

## NORTHERN GRAPHITE CORPORATION

## ANNUAL INFORMATION FORM

## FOR THE YEAR ENDED DECEMBER 31, 2014

March 30, 2015

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#### CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This Annual Information Form contains "forward-looking statements" which reflect management's expectations regarding the Corporation's future growth, results of operations, performance and business prospects and opportunities. Such forward-looking statements may include, but are not limited to, statements with respect to the future financial or operating performance of the Corporation and its projects, the future price of graphite or other metal and mineral prices, the estimation of mineral resources, the timing and amount of estimated future production, costs of production, capital, operating and exploration expenditures, costs and timing of the development of new deposits, costs and timing of future exploration, requirements for additional capital, government regulation of mining operations, environmental risks, reclamation expenses, title disputes or claims, limitations of insurance coverage and the timing and possible outcome of regulatory matters. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes" or variations (including negative variations) of such words and phrases, or statements that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved.

Forward-looking statements involve known and unknown risks, uncertainties, assumptions and other factors that may cause the actual results, performance or achievements of the Corporation to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Such factors include, among others: general business, economic, competitive, political and social uncertainties; the actual results of current exploration activities; conclusions of economic evaluations; fluctuations in currency exchange rates; changes in project parameters as plans continue to be refined; changes in labor costs or other costs of production; future prices of graphite or other industrial mineral prices; possible variations of mineral grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accidents, labor disputes and other risks of the mining industry, including but not limited to environmental hazards, cave-ins, pit-wall failures, flooding, rock bursts and other acts of God or unfavorable operating conditions and losses; delays in obtaining governmental approvals or financing or in the completion of development or construction activities; actual results of reclamation activities, and the factors discussed in the section entitled "Risk Factors" in this Annual Information Form. Although the Corporation has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results to differ from those anticipated, estimated or intended. Forward-looking statements contained herein are made as of the date of this Annual Information Form and the Corporation disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise, except as may be required by applicable securities laws. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements.

#### MARKET AND INDUSTRY DATA

This Annual Information Form includes market and industry data that has been obtained from third party sources, including industry publications, as well as industry data prepared by management on the basis of its knowledge of and experience in the industry in which the Corporation operates (including management's estimates and assumptions relating to such industry based on that knowledge). Management's knowledge of such industry has been developed through its experience and participation in such industry. Although management believes such information to be reliable, the Corporation has not independently verified any of the data from third party sources referred to in this Annual Information Form or ascertained the underlying economic assumptions relied upon by such sources. Furthermore, references in this Annual Information Form to any publications, reports, surveys or articles prepared by third parties should not be construed as depicting the complete findings of the entire publication, report, survey or article. The information in any such publication, report, survey or article is not incorporated by reference in this Annual Information Form.

#### **GENERAL MATTERS**

Unless otherwise indicated, all amounts herein are stated in Canadian dollars (\$). Unless otherwise specified, the information contained in this Annual Information Form is presented as at December 31, 2014.

#### **CORPORATE STRUCTURE**

#### Name and Incorporation

Northern Graphite Corporation ("**Northern**" or the "**Corporation**") was incorporated on February 25, 2002 under the *Business Corporations Act* (Ontario) as "Industrial Minerals Canada Inc." Pursuant to articles of amendment dated March 1, 2010, the Corporation changed its name to "Northern Graphite Corporation" and subdivided its then outstanding common shares. Pursuant to articles of amendment dated August 10, 2010, the Corporation amended its articles to remove certain private company restrictions and cumulative voting provisions.

The registered office of the Corporation is located at Suite 800, Wildeboer Dellelce Place, 365 Bay Street, Toronto, Ontario, M5H 2V1. The head office of the Corporation is located at Suite 201, 290 Picton Avenue, Ottawa, Ontario, K1Z 8P8.

#### **Intercorporate Relationships**

The Corporation has no subsidiaries.

#### **DESCRIPTION OF THE BUSINESS**

Northern is a mineral exploration and development company which holds a 100% interest in the Bissett Creek graphite project (the "**Bissett Creek Project**"). The Bissett Creek Project presently consists of Ontario mining lease number 106693 (covering 565 hectares), Ontario mining lease number 109335 (covering 1,938 hectares) (the "**Mining Leases**") and five unpatented mining claims covering approximately 464 hectares (the "**Mining Claims**"), for a total project area of approximately 2,967 hectares, all of which are contiguous to one another and located in the United Townships of Head, Clara and Maria, in the County of Renfrew, Province of Ontario. Ontario mining lease number 106693 was originally granted by the Province of Ontario in 1993 with a twenty-one year term, which was set to expire in September 2014. The Corporation submitted an application for renewal of the lease in 2014 and has received notification from the Ontario Ministry of Northern Development, and Mines (the "**MNDM**") that it has met the necessary requirements for renewal. This lease renewal has been requisitioned for issuance and registration and it is expected that the new expiry date will be in 2035. Ontario mining lease number 109335 was granted in June 2013 and expires in June 2034. Both leases require annual rental payments to the MNDM in an amount prescribed by the *Mining Act* (Ontario) which is approximately \$7,584.

The Corporation's principal business is the exploration and potential development of the Bissett Creek Project. The Corporation has no other properties or rights to acquire other properties. In July 2012, the Corporation completed a bankable final Feasibility Study (the "FS") on the Bissett Creek Project which confirmed the technical and financial viability of constructing and operating an open pit mine and 2,300 tonnes per day ("tpd") processing plant. A technical report relating to the FS prepared in accordance with National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("NI 43-101") was filed on SEDAR on August 24, 2012. On May 7, 2013, the Corporation announced a new resource estimate for the Bissett Creek Project based on results from a 2012 61 hole, 3,782 meter drill program. The drill program successfully achieved its objective of upgrading a significant portion of inferred resources to the measured and indicated categories. On September 23, 2013, the Corporation updated the economics for the FS (the "FS Update") based on the new and larger resource estimate, some modifications to the capital and operating cost assumptions, and lower graphite prices.

On October 23, 2013, the Corporation completed a Preliminary Economic Assessment (the "**2013 PEA**") on an expansion case for its Bissett Creek Project. The 2013 PEA was undertaken to demonstrate the potential ability to meet expected future growth in graphite demand by doubling production after three years of operation. A technical report relating to the 2013 PEA prepared in accordance with NI 43-101 was filed on SEDAR on December 6, 2013.

On June 24, 2014, the Corporation updated the 2013 PEA (the "2013 PEA Update") to assess the economics of building a 2 million tpa processing plant at the outset rather than increasing from 1 million tpa to 2 million tpa after three years of operation. The larger process plant was evaluated due to recent developments in the lithium-ion battery industry.

The Corporation and previous management originally filed a mine closure plan ("MCP") with MNDM in 2004 (the "2004 MCP") and was authorized to begin production based on a dry recovery process but a commercial operation was never established due to technical problems and financial difficulties. In the fourth quarter of 2012, the Corporation filed an amended MCP to increase the size of the potential operation and to use a conventional flotation recovery process as outlined in the FS. On August 26, 2013, the Corporation announced that the MNDM had accepted the Corporation's MCP for filing. While the Corporation is in a position to begin construction of a mine on the Bissett Creek Project, subject to arranging the necessary full project financing and additional species at risk permitting, it is likely that the changes contemplated in the FS Update will trigger the requirement to file another closure plan amendment. A number of operational permits and environmental authorizations are also required prior to the commencement of mining operations. The Corporation expects that these permits and authorizations will be obtained in the normal course as needed. Site work for the Bissett Creek Project would include the clearing of internal roads, plant site and tailings basin. Construction of the plant and infrastructure are estimated to take approximately 12 months.

The Bissett Creek Project is subject to a royalty of \$20 per tonne of graphite concentrate and a 2.5% net smelter return ("**NSR**") on any other minerals or metals produced, both of which are payable to the original prospectors who identified and staked the Bissett Creek Project. An annual advance royalty of \$27,000 is payable in two equal installments on March 15 and September 15 of each year, which will be credited against future royalties on graphite concentrate produced from the Bissett Creek Project.

The Corporation has negotiated employment contracts with Gregory Bowes, Chief Executive Officer, and Stephen Thompson, Chief Financial Officer, which became effective as of May 1, 2011. Stephen Thompson has subsequently entered into an employment contract that is effective April 1, 2015 and has a three month term. The Corporation has no other employees and retains consultants to assist in its operations on an as-needed basis. The Corporation will begin building a team to construct and operate the Bissett Creek Project once the next stage of financing is completed.

#### GENERAL DEVELOPMENT OF THE BUSINESS

#### History

Until March 1, 2010, the Corporation was a wholly-owned subsidiary of Mindesta Inc. ("**Mindesta**"), formerly Industrial Minerals, Inc., a corporation incorporated under the laws of Delaware and quoted on the over-the-counter bulletin board in the United States (OTC-BB: MDST). Mindesta was a reporting issuer in British Columbia pursuant to British Columbia Instrument 51-509 – *Issuers Quoted in the U.S. Over-the-Counter Markets* ("**BCI 51-509**"). Mindesta acquired Ontario mining lease number 106693 and a number of associated mining claims in 2002 and assigned them to the Corporation in 2003.

The Corporation filed the 2004 MCP with the MNDM in 2004, the acceptance of which by the MNDM authorized Northern to proceed with the construction of a mine and processing plant on the Bissett Creek Project property. A small processing plant, based on a dry recovery process, was constructed and a very small amount of material was mined. However, the performance of the dry process was unsatisfactory, commercial operation was never achieved, and the Bissett Creek Project was put on a care and maintenance basis in 2005.

In May 2007, Mindesta retained SGS Canada Inc., formerly and then named Systèmes Geostat International Inc. ("**SGS**"), to prepare a NI 43-101 compliant technical report on the Bissett Creek Project, including a preliminary economic assessment. Mindesta received the completed technical report from SGS in December 2007 and intended at that time to proceed with additional exploration drilling, pilot plant testing and preparation of a feasibility study. However, due to Mindesta's lack of financial resources this work was not completed and the report prepared by SGS was not filed with securities regulators.

Between March 2007 and June 2008, Mindesta experienced a number of changes in directors and management as it attempted to develop and execute a strategy for the exploration and development of the Bissett Creek Project. Eventually, these changes resulted in Gregory Bowes joining the Board of Directors of Mindesta on June 23, 2008 as an independent director. Mr. Bowes was also made a director of the Corporation on July 9, 2008.

Faced with the lack of prospects for the exploration and development of the Bissett Creek Project through Mindesta, the management and Board of Directors of Mindesta determined that the best prospects for advancing the Bissett Creek Project would be through the Corporation independently seeking its own financing and pursuing a going public transaction in Canada. Mr. Bowes was appointed as the President and Chief Executive Officer of the Corporation effective May 1, 2009 with the objective of executing upon this strategy.

In late 2009 and early 2010 the Corporation raised approximately \$2,431,750 in a number of private transactions to finance its activities.

On March 1, 2010, the Corporation changed its name to "Northern Graphite Corporation" and subdivided its then outstanding common shares to result in Mindesta owning 11,750,000 common shares of the Corporation.

In 2010, following the reorganization of the Corporation, SGS updated their 2007 work and produced a technical report (the "**2010 Technical Report**") entitled "Technical Report Preliminary Economic Assessment on the Bissett Creek Graphite Property of Industrial Minerals, Inc. & Northern Graphite Corporation" dated July 16, 2010 and revised February 2, 2011. It was prepared by Gilbert Rousseau P.Eng and Claude Duplessis P.Eng of SGS, each of whom is an independent "qualified person" pursuant to NI 43-101.

Following the completion of the 2010 Technical Report, Northern decided to undertake a drilling program, commence a pre-feasibility study and metallurgical testing, and initiate the environmental and mine permitting process for the Bissett Creek Project.

The Corporation commenced the drill program in July 2010 with the objectives of upgrading inferred resources to indicated resources, confirming results of historical drilling, and expanding the resource to demonstrate the potential to significantly increase production in the future if warranted by graphite demand. A total of 51 holes were drilled, totaling 2,927 metres. All 51 holes intersected widespread graphite mineralization, with 50 of the 51 holes containing widths and grades similar to those within the existing resource model. As a result, the deposit was

significantly enlarged and remained open to the north and to the east.

Following completion of the 2010 Technical Report, and the 2010 drill program, SGS was engaged to complete a pre-feasibility study. As part of this process, SGS would complete a new set of metallurgical tests to confirm previous results and also to examine the potential to produce saleable by-products and value added graphite products for specialty markets.

The Corporation engaged Knight Piesold Consulting to define and complete all environmental and engineering studies required to file a closure plan amendment for the Bissett Creek Project and to prepare and submit all permit applications required to initiate construction and mining. This process included ongoing local community and First Nations consulting.

On February 1, 2011, Don Baxter was appointed as President and Stephen Thompson was appointed as the Chief Financial Officer of the Corporation. Mr. Bowes resigned as President to focus on his role as Chief Executive Officer and a Director.

On April 18, 2011, the Corporation completed an initial public offering consisting of the issuance of an aggregate of 8,000,000 common shares at a price of \$0.50 per share for gross proceeds of \$4,000,000 pursuant to a final prospectus dated April 7, 2011 filed in the provinces of Ontario, Alberta and British Columbia (the "**IPO**"). The common shares of the Corporation commenced trading on the TSX Venture Exchange (the "**TSX-V**") on April 20, 2011 under the symbol "NGC". From the IPO to the end of 2012, 9,610,836 warrants have been exercised resulting in proceeds to the Corporation of \$3,240,404. As a result of the IPO, Mindesta's ownership in Northern was further reduced to 31.5%.

On June 21, 2011, the Corporation announced that the pre-feasibility study underway on the Bissett Creek Project would be upgraded to a full bankable feasibility study.

In September 2011, the Corporation announced a significant increase in estimated resources based on the results from the 2010 drilling program. The updated base case mineral resource for the Bissett Creek Project, using a cut off of 0.986% graphitic carbon ("Cg"), totalled 25,983,000 tonnes grading 1.81% Cg in the indicated category (470,300 tonnes of contained graphite) while inferred resources totalled 55,038,000 tonnes grading 1.57% Cg (864,100 tonnes of contained graphite). The deposit remains open along strike to the north and south, and down dip to the east. The drilling program and resource estimate confirmed that near surface graphite mineralization comprises an area of over one square kilometer. The deposit is tabular and very shallowly dipping (10%). The waste to ore ratio for this new resource was 0.27:1.

SGS Minerals Services in Lakefield, Ontario ("SGS Lakefield") performed Locked Cycle testing on composite material taken from drill core samples across the deposit in 2011. The test produced six final concentrates which showed consistent flake size distribution and carbon grade. The overall concentrate grade averaged 95%Cg. A concentrate which grades 94%Cg and has a flake size distribution of 80% greater than +80 mesh is the industry standard premium product. Almost all Bissett Creek production meets this specification as the final concentrates averaged over 70%, +80 mesh. Approximately 6% of the concentrate was +100 mesh and 12% was +200 mesh, both with high carbon content. Less than 10% was very small, -200 mesh flake and powder with a carbon content in the low 80s.

Most significantly, almost 50% of the graphite concentrate produced was +48 mesh XL flake which averaged 98% Cg with one value as high as 99.2% Cg. The overall carbon recovery in the Locked Cycle tests was 92.2%.

On December 12, 2011, the Board of Directors of Mindesta declared a pro rata dividend-in-kind, payable January 25, 2012 to shareholders of record as at January 5, 2012, whereby most of the shares of the Corporation owned by Mindesta would be distributed to Mindesta shareholders. At the close of trading on January 25, 2012, Mindesta completed the distribution to its shareholders of 9,413,581 shares of the Corporation (approximately 25% of the Northern common shares outstanding) on the basis of one common share of Northern for each share of Mindesta common stock held. Mindesta no longer holds any common shares of Northern.

On March 16, 2012, the Corporation completed a non-brokered private placement through the issuance of 6,206,377 common shares at a price of \$1.70 per share for gross proceeds of \$10,550,841. In connection with the private placement, and in accordance with the policies of the TSX-V, the Corporation paid total finder's fees of \$121,517 and issued 71,480 finder's warrants, each exercisable to acquire one common share of the Corporation at a price of C\$2.00 per share for a period of one year (and which have since expired). The net proceeds of the placement were used to finance the completion of the FS and to finance permitting, detailed engineering and design work with respect to the Bissett Creek Project, along with providing working capital and funds for general corporate purposes.

In July 2012, the Corporation completed the bankable FS. The FS was prepared by G Mining Services Inc. and included contributions from SGS Lakefield (metallurgy) and SGS (resource modelling), Knight Piesold Ltd. (environmental, permitting, tailings management and road infrastructure) and Met-Chem Canada Inc. (process engineering). The FS confirmed the technical and financial viability of constructing and operating an open pit mine and 2,300 tpd processing plant on the Bissett Creek Project. The FS is the subject of a technical report prepared in accordance with NI 43-101 dated August 23, 2012 and prepared by Louis Gignac, ing., Nicolas Ménard, ing., Antoine Champagne, ing., Ahmed Bouajila, ing., Robert Menard, ing., and Robert Marchand, ing., each of whom is an independent "qualified person" under NI 43-101, which has been filed on SEDAR.

On November 8, 2012, the Corporation announced that ongoing metallurgical testing by Hazen Research had succeeded in purifying the SPG from the Bissett Creek Project to 99.99% Cg and large flake graphite to 99.83% Cg. These bench scale tests were the first step in demonstrating that the laboratory purification process developed by Northern can be scaled to commercial levels.

On November 29, 2012, the Corporation was accepted for graduation to Tier 1 of the TSX-V. As a result, all of the securities of Northern that were then remaining in escrow, being an aggregate of 1,734,541 common shares, were released effective November 29, 2012. Northern no longer has any securities remaining in escrow.

On January 8, 2012, the Corporation announced that it had signed a letter of intent with Caterpillar Financial to provide financing for up to US\$17.5 million in Caterpillar mining and power equipment for the Bissett Creek Project. Caterpillar Financial has also preliminarily indicated its additional interest in participating in a project debt facility, subject to receipt of an information memorandum relating thereto and its agreement with the terms and conditions thereof.

On January 18, 2013, the Corporation announced that following a competitive bidding process involving five engineering firms, it had awarded a \$3.5 million contract for the detailed engineering and design of the Bissett Creek Project to PES-BECMA.

On March 7, 2013, the Corporation announced positive results from a 61 hole, 3,425 meter drilling program on the Bissett Creek Project. The drill program was designed to infill a significant portion of inferred resources with the objective of upgrading them to the measured and indicated categories. In addition, extensions to higher grade zones outside of the current resource model were tested.

On May 7, 2013, the Corporation announced a new resource estimate for the Bissett Creek Project based on results from the drill program. The drill program successfully achieved its objective of upgrading a significant portion of inferred resources to measured and indicated resources. Measured and indicated resources are now estimated at 69.8 million tonnes grading 1.74% Cg based at a 1.02% Cg cutoff grade compared to the previous estimate of 26 million tonnes grading 1.81% Cg at a cutoff of 0.98%Cg.

On July 8, 2013, the Corporation announced that Don Baxter had resigned as President of the Corporation. The Corporation plans to hire a COO as part of its efforts to finance and build the Bissett Creek Project.

In October of 2012, the Corporation submitted an amended MCP for the Bissett Creek Project to the MNDM. On August 26, 2013, the Corporation announced that the MNDM had accepted the Corporation's MCP for filing and that the Corporation was granted an additional mining lease for the Bissett Creek Project. The completion of species at risk permitting, additional operational permitting and likely an additional amendment to the MCP will be required before the Corporation can commence construction of the Bissett Creek Project.

On September 23, 2013, the Corporation announced that the FS economics had been updated to incorporate the new and larger resource estimate and therefore, a new mine plan, some modifications to the capital and operating cost assumptions, and lower graphite prices. This update was prepared by AGP Mining Consultants Inc. ("AGP"). It was not considered a material change and no new NI 43-101 report was filed.

On September 30, 2013, the Corporation announced that its proprietary process for purifying SPG had been tested on concentrates from the Bissett Creek Project and had consistently achieved 99.95%+C purity levels in extensive independent laboratory and bench scale testing. High purity graphite is required for many value added applications including lithium-ion batteries.

On October 23, 2013, the Corporation announced the results of a PEA on an expansion case for the Bissett Creek Project. The 2013 PEA was undertaken to demonstrate the ability to meet expected future growth in graphite demand by substantially increasing production from the deposit based on measured and indicated resources only. A technical report relating to the 2013 PEA prepared in accordance with NI 43-101 was filed on SEDAR on December 6, 2013.

On November 11, 2013, the Corporation announced that it had partnered with Coulometrics LLC to manage development of the Corporation's proprietary technologies for manufacturing SPG and improving the performance of lithium-ion batteries. The initial focus is on the development of nano-material based surface coatings for SPG. SPG is manufactured from flake graphite concentrate and is the anode material in lithium-ion batteries. Prices range from \$3,500 per tonne uncoated to over \$10,000 per tonne for coated SPG. On March 19, 2014, the Corporation announced that it had developed and successfully tested a proprietary process for coating SPG which is necessary before it can be used as an anode material in lithium-ion batteries.

On June 14, 2014, the Corporation announced the results of the 2013 PEA Update which assessed the economics of building a 2 million tpa processing plant at the outset rather than increasing from 1 million tpa to 2 million tpa after three years of operation as contemplated in the 2013 PEA. The larger process plant was evaluated due to recent developments in the lithium-ion battery industry. The 2013 PEA Update was not considered a material change and no new NI 43-101 report was filed.

On November 10, 2014, the Corporation announced that in partnership with Coulometrics LLC, it had opened a lithium-ion battery research and testing facility. The Corporation indicated that the facility will focus on developing and testing improved natural graphite based anode materials for lithium-ion batteries with the goal of improving battery performance, reducing costs and reducing the environmental impact of anode manufacturing. The Corporation noted that the facility will be available on normal commercial terms to any company, including Northern's competitors.

On January 22, 2015, the Corporation announced that concentrates from its Bissett Creek Project deposit have been successfully upgraded to the highest nuclear grade classification level using the Corporation's proprietary purification process.

On January 27, 2015, the Corporation announced that it had appointed Endeavour Financial Limited (Cayman) as its exclusive advisor with respect to negotiating and structuring strategic partnerships and offtake agreements, and raising debt financing, for the Bissett Creek Project.

On March 2, 2015, the Corporation announced that independent testing has confirmed that flake graphite concentrates from the Corporation's deposit meet or exceed quality requirements for all major end markets and in particular, refractories and expandable graphite. Testing was carried out by NGS Naturgraphit GmbH which provides a broad range of consulting, research and development and laboratory services to graphite producers, dealers and consumers.

#### Trends

There are significant uncertainties regarding the price of graphite as well as other minerals and metals and the availability of equity financing for the purposes of mineral exploration and development. For instance, the prices of minerals, including graphite, have fluctuated widely in recent years and it is expected that wide fluctuations may

continue. Management of the Corporation is not aware of any trend, commitment, event or uncertainty both presently known or reasonably expected by the Corporation to have a material adverse effect on the Corporation's business, financial condition or results of operations other than the normal speculative nature of the natural resource industry and the risks disclosed in this Annual Information Form under the heading "Risk Factors".

#### THE GRAPHITE INDUSTRY

Graphite is one of only two naturally occurring forms of pure carbon, the other being diamonds. Graphite consists of a two dimensional, planar structure molecular structure whereas diamonds have a three dimensional crystal structure. Graphene is a single, one atom thick layer of carbon atoms arranged in a "honeycomb" or "chicken wire" pattern. A graphite flake is essentially many, many layers of graphene held together by weak bonds. It has been estimated that there are three million layers of graphene in a one millimeter thickness of graphite. The delamination or exfoliation of graphite flakes is therefore one method of making graphene.

Graphite is formed by the metamorphism of carbon rich materials which leads to the formation of either crystalline flake graphite, fine grained amorphous graphite, or crystalline vein or lump graphite. Graphite is a non-metal but has many properties of metals and is desirable for its thermal and electrical conductivity, resistance to acids and heat, chemical inertness, and lubricity.

