## BIOMARK DIAGNOSTICS INC.

# Form 51-102F1 Management's Discussion & Analysis Quarterly Report For the Quarter Ended December 31, 2019

## 1.1 Date of Report: February 25th, 2020

The following management's discussion and analysis ("MD&A") should be read together with the condensed consolidated financial statements and accompanying notes for the quarter ended December 31, 2019, which are prepared in accordance with International Financial Reporting Standards ("IFRS"). All amounts are stated in Canadian dollars unless otherwise indicated.

This MD&A includes certain statements that may be deemed "forward-looking statements". Forward-looking statements are often, but not always, identified by the use of words such as "anticipate", "plan", "estimate", "expect", "may", "project", "predict", "potential", "could", "might", "should" and other similar expressions. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include market prices, continued availability of capital and financing and general economic, market or business conditions. Investors are cautioned that any such statements are not guarantees of future performance and actual results or developments may differ materially from those projected in the forward-looking statements.

## 1.2 Overall Performance

BioMark Diagnostics Inc. was incorporated under the Business Corporation Act of British Columbia on June 19, 2014. The head office of the Company is 165-10551 Shellbridge Way, Richmond, British Columbia, V6X 2W8.

BioMark Diagnostics is developing proprietary, non-invasive, and accurate cancer diagnostic solutions to help detect, monitor, and assess treatment for cancer early and cost effectively. The platform technology is also designed to be used for measuring response to treatment and potentially for serial monitoring for cancer survivors. For more information please visit the company website at: www.biomarkdiagnostics.com

Announcements and Highlights during the quarter:

Management continues to raise capital through private placement, family
funds and other strategic sources to support completion of clinical trials
studies and commercialization of its core technology platform.
Management has been working on numerous non-dilutive financing with
various government institutions across Canada and USA.

- BioMark submitted a manuscript tilted "A High-Performing Plasma Metabolite panel for Early-Stage Lung Cancer Detection" through an international research collaboration to a high impact peer review medical journal on September 17<sup>th</sup>, 2019 and are keenly awaiting notification of acceptance or rejection.
- On October 15<sup>th</sup>, 2019, Drs. Maksymiuk and Sitar presented at the October 2019 Grand Rounds in University of Manitoba. The title of the presentation "Recent Findings in Early Cancer Diagnosis Focus on Manitoba Contributions".
- BioMark team visited Asia from October 11<sup>th</sup> to October 20<sup>th</sup>, 2019. Discussions were held with various interested entities for potential collaboration.
- Drs Don Miller, Dan Sitar and Eman Alraddadi are completing a manuscript titled "Pharmacokinetic modelling of amantadine and acetylamantadine metabolites for potential applications as cancer biomarker". Additional substrate rimantadine is now being included in the model.
- On November 19<sup>th</sup>, 2019, BioMark was pleased to announce that it has signed a Letter of Intent for Licensing Relationship for Clinical Validation and Development.
- On November 29<sup>th</sup>, 2019, Interim Financial Statement and MD&A were filed in SEDAR and Canadian Securities Exchange as required by regulators.
- On December 11<sup>th</sup>, 2019, BioMark was pleased to announce that the Company was proud to be featured in the official magazine of the Canadian Trade Commissioner Service (TCS) Life Sciences Special Edition. BioMark with the help of the Canadian Trade Commissioner Service (TCS) continues to develop dynamic global connections and undertaking research collaborations in an effort to bring its "nextgeneration" cancer diagnostics technology to market.
- On December 16<sup>th</sup>, 2019, BioMark was pleased to announce that it closed the non-brokered Private Placement for gross proceeds of \$669,347.00 wherein BioMark issued 2,231,157 units at a price of \$0.30 per unit further to its press release of November 21<sup>st</sup>, 2019. Each unit is composed of one common share of the Company and one-half share purchase warrant. Each whole warrant shall entitle the holder to acquire one share at a price of \$0.45 per share for a period of two year after the date of issuance.
- On December 19<sup>th</sup>, 2019, BioMark was pleased to provide 2019 round up and our outlook for 2020.

