



**Denison Mines Corp.**

2017 Annual Information Form

March 27, 2018

## ABOUT THIS ANNUAL INFORMATION FORM

This annual information form ("AIF") is dated March 27, 2018. Unless stated otherwise, all of the information in this AIF is stated as at December 31, 2017.

This AIF has been prepared in accordance with Canadian securities laws and contains information regarding Denison's history, business, mineral reserves and resources, the regulatory environment in which Denison does business, the risks that Denison faces and other important information for Shareholders.

This AIF incorporates by reference:

- Denison's management discussion and analysis ("MD&A") for the year ended December 31, 2017, which is available under the Company's profile on SEDAR ([www.sedar.com](http://www.sedar.com)) and on EDGAR ([www.sec.gov/edgar.shtml](http://www.sec.gov/edgar.shtml)) as an exhibit to the Company's Form 40-F.
- Denison's audited consolidated financial statements for the year ended December 31, 2017, which are available on SEDAR and EDGAR as an exhibit to the Company's Form 40-F.

### Financial Information

Unless otherwise specified, all dollar amounts referred to in this AIF are stated in Canadian dollars. References to "USD" mean United States dollars.

Financial information is derived from consolidated financial statements that have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

### Caution about Forward-Looking Information

Certain information contained in this AIF and the documents incorporated by reference concerning the business, operations and financial performance and condition of Denison constitutes forward-looking information within the meaning of the United States *Private Securities Litigation Reform Act of 1995* and similar Canadian legislation.

Generally, the use of words and phrases like "plans", "expects", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes", or the negatives and/or variations of such words and phrases, or statements that certain actions, events or results "may", "could", "would", "might" or "will" "be taken", "occur", "be achieved" or "has the potential to" and similar expressions are intended to identify forward-looking information.

Forward-looking information involves known and unknown risks, uncertainties, material assumptions and other factors that may cause actual results or events to differ materially from those expressed or implied by such forward-looking statements. Denison believes that the

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expectations and assumptions reflected in this forward-looking information are reasonable, but no assurance can be given that these expectations will prove to be correct.

Forward-looking information should not be unduly relied upon. This information speaks only as of the date of this AIF, and Denison will not necessarily update this information, unless required to do so by securities laws.

### Examples of Forward-Looking Information

This AIF contains forward-looking information in a number of places, including statements pertaining to Denison's:

- expectations about 2018 and future market prices, production costs and global uranium supply and demand
- exploration, evaluation and development plans and objectives
- capital expenditure programs, exploration and development expenditures and reclamation costs and timing
- estimates of its mineral reserves and mineral resources
- results of its PEA and plans with respect to the PFS (each as defined below)
- expectations regarding additions to its mineral reserves and resources through acquisitions and exploration
- expectations regarding raising capital
- expectations regarding ongoing joint arrangements and Denison's share of the same
- expectations regarding the toll milling of Cigar Lake ores, and the relationships with its contractual partners with respect thereto
- future royalty and tax payments and rates
- the receipt of regulatory approvals, permits and licences under governmental regulatory regimes
- expectations regarding possible impacts of litigation and regulatory actions

Statements relating to "mineral resources" are deemed to be forward-looking information, as they involve the implied assessment, based on certain estimates and assumptions that the mineral resources described can be profitably produced in the future.

### Material Risks

Denison's actual results could differ materially from those anticipated. Management has identified the following risk factors which could have a material impact on the Company or the trading price of its common shares ("**Shares**"):

- the speculative nature of exploration and development projects
- the risk of failure to realize benefits from transactions
- the imprecision of mineral reserve and resource estimates
- the risk of Denison's inability to expand and replace its mineral reserves and resources
- the impact of uranium price volatility on the valuation of Denison's mineral reserves and resources and the market price of its shares
- uncertainty regarding public acceptance of nuclear energy and competition from other energy sources
- volatility in the market price of the Company's shares
- the risk of dilution from future equity financings
- reliance on other operators
- risk of challenges to property title and/or contractual interests in Denison's properties
- competition for properties
- global financial conditions
- the risk of failure by Denison to meet its obligations to its creditors
- change of control restrictions
- the capital intensive nature of mining industry and the uncertainty of funding
- uncertainty as to reclamation and decommissioning liabilities and timing
- potential for technical innovation rendering Denison's products and services obsolete

- liabilities inherent in mining operations and the adequacy of insurance coverage
- delays in obtaining licence amendments and renewals for development properties
- difficulty complying with changing government regulations and policy, including without limitation, compliance with environment, health and safety regulations
- potential claims of Canada's First Nations people
- the ability of Denison to ensure compliance with anti-bribery and anti-corruption laws
- the uncertainty regarding risks posed by climate change
- global demand and international trade restrictions
- the reliance of the Company on its information systems and the risk of cyber-attacks on those systems
- dependence on key personnel
- dependence on contractors and third parties
- potential conflicts of interest for the Company's directors who are engaged in similar businesses
- limitations of disclosure and internal controls
- the potential influence of Denison's largest Shareholder, Korea Electric Power Corporation ("KEPCO") and its subsidiary, Korea Hydro & Nuclear Power ("KHNP").

The risk factors listed above are discussed in more detail later in this AIF (see "Risk Factors"). The risk factors discussed in this AIF are not, and should not be construed as being, exhaustive.

### Material assumptions

The forward looking statements in this AIF and the documents incorporated by reference are based on material assumptions, including the following, which may prove to be incorrect:

- our expectations regarding the demand for, and supply of, uranium, the outlook for long-term contracting, changes in regulations, public perception of nuclear power, and the construction of new and relicensing of existing nuclear power plants
- our budget, including expected exploration levels and costs and the assumptions regarding market conditions and other factors upon which we have based our expenditure expectations
- our expectations regarding spot prices and realized prices for uranium
- our expectations regarding tax rates, currency exchange rates and interest rates
- our decommissioning and reclamation obligations and the status and ongoing maintenance of agreements with third parties with respect thereto
- our mineral reserve and resource estimates, and the assumptions upon which they are based
- our, and our contractors', ability to comply with current and future environmental, safety and other regulatory requirements and to obtain and maintain required regulatory approvals
- our operations are not significantly disrupted as a result of political instability, nationalization, terrorism, sabotage, social or political activism, breakdown, natural disasters, governmental or political actions, litigation or arbitration proceedings, equipment or infrastructure failure, labour shortages, transportation disruptions or accidents, or other development or exploration risks

### A Note for US Investors Regarding Estimates of Measured, Indicated and Inferred Mineral Resources

This AIF uses the terms "measured", "indicated" and "inferred" mineral resources. United States investors are advised that while such terms are recognized and required by Canadian regulations, the United States Securities and Exchange Commission does not recognize them. "Inferred mineral resources" have a great amount of uncertainty as to their existence, and as to their economic and legal feasibility. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to a higher category. Under Canadian rules, estimates of inferred mineral resources may not form the basis of feasibility or other economic studies. **United States investors are cautioned not to assume that all or any part of measured or indicated mineral resources will ever be converted into mineral reserves. United States investors are also cautioned not to assume that all or any part of an inferred mineral resource exists, or is economically or legally mineable.**

## ABOUT DENISON

Denison Mines Corp. is engaged in uranium exploration and development. The registered and head office of Denison is located at 1100 – 40 University Avenue, Toronto, Ontario, M5J 1T1, Canada. Denison's website address is [www.denisonmines.com](http://www.denisonmines.com).

At the end of 2017, Denison had a total of 68 active employees, all of which were employed in Canada. None of the Company's employees are unionized.

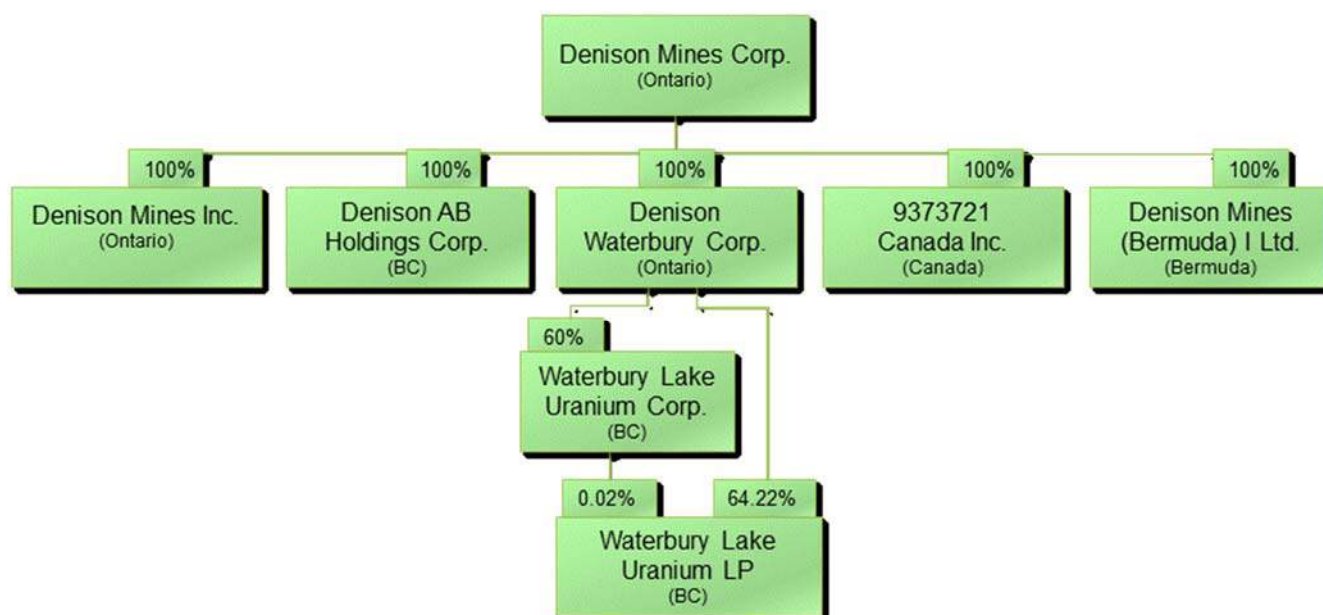
The Shares are listed on the Toronto Stock Exchange ("TSX") under the symbol "DML" and on the NYSE American (formerly NYSE MKT) under the symbol "DNN." Computershare Investor Services Inc. acts as the registrar and transfer agent for the Shares. The address for Computershare Investor Services Inc. is 100 University Avenue, 8th Floor, Toronto, ON, M5J 2Y1, Canada, and the telephone number is 1-800-564-6253.

In this AIF, *Denison or the Company* means Denison Mines Corp., *Shareholders* means holders of Denison's common shares and *Shares* means Denison's common shares.

Denison is a reporting issuer in all of the Canadian provinces. The Shares are also registered under the United States *Securities Exchange Act of 1934*, as amended, and Denison files periodic reports with the United States Securities and Exchange Commission.

### Denison's Structure

Denison conducts its business through a number of subsidiaries. The following is a diagram depicting the corporate structure of Denison and its active subsidiaries as at December 31, 2017, including the name, jurisdiction of incorporation and proportion of ownership interest in each.



Denison also owns a number of inactive subsidiaries which have no liabilities or assets and do not engage in any business activities.

## Denison Asset Overview

### Uranium Exploration and Development

Denison's uranium exploration properties are principally held directly by the Company or indirectly through Denison Mines Inc. ("**DMI**"), Denison Waterbury Corp. and Denison AB Holdings Corp.

#### **Denison's Key Assets - In the Athabasca Basin in Northern Saskatchewan:**

- A 63.30% interest in, and operator of, the Wheeler River project, which is host to the Phoenix and Gryphon uranium deposits – together representing the largest undeveloped uranium project in the infrastructure rich eastern Athabasca Basin.
- A 64.22% interest in, and operator of, the Waterbury Lake project, which includes the J Zone deposit and Huskie discovery.
- A 22.50% interest in the McClean Lake uranium processing facility and uranium deposits, through its interest in the McClean Lake Joint Venture ("**MLJV**") operated by Orano Canada Inc. (formerly AREVA Resources Canada Inc.) ("**Orano Canada**").
- A 25.17% interest in the Midwest uranium project, operated by Orano Canada, which is host to the Midwest Main and Midwest A deposits.
- An extensive portfolio of exploration and development property interests, including: Murphy Lake (82.58%); Crawford Lake (100%), Hook-Carter (80%); South Dufferin (100%); and Mann Lake (30%).

### Toll Milling

Denison participates in a toll-milling arrangement through its 22.50% interest in the MLJV, whereby ore is processed for the Cigar Lake Joint Venture ("**CLJV**") at the McClean Lake processing facility (the "**Cigar Toll Milling**"). In February 2017, Denison completed a financing (the "**APG Transaction**") with Anglo Pacific Group PLC ("**APG**") and its wholly owned subsidiary Centaurus Royalties Ltd. for gross proceeds to Denison of \$43,500,000. The APG Transaction has the effect of monetizing a portion of Denison's future share of the Cigar Toll Milling, with the benefit of providing Denison with the financial flexibility to advance its interests in the Athabasca Basin, including the Wheeler River project. While the APG Transaction monetized certain future toll milling receipts from the Cigar Toll Milling, Denison retains a 22.5% strategic ownership stake in the MLJV and McClean Lake processing facility. See "Denison's Operations – Cigar Lake Toll Milling – APG Transaction".

### Services

The Company also generates cash flow through the following areas of its business:

- (i) Management of Uranium Participation Corporation ("**UPC**")

Pursuant to a management services agreement, DMI serves as the manager of UPC, a publicly-traded company listed on the TSX under the symbol "U", which invests in uranium oxide in concentrates ( $U_3O_8$ ) and uranium hexafluoride ( $UF_6$ ).

- (ii) The Denison Environmental Services (“**DES**”) division of DMI

DES provides mine care & maintenance, decommissioning, environmental and other consulting services to third party customers.

### **The Formation of Denison**

Denison was formed by articles of amalgamation as International Uranium Corporation (“**IUC**”), effective May 9, 1997 pursuant to the *Business Corporations Act* (Ontario) (the “**OBCA**”). On December 1, 2006, IUC combined its business and operations with DMI, by way of arrangement under the OBCA (the “**IUC Arrangement**”). Pursuant to the IUC Arrangement, all of the issued and outstanding shares of DMI were acquired in exchange for IUC’s shares. Effective December 1, 2006, IUC’s articles were amended to change its name to “Denison Mines Corp.”

Through its acquisitions of JNR Resources Inc. (“**JNR**”), Fission Energy Corp. (“**Fission**”) and Rockgate Capital Corp. (“**Rockgate**”) in 2013 and its acquisition of International Enxco Limited (“**IEC**”) in 2014, Denison increased its project portfolio in Canada, primarily in the Athabasca Basin. Since then, Denison has worked to further achieve its objective of focusing on its core activities in the Athabasca Basin, completing the sale of its interest in the Gurvan Saihan joint venture in Mongolia to Uranium Industry a.s. (“**UI**”) in 2015 and completing a transaction with GoviEx Uranium Inc. (“**GoviEx**”) in 2016 to combine their respective African uranium mineral interests, with GoviEx acquiring Denison’s uranium mineral interests in Zambia, Mali and Namibia.

### **DEVELOPMENTS OVER THE LAST THREE YEARS**

#### **2015...**

In January, David Cates, formerly Vice President Finance & Tax and Chief Financial Officer, was appointed President and Chief Financial Officer of the Company. Also in January, Mr. Tae Hwan Kim, KEPCO’s representative on Denison’s Board, resigned and was replaced by Mr. Joo Soo Park.

At the end of January, the Company amended the terms of its credit facility with the Bank of Nova Scotia (the “**Credit Facility**”). Key amendments included the extension of the Credit Facility to January 2016, an increase in the maximum credit provided under the facility to \$24,000,000 and the introduction of a covenant to maintain a minimum balance of cash and equivalents of \$5,000,000 on deposit with the Bank of Nova Scotia.

In March, Ron Hochstein resigned as Chief Executive Officer of the Company and was appointed Executive Chairman of the Company’s Board of Directors and David Cates assumed the role of Chief Executive Officer to become President and Chief Executive Officer of the Company. To facilitate these changes, Lukas Lundin resigned as Chairman, but continued as a Director of the Company. Also in March, Gabriel (Mac) McDonald was appointed Vice-President Finance and Chief Financial Officer.

In April, the Company completed its winter exploration drilling in the Athabasca Basin. The drilling program included the expansion of the Gryphon zone of basement hosted uranium mineralization at Wheeler River, a new discovery of high grade unconformity hosted uranium mineralization southwest of Gryphon, and the extension of a zone of high grade unconformity hosted uranium mineralization at Mann Lake. The Company reported that over 30,300 metres had been completed in 61 drill holes on seven projects operated by the Company. Additionally, approximately 12,700 metres were completed in 32 holes on projects operated by the Company’s joint venture partners.

In May, the Company completed a bought deal private placement of 12,000,000 Shares on a flow-through basis pursuant to the *Income Tax Act* (Canada) at a price of \$1.25 per Share for total gross proceeds of \$15,000,000 (the "**2015 Offering**"). The gross proceeds from the financing were used to fund the Company's Canadian exploration expenses through to the end of 2016.

In July, Denison and Fission Uranium Corp. ("**Fission Uranium**") announced a transaction to create a diversified uranium company, and executed a definitive arrangement agreement (the "**2015 Fission Arrangement Agreement**"). In October, Denison and Fission Uranium terminated the arrangement agreement because the required two-thirds approval of the arrangement by Fission Uranium shareholders was not obtained.

In late July, Denison completed the definition drilling component of the summer exploration program at the Gryphon Zone on the Wheeler River property, and reported the discovery of uranium mineralization at the Murphy Lake property, which is located 30 kilometres northwest of the McClean Lake mill.

Also in late July, the Company announced it had entered into an agreement with UI pursuant to which the Company would sell its interest in the Gurvan Saihan joint venture (the "**GSJV**") to UI (the "**Mongolia Transaction**"). On November 25, 2015, the parties amended and restated the Share Purchase Agreement (the "**GSJV Purchase Agreement**") and announced the closing of the sale of its interest in the GSJV on December 1, 2015. In connection with the closing the Company received USD\$1,250,000 and retained rights to receive additional proceeds from contingent payments of up to USD\$12,000,000, for total consideration of up to USD\$13,250,000. The contingent payments are payable as follows: (1) USD\$5,000,000 within 60 days of the issuance of a mining licence for an area covered by any of the four principal exploration licences held by the GSJV, being the Hairhan, Haraat, Gurvan Saihan and Ulzit projects (the "**First Project**"); (2) USD\$5,000,000 within 60 days of the issuance of a mining licence for an area covered by any of the other exploration licences held by the GSJV (the "**Second Project**"); (3) USD\$1,000,000 within 365 days following the production of an aggregate of 1,000 pounds U<sub>3</sub>O<sub>8</sub> from the operation of the First Project; and (4) USD\$1,000,000 within 365 days following the production of an aggregate of 1,000 pounds U<sub>3</sub>O<sub>8</sub> from the operation of the Second Project. On December 2, 2015, UI submitted applications to the Mongolian government for mining licences for each of the four exploration licence projects. See "Developments Over the Last Three Years – 2016..." for further developments.

In October, Denison appointed Lukas Lundin Executive Chairman of the Board of Directors. To facilitate this appointment, Ron Hochstein stepped down as Executive Chairman, but continued to serve as a Director.

Also in October, Denison completed its summer 2015 exploration activities. The exploration program was highlighted by the completion of delineation drilling at the Gryphon zone on the Wheeler River property, which resulted in the expansion of uranium mineralization at Gryphon. During the summer exploration program, over 37,900 metres of drilling was completed on 13 properties operated by Denison and its partners, with approximately 24,500 metres of drilling completed at Wheeler alone.

Effective November, Catherine Stefan was appointed independent Lead Director of the Board of Directors. Also in November, John Craig resigned as a member of the Board of Directors and Steve Blower resigned from his position as Vice President, Exploration.



Also in November, Denison announced a significant increase in the estimated mineral resources on its Wheeler River property due to the addition of the Gryphon Deposit. The initial resource estimate for the Gryphon Deposit added inferred mineral resources of 43,000,000 pounds  $U_3O_8$  (834,000 tonnes at a grade of 2.31%  $U_3O_8$ ) from the A, B and C Series of mineralized lenses. This initial estimate added to a property that was already host to the Phoenix deposit, which includes an estimated indicated mineral resource of 70,200,000 pounds  $U_3O_8$ , (166,400 tonnes at a grade of 19.14%  $U_3O_8$ ). Together, the Gryphon and Phoenix deposits represent a unique combination of large resource size and high grades, with the potential for co-development. A technical report with respect to this updated mineral resource estimate for the Wheeler River property was publicly filed on December 7, 2015.

Effective December, Sheila Colman, General Counsel and Corporate Secretary, resigned as an officer of Denison and its applicable affiliates.

Production from the McClean Lake mill in 2015 amounted to approximately 11,294,000 pounds  $U_3O_8$  for the CLJV and 11,000 pounds  $U_3O_8$  for the MLJV. The Company's share of toll milling revenues from processing Cigar Lake ore at the McClean Lake mill during the year totaled approximately USD\$3,155,000.

## **2016...**

In January, Dale Verran was appointed Vice President, Exploration with responsibility for overseeing and advancing the Company's exploration programs. Prior to his appointment, Mr. Verran served as Technical Director, Exploration for the Company. In addition, Mr. Joo Soo Park, KEPCO's representative on Denison's Board, resigned and was replaced by Mr. Hyung Mun Bae.

Also in January, the Company amended and extended its Credit Facility to January 31, 2017.

In February, Amanda Willett was appointed Corporate Counsel and Corporate Secretary of Denison on a secondment basis, which appointment was made permanent effective June 2016.

In March, the Company announced the execution of a new three year agreement (the "**MSA**") to provide management services to UPC. The MSA took effect on April 1, 2016, at the conclusion of the three year term of the then current management services agreement between UPC and DMI. See "Manager of UPC".

In April, Denison announced the results of the preliminary economic assessment ("**PEA**") on its 60% (now 63.3%, as at December 31, 2017) owned Wheeler River Project. The PEA considered the potential economic merit of co-developing the high grade Gryphon and Phoenix deposits as a single underground mining operation, and assumed processing at Denison's 22.5% owned McClean Lake mill. The PEA considered two economic scenarios: (a) a base case scenario based on a March 2016 long-term price of uranium of USD\$44.00 per pound; and (b) a production case scenario based on a long-term price of uranium of USD\$62.60 per pound. Economic highlights of the PEA included (a) base case: a pre-tax IRR of 20.4% and a pre-tax Net Present Value ("**NPV**") of \$513 million (Denison's share \$308 million); and (b) production case: a pre-tax IRR of 34.1% and pre-tax NPV of \$1,420 million (Denison's share \$852 million). The PEA is based on the mineral resource estimates for the Gryphon deposit effective September 25, 2015 and the Phoenix deposit effective May 28, 2014. Following the completion of the PEA, a decision was made to advance towards the completion of a Pre-Feasibility Study ("**PFS**") which would require additional definition drilling to be completed in order to improve the confidence in the existing mineral resources estimated for the Gryphon deposit. See "Mineral Properties – Wheeler River".

Also in April, Denison completed its winter exploration drilling in the Athabasca Basin. Drilling results at Wheeler River included the discovery of the D Series of mineralized lenses, located within 200 metres north and northwest of the Gryphon deposit and continued intercepts of mineralization and/or radioactivity to the southwest of Gryphon along the K-North trend. Other notable winter results included the extension of a mineralized trend at Murphy Lake and the discovery of mineralization on the CR-3 trend at Moon Lake South. The Company reported that 31,091 metres of drilling had been completed in 55 drill holes on seven projects operated by the Company. Additionally, 8,107 metres of drilling was completed in 31 holes on projects operated by the Company's joint venture partners.

In May, Denison completed a private placement offering (the "**2016 Offering**") of Shares issued on a "flow-through" basis pursuant to the *Income Tax Act* (Canada). Denison issued 15,127,805 Shares, at a price of \$0.82 per Share, for aggregate gross proceeds to Denison of \$12,405,000. The gross proceeds from the financing were intended to fund the Company's Canadian exploration expenses through to the end of 2017.

In June, GoviEx and Denison completed the combination of their respective African uranium mineral interests (the "**Africa Transaction**"). Pursuant to the Africa Transaction, GoviEx acquired all of Denison's African uranium mineral interests in Mali, Zambia and Namibia through the acquisition of Rockgate from Denison. In exchange, Denison received 56,050,450 common shares and 22,420,180 common share purchase warrants ("**Consideration Warrants**") of GoviEx. Each Consideration Warrant is convertible into one common share of GoviEx at a price of USD\$0.15 per share for a period of three years. The Consideration Warrants include an acceleration clause, which provide that in the event that the closing price of GoviEx's common shares on the TSX Venture Exchange is equal to or greater than \$0.24 per share for a period of 15 consecutive trading days, GoviEx may provide holders of the Consideration Warrants with written notice that holders have 30 days to exercise the Consideration Warrants on the original terms, failing which the exercise price of the Consideration Warrants will be increased to USD\$0.18 per share and the term of the Consideration Warrants will be reduced by six months. Concurrently, GoviEx completed a non-brokered equity financing on a private placement basis, in which Denison provided the lead order of approximately USD\$500,000 for 9,093,571 common shares and common share purchase warrants (the "**Concurrent Warrants**"). Each Concurrent Warrant is convertible into one common share of GoviEx for a period of three years, at a price of USD\$0.12 per share until June 10, 2018 and thereafter at a price of USD\$0.14 per share. The Concurrent Warrants include an acceleration clause, which provide that in the event that the closing price of GoviEx's common shares on the TSX Venture Exchange is equal to or greater than \$0.20 per share for a period of 15 consecutive trading days, GoviEx may provide holders of the Concurrent Warrants with written notice that holders have 60 days to exercise the Concurrent Warrants on the original terms, failing which the Concurrent Warrants will expire unexercised. In total, as a result of the sale and the concurrent financing, Denison acquired a total of 65,144,021 common shares of GoviEx, or approximately 24.6% of GoviEx's issued and outstanding common shares at the end of June 2016 (18.72% at December 2017, according to publicly available information as at the date of this AIF), and 31,513,751 GoviEx common share purchase warrants. GoviEx is a publicly traded company and is listed on the TSX Venture Exchange under the symbol "GXU". For so long as Denison holds at least 5% of the issued and outstanding common shares of GoviEx, Denison will have the right to appoint one director to the GoviEx board of directors and will have the right to participate in future GoviEx equity financings in order to maintain its pro-rata ownership. Denison's nominee director, Mr. David Cates, President and Chief Executive Officer of Denison, was appointed to the GoviEx board of directors.

In August, the Company closed an option agreement with Skyharbour Resources Ltd. ("**Skyharbour**"), which grants Skyharbour an option to acquire a 100% interest in Denison's wholly owned Moore Lake property in exchange for cash, stock and exploration spending commitments (the "**Skyharbour Agreement**"). Under the terms of the Skyharbour Agreement, Denison received 4,500,000 common shares of Skyharbour and will receive staged cash payments of \$500,000, in aggregate, over the next five years. Skyharbour must also spend \$3,500,000 in exploration expenditures on the property over the same five year period in order to complete the option. Under the terms of the Skyharbour Agreement, Denison also maintains various back-in rights on the property to re-acquire a 51% interest in the property and is entitled to nominate a member to Skyharbour's Board of Directors as long as Denison maintains a minimum ownership position of 5%. In total, as a result of the option agreement shares and Denison's existing position, Denison held 5,000,000 common shares of Skyharbour, or approximately 11.3% of Skyharbour's issued and outstanding shares at the end of August 2016 (approximately 10.0% at December 2017, based on publicly available information as at the date of this AIF and taking into account additional shares acquired by Denison subsequent to the Skyharbour Agreement date). Denison's nominee director, Mr. David Cates, was appointed to the Skyharbour board of directors.

In September, the Mongolian government (through the Mineral Resource Authority of Mongolia) formally issued the mining licence certificates for the Hairhan, Haraat, Gurvan Saihan and Ulzit projects. The issuances triggered an obligation for UI to make an aggregate of USD\$10,000,000 of contingent payments to Denison, within 60 days, as per the terms of the Mongolia Transaction. See "Developments Over the Last Three Years – 2017..." for further information.

In October, Denison announced completion of a highly successful summer 2016 drilling program on the Wheeler River project. Highlights included; (1) continued expansion of the D Series lenses along strike to a collective strike length of 330 metres, (2) new high grade drill intersections which indicated expansion of the A and B Series lenses both down-dip and up-dip on the southwestern portion of the Gryphon deposit, (3) discovery of basement-hosted mineralization on the K-West conductive trend, located approximately 500 metres west of the Gryphon deposit, and (4) completion of an initial set of five infill and delineation holes on the Gryphon deposit, which confirmed high grades. During the summer exploration program, over 32,000 metres of drilling was completed on five properties operated by Denison, with over 25,000 metres of drilling completed at Wheeler River. A further 4,857 metres of drilling was completed in 10 holes on projects operated by the Company's joint venture partners.

In November, Denison completed a definitive agreement with ALX Uranium Corp. ("**ALX**") and acquired an immediate 80% ownership of the entire Hook-Carter property in exchange for the issuance of 7,500,000 common shares of Denison. Under the terms of the agreement with ALX (the "**Hook-Carter Agreement**"), ALX will retain a 20% interest in the Hook-Carter property and Denison agrees to fund ALX's share of the first \$12,000,000 in expenditures. Denison will be the operator of the project and will retain full discretion as to the nature, extent, timing and scope of all work projects, and has agreed to a modest work commitment, whereby Denison is required to spend \$3,000,000 on the property over the first 3 years. If Denison does not meet the \$3,000,000 work commitment, ALX's interest will increase from 20% to 25% and Denison's interest in the project will decrease from 80% to 75%. The parties have agreed to form a joint venture thirty-six months after the effective date of the Hook-Carter Agreement, in which all material decisions shall be carried by a vote representing a 51% ownership interest.

Also in November, Denison acquired the Coppin Lake property ("**Coppin Lake**") from Orano Canada and UEX Corporation. Coppin Lake comprises ten mineral claims covering an area of 2,768 hectares in the western portion of the Athabasca Basin region in northern Saskatchewan, contiguous with the Hook-Carter property. Pursuant to the area of interest provisions within the Hook-Carter Agreement, Coppin Lake now forms a part of the Hook-Carter property for the purposes of the Hook-Carter Agreement and the eventual joint venture between Denison and ALX with respect thereto.

In December, Denison was notified that the significant majority of KEPCO's indirect ownership of Denison's shares had been transferred to KHNP Canada Energy Ltd., a subsidiary of KHNP ("**KHNP Canada**"). Effective in December, Hyung Mun Bae resigned as a member of the Board of Directors.

## **2017...**

In January, Denison executed an agreement with the partners of the Wheeler River Joint Venture ("**WRJV**") that is expected to increase Denison's ownership of the Wheeler River project to up to approximately 66% by the end of 2018. The WRJV is a joint venture between Denison as operator (now 63.3% interest), Cameco Corporation ("**Cameco**") (26.7% interest), and JCU (Canada) Exploration Limited ("**JCU**") (10.00% interest) (collectively, the "**JV Parties**"). Under the terms of the agreement, the JV Parties have agreed to allow for a one-time election by Cameco to fund 50% of its ordinary share (30%) of joint venture expenses in 2017 and 2018. The shortfall in Cameco's contribution will be funded by Denison, in exchange for a transfer to Denison of a portion of Cameco's interest in the WRJV. Accordingly, Denison's share of joint venture expenses is 75% in 2017 and 2018, and Cameco and JCU's share of joint venture expenses is 15% and 10%, respectively. See "Mineral Properties – Wheeler River".

Also in January, UI and Denison entered into an extension agreement (the "Extension Agreement"), pursuant to which it was agreed that the payment deadline for the contingent payments due under the GSJV Purchase Agreement would be extended to July 16, 2017, provided that the outstanding amount would bear interest at a rate of 5% per annum, payable monthly in arrears. The first payment under the Extension Agreement was due on or before January 31, 2017. The required payments were not made and UI is in default of its obligations under the Extension Agreement and GSJV Purchase Agreement. For further updates, see below in this section and in "Legal and Regulatory Proceedings".

In February, Denison completed the APG Transaction for gross proceeds to Denison of \$43,500,000. See "Denison's Operations – Cigar Lake Toll Milling – APG Transaction".

Co-ordinated with the closing of the APG Transaction, the maturity date under the Credit Facility was extended to January 31, 2018 and the terms of the Credit Facility were amended to reflect certain changes required to facilitate an inter-creditor agreement between BNS and the parties to the APG Transaction. Amongst those changes, BNS and DMI agreed to replace a restrictive covenant to maintain \$5,000,000 on deposit with BNS with a pledge of \$9,000,000 in restricted cash or GIC's as collateral. Under the amended Credit Facility, Denison will pay letter of credit fees of 0.4% on the first \$9,000,000 (associated with the restricted cash), and 2.4% on the remaining \$13,000,000 of letters of credit issued under the facility.

Also in February, Mr. Kwang Hee Jeong was appointed to the Board as KHNP Canada's representative.

In March, Denison closed a private placement share offering, under which the Company issued, in aggregate, 18,337,000 shares of Denison for gross proceeds of \$20,000,290. The aggregate share offering was comprised of the following three elements: (a) a “Common Share” offering which consisted of 5,790,000 Shares at a price of \$0.95 per Share for gross proceeds of \$5,500,500; (b) a “Tranche A Flow-Through” offering which consisted of 8,482,000 Shares issued on a “flow-through” basis at a price of \$1.12 per Share for gross proceeds of \$9,499,840; and (c) a “Tranche B Flow-Through” offering which consisted of 4,065,000 Shares issued on a “flow-through” basis at a price of \$1.23 per Share for gross proceeds of \$4,999,950.

In April, Denison completed its winter exploration drilling in the Athabasca Basin. At Wheeler River, the winter 2017 drilling program was focused on two objectives: (1) continued infill and delineation drilling of the Gryphon deposit, in order to upgrade the estimated inferred resources to an indicated level of confidence, and (2) exploration drilling outside of the current resources estimated for the Gryphon deposit, with the aim of discovering additional resources. The winter 2017 drilling program at Wheeler River was completed with a total of 14,732 metres drilled in 26 holes. Drilling results at Wheeler River included intersections of high-grade mineralization within the D Series lenses of mineralization, located within 200 metres north and northwest of the Gryphon deposit. Other notable winter results included high grade intersections from infill drilling within the Gryphon deposit’s A, B and C series lenses, where 17 drill holes, totaling approximately 8,402 metres, were completed as part of the winter 2017 program. Winter drilling programs were also completed by the Company at Waterbury Lake (9 holes, 4,803 metres), Murphy Lake (9 holes, 3,433 metres) and Crawford Lake (1 hole, 519 metres). A further 5,029 metres of drilling was completed in 17 holes on the Wolly project by Orano Canada.

In July, Denison announced that DES had entered into a new two year services agreement with Rio Algom Limited, which is a subsidiary of BHP Billiton Limited. Pursuant to the agreement, DES will be responsible for the management and operation of nine decommissioned mine sites in Ontario and two in Quebec from July 1, 2017 to June 30, 2019, including the operation of water treatment plants and tailings management facilities; environmental monitoring and compliance, data management, and regulatory reporting; maintenance of roads, dams and electrical infrastructure; site management, including health and safety, procurement, logistics, and budgeting activities; and project management and execution for various projects, including infrastructure upgrades and replacements, engineering and environmental programs, as well as water management initiatives.

In September, Denison reported the completion of the summer exploration drilling program at the Waterbury Lake project. The summer 2017 drill program at Waterbury Lake commenced in late July and was highly successful, returning several high-grade uranium intersections from a target area located approximately 1.5 kilometres to the northeast of the property’s J Zone uranium deposit. Following the discovery of uranium mineralization in the first four drill holes of the program, the scope of the program was increased in late August to allow for a total of 9 drill holes. Of the eight drill holes designed to test for basement-hosted mineralization, seven holes intersected significant mineralization, including 9.1%  $U_3O_8$  over 3.7 metres (drill hole WAT17-446A), 1.7%  $U_3O_8$  over 7.5 metres (drill hole WAT17-449) and 1.5%  $U_3O_8$  over 4.5 metres (drill hole WAT17-450A). Taken together, the summer program included a total of 3,722 metres drilled and resulted in the wide-spaced definition (approximately 50 x 50 metre drill hole spacing) of a significant zone of entirely basement-hosted mineralization with geological features consistent with basement-hosted deposits in the Athabasca Basin. The new zone of mineralization at the Waterbury Lake project has been named the “Huskie” zone.

Also in September, Denison and KHNP Canada entered into an amended and restated strategic relationship agreement dated September 19, 2017 (the “**KHNP SRA**”), on substantially similar terms as the prior strategic relationship agreement with KEPCO. The KHNP SRA was entered into in connection with the December 2016 transfer by KEPCO of substantially all of its indirect ownership of Denison’s shares to KHNP Canada. See “Risk Factors – Potential Influence of KEPCO and KHNP”.

In November, the Company announced the completion of the summer 2017 drilling program at the Wheeler River project, including a total of 64 drill holes (totalling 29,224 metres). The drilling program was focused within, and in the immediate vicinity of, the Gryphon deposit ahead of a planned update to the mineral resource estimate for the property. Highlights from the summer drilling program included: (1) expansion of high-grade mineralization within the D series lenses; (2) discovery and expansion of the E series lenses both at the unconformity and within the upper basement; and (3) expansion of the A and B series lenses both up-dip and down dip. The Company also successfully completed the definition drilling program on the Gryphon deposit’s A, B and C series lenses, with the objective of increasing the confidence of the previously estimated mineral resources from an inferred to indicated level. A summer drilling program was also completed by the Company at Crawford Lake (4 holes, 2,068 metres) and a further 5,870 metres of drilling was completed in 20 holes on the McClean project by Orano Canada.

In December, the Company filed a Request for Arbitration under the Arbitration Rules of the London Court of International Arbitration against UI in connection with the continued failure of UI to pay to the Company the contingent consideration payable under the GSJV Purchase Agreement and the Extension Agreement, with respect to the Mongolia Transaction. See “Legal and Regulatory Proceedings”.

### **Events This Year...**

In January, the Company amended and extended its Credit Facility to January 31, 2019.