Because of supply concerns relating to the fact that China produces over 70% of the world's graphite, and to potential demand growth from new applications such as lithium-ion batteries, the European Union announced that graphite is one of 14 "critical mineral raw materials" considered to be in supply risk. The United States government has also included graphite on a list of mineral resources whose loss could critically impact the public health, economic security and/or national and homeland security of the United States. There is very little recycling of, or substitution for, graphite.

Graphite is primarily used in the steel industry where it is added to bricks ("**refractories**") which line furnaces to provide strength and resistance to heat and corrosion, used to line ladles and crucibles, and added to steel to increase carbon content. Graphite is also used extensively in the automobile industry in gaskets, brake linings and clutch materials. It has a myriad of other industrial uses including electric motors (carbon brushes), batteries, lubricants, pencils, thermal management in electronics, fuel cells, seals and gaskets, fire retardants, flow batteries and many other products. The graphite commonly used in golf clubs, hockey sticks, tennis rackets and composite materials is actually carbon fiber, a synthetic form of graphite made from petroleum coke.

World production of natural graphite was just under one million tonnes in 2011 and therefore it cannot be considered a small, specialty market. The natural graphite market is larger than the markets for molybdenum, tungsten, cobalt, uranium, lithium and rare earths combined. Of all global production, 55% is accounted for by flake graphite, 1% by vein graphite and the remainder is low value, amorphous graphite. Over the 2004 to 2011 period flake graphite demand grew by an average of 7.5% per annum as it is required for both traditional refractories markets and the new rapidly growing markets of expandable graphite, li ion batteries and fuel cells. Alternatively, amorphous graphite demand declined by an average of over five per cent per year during the same period as it is used in low value markets such as pencils and lubricants and the very competitive market for additives used to increase the carbon content of steel.

According to Roskill Market Reports, China produces 80% of the world's graphite but only exports 40% of its production since it is also the world's largest consumer of graphite. Half of Chinese production is low value amorphous graphite and their flake graphite tends to be smaller in size and lower in carbon content. The Chinese industry is very fragmented and characterized by a large number of small producers and even illegal miners. The country's natural resource strategy in general is to address poor labour and environmental standards and a lack of investment and professional mine planning by closing smaller operations and forcing others to consolidate to create a larger, more professional industry. In addition, China currently imposes a 20% export duty and a 17% value-added tax on graphite, and an export permit is required. Export permits are only granted to large producers to eliminate small, inefficient operations and provide a means to control exports in the future.

Like uranium, there is a posted price for graphite which provides a long term guideline but actual sales are negotiated between producers and consumers. Graphite is not sold under long term contracts and there is no futures

market. Prices increase with flake size and carbon content with the +80 mesh large flake and 94%C high purity carbon varieties being the premium product quoted by Industrial Minerals. However, +50 mesh (XL) and +32 mesh (XXL) flake sizes are becoming increasingly important and command the highest prices. Well-established producers with guaranteed consistency can generally charge more. *Industrial Minerals* magazine polls users every week and publishes a price range for the most popular grades.

Current Graphit	e Prices by	Grade (US\$/tonne -	CIF Europe), March 19, 2015
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	Low	High
Synthetic graphite 99.95%C	\$7,000	\$20,000
Large flake (+80 mesh) 94-97%C	\$1,200	\$1,300
Large flake (+80 mesh) 90%C	\$950	\$1,050
Medium flake (+100 to -80 mesh) 94-97%C	\$1,050	\$1,150
Medium flake (+100 to -80 mesh) 90%C	\$850	\$950
Fine flake (-100 mesh) 94-97%C	\$900	\$950
Fine flake (-100 mesh) 90%C	\$750	\$800
Amorphous powder (80-85%C)	\$430	\$480

#### Source: Industrial Minerals magazine

Industrial Minerals does not quote prices for +48 and +32 mesh flake graphite but industry sources indicate they are currently about US\$2,000/t and US\$2,300/t respectively for 96-98%Cg grades.

Graphite prices peaked in the \$1,300/tonne range for the premium grade (large flake +80 mesh, 94-97%C) in the late 1980s and then declined sharply as Chinese producers dumped product on the market. Prices did not begin to recover until 2005, and peaked in 2012 in a range of US\$2,500 to \$3,000/tonne when some shortages were reported. The subsequent slowdown in the Chinese economy combined with a lack of growth in the US/Japan/Europe economies has caused prices to fall back approximately 50% from the 2012 levels. They are currently in the US\$1,200 to \$1,300/tonne range for large flake, high purity graphite. Prices are still double their previous lows and prices for large and extra large flake have held up better. Many uneconomic mines have closed or suspended operations which could indicate that pricing is at the marginal cost of production and should limit further declines.

# INDUSTRIAL MINERALS

o Flake, 94-97% C, +80 Mesh, FCL, CIF, Europe

o Flake, 94-97% C, −100 Mesh, FCL, CIF, Europe

○ Flake, 94-97% C, +100 Mesh -80 Mesh, FCL, CIF, Europe

2,500			
2,000		6	A
1,500			
1,000		ALS	
500			
0			
	2000	2005	2010 2

Source: Industrial Minerals Notes: CIF European Port FCL

#### THE BISSETT CREEK PROJECT

The Corporation completed a bankable FS on the Bissett Creek Project effective August 23, 2012. The FS confirmed the technical and financial viability of constructing and operating an open pit mine and 2,500 tpd processing plant.

The FS was prepared by G Mining and included contributions from SGS, Knight Piesold Ltd. and Met-Chem Canada Inc. The contributions of the specialized consultants for specific areas of the FS were as follows:

#### **Feasibility Study Participants**

Area	Participant
Mineral Resources	SGS
Metallurgical Test Work, Supervision and Reporting	SGS Lakefield
Mineral Processing Methods, Metal Recoveries and Flow Sheets	SGS
Environment and Social Studies	Knight Piésold Ltd.
Roads, Tailings Management Facilities and Water Management	Knight Piésold Ltd.
Closure Plan, Environmental Management Plan, Permitting	Knight Piésold Ltd.

Process Plant Engineering	Met-Chem Canada Inc.
Mineral Reserves and Mine Plan	G Mining
Infrastructure, Support Buildings and Power Generation	G Mining
Capital and Operating Costs, Financial Model	G Mining
Overall Coordination, Conclusion and Recommendations	G Mining

The FS is the subject of a technical report on the Bissett Creek Project prepared in accordance with NI 43-101 dated August 23, 2012 and prepared by Louis Gignac, ing., Nicolas Ménard, ing., Antoine Champagne, ing., Ahmed Bouajila, ing., Robert Menard, ing., and Robert Marchand, ing., each of whom are independent "qualified persons" under NI 43-101 (the "2012 Technical Report").

Subsequent to the completion of the FS there was a significant decline in the price of graphite. Also, drilling had significantly increased the size of the resource. Accordingly, the Corporation revised the mine plan in the existing FS based on the new 2013 resource model with the objective of offsetting lower prices with higher grades. The Corporation also switched from contract to owner mining to reduce costs. On September 23, 2013 the Corporation updated the economics of the FS. The FS Update incorporated the new resource and mine plan, some modifications to the capital and operating cost assumptions, and lower graphite prices. The FS Update was prepared by AGP Mining Consultants and did not require the filing of a new NI 43-101 Report. A press release was issued and filed on Sedar and includes detailed cash flows relating to the FS Update. Gordon Zurowski, P.Eng., Principal Mining Engineer, of AGP Mining Consultants and a "qualified person" under NI 43-101 who is independent of the Corporation, prepared and authorized the release of the economics for the FS Update.

The following description of the Bissett Creek Project is summarized from the 2012 Technical Report and in many cases is a direct extract. Portions of the following information are based on assumptions, qualifications and procedures described in the 2012 Technical Report but which are not fully described herein. Reference should be made to the full text of the 2012 Technical Report, which is incorporated by reference herein. The 2012 Technical Report has been filed with certain Canadian securities regulatory authorities pursuant to NI 43-101 and is available for review under Northern's SEDAR profile at *www.sedar.com*.

#### **Project Description and Location**

The Corporation holds a 100% interest in the Bissett Creek Project, which contains a large flake graphite deposit, and is located south of the Trans-Canada Highway (Highway 17) and 53 kilometres east of Mattawa, and west of Deep River, Ontario. The Bissett Creek Project is located in the United Townships of Head, Clara and Maria, in the County of Renfrew, Province of Ontario, approximately 300 km northeast of Toronto.



The Bissett Creek Project consists of Ontario mining lease number 106693, which was originally issued in 1993 for 21 years and which covers 565 hectares, Ontario mining lease number 109335 issued in 2013 for 21 years covering 1,938 hectares (the "**Mining Leases**") and five unpatented mining claims (the "**Mining Claims**") covering approximately 464 hectares for a total project area of approximately 2,967 hectares, all of which are contiguous to one another. A renewal application with respect to lease number 106693 was submitted to the MNDM and the Corporation has received notification that it has met the necessary requirements for renewal. This lease renewal has been requisitioned for issuance and registration and it is expected that the new expiry date will be in 2035. The Bissett Creek Project is centered on UTM coordinates 727170 E and 5112025N (NAD 83) on the topographic map (NTS 31L/01). The Mining Leases cover all of the area that will be encompassed in the proposed mining operation and related infrastructure.

Royalties on the Bissett Creek Project include an annual advance payment of \$27,000 to the three original prospectors that discovered the property which will be credited against a royalty of \$20 per ton of concentrate on net sales once the mine is operational, and a 2.5% NSR on any other minerals derived from the property payable to the same parties.

#### Accessibility, Climate, Local Resources, Infrastructure and Physiography

#### Accessibility

The property is accessible from the Trans-Canada Highway (Highway 17), approximately 53 km east of the town of Mattawa. The Trans-Canada Highway in this area connects the cities of North Bay, Ottawa and Montreal where the nearest port is located. The Bissett Creek road intersects Highway 17 two km east of the village of Bissett Creek. Access from Highway 17 to the property is by way of a well maintained gravel forestry road for a distance of 13 km and then east on a winding road for a distance of 4 km.

#### Climate

The nearest town to the Bissett Creek Project with the most complete data on climate is Petawawa, which hosts a military base. In Ontario, the climate is generally continental, although modified by the Great Lakes to the south, and precipitation increases from NW to SE. Annual rainfall is from 200 to 600 mm.

#### Local Resources

The area is well served by regional geological and mining service firms in North Bay, Sudbury and Ottawa, which are situated 115 km and 243 km to the northwest, and 244 km to the southeast, respectively. The nearest towns, Mattawa and Deep River, may also provide workers and minor services, lodging and living support.

Buildings at the site installed in 2002 by Mindesta provide shelter facilities for small groups, core logging, splitting facilities and some storage. All major services are available in Sudbury, North Bay and Ottawa, while minor ones may be available in Mattawa, Deep River.

#### Infrastructure

The access road and stripping of the overburden in certain areas were completed by North Coast Industries Ltd. ("**North Coast**"), a previous optionee of the project, between 1987 and 1992. The dry process pilot plant building was completed by Mindesta in 2005. All buildings are kept in good condition; however the old dry process equipment was removed during 2011.

Sand and gravel are available within the Bissett Creek Project site, if additional material should be required.

Presently, there is no electrical power from Ontario Hydro at the site and electrical power at the site is provided by a small power generator. The FS contemplated the Corporation bringing in a natural gas pipeline from the Highway 17 corridor to fuel natural gas generators at the site for future production. In the FS Update a switch was made to transporting compressed natural gas ("CNG") from the pipeline to the site by truck. Waste heat from power

generation will be used to dry the graphite concentrate produced as well as heat the buildings.

#### Physiography

The Bissett Creek Project is located in rolling hilly terrain. The elevation above sea level ranges from 270 to 320 meters. The property is covered by a mixed forest of conifers and hardwoods. Merchantable red and white pine occurs near the western margin of the property. Soil cover is variable. Rock exposures are found in road cuts and ridge crests. Soil cover is normally sandy, glaciofluvial deposits over ridge areas and glacial lake and stream sediments at lower elevations. Lower lying areas tend to be swampy and covered by moderately thick growth of stunted cedar and swamp grasses. Overburden depth on the property is variable, ranging from zero to ten metres thick in the swampy areas.

#### History

The Bissett Creek Project was first staked by Frank Tagliamonti and associates in 1980. The same year, Donegal Resources Ltd. optioned the Bissett Creek Project but limited work was performed prior to its decision to abandon the property.

In 1981, Hartford Resources Inc. ("**Hartford**") optioned the Bissett Creek Project and staked an additional 24 claims. In 1984, Princeton Resources Corp. ("**Princeton**") acquired a 100% interest in the Bissett Creek Project through the acquisition of Hartford. Hartford had held the claims since 1981 and had conducted some exploration work including line cutting, surveying, and trenching. During the latter part of 1984 through 1986, Princeton carried out a program of mapping, trenching, surveying, drilling, sampling, and testing with the result that 10 million tonnes of approximately 3% graphite were defined. *Historical information is provided for informational purposes only. This resource estimate was not completed in accordance with NI 43-101 and therefore should not be relied upon.* In 1985, Princeton set up a base camp and constructed a batch testing plant.

In November 1986, North Coast entered into an option agreement with Princeton whereby North Coast would be awarded a 58% interest in the Bissett Creek Project upon the completion of a batch testing plant, bulk sampling and the production of graphite flake for end user tests. North Coast was awarded its 58% interest in June 1987 and subsequently acquired Princeton's remaining 42% interest in February 1989.

In 1986, North Coast hired KHD Canada Inc. ("**KHD**") to review the test plant and make process recommendations. In 1987, the results of these recommendations indicated that the Bissett Creek Project graphite deposit could be concentrated into high grade and high value graphite flakes. A full feasibility study was undertaken and completed in 1989 which deemed the Bissett Creek Project to be viable. Kilborn Engineering Ltd., KHD, Bacon Donaldson and Associates Ltd. and Cominco Engineering Services Limited determined that the Bissett Creek Project had a minimum of 20 million tonnes of graphitic material grading higher than 3.18% C. *Historical information is provided for informational purposes only. The feasibility study and resource estimate were not completed in accordance with NI 43-101 and therefore should not be relied upon.* 

World graphite prices underwent a significant decline in the late 1980's as China aggressively entered the graphite market, and the Bissett Creek Project was put on hold. North Coast continued to maintain the leases up until 1997 but graphite prices did not recover sufficiently to warrant proceeding with a mine/mill development at the Bissett Creek Project site.

In 2002, Mindesta, through the Corporation, took over the Bissett Creek Project and attempted to develop a dry process for the recovery of the graphite flakes. A poorly engineered and flawed design resulted in very little product being produced and continuous or commercial operation was never achieved.

In April 2007, Mindesta, through a new management group, proceeded to review the past documentation and determined that there was sufficient data to proceed with a preliminary economic assessment. Graphite prices had recovered significantly and SGS was contracted in May 2007 to produce a NI 43-101 compliant technical report on the Bissett Creek Project.

Title to the mining lease and claims was held by Industrial Minerals Canada Inc. which was then a subsidiary of

Mindesta and which subsequently changed its name to "Northern Graphite Corporation" in December 2009.

#### **Geological Setting**

The Bissett Creek Project lies within the Ontario Gneiss Segment of the Grenville Structural Province of the Canadian Shield. This area is characterized by quartzofeldspathic gneisses which have undergone upper amphibolite facies grade of regional metamorphism with metamorphic temperatures estimated to have reached the 600 to 700 degrees Celsius range. The Ontario Gneiss Segment is distinguished from other areas of the same belt by having northwesterly dominant foliation and structural trends.

Mapping by S.B. Lumbers, 1976, of the Ontario Department of Mines, indicates that the property and surrounding area are underlain by Middle Precambrian metasedimentary rocks. These are coarse and medium grained, biotite-K-feldspar quartz-plagioclase gneisses which are high grade metamorphic equivalents of pure sandstone, arkose and argillite. These highly deformed and recrystallized rocks have been folded into northwest trending, northeast dipping recumbent folds which are refolded by large broad open folds. Greater than 10 % of the rocks are composed of remobilized quartz and feldspar migmatite.

The Bissett Creek Project is predominantly underlain by Middle Precambrian age meta-sedimentary rocks. These are divided into graphite gneiss, transitional graphitic gneiss, and barren gneiss for mapping purposes. The graphitic gneiss is a distinctive recessive weathering unit, commonly exposed along rock cuts, hill tops and occasional cliff faces. It is acalcareous, biotite-amphibole-quartzofelspathic gneiss (generally red-brown to pale yellow-brown weathering). Graphite, pyrite and pyrrhotite occur throughout. Graphite occurs in concentrations visually estimated to be from 1 to 10 %. Sulphides occur in concentrations from 1 to 5 %. In its unweathered state, the rock unit is pale to medium grey in colour.

This graphite gneiss has a moderate 5 to 20 degree dip to the east and the high grade layer dips 20 to 30 degrees to the south on the property. This unit is sandwiched between the upper barren non-calcareous gneiss, which forms the hanging wall of the deposit and a similar lower barren gneiss which forms the footwall. A total thickness of 75m of graphitic gneiss was intersected by drilling.

The barren gneiss is a pale to dark grey-green non-calcareous unit. Black biotite, dark green amphiboles and red garnets distinguish the units from the graphite bearing varieties.

An intermediate unit is present, typically a biotite-muscovite-garnet-quartzofeldspathic gneiss. Muscovite is the distinguishing mica variety and the garnets are mauve in color. This unit may contain variable amounts of graphite and occurs below and within the graphitic gneiss. Two intrusive units have been observed on surface; dykes and sills of coarse grained biotite-muscovite-quartz-feldspar pegmatites and a dark green lamprophyre.

The deposit may be classified as a sedimentary type in origin. However, metamorphism has transformed the original organic content of the mother sedimentary rock into graphitic carbon flakes. The actual appellation of the deposit is graphitic gneiss. The Bissett Creek Project main zone area is composed of sub-horizontal 5 to 10 degrees undulating layers. The actual well recognized higher grade layer is dipping 15 to 20 degrees to the south.

#### Exploration

In 1984, Princeton completed geological mapping, line cutting, surveying, trenching, sampling and diamond drilling. A total of 1,041 ft. (317 m) of BQ diameter core was drilled in seven holes. Forty trench samples were taken along five new trenches. A 15 ton bulk sample was taken from a previously known surface high grade outcrop.

In 1985, Princeton completed geological grid mapping, a magnetic survey, diamond drilling and bulk sampling. A pilot test plant was constructed on site. Ninety-nine vertical BQ diamond drill holes were completed for a total footage drilled of 16,836 (3,131 m).

In late 1986, North Coast optioned a 58% interest in the property and became the operator. As part of this agreement, North Coast operated the pilot plant processing some 4,900 tons of ore and producing approximately 36 tons of graphite concentrate.

In 1987, North Coast completed geological mapping and trenching. Sixty-seven percussion holes were drilled to 60 feet, where possible, and a total of 977 feet of N-DBGM diameter core were drilled in six holes. An additional 5,707 feet of BQ diameter core was drilled in 34 holes. North Coast collected a number of smaller bulk samples for bench test work by KHD and a large 60 tonne bulk sample for pilot testing by EKOF Flotation Gmbh ("**EKOF**") and KHD. Further detailed exploration and evaluation work consisted of ore reserve calculations, mine planning, estimates of associated capital and operating costs, extensive metallurgical evaluation, process design, environmental assessment, graphite flake quality evaluation, flake concentrate end user testing and market analysis. North Coast engaged KHD to review the pilot plant flow sheet and equipment, to make process recommendations, and to perform test work on samples and concentrate from the pilot plant. Based on the positive conclusions of the "Prefeasibility Study for the Bissett Creek Graphite Project" issued in December 1987 by KHD, a full feasibility study was completed by KHD in April 1989 for operation of a graphite beneficiation plant with mining facilities and necessary infrastructure. This work determined that the property had a minimum of 20 million tons of graphitic material grading 3.18%. *Historical information is presented for informational purposes only. The resource estimation was not completed in accordance with NI 43-101 and therefore should not be relied upon.* 

SGS's geological and mining-metallurgical engineers visited the site on June 6 and 7, 2007 and the geological engineer visited again on August 6 and 7, 2007. In addition, site visits were conducted by the following qualified persons pertaining to the 2012 Technical Report and the 2013 PEA:

Gilbert Rousseau, Eng. - SGS Geostat (September 15 to 17, 2010);

Francois Thibert, M.Sc .Geo. - SGS Geostat (September 15 to 17, 2010);

Andy Phillips, Eng. - Knight Piésold Ltd (June 29, 2011);

Steve Aiken, Eng - Knight Piésold Ltd (June 29, 2011);

Robert Menard, ing. – G Mining Services Inc. (June 29, 2011);

Nicolas Menard, ing. - G Mining Services Inc. (June 29, 2011);

Pierre Desautels, P.Geo. - AGP Mining Consultants (October 15, 2012);

Marc Leduc, P.Eng. (July 10, 2013);

Gordon Zurowski, P. Eng – AGP Mining Consultants (September 23, 2013).

No additional work was done on the Bissett Creek Project between the summer and of 2007 and the completion of a Preliminary Economic Assessment by SGS Geostat in July 2010 (subsequently revised in February 2011). Following completion of this 2010 Technical Report, the Corporation implemented the recommendations in it and completed a 2,900m infill and exploration drilling program and initiated a metallurgical testing program, a pre-feasibility study and the environmental and permitting review process, all with the objective of positioning the Corporation to make a construction decision on the Bissett Creek Project in early 2012. Subsequently, the Corporation made the decision to upgrade the pre-feasibility study to a full bankable feasibility study which was completed in the third quarter of 2012. The Corporation subsequently announced an update of the economics in the FS during September 2013, released a Preliminary Economic Assessment on an expansion case in October 2013 and updated the 2013 PEA in June 2014.

#### Mineralization

In Ontario, graphite occurs in both the Superior and Grenville structural provinces but the more important graphite deposits have been found historically in the Grenville Province. In the Superior Province it is associated with gold and base metal deposits occurring in carbonaceous sediments and shear zones. In the Grenville Province, graphite occurs within both the Central Gneiss Belt ("CGB") and the Central Metasediment Belt ("CMB"). Disseminated flake and "amorphous" graphite occurs in certain marble units in the CGB, within siliceous gneiss units in the CGB and within some of the marble units of the CMB. Prior production from Ontario has come from

graphite deposits within the marbles of the CMB which are locally of higher grade. Economic deposits now are being found in the siliceous metasediments of the CGB. The lower grade of deposits in the CGB is offset by their larger size and amenability to open pit mining.

At the Bissett Creek Project, the graphite mineralization is well characterized by homogeneously distributed graphite flakes (about 1 to 5 mm in size and 3 to 10 % of volume) within biotite schists with variable content of amphibole, clinopyroxene, chlorite, carbonate and graphite. Ubiquitous trace minerals included sphene, apatite, garnet and zircon. Sulfides were reported as trace amounts, usually as pyrite and pyrrhotite. On the basis of the graphite content and variation of the gneissic facies, the graphitic gneiss can be divided into:

Biotite rich quartzo-feldspathic and graphitic gneiss, paragneiss;Biotite rich quartzo-feldspathic and graphitic gneiss; and, Diopside-tremolite-biotite rich quartzo-feldspathic and graphitic gneiss.

Graphite flakes occur disseminated in the graphitic gneiss horizon and are in variable concentration in the transitional gneiss. The diopside-tremolite-biotite-graphite bearing gneiss is mostly located in the upper part of the mineralized graphitic horizon whereas the graphite rich paragneiss (up to 10 % graphite) sub-unit generally confined at the base. Graphite generally forms slender, oval to sub-rounded planar flakes averaging 0.3-1.5 mm long and 0.03-0.07 mm wide. These commonly occur adjacent to flakes of biotite of similar size or are associated with patches of pyrrhotite. Much less commonly, books of a few flakes are contorted or warped, and minor quartz or less commonly biotite occurs between the individual flakes.