- On December 20<sup>th</sup>, 2019, BioMark Diagnostics Inc. held its Annual General Meeting at 17th Floor - 1030 West Georgia St., Vancouver, BC V6E 2Y3 on Friday, at 9:00 a.m. (Vancouver Time).
- BioMark along with MedTeq in Quebec provided further documents for the grant application titled "A Pan Canadian initiative for the development of liquid biopsy assay for lung cancer screening". A multi-disciplinary team consisting of parties from Quebec, Alberta, Manitoba and British Columbia were involved in the application. The total ask is estimated at \$650,000. Decision of the outcome is expected by February / March 2020.
- On December 31st, 2019, BioMark Diagnostics Inc. was pleased to announce appointment of scientific and medical advisors, grant of stock options and changes in Board of Directors.

# **Risk Factors and Uncertainty**

The Company is focused on more select market introduction and development of all its product lines while instituting cost control of product development. The failure to generate future sales in the Company's main products could have a significant and adverse affect on the Company.

The Company is engaged in conducting additional clinical research related to technology positioning and regulatory submissions. Negative clinical trials along with regulatory non-approval or delays could adversely affect sales, product commercialization and could have a major impact on the Company. Additionally, industry evolution and existing or new market entrants can impact the competitive position of BioMark. New detection and screening technologies in genomics, epigenetics, exosomes, and liquid biopsy incorporating big data can negatively impact BioMark commercialization efforts. BioMark is examining potential of incorporating or partnering with some industry participants to lower this risk.

BioMark's success will depend in large measure on certain key personnel. The loss of the services of such key personnel could have a material adverse affect on the Company. The contributions of these individuals to the immediate operations of BioMark are of central importance. In addition, there can be no assurance that BioMark will be able to continue to attract and retain all personnel necessary for the development and operation of its business.

Management is continuing efforts to attract additional equity and capital investors and implement cost control measures to maintain adequate levels of working capital. Nevertheless, there can be no assurance provided with respect to the successful outcome of these ongoing actions. If the Company is unable to obtain additional financing on reasonable terms, the Company may be required to curtail or reduce its operations to continue as a going concern.

In addition, the Company's limited working capital could affect the Company's ability to seize upon opportunities requiring investment, or to reinvest in its products in a timely manner.

## 1.3 Selected Quarter Information

The following information is a summary of the current quarter and year-to-date results including a comparison of financial performance to the corresponding previous year. The information is presented on the same basis as the consolidated financial statements and should be read in conjunction with the statements and accompanying notes.

	December 31,	March 31,	December 31,
	2019	2019	2018
	\$	\$	\$
Total Expenses	936,174	545,612	168,668
Net Loss	672,891	545,612	168,668
Loss Per share	0.01	0.01	0.00
Total Assets	743,048	34,642	77,437
Distribution or Cash Dividends	None	None	None

For discussion of annual information refer to sections 1.4 and 1.5.

#### 1.4 Discussion of Operations

The Company generated its revenues of \$263,283.00 for the quarter ended December 31, 2019 and has recorded a net loss of \$672,891. The net loss increased by \$504,223 compared to the previous year of \$168,668. This was due to the large amount of share-based compensation and increased consulting fee. Total assets increased to \$743,048 for the quarter ended December 31, 2019 compared to \$77,437 reported on December 31, 2018. This capital increase is attributed to cash received from the generated revenue and financial activities through private placement and warrants exercise.

Consulting service fees increased by \$62,342 compared to the previous year of \$82,500 which associated with the financial activities and revenue generation. Professional fees and filing and transfer agent fees reduced by \$11,147 and \$2,415 respectively compared to the same period of last year due to the timing of the billing period of required professional services. Research and other decreased by \$15,710 at this quarter but the Company is expecting to increase investment spending associated with research, sample and data analysis, regulatory submission, potential point of care test kit development, incorporation of AI/imaging, presentations and publications in the next

quarter. The share-based compensation increased by \$733,322 compared to \$nil as reported in December 31, 2018, mainly due to services rendered by scientific advisors and consultants as consulting services to support scientific and research development activities over the past few years. Previous options related to share-based compensation for the scientific advisors and consultants expired during this quarter. The Company currently has no reported payroll and engages on the basis of consulting services as needed.

Travel expenses during the period remained at a similar level to the previous year with a slight decrease of \$2,877. Office and miscellaneous increased by \$3,991 due to the office upgrade equipment and furnishings.