Also in January, Denison announced the results of an updated mineral resource estimate for the Gryphon deposit on the Wheeler River property. The Gryphon deposit is estimated to contain, above a cut-off grade of 0.2%  $U_3O_8$ , 61.9 million pounds of  $U_3O_8$  (1,643,000 tonnes at 1.71%  $U_3O_8$ ) in indicated mineral resources, plus 1.9 million pounds of  $U_3O_8$  (73,000 tonnes at 1.18%  $U_3O_8$ ) in inferred mineral resources. By comparison, the maiden mineral resource estimate, completed in September 2015, was comprised of inferred mineral resources of 43.0 million pounds of  $U_3O_8$  above a cut-off grade of 0.2%  $U_3O_8$  (834,000 tonnes at 2.3%  $U_3O_8$ ). With this update to the resources estimated for the Gryphon deposit, the combined indicated mineral resources estimated for the Wheeler River project increased by 88% to 132.1 million pounds  $U_3O_8$ , which will be used to support the PFS initiated for the project in July 2016 and expected to be completed during 2018. Following the update, Wheeler River retained and improved its standing as the largest undeveloped high-grade uranium project in the infrastructure rich eastern portion of the Athabasca Basin. See “Mineral Properties – Wheeler River”.

In March, Denison filed a technical report containing the updated mineral resource estimate for the Wheeler River property titled “Technical Report with an Updated Mineral Resource Estimate for the Wheeler River Property, Northern Saskatchewan, Canada” dated March 15, 2018.

Also in March, Denison completed a review of an updated mineral resource estimate for the Midwest project in the technical report titled “Technical Report with an Updated Mineral Resource Estimate for the Midwest Property, Northern Saskatchewan, Canada” dated March 26, 2018, which was publicly filed on March 27, 2018.

## THE URANIUM INDUSTRY

In 2017, the uranium industry weathered yet another difficult and somewhat volatile year. An oversupplied spot market continued to put downward pressure on the spot price of  $\text{U}_3\text{O}_8$ , despite the announcement of various production curtailments from the world's largest uranium producers. After reaching a 12-year low near US\$18.00 per pound  $\text{U}_3\text{O}_8$  in December 2016, the spot price started 2017 at US\$20.25 per pound  $\text{U}_3\text{O}_8$ , traded north of US\$26.00 per pound  $\text{U}_3\text{O}_8$  in the first quarter of the year, retreated back to the US\$20.00 per pound  $\text{U}_3\text{O}_8$  level in the third quarter, then rallied in the fourth quarter to peak at US\$26.50 per pound  $\text{U}_3\text{O}_8$  in early December 2017. After a volatile year, the spot price closed 2017 at US\$23.75 per pound  $\text{U}_3\text{O}_8$  – representing an increase of over 17% for the year.

Industry insiders have pointed to multiple reasons for the volatility in spot prices during 2017 – including negative demand side stories from nuclear heavy-weight countries like the United States, France and South Korea, continued disappointment with the rate of nuclear reactor restarts in Japan, the deferral of utility contracting activity, and an abundance of secondary supplies entering the market (including underfeeding from under-utilized enrichment plants). These negative stories were offset at various times during the year by high profile production curtailments announced by Cameco and National Atomic Company Kazatomprom (“**Kazatomprom**”). The oversupplied spot market has also weighed on the long-term contract price of uranium, which has fallen 30% over the past two years, from a price of US\$44.00 per pound  $\text{U}_3\text{O}_8$  at the beginning of 2016 to US\$31.00 per pound  $\text{U}_3\text{O}_8$  at the end of 2017. With only an estimated 75 million pounds  $\text{U}_3\text{O}_8$  contracted during 2017 (approximately 30% of the annual contract volumes seen during the 2005-2012 contracting cycle), there have been few opportunities for the market to truly discover an appropriate long-term price for uranium.

Low prices and minimal contracting volumes seem illogical when juxtaposed to statistics from the U.S. Energy Information Administration and American Nuclear Society regarding the fact that, on a net basis, more new nuclear power capacity was added to the global electricity grid during 2015 and again in 2016 than in any other year over the last 25 years. This view is bolstered by the fact that a uranium price in the low US\$20.00 per pound range puts pressure on even the lowest cost producing uranium mines in the world to turn a profit on an all-in cost basis. With demand forecasts for uranium increasing steadily through 2030, meaningful new nuclear capacity is expected to come onto the grid while the uranium mining production pipeline has been stagnated by several years of low uranium prices. Uranium prices at current levels fail to incentivize the majority of undeveloped uranium projects towards construction, and, as a result, logic would suggest that prices should be on the rise. Underpinning that logic, however, is the assumption that growing demand in the future translates into increased buying today, and an oversupplied spot market, and historically low prices, will be fixed by opportunistic buying for long-term utility needs.

Volumes in the spot market during 2017 were sporadic, varying week to week with a total volume of approximately 44 million pounds  $\text{U}_3\text{O}_8$  being traded during the year. With buyers staying on the sidelines, sellers have simply outnumbered buyers in the market and prices have battled downward pressure all year. This dynamic, combined with the reality of higher priced long term contracts falling off in the not too distant future, led to the announcement of significant production curtailments in 2017. The most notable of these curtailments being Cameco's announcement regarding the shut-down of the McArthur River mine for 10 months (or longer, depending on market conditions). The McArthur River mine is the largest and highest grade uranium mine in the world. The announced curtailment represents the removal of approximately 15 million pounds  $\text{U}_3\text{O}_8$  from the market in 2018, and up to 18 million pounds  $\text{U}_3\text{O}_8$  in future years.

Kazatomprom, the world's largest uranium producer, also declared that it would exercise restraint in 2017 and future years, having announced in early 2017 that it would cut production by 10% in 2017. Later in 2017, Kazatomprom also confirmed that it would constrain production levels for a further 3 years, through the end of 2020.

As a result of these and other production curtailments, various analysts are now expecting that the uranium market could swing to a deficit position in the near future, which would help to consume excess inventories that could otherwise leak into the market as secondary supplies. For a price recovery to be sustained, however, utility buying must resume and contracting volumes must increase as utilities work towards securing approximately 1.2 billion pounds  $U_3O_8$  in estimated uncovered uranium requirements for the period of 2018 to 2030.

Much of the uncovered future demand is estimated to come from non-U.S. utilities, as growth in nuclear energy is expected to be driven by increasing nuclear generating capacities in Asia – primarily from China and India. According to the World Nuclear Association (“WNA”), as of February 1, 2018, China had 38 operable nuclear reactors capable of producing 34.6 gigawatts of electricity. A further 20 reactors are under construction and an additional 182 reactors are either planned or proposed. Ux Consulting Company, LLC (“UxC”) estimates that 99 reactors are expected to be operable and capable of producing over 98.5 gigawatts of electricity in China by 2030. To achieve this level of production, China's fleet of nuclear reactors will have to increase by between 5 and 6 reactors each year for the next 12 years. The WNA is projecting a similar growth profile for India, where 22 reactors were operable as of February 1, 2018, capable of producing 6.2 gigawatts of power. Taken together, 65 reactors are either under construction, planned or proposed in India. UxC estimates that India could have over 15 gigawatts of nuclear energy operable by 2030, representing over 2 times as much power capacity as is currently available from nuclear. To achieve this level of production, India's fleet of nuclear reactors will have to increase by one additional reactor each year over the next 12 years.

With few economic sources of new supply able to advance through the project development pipeline, in this market, and the potential for additional production curtailments as high-priced contracts at various high-cost operations are expected to drop off in the coming years, a significant utility contracting cycle is expected to lead to the realization that current uranium prices are well below the level required to incentivize sufficient new sources of primary supply into the market. This could lead to a sustained market of rising prices, as buyers are forced to bid up the price to secure available supplies of uranium or incentivize new sources of supply into the market.

## **Uranium Demand**

The WNA reports that there are 448 nuclear reactors operable in 30 countries as of February 2018. These reactors can generate 393.1 gigawatts of electricity and supply approximately 11% of the world's electrical requirements (21% in Organisation for Economic Co-operation and Development (OECD) member countries). As of February 2018, 57 nuclear reactors are under construction in 15 countries with the principal drivers of this expansion being China (20 reactors under construction), Russia (6), India (6), UAE (4), and South Korea (4). Based on statistics from the WNA, dated February 2018, there are a total of 215 reactors that are either under construction, or planned around the world, and an additional 351 reactors that are proposed.



According to UxC's Q1 2018 Uranium Market Outlook ("**Q1 2018 Outlook**"), global nuclear power capacities are projected to increase from approximately 375 gigawatts as of November 2017 to over 446 gigawatts by 2030. UxC also estimates that annual uranium demand could grow by over 55% to more than 295 million pounds  $U_3O_8$  by 2035 from an estimated 190 million pounds  $U_3O_8$  in 2017. In the Q1 2018 Outlook, UxC estimates base case demand in 2018 to be 194.1 million pounds  $U_3O_8$ .

### **Primary Uranium Supply**

According to UxC's Q4 Outlook, uranium production for 2017 was estimated to decrease by nearly 7% year over year from 162.0 million pounds  $U_3O_8$  in 2016 to 151.1 million pounds  $U_3O_8$  in 2017. Production in 2018 is expected to decrease even further, with the Q1 2018 Outlook projecting 2018 production to drop a further 6.7% (from 2017 estimates) to only 141.1 million pounds  $U_3O_8$ . Production from Canada, Kazakhstan, Australia, Africa and the United States all declined in 2017, while production from Russia remained essentially flat. Production in Canada decreased by nearly 6% or 2.1 million pounds  $U_3O_8$ . Cigar Lake production is expected to remain constant at 18 million pounds of  $U_3O_8$  per year through 2025. McArthur River has been modeled by UxC to produce 1 million pounds of  $U_3O_8$  in 2018 (owing to the announced 10 month shut-down). Canada remains the second largest producing nation with approximately 23% of the world's production from 2017 coming from within Canada. Kazakhstan continues to be the world's largest producer of uranium, representing approximately 40% of production in 2017.

UxC estimates in its Q1 2018 Outlook that existing mine production, plus new planned and potential mine production, will increase primary uranium supply to 161.7 million pounds  $U_3O_8$  by 2020, before declining to only 115.9 million pounds  $U_3O_8$  by 2030. At its height in 2020, the projected production levels include the resumption of mining at McArthur River (estimated at 18.7 million pounds  $U_3O_8$  per year) and represents a total increase of only 7% from estimated 2017 production levels. This is in contrast to the dramatic increases in uranium demand outlined above. In past years, UxC projected that Kazakhstan was expected to continue to be one of the principal drivers for the increases in primary mine production. In the Q1 2018 Outlook, the main drivers are now limited to the resumption of mining at McArthur River and the ramp up of production at the Husab mine in Namibia. For other projects to move forward to increase UxC's production forecasts, uranium prices will need to increase appreciably to support their higher cost production profiles and the significant capital expenditures that will be required.

### **Secondary Uranium Supply**

In the Q1 2018 Outlook, primary mine production is estimated to supply approximately 73% of estimated 2018 base case demand (compared to approximately 80% in 2017). The balance of demand is expected to be supplied from secondary sources such as commercial inventories, reprocessing of spent fuel, sales by uranium enrichers and inventories held by governments, in particular the U.S. Department of Energy. In years prior to 2017, primary supplies have normally made up 85% or more of annual demand.

Excess commercial inventories, which were once one of the major sources of secondary supplies during the period from the early 1970s to the early 2000s, have largely been consumed; however, as a result of the shutdown of the German nuclear program and the continued shut down of the majority of the Japanese nuclear fleet, commercial inventories could become a more significant factor. A large source of secondary supplies continues to be government inventories, particularly in the U.S. and Russia. The disposition of these inventories may have a market impact over the next 10 to 20 years, although, the rate and timing of this material entering the market is uncertain.

Secondary supplies remain a complexity of the uranium market. The Q1 2018 Outlook forecasts that 49.7 million pounds  $U_3O_8$  will enter the market from secondary supplies in 2018, leaving a shortfall of 3.3 million pounds  $U_3O_8$  for supplies to match the base case demand scenario for 2018.

Looking ahead, UxC expects that secondary sources of supply will fall from estimated 2018 levels to 23 million pounds  $U_3O_8$  per year by 2030.

## Uranium Prices

Nuclear utilities purchase uranium primarily through long-term contracts. These contracts usually provide for deliveries to begin two to four years after they are signed and provide for delivery from four to ten years thereafter. In awarding medium and long-term contracts, electric utilities consider the producer's uranium reserves, record of performance and production cost profile, in addition to the commercial terms offered. Prices are established by a number of methods, including base prices adjusted by inflation indices, reference prices (generally spot price indicators, but also long-term reference prices) and annual price negotiations. Contracts may also contain annual volume flexibility, floor prices, ceiling prices and other negotiated provisions. Under these contracts, the actual price mechanisms are usually confidential.

The long-term demand that actually enters the market is affected in a large part by utilities' uncovered requirements. UxC estimates, in the Q1 2018 Outlook, that uncovered demand is only 4.4 million pounds  $U_3O_8$  in 2018. Uncovered demand, however, is projected by UxC to increase significantly over the period of 2018 to 2020, such that up to 27.9 million pounds remains uncovered for 2020. Annual uncovered demand rises rapidly for years after 2020, to 108.6 million pounds  $U_3O_8$  for 2025 and over 138.2 million pounds  $U_3O_8$  for 2030 (representing roughly 80% of total base case demand in those years). Taken together, nearly 1.1 billion pounds  $U_3O_8$  remain uncovered between 2018 and 2030. At 138.2 million pounds, uncovered demand in 2030 is over 35 million pounds  $U_3O_8$  more than total production expected from existing uranium mines for the same year. In order to address the rising portion of demand that is uncovered, utilities will have to return to the market and enter into long-term contracts. From 2006 to 2010, on average, 39 million pounds  $U_3O_8$  equivalent were purchased on the spot market per year and roughly 200 million pounds  $U_3O_8$  equivalent were contracted in the long term market each year. In 2017, by comparison, 43.5 million pounds  $U_3O_8$  equivalent were purchased on the spot market, and approximately 73 million pounds  $U_3O_8$  equivalent were contracted in the long term market. With low contract volumes in recent years and increasing uncovered requirements, we expect that long term contracting activity will have to increase in the near future as utilities look to secure supply and move  $U_3O_8$  through the nuclear fuel cycle in order to fuel the world's growing fleet of nuclear reactors.

The long-term price is published on a monthly basis and began the year at US\$30.00 per pound  $U_3O_8$ . On low volumes, as noted above, the long-term price increased to US\$31.00 per pound  $U_3O_8$  by the end of the year.

Electric utilities procure their remaining uranium requirements through spot and near-term purchases from uranium producers, traders and other suppliers. Historically, spot prices are more volatile than long-term prices. The spot price began the year at US\$20.25 per pound  $U_3O_8$  and ended the year at US\$23.75 per pound  $U_3O_8$ .

## Competition

The uranium industry is small compared to other commodity industries, in particular other energy commodity industries. Uranium demand is international in scope but supply is characterized by a relatively small number of companies operating in only a few countries. Production, in general, is concentrated amongst a small number of producers and is also geographically concentrated with approximately 70% of the world's production in 2017 coming from only three countries: Kazakhstan, Canada, and Australia.

Competition is somewhat different amongst exploration & development companies focused on the discovery or development of a uranium deposit. Exploration for uranium is being carried out on various continents, but expenditures by public companies have been generally concentrated in recent years in Canada, Africa and Australia. In Canada, exploration has focused on the Athabasca Basin region in northern Saskatchewan. Explorers have been drawn to the Athabasca Basin region by the high-grade uranium deposits that have produced some of the most successful uranium mines operating in the world today. Within the Athabasca Basin region, exploration is generally divided between activity that is occurring in the eastern portion of the Basin and the western portion of the Basin. The eastern Basin is a district that is defined by rich infrastructure associated with the existence of several operating uranium mines and uranium processing facilities. Infrastructure includes access to the provincial power grid and a network of provincial all weather highways. By comparison, in the western Basin, there are no operating uranium mines or processing facilities and access to the provincial power grid is not currently available. Several uranium discoveries have been made in the Athabasca Basin region in recent years, and competition for capital can be intense.

## MINERAL RESERVES AND MINERAL RESOURCES

Dale Verran, MSc, P.Geo, Pr.Sci.Nat., Denison's Vice President Exploration, who is a "Qualified Person" in accordance with the requirements of NI 43-101, is responsible for the mineral resource estimates for the Company's properties and all disclosure of scientific or technical information concerning mineral resources in this AIF, except as otherwise provided herein.

### Summary of Mineral Reserves and Mineral Resources

NI 43-101 requires mining companies to disclose mineral reserve and resource estimates using the subcategories of proven mineral reserves, probable mineral reserves, measured mineral resources, indicated mineral resources and inferred mineral resources.

The following tables show the Company's estimates of mineral reserves and mineral resources as of the date of this AIF. Such estimates are reported in the applicable technical reports prepared in accordance with NI 43-101, adjusted for mining activity where applicable. The summary information below on Denison's mineral reserve estimates was prepared from the year-end stockpile survey reported by Orano Canada, the operator of the McClean Lake joint venture.

For full details, reference should be made to the applicable technical reports for the properties.

See "Mineral Properties" for more information.

### Proven Mineral Reserve Estimates

Project/Deposit	100% Basis			Company Share <sup>5</sup>
	Tonnes	Grade % U <sub>3</sub> O <sub>8</sub>	Pounds of U <sub>3</sub> O <sub>8</sub> (,000)	Pounds of U <sub>3</sub> O <sub>8</sub> (,000)
McClean - Ore Stockpile	88,000	0.38	738	166

### Indicated Mineral Resource Estimates <sup>(1)(2)</sup>

Project/Deposit	100% Basis			Company Share <sup>5</sup>
	Tonnes	Grade % U <sub>3</sub> O <sub>8</sub>	Pounds of U <sub>3</sub> O <sub>8</sub> (,000)	Pounds of U <sub>3</sub> O <sub>8</sub> (,000)
Wheeler River - Phoenix	166,000	19.1	70,200	44,400
Wheeler River - Gryphon	1,643,000	1.7	61,900	39,200
<i>Wheeler River Subtotal</i>	<i>1,809,000</i>		<i>132,100</i>	<i>83,600</i>
McClean - Caribou	47,800	2.6	2,800	600
McClean - Sue D	122,800	1.1	2,800	600
McClean - McClean North	205,800	2.8	12,400	2,800
<i>McClean Subtotal</i>	<i>376,400</i>		<i>18,000</i>	<i>4,000</i>
Midwest - Midwest Main	453,000	4.0	39,900	10,100
Midwest - Midwest A	566,000	0.87	10,800	2,700
<i>Midwest Subtotal</i>	<i>1,019,000</i>		<i>50,700</i>	<i>12,800</i>
Waterbury - J Zone	291,000	2.0	12,800	8,200
<b>Total Indicated Mineral Resources</b>	<b>3,495,800</b>		<b>213,600</b>	<b>108,600</b>

## Inferred Mineral Resource Estimates <sup>(1)(3)</sup>

Project/Deposit	100% Basis		Pounds of U <sub>3</sub> O <sub>8</sub> (,000)	Company Share <sup>5</sup>
	Tonnes	Grade % U <sub>3</sub> O <sub>8</sub>		Pounds of U <sub>3</sub> O <sub>8</sub> (,000)
Wheeler River - Phoenix	9,000	5.8	1,100	700
Wheeler River - Gryphon	73,000	1.2	1,900	1,200
<i>Wheeler River Subtotal</i>	<i>82,000</i>		<i>3,000</i>	<i>1,900</i>
McClean - Sue D	24,200	0.39	200	0
McClean – Sue E <sup>(4)</sup>	483,400	0.69	7,300	1,600
McClean - McClean North	3,300	0.79	100	0
<i>McClean Subtotal</i>	<i>510,900</i>		<i>7,600</i>	<i>1,600</i>
Midwest - Midwest Main	793,000	0.66	11,500	2,900
Midwest - Midwest A	53,000	5.8	6,700	1,700
<i>Midwest Subtotal</i>	<i>846,000</i>		<i>18,200</i>	<i>4,600</i>
<b>Total Inferred Mineral Resources</b>	<b>1,438,900</b>		<b>28,800</b>	<b>8,100</b>

### Notes:

- (1) CIM Definitions (2014) were followed for classification of mineral resources. Mineral resources are not mineral reserves and do not have demonstrated economic viability. No mineral reserves have as yet been defined.
- (2) The indicated mineral resources were estimated at various cut-off grades. They are:
  - Phoenix: 0.80% U<sub>3</sub>O<sub>8</sub>
  - Gryphon: 0.20% U<sub>3</sub>O<sub>8</sub>
  - Caribou: 0.10% U<sub>3</sub>O<sub>8</sub>
  - Sue D: 0.10% U<sub>3</sub>O<sub>8</sub>
  - McClean North: 0.10% U<sub>3</sub>O<sub>8</sub>
  - Midwest Main: 0.10% U<sub>3</sub>O<sub>8</sub> (0.085% U)
  - Midwest A: 0.10% U<sub>3</sub>O<sub>8</sub> (0.085% U)
  - J Zone: 0.10% U<sub>3</sub>O<sub>8</sub>
- (3) The inferred mineral resources were estimated at various cut-off grades. They are:
  - Phoenix: 0.80% U<sub>3</sub>O<sub>8</sub>
  - Gryphon: 0.20% U<sub>3</sub>O<sub>8</sub>
  - Sue D: 0.10% U<sub>3</sub>O<sub>8</sub>
  - Sue E: 0.10% U<sub>3</sub>O<sub>8</sub>
  - McClean North: 0.10% U<sub>3</sub>O<sub>8</sub>
  - Midwest Main: 0.10% U<sub>3</sub>O<sub>8</sub> (0.085% U)
  - Midwest A: 0.10% U<sub>3</sub>O<sub>8</sub> (0.085% U)
- (4) The operator conducted confirmatory drilling on a portion of these mineral resources outside the designated pit and late in 2006 submitted a preliminary analysis detailing an inferred mineral resource of approximately 2 million pounds on a 100% basis in this area, as compared to the 7.3 million pounds that Scott Wilson Roscoe Postle Associates Inc. (“**Scott Wilson RPA**”), now Roscoe Postle Associates Inc., has estimated in its February 2006 technical report. Roscoe Postle Associates Inc. has not re-estimated the mineral resource using the new drill information.
- (5) As at December 31, 2017, pursuant to the terms of the agreements with its applicable joint venture partners, the Company had a 63.30% interest in the Wheeler River project, a 22.50% interest in the McClean Lake property; a 25.17% interest in the Midwest project; and a 64.22% interest in the Waterbury Lake property.
- (6) Numbers may not add due to rounding.

The tables below detail the changes to the Company's mineral reserve and mineral resource estimates from the financial year ended December 31, 2016 to March 27, 2018.

**Change to Denison's Share of Proven Mineral Reserves**  
(in thousands of pounds U<sub>3</sub>O<sub>8</sub>)

Reserves	December 31, 2016	Additions (Deletions)	March 27, 2018
McClean - Ore Stockpile	153	13 <sup>(1)</sup>	166

**Change to Denison's Share of Probable Mineral Reserves**  
(in thousands of pounds U<sub>3</sub>O<sub>8</sub>)

Reserves	December 31, 2016	Additions (Deletions)	March 27, 2018
McClean – SABRE Pond	13	(13) <sup>(1)</sup>	0

**Change to Denison's Share of Indicated Mineral Resources**  
(in thousands of pounds U<sub>3</sub>O<sub>8</sub>)

Resources	December 31, 2016	Additions (Deletions)	March 27, 2018
Wheeler River – Phoenix	42,100	2,300 <sup>(2)</sup>	44,400
Wheeler River – Gryphon	0	39,200 <sup>(2)(3)</sup>	39,200
Midwest – Midwest Main	10,800	(700) <sup>(4)</sup>	10,100
Midwest – Midwest A	1,500	1,200 <sup>(4)</sup>	2,700
Waterbury – J Zone	8,100	100 <sup>(5)</sup>	8,200

**Change to Denison's Share of Inferred Mineral Resources**  
(in thousands of pounds U<sub>3</sub>O<sub>8</sub>)

Resources	December 31, 2016	Additions (Deletions)	March 27, 2018
Wheeler River – Gryphon	25,800	(24,600) <sup>(2)(3)</sup>	1,200
Midwest – Midwest Main	100	2,800 <sup>(4)</sup>	2,900
Midwest – Midwest A	1,100	600 <sup>(4)</sup>	1,700

**Notes:**

- (1) Mineralized material was moved from the McClean SABRE Pond to the McClean Ore Stockpile during summer 2017.
- (2) The Company increased its interest in the Wheeler River project during 2017 from 60% to 63.3%, in accordance with an agreement with its WRJV JV Parties, as announced on January 10, 2017.
- (3) Also a result of the updated mineral resource estimate, and the conversion of mineral resources from the inferred to indicated categories, as described in the Wheeler Technical Report.
- (4) A result of the updated mineral resource estimate for the Midwest property, as described in the Midwest Technical Report.
- (5) The Company increased its interest in the Waterbury Lake project by 1.21% in 2017, in accordance with the terms of the Waterbury Lake Limited Partnership Agreement and other agreements with the Waterbury Lake partners.
- (6) Numbers may not add due to rounding.

## Historical Estimates

### McClean South Historical Estimate

On the McClean Lake Joint Venture property, the McClean South trend is located parallel to and approximately 500 metres south of the McClean North trend (see “Mineral Properties – McClean Lake”). There are two presently known mineralized pods which were drilled by Canadian Oxy during 1979-1980: the Southwest Pod and the Southeast Pod. The original owner of the property, Canadian Oxy, prepared estimates of tonnages, grades and contained uranium for these deposits as of 1980, which have not been verified by Denison. The results of these estimates are set out below. The Company is not treating this historical estimate as current mineral resources or mineral reserves.

### **McClean South Historical Estimates** <sup>(1)(2)</sup>

<b>Deposit</b>	<b>100% Basis</b>	<b>Grade (% U<sub>3</sub>O<sub>8</sub>)</b>	<b>Pounds of U<sub>3</sub>O<sub>8</sub> (,000)</b>	<b>Company's Share</b>
	<b>Tons (,000)</b>			<b>Pounds of U<sub>3</sub>O<sub>8</sub> (,000)</b>
Southwest Pod	47.6	2.10	2,000	500
Southeast Pod	126.7	0.73	1,900	400

**Notes:**

- (1) The historical estimates do not comply with the requirement of NI 43-101. CIM definitions are not used.
- (2) The historical estimates cannot be verified and the estimates are not necessarily indicative of the mineralization on the property.

This trend will require future evaluation to upgrade this historical estimate as a current mineral resource estimate.

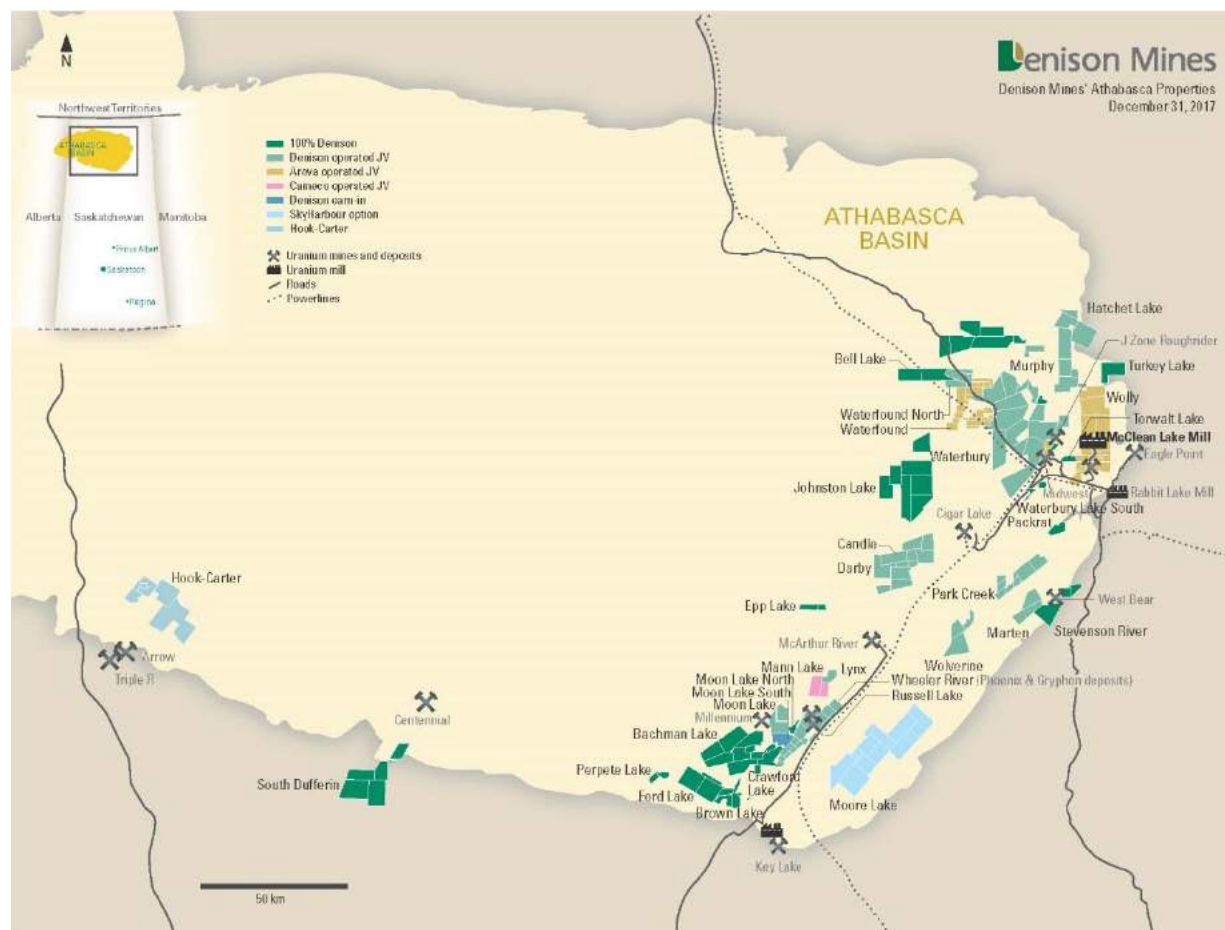
## MINERAL PROPERTIES

### Denison's Priority Properties:

• Wheeler River	Page 25
• Waterbury Lake	Page 37
• McClean Lake	Page 48
• Midwest	Page 54
• Other Exploration Properties	Page 63

Denison's priority mineral exploration properties are located in the Athabasca Basin, the majority of which are located in the eastern Athabasca Basin, which is host to existing infrastructure including uranium mines and mills, and provincial powerlines and highways (see location map, below). As of December 31, 2017, Denison has interests in 38 mineral properties in Saskatchewan, comprised of 267 claims covering 351,364 hectares.

### Location Map of Denison's Athabasca Basin Mineral Properties





## Athabasca Basin Overview

The Athabasca Basin covers an area of approximately 100,000 square kilometres in northern Saskatchewan and northeastern Alberta. The Athabasca Basin is host to the world's largest high-grade uranium mines and deposits including the McArthur River mine and Cigar Lake mine located in the eastern Athabasca Basin. The deposits are classified as unconformity-associated (also unconformity-related and -type) deposits owing to their spatial association with a major unconformable contact between a relatively undeformed Proterozoic sedimentary basin (the Athabasca Basin) and underlying metamorphosed and deformed Archean to Palaeoproterozoic basement rocks.

Since the discovery of Key Lake in 1975-1976, the Key Lake exploration model has emphasized the occurrence of uranium mineralization proximal to the sub-Athabasca unconformity at locations where graphitic pelite units in the basement meet the basal Athabasca sandstone. The graphitic pelite units are commonly intensely sheared in contrast to the physically more competent rock types that include non-graphitic pelite, semi-pelite, psammite, meta-arkose, or granite gneiss. Airborne and ground electromagnetic systems are commonly used to map conductive graphitic pelite units versus the relatively resistive and non-conductive quartz-feldspathic rock types.

However, since the discovery of the McArthur River deposit in 1988, the McArthur River exploration model has emphasized the importance of basement quartzites occurring in proximity to uranium mineralization. Highly competent quartzites provide a strong rheological contrast to other metasediments and therefore control the sites of major thrust, reverse, and strike-slip faults. Although these faults are loci for mineralization; the poor conductivity, low magnetic susceptibilities and specific gravity (density) values associated with quartzite, as well as other quartz-feldspathic rocks, limits the effectiveness of airborne and ground geophysical methods in mapping these basement units. This is particularly so when they are covered by hundreds of metres of Athabasca sandstone. Alteration haloes are typically larger than the deposit footprints, and are characterized by changes in mineralogy and major and trace elements. Therefore, the detection of alteration halos through geophysics, primarily DC resistivity surveys, and drill core lithogeochemistry and reflectance spectrometry have become increasingly important exploration methodologies.

More recently, basement-hosted deposits have become more recognized as a viable exploration target through the development of the Eagle Point mine and the discovery of deposits such as Millennium, Gryphon, Triple R and Arrow. Exploration typically requires the recognition of significant fault zones within basement metasediments (often associated with graphite) with associated clay and geochemical alteration haloes.

## Wheeler River

The Wheeler River project is owned by Denison (63.30%) and its joint venture partners, Cameco (26.70%) and JCU (10.00%) pursuant to the Wheeler River Joint Venture. Denison is the operator/manager of the project.

This project description is a summary, based on the project's technical report entitled "Technical Report with an Updated Resource Estimate for the Wheeler River Property, Northern Saskatchewan, Canada," dated March 15, 2018 (the "**Wheeler Technical Report**"), a copy of which is available on the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com). The Wheeler Technical Report was authored by Mr. Mark Mathisen, C.P.G. of Roscoe Postle Associates Inc. ("**RPA**") and Mr. Ken Reipas, P.Eng of SRK Consulting (Canada) Inc. ("**SRK Consulting**"), both of whom are independent Qualified Persons in accordance with the requirements of NI 43-101.

The Wheeler Technical Report describes the results of the PEA undertaken by the Company on the Wheeler River project with an effective date of March 31, 2016, which is based on the mineral resource estimates for the Gryphon deposit effective September 25, 2015 and the Phoenix deposit effective May 28, 2014. The Wheeler Technical Report also includes the results from an update to the estimated mineral resources for the Gryphon Deposit effective January 30, 2018. The impact of the updated estimated mineral resources have not been reflected in the PEA for the Wheeler River project. Denison anticipates incorporating the updated mineral resource estimate for the Gryphon deposit in the PFS for the Property. Work related to the PFS was commenced in 2016, following the release of the PEA, and is expected to be completed during 2018.

The conclusions, projections and estimates included in this description are subject to the qualifications, assumptions and exclusions set out in the technical report. We recommend you read the technical report in its entirety to fully understand the project.

### Property Description, Location and Access

The property is located along the eastern edge of the Athabasca Basin in northern Saskatchewan, Canada and is located approximately 35 km north-northeast of the Key Lake mill and 35 km southwest of the McArthur River uranium mine.

Access to the property is by road or air from Saskatoon. The property is well located with respect to all-weather roads and the provincial power grid. Vehicle access to the property is by the provincial highway system to the Key Lake mill then by the ore haul road between the Key Lake and McArthur River operations to the eastern part of the property. An older access road, the Fox Lake Road, between Key Lake and McArthur River, provides access to most of the northwestern side of the property. Gravel and sand roads and drill trails provide access by either four-wheel-drive or all-terrain-vehicle to the rest of the property.

The property consists of 19 mineral claims totaling 11,720 hectares, with an annual assessment requirement of \$293,000 to maintain title to the mineral claims. Based on previous work submitted and approved by the province of Saskatchewan, there is sufficient assessment credits available to keep title on the property secure until 2035.

Any uranium produced from the Wheeler River property is subject to uranium mining royalties in Saskatchewan in accordance with Part III of The Crown Mineral Royalty Regulations. See

"Government Regulation - Canadian Royalties." There are no other back-in rights or royalties applicable to this property.

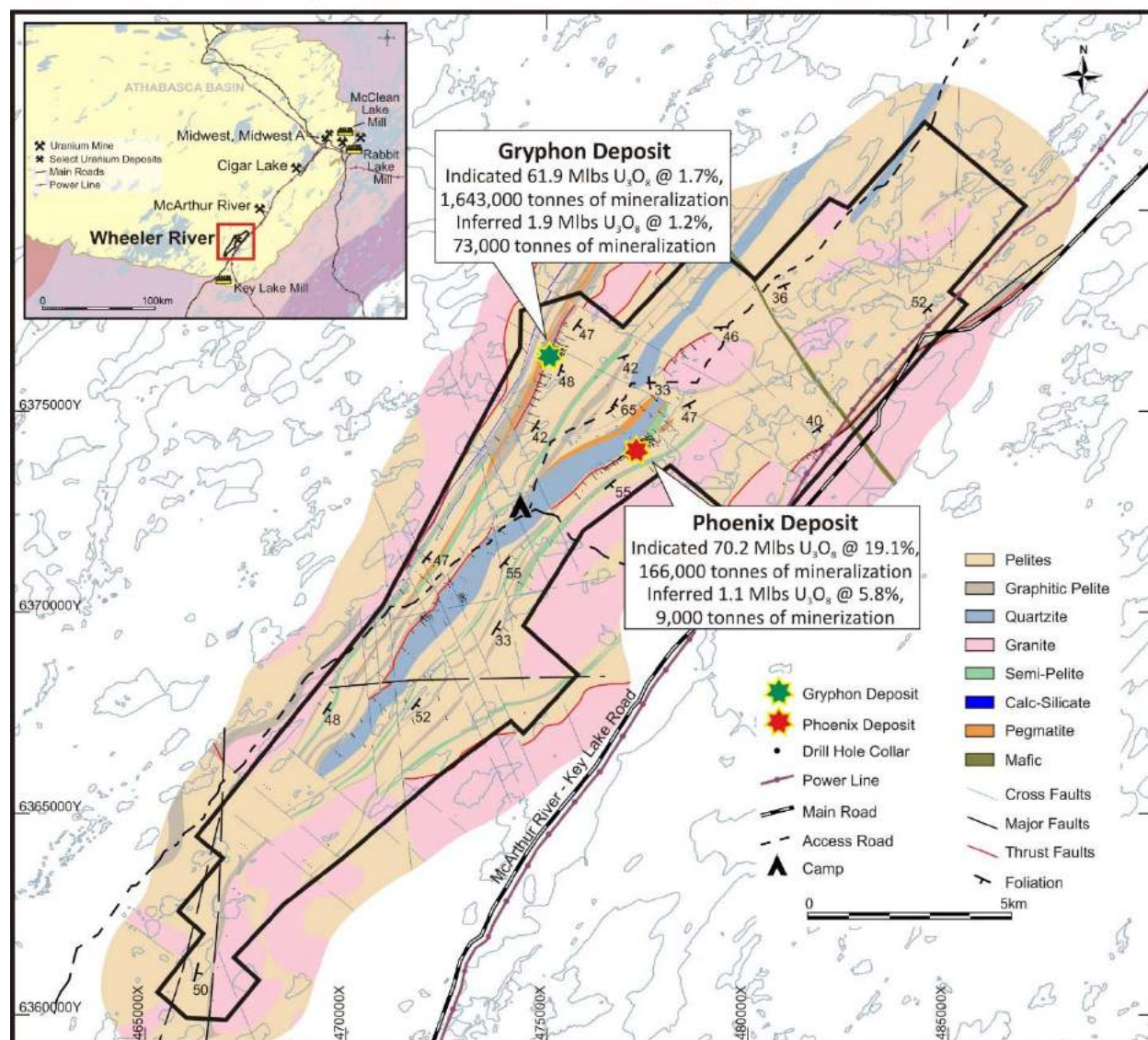
There are no known environmental liabilities associated with the property, and there are no other significant factors and risks that may affect access, title, or the right or ability to perform work on the property. All the necessary permits for surface exploration on the property are in place and current.