The overall size distribution of the graphite flakes observed in core samples throughout the deposit does not show a direct relationship to the total graphitic carbon of the analysis. Large flakes are generally present independently of the percentage grade of the graphite, making the graphite gneiss horizon prospective along its entire length.

It was noted that the weathered horizon, some two to four metres thick, was a more friable form of the gneiss than the fresher rock without any noticeable change in the graphite content or flake size. This weathered material has the potential to be comminuted much more easily than the fresh rock and with probably better liberation of full-sized graphite flakes.

#### Drilling

A total of 275 diamond drill holes have been drilled on the Bissett Creek Project for a total of 14,371 m. An additional 82 percussion holes and 17 geotechnical holes have also been drilled.

	Percussion Holes	Geotech Holes	DDH Holes	meters
1984			4	187.8
1985			102	5156.3
1986			6	274.3
1987	82		45	2154.0
Sub Total	82		157	7772.4
2007			6	246.4
2010		17	51	2926.9
2012			61	3425
Total	82	17	275	14370.7

**Drilling Summary** 

Starting in 1984 and continuing through 2015 Princeton drilling totalled 5,450m in 106 diamond drill holes and 30 unnamed test holes. The majority were drilled on a 64m x 46m spacing. A smaller grid spacing of 23m x 23m was used in one area and one fence of holes was drilled at a 10m spacing to determine the continuity of the graphite horizons.

The 1985 drilling program outlined a total of 3.8 million tonnes ("**Mt**") of flake graphite bearing gneiss grading an average of 3.05% graphitic carbon ("**Cg**") using a 2.5% Cg cut-off grade. *This resource estimate is not compliant with the current NI 43-101 regulations and is presented herein as a historical reference and should not be relied upon.* Most of the tonnage is near surface with close to 3 Mt of the 3.8 Mt within 34m of the bedrock surface. This tonnage occurs in three higher grade horizons dipping gently southeast and contained within an envelope of lower grade graphitic gneiss. Grade and thickness decrease in the southwest, northeast and down dip directions. In cross-section, true thicknesses range from 15 to 30m. Commonly, a second horizon with a thickness ranging from three to six meters occurs in the same section. The larger horizons are traceable over a 350m strike length. The resource estimate was not evaluated in terms of mining feasibility and no mining dilution or stripping ratio had been calculated.

In 1986, six diamond drill holes for a total of 274m were drilled in a tight grid spacing. These holes were probably drilled by North Coast.

North Coast's 1987 drill program included 67 percussion holes drilled strictly for assay, using a Gardner-Denver 750 c.f.m. airtrack drill with a vacuum, filter and screen system. Holes were drilled to 60 feet where possible and the whole length was sampled in ten feet lengths. Additionally, a total of 1,207m of N-DBGM diameter core was drilled in 26 holes and 947m of BQ diameter core was drilled in 19 holes. All holes were vertical.

All 1980's drill hole collars were surveyed in 1988 by triangulation using a total station by R. M. Blais & Associates Ltd. for CEC Engineering Ltd. Collar coordinates were reported on maps in a local mine grid system in imperial units and converted to a metric system in UTM NAD27 zone 17 projection system. The conversion (i.e. translation and rotation) from the local mine grid system to the UTM NAD27 system is unknown. There are no digital records of the information and none of the historical casings could be found in the field for resurveying.

In 2007, SGS was retained by Mindesta to prepare a NI 43-101 compliant technical report on the Bissett Creek Project, including a preliminary economic assessment. An additional six vertical diamond drill holes of NQ size were completed in the northeast zone for 247m. Drilling was aimed at confirming grade and graphite flakes size in an area that had been investigated in the 1980's. The diamond drill holes were bored by George Downing Estate Drilling Ltd. between August 1 and August 9, 2007. All six holes of the 2007 drill program intersected mineralized gneiss. There was no overburden at the drill site locations. The graphitic gneiss foliation being sub horizontal, the vertical holes cut mineralized thicknesses from 30m up to 49m. Drilling confirmed that the main graphitic gneiss body at the Bissett Creek Project is made up of various consistently mineralized zones and that graphite flakes were observed in all six holes.

Northern's 2010 drilling program was jointly planned in part with SGS Geostat as a follow up to the 2010 Technical Report recommendations. The objectives of the drilling program were three-fold. Firstly, five historical holes (BC-85-020, BC-85-027, BC-86-006, BC-85-070, BC-87-036) were selected to be twinned (SGS-10-001 to -005) in order to validate historical drill results where high grade zones had been intersected. Since none of the historical drill hole casings could be located in the field, collars were located on georeference historical maps and were assumed to be within five meters of the actual location. Secondly, an additional eight holes (SGS-B1-001 to -004; SGS-B2-001 to -004) were planned to validate the mineralized zone continuity in between the 50m spaced historical drill hole sections. Third, the drilling was intended to upgrade part of the inferred resources to indicated resources.

In late 2012 the Corporation completed a 61 hole, 3,425 meter drill program on its Bissett Creek Project. The drill program was designed to infill a significant portion of inferred resources with the objective of upgrading them to the measured and indicated categories. In addition, extensions to higher grade zones outside of the current resource model were tested. Almost all 61 holes returned widths and grades similar to those used in the FS.

On May 7, 2013, the Corporation announced a new resource estimate which included the 2012 drill results. The Corporation revised the existing mine plan and on September 23, 2013, the Corporation announced updated FS

economics based on the revised mine plan and the updated resource.

#### Sampling and Analysis

Graphite is evaluated and marketed on the following basis:

- Flake size (mesh size);
- Carbon content of cleaned flakes (carbon content of concentrate); and
- Ash content (amount of oxides and carbonates still present in graphite flakes after concentration).

Those evaluation methods are generally accepted and used by the industrial graphite users. However, these are all concentrate measurements and one must start with a base line assessment of the mineralization. Flake size is determined with standard sieve tests using standard "tyler" sieve size openings. The "ash contents" are determined by qualitative spectrographic analysis on the graphitic flake. The determination of contained carbon in the flake poses a different problem. The industry accepts a variety of determination methods, as described below:

- a) double-loss-on-ignition analysis ("LOI");
- b) flotation product produced; loss-on-ignition; and
- c) organic carbon removal; measurement of the inorganic carbon ("LECO").

The double-loss-on ignition method was the most accepted in the graphite industry; however it is very slow and cumbersome for use in drill core and large numbers of geologic samples. Also, the method does not eliminate all the organic carbon in the sample and the industry does not credit the organic portion of a concentrate.

During the course of the project's exploration programs, the Cg content was determined using various methods, including flotation, LOI, and acid-bath with LECO finish. The type and extent of certain volatiles observed in the Bissett Creek Project samples makes quantitative analyses for graphite content problematic. Consequently, it was determined that the acid- bath LECO method produced the most reliable results to use for ore resource estimations. Even though different acid digestion procedures might have been used through time to remove organic carbon prior to the measurement of the inorganic carbon by LECO, all those samples were retained for the current ore resource estimation. The SGS Geostat 2007 drilling program aimed at giving a certain level of confidence with respect to the use of historical data and was able to reproduce similar grades and thicknesses to those intersected by historical holes. Therefore, results are considered reliable for the purposes of the current ore resource estimation.

#### 1980s' Drilling

Two analytical methods were used during the exploration drilling program. The first method used (Flotation) was to determine if an acceptable flake product could be recovered from the rock and then a determination of the carbon content of the graphite flakes was made. All drill core samples were visually estimated by the site geologists to determine their graphite content. A substantial correction factor was needed to correlate the visual estimates with the chemical assays of the contained graphite. The average reduction factor was estimated to be a little less than four, but it is very apparent that the factor could be as high as eight and as low as two. Some preliminary estimates of grade were made by using the results of the preliminary metallurgical test work, but once the main 1985 drill program was underway Lakefield Research Inc. ("Lakefield") carried out more definitive metallurgical testing and assayed some of the then current drill core samples for contained Cg content by chemical means. An initial 90 samples were assayed by Lakefield. Subsequent assaying was carried out by Erana Mines Ltd. ("Erana"), who were advised to use similar equipment and procedures to that used by Lakefield. Erana reran an initial 42 samples previously assayed by Lakefield with reasonable correlations. The second method, LECO, allows direct analysis of material without initial separation of the graphitic flake. This technique also eliminates all the organic carbon material and reads only the inorganic carbon content. To provide analytical checks, initially in the program, alternate samples were sent to Lakefield in Lakefield and Porto Metal Mills Ltd. in Sudbury.

The Flotation method entailed taking five kilograms of material, crushing same and by flotation methods producing a graphitic flake concentrate. From this, flake size distributions and ash contents were determined. Carbon contents were determined by LOI and LECO.

The LECO method procedure used is to remove any carbon in carbonates by an acid bath, followed by a short term ignition of the sample at 3000°F. The gas that is given off is then passed through various adsorption tubes to remove all constituents that might interfere with the determination of the amount of carbon dioxide (CO<sub>2</sub>) produced and then the carbon dioxide is itself adsorbed. The amount of graphite is calculated from the weight of CO<sub>2</sub> that has been adsorbed.

As the exploration drilling program progressed between 1986 and 1987, the majority of samples were prepared and analyzed at a site facility with regular checks conducted at Lakefield in Lakefield, Ontario (every tenth sample) and KHD facilities in West Germany. The carbon content determination was done using two methods, the double-loss-on-ignition and by LECO.

#### 2007 Program

In 2007, all core samples were prepared at Ortech Laboratory, in Ontario and assayed at Activation Laboratories Ltd for graphitic carbon using double-acid digestion with one in five samples assayed for total carbon (C).

The graphitic carbon analytical procedure used a 0.5 g sample digested with hydrochloric and perchloric acids to remove all forms of carbon with the exception of Cg. An Eltra CS-2000 is used for the analysis.

#### 2010 Program

For the 2010 exploration drilling program, core sample preparation and analyses were performed by SGS Minerals Services, Toronto Laboratory in Don Mills, Ontario, and the results certified by laboratory manager for SGS in Vancouver, B.C.

SGS's assay method does not measure graphitic carbon directly with the instruments but Cg results are indirectly calculated by subtracting the carbon in the carbonates from the total carbon. This implies determining total carbon by LECO and total  $CO_2$  by coulometry for each sample. This approach assumed that the only other form of carbon in the samples, other than graphitic carbon, is contained within the carbonates and that no organic carbon is present. According to SGS, these methods have been fully validated for the range of samples typically analysed. Method validation includes the use of the certified materials, replicates and blanks to calculate accuracy, precision, linearity, range, and limit of detection, limit of quantification, specificity and measurement uncertainty.

Northern implemented a QA/QC program in 2010 consisting of inserting a) a field duplicate sample in every hole; b) an analytical standard after every 35 or 40 drill core samples, intermittent with the blank sample; and c) a blank sample after 35 or 40 samples, intermittent with the standard sample. The reference material, not certified, was provided by SGS Laboratory in Lakefield, Ontario. The blank sample consisted of barren granitic gneiss sampled from drill hole BC-10-03 between 0.5 and 3.6 m. The reference material was originally prepared from a 150 kg non-oxidized bulk sample originally ordered to initiate metallurgical testing. All products were submitted in triplicate for LECO (C and Cg) and double LOI method at SGS.

#### 2012 Program

All samples from the 2012 drill program were collected and supervised by Mehmet Taner, P.Geo., PhD and a QP, and delivered to SGS Mineral Services (Toronto). SGS is an ISO/IEC 17025 accredited analytical laboratory. The samples were ashed at 500 °C to remove organic carbon. Carbonate carbon was estimated on one aliquot of the ashed sample using dilute perchloric acid to release  $CO_2$  which was then measured by a Coulometric analyzer. A second aliquot was used to estimate total carbon content. The second aliquot was combusted at 950 °C and the carbon was converted to  $CO_2$  and measured by the coulometer. Graphitic carbon was calculated as follows: percentage of graphitic carbon equals the percentage of total carbon in ashed sample minus percentage carbon as carbonate in ashed sample. For QA/QC purposes, the Corporation inserted a total of 40 standards (one every  $35^{th}$  to  $40^{th}$ 

sample), intermittent with 19 blank samples. A field duplicate sample was generally taken in every hole (1/4 of the core) within well mineralized sections. A total of 29 duplicate samples were taken.

#### Data Verification

Twin Hole Validation: In order to validate historical drill results, SGS Geostat recommended twinning five holes where high grade zones had been intersected in historical drill holes. Results of the 2010 twin drill hole program show a fair to good correlation between twin holes and historical drill holes. The primary objective of the program was to test for grade and thickness of the proposed mined area. The twin holes validated both. Variability might be accounted by analytical method differences and true distances between paired holes. Thus, SGS Geostat considers historical drill data to be of acceptable quality to be included in the final project database.

Check Assays: SGS Geostat completed independent analytical checks of drill core duplicate samples taken from selected Northern 2010 drill holes. A total of 33 core duplicates (1/4 of the core) were collected from holes SGS-10-B2-002 and BC-10-021 by François Thibert, independent qualified person, and submitted for C, Cg, CaCO<sub>2</sub> and Silicon Carbon ("**Si-C**") at SGS Minerals Laboratory in Toronto, Ontario. Check samples were analysed with the same analytical procedures used during the 2010 exploration drill program by determining C by LECO and CaCO<sub>3</sub> by measuring CO<sub>2</sub> by the CO<sub>2</sub> coulometer. Results of the independent check sampling program show fairly good reproducibility of the data and therefore, SGS Geostat considers those acceptable.

Digital Drill Hole Database: None of the original data computerized in the late 1980's could be retrieved from Northern. Numerous unsuccessful attempts were made to contact various past stakeholders. Consequently, drill hole collar data including location, azimuth, length, and deviation, lithological descriptions and assay results have been compiled and mostly manually re-entered to build the Bissett Creek Project digital drill hole database. All imperial unit data were converted to the metric system.

None of the 1980's drill casings could be found in the field for resurveying and there are no digital records of the information. All 1980's drill hole collars were surveyed in 1988 by triangulation using total station by R. M. Blais & Associates Ltd. for CEC Engineering Ltd. Collar coordinates were reported on maps in a local mine grid system in imperial units and converted to a metric system in UTM NAD27 zone 17 projection system. The conversion (i.e. translation and rotation) from the local mine grid system to the UTM NAD27 system is unknown. Diamond drill collars have thus been positioned through geo-referencing of historical scanned maps using the UTM NAD27 zone 17 grid as control points. Most of the historical holes elevation values were adjusted relative to the 2010 Lidar survey. It is SGS Geostat's opinion that the converted drill collar locations are within a three to five meter radius of the original collars. Hole lengths, collar azimuth and dip were taken directly from the drill log hard copies. 2007 and 2010 collar data were supplied by Northern in a digital format and most of the collar location were field checked with a hand held GPS during the SGS site visit.

The assay table comprises assays from all diamond drill holes drilled on the property to date but excludes all sample assays from percussion and geotechnical holes as well as trenching and bulk sampling done in the 80's. The database consists of 3,090 samples that represent 8,306 m of core sampled from the 10,946 m of drill core.

There are 2,815 samples for which there is a Cg LECO analysis that represents 91% of the dataset. Most of the missing LECO data comes from the 1987 holes for which logs are missing. Since there is an almost complete LECO dataset for the deposit, it is recommended to avoid using a predictive equation based on linear regression analysis to factor the missing data and just simply ignore those holes. Average sample length is 2.7 m.

Assay data from the 1980's drilling was compiled from:

"Preliminary Report on Geology, Diamond Drilling and Trenching on Bissett Creek Graphite Property" by Schmidt (January 1985) comprising % graphite data obtained by flotation and estimates of purity by LOI measurements done on final concentrates;

"Summary Progress Report on the Bissett Creek Project for the 1985 Calendar Year" by William Hill Mining Consultants Limited (February 1986). It comprises % graphite data obtained by flotation, estimates of purity by LOI measurements done on final concentrates, and % Cg by LECO on samples that have been leached with nitric acid to remove carbonates;

Photocopies of hand written spreadsheets comprising of Cg by double LOI and Cg by LECO with some reassay samples; and,

Set of sections by North Coast from 1991 showing sample intervals with LECO data. Most of those samples were assayed with on-site lab facilities and none of these results could be verified with laboratory assay certificates. QA/QC program reports, if any, were not available. It was realized that from the 871 samples assayed in 1985, 310 (36 %) samples had LECO values different in the hand written photocopies and 561 (64 %) had identical values. Since it was presumed that the hand written photocopies post-dated the William Hill report, it was concluded that those 310 samples were re-assayed even though none of these assumptions could be verified in the existing available reports. A statistical test was thus performed to evaluate a possible bias between the two dataset. The test was not conclusive and it also showed that the average from the second set (avg. = 1.545) was slightly lower that the first set (avg. = 1.570) when comparing the 310 samples for which LECO data was different. Finally, the second dataset was compared and validated with the set of sections from North Coast (1991) that was presumed to have been generated from the database used for the various historical reported resource calculations. The actual compilation is presumed to reflect the original dataset even though neither the original data nor lab assay certificates could be found.

#### 2011 Mineral Resource Estimate

SGS initially completed a resource estimate in the 2010 Technical Report. This resource estimate was updated based on results of the 2010 drill program for use in the FS and set out in the 2012 Technical Report.

This database for the Bissett Creek Project contains collar, survey, lithology and analytical results information for 212 surface drill holes, consisting in 50 recent surface drill holes and 162 historical surface drill holes. All but seven holes were drilled vertically. Drilling covers an area of 1.330 km by 1.970 km from 727,000 m E / 5,111,459 m N to 728,176 m E / 5,113,318 m N in the UTM NAD83 coordinate system. Most of the drilling was done on a grid oriented N068 on a general pattern of 64 m x 46 m spacing. There is some tighter drilling along some lines and some detailed drilling at 23 m x 23 m grid spacing was completed in one area. Recent drilling was completed on a wider 100 m x 100 m grid pattern on the same N068 oriented grid. Drill holes were drilled along strike and inclined mostly vertically, with respect to the moderate relief in terrain, to intercept the mineralization in such a manner as to obtain a reasonably true thickness of the mineralization.

Eight holes to the north as well as two holes to the southwest were not used in the current resource model. All percussion drill holes as well as trench or pit assay results were excluded from the resource calculation because their methodology description was not thorough enough.

There are a total of 3,005 assayed intervals for which the carbon content determination was done using the double loss-on-ignition method and/or by LECO. From this total 2,745 of assayed intervals were assayed for Cg using the LECO analytical method. Sample lengths averaged 2.7 m. The current mineral resource estimate only uses Cg assay results. It is in SGS's opinion that the Double LOI analytical method overestimates the Cg grade because it measures also sulphides and carbon contained in the carbonates. Consequently, holes for which LECO data were not available were discarded (BC-87-041 to BC-87-045) because the use of a predictive equation based on linear regression analysis to factor the missing Cg data was not judged satisfactory.

#### Assay Database Compilation Used in the 2011 Mineral Resource Estimate

	1984	1985	1986	1987	2007	2010	Total
# of records	39	1,014,	90	793	162	907	3,005
Double LOI	39	973	90	793	0	0	1,895
Cg LECO resources 2011	39	978	90	569	162	907	2,745

Double LOI & Cg LECO	39	937	90	569	0	0	1,635
Length (m)	87.44	3,172.53	261.66	2,017.69	245.19	2,309.00	8,093.51

Detailed topographic data were acquired through the completion of a 53 km<sup>2</sup> LIDAR survey on January 31, 2011.

A block model of 10 m (E-W) by 10 m (N-S) by 6 m (vertical) was interpolated using geo-statistical methods (ordinary kriging) within the mineralized envelope. The block model has been rotated by 22.3 degrees to the North-West. The block model orientation and the block size selection were based on drill spacing, mineralized zone geometry and thickness, and the assumed mining bench height. The block model covers a strike length of approximately 1,300 m and it reaches a maximum depth of 100 m below surface. The block model was restricted to the mineralized envelope defined by the hanging wall and footwall surfaces of the mineralized graphitic gneiss. The percentage of volume of a block falling within the mineralized envelope was calculated for tonnage estimate and blocks with 100 % of their volume falling within the barren envelopes were discarded. Where the mineralized envelope pinches out to the West and the North-West side of the deposit, blocks with too small of a volume percentage were also discarded. The final model contains 76,193 estimated blocks for a total volume of 38,679,630  $m^3$ .

Block interpolation was performed using just one pass considering the mineralization continuity, geometry, and thickness as well as drill spacing. This approach was also selected to better reflect the anticipated average grade of the mined material by avoiding high grading certain portion of the deposit with smaller search ellipsoid. A search ellipsoid oriented N135 degrees with 360 m primary axis and 80 m secondary axis in the horizontal plane and a 54 m vertical search component was used to select the composite data. A minimum of seven composites and a maximum of 20 composites from at least three holes were used to prevent one drill hole from contributing too many samples to the block being estimated. Sample weights within the search ellipsoid are those given by the correlogram model equation.

An average bulk density of 2.63  $t/m^3$  was used to calculate tonnage from the volumetric estimates of the resource block model. This value falls within the range of measures done by Northern on various facies of graphitic gneiss found on the property. Although those measures have not been validated by SGS Canada, it is considered valid for the current resource estimates.

Due to the absence of historical assay certificates, sample rejects or drill hole casings, it was decided that there would not be any resources classified as measured. Thus, mineral resources are classified into indicated and inferred categories. Factors used to determine the mineral resources classification follow the CIM requirements and guidelines which are primarily grade variability and spatial continuity of mineralization. The mineral resources were classified using an oriented ellipsoid of 80 m x 80 m x 20 m for the indicated category followed by manual editing of the final classification based on correlogram distance interpretation. There are 154 diamond drill holes within the indicated resource perimeter, including of six holes drilled in 2007 for SGS Geostat, 13 holes drilled for SGS Geostat in 2010, and six holes drilled in 2010 by Northern. This recent drilling represents only 16 % of the total drilling within indicated perimeter.

In order to establish a reasonable prospect of economic extraction in an open-pit context, mineral resources were limited to an optimized Whittle pit shell using an average graphite price of USD 2,000 per tonne, updated operating and capital costs, relative density of  $2.63 \text{ t/m}^3$ , 10% mine dilution and 90% mine recovery. A grade of 0% Cg was applied to the 10% diluted tonnes. The table below summarizes the mineral resources for the Bissett Creek Project at various cut-off grades.

2011 Mineral Resources (Diluted)								
	Indicated			Inferred				
		Cg(%)	In Situ		Cg(%)	In Situ		
%Cg	Tonnage*	by	Graphite**	Tonnage*	by	Graphite**		
Cut-off	(metric tons)	LECO	(metric tons)	(metric tons)	LECO	(tonnes)		
0.986	25,983,000	1.81	470,300	55,038,000	1.57	864,100		

#### Bissett Creek Project Flake Graphite Deposit

1.227	24,588,000	1.85	454,900	50,472,000	1.62	817,600
1.50	19,954,000	1.99	397,100	33,672,000	1.81	609,500
1.75	16,031,000	2.34	375,100	21,417,000	2.21	473,300
2.0	11,921,000	2.50	298,000	14,584,000	2.37	345,600

#### Mineral resources that are not mineral reserves do not have demonstrated economic viability.

10 % dilution; 90 % mine recovery

\*Rounded to nearest 1000

\*\*Rounded to nearest 1000

Effective date September 12<sup>th</sup> 2011

CIM definitions for mineral resources were followed

Numerous parameters were modified from the 2010 Preliminary Economic Assessment to update the resource estimate and comparison between the two might be difficult to make. Using the various pit outlines of the 2010 PEA and the 2011 block model, variation in tonnage and grade is explained by some of the factors listed below:

- The mineralized envelope has been modified by a new geological interpretation, more detailed topographic data, the insertion of barren envelopes and by redefining the overburden surface;
- A re-examination of the historical drill hole locations with historical drawings not available at the time of the 2010 PEA has led to moving the location of a certain number of drill holes which affected the interpolation of the block model;
- Lower average grades from the 2010 drilling affected the interpolation. Consequently, some tonnage below a certain cut-off grade was lost; and,
- Changes to six meter long composites from five meter long composites used in the 2010 PEA may have also affected the grade interpolation by slightly smoothing the results.

