



(Expressed in thousands of Canadian dollars, except per share amounts or unless stated otherwise)

#### INTRODUCTION & BACKGROUND

This management's discussion and analysis dated as of August 10, 2023 (this "MD&A") of the financial condition and results of operations of Sigma Lithium Corporation ("Sigma" or the "Company") constitutes management's review of the factors that affected the Company's financial and operating performance for the three months ended March 31, 2023 and 2022. This MD&A should be read in conjunction with the audited annual financial statements of the Company for the years ended December 31, 2022 and 2021 together with the notes thereto, and the unaudited condensed interim financial statements for the three months ended March 31, 2023 and 2022, together with the notes thereto. Results are reported in Canadian dollars, unless otherwise noted.

The Company's financial statements and the financial information contained in this MD&A are prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board. In the opinion of management, all adjustments (which consist only of normal recurring adjustments) considered necessary for a fair presentation have been included. Information contained herein is presented as of August 10, 2023, unless otherwise indicated.

Unless inconsistent with the context, references in this MD&A to the "Company" or "Sigma" are references to the Company and its subsidiaries.

The Company's registered office is Suite 2200, 885 West Georgia Street, Vancouver, British Columbia, Canada, V6C 3E8. The Company's common shares ("Common Shares") trade under the symbol "SGML" in the United States on Nasdaq and in Canada on the TSX Venture Exchange ("TSXV"). Additionally, Brazilian Depositary Receipts ("BDRs") trade under the symbol "S2GM34" in Brazil on the B3 exchange.

Further information about the Company and its operations, including the financial statements referred to above and the Company's annual information form, is available on the Company's website at <a href="www.sigmalithium.ca">www.sigmalithium.ca</a>, at <a href="www.sec.gov">www.sec.gov</a> (EDGAR).

The information herein should be read in conjunction with the technical report titled "Grota do Cirilo Lithium Project Araçuaí and Itinga Regions, Minas Gerais, Brazil, Amended & Restated Technical Report dated June 12, 2023, and with an effective date of October 31, 2022 for the resource and reserve estimates in such report (the "Restated Technical Report").

The Restated Technical Report includes information about the Company's wholly-owned Grota do Cirilo lithium project (the "Project") in Brazil, such as: (i) the mineral reserve and resource estimates for the Xuxa deposit ("Phase 1"), the Barreiro deposit ("Phase 2") and the Nezinho do Chicão deposit ("Phase 3" and together with Phase 2, "Phase 2 & 3"); (ii) the results of the updated feasibility study on Phase 1 (the "Phase 1 FS"); and (iii) the results of the preliminary feasibility study on Phase 2 & 3 PFS").

Readers should note that the Company has not yet reported or announced a production decision in respect of Phase 2 & 3. The Company expects that it will assess the results of a feasibility study for Phase 2 & 3 before making such production decision. All statements regarding mine development or production in respect of Phase 2 & 3 in this MD&A are expressly qualified by this statement.

Readers should refer to and carefully consider the sections below titled "Risk Factors", "Cautionary Note Regarding Forward-Looking Information" and "Cautionary Note Regarding Mineral Reserve and Mineral Resource Estimates".

#### **OUR BUSINESS**

Sigma is a Canadian-incorporated lithium company focused on commencing commercial production for Phase 1 and evaluating the construction of Phase 2 & 3 of the Project. The Project is what is expected to be one of the largest hard rock lithium operations in the Americas, located in the municipalities of Araçuaí and Itinga in the northeastern part of the state of Minas Gerais, Brazil. The Company owns 100% of the Project indirectly through its wholly-owned subsidiary Sigma Mineração S.A. ("Sigma Brazil"). The Project area is comprised of 29 mineral rights (which include mining concessions, applications for mining concessions, exploration authorizations, applications for mineral exploration authorizations) spread over 185 km², which is located within the broader 19,000-hectare land package held by Sigma Brazil (containing the Grota do Cirilo, Sao Jose, Genipapo and Santa Clara properties).





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The Project is vertically integrated, with the Company's mining operations supplying spodumene bearing material to its lithium production and processing plant (the "Greentech Plant"). The Greentech Plant is designed to process 5.5% to 6.0% battery grade high purity lithium concentrate ("Green Lithium"), engineered to the specifications of the Company's customers in the rapidly expanding lithium-ion battery supply chain for electric vehicles ("EVs"), in an environmentally friendly way through a fully automated and digital dense medium separation ("DMS") technology process. The Greentech Plant was built after the completion of engineering to the level of FEL-3 stage precision by Primero Group Ltd. ("Primero") and extensive testing at the Company's on-site demonstration pilot plant, which has been in operation since late 2018.

As the Company's mission statement has been guided by adhering to the highest level of environmental, social and governance ("ESG") practices since inception in 2012, the Project is being developed in a sustainable way. Additionally, the Company is focused on social programs promoting sustainable development, inclusion (including on the Company's Board of Directors (the "Board")), and upskilling local people in the region where we operate. As a result, the Company has committed to the strategies outlined in Table 1 below, to advance the development of the Project in a responsible and sustainable way. The Company is proud to report that it has successfully delivered on its "net zero carbon" and "zero tailings" programs through the purchase of carbon credit "in-setting" and upcycling its Green Tailings (as described below), achieving "triple zero" production from the onset. Over the longer term, Sigma plans to further build upon its ESG commitments through more innovative programs including increasing its trucking fleet's fuel consumption to a target of approximately 50% biofuels.

Table 1: Summary of Sigma's ESG-Driven Decisions & Strategies

Governance & Diversity	Sustainable Development	Greentech Plant
CEO / Co- Chairpersons: 100% / 50% female	Phase 1 built as two pits to	Zero net carbon, tailings
Board Independence: 67%	preserve seasonal stream	and hazardous chemicals
Board Committees Chair Independence: 88%	Social programs / commitment to	Minimal water impact
Board Diversity: 33% female / LGBTQ representation	local hiring and training	100% green hydro power

Sigma is building the Project in a phased approach, with Phase 1 production at the Project successfully initiated in April 2023. Table 2 below highlights the results of the Phase 1 FS and Phase 2 & 3 PFS included in the Restated Technical Report. Phase 1 production of Green Lithium is anticipated to position the Company as a globally relevant Tier 1 lithium producer, with Phase 2 & 3 potentially tripling production (if a production decision is made by the Company following the completion of a feasibility study). The Greentech Plant is planned to potentially have two separate production lines, one for Phase 1 and one for Phase 2 & 3, which will have similar DMS processing flowsheets and will share certain common plant infrastructure.

Table 2: Highlights of the Phase 1 FS and Phase 2 & 3 PFS Included in the Restated Technical Report

Highlights @ 5.5% Lithium Oxide Concentration	Units	Phase 1	Phase 2 & 3	Phase 1, 2 & 3
Operating Life	(years)	8	12	13
Run-Rate Green Lithium Production	(tpa)	270,000	496,000	766,000
Run-Rate Lithium Carbonate Equivalent Production	(ktpa)	37	67	104
Total Cash Cost Excluding Royalties (@ Mine Gate)	(US\$/tonne)	\$281	\$292	\$289
All-In Sustaining Cost (CIF China)	(US\$/tonne)	\$541	\$516	\$523
After-Tax Net Present Value (@ 8% Discount Rate)	(US\$ Bn)	\$5.7	\$9.6	\$15.3
After-Tax Internal Rate of Return	(%)	1,282%	1,207%	1,273%
Payback Period	(months)	1.0	1.1	1.2

The Phase 1 of the Project will also produce low grade, high-purity, zero chemicals, approximately 1.3% lithium oxide (Li<sub>2</sub>O), hypofine by-products with material market value ("**Green Tailings**"), which Sigma is selling to strengthen its ESG-centric approach with a pioneering "zero tailings" environmental sustainability strategy, eliminating the environmental footprint of tailings with a positive ecosystem impact, while also generates an additional revenue stream to the company.





Going forward, Sigma plans to continue evaluating the Phase 2 & 3 expansion, with any formal production decision being subject to and following the completion of a feasibility study (including FEL-3 level estimates) and Phase 1 production ramp-up. Additionally, Sigma plans to continue all stages of exploration programs, focused on further increasing its mineral resource base and extending the Project's operating life.

Figure 1: General View of the Phase 1 Greentech Plant Producing "Triple Zero" Green Lithium



Figure 2: Sigma's Corporate Targets of Creating Value in a Sustainable Way

#### **Major Corporate Targets** Net Zero Carbon Emmissions / Zero Tailings Achieve Phase 1 Commercial Production Organic Production Growth hase 2 & 3) Potential for production to Expected in Q4-2023 (after first Net zero carbon / production in April 2023) commence in 2024 tailings to be upcycled Completed Planned In Progress Planned In Progress Completed Planned In Progress Completed

#### While Continuing to Build Our Sustainable Competitive Advantage





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## **PROJECT HIGHLIGHTS**

- Phase 1 production was successfully initiated in April 2023, after receiving the required operating license on March 31, 2023.
  - Crushing circuit commissioning completed on schedule in February 2023 after commencing in December 2022.
  - Operational DMS circuit achieved on schedule in April 2023 after commissioning commenced ahead of schedule in January 2023.
- Inaugural shipment of 15,000 tonnes of Green Lithium and 15,000 tonnes of Green Tailings to Yahua International Investment and Development Co., Ltd. ("Yahua") under the Yahua Offtake (as defined below) completed on July 27, 2023, with the company receiving revenue of approximately US\$3,500 per tonne and US\$350 per tonne, respectively.
- Construction workforce increased to more than 1,000 (approximately 40% comprised of Jequitinhonha Valley region community members where the Project is located), as activity continued to accelerate during the first quarter of 2023.
- Formal investment decision for the potential Phase 2 & 3 production expansion to approximately 766,000 tonnes per year expected to be made in the second half of 2023 after detailed engineering work is completed.
- Exploration work remains underway, targeting a further increase in the Company's total mineral resource estimate expected in the second half of 2023.

## **CORPORATE HIGHLIGHTS**

- Announced Board and management updates in January 2023 including Ana Cabral-Gardner remaining as Chief Executive Officer ("CEO") and Co-Chairperson of the Board.
- Announced an offtake transaction with Yahua for the delivery of 15,000 tonnes of Green Lithium along with a three-year agreement to ship 100% of its Green Tailings to Yahua (the "Yahua Offtake"). Through this transaction, Sigma obtained premium pricing for the sale of its Green Lithium at 9% of the lithium hydroxide index and delivered on its "zero tailings" strategy.
- Sigma Shareholders appointed Bechara S. Azar, Cesar Chicayban, Lucas Melo and Alexandre Rodrigues as Independent Directors of the Board as well as the reappointment of Ana Cabral-Gardner as a Director and Chairperson of the Board and Marcelo Paiva as a Director of the Board in June 2023.
- In July 2023, Sigma began trading its BDRs on B3 (the Brazilian Stock Exchange), which was an initiative of the B3 exchange itself in an effort to make the stock more accessible to Brazilian retail and institutional investors.

### **ESG HIGHLIGHTS**

- During an event focused on the women of the region on March 23, 2023, which was attended by the Governor of the State of Minas Gerais and his senior leadership team, the Company announced several updates to its ongoing social inclusion programs:
  - Zero Tailings Program: As discussed above, the Company delivered on its "zero tailings" program in May 2023 through the Yahua Offtake where the Company agreed to sell 100% of its Green Tailings for a period of up to three-years and continued to donate coarse gravel tailings generated from Green Lithium production to help pave local dirt roads in the Jequitinhonha Valley region.
  - Microcredit For Female Entrepreneurs Program: The Company announced the intention to expand
    its landmark microcredit program launched for female entrepreneurs of the Jequitinhonha Valley
    region where the Company operates. There are currently 1,632 female entrepreneurs enrolled in the





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program, with R\$2,000 to be loaned per person, and the goal is to achieve a total enrollment of 10,000 women with an additional investment of up to R\$20 million.