## **Upcoming Potential Operational Objectives**

In the coming quarters, BioMark will continue to evolve its business operations to help further leverage its expertise in cancer detection, monitoring and assessment. Some key business objectives initiatives include:

- Actively raise capital especially with institutional, family funds and strategic investors
- Respond to questions related to its application to Health Canada for diagnostic application of its SSAT1 initially using LCMS. The LCMS is the industry gold reference standard, hence, to gain recognition the company is focusing on this analytical methodology; See notes below on activities related to our clinical trials.
- Revalidate and advance the clinical commercialization of its customized fingerprint assay with The Metabolomics Innovation Centre (TMIC) and authorized lab service company for lung cancer. A larger cohort of samples (>1200) with an emphasis on earlier stage lung cancer samples along with appropriate controls is currently being sourced through registered bio depository centre in Quebec (IUCPQ) and other centres across N. America. Assays will be reanalyzed/revalidated at accredited partner labs after the initial analysis and prototype kits will be developed and optimized by TMIC. In addition, the company will enhance its supporting software as needed for the assay through services rendered at a leading Machine learning organization in either Alberta or Quebec. The company anticipates the completion of the sample validation by end 2020 year provided sufficient finances are raised and grants obtained.
- Continue to research and develop better quantification technologies or methods that will enhance the signal detection and reduce overall costs associated with sample collection and preparation. The company's goal is to lower cost detection costs associated with our platform; Elisa

tests using BioMark's monoclonal antibodies have being conducted and are now being compared to our LCMS test for accuracy and reproducibility. Validation of the kits at an accredited lab will follow the optimization of the assay. Successful outcome will provide avenues to introduce the tests in centres that require economic and fast turnaround times (doctor offices for example).

- Conduct and appropriately register the clinical trials which include measuring response to radiation and chemotherapy and surgical intervention firstly for late stage lung cancer and then for glioblastoma; A first readout on lung cancer response to treatment pilot test is anticipated in March 2020. Samples have been shipped to our registered partner lab for analysis. Internal standards have been established for the assays based on multiple substrates.
- Develop stronger industry collaborations both locally and internationally with leading institutions and clinicians
- Publish in leading journals and highlight our breakthroughs at important meetings and symposiums
- Seek strong local and international industrial partners to engage in codevelopment projects
- Apply for appropriate government grants with partner institutions in Canada and USA such as Medteq, Brain Cancer Foundation, NSERC Alliance and Genome BC
- Continue to build the operating and scientific teams

## 1.5 Summary of Quarterly Results

The following information is a summary of the Company's financial results for the eight most recently completed quarters.

	December 31,	September 30,	June 30,	March 31,
	2019	2019	2019	2019
	\$	\$	\$	\$
Total Revenue	263,283	-	-	-
Expenses	936,174	135,926	120,557	123,218
Net Loss	(672,891)	(135,926)	(120,557)	(123,218)
Loss per Share	(0.01)	(0.00)	(0.00)	(0.00)

	December 31,	September 30,	June 30,	March 31,
	2018	2018	2018	2018
	\$	\$	\$	\$
Total Revenue	-	-	-	-
Expenses	168,688	160,558	110,911	147,536
Net Loss	(168,688)	(160,558)	(110,911)	(147,536)
Loss per Share	(0.00)	(0.00)	(0.00)	(0.00)

## 1.6 Liquidity

The Company has total assets of \$743,048 as at December 31, 2019 consisting of cash and amounts receivable and has a negative working capital of \$327,945.

At December 31, 2019, the Company had cash and cash equivalents of \$724,665 (December 31, 2018 – \$63,045). Working capital deficit reduced by \$771,987 from December 31, 2018 (\$1,099,932) due to the large increase in current assets during this quarter especially for cash and cash equivalents. Working capital is defined as current assets less current liabilities. Total liabilities reduced by \$107,166 from December 31, 2018 (\$1,175,729) which is mainly due to the decrease related to dues to parties mainly as debt settlement with key management personnel. Cash and cash equivalents increased largely by \$661,620 and is attributed to the cash received from revenue and cash obtained from warrants exercised by existing share holders and financing activities through private placement.

Cash utilized in operating activities during the quarter ended December 31, 2019 shows an increase in items not affecting cash which includes share-based compensation and deb settlement in shares along with reduction in accounts payable and accrued liabilities.

At December 31, 2019, share capital was \$5,520,070 comprising 72,313,729 issued and outstanding common shares (December 31, 2018 it was \$4,308,874 comprising 65,015,119 issued and outstanding common shares). Contributed Surplus at December 31, 2019 is \$1,545,347 (vs \$700,357 for December 2018) the increase is the result of the share-based payments accrued during this quarter. As a result of the net loss for the nine months ended December 31, 2019 of \$929,373 (December 31, 2018 – \$422,394) the deficit at December 31, 2019 increased to \$7,210,514 compared to \$6,157,923 to the same period December 31, 2018.