#### 2013 Mineral Resource Estimate

On May 7, 2013, the Corporation announced a new resource estimate for the Bissett Creek Project based on results from the 2012 61 hole, 3,782 meter drill program. This drill program successfully achieved its objective of upgrading a significant portion of inferred resources to the measured and indicated categories.

_		Measured +	Indicated I	Resources	Inferred Resources					
	Cutoff	Tonnage Cg% Graphite (t)			Tonnage	Cg%	In Situ Graphite (t)			
Γ	1.02	69,791,000	1.74	1,213,000	24,038,000	1.65	396,000			
Γ	1.50	37,565,000	2.14	803,000	11,971,000	2.02	242,000			
Γ	1.75	23,439,000	2.45	574,000	6,274,000	2.39	150,000			
Γ	2.00	15,902,000	2.73	435,000	3,564,000	2.79	100,000			

Bissett Creek Project Resource Estimate, May 6, 2013

Notes:

• Resource shell is based on Measured, Indicated and Inferred material, tonnages rounded to the nearest thousand

- Graphite price used is US\$1,800 per tonne with an exchange rate of \$1Cdn=\$1 US
- Dilution and ore loss are considered to be zero
- Feasibility Study costs and information have been used for Resource Shell generation:

Overburden Mining Cost	\$1.85	per tonne material
Waste Mining Cost	\$3.24	per tonne materia
Ore Mining Cost	\$4.15	per tonne ore
Process Cost	\$9.61	per tonne ore

General and Administrative	\$3.41	per tonne ore
Recovery	95%	
Royalty	\$20	per tonne of concentrate

- No mining restrictions relating to permitting were applied
- Pit slopes of 45 degrees in rock and 30 degrees in overburden
- Cutoff of 1.02% Cg

Mineral resources were estimated in conformance with the CIM Mineral Resource definitions referred to in NI 43-101. Pierre Desautels, P.Geo., Principal Resource Geologist, and Gordon Zurowski, P.Eng., Principal Mining Engineer, both of AGP Mining Consultants and "qualified persons" under NI 43-101 who are independent of the Corporation, have prepared and authorized the release of the mineral resource estimates presented herein.

Mineral resources that are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.

The quantity and grade of reported inferred mineral resources in this estimation are uncertain in nature and there has been insufficient exploration drilling to define these inferred mineral resources as indicated or measured mineral resources and it is uncertain if further exploration will result in upgrading them to indicated or measured mineral resources.

Notes on 2013 Mineral Resource Estimation Methodology:

- The updated mineral resource is based on 268 diamond drill holes totaling 14,361 meters of historic and recent drilling. This includes 117 surface diamond drill holes totaling 6,919 meters completed under Northern's supervision from 2007 to 2012.
- All drill holes are diamond drill core and were sampled and assayed over their entire length in the mineralize section of the core of mostly 1 m sample intervals. A QA/QC program was in place since the 2010 drill program, which included the insertion of standards, duplicates and blanks.
- Specific gravities were determined by ALS Minerals for a representative number of rock and mineralization types provided by Northern. 657 determinations exist in the database. The specific gravity was weighted by the lithology count for each of the domains. There was no variation from the average specific gravity of all mineralized domains and a value of 2.72 was applied to the entire block model.
- A detailed review of the geological mapping, geological logs and grade distribution led to the development of three-dimensional (3D) domain models based primarily on grade boundaries and partially on lithological units. The wireframing resulted in two higher grade envelopes based on a natural cut-off grade ranging between 2.5% and 2.8% Cg. These two envelopes reside within a lower grade graphitic gneiss domain averaging 1.4% Cg. A mostly barren zone exists below these high grade units and forms the bottom footwall contact of the mineralization. Seven minor barren units were also modelled within the mineralized zone to tie the surface mapping with the drilling. These domains were utilized in the variography studies and in grade interpolation constraints. The model prepared for the May 6, 2013 resource estimate was updated based on the new 2012 diamond drilling information.
- For the treatment of outliers each statistical domain was evaluated separately and no top cut was necessary. However, a search restriction imposed on threshold values of 6% Cg was used to restrict the influence of the highest values during the interpolation.
- The composite intervals selected were 3.0 metres.
- A 3D geological block model was generated using GEMS© software. The block model matrix size is 8 m x 8 m x 3 m in consideration of Northern planning to use a 6 meter bench height for drilling and blasting but sampling and mining in 3 meter flitches. Ordinary kriging was used for all domains with inverse distance and nearest neighbour check models. The interpolation was carried out in multiple passes with increasing search ellipsoid dimensions. Classification for all models was based primarily on the pass number, distance to the closest composite and drill density map. The measured classification was downgraded in areas where the interpolation of the grade relied mostly on historical drill holes.
- The reported mineral resources are considered to have reasonable prospects of economic extraction. A Lerchs Grossman optimized constraining shell was generated to constrain the potential open pit material. This shell was designed using design parameters from the recently completed Feasibility Study. The

constraining shell extends down to the barren unit at the bottom of the model.

• The rounding of tonnes as required by NI 43-101 reporting guidelines may result in apparent differences between tonnes, grade and contained graphite.

#### Mineral Reserves in the FS

Mineral reserves for the Bissett Creek Project were established in the FS based on the 2011 resource estimate prepared by SGS Géostat. The block model was limited by the mineralized envelope defined by the hanging wall and footwall surfaces of the mineralized graphitic gneiss; similarly, envelopes of intercalated barren intervals within the graphitic horizon were also contoured in the model. Interpolation of graphitic carbon grades within the mineralized envelopes was done by ordinary kriging using geostatistical parameters. The resource model is a "percentage model" because only the percentage of blocks falling within the mineralized envelope were used for the interpolation. Consequently, the initial resources calculation is undiluted. SGS Géostat found appropriate to include a 10% dilution at zero grade and a 90% mine recovery factor for the final mineral resources.

Open pit optimization was conducted by G Mining to determine the optimal economic shape of the open pit in three dimensions. This task was undertaken using Whittle software which is based on the Lerch-Grossmann algorithm. The method works on a block model of the ore body, and progressively constructs lists of related blocks that can be mined economically. The method uses the economic values of the blocks to define a pit outline that has the highest possible total economic value, subject to the required pit slopes defined as structure arcs in the software. The table below presents a summary of the parameters used in this optimization process. The selling price for graphitic carbon was USD 2,097/t concentrate less a royalty of USD 20.00/t conc.

Selling Parameters				
In-situ Breakeven COG	0.853	% Cg		
Diluted Grade	0.776	% Cg		
Selling Price	2 097.00	USD/t conc.		
Royalty	20.00	USD/t conc.		
Net Selling Price	2 077.00	USD/t conc.		
Exch. Rate	1.00	CAD/US\$		
Selling Price	2 097	CAD/t conc.		
Royalty	20.00	CAD/t conc.		
Net Selling Price	2 077.00	CAD/t conc.		
Plant Recovery	92.7	%		
Concentrate Grade	94.50	% Cg		
Concentration Ratio	131.4	CR		
Net Revenue	14.65	CAD/t ore		
Ore Based Costs				
Processing Cost	11.30	CAD /t ore		
G&A cost	3.00	CAD /t ore		

#### Bissett Creek Project Optimization Parameters and Cut-off Grade Calculation

Ore Premium Mining Cost	0.35	CAD /t ore
Total ore Based Cost	14.65	CAD/t ore
Profit	-	CAD/t ore
Mining Param	eters	
Overburden Mining Cost	3.30	CAD/t mined
Waste Mining Cost	3.90	CAD/t mined
Ore Mining Cost	3.90	CAD/t mined
Mining Recovery	90	%
Mining Dilution	10	%
Overall Slope Angle in Overburden	26	deg
Overall Slope Angle in Rock	45	deg
Processing R	ate	
Tonnes per day	2 500	tpd
Plant Availability	0.92	
Mill Throughput	839 500	t/yr

The plant recovery will start at 92.7% and increase to 94.7% following operating improvements and experience. For the optimization the conservative value was used. The total ore based cost which includes processing costs, general services costs and ore premium mining cost due to the extra distance that the truck will travel to transport the ore to the plant is USD 14.65/t ore. The breakeven cut-off grade ("COG") base on the assumed product prices, recoveries and ore-based costs was 0.85% Cg. The mining costs were initially estimated at CAD 3.30/t of overburden and CAD 3.90/t of rock. For the optimization, the mining dilution is fixed to 10% at a low grade and mining loss at 10%. The overall slope angle for overburden and rock were established respectively at 26 degrees and 45 degrees. In order to qualify for mineral reserves, only the measured and indicated resources were utilized in the open pit optimization process.

The optimal pit shell corresponding to a price of CAD 2,077/t of Cg concentrate produced with the Lerch-Grossman algorithm was used as a guideline for designing the final pit. The final pit design process consists of designing ramp accesses to the bottom of each pit phase using the geotechnical recommendations guiding the bench geometry. The ramps and haul roads are designed for the largest equipment, being a 45 t class haul truck. For double lane traffic, industry best-practice is to design a road width of at least 3.5 times the width of the largest vehicle, which corresponds to 22 m in our case. Ramp gradients were established at 10%.

Phasing of the pit was investigated by using the pushback chooser module in Whittle which iteratively searches for the best combination of pushbacks to maximize NPV. A mining width is specified between pushbacks to assure enough working room for equipment. Considering the anticipated size of mining equipment, a mining width of 70 m was assumed.

Mining will be accomplished with three phases to achieve the final pit limits. The objective of pit phasing is to improve economics by feeding the highest grade at a reasonable stripping ratio during the earlier years and to defer lower grades towards the later years. The initial phase is centered on the higher grade material. It was necessary also to store sulphide tailings in the mined out phases 1 and 2 in the 13th year of operations and non-sulphide tailings in the 16th year of operations. Consequently, the last phase 3 and phases 1 and 2 will be separated by a 26 m berm of in-situ rock and overburden glacial till to protect mining operations in phase 3 from tailings disposals in phases 1 and 2. Filling phases 1 and 2 with tailings will progress to Elevation 266 by the time phase 3 is mined out; the bottom of phase 2 is at about Elevation 209.

The mineral reserves for the Bissett Creek Project are reported according to the Canadian Institute of Mining, Metallurgy and Petroleum's ("**CIM**") standards. According to these standards, Resource Model blocks classified as Measured and Indicated can be reported as proven and probable reserves. Owing to the above reporting standards, the inferred resources cannot be included as reserves and so have not been included in the optimization and calculations.

Mining reserves were estimated by designing ore outlines or mining shapes around economic mineralization for every six meter bench. Only mineralization classified, as indicated, was considered when designing the ore outlines. Since there was no mineralization classified as measured, all mineral reserves are classified as probable at this time. After several cycles of mine planning and project evaluation it was decided to use a higher cut-off grade of 1.2% Cg instead of the breakeven 0.85% Cg for the mineral reserves and corresponding optimal mine plan. This marginal ore (0.85-1.2% Cg) is estimated at 1.66 Mt at 1.1% Cg and will be stockpiled separately and could be processed economically at the end of the current LOM. However, it is currently excluded from the mineral reserves and mill feed plan; it is accounted as waste for costing purposes. Inferred resources within the pit limits are estimated to be 1.53 Mt at 1.5 % Cg and is considered as waste material.

The ore outlines include a one meter dilution envelope around economic ore blocks and also enclose marginal material surrounded by economic mineralization. The dilution envelope and enclosed waste in most cases is mineralized, with an associated dilution grade. The mineral reserves are consequently inclusive of a 7.8% dilution at 0.5% Cg. A mining loss of 10% was estimated at this time mostly because of the low dip of the orebody and the inclined ore-waste contacts.

The total probable mineral reserves in the FS were estimated at 18.98 Mt at 1.89% Cg and are detailed in the following table.

winer at Reserves by winning I hase in the PS			
Phases	Ore Tonnage (kt)	Cg (%)	
Phase 1	3,663	2.28%	
Phase 2	9,048	1.85%	
Phase 3	6,266	1.71%	
Total	18,977	1.89%	

#### Mineral Reserves by Mining Phase in the FS

Minimum Dilution: Average 7.8% at 0.5% Cg

Mining Recovery: 90%

#### Mineral Reserves in the FS Update

Probable mining reserves for the Bissett Creek Project deposit were established in the FS Update based on measured and indicated resources of 69.8 Mt grading 1.74% graphitic carbon Cg based on a 1.02% Cg cutoff. The resource estimate was prepared by AGP who established a breakeven cut-off grade ("**COG**") and ran optimized Whittle pits on the measured and indicated resources based on a number of parameters including those outlined in table entitled Comparison of FS and FS Update Economics in the Economic Analysis section of this AIF.

The final mine plan only contemplated a 25 to 30 year operation and resulted in probable reserves of 28.3 Mt of ore grading 2.06% Cg based on a COG of 0.96% Cg. Probable reserves include 24.3 Mt grading 2.20% Cg that will be processed first and 4.0 Mt grading 1.26% Cg from a low grade stockpile ("LGS") that will be processed at the end of the mine life. In order to increase head grades in the initial years of production while maintaining a reasonable stripping ratio, measured and indicated resources grading between 0.96% Cg and 1.5% Cg will be stockpiled, largely within the mined out areas of the pit. The total LGS will be 16.5 Mt grading 1.26% Cg and will provide a great deal of flexibility in future operations as it will be available for processing at a later date, either through an expanded facility or at the end of the mine life. It also represents a low cost source of ore that could be processed

during periods of depressed prices.

The mine plan was also designed to supply blasted rock and glacial till for tailings dam construction during pre-production and to allow for sulphide and non-sulphide waste disposal in mined out areas by year five. Sulphide tailings may also be stored in the mined out pit starting in year eight. Contact dilution was estimated at 1% overall. Due to the gradational nature of the deposit, contact block grades were queried and utilized in individual block dilution calculations. A one metre dilution skin was assumed between waste and ore with negligible grade dilution except along the base of the deposit. The resulting global dilution was determined to be 1%. Backhoe support will be utilized to minimize dilution along this and other contacts.

#### **Mineral Processing and Metallurgical Testing**

The FS relied on two extensive metallurgical testing programs to develop and assert the processing and recovery schemes for the Bissett Creek Project; testing programs supervised by Cominco Engineering Services Limited ("CESL"), on behalf of a former owner, in the 1990s; and recent testing programs (2010-2012) sponsored by Northern at SGS Lakefield.

#### Historical Processing and Metallurgical Study

A metallurgical study was carried out in 1990 for North Coast Industries the project owners at the time. Metallurgical development and the direction of testwork were provided by CESL. The testwork was conducted at Ortech International ("**Ortech**") and Bacon, Donaldson and Associates Limited. ("**BDA**") testing laboratories during January-June 1990. Detailed test results and their specific information of the ore samples are documented in a report title "Metallurgical Testing of Bissett Creek Graphite Final Report" by BDA in July 1990.

The purpose of the testwork was to confirm and/or improve the metallurgy developed in an earlier study, followed by the demonstration of the flowsheet in a continuous pilot plant operation. Further, the results of the pilot plant tests were used to form the basis of a production scale plant flowsheet development.

Metallurgical targets for the testwork were as follows:

- Overall concentrate grade of approximately 92-95%Cg
- Overall graphite recovery to concentrates of 93-95%Cg
- A high proportion of flakes in the +48 mesh size fraction, i.e. 50% by weight or greater

#### Recent Processing and Metallurgical Testing Program

The recent program was developed by SGS Lakefield based on the previous program outcomes. This program was aiming to develop and pilot test a final version of the processing flowsheet. Descriptions and results of this latest program are presented in the report "*An Investigation into the Recovery of Graphite from a Bulk Sample from Bissett Creek – June 21, 2012*".

A series of comminution tests was completed to support the sizing of the crushing and grinding equipment and to quantify media wear. The Bissett Creek Project ore is classified as "soft" when compared to the JK Tech database.

A lab program was completed in 2010 to 2011 on a master composite originating from the Bissett Creek Project deposit. This lab program generated a flowsheet and reagent conditions that were deemed suitable to produce a graphite concentrate grading at least 95% C and to maximize overall graphite recovery.

A series of batch flotation tests was completed to validate the flotation conditions prior to lock cycle testing.

Eight locked cycle tests were performed to optimize the processing flowsheet for the Bissett Creek Project ore and to separate the tailings into a sulphide tailings stream and a low-sulphide tailings stream. Then eight different composites were submitted to locked cycle tests according to the final flowsheets. The composite samples were taken from locations across the ore body to confirm flake consistency.

Assuming that the difference in recoveries for the whole range of grades tested is probably within the margin of test error and too small to draw any relationships, we can conclude that the variability tests do not demonstrate any meaningful correlation between:

Head grades and concentrate grades;

Head grades and recoveries; and

Head grades and +80 mesh (flake) fraction in the concentrate product.

The Locked Cycle testing on composite material taken from drill core samples across the deposit produced six final concentrates which showed consistent flake size distribution and carbon grade. The overall concentrate grade averaged 95% C. A concentrate which grades 94%C and has a flake size distribution of 80% greater than +80 mesh is the industry standard premium product. Almost all Bissett Creek Project production meets this specification as the final concentrates averaged over 70%, +80 mesh. Approximately 6% of the concentrate was +100 mesh and 12% was +200 mesh, both with high carbon content. Less than 10% was very small, -200 mesh flake and powder with a carbon content in the low 80s.

Most significantly, almost 50% of the graphite concentrate produced was jumbo size, +48 mesh flake which averaged 98 % C with one value as high as 99.2% C. A pilot plant test was designed to further confirm the flow sheet incorporated into the FS and optimize its operating parameters. The overall carbon recovery in the Locked Cycle tests was 92.2% and the Corporation's objective is to increase it to a range of 94 to 95 % without degradation of flake size. Selected samples from the locked cycle tests were submitted for a basic environmental analysis to determine the most suitable flowsheet option to produce a large percentage of non-acid generating tailings and only a small tailings stream of acid generating material that requires special tailings handling. The combination of a sulphide rougher and cleaner circuit in combination with a magnetic separator that treats the combined rougher and sulphide 1st cleaner tails produced non-acid generating tailings with the lowest mass recovery into the high-sulphur tailings stream.

Test	Duoduot	Weight	Assay (%)	Distribution (%)
Test	Froduct	rroduct %		C(t,g)
	Final Concentrate	1.4	93.5	96.8
LCT LG-3	Head (calc)	100.0	1.38	100.0
	Head (direct)		1.22	
	Final Concentrate	1.4	93.7	95.2
LCT LG-4	Head (calc)	100.0	1.35	100.0
	Head (direct)		1.45	
	Final Concentrate	1.6	96.5	97.7
LCT MG-2	Head (calc)	100.0	1.60	100.0
	Head (direct)		1.47	
	Final Concentrate	1.6	95.4	96.8
LCT MG-4	Head (calc)	100.0	1.58	100.0
	Head (direct)		1.30	
	Final Concentrate	3.4	93.7	99.1
LCT HG-1	Head (calc)	100.0	3.22	100.0
	Head (direct)		3.18	
	Final Concentrate	3.7	95.5	96.2
LCT HG-2	Head (calc)	100.0	3.66	100.0
	Head (direct)		3.34	

The table below summarizes the LCT results:

	Final Concentrate	2.6	95.3	97.1
LCT HG-3	Head (calc)	100.0	2.56	100.0
	Head (direct)		2.32	
	Final Concentrate	3.6	95.9	98.3
LCT HG-4	Head (calc)	100.0	3.52	100.0
	Head (direct)		2.61	

\*The recoveries are calculated using a mix of total and graphite carbon assays. Since the C analysis is not accurate at the lower grade (<5% C) we use the graphitic carbon results, while the C is used for all other products (mainly concentrates).

Composite	Flake Size Distribution - % retained (mesh)						
	+32	+48	+80	+100	+200	-200	>80
LG Pit #3	19.0	32.8	23.2	5.0	10.4	9.5	75.1
LG Pit #4	22.6	32.6	20.1	4.6	9.5	10.5	75.3
MG Pit #2	23.7	34.1	22.1	3.9	8.7	7.5	79.9
MG Pit #4	25.7	32.8	19.9	3.8	9.3	8.4	78.4
HG Pit #1	11.2	31.9	28.1	7.0	12.8	9.0	71.2
HG Pit #2	14.8	32.8	25.9	5.9	12.0	8.6	73.5
HG Pit #3	20.2	35.1	22.7	5.3	9.3	7.4	78.0
HG Pit #4	15.7	32.0	24.4	6.0	11.7	10.2	72.1
Minimum	11.2	31.9	19.9	3.8	8.7	7.4	71.2
Maximum	25.7	35.1	28.1	7.0	12.8	10.5	79.9
Average	19.1	33.0	23.3	5.2	10.5	8.9	75.4
StdDev	4.9	1.1	2.8	1.1	1.5	1.2	3.1
Rel StdDev	25.8	3.3	12.0	21.4	14.3	13.0	4.1

Size Fraction Analysis of Graphite Concentrates from LCTs

In order to demonstrate the suitability of the proposed flowsheet on a larger scale and continuous operation, pilot scale testing trials were performed on approximately 110 t of a bulk sample originating from Northern's Bissett Creek Project deposit. The purpose of the pilot plant program was the following:

- Demonstration of the proposed flowsheet on a pilot plant scale;
- Production of concentrate and tailings for downstream testing; and,
- Development of engineering data to support the generation of process design criteria and results.

The bulk material sample was received in three 40t dump trucks, stage-crushed to -5/8", and homogenized with a front-end loader. A 100 kg sample was extracted for laboratory scale testing and as reference material. A representative sub-sample was submitted for chemical analysis. The circuit was configured based on the flowsheet that was developed on a Bissett Creek Project Master composite. The setup of the pilot plant was completed in late October 2011 and the circuit was commissioned during the second week in November. Over the course of the following four weeks, the circuit was operated for 17 shifts until December 8, 2011.

The results were communicated to Northern Graphite, G Mining, and SGS as they became available. Representatives of the three companies (Ahmed Bouajila, Nicolas Menard and Gilbert Rousseau) were present on site throughout the four weeks of operation.

Due to a series of mechanical and metallurgical challenges, the circuit was only optimized at the end of run PP-14. An extended run commenced on PP-15 and five successful surveys were completed during PP- 16 and PP-17, which consisted of multiple cuts of each external and internal stream of the flotation circuit. The direct head assays of each product were then used with data reconciliation software BILMATTM to generate a circuit mass balance. The graphite recoveries into the final concentrate ranged between 90.5 % in survey PP-17B and 94.9 % in survey PP-16C. The adjusted concentrate grades varied from 93.4% in PP-16C to 95.3 % in PP-16A.

Since the revenue for the graphite concentrate is highly dependent on the flake size distribution and the grade of each size fraction, the final concentrate from each survey was subjected to a size fraction analysis. The results of this analysis reveal that almost 50 % of the concentrate mass consisted of +48 mesh flakes, which are considered a premium product. The +48 mesh fraction ranged between 43.1% and 58.5% by mass in the locked cycle variability tests compared to 45.7% to 49.8% in the pilot plant

The Bissett Creek Project pilot plant campaign demonstrated the suitability of the proposed flowsheet despite concerns that the bulk sample was partly weathered. As a result of this and the lack of operating time to optimize the circuit, the metallurgical performance of the pilot plant was slightly inferior compared to the laboratory program that was completed on a Master composite and eight variability composites. Based on the pilot plant results, the FS used a recovery 92.7 % in the first year, increasing to 94.7 % in year 3, for mass balance and project economics.

SGS Lakefield completed the full suite of metallurgical tests on the Bissett Creek Project deposit including lab and bench scale work, a bulk sample/pilot plant test, and variability testing to determine if recoveries and flake size distribution are consistent across the deposit. A similar program was also carried out in the 1980's as part of a previous feasibility study (non NI 43-101 compliant) with consistent results.

