

GRAPHENE 3D LAB INC.
Interim Management Discussion and Analysis
Quarterly highlights for the six months ended November 30, 2018

This Management Discussion and Analysis (“MD&A”) of Graphene 3D Lab Inc. (the “Company” or “Graphene 3D”) provides analysis of the Company’s financial results for the six months ended November 30, 2018 and 2017. The following information should be read in conjunction with the condensed interim consolidated financial statements and notes for the six months ended November 30, 2018, which are prepared in accordance with International Financial Reporting Standards. This MD&A should also be read in conjunction with the audited annual consolidated financial statements and notes for the year ended May 31, 2018. All amounts are expressed in US dollars unless otherwise noted. Canadian dollars are indicated by the symbol “C\$”.

This discussion contains forward-looking statements and information that are based on the beliefs of management and reflect the Company’s current expectations. When used in this Discussion, the words “estimate”, “project”, “belief”, “anticipate”, “intend”, “expect”, “plan”, “predict”, “may” or “should” and the negative of these words or such variations thereon or comparable terminology are intended to identify forward-looking statements and information. Such statements and information reflect the current view of the Company with respect to risks and uncertainties that may cause actual results to differ materially from those contemplated in those forward-looking statements and information.

By their nature, forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the Company’s actual results, performance or achievements, or other future events, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Such factors include, among others, the following risks: risks associated with the marketing and sale of securities, the need for additional financing, reliance on key personnel, the potential for conflicts of interest among certain officers or directors with certain other projects, and the volatility of the Company’s common share price and volume. Forward-looking statements are made based on management’s beliefs, estimates and opinions on the date that statements are made and the Company undertakes no obligation to update forward-looking statements if these beliefs, estimates and opinions or other circumstances should change. Investors are cautioned against attributing undue certainty to forward-looking statements.

There are a number of important factors that could cause the Company’s actual results to differ materially from those indicated or implied by forward-looking statements and information. Such factors include, among others, risks related to Graphene 3D’s proposed business such as failure of the business strategy, stable supply prices, demand and market prices for 3D printing products, and government regulation; risks related to Graphene 3D’s operations, such as additional financing requirements and access to capital, reliance on key and qualified personnel, insurance, competition, intellectual property and reliable supply chains; risks related to Graphene 3D and its business generally such as potential exposure to tax under Canadian and US income tax laws, laws and regulations relating to cross-border mergers and acquisitions, infringement of intellectual property rights, product liability, environmental protection, currency exchange rates and conflicts of interest.

The Company cautions that the foregoing list of material factors is not exhaustive. When relying on the Company’s forward-looking statements and information to make decisions, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. The Company has assumed a certain progression, which may not be realized. It has also assumed that the material factors referred to in the previous paragraph will not cause such forward-looking statements and information to differ materially from actual results or events. However, the list of these factors is not exhaustive and is subject to change and there can be no assurance that such assumptions will reflect the actual outcome of such items or factors. While the Company may elect to, it does not undertake to update this information at any particular time.

1.1 DATE OF REPORT

This report is prepared as of January 29, 2019.

1.2 COMPANY OVERVIEW

Graphene 3D Lab Inc. (the “Company” or “Graphene 3D”), formerly MatNic Resources Inc. (“MatNic”) was incorporated pursuant to the British Columbia Business Corporations Act on January 17, 2011. On August 8, 2014, the Company acquired Graphene 3D Lab (U.S.) Inc. (“Graphene 3D U.S.”) through a reverse acquisition/takeover transaction (“Transaction”). The

historical operations, assets and liabilities of Graphene 3D U.S. are included as the comparative figures as at and for the period ended May 31, 2014, which is deemed to be the continuing entity for financial reporting purposes. Graphene 3D U.S. was incorporated on September 3, 2013 in the State of Delaware, U.S.A.

In association with the Transaction, MatNic changed its name to Graphene 3D Lab Inc. and concurrent with the closing of the transaction, the Company effected a change in directors, management and business. On August 11, 2014 the Company's common shares resumed trading on the TSX Venture Exchange ("TSX-V") under the symbol "GGG." On October 7, 2014, the Company began trading on OTCQB, the venture marketplace for entrepreneurial and development stage companies operated by OTC Markets Group, under the symbol "GPHBF".