- Zero Drought for Small Holder Farmers Program: The Company is leading an ongoing project to
  construct up to 2,000 small basins for water collection in disadvantaged communities of the
  Jequitinhonha Valley, which will provide relief for the effects of dry season on plantations and livestock
  in such communities. As of the date of this MD&A, 506 water capture basins have been built in the
  Araçuaí municipality and 500 in the Itinga municipality.
- Water For All Program: Additionally, to further combat the impacts of water scarcity in the Jequitinhonha Valley region, the Company committed to donating up to 3,000 water tanks to residents located in the surrounding areas of the Greentech Plant. As of the date of this MD&A, 121 water tanks have been constructed.
- Combating Violence Against Women Program: The Company announced its plans to introduce a
  program, in partnership with the Justice Court of the state of Minas Gerais, targeting domestic abuse
  against women in the Jequitinhonha Valley region. This program advances the goals of United Nations
  Sustainable Development Goals ("UN SDGs") #5 (Gender Equality) and #11 (Sustainable Cities and
  Communities).
- Being a Child Program: During the second quarter of 2023, the Company committed to a number of
  initiatives to help foster sustainable development in the Poco Dantes community, including helping
  fund the renovation of the school in the community (benefiting approximately 30 children), constructing
  a bridge to increase connectivity to the larger towns of Araçuaí and Itinga and renovations to outdoor
  sports facilities.
- The Company is continuing its ongoing support for local employment with the continuation of the Homecoming Employment Program and Education Program for Mining Technicians. Approximately 40% of its 1,000+ person construction workforce is local to the region.
- The Company continues to support local communities with the ongoing Zero Hunger Action, providing approximately 3.6 million meals for those in need since initiation in 2021 (cumulative program total of up to 21,000 food baskets expected to be delivered through 2023).
- The Company remains committed to the environmentally responsible development of the Project which uses 100% dry stacking and clean energy usage in the form of hydroelectricity, water treatment & recycling.
- The Company advanced its environmental programs in 2022 and 2023 with 784 people from five different communities participating in environmental education programs, the Company's environmental management and supervision plan for responsible consumption and production being completed in the fourth quarter of 2022, and planting and vegetation monitoring program to preserve and nurture local flora and fauna (20,000 native seedlings acquired to date and an additional 20,000 expected to be acquired in Q4-2023).

## The Road to Net Zero

- On July 26, 2023, Sigma announced that it achieved operational net zero (carbon neutrality) for its first shipment of Green Lithium and Green Tailings by offsetting the remaining "hard to abate" carbon emitted during the production process both at its Phase 1 mine and Greentech Plant, achieving triple zero production (net zero carbon, zero tailings and zero hazardous chemicals).
- Sigma had a leading role at the following globally relevant conferences as an ongoing case study in "impact investing in the mining business" and "green battery metals":
  - Panelist and participant at the Future Minerals Forum in Riyadh in January 2023 (invited by the Kingdom of Saudi Arabia); and
  - Referenced as a case study at multiple panels and an active participant in the 2022 United Nations Climate Change Conference in Egypt in November 2022 ("COP27") (Sigma has been featured year after year since 2019 at COP25 in Madrid for the actions that have been implemented since inception).





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Multiple members of the senior management team hosted workshops on "Impact Investing in Mining." CEO and Co-Chairperson Ana Cabral-Gardner was featured as a keynote speaker.

- Ana Cabral-Gardner was invited by UN-DESA to host a workshop at the SDG Pavilion at COP-27 where she presented a framework on how to apply UN-SDGs to mining projects globally, in order to measure sustainability and overall economic and social impact.
- Additionally, Ms. Cabral-Gardner made the keynote presentation on "circular economy" at COP Investments (hosted by the World Climate Fund), presenting the Company's strategy to become the first "Zero Tailings" lithium producer by upcycling 100% of its "hazardous chemicals free" tailings from the Greentech Plant.
- Ms. Cabral-Gardner also participated in the "Acceleration to Net Zero Series" hosted by McKinsey & Co. with leading sustainability professionals across fields.

## Global Case Study in Environmental Sustainability in the Battery Materials Supply Chain

- Sigma was:
  - a participant in two panels at the Brazil-Canada Conference at the 2023 Prospectors & Developers Association of Canada ("PDAC") Convention in Toronto in March 2023;
  - a presenter in the Brazilian Mining Day at PDAC 2023 organized by the Agency for the Development and Innovation of the Brazilian Mining Sector (ADIMB) in March 2023; and
  - a participant on "Pathways to Decarbonize Hard to Abate Sectors" panel at the Brazil Climate Summit at Columbia Business School in September 2022.

#### PHASE 1 GREENTECH PLANT PRODUCTION PROGRESS

## **Commissioning & Commercial Production**

The Company successfully initiated production on schedule in April 2023, and is ramping up to full commercial production Commissioning and start-up management is led by the Company's operational team and Chief Operating Officer Brian Talbot with the support of third-party local experts of an engineering company. Sigma was able to achieve initial production on schedule as a result of activity continuing to accelerate in the quarter, with the construction workforce increasing to more than 1,000.

As of the date of this MD&A, the Company has achieved the following significant milestones:

- Completed the coarse and fines DMS circuits commissioning and initial production on schedule in April 2023;
- Completed the electromechanical assembly of the raw water supply piping and the installation of equipment, including water tanks in February 2023;
- Completed crushing circuit commissioning on schedule in February 2023; and
- Completed the first shipment of 15,000 tonnes of Green Lithium and 15,000 tonnes of Green Tailings to Yahua on July 27, 2023.

Refer to Figures 3 to 6 for a visualization of Phase 1 Greentech Plant production progress as of the date of this MD&A.

Going forward, the Company intends to remain focused on completing the following key workstreams in 2023:

- Completing the ramp-up of production, with commercial production reaching nameplate capacity;
- Continue Detailed Engineering of Phase 2 & 3; and
- Exploration of greenfield targets.





The Company is deploying the following strategies to ensure an efficient ramp-up to commercial production:

- Monitoring commissioning tests and analyzing their respective issued reports during commissioning;
- Identifying, registering and flagging non-conformities related to commissioning and test procedures; and
- Coordinating interfaces between contractors and expediting (with contractors) the sending of data-books available for the pre-operational phase.

Figure 4: DMS Circuit

Figure 3: Crushing Circuit



Figure 5: Truck Loading for Delivery to the Port



Figure 6: "Triple Zero" Green Lithium Production





## **Commercial Agreements**

The Company continued to deliver on its strategy of ensuring optimal commercial flexibility while securing premium pricing for its Green Lithium production and delivering on its "zero tailings" strategy through the Yahua Offtake announced on May 26, 2023. Pursuant to the agreement, Sigma delivered 15,000 tonnes of Green Lithium and 15,000 tonnes of Green Tailings to Yahua on July 27, 2023 at a price of approximately US\$3,500 per tonne and US\$350 per tonne, respectively.

Refer to Figures 7 and 8 for a visualization of Sigma's inaugural shipment in July 2023.

Figure 7: Loading First Shipment of Green Lithium Figure 8: Loaded Green Lithium



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#### **Health & Safety**

Health and safety remains one of Sigma's primary focuses at the construction site, and the Company is proud to report the following achievements as of the date of this MD&A:

- Substantial Covid-19 suppression, with no cases reported during the first quarter of 2023 and only 36 cases reported during 2022.
- 100% of the operational workforce vaccinated for Covid-19.
- Zero lost time due to injury since construction commenced (approximately 2,152,000 of cumulative total person hours).

## **PHASE 1 MINING PROGRESS**

As of the date of this MD&A, the Company has achieved the following significant milestones:

- Achieving full-scale mining in May 2023;
- Implemented dust, vibration and noise control initiatives during the first quarter of 2023 (including application of polymers on roads and slopes, an automated spray system and road sheeting with coarse reject gravel generated from Greentech Plant production);
- Completed the bridge over the Piaui "seasonal stream" that divides the Phase 1 north and south pits to improve transportation efficiency in April 2023;
- Completed the seeding of vegetation cover for the initial waste pile slopes (where non-mineralized material will be dry stacked) in February 2023;
- Phase 1 south pit pre-stripping completed in February 2023, as the Company plans to simultaneously source feedstock ore from both the north and south pits;
- Run of mine pad was finalized in the first quarter of 2023; and
- Completed the construction of mine haul roads linking the Phase 1 north pit and Phase 1 south pit to the Greentech Plant and waste pile locations.

Refer to Figures 9 to 12 below for a visualization of Phase 1 mining activities and progress as of the date of this MD&A. Note that the area marked in red in Figures 7 and 8 highlight exposed ore.

Going forward, the Company intends to remain focused on the following workstreams:

 Continuing to transport stockpiled ore to the run of mine pad to ensure sufficient Greentech Plant ore feed on an ongoing basis; and





 Continuing to implement grade control systems to optimize mine and processing recovery during production ramp-up.

Sigma is employing contract mining, with a third party engaged as the Company's mining contractor.

Figure 9: North Pit Mining



Figure 10: South Pit Mining & Ore Stockpiling



Note: Red circles in Figures 9 and 10 highlight exposed ore.

Figure 11: Piaui Bridge



Figure 12: Ore Stockpiling on "Run of Mine" Pad



#### PHASE 2 & 3 DEVELOPMENT PROGRESS

During the first quarter of 2023, the Company continued to advance development work for a potential Phase 2 & 3 production expansion, after announcing the results of the Phase 2 & 3 PFS in December 2022. An illustration of the potential production sequencing in the Phase 2 & 3 PFS is highlighted in Figures 13 and 14 below.

The Phase 2 & 3 PFS investigated the opportunity to fast-track Phase 3 production and to build a dual plant which could process both Phase 2 and Phase 3 ore feed simultaneously to deliver a greater production increase in 2024 (if warranted by feasibility study) versus the sole Phase 2 expansion originally envisioned in the Phase 2 preliminary feasibility study completed in May 2022. Refer to Figure 12 below for the 3D rendering of the potential Phase 2 & 3 expansion.

Sigma expects to complete a feasibility study for the potential Phase 2 & 3 expansion in the second half of 2023 ahead of making a formal production decision to proceed with Phase 2 & 3. Sigma has appointed DRA Global Limited ("**DRA**") to work alongside Promon on the design and potential construction of the Phase 2 & 3 expansion. DRA has been selected for its international experience in advanced mineral processing, specifically with lithium DMS plant design, and its construction management experience.

Figure 13: 3D Rendering of the Phase 1 and Potential Phase 2 & 3 Greentech Plant Expansion



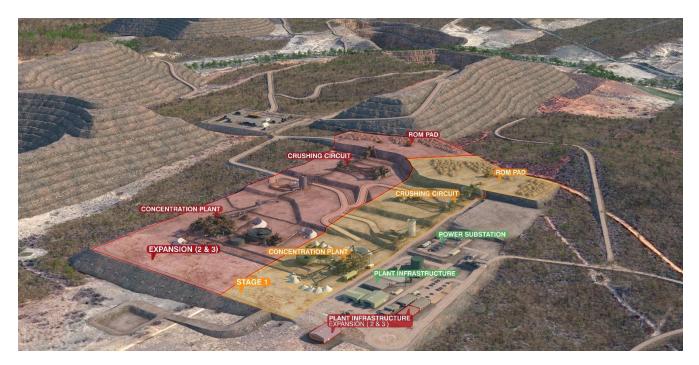


Figure 14: Planned Expansion of Phase 2 and 3



Note: Figures 13 and 14 show the currently contemplated location but may be subject to be change following completion of detailed engineering.

## **EXPLORATION PROGRESS**

The current exploration program focus is targeted to complete an initial Phase 4 mineral resource estimate. Phase 4 is located in close proximity to Phase 2 and Phase 3 and would be mined as an additional open pit, if warranted and economically viable based on a feasibility study.