The FS was largely based on pilot plant results from the processing of slightly weathered material that does not respond as well to flotation as unweathered rock. The locked cycle tests, which were performed on fresh drill core, were better in terms of recoveries, concentrate grades and flake size distribution which represents potential upside in the project. The FS assumed recoveries of 92.7% in the first year of operation, 93.7% in year two and 94.7% over the balance of the project. Recoveries in the eight locked-cycle test averaged 97.2% and ranged from 95.2% to 99.1%. The FS Update assumes recoveries of 94.7% for the entire project.

The Corporation is confident of achieving recoveries of 94 to 95% in the full scale plant for the following reasons:

- operation of a pilot plant does not allow enough time to optimize the process with respect to balancing grinding, retention time and reagents;
- due to its small scale, the pilot plant used mechanical cells for rougher flotation. The full plant will use column flotation which is more efficient for the recovery of coarse graphite flotation products;
- the bulk sample showed some signs of surface oxidation that affected recovery. This will not be a factor in the full scale mining operation; and
- a coarser final flake concentrate is also expected as a rod mill was used for primary grinding in laboratory and pilot plant testing whereas the full scale plant will utilize a SAG Mill which is the best method of grinding to preserve flake size.

The FS and FS Update assume an average concentrate grade of 94.5% Cg compared to 94.9% Cg in the locked-cycle tests. However, the locked cycle tests generated average grades of 98.1%, 97.0% and 95.1% for the important +32 (XXL), +50 (XL) and +80 (L) mesh size fractions respectively. Based on pilot plant results, the FS assumes that production will consist of 18% +32 mesh at 95.1% Cg, 31% +50 mesh at 95.1% Cg, 28.2% +80 mesh at 94.5% Cg, 5% +100 mesh at 97.3% Cg, 7% +150 mesh at 98% Cg and 11% -150 mesh at 92.7% Cg.

Flake graphite is sold based on 80% meeting the required specification. Therefore, smaller flake sizes can be blended into larger as long as the carbon content is maintained. The -100 flake concentrate produced by the Bissett Creek Project is at least 94%Cg and therefore is suitable for this purpose. After blending, the FS Update assumes 60% of the Bissett Creek Project production will be +50 mesh and a third of this material is actually +32 mesh, 97-98%Cg. Because of the latter, the price for the +50 mesh concentrates was estimated at US\$2,100/t. Graphite prices used in the FS Update are US\$1,400/t for the 35% of production that will be +80 mesh, 95%+Cg and US\$1,200/t for the 5% that will be +100 mesh, 95-97%Cg. Therefore, the weighted average price that would be realized by the Bissett Creek Project concentrates in the current market was estimated at US\$1,800/t in the FS Update.

The FS Update assumed waste rock and the low grade stockpile will be acid generating and included the cost of a lined pad and additional financial assurance. Subsequent testing has determined that the lined pad is not required.

Pilot plant results have confirmed that the Bissett Creek Project will produce entirely large flake, high carbon concentrates from flotation alone, without chemical or thermal treatment. As a result, the Bissett Creek Project concentrates will potentially yield high average values per tonne which should result in high margins. As a result, the Corporation believes it will have the option of selling them into current high value markets, or using them to produce SPG for lithium-ion batteries if it is financially advantageous to do so. The pilot plant also confirmed results from the extensive historical testing, bulk sampling and pilot plant work that was carried out in the past and has validated the performance of the new flow sheet that forms the basis for the bankable FS and FS Update.

#### **Anticipated Mining Operations and Production**

Considering the relatively small tonnage mined yearly and the desire by Northern to limit up front capital requirements, it was decided early in the FS to use contract mining as the basis for mine operations. In order to reduce operating costs, the FS Update is based on owner mining. A contractor will handle drilling and blasting operations.

On the basis of six meter benches, the contractor will likely use drills capable of drilling 10-15 cm diameter hole on a pattern resulting in a powder factor of  $0.8 \text{ kg/m}^3$ . Explosives would be entirely emulsion. Based on quotes obtained and review of actual contractors costs in current operations, drilling and blasting costs were estimated at CAD 0.85/t of waste and CAD 1.15/t of ore in the FS. The higher cost in ore is explained by the loss in productivity while drilling to allow sampling of cuttings at every meter in the mineralized zone and the need to adjust bench height to minimize dilution and ore losses from the inclined ore/waste contacts. It is also planned to conduct pre-shearing of the final pit walls and a cost of CAD 21/m<sup>2</sup> was estimated.

Loading and haulage operations will likely use 71t capacity trucks with  $6.4 \text{ m}^3$  loading equipment. Overburden will be free-digging and blasted rock should have a maximum size of 0.6 m. The waste storage facility is on average 0.6 km from the pit ramp and the haulage distance from the pit to the primary crusher is 2.1 km. The maximum lift from the final pit bottom is 80 m and the maximum height of the waste storage facility is 25 m.

The design criteria for the Bissett Creek Project processing plant was based on Northern's direction and the results obtained from the metallurgical testing performed by SGS Lakefield during 2011. The design criteria for the graphitic carbon processing plant were based on a continuous and homogenous feed of ore coming from the pit and the following parameters:

- Plant throughput: 839,500 Mt/yr (2,500 t/day) in the FS, 1,000,000 Mt/y (2,900 t/day) in the FS Update;
- Plant availability: 92 %;
- Plant operating schedule: 365 d/y, 24 hr/day;
- Plant availability: 92 %;
- Crushing ROM feed size: 80 % minus 600 mm;
- SAG Mill feed size: 80 % minus 170 mm; and,
- Flotation feed size (Flash cell): 80% minus 600 µm.

The flow sheet does not contain any major technological challenges. All the processes selected are well established in the mineral processing industry. The plant is located to be in proximity of the open pit mine to optimize the haulage distances, and in proximity to both tailings storage areas to reduce pumping distances.

In the FS Update, an average of 20,800 tonnes of graphite concentrate at 94.5% Cg is expected to be produced annually over the course of 28 years compared to an average of 15,900 tonnes in the FS. The increase was mainly due to higher grades and slightly higher throughput.

#### **Proposed Infrastructure**

Access roads already exist to the property but upgrades are required on most of them. Additional roads will also be required to service the tailings, the pit and the crushing plant. Knight Piésold Consulting ("**KP**") conducted an assessment for the roads required for the project.

The Tailings Management Facilities will be located north of the process plant facilities. Two tailings ponds will be required. One facility will be used to store the sulphides tailings, while the second one will store the non-deleterious neutral tailings. KP conducted a study on tailings management. Delivery of fuel will be done by tankers. Fuel will be stored in ISO approved tanks. Two horizontal tanks of 50,000 litres each will be installed close to the truck shop. A total of 100,000 litres of storage will be available to the mine fleet and the mobile equipment.

Power for the project will be produced by natural gas generators. The FS proposed a natural gas pipeline to deliver gas to the site. However, the FS Update assumes that compressed natural gas ("**CNG**") will be transported to site by truck. Heat recovery from exhaust gases and from the cooling water loop will also be implemented for costs savings. The proposed power plant will consist of five generators with individual outputs of 1 MW each at ISO conditions. The design of the power plant is to meet an average power demand of 3.3 MW and a peak demand of 4 MW of electrical power, with one generator installed as stand-by. Power distribution throughout the property will be via overhead power lines at 4,160 Volts.

An existing maintenance facility is located at the current pilot scale processing plant. This building will require upgrades. Power will be required, and insulation will also be improved. This installation will be available to the mining contractor, for minor maintenance works, spare parts storage and will also provide the mining staff with office space. The truck shop is located approximately 650 m south of the pit.

A warehouse will be located south of the processing plant building. It will be a 35 m long x 18.2 m wide canvas-type building. It will be used for cold storage; a small workshop could be installed inside the building if needed. It will be equipped with two garage doors. This warehouse will also be used during construction for long term storage of critical equipment.

The main offices will be located within the process plant building.

#### **Environmental and Permitting**

Knight Piesold led the environmental studies and permitting process for the FS. Subsequently, Stantec has taken over all permitting and environmental work. Baseline characterization programs were completed between 2010 and 2014 on hydrogeology, hydrology aquatic environment, terrestrial environment, meteorology and geochemistry. The baseline studies were conducted to identify the potential environmental impacts during construction, operation and closure phases of the Bissett Creek Project.

A draft Project Description was sent out to the Canadian Environmental Assessment Agency ("**CEAA**") and the MNDM on March 2, 2012. The Project Description was circulated to the various provincial and federal government agencies for review. Following the review, the Corporation received confirmation that the Bissett Creek Project, as defined in the Project Description, is not subject to the *Environmental Assessment Act* (Ontario) or the Canadian Environmental Assessment Act.

Geochemistry of the mill feed and waste rock were studied and the results showed that the graphitic gneiss had the potential to generate acid drainage. Most of the waste rock samples were classified as non-acid generating. Low

grade mill feed and marginal mill feed that are currently considered as waste may have acid generating potential that will need to be managed during the life of the project. Studies are ongoing in this regard.

Sulphides are associated with the graphite mineralization and testing at SGS Lakefield demonstrated that the sulphides could be concentrated in a sulphide tailings, representing 3% of the total tailings tonnage and characterized as acid generating. This results in 97% of the tailings being neutral and non-acid generating. Each tailings stream would have its own tailings management facility. The sulphides tailings management facility will keep a water cover above the tailings bed to prevent physical contact between the tailings material and air to prevent any oxidation and generation of acid water.

The project will need to meet air quality and noise level standards stipulated by Ontario's Ministry of the Environment. Due to the Bissett Creek Project's remote location, it is expected that the processing power plant and operations will meet the standards by using normal control practices.

The Bissett Creek Project is located in several sub-basins of the Grant and Mag Creek watersheds. Hydrometric monitoring was conducted to monitor stream flows. The linkage between surface and groundwater was investigated. Mine dewatering could have an impact on water flows at Mag Creek; with the current data available, it is possible that seepage to the mine pit could minimally reduce Mag Creek flow from 1 to 4%. Samples of surface water were analyzed. Results indicate that the majority of the surface water sites have elevated aluminum and iron concentrations.

The property includes wetlands. An assessment was conducted in July 2011. Consultation with the Ministry of Natural Resources confirmed that the wetlands on site are part of a much larger wetland complex. A wetland Environmental Impact Statement ("EIS") will be prepared in conjunction with the Ministry of Natural Resources and include mitigation and avoidance strategies as well as outline Best Management Practices.

Investigations performed on the local wildlife concluded that ten species at risk are present within the Bissett Creek Project. Northern will be required to obtain a permit under the *Endangered Species Act* ("**ESA**") should any activities results in damage to threatened species habitat.

The employment generated by the Bissett Creek Project is estimated at 88 positions initially and would expand to an estimated108 after the doubling in production as envisioned in the PEA. Those positions will benefit the nearby communities.

An Environmental Management Plan ("**EMP**") will be implemented for the Bissett Creek Project prior to development. It will provide a framework for dealing with environmental risks associated with the development, operation and closure of the Bissett Creek Project.

Even though there are no federal environmental assessments required for the Bissett Creek Project; there are a number of provincial and federal permits, licenses and approvals that need to be obtained prior to mine development. They are listed as follows:

Provincial Permit (Agency)	Act	Regulations
Work Permit (MNR)	Public Lands Act	O.Reg 453/96
Work Permit (MNR)	Public Lands Act	O.Reg 973/90
Approval (MNR)	Lakes and Rivers Improvement Act	N/A
Burning Permit (MNR)	Forest Fire Prevention Act	O.Reg 207/96
Environmental Compliance Approval (MOE)	EPA Ontario Water Resources Act	O.Reg. 561/94
Permit (CBO)	Ontario Bldg Code	N/A

#### List of Licenses, Permits and Approvals:

Certificate of Approval (MOE)	Safe Drinking Water Act	O.Reg 169/03 O.Reg 170/03
Approval (MOE)	Clean Water Act	O.Reg 287/07
Generator Registration Report (MOE)	EPA	O.Reg 347/90
Permit to Take Water >50,000 L (MOE)	Ontario Water Resources Act	O.Reg 387/04
Verification of amended Closure Plan (MNDM)	Mining Act	O.Reg 240/00
Permit (MNR)	Endangered Species Act	N/A
Federal Permit (Agency)	Act	Regulations
Approval (TC)	Navigable Water Protection Act	Navigable Waters Works Regulations

#### Revised Mine Closure Plan

In October 2012, the Corporation submitted an amended Mine Closure Plan (the "**2012 MCP**") for the Bissett Creek Project to the MNDM and in August 2013, it was accepted for filing. The 2012 MCP is an all-encompassing document that describes, in detail, the nature of the operations that will be carried out, the current baseline environmental conditions, and the Corporation's plan for rehabilitating the site and returning it to its natural state at the end of mining operations. The 2012 MCP is a requirement of the *Mining Act* (Ontario) and must be filed prior to commencement of construction and operations. A financial assurance that guarantees the Corporation's rehabilitation obligations under the 2012 MCP must be provided to the MNDM as part of the filing process. The overall required financial assurance was set at \$2.3 million which reflects the relatively benign nature of the deposit. In addition to the amount currently deposited of \$803,135, \$800,000 will be deposited prior to placing any footings in the ground for construction of structures such as buildings and dams and \$729,088 will be deposited prior to the commencement of commencement of commencial production.

The 2012 MCP and underlying baseline information were prepared by Knight Piesold Ltd. The 2012 MCP addresses the questions and concerns of the public, First Nation Communities and other interest groups that were identified during pre-submission consultations. A provincial Class Environmental Assessment is underway and a number of other permits relating to air, noise, water, species at risk, etc. are required prior to the commencement of operations and follow in the normal course after acceptance of the 2012 MCP. Most of these issues are dealt with in the 2012 MCP. With the acceptance or "filing" of the 2012 MCP, the Corporation could initiate site work relating to the FS including the clearing of internal roads, plant site and tailings basin subject to financing and completion of the species at risk permitting. However, it is possible that the changes contemplated by the FS Update will trigger the requirement for another MCP amendment. The Corporation and Stantec are currently evaluating this issue prior to making a submission to the various government ministries.

#### **Capital and Operating Costs**

The capital cost estimate for the Bissett Creek Project was developed at  $\pm$  15% accuracy. Costs are reported in Canadian Dollars ("CAD").

According to standards established at the outset of the project, pricing of equipment, material and labour were estimated according to the following guidelines:

- Equipment proposals received specifically for the project;
- Equipment prices derived from recent projects or from databases;
- Material prices based on quotations received from contractors; and,
- Labour rates based on quotations received from contractors.

Locally available material was used for estimation purposes and prices were sourced from regional suppliers.

No escalation was built into the capital cost estimates. The estimates were received during 1st Quarter 2012.

Labour rates were developed using hourly rates provided by contractors from the area. Due to the geographical location of the project, travel time and room and board were included in the hourly rates.

In the FS Update, the capital cost to construct the processing plant, power plant and all associated mine infrastructure was estimated at \$101.6 million including a \$9.3 million contingency, compared to \$102.9 million in the FS including contingency. Increased capital costs of approximately \$7.2 for mining equipment due to the switch from contractor to owner mining were largely offset by the removal of costs for detailed engineering (\$4.5 million), modifications to the SAG mill drive and discharge (\$1.3 million), switching to a mobile crusher (\$1.0 million) and the removal of a redundant mill circuit (\$750k). The capacity of the plant has been increased slightly to 2,670tpd in the FS Update from 2,300tpd (based on 92% availability) and the FS Update assumes that CNG will be trucked from the main Trans Canada line, approximately 15 kms away, rather than brought in by pipeline. These changes had minimal effect on estimated capital costs. Detailed engineering was removed because it was already underway and expected to be completed prior to financing and the decision to start construction. However, it was subsequently suspended after one third was completed. The balance of these costs have yet to be incurred.

The Corporation is required to deposit a financial assurance of \$2.3 million with the Province of Ontario (\$799,200 of which has already been deposited) to guarantee its obligations with respect to the 2012 MCP, compared to the \$3.57 million estimate used in the FS. \$800,000 will be paid prior to placing any footings in the ground for construction of structures such as buildings and dams and \$729,088 will be paid prior to the commencement of commercial production. The Corporation will be discussing additional financial assurance requirements relating to the new mine plan with government ministries and has included an additional potential provision of \$2.5 million over four years in the FS Update.

DESCRIPTION	FS 1Q 2012 CAD	FS Update CAD
	(000)	(000)
Infrastructure	\$9,383	\$8,644
Electrical Infrastructure	\$11,665	\$11,749
Tailings and Water Management	\$6,671	\$6,671
Mobile Equipment	\$1,711	\$1,711
Mine Infrastructure	\$50	\$7,164
Processing Plant	\$39,933	\$36,780
Construction Indirect costs	\$14,163	\$9,663
General Services	\$5,758	\$5,757
Pre-production and Commissioning	\$4,234	\$4,218
Contingency (10%)	\$9,357	\$9,281
Total	\$102,925	\$101,638

#### **Total Capital Expenditures**

Mining costs are based on contract mining in the FS and owner mining in the FS Update. Contractors will provide drilling and blasting services and will be responsible for managing the explosives. The owner will provide the mine management and technical services, including grade control. A mine engineer will be responsible for the department. A geologist and a mine technician will be hired directly by the owner. The processing costs include the manpower to operate the processing plant, as well as the crusher. It also includes the electrical power production and the consumption of natural gas. Consumables, reagents, and spare parts are also included in this estimate. Costs are calculated on a throughput of 839,500 t/yr of ore in the FS and 1,000,000 t/yr in the FS Update.

Cash mine operating costs over the mine life were estimated to average \$16.57 per tonne of ore, or \$795 per tonne of concentrate (US \$755/t) in the FS Update compared to \$21.87 per tonne and \$968 per tonne of concentrate the FS. The decline in operating costs was mainly due to a switch from contract to owner mining, increased grades and

throughput, and shorter haul distances in the new mine plan.

Description	FS 1Q 2012 CAD/Mt	FS Update CAD/Mt
Processing Costs	7.32	\$6.17
Power Costs	2.29	\$2.27
G&A Costs	2.94	\$2.50
Technical Services	0.47	*
Drilling and Blasting (Waste)	0.85	**
Drilling & Blasting (ore)	1.15	\$1.37
Overburden Removal	1.85	*
Waste Rock Mining	2.30	*
Ore Mining	2.70	\$4.26
Total	21.87	\$16.57

\* included in ore mining

\*\* included in ore drilling and blasting

#### **Economic Analysis**

The financial analysis is based on the net present value ("**NPV**") and internal rate of return ("**IRR**") of all project cash flows starting with the project approval and development release. The valuation date on which these financial metrics are based is at the commencement of construction. All financial analyses presented are based on unlevered cash flow projections, with no provision made for debt financing.

The financial analysis was performed both on a before-tax and on an after-tax basis with the cash flows estimated on a project basis only. Revenue and expenditure projections associated with the initial development and ongoing operation of the Bissett Creek Project have been prepared using constant, 1Q 2012 Canadian dollars without provision for inflation.

The graphite prices selected for the FS are based on price history at the time of the study. The graphite market had experienced major changes in recent years which resulted in an important increase in prices. In addition to much improved market pricing, the Bissett Creek Project graphite products include a major proportion of large flakes that could command an important premium from clients outside of the quoted prices by Industrial Minerals magazine; however at the time of the FS, the Corporation had no specific agreement with clients for its large flakes. Because the graphite market is experiencing major positive changes and the high-quality of the Bissett Creek Project graphite products, it was decided to retain four price scenarios to assess the value of the Bissett Creek Project in the FS. Scenario 1 represented the last 24-month average graphite price for the likely combination of standard products from Bissett Creek Project. Scenario 3 was based on the last 12-month average. Industrial Minerals magazine, which is the most widely used source for graphite pricing, does not provide pricing for extra-large flake material which will make up over 50% of Bissett Creek Project production. A premium paid for the large flake graphite would increase the average realized price for the entire production by USD 200/t of concentrate in Scenarios 2 and 4 representing less than 10%. Northern believes this premium could be as high as 20%. The Table below shows the various scenarios:

#### FS Graphite Prices

Description	USD/t
Scenario 1: 24 months average	2,100
Scenario 2: 24 months average + premium	2,300
Scenario 3: 12 months average	2,600
Scenario 4: 12 months average + premium	2,800

The Corporation is subject to several taxation jurisdictions provincially and federally. The Ontario mining tax is levied at a rate of 10% on mining profits in excess of CAD\$500,000 derived from operations located in Ontario. The first CAD\$10 M of profit generated by a new mine is exempted from mining tax for a three year period. In Ontario, corporations file a single combined income tax return and pay combined income tax instalments based on a corporate income tax base harmonized with federal definition of corporate taxable income. The provincial tax rate used in the FS was 10%. The federal tax rate applicable to resources profits is 15%.

Flake graphite is sold based on 80% meeting the required specification. Therefore, smaller flake sizes can be blended into larger as long as the carbon content is maintained. The -100 flake concentrate produced by Bissett Creek is at least 94%Cg and therefore is suitable for this purpose. Accordingly, 60% of Bissett Creek production will be +50 mesh and a third of this material is actually +32 mesh, 97-98%Cg. Because of the latter, the price for the +50 mesh concentrates has been estimated at US\$2,100/t in the FS Update. Prices of US\$1,400/t have been used for the 35% of production that will be +80 mesh, 95%+Cg and US\$1,200/t has been used for the 10% that will be +100 mesh, 95-97%Cg. Therefore, the weighted average price that would be realized by Bissett Creek concentrates is estimated at US\$1,800/t in the FS Update.

The FS Update indicates a pre-tax internal rate of return IRR of 19.8% (17.3% after tax) and a pre-tax net present value NPV of \$129.9 million (\$89.3 million after tax) in the base case which uses a weighted average price of US\$1,800/tonne for the concentrates that will be produced. This represents a substantial improvement in project economics over the FS which had a 15.6% pre-tax IRR at a price of US \$2,100/t. The project has significant leverage to higher prices as the pre tax IRR increases from 19.8% to 25.7% and the pre-tax NPV from \$129.9 million to \$201.1 million at a price of US \$2,100/t. Economics are based on a US dollar exchange rate of 0.95. It has declined substantially since that time which will further enhance the economics of the Bissett Creek Project.

	FS Update	FS
	(base case)	
Probable reserves (million tonnes)	28.3Mt*	19.0Mt
Feed Grade (% graphitic carbon)	2.06%*	1.89%
Waste to ore ratio (excl. low grade stockpile)	0.79	0.50
Processing rate (tonnes per day - 92% availability)	2,670	2,300
Mine life*	28 years	23 years
Mill recovery	94.7%	92.7-94.7%
Average annual production	20,800t	15,900t
Capital cost (\$ millions - including 10% contingency)	\$101.6M	\$102.9M
Cash operating costs (\$/tonne of concentrate)*	\$795/t	\$968/t
Mining costs (\$/tonne of ore)	\$5.63	\$5.79
Processing costs (\$/tonne of ore)	\$8.44	\$9.60
General and administrative costs (\$/tonne of ore)	\$2.50	\$2.94
CDN/US dollar exchange rate	0.95	1.00
Graphite prices (US\$ per tonne)	\$1,800	\$2,100
Pre tax Net Present Value @8% (CDN\$ millions)	\$129.9	\$71.7
Pre tax IRR (%)	19.8%	15.6%
After tax Net Present Value @8% (CDN\$ millions)	\$89.3	\$46.9
After tax IRR (%)	17.3%	13.7%

#### **Comparison of FS and FS Update Economics**

\*Includes 24 Mt grading 2.20% Cg and 4.0 Mt grading 1.26% Cg of low grade stockpile ("LGS") to be processed at the end of the mine life. An additional 12.5 Mt LGS grading 1.26% Cg is stored in the pit and is available for processing through a future expansion or at the end of the mine life. The waste to ore ratio is 0.24 if the low grade stockpile is processed. All grades are diluted.