The Province of Saskatchewan and the Athabasca Basin communities have a long history of supporting the uranium industry. In 2016 Denison initiated community engagement activities with stakeholder groups, including discussions regarding employment and business opportunities, and the discussions and meetings have overall been very positive.

### Location and Basement Geology Map, Showing Regional Infrastructure.

#### Wheeler River Property Location and Geology

**Denison Mines**



## History

The Wheeler River property was staked on July 6, 1977, due to its proximity to the Key Lake uranium discoveries, and was vended into an agreement on December 28, 1978 between AGIP Canada Ltd., E&B Explorations Ltd. and Saskatchewan Mining Development Corporation, with each holding a one-third interest. On July 31, 1984, each party divested a 13.3% interest and allowed Denison Mines Limited, a predecessor company to Denison, to earn in to a 40% interest.

In late 2004, Denison entered into an agreement to earn a further 20% interest by expending \$7,000,000 within six years. At that time, Denison became the project operator. In 2007, when the earn-in obligations were completed, the participating and ownership interests were Denison 60%; Cameco 30%, and JCU 10% and they remained that way up to the end of 2016. In January 2017, Denison, Cameco and JCU executed an agreement, pursuant to which the JV Parties have agreed to allow for a one-time election by Cameco to fund 50% of its ordinary share (30%) of joint venture expenses in 2017 and 2018. The shortfall in Cameco's contribution will be funded by Denison, in exchange for a transfer to Denison of a portion of Cameco's interest in the WRJV. Accordingly, Denison's share of joint venture expenses is 75% in 2017 and 2018, and Cameco and JCU's participating share of joint venture expenses is 15% and 10%, respectively. As a result of that agreement, at December 31, 2017, the ownership interests were Denison 63.3%, Cameco 26.7% and JCU 10%.

Historical drilling campaigns were reconnaissance in nature and were largely designed to test electromagnetic conductors, interpreted to represent graphite-rich basement rocks at the sub-Athabasca unconformity, in widely-spaced holes typically 300 to 600 metres apart. Historical drilling statistics included:

1979 – 1984	AGIP Canada Ltd.	61 holes	(19,646 metres)
1985 – 1989	SMDC	57 holes	(24,430 metres)
1995 – 2004	Cameco	37 holes	(19,265 metres)

During its operatorship, Cameco (formerly SMDC) had identified a major geological unit termed the "quartzite ridge" and had noted extensive dravite (boron) alteration in the overlying sandstones. Cameco also discovered several uranium mineralized intercepts that occurred in a variety of geological settings throughout the property.

## Geological Setting, Mineralization and Deposit Types

The Wheeler River property is located near the southeastern margin of the Athabasca Basin in the southwest part of the Churchill Structural Province of the Canadian Shield. The Athabasca Basin is a broad, closed, and elliptically shaped, cratonic basin with an area of 425 km (east-west) by 225 km (north-south). The bedrock geology of the area consists of Archean and Paleoproterozoic gneisses unconformably overlain by up to 1,500 m of flat-lying, unmetamorphosed sandstones and conglomerates of the mid-Proterozoic Athabasca Group. The property is located near the transition zone between two prominent litho-structural domains within the Precambrian basement, the Mudjatik Domain to the west and the Wollaston Domain to the east. The Mudjatik Domain is characterized by elliptical domes of Archean granitoid orthogenesis separated by keels of metavolcanic and metasedimentary rocks, whereas the Wollaston Domain is characterized by tight to isoclinal, north-easterly trending, doubly plunging folds developed in Paleoproterozoic metasedimentary rocks of the Wollaston Supergroup, which overlie Archean granitoid orthogenesis identical to those of the Mudjatik Domain. The area is cut by a major northeast-striking fault system of Hudsonian Age. The faults occur predominantly in the basement rocks but often extend up into the Athabasca Group due to several periods of post-depositional movement.

Local geology is comprised of little-deformed late Paleoproterozoic to Mesoproterozoic Athabasca Group strata comprised of Manitou Falls Formation sandstones and conglomerates which unconformably overlie the crystalline basement and have a considerable thickness from 170 metres over the quartzite ridge to at least 560 metres on the western side of the Property. Basement rocks beneath the Phoenix and Gryphon deposits are part of the Wollaston Domain and are comprised of metasedimentary and granitoid gneisses. The metasedimentary rocks belong to the Wollaston Supergroup and include graphitic and non-graphitic pelitic and semipelitic gneisses, meta-quartzite, and rare calc-silicate rocks together with felsic and quartz feldspathic granitoid gneisses. Pegmatitic segregations and intrusions are common in all units with garnet, cordierite, and sillimanite occurring in the pelitic strata, indicating an upper amphibolite grade of metamorphism. Graphitic pelite and quartzite units appear to play important roles in the genesis of Athabasca Basin unconformity-type deposits. Thus the presence of extensive subcrop of both units: 18 kilometres of quartzite and 152 line-kilometres of conductors (assumed to be graphitic pelite), greatly enhances the economic potential of the Wheeler River property. The Wheeler River property is partially covered by lakes and muskeg, which overlie a complex succession of glacial deposits up to 130 metres in thickness. These include eskers and outwash sand plains, well-developed drumlins, till plains, and glaciofluvial plain deposits. The orientation of the drumlins reflects southwesterly ice flow.

The Phoenix uranium deposit was discovered in 2008 and can be classified as an unconformity-related deposit of the unconformity-hosted variety. The deposit straddles the sub-Athabasca unconformity approximately 400 metres below surface and comprises three zones (A, B, C) which cover a strike length of 1.1 kilometres. The deposit comprises an exceptionally high grade core surrounded by a lower grade shell. The deposit is interpreted to be structurally-controlled by the WS shear, a prominent basement thrust fault which occurs footwall to a graphitic-pelite and hangingwall to a garnetiferous pelite and quartzite unit. Mineralization within the Phoenix deposit lenses is dominated by massive to semi-massive uraninite associated with an alteration assemblage comprising hematite, dravitic tourmaline, illite and chlorite. Secondary uranium minerals, including uranophane, and sulphides are trace in quantity.

The Gryphon uranium deposit was discovered in 2014 and can be classified as an unconformity-related deposit of the basement-hosted variety. It is located 3 kilometres northwest of the Phoenix deposit. The deposit occurs within southeasterly dipping crystalline basement rocks of the Wollaston Supergroup below the regional sub-Athabasca Basin unconformity. The deposit is located from 520 to 850 metres below surface and has an overall strike length of 610 metres, dip length of 390 metres and varies in thickness between 2 and 70 metres, depending on the number of mineralized lenses present. The mineralized lenses are controlled by reverse fault structures which are largely conformable to the basement stratigraphy and dominant foliation. The A, B and C series of lenses comprise stacked, parallel lenses which plunge to the northeast along a fault zone ("G-Fault") which occurs between hanging wall graphite-rich pelitic gneisses and a more competent pegmatite-dominated footwall. A ubiquitous zone of silicification ("Quartz-Pegmatite Assemblage") straddles the G-Fault and the A, B and C series of lenses occur hanging wall, within, and footwall to the Quartz-Pegmatite Assemblage respectively. The D series of lenses occur within the pegmatite-dominated footwall along a secondary fault zone ("Basal Fault") or within extensional relay faults which link to the G-Fault. The E series of lenses occur along the G-Fault, up-dip and along strike to the northeast of the A and B series lenses, within the upper basement or at the sub-Athabasca unconformity. Mineralization within the Gryphon deposit lenses is dominated by massive, semi-massive or fracture-hosted uraninite associated with an alteration assemblage comprising hematite, dravitic tourmaline, illite, chlorite and kaolinite. Secondary uranium minerals, including uranophane and carnotite, and sulphides are trace in quantity.

## Exploration

From 2005 to the end of 2017, Denison has conducted numerous geophysical surveys across the property, in order to generate drill targets. Airborne surveys have included two electromagnetic surveys (totaling 2,005 line kilometres) and one gravity survey (totaling 1,711 line kilometres). Ground surveys have included four electromagnetic surveys (488 line kilometres), 10 resistivity surveys (979 line kilometres), two gravity surveys (2,920 stations) and 42 downhole geophysical surveys.

## Drilling

From 2005 to the end of 2017, Denison has completed 330,540 metres of diamond drilling in 655 holes on the Wheeler River property. The majority of this drilling has been focused on the discovery and delineation of the Phoenix (251 holes totaling 115,948 metres) and Gryphon (214 holes totaling 120,351 metres) deposits.

### *Discovery and Delineation of the Phoenix Deposit*

In the summer of 2008, as a direct result of the 2007 DC resistivity survey along the hanging wall of the quartzite ridge, two drill holes were located 600 metres apart along the same low resistivity trend. This drilling intersected a zone of characteristic sandstone alteration and uranium mineralization linked to unconformity-associated uranium deposits. All drill holes during the summer of 2008 intersected either uranium mineralization or very strong alteration close to mineralization.

Subsequent drilling programs conducted during 2009 and 2010 extended the mineralized zone for a strike length of greater than 900 metres. An initial mineral resource estimate was completed at the end of 2010. Aggressive drilling programs in 2011 and 2012 successfully added additional mineral resources. In 2013, drilling was completed at the Phoenix deposit, but a large portion of the 2013 Wheeler River drilling program was also allocated to exploration of several other target areas on the property. Some additional infill drilling was completed at the Phoenix deposit in early 2014, and this work was successful in extending some high grade mineralization into areas previously modeled as low grade. These results, combined with results from 2013 were the catalyst for an updated mineral resource estimate for the Phoenix deposit in June 2014.

### *Discovery and Delineation of the Gryphon Deposit*

In March 2014, drill hole WR-556 resulted in discovery of the Gryphon deposit, intersecting uranium mineralization averaging 15.33%  $U_3O_8$  over 4.0 metres in basement graphitic gneiss, 200 metres below the sub-Athabasca unconformity. The Gryphon deposit occurs on the K-North trend, which exhibits numerous favourable exploration criteria including basement quartzite and graphitic gneisses, basement structures, reverse offsets of the unconformity, weak basement hosted mineralization near the unconformity, and anomalous sandstone geochemistry and alteration.

Historical holes ZK-04 and ZK-06 drilled in the late 1980s, along the K-North trend, targeted unconformity-related mineralization and intersected favourable sandstone structure and alteration as well as alteration and weak mineralization in the basement approximately 35 metres below the unconformity. Follow-up drilling campaigns attempted to locate unconformity mineralization up dip of the weak basement mineralization. Gryphon deposit discovery drill hole WR-556 was the first to evaluate the down dip projection of these intersections into the basement.

Since the discovery hole at Gryphon, subsequent drilling campaigns in 2014 and 2015 were completed and an initial resource estimate was released in November 2015. Additional mineralization was discovered immediately northeast of Gryphon in 2016. Continued drilling during 2016 and 2017 was focused on expanding the mineral resources at Gryphon and increasing the level of confidence from an inferred to indicated category. An updated mineral resource estimate for the Gryphon deposit was announced in January 2018.

#### Sampling, Analysis and Data Verification

See “Athabasca Exploration: Sampling, Analysis and Data Verification” for details.

#### Mineral Processing and Metallurgical Testing

The results of the 2016 PEA, as detailed in the Wheeler Technical Report, is based on the assumption that mill feed from Wheeler River will be trucked to an existing uranium mill in northern Saskatchewan for processing under a custom milling agreement. In connection with that, preliminary process test work was completed for the Phoenix deposit in 2014, and for the Gryphon deposit in 2015.

The metallurgical test results indicate the Gryphon and Phoenix deposits are suitable for processing through the McClean Lake mill. Overall uranium process recovery has been estimated at 97.0% for Gryphon (due to lower grade), while Phoenix recovery is estimated at 98.1%. More details of the test work include:

#### *Gryphon Test Work Result Highlights:*

- The Gryphon composite sample contained 3.36%  $U_3O_8$ .
- Uraninite is the primary uranium mineral. It is associated mainly with phyllosilicates/clays minerals, followed by uraninite-illite intergrowth, quartz, tourmaline (dravite) and complex intergrowths.
- Acid leaching at grinding size of P100=300  $\mu m$  would be effective for extraction of uranium.
- The five leaching tests showed that 95.4% to 98.8% of uranium can be extracted in 8 hours and 98.6% to 99.2% in 12 hours, depending on leaching conditions.
- The following leaching conditions are recommended: Temperature: 50° C, Pressure: atmospheric, Free Acid: 18.7 g/L, ORP:  $\geq 450$  mV, Residence Time: minimum 8 hours with  $Fe_{3+}$  addition or 12 hours without  $Fe_{3+}$  addition, Oxidant: 30% hydrogen peroxide, Acid:  $H_2SO_4$ , Pulp Density: 50% solids,  $Fe_{3+}$  addition: 1 g/L.
- The acid consumption was 11.3 kg/t ore. With  $Fe_{3+}$  addition of 1g/L, leaching kinetics were enhanced, with 98.4% and 98.8% uranium extraction in 4 and 8 hours respectively.
- Magnafloc 351 can be used to accelerate the settling of leach residue in the solid/liquid separation. The settled densities ranged from 37.1% to 44.8% solids, with highest density achieved under conditions of grinding size of P100=300  $\mu m$  and low residual acid strength from leaching.
- Solvent extraction is effective to selectively extract and purify uranium.
- No abnormal challenges are expected for effluent treatment based on the raffinate composition.
- The total digestion analysis for the  $U_3O_8$  sample shows that high purity  $U_3O_8$  product can be produced by stripping with ammonium sulfate-ammonium hydroxide solution, yellow cake precipitation with ammonium hydroxide solution followed by calcination. The calcined  $U_3O_8$  product meets all specifications on ASTM C967-13, “Standard Specifications for Uranium Ore Concentrate.”



### *Phoenix Test Work Result Highlights:*

- The Phoenix composite sample contained 19.7%  $\text{U}_3\text{O}_8$ .
- Uraninite is the primary uranium mineral. It is associated mainly with clay minerals like illite; with sulfides and iron oxides; and to a lesser extent with quartz and carbonate minerals.
- Over 95% of the uraninite is exposed in all the size fractions. This indicates a relatively coarse grind size can be used for leaching.
- Leaching tests showed that over 99.5% uranium can be extracted in 8-12 hours depending on leaching conditions. The following leaching conditions are recommended: Temperature: 50° C, Pressure: atmospheric, Terminal Free Acid: 30 g/L, ORP:  $\geq 450$  mV, Residence Time: 8-12 hours, Oxidant: sodium chlorate or hydrogen peroxide, Acid:  $\text{H}_2\text{SO}_4$ , Pulp Density: 50% solids.
- The acid consumption in the preliminary leaching program was 70-75 kg/t ore or 1.6-1.7 kg/ lb  $\text{U}_3\text{O}_8$ .
- Magnafloc 351 can be used to accelerate the settling of leach residue solids in the counter current decantation (CCD) solid/liquid separation.
- Solvent extraction (SX) is effective to selectively extract and purify uranium.
- No abnormal challenge is expected for future effluent treatment based on the raffinate composition.
- The total digestion analysis of the yellow cake (YC) sample shows that high purity YC product can be produced through strong acid SX stripping, gypsum precipitation, and hydrogen peroxide uranium precipitation.

### Mineral Reserve and Mineral Resource Estimates

RPA, an independent technical consulting firm with relevant experience, was retained by Denison on behalf of the Wheeler River Joint Venture to prepare and audit the mineral resource estimates for the Gryphon and Phoenix deposits in accordance with CIM Definition Standards (2014) in NI 43-101. The Wheeler Technical Report contains a combined mineral resource estimate for the Wheeler River project, with effective dates for the mineral resource estimates for the Gryphon and Phoenix deposits of January 30, 2018 and May 28, 2014, respectively. See “Mineral Reserves and Mineral Resources”, above, for a summary of the combined mineral resource estimate for the Wheeler River project.

### *Phoenix Deposit Estimation Methodology*

Geology, structure, and the size and shape of the mineralized zones have been interpreted using data from 243 diamond drill holes which resulted in three dimensional wireframe models that represent 0.05%  $\text{U}_3\text{O}_8$  grade envelopes. The mineralization model consists of a higher grade zone within an envelope of lower grade material, resulting in two main estimation domains - higher grade and lower grade. Additionally, a new domain representing a small zone of structurally controlled basement mineralization was added at the north end of the deposit.

Based on 196 dry bulk density determinations, Denison developed a formula relating bulk density to uranium grade which was used to assign a density value to each assay. Bulk density values were used to weight grades during the resource estimation process and to convert volume to tonnage.

Uranium grade times density (GxD) values and density (D) values were interpolated into blocks in each domain using an inverse distance squared (ID2) algorithm. Hard domain boundaries were



employed such that drill hole grades from any given domain could not influence block grades in any other domain. Very high grade composites were not capped but grades greater than a designated threshold level for each domain were subject to restricted search ellipse dimensions in order to reduce their influence. Block grade was derived from the interpolated GxD value divided by the interpolated D value for each block. Block tonnage was based on volume times the interpolated D value.

The mineral resource estimate for the Phoenix deposit was classified as indicated and inferred based on drill hole spacing and apparent continuity of mineralization. The block models were validated by comparison of domain wireframe volumes with block volumes, visual comparison of composite grades with block grades, comparison of block grades with composite grades used to interpolate grades, and comparison with estimation by a different method.

### *Gryphon Deposit Estimation Methodology*

The three-dimensional mineralized wireframes were created by Denison utilizing Gemcom software following detailed interpretation of the deposit geology and structure. The wireframes were defined using a threshold of 0.05%  $U_3O_8$  and minimum thickness of two metres. One higher grade domain was defined within the A1 lenses and three higher grade domains were defined in the D1 lenses based on a threshold of 4.0%  $U_3O_8$ . The wireframes and drilling database were sent to RPA for grade modelling following QAQC which included ensuring the wireframes were 'snapped' to the drill hole mineralized intervals.

Based on 279 dry bulk density determinations, a polynomial formula was determined relating bulk density to uranium grade which was used to assign a density value to each assay. Bulk density values were used to weight grades during the resource estimation process and to convert volume to tonnage. Uranium grade multiplied by density (GxD) values and density (D) values were interpolated into blocks measuring 5 metres by 1 metre by 2 metres using an inverse distance squared (ID2) algorithm since variograms were not considered good enough to derive kriging parameters. Hard domain boundaries were employed at the wireframe edges, so that blocks within a given wireframe were only informed by grade data from that wireframe. For the A1 high-grade domain, assays were capped at 30%  $U_3O_8$  with a search restriction applied to composite grades over 20% and for the D1 high-grade domains, assays were capped at 20%  $U_3O_8$  with no search restriction. For the A1-A4, B3-B7, C4-C5 and D2-D4 low-grade domains, assays were capped at 10%  $U_3O_8$ . For the C1 low-grade domain, assays were capped at 20%  $U_3O_8$  with a search restriction applied to composite grades over 10%. For the B1, B2, E1 and E2 low-grade domains, assays were capped at 15%  $U_3O_8$  with search restrictions applied to composite grades over 10%  $U_3O_8$  for the B1 domain and 5.0%  $U_3O_8$  for the E2 domain. For the D1 low-grade domain, assays were capped at 5%  $U_3O_8$ . Block grade was derived from the interpolated GxD value divided by the interpolated D value for each block. Block tonnage was based on volume times the interpolated D value.

The mineral resource estimate for the Gryphon deposit was classified according to the drill hole spacing and the apparent continuity of mineralization, as either indicated mineral resources (generally, drill hole spacing of 25 x 25 metres) or inferred mineral resources (generally, drill hole spacing of 50 x 50 metres). The block models were validated by comparison of domain wireframe volumes with block volumes, visual comparison of composite grades with block grades, comparison of block grades with composite grades used to interpolate grades, and comparison with estimation by a different method.

## Mining Operations

Due to the similarities between the Phoenix and Cigar Lake deposits, for the purposes of the 2016 PEA the Jet bore system (JBS) mining was selected for the high grade Phoenix Zones A and B1, similar to the mining method utilized at the Cigar Lake mine. This methodology requires a freeze wall to eliminate the potential for ground water to flow into the mine as well as improve the strength of the host rock. In the JBS mining method an access drift is established directly below the mineralization. A pilot hole is drilled up into the mineralization, equipped with a rotating high pressure water jet capable of cutting the surrounding mineralization. A slurry of water and loose broken rock flows by gravity out of the cavity created, down into a receiving car next to the jet bore machine. At the Cigar Lake mine, the JBS method has successfully excavated cavities in the range of 4 to 7 metres in diameter. Mined out cavities will be filled with concrete that withstands the force of the water jet when an adjacent cavity is mined. The JBS method allows for mine operators to carry out their work in a protective environment to ensure exposure to high grade mineralization is minimized for all personnel.

The Gryphon deposit is located in the granitic basement rocks. The ground conditions are generally good with localized areas of poorer quality ground typically associated with faulting or other geological structures. The orebody consists of stacked parallel lenses dipping at 55 degrees. Extensive geotechnical and hydrogeological programs have been completed to fully assess the ground conditions surrounding the deposit. The physical properties of the orebody and host lead to a selection of conventional longhole open stoping with backfill as the optimum mining method for the Gryphon deposit.

## Processing and Recovery Operations

The PEA assumes concurrent processing of Wheeler ores along with 18M lbs / year of Cigar Lake ores. Currently the McClean mill capacity consists of 18 M lb  $U_3O_8$ /yr milling of high grade Cigar Lake Phase 1 feed through the #2 leach circuit, while a notional 4 to 6 M lb  $U_3O_8$ /yr of co-milling capacity exists in the #1 leach circuit for a total leach capacity of 22 M lb  $U_3O_8$ /yr.

In order to co-mill the full tonnage of the Gryphon deposit feed with the Cigar Lake Phase 1 feed, expansion of the #1 leaching circuit and solid/liquid separation circuits' capacities are required. The McClean Lake #1 leach circuit currently has insufficient retention capacity to provide the estimated required retention time for leaching. One or two additional tanks would be required to augment the existing capacity to efficiently process the Gryphon deposit feed.

The counter current decantation (CCD) circuit used for solid-liquid separation at McClean Lake is anticipated to be a bottleneck in mill production. A conventional approach to wash poorly settling solids is pressure filtration. For the PEA base case to reach full Cigar Lake Phase 1/Gryphon co-milling capacity within the design recovery rate, two new pressure filters are proposed to supplement the existing CCD thickener circuit. The proposed solid-liquid separation operation is as follows:

- Cigar Lake leach residue slurry from the primary thickener underflow feeds to a new dedicated high grade pressure filter; the washed cake is sent directly to tailings neutralization.
- Gryphon leach residue slurry is split into coarse and fine fractions using a hydrocyclone, and then:
  - the coarse fraction is sent to the existing CCD thickener circuit (this way, CCD tonnage is reduced to an acceptable rate and settling performance is improved at the same time); and

- the fine fraction is sent to a new low grade pressure filter. The washed cake is sent directly to tailings neutralization.

To co-mill the full tonnage of the Phoenix zone feed with the Cigar Lake Phase 2 feed, some minor re-configurations of the slurry receiving, leaching, and solid/liquid separation circuits are required. After the pregnant solution is separated from the leached solids residue, the downstream circuits (clarification, SX, carbon columns, precipitation, calcining, packaging, crystallization) are assumed from stated expansion plans to be capable of processing 24 M lb U<sub>3</sub>O<sub>8</sub>/yr.

#### Infrastructure, Permitting and Compliance Activities

As a remote northern greenfield site, the Wheeler River project would require substantial infrastructure to support operations. The site is located within 6 kilometres of a provincial highway and powerline. Tie-ins to that infrastructure into site would be required. Additional surface infrastructure required to be located at the sites would include:

- Production shaft, hoist house and headframe, and ventilation raise
- Main fresh air fans and mine air heater
- Full service camp
- Mine building including administration offices, change house, maintenance shop, warehouse, emergency services, laboratories,
- Electrical sub-station supplied by a new overhead power supply line
- Back-up diesel power generators
- Water supply and water treatment plant and ponds
- Waste rock storage facilities
- Fuel storage
- Backfill plant
- Freeze plant
- Ore handling facilities

In terms of environmental matters, there are no recognized environmental fatal flaws associated with this project. Similar operations currently active have shown any environmental concerns can be successfully mitigated. Preliminary baseline data collection is in progress and no concerns have been identified. All potential environmental impacts can be successfully mitigated through the implementation of industry best practices. The most significant environmental concern associated with the project will be the management of routine and non-routine mine water effluent.

From a regulatory perspective, the project will require completion of a federal and provincial environmental assessment. This assessment will be completed as a joint environmental assessment. It is estimated the assessment will require approximately 24 to 36 months to complete following the submission of a detailed project description. See “Government Regulation – Environmental Assessments” for more information.

#### Capital and Operating Costs

For the PEA, the Wheeler River project total capital cost estimate is \$1,103 million including a contingency of 26%. The total capital cost estimate is split between \$560 million of initial capital and \$543 million of sustaining capital.

<b>Capital Cost Area</b>	<b>Initial \$M</b>	<b>Sustaining \$M</b>	<b>Total \$M</b>
Owners Costs	\$25	\$0	\$25
Surface Infrastructure	\$167	\$7	\$174
Mine	\$219	\$335	\$554
Plant Feed Handling & Processing	\$18	\$60	\$78
Decommissioning	\$0	\$40	\$40
Subtotal	<b>\$429</b>	<b>\$442</b>	<b>\$871</b>
Contingency	\$131	\$101	\$232
<b>Total Capital (\$M)</b>	<b>\$560</b>	<b>\$543</b>	<b>\$1,103</b>

Capital costs are expressed in 2015 Canadian dollars to a bottom line accuracy of +/- 40%. Initial capital costs are based on the five-year period from January 1, 2021 through to December 31, 2025. Sustaining capital costs are for the period from January 1, 2026 through to the end of 2041.

Operating costs for Wheeler have been factored based on similar operations.

<b>Operating Cost Area</b>	<b>CAD / lb U<sub>3</sub>O<sub>8</sub></b>	
	<b>Gryphon</b>	<b>Phoenix</b>
Mining	\$3.45	\$17.45
Surface Transportation	\$1.63	\$0.85
Processing	\$8.03	\$6.03
Toll Milling Fee	\$2.00	\$2.00
General & Administration	\$4.17	\$3.57
<b>Total<sup>(1)</sup></b>	<b>\$19.28</b>	<b>\$29.90</b>

**Note:**

(1) US\$14.28 and US\$22.15, respectively, using the PEA exchange rate of 1.35 CAD/USD.

Because of the long lead time to production (estimated to be 2026 in the PEA), the PEA considers the following two pricing scenarios, both sourced from UxC: (1) a Base case scenario using a long-term contract price of US\$44.00 per pound U<sub>3</sub>O<sub>8</sub> as of March 28, 2016; and (2) a Production case price sensitivity using a long-term contract price of US\$62.60 per pound U<sub>3</sub>O<sub>8</sub> for the year 2026 (based on UxC's Uranium Market Outlook Q1 2016) when the project production period begins. These prices have been converted to CAD using an exchange rate of 1.35 CAD / USD based on Bloomberg long term projections as of February 2016.

The project economics have been further analyzed on a pre-tax basis (100% basis) and a Denison specific post-tax basis (60% basis, based on Denison's ownership interest as at the PEA date). A summary of the results is as follows:

*Pre-tax (100% basis) economic results:*

- Internal rate of return (IRR): Base case = 20.4% / Production Case = 34.1%;
- Net present value (NPV) at 8% discounting: Base case = \$513 million / Production case = \$1,420 million;
- Pay-back period (from the start of production): Base case = approximately 3 years / Production case = approximately 18 months; and
- The break-even price for the project is estimated at approximately US\$34 per pound U<sub>3</sub>O<sub>8</sub> under the Base case scenario.

*Denison specific post-tax (60% basis) economic results:*

- Internal rate of return (IRR): Base case = 17.8% / Production Case = 29.2%; and
- Net present value (NPV) at 8% discounting: Base case = \$206 million / Production case = \$548 million;

### Exploration, Development and Production

Denison expects to complete a PFS for the Wheeler River property during 2018. The PFS will be based upon the combined indicated mineral resources for the project, which includes the Phoenix and Gryphon deposits, as reflected in the Wheeler Technical Report. Denison has retained Stantec Consulting Inc. ("Stantec"), ENGCOMP Engineering and Computing Professionals Inc. ("ENGCOMP") and Hatch Ltd., as leading engineering and consulting firms, to lead and author the PFS and to support the Company's in-house project development team in the completion of the PFS. The PFS is expected to evaluate production potential from both the Gryphon and Phoenix deposits while utilizing Denison's McClean Lake mill.

The PFS will evaluate Gryphon production using a conventional longhole mining program and assess innovative extraction techniques for the Phoenix deposit. Mineral processing activities are expected to take advantage of the capacity available at the McClean Lake facility with limited capital upgrade requirements. With the already established regional infrastructure (mill, provincial highway, provincial power line, supply chain, etc.) initial capital costs are expected to be well below comparables in the industry. If determined achievable, low capital costs, combined with high grades and low operating expenses, could lead to an economically robust project that is able to thrive in difficult market conditions.

The PFS is expected to be completed in 2018. Following the completion of the PFS, the next steps are expected to be the initiation of a formal Federal and Provincial Environmental Assessment Process.

With 97% of the project's mineral resources classified as indicated mineral resources, exploration drilling during 2018 will focus on step-outs along strike of Gryphon and testing of high priority regional targets. The Gryphon deposit remains open in numerous areas with a significant amount of potential for future resource growth. Priority exploration target areas include: (1) Along strike to the northeast of the E series lenses, where both unconformity and basement potential exists; (2) Down plunge of the A and B series lenses; (3) Along strike to the northeast and southwest of the D series lenses; and (4) Within the currently defined D series lenses, where additional high-grade shoots may exist.

Very little regional exploration has taken place on the property in recent years, with drilling efforts focused on the Phoenix and Gryphon deposits, which were discovered by Denison in 2008 and 2014 respectively. The property is host to numerous uranium-bearing lithostructural corridors which are under- or unexplored and have the potential for additional large, high-grade unconformity or basement hosted deposits. The 2018 exploration program will see renewed focus along these corridors to follow-up on previous mineralized drill results, or to test geophysical targets identified from recent surveys.

## Waterbury Lake

The Waterbury Lake property is owned by Denison (64.22%) and Korea Waterbury Uranium Limited Partnership (“**KWULP**”) (35.76%), as limited partners in the Waterbury Lake Uranium Limited Partnership (“**WLULP**”) (with a 0.02% interest held by the Denison and KWULP -owned Waterbury Lake Uranium Corporation, as general partner of the WLULP), pursuant to the Waterbury Lake Uranium Limited Partnership Agreement. Denison is the operator of the project.

Except as otherwise noted below, this project description is based on the project’s technical report entitled “Mineral Resource Estimate On The J Zone Uranium Deposit, Waterbury Lake Property” dated September 6, 2013 (the “**J Zone Technical Report**”) by Allan Armitage, Ph.D., P.Geo., and Alan Sexton, M.Sc., P.Geo. of GeoVector Management Inc. (“**GeoVector**”), a copy of which is available on the Company’s website and under its profile on the SEDAR website at [www.sedar.com](http://www.sedar.com).

The conclusions, projections and estimates included in this description are subject to the qualifications, assumptions and exclusions set out in the technical report. We recommend you read the technical report in its entirety to fully understand the project.

### Property Description, Location and Access

The Waterbury Lake property is located in northern Saskatchewan, approximately 12 kilometres north of Points North Landing and 700 kilometres northeast of Saskatoon, Saskatchewan.

The property can be accessed year round by provincial highway to Points North, which is a privately owned service centre with an airstrip and accommodations available. The nearest community is Wollaston Lake, 57 kilometres directly south east of Points North. The property’s core camp is accessible year round via 4x4 trail or ice road during winter across McMahon Lake.

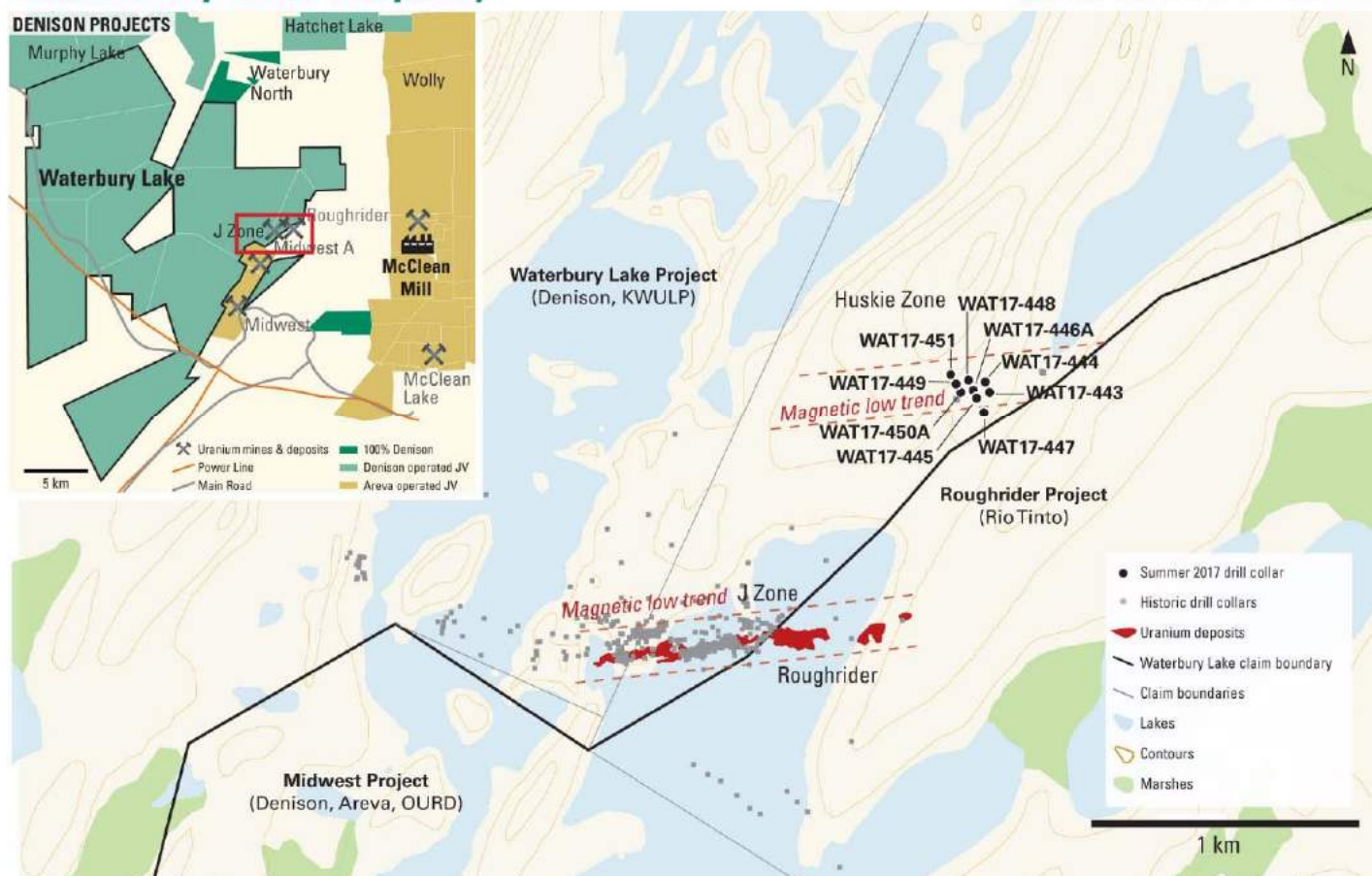
The property is comprised of 13 contiguous claims and one separate claim covering 40,256 hectares with an annual assessment requirement of \$972,905 to maintain title to the mineral claims. Based on previous work submitted and approved by the province of Saskatchewan, there is sufficient assessment credits available to keep title on the property secure until at least 2037, with the separate claim secure until 2032.

Any uranium produced from the Waterbury Lake property is subject to uranium mining royalties in Saskatchewan in accordance with Part III of The Crown Mineral Royalty Regulations. See “Government Regulation - Canadian Royalties.” There are no other back-in rights or royalties with non-owners applicable to this property. Denison has a 2% net smelter return royalty on the portion of the project that it does not own.

There are no known environmental liabilities associated with the Waterbury Lake property, and there are no other significant factors and risks that may affect access, title, or the right or ability to perform work on the property. All the necessary permits for surface exploration on the property are in place and current.

## Location map of the J Zone and Huskie Zone on the Waterbury Lake project

### Waterbury Lake Property



### History

Strathmore Minerals Corp. ("**Strathmore**") acquired a 100% interest in the 13 mineral claims located in Saskatchewan in 2004 via staking. During 2007, Strathmore spun out all of their Canadian assets, including Waterbury's 13 mineral claims into a new company, being Fission. In 2008, an earn-in agreement was signed with the KWULP, whereby Fission granted KWULP the exclusive rights to earn up to a 50% interest in the Waterbury Lake property by funding \$14,000,000 of expenditures on or before January 30, 2011. Additionally, Fission retained an overriding royalty interest in the property of 2% of net smelter returns. On April 29, 2010, KWULP had fully funded its \$14,000,000 of expenditures and consequently earned a 50% interest in the property.

The earn-in agreement required that on completion of the earn-in period, the parties agree to form a jointly controlled limited partnership to hold the property and on August 16, 2010 the WLULP agreement was signed, superseding the original earn-in agreement. WLULP was officially formed December 30, 2010. Fission had 12 months from the completion of the earn-in agreement during which time it could acquire an additional 10% interest in WLULP for \$6,000,000. On April 12, 2011, Fission exercised its back-in option by paying KWULP \$6,000,000, bringing Fission's interest up to 60%.

The WLULP agreement required that Fission and its partners spend a total of \$30,000,000 for exploration and evaluation costs over the next three years, according to their interest in the WLULP. The winter 2013 program completed the budgeted three year exploration program. Fission was appointed operator for WLULP.