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The Company plans to drill approximately 40,000 meters in 2023, with the goal of further increasing the Project's estimated mineral resources. The Company expects any additional mineral resource growth achieved will be utilized as feedstock material to extend the Project's operating life, if warranted after completing and analyzing a preliminary economic assessment, pre-feasibility study and feasibility study.

#### **ESG & SUSTAINABILITY PROGRESS**

Sigma's mission statement and key focus has been guided by making business decisions in a manner consistent with furthering the UN SDGs and adhering to the highest level of ESG practices.

Specifically, Sigma is focused on the following three pillars: (i) sustainable development; (ii) minimizing the environmental impact of our operations; and (iii) improving the lives of those in and around the region where we operate. Further, the Company remains focused on global leadership to increase awareness of our "green battery metals" approach.

Sigma is proud to report the progress made during the first quarter of 2023 to advance its social and environmental programs, which have been developed to ensure the sustainable construction of the Project and development of the Jequitinhonha Valley region, including social advancement of its population, where we operate.

## **Social Programs Updates**

Sigma's activities during 2022 and early 2023 related to its social programs are summarized below and visualized in Figures 15 to 20 below.

- Microcredit Program: During the third quarter of 2022, Sigma established the largest microcredit program in Brazil, which has been targeted for female entrepreneurs in the Jequitinhonha Valley region. Through this program, the Company encourages sustainable development by providing microcredit loans of R\$2,000 per person and providing mentorship programs. The Company is proud to report that as of the date of this MD&A, 1,632 female entrepreneurs have enrolled in the program, 877 videoconferences have been held, 2,747 interactions via mobile messaging or video conferences with their business advisors and 950 participants have already received the microcredit. This program advances the goals of UN SDGs #8 (Decent Work and Economic Growth) and #10 (Reduced Inequalities).
- Zero Drought for Small Holder Farmers Program: In 2023, the Company announced the "Zero Drought for Small Holder Farmers" program consisting of the construction of 1,000 small rainwater capture structures in the municipality of Itinga and another 1,000 in the municipality of Araçuaí, totaling 2,000 structures in the mid Jequitinhonha Valley region. These water capture basins are dug into the ground and located at strategic points to prevent soil erosion during the heavy rainfall season, store water for irrigation of small crops during the dry periods and contribute to increasing the volume of water that will feed the region's aquifers. Total investment by the Company is expected to be up to R\$4,000,000 (R\$2,000 per structure), all of which is to be spent in 2023. The Company will donate to the municipalities structures which will be built via third-party contractors to support the need. The municipalities completed the geolocation studies for the allocation of the structures. As of the date of this MD&A, 506 rainwater capture basins have been built in the municipality of Itinga and 500 in the municipality of Araçuaí.
- Water For All Program: Additionally, to further combat the impacts of water scarcity in the Jequitinhonha Valley region, the Company committed to donating in 2023 up to 3,000 water tanks to residents located in the surrounding areas of the Greentech Plant. As of the date of this MD&A, 121 water tanks have been constructed so far.
- Combating Violence Against Women Program: The Company announced its plans to introduce a program, in partnership with the Justice Court of the state of Minas Gerais, targeting domestic abuse against women in the Jequitinhonha Valley region. This program advances the goals of UN SDGs #5 (Gender Equality) and #11 (Sustainable Cities and Communities).
- Homecoming Employment Program: Sigma remains committed to prioritizing employing persons local to the Jequitinhonha Valley region. The Company is proud to report that it continued to make progress on this initiative during the first quarter of 2023 and fourth quarter of 2022, with approximately 40% of its >1,000-



person construction workforce being comprised of locals to the region. This program advances the goals of UN SDGs #8 (Decent Work and Economic Growth) and #10 (Reduced Inequalities).

- Education Program for Mining Technicians Program: In order to support the Homecoming Employment Program, Sigma established a partnership between the Federal University of Vales do Jequitinhonha e Mucuri (Campus Janauba) and the Federal Institute of Education of Aracuai in January 2022, establishing the first program to train mining technicians in the region. The educational program will be taught by ten teachers over a three-year period with a workload of approximately 1,200 hours. Sigma is proud to announce that as of the date of this MD&A, 40 persons local to the Jequitinhonha Valley region have enrolled in the program and are expected to graduate in 2024, after which the Company hopes they will join our operational team at the Project. Select courses covered in the program include: loader operation (theory and practice); operation of tractors (theory and practice); basic instrumentation and programmable logic controller operation; processing plant operation; industrial mechanical maintenance; industrial electrician; qualification in welding process; safety, health and environment; personal protection equipment; occupational risk management; safety at work (machines and equipment); control measures and preventative safety systems; silviculture (native seedling nursery): railings (barbed and smooth wire); operations and maintenance of chainsaws and log splitting; operations and maintenance of brush cutters; forestry (recovery of degraded and altered areas). This program advances the goals of UN SDGs #4 (Quality Education) and # 17 (Partnership for the Goals).
- Zero Hunger Action Program: The Company remained dedicated to humanitarian relief action, continuing to deliver the previously pledged 7,200 food baskets per year, being 600 per month, commitment done during 2021 at the height of the Covid-19 pandemic for the vulnerable families in the Vale do Jequitinhonha region. During 2022, the Company delivered such 7,200 food baskets. For 2023, the Company aims to continue delivering 600 food baskets per month. This program advances the goals of UN SDGs #1 (No Poverty), #2 (Zero Hunger) and # 17 (Partnership for the Goals).
- Being a Child Program: During the second quarter of 2023, the Company committed to a number of initiatives to help foster sustainable development in the Poço Dantas community, located relatively nearby the Project. Firstly, Sigma will help fund the renovation of the school in the community, benefiting approximately 30 local children as well as adults, as an adult literacy course is expected to be offered. Additionally, Sigma will help fund the construction of a bridge that connects the Poço Dantas community to Araçuaí and Itinga, which will provide improved access to education and health facilities. Lastly, Sigma will help fund a covering for the outside sport courts, which will help foster the practice of sports and community building in the area. Sigma also expects to implement after-school programs at this facility.

Figure 15: Microcredit Program Expansion Event



Figure 17: Homecoming Employment Program

Figure 16: Homecoming Employment Program



Figure 18: Education Program for Mining Technicians







Figure 19: Zero Hunger Action





Figure 20: Zero Drought for Small Holder Farmers



#### **Environmental Programs Updates**

Sigma's activities during 2022 and early 2023 pertaining to its environmental programs are summarized below.

- Zero Tailings Program: The Company is proud to report that it delivered on its "zero tailings" program in May 2023, as it executed up to a three-year agreement to sell it 100% of its Green Tailings to Yahua and continued to donate coarse gravel tailings generated from Green Lithium production to help pave local dirt roads in the Jequitinhonha Valley region. Refer to Figures 21 and 22 below for a visualization of the Company's "zero tailings" program.
- Net Zero Carbon Program: The Company is also proud to report that it delivered on its net zero carbon program for its first shipment of Green Lithium and Green Tailings under the Yahua Offtake in July 2023 by offsetting the remaining "hard to abate" carbon emitted during the production process both at its Phase 1 mine and Greentech Plant, achieving "trip zero production" (net zero carbon, zero tailings and zero hazardous chemicals). The Company effectively lowered its carbon footprint with a series of pioneering initiatives, paving the way forward for the metals and mining sector, including: (i) "zero tailings" as described above; (ii) using zero hazardous chemicals in the DMS process at the Greentech Plant; (iii) water efficiency with 100% sewage water used, which is then recirculated; (iv) 100% renewable energy usage at the Greentech Plant; (v) biodiesel used for its trucking fleet with plans to increase to 50% of fuel consumption by 2024; and (vi) decreased explosives load with computerized load simulation strategies. Due to the low carbon content of Sigma's production, the Company was able to achieve net zero carbon for 2023 via the purchase of 59,000 tonnes of carbon credits (which are verified through Verra Verified Carbon Standard) from Carbonnext.
- Environmental Education Program: More than 784 people from five different communities participated in environmental education programs held by Sigma. Topics covered included water education, where participants were educated about conservation, purification and proper use. The Company promotes a strong dialogue with the communities through this program with the following objectives: (i) raising awareness of the Project's operations (including the socio-economic and environmental impacts of the Project); (ii)



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identifying community concerns; (iii) strengthening the relationship with the local community; and (iv) raising awareness of environmental control and monitoring programs. This program advances the goals of UN SDGs #11 (Sustainable Cities and Communities) and #15 (Life on Land).

- Environmental Management & Supervision Plan: During the quarter, Sigma continued to implement procedures and standards related to environmental management pursuant to its Integrated Management System (the "IMS"). The Company completed the IMS in the fourth quarter of 2022 (in advance of initiating production at the Project), which focuses on the key pillars summarized below. This program advances the goals of UN SDGs #12 (Responsible Consumption and Production) and #15 (Life on Land).
  - Treatment of Domestic Effluents: A sewage treatment station is to be installed and maintained as necessary.
  - Rainwater Drainage System and Containment of Erosion: A drainage system was installed in the
    fourth quarter of 2022 as part of the Phase 1 Greentech Plant construction, which will capture rainwater
    and pump it back to the Phase 1 Greentech Plant to be used in the process. The Company also began
    monitoring regional erosion and the effectiveness of the drainage system and will continue to do so
    going forward.
  - Controlling Atmospheric Emissions and Noise / Vibration Impacts: The Company carries out road wetting (one of the most effective techniques for controlling dust emissions) to ensure that the impacts of dust generation are minimized in the areas surrounding the Project. Vehicles and equipment are also routinely inspected and tuned in order to minimize gas emissions, noise and fuel consumption. Vibrations and noise are controlled and minimized by the periodic lubrication and maintenance of machines and equipment. Rubber pads that absorb vibrations have also been installed. Sigma regularly monitors the levels of noise, vibration, air quality and water quality through accredited laboratories. This data is sent to regulatory agencies.
  - Waste Management: The Company has implemented a set of procedures and guidelines for the
    prevention, mitigation and correction of environmental impacts arising from the handling, storage and
    disposal of waste. This monitoring system is focused on tracking and ensuring the environmentally
    correct disposal of waste generated in the construction of the Project.
  - Tailings Recycling Plan: The Company plans on pursuing a strategy of selling tailings generated
    from the crushing and dry screening process during production at the Project. This plan will enable the
    Company to further reduce the environmental impact of the Project while providing another source of
    lithium supply in a tight lithium market.
  - Environment Management System ("EMS"): The Company started to apply its digital EMS through software with the objective of managing information (environmental licenses, grants, studies), licensing project management, schedule conditions, reports, advanced dashboard, surveys, waste management, protocols, certificates and offices.
- Planting and Vegetation Monitoring Program: During the fourth quarter, the Company acquired 5,000 native seedlings to further advance this program (to date 15,000 native seedlings have been acquired). Sigma expects to acquire an additional 20,000 native seedlings in the fourth quarter of 2023, coinciding with the rainy season at the Project. The Company is committed to helping preserve and nurture the vegetation and fauna local to the region and closely monitors the areas where it plants seedlings. This program advances the goals of UN SDGs #12 (Responsible Consumption and Production) and #15 (Life on Land).

Figure 21: Green Tailings Warehoused at Port Figure 22: Coarse Gravel Tailings Paving Roads







## **Corporate Governance Updates**

During the first quarter of 2023, Sigma took steps to further strengthen both its Board and management, which are summarized below.