#### Sensitivities (pre-tax) in the FS Update

	<u>\$2,100</u>		<u>\$1,800</u>		<u>\$1,500</u>	
	NPV*	IRR	NPV*	IRR	NPV*	IRR
Base Case	\$201.1	25.7%	\$129.9	19.8%	\$58.7	13.6%
Grade +10%	\$250.6	29.7%	\$172.3	23.4%	\$93.9	16.8%
Grade -10%	\$151.6	21.6%	\$87.6	16.2%	\$23.6	10.3%
<b>Operating costs -10%</b>	\$218.8	27.1%	\$147.6	21.3%	\$76.5	15.2%
<b>Operating costs +10%</b>	\$183.4	24.2%	\$112.2	18.3%	\$41.0	11.9%
Capex -10%	\$212.3	28.4%	\$141.2	22.0%	\$70.0	15.3%
Capex +10%	\$189.8	23.4%	\$118.7	18.0%	\$47.5	12.2%
*\$ millions @ 8%						

#### Significant Project Opportunities

A number of significant, low risk opportunities exist to improve upon the FS Update including:

- There is scope to reduce capital costs through the purchase of used equipment, lease financing of the mining fleet and natural gas generators, and additional permitting of lower cost tailings options;
- The Corporation has released the results of a PEA that show the economics of doubling production in three years based on measured and indicated resources only to meet the anticipated growth in graphite demand. Due to the flat lying nature of the deposit, production can be expanding without a significant increase in the stripping ratio or mine capital and operating costs and can take advantage of lower grade material currently planned to be stockpiled in the mined out pit;
- The FS Update includes the cost of a lined storage pad, for waste rock and the low grade stockpile and additional financial assurance related thereto. Testing has indicated that the lined pad is not required and the amount of the financial assurance is being recalculated.
- The Corporation has carried out extensive purification testing over the last two years and is developing a commercial process to produce and sell high purity (99.95%Cg+) products; and
- The Corporation has successfully upgraded Bissett Creek concentrate for use in lithium-ion batteries. Testing to define the capital and operating costs of constructing an upgrading facility is underway.

No revenues or costs associated with mine expansion or upgrading and purifying to sell into value added markets are included in the FS or the FS Update.

#### Expansion Case Preliminary Economic Assessment ("2013 PEA")

On October 23, 2013, the Corporation announced the results of a 2013 PEA on an expansion case for its Bissett Creek Project. The 2013 PEA was undertaken to demonstrate the ability to meet expected future growth in graphite demand by substantially increasing production from the Bissett Creek Project deposit based on measured and indicated resources only. The 2013 PEA built on the FS completed by G Mining in August 2012 and the expanded resource model and FS Update subsequently completed by AGP. The 2013 PEA was authored by Marc Leduc P. Eng. A technical report relating to the PEA prepared in accordance with NI 43-101, which includes the latest resource calculation, was filed on SEDAR.

On June 24, 2014, the Corporation updated the 2013 PEA to assess the economics of building a 2 Mtpa processing plant at the outset rather than increasing from 1 Mtpa to 2 Mtpa after three years of operation as contemplated in the 2013 PEA. The larger process plant was evaluated due to recent developments in the lithium-ion battery industry.

For the 2013 PEA Update, Ken Kuchling, P.Eng., Senior Mining Associate of P&E Mining Consultants Inc. ("**P&E**") reviewed the 2013 PEA mine plan and modified it to commence production at the expanded 2.0 Mtpa production rate in Year 1 rather than ramping up in Year 3 and to more aggressively backfill the open pit with waste. Dan Peldiak, P.Eng. Principal Process Engineer WorleyParsons Canada prepared the revised capital and operating costs for the process plant which represents a portion of the total capital and operating accuracy of +15/-20%. Andrew Bradfield, P.Eng. of P&E, who is independent of the Corporation, approved and authorized the disclosure of the technical information relating to the 2013 PEA Update. There is no requirement for a new NI 43-101 relating to the 2013 PEA Update. Readers should refer to the NI 43-101 technical reports relating to the S and the 2013 PEA for further details with respect to the Bissett Creek Project.

The 2013 PEA assumed that the processing plant is expanded after three years of operation, except for the crusher which has excess capacity, and that the capacity of the plant is effectively doubled from 2,670 to 5,340 tpd whereas the 2013 PEA Update assumes the initial processing capacity it 5,340. Corresponding adjustments were made to the power plant, mine fleet and tailings storage facilities and other infrastructure to account for the increased throughput. Both the 2013 PEA and the 2013 PEA Update use the same mine plan as the 2013 FS Update but accelerate the mining of the high grade ore and process all of the LGS thereafter. There are also 27.3 million tonnes of Measured and Indicated resources, that could be processed before the LGS, and 24 million tonnes of Inferred resources, both of which are not part of the mine plan. Furthermore, the deposit is still open such that additional drilling may support further production expansions. Due to the flat lying nature of the deposit, production can be expanded without any additional stripping or pushback of the pit walls. By going to a second shift, essentially the same mining fleet is used.

Under the 2013 PEA initial capital costs remain at \$101.6 million as per the FS Update and an additional \$45.2 million in capital has been added in year three to essentially twin the mill circuits. Sustaining capital over the mine life was increased by \$15.7 million for additional mining equipment, tailings facilities and other infrastructure.

Development capital costs in the 2013 PEA Update have been estimated at \$134.1 million (including a 10% contingency) for an operation that will produce an average of approximately 44,200 tonnes of graphite concentrate annually over the first 10 full years of operation.

Both the 2013 PEA and the 2013 PEA Update show even more robust economics than the FS Update because production is essentially being doubled while capital costs have increased by less than 50%. The 2013 PEA Update is a more optimal plan because it is more efficient to build one large mill rather than building a second parallel circuit after three years. However, the current annual graphite market is less than 400,000 tonnes and a project this size has the potential to adversely affect prices, especially considering the volume of XL and XXL flake sizes that will be produced. The Corporation would only contemplate an expansion scenario if it had a strategic partner and secured offtake agreements.

## Summary of 2013 PEA Update Results vs 2013 PEA and FS Update

	2013	2013	2013
	FS Update	PEA	PEA Update
Reserves/resources (million tonnes)*	28.3*	39.4*	$40.5^{1}$
Feed Grade (% graphitic carbon)	2.06%*	1.85%*	$1.83\%^{1}$
Waste to ore ratio	0.79	0.24	0.25
Processing rate (tonnes per day - 92% availability)	2,670	2,670-5,340	5,480
Mine life (years)	28	22	21
Mill recovery	94.7%	94.7%	94.7%
Average annual production	20,800t	33,183t	$44,200^2$
Initial capital cost (\$ millions - including 10% contingency)	\$101.6M	\$101.6M	\$134.1
Expansion capital	NA	\$45.2M	NA

Sustaining capital	\$43.0	\$58.7M	\$55.1
Cash operating costs (\$/tonne of concentrate)	\$795/t	\$695/t	\$736
Mining costs (\$/tonne of ore)	\$5.63	\$4.05	\$3.74
Processing costs (\$/tonne of ore)	\$8.44	\$7.35	\$7.78
General and administrative costs (\$/tonne of ore)	\$2.50	\$1.45	\$1.45
CDN/US dollar exchange rate	0.95	0.95	0.95

\*The probable reserve in the FS Update consists of 24 Mt grading 2.20% Cg and 4.0 Mt of low grade stockpile ("LGS") grading 1.26% Cg. The 2013 PEA accelerates the processing of the probable reserve and processes an additional 11.1 Mt of measured and indicated resources from the LGS at the end of the mine life. All grades are diluted.

<sup>1</sup> Potentially economically extractable resources based on the 24 Mt probable reserve grading 2.20% Cg (as estimated in the FS) being processed first followed by the processing of 16.1 Mt of Measured and Indicated resources grading 1.26 % Cg from a low grade stockpile. All grades are diluted. *Mineral resources that are not mineral reserves do not have demonstrated economic viability.* 

#### <sup>2</sup> first 10 years

#### Mine Planning and Operations

Important requirements for the final mine plan in the 2013 PEA were the following:

1. Maintain head grades in excess of 2.22% Cg to the mill in the initial years of production while maintaining a reasonable stripping ratio;

2. Supply blasted rock and glacial till for tailings dam construction during preproduction period; and

3. Allow for tailings disposal in mined-out pits in year 7 for sulphides tailings and in year 19 for non-sulphide tailings.

Under the expansion scenarios, the mill will process approximately 40 Mt over the mine life with an average feed grade of 1.84% Cg at an average strip ratio of 0.28:1. Low grade material will be stockpiled near the process plant initially until sufficient room is available in the pit. The low grade stockpile in the pit will continue to grow until the high grade material in the current design is completely processed and then the low grade will be processed. There will be 14.6 million tonnes of low grade processed by the end of the mine life with an average grade of 1.27% Cg. Not all of the low grade material can be recovered as there will be some mixing of waste and overburden as well as losses along the footwall and high walls. Additional higher grade measured and indicated resources are available for mining and processing should the Corporation elect to do so rather than processing the low grade stockpile.

Under the 2013 PEA Update scenario, an average of 44,200 tonnes of concentrate will be produced annually over the first 10 years of operation at a cash cost of \$736 per tonne which is less than US\$600 per tonne at current exchange rates.

The Corporation has opted to advance an owner operated mining plan to reduce overall costs for mining. Typically in Northern Ontario, different contractors will handle drilling and blasting operations and materials handling; Northern will be contracting drilling and blasting to a secondary contractor. On the basis of 6 m benches, the chosen contractor will likely use drills capable of drilling 10-15 cm diameter hole on a pattern resulting in a powder factor of 0.8 kg/m. Explosives would be entirely emulsion.

Loading and hauling operations will be accomplished with four 71 tonne capacity trucks paired with two 6.4  $\text{m}^3$  front end loaders. A small backhoe will assist with contact cleaning along the footwall and barren gneiss zones. Overburden will be free-digging and blasted rock should have a maximum size of 0.6 m. The overburden and rock waste storage facility is on average 0.6 km from the pit ramp and the haulage distance from the pit to the primary crusher is 2.1 km. The maximum lift from the final pit bottom is 100 m and the maximum height of the waste storage facility is 18 m. After year four until the end of the mine life, the mined out portion of the pit will be backfilled with low grade material and some rock and overburden. This reduces the average haul of this material to 3-400 metres with limited vertical rise. Mine operating costs are based on costs developed by AGP with inputs from the Ontario Caterpillar dealer.

#### Mineral Processing

The processing plant in the FS was designed for a yearly throughput of approximately 840,000 tonnes per year. The plant had excess crushing and grinding capacity and with minor modifications to pumps and other equipment, capacity was increased to 1,000,000 tonnes per year in the FS Update. The process flowsheet uses proven methods widely used in the mineral industry and is shown in the following table. Mill feed from the mine will be crushed by a mobile jaw crusher, and conveyed to a stockpile. Crushed mill feed will then be reclaimed to the concentrator building. The mill feed will then go through successive steps of grinding, flotation and screening on progressively finer particles. The objective is to produce a high grade graphite concentrate, but also to preserve as much as possible the large size of the graphite flakes to maximize the value of the concentrates. The graphite concentrate will be thickened to remove excess water, before being filtered and dried. The moisture content of the final product will be below 1%. After the screening into several fractions, the concentrate can be bagged and sold on either a given fraction-basis or on a blended basis.



**Simplified Flowsheet from the FS** 

The 2013 PEA was prepared to evaluate the economics of a plant expansion whereby the initial throughput is doubled to 2,000,000 tonnes per year after three years of operation. This will be accomplished by twinning all the process flowsheet except the crusher which is capable of handling the increased throughput. The 2013 PEA Update uses the same flowsheet as the FS Update with larger equipment.

#### Infrastructure

The project will require specific infrastructure to be built in order to support the mining and processing operations. The FS included a natural gas-fired power plant of five MW installed on site. In the **2013** PEA, expansion scenarios compressed natural gas will be transported to the site by truck from a compressor station to be built approximately 15 km east of project on the large gas pipeline that parallels the Trans-Canada highway. The power plant will be doubled in size to accommodate the expansion in capacity.

Support buildings and infrastructures will include water pumping stations, water treatment for waste water disposal and for potable use. A dry storage warehouse will be built near the processing plant. Offices and an assay and metallurgical laboratory will be included inside the concentrator building. Services such as change rooms and lunch room will be integrated into the office complex.

A diesel storage area will be built in order to store fuel for the owner's mining and support fleet.

The access road will be upgraded to facilitate site access. A haul road will be built to allow haulage of mill feed to the processing facility. Service roads will be built to allow access to the tailings management facilities and to the pumping stations.

The tailings will be stored in two separate storage facilities. The non-deleterious tailings management facility will store the neutral, non-acid generating tailings. The sulphides tailings management facility will store the tailings with acid generating potential. These tailings will be kept under water to avoid chemical reaction with the ambient air.

#### Environmental and Impact Assessment Permitting

The 2012 MCP does not contemplate the expansion case and additional studies and permitting will be required before an expansion would be permitted.

#### Expansion Case Economics

The expansion cases indicate that the Bissett Creek Project has very attractive economics even at or below current depressed graphite price levels. The pre-tax internal rate of return ("**IRR**") is 26.3% (22.0% after tax) and the pre-tax NPV is \$231.1 million (\$150.0 million after tax) in the 2013 PEA base case which uses an 8% discount rate and a weighted average price of US\$1,800/tonne of concentrate. The 2013 PEA Update has a pre-tax IRR is 31.7% (26.7% after tax) and the pre-tax NPV is \$264.7 million (\$178.9 million after tax) using the same parameters due to the efficiencies inherent in building one large plant at the start rather than building a parallel circuit after three years of operation.

	2013 FS Update		2013 PEA (base case)	)	<u>201</u>	<u>3 PEA Upd</u> (base case)	<u>ate</u>
Graphite prices (US\$ per tonne)	\$1,800	\$2,100	\$1,800	\$1,500	\$2,100	\$1,800	\$1,500
Pre tax NPV @8% (CDN\$ millions) Pre tax IRR (%)	\$129.9 19.8%	\$335.6 33.0%	\$231.0 26.3%	\$126.6 18.8%	\$380.9 40.7%	\$264.7 31.7%	\$148.4 22.2%
After tax NPV@8%(CDN\$ millions) After tax IRR (%)	\$89.3 17.3%	\$221.9 27.7%	\$150.0 22.0%	\$77.3 15.7%	\$257.9 33.9%	\$178.9 26.7%	\$99.0 18.9%

#### **Spherical Graphite**

In order to be used as the anode material in li ion batteries, flake concentrate produced by a graphite mine must be micronized, rounded, purified, coated and graphitized. The resultant product is called spherical graphite ("**SPG**"). Only flake graphite that can be economically rounded and purified and is free from specific impurities can be used. Generally this means flake graphite must be at least +150 mesh in size and greater than 94%Cg. Uncoated SPG, which has been micronized, rounded and purified, sells for US\$2,750 to US\$3,500 per tonne. Coated SPG, which has also been graphitized, sells for US\$15,000 per tonne.

The Bissett Creek Project provides the Corporation with a number of natural competitive advantages in the battery technology field as it has the highest percentage of battery grade material, the highest reported yield on converting concentrate to SPG and a pristine, highly ordered crystal structure that has the potential to improve battery performance and reduce costs. The Corporation is leveraging these advantages with proprietary coating and purification technologies to make better and lower cost anode materials and to replace the damaging environmental practices currently used in their manufacture.

The Corporation has successfully manufactured test quantities of SPG from graphite concentrate produced from the Bissett Creek Project. It has been evaluated in Lithium/graphite battery test cells and the initial performance of these cells indicates that due to the pristine nature of the Bissett Creek Project flake graphite, and a high degree of order in its crystal structure, it has a higher capacity than many commercial SPG products. Because of the highly ordered crystal structure the costly graphitization step may not be required. Testing also demonstrated that graphite from Bissett Creek Project does not contain high levels of iron or any other impurities that negatively affect cell performance. Further tests are on-going. The cells were made and the testing carried out in a highly qualified, independent laboratory.

Currently, almost all SPG is produced from small flake concentrates (-100 to +150 mesh) and 70% of the graphite is destroyed in the process. As a result, it takes three tonnes of small flake graphite to make one tonne of SPG and these losses are a major cost in the manufacturing of SPG. Initial testing, using production scale equipment, has confirmed that large flake graphite from the Bissett Creek Project deposit has a spherical graphite yield of 50%. The Corporation expects that the yield will increase with further optimization.

Almost all SPG is currently produced in China and purified using strong acids which results in large volumes of acidic and toxic waste, and this method is not environmentally sustainable as the demand for, and production of, lithium-ion batteries increases. It is also inconsistent with the green energy objectives of the hybrid and all electric car industry. The high quality and purity of graphite from Bissett Creek Project has enabled the Corporation to develop a proprietary purification technology that is environmentally friendly and sustainable where the technology works at much lower temperatures than traditional thermal purification techniques and will result in lower capital and operating costs. High purity graphite is required for many value added applications including lithium-ion batteries.

The Corporation has also developed and successfully tested a process for coating SPG and is now able to provide potential strategic and offtake partners with representative test samples of coated SPG based on Bissett Creek Project concentrate that has been purified and coated using its proprietary processes. SPG sells for much higher prices than run of mine graphite concentrates and could potentially enhance the economics of the Bissett Creek Project. The large flake nature of the Bissett Creek Project deposit provides the Corporation with the flexibility to sell its concentrates into high value, large flake markets or produce SPG for the lithium-ion battery market.

On November 10, 2014, the Corporation announced that in partnership with Coulometrics LLC, it had opened a lithium-ion battery research and testing facility. The Corporation indicated that the facility will focus on developing and testing improved natural graphite based anode materials for lithium-ion batteries with the goal of improving battery performance, reducing costs and reducing the environmental impact of anode manufacturing.

#### **Current Status**

The Corporation intends to continue advancing the Bissett Creek Project over the course of 2015. The Corporation could be in a position to begin plant construction late in 2015, subject arranging full project financing and the completion of additional permitting. Construction of the plant and infrastructure are estimated to take approximately 12 to 18 months.

#### DIVIDENDS

The Corporation has not, since the date of its incorporation, declared or paid any dividends on its shares and does not currently have a policy with respect to the payment of dividends. For the foreseeable future, the Corporation anticipates that it will retain future earnings and other cash resources for the operation and development of its business. The payment of dividends in the future will depend on the Corporation's earnings, if any, its financial condition and such other factors as the directors of the Corporation consider appropriate.

#### **DESCRIPTION OF CAPITAL STRUCTURE**

#### **Capital Structure**

The authorized share capital of the Corporation consists of an unlimited number of common shares. As at March 30, 2015, 49,181,281 common shares were issued and outstanding as fully paid and non-assessable.

In addition, as at March 30, 2015, the Corporation had issued and outstanding:

- 2,225,000 stock options, each of which are exercisable to acquire one common share at an exercise price of \$0.50 until April 18, 2016;
- 25,000 stock options, each of which is exercisable to acquire one common share at an exercise price of \$0.94 until November 16, 2016;
- 75,000 stock options, each of which is exercisable to acquire one common share at an exercise price of \$0.80 until December 20, 2016;
- 525,000 stock options, each of which is exercisable to acquire one common share at an exercise price of \$2.50 until April 11, 2017;
- 500,000 stock options, each of which is exercisable to acquire one common share at an exercise price of \$0.85 until December 20, 2017;
- 200,000 stock options, each of which is exercisable to acquire one common share at an exercise price of \$0.75 until May 15, 2017; and
- 650,000 stock options, each of which is exercisable to acquire one common share at an exercise price of \$0.70 until January 9, 2020.

#### **Common Shares**

Holders of the common shares are entitled to receive notice of and to attend and vote at all meetings of the shareholders of the Corporation and each common share confers the right to one vote in person or by proxy at all meetings of the shareholders of the Corporation. Holders of the common shares, subject to the prior rights, if any, of any other class of shares of the Corporation, are entitled to receive such dividends in any financial year as the Board of Directors of the Corporation, whether voluntary or involuntary, holders of the common shares are entitled to receive, subject to the prior rights, if any, of the holders of any other class of shares of the Corporation, the remaining property and assets of the Corporation. Holders of common shares have no pre-emptive rights, no conversion rights or rights of redemption provisions applicable to the common shares.

#### PRICE RANGE AND TRADING VOLUME OF SHARES

The Corporation's common shares were listed and posted for trading on the TSX-V under the symbol "NGC" commencing on April 20, 2011 following the completion of the Corporation's initial public offering on April 18, 2011. The following table sets forth the reported high and low sale prices and the daily average trading volume for the shares on the TSX-V for each of the periods indicated.

	<u>High (\$)</u>	<u>Low (\$)</u>	Daily Average <u>Volume</u>
D 1 0014	0.04	0.62	
December 2014	0.84	0.63	61,776
November 2014	0.89	0.77	37,355
October 2014	0.93	0.75	56,641
September 2014	1.18	0.82	91,629
August 2014	1.34	1.06	156,295
July 2014	1.44	0.70	262,464
June 2014	0.76	0.61	57,200
May 2014	0.79	0.69	41,162
April 2014	0.83	0.72	63,290
March 2014	0.84	0.68	85,576
February 2014	0.75	0.60	60.595
January 2014	0.83	0.63	80,250
-			

#### PRIOR SALES

The Corporation did not issue any securities that were not listed or quoted on a marketplace during the financial year ended December 31, 2014.

#### **ESCROWED SECURITIES**

The Corporation had no securities held in escrow at December 31, 2014.

On November 29, 2012, the Corporation was accepted for graduation to Tier 1 of the TSX-V and, all of the remaining securities of Northern that were held in escrow (1,734,541 common shares), were immediately released.

#### **DIRECTORS AND OFFICERS**

#### **Directors and Officers**

The names, municipalities of residence and positions held in the Corporation of each of the directors and officers of the Corporation, their current principal occupation other than with the Corporation, the dates of their appointment or election as directors and their holdings of common shares (including those over which they exercise control) are set forth below:

Name, Municipality of Residence and Position with the		Director/Officer	Common Shares Beneficially Owned Directly or Indirectly or
Corporation	Principal Occupation	Since	Controlled
Gregory B. Bowes Carleton Place, Ontario, Canada Chief Executive Officer and Director	Chief Executive Officer and a Director of the Corporation.	July 9, 2008	1,716,428 <sup>(4)</sup>
Ronald N. Little <sup>(1)(2)</sup>	President, CEO and a director of	June 24, 2010	1,185,714 <sup>(5)</sup>

Ottawa, Ontario, Canada Director	Orezone Gold Corporation.		
Jay Chmelauskas <sup>(1)(3)</sup> Vancouver, British Columbia, Canada Director	CEO and President, Western Lithium Corp.	September 7, 2010	21,800
K. Sethu Raman, Ph.D <sup>(2)(3)</sup> Toronto, Ontario, Canada Director	Independent mining consultant.	September 7, 2010	285,694
Iain Scarr <sup>(3)</sup> Highlands Ranch, Colorado, United States of America Director	Country Manager and General Manager – Development, Galaxy Resources Limited	September 7, 2010	60,000
Donald H. Christie, CPA, CA <sup>(1) (2)</sup> Toronto, Ontario, Canada Director	President and COO, Norvista Capital Corporation	August 17, 2010	25,000
Stephen Thompson, CPA, CA CPA (Illinois) Ottawa, Ontario, Canada Chief Financial Officer	Chief Financial Officer of the Corporation	February 1, 2011	Nil

Notes:

- (1) Member of Audit Committee.
- (2) Member of Compensation and Nomination Committee.
- (3) Member of Corporate Governance Committee.
- (4) 745,000 common shares are held by Gregory Bowes. 571,428 common shares are held by Bowes & Company, Management Ltd., which is owned and controlled by Gregory Bowes and his family, and 400,000 common shares are owned by his spouse.
- (5) 985,714 common shares are held by Ronald Little and 200,000 are owned by his spouse.

Each director will hold office until the Corporation's next annual meeting or until a successor is elected or appointed.

