the Company's intellectual property infringes on their intellectual property. However, in the future, third parties may assert a claim that the Company infringes on their intellectual property. As a result, there is a risk that the Company, or one or more of its licensors, may become subject to litigation alleging that the products or technologies of the Company or its licensors infringe on the proprietary rights of third parties. Whether or not the products or technologies infringe on the proprietary rights of third parties, the Company or such licensors could incur significant expenses in defending allegations of infringement of proprietary rights. Further, the Company or such licensors may be required to modify their products or obtain licenses for intellectual property rights because of any alleged proprietary infringement which may not be achievable on commercially reasonable terms, in a timely manner, or at all, any of which could adversely affect the Company's business revenue, results from operations and financial condition.

### **Conflicts of Interest**

Certain of the Company's directors and officers may serve as directors or officers of other reporting companies, companies providing services to the Company, or companies in which they may have significant shareholdings. To the extent that such other companies may participate in ventures in which the Company may participate, the directors of the Company may have a conflict of interest in negotiating and concluding terms respecting the extent of such participation. If such a conflict of interest arises at a meeting of the Company's directors, a director who has such a conflict will abstain from voting for or against the approval of such participation or such terms.

From time to time, several companies may participate in the acquisition, assessment and evaluation, and development of mineral reclamation properties, thereby allowing for the participation in larger programs, permitting involvement in a greater number of programs and reducing financial exposure in respect of any one program. It may also occur that a particular company will assign all or a portion of its interest in a particular program to another of these companies due to the financial position of the company making the assignment. In accordance with the laws of Canada, the directors of the Company are required to act honestly, in good faith and in the best interests of the Company. In determining whether the Company

will participate in a program and the interest therein to be acquired by it, the directors will primarily consider the degree of risk to which the Company may be exposed and its financial position at the time.

**L. Related Party Transactions**

Please refer to Note 7 of the annual consolidated financial statements for the year ended December 31, 2022.

**M. Other MD&A Requirements**

Additional information related to the Company is filed electronically on the System for Electronic Document Analysis and Retrieval (SEDAR) at [www.sedar.com](http://www.sedar.com).