- On January 23, 2023, Ana Cabral-Gardner was appointed to remain as CEO and Co-Chairperson of the Board and Felipe Peres as Senior Financial Advisor to the Company.
- On June 30, 2023, Sigma held its Annual and Special Meeting of Shareholders where the shareholders of the Company approved the appointment of Bechara S. Azar, Cesar Chicayban, Lucas Melo and Alexandre Rodrigues as Independent Directors of the Board as well as the reappointment of Ana Cabral-Gardner as a Director and Chairperson of the Board and Marcelo Paiva as a Director of the of the Board. The previous independent Directors of the Company, including Gary Litwack, Frederico Marques and Dana M. Perlman, did not stand for reelection to the Board.
- On July 28, 2023, the Company changed its Chief Financial Officer ("CFO"). Caio Araujo, who was hired on June 26, 2023 as Chief Controls Officer ("CCO") replaced the former CFO, and the Senior Financial Controller, Raphael Dias, hired on July 5, 2023, replaced Mr. Araujo as the new CCO.
- The Company's internal committees are as follows:
  - Audit Committee: comprised of Lucas Melo (Chairperson), Cesar Chicayban and Bechara S. Azar, so as to be comprised entirely of independent directors.
  - Corporate Governance, Nomination and Compensation Committee: comprised of Cesar Chicayban (Chairperson), Lucas Melo and Marcelo Paiva.
  - **ESG Committee:** comprised of Alexandre Rodrigues (Chairperson), Ana Cabral-Gardner, Cesar Chicayban and Maria José Salum.
  - Management Technical Committee: comprised of Ana Cabral-Gardner (Co-Chairperson), Vicente Lobo (Co-Chairperson), Cesar Chicayban, Bechara S. Azar and Marcelo Paiva.

## **Global Sustainability Leadership Updates**

Sigma has continued its mission of catalyzing positive global change, enrolling or participating in the following important conferences as a case study in "green battery metals":

 Participant in two panels at the Brazil-Canada Conference at the PDAC Convention in Toronto in March 2023;



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- Panelist and participant at the Future Minerals Forum in Riyadh in January 2023 (invited by the Kingdom of Saudi Arabia); and
- COP27 in Egypt in November 2022 (Ana Cabral-Gardner was a keynote speaker and Sigma presented at two workshops, including UN-DESA, on applying SDGs and best ESG practices in the industry).

#### **REGULATORY & LICENSING UPDATES**

## **Regulatory Updates**

Key regulatory changes that are relevant to the Company and/or the lithium industry that occurred in 2023 are highlighted below.

- On June 9, 2023, the U.S. Securities and Exchange Commission (the "SEC") approved the listing standards proposed by the Nasdaq and the NYSE on February 22, 2023, which require all listed companies to adopt and comply with compensation recovery (or "clawback") policies for incentive-based compensation received by current and former executive officers based on financial statements that are subsequently restated, and to disclose their clawback policies in accordance with SEC rules. Such listing standards will take effect on October 2, 2023; and listed companies have until December 1, 2023 to adopt compliant policies and must begin to disclose such policies and how they apply in the annual reports filed after they adopt such policy.
- On October 28, 2022, the Government of Canada issued a new policy (the "New ICA Policy") relating to the treatment of investments by foreign state-owned enterprise ("SOEs") and foreign-influenced private investors in Canada's critical minerals sectors under the Investment Canada Act (the "ICA"). The New ICA Policy identified certain minerals that the Government of Canada has determined are essential to Canada's prosperity in emerging low-carbon and other technology sectors or that contribute to Canada's national security as vital inputs to defence and high technology, which includes lithium. The New ICA Policy is intended to preserve Canada's access to critical minerals and to support the government's critical minerals strategy, which in turn is designed to position Canada as the global supplier of choice for critical minerals. For a further discussion as to how the New ICA Policy and other governmental policies relating to critical minerals may affect the Company's business, see "Risks Related to the Company's Business and Securities".

#### **Licensing Updates**

Sigma received an operational license ("**LO**") for the Phase 1 north pit and the Greentech Plant on March 31, and for the Phase 1 south pit on April 30, both with a unanimous vote of approval including all the non-governmental organizations involved. This follows the Company filing its request for the LO for the Phase 1 north pit and Greentech Plant on November 16, 2022 and the Phase 1 south pit on January 23, 2023. The receipt of the LO was the last licensing step required for Sigma to produce Green Lithium.

On August 17, 2022, the Company submitted the application for Preliminary and Installation Licenses for Phase 2 to the environmental authority of the state of Minas Gerais, the State Council for Environmental Policy (COPAM) in Brazil.

Following the receipt of the Preliminary and Installation Licenses for Phase 2, the next license to be received in advance of operations commencement is the Operating License which constitutes an administrative inspection when construction is completed.

## **SELECTED FINANCIAL INFORMATION**

## **Quarterly Information**

Selected consolidated financial information is as follows:

Quarterly Information	2023	3 2022				2021		
(in C\$ millions)	Q1	Q4	Q3R*	Q2R*	Q1R*	Q4R*	Q3R*	Q2R*
Total Assets	\$363.7	\$308.9	\$197.7	\$198.1	\$198.9	\$195.6	\$68.6	\$69.2
Property, Plant & Equipment	211.1	158.6	89.3	57.5	44.2	32.7	27.8	24.7





(Expressed in thousands of Canadian dollars, except per share amounts or unless stated otherwise)

Working Capital	60.6	77.1	76.4	114.2	140.0	150.5	33.3	38.4
Total Liabilities	186.5	125.8	15.2	18,0	9.7	10.7	9.1	8.2
Net Revenue	-	-	-	-	-	-	-	-
Expenses	(29.8)	(73.1)	(20.3)	(21.5)	(12.2)	(15.8)	(10.9)	(1.0)
Loss for the Period	(29.8)	(73.1)	(20.3)	(21.5)	(12.2)	(15.8)	(10.9)	(1.0)
Basic (Loss) / Income per Common Share	(0.29)	(0.72)	(0.20)	(0.21)	(0.12)	(0.18)	(0.12)	(0.01)

Note: working capital is the difference between current assets and current liabilities (refer to section "Use of Non-GAAP measures").
\*R means restated in relation to the same period presented.

Changes in the Company's total assets, working capital, liabilities and results were mainly driven by financings and expenses incurred in the period.

In Q1-2023, total assets increased primarily due to \$54.8 million increase in property, plant and equipment as the Company continued to finalize the commissioning and construction of its Phase 1 Greentech Plant. Total liabilities increased primarily due to a \$54.4 million drawn under the Synergy Financing (now fully drawn) and \$3.1 million drawn during the quarter under a loan with the Brazilian Development Bank of Minas Gerais ("BDMG") that was previously entered into on November 14, 2022.

In Q4-2022, total assets increased primarily due to a \$69.3 million increase in property, plant and equipment; \$16.9 million increase in prepaid expenses and other assets and due from related parties; \$13.9 million increase in exploration and evaluation assets; and \$11.2 million increase in cash, following the Company closing the Synergy Financing. Total liabilities increased primarily due to the \$77.4 million drawn under the Synergy Financing; a \$23.1 million increase in accounts payable; a \$4.4 million increase in the Company's asset retirement obligations; a \$3.4 million increase in the Company's lease liability; and a \$2.6 million increase in payroll and other taxes.

In Q3-2022, total assets increased primarily due to a \$5.5 million foreign exchange gain partially offset by a \$4.0 million cash outflow to return the deposit paid by Mitsui under the Mitsui agreement and to terminate the Mitsui agreement and expenses incurred in the period, including \$3.3 million of general and administrative expenses and a \$1.0 million loss associated with the termination of the Mitsui HOA. Total liabilities decreased primarily due to the elimination of the Company's \$4.0 million deferred revenue liability as a result of the termination of the Mitsui HOA.

In Q2-2022, total assets decreased primarily due to the expenses in the period (including \$3.6 million of general and administrative expenses). Total liabilities increased primarily due to the introduction of a \$4.9 million royalty agreement call option liability in the period (the "**Royalty Agreement Call Option**"). This liability is associated with the Company's opportunity to repurchase a 1.0% net smelter return royalty on the Project for US\$3.8 million. As a subsequent event, the Company exercised the Royalty agreement call option on April 13<sup>th</sup>, 2023 and made the associated cash payment.

In Q1-2022, total assets increased primarily due to amounts capitalized in the period (property, plant & equipment and exploration & evaluation assets increased by \$8.4 million and \$4.1 million, respectively). Total liabilities decreased primarily due to a \$2.5 million decrease in accounts payable.

In Q4-2021, total assets increased primarily due to a \$118.8 million increase in cash, following the Company closing a private placement on December 23, 2021 for gross proceeds of \$136.7 million (the "**December 2021 Equity Financing**"), partially offset by expenses in the period (including \$3.1 million of general and administrative expenses). Total liabilities increased primarily due to a \$3.9 million increase in accounts payable.

In Q3-2021, total assets decreased primarily due to \$11.1 million of general and administrative expenses incurred in the period. Total liabilities increased primarily due to a \$1.7 million increase in accounts payable.

In Q4-2022, the Company, while reviewing the calculation of its lease contracts, identified several contracts which were not previously accounted for under IFRS 16. The Company has restated the 2021 Financial Statements and the Q3-2022, Q2-2022, Q1-2022, Q3-2021, Q2-2021 and Q1-2021 consolidated interim financial information was



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re-stated in the quarterly information table to account for the contracts which were not previously capitalized, recognizing right-of-use assets and lease liabilities.

Please note Q3-2022, Q2-2022 and Q1-2022 consolidated interim financial information was re-stated in the quarterly information table as they contained an error related to the accounting for stock-based compensation expense. The Company has adjusted its stock compensation expense to account for restricted share units ("**RSUs**") which were not previously accounted for.

#### Results of Operations - Net Loss Analysis

## Three Months Ended March 31, 2023 versus Three Months Ended March 31, 2022

The following table summarizes the items that resulted in an increase in the net loss for the three months ended March 31, 2023 versus the three months ended March 31, 2022, as well as certain offsetting items:

Financial Results	Three Months I	Three Months Ended March 31,			
(in C\$ 000s)	2023	2022	2023 vs. 2022		
General and Administrative Expenses	(\$14,302)	(\$1,359)	(\$12,943)		
Stock-Based Compensation	(19,705)	(12,642)	(7,063)		
Financial Income / (Expenses)	4,194	1,858	2,336		
Depreciation	(34)	(22)	(12)		
Net Loss	(\$29,847)	(\$12,165)	(\$17,682)		

The higher net loss during the three months ended March 31, 2023 is primarily attributable to:

- a \$7.1 million increase in expenses associated with stock-based compensation; and
- a \$12.9 million increase in general and administrative expenses.

The higher net loss during the three months ended March 31, 2023 was partially offset by a gain from financial income of \$4.2 million versus \$1.9 million in Q1-2022. Refer to the table below for a summary of the Company's net financial results during the quarters.

Financial income and expenses	Three Months E	Three Months Ended March 31,		
(in C\$ 000s)	2023	2022	2023 vs. 2022	
Accretion and Interest on Note Payable	\$-	(\$15)	\$15	
Interest expense – including Leasing IFRS 16	(1,025)	-	(1,025)	
Bank expenses	(637)	-	(637)	
Foreign Exchange Gain / (Loss)	3,278	1,873	1,405	
Financial Income	2,578	-	2,578	
Net Financial Result	\$4,194	\$1,858	\$2,336	

## **Expenses**

General and administrative expenses for the three months ended March 31, 2023 of \$14.3 million (versus \$1.4 million in Q1-2022) are comprised of expenses associated with: (i) salaries and benefits (\$3.0 million); (ii) legal services (\$1.1 million); (iii) travel (\$0.3 million); (iv) business development and investor relations (\$0.7 million); (v) accounting and auditing services (\$0.9 million); (vi) insurance (\$2.1 million); (vii) fines on late tax payments (\$1.3 million); (viii) social projects (\$2.7 million); and (ix) other general corporate expenses (\$2.8 million). The increase in the Company's general and administrative expenses during the three months ended March 31, 2023 is mostly due to the Company adding key personnel in anticipation of commencing production at the Phase 1 Greentech Plant in April 2023 and increasing investor relations activity.



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Stock-based compensation for the three months ended March 31, 2023 of \$19.7 million (versus \$12.6 million in Q1-2022) is a non-cash expense associated with the fair market value of RSUs vested during the period.

#### Other Items

Gain on foreign exchange was a result of the impact that the appreciation of the United States dollar had on cash held in United States dollars during the period.