At present, the Company's operations do not generate cash inflows and its financial success after December 31, 2019 is dependent on management's ability to continue to obtain sufficient funding to sustain operations through the development stage and successfully bring the Company's technologies to the point that they may be out licensed so that the Company achieves profitable operations. The research and development process can take many years and is subject to factors that are beyond the Company's control.

In order to finance the Company's future research and development and to cover administrative and overhead expenses in the coming years the Company may raise money through equity sales. Many factors influence the Company's ability to raise funds, including the Company's record of accomplishment, and the experience and caliber of its management. Actual funding requirements may vary from those planned due to various factors, including the progress of research activities. Management believes it will be able to raise equity capital as required in the long term but recognizes there will be risks involved that may be beyond their control. Should those risks fully materialize, it may not be able to raise adequate funds to continue its operations.

Since the Company will not be able to generate cash from its operations in the foreseeable future, the Company will have to rely on funding through future equity issuances and through short term borrowing in order to finance ongoing operations. The ability of the Company to raise capital will depend on market conditions and it may not be possible for the Company to issue shares on acceptable terms or at all. See subsequent event for additional information.

#### 1.7 Capital Resources

The Company does not have any other commitments for material capital expenditures. The Company is not a party to any off-balance sheet arrangements that have, or are reasonably likely to have, a current or future material effect on the Company's financial condition, changes in financial condition, revenues, expenses, results of operations, liquidity, capital expenditures or capital resources.

## 1.8 Off-Balance Sheet Arrangements

There is no off-balance sheet arrangements to which the Company is committed.

#### 1.9 Transactions Between Related Parties

During the quarter ended December 31, 2019, the Company entered into the following transactions with related parties:

- a) For the quarter ended December 31, 2019, directors and officers of the company provided consulting services to the company of \$97,500. These charges are included in consulting fees. Consulting fees from the CEO was \$60,000 and the Interim CFO who also performed duties as Project Director was \$37,500 for the quarter ended December 31, 2019. As at December 31, 2019, the Company has \$675,945 due to CEO (2018 \$649,946). The balance owing to the interim CFO as at December 31, 2019 is \$118,645 (2018 \$198,395). The balances due to related parties are unsecured, non-interest bearing and without fixed repayment terms.
- b) For the quarter ended December 31, 2019, the Company recognized \$ nil of share-based compensation for stock options held by director and officers.
- c) On May 14, 2014, the Company entered a General Service Agreement (the "Service Agreement") with BioMark Technologies Inc., Both Biomark Diagnostics and BioMark Technologies are managed by the CEO of the Company. According to the Service Agreement, the Company engaged Biomark Technologies to provide important services that include continuation of research and development, establishing a framework quality management system, IP refinement and filing, establish protocols with key investigators, linking platforms that BioMark Diagnostics can leverage, engage in territorial business development from relationships that Biomark Technologies developed over the years, supplier validation and review, operating capital and other related functions (the "Services"). Biomark Technologies uses subcontractors to perform some of its services. The Company will pay management fees equivalent to cost plus a 25% administration fee to Biomark Technologies and payable upon completion of the Services. For the quarter ended December 31, 2019, the Company paid \$nil to Biomark Technologies as administration fees (2018) - \$nil). BTI holds approximately 56.70% of the common shares of the Company as at December 31, 2019 (2018 – 63.07%). The CEO owns more than 10% interest in the Company. The term of this Agreement will remain in full force and effect indefinitely until terminated as provided in the Agreement. In the event that either party wishes to terminate this Agreement, that each party will be required to provide 30 days' notice to the other party.
- d) On May 14, 2014, the Company entered into an Independent Contractor Agreement (the "Agreement") with the CEO of the Company. According to the Agreement, the CEO will provide consulting services to the Company for one year with a compensation of \$240,000 per year plus benefits. In addition, the CEO will be paid a cash bonus equivalent to 30% of the annual salary at the end of each year if the trading price of the Company shares increased by more than 30% from the trading price at the beginning of the year. For the purpose of this calculation, the starting

trading price is \$0.25 per share. The CEO will also be granted stock options for 1,000,000 shares at a price of \$0.25 per share (granted). Finally, if the Company's market capitalization exceeds \$200 million USD, the CEO will be paid an additional cash bonus of \$500,000. The terms of the CEO agreement are on year to year basis unless terminated accordance to the terms and conditions set forth in the agreement. According to the Agreement, the Company engaged CEO service to provide important services that include develop and direct the corporate strategy, resource allocation, review acquisitions or partnerships, drive or generate revenue growth, hire, and retain staff as necessary, support in capital raise rounds, manage past relationships and build business and collaborations.