Graphene 3D U.S. is a C-corporation, organized on September 3, 2013 under the laws of the State of Delaware. The founders of the corporation include Daniel Stolyarov, Ph.D., Co-CEO and Elena Polyakova, Ph.D., Co-CEO. Founding team members have many years' worth of combined experience in 3D printing, material production, R&D, and the commercialization of new materials. Graphene 3D U.S. was initially a spinout of Graphene Laboratories Inc. ("Graphene Laboratories" or "GLI"). On August 12, 2015, the Company entered a Share Exchange Agreement ("SEA") to acquire all of the issued and outstanding shares of GLI. This transaction was reviewed and accepted for filing by the TSX Venture Exchange and closed on December 8, 2015. Graphene Laboratories now operates as a wholly-owned subsidiary of Graphene 3D.

1.3 NATURE OF BUSINESS

Graphene 3D is in the business of developing, manufacturing, and marketing proprietary composites and coatings, based on graphene and other advanced materials, for a number of industries including: aerospace, automotive, medical prosthetics, and military. In addition, it produces a variety of materials for 3D printing. Graphene 3D currently has eight US patent applications pending for its technology.

The Company's wholly-owned subsidiary, Graphene Laboratories Inc., currently offers over 100 graphene and related products to a client list comprised of more than 12,000 customers worldwide, including nearly every Fortune 500 tech company and major research university. Some notable clients are: NASA, Ford Motor Co., GE, Apple, Xerox, Samsung, Harvard University, IBM, and Stanford University

The Company also holds a provisional patent relating to the manufacture and processing of graphene. Graphene is a novel material with a variety of outstanding properties. It is currently available in the market at various grades, with performance characteristics such as mechanical strength, and conductivity improving with fewer atomic layers. Graphene Laboratories patented manufacturing process provides proof of concept to allow for a low-energy, chemical-free manufacture designed to achieve high-grade graphene material at a projected industry leading low cost. The Company has begun planning on a two-phased development program to advance this manufacturing process from bench-top prototype to a large-scale manufacturing operation.

The Company operates several subdivisions which include the following:

R&D Materials

Graphene Supermarket (R&D Graphene Materials): The Company's suite of graphene products is available online at the company's e-commerce platform Graphene Supermarket (www.graphene-supermarket.com). Graphene 3D is a world leader in the development, manufacturing and marketing of graphene and other 2D crystals as well as composites based on these nanomaterials. These diverse materials have a wide spectrum of commercial, research and military applications

Materials for 3D Printing

The 3D printing division of the Company offers a portfolio of 3D printable filaments including a portfolio of specialty fused filament fabrication filaments. These materials can be purchased through multiple distribution networks worldwide or directly from the web-store www.blackmagic3D.com.

Conductive Epoxies

The Company's recent focus has been on developing the best in conductive epoxy systems. Through research and development, our team have been able to create innovative, new products with unique properties by using a proprietary mix of high-

performance carbon fillers to achieve superb electrical and mechanical properties for electrically conductive epoxy. The Company's specialty adhesive epoxies are well suited for use in aerospace, automotive industries, electronics and communication etc.

Three different product lines are offered:

Carbon -P series: Carbon filled conductive epoxy (G6-EP), with main features:

- Non-metallic: carbon filled
- Excellent electrical conductivity: 5 Ohm x cm
- Ultralight: density is less than 1.1 g/cm³
- Low-cost silver alternative
- Excellent gap-filling adhesive

Silver – SG series: Silver/Graphene conductive epoxies (G6-SG, G6-FXSG, G6-HTSG).

- Traditional epoxy materials tend to be brittle and are prone to mechanical failure. Graphene fillers add superior durability, fatigue and crack resistance in addition to low electrical resistance. The Company uses a proprietary mix of silver and graphene materials to achieve a superb combination of mechanical and electrical properties.
- G6-SG - Silver/Graphene conductive epoxy;
- G6-FXSG – Flexible Silver/Graphene conductive epoxy;
- G6-HTSG – High-temperature Silver/Graphene conductive epoxy

Silver- NS series: Silver/Carbon conductive epoxies (G6-NS10, G6-NS11, G6-HTNS).