#### **Liquidity and Capital Resources**

Cash Flow Highlights	Three Months E	Three Months Ended March 31,			
(in C\$ 000s)	2023	2022	2023 vs. 2022		
Cash used in Operating Activities	(\$35,332)	(\$4,310)	(\$31,022)		
Cash used in Investing Activities	(27,881)	(10,041)	(17,840)		
Cash provided by Financing Activities	57,414	2,006	55,408		
Effect of Foreign Exchange on Cash	2,297	(1,065)	3,362		
Change in Cash and Cash Equivalents	(3,502)	(13,410)	9,908		
Cash & Cash Equivalents – Beginning of the Period	96,354	154,305	57,951		
Cash & Cash Equivalents – End of the Period	\$92,852	\$140,895	\$48,043		

As at March 31, 2023, the Company had cash and cash equivalents of \$92.9 million and working capital of positive \$60.6 million, compared to cash and cash equivalents of \$140.9 million and working capital of \$140.0 million as at March 31, 2022. Additionally, the Company had total debt outstanding of \$131.9 million after closing the Synergy Financing on December 10, 2022 (fully drawn as of the date of this MD&A) and drawing \$3.2 million from the BDMG Loan in January 2023.

#### **Liquidity Outlook**

Sigma's use of cash is currently, and is expected to continue to be, focused on funding the final phase of the Phase 1 Greentech Plant's ramp-up to commercial production, developing the Project's growth opportunities (including Phase 2 & 3) and for general corporate expenditures. The Company continuously monitors its cash outflows and seeks opportunities to minimize all costs, to the extent possible, especially general and administrative expenses.

As of March 31, 2023, the Company had \$92.9 million in cash and cash equivalents, which compares to the \$96.3 million at December 31, 2022. The cash reduction of \$3.5 million is mainly related to cash used in operating activities of \$35.3 million, cash used in investing activities of \$27.9 million, cash provided by financing activities of \$57.4 million and the effect of foreign exchange on cash of \$2.3 million.

Additionally, as of the date of this MD&A, the Company has used all of the proceeds raised from the December 2021 Equity Financing and all of the \$42.0 million of proceeds raised from the private placement completed on February 12, 2021 (the "**February 2021 Equity Financing**").

## **Operating Activities**

Cash used in operating activities during the three months ended March 31, 2023 was \$35.3 million, which compares to \$4.3 million during the three months ended March 31, 2022.

The significant components of operating activities are discussed in the Results of Operations section above.

### **Investing Activities**

Cash used in investing activities during the three months ended March 31, 2023 was \$27.9 million, which compares to \$10.0 million during the three months ended March 31, 2022.

The significant components of investing activities are associated with the construction and commissioning of the



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Phase 1 Greentech Plant.

## Financing Activities

Cash provided by financing activities during the three months ended March 31, 2023 was \$57.4 million, which compares to \$2.0 million during the three months ended March 31, 2022.

The sources of cash during the three months ended March 31, 2023 was primarily driven by \$54.4 million of proceeds drawn in February and March 2023 under the Synergy Financing (now fully drawn) and \$3.2 million of proceeds drawn in January 2023 from a loan with the BDMG.

Sigma's outstanding capital expenditures for the Phase 1 Greentech Plant as of March 31, 2023 are summarized below.

#### **Capital Expenditures to Commercial Production**

Capital Expenditures (in US\$ million)	Phase 1 (Year 1)	Phase 2 & 3 <i>(Year 2)</i>
Process Plant	\$69.8	\$96.3
Engineering Services	19.2	23.3
Environmental Equipment (Water & Dry Stacking)	15.8	16.4
Operational & ESG Expenses During Construction	9.8	9.8
Mine	9.2	2.3
Substation & Utility Power Supply	7.4	0.7
Working Capital During Plant Commissioning	6.1	6.1
Tax Incentives (Savings)	(2.6)	-
Capital Expenditures Disbursed During Construction	(103.3)	
Total Capital Expenditures to Commercial Production	\$31.4	\$154.9

### **CURRENT SHARE DATA**

Issued and outstanding securities of the Company as at the date of this MD&A were as follows:

Common Shares Issued and Outstanding	109.4 million
RSUs	3.5 million
Stock Options	0.1 million
Fully Diluted Number of Common Shares	113.0 million

There are RSUs for 3.5 million Common Shares outstanding (of which an aggregate 0.5 million RSUs to the CEO of the Company vested upon successful execution of Sigma's net-zero plan, as announced on July 26, 2023). There are stock options exercisable for 110,000 Common Shares outstanding, of which 100,000 have an average exercise price of \$14.65 and expire in April 2027, and 10,000 have an average exercise price of \$2.23 and expire in August 2028.

#### **DISCLOSURE, CONTROLS & PROCEDURES**

The CEO and CFO of the Company are responsible for establishing and maintaining disclosure controls and procedures ("**DC&P**") for the Company as defined under National Instrument 52-109 (NI 52-109) issued by the Canadian Securities Administrators and in Rule 13a-15(e) under the U.S. Securities Exchange Act of 1934, as amended (the "**Exchange Act**"). The DC&P is to provide reasonable assurance that information required to be disclosed by the Company in its annual filings, interim filings or other reports filed or submitted by it under securities legislation is recorded, processed, summarized and reported within the time periods specified in the securities



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legislation and include controls and procedures designed to ensure that information required to be disclosed by an issuer in its annual filings, interim filings or other reports filed or submitted under securities legislation is accumulated and communicated to the Company's management, including its certifying officers, as appropriate to allow timely decisions regarding required disclosure. The Company has mapped the DC&P deficiencies and taken the following remediating actions: (i) established a Disclosure Committee led by the CFO that includes senior representatives of all business areas; (ii) held an inaugural meeting of the Disclosure Committee to define roles and responsibilities of the members and the review process; (iii) adopted an annual meeting plan to review the quarterly and annual fillings; (iv) adopted a checklist to be used by the members to identify and communicate matters and events to the attention of the Chair of the Disclosure Committee. The Company is following the designed procedures in the review of its annual fillings for the year ended December 31, 2022. However, as at December 31, 2022 given the failure to meet reporting deadlines, the lack of time to evidence the operation and test the DC&P, and given that the Internal Controls Over Financial Reporting ("ICFR") continue to show material weaknesses, the CEO and CFO evaluated that there is a material weakness in the design and operation of the Company's DC&P, which are deemed as ineffective.

Notwithstanding these material weaknesses experienced in 2022, Management concluded that the consolidated financial statements for the year ended December 31, 2022 presented fairly, in all material respects, the financial position of the Company.

#### INTERNAL CONTROL OVER FINANCIAL REPORTING

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in NI 52-109 and Rule 13a-15(f) of the Exchange Act, to provide reasonable assurance regarding the reliability of the Company's financial reporting and the preparation of its consolidated financial statements in accordance with IFRS. Under the supervision and with the participation of our Management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based upon criteria established in *Internal Control – Integrated Framework* (2013) by the Committee of Sponsoring Organizations of the Treadway Commission. Based on that evaluation, our Management concluded that our internal control over financial reporting was ineffective as of December 31, 2022 due to the material weaknesses described below.

A material weakness is a deficiency, or a combination of deficiencies, financial reporting, such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis.

Management has identified the following material weaknesses:

- An ineffective control environment resulting from the failure to disseminate a translated Code of Ethics and relevant training, an insufficient number of trained financial reporting and accounting personnel with the appropriate skills and knowledge and with appropriate assigned authorities, responsibilities and accountability related to the design, implementation and operating effectiveness of financial reporting, as well as insufficient board oversight over the development and performance of internal controls;
- The insufficient number of personnel described above contributed to an ineffective risk assessment process neccesary to identify all relevant risks of material misstatement, including fraud risks, and to evaluate changes that could impact the system of quality control around processees, as well as the implications of relevant risks on the achievement of objectives, including financial reporting objectives;
- An ineffective internal and external information and communication process to ensure the relevance, timeliness and quality of information used in control activities, particularly with respect to documentation of activities and internal communication between Legal and Accounting for new employment (and consulting) contracts entered into by the Company as well as ensuring the communication of the Company's whistleblower policy;
- An ineffective monitoring process to ensure controls are periodically evaluated, results of testing are communicated to senior management and the board of directors and the control deficiencies are tracked for remediation on a timely basis; and



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 Ineffective control activities due to the (i) failure to deploy general control activities over information technology (ii) failure to document policies and procedures and (iii) failure to document control activities to mitigate risks.

These material weaknesses have had a pervasive impact on the Company's internal control over financial reporting and resulted in both material and immaterial misstatements to the preliminary consolidated financial statements that were corrected in the audited consolidated financial statements prior to the release of our annual report on Form 40-F. During the third quarter of 2022, it was identified that there were a number of share-based compensation awards within contracts which the Company's controls failed to detect and account for appropriately in a timely manner. The lack of appropriate controls over the timing of recognition of share-based compensation resulted in the need to restate the interim periods financial statements for the quarters ended June 30, 2022 and March 31, 2022. In addition, during the fourth quarter of 2022, it was identified that several lease contracts were not previously accounted for under IFRS 16. The lack of appropriate controls over complex accounting practices caused the Company to restate the 2021 Financial Statements through a restatement note included in the 2022 Financial Statements to account for the contracts which were not previously capitalized, properly recognizing right-of-use assets and lease liabilities impact on the financials.

These material weaknesses create a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis.

#### ATTESTATION REPORT OF THE REGISTERED PUBLIC ACCOUNTING FIRM

The Company engaged KPMG LLP to perform an "integrated audit" which encompassed an opinion on the fairness of presentation of the Company's audited annual consolidated financial statements for the financial year ended December 31, 2022, as well as an opinion on the effectiveness of the Company's ICFR. KPMG LLP, the Company's independent registered public accounting firm, audited the Company's consolidated financial statements and issued an adverse report on the effectiveness of ICFR. KPMG LLP's attestation report on the Company's ICFR was incorporated by reference into the Company's annual report on Form 40-F under the Exchange Act for the year ended December 31, 2022.

For 2023 the Company engaged KPMG Auditores Independentes Ltda., the Brazilian audit firm, to perform the same scope as that performed in 2022 by KPMG LLP.

#### CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING AND REMEDIATION

In addition to the material weaknesses noted above, the following changes in internal control have the potential to materially affect our ongoing internal control financial reporting:

- The Company engaged external consultants to assist Management in assessing its internal control over financial reporting, mapping all existing control deficiencies and defining remediation plans; and
- The Company constantly takes measures to improve management oversight of its financial and accounting activities, which includes managerial skills as well as the process of staffing and further strengthening its accounting and financial teams.

Since the internal control remediation process remains underway, documentation and testing have not been completed at all levels, Management concluded that as of December 31, 2022 there was a material weakness in its internal controls over financial reporting, which were determined to be not effective by Management.

The Company is developing, and has started implementing, remediation plans to address the material weaknesses identified during the December 31, 2022 year end. The Company continues to assess and update its remediation plan during fiscal year 2023, with the goal of remediating all material weaknesses by the end of the year. However, currently it cannot ensured all the material weaknesses will be remediated by year-end. The following are some of the items the Company has currently started with.

 Budget process: The Company prepared an annual budget submitted to the Board for approval detailing the investments, expenses and other accounts, which was approved in the first quarter of 2023.



(Expressed in thousands of Canadian dollars, except per share amounts or unless stated otherwise)

- IT Investment: During the fourth quarter of 2022, the Company approved the IT plan which encompasses investments in equipment and software, additional headcount, training the users, engaging user support providers, as well as establishing policies and procedures for the IT organization structure, including controls over the definition, acquisition, installation, configuration, integration, and maintenance of the IT infrastructure. The Company plans to address training with material in development with our third-party provider. The Company has developed a Data Security Policy and the Access Control Policy that once approved will be implemented in 2023, together with training designed to the users (under development with our third party provider) to operate in the enhanced IT environment with the view to ensure the ITGC controls are effective.
- Code of ethics: Sigma is committed to operate with integrity. The Company is in the process of strengthening the Code of Ethics at all levels and jurisdictions. The Portuguese version of the Code of Ethics will soon be disseminated to all employees, with training sessions to be rolled out, aimed to reach all employees across all jurisdictions during 2023, as part of the process of building a culture of controls and compliance.
- **Financial statements closing schedule**: The Company will develop with the assistance of external providers a detailed financial statements closing schedule identifying all activities, owners, and reviewers to control the preparation, completion and quality of its quarterly and annual financial statements closing processes.