The following is biographical information relating to the directors and senior officers of the Corporation, including their principal occupations for the past five years:

**Gregory B. Bowes, B.Sc. (Geology), MBA -** *CEO and Director.* Mr. Bowes (age 60) has over 30 years of experience in the resource and engineering industries. He holds an MBA from Queens University and an Honours B.Sc., Geology degree from the University of Waterloo. Mr. Bowes was Senior Vice President of Orezone Gold Corporation (ORE:TSX) from February 2009 to June 2010, and was Vice President, Corporate Development of its predecessor, Orezone Resources Inc., from January 2004 until September 2005 and was Chief Financial Officer from October 2005 to March 2007, and from April 2008 to February 2009. From December 2006 until April 2008, Mr. Bowes served as President, CEO and a director of San Anton Resource Corporation (SNN:TSX). Mr. Bowes' services to the Corporation were provided as an independent contractor until May 1, 2011. Effective May 1, 2011, Mr. Bowes entered into an employment contract with the Corporation, which includes a non-competition and non-disclosure agreement with the Corporation.

**Iain Scarr, B.Sc. (Geology), MBA -** *Director***.** Mr. Scarr is founder and principal of IMEx Consulting which provides business development, mining and marketing services to the industrial minerals industry. Mr. Scarr is currently Country Manager and General Manager for the Galaxy Resources Limited's (ASX:GXY) flagship Sal de

Vida lithium and potash brine project in Argentina. Mr. Scarr spent 30 years with Rio Tinto Exploration and was most recently Commercial Director and VP Exploration, Industrial Minerals Division. He holds a B.Sc. in Earth Sciences from California State Polytechnic University and MBA from Marshall School of Business at the University of Southern California.

**Ronald N. Little, P.Eng -** *Director.* Mr. Little is the President, CEO and a director of Orezone Gold Corporation (ORE:TSX). Mr. Little has over 30 years of experience in mineral exploration, mine development, mine operations and capital markets. He has spent the last 20 years focused on African projects where he was the founder and responsible for over \$1 billion in transactions with Orezone Resources Inc., a company that was building the largest gold mine in Burkina Faso and taken over by IAMGOLD in 2009. Mr. Little has held directorships with other public and private companies and held senior operating positions in both major and junior gold producing companies.

Jay Chmelauskas, B.A.Sc, MBA - Director. Mr. Chmelauskas is CEO and President of Western Lithium Corp. and was previously President and CEO of China Gold International Resources Corp. Ltd. (formerly Jinshan Gold Mines) where he successfully managed and led the company during all phases of the commissioning of one of China's largest open pit gold mines. Mr. Chmelauskas has considerable experience in the exploration, development and mining industry, including a large Placer Dome gold mine, and a business analyst position with chemical manufacturer Methanex Corporation. Mr. Chmelauskas has a Bachelor of Applied Science in Geological Engineering from the University of British Columbia and a Master of Business Administration from Queen's University.

**Donald H. Christie, CPA, CA** – *Director.* Mr. Christie is the President, COO and a Director of Norvista Capital Corporation (NVV: TSX-V); the Chief Financial Officer and a Director of Solvista Gold Corporation (SVV:TSX-V) and the CFO and a Director of Nevada Zinc Corporation (NZN: TSX-V). Mr. Christie is a Chartered Professional Accountant - Chartered Accountant. Prior to his role as Chief Financial Officer at Solvista Gold Corporation, Mr Christie was CFO of Continental Gold Limited (CNL:TSX). Prior to his involvement with Continental Gold Limited, Mr. Christie co-founded Ollerhead Christie & Company Ltd., a privately held Toronto investment banking firm which sourced, structured and syndicated debt private placements and provided financial advisory services to a client base comprised primarily of colleges, universities, schools boards and provincial government agencies. Prior to founding Ollerhead Christie & Company Ltd., Mr. Christie served as a Managing Director of Newcourt Credit Group (TSX, NYSE), which subsequently combined with the CIT Group, Inc. While at Newcourt, Mr. Christie was involved in the structuring and syndication of over \$1.5 billion of transactions. Mr. Christie holds an Honours B.Comm degree from Queen's University.

**K. Sethu Raman, Ph.D** - *Director.* Dr. Raman is a professional geologist with over 40 years of international experience in all phases of exploration and development and has held senior executive positions in several public mining companies. He spent 13 years with Campbell Chibougamau Mines, Campbell Resources and Royex Gold Group of companies (now Barrick Gold) in various management positions including Vice President (1980-86) where he played a key role in gold discovery and development of six operating gold mines and major acquisitions including Hemlo Gold Mine and the Nickel Plate Gold Mine. From 1986 to 2004, Dr. Raman was President and CEO of Holmer Gold Mines Limited which over the years discovered and developed the Timmins Gold deposit. On December 31, 2004, Lake Shore Gold Corp., a TSX listed company, acquired all of the issued and outstanding shares of Holmer. Dr. Raman is currently a director of Moneta Porcupine Mines (TSX:ME), Crescent Resources Limited (formerly Nico Mining Limited) (TSX:RCB) and Altai Resources Inc. (TSX-V:ATI). Dr. Raman holds a Ph.D (1970) in geology from Carleton University, Ottawa and a UNESCO Post-Graduate Diploma (1965) from University of Vienna, Austria.

**Stephen Thompson, CPA, CA, CPA (Illinois)** - *Chief Financial Officer.* Mr. Thompson (age 46) holds a Bachelor of Commerce (honours) degree from Queens' University (1991) and is a Chartered Professional Accountant - Chartered Accountant as well as a Certified Public Accountant (Illinois, USA) with 25 years of experience in accounting and finance. For the three years preceding his involvement at Northern, he provided financial management and leadership services to a number of small Ottawa-based companies. He was previously Vice President, Finance of Espial Group Inc., Vice President, Finance of Hydro Ottawa Limited and Vice President Controller of Accelio Corporation. Mr. Thompson's services to the Corporation were provided as an independent contractor from February to April of 2011. Effective May 1, 2011, Mr. Thompson entered into an employment

contract with the Corporation, which includes a non-competition and non-disclosure agreement with the Corporation. Mr. Thompson has subsequently entered an employment contract with the corporation, effective April 1, 2015 to June 30, 2015, which maintains the non-competition and non-disclosure agreements with the Corporation.

#### **Shareholdings of Directors and Officers**

As of the date of this Annual Information Form, the directors and executive officers of the Corporation, as a group, beneficially owned, directly or indirectly, or exercised control or direction over an aggregate of 3,294,636 shares, representing approximately 6.7% of the issued and outstanding shares of the Corporation.

#### **Cease Trade Orders**

Except as disclosed below, no director or executive officer of Northern is, as at the date of this Annual Information Form, or has been, within 10 years before the date of this Annual Information Form, a director, chief executive officer or chief financial officer of any company (including Northern) that was subject to a cease trade or similar order or an order that denied the relevant company access to any exemption under securities legislation that was (i) in effect for a period of more than 30 consecutive days, (ii) issued while the director or executive officer was acting in that capacity, or (iii) issued after that person ceased to act in that capacity but which resulted from an event that occurred while that person was acting in that capacity.

Donald Christie was a Director of Alpha One Corporation ("**Alpha One**"), a Capital Pool Company which was listed on the TSX-V and the NEX. On April 3, 2006, trading in Alpha One shares was halted by the TSX-V at the request of Alpha One. On April 5, 2006 Alpha One issued a press release describing its intended Qualifying Transaction (as defined in the TSX-V Policies). The TSX-V subsequently issued a bulletin on September 13, 2006 indicating that Alpha One was required to complete a Qualifying Transaction by October 14, 2006, 24 months from its date of listing. Further to the TSX-V bulletin dated September 13, 2006, effective October 20, 2006, trading in Alpha One shares was suspended, as Alpha One failed to complete a Qualifying Transaction within 24 months of its listing. On March 9, 2007, as the result of Alpha One failing to complete the Qualifying Transaction within the time frame prescribed by TSX-V Policy 2.4, the Alpha One shares were transferred to NEX where they remained suspended pending the closing of a Qualifying Transaction. The trading symbol for Alpha One shares was changed from AOC.P to AOC.H as a result of the transfer to NEX. Alpha One complete its Qualifying Transaction on April 27, 2011 to become Solvista Gold Corporation.

Gregory Bowes has been a director of Mindesta since June 23, 2008 and became the Chief Executive Officer and Chief Financial Officer of Mindesta on May 10, 2010. On August 18, 2009, Mindesta, which is a Delaware corporation which is quoted on the over-the-counter bulletin board in the United States, was advised by the BCSC that the BCSC had issued a cease trade order against it for failure to file a NI 43-101 compliant technical report in connection with the November 2007 announcement by Mindesta of a mineral resource estimate and the results of a preliminary assessment for the Bissett Creek Project and subsequent similar disclosure. Mindesta had been designated a reporting issuer in British Columbia by the BCSC pursuant to BCI 51-509 on September 15, 2008. The technical report had been completed and Mindesta's disclosure was consistent with it, but the report was not filed with the BCSC due to the financial difficulties being experienced by Mindesta. The BCSC issued a full revocation of the cease trade order effective March 10, 2011.

#### **Bankruptcies**

No director or executive officer of Northern or, to the knowledge of Northern, any shareholder holding a sufficient number of securities of Northern to affect materially the control of Northern:

(a) is, as of the date of this Annual Information Form, or has been within 10 years before the date of this Annual Information Form, a director or executive officer of any company (including Northern) that, while that person was acting in that capacity, or within a year of ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets; or (b) has, within 10 years before the date of this Annual Information Form, become bankrupt or made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold his assets.

#### **Penalties or Sanctions**

No director or executive officer of the Corporation or, to the knowledge of the Corporation, shareholder holding a sufficient number of securities of the Corporation to affect materially the control of the Corporation, has been subject to: (a) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or (b) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

#### **Conflicts of Interest**

As at the date hereof, the Corporation is not aware of any existing or potential material conflicts of interest between the Corporation and any director or officer of the Corporation.

Certain of the directors of the Corporation serve as directors or officers of, or provide consulting services to, other resource companies or may have significant shareholdings in other public or private resource companies which may compete with the Corporation. Situations may arise in connection with potential acquisitions, investments or other transactions where the interests of these directors may actually or potentially conflict with the interests of the Corporation. The Corporation intends to establish procedures and practices to minimize the frequency and extent of conflicts of interest and to resolve or deal with them in a manner which protects the interests of the Corporation and its shareholders, including disclosure of actual or perceived conflicts and having independent directors review and deal with such conflicts. The *Business Corporations Act* (Ontario) requires written disclosure if a director or officer of the Corporation is a party to a material contract or proposed material contract, with the Corporation and subject to certain exceptions, requires the director to abstain from voting on the matter.

#### **Committees of the Board of Directors**

The Board of Directors has established three committees as described below, the Audit Committee, the Compensation and Nomination Committee and the Corporate Governance Committee.

#### Audit Committee

The Audit Committee is comprised of Messrs. Christie, Chmelauskas and Little. The Audit Committee has been structured to comply with National Instrument 52-110 - *Audit Committees* ("**NI 52-110**"). Each member of the Audit Committee is financially literate within the meaning of NI 52-110. In addition, each member of the Audit Committee is independent within the meaning of NI 52-110.

The Audit Committee oversees the accounting and financial reporting practices and procedures of the Corporation, and the audits of the Corporation's financial statements. The principal responsibilities of the Audit Committee include: (i) overseeing the quality and integrity of the internal controls and accounting procedures of the Corporation, including reviewing the Corporation's procedures for internal control with the Corporation's auditor and Chief Financial Officer; (ii) reviewing and assessing the quality and integrity of the Corporation's annual and quarterly financial statements and related management's discussion and analysis, as well as all other material continuous disclosure documents, such as the Corporation's annual information form; (iii) monitoring compliance with legal and regulatory requirements related to financial reporting; (iv) reviewing and approving the engagement of the auditor of the Corporation and independent audit fees; (v) reviewing the qualifications, performance and independence of the auditor, including meeting with the auditor as required in connection with the audit services provided by the Corporation; (vi) reviewing the Corporation's risk management procedures; (vii) reviewing any significant transactions outside the Corporation's ordinary course of business and any pending litigation involving

the Corporation; and (viii) examining improprieties or suspected improprieties with respect to accounting and other matters that affect financial reporting.

#### **Compensation and Nomination Committee**

The Compensation and Nomination Committee is comprised of Messrs. Christie, Little, and Raman. Each member of the Compensation and Nomination Committee is independent within the meaning of National Policy 58-201 – *Corporate Governance Guidelines* ("**NP 58-201**").

The Compensation and Nomination Committee oversees the remuneration, nomination and appointment policies and practices of the Corporation. The principal responsibilities of the Compensation and Nomination Committee include: (i) considering the Corporation's overall remuneration strategy and, where information is available, verifying the appropriateness of existing remuneration levels using external sources for comparison; (ii) comparing the nature and amount of the Corporation's directors' and executive officers' compensation to performance against goals set for the year while considering relevant comparative information, independent expert advice and the financial position of the Corporation; (iii) making recommendations to the Board of Directors in respect of director and executive officer remuneration matters with the overall objective of ensuring maximum shareholder benefit from the retention of high quality board and executive team members; (iv) considering nominees for independent directors of the Corporation; and (v) planning for the succession of directors and executive officers of the Corporation, including appointing, training and monitoring senior management to ensure that the Board of Directors and management have appropriate skill and experience.

#### Corporate Governance Committee

The Corporate Governance Committee is comprised of Messrs. Chmelauskas, Raman, and Scarr. Each member of the Corporate Governance Committee is independent within the meaning of NP 58-201.

The Corporate Governance Committee oversees the Corporation's approach to corporate governance matters. The principal responsibilities of the Corporate Governance Committee include: (i) monitoring and overseeing the quality and effectiveness of the corporate governance practices and policies of the Corporation; (ii) adopting and implementing corporate communications policies and ensuring the effectiveness and integrity of communication and reporting to the Corporation's shareholders and the public generally; and (iii) administering the Board of Directors' relationship with the management of the Corporation.

#### **Directors' and Officers' Liability Insurance**

The Corporation carries directors' and officers' liability insurance. The Corporation does not maintain any key man insurance.

#### AUDIT COMMITTEE INFORMATION

#### Audit Committee Charter

The charter for the Corporation's Audit Committee is attached as Appendix "A" to this Annual Information Form.

#### **Composition of the Audit Committee**

The Audit Committee of the Corporation is comprised of Donald Christie CPA, CA, Jay Chmelauskas and Ronald Little. Mr. Christie serves as Chairman of the Audit Committee. The Audit Committee has been structured to comply with NI 52-110. Each member of the Audit Committee is financially literate within the meaning of NI 52-110. In addition, each member of the Audit Committee is independent within the meaning of NI 52-110.

#### **Relevant Education and Experience**

Each member of the Corporation's Audit Committee has adequate education and experience that is relevant to their performance as an Audit Committee member and, in particular, education and experience that have provided the

member with: (a) an understanding of the accounting principles used by the Corporation to prepare its financial statements and the ability to assess the general application of those principles in connection with estimates, accruals and reserves; (b) experience preparing, auditing, analyzing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can reasonably be expected to be raised by the Corporation's financial statements or experience actively supervising individuals engaged in such activities; and (c) an understanding of internal controls and procedures for financial reporting. In particular: (i) Mr. Christie is a Chartered Professional Accountant - Chartered Accountant with many years of experience with financial reporting and public companies, and he is currently Chief Financial Officer of Solvista Gold Corporation; (ii) Mr. Chmelauskas holds a Masters Degree in Business Administration, and he is currently President of Western Lithium Corp. and was previously President and CEO of China Gold International Resources Corp. Ltd., both publicly listed companies; and (iii) Mr. Little has 20 years of experience in managing public companies. In these capacities, they have become familiar with and had experience preparing, analyzing or evaluating financial statements and reporting requirements for public companies or actively supervising individuals engaged in such activities, and have developed an understanding of the accounting principles used by the Corporation to prepare its financial statements and an understanding of internal controls and procedures for financial reporting.

#### **Reliance on Certain Exemptions**

At no time since the commencement of the Corporation's most recently completed financial year has the Corporation relied upon any exemptions under NI 52-110.

#### Audit Committee Oversight

At no time since the commencement of the Corporation's most recently completed financial year was a recommendation of the Audit Committee to nominate or compensate an external auditor not adopted by the Corporation's Board of Directors.

#### **Pre-Approval Policy**

The Corporation has not yet adopted any specific policies or procedures for the engagement of non-audit services. Such matters are the subject of review and pre-approval by the Audit Committee.

#### **External Auditor Service Fees**

The aggregate fees billed by the Corporation's auditors, Meyers Norris Penny LLP, Chartered Accountants, in each of the last two financial years of the Corporation are as follows:

Financial Year Ending	Audit Fees	Audit Related Fees	Tax Fees	All Other Fees
December 31, 2014	\$32,146	Nil	\$9,080	Nil
December 31, 2013	\$30,000	Nil	\$37,000	Nil

Notes:

(1) The aggregate audit fees billed.

(2) The aggregate fees billed for assurance and related services that are reasonably related to the performance of the audit or review of the Corporation's financial statements which are not included under the heading "Audit Fees".

(3) The aggregate fees billed for professional services rendered for tax compliance, tax advice and tax planning.

(4) The aggregate fees billed for products and services other than as set out under the headings "Audit Fees", "Audit Related Fees" and "Tax Fees".

#### PROMOTERS

Gregory Bowes, CEO of the Corporation, took the initiative to finance and reorganize the affairs of the Corporation and accordingly may be considered to be a promoter of the Corporation within the meaning of applicable securities legislation. Mr. Bowes beneficially owns or controls 1,716,428 (common shares of the Corporation representing 3.5% of the issued and outstanding common shares. Mr. Bowes is compensated for the services he provides to the Corporation in his capacity as CEO at a base salary of \$250,000 per year in 2014 in accordance with the provisions of his employment agreement with the Corporation. See "Directors and Officers".

#### LEGAL PROCEEDINGS AND REGULATORY ACTIONS

The Corporation is not and was not during the financial year ended December 31, 2014 a party or subject to any legal proceedings involving the Corporation or any of its property.

No penalties or sanctions are or were during the financial year ended December 31, 2014 imposed against the Corporation by a court relating to securities legislation or by a securities regulatory authority. No other penalties or sanctions are or were during the financial year ended December 31, 2014 imposed by a court or regulatory body against the Corporation that would likely be considered important to a reasonable investor in making an investment decision. The Corporation has not entered into at present or during the financial year ended December 31, 2014 any settlement agreements before a court relating to securities legislation or with a securities regulatory authority.

#### INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

Other than as disclosed in this Annual Information Form, no director or executive officer of the Corporation or any person or company that is the direct or indirect beneficial owner of, or who exercise control or direction over, more than 10% of any class or series of the Corporation's outstanding voting securities, or any associate or affiliate of any of such persons or companies, had any material interest, direct or indirect, in any transactions which materially affected or would materially affect the Corporation, occurring during the year ended December 31, 2014.

#### **REGISTRAR AND TRANSFER AGENT**

The transfer agent and registrar of the Corporation is TMX Equity Transfer Services at its principal office in Toronto, Ontario.

#### MATERIAL CONTRACTS

The Corporation has no material contracts, other than contracts entered into in the ordinary course of business, that were entered into during the financial year ended December 31, 2014, or that were entered into before the financial year ended December 31, 2014, that are still in effect.

#### **INTERESTS OF EXPERTS**

Certain information in this Annual Information Form on the Bissett Creek Project is summarized from the 2010 Technical Report prepared by Gilbert Rousseau P. Eng and Claude Duplessis P. Eng, both of SGS, and both of whom are independent qualified persons under NI 43-101. As of the date hereof, to the Corporation's knowledge, none of Messrs. Rousseau or Duplessis or any of the directors, officers, principals and associates of SGS own beneficially, directly or indirectly, or exercise control or direction over, any of the securities or other property of the Corporation.

Certain information in this Annual Information Form on the Bissett Creek Project is summarized from the 2012 Technical Report prepared by the following qualified persons, each of whom are independent qualified persons under NI 43-101: Nicolas Menard, ing, Louis Ginac, ing, Robert Marchand, ing, Robert Menard, ing, Andy Phillips, P.Eng, Steve Aiken, P.Eng, Ahmed Bouajila, ing, Daniel Houde, ing, Francois Thibert, P.Geo, Gilbert Rousseau, ing, Mehmet Taner, P.Geo and Antoine Champange, ing. As of the date hereof, to the Corporation's knowledge, none of the individuals listed above or any of the directors, officers, principals and associates of their respective companies

own beneficially, directly or indirectly, or exercise control or direction over, any of the securities or other property of the Corporation.

Certain information in this Annual Information Form on the Bissett Creek Project is also summarized from the 2013 Mineral Resources estimate and the FS Update. These Mineral resources were estimated in conformance with the CIM Mineral Resource definitions referred to in NI 43-101 Standards of Disclosure for Mineral Projects. Pierre Desautels, P.Geo., Principal Resource Geologist, and Gordon Zurowski, P.Eng., Principal Mining Engineer, both of AGP Mining Consultants and "qualified persons" under NI 43-101 who are independent of the Corporation, have prepared and authorized the release of this 2013 mineral resource estimate. As of the date hereof, to the Corporation's knowledge, none of Messrs. Desautels or Zurowski or any of the directors, officers, principals and associates of AGP own beneficially, directly or indirectly, or exercise control or direction over, any of the securities or other property of the Corporation.

Certain information in this Annual Information Form on the Bissett Creek Project is also summarized from the 2013 PEA. Pierre Desautels, P.Geo., Principal Resource Geologist, and Gordon Zurowski, P.Eng., Principal Mining Engineer, both of AGP Mining Consultants and "qualified persons" under NI 43-101 who are independent of the Corporation, prepared the mineral resource estimates in the PEA. Gordon Zurowski, P.Eng., prepared the reserve estimate and the updated Feasibility Study economics. Marc Leduc, P.Eng., who is independent of the Corporation, prepared the PEA and approved and authorized the release of the information contained therein. As of the date hereof, to the Corporation's knowledge, none of Messrs. Desautels, Zurowski, or Leduc or any of the directors, officers, principals and associates of AGP own beneficially, directly or indirectly, or exercise control or direction over, any of the securities or other property of the Corporation.

Ken Kuchling, P.Eng., Senior Mining Associate of P&E Mining Consultants Inc. prepared the revised mine plan for the 2013 PEA Update. Dan Peldiak, P.Eng., Principal Process Engineer WorleyParsons Canada prepared the revised capital and operating costs for the process plant. Andrew Bradfield, P.Eng., of P&E, who is independent of the Corporation, approved and authorized the disclosure of the technical information relating to the 2013 PEA Update. Readers should refer to the NI 43-101 technical reports relating to the FS and the 2013 PEA for further details with respect to the Bissett Creek Project.

The average selling price used in the 2010 Technical Report was reviewed by Mindesta and graphite expert at that time, Mr. George C. Hawley. As of the date hereof, the Corporation is unaware of any shareholdings that Mr. Hawley might have.

Meyers Norris Penny LLP, Chartered Accountants, of Vancouver, British Columbia, are the Corporation's auditors and such firm has prepared an opinion with respect to the Corporation's financial statements as at and for the year ended December 31, 2013. Meyers Norris Penny LLP, Chartered Accountants are independent of the Corporation in accordance with the Rules of Professional Conduct as outlined by the British Columbia Institute of Chartered Accountants.

#### **RISK FACTORS**

An investment in the Corporation is subject to risks and uncertainties. The occurrence of any one or more of these risks or uncertainties could have a material adverse effect on the value of any investment in the Corporation and the business, prospects, financial position, financial condition or operating results of the Corporation. Prospective investors should carefully consider the information presented in this Annual Information Form, including the following risk factors, which are not an exhaustive list of all risk factors associated with an investment in the Corporation or the Corporation's shares or in connection with the operations of the Corporation:

#### Exploration Stage Corporation and Single Asset

The Corporation has a limited history of operations and is in the early stage of development. The Corporation is engaged in the business of exploring and developing a single asset, the Bissett Creek Project, in the hope of ultimately, at some future point, placing the Bissett Creek Project into production. The Bissett Creek Project will

be for the foreseeable future the Corporation's sole asset. Although management believes the Bissett Creek Project has sufficient merit to justify focusing all the Corporation's limited resources upon it, the Corporation will in consequence be exposed to some heightened degree of risk due to the lack of property diversification. The Bissett Creek Project is known to host NI 43-101 compliant indicated and inferred resources and a probable reserve. However, there are no guarantees that these indicated and inferred resources will ever be demonstrated, in whole or in part, to be profitable to mine. Development of the Bissett Creek Project will only follow upon obtaining satisfactory results from the recommended multi-phase exploration and development program and any subsequent work and studies that may be required. There can be no assurance that any of the Corporation's planned exploration and development activities on the Bissett Creek Project will ever lead to graphite production from the Bissett Creek Project.