In April 2013 Denison acquired Fission, including Fission's 60% interest in the Waterbury Lake uranium project. In January 2014, Denison agreed to allow KWULP to defer its funding obligations to WLULP until September 30, 2015 and to not be diluted as per the dilution provisions in the relevant agreements, in exchange for allowing Denison to authorize spending programs without obtaining the approval of 75% of the voting interest. On September 30, 2015, KWULP notified Denison that it elected to dilute its interest in the Waterbury Lake project and that it would not fund its deferred funding obligation to WLULP. As a result, Denison earned an additional 1.55% interest in the Waterbury Lake project. In December 2016, Denison and KWULP further agreed to allow Denison to continue to authorize spending programs up to an aggregate amount of \$10,000,000 (the "Discretionary Amount") until September 30, 2017 without obtaining the approval of 75% of the voting interest and that KWULP would not fund its pro rata portion of such spending. By the end of 2016, the agreement with KWULP had resulted in Denison earning a further 1.46% interest, bringing Denison's interest in the project to 63.01%. By the end of 2017, the agreement with KWULP had resulted in Denison earning a further 1.21% interest in the project to 64.22%. Again, in January 2018, Denison and KWULP further agreed to allow Denison to authorize spending programs, and increased the aggregate Discretionary Amount to \$15,000,000.

Uranium exploration has been undertaken on the Waterbury Lake property for over 40 years. Numerous and varied programs have been carried out on different portions of the property, including diamond drill campaigns, airborne and ground geophysics, boulder sampling and prospecting. Airborne radiometric, magnetic and electromagnetic (EM) surveys as well as a hydrogeochemical survey were conducted on Waterbury Lake as early as 1969. Cogema Resources Inc. (now Orano Canada) acquired properties in the Waterbury and Henday Lake areas during the late 1980s and carried out an extensive exploration program involving geological mapping, sampling, drilling and geophysical surveys. The latter included airborne EM and magnetic surveys, and ground VLF-EM and gravity surveys.

Following-up on work done by Orano Canada up until the early 1990s, Cameco acquired properties in the Waterbury and McMahon Lakes area and initially completed geological mapping and sampling programs. This was followed by more geophysical surveys including ground time domain electromagnetic (TDEM), magnetic, gravity and induced polarization (IP) over select targets and drilling throughout the decade.

In 2004, Strathmore acquired the Waterbury Lake property through the staking of 13 mineral claims. During the spring of 2005, an airborne high power time domain electromagnetic (MEGATEM II) survey was completed over the entire property. A total of 1,749 line kilometres were flown. Other work during 2005 included a heli-borne EM survey flown in the spring and a small boulder sampling program in the fall. Strathmore continued work on the property during 2006 with a ground EM geophysical survey and completing eight drill holes totaling 2,865 metres. In addition, an IP-resistivity survey was completed. This was followed by more ground geophysical surveys in early 2007. In June 2007, the Waterbury Lake property was spun out of Strathmore and into Fission.

Late in 2007, Fission funded the drilling of eight diamond drill holes totaling 2,222 metres. In early 2008, five drill holes totaling 1,303 metres were completed and a 594 line-kilometre VTEM



airborne magnetic and EM survey was flown. Following this work, soil sampling, ground and airborne geophysical surveys and a 19-hole drilling program (7,996 metres) were completed between May and August. In 2009, two drilling programs were carried out totalling 10,082 metres in 29 holes. Two diamond drilling programs were completed on the property during 2010. The first was carried out between mid-January and end of March, 2010. During this period 35 diamond drill holes were completed for a total accumulated length (including restarts) of 11,250 metres. Several geophysical surveys were also completed during the first three months of the year. A second diamond drilling program was conducted between mid-July to early September. During this period, 16 holes were completed for a total accumulated length (including restarts) of 5,172 metres. Airborne radiometric anomalies delineated from the previous summer were checked in the field during August and early September, and a bathymetry survey of the Discovery Bay/Talisker area was carried out in early October. A winter 2011 drilling program was carried out between early January and mid-April, 2011. Three diamond drill rigs completed a total of 82 holes for a total accumulated length (including restarts) of 26,300 metres. Between January and June 2011, several geophysical surveys were conducted on the Waterbury property. These included 26.4 kilometres of time domain EM survey at Discovery Bay Extension, 25.6 kilometres of time domain EM at Oban and Oban North grids, and 64 kilometres of IP Resistivity and 32.15 kilometres of time domain EM surveys at Murphy-Glen grid. Two drilling programs were completed on the property in 2012 totalling approximately 39,320 metres of core, including 75 holes on the J Zone. A total of 86 holes (31,590 metres) were drilled during the winter drilling program including 49 holes in and around the J Zone. Twenty-six drill holes totaling 7,730 metres were completed in the J Zone area in a summer 2012 drilling program. A total of 68 drill holes and 11 restarts were completed in 2013 comprising 21,013 metres. All of the winter 2013 drilling was completed in the immediate area of the J Zone deposit to extend the boundaries of the mineralization and infill gaps in the drill pattern.

#### Geological Setting, Mineralization and Deposit Types

The Waterbury property is located in the eastern portion of the Proterozoic Athabasca Basin. The Athabasca sediments unconformably overlie older crystalline basement complexes of the highly prospective Mudjatik – Wollaston Transition Zone (“**MWTZ**”). The MWTZ marks a gradational contact between bands of Paleoproterozoic metasediments and Archean granitic gneisses of the Mudjatik domain to the west and variably graphitic Paleoproterozoic metasediments and Archean granitic gneisses of the Wollaston domain to the east. The MWTZ currently hosts all producing uranium deposits in the Athabasca Basin including McArthur River and Cigar Lake.

The Athabasca basin in the project area is comprised of several hundred metres of Manitou Falls Formation fluvial, quartz rich conglomeratic sandstone. Basement rocks in the area are dominated by Archean orthogneisses, occurring as large domes, and steeply dipping, locally graphitic, Paleoproterozoic metasedimentary paragneisses to granofels. Directly below the Athabasca/basement unconformity is a zone of paleoregolith which commonly extends for many metres into the basement. The paleoweathered zone typically grades with depth from pervasive hematization into pervasive chloritization and finally into fresh rock. The unconformity surface is relatively flat on a large scale but in the Discovery Bay area local reverse faulting down drops the unconformity to the south-east.

The Athabasca Basin sedimentary rocks which overlie the Waterbury Lake project area typically range in thickness from 195 to 300 metres. The upper portion of the sedimentary package is comprised of the Manitou Falls Collins (MFC) Formation pebbly quartz arenite which grades into Manitou Falls Bird (MFB) Formation pebble bedded quartz arenite at approximately 80 metres depth. An easily recognizable 5 to 7 metres marker conglomerate exists in the MFB sandstone,

and a basal conglomerate unit is almost always present directly above the unconformity. In the deposit area, the underlying basement geology is interpreted to be a steeply north-northwest dipping, east-west trending corridor of variably graphitic Wollaston Group metasedimentary gneisses, bounded to the north and south by thick zones of predominantly granitic Archean orthogneiss. The Archean orthogneisses apparently define two large dome structures identified as the north and south side orthogneiss domes. The stratigraphy of the metasedimentary corridor is dominantly comprised of: weakly graphitic cordierite-almandine pelitic gneiss, informally termed the 'typical J Zone pelitic gneiss'; graphite-sulphide rich pelitic gneiss; cordierite-almandine augen gneiss; and thin lenses of garnetite which appear to be more abundant along the southern edge of the corridor. A thick unit of strongly graphitic cataclasite exists within the graphite-sulphide pelitic gneiss.

### *J Zone*

The J Zone uranium deposit was discovered during the winter 2010 drilling program at Waterbury Lake and can be classified as an unconformity-related deposit of the unconformity-hosted variety. The second drill hole of the campaign, WAT10-063A, was an angled hole drilled from a peninsula extending into McMahon Lake. It intersected 10.5 metres of uranium mineralization grading 1.91%  $U_3O_8$  including 1.0 metres grading 13.87%  $U_3O_8$  as well as an additional four metres grading at 0.16%  $U_3O_8$ .

The J Zone deposit is currently defined by 268 drill holes intersecting uranium mineralization over a combined east-west strike length of up to 700 metres and a maximum north-south lateral width of 70 metres. The deposit trends roughly east-west ( $80^\circ$ ) in line with the metasedimentary corridor and cataclastic graphitic fault zone.

Mineralization thickness varies widely throughout the J Zone and can range from tens of centimetres to over 19.5 metres in vertical thickness. In cross section J Zone mineralization is roughly lens shaped with a relatively thick central zone that corresponds with the interpreted location of the cataclasite and rapidly tapers out to the north and south. Locally, a particularly high grade (upwards of 40%  $U_3O_8$ ) but often thin lens of mineralization is present along the southern boundary of the metasedimentary corridor. Ten metre step out drill holes to the south from these high grade holes have failed to intersect any mineralization, demonstrating the extremely discreet nature of mineralization.

Uranium mineralization is generally found within several metres of the unconformity at depth ranges of 195 to 230 metres below surface. It variably occurs entirely hosted within the Athabasca sandstones, entirely within the basement metasedimentary gneisses or straddling the unconformity between them. A semi-continuous, thin zone of uranium mineralization has been intersected in occasional southern J Zone drill holes well below the main mineralized zone, separated by several metres of barren metasedimentary gneiss. This mineralized zone is informally termed the south-side lens and can host grades up to 3.70%  $U_3O_8$ .

### *Huskie Zone*

The Huskie Zone was discovered during the summer 2017 drilling program at Waterbury Lake and can be classified as an unconformity-related deposit of the basement-hosted variety. The Huskie Zone is located approximately 1.5 kilometres to the northeast of the property's J Zone uranium deposit. The mineralized zone occurs between 50 and 175 metres vertically below the sub-Athabasca unconformity (265 and 390 metres vertically below surface) and measures

approximately 100 metres along strike (extent of 2017 drilling), up to 120 metres along dip, with individual lenses varying in interpreted true thickness between approximately 2 and 7 metres.

The mineralized zone is hosted primarily within a faulted, graphite-bearing pelitic gneiss ("graphitic gneiss") which forms part of an east-west striking, northerly dipping package of metasedimentary rocks flanked to the north and south by granitic gneisses. The Athabasca Group sandstones that unconformably overly the basement rocks are approximately 210 metres thick. A major reverse fault, occurring along the upper contact of the graphitic gneiss, has resulted in approximately 15 metres of offset of the sub-Athabasca unconformity. Preliminary interpretation indicates the mineralization occurs as parallel, stacked lenses which are conformable to the foliation and fault planes within the graphitic gneiss. The high-grade mineralization is comprised of massive to semi-massive uraninite (pitchblende) and subordinate bright yellow secondary uranium minerals occurring along fault or fracture planes, or as replacement along foliation planes. Disseminations of lower grade mineralization occur within highly altered rocks proximal to fault planes. The mineralization is intimately associated with hematite, which both occur central to a broad and pervasive alteration envelope of white clays, chlorite and silicification.

### Exploration

Since Denison acquired the property in April 2013 four resistivity surveys (298 line kilometres) have been completed, comprised of surveys over the Discovery Bay (J Zone), Oban and Hamilton Lake areas. These surveys augment existing magnetic, electromagnetic, resistivity and gravity surveys for the property. The resistivity surveying conducted by Denison have led to the definition of numerous drill targets, a large portion of which have been subsequently tested.

### Drilling

Since Denison acquired the property in April 2013, drilling has largely focused on testing resistivity targets in the Discovery Bay Extension (12 holes, 3963.3 metres), Oban (18 holes, 6197.5 metres), Hamilton Lake (12 holes, 5879.8 metres) and Arran (3 holes, 888 metres) target areas. Highlights have included the discovery of weak unconformity-hosted mineralization at Oban and Hamilton Lake. These target areas have untested targets that warrant follow-up.

### *Oban*

The Oban area is a prospective east-west lithostructural trend located approximately 3 kilometres north of the J Zone deposit. Resistivity surveying has identified a broad zone of low basement resistivity with two sub-parallel trends roughly coincident with previously identified electromagnetic conductors. Weak mineralization was intersected at the sub-Athabasca unconformity during 2014 in drill holes WAT14-406A (0.08%  $U_3O_8$  over 4.8 metres) and WAT14-407 (0.05%  $U_3O_8$  over 1.5 metres). Follow-up drilling during 2015 confirmed favorable exploration criteria along the trend including alteration and structure in the sandstone and graphitic basement rocks. WAT15-419, drilled 150 metres east along strike of WAT14-406A and WAT14-407, intersected a mineralized fracture 50 metres above the unconformity that contained 788 ppm U over 0.5 metres. WAT15-425 followed up this fracture at the unconformity and intersected multiple, metre-scale zones of weak uranium mineralization. Samples through these zones contained up to 0.267%  $U_3O_8$  over 0.5 metres. Further drilling in 2016 focused along strike to the east where resistivity coverage had been expanded. The drill holes confirmed extension of the trend to the east, including strong alteration and structure in the sandstone and graphitic basement rocks, but did not intersect any significant mineralization. In light of the basement-hosted discovery at the Huskie Zone the Oban trend warrants further review to evaluate the basement potential in detail.

## *Hamilton Lake*

The Hamilton Lake area is a relatively large and under-explored area on the western flank of the Midwest Dome, which shows prospective airborne magnetic and electromagnetic trends, but has not been subject to adequate ground geophysical surveying and follow-up drill testing. Limited historical drilling at Hamilton Lake intersected graphitic metasediments, structure, alteration, and elevated sandstone geochemistry. The DCIP resistivity survey completed by Denison in 2016 over the southern portion of the Hamilton Lake area showed a significant north-south, linear, low resistivity trend with some associated low resistivity 'breaches' in the sandstone that could be indicative of alteration chimneys associated with uranium mineralization. An initial drill program completed during 2016, which included a fence of two drill holes, identified features associated with unconformity-related uranium deposits, including highly altered and structured sandstone and graphitic basement rocks, an unconformity offset, and anomalous geochemistry, including 8.3 ppm U over the basal 25 metres of sandstone and 0.5 metre intervals of 389 ppm and 299 ppm U immediately above the unconformity. These results confirmed the trend, termed the 'Hamilton Lake trend', as a high priority target with an interpreted minimum strike length of 4.5 kilometres to the south and 9.0 kilometres to the north of the two holes completed in 2016.

During the winter 2017 program, nine drill holes totaling 4,803 metres were completed on the Hamilton Lake trend. Seven of these holes were drilled along strike, to the north and south, of the 2016 drilling results to test targets at the unconformity. A total of 1.8 kilometres of strike length was evaluated at a reconnaissance scale with holes, drilled as single holes or fences, spaced 300 or 600 metres apart along strike. The results confirmed strike continuity of a significant graphitic fault zone in the basement rocks with associated structured and altered overlying sandstone. Drill-hole WAT17-438, which optimally intersected the basement graphitic fault zone at the unconformity, intersected weak mineralization immediately above the unconformity, including 0.23% and 0.04%  $U_3O_8$  over 0.5 metre intervals. The mineralization was associated with a fairly significant sandstone alteration plume. Two additional holes were drilled to test 'resistivity low' trends to the east of the Hamilton Lake trend. The holes did not intersect favorable geological features associated with unconformity-related uranium thereby confirming the Hamilton Lake trend as the principle target horizon.

Further drilling is warranted along the extensive Hamilton Lake trend, along strike of the 2017 drilling, to test the basement graphitic fault zone at the unconformity and related high priority 'resistivity low' targets.

## *Huskie Zone*

During the summer 2017 drilling program at Waterbury Lake, Denison discovered high-grade, basement-hosted mineralization, located approximately 1.5 kilometres to the northeast of the property's J Zone uranium deposit. The new zone of mineralization has been named the "Huskie" zone. The summer program included a total of nine drill holes totaling 3,722 metres. Of the eight drill holes designed to test for basement-hosted mineralization, seven holes intersected significant mineralization – including high-grade intersections in four of the holes. A single hole was designed to test for unconformity mineralization and encountered bleaching, silicification, clay alteration and weak radioactivity in the lower sandstone, proximal to a 15 metre unconformity offset which suggests additional potential at the unconformity. This initial drilling campaign, completed on an approximate 50 x 50 metre spacing, has allowed for the wide-spaced definition of a zone of entirely basement-hosted mineralization with geological features consistent with basement-hosted deposits in the Athabasca Basin. Highlight assay results from the summer 2017 drilling program included:

- 9.1% U<sub>3</sub>O<sub>8</sub> over 3.7 metres; including 16.8% U<sub>3</sub>O<sub>8</sub> over 2.0 metres in drill hole WAT17-446A
- 1.7% U<sub>3</sub>O<sub>8</sub> over 7.5 metres; including 8.2% U<sub>3</sub>O<sub>8</sub> over 1.5 metres in drill hole WAT17-449
- 1.5% U<sub>3</sub>O<sub>8</sub> over 4.5 metres; including 3.9% U<sub>3</sub>O<sub>8</sub> over 1.0 metre in drill hole WAT17-450A

### Sampling, Analysis and Data Verification

For the exploration and drilling work being completed by Denison since April 2013, Denison has followed the sampling, analysis and data verification procedures as outlined in the section “Athabasca Exploration: Sampling, Analysis And Data Verification”.

The sampling, analysis and data verification for the J Zone mineral resource estimate is comprehensively described in the J Zone Technical Report. A summary of those procedures are provided as follows:

Drill core was split once geological logging, sample mark up and photographing were completed. All drill core samples were marked out and split at the splitting shack by Fission employees, put into 5-gallon sample pails and sealed and transported to Points North, Saskatchewan only prior to shipment. The samples were then transported directly to the Saskatchewan Research Council Geoanalytical laboratories (the “**SRC Lab**”) in Saskatoon Saskatchewan by Marsh Expediting. All assay and bulk density samples were split using a manual core splitter over the intervals noted in the sample booklet. Half of the core was placed in a plastic sample bag with the sample tag and taped closed with fibre tape. The other half of the core was returned to the core box in its original orientation for future reference. All drill core samples were evenly and symmetrically split in half in order to try and obtain the most representative sample possible. Mineralized core samples which occur in drill runs with less than 80% core recovery are flagged for review prior to the resource estimation process. Recovery through the mineralized zone is generally good however and assay samples are assumed to adequately represent in situ uranium content. The SRC Lab offers an ISO/IEC 17025:2005 accredited method for the determination of U<sub>3</sub>O<sub>8</sub> weight % in geological samples. Rock samples are crushed to 60 % at -2 mm and a 100-200g sub sample is split out using a riffler. The sub sample is further crushed to 90% at -106 microns using a standard puck and ring grinding mill. An aliquot of pulp is digested in a concentrated mixture of HNO<sub>3</sub>:HCl in a hot water bath for an hour before being diluted by deionised water. Samples are then analysed by a Perkin Elmer ICP-OES instrument (models DV4300 or DV5300).

Drill core samples collected for bulk density measurements were first weighed as they are received and then submerged in deionised water and re-weighed. The samples are then dried until a constant weight is obtained. The sample is then coated with an impermeable layer of wax and weighed again while submersed in deionized water. Weights are entered into a database and the bulk density of the core waxed and un-waxed (immersion method) is calculated and recorded. Not all density samples had both density measurements recorded. Water temperature at the time of weighing is also recorded and used in the bulk density calculation. The detection limit for bulk density measurements by this method is 0.01 g/cm<sup>3</sup>.

Prior to the summer 2010 drill program, the only QA/QC procedures implemented on drill core samples from the project were those performed internally by SRC Lab. The in-house SRC Lab QA/QC procedures involve inserting one to two quality control samples of known value with each new batch of 40 geochemical samples. All of the reference materials used by the SRC Lab on the Waterbury project are certified and provided by CANMET Mining and Mineral Services. The SRC Lab internal QA/QC program continued through the 2013 drill program. Starting in the summer of 2010 and continuing into the 2013 drill program (discontinued after DDH WAT13-350), an internal QA/QC program was designed by Fission to independently provide confidence in the core sample geochemical results provided by the SRC Lab. The internal QA/QC sampling program determines

analytical precision through the insertion of sample duplicates, accuracy through the insertion of materials of “known” composition (reference material) and checks for contamination by insertion of blanks. Blanks, reference standards and duplicates were inserted into the sample sequence including field duplicates (quarter core every 1 in 20 samples), prep and pulp duplicates (inserted by the SRC Lab every 1 in 20 samples) and blank samples (1 sample for every mineralized drill hole). Beginning in 2012 certified, internal reference standards were used in all holes drilled at Waterbury Lake, replacing the re-analysed low, medium and high grade reference samples. The results of the QA/QC programs indicate there are no issues with the drill core assay data. The data verification programs undertaken on the data collected from the Project support the geological interpretations, and the analytical and database quality, and therefore the data can support mineral resource estimation.

### Mineral Processing and Metallurgical Testing

A preliminary assessment of the mineralogical and leaching characteristics of a representative selection of drill core samples from the J Zone was undertaken between July and December 2011 by Mineral Services Canada (“MSC”).

The study was based on a suite of 48 samples of mineralized material collected from thirty-two drill holes (2010 and 2011 programs). These were chosen to provide good spatial representation of the J Zone mineralization as well as representing a wide range of uranium content. The samples were derived from the half split core remaining after the initial geochemical / assay sampling process. All samples were submitted to the SRC Lab for comprehensive mineralogical analysis and preparation of thin sections for petrographic analysis. The results of mineralogical work were used, in conjunction with spatial considerations, to define suitable composite samples for preliminary leaching test work undertaken by the Saskatchewan Research Council (“SRC”) Mining and Minerals Division.

Mineralogical analysis, utilizing XRD, quantitative mineralogical analysis (Q-Min), petrography and SEM-EDS analysis, determined that the most abundant uranium-bearing minerals in the J Zone are uraninite and/or pitchblende, and coffinite. The gangue mineralogy is essentially comprised of various amounts of quartz, phyllosilicates (illite-sericite, chlorite, biotite, kaolinite) and (Fe, Ti)-oxides (hematite, goethite and anatase). Feldspars also occur in most samples and carbonates as well as a variety of sulphides are locally present. Ni-arsenides are recognized throughout the samples as well. The results of the mineralogical analyses identified five groupings of samples with ore mineralogies typically dominated by either uranium oxide or uranium silicate phases.

Preliminary acid leaching tests were undertaken by SRC Mining and Minerals Division on composite samples prepared from the sample set. Only the leaching time and rate of acid addition were considered in the tests while the other parameters (e.g. solid percentage in the slurry, temperature, pressure and agitation conditions) remained fixed. A total of five composite samples were defined based on spatial location, lithology, uranium grades and mineralogy. Acid leaching ( $\text{H}_2\text{SO}_4$ ) was performed on each of the composite samples for 12 hours under atmospheric pressure and at a temperature of 55-65°C. Agitation was used to create adequate turbulence. Sodium Chlorate was used as the oxidant. The tests were undertaken on the assay lab rejects from XRD analyses that were ground to 90% passing 106 microns. The percentage of solids in the slurry was set at 50%. The only variables were the acid addition and leaching residence time. Two different  $\text{H}_2\text{SO}_4$  dosages were used to create an initial leaching environment with 25 mSc/cm and 55 mSc/cm, respectively. Each composite sample was split into two subsamples labelled A and B. The A sample was used to test high acid addition with high initial conductivity and the B

sample was used to test low acid addition with low initial conductivity. The preliminary acid leaching tests showed that maximum extraction rates of 97.6 % to 98.5 %  $U_3O_8$  can be obtained (depending on the acid addition) within 4 to 8 hours of leaching time, and that the leaching efficiency was variably affected by acid addition and leaching time.

A more comprehensive phase of metallurgical test work has been recommended to optimize the leaching efficiency as well as to evaluate other parameters of the leaching process (grinding size of the ore, solid percentage in the slurry, temperature, pressure, and residence time and agitation conditions).

### Mineral Resource Estimates

The Company retained GeoVector to independently review and audit mineral resource estimates for the Waterbury Lake property, in accordance with the requirements of NI 43-101, and in 2013 GeoVector prepared the J Zone Technical Report. See “Mineral Reserves and Mineral Resources”, above, for a summary of the mineral resource estimate for the Waterbury Lake project.

For the 2013 mineral resource estimate, a 3D wireframe model was constructed based generally on a cut-off grade of 0.03 to 0.05 %  $U_3O_8$  which involved visually interpreting mineralized zones from cross sections using histograms of  $U_3O_8$ . 3D rings of mineralized intersections were created on each cross section and these were tied together to create a continuous wireframe solid model in Gemcom GEMS 6.5 software. The modeling exercise provided broad controls on the size and shape of the mineralized volume.

Based on a statistical analysis of the composite database, no capping was applied on the composite populations to limit high values for uranium. A histogram of the data indicates a log normal distribution of the metals with very few outliers within the database. Analysis of the spatial location of outlier samples and the sample values proximal to them led GeoVector to believe that the high values were legitimate parts of the population and that the impact of including these high composite values uncut would be negligible to the overall resource estimate.

Using waxed core and dry bulk density determinations a formula was derived relating bulk density to grade and was used to assign a density value to each assay. Bulk density values were used to weight grades during the resource estimation process and to convert volume to tonnage.

Uranium grade times density (GxD) values and density (D) values were interpolated into the block model using an inverse distance squared (ID2) algorithm. Block grade was derived from the interpolated GxD value divided by the interpolated D value for each block. Block tonnage was based on volume times the interpolated D value.

Two passes were used to interpolate all of the blocks in the wireframe, but 99% of the blocks were filled by the first pass. The size of the search ellipse, in the X, Y, and Z direction, used to interpolate grade into the resource blocks is based on 3D semi-variography analysis (completed in GEMS) of mineralized points within the resource model. For the first pass, the search ellipse was set at 25 x 15 x 15 metres in the X, Y, Z direction respectively. The Principal azimuth is oriented at 075°, the Principal dip is oriented at 0° and the Intermediate azimuth is oriented at 0°. For the second pass, the search ellipse was set at 50 x 30 x 30 metres in the X, Y, Z direction respectively. The Principal azimuth is oriented at 075°, the Principal dip is oriented at 0° and the Intermediate azimuth is oriented at 0°.

The mineral resources for the J Zone were classified as indicated based on drill hole spacing and continuity of mineralization. The block model was validated by visual and statistical comparisons of composite grades and block grades.

#### Exploration, Development and Production

The Company's 2018 exploration program is designed to test for extensions to the Huskie zone mineralization through step-out drilling. A diamond drilling program of approximately 14,400 metres in 36 drill holes is planned for 2018 and is expected to be carried out during the winter and summer drilling seasons. No development or production is currently planned for the project.



## McClellan Lake

The McClellan Lake projects are owned by Denison (22.5%) and its joint venture partners, Orano Canada (70.0%) and OURD (7.5%). Orano Canada is the operator/manager of the projects.

Except as otherwise noted below, the project descriptions are based on the Company's technical reports: (A) the "Technical Report on the Denison Mines Inc. Uranium Properties, Saskatchewan, Canada" dated November 21, 2005, as revised February 16, 2006 (the "**McClellan Technical Report**"), (B) the "Technical Report on the Sue D Uranium Deposit Mineral Resource Estimate, Saskatchewan, Canada" dated March 31, 2006 (the "**Sue D Report**"), and (C) the "Technical Report on the McClellan North Uranium Deposit Mineral Resource Estimate, Saskatchewan, Canada" dated January 31, 2007 (the "**McClellan North Technical Report**"), copies of which are available on the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com). Scott Wilson RPA (now Roscoe Postle Associates Inc.) was engaged to prepare and deliver the McClellan Technical Report (authored by Richard E. Routledge, M.Sc., P. Geo.), the Sue D Report and the McClellan North Technical Report (each authored by Richard E. Routledge, M.Sc., P. Geo. and James W. Hendry, P. Eng.). Each author was an independent Qualified Person for the purposes of NI 43-101. By letter dated October 20, 2009, Orano Canada received from Scott Wilson RPA subsequent corrections to the resource estimate in the McClellan North Technical Report, which revisions have been incorporated herein as applicable.

The conclusions, projections and estimates included in this description are subject to the qualifications, assumptions and exclusions set out in the technical reports. We recommend you read the technical reports in their entirety to fully understand the project.

### Property Description, Location and Access

The McClellan Lake property is located within the eastern part of the Athabasca Basin in northern Saskatchewan, approximately 26 kilometres west of the Rabbit Lake mine and approximately 750 kilometres north of Saskatoon.

Access to the McClellan Lake site is by both road and air. Goods are transported to the site by truck over an all-weather road connecting with the provincial highway system. Air transportation is provided through the Points North airstrip about 25 kilometres from the project site.

The mineral property consists of four (4) mineral leases covering an area of 1,147 hectares and 13 mineral claims covering an area of 3,111 hectares. The right to mine the McClellan Lake deposits was acquired under these mineral leases, as renewed from time to time. Mineral leases are for terms of 10 years with the right to renew for successive 10-year periods provided that the leaseholders are not in default of the terms of the lease. A mineral claim grants the holder the right to explore for minerals within the claim lands and the right to apply for a mineral lease. The current mineral leases have terms that expire between November 2025 and August 2026 and title to the mineral claims is secure until at least 2036. It is expected that the leases will be renewed in the normal course, as required, to enable all the McClellan Lake deposits to be fully exploited.

The right to use and occupy the lands at McClellan Lake has been granted in a surface lease agreement with the province of Saskatchewan. The McClellan surface lease was entered into in 2002, has a term until 2035 (33 years) and covers a land area of approximately 3,677 hectares.

The uranium produced from the McClellan Lake deposits is subject to uranium mining royalties in Saskatchewan in accordance with Part III of The Crown Mineral Royalty Regulations. See "Government Regulation - Canadian Royalties." In addition, a royalty of 2% of the spot market

price on all  $U_3O_8$  produced from the Sue E deposit is payable to the previous owner of a portion of the deposit.

### History

Several operators and related joint ventures have managed the McClean Lake project from 1968 to present. Their involvement has resulted in the discovery of several uranium deposits including the McClean North, McClean South, JEB, Sue trend (A,B,C,D,E), and Caribou. Exploration activities over the project have involved extensive geophysical surveys, both airborne and ground, in addition to exploration/delineation diamond drilling.

Uranium production from the McClean Lake deposits at the onsite McClean mill facility to date (current to 2017) is approximately 50 million pounds  $U_3O_8$ . The ore feed for production is almost entirely sourced from mining activities of the Sue (A, B, C, and E) and JEB deposits.

#### *1968 – 1974 (Gulf Minerals Canada Ltd.)*

From 1968 to 1974, the entire area was held under permit (Permit #8) by Gulf Minerals Canada Ltd. During this period, Gulf flew an airborne radiometric survey over the area and conducted reconnaissance and ground level surveys.

#### *1974 – 1985 (Canadian Occidental Petroleum Ltd)*

In 1974 Gulf reduced their land holding and allowed Permit #8 to lapse. Canadian Occidental Petroleum Ltd. (CanOxy) acquired the ground and flew a reconnaissance survey over the area in July of that same year and preceded to stake a 260 square kilometre area called then the Wolly property (now divided into the McClean Lake and Wolly properties). CanOxy operated the project from 1974 to 1985 at first without partners, then in 1977, in partnership with Inco Ltd. The agreement allowed Inco Ltd. to earn a 50% interest in the property by January 1980.

Initial exploration consisted of geochemical and ground radiometric prospecting with follow up drilling. Several geophysical methods were also used, but correlation with geochemical and radiometric anomalies was generally poor. In 1977, airborne magnetic and EM surveys were flown over the property. The results indicated conductive trends and helped to better define the regional basement structure and lithology. The first significant discovery came in 1978, when the Tent Lake zone was found along a major conductive trend. Following this discovery, the emphasis was on geophysical rather than geochemical or radiometric targets. From 1979 to 1985, several major discoveries were made based mainly on geophysics and improved geological interpretations. This included the McClean North deposit in 1979, the McClean South deposit in 1980, the Candy Lake zone in 1981 and the JEB deposit in 1982. During this period, CanOxy completed 781 drill holes for 118,540 metres of drilling; most of them concentrated in the area now known as the McClean Lake property.

#### *1985 – 1993 (Minatco / Denison Mines / OURD)*

In January 1985, Minatco entered into a joint venture agreement with CanOxy and Inco to become the operator of the project. Geophysical and drilling programs were conducted throughout the project area to follow up existing mineralized areas, and explore new zones. In 1987, an additional zone (Pod 5) was found in McClean North. Several very significant discoveries were also made the following year, in 1988: two new mineralized zones, Sue A and B were found in the Sue area, which would lead to the discovery of the highly productive Sue trend; mineralization was indicated on the McClean South conductor, west of the McClean Southwest pod; and additional

mineralization was found in McClean North. Additional work in the Sue area over the next few years, led to the Sue C deposits in 1989, the Sue D deposit in 1990 and the Sue E deposit in 1991. From 1985 to 1993, Minatco completed 1,160 drill holes for a total of 171,090 metres of drilling on the Wolly and McClean Lake projects, most of them concentrated again in the area now known as the McClean Lake property. In 1990, the CanOxy-Inco JV sold out to Minatco.

In 1993, Denison Mines Ltd. exchanged with Minatco a 70% interest in the Midwest Lake project for a 22.5% interest in the McClean Lake project. OURD Canada Ltd., a Denison partner, also obtained a 7.5% interest in McClean. Also in 1993, Orano Canada (formerly Cogema Resources Inc.) acquired the uranium assets of TOTAL (Minatco in Canada) and became the operator of the McClean Lake Project.

In 1993, the joint venture planned to proceed with mine development. The McClean Lake property was created, and defined as a portion of the Wolly property outlined by a surface lease (containing the JEB, Sue and McClean deposits).

#### Geological Setting, Mineralization and Deposit Types

The McClean Lake uranium deposits lie near the eastern margin of the Athabasca Basin in the Churchill Structural Province of the Canadian Shield. The bedrock geology of the area consists of Precambrian gneisses unconformably overlain by flat lying, unmetamorphosed sandstones and conglomerates of the Athabasca Group. The Precambrian basement complex is composed of an overlying Aphebian aged supracrustal metasedimentary unit infolded into the older Archean gneisses. The younger Helikian aged, Athabasca sandstone was deposited onto this basement complex. The basement surface is marked by a paleoweathered zone with lateritic characteristics referred to as regolith.

The McClean Lake uranium deposits which include the Sue deposits (A to E), McClean deposits (North and South), Caribou deposit and JEB deposit are unconformity-related deposits of the unconformity-hosted variety.

#### Exploration and Drilling

Exploration activities including ground geophysics and diamond drilling were conducted by Orano Canada from 1994 to present. The majority of exploration has been focused on areas of known mineralization at McClean North/South, Sue Trend, JEB and the Tent Seal Trend. Other target areas on the property which have also been subject to ground geophysics and drilling include Candy Lake, Bena, Vulture and Moffat Lake. In 2002 the discovery of Caribou, the high- grade unconformity related uranium deposit was made approximately 2 kilometres northwest of the Sue C open pit. No other significant discoveries have been made since 2002. During the period 1994 to 2017 Orano Canada completed 95,933 metres of drilling in 496 holes.

#### Sampling, Analysis and Data Verification

The following description applies to all exploration on the McClean Lake property.

Following the completion of a drill hole, the hole is radiometrically logged using a downhole slim-line gamma probe. The gamma-log results provide an immediate equivalent uranium value (eU%) for the hole, which, except in high grade zones, is reasonably accurate. The gamma-log results, however, have not been used for the purposes of estimating mineral reserves or resources unless core loss is significant.

Sample intervals are generally 50 centimetres long, except where higher or lower grade mineralization boundaries fall within the interval. In that case, two 25 centimetre samples are collected. Flank samples of 1.0 metre are always collected where mineralization is located. A background geochemistry sample is collected every 10 metres down the hole.

All sampled core is split in half, one half retained and the other sent to an independent laboratory. Lost core is not an issue at the McClean project as core recovery has been good. Control samples are routinely assayed with each batch of core samples analyzed.

The mineralization in the various McClean deposits is highly variable in both mineralogy and uranium content. The principal minerals identified in the deposits are pitchblende, uraninite and niccolite. As a result of the highly variable uranium content, a variable density formula was developed for the McClean deposits. This formula was modified over the years to account for the fact that it originally tended to underestimate  $U_3O_8$  content where the  $U_3O_8$  values were associated with high values of nickel and arsenic.

No opinion can be given regarding security of samples in the mid to late 1970s and the late 1980s other than to indicate that subsequent geological work and all metallurgical and geotechnical work have confirmed the results. All procedures reviewed follow generally accepted industry practice. A good demonstration of the reliability is that JEB and the Sue deposits (B and C) have been mined out and more uranium has been recovered into stockpiles than had been estimated from surface drilling.

#### Mineral Reserve and Mineral Resource Estimates

Estimation procedures have evolved over the years. At the time of the feasibility study in 1990, polygonal methods were used for the JEB, the Sue A, the Sue B, the Sue C deposits and for the McClean zones. Prior to the start of mining at the JEB deposit, the mineral reserves were re-evaluated using computerized methods whereby block models were constructed and geostatistical methods were implemented. Much more recently, these mineral resource estimates have been further refined using Whittle pit optimization software. Appropriate tests and audits of the databases on all the McClean deposits have been carried out by past qualified Denison personnel. In the case of JEB, Sue C and Sue B, the amount of  $U_3O_8$  recovered into stockpiles was higher than that estimated from surface drilling.

The Company received the McClean Technical Report from Scott Wilson RPA (now Roscoe Postle Associates Inc.) on its mineral reserves and mineral resources at certain of the deposits (Sue A, B, E and McClean North and Caribou) at McClean Lake in which Denison has an interest. See "Mineral Reserves and Mineral Resources", above, for a summary of the mineral resource and mineral reserve estimates remaining, after adjusting for mining activity, as applicable.

In preparing the McClean Technical Report, Scott Wilson RPA reviewed previous estimates of mineral reserves and mineral resources at the applicable properties, and examined and analyzed data supporting the previous estimates, as well as other available data regarding the properties, including extensive information from Orano Canada.

For the Sue E deposit, Scott Wilson RPA constructed a block model using indicator kriging to both map out and geologically constrain mineralized areas. A block that had at least one nearby composite within 10 metres of its centre, and that had composites from at least two different drill holes in its search neighbourhood was classified as part of the indicated mineral resource. The indicated mineral resource was evaluated by Scott Wilson RPA in 2005 using Whittle economic evaluation software showing that the Sue E pit economics were robust and mineral reserves were

estimated. Mining was completed at the Sue E pit during 2008 recovering about 91% of the probable mineral reserves estimated by Scott Wilson RPA. Scott Wilson RPA classified approximately 7.3 million of the pounds outside the current pit as inferred mineral resources. Confirmatory drilling in 2006 by the operator has indicated that this may be reduced to 2.0 million pounds. Scott Wilson RPA has not re-estimated the mineral resources based on this drilling.

The mineral resource estimate for the Caribou deposit is based on a block model for which grade was interpolated using ordinary kriging. Since there were no plans for the mining of this deposit at the date of the McClean Technical Report, the economic potential was not evaluated and mineral reserves were not estimated.

With respect to the Sue D deposit, the Company received the Sue D Report in 2006, authored by Scott Wilson RPA. Scott Wilson RPA carried out an independent mineral resource estimate for Sue D by conventional 3-D computer block modeling. A minimum vertical mining width of two metres was employed with a 0.1%  $U_3O_8$  cut-off.