## 1.10 Fourth Quarter

N/A

# 1.11 Proposed Transactions

N/A

# 1.12 Critical Accounting Estimates

The preparation of the consolidated financial statements in accordance with IFRS requires the Company to make estimates and assumptions concerning the future. The Company's management reviews these estimates and underlying assumptions on an ongoing basis, based on experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Revisions to estimates are adjusted for prospectively in the period in which the estimates are revised. However, actual outcomes can differ from these estimates. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected. The more significant areas are as follows:

- the estimates and assumptions used in the share-based payments; and
- the fair value measurements for financial instruments;

The preparation of consolidated financial statements in accordance with IFRS requires the Company to make judgments, apart from those involving estimates, in applying accounting policies. Actual results may differ from these estimates.

Significant areas where management's judgment has been applied include:

 Classifying categories of financial assets and financial liabilities in accordance with IAS 39, Financial instruments: recognition and measurement;

- Evaluating if the criteria for recognition of provisions and contingencies are met in accordance with IAS 37, Provisions, contingent liabilities and contingent assets; and
- The assessment of the Company's ability to continue as a going concern.

## 1.13 Changes in Accounting Policies including Initial Adoption

New accounting standards adopted effective April 1, 2018

#### **IFRS 9 Financial Instruments**

IFRS 9, "Financial Instruments" replaced IAS 39, "Financial Instruments: Recognition and Measurement" ("IAS 39") and all previous versions of IFRS 9. The Company elected to apply IFRS 9 using a full retrospective approach. IFRS 9 replaces the provisions of IAS 39 that relate to the recognition, classification, and measurements of financial assets and financial liabilities, derecognition of financial instruments and impairment of financial assets. IFRS 9 uses a single approach to determine whether a financial asset is classified and measured at amortized cost or fair value. The approach in IFRS 9 is based on how the Company manages its financial instruments and the contractual cash flow characteristics of the financial asset. Most of the requirements in IAS 39 for classification and measurement of financial liabilities were carried forward in IFRS 9. The application of IFRS 9 did not impact the Company's classification and measurement of financial assets and liabilities, and there was also no impact to the carrying value of any of the Company's financial assets or liabilities on the date of transition.

New accounting standards issued but not yet effective

Certain new standards, interpretations, amendments and improvements to existing standards were issued by the IASB or IFRIC that are mandatory for future accounting periods. The following have not yet been adopted by the Company and are being evaluated to determine their impact.

• IFRS 16: Leases: New standard to establish principles for recognition, measurement, presentation and disclosure of leases with an impact on lessee accounting, effective for annual periods beginning on or after January 1, 2019.

Based on current expectations, the Company does not expect these standards to have a significant impact on the financial statements.

#### 1.14 Financial Instruments and Other Instruments

Fair values

The Company's financial instruments include cash, accounts payable and due to related parties. The carrying amounts of these financial instruments are a reasonable estimate of their fair values because of their current nature.

The Company classifies its fair value measurements in accordance with an established hierarchy that prioritizes the inputs in valuation techniques used to measure fair value as follows:

Level 1 – Unadjusted quoted prices in active markets for identical assets or liabilities;

Level 2 – Inputs other than quoted prices that are observable for the asset or liability either directly (i.e. as prices) or indirectly (i.e. derived from prices); and

Level 3 – Inputs that are not based on observable market date.

Credit risk

The Company is not exposed to credit risk.

Interest rate risk

Interest rate risk is the risk the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Financial assets and liabilities with variable interest rates expose the Company to cash flow interest rate risk. The Company does not hold any financial liabilities with variable interest rates. The Company does maintain bank accounts which earn interest at variable rates, but it does not believe it is currently subject to any significant interest rate risk.

## Liquidity risk

The Company's ability to continue as a going concern is dependent on management's ability to raise required funding through future equity issuances and through short-term borrowing. The Company manages its liquidity risk by forecasting cash flows from operations and anticipating any investing and financing activities. Management and the Board of Directors are actively involved in the review, planning and approval of significant expenditures and commitments.