The financial and accounting team will work with external specialists to bring in expertise and expedite the remediation of control deficiencies at the process level during 2023 with a focus on the implementation of absent controls identified at the risks and controls matrix for process underlying all significant accounts and disclosures. The external specialists with expertise in internal controls implementation are assisting with the development and documentation of the following workstreams related to the internal controls over financial reporting needed to be in compliance with SOX: (i) prepare and review the risks and controls matrix; (ii) establish a Project Management Office to manage the control deficiencies and remediation; (iii) develop and document structured policies and procedures; (iv) test the design, implementation and operating effectiveness of the internal controls after remediation to support the CEO and CFO certifications; and (v) support training content development and conducting training sessions across the Company.

The Company has retained the services of Information Technology consulting assistance and plans to hire an Information Technology officer during 2023 to manage the Information Technology Environment and the Information Technology General Controls.

Management will continue to review and make necessary changes to the overall design and operation of the Company's internal control environment, as well as the policies and procedures to improve the overall effectiveness of internal control over financial reporting. The material weaknesses will not be considered remediated until the applicable controls operate for a sufficient period of time and management concludes, through testing, that these controls are operating effectively. The Company is taking steps toward remediation during the 2023 fiscal year, but still cannot ensure our internal controls environment will be free of material weaknesses by the end of fiscal year 2023.

## **RELATED PARTY TRANSACTIONS**

The Company's related parties include:

Related Party	Nature of Relationship
A10 Group	A10 Group is composed of A10 Serviços Especializados de Avaliação de Empresas Ltda. ("A10 Advisory") and A10 Investimentos Ltda. ("A10 Investimentos") The companies are controlled and indirectly controlled, respectively, by the director of the Company, Marcelo Paiva. The CEO, Ana Cabral-Gardner (Co-CEO on December 31, 2022), has a minority stake at A10 Advisory and A10 Investimentos.
Miazga	Miazga Participações S.A is a land administration company in which the CEO of the Company (Co-CEO on December 31, 2022), Ana Cabral-Gardner, and a director of the Company, Calvyn Gardner, who was Co-CEO on December 31, 2022, have an indirect economic interest.



(Expressed in thousands of Canadian dollars, except per share amounts or unless stated otherwise)

R-Tek	R-Tek Group Pty Ltd. ("R-Tek") is a corporation in which the Chief Operating Officer of the Company, Brian Talbot, is a controlling shareholder.
Arqueana	Arqueana Empreendimentos e Participações S.A. is a land administration company in which the CEO of the Company (Co-CEO on December 31, 2022), Ana Cabral-Gardner, and director of the Company, Calvyn Gardner, who was Co-CEO on December 31, 2022, have an indirect economic interest.
Tatooine	Tatooine Investimentos S.A. is a land administration company in which the CEO of the Company, Ana Cabral-Gardner, has an indirect economic interest.

#### **Transactions with Related Parties**

The related party transactions are recorded at the exchange amount transacted as agreed between the Company and the related party. All the related party transactions have been reviewed and approved by the independent directors of the Company. The financial impact on the Company of the transactions below is not material to the Company.

- Cost sharing agreement ("CSA"): The Company has a CSA with A10 Advisory where A10 Advisory is reimbursed for secondment staff 100% allocated to the Company, comprising administrative personnel. Many of these positions have now been filled by full-time employees of the Company except for a remaining few that are in the process of being phased out.
- Leasing Agreements: The Company has right-of-way agreements with Miazga and Arqueana relating to access to the Project.
- Note Payable: The Company fully repaid the final installment of \$0.3 million to Arqueana in March 2022. The note payable to Arqueana was related to the share exchange agreement dated December 12, 2017, entered by the Company with Arqueana.
- Loan Agreement: The Company's subsidiary, Sigma Mineração S.A. ("SMSA") entered into a loan agreement dated September 21, 2022 (as amended) with Miazga to fund Miazga's purchase of property located in the area of interest of the Project, which is to be further transferred to environmental authorities for environmental compensation purposes. The loan agreement provides for the loan of an amount up to R\$0.8 million, which is the exact amount spent on the purchase of the property. The purchase agreement and loan are divided into two installments, whereas the first installment was paid, and the second installment will be paid by the Company to Miazga within 90 days after the payment of the first installment.
- Independent Consultant Service Agreement ("ICSA"): The Company has an ICSA with R-Tek where R-Tek's Principal, Brian Talbot, provides direct and personal services related to the management of Sigma's overall process operations, with the roles, responsibilities and obligations equivalent of a Chief Operating Officer.
- Commission fees: The Company had an agreement with A10 Advisory for acting as the financial advisor to locate equity investors in non-brokered private placements, conducted as part of a consortium of financial advisors. The Company paid finders' fee of 7% of the gross proceeds received from these investors.
- Amounts due from related party: The Company paid for drilling services provided by a third-party that were
  performed on Arqueana's land. These amounts are unsecured and are non-interest bearing. Subsequent to
  December 31, 2022, the major part was repaid, and the remaining \$0.4 million is expected to be repaid by
  year-end.
- Facility Agreement: As a subsequent event, SMSA entered into a facility agreement dated April 20, 2023, with Tatooine, to fund Tatooine's purchase of multiple properties located in areas of interest of the Project. The facility agreement provides for the loan of an amount up to US\$12 million. The facility agreement is to be made available upon utilization requests made by Tatooine to SMSA, specifying the amount to be utilized by Tatooine for the acquisition of each property and its corresponding expected costs and expenses. Upon



the transfer of the funds, there shall be a loan established between the parties in the amount of each utilization request. There were no payments made by the Company or its subsidiaries related to the Facility Agreement in the first quarter of 2023.

#### **Outstanding Balances and Expenses with Related Parties:**

Outstanding Balances and	As at Marc	ch 31, 2023	Three Months Ended March 31, 2023	As at December 31, 2022		Twelve Months Ended Dec. 31, 2022
Expenses (in C\$ 000s)	Pre-Payments / Receivables			Pre- Payments	Accounts Payable/ Debt	Expenses / Payments
A10 Advisory						
CSA	\$-	\$92	\$-	\$-	\$-	\$18
<u>Miazga</u>						
Lease Agreements	\$-	\$43	\$3	\$-	\$42	\$17
Prepaid Land Lease Offset	91	-	-	103	13	-
Loan Agreement (1)	118	-	-	113	-	-
R-Tek						
Service provided	\$-	\$-	\$893	\$-	\$242	\$-
<u>Arqueana</u>						
Lease Agreements	\$-	\$234	\$-	\$-	\$225	(\$10)
Accounts Receivable	361	-	-	4,881	-	-
Note Payable	-	-	-	-	-	(\$270)

<sup>(1)</sup> As of March 31, 2022, 50% of the total loan was drawn.

#### **NEW IFRS PRONOUNCEMENTS**

## Amendments to IAS 1 - Presentation of Financial Statements

In October 2022, the IASB issued amendments to IAS 1, Presentation of Financial Statements titled Non-current liabilities with covenants. These amendments sought to improve the information that an entity provides when its right to defer settlement of a liability is subject to compliance with covenants within 12 months after the reporting period. These amendments to IAS 1 override but incorporate the previous amendments, Classification of liabilities as current or non-current, issued in January 2020, which clarified that liabilities are classified as either current or non-current, depending on the rights that exist at the end of the reporting period. Liabilities should be classified as non-current if a company has a substantive right to defer settlement for at least 12 months at the end of the reporting period. The amendments are effective January 1, 2024, with early adoption permitted. Retrospective application is required on adoption. We do not expect these amendments to have a material effect on Q1 2023 financial statements.

## Amendment to IAS 1 and IFRS Practice Statement 2 - Disclosure of Accounting Policies

In February 2021, the IASB issued amendments to IAS 1, Presentation of Financial Statements and the IFRS Practice Statement 2 Making Materiality Judgements to provide guidance on the application of materiality judgments to accounting policy disclosures. The amendments to IAS 1 replace the requirement to disclose significant accounting policies with a requirement to disclose material accounting policies. Guidance and illustrative examples are added in the Practice Statement to assist in the application of the materiality concept when making judgments about accounting policy disclosures. The amendments are effective January 1, 2023. Prospective application is required on adoption. These amendments did not impact the Q1 2023 financial statements.



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#### **RISK FACTORS**

The Company is subject to numerous risk factors at any given time (many of which are beyond its control) which could materially adversely impact upon its business, financial condition, results of operations, cash flows, ability to obtain financing and prospects and, as a result, the trading price of the Common Shares. For risk factors faced by Sigma, please refer to its Annual Information Form for the year ended December 31, 2022 in the section titled "Risk Factors" filed on the Company's profile on SEDAR at <a href="www.sedar.com">www.sedar.com</a> and EDGAR at <a href="www.sec.gov">www.sec.gov</a>, as revised or supplemented as follows:

### **Risks Related to Resource Development**

- Development of the Project: The Company's business strategy depends in large part on developing and maintaining the Project as a commercially viable mining operation. Whether a mineral deposit will be commercially viable depends on numerous factors, including: (i) the particular attributes of the deposit, such as size, grade and proximity to infrastructure; (ii) commodity prices, which are highly volatile; and (iii) government regulations, including regulations relating to prices, taxes, royalties, land tenure, land use, importing and exporting of minerals, environmental protection and capital and operating cost requirements. The continuous development and operation of the Project is subject to the Company securing the necessary funding and other resources and is also subject to numerous development and operational risks. Accordingly, there can be no assurance that the Company will be able to maintain the Project as a commercial mining operation.
- Achieving and managing growth: The Project is at the beginning of the operating stage and is facing a substantial increase in skilled personnel and operational support as the Project transitions to a more consolidated operating stage. The Company's ability to succeed in concluding the development to commercial operations depends on a number of factors, including management's ability to manage this transition, the availability of working capital, and the ability to recruit and train additional qualified personnel (and, where appropriate, to engage third party contractors with qualified personnel).

## Risks Related to the Company's Business and Securities

- Risks of future losses and going concern: The Company's ability to continue as a going concern is dependent upon the ability to ultimately generate future profitable operations and obtain the necessary financing to meet its obligations and repay its liabilities arising from normal business operations when they come due. The Company has reported net losses and comprehensive losses for the years ended December 31, 2022 and 2021. The Company had a cash balance of \$92.9 million as of March 31, 2023 and believes this is enough to continue as a going concern at least for the next twelve months. The Company's business does not currently operate on a self-sustaining basis and until it is successfully able to fund its expenditures from its revenues, its ability to continue as a going concern is dependent on obtaining additional debt financing to fund long-term expenditures related to the construction of the Phase 1 Greentech Plant. The Company expects to continue to sustain operating losses in the future until it generates revenue from commercial production of its mineral properties. There is no guarantee that the Company will ever be profitable.
- Significant shareholder influence: To the Company's knowledge, as of the date hereof, A10 Fund holds approximately 43.6% of the outstanding Common Shares. For as long as it directly or indirectly maintains a significant interest in the Company, A10 Fund may be in a position to affect the Company's governance and operations. As a result of its shareholdings, A10 Fund has the ability, among other things, to approve significant corporate transactions and delay or prevent a change of control of the Company that could otherwise be beneficial to minority shareholders. A10 Fund generally will have the ability to control the outcome of any matter submitted for the vote or consent of the Company's shareholders. In some cases, the interests of A10 Fund may not be the same as those of the other minority shareholders, and conflicts of interest may arise from time to time that may be resolved in a manner detrimental to the Company or minority shareholders (including conflicts of interests that result from certain officers and directors being involved with the A10 Fund). The effect of this influence may be to limit the price that investors are willing to pay for Common Shares.