Due to the significant increase in the price of uranium from 2004 to 2006, Denison engaged Scott Wilson RPA to re-evaluate the uranium resources in the McClean North trend that are amenable to other methods of mining. The original McClean Technical Report had only evaluated mineral resources and mineral reserves of the high grade portions under the assumption that they would be mined using a blind shaft mining method. The Company received the McClean North Technical Report on the mineral reserves and resources at the McClean North uranium project in 2007.

The re-evaluation of McClean North was carried out by conventional 3-D computer block modeling. Wire frames were constructed for each of pods 1, 2 and 5. The estimate included internal dilution, but not external dilution, and was carried out at a 0.1%  $U_3O_8$  cut-off. This mineral resource estimate is based entirely on diamond drill information. Block cell dimensions were selected at 8 metre model grid east west x 5 metre model grid north south and a 2 metre bench height or approximately 180 tonnes/block. Scott Wilson RPA constructed a mineral resource wireframe based on kriging, and constructed a special waste wireframe, that generally surrounds the mineral resource wireframe, using similar kriging parameters but with larger search distances. Subsequent to this report, the Company and Scott Wilson RPA reviewed the block model and estimation procedures in October 2009 and made a slight revision to the mineral resource estimate for the McClean North deposit.

### Mining Operations

McClean Lake consists of nine known ore deposits: JEB; Sue A, B, C, D and E; McClean North; McClean South; and Caribou). In 1995, the development of the McClean Lake project began. Mill construction commenced in 1995 and ore processing activities reached commercial production in November 1999. Mining operations also commenced, and the following deposits have been mined out to date: JEB (1996 to 1997), Sue C (1997 to 2002), Sue A (2005 to 2006), Sue E (2005 to 2008) and Sue B (2007 to 2008). Various test mining programs from 2006 to date have also been conducted at McClean North.

At December 2017, the remaining ore reserves consist of a limited quantity of stockpiled ore from historical Sue B open pit mining operations and test mining activities at McClean North. Approximately 87,454 tonnes of Sue B ore at a grade of 0.35%  $U_3O_8$  and 534 tonnes of McClean Lake North ore (mined via SABRE), at an average grade of 4.78%  $U_3O_8$ , are stockpiled on surface as at the end of 2017.

Other than continued test mining activities for SABRE, no additional mining operations are planned at this time.

Low-grade special waste from the mining of the JEB, Sue C, Sue A, Sue E and Sue B deposits has been disposed of in the mined-out Sue C pit. In the future, Cigar Lake special waste will also be disposed of in the Sue C Pit. By agreement between the CLJV and the MLJV, costs to update the Sue Water Treatment Plan and costs to dewater the Sue C pit for Cigar Lake special waste will be shared 50/50 between the CLJV and MLJV.

### *SABRE*

The MLJV is currently assessing the Surface Access Borehole Resource Extraction (“SABRE”) mining method technology for extraction of the McClean North deposits. The SABRE technology is experimental and a feasibility study has not yet been completed. Previous field tests of the SABRE technology has produced a small amount of ore, some of which has been processed into  $U_3O_8$  and some of which remain in the ore stockpile at December 2017. See “Denison’s Operations” below.

### Processing and Recovery Operations

Processing of the McClean Lake ore stockpiles is anticipated to occur prior to the end of life of the McClean Lake mill. Historical processing of the McClean Lake orebodies through 2000 to 2010 has demonstrated strong performance, with recoveries above 97%. The MLJV anticipates processing of the remaining stockpiles to have similar performance results.

### Development and Production

In 2012, Orano Canada (then AREVA) initiated an internal study evaluating the feasibility of mining the McClean North, Caribou and Sue D deposits via conventional underground methods, which internal study was completed in April 2014. However, no formal technical report has been prepared by Denison in accordance with NI 43-101 and a production decision has been deferred due to the low uranium price environment.

### Infrastructure, Permitting and Compliance Activities

The McClean Lake uranium mill, one of the world’s largest uranium processing facilities, is currently processing ore from the Cigar Lake mine under the Cigar toll milling arrangement between the MLJV and the CLJV. The site has been in operation since the late 1990’s and consists of the mill, a tailings management facility, administration offices and building, camp facilities, back-up power supply, water treatment plants and a host of other minor facilities. The site is connected to the provincial power grid and provincial highways. Points North Landing Airport provides transportation to and from site for personnel on a daily basis.

As a uranium site, the CNSC permits the operations. On July 1, 2017 the McClean site received a 10 year license for operations until June 30, 2027. See “Denison’s Operations”.

## Midwest

The Midwest project is owned by Denison (25.17%) and its joint venture partners, Orano Canada (69.16%) and OURD (5.67%) pursuant to the Midwest Joint Venture Agreement. Orano Canada is the operator of the project.

Except as otherwise noted below, this project description is based on the project's technical report entitled "Technical Report with an Updated Mineral Resource Estimate for the Midwest Property, Northern Saskatchewan, Canada" dated March 26, 2018 (the "**Midwest Technical Report**"), a copy of which is available on the Company's profile on the SEDAR website at [www.sedar.com](http://www.sedar.com). The Midwest Technical Report was authored by Dale Verran, MSc, P.Geo, Pr.Sci.Nat. and Chad Sorba, P.Geo, of the Company and G. David Keller, PGeo, and Oy Leuangthong, PEng, of SRK Consulting. G. David Keller and Oy Leuangthong are independent qualified persons for the purposes of NI 43-101.

The conclusions, projections and estimates included in this description are subject to the qualifications, assumptions and exclusions set out in the technical report. We recommend you read the technical report in its entirety to fully understand the project.

### Property Description, Location and Access

The Midwest property is located within the eastern part of the Athabasca Basin in northern Saskatchewan. The northern portion of the property is located on South McMahon Lake, about one kilometre from the Points North Landing airstrip and about 25 kilometres west by existing roads from the McClean Lake mill on the McClean Lake property. The site is approximately 750 km by air north of Saskatoon and about 420 km by road north of the town of La Ronge.

Access to the Midwest property is by both road and air. Goods are transported to the site by truck over an all-weather road connecting with the provincial highway system. Air transportation is provided through the Points North airstrip about 2 kilometres from the property.

The property consists of three (3) contiguous mineral leases, covering 1,426 hectares and contains both the Midwest Main and Midwest A deposits. The mineral lease containing the Midwest Main deposit (ML 5115) is 556 hectares in size. Each of the mineral leases is at an annual assessment rate of \$75.00 per hectare and has sufficient approved assessment credits to maintain the ground in good standing until 2030. There is no current production from these mineral leases. Leases must be renewed every 10 years as part of an administrative process.

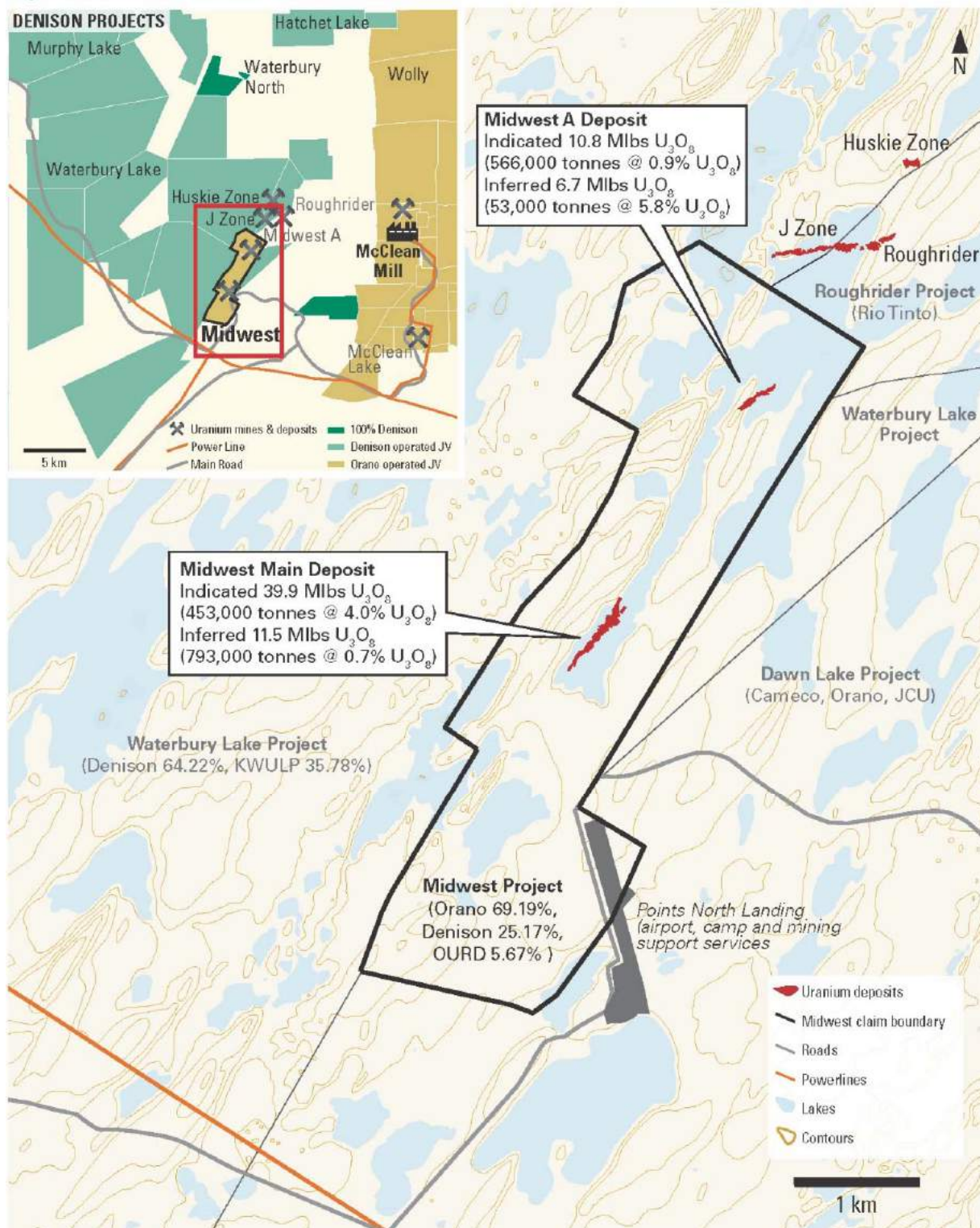
Since the completion of the underground test mine at the Midwest Main deposit in 1988 and 1989, the site has been under an environmental monitoring and site security surveillance program. At present, there is an inactive water treatment plant, two water storage ponds and a core storage area on the site, as well as a dam in the Mink Arm of South McMahon Lake. All of the facilities used in the test mine program and all of the existing surface facilities are located on lands owned by the province of Saskatchewan. The right to use and occupy the lands was granted in a surface lease agreement with the province of Saskatchewan. The original surface lease agreement of 1988 was replaced by a new agreement in 2002. This new surface lease is valid for a period of 33 years. Obligations under the surface lease agreement primarily relate to annual reporting regarding the status of the environment, the land development and progress made on northern employment and business development. The Midwest surface lease covers an area of approximately 646 hectares.



## Location of the Midwest Main and Midwest A deposits on the Midwest project

### Midwest Project Updated Mineral Resource Estimates

Denison Mines





Any uranium produced from the Midwest deposits is subject to uranium mining royalties in Saskatchewan in accordance with Part III of The Crown Mineral Royalty Regulations. See "Government Regulation - Canadian Royalties." A portion of Denison's interest in the Midwest project (i.e. 5.5% of the project reducing to 3.44% after payout) is subject to a sliding-scale, gross overriding royalty ranging from 2% to 4% payable to two previous owners of a portion of the Midwest project.

There are no known significant factors or risks that may affect access, title, the right, or ability of Orano to perform work at/on the Midwest property.

### History

Initial exploration work in the vicinity of the two Midwest deposits began in 1966. Canada Wide Mines Ltd., a subsidiary of Esso Resources Canada Ltd., was operator of the project from 1968 to 1982. From 1968 to 1975, exploration was carried out on an exploration permit which included the area covered by the current mineral leases. Most of the work was concentrated on the area near South McMahon Lake where uranium mineralized boulders were found. In 1974, the exploration permit was changed to mineral leases.

During the winter season of 1977, one of the holes drilled through the unconformity encountered mineralization. In January 1978, the Midwest Main deposit was intersected by the first drill holes. During 1978 through 1980, a further 439 holes were drilled (for a total of about 650) to delineate the deposit and to explore the surrounding area of the mineral leases.

In 1987, Denison acquired a 45% interest in the Midwest project and became the operator. An underground test mine program was completed in 1989 which confirmed the results of the surface drilling program and identified a high grade mineral reserve containing 35.7 million pounds of  $U_3O_8$  at an average diluted grade of 4.5%  $U_3O_8$ , considered to be mineable by underground methods. During this time, Denison also performed an EM-37 survey and geotechnical drilling on the Midwest Main deposit. Exploration drilling was conducted to the east (1988) and along the conductive trend to the north of Midwest Main deposit (1989).

In 1993, the respective owners of McClean Lake and Midwest combined their interests to make one complementary project with one mill at McClean Lake. In order to accomplish this, a portion of Denison's interest in Midwest was exchanged for an interest in McClean Lake. This transaction, together with several related ownership changes, resulted in Denison's ownership interest in Midwest being reduced to 19.5% and Minatco, Orano Canada's predecessor in title, becoming the operator.

In 1999, Denison increased its interest in Midwest by 5.50% through the exercise of first refusal rights. With the uncertainty of the timing and costs of the Midwest development and the desire to eliminate the obligation to pay advance and future royalties on production from Midwest, Denison decreased its interest in Midwest from 25% to 19.96% effective March 31, 2001. Orano Canada, the operator/manager of Midwest, also reduced its interest from 70.5% to 54.84% for the same reason.

At the end of 2004, in order to take advantage of rapidly increasing uranium prices, Denison again increased its interest at Midwest, along with its joint venture partners, by buying the 20.70% interest in Midwest then held by Redstone Resources Inc. This purchase permitted Denison to acquire a further 5.21% interest in Midwest, bringing its interest to 25.17%. Orano Canada's interest increased to 69.16% and OURD's interest increased to 5.67%.

### Geological Setting, Mineralization and Deposit Types

The Midwest deposits are classified as 'unconformity-type' uranium deposits, and occur approximately 200 metres below surface straddling the unconformable contact between overlying Athabasca Group sandstones and the underlying Paleoproterozoic and Archean basement rocks belonging to the Wollaston-Mudjatik Transition Zone. The north-northeast Midwest structural trend that controls the Midwest Main and Midwest A uranium deposits follows a steeply-dipping, graphitic pelitic gneiss, basement unit that is bounded by granitic gneisses or granite to both the east and west. The sub-Athabasca unconformity surface is relatively flat on a regional scale, however there is a slight uplift along the north-northeast Midwest trend and a generally higher elevation to the east. Fault zones in the basement are often characterized by brecciation and strong hydrothermal alteration with clay mineral development. These fault zones generally extend into the overlying Athabasca Group sandstone.

The Midwest Main deposit is lens to cigar shaped, 600 metres long, 10 to over 100 metres wide, with thicknesses ranging from five metres to 10 metres. The deposit consists of a near-massive, high-grade mineralized core that straddles the unconformity approximately 210 metres below surface. The high-grade core is surrounded by lower-grade, more dispersed, fracture-controlled mineralization in both sandstone and, in minor amounts, in basement rocks. The high-grade mineralization forms a roughly flat-lying lensoid concentration, with a root extending down into the basement rocks along a steeply-dipping fault.

The Midwest A deposit is approximately 450 metres long, 10 to 60 metres wide, ranges up to 70 metres in thickness and occurs between 150 and 235 metres below surface. Mineralization straddles the unconformity contact with minor amounts hosted within basement structures immediately below the unconformity. Thicker zones of mineralization above the unconformity are concentrated in conglomerate units at the base of the Athabasca sandstone. Similar to Midwest Main, a high-grade core of mineralization is surrounded by a lower-grade, more dispersed, fracture-controlled envelope.

### Exploration and Drilling

Under Orano Canada's operatorship, exploration activities resumed in 2004. Exploration drilling was initiated some three kilometres to the northeast of the Midwest deposit to test ground around a historic hole MW-338 that had returned an isolated intercept of 3.8 metres at 6.9%  $U_3O_8$ . Between 2005 and 2009, a further 50,831 metres of drilling was completed in 191 drill holes on the property, which discovered and delineated the Midwest A deposit and identified and evaluated several other mineralized areas, including the Josie Zone, lying between the Midwest and the Midwest A deposits. 76 of these holes (20,794.9 metres) have intersected the mineralization associated with the Midwest A deposit. Additional geophysical programs were also conducted.

The Midwest Main deposit was intensively drilled in the late 1970's and 1980s. Drill holes defining the Midwest deposit include 615 drill holes, of which 362 are mineralized. By type, these include exploration, shallow reconnaissance (<100 metres), and geotechnical drill holes. Only 11 drill holes have been completed on the Midwest Main deposit area under Orano Canada's operatorship. Four inclined geotechnical holes were drilled in 2004 and four shallow geotechnical drill holes were completed in 2006. Three additional exploration drill holes were carried out within the deposit outlines in 2006 (MW-677, MW-678, and MW-685).

No exploration work was conducted at Midwest during the period 2010 to 2017.

### Sampling, Analysis and Data Verification

During 2017, Orano Canada undertook a comprehensive review of the databases for both the Midwest Main and Midwest A deposits ahead of an updated mineral resource estimate. Concerns were identified at both deposits that needed to be addressed to increase both the confidence and the accuracy of the final estimate.

Given the historic nature of the data at Midwest Main a limited amount of data was readily available digitally: downhole gamma probe (“probe”) data existed only as paper logs making it previously unavailable to be used, no comprehensive 3D geological model was available, perched mineralization was not fully modeled, and further data QAQC was needed. Midwest A has a much more modern data set; however, no dry bulk density measurements were available, the latest drilling from September 2007 to December 2009 was not taken into account in the previous estimate, and the High Grade Zone was assigned an average uranium grade rather than performing grade modelling. Additionally, both deposits required new probe to chemical uranium assay grade (“grade”) correlations for the calculation of equivalent uranium (eU), combination of probe and grade data based on core recovery and probing/drilling parameters to be available for estimation, updated lithology and structural models (geological models), and an updated block model.

Work began with verifying the grade data against assay certificates and a historical nine track database from ESSO. Some discrepancies were noted in the sample locations as well as some of the grades due to typographical errors. When compared to the original drill logs and the probe logs, these were able to be rectified.

The Midwest deposits often have core loss associated with the mineralization, due to the high amount of clay alteration and quartz dissolution which makes core recovery while drilling difficult. This results in gaps in the grade dataset that are typically addressed by using probe equivalent uranium (eU) data. Digital probe data was available for Midwest A, however for Midwest Main most of probe data was never digitized and remained only available on paper logs. The paper logs for 218 holes were digitized and added to the Midwest data set. This was followed up by ensuring the probe data was depth corrected (depth matched with grade data), as well as the creation of new probe to grade correlations for both deposits.

Midwest Main had a robust density to grade correlation; however, Midwest A did not have any dry bulk density measurements taken. The only density data at Midwest A was in the form of specific gravity measurements which do not take into account porosity and therefore tend to overestimate the density. Due to the high density of uranium, density is a vital reference for the expected tonnage of high-grade uranium deposits, which has a direct effect on the amount of uranium estimated. Given this uncertainty at Midwest A, previous resource estimations were forced to use a very conservative grade to density regression formula to avoid overestimation of resources. During a 2017 site visit, 25 dry bulk density measurements were taken from the remaining Midwest A drill core and sent for dry bulk density and geochemical analyses. A new grade to density regression formula was established showing an increase to the correlation by approximately 10%.

Various chemical assay methods have been employed at the Midwest Project prior to Orano Canada assuming operatorship in 2004. The methods described herein pertain to the program from 2004 onwards. Drill core with anomalous total gamma radioactivity (>200 counts per second utilizing a SPP2 or SPPy scintillometer) was sampled over 0.5 metre intervals. Sampling is undertaken on site by splitting the core in half, with one half submitted for analysis and the other half retained in the core box for future reference. Uranium chemical assays are performed by the

SRC Lab located in Saskatoon. Sample preparation involves crushing and pulverizing core samples to 90% passing -106 microns. Splits of the resultant pulps are initially submitted for multi-element ICP-MS analysis following partial (HNO<sub>3</sub>:HCl) and total (HF:HNO<sub>3</sub>:HClO<sub>4</sub>) digestions. Samples with  $\geq 1,000$  ppm U (partial digest) are re-assayed for U<sub>3</sub>O<sub>8</sub> using an ISO/IEC 17025:2005 accredited method for the determination of U<sub>3</sub>O<sub>8</sub> weight %. Pulp splits are digested using aqua-regia and the solution analyzed for U<sub>3</sub>O<sub>8</sub> weight % using ICP-OES.

For composite exploration samples, collected over 20 metre (upper sandstone) or 10 metre intervals (lower sandstone and basement), major and trace elements are determined using ICP-MS or ICP-OES after partial and total digestions. Boron values are obtained through NaO<sub>2</sub>/NaCO<sub>3</sub> fusion followed by ICP-OES. In addition to internal checks by the SRC Lab, Orano has rigorous quality assurance and quality control ("QAQC") procedures including the insertion of standard reference materials, blanks and field duplicates.

For mineral resource estimation purposes, wherever core recovery was less than 75%, the radiometric equivalent uranium values ("eU") derived from a calibrated downhole gamma probe are substituted for chemical assays where possible. Core recovery at Midwest Main is typically good with poorer recovery observed at Midwest A. For the Midwest A and Midwest Main updated mineral resource estimates reported herein, 64% and 16% of the assay intervals relied on eU grades, respectively.

Orano Canada has performed detailed QAQC and data verification, where possible, of all datasets, which in Denison's opinion are in accordance with industry best practice. Denison has performed additional QAQC and data verification of the drilling database including review of the QA/QC methods and results, verification of assay certificates against the database assay table, review of downhole probe and eU calculation procedures, standard database validation checks and two site visits to the Midwest project in early 2018. Denison has reviewed Orano Canada's procedures and protocols and considers them to be reasonable and acceptable for mineral resource estimation.

#### Mineral Processing and Metallurgical Testing

There has been no mineral processing or metallurgical test work completed on the Midwest A deposit. It is recommended that initial metallurgical testing be carried out in conjunction with future drilling campaigns.

Several programs of metallurgical testing have been carried out on Midwest Main mineralization. The two main studies were by Melis Engineering in 1990 and by SEPA (Service d'Études, de Procédés et Analyses, engineering department of the Orano Group in France) in 1998. Both studies show that good metallurgical recovery of uranium can be achieved. The current McClean mill milling process differs from what was planned by Melis as a separate facility was planned in the study. The leaching tests done by SEPA on the Midwest Main mineralization samples showed that 99.5% of uranium could be extracted using these conditions:

- Leach time 24 hours
- Acid addition 120 kg/tonne
- Free acid at end of test 25 g/l
- Oxidation, O<sub>2</sub> at 2 bar pressure
- Redox 470 m.v.

The current process for Cigar Lake ore being processed at the McClean mill requires an eight hour leaching time which is substantially less than what is proposed as optimal for Midwest Main ore (24 hours). As the mill has recently undergone upgrades, it is expected these leaching times will be reviewed.

The test work has demonstrated that a metallurgical recovery for uranium of 98% from Midwest Main mineralization can be obtained.

The Midwest Main deposit has a relatively high amount of arsenic (5-10% overall), which could affect the water quality discharge from the mill if not properly precipitated into the tailings. The SEPA study proposed using ferric sulphate to precipitate the arsenic in the tailings. Currently the mill is addressing arsenic in the Cigar Lake ore, which also contains high levels of arsenic, using barium chloride and ferric sulphate to precipitate it from solution.

Test work was conducted by Denison in 1992 at Lakefield Research to determine if the recovery of nickel and cobalt was feasible along with the extraction of uranium (Lakefield Research, 1992). Test work indicated that a precipitate with good grades of nickel and cobalt could be produced from a raffinate solution after the arsenic and radium are precipitated. It is estimated that an overall process recovery of 54% for both nickel and cobalt could be achieved.

The JEB mill has seen many recent upgrades and changes since the 1992 and 1998 studies were conducted. Review of the studies and additional metallurgical testing will likely need to be conducted prior to mining of Midwest Main.

#### Mineral Resource Estimates

The Company retained SRK Consulting to independently review and audit an updated mineral resource estimate for the Midwest project completed by Orano Canada in November 2017. The review and audit was done in accordance with CIM Definition Standards (2014) and NI 43-101. The Company received a memorandum from SRK Consulting dated March 9, 2018, which was incorporated into the Midwest Technical Report. See “Mineral Reserves and Mineral Resources”, above, for a summary of the mineral resource estimate for the Midwest project.

In November 2017, Orano Canada provided Denison with a comprehensive Project database consisting of drill hole data, mineralized wireframes and block models for both the Midwest Main and Midwest A deposits. Prior to mineral resource estimation, Orano had performed detailed QAQC and data verification of all datasets, which in Denison’s opinion are in accordance with industry best practice. Denison performed additional QAQC and data verification of the database including review of the QA/QC methods and results, verification of assay certificates against the database assay table, standard database validation checks and two site visits to the Midwest project in early 2018. Denison has reviewed Orano’s procedures and protocols and considers them to be reasonable and acceptable for mineral resource estimation. The Midwest database was sent to SRK to conduct review and audit of the updated mineral resource estimate completed by Orano Canada. For the audited mineral resource estimate, SRK used data collected from several drilling campaigns completed between 1977 and 2009, including a total of 156 drill holes for Midwest A and 305 drill holes for Midwest Main. The audited mineral resource estimate includes expanded Low Grade and High Grade zones for Midwest A and three primary mineralized zones at Midwest Main, namely Unconformity, Perched and Basement zones. A summary of the audited estimation methodology and for Midwest A and Midwest Main are described below.

The Midwest A block model consists of two main mineralized domains, Low Grade and High Grade zones constructed using a 0.05% U cut-off with minimum thickness of two metres and 10.0% U cut-off with minimum thickness of one metre, respectively. A perched zone was identified, but was not considered for resource estimation. The Midwest A deposit consists of data from 113 boreholes of which 69 boreholes intersect the mineralization itself. Grades are comprised of 64% eU data, derived from a calibrated downhole gamma probe, and 36% chemical assay data. Sample data were composited to one metre length. An accumulation-like approach was used, wherein density multiplied by grade (DG, where grade is in percent uranium) and density were estimated into a three-dimensional block model, constrained by wireframes in two passes using ordinary kriging. The grade was then calculated into each block by dividing the estimated DG by the estimated density. A block size of 5 by 5 by 2 metres was selected. Search radii were based on variogram analyses with a relatively flat ellipsoid used aligned roughly to the unconformity surface.

Grade capping was not performed, however, the treatment of high grades was considered during estimation by limiting the influence of DG composites greater than 20 and density composites greater than 3, to a neighbourhood of 7.5 cubic metres within the low-grade zone. Within the High Grade zone SRK applied a high grade limited radial influence of DG composites greater than 200, within a 7.5 metre cubic volume. Classification is based on drillhole spacing, with blocks classified as Indicated only found in the sandstone and upper basement portion of the Low Grade zone with drillhole space of 30 metres or less. The lower basement and all other sandstone blocks are classified as Inferred.

The Midwest Main block model considered three main mineralized domains: one Unconformity, 19 Perched and a one Basement zone constructed using a 0.05% U cut-off with minimum thickness of two metres. The Midwest Main deposit consists of data from 305 boreholes that intersected the mineralization, with new downhole gamma probe eU data for unsampled locations or in areas of poor core recovery (less than 75% core recovery). Grades are comprised of 16% eU data, derived from a calibrated downhole gamma probe, and 84% chemical assay data. Sample data were composited to one metre length.

Similar to Midwest A, two attributes, density and density multiplied by grade (DG), were calculated into each block using ordinary kriging, and the uranium grade was then calculated by dividing the estimated DG by the estimated density. A block size of 5 by 5 by 2 metres was selected. Search radii were based on variogram analyses with a relatively flat ellipsoid used aligned roughly to the unconformity surface.

Capping was not performed, however, higher grade composites were limited to a 5-cubic-metre neighbourhood of influence. This was applied to all zones, with high grade thresholds varying by zone. Classification is based on estimation passes, with blocks classified as Indicated only in the Unconformity zone and in regions of tight borehole spacing up to a nominal spacing of 17.5 metres. All other blocks are classified as Inferred.

#### Exploration, Development and Production

The 2018 exploration program at the Midwest project, operated by Orano Canada, consists of 5,000 metres of diamond drilling in approximately 15 holes. Drilling will focus on brownfield exploration at Midwest Main (5 holes to test basement targets) and along the Points North conductor (5 holes to test unconformity and basement targets). An additional 4 to 5 holes are planned to upgrade the high-grade inferred resources at Midwest A to an indicated category.

In early 2007, Orano Canada completed an internal study evaluating the feasibility of mining the Midwest Main deposit via open pit mining methods and processing the resulting ore at the McClean Lake mill. In November 2007, the Midwest Joint Venture partners made a formal production decision to proceed with the development of the Midwest Main deposit. Subsequently, in November 2008, the Midwest Joint Venture partners announced that the development of the Midwest Main project would be delayed for an indefinite period due to delays and uncertainties associated with the regulatory approval process, increasing capital and operating cost estimates and the depressed state of the uranium market at the time.

In September 2011, the final version of the Midwest Project Environmental Impact Statement ("EIS") was submitted to provincial and federal governments. A Comprehensive Study Report was drafted by the CNSC and circulated for federal, provincial and aboriginal review, and in September 2012, the Midwest EIS was approved.

At this time, no development or production is currently planned.

## **Other Properties, Athabasca Basin, Saskatchewan**

Results from the 2017 programs at Denison's highest priority non-material properties are discussed below. For Sampling, Analysis and Data Verification Procedures with respect thereto, see "Athabasca Exploration: Sampling, Analysis and Data Verification".

### **Murphy Lake Project**

Denison holds a 82.58% interest in the Murphy Lake project, with Eros Resources holding the remaining 17.42%. Denison is the operator. Murphy Lake is located approximately 30 kilometres northwest from the McClean Lake mill and is contiguous with the northwest boundary of Denison's Waterbury Lake property. The Murphy Lake property is comprised of seven mineral claims covering 12,038 hectares in two non-contiguous blocks, namely the southern block (5 claims, 10,506 hectares) and northern block (2 claims, 1,532 hectares).

In 2015, Denison carried out a diamond drilling program consisting of five holes totalling 1,818 metres on the southern block of the Murphy Lake property. The program focused on testing DCIP resistivity targets along the southern Murphy Lake trend (Dalton Lake trend), where limited historical drilling had intersected significant structure and alteration both in the sandstone and the basement. The first hole of the program, MP-15-03, encountered weak uranium mineralization over a significant width. The hole intersected 0.25%  $U_3O_8$  over 6.0 metres starting at a depth of 270 metres at the sub-Athabasca unconformity. The mineralization is associated with a zone of strong sandstone alteration including desilicification and clay over a hematite cap. Basement rocks immediately below the mineralization consist of graphitic pelitic gneisses that are in fault contact with both the overlying meta-arkoses and the underlying granites. Four additional drill holes were completed to follow up on the mineralization in MP-15-03. While none of the holes intersected significant mineralization, all encountered significant structure and alteration, suggesting the presence of a prospective mineralized system. Drill hole MP-15-06 intersected weakly elevated radioactivity straddling the unconformity approximately 23 metres south of the mineralized section in MP-15-03. Sandstone litho-geochemistry samples from this section returned elevated partial uranium values ( $>1$  ppm) extending more than 150 metres above the mineralization.

A drilling program was completed during the 2016 winter program, as well as ground gravity and DC-IP resistivity surveys. A total of 3,695 metres in 10 drill holes were completed to mainly test high priority targets identified along strike and on section of MP-15-03. Drilling confirmed the continuity of the intense hydrothermal sandstone alteration system, identified in 2015, over a strike length of 850 metres. Weak uranium mineralization was intersected in the sandstone associated with intense hematite and clay alteration in three drill holes (MP-16-08, MP-16-11 and MP-16-17). Highlight results include 0.19%  $U_3O_8$  over 2.9 metres (drill hole MP-16-08), 0.13%  $U_3O_8$  over 14.5 metres (drill hole MP-16-11) and 0.04%  $U_3O_8$  over 16 metres (drill hole MP-16-17). Drill hole MP-16-08, drilled on section with MP-15-03, identified uranium mineralization associated with a parallel graphitic fault zone approximately 70 metres to the south. Drill holes MP-16-11 and MP-16-17 were both drilled along strike to the west of drill hole MP-15-03 at 200 metres and 100 metres, respectively.

During the winter 2017, Denison completed a nine hole drill program, totaling 3,433 metres, with a primary focus on testing the Dalton Lake trend both to the east and west along strike where alteration remained open and untested targets were evident in the ground geophysical and geochemical datasets. Additional drilling was completed to evaluate other high priority targets associated with parallel trends in the area. The winter 2017 drilling program successfully extended



the known alteration system over a continuous strike length of 1.8 kilometres, though no significant radioactivity or uranium mineralization was encountered.

### Crawford Lake Project

Crawford Lake is 100% owned by the Company and is located immediately southwest of Denison's Wheeler River project, approximately 10 kilometres south of Cameco's Millennium deposit in the southeast portion of the Athabasca Basin. The Crawford Lake property is comprised of five contiguous mineral claims covering 11,800 hectares.

During the third quarter of 2016, two holes were completed for a total of 1,706 metres which focused on targets on the CR-3 conductive trend from a 2014 resistivity survey. The first hole completed (CR-16-27A) intersected 100 metres of strong sandstone alteration above the unconformity and a wide graphitic structure 90 metres below the unconformity suggesting the optimal target at the unconformity remains untested. The second hole (CR-16-28) was targeting a previously untested parallel conductor to the main CR-3 trend. CR-16-28 intersected 100 metres of strong sandstone alteration and a wide structurally disrupted graphitic conductor. No elevated radioactivity or uranium mineralization was intersected in either of the holes. The CR-3 trend remains highly prospective with the previous discovery of weak uranium mineralization and both strong sandstone and basement alteration present.

A single 519 metre drill hole (CR-17-29) was completed during winter 2017 to utilize ice formation to test a target occurring below a lake. The single hole was completed on the CR-3 conductive trend targeting a 'structural bend' interpreted from ground geophysical data. The hole was located between drill holes CR-15-24 and CR-16-26, located 300 metres along strike to the southwest and northeast respectively. Both of these previous holes intersected strongly altered and structurally disrupted basement. Drill hole CR-17-29 intersected weakly elevated total gamma radioactivity (280 counts per second) at the unconformity and a graphitic unit with faults at 43 metres and 52 metres below the unconformity. The alteration surrounding the basement faults was not as substantial as the alteration in CR-15-24 and CR-16-26, however the optimal unconformity target remains untested on this portion of the CR-3 trend.

Four holes were completed during summer 2017, for a total of 2,068 metres. Three of the holes targeted the CR-3 conductive trend and one hole targeted a parallel conductive trend to the CR-3. Two of the three holes on the CR-3 intersected significant alteration including 250 metres of strong sandstone alteration in CR-17-32 along with total gamma radioactivity of 650 counts per second in healed fractures at the unconformity. The drill hole (CR-17-31) testing the parallel trend intersected strong sandstone alteration and structure higher up in the sandstone, suggesting the optimal target was overshoot. The CR-3 area (including parallel trends) remains prospective with continued discovery of weak uranium mineralization at the unconformity and limited historical drilling.

### Hook-Carter Project

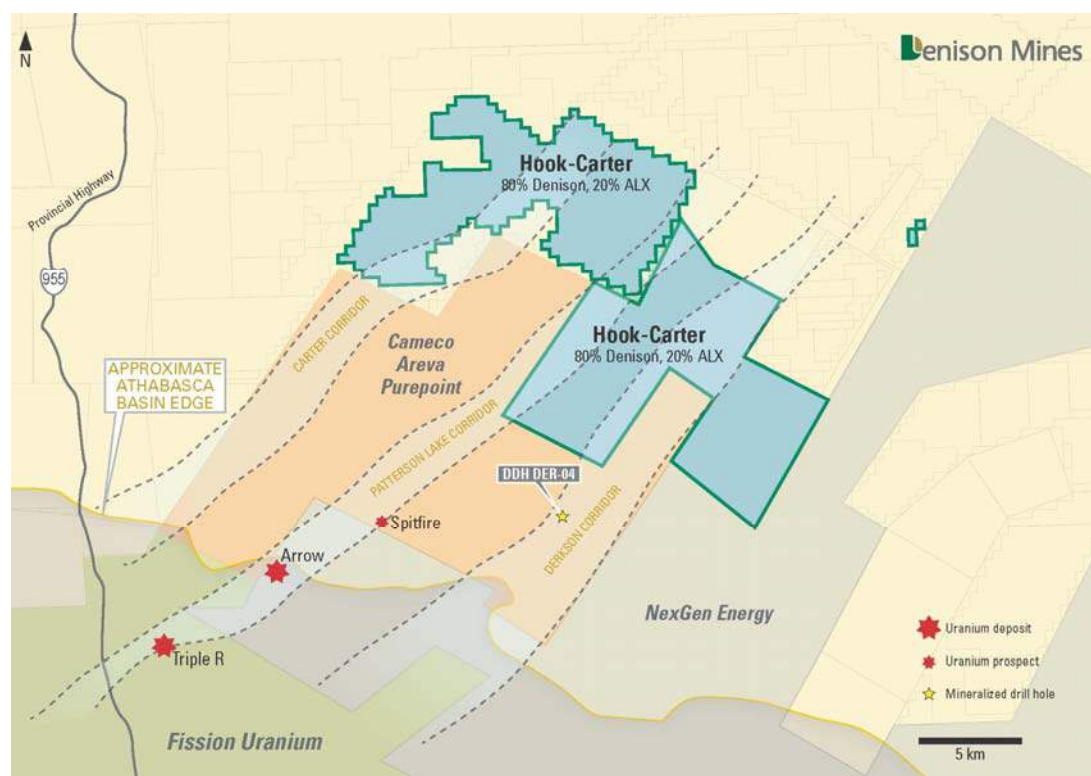
In November 2016, Denison acquired an immediate 80% ownership of the entire Hook-Carter property ("**Hook-Carter**"), from ALX, in exchange for the issuance of 7,500,000 common shares of Denison. Under the terms of the agreement, ALX will retain a 20% interest in Hook-Carter and Denison has agreed to fund ALX's share of the first \$12,000,000 in expenditures. Denison will be the operator of the project and will retain full discretion as to the nature, extent, timing and scope of all work projects on Hook-Carter. Denison agreed to a modest work commitment, whereby Denison is required to spend \$3,000,000 on the property over the first 3 years. If Denison does not meet the \$3,000,000 work commitment, ALX's interest will increase from 20% to 25% and

Denison's interest in the project will decrease from 80% to 75%. The parties have agreed to form a joint venture thirty-six months after the effective date of the agreement, in which all material decisions shall be carried by a vote representing a 51% ownership interest. The Denison common shares issued to ALX are subject to an escrow arrangement, whereby 1/6<sup>th</sup> of the shares were available to ALX on closing, and a further 1/6<sup>th</sup> of the shares are to be released from escrow in 6 month increments following the closing.