The Company intends to meet its current obligations in the following year with funds to be raised through private placements, shares for debt, loans and related party loans.

## 1.15 Other MD&A Requirements

- (a) More information about the Company is on SEDAR at www.sedar.com.
- (b) Information required in the following sections of National Instrument 51-102, if applicable:
  - (i) Section 5.3 Additional Disclosure for Venture Issuers without Significant Revenue;

An analysis of material components of the Company's general and administrative expenses is disclosed in the Statement of Comprehensive Loss forming part of the Financial Statements for the period ended September 30, 2019 to which this MD&A relates.

- (ii) Section 5.4 Disclosure of Outstanding Share Data; and
  - a. Authorized:

Unlimited common shares without par value

b. Common Shares Issued:

As at December 31, 2019, the Company had 72,313,729 common shares issued and outstanding.

On April 16th, 2019, the Company issued 2,000,000 units at a price of \$0.10 per unit for gross proceeds of \$200,000. Each unit consists of one common share and one share purchase warrant. One whole share purchase warrant will entitle the holder thereof to purchase one common share at \$0.20 per share for a period of two years from the closing date of the private placement, subject to an acceleration clause.

On June 18th, 2019, pursuant to the Debt Settlement that BioMark Diagnostics announced, the Company issued a total of 1,000,000 shares (the "Debt Shares") to director and officer at deemed price of \$0.15 per Debt Share in settlement of the indebtedness in aggregate amount of \$150,000. No warrants were issued in connection with the debt settlement. The Debt Shares will be subject to a four month plus 1-day hold period.

As of June 29th, 2019, 1,130,291 shares have been issued upon the exercise of the warrants by the warrant holders at a price of \$0.15 per share (the "Exercise Price"), upon and subject to the terms and conditions.

As of August 26th, 2019, 75,502 shares have been issued upon the exercise of the warrants by the warrant holders at a price of \$0.15 per share (the "Exercise Price"), upon and subject to the terms and conditions.

As of September 20, 2019, 841,662 shares have been issued upon the exercise of the warrants by the warrant holders at a price of \$0.15 per share (the "Exercise Price"), upon and subject to the terms and conditions.

On December 16, 2019, the Company closed a private placement of 2,231,157 units at \$0.30 per unit for total consideration of \$669,347. Each unit is composed of one common share and one-half share purchase warrant. Each warrant will entitle the holder to acquire one common share at a price of \$0.45 per share for a period of two years. In connection with the private placement, the Company paid finder's fees of \$9,600 cash and issued 32,000 share purchase warrants at a fair value of \$618. Of the 2,231,157 units, 200,000 units were issued to settle outstanding debt with the CEO and interim CFO.

#### c. Share Purchase Warrants

As at December 31, 2019, the Company had 4,258,079 shareholder warrants issued and outstanding of which 1,110,500 warrant will entitle the holder to acquire one share at a price of \$0.15 per share, 2,000,000 warrants will entitle the holder to acquire one share at price of \$0.20 per share and 1,147,579 warrants will entitle the holder to acquire one share at price of \$0.45 per share for a period of two years after its Closing Date respectively. The Company uses the residual value method to allocate proceeds of the unit amongst the common share and the share purchase warrant.

#### d. Stock options:

The Company has reserved 5,145,000 common shares under its New Stock Option Plan which was last approved by the shareholders on December 20, 2019. The plan provides for the granting of options to directors, employees, and consultants. Stock options granted generally have varying expiry terms of up to five years and vesting periods determined at the discretion of the directors.

The number of options exercisable as at December 31, 2019 was 5,145,000 (2018 - 4,675,000 options). The weighted average life remaining for these options was 3.93 years and weighted average exercise price was \$0.26 per option.

(iii) Section 5.7 – Additional Disclosure for Reporting Issuers with Significant Equity Investees.

Not Applicable.

(c) Disclosure required by National Instrument 52-109 Certification of Disclosure in Issuers' Annual and Interim Filings and, as applicable, Form 52-109F1 Certification of Annual Filings – Full Certificate, Form 52-109F1R Certification of Refiled Annual Filings, or Form 52-109F1 AIF Certification of Annual Filings in Connection with Voluntarily Filed AIF.

Form 52-109FV2 Certification of Interim Filings is filed on SEDAR.