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In addition, the potential that A10 Fund may sell Common Shares in the public market or in private transactions, as well as any actual sales of Common Shares in the public market or in private transactions, could adversely affect the market price of the Common Shares.

#### CRITICAL ACCOUNTING ESTIMATES

Significant assumptions about the future and other sources of estimation uncertainty that management has made at the financial position reporting date, that could result in a material adjustment to the carrying amounts of assets and liabilities, relate to, but are not limited to, the following:

- Valuation of share-based payment transactions: The valuation of the Company's share-based payment transactions requires the use of estimates and valuation techniques. Measurement of the Company's RSUs that contain market-based conditions is based on a Monte Carlo pricing model which uses various inputs and assumptions. Changes in these assumptions result in changes in the fair value of these instruments and a corresponding change in the amount recognized in profit or loss. Judgement is also required in determining grant date and in estimating when non-market performance conditions are expected to be met.
- Mineral reserves and mineral resources: Proven and probable mineral reserves are the economically mineable parts of the Company's measured and indicated mineral resources demonstrated by at least a preliminary feasibility study. The Company estimates its proven and probable mineral reserves and measured and indicated and inferred mineral resources based on information compiled by appropriately qualified persons. The estimation of future cash flows related to proven and probable mineral reserves is based upon factors such as estimates of commodity prices, foreign exchange rates, future capital requirements and production costs along with geological assumptions and judgments made in estimating the size and grade of the mineral ore body. Changes in the proven and probable mineral reserves or measured and indicated and inferred mineral resources estimates may impact the carrying value of the property, plant and equipment, asset retirement obligations, recognition of deferred tax amounts and depreciation, depletion, and amortization.
- Depreciation and amortization: Mobile and other equipment is generally depreciated, net of residual value, on a straight-line basis, over the useful life of the equipment but does not exceed the estimated life of mine based on proven and probable reserves. Changes in estimates can be the result of actual future production differing from current forecasts of future production and/or expansion of mineral reserves through exploration activities.
- Valuation of long-lived assets: The assessment of fair values, including those of the CGUs for purposes of testing long-lived assets for potential impairment or reversal of impairment, require the use of assumptions and estimates for recoverable production, future capital requirements and operating performance, as contained in the Company's technical reports, as well as future and long term commodity prices, discount rates, and foreign exchange rates. Changes in any of the assumptions or estimates used in determining the fair value of long-lived assets could impact the impairment analysis.
- Provision for restoration, rehabilitation, and environmental remediation: The Company assesses its provision for restoration, rehabilitation, and environmental remediation on an annual basis or when new material information becomes available. Mining and exploration activities are subject to various laws and regulations governing the protection of the environment. In general, these laws and regulations are continually changing and the Company has made, and intends to make in the future, expenditures to comply with such laws and regulations. Accounting or restoration, rehabilitation, and environmental remediation obligations requires management to make estimates of the future costs the Company will incur to complete the restoration, rehabilitation, and environmental remediation work required to comply with existing laws and regulations at each mining operation. Actual costs incurred may differ from those amounts estimated. Also, future changes to environmental laws and regulations could increase the extent of restoration, rehabilitation, and environmental remediation work required to be performed by the Company. Increase in future costs could materially impact the amounts charged to operations for restoration, rehabilitation, and environmental remediation. The provision represents management's best estimate of the present value of the future restoration, rehabilitation, and environmental remediation obligation. The actual future expenditures may differ from the amounts currently provided.



#### **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 financial performance or financial condition of the Company, including, and without limitation, such considerations as liquidity and capital resources.

#### **CAPITAL MANAGEMENT**

The Company manages its capital with the following objectives:

- To ensure sufficient financial flexibility to achieve its ongoing business objectives, namely funding the
  construction of the Phase 1 Greentech Plant and future growth opportunities (including potential production
  expansions through the development of the Project's Phase 2 and Phase 3 deposits); and
- To maximize shareholder returns through enhancing its share value.

The Company monitors its capital structure and adjusts according to market conditions to meet its objectives, given the current outlook of the business and industry in general. The Company may manage its capital structure by issuing new shares, raising debt, repurchasing outstanding shares, adjusting capital spending, or disposing of assets. The capital structure is reviewed by management and the Board on an ongoing basis.

The Company considers its capital to be equity, comprising share capital, contributed surplus, accumulated other comprehensive loss and deficit, which on March 31, 2023, totaled \$179.0 million (March 31, 2022: \$189.2 million). The Company's capital management objectives, policies, and processes remained unchanged during the three months ended March 31, 2023.

The Company manages capital through its financial and operational forecasting processes. The Company reviews its operating expenditures, and other investing and financing initiatives based on activities related to the Project.

#### **FINANCIAL RISK FACTORS**

The Company's activities expose it to a variety of financial risks: credit risk, liquidity risk, and market risk (including interest rate risk, foreign currency risk, and price risk).

The fair values of cash and cash equivalents, accounts payable, export prepayment agreement, due from related party and note payable approximate their carrying values due to the short term to maturity of these financial instruments.

### **Credit Risk**

Credit risk is the risk of loss associated with a counterparty's inability to fulfill its payment obligations. The Company's credit risk is primarily attributable to cash and cash equivalents. The Company's cash and cash equivalents are held with established institutions for which management believes the risk of loss to be remote.

#### **Liquidity Risk**

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they fall due. The Company's approach to managing liquidity is to ensure it will have sufficient liquidity to meet liabilities when due. To the extent the Company does not believe it has sufficient liquidity to meet obligations, it will actively manage its expenses along with capital expenditures, while it seeks additional equity or debt funding.

As of March 31, 2023, the carrying amount of the financial liabilities, measured using the amortized cost method are described below. Their corresponding maturities are evidenced below:

Contractual Obligations	Up to 1 Year	1-3 Years	4-5 Years	>5 Years	Total
Suppliers	\$19,553	\$-	\$-	\$-	\$19,553
Accounts payable and accrued liabilities	12,984	-	-	1,824	14,808
Export prepayment agreement	-	131,950	-	-	131,950



(Expressed in thousands of Canadian dollars, except per share amounts or unless stated otherwise)

BDMG	101	1,305	1,252	574	3,232
Lease liabilities	1,385	1,830	889	824	4,928

## **Market Risk**

Market risk is the risk of loss that may arise from changes in market factors such as interest rates and foreign exchange rates.

#### Interest Rate Risk

The Company has cash and cash equivalent balances. The Company's current policy is to invest surplus cash balances with high rated banks in the jurisdictions it has a presence in, such as Canada and Brazil. As of March 31, 2023, the Company had \$92.9 million of cash. The Company's exposure to risk of changes in market interest rates prelates primarily to interest earned on its cash balances.

Additionally, on December 31, 2022, the Company entered into an export prepayment agreement exposed to interest BSBY + 6.95%, as disclosed in the Financial Statements.

• Sensitivity to a plus or minus 10% change in the interest rate of the export prepayment agreement would affect the Company's consolidated statements of net loss and comprehensive Loss by approximately \$0.6 million.

## Foreign Currency Risk

The Company's functional and presentation currency is the Canadian dollar and certain purchases, and salaries are transacted in Canadian dollars. The Company also has significant balances in Brazilian Reais and United States dollars that are subject to foreign currency risk.

The Company had the following balances in the prescribed currencies:

(in \$ 000s)	As at March 31, 2023	As at December 31, 2022
Brazilian Reais		
Current Assets	\$101,209	\$291,915
Current Liabilities	(188,167)	(116,874)
United States Dollar		
Cash in Banks	62,846	28,704
Current Liabilities	(3,800)	(3,800)
Non-Current Liabilities	(100,533)	(60,114)

R means restated in relation to the same period presented

Cash in Foreign Currencies (in \$ 000s)	As at Marc	h 31, 2023	As at December 31, 2022		
	Amount in Currency Shown	Equivalent in Canadian Dollars	Amount in Currency Shown	Equivalent in Canadian Dollars	
Deposits in Brazilian Reais	\$24,802	\$6,620	\$223,635	\$57,325	
Deposits in United States Dollars	62,846	84,949	28,704	38,886	
Total Cash	-	\$91,568	-	\$96,211	

The Company is exposed to foreign currency risk on fluctuations related to cash and cash equivalents, receivables, export prepayment agreement, accounts payable, accrued liabilities and other liabilities denominated in Brazilian Reais and United States dollars.



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- Sensitivity to a plus or minus 10% change in the foreign exchange rate of the Brazilian Reais compared to the Canadian dollar would affect the Company's consolidated statements of net loss and comprehensive loss by approximately \$0.7 million with all other variables held constant.
- Sensitivity to a plus or minus 10% change in the foreign exchange rate of the United States dollar compared to the Canadian dollar would affect the Company's consolidated statements of net loss and comprehensive loss by approximately \$5.4 million with all other variables held constant.

#### **Changes in Directors and Management**

At the end of July, Caio Araujo assumed as the new CFO of Sigma. Mr. Araujo joined Sigma on June 26, 2023 as Chief Controls Officer and recently replaced the former CFO. Mr. Araujo has 33 years of experience in finance and controlling, having built his career in auditing and consulting in global capital markets, accounting and controlling of a multi-segment company acting in the steel, iron ore, cement, energy and logistics industries. Before joining Sigma, Mr. Araujo was Controlling and Treasury Director of a telecommunication company. Mr. Araujo has bachelor degrees in accounting and business administration and has a MBA in Production Engineering from Escola Politecnica of the University of San Paolo (USP) and a MBA in Corporate Finance and Investment Banking from Foundation Institute of Administration (FIA).

Raphael N. Dias joined as Chief Controls and Human Resources Officer on July 5, 2023. Raphael has over 22 years of experience in corporate finance. Prior to join Sigma, he served as LATAM Controller Vice-president of Cargill Agrícola S.A., and prior to that, as Controlling Director of Nike do Brasil S.A.. Mr. Dias started his career in 2001 at Deloitte Touch Tohmatsu in the Assurance Team, within an international experience of almost two years in San Jose, CA. Raphael holds a BA in Economics from Instituto Presbiteriano Mackenzie, a BA in Accounting from Universidade Paulista and a MBA from Universidade de São Paulo – ESALQ. Mr. Dias just started a M.Sc. in Administration at Instituto de Ensino e Pesquisa – INSPER, with an expected conclusion in April 2025.

## **QUALIFIED PERSON**

Mr. Wes Roberts, P.Eng. is the "qualified person" under National Instrument 43-101 ("NI 43-101") who reviewed and approved the technical information disclosed in this MD&A.

#### CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

Certain information and statements in this MD&A may constitute "forward-looking information" within the meaning of Canadian securities legislation and "forward-looking statements" within the meaning of U.S. securities legislation (collectively, "Forward-Looking Information"), which involve known and unknown risks, uncertainties, and other factors which may cause the actual results, performance or achievements of the Company, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such Forward-Looking Information. All statements, other than statements of historical fact, may be Forward-Looking Information, including, but not limited to, mineral resource or mineral reserve estimates (which reflect a prediction of the mineralization that would be realized by development). When used in this MD&A, such statements generally use words such as "may", "would", "could", "will", "intend", "expect", "believe", "plan", "anticipate", "estimate" and other similar terminology. These statements reflect management's current expectations regarding future events and operating performance and speak only as of the date of this MD&A. Forward-Looking Information involves significant risks and uncertainties, should not be read as guarantees of future performance or results, and does not necessarily provide accurate indications of whether or not such results will be achieved. A number of factors could cause actual results to differ materially from the results discussed in the Forward-Looking Information, which is based upon what management believes are reasonable assumptions, and there can be no assurance that actual results will be consistent with the Forward-Looking Information.