In November 2016, Denison also completed the purchase of the Coppin Lake property ("**Coppin Lake**") from Orano Canada and UEX Corporation. Coppin Lake comprises ten mineral claims covering an area of 2,768 hectares in the western portion of the Athabasca Basin region in northern Saskatchewan. The claims lie between, and are contiguous with, both the Carter East and Carter West blocks of the Hook-Carter property. Under the terms of the Hook-Carter acquisition, ALX has elected to acquire an interest in Coppin Lake from Denison that is equal to ALX's interest in Hook-Carter and the Coppin Lake claims will be included as part of the overall Hook-Carter property.

Hook-Carter is located near the southwestern margin of the Athabasca Basin, in northern Saskatchewan approximately 25 kilometres east of Highway 955. The property is accessible year round by utilizing a combination of vehicular and helicopter and/or fixed wing aircraft. Hook-Carter is highlighted by 15 kilometres of strike potential along the Patterson Lake Corridor – host to the recently discovered Triple R deposit (Fission Uranium Corp.), Arrow deposit (NexGen Energy Ltd.), and Spitfire discovery (Purepoint Uranium Group Inc., Cameco Corp., and Orano Canada (formerly AREVA Resources Canada Inc.)) which occur within 8 to 20 kilometres of Hook-Carter. The property also covers significant portions of the Derkson and Carter Corridors which provide additional priority target areas (see location map below).

### Hook-Carter Property, in Relation to Nearby Uranium Deposits and Prospects



The property is currently comprised of 45 claims (41 contiguous and four separate claims) covering 20,522 hectares with an annual assessment requirement of \$400,925 to maintain title to the mineral claims. Certain specific claims on the property are subject to certain Net Smelter Return Royalties (2.0% or 2.5% with fifty percent buyback) or Gross Overriding Return Royalties (2.5% with forty percent buyback).

Hook-Carter features between 250 and 700 metres of Athabasca Group sandstone cover overlying the basement rocks that define the prospective geological trends or corridors. As a result, Hook-Carter offers both basement- and unconformity-hosted uranium deposit potential.

Hook-Carter is significantly underexplored compared with other properties along this trend with only eight historic drill holes, including only five holes over the 15 kilometres of Patterson Lake Corridor strike length. Three historic holes have been completed on the Derkson Corridor and no drilling has been carried out on the Carter Corridor. Results from historic holes (including sandstone alteration, geochemistry and basement geology and structure) suggest favorable environments for the presence of unconformity-related uranium deposits. All the holes drilled to date were designed to test the unconformity (seldom penetrating more than 100 metres into the basement) and therefore the basement is considered unexplored. The five holes on the Patterson Lake Corridor are between 1.5 and 4.3 kilometres apart and considering the corridor is comprised of multiple conductors, significant space and potential exists for sizeable deposits.

Previous exploration work has been dominated by geophysical surveys dating back to 1997. Airborne surveying has included property-wide electromagnetics (including a VTEM™ survey on the Patterson Lake Corridor), a property-wide medium-resolution magnetic survey and limited Falcon® Airborne Gravity Gradiometry and HeliSAM TEM surveying. These data sets provide an excellent repository for the interpretation of basement geology and area selection for further targeting. Ground geophysical surveying has included property-wide electromagnetic surveys on a reconnaissance spacing. The airborne and ground electromagnetic survey results indicate the prospective corridors on Hook-Carter are comprised of multiple conductors suggesting numerous graphitic target horizons are present. Surficial surveys completed include lake sediment sampling, radiometric sampling, and boulder sampling. Anomalies produced by boulder and lake geochemistry along the Patterson Lake corridor provide further encouragement for mineralization. Approximately 3 kilometres southwest along trend of the Hook-Carter property boundary, drilling on the Derkson Corridor has previously returned mineralized results approximately 5 metres below the unconformity (0.24% U<sub>3</sub>O<sub>8</sub> over 2.5 metres reported in drill hole DER-04 by SMDC-Imperial Oil, 1978, Assessment File Number 74F11-0008, Saskatchewan Mineral Assessment Database).

During 2017, exploration activities at the Hook-Carter project included ground geophysical surveying over the shallower portions of the Patterson Corridor. A Moving Loop Time-Domain Electromagnetic (“MLTEM”) survey and a DC-IP resistivity survey were completed on the HC-17-G1 grid, which was cut in early winter 2017. The MLTEM survey identified five steeply east-dipping apparent conductors, named HC-01 to HC-05. The conductors are interpreted to be basement hosted graphitic structures that would form drilling targets. The DC-IP resistivity survey has generated numerous additional targets, both at the unconformity and within the basement, some of which are coincident with the MLTEM targets.

Denison plans to carry out a substantial exploration program in 2018 consisting of approximately 10,000 metres of diamond drilling. The program will test a number of high-priority targets identified by the 2017 MLTEM and Spartan DC-IP resistivity surveys.

### South Dufferin

The South Dufferin project is a 100% Denison owned property comprising 14,364 hectares in six contiguous mineral claims. The property lies just off the southern margin of the Athabasca Basin and covers the southern extension of the Virgin River Shear Zone which hosts known uranium mineralization at Cameco's Centennial deposit approximately 20 to 25 kilometres along trend to the north. Exploration potential exists for basement-hosted uranium mineralization associated with the Dufferin Lake fault and parallel faults within the Virgin Lake Shear zone.

During 2015 and 2016, soil and radon sampling programs were conducted over the property. The surveys were successful in generating numerous anomalies which, based on their size, amplitude and orientation, could represent uranium mineralization occurring in basement rocks beneath the glacial till cover. During 2017, horizontal loop electromagnetic (HLEM) survey coverage and combined total field magnetic and VLF electromagnetic (VLF-EM) surveying was completed on three grids. Several coincident soil/radon and electromagnetic anomalies have been identified and have resulted in five priority drill target areas. A diamond drilling program is proposed for summer 2018, to be comprised of approximately 2,200 metres of drilling in 16 holes.

### Mann Lake

The Mann Lake exploration project is located 25 kilometres southwest of the McArthur River mine and is on trend between Cameco's Read Lake project and Denison's 63.3% owned Wheeler River project in Saskatchewan's eastern Athabasca Basin. The property is comprised of two mineral claims covering 3,407 hectares. The Mann Lake project is a joint venture between Cameco (52.5%), Denison (30%) and Orano Canada (17.5%). Cameco is the operator.

During 2014 and 2015 a significant zone of unconformity mineralization was discovered by Cameco along the Granite Contact ("GC") fault over a 600 metre strike length, highlighted by 6.7%  $U_3O_8$  over 3.9 metres in drill hole MN-066-01. The winter 2016 drilling program was focused on testing the southern extent of the GC fault, which is interpreted to extend approximately 2.4 kilometres from the mineralized zone to the southern property boundary. Three holes were completed, two of which identified a significant sub-Athabasca unconformity offset related to the GC fault, including significant alteration and anomalous geochemistry, approximately 300 metres from the southern property boundary on section L500N. As a result, the 2016 exploration program was increased to allow for a further 3 holes which were completed in the second quarter of 2016. Drill hole MN-078, designed to test the unconformity offset on section L500N, pierced the unconformity 10 to 15 metres west of optimal target and intersected weak uranium mineralization (up to 400 cps on the handheld total gamma scintillometer) over 1 metre. A further two holes were drilled 200 metres to the south on L300N to test the GC fault offset at the unconformity. Drill hole MN-079 intersected significant structure and alteration in the lower sandstone associated with the GC fault, including elevated radioactivity up to 800 cps on the handheld total gamma scintillometer, and was interpreted to have overshot the optimal target by approximately 40 metres. Drill hole MN-080, drilled 40 metres to the east of MN-079, intersected the damage zone of the GC fault in the basal sandstone and intersected the GC fault zone approximately 50 metres below the unconformity within graphitic pelitic gneiss. The significant structure, alteration and unconformity offset first identified on L500N associated with the GC fault was confirmed to be present on L300N and to have associated elevated radioactivity. No field work was undertaken by Cameco during 2017, and no field work has been proposed by Cameco for 2018.

### Other Denison Athabasca Projects

Denison's other Athabasca projects range in exploration maturity and present numerous exploration opportunities. Denison continues to review its significant land package with a view to generating new exploration targets or creating spin-out opportunities. During 2017, exploration programs on Denison's other Athabasca projects included DCIP resistivity surveying at Bachman Lake and Moon Lake South. Exploration for 2018 on Denison's other Athabasca projects is expected to include a ground geophysical survey at Hatchet Lake.

<b>Projects (as at Dec 31 2017)</b>	<b>Denison % Ownership</b>	<b>JV Partner</b>	<b># Claims</b>	<b>Hectares</b>
Bachman Lake	100%	N/A	5	11,419
Bell Lake	100%	N/A	8	23,642
Brown Lake	100%	N/A	4	1,853
Candle Lake	44.62%	Uranium One/JCU	1	2,595
Darby	59.49%	Uranium One	10	17,564
Epp Lake	100%	N/A	2	1,586
Ford Lake	100%	N/A	8	10,924
Hatchet Lake	70.15%	Eros Resources Corp.	8	19,340
Jasper Lake	100%	N/A	2	1,790
Johnston Lake	100%	N/A	7	24,598
Lynx Lake	59.49%	Uranium One	1	1,274
Marten	100%	N/A	2	5,008
Moon Lake	59.49%	Uranium One	2	4,590
Moon Lake North	100%	N/A	5	788
Moon Lake South	51.00% <sup>(1)</sup>	N/A	1	2,716
Moore Lake	100% <sup>(2)</sup>	N/A	12	35,705
Packrat	100%	N/A	1	1,621
Park Creek	49.00%	Cameco	8	7,798
Perpete Lake	100%	N/A	2	1,058
Russell Lake	37.82%	Cameco/Boyko	1	355
Stevenson River	100%	N/A	1	3,751
Torwalt Lake	100%	N/A	1	812
Turkey Lake	100%	N/A	1	3,789
Waterbury North	100%	N/A	2	705
Waterbury South	100%	N/A	6	1,063
Waterfound	14.42%	Orano Canada/JCU	25	11,670
Waterfound North	59.49%	Uranium One	4	4,124
Wolly	21.89%	Orano Canada/JCU	17	23,700
Wolverine	100%	N/A	3	5,735

**Notes:**

- (1) Subject of an option agreement between Denison and CanAlaska Uranium Ltd., pursuant to which Denison can earn up to a 75% interest in the property.
- (2) Subject of the Skyharbour Agreement, pursuant to which Skyharbour can acquire a 100% interest in the property, subject to certain buy-back options exercisable by Denison.

## **ATHABASCA EXPLORATION: SAMPLING, ANALYSIS AND DATA VERIFICATION**

The following section details procedures and protocols for all Athabasca exploration programs operated by Denison in reference to drill hole surveying, downhole radiometric surveying, core logging, core sampling, sample preparation methods, analytical procedures, Quality Assurance and Quality Control (“QA/QC”) and data verification.

### **Drill Hole Surveying**

Drill collars are typically sited and surveyed in the field using a Differential Global Positioning System (“DGPS”) to determined accurate coordinates and elevation. The drill rig azimuth and dip is aligned using a field compass set to the appropriate magnetic declination. The trajectory of all drill holes is determined with a Reflex survey instrument in single point mode, which measures the dip and azimuth at 50 metre intervals down the hole.

### **Downhole Radiometric Probe Surveying**

When possible, all drill holes are surveyed immediately after drilling with a downhole radiometric probe to measure natural gamma radiation. Each survey consists of either a HPL2375 single sodium iodide (NaI) scintillation crystal tool or a 2GHF-1000 triple gamma (one sodium iodide crystal and two ZP1320 high flux Geiger-Mueller (GM) tubes) tool attached to a MX-Series winch with a MGX data recorder connected to a portable computer. All logging instruments are manufactured by Mt. Sopris Instruments Inc., Denver CO and powered by a portable Honda generator.

Downhole logging measurements are completed within the drill rods for both down and up survey runs using MSLog software provided by Mt Sopris. Logging speeds are maintained at approximately 10 metres/minute. Individual data recordings are stored separately for each run on a portable laptop computer.

Total count measurements from each survey are converted to equivalent grade  $U_3O_8$  % (e  $U_3O_8$ ) values using conversion coefficients derived from calibration facilities at the Saskatchewan Research Council (SRC) pits located in Saskatoon, Saskatchewan. The calibration facilities allow for regular checks on both probes and probing equipment and to monitor or determine maintenance issues before field operations begin. This site consists of four mineralized holes, with isolated uranium concentrations of 1.4, 1.6, 1.6 and 0.21 metres wide with U grades varying from 0.063, 0.29, 1.25 and 4.07%, respectively. Individual probes are calibrated using the NaI crystal measurements a minimum of two times per year, normally before and after the winter and summer field seasons. Survey results are also corrected for attenuation of signal in water and for the thickness of steel pipe in the hole. GM tubes are checked for drift at the site, however calibration factors for these probes was derived separately using direct comparisons of total count values with assay core results as high as 80%  $U_3O_8$ . The “in-situ” nature of this calibration procedure allows for a wider spectrum of predicted results than using the SRC calibration facilities.

The Company typically reports preliminary radiometric equivalent grades (“e  $U_3O_8$ ”), derived from a calibrated downhole total gamma probe, during its exploration programs and subsequently reports definitive assay grades following sampling and chemical analysis of the mineralized drill core.

## Core Logging

Denison employs suitably qualified persons to log all drill core in detail at dedicated, custom-built core logging facilities proximal to drilling operations. Routine logs completed for each drill hole include lithology, sandstone texture, paleoweathering, mineralization, alteration, structure (interval and point), geotechnical and gamma (handheld scintillometer). Where required for geophysical survey reconciliation, additional logs may include magnetic susceptibility and other physical property measurements. For advanced projects where mining studies may be applicable geotechnical logs are expanded and may also include point load testing. All logging data, together with collar and survey information and a drill hole summary, are uploaded to a DH Logger database with central storage on Denison's server at the Saskatoon office. In addition, drill core is photographed, both wet and dry, before it is stored at project sites either in racks or as cross-stacks. Drill core handling and sampling protocols are in accordance with industry best practices.

## Core Sampling, Sample Preparation and Assaying

### Assay Samples

Denison submits drill core samples for chemical  $U_3O_8$  assay for all mineralized intervals, where core recovery permits. Mineralized intervals are identified by handheld scintillometer and confirmed by downhole gamma probe logs. All mineralized core is broken into approximate 10 centimetre pieces and measured with a handheld scintillometer (RS-120 or RS-125) by removing each piece of drill core from the ambient background, noting the most pertinent reproducible result in counts per second ("**cps**"), and carefully returning it to its correct place in the core box. Any core registering over 500 cps is marked for sampling, typically over 50 centimetre intervals. A threshold of 300 cps has been used at Wheeler River's Gryphon deposit since the beginning of 2017. Additional non-mineralized 'shoulder' samples are marked over 50 centimetre intervals to flank both ends of the mineralized intervals. In areas of strong mineralization more than one sample on either end is sometimes required. All core samples are split in half with a hand splitter according to the sample intervals marked on the core. One-half of the core is returned to the core box for future reference and the other half is bagged, tagged, and sealed in a plastic bag. Bags of mineralized samples are sealed for shipping in metal or plastic pails depending on the radioactivity level.

Because the mineralized drill cores are classified as hazardous materials and are regulated under requirements governing the transport of dangerous goods, Denison staff have been trained in the proper handling and transport of the cores and deliver them from the core facility directly to the laboratory without outside contact.

All drill core  $U_3O_8$  assays are conducted by the SRC Lab. The assay sample preparation and analytical procedures are as follows:

- Drill core samples are received by the analytical laboratory from Denison in sealed five-gallon plastic or metal pails. Each sample is contained in a sealed plastic bag with a sample tag. A packing slip is enclosed that contains instructions and a sample number list. Samples are verified against the packing slip. Any extra samples or missing samples are noted and Denison is informed.
- Samples are sorted and processed according to location (sandstone or basement origin) and level of radioactivity.
- Sample preparation includes drying, jaw crushing to 60% passing -2 millimetres and pulverizing to 90% passing -106 microns.

- The resultant pulp is split and digested using a two-acid partial digest ( $\text{HNO}_3\text{:HCl}$ ) and a three-acid 'total' digest ( $\text{HF:HNO}_3\text{:HClO}_4$ ) and the respective solutions analyzed for multi-elements, including uranium, using ICP-OES (SRC Lab analytical method ICP1). Boron values are obtained through  $\text{NaO}_2\text{/NaCO}_3$  fusion followed by ICP-OES.
- When uranium partial values, as obtained above, are  $\geq 1,000$  ppm, sample pulps are re-assayed for  $\text{U}_3\text{O}_8$  using SRC Lab's ISO/IEC 17025:2005 accredited method for the determination of  $\text{U}_3\text{O}_8$  wt%. A split of the sample pulp is digested using aqua-regia ( $\text{HCl:HNO}_3$  in the ratio 3:1) and the solution analyzed for  $\text{U}_3\text{O}_8$  wt% using ICP-OES.F

### Bulk Dry Density Sampling

In addition, samples are routinely collected from mineralized intersections for bulk dry density determination as required for mineral resource estimation. Density samples are typically collected at a frequency of one density sample per 10 assay samples (i.e. 1 sample for every 5 metre interval), also ensuring the density samples are representative of the uranium grade range and the different domains of the deposit. The density samples comprise half-split core over 10 centimetre intervals, and for each sample, the depth, rock type and gamma scintillometer reading is recorded. The samples are sent to the SRC Lab for analysis along with the mineralized core samples for assay. At the SRC Lab, the density samples are first weighed as received and then submerged in de-ionized water and re-weighed. The samples are then dried until a constant weight is obtained. The sample is then coated with an impermeable layer of wax and weighed again while submersed in de-ionized water. Weights are entered into a database and the bulk density of each sample is calculated. Water temperature at the time of weighing was also recorded and used in the bulk density calculation. Following bulk density determination, the samples are sent for uranium assay using SRC Lab's ISO/IEC 17025:2005 accredited method for the determination of  $\text{U}_3\text{O}_8$  wt% in order to ensure a direct correlation can be made between density and assay values.

### Exploration Samples

Three other types of drill core samples are collected during routine exploration, the results of which are used to prioritize drill holes for follow-up exploration or determine geochemical and/or alteration vectors toward mineralization, as follows:

1. Composite geochemical samples are collected over approximately 10 metre intervals in the upper Athabasca sandstone and in fresh lithologies beneath the unconformity (basement) and over 5 metre intervals in the basal sandstone and altered basement units. The samples consist of 1 centimetre to 2 centimetres disks of core collected at the top or bottom of each row of core in the box over the specified interval. Care is taken not to cross lithological contacts or stratigraphic boundaries. These samples are submitted to the SRC Lab for sample preparation and multi-element analysis. The same sample preparation procedures are used as described above for  $\text{U}_3\text{O}_8$  assay samples. The pulps are analyzed using the ICPMS Exploration Package which includes a total digest ( $\text{HF:HNO}_3\text{:HClO}_4$ ) and partial digest ( $\text{HNO}_3\text{:HCl}$ ) followed by ICP-MS analysis. Boron values are obtained through  $\text{NaO}_2\text{/NaCO}_3$  fusion followed by ICP-OES.
2. Representative/systematic core disks (one to five centimetres in width) are collected at regular 5 metre to 10 metre intervals throughout the entire length of core until basement lithologies become unaltered. These samples are analyzed for clay minerals using reflectance spectroscopy. Samples for reflectance clay analyses are analyzed by Denison using an



ArcSpectro FT-NIR ROCKET spectrometer and sent to AusSpec International Ltd. (AusSpec) for interpretation.

3. Select spot samples are collected from significant geological features (i.e. radiometric anomalies, structure, alteration etc.). Core disks 1 to 2 centimetres thick are collected for reflectance spectroscopy and split core samples are collected for geochemical analysis. The same reflectance spectrometry or geochemical procedures as described above are used.

These sampling types and approaches are typical of uranium exploration and definition drilling programs in the Athabasca Basin.

### Data Handling

After the analyses are completed, analytical data are securely sent using electronic transmission of the results, by the SRC Lab to Denison. The electronic results are secured using WINZIP encryption and password protection. These results are provided as a series of Adobe PDF files containing the official analytical results ("assay certificates") and a Microsoft Excel spreadsheet file containing only the analytical results. Analytical data received from the lab is imported directly into Denison's DH Logger database. The data is subject to validation using triggers built into the database to identify blank or standard assays that fall outside the accepted limits that require re-analysis. Field duplicates are validated using control charts. The laboratory is notified immediately of any problematic samples or batches and these are re-analyzed. Assay values that fall below the method detection limit (MDL) are reported by the lab as 'less than' values (<MDL). These values are automatically replaced by half MDL by the database during import. The database is backed up on- and off-site every day.

### **QAQC**

The SRC Lab has an internal QAQC program dedicated to active evaluation and continual improvement in the internal quality management system. The laboratory is accredited by the Standards Council of Canada as an ISO/IEC 17025 Laboratory for Mineral Analysis Testing and is also accredited ISO/IEC 17025:2005 for the analysis of  $U_3O_8$ . The laboratory is licensed by the Canadian Nuclear Safety Commission (CNSC) for possession, transfer, import, export, use, and storage of designated nuclear substances by CNSC Licence Number 01784-1-09.3. As such, the laboratory is closely monitored and inspected by the CNSC for compliance. All analyses are conducted by the SRC Lab, which has specialized in the field of uranium research and analysis for over 30 years. The SRC Lab is an independent laboratory, and no associate, employee, officer, or director of Denison is, or ever has been, involved in any aspect of sample preparation or analysis on samples. The SRC Lab uses a Laboratory Management System (LMS) for Quality Assurance. The LMS operates in accordance with ISO/IEC 17025:2005 (CAN-P-4E) "General Requirements for the Competence of Mineral Testing and Calibration Laboratories" and is also compliant to CAN-P-1579 "Guidelines for Mineral Analysis Testing Laboratories". The laboratory continues to participate in proficiency testing programs organized by CANMET (CCRMP/PTP-MAL).

The SRC Lab routinely inserts standard reference materials and blanks into batches of the Company's samples as an internal check on accuracy and contamination. Quality control samples (reference materials, blanks, and duplicates) are included with each analytical run, based on the rack sizes associated with the method. Before the results leave the laboratory, the standards, blanks, and split replicates are checked for accuracy, and issued provided the senior scientist is fully satisfied. If for any reason there is a failure in an analysis, the sub-group affected will be re-analyzed, and checked again. A Corrective Action Report will be issued and the problem

is investigated fully to ensure that any measures to prevent the re-occurrence can and will be taken. All human and analytical errors are, where possible, eliminated. If the laboratory suspects any bias, the samples are re-analyzed and corrective measures are taken.

Denison has developed several QA/QC procedures and protocols for all exploration projects to independently monitor laboratory performance which include the analysis of uranium standards, blanks, field duplicates and exploration standards, as follows:

Uranium Standards - Due to the radioactive nature of the standard material, insertion of the standard materials is preferable at the SRC Lab instead of in the field. During sample processing, the appropriate standard grade is determined, and an aliquot of the appropriate standard is inserted into the analytical stream for each batch of materials assayed. Uranium standards are typically inserted at a minimum rate of 1 in every 40 samples. For the Wheeler River project, Denison uses standards provided by Joint Venture partner Cameco for uranium assays. Six Cameco uranium assay standards have been prepared for use in monitoring the accuracy of uranium assays received from the laboratory. For other Denison projects a suitable matrix-matched Certified Reference Material ("CRM") is used as a standard.

Blanks - Denison employs a lithological blank composed of quartzite to monitor the potential for contamination during sampling, processing, and analysis. The selected blank consists of a material that contains lower contents of  $U_3O_8$  than the sample material but is still above the detection limit of the analytical process. Due to the sorting of the samples submitted for assay by the SRC Lab based on radioactivity, the blanks employed must be inserted by the SRC Lab after this sorting takes place, in order to ensure that these materials are ubiquitous throughout the range of analytical grades. In effect, if the individual geologists were to submit these samples anonymously, they would invariably be relegated to the minimum radioactive grade level, preventing their inclusion in the higher radioactive grade analyses performed by the SRC Lab. Blanks are typically inserted at a minimum rate of 1 in every 40 samples. For the Wheeler River project, Denison uses blanks provided by Joint Venture partner Cameco. For other Denison projects other suitable blank material is used, as provided by the SRC Lab.

Field Duplicates - The Company inserts duplicate samples in the sample stream as a check on the precision of the SRC Lab. Core duplicates are prepared by collecting a second sample of the same interval, through splitting the original sample, or other similar technique, and are submitted as an independent sample. Duplicates are typically submitted at a minimum rate of one per 25 samples. The collection may be further tailored to reflect field variation in specific rock types or horizons.

Exploration Standards – Denison has prepared three in-house 'exploration standards' to independently monitor laboratory performance during the processing of routine drill core exploration samples. These standards aim to test laboratory accuracy and precision for a variety of trace metals at low levels, as required for Athabasca uranium exploration.

Assay Checks – In addition to the QAQC described above, Denison sends one in every 25  $U_3O_8$  assay samples to the SRC Lab's Delayed Neutron Counting (DNC) laboratory, a separate facility located at the SRC Lab in Saskatoon, to compare the uranium values using two different methods, by two separate laboratories. All radioactive samples are monitored and recorded as per CNSC licence 01784-1-09.0. Furthermore, down hole radiometric probe results provide equivalent uranium data ( $eU_3O_8$ ) that is used internally by the Company for comparisons with the SRC Lab  $U_3O_8$  results.

## Data Verification

Denison engages with independent consultants for estimation of mineral resources on its mineral properties in accordance with CIM Definition Standards (2014) in National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”). In this regard, the independent consultants undertake rigorous data verification including, but not limited to, Denison’s field procedures, databases and assay results.

Prior to public disclosure of drilling results, including preliminary radiometric equivalent grades (“eU<sub>3</sub>O<sub>8</sub>”) and chemical assay grades (“U<sub>3</sub>O<sub>8</sub>”), the results are subject to data verification by Qualified Persons employed by Denison. This includes checks of 10 to 20% of the results (typically as composited intervals) against non-composited eU<sub>3</sub>O<sub>8</sub> determinations and laboratory assay certificates.

## DENISON’S OPERATIONS

### McClean Lake Mill

The MLJV owns a state of the art uranium processing facility located on the eastern edge of the Athabasca Basin in northern Saskatchewan, approximately 750 kilometres north of Saskatoon. Orano Canada is the operator/manager of the facility.

The McClean Lake mill is specially designed and constructed to process high grade uranium ores in a safe and environmentally responsible manner. The mill uses sulphuric acid and hydrogen peroxide leaching and a solvent extraction recovery process to extract and recover the uranium product from the ore. In addition to the mill facility, other infrastructure on the site includes a sulphuric acid plant, a ferric sulphate plant, an oxygen plant, an electricity transmission line tied into the provincial power grid, a 14 megawatt back-up diesel power plant, warehouses, shops, offices and living accommodations for site personnel.

In 2016, mill expansion, construction and licensing were completed and the licensed production capacity of the mill was increased to 24 million pounds U<sub>3</sub>O<sub>8</sub> per year. This increased licensed capacity allowed for the processing of 100% of ore production from the Cigar Lake mine, expected to be 18 million pounds U<sub>3</sub>O<sub>8</sub> per year, and the flexibility to mill ore from other sources.

### Operations

The McClean Lake mill began production of uranium concentrates in 1999, with the first ore fed to the mill on June 22, 1999 and commercial production achieved on November 1, 1999. The mill operated until the end of June 2010, producing approximately 50 million pounds U<sub>3</sub>O<sub>8</sub>, when it was placed on stand-by due to a lack of ore. In 2014, the McClean Lake mill re-commenced operations with the delivery of ore shipments from the Cigar Lake Mine, owned by the CLJV and operated by Cameco. In 2014, the mill processed over 456,800 pounds of U<sub>3</sub>O<sub>8</sub> with a 97.5% recovery rate. Mill feed consisted of a blend of Cigar Lake ores and stockpiled Sue B and McClean Lake North ores (mined via SABRE). In 2015, production ramped up and the mill produced approximately 11.3 million pounds of U<sub>3</sub>O<sub>8</sub> with a 98.9% recovery rate.

In 2016, the mill produced 17.3 million pounds of U<sub>3</sub>O<sub>8</sub> with a 99% recovery, and mill feed was all Cigar Lake ore. In 2017, the mill produced 18.0 million pounds of U<sub>3</sub>O<sub>8</sub> with 99.1% recovery, processing 100% mill feed from Cigar Lake. While mill personnel continue to refine operational practices and procedures to further improve performance, overall mill performance included no major upsets in the areas of safety, the environment or production. The table below shows the operating statistics for McClean Lake over the last five years.

<b>McClean Lake Operations</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
Ore Milled (thousand tonnes)	36,374	36,682	24,912	8.4	-
Average Grade (% U <sub>3</sub> O <sub>8</sub> )	22.78	21.39	20.61	2.85	-
MLJV Production (thousand pounds U <sub>3</sub> O <sub>8</sub> )	-	-	10.7	112.4	-
Denison's share MLJV Production (thousand pounds U <sub>3</sub> O <sub>8</sub> )	-	-	2.4	25.3	-
Toll Mill Production (thousand pounds U <sub>3</sub> O <sub>8</sub> )	18,015	17,333	11,294	344.4	-

For information pertaining to taxes and royalties, see “Government Regulation – Saskatchewan Royalties” and “Government Regulation – Canadian Income and Other Taxes.”

### Mill Licence

The McClean Lake site is operated under various permits, licences, leases and claims granted and renewed from time to time, all of which are currently in good standing. Several key regulatory achievements were completed in 2017 for McClean Lake: (a) the issuance by the CNSC of a 10 year license for operation of both McClean and Midwest projects; (b) the receipt of renewal of provincial approvals to operate for a 6 year term, expiring on October 31, 2023; and (c) CNSC approval to expand the existing tailings facility up to an elevation of 448m ASL. Historically CNSC issued Mine Operating Licences were granted for a 5 year term, but in 2009 the McClean Lake operations received an 8 year term and in 2017 was granted a further 10 year term: UMOL-MINEMILL-McLEAN.00/2017 (the “**Mine Operating License**”) which is valid for the period July 1, 2017 to June 30, 2027. In addition to renewal of all previously licensed activities, the current licence authorizes mining of the McClean North deposits using hydraulic borehole mining methods (SABRE) and includes the care and maintenance activities at the Midwest site.

### Tailings Disposal

The disposal of mill tailings in an environmentally acceptable manner has led to advances in the design and construction of new tailings management facilities. In the TMF, tailings are deposited sub-aqueously in a paste form from a barge. This procedure minimizes tailings segregation, eliminates concerns of freezing and dust generation, and controls radiation and radon emissions from the pond. This facility has been designed to receive tailings from processing high grade Midwest and Cigar Lake ores in addition to tailings from the McClean Lake deposits.

Under the regulatory approved TMF Optimization project, the tailings capacity of the TMF is being increased in two stages. In 2013, the first phase of the TMF Optimization project was completed which involved the sloping of the TMF walls and the placement of a bentonite liner to increase the TMF capacity elevation. The second phase of the TMF Optimization project is designed to further increase the TMF capacity elevation to 434 metres above sea level (“**m ASL**”).

A second project, called TMF Expansion, entails adding an additional 4.5 million cubic metres of tailings capacity over and above that created through the TMF Optimization project. The full scope of this project envisions the TMF capacity elevation being increased to an elevation of 448 m ASL, over a number of stages along with a larger surface footprint. On April 19, 2017, the MLJV received regulatory approvals for the TMF expansion project. Following receipt of regulatory approvals, construction activities (of both TMF optimization and expansion) was initiated with the installation of a new tailings pipe bench, decommissioning of 12 dewatering wells and the relocation of the contaminated landfill from the TMF to the Sue C site. In 2018, work is expected to continue with the re-sloping of the pit walls and placement of a 4m lift of the bentonite liner.

## Cigar Lake Toll Milling

In 2002, Denison and its partners entered into an agreement with the CLJV to process Cigar Lake ore at the McClean Lake mill. Pursuant to that agreement, all Cigar Lake ore was to be leached at the McClean Lake mill with the pregnant aqueous solution being divided between the McClean Lake and Rabbit Lake facilities for processing into uranium concentrates. In order to process this Cigar Lake ore, an expansion of the McClean Lake mill was required. The expansion and modifications of the McClean Lake mill to raise its capacity to 13.0 million pounds  $U_3O_8$  were completed in 2008 and all costs were paid for by the CLJV.

As a result of delays in the startup of the Cigar Lake mine and the exhaustion of permitted ore deposits at McClean Lake, the McClean Lake mill was placed on stand-by at the end of June of 2010. Under the Cigar Lake toll milling agreement, the CLJV funded a considerable portion of the McClean Lake stand-by costs, with the relative proportion of the stand-by costs paid by each party calculated on the basis of the percentage of mineral reserves between the McClean Lake and Cigar Lake joint ventures.

In 2011, the CLJV and the MLJV agreed to amend the toll milling agreement. Under the new milling arrangement, the McClean Lake operation is expected to process and package 100% of the uranium produced from the Cigar Lake mine. To accommodate the annual production of 18.0 million pounds  $U_3O_8$  from the CLJV, the mill has been further expanded to an annual licensed capacity of 24.0 million pounds  $U_3O_8$ . All costs for the expansion of the McClean Lake mill and a portion of the TMF Optimization and TMF Expansion (See “Denison’s Operations - McClean Lake - Tailings Disposal”) are paid for by the CLJV.

## Cigar Lake Toll Milling – APG Transaction

Pursuant to the APG Transaction in February 2017, certain of Denison’s interests in the Cigar Lake toll milling proceeds have been sold to APG and its subsidiary Centaurus Royalties Ltd. (“**Centaurus**”) for aggregate gross proceeds to Denison of \$43,500,000. The APG Transaction is comprised of the following elements: (1) a 13 year limited recourse lending arrangement involving a loan from APG to 9373721 Canada Inc. (“**SPV**”) (the “**APG Loan**”) and a further loan from SPV to DMI (the “**SPV Loan**”) each for \$40,800,000 (collectively, the “**Lending Arrangement**”); and (2) \$2,700,000 in proceeds from the sale, to Centaurus, of a stream equal to Denison’s 22.5% share of proceeds from the toll milling of Cigar Lake ore by the McClean Lake mill for specified Cigar Lake toll milling throughput in excess of 215 million pounds  $U_3O_8$  after July 1, 2016 (the “**Stream Arrangement**”).

Additional details of the APG Transaction are as follows:

- No Warranty of the Future Rate of Production - No warranty is provided by Denison (including DMI and SPV) to APG (including Centaurus), under the terms of the Lending Arrangement or the Stream Arrangement, regarding: the future rate of production at the Cigar Lake mine and / or the McClean Lake mill; or the amount or collectability of proceeds to be received by the MLJV in respect of toll milling of Cigar Lake ore.
- APG Loan Details - The APG Loan will accrue interest at a rate of 10% per annum and does not have a predetermined principal repayment schedule. The APG Loan is secured by a first priority interest in the assets of SPV which will essentially consist of the SPV Loan to DMI.
- SPV Loan Details - The SPV Loan will accrue interest at a rate of approximately 10% per annum and does not have a predetermined principal repayment schedule. The SPV Loan is limited in its recourse against DMI such that it is generally repayable only to the extent of Denison’s share of the toll milling revenues earned by the MLJV from the processing of the

first 215 million pounds of U308 from Cigar Lake ore on or after July 1, 2016. Denison will guarantee the limited recourse loan repayments and will grant a second ranking pledge of its share of DMI to secure performance by DMI of its obligations to pay the SPV Loan. The share pledge is second ranking to Denison's existing pledge of its shares of DMI to the Bank of Nova Scotia ("**BNS**") under the terms of its Letters of Credit Facility.

### **Surface Access Borehole Resource Extraction (SABRE) Mining Program**

The SABRE program is focused on developing a viable alternate mining method combining surface drilling and borehole mining technology. Benefits of the method may include a reduced time to production, reduced or deferred capital costs, as well as minimizing safety and environmental risks.

Hydraulic borehole mining is a technique used to extract materials through a small access borehole, typically less than one-half of a metre in diameter, resulting in a very small disturbance to the surface. A mining tool containing a high-pressure water jet nozzle is lowered through the access borehole in the overburden and sandstone to the mineralized horizon. The high-pressure water jet is used to cut or erode the mineral-bearing ore and to create a cavity up to four metres in diameter. The cuttings are transported to surface in a slurry form and sent through a series of screens and settling ponds to separate the ore from the jetting water. Jetting water is filtered further and re-used in the process. Each mined out cavity is backfilled after completion with a cemented mixture in the mineralized horizon.

Between 2007 and 2012, approximately 2,100 tonnes of ore was recovered through various SABRE test mining programs, a portion of which has been fed to the mill between 2007 and 2014. After the completion of several significant milestones in 2012 and 2013, a decision was made in late 2013 to suspend the SABRE program in 2014 in response to the low uranium price environment. In 2015, SABRE activities were limited to patent applications and upgrading down-hole sonar capabilities with the objective of improving surveying of cavity dimensions and mining performance. In 2016, an expanded program was evaluated for SABRE including the re-tooling of the program to allow for larger volumes and jetting pressures designed to increase the SABRE production rate. In addition, the purchase, installation and testing of a new solid / liquid separation system was completed to assess the improvement in recovery of small uranium particles from the production slurry creating during the SABRE mining process.

In 2017, development of the re-tooled SABRE program continued with engineering of larger diameter mining pipes, procurement of high pressure pumps and a tendering process to contract drilling equipment and labour for a further mining test.

In 2018 it is expected that the access boreholes will be drilled and cased to depth in preparation for test mining activities at McClean North in 2019. Additional engineering, followed by fabrication, will be completed for the mining pipes and drill assembly.

## MANAGER OF UPC

DMI is the manager of UPC. UPC is a public company with the primary investment objective of achieving an appreciation in the value of its uranium holdings. The Company does not, directly or indirectly, have an ownership interest in UPC. As manager, DMI provides UPC's officers and manages UPC's activities, including purchasing uranium for and on behalf of UPC as directed by the UPC board, arranging for its storage and attending to regulatory reporting for UPC.