- These epoxies have been developed based on advanced proprietary technology that requires less silver content to be at par with leading silver-based epoxies in terms of electrical properties. This improvement makes G6E-NS™ less dense, more flexible, and allows for stronger adhesion to the target substrate.
- G6-NS10 - Silver/Carbon conductive epoxy;
- G6-NS11 - Silver/Carbon conductive epoxy
- G6-NS - High-temperature Silver/Carbon conductive epoxy

Adhesive materials produced by the company are distributed under the G6-Epoxy™ trade name and can be purchased at <https://g6-epoxy.com/>.

Fine Chemicals for Advanced Manufacturing and Drug Discovery

ChemApproach is a worldwide supplier of a wide variety of building blocks (many of these are unique) to R&D facilities in the pharmaceutical, agriculture, and biotechnology industries, as well as academic institutions, and various technology companies. It's professional team of PhD chemists hold many years of experience in design, development and implementation of industrial projects, as well as experience in synthetic organic chemistry. This division offers a plethora of the substituted aromatic and heterocyclic compounds. Most of its molecules are synthesized as medicinally-relevant and drug candidates. The production scale varies from grams to multi-kilograms quantities. The divisions main expertise lies within the introduction of the various substituents to the aromatic rings, a large variety of functional group transformations, and a selective incorporation of halogens in organic molecules, particularly, iodine. These classes of organic molecules have a wide range of application in: Drug-design, Biochemistry, Polymer chemistry, Electronics and Hi-Tech, Petrochemical <https://chemapproach.com/>

Graphene Manufacturing Process Patent

The Company filed a non-provisional patent pertaining to the preparation and separation of atomic layers of graphene. This technological breakthrough represents a new, energy and chemically efficient process to manufacture, sort and classify graphene nanoparticles resulting in the potential for large scale production of high-grade graphene. This patent relates to graphene nanoplatelets (GNP). Specifically, the patent covers a new, energy efficient, not chemically invasive, process that significantly lowers the cost of preparing and separating high quality, few atomic layers thick GNP. The application claims priority to provisional application No. 62/058,313, filed on October 1, 2014.

1.4 HIGHLIGHTS FOR THE QUARTER ENDED NOVEMBER 30, 2018

Corporate Developments

On August 9, 2018, the Company announced further expansion of the Company's product line of advanced graphene-enhanced conductive adhesives under the brand of G6-Epoxy™. All G6-EPOXY™ products are manufactured and packaged in Company's new facility located on Long Island, the State of New York. The new products include conductive adhesives for applications that require curing at room temperature. While curing, these epoxies do not need a heating oven. Hence, they provide the capability of bonding temperature sensitive components at room temperature.

The Company has also added new adhesives that combine electrical conductivity as well as flexibility and are optimized for applications requiring a soft or flexible bond. Further, several grades of the HIGH-TEMPERATURE adhesives that offer service temperatures up to 316°C/600F become available now.

Management Team Changes

On November 19, 2018, Elena Polyakova resigned from her positions of co-CEO and director as a result of pursuing an academic career in graphene research and joining the Centre for Advanced 2D Materials at the National University of Singapore in a position of Senior Research Fellow. Going forward Daniel Stolyarov will remain the sole CEO of the Company.

Financial Update

On January 3, 2019, the Company received a royalty payment of \$92,500 and extended the Technology Transfer Agreement (the "agreement") with a multinational manufacturer for additional 90 days to allow sufficient time to complete the manufacturing process. The Company expects to receive an additional \$60,000 royalty payment once the extended agreement term is completed.

1.5 RESULTS OF OPERATIONS

Six months ended November 30, 2018 ("Q2 F2019") compared with the six months ended November 30, 2017 ("Q2 F2018")

During Q2 F2019, the Company reported a net loss of \$476,959 compared to a net loss of \$648,551 in Q2 F2018. The lower net loss was primarily the result of lower general and administrative expenses due to lower share-based compensation and professional fees, partially offset by increased salaries and benefits.