#### Mineral Exploration and Development

The exploration and development of mineral projects is highly speculative in nature and involves a high degree of financial and other risks over a significant period of time which even a combination of careful evaluation, experience and knowledge may not reduce or eliminate. The Bissett Creek Project, which will constitute the Corporation's sole asset, is known to host NI 43-101 compliant indicated and inferred resources, which have been updated into a probable reserve in the FS Update. However, there are no guarantees that there will ever be a profitable mining operation on the Bissett Creek Project. The proposed multi-phase exploration and development program on the Bissett Creek Project is subject to a significant degree of risk. Whether a mineral deposit will be commercially viable depends on a number of factors, including the particular attributes of the deposit (i.e. size, grade, access and proximity to infrastructure), financing costs, the cyclical nature of commodity prices and government regulations (including those relating to prices, taxes, currency controls, royalties, land tenure, land use, importing and exporting of mineral products, and environmental protection). The effect of these factors or a combination thereof cannot be accurately predicted but could have an adverse impact on the Corporation.

#### No History of Mineral Production

The Corporation has never had an interest in a mineral producing property. There is no assurance that commercial quantities of minerals will be discovered at any future properties, nor is there any assurance that any future exploration programs of the Corporation on the Bissett Creek Project or any future properties will yield any positive results. Even where commercial properties of minerals are discovered, there can be no assurance that any property of the Corporation will ever be brought to a stage where mineral reserves can be profitably produced thereon. Factors which may limit the ability of the Corporation to produce mineral resources from its properties include, but are not limited to, the price of mineral resources are explored, availability of additional capital and financing and the nature of any mineral deposits.

#### Mining Operations and Insurance

Mining operations generally involve a high degree of risk. The Corporation's operations will be subject to all of the hazards and risks normally encountered in mineral exploration and development. Such risks include unusual and unexpected geological formations, seismic activity, rock bursts, cave-ins, water inflows, fires and other conditions involved in the drilling and removal of material, environmental hazards, industrial accidents, periodic interruptions due to adverse weather conditions, labor disputes, political unrest and theft. The occurrence of any of the foregoing could result in damage to, or destruction of, mineral properties or interests, production facilities, personal injury, damage to life or property, environmental damage, delays or interruption of operations, increases in costs, monetary losses, legal liability and adverse government action. The Corporation does not currently carry insurance against these risks and there is no assurance that such insurance will be available in the future, or if available, at economically feasible premiums or acceptable terms. The potential costs associated with losses or liabilities not covered by insurance coverage may have a material adverse effect upon the Corporation's financial condition.

#### Limited Operating History and Financial Resources

The Corporation has a limited operating history, has no operating revenues and is unlikely to generate any revenues from operations in the immediate future. It anticipates that its existing cash resources, together with the net

proceeds of the Offering, will be sufficient to cover its projected funding requirements for the ensuing year. If its phased exploration and development program is successful, additional funds will be required to bring the Bissett Creek Project to production. The Corporation has limited financial resources and there is no assurance that sufficient additional funding will be available to enable it to fulfill its obligations or for further exploration and development on acceptable terms or at all. Failure to obtain additional funding on a timely basis could result in delay or indefinite postponement of further exploration and development and could cause the Corporation to reduce or terminate its operations. Additional funds raised by the Corporation from treasury share issuances may result in further dilution to the shareholders of the Corporation or a change of control.

#### Governmental and Environmental Regulation, Permits and Compliance

The future operations of the Corporation, including exploration and development activities and the commencement and continuation of commercial production, require licenses, permits or other approvals from various federal, provincial and local governmental authorities and such operations are or will be governed by laws and regulations relating to prospecting, development, mining, production, exports, taxes, labor standards, occupational health and safety, waste disposal, toxic substances, land use, water use, environmental protection, land claims of indigenous people and other matters. The Corporation believes that the Bissett Creek Project is in substantial compliance with all material laws and regulations which currently apply to its activities. There can be no assurance, however, that the Corporation will obtain on reasonable terms or at all the permits and approvals, and the renewals thereof, which it may require for the conduct of its future operations or that compliance with applicable laws, regulations, permits and approvals will not have an adverse effect on plans to explore and develop the Bissett Creek Project. Possible future environmental and mineral tax legislation, regulations and actions could cause additional expense, capital expenditures, restrictions and delay on the Corporation's planned exploration and operations, the extent of which cannot be predicted.

Failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions thereunder, including orders issued by regulatory or judicial authorities causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment, or remedial actions. Parties engaged in mining operations may be required to compensate those suffering loss or damage by reason of the mining activities and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations.

#### **Results of Prior Exploration Work**

In preparing the 2010 Technical Report, the 2012 Technical Report, the FS, the FS Update, the **2013** PEA, and the 2013 PEA Update, the authors of such report relied upon data generated by exploration work carried out by geologists employed by others. There is no guarantee that data generated by prior exploration work is 100% reliable and discrepancies in such data not discovered by the Corporation may exist. Such errors and/or discrepancies, if they exist, could impact on the accuracy of the 2010 Technical Report, the 2012 Technical Report, the FS, the FS Update, the 2013 PEA and the **2013** PEA Update.

#### **Reliance on Management and Experts**

The success of the Corporation will be largely dependent upon the performance of its senior management and directors. Due to the relative small size of the Corporation, the loss of these persons or the inability of the Corporation to attract and retain additional highly-skilled employees may adversely affect its business and future operations. The Corporation has not purchased any "key-man" insurance nor has it entered into any non-competition or non-disclosure agreements with any of its directors, officers or key employees and has no current plans to do so.

The Corporation has hired and may continue to rely upon consultants and others for geological and technical expertise. The Corporation's current personnel may not include persons with sufficient technical expertise to carry out the future development of the Corporation's properties. There is no assurance that suitably qualified personnel can be retained or will be hired for such development.

#### **Competition**

The mineral exploration and mining business is competitive in all of its phases. The Corporation competes with numerous other companies and individuals, including competitors with greater financial, technical and other resources, in the search for and the acquisition of attractive mineral properties. The mining industry is facing a shortage of equipment and skilled personnel and there is intense competition for experienced geologists, field personnel, contractors and management. There is no assurance that the Corporation will be able to compete successfully with others in acquiring such equipment or personnel.

#### **Conflicts of Interest**

Certain of the directors and officers of the Corporation also serve as directors and/or officers of other companies involved in natural resource exploration and development and consequently, there exists the possibility for such directors and officers to be in a position of conflict. Any decision made by any of such directors and officers involving the Corporation should be made in accordance with their fiduciary duties and obligations to deal fairly and in good faith with a view to the best interests of the Corporation and its shareholders.

In addition, each of the directors is required to declare and refrain from voting on any matter in which such directors may have a conflict of interest in accordance with the procedures set forth in the *Business Corporations Act* (Ontario) and other applicable laws.

#### **Competitive Conditions**

The mineral exploration and mining business is competitive in all phases of exploration, development and production. The Corporation competes with a number of other entities in the search for and acquisition of productive mineral properties. As a result of this competition, the majority of which is with companies with greater financial resources than the Corporation, the Corporation may be unable to acquire attractive properties in the future on terms it considers acceptable. The Corporation also competes for financing with other resources companies, many of whom have greater financial resources and/or more advanced properties. There can be no assurance that additional capital or other types of financing will be available if needed or that, if available, the terms of such financing will be favorable to the Corporation.

#### Title to Property

The Corporation has carefully examined the historical record of ownership of the registered surface and mineral rights for the claims comprising the Bissett Creek Project, and the leasehold interests comprising the Bissett Creek Project, and has established and confirmed that ownership thereof is valid and secure and that title is properly registered. However, there can be no assurance or guarantee that the Corporation's interests in the Bissett Creek Project may not be challenged. There can be no assurance that the Corporation will be able to secure the grant or the renewal of exploration permits or other tenures on terms satisfactory to it, or that governments having jurisdiction over the Bissett Creek Project will not revoke or significantly alter such permits or other tenures or that such permits and tenures will not be challenged or impugned. It is always possible, though unlikely, that third parties may have valid claims not appearing in the historical record underlying portions of the interests of the Corporation and the permits or tenures may be subject to prior unregistered agreements or transfers or native land claims and title may be affected by undetected defects. If a title defect exists, it is possible that the Corporation may lose all or part of its interest in the properties to which such defects relate. A renewal application with respect to lease number 106693 was submitted to the MNDM and the Corporation has received notification that it has met the necessary requirements for renewal. The Corporation has received notification that this lease renewal has been requisitioned for issuance and registration and that the Corporation's receipt of the renewed lease is dependent on administrative processes at MNDM.

#### Aboriginal Land Claims

At the present time, the lands comprising the Bissett Creek Project are the subject of an aboriginal land claim. The Corporation has been in consultations with the Algonquins of Ontario ("AOO") for the past three years. The Corporation has begun the process of negotiating an Impact Benefits Agreement ("IBA") with the AOO. A

Memorandum of Understanding ("**MOU**") has been provided and is under negotiation which is the first step towards an IBA. To date the AOO have expressed support for the project and have shown interest in economic development. However, the negotiation of an MOU and an IBA are subject to many factors beyond the Corporation's control and there is no guarantee or assurance that the Corporation will be successful.

#### Environmental Risks and Hazards

All phases of the Corporation's operations will be subject to environmental regulation in the jurisdictions in which it operates. These regulations mandate, among other things, the maintenance of air and water quality standards and land reclamation and provide for restrictions and prohibitions on spills, releases or emissions of various substances produced in association with certain mining industry activities and operations. They also set forth limitations on the generation, transportation, storage and disposal of hazardous waste. A breach of such regulation may result in the imposition of fines and penalties. In addition, certain types of mining operations require the submission and approval of environmental impact assessments. Environmental legislation is evolving in a manner which will require stricter standards and enforcement, increased fines and penalties for non-compliance, more stringent environmental assessments of proposed projects and a heightened degree of responsibility for companies and their officers, directors and employees. The cost of compliance with changes in governmental regulations has the potential to reduce the viability or profitability of operations of the Corporation. The Bissett Creek Project has, over the course of the past two decades, been subject to several environmental studies. Additional environmental studies will, however, be required as the Corporation's anticipated exploration and development programs unfold. It is always possible that, as work proceeds, environmental hazards may be identified on the Bissett Creek Project which are at present unknown to the Corporation and which may have the potential to negatively impact on the Corporation's exploration and development plans for the Bissett Creek Project.

#### Cost of Land Reclamation

It is difficult to determine the exact amounts which will be required to complete all land reclamation activities on the Bissett Creek Project. Reclamation bonds and other forms of financial assurance represent only a portion of the total amount of money that will be spent on reclamation activities over the life of a mine. Accordingly, it may be necessary to revise planned expenditures and operating plans in order to fund reclamation activities. Such costs may have a material adverse impact upon the financial condition and results of operations of the Corporation.

#### **Commodity Prices**

The price of the Corporation's securities, its financial results and its exploration, development and mining activities have previously been, or may in the future be, significantly adversely affected by declines in the price of graphite. Industrial mineral prices fluctuate widely and are affected by numerous factors beyond the Corporation's control such as the sale or purchase of industrial minerals by various dealers, interest rates, exchange rates, inflation or deflation, currency exchange fluctuation, global and regional supply and demand, production and consumption patterns, speculative activities, increased production due to improved mining and production methods, government regulations relating to prices, taxes, royalties, land tenure, land use, importing and exporting of minerals, environmental protection, the degree to which a dominant producer uses its market strength to bring supply into equilibrium with demand, and international political and economic trends, conditions and events. The prices of industrial minerals have fluctuated widely in recent years, and future price declines could cause continued exploration and development of the Bissett Creek Project to be impracticable.

Further, reserve calculations and life-of-mine plans using significantly lower industrial mineral prices could result in material write-downs of the Corporation's investment in the Bissett Creek Project and increased amortization, reclamation and closure charges.

In addition to adversely affecting reserve estimates and the Corporation's financial condition, declining commodity prices can impact operations by requiring a reassessment of the feasibility of a particular project. Such a reassessment may be the result of a management decision or may be required under financing arrangements related to a particular project. Even if the project is ultimately determined to be economically viable, the need to conduct such a reassessment may cause substantial delays or may interrupt operations until the reassessment can be completed.

#### Price Volatility and Lack of Active Market

In recent years, securities markets in Canada and elsewhere have from time to time experienced high levels of price and volume volatility. Consequently, the market prices of the securities of many public companies have experienced significant fluctuations in price which have not necessarily been related to the operating performance, underlying asset values or prospects of such companies. It may be anticipated that any quoted market for the Corporation's securities will be subject to such market trends and that the value of such securities may be affected accordingly. If an active market does not develop, the liquidity of the investment may be limited and the market price of such securities may decline.

#### Litigation

From time to time, the Corporation may be involved in lawsuits. The outcomes of any such legal actions may have a material adverse effect on the financial results of the Corporation on an individual or aggregate basis.

#### Dividends

The Corporation has no earnings or dividend record and does not anticipate paying any dividends on its common shares in the foreseeable future.

#### **ADDITIONAL INFORMATION**

Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Corporation's securities, and securities authorized for issuance under equity compensation plans, is contained in the Corporation's information circular dated April 25, 2014 for the most recent annual meeting of the Corporation's shareholders held on June 5, 2014. Additional information is provided in the Corporation's audited financial statements and the Corporation's management discussion and analysis for the year ended December 31, 2014. Copies of the foregoing documents may be obtained by shareholders upon request from the Corporate Secretary of the Corporation. These documents, as well as additional information relating to the Corporation, are available on SEDAR under the Corporation's SEDAR profile at *www.sedar.com*.

#### SCHEDULE "A"

#### CHARTER OF THE AUDIT COMMITTEE

#### NORTHERN GRAPHITE CORPORATION (the "Corporation")

#### I. Purpose

The Audit Committee is a committee of the Board of Directors which assists the Board in overseeing the Corporation's financial controls and reporting and in fulfilling its legal and fiduciary obligations with respect to matters involving the accounting, auditing, financial reporting, internal control and legal compliance functions of the Corporation. The Audit Committee's primary duties and responsibilities are to:

- Oversee: (i) the integrity of the Corporation's financial statements; (ii) the Corporation's compliance with legal and regulatory requirements with respect to financial controls and reporting; and (iii) the auditors' qualifications and independence.
- Serve as an independent and objective party to monitor the Corporation's financial reporting processes and internal control systems.
- Review and appraise the audit activities of the Corporation's independent auditors.
- Provide open lines of communication among the independent auditors, financial and senior management and the Board of Directors for financial reporting and control matters.

#### II. Composition

Members of the Audit Committee are appointed and removed by the Board of Directors. The Board shall designate annually the members of the Committee and a Chairman of the Committee. The Committee will be comprised of at least three directors, each of whom qualifies as an independent director, as determined by the Board<sup>1</sup>. All members should have skills and/or experience which are relevant to the mandate of the Committee, as determined by the Board. All members of the Committee shall be financially literate at the time of their election to the Committee. "Financial literacy" shall be determined by the Board of Directors in the exercise of its business judgment, and shall include a working familiarity with basic finance and accounting practices and an ability to read and understand financial statements that present a breadth and level of complexity of the issues that can reasonably be expected to be raised by the Corporation's financial statements. Committee members, if they or the Board of Directors deem it appropriate, may enhance their understanding of finance and accounting by participating in educational programs conducted by the Corporation or an outside consultant or firm.

#### III. Responsibilities

The responsibilities of the Audit Committee shall generally include, but not be restricted to, undertaking the following:

#### Selection and Evaluation of Auditors

(a) Recommending to the Board of Directors the external auditors (subject to shareholder approval) to be engaged to prepare or issue an auditor's report or performing other audit, review or attest services for the Corporation and the compensation of such external auditors.

<sup>&</sup>lt;sup>1</sup> Determined in accordance with National Instrument 52-110 – *Audit Committees*.

- (b) Overseeing the independence of the Corporation's auditors and taking such actions as it may deem necessary to satisfy it that the Corporation's auditors are independent within the meaning of applicable securities laws by, among other things: (i) requiring the independent auditors to deliver to the Committee on a periodic basis a formal written statement delineating all relationships between the independent auditors and the Corporation; and (ii) actively engaging in a dialogue with the independent auditors with respect to any disclosed relationships or services that may impact the objectivity and independence of the independent auditors and taking appropriate action to satisfy itself of the auditors' independence.
- (c) Instructing the Corporation's independent auditors that: (i) they are ultimately accountable to the Committee (as representatives of the shareholders of the Corporation); (ii) they must report directly to the Committee; and (iii) the Committee is responsible for the appointment (subject to shareholder approval), compensation, retention, evaluation and oversight of the Corporation's independent auditors.
- (d) Ensuring the respect of legal requirements regarding the rotation of applicable partners of the external auditors, on a regular basis, as required.
- (e) Reviewing and pre-approving all audit and permitted non-audit services or mandates to be provided by the independent auditors to the Corporation or any of its subsidiaries, including tax services, and the proposed basis and amount of the external auditors' fees for such services, and determining which non-audit services the auditors are prohibited from providing (and adopting specific policies and procedures related thereto).
- (f) Reviewing the performance of the Corporation's independent auditors and replacing or terminating the independent auditors (subject to required shareholder approvals) when circumstances warrant.

#### **Oversight of Annual Audit**

- (a) Reviewing and accepting, if appropriate, the annual audit plan of the Corporation's independent auditors, including the scope, extent and schedule of audit activities, and monitoring such plan's progress and results during the year.
- (b) Confirming through private discussions with the Corporation's independent auditors and the Corporation's management that no management restrictions are being placed on the scope of the independent auditors' work.
- (c) Reviewing with the external auditors any audit problems or difficulties and management's response thereto and resolving any disagreement between management and the external auditors regarding accounting and financial reporting.
- (d) Reviewing with management and the external auditors the results of the year-end audit of the Corporation, including: (i) the annual financial statements and the audit report, the related management representation letter, the related "Memorandum Regarding Accounting Procedures and Internal Control" or similar memorandum prepared by the Corporation's independent auditors, any other pertinent reports and management's responses concerning such memorandum; and (ii) the qualitative judgments of the independent auditors about the appropriateness and not just the acceptability of accounting principles and financial disclosure practices used or proposed to be adopted by the Corporation including any alternative treatments of financial information that have been discussed with management, the ramification of their use and the independent auditor's preferred treatment as well as any other material communications with management and, particularly, about the degree of aggressiveness or conservatism of its accounting principles and underlying estimates.

#### **Oversight of Financial Reporting Process and Internal Controls**

- (a) Reviewing with management and the external auditors the annual financial statements and accompanying notes, the external auditors' report thereon and the related press release, and obtaining explanations from management on all significant variances with comparative periods, before recommending approval by the Board and the release thereof.
- (b) Reviewing with management the quarterly financial statements and any auditors' review thereof before recommending approval by the Board and the release thereof.
- (c) Reviewing and periodically assessing the adequacy of the Corporation's procedures for the Corporation's public disclosure of financial information extracted or derived from the Corporation's financial statements, including reviewing the financial information contained in the annual information form, management proxy circular, management's discussion and analysis, Annual Information Formes and other documents containing similar financial information before their public disclosure or filing with regulatory authorities, including the audit committee's report for inclusion in the Corporation's management information circular in accordance with applicable rules and regulations.
- (d) Periodically reviewing the Corporation's disclosure policy to ensure that it conforms with applicable legal and regulatory requirements.
- (e) Reviewing the adequacy and effectiveness of the Corporation's accounting and internal control policies and procedures through inquiry and discussions with the Corporation's independent auditors and management of the Corporation.
- (f) Monitoring the quality and integrity of the Corporation's disclosure controls and procedures and management information systems through discussions with management and the external auditors.
- (g) Overseeing management's reporting on internal controls and disclosure controls and procedures.
- (h) Reviewing on a regular basis and monitoring the Corporation's policies and guidelines which govern the Corporation's risk assessment and risk management, including the Corporation's major financial risk exposures and the steps management has taken to monitor and control such exposures, including hedging policies through the use of financial derivatives.
- (i) Establishing and maintaining free and open means of communication between and among the Board of Directors, the Committee, the Corporation's independent auditors and management.

#### **Other Matters**

- (a) Assisting the Board with oversight of the Corporation's compliance with applicable legal and regulatory requirements, including meeting with general counsel and outside counsel when appropriate to review legal and regulatory matters, including any matters that may have a material impact on the financial statements of the Corporation.
- (b) Reviewing and approving any transactions between the Corporation and members of management and/or the Board as well as policies and procedures with respect to officers' expense accounts and perquisites, including the use of corporate assets. The Committee shall consider the results of any review of these policies and procedures by the Corporation's independent auditors.
- (c) Conducting or authorizing investigations into any matters within the Committee's scope of responsibilities, including retaining outside counsel or other consultants or experts as the Committee determines necessary to carry out its duties and to set and pay the compensation for these advisors.

- (d) Establishing procedures for the receipt, retention and treatment of complaints received by the Corporation regarding accounting, internal accounting controls or auditing matters and the confidential, anonymous submission by employees of the Corporation of concerns regarding questionable accounting matters.
- (e) Establishing procedures for the review and approval of financial and related information of the Corporation.
- (f) Reviewing and approving the Corporation's hiring policies regarding partners, employees and former partners and employees of the present and former external auditors of the Corporation.
- (g) Performing such additional activities, and considering such other matters, within the scope of its responsibilities, as the Committee or the Board of Directors deems necessary or appropriate.

#### IV. Meetings and Advisors

The Committee will meet as often as it deems necessary or appropriate to perform its duties and carry out its responsibilities described above in a timely manner, but not less than quarterly. The quorum at any meeting of the Committee shall be a majority of its members. All such meetings shall be held pursuant to the By-Laws of the Corporation with regard to notice and waiver thereof.

The Audit Committee shall meet on a regular basis without management or the external auditors. The Committee, in its discretion, may ask members of management or others to attend its meetings (or portions thereof) and to provide pertinent information as necessary. As part of its purpose to foster open communications, the Committee shall meet at least annually, and more frequently as required, with management and the Corporation's independent auditors in separate executive sessions to discuss any matters that the Committee or each of these groups or persons believe should be discussed privately. The independent auditors will have direct access to the Committee at their own initiative. The Chairman should work with the Chief Financial Officer and management to establish the agenda for Committee meetings.

Written minutes of each meeting of the Committee shall be filed in the Corporation's records. The Chairman of the Committee will report periodically to the Board of Directors.

The Committee shall, in appropriate circumstances and subject to advising the Chairman of the Board, have the authority to engage and obtain advice and assistance from advisors, including independent or outside legal counsel and accountants, as it determines is necessary or appropriate to carry out its duties. The Corporation shall provide for appropriate funding, as determined by the Committee, for payment of any compensation (i) to any independent auditors engaged for the purpose of rendering or issuing an audit report or related work or performing other audit, review or attest services for the Corporation, and (ii) to any independent advisors employed by the Committee.

#### V. Disclosure of Charter

This charter shall be published in the Corporation's annual information form or information circular as required by applicable securities laws.

While the Committee has the duties and responsibilities set forth in this charter, the Committee is not responsible for planning or conducting the audit or for determining whether the Corporation's financial statements are complete and accurate and are in accordance with generally accepted accounting principles. Similarly, it is not the responsibility of the Committee to ensure that the Corporation complies with all laws and regulations.

Nothing contained in this charter is intended to expand applicable standards of conduct under statutory or regulatory requirements for the directors of the Corporation or the members of the Audit Committee.