The MSA is the current management services agreement between DMI and UPC, effective April 1, 2016. Under the MSA, DMI will receive the following management fees from UPC: a) a base fee of \$400,000 per annum, payable in equal quarterly installments; b) a variable fee equal to (i) 0.3% per annum of UPC's total assets in excess of \$100 million and up to and including \$500 million, and (ii) 0.2% per annum of UPC's total assets in excess of \$500 million; c) a fee, at the discretion of the UPC board, for on-going monitoring or work associated with a transaction or arrangement (other than a financing, or the acquisition of or sale of  $U_3O_8$  or  $UF_6$ ); and d) a commission of 1.0% of the gross value of any purchases or sales of  $U_3O_8$  or  $UF_6$ , or gross interest fees payable to UPC in connection with any uranium loan arrangements. The MSA has a three-year term and may be terminated by either party upon the provision of 120 days written notice.

During 2017, DMI earned an aggregate of USD\$1,397,000 in total management fees as manager of UPC.

## DENISON ENVIRONMENTAL SERVICES

DES was formed in 1997 to provide mine decommissioning and mine care and maintenance services to industry and government, as well as to manage Denison's post mine closure environmental obligations on its Elliot Lake landholdings. DES's current focus is on post-closure mine care and maintenance services and the majority of DES's revenue comes from such services. DES is headquartered in Elliot Lake, Ontario.

The primary activities of DES in 2017 include: providing the ongoing monitoring of Denison's two closed Elliot Lake mine sites as well as environmental monitoring, effluent treatment and maintenance services for several clients including:

- Rio Algom Ltd.'s five closed Elliot Lake mines;
- Yukon Government's Mt. Nansen Mine in the Yukon;
- BHP Billiton's closed base metal mine at Les Mines Selbaie in Quebec; and
- Ontario Government's closed Kam Kotia Mine in northern Ontario.

In 2017, DES also carried out work on several other smaller contracts.

## ENVIRONMENTAL, HEALTH AND SAFETY MATTERS

The Company has adopted an Environmental, Health and Safety Policy (the "**EHS Policy**") that affirms Denison's commitment to environmentally responsible management and compliance with occupational health and safety laws. Under the EHS Policy, the Company has committed to run its operations in compliance with applicable legislation, in a manner that minimizes the impact on our ecosystem. The EHS Policy mandates the use of regular monitoring programs to identify risks to the environment, to the public and to Denison's employees and to ensure compliance with regulatory requirements. The EHS Policy also sets out Denison's requirement to train its

employees regarding environmental and health and safety compliance and best practices and to provide adequate resources in this regard.

The EHS Policy requires regular reporting to the Board regarding the Company's compliance and the results of the Company's monitoring. To assist the Board with its responsibilities in overseeing environmental, health and safety matters, the Board has established the Environment, Health and Safety (the "**EHS Committee**") which works with management to discuss matters affecting the environment, health and safety and its stakeholders and reporting and making recommendations to the Board.

## **Canada**

### McClean Lake

At McClean Lake, which is operated by Orano Canada, final portions of the mill expansion were completed in early 2017 and all construction personnel, equipment and facilities were demobilized from the site. Toll milling activities for Cigar Lake ores continued throughout the year. During 2017 there were five reportable safety incidents including four medical incidents. Environmentally there were 5 reportable environmental incidents, all of which were minor in nature and have been successfully remediated with no lasting impacts. The facility has maintained its internationally recognized ISO 14001:2004 and OHSAS 18001 certification.

The McClean Lake and Midwest projects are combined under a single Operating License issued by the CNSC. The combined Preliminary Closure Plan was prepared by Orano Canada and approved by the authorities in 2016, estimating the total decommissioning and reclamation costs for both projects to be \$107,241,000. Financial assurances are in place for this entire amount, with Denison's share being \$24,135,000.

### Elliot Lake

Denison's uranium mine at Elliot Lake, Ontario, which started operations in 1957, was permanently closed upon completion of deliveries of  $U_3O_8$  to Ontario Hydro in May 1992. During its 35 years of continuous operation, the facility produced 147 million pounds of  $U_3O_8$  in concentrates from the milling of 70 million tons of ore.

By 1998, all significant capital reclamation activities at Denison's two closed Elliot Lake mines had been completed and, for the most part, decommissioning has progressed to the long-term monitoring phase.

During 2017, the water treatment plants operated as planned and all environmental targets were met. Monitoring and other remediation related expenses were \$814,000 for the year. Monitoring costs for 2018 are budgeted to be \$751,000. All expenditures are funded from the Reclamation Trust described below. It is estimated that sufficient funds are in the Reclamation Trust to meet all monitoring costs through 2023.

All activities and monitoring results are reviewed regularly by the CNSC and the Elliot Lake Joint Regulatory Group, which consists of federal and provincial regulators.

Pursuant to a Reclamation Funding Agreement, effective June 30, 1994, with the Governments of Canada and Ontario, Denison has established a Reclamation Trust from which all spending on its Elliot Lake reclamation activities is funded. When the Reclamation Trust was first established in 1994, Denison was required to deposit 90% of its cash receipts after deducting permitted expenses, as defined in such agreement, into the Reclamation Trust. In 1997, the Governments



of Canada and Ontario agreed to suspend the 90% funding requirement provided Denison maintained four years of cash requirements in the Reclamation Trust. Early in 1999, the Governments of Canada and Ontario agreed to further amend the Reclamation Funding Agreement, effective when Denison received an amended site decommissioning licence, which was obtained on April 22, 1999. Pursuant to that amendment, Denison is required to maintain sufficient funds in the Reclamation Trust to meet six years of cash requirements.

The CNSC has proposed the modification of the licences for Elliot Lake to a single Waste Facility Operating Licence for both facilities (see “Government Regulation – Canadian Uranium Industry”). Under the proposed Waste Facility Operating Licence, the reclamation funding arrangement may be modified, but at this point in time the Company believes that it will be able to maintain the current funding agreement.

### Denison Environmental Services

DES has maintained its internationally recognized ISO 9001:2008 certification which is a certification for Quality Management Systems (“QMS”). DES is currently in the process of updating the QMS to meet ISO 9001:2015 certification requirements. In 2017, DES had no lost time incidents and only one medical aid injury.

### Exploration

The Denison exploration group in Saskatchewan had two lost time incidents, one safety incident and several minor medical aids in 2017. One lost time incident involved an employee of a contractor performing work for Denison, whose hand was electrocuted while handling electrical lines in part due to a failure to follow the contractor’s operating procedures.

There were no environmental incidents or accidents in 2017. All required permits were obtained, and the exploration sites were remediated for any environmental impacts as required.

## **GOVERNMENT REGULATION**

### **Saskatchewan Exploration and Land Tenure**

In Canada, natural resource exploration and land tenure activity fall under provincial legislative jurisdiction. In Saskatchewan, the management of mineral resources and the granting of exploration and mining rights for mineral substances and their use are regulated by the *Crown Minerals Act* (Saskatchewan) and *The Mineral Tenure Registry Regulations*, 2012, that are administered by the Saskatchewan Ministry of Energy and Resources.

The right to explore for minerals in Saskatchewan is acquired under a mineral claim from the province. The initial term of a mineral claim is two years, renewable for successive one-year periods, provided the mineral claim is in good standing. To maintain a mineral claim in good standing, generally, the holder of a mineral claim must expend a prescribed amount on exploration. Excess expenditures (also known as assessment credits) can be applied to satisfy expenditure requirements for future claim years. Except for exploration purposes, a mineral Claim does not grant the holder the right to mine minerals. A holder of a mineral claim in good standing has the right to convert a mineral claim into a mineral lease. Surface exploration work on a mineral claim requires additional governmental approvals.

The right to mine minerals in Saskatchewan is acquired under a mineral lease from the province. A mineral lease is for a term of 10 years, with a right to renew for successive 10-year terms in the absence of default by the lessee. The lessee is required to spend certain amounts for work during

each year of a mineral lease. A mineral lease cannot be terminated except in the event of default and for certain environmental concerns, as prescribed in *The Crown Minerals Act* (Saskatchewan). However, mineral leases may be amended unilaterally by the lessor by amendment to *The Crown Minerals Act* (Saskatchewan) or *The Crown Mineral Royalty Regulations, 2013* (Saskatchewan).

Mineral rights, held through mineral claims and mineral leases, are distinct from surface rights. The surface facilities and mine workings are located on lands owned by the province of Saskatchewan. The right to use and occupy lands is acquired under a surface lease from the province of Saskatchewan. A surface lease is for a period of time, up to a maximum of 33 years, as is necessary to allow the lessee to operate its mine and plant and thereafter carry out the reclamation of the lands involved. Surface leases are also used by the province of Saskatchewan as a mechanism to achieve certain environmental and radiation protection and socio-economic objectives, and contain certain undertakings in this regard.

### **Environmental Assessments**

The assessment of a proposed uranium project in Saskatchewan involves both a provincial and federal assessment. In Saskatchewan, the assessment of a project with joint federal and provincial jurisdiction is coordinated through established protocols in order to align with the “one project-one assessment” model for the proponent and the public without compromising any statutory requirements of the legislation of either jurisdiction.

In the province of Saskatchewan, the *Environmental Assessment Act* is administered by the Ministry of Environment (MOE). The level of assessment for mining projects is dependent on the specific characteristics of each individual project. A proponent of a project that is considered to be a “development” pursuant to the Saskatchewan *Environmental Assessment Act*, is required to conduct an environmental impact assessment (EIA) of the proposed project and prepare and submit an environmental impact statement (EIS) to the Minister of Environment.

Federally, the *Canadian Environmental Assessment Act* (CEAA) was amended in the spring of 2012 and the *Regulations Designating Physical Activities* (2012) were established to clarify when a federal EIA is required and define what federal agency is required to be the “responsible authority” for the conduct of the EIA. For uranium projects, the CNSC is designated as the “responsible authority” under the CEAA and carries full authority to complete the screening of the proposed project and any subsequent environmental assessments.

Under the CEAA, an EIA focuses on potential adverse environmental effects that are within federal jurisdiction including: (a) fish and fish habitat and other aquatic species; (b) migratory birds; (c) federal lands; (d) effects that cross provincial or international boundaries; (e) effects that impact on aboriginal peoples, such as their use of lands and resources for traditional purposes, and (f) changes to the environment that are directly linked to or necessarily incidental to any federal decisions about a project.

The Government of Canada is in the process of finalizing a new Impact Assessment Act (the “IAA”), to replace the CEAA. It is expected that the new IAA will introduce substantial changes to decision-making for designated projects. The potential impacts of this change for Denison and the uranium industry overall are not yet known.

Environmental matters related to the McClean Lake uranium facility and the Midwest project are regulated by the CNSC and the Saskatchewan Ministry of Environment. A number of other

ministries and departments of the federal and Saskatchewan governments also regulate certain aspects of the operation. Prior to proceeding with development of the McClean Lake uranium facility and Midwest project, the proponents were required to submit Environmental Impact Statements for review. After completion of that review and receipt of recommendations, the federal and Saskatchewan governments issued the appropriate initial authorizations, subject to the normal licensing renewal process, for the McClean Lake uranium facility in 1995 and for Midwest in 2012.

For Denison's Wheeler River property, preliminary baseline data collection is in progress with respect to the assessment of potential environmental impacts. From a regulatory perspective, the project will require completion of a federal and provincial environmental assessment, to be completed as a joint environmental assessment. It is currently estimated the assessment will require approximately 24 to 36 months to complete following the submission of a detailed project description.

### **Licensing and Permitting**

The federal government recognizes that the uranium industry has special importance in relation to the national interest and therefore regulates the mining, extraction, use and export of uranium under the *Nuclear Safety and Control Act* ("**NSCA**"). The NSCA is administered by the CNSC which issues licences pursuant to the regulations under the NSCA.

In the event environmental assessment approvals by both the provincial and federal governments are granted, a project will be allowed to proceed to the second tier of approvals for licenses. The federal (CNSC) licensing process requires the submission of detailed engineering design packages as well as detailed management plans for all facets of the operation as part of their licensing process. The federal licenses are typically the license (i) to prepare a site and construct, (ii) operate, (iii) decommission, and (iv) abandon.

Activities at McClean Lake and Midwest are currently carried out under a single operating license issued by the CNSC and are subject to all applicable federal statutes and regulations and to all laws of general application in Saskatchewan, except to the extent that such laws conflict with the terms and conditions of the licences or applicable federal laws.

Decommissioning activities at Elliot Lake are currently carried out under two decommissioning licences issued by the CNSC, one for the Stanrock tailings area and one for the Denison mine site and tailings areas. Decommissioning of the facilities pursuant to the terms of the decommissioning licences has been completed. The CNSC has initiated the actions to combine the Stanrock and Denison sites under one Waste Facility Operating Licence. There are no significant differences between the different forms of licences. After a lengthy period of care, maintenance and monitoring, Denison may apply to the CNSC for permission to abandon the sites.

### **Saskatchewan Royalties**

The province of Saskatchewan imposes royalties on the sale of uranium extracted from ore bodies in the province in accordance with Part III of The Crown Mineral Royalty Regulations (the "**Regulations**") pursuant to The Crown Minerals Act (the "**Act**"). Significant revisions to the uranium royalty regime in Saskatchewan became effective on January 1, 2013, and has three components:

- (i) Basic Royalty: Computed as 5% of gross revenues derived from uranium extracted from ore bodies in the province;
- (ii) Saskatchewan Resource Credit: Reduction in the basic royalty equal to 0.75% of gross revenues derived from uranium extracted from ore bodies in the province; and
- (iii) Profit Royalty: Two-tier rate structure, computed as 10% or 15% of net profits derived from the mining and processing of uranium extracted from ore bodies in the province.

Gross revenue, for the Basic Royalty, is determined in accordance with the Regulations and allows for reductions based on specified allowances. Net profit, for the Profit Royalty, is calculated based on the recognition of the full dollar value of a royalty payer's exploration, capital, production, decommissioning and reclamation costs, in most cases, incurred after January 1, 2013. Net profits will be taxed under the profit royalty at a rate of 10% for net profits up to and including \$22.00 per kilogram (\$10 per pound) of uranium sold, and at 15% for net profits in excess of \$22.00 per kilogram. The \$22.00 per kilogram threshold is applicable for 2013 (the base year) and is indexed in subsequent years for inflation.

Under this system, each owner or joint venture participant in a uranium mine is a royalty payer. Individual interests are consolidated on a corporate basis for the computation and reporting of royalties due to the province.

Royalty payments are due to the province on or before the last day of the month following the month in which the royalty payer sold, or consumed, the uranium for the purposes of the basic royalty, and quarterly installments are required based on estimates of net profits in respect of the profit royalty.

### **Canadian Income and Other Taxes**

Denison and its Canadian subsidiaries are subject to federal and provincial income taxes. In 2017, taxable income was subject to federal taxes at a rate of 15%, and provincial taxes in Saskatchewan, Ontario, Quebec, British Columbia and the Yukon Territory at rates varying between 11% and 13.5%. Taxable income for each entity is allocated between provinces and territories based on a two point average of the proportion of salaries and revenues attributable to each province or territory. Denison expects that it will not be liable for Canadian income taxes on a current tax basis for the financial year ended 2017. As a resource corporation in Saskatchewan, Denison is also subject to a resource surcharge equal to 3% of the value of resource sales from production in Saskatchewan, if any, during the year.

In recent years, including 2017, Denison has issued shares eligible for treatment as "flow through shares", as defined in subsection 66(15) of the *Income Tax Act* (Canada). As a result, a significant portion of Denison's Canadian Exploration Expenditures have been renounced to shareholders and are not available to Denison as a tax deduction in the current year or future years.

### **Audit / Review by Taxing Authorities**

From time to time, Denison is subject to audit / review by taxing authorities. In certain jurisdictions, periodic reviews are carried out by taxing authorities in the ordinary course of business. Denison cooperates with all requests received from taxing authorities, and is not currently engaged in a material dispute with any of the applicable taxing authorities.

## **RISK FACTORS**

Denison's business, the value of the Shares and management's expectations regarding the same are subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of Denison to be materially different than anticipated. The following are those risks, uncertainties and other factors pertaining to the outlook and conditions currently known to Denison that have been identified by the Company as having the potential to negatively affect Denison's business and the value of the Shares. Current and prospective security holders of Denison should carefully consider these risk factors. However, these factors are not, and should not be construed as being exhaustive, and other circumstances that are currently not foreseen by management of Denison could arise to negatively affect Denison's business and its Shareholders.

### **Speculative Nature of Exploration and Development**

Exploration for minerals and the development of mineral properties is speculative, and involves significant uncertainties and financial risks that even a combination of careful evaluation, experience and knowledge may not eliminate. While the discovery of an ore body may result in substantial rewards, few properties which are explored are commercially mineable or are ultimately developed into producing mines. Major expenses may be required to properly evaluate the prospectivity of an exploration property, to develop new ore bodies and to estimate mineral resources and establish mineral reserves. There is no assurance that the Company's uranium deposits are commercially mineable.

### **Imprecision of Mineral Reserve and Resource Estimates**

Mineral reserve and resource figures are estimates, and no assurances can be given that the estimated quantities of uranium are in the ground and could be produced, or that Denison will receive the prices assumed in determining its mineral reserves. Such estimates are expressions of judgment based on knowledge, mining experience, analysis of drilling results and industry best practices. Valid estimates made at a given time may significantly change when new information becomes available. While Denison believes that the mineral reserve and resource estimates included are well established and reflect management's best estimates, by their nature, mineral reserve and resource estimates are imprecise and depend, to a certain extent, upon statistical inferences and geological interpretations, which may ultimately prove inaccurate. Furthermore, market price fluctuations, as well as increased capital or production costs or reduced recovery rates, may render mineral reserves and resources uneconomic and may ultimately result in a restatement of mineral reserves and resources. The evaluation of mineral reserves or resources is always influenced by economic and technological factors, which may change over time.

### **Inability to Expand and Replace Mineral Reserves and Resources**

Denison's mineral reserves and resources at its McClean Lake, Midwest, Wheeler River and Waterbury Lake projects are Denison's material future sources of uranium concentrates. Unless other mineral reserves or resources are discovered, Denison's sources of future production for uranium concentrates will decrease over time when its current mineral reserves and resources are depleted. There can be no assurance that Denison's future exploration, development and acquisition efforts will be successful in replenishing its mineral reserves and resources. In addition, while Denison believes that many of its properties demonstrate development potential, there can be no assurance that they can or will be successfully developed and put into production or that they will be able to replace production in future years.

## **Economics of Developing Mineral Properties**

Denison's current and future uranium production is dependent in part on the successful discovery and development of new ore bodies and/or revival of previously existing mining operations. It is impossible to ensure that Denison's current exploration and development programs will result in profitable commercial mining operations. Where the Company has been able to estimate the existence of mineral resources and mineral reserves, substantial expenditures will be required to establish economic feasibility for commercial development and to obtain the required environmental approvals, permitting and assets to commence commercial operations.

The economic feasibility of development projects is based upon many factors, including, among others: the accuracy of mineral reserve and resource estimates; metallurgical recoveries; capital and operating costs of such projects; government regulations relating to prices, taxes, royalties, infrastructure, land tenure, land use, importing and exporting, and environmental protection; political and economic climate; and uranium prices, which are historically cyclical. Development projects are also subject to the successful completion of engineering studies, issuance of necessary governmental permits and availability of adequate financing.

Development projects have no operating history upon which to base estimates of future cash flow. Denison's estimates of mineral reserves and resources and cash operating costs are, to a large extent, based upon detailed geological and engineering analysis. The decision as to whether a property contains a commercial mineral deposit and should be brought into production will depend upon the results of exploration programs and/or feasibility studies, and the recommendations of duly qualified engineers and/or geologists, all of which involves significant expense. Economic analyses and feasibility studies derive estimates of capital and operating costs based upon many factors, including, among others: anticipated tonnage and grades of ore to be mined and processed; the configuration of the ore body; ground and mining conditions; expected recovery rates of the uranium from the ore; and alternate mining methods.

As at the date hereof, the results of economic analyses for Denison's projects are preliminary in nature and include inferred mineral resources, which are considered too speculative geologically to have the economic considerations applied that would enable them to be categorized as mineral reserves. There is no certainty that any forecasts in an economic analysis prepared by or for the Company would be realizable or that any resources would ever be upgraded to reserves. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

It is possible that actual costs and economic returns of current and new mining operations may differ materially from Denison's best estimates. It is not unusual in the mining industry for new mining operations to experience unexpected problems during the start-up phase, take much longer than originally anticipated to bring into a producing phase, and to require more capital than anticipated. The ability to sell and profit from the sale of any eventual mineral production from a property will be subject to the prevailing conditions in the applicable marketplace at the time of sale. The demand for uranium and other minerals is subject to global economic activity and changing attitudes of consumers and other end-users' demand. Many of these factors are beyond the control of a mining company and therefore represent a market risk which could impact the long term viability of Denison and its operations.

## **Benefits Not Realized From Transactions**

Denison has completed a number of transactions over the last several years, including without limitation the acquisition of International Enxco Ltd., the acquisition of Fission, the acquisition of JNR, the sale of its mining assets and operations located in the United States to Energy Fuels Inc., the sale of its interest in the GSJV, the Africa Transaction, the optioning of the Moore Lake property to Skyharbour, the acquisition of an 80% interest in the Hook-Carter property from ALX, the acquisition of an interest in the Moon Lake property from CanAlaska and entering into the APG Transaction. Despite Denison's belief that these transactions, and others which may be completed in the future, will be in Denison's best interest and benefit the Company and Denison's shareholders, Denison may not realize the anticipated benefits of such transactions or realize the full value of the consideration paid or received to complete the transactions. This could result in significant accounting impairments or write-downs of the carrying values of mineral properties or other assets and could adversely impact the Company and the price of its Shares.

## **Volatility and Sensitivity to Market Prices**

The long and short term market prices of  $U_3O_8$  affect the value of Denison's mineral resources and the market price of the Shares. Historically, these prices have fluctuated and have been and will continue to be affected by numerous factors beyond Denison's control. Such factors include, among others: demand for nuclear power, political and economic conditions in uranium producing and consuming countries, public and political response to nuclear incidents, reprocessing of used reactor fuel and the re-enrichment of depleted uranium tails, sales of excess civilian and military inventories (including from the dismantling of nuclear weapons) by governments and industry participants, uranium supplies from other secondary sources, and production levels and costs of production from primary uranium suppliers.

## **Public Acceptance of Nuclear Energy and Competition from Other Energy Sources**

Growth of the uranium and nuclear power industry will depend upon continued and increased acceptance of nuclear technology as a clean means of generating electricity. Because of unique political, technological and environmental factors that affect the nuclear industry, including the risk of a nuclear incident, the industry is subject to public opinion risks that could have an adverse impact on the demand for nuclear power and increase the regulation of the nuclear power industry. Nuclear energy competes with other sources of energy, including oil, natural gas, coal and hydro-electricity. These other energy sources are, to some extent, interchangeable with nuclear energy, particularly over the longer term. Technical advancements in, and historically large government subsidies for, renewable and other alternate forms of energy, such as wind and solar power, could make these forms of energy more commercially viable and put additional pressure on the demand for uranium concentrates. Sustained lower prices of alternate forms of energy may result in lower demand for uranium concentrates.

Current estimates project significant increases in the world's nuclear power generating capacities, primarily as a result of a significant number of nuclear reactors that are under construction, planned, or proposed in China, India and various other countries around the world. Market projections for future demand for uranium are based on various assumptions regarding the rate of construction and approval of new nuclear power plants, as well as continued public acceptance of nuclear energy around the world. The rationale for adopting nuclear energy can be varied, but often includes the clean and environmentally friendly operation of nuclear power plants, as well as the affordability and round-the-clock reliability of nuclear power. A change in public sentiment regarding nuclear energy could have a material impact on the number of nuclear power plants

under construction, planned or proposed, which could have a material impact on the market's and the Company's expectations for the future demand for uranium and the future price of uranium.

### **Market Price of Shares**

Securities of mining companies have experienced substantial volatility in the past, often based on factors unrelated to the financial performance or prospects of the companies involved. These factors include macroeconomic conditions in North America and globally, and market perceptions of the attractiveness of particular industries. The price of Denison's securities is also likely to be significantly affected by short-term changes in commodity prices, other mineral prices, currency exchange fluctuation, or changes in its financial condition or results of operations as reflected in its periodic earnings reports and/or news releases. Other factors unrelated to the performance of Denison that may have an effect on the price of the securities of Denison include the following: the extent of analytical coverage available to investors concerning the business of Denison; lessening in trading volume and general market interest in Denison's securities; the size of Denison's public float and its inclusion in market indices may limit the ability of some institutions to invest in Denison's securities; and a substantial decline in the price of the securities of Denison that persists for a significant period of time could cause Denison's securities to be delisted from an exchange. If an active market for the securities of Denison does not continue, the liquidity of an investor's investment may be limited and the price of the securities of the Company may decline such that investors may lose their entire investment in the Company. As a result of any of these factors, the market price of the securities of Denison at any given point in time may not accurately reflect the long-term value of Denison. Securities class-action litigation often has been brought against companies following periods of volatility in the market price of their securities. Denison may in the future be the target of similar litigation. Securities litigation could result in substantial costs and damages and divert management's attention and resources.

### **Dilution from Further Equity Financing**

While active in exploring for new uranium discoveries in the region, Denison's present focus is on advancing the Wheeler River project to a development decision, with the potential to become the next large scale uranium producer in Canada. Denison will require additional funds to further such activities. If Denison raises additional funding by issuing additional equity securities, such financing would substantially dilute the interests of Shareholders and reduce the value of their investment.

### **Reliance on Other Operators**

At some of its properties, Denison is not the operator and therefore is not in control of all of the activities and operations at the site. As a result, Denison is and will be, to a certain extent, dependent on the operators for the nature and timing of activities related to these properties and may be unable to direct or control such activities.

As an example, Orano Canada is the operator and majority owner of the McClean Lake and Midwest joint ventures in Saskatchewan, Canada. The McClean Lake mill employs unionized workers who work under collective agreements. Orano Canada, as the operator, is responsible for most operational and production decisions and all dealings with unionized employees. Orano Canada may not be successful in its attempts to renegotiate the collective agreements, which may impact mill and mining operations. Similarly, Orano Canada is responsible for all licensing and dealings with various regulatory authorities. Any lengthy work stoppages, or disruption to the operation of the mill or mining operations as a result of a licensing matter or regulatory compliance, may have a material adverse impact on the Company's future cash flows, earnings, results of operations and financial condition.



## **Reliance on Contractors and Experts**

In various aspects of its operations, Denison relies on the services, expertise and recommendations of its service providers and their employees and contractors, whom often are engaged at significant expense to the Company. For example, the decision as to whether a property contains a commercial mineral deposit and should be brought into production will depend in large part upon the results of exploration programs and/or feasibility studies, and the recommendations of duly qualified third party engineers and/or geologists. In addition, while Denison emphasizes the importance of conducting operations in a safe and sustainable manner, it cannot exert absolute control over the actions of these third parties when providing services to Denison or otherwise operating on Denison's properties. Any material error, omission, act of negligence or act resulting in environmental pollution, accidents or spills, industrial and transportation accidents, work stoppages or other actions could seriously adversely affect the Company's operations and financial condition.

## **Property Title Risk**

The Company has investigated its rights to explore and exploit all of its material properties and, to the best of its knowledge, those rights are in good standing. However, no assurance can be given that such rights will not be revoked, or significantly altered, to its detriment. There can also be no assurance that the Company's rights will not be challenged or impugned by third parties, including the Canadian, provincial and local governments, as well as by First Nations and Métis.

There is also a risk that Denison's title to, or interest in, its properties may be subject to defects or challenges. If such defects or challenges cover a material portion of Denison's property, they could materially and adversely affect Denison's results of operations and financial condition, its reported mineral reserves and resources or its long-term business prospects.

## **Competition for Properties**

Significant competition exists for the limited supply of mineral lands available for acquisition. Many participants in the mining business include large established companies with long operating histories. The Company may be at a disadvantage in acquiring new properties as competitors may have greater financial resources and more technical staff. Accordingly, there can be no assurance that the Company will be able to compete successfully to acquire new properties or that any such acquired assets would yield resources or reserves or result in commercial mining operations.

## **Global Financial Conditions**

Global financial conditions continue to be subject to volatility arising from international geopolitical developments and global economic phenomenon, as well as general financial market turbulence. Access to public financing and credit can be negatively impacted by the effect of these events on Canadian and global credit markets. The health of the global financing and credit markets may impact the ability of Denison to obtain equity or debt financing in the future and the terms at which financing or credit is available to Denison. These increased levels of volatility and market turmoil could adversely impact Denison's operations and the trading price of the Shares.

## **Ability to Maintain Obligations under Credit Facility and Other Debt**

Denison is required to satisfy certain financial covenants in order to maintain its good standing under the Credit Facility. Denison is also subject to a number of restrictive covenants under the APG Transaction. Denison may from time to time enter into other arrangements to borrow money in order to fund its operations and expansion plans, and such arrangements may include

covenants that have similar obligations or that restrict its business in some way. Events may occur in the future, including events out of Denison's control, which could cause Denison to fail to satisfy its obligations under the Credit Facility, APG Transaction or other debt instruments. In such circumstances, the amounts drawn under Denison's debt agreements may become due and payable before the agreed maturity date, and Denison may not have the financial resources to repay such amounts when due. The Credit Facility and APG Transaction are secured by DMI's main properties by a pledge of the shares of DMI. If Denison were to default on its obligations under the Credit Facility, APG Transaction or other secured debt instruments in the future, the lender(s) under such debt instruments could enforce their security and seize significant portions of Denison's assets.

### **Change of Control Restrictions**

The APG Transaction and certain other of Denison's agreements contain provisions that could adversely impact Denison in the case of a transaction that would result in a change of control of Denison or certain of its subsidiaries. In the event that consent is required from our counterparty and our counterparty chooses to withhold its consent to a merger or acquisition, then such party could seek to terminate certain agreements with Denison, including certain agreements forming part of the APG Transaction, or require Denison to buy the counterparty's rights back from them, which could adversely affect Denison's financial resources and prospects. If applicable, these restrictive contractual provisions could delay or discourage a change in control of our company that could otherwise be beneficial to Denison or its shareholders.

### **Capital Intensive Industry and Uncertainty of Funding**

The exploration and development of mineral properties and the ongoing operation of mines and facilities requires a substantial amount of capital and may depend on Denison's ability to obtain financing through joint ventures, debt financing, equity financing or other means. General market conditions, volatile uranium markets, a claim against the Company, a significant disruption to the Company's business or operations or other factors may make it difficult to secure financing necessary to fund additional exploration of the Company's projects or to take advantage of opportunities for acquisitions, or for the substantial capital that is typically required in order to bring a mineral project, such as the Wheeler River project, to a production decision or to place a property, such as the Wheeler River project, into commercial production. There is no assurance that the Company will be successful in obtaining required financing as and when needed on acceptable terms, and failure to obtain such additional financing could result in the delay or indefinite postponement of the Company's exploration, development or other growth objectives.

### **Decommissioning and Reclamation**

As owner of the Elliot Lake decommissioned sites and part owner of the McClean Lake mill, McClean Lake mines, the Midwest uranium project and certain exploration properties, and for so long as the Company remains an owner thereof, the Company is obligated to eventually reclaim or participate in the reclamation of such properties. Most, but not all, of the Company's reclamation obligations are secured, and cash and other assets of the Company have been reserved to secure this obligation. Although the Company's financial statements record a liability for the asset retirement obligation, and the bonding requirements are generally periodically reviewed by applicable regulatory authorities, there can be no assurance or guarantee that the ultimate cost of such reclamation obligations will not exceed the estimated liability contained on the Company's financial statements.

As Denison's properties approach or go into decommissioning, regulatory review of the Company's decommissioning plans may result in additional decommissioning requirements,

associated costs and the requirement to provide additional financial assurances. It is not possible to predict what level of decommissioning and reclamation (and financial assurances relating thereto) may be required from Denison in the future by regulatory authorities.

### **Technical Innovation and Obsolescence**

Requirements for Denison's products and services may be affected by technological changes in nuclear reactors, enrichment and used uranium fuel reprocessing. These technological changes could reduce the demand for uranium or reduce the value of Denison's environmental services to potential customers. In addition, Denison's competitors may adopt technological advancements that give them an advantage over Denison.

### **Mining and Insurance**

Denison's business is capital intensive and subject to a number of risks and hazards, including environmental pollution, accidents or spills, industrial and transportation accidents, labour disputes, changes in the regulatory environment, natural phenomena (such as inclement weather conditions, earthquakes, pit wall failures and cave-ins) and encountering unusual or unexpected geological conditions. Many of the foregoing risks and hazards could result in damage to, or destruction of, Denison's mineral properties or processing facilities in which it has an interest; personal injury or death; environmental damage, delays in or interruption of or cessation of production or processing or in Denison's exploration or development activities; or costs, monetary losses and potential legal liability and adverse governmental action. In addition, due to the radioactive nature of the materials handled in uranium exploration, mining and processing, as applicable, additional costs and risks are incurred by Denison and its joint venture partners on a regular and ongoing basis.

Although Denison maintains insurance to cover some of these risks and hazards in amounts it believes to be reasonable, such insurance may not provide adequate coverage in the event of certain circumstances. No assurance can be given that such insurance will continue to be available, that it will be available at economically feasible premiums, or that it will provide sufficient coverage for losses related to these or other risks and hazards.

Denison may be subject to liability or sustain loss for certain risks and hazards against which it cannot insure or which it may reasonably elect not to insure because of the cost. This lack of insurance coverage could result in material economic harm to Denison.

### **Dependence on Issuance of Licence Amendments and Renewals**

Orano Canada maintains the regulatory licences in order to operate the McClean Lake mill, all of which are subject to renewal from time to time and are required in order for the mill to operate in compliance with applicable laws and regulations. In addition, depending on Orano Canada's or the Company's business requirements, it may be necessary or desirable to seek amendments to one or more of its licences from time to time. While Orano Canada and the Company have been successful in renewing its licences on a timely basis in the past and in obtaining such amendments as have been necessary or desirable, there can be no assurance that such licence renewals and amendments will be issued by applicable regulatory authorities on a timely basis or at all in the future.

## **Governmental Regulation and Policy Risks**

Uranium mining and milling operations and exploration activities, as well as the transportation and handling of the products produced, are subject to extensive regulation by federal, provincial and state governments. Such regulations relate to production, development, exploration, exports, imports, taxes and royalties, labour standards, occupational health, waste disposal, protection and remediation of the environment, mine decommissioning and reclamation, mine safety, toxic substances, transportation safety and emergency response, and other matters. Compliance with such laws and regulations is currently, and has historically, increased the costs of exploring, drilling, developing, constructing, operating and closing Denison's mines and processing facilities. It is possible that, in the future, the costs, delays and other effects associated with such laws and regulations may impact Denison's decision with respect to exploration and development properties, including whether to proceed with exploration or development, or that such laws and regulations may result in Denison incurring significant costs to remediate or decommission properties that do not comply with applicable environmental standards at such time. Denison expends significant financial and managerial resources to comply with such laws and regulations. Denison anticipates it will have to continue to do so as the historic trend toward stricter government regulation may continue. Because legal requirements are frequently changing and subject to interpretation, Denison is unable to predict the ultimate cost of compliance with these requirements or their effect on operations. Furthermore, future changes in governments, regulations and policies, such as those affecting Denison's mining operations and uranium transport could materially and adversely affect Denison's results of operations and financial condition in a particular period or its long-term business prospects.

Failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions. These actions may result in 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. Companies engaged in uranium exploration operations may be required to compensate others who suffer loss or damage by reason of such activities and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations.

The development of mines and related facilities is contingent upon governmental approvals that are complex and time consuming to obtain and which, depending upon the location of the project, involve multiple governmental agencies. The duration and success of such approvals are subject to many variables outside Denison's control. Any significant delays in obtaining or renewing such permits or licences in the future could have a material adverse effect on Denison.

## **Global Demand and International Trade Restrictions**

The international uranium industry, including the supply of uranium concentrates, is relatively small compared to other minerals, competitive and heavily regulated. Worldwide demand for uranium is directly tied to the demand for electricity produced by the nuclear power industry, which is also subject to extensive government regulation and policies. In addition, the international marketing of uranium is subject to governmental policies and certain trade restrictions. The supply and marketing of uranium from Russia and from certain republics of the former Soviet Union is, to some extent, impeded by a number of international trade agreements and policies. These agreements and any similar future agreements, governmental policies or trade restrictions are beyond the control of Denison and may affect the supply of uranium available in the United States and Europe, which are currently the largest markets for uranium in the world, as well as the future of supply to developing markets, such as China and India. If substantial changes are made to the

regulations affecting global marketing and supply, the Company's business, financial condition and results of operations may be materially adversely affected.

### **Environmental, Health and Safety Risks**

Denison has expended significant financial and managerial resources to comply with environmental protection laws, regulations and permitting requirements in each jurisdiction where it operates, and anticipates that it will be required to continue to do so in the future as the historical trend toward stricter environmental regulation may continue. The uranium industry is subject to, not only the worker health, safety and environmental risks associated with all mining businesses, including potential liabilities to third parties for environmental damage, but also to additional risks uniquely associated with uranium mining and processing. The possibility of more stringent regulations exists in the areas of worker health and safety, the disposition of wastes, the decommissioning and reclamation of mining and processing sites, and other environmental matters each of which could have a material adverse effect on the costs or the viability of a particular project.

Denison's facilities operate under various operating and environmental permits, licences and approvals that contain conditions that must be met, and Denison's right to continue operating its facilities is, in a number of instances, dependent upon compliance with such conditions. Failure to meet any such condition could have a material adverse effect on Denison's financial condition or results of operations.

Although the Company believes its operations are in compliance, in all material respects, with all relevant permits, licences and regulations involving worker health and safety as well as the environment, there can be no assurance regarding continued compliance or ability of the Company to meet stricter environmental regulation, which may also require the expenditure of significant additional financial and managerial resources.

Mining companies are often targets of actions by non-governmental organizations and environmental groups in the jurisdictions in which they operate. Such organizations and groups may take actions in the future to disrupt Denison's operations. They may also apply pressure to local, regional and national government officials to take actions which are adverse to Denison's operations. Such actions could have an adverse effect on Denison's ability to produce and sell its products, and on its financial position and results.

### **Aboriginal Title and Consultation Issues**

First Nations and Métis title claims as well as related consultation issues may impact Denison's ability and that of its joint venture partners to pursue exploration, development and mining at its Saskatchewan properties. Pursuant to historical treaties, First Nations bands in northern Saskatchewan ceded title to most traditional lands but continue to assert title to the minerals within the lands. Managing relations with the local native bands is a matter of paramount importance to Denison. There may be no assurance, however, that title claims as well as related consultation issues will not arise on or with respect to the Company's properties.