Research and development expenditures are summarized as follows:

	Quarter ended Nov. 30, 2018	Quarter ended Aug 31, 2018	Quarter ended May 31, 2018	Quarter ended Feb. 28, 2018	Quarter ended Nov 30, 2017	Quarter ended Aug 31, 2017	Quarter ended May 31, 2017	Quarter ended Feb 28, 2017
Research personnel	30,409	27,115	47,244	53,675	37,766	54,252	64,327	64,235
Research and development equipment and supplies	7,219	16,285	39,267	11,598	1,849	8,056	2,898	5,124
Patent registration expense	3,300	802	15,723	2,869	450	599	6,030	1,421
Total research and development expenses	40,928	44,202	102,234	68,142	40,065	62,907	73,255	70,780

Since the corporate RTO transaction in August 2014, the Company has ramped up its research and development budget and activities incurring significant expenditures on its R&D activities over the past several quarters. The Company has expanded these activities with the purchase of research and development equipment and supplies to set-up the extruder equipment acquired in the year ended May 31, 2015. Recent reductions in R&D spending were as a result of the Company focusing its resources on revenue generating activities.

1.6 SELECTED FINANCIAL INFORMATION

The following table contains selected financial information for Graphene 3D for the year ended May 31, 2018 as compared to the years ended May 31, 2017 and 2016. The information set forth should be read in conjunction with the audited annual financial statements, prepared in accordance with International Financial Reporting Standards (“IFRS”), and the related notes thereon.

	Year ended May 31, 2018 \$	Year ended May 31, 2017 \$	Year ended May 31, 2016 \$
Revenue	909,512	1,108,998	773,412
Gross profit	617,683	482,780	181,072
Net loss	1,064,075	1,017,590	2,207,055
Comprehensive Loss	1,046,521	1,025,195	2,244,845
Net loss per share	\$0.02	\$0.02	\$0.05
Total assets	1,481,232	1,057,022	1,273,546
Total non-current financial liabilities	56,525	147,391	217,348

Non-current financial liabilities consist of the long-term portion of the finance lease obligation and deferred tax liability related to the acquisition of GLI in December 2015.

1.7 SUMMARY OF QUARTERLY RESULTS

The following summary information is taken from the Company’s quarterly and annual financial reports covering the last eight reporting quarters.

	Quarter ended Nov. 30, 2018 \$	Quarter ended Aug 31, 2018 \$	Quarter ended May 31, 2018 \$	Quarter ended Feb 28, 2018 \$	Quarter ended Nov 30, 2017 \$	Quarter ended Aug 31, 2017 \$	Quarter ended May 31, 2017 \$	Quarter ended Feb 28, 2017 \$
Revenue	(224,898)	(209,537)	(229,442)	(235,592)	(209,965)	(234,513)	(309,098)	(267,895)
Cost of goods sold	201,218	96,855	*5,888	127,329	124,914	33,698	203,147	125,847
Gross (profit) loss	*(23,680)	(112,682)	(223,554)	(108,263)	(85,051)	(200,815)	(105,951)	(142,048)
Operating expenses	315,736	297,585	418,976	401,060	494,971	400,226	449,745	343,232
Net loss	292,056	184,903	111,817	303,707	421,497	227,054	326,604	212,994
Comprehensive Loss	293,917	186,157	109,628	288,707	421,595	226,591	341,652	214,363
Net loss per share (basic and diluted)	\$0.004	\$0.003	\$0.002	\$0.005	\$0.007	\$0.004	\$0.006	\$0.004
Total assets	1,097,499	1,278,168	1,481,232	1,649,404	1,050,555	1,171,990	1,057,022	1,283,449
Shareholders’ equity	745,978	1,039,895	1,192,577	1,340,508	641,460	740,749	675,074	927,814

*The decrease in gross profit for the quarter ended November 30, 2018 was primarily due to the liquidation of a large portion of the 3D printing filament inventory in order to make room for the installation of new equipment for upcoming projects.