In particular (but without limitation), this MD&A contains Forward Looking Information with respect to the following matters: statements regarding anticipated decision making with respect to the Project; capital expenditure programs; estimates of mineral resources and mineral reserves; development of mineral resources and mineral reserves; government regulation of mining operations and treatment under governmental and taxation regimes; the future price of commodities, including lithium; the realization of mineral resource and mineral reserve estimates,



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including whether mineral resources will ever be developed into mineral reserves; the timing and amount of future production; currency exchange and interest rates; expected outcome and timing of environmental surveys and permit applications and other environmental matters; potential positive or negative implications of change in government; the Company's ability to raise capital and obtain project financing; expected expenditures to be made by the Company on its properties; successful operations and the timing, cost, quantity, capacity and quality of production; capital costs, operating costs and sustaining capital requirements, including the cost of construction of the processing plant for the Project; and competitive conditions and the ongoing uncertainties and effects in respect of the military conflict in Ukraine.

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 several risks and uncertainties, many of which are beyond the Company's control, that could cause actual results to differ materially from those disclosed in or implied by such Forward-Looking Information. With respect to the Forward-Looking Information, the Company has made assumptions regarding, among other things:

- General economic and political conditions (including but not limited to the impact of the continuance or escalation of the military conflict between Russia and Ukraine, and economic sanctions in relation thereto).
- Stable and supportive legislative, regulatory and community environment in the jurisdictions where the Company operates.
- Stability and inflation of the Brazilian Real, including any foreign exchange or capital controls which may be enacted in respect thereof, and the effect of current or any additional regulations on the Company's operations.
- Anticipated trends and effects in respect of the COVID-19 pandemic and post-pandemic.
- Demand for lithium, including that such demand is supported by growth in the EV market.
- Estimates of, and changes to, the market prices for lithium.
- The impact of increasing competition in the lithium business and the Company's competitive position in the industry.
- The Company's market position and future financial and operating performance.
- The Company's estimates of mineral resources and mineral reserves, including whether mineral resources will ever be developed into mineral reserves.
- Anticipated timing and results of exploration, development and construction activities.
- Reliability of technical data.
- The Company's ability to develop and achieve full capacity commercial production at the Project.
- The Company's ability to obtain financing on satisfactory terms to develop the Project, if required.
- The Company's ability to obtain and maintain mining, exploration, environmental and other permits, authorizations and approvals for the Project.
- The timing and outcome of regulatory and permitting matters for the Project.
- The exploration, development, construction and operational costs for the Project.
- The accuracy of budget, construction and operations estimates for the Project.
- Successful negotiation of definitive commercial agreements, including off-take agreements for the Project.
- The Company's ability to operate in a safe and effective manner.





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Although management believes that the assumptions and expectations reflected in such Forward-Looking Information are reasonable, there can be 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.

In addition, Forward Looking Information with respect to the potential outlook and future financial results contained in this MD&A is based on assumptions noted above and about future events, including economic conditions and proposed courses of action, based on management's assessment of the relevant information available as at the date of such information. Readers are cautioned that any such information should not be used for purposes other than for which it is disclosed.

The Company's actual results could differ materially from those anticipated in any Forward-Looking Information as a result of various known and unknown risk factors, including (but not limited to) the risk factors referred to under the heading "Risk Factors" in this MD&A. Such risks relate to, but are not limited to, the following:

- There can be no assurance that market prices for lithium will remain at current levels or that such prices will improve.
- The market for EVs and other large format batteries currently has limited market share and no assurances can be given for the rate at which this market will develop, if at all, which could affect the success of the Company and its ability to develop lithium operations.
- Changes in technology or other developments could result in preferences for substitute products.
- New production of lithium hydroxide or lithium carbonate from current or new competitors in the lithium markets could adversely affect prices.
- Phases 2 and 3 of the Project are at development stage and the Company's ability to succeed in progressing through development of such phases to commercial operations will depend on a number of factors, some of which are outside its control.
- The Company's financial condition, operations and results of any future operations are subject to political, economic, social, regulatory and geographic risks of doing business in Brazil.
- Inflation in Brazil, along with Brazilian governmental measures to combat inflation, may have a significant negative effect on the Brazilian economy and, as a result, on the Company's financial condition and results of operations.
- Violations of anti-corruption, anti-bribery, anti-money laundering and economic sanctions laws and regulations could materially adversely affect the Company's business, reputation, results of any future operations and financial condition.
- Corruption and fraud in Brazil relating to ownership of real estate could materially adversely affect the Company's business, reputation, results of any future operations and financial condition.
- The Company is subject to regulatory frameworks applicable to the Brazilian mining industry which could be subject to further change, as well as government approval and permitting requirements, which may result in limitations on the Company's business and activities.
- The Company's operations are subject to numerous environmental laws and regulations and expose the Company to environmental compliance risks, which may result in significant costs and have the potential to reduce the profitability of operations.
- Physical climate change events and the trend toward more stringent regulations aimed at reducing the effects
  of climate change could have an adverse effect on the Company's business and future operations.
- As the Company does not have any experience in the operation of a mine, processing plants and related infrastructure, it is more difficult to evaluate the Company's prospects, and the Company's future success is more uncertain than if it had a more proven history of developing a mine.



(Expressed in thousands of Canadian dollars, except per share amounts or unless stated otherwise)

- The Company's future production estimates are based on existing mine plans and other assumptions which change from time to time. No assurance can be given that such estimates will be achieved.
- The Company may experience unexpected costs and cost overruns, problems and delays during construction, development, mine start-up and operations for reasons outside of the Company's control, which have the potential to materially affect its ability to fully fund required expenditures and/or production or, alternatively, may require the Company to consider less attractive financing solutions.
- The Company's capital and operating cost estimates may vary from actual costs and revenues for reasons outside of the Company's control.
- The Company's operations are subject to the high degree of risk normally incidental to the exploration for, and the development and operation of, mineral properties.
- Insurance may not be available to insure against all such risks, or the costs of such insurance may be uneconomic. Losses from uninsured and underinsured losses have the potential to materially affect the Company's financial position and prospects.
- The Company is subject to risks associated with securing title, property interests and exploration and exploitation rights.
- The Company is subject to strong competition in Brazil and in the global mining industry.
- The Company may become subject to government orders, investigations, inquiries or other proceedings (including civil claims) relating to health and safety matters, which could result in consequences material to its business and operations.
- The Company's mineral resource and mineral reserve estimates are estimates only and no assurance can be given that any particular level of recovery of minerals will in fact be realized or that identified mineral resources or mineral reserves will ever qualify as a commercially mineable (or viable) deposit.
- The Company's operations and the development of its projects may be adversely affected if it is unable to maintain positive community relations.
- The Company is exposed to risks associated with doing business with counterparties, which may impact the Company's operations and financial condition.
- Any limitation on the transfer of cash or other assets between the Company and the Company's subsidiaries, or among such entities, could restrict the Company's ability to fund its operations efficiently or the ability of its subsidiaries to distribute cash otherwise available for distributions.
- The Company is subject to risks associated with its reliance on consultants and others for mineral exploration and exploitation expertise.
- Pandemics could have a material adverse effect on the Company's business, operations, financial conditions and stock price.
- The current military conflict in Ukraine and the economic or other sanctions imposed may impact global markets in such a manner as to have a material adverse effect on the Company's business, operations, financial condition and stock price.
- If the Company is unable to ultimately generate sufficient revenues to become profitable and have positive cash flows, it could have a material adverse effect on its prospects, business, financial condition, results of operations or overall viability as an operating business (including its ability to repay the Synergy Financing, in respect of which, substantially all of the Company's consolidated assets have been secured).
- The Company is subject to liquidity risk and therefore may in the future have to include a "going concern" note in its financial statements.



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- The Company may not be able to obtain sufficient financing in the future on acceptable terms, which could have a material adverse effect on the Company's business, results of operations and financial condition. In order to obtain additional financing, the Company may conduct additional (and possibly dilutive) equity offerings or debt issuances in the future.
- Western governmental actions in respect of critical minerals may affect the Company's business.
- The Company may be unable to achieve cash flow from operating activities sufficient to permit it to pay the principal, premium, if any, and interest on the Company's indebtedness, or maintain its debt covenants.
- The Company has not declared or paid dividends in the past and may not declare or pay dividends in the future.
- The Company has increased costs as a result of being a public company both in Canada listed on the TSXV and in the United States listed on the Nasdaq, and its management is required to devote further substantial time to United States public company compliance efforts.
- If the Company does not maintain implement and maintain adequate and appropriate internal controls over financial reporting as outlined in accordance with NI 52-109 or the Rules and Regulations of the SEC, the Company will have to continue to report a material weakness and disclose that the Company has not maintained appropriate internal controls over financial reporting.
- As a foreign private issuer, the Company is subject to different U.S. securities laws and rules than a domestic U.S. issuer, which may limit the information publicly available to its shareholders.
- Failure to retain key officers, consultants and employees or to attract and, if attracted, retain additional key individuals with necessary skills could have a materially adverse impact upon the Company's success.
- The Company is subject to currency fluctuation risks.
- From time to time, the Company may become involved in litigation, which may have a material adverse effect on its business financial condition and prospects.
- Certain directors and officers of the Company are, or may become, associated with other natural resource companies which may give rise to conflicts of interest.
- The market price for the Company's shares may be volatile and subject to wide fluctuations in response to numerous factors beyond its control, and the Company may be subject to securities litigation as a result.
- If securities or analysts, industry analysts or activist short sellers publish research or other reports about the Company's business, prospects or value, which questions or downgrades the value of the Company, the price of the Common Shares could decline.
- The Company will have broad discretion over the use of the net proceeds from offerings of its securities.
- There is no guarantee that the Common Shares will earn any positive return in the short term or long term.
- The Company has a major shareholder which owns 43.6% of the outstanding Common Shares and, as such, for as long as such shareholder directly or indirectly maintains a significant interest in the Company, it may be in a position to affect the Company's governance, operations and the market price of the Common Shares.
- As the Company is a Canadian corporation but many of its directors and officers are not citizens or residents of Canada or the U.S., it may be difficult or impossible for an investor to enforce judgements against the Company and its directors and officers outside of Canada and the U.S. which may have been obtained in Canadian or U.S. courts or initiate court action outside Canada or the U.S. against the Company and its directors and officers in respect of an alleged breach of securities laws or otherwise. Similarly, it may be difficult for U.S. shareholders to effect service on the Company to realize on judgments obtained in the United States.



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- The Company is governed by the Canada Business Corporations Act and by the securities laws of the province of Ontario, which in some cases have a different effect on shareholders than U.S. corporate laws and U.S. securities laws.
- The Company is subject to risks associated with its information technology systems and cyber-security.
- The Company may be a Passive Foreign Investment Company, which may result in adverse U.S. federal income tax consequences for U.S. holders of Common Shares.

Readers are cautioned that the foregoing lists of assumptions and risks are not exhaustive. The Forward-Looking Information contained in this MD&A is expressly qualified by these cautionary statements. All Forward-Looking Information in this MD&A speaks as of the date of this MD&A. 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 applicable securities law. Additional information about these assumptions, risks, and uncertainties is contained in the Company's filings with securities regulators, including the Company's most recent annual and interim MD&A and annual information form, which are available on SEDAR at <a href="https://www.sedar.com">www.sedar.com</a>.

## CAUTIONARY NOTE REGARDING MINERAL RESERVE & MINERAL RESOURCE ESTIMATES

Technical disclosure regarding the Company's properties included in this document has not been prepared in accordance with the requirements of U.S. securities laws. Without limiting the foregoing, such technical disclosure uses terms that comply with reporting standards in Canada and estimates are made in accordance with NI 43-101. Unless otherwise indicated, all mineral reserve and mineral resource estimates contained in the technical disclosure have been prepared in accordance with NI 43-101 and the CIM Definition Standards.

NI 43-101 is a rule developed by the Canadian Securities Administrators that establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects. NI 43-101 differs significantly from the disclosure requirements of the SEC generally applicable to U.S. companies. Accordingly, information contained in this MD&A is not comparable to similar information made public by U.S. companies reporting pursuant to SEC disclosure requirements.