*The decrease in costs of goods sold for the quarter ended May 31, 2018 was primarily due to the Company utilizing previously expensed raw materials inventory as well as additional non-inventory supplies. In addition, the Company changed several vendors by offering lower prices with major items and optimized the business operation by enhance products and services ‘efficiency with higher profit margins.

There were no significant variations in other operating expenses.

1.8 LIQUIDITY AND CAPITAL RESOURCES

As at November 30, 2018, the Company had working capital surplus of \$282,110 (May 31, 2018 - \$711,943).

As at November 30, 2018, cash and cash equivalents totaled \$172,322 (May 31, 2018 - \$426,878).

Cash used in operating activities during Q2 F2019 was \$248,491 (Q2 F2018 - \$343,749).

Cash used in investing activities during Q2 F2019 was \$2,924 (Q2 F2018 - \$89,826 recovered). The main contributors were the purchase of additional equipment and the settlement of loans payable. As at November 30, 2018, the Company's net assets totalled \$1,097,499 (May 31, 2018 - \$1,481,232).

Cash generated from financing activities during Q2 F2019 was \$nil (Q2 F2018 – \$295,392).

As at November 30, 2018, the Company's share capital remained the same as at May 31, 2018 at \$7,205,717, which represented 73,451,814 issued and outstanding common shares without par value.

As at November 30, 2018, warrant reserves and contributed surplus also remained the same as at May 31, 2018 at \$33,946 and \$2,821,938, respectively.

As at November 30, 2018, the Company's retained losses increased to \$9,219,625 as the result of Q2 F2019's net loss of \$476,959 (May 31, 2018 - \$8,742,666).

The Company's ability to meet its administrative expenses and complete its planned research and development activities and its ramp up of commercial operations is ultimately dependent upon management's ability to secure additional financing. While management has been successful in obtaining funding in the past, there can be no assurance that it will be able to do so in the future.

1.9 COMMITMENTS

The Company entered into a three year lease for the Company's facilities ending December 31, 2020. The lease requires monthly payments of \$8,000.

1.10 RELATED PARTIES TRANSACTIONS

Parties are considered to be related if one party has the ability, directly or indirectly, to control the other party or exercise significant influence over the other party in making financial and operating decisions. Related parties may be individuals or corporate entities. Key management includes directors and officers of the Company. The Company entered into the following transactions with related parties:

- a) During the six months ended November 30, 2018, the Company incurred directors' and officers' salaries expense in the amount of \$110,481 (2017 - \$112,500).
- b) During the six months ended November 30, 2018, the Company did not issue stock options (2017 – 2,750,000 stock options with FV of \$327,000) to directors and officers of the Company. For the six months ended November 30, 2018, there was no share-based compensation incurred (2017 - \$226,514).

The following amounts were due to related parties:

	November 30, 2018	May 31, 2018
	\$	\$
Salary to officers	65,271	30,005
Expense reimbursements to related parties	18,166	10,579
	83,437	40,584

The amounts due to related parties are included in accounts payable and are unsecured, have no fixed repayments and are non-interest bearing.

1.11 RISKS AND UNCERTAINTIES

An investment in the Company's securities involves a high degree of risk. Potential investors should carefully consider the following information about these risks. If any of the following risks actually occurs, the business, financial condition and prospects of the Company could be materially adversely affected. In that case, the value of any securities of the Company could also decline and investors could lose all or part of their investment.

The risks and uncertainties described below are those that Graphene 3D's management believes are material, but these risks and uncertainties may not be the only ones that the Company may face. Additional risks and uncertainties, including those that management currently are not aware of or deem immaterial, may also result in decreased operating revenues, increased operating expenses or other events that could result in a decline in the value of any securities of the Company. The following information is a summary only of certain risk factors and is qualified in its entirety by reference to, and must be read in conjunction with, the detailed information appearing elsewhere in Management Discussion and Analysis.

An investment in the securities of the Company is highly speculative.

Risks Related to Our Business and Industry

If the market does not develop as we expect, our products may not be accepted by the market.

- There is significant competition in our market, which could make it difficult to attract customers, cause us to reduce prices and result in reduced gross margins.
- The long sales cycle for our products makes the timing of our revenues difficult to predict.
- We may not be able to generate operating profits.
- We plan to grow very rapidly, which will place strains on management and other resources.
- We may not be able to hire the number of skilled employees that we need to achieve our business plan.
- Loss of key management or sales or customer service personnel could adversely affect our results of operations.
- If our manufacturing facilities are disrupted, sales of our products will be disrupted, and we could incur unforeseen costs.
- Global economic, political and social conditions may harm our ability to do business, increase our costs, and negatively affect our stock price.
- We may need to raise additional capital from time to time if we are going to meet our growth strategy and may be unable to do so on attractive terms.
- Our operating results and financial condition may fluctuate on a quarterly and annual basis.

Our operating results and financial condition may fluctuate due to a number of factors, including those listed below and those identified throughout this "Risk Factors" section:

- the development of new competitive systems or processes by others;
- the entry of new competitors into our market whether by established companies or by new companies;
- changes in the size and complexity of our organization, including our international operations;
- levels of sales of our products and services to new and existing customers;
- the geographic distribution of our sales;
- changes in product developer preferences or needs;
- delays between our expenditures to develop, acquire or license new technologies and processes, and the generation of sales related thereto;
- our ability to timely and effectively scale our business during periods of sequential quarterly or annual growth;
- limitations or delays in our ability to reduce our expenses during periods of declining sequential quarterly or annual revenue;

- changes in our pricing policies or those of our competitors, including our responses to price competition;
- changes in the amount we spend in our marketing and other efforts;
- the volatile global economy;
- general economic and industry conditions that affect customer demand and product development trends;
- changes in accounting rules and tax and other laws; and
- We could be subject to personal injury, property damage, product liability, warranty and other claims involving allegedly defective products that we supply, which could result in material expense, diversion of management time and attention and damage to our business reputation.
- We could face liability if our 3D printers are used by our customers to print dangerous objects.
- We may not have adequate insurance for potential liabilities.
- Even a partially uninsured claim of significant size, if successful, could materially adversely affect our business, financial condition, results of operations and liquidity. However, even if we successfully defend ourselves against any such claim, we could be forced to spend a substantial amount of money in litigation expenses, our management could be required to spend valuable time in the defense against these claims and our reputation could suffer, any of which could adversely affect our results of operations.

Risks Related to Our Intellectual Property

We may not be able to obtain patent protection or otherwise adequately protect or enforce our intellectual property rights, which could impair our competitive position.

- Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.
- We may incur substantial costs defending against third party infringement claims as a result of litigation or other proceedings.
- Our failure to expand our intellectual property portfolio could adversely affect the growth of our business and results of operations.

1.12 OUTSTANDING SHARE DATA

The authorized capital of the Company consists of an unlimited number of common shares with no par value. As at the date of this MD&A, the following common shares, options and share purchase warrants were outstanding:

	Number of Shares	Exercise Price	Expiry Date
Issued and Outstanding Common Shares	73,451,814		
Stock Options	1,530,000	C\$0.25	February 28, 2019
	690,000	C\$0.21	August 24, 2021
	200,000	C\$0.21	September 13, 2021
	300,000	C\$0.11	July 28, 2022
	2,450,000	C\$0.12	November 13, 2022
Fully Diluted at January 29, 2019	78,621,814		

As of the date of this MD&A, 240,000 issued and outstanding common shares remain in escrow.

OTCQB Listing

The Company has been verified to trade on OTCQB®, the venture marketplace for entrepreneurial and development stage companies operated by OTC Markets Group (OTCQX: OTCM) and began trading Oct. 7, 2014. Euro Pacific Capital, Inc. is a qualified Principal American Liaison (“PAL”) and has submitted a Letter of Introduction for Graphene 3D in accordance with the standards for trading on OTCQB.

1.13 OPERATING SEGMENTS

The Company operates in one reportable segment – the research, development and manufacturing of graphene-enhanced materials. Substantially all of the Company’s revenue was generated in the U.S. and all capital assets are located in the U.S.

1.14 CRITICAL ACCOUNTING ESTIMATES

The preparation of the consolidated financial statements in conformity with IFRS requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates. Estimates are reviewed on an ongoing basis based on historical experience and other factors that are considered to be relevant under the circumstances. These estimates involve considerable judgment and are, or could be, affected by significant factors that are out of the Company’s control. Revisions to estimates and the resulting effects on the carrying amounts of the Company’s assets and liabilities are accounted for prospectively.

The Company’s significant accounting policies and estimates are included in Note 3 to the May 31, 2018 audited consolidated financial statements of Graphene 3D Lab Inc. The preparation of financial statements in accordance with IFRS requires management to select accounting policies and make estimates. Such estimates may have a significant impact on the financial statements. Actual amounts could differ materially from the estimates used and, accordingly, affect the results of the operations. These include:

- the valuation of share-based payments expense;
- the useful lives for depreciation of equipment;
- the valuation of inventories and recognition of inventory impairment;
- the determination of the allowance of doubtful accounts; and
- the useful lives and recoverability of intangible asset.

Share-based payments

The grant date fair value of share-based payment awards granted to employees is recognized as an employee expense, with a corresponding increase in equity, over the period that the employees unconditionally become entitled to the awards. The amount recognized as an expense is adjusted to reflect the number of awards for which the related service and non-market vesting conditions are expected to be met, such that the amount ultimately recognized as an expense is based on the number of awards that do meet the related service and non-market performance conditions at the vesting date.

Inventory

The Company’s inventory is measured at the lower of cost and net realizable value. Cost is determined using the weighted average method. The cost of finished goods and work-in-progress comprises raw materials, direct labour, other direct costs and related production overhead costs.

An allowance for obsolete or slow-moving inventories is made where necessary. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and selling expenses.

1.15 FINANCIAL INSTRUMENTS AND OTHER INSTRUMENTS

The fair value of the Company’s cash and cash equivalents, amounts receivable, and accounts payable and accrued liabilities approximate carrying value which is the amount recorded on the statement of financial position due to their short-term nature.

Credit risk

Credit risk is the risk of financial loss to the Company if counter-party to a financial instrument fails to meet its contractual obligations. The Company manages credit risk by investing its cash and cash equivalents with a large United States and Canadian chartered banks. The Company manages credit risk for trade and other receivables through established credit monitoring activities. As at November 30, 2018, the Company's maximum exposure to credit risk is the carrying value of cash and cash equivalents and accounts receivable.

Interest rate risk

Interest rate risk is the risk that 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 interest rate risk with respect to its cash flow. As at November 30, 2018, the Company is not exposed to significant interest rate risk.

Currency risk

The Company has transactions internationally and is exposed to foreign exchange risk from the Canadian Dollar. Foreign exchange risk arises from financing and purchase transactions that are denominated in currency other than the US Dollar, which is the functional currency of the Company. As at November 30, 2018 the Company held \$147,603 (May 31, 2018 - \$203,153) in Canadian dollar cash and cash equivalents. A 10% increase or decrease in the Canadian dollar would increase or decrease comprehensive income by \$14,760 (May 31, 2018 - \$20,000).

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 manages liquidity risk through the management of its capital structure and financial leverage as outlined above. As at November 30, 2018, the Company has cash and cash equivalents of \$172,322 (May 31, 2018 - \$426,878) and a working capital surplus of \$282,110 (May 31, 2018 - \$1711,943). However, as at November 30, 2018, the Company has an accumulated deficit of \$9,219,625 (May 31, 2018 - \$8,742,666). The continuation of the Company depends upon the support of its lenders and equity investors, which cannot be assured.

APPROVAL

The Board of Directors of Graphene has approved the disclosure contained in this MD&A. A copy of this MD&A will be provided to anyone who requests it.

ADDITIONAL INFORMATION

Additional information related to Graphene is on SEDAR at www.sedar.com and the Company's website <http://www.graphene3dlab.com>.