### **Anti-Bribery and Anti-Corruption Laws**

The Company is subject to anti-bribery and anti-corruption laws, including the *Corruption of Foreign Public Officials Act* (Canada). Failure to comply with these laws could subject the Company to, among other things, reputational damage, civil or criminal penalties, other remedial measures and legal expenses which could adversely affect the Company's business, results from operations, and financial condition. It may not be possible for the Company to ensure compliance

with anti-bribery and anti-corruption laws in every jurisdiction in which its employees, agents, sub-contractors or joint venture partners are located or may be located in the future.

### **Climate Change**

Due to changes in local and global climatic conditions, many analysts and scientists predict an increase in the frequency of extreme weather events such as floods, droughts, forest and brush fires and extreme storms. Such events could materially disrupt the Company's operations, particularly if they affect the Company's sites, impact local infrastructure or threaten the health and safety of the Company's employees and contractors. As a result, any such event could result in material economic harm to Denison.

The Company is focused on operating in a manner designed to minimize the environmental impacts of its activities; however, environmental impacts from mineral exploration and mining activities are inevitable. Increased environmental regulation and/or the use of fiscal policy by regulators in response to concerns over climate change and other environmental impacts, such as additional taxes levied on activities deemed harmful to the environment, could have a material adverse effect on Denison's financial condition or results of operations.

### **Information Systems and Cyber Security**

The Company's operations depend upon the availability, capacity, reliability and security of its information technology (IT) infrastructure, and its ability to expand and update this infrastructure as required, to conduct daily operations. Denison relies on various IT systems in all areas of its operations, including financial reporting, contract management, exploration and development data analysis, human resource management, regulatory compliance and communications with employees and third parties.

These IT systems could be subject to network disruptions caused by a variety of sources, including computer viruses, security breaches and cyber-attacks, as well as network and/or hardware disruptions resulting from incidents such as unexpected interruptions or failures, natural disasters, fire, power loss, vandalism and theft. The Company's operations also depend on the timely maintenance, upgrade and replacement of networks, equipment, IT systems and software, as well as pre-emptive expenses to mitigate the risks of failures.

The ability of the IT function to support the Company's business in the event of any such occurrence and the ability to recover key systems from unexpected interruptions cannot be fully tested. There is a risk that, if such an event actually occurs, the Company's continuity plan may not be adequate to immediately address all repercussions of the disaster. In the event of a disaster affecting a data centre or key office location, key systems may be unavailable for a number of days, leading to inability to perform some business processes in a timely manner. As a result, the failure of Denison's IT systems or a component thereof could, depending on the nature of any such failure, adversely impact the Company's reputation and results of operations.

Although to date the Company has not experienced any material losses relating to cyber attacks or other information security breaches, there can be no assurance that the Company will not incur such losses in the future. Unauthorized access to Denison's IT systems by employees or third parties could lead to corruption or exposure of confidential, fiduciary or proprietary information, interruption to communications or operations or disruption to the Company's business activities or its competitive position. Further, disruption of critical IT services, or breaches of information security, could have a negative effect on the Company's operational performance and its reputation. The Company's risk and exposure to these matters cannot be fully mitigated because

of, among other things, the evolving nature of these threats. As a result, cyber security and the continued development and enhancement of controls, processes and practices designed to protect systems, computers, software, data and networks from attack, damage or unauthorized access remain a priority.

The Company applies technical and process controls in line with industry-accepted standards to protect information, assets and systems; however these controls may not adequately prevent cyber-security breaches. There is no assurance that the Company will not suffer losses associated with cyber-security breaches in the future, and may be required to expend significant additional resources to investigate, mitigate and remediate any potential vulnerabilities. As cyber threats continue to evolve, the Company may be required to expend additional resources to continue to modify or enhance protective measures or to investigate and remediate any security vulnerabilities.

### **Dependence on Key Personnel and Qualified and Experienced Employees**

Denison's success depends on the efforts and abilities of certain senior officers and key employees. Certain of Denison's employees have significant experience in the uranium industry, and the number of individuals with significant experience in this industry is small. While Denison does not foresee any reason why such officers and key employees will not remain with Denison, if for any reason they do not, Denison could be adversely affected. Denison has not purchased key man life insurance for any of these individuals. Denison's success also depends on the availability of qualified and experienced employees to work in Denison's operations and Denison's ability to attract and retain such employees.

### **Conflicts of Interest**

Some of the directors and officers of Denison are also directors of other companies that are similarly engaged in the business of acquiring, exploring and developing natural resource properties. Such associations may give rise to conflicts of interest from time to time. In particular, one of the consequences would be that corporate opportunities presented to a director or officer of Denison may be offered to another company or companies with which the director or officer is associated, and may not be presented or made available to Denison. The directors and officers of Denison are required by law to act honestly and in good faith with a view to the best interests of Denison, to disclose any interest which they may have in any project or opportunity of Denison, and, where applicable for directors, to abstain from voting on such matter. Conflicts of interest that arise will be subject to and governed by the procedures prescribed in the Company's Code of Ethics and by the OBCA.

### **Disclosure and Internal Controls**

Internal controls over financial reporting are procedures designed to provide reasonable assurance that transactions are properly authorized, assets are safeguarded against unauthorized or improper use, and transactions are properly recorded and reported. Disclosure controls and procedures are designed to ensure that information required to be disclosed by a company in reports filed with securities regulatory agencies is recorded, processed, summarized and reported on a timely basis and is accumulated and communicated to the company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance with respect to the reliability of reporting, including financial reporting and financial statement preparation.

## Potential Influence of KEPCO and KHNP

Effective December 2016, KEPCO transferred the majority of its interest in Denison to KEPCO's subsidiary, KHNP. Denison and KHNP subsequently entered into the KHNP SRA (on substantially similar terms as the original strategic relationship agreement between Denison and KEPCO), pursuant to which KHNP Canada is contractually entitled to Board representation. Provided KHNP Canada holds over 5% of the Shares, it is entitled to nominate one director for election to the Board at any shareholder meeting.

KHNP Canada's shareholding level gives it a large vote on decisions to be made by shareholders of Denison, and its right to nominate a director may give KHNP Canada influence on decisions made by Denison's Board. Although KHNP Canada's director nominee will be subject to duties under the OBCA to act in the best interests of Denison as a whole, such director nominee is likely to be an employee of KHNP and he or she may give special attention to KHNP's or KEPCO's interests as indirect Shareholders. The interests of KHNP and KEPCO, as indirect Shareholders, may not always be consistent with the interests of other Shareholders.

The KHNP SRA also includes provisions granting KHNP Canada a right of first offer for certain asset sales and the right to be approached to participate in certain potential acquisitions. The right of first offer and participation right of KHNP Canada may negatively affect Denison's ability or willingness to entertain certain business opportunities, or the attractiveness of Denison as a potential party for certain business transactions. KEPCO's large indirect shareholding block may also make Denison less attractive to third parties considering an acquisition of Denison if those third parties are not able to negotiate terms with KEPCO or KHNP Canada to support such an acquisition.

## DENISON'S SECURITIES

### The Shares

The Company is entitled to issue an unlimited number of Shares. As of December 31, 2017, Denison had an aggregate of 559,183,209 Shares issued and outstanding. As at the date hereof, Denison had an aggregate of 559,183,209 Shares issued and outstanding.

Shareholders are entitled to receive notice of, and to one vote per share at, every meeting of Shareholders and to share equally in the assets of Denison remaining upon the liquidation, dissolution or winding up of Denison after the creditors of Denison have been satisfied.

### Dividends

Shareholders are entitled to receive dividends if, as and when declared by the Board of Directors. The directors have adopted a policy of dedicating cash flow to reinvestment in the business of the Company. Accordingly, no dividends have been declared to date. Further, the Company is restricted from paying dividends under its Credit Facility.

### Fission Replacement Options

In connection with the acquisition of Fission in 2013, unexercised Fission options were exchanged for options to acquire Shares of Denison (the "**Fission Replacement Options**").

During the financial year ended December 31, 2017, an aggregate of 115,373 Fission Replacement Options were exercised into Shares in accordance with their terms, and all other



outstanding Fission Replacement Options expired unexercised. As at December 31, 2017, no Fission Replacement Options remained outstanding.

### Price Range and Trading Volume of Shares

The Shares trade on the TSX under the symbol “DML” and on the NYSE American under the symbol “DNN”. The following table sets forth, for the periods indicated, the reported intra-day high and low sales prices and aggregate volume of trading of the Shares on the TSX and NYSE American during the year ended December 31, 2017.

Month	High (CAD\$) TSX	Low (CAD\$) TSX	Volume TSX	High (US\$) NYSE American	Low (US\$) NYSE American	Volume NYSE American
January	1.09	0.70	41,518,916	0.84	0.52	31,566,775
February	1.10	0.84	26,928,914	0.84	0.64	16,666,002
March	0.93	0.78	14,440,812	0.70	0.58	12,001,813
April	0.88	0.70	7,771,770	0.66	0.51	8,185,036
May	0.72	0.60	10,722,285	0.53	0.45	8,046,470
June	0.64	0.54	10,834,608	0.47	0.41	9,026,213
July	0.65	0.54	15,228,934	0.53	0.42	10,360,469
August	0.65	0.56	8,051,123	0.52	0.44	7,099,542
September	0.63	0.56	4,645,754	0.51	0.45	4,069,902
October	0.58	0.50	7,248,399	0.47	0.38	5,895,465
November	0.75	0.51	30,853,540	0.59	0.40	25,144,680
December	0.80	0.62	17,080,901	0.62	0.48	16,630,857

Source: Bloomberg Finance

### Prior Sales

During the year ended December 31, 2017, the Company issued the following stock options, each exercisable for a Share at the following exercise prices:

Date of Issuance	Number of Options Issued	Exercise Prices (CAD)
March 10, 2017	6,419,400	\$0.85
August 4, 2017	40,000	\$0.60
<b>TOTAL</b>	<b>6,459,400</b>	

### Escrowed Securities and Securities Subject to Contractual Restrictions on Transfer

Designation of Class	Number of Securities held in escrow or that are subject to contractual restriction on transfer	Percentage of Class at December 31, 2017
Common Shares	3,750,000 <sup>(1)</sup>	0.67%

- <sup>(1)</sup> The shares are being held in escrow by Blake, Cassels & Graydon LLP (“**Blakes**”) pursuant to an escrow agreement dated November 4, 2016 among the Company, ALX Uranium Corp. and Blakes in connection with the Hook-Carter property acquisition. Originally 6,250,000 were held in escrow, and the shares are released in increments of 1,250,000 shares, twice per year, beginning on May 4, 2017.

## DENISON'S MANAGEMENT

### Denison's Directors

The following table sets out the names and the provinces and countries of residence of each of the directors of Denison as of the date hereof, their respective positions and offices held with Denison and their principal occupations during the five preceding years. The following table also identifies the members of each committee of the Board of Directors.

Name and Province and Country of Residence	Principal Occupation and Employment for Past Five Years	Director Since <sup>(1)</sup>
W. ROBERT DENGLER <sup>(2, 4, 5)</sup> Ontario, Canada	Corporate Director since 2006; prior: Vice-Chairman and Director of Dynatec Corporation; President and Chief Executive Officer of Dynatec Corporation.	2006
BRIAN D. EDGAR <sup>(3, 6, 7)</sup> British Columbia, Canada	Chairman of Silver Bull Resources, Inc., a mineral exploration company listed on both OTCMKTS and the TSX, since 2012, and President and Chief Executive Officer of Dome Ventures Corporation, a subsidiary of Silver Bull Resources Inc., since 2005.	2005
RON F. HOCHSTEIN <sup>(2)</sup> British Columbia, Canada	Director of the Company since 2000 and President and Chief Executive Officer of Lundin Gold Inc. since 2014; prior: President and Chief Executive Officer of the Company from 2009 to 2015.	2000
KWANG HEE JEONG Gyeongsangbuk, Korea	General Manager of the Global Business Planning and Administration Team at KHNP, a subsidiary of the Korea Electric Power Corporation (KEPCO), since 2016 and has been with KHNP in different positions since 1997.	2017
LUKAS H. LUNDIN Vaud, Switzerland	Chairman of the Board of the Company since 1998 (other than Mr. Hochstein's term as Executive Chairman for a period in 2015); Business/Mining Executive.	1997
WILLIAM A. RAND <sup>(4, 6)</sup> British Columbia, Canada	President and director of Rand Investments Ltd., a private investment company based in British Columbia.	1997
CATHERINE J. G. STEFAN <sup>(3, 6, 8)</sup> Ontario, Canada	Lead Director of the Board of the Company; prior: President, Stefan & Associates, a consulting firm based in Ontario, from 2009-2016; prior: Managing Partner, Tivona Capital Corporation, a private investment firm, from 1999-2008.	2006

#### Notes:

- (1) The term of office of each of the directors of Denison will expire at the Annual Meeting of the Shareholders to be held on May 3, 2018.
- (2) Member, Environment, Health and Safety Committee
- (3) Member, Corporate Governance and Nominating Committee
- (4) Member, Compensation Committee
- (5) Chair, Compensation Committee and Environment Health and Safety Committee
- (6) Member, Audit Committee
- (7) Chair, Corporate Governance and Nominating Committee
- (8) Chair, Audit Committee

## Denison's Executive Officers

The following table sets out the names and the provinces or states and countries of residence of each of the executive officers of Denison as of the date hereof, their respective positions and offices held with Denison and their principal occupations during the five preceding years.

Name and Province and Country of Residence	Position with Denison and Employment for Past Five Years
DAVID CATES Ontario, Canada	President and Chief Executive Officer since 2015; Vice President Finance, Tax and Chief Financial Officer since 2013; prior: Director, Taxation from 2008 to 2012.
PETER LONGO Saskatchewan, Canada	Vice President, Project Development since 2014; prior: Vice-President, Operations, Claude Resources Inc., a gold mining company from 2011-2014; prior Project Manager, AREVA Resources Inc. from 2007-2011.
GABRIEL McDONALD Ontario, Canada	Vice President, Finance and Chief Financial Officer since 2015; prior: Director of Financial Reporting at IAMGOLD Corporation from 2015, Senior Manager at PricewaterhouseCoopers LLP from 2008.
MICHAEL SCHOONDERWOERD Ontario, Canada	Vice President, Controller since 2013; prior, Corporate Controller, 2004 to 2012.
DALE VERRAN Saskatchewan, Canada	Vice President, Exploration since January 2016; Technical Director, Exploration since 2013; prior: Technical Director, Remote Exploration Services from 2005 to 2013, and Exploration Manager, Manica Minerals Limited from 2010 to 2013.
AMANDA WILLETT British Columbia, Canada	Corporate Counsel and Corporate Secretary since June 2016; prior: Senior Associate at Blake, Cassels & Graydon LLP in Vancouver since 2011, Associate at Stikeman Elliott LLP in Toronto since 2008.

The directors and executive officers of Denison, as a group, beneficially own, or control or direct, directly or indirectly, 3,153,298 Shares, or less than one percent of the Shares as of the date of this AIF. No single director or officer beneficially owns or controls or directs, directly or indirectly, one percent or more of the Shares as of the date of this AIF. The information as to Shares beneficially owned or directed by the directors and officers, not being within the knowledge of the Company, has been furnished by each such individual.

## Cease Trade Orders, Bankruptcies, Penalties or Sanctions

Other than as referred to below, no director or officer of the Company:

- (a) is, as at the date of this AIF, or has, within the previous ten year period, been a director or executive officer of a company (including Denison) that:
  - (i) 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 in effect for a period of more than 30 consecutive days that was issued (A) while that person was acting in such capacity or (B) after that person ceased to act in such capacity but which resulted from an event that accrued while that person was acting in that capacity; or

- (ii) 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 (A) while that person was acting in such capacity or (B) within a year of that person ceasing to act in such capacity, or
- (b) has, within the previous ten year period, become bankrupt, 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 such person's assets; or
- (c) is, or has been, subject to any penalties or sanctions (i) 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 (ii) imposed by a court or regulatory body that would likely be considered important to a reasonable security holder in making an investment decision.

Ron Hochstein and Lukas Lundin were directors of Sirocco Mining Inc. ("**Sirocco**"). Pursuant to a plan of arrangement completed on January 31, 2014, Canadian Lithium Corp. amalgamated with Sirocco to form RB Energy Inc. ("**RBI**"). In October 2014, RBI commenced proceedings under the Companies' Creditors Arrangement Act (the "**CCAA**"). CCAA proceedings continued in 2015 and a receiver was appointed in May 2015. The TSX de-listed RBI's common shares in November 24, 2014 for failure to meet the continued listing requirements of the TSX. Although Lukas Lundin was never a director, officer or insider of RBI, he was a director of Sirocco within the 12-month period prior to RBI filing under the CCAA. Ron Hochstein was a director of RBI from the time of the plan of arrangement with Canadian Lithium Corp. to October 3, 2014.

### **Conflicts of Interest**

Some of Denison's directors and officers are also directors and/or officers of other natural resource companies and, consequently, there exists the possibility for such directors and officers to be in a position of conflict relating to any future transactions or relationships between the Company or common third parties. However, the Company is unaware of any such pending or existing conflicts between these parties. Any decision made by any of such directors and officers involving the Company are made in accordance with their duties and obligations to deal fairly and in good faith with the Company and such other companies and their obligations to act in the best interests of Denison's shareholders. In addition, each of the directors of the Company discloses and refrains from voting on any matter in which such director may have a conflict of interest.

None of the present directors or senior officers of the Company, and no associate or affiliate of any of them, has any material interest in any transaction of the Company or in any proposed transaction which has materially affected or will materially affect the Company except as described herein.

- Investor relations, administrative service fees and other expenses of USD\$147,000 were incurred during the financial year ended December 31, 2017 with Namdo Management Services Ltd, a company which shares a common director with Denison. These services were incurred in the normal course of operating a public company.
- Office and administrative service fees of USD\$46,000 were incurred during the financial year ended December 31, 2017 with Lundin S.A., a company with which a director of Denison is affiliated.

- One of Denison's directors, Mr. Jeong, is employed by KHNP, a subsidiary of KEPCO and the parent corporation of KHNP Canada. Through its corporate holdings, KEPCO is a significant shareholder of the Company, with approximately 10.42% of the outstanding Shares as of the date hereof (the majority of which are held directly by KHNP Canada). The Company and KHNP Canada are parties to the KHNP SRA, which may present a conflict of interest for Mr. Jeong. The KHNP SRA provides KHNP Canada with a right of first offer for certain asset sales and the right to be approached to participate in certain potential acquisitions being considered by Denison. While the Company is not aware of a pending or existing conflict of interest with Mr. Jeong as of the date hereof, the interests of KEPCO, KHNP and KHNP Canada as shareholders of Denison and their business relationships with Denison may place Mr. Jeong in a position of conflict as a director of the Company in the future.

## Interest of Management and Others in Material Transactions

Other than as disclosed in this AIF, no director or executive officer of Denison, no person or company that beneficially owns, controls or directs, indirectly or directly, more than 10% of the Shares, and no associate or affiliate of any of them, has or has had, within the three most recently completed financial years or during the current financial year, any material interest, direct or indirect, in any transaction which materially affects or is reasonably expected to materially affect Denison.

## Standing Committees of the Board

### The Audit Committee

The audit committee of the Company's Board of Directors is principally responsible for:

- recommending to the Company's Board of Directors the external auditor to be nominated for election by the Company's shareholders at each annual general meeting and negotiating the compensation of such external auditor;
- overseeing the work of the external auditor;
- reviewing the Company's annual and interim financial statements, its MD&A in respect thereof and press releases regarding earnings before they are reviewed and approved by the Board of Directors and publicly disseminated by the Company; and
- reviewing the Company's financial reporting procedures for the Company's public disclosure of financial information extracted or derived from its financial statements.

The Company's Board of Directors has adopted an audit committee mandate/terms of reference (the "**Mandate**") which sets out the Audit Committee's mandate, organization, powers and responsibilities. The complete Mandate is attached as Schedule A to this AIF.

Below are the details of each Audit Committee member, including his or her name, whether she or he is independent and financially literate as such terms are defined under National Instrument 52-110 - *Audit Committees* of the Canadian Securities Administrators ("**NI 52-110**") and his or her education and experience as it relates to the performance of his or her duties as an Audit Committee member. All three audit committee members have "financial expertise" within the meaning of the *U.S. Sarbanes-Oxley Act* of 2002, as amended, and are financially literate under NI 52-110. The qualifications and independence of each member is discussed.

Director	Independent <sup>(1)</sup>	Financially Literate <sup>(2)</sup>	Education & Experience Relevant to Performance of Audit Committee Duties
Catherine J.G. Stefan Chair of the Audit Committee	Yes	Yes	<ul style="list-style-type: none"> <li>Chartered Professional Accountant, Chartered Accountant</li> <li>B.Comm</li> <li>Held position of Chief Operating Officer, O&amp;Y Properties Inc., President of Stefan &amp; Associates and Executive Vice-President of Bramalea Group, Chair, Tax Committee of the Canadian Institute of Public Real Estate Companies (CIPREC).</li> </ul>
Brian D. Edgar	Yes	Yes	<ul style="list-style-type: none"> <li>Law degree, with extensive corporate finance experience</li> <li>Held positions of Chairman (since 2011) and President and Chief Executive Officer (2005 to 2011) of a public company.</li> <li>Has served on audit committees of a number of public companies</li> </ul>
William A. Rand	Yes	Yes	<ul style="list-style-type: none"> <li>B.Comm (Accounting)</li> <li>Two law degrees, with extensive corporate finance experience</li> <li>Has served on audit committees of a number of public companies</li> </ul>

**Notes:**

(1) Independent within the meaning of NI 52-110.

(2) To be considered financially literate, a member of the Committee must have the ability to read and understand a set of financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of the issues that can reasonably be expected to be raised by the Company's financial statements.

Since the commencement of the Company's most recently completed financial year, there has not been a recommendation of the Audit Committee to nominate or compensate an internal auditor which was not adopted by the Company's Board of Directors.

The Audit Committee has adopted specific policies and procedures for the engagement of non-audit services as described in Section D of the Mandate.

The following table discloses the fees billed to the Company by its external auditor, PricewaterhouseCoopers LLP ("**PwC**"), during the last two fiscal years.

Financial Year Ending	Audit Fees <sup>(1)</sup>	Audit-Related Fees <sup>(2)</sup>	Tax Fees <sup>(3)</sup>	All Other Fees <sup>(4)</sup>
December 31, 2017	\$173,526	\$115,212	Nil	Nil
December 31, 2016	\$175,988	\$128,978	Nil	Nil

**Notes:**

(1) The aggregate fees billed for audit services of the Company's consolidated financial statements.

(2) The aggregate fees billed for assurance and related services that are reasonably related to the performance of the audit or review of the Company's financial statements and are not disclosed in the Audit Fees column. Fees relate to reviews of interim consolidated financial statements and specified audit procedures not included as part of the audit of the consolidated financial statements.

- (3) The aggregate fees billed for tax compliance, tax advice, and tax planning services, such as transfer pricing and tax return preparation.
- (4) The aggregate fees billed for professional services other than those listed in the other columns.

## Other Board Committees

The Board currently has three other standing committees in addition to the Audit Committee, namely the Corporate Governance and Nominating Committee, the Compensation Committee and the Environment, Health and Safety Committee. Each standing committee of the Board operates according to its mandate, which is approved by the Board and sets out the committee's duties and responsibilities. A discussion of each committee and its composition can be found in the most recent management information circular prepared in connection with the Company's Shareholder meeting, and copies of the standing committee mandates are available on the Company's website at [www.denisonmines.com](http://www.denisonmines.com).

## Corporate Governance

As a Canadian reporting issuer with its Shares listed on the TSX, Denison has in place a system of corporate governance practices which is responsive to applicable Canadian requirements, including National Policy 58-201 - *Corporate Governance Guidelines* of the Canadian Securities Administrators (the "**Guidelines**"). Denison's corporate governance practices meet or exceed the Guidelines and all other applicable Canadian requirements. Reference is made to the Corporate Governance Practices section of the Circular, which contains a description of the Company's system of corporate governance practices with reference to the Guidelines.

Denison is classified as a foreign private issuer under U.S. securities law and its Shares are listed on NYSE American. Pursuant to the rules of the NYSE American, a foreign private issuer is permitted to follow home country practice except with respect to certain rules, with which Denison complies.

## LEGAL AND REGULATORY PROCEEDINGS

Except as described below, the Company is not currently a party to, nor was it a party to during the last financial year, and none of the Company's property is or was the subject of, any material legal proceedings, and the Company knows of no such material legal proceedings that are contemplated. However, from time to time, the Company may become party to routine litigation incidental to its business or other litigation matters deemed non-material by the Company.

## Uranium Industry a.s. Arbitration

Under the terms of the GSJV Purchase Agreement with respect to the Mongolia Transaction, the issuance by the Mongolian government of mining licence certificates for the Hairhan, Haraat, Gurvan Saihan and Ulzit projects in 2016 triggered an obligation for UI to make an aggregate of USD\$10,000,000 of contingent payments to Denison by November 16, 2016.

Pursuant to the Extension Agreement subsequently entered into between UI and the Company, the payment due date for the contingent payments was extended from November 16, 2016 to July 16, 2017. As consideration for the extension, UI agreed to pay interest on the contingent payments at a rate of 5% per year, payable monthly up to July 16, 2017 and agreed to pay a USD\$100,000 instalment amount towards the balance of contingent payments. The first payment under the Extension Agreement was due on or before January 31, 2017. The required payments were not made and UI is in breach of the GSJV Purchase Agreement and the Extension Agreement.

On February 24, 2017, the Company served notice to UI that UI was in default of its obligations under the GSJV Agreement and the Extension Agreement and that the contingent payments and all interest payable thereon are immediately due and payable. On December 12, 2017, the Company filed a Request for Arbitration under the Arbitration Rules of the London Court of International Arbitration in conjunction with the default of UI's obligations under the GSJV and Extension agreements, to which Uranium Industry submitted its response and counterclaim on February 14, 2018. The parties have appointed a chair for the three member arbitration panel, and are considering initial procedural matters.

## MATERIAL CONTRACTS

Reference is made to the material contracts which have been filed by Denison with the Canadian securities regulatory authorities on the SEDAR website at [www.sedar.com](http://www.sedar.com).

Below are the particulars of each contract, other than those entered into in the ordinary course of business, that is material to Denison and that was entered into between January 1, 2016 and the date hereof or was entered into before those dates but is still in effect:

1. The following agreements executed in connection with the APG Transaction:
  - a. The loan agreement between DMI and SPV dated January 31, 2017 with respect to the DMI Loan;
  - b. The loan agreement between SPV and APG dated January 31, 2017 with respect to the SPV Loan;
  - c. The performance guarantee by Denison as guarantor in favour of the SPV as beneficiary and APG as permitted assignee, pursuant to which Denison has agreed to guarantee the performance of DMI's obligations to SPV under the SPV Loan, which guarantee has been assigned by SPV in favour of APG;
  - d. The streaming agreement between the DMI and Centaurus dated January 31, 2017 with respect to the Stream Arrangement; and
  - e. The performance guarantee by Denison as guarantor in favour of Centaurus as beneficiary, pursuant to which Denison has agreed to guarantee the performance of DMI's obligations to Centaurus under the Stream Arrangement.
2. The Reclamation Funding Agreement made as of the 21<sup>st</sup> day of December 1995 among Denison Mines Limited ("**DML**"), Her Majesty the Queen in Right of Canada (the "**Government of Canada**") and Her Majesty the Queen in Right of the Province of Ontario (the "**Government of Ontario**") as amended by the Amending Agreement made as of the 11<sup>th</sup> day of April 1997 among DML (now DMI), the Government of Canada and the Government of Ontario and as further amended by the Amending Agreement made as of the 25<sup>th</sup> day of February 1999 among DML, the Government of Canada and the Government of Ontario and further amended by an Assignment and Novation Agreement made as of the 29<sup>th</sup> day of December, 2003 among Denison Energy, DMI, the Government of Canada and the Government of Ontario.

According to the Reclamation Funding Agreement, the Company is required to maintain funds in an Environmental Trust sufficient for the succeeding six years of the estimated reclamation and on-going care and monitoring expenditures for the Company's closed Elliot Lake mining facility.



3. The KHNP SRA dated September 19, 2017 between the Company and KHNP Canada.

The KHNP SRA provides for a long-term collaborative business relationship between the parties, replacing the strategic relationship agreement made as of June 15, 2009 among the Company, KEPCO and KEPCO Canada Uranium Investment Limited Partnership. Under the KHNP SRA, KHNP Canada is entitled to the nomination of one Board representative, provided that KHNP Canada's shareholding percentage stays above 5%.

The KHNP SRA also provides that if Denison intends to sell an interest in certain of its substantial assets, it will first notify KHNP Canada of each such proposed sale and provide KHNP Canada with a 30-day right of first offer to allow KHNP Canada to purchase the interest in the asset that Denison proposes to sell. The KHNP SRA provides that Denison will allow KHNP Canada to participate in potential purchases of certain assets, including a mill facility, a producing mine or a mineral resource for which a production feasibility study has been completed, which Denison plans to pursue with a co-investor. KHNP Canada's ability to purchase will not be available where Denison and KHNP Canada cannot agree on terms within a reasonable time or where their involvement would adversely affect Denison's ability to pursue an investment opportunity. The right of first offer and co-investment rights are subject to pre-existing contractual commitments and do not apply to certain pre-existing transactions. KHNP Canada is also entitled to subscribe for additional Shares in order to maintain or increase its shareholding percentage in Denison to thresholds which are relevant to its rights under the KHNP SRA, in circumstances where Denison completes a public offering or broadly distributed private placement to raise proceeds of greater than \$10 million.

Denison is entitled to terminate the KHNP SRA if KHNP Canada's shareholding percentage in Denison drops below 5% and stays below 5% for 60 days following delivery of a notice to that effect by Denison to KHNP Canada or if Denison completes an Extraordinary Transaction, as defined in the KHNP SRA.

## **NAMES AND INTERESTS OF EXPERTS**

The Company's Independent Registered Public Accounting Firm is PricewaterhouseCoopers LLP, Chartered Professional Accountants, Licensed Public Accountants, who have issued an independent auditor's report dated March 8, 2018 in respect of Denison's consolidated financial statements as at December 31, 2017 and 2016 for the years ended 2017 and 2016 and the effectiveness of the Company's internal control over financial reporting as at December 31, 2017. PwC has advised that it is independent with respect to the Company within the meaning of the Rules of Professional Conduct of the Chartered Professional Accountants of Ontario and Public Company Accounting Oversight Board Rule 3520 Auditor Independence.

Dale Verran, MSc, Pr.Sci.Nat., Denison's Vice President, Exploration, who is a "Qualified Person" within the meaning of this term in NI 43-101, has prepared sections of this AIF that are of a scientific or technical nature pertaining to the Company's mineral projects and has verified the data disclosed therein. To the knowledge of Denison, Dale Verran is the registered or beneficial owner, directly or indirectly, of less than one percent of the outstanding Shares.

Peter Longo, P.Eng, MBA, PMP, Denison's Vice President Project Development, who is a "Qualified Person" within the meaning of this term in NI 43-101, has prepared sections of this AIF that are of a scientific or technical nature pertaining to the Company's mineral projects and has

verified the data disclosed therein. To the knowledge of Denison, Peter Longo is the registered or beneficial owner, directly or indirectly, of less than one percent of the outstanding Shares.

The Wheeler Technical Report dated March 15, 2018 was authored by Mark Mathisen, C.P.G., of RPA and Ken Reipas, P.Eng, of SRK Consulting, who are independent in accordance with the requirements of NI 43-101.

The J Zone Technical Report dated September 6, 2013 was authored by Allan Armitage, Ph.D., P.Geo., and Alan Sexton, M.Sc., P.Geo. of GeoVector, which was retained to independently review and audit mineral resource estimates in accordance with the requirements of NI 43-101.

RPA, which was retained to independently review and audit the mineral reserves and mineral resources in accordance with the requirements of NI 43-101, prepared the following technical reports:

- McClean Technical Report dated November 21, 2005 as amended on February 16, 2006 by Richard E. Routledge, M.Sc., P.Geo. and James W. Hendry, P.Eng.
- McClean North Technical Report dated January 31, 2007 by Richard E. Routledge, M.Sc., P.Geo.
- Sue D Report dated March 31, 2006 by Richard E Routledge, M.Sc., P.Geo. and James W. Hendry, P.Eng.

The Midwest Technical Report dated March 26, 2018 was authored by Dale Verran, MSc, Pr.Sci.Nat. and Chad Sorba, P.Geo, of the Company and G. David Keller, PGeo, and Oy Leuangthong, PEng, of SRK Consulting, who were retained to independently review and audit the mineral reserves in accordance with the requirements of NI 43-101.

To the knowledge of Denison as of the date hereof, each of RPA Inc., GeoVector and SRK Consulting and each of their respective partners, employees and consultants who participated in the preparation of the aforementioned reports, or who were in a position to influence the outcome of such reports, are the registered or beneficial owner, directly or indirectly, of less than one percent of the outstanding Shares.

## ADDITIONAL INFORMATION

Additional information regarding the Company is available on the SEDAR website at [www.sedar.com](http://www.sedar.com). Further information concerning the Company, including directors' and officers' remuneration and indebtedness, principal holders of the Company's securities, options to purchase securities and interests of insiders in material transactions, where applicable, is contained in the Circular for the Annual General and Special Meeting of Shareholders to be held on May 3, 2018. Additional financial information is provided in the Company's audited consolidated financial statements and MD&A for the financial year ended December 31, 2017.

A copy of this AIF, as well as the Circular and such other information and documentation that the Company makes available via SEDAR, can be found at [www.sedar.com](http://www.sedar.com). In addition, certain of this information is distributed to shareholders in connection with Denison's Annual General Meeting of Shareholders. The Company will provide any of the foregoing documents subject to its rights to require people who are not security holders of the Company to pay a reasonable charge. Copies of these documents may be obtained by writing to:

Denison Mines Corp.  
1100 – 40 University Avenue  
Toronto, Ontario, M5J 1T1

Telephone: (416) 979-1991  
Facsimile: (416) 979-5893  
Email: [info@denisonmines.com](mailto:info@denisonmines.com)

## SCHEDULE A



### Audit Committee Mandate and Charter

#### **A. Composition of the Committee**

- (1) The Board shall appoint annually from among its members at the first meeting of the Board following the annual meeting of the shareholders a committee to be known as the Audit Committee (the "Committee") to be composed of three (3) directors or such other number not less than three (3) as the Board may from time to time determine.
- (2) Any member of the Committee may be removed or replaced at any time by the Board. Any member of the Committee ceasing to be a director or ceasing to qualify under A(3) below shall cease to be a member of the Committee. Subject to the foregoing, each member of the Committee shall hold office as such until the next annual appointment of members to the Committee after his or her election. Any vacancy occurring in the Committee shall be filled at the next meeting of the Board.
- (3) Each member of the Committee shall:
  - (a) be a member of the Board;
  - (b) not be an officer or employee of the Company or any of its affiliates;
  - (c) be an unrelated director as defined in the Toronto Stock Exchange (the "TSX") Corporate Governance Guidelines ("TSX Guidelines") as the same may be amended from time to time;
  - (d) satisfy the independence requirements applicable to members of audit committees under each of Multilateral Instrument 52-110 – Audit Committees of the Canadian Securities Administrators ("M1 52-110"), Rule 10A-3(b)(1)(ii) of the United States Securities and Exchange Commission, and any other applicable laws and regulations, as the same may be amended from time to time (with the TSX Guidelines, "Applicable Laws"); and
  - (e) satisfy the financial literacy requirements prescribed by Applicable Laws.
- (4) A majority of the Committee shall constitute a quorum.
- (5) The Committee shall elect annually a chairperson from among its members.

#### **B. Purpose**

- (1) The Committee's purpose is to assist the Board in its supervision of the management of the business and affairs of the Company through oversight of:
  - (a) the integrity of the Company's financial statements, Management's Discussion and Analysis ("MD&A") and other financial reporting;
  - (b) the integrity of the Company's internal control and management information systems;
  - (c) the Company's compliance with all applicable laws, rules, regulations, policies and other requirements of governments, regulatory agencies and stock exchanges relating to accounting matters and financial disclosure;
  - (d) the auditor's qualifications and activities;
  - (e) communication among the auditor, management and the Board; and
  - (f) such other matters as are determined by the Board from time to time.

### **C. Committee Resources**

- (1) The Committee shall have direct channels of communication with the Company's auditor to discuss and review specific issues as appropriate.
- (2) The Committee, or any member of the Committee with the approval of the Committee, may retain at the expense of the Company such independent legal, accounting (other than the auditor) or other advisors on such terms as the Committee may consider appropriate and shall not be required to obtain the approval of the Board in order to retain or compensate any such advisors.
- (3) The Committee shall have unrestricted access to Company personnel and documents and shall be provided with all necessary funding and other resources to carry out its responsibilities.

### **D. Committee Responsibilities**

- (1) The responsibilities of the Committee shall be to:
  - (a) with respect to financial accounting matters:
    - (i) review with management and the external auditors the annual consolidated financial statements, MD&A and press release announcing annual financial results of operations before making recommendations to the Board relating to approval of such documents;
    - (ii) review with management and the external auditors interim financial statements, MD&A and press release announcing interim financial results of operations before making recommendations to the Board relating to approval of such documents;
    - (iii) review and discuss with management and the external auditors all public disclosure documents containing audited or unaudited financial information including: any Prospectus; the Annual Report; interim unaudited reports; and any material change report pertaining to the Company's financial matters. The Committee will review the consistency of the foregoing documents with facts, estimates or judgments contained in the audited or unaudited financial statements;
    - (iv) satisfy itself that adequate procedures are in place for the review of the Company's disclosure of financial information extracted or derived from the Company's financial statements, other than the Company's financial statements, MD&A and earnings press releases, and shall periodically assess the adequacy of those procedures;
    - (v) prior to the completion of the annual audit, and at any other time deemed advisable by the Committee, review and discuss with management and the auditor the quality of the Company's accounting policies and financial statement presentation, including, without limitation, the following:
      1. all critical accounting policies and practices to be used, including, without limitation, the reasons why certain estimates or policies are or are not considered critical and how current and anticipated future events may impact those determinations as well as an assessment of any proposed modifications by the auditors that were not made;
      2. all alternative accounting treatments for policies and practices that have been discussed by management and the auditors; and
      3. other material written communications between the auditor and management, including, without limitation, any management letter, schedule of unadjusted differences, the management representation letter, report on internal controls, as well as the engagement letter and the independence letter;

- (vi) review annually the accounting principles and practices followed by the Company and any changes in the same as they occur;
  - (vii) review new accounting principles of the Chartered Professional Accountants of Canada and the International Accounting Standards Board which would have a significant impact on the Company's financial reporting as reported to the Committee by management;
  - (viii) review the status of material contingent liabilities as reported to the Committee by management;
  - (ix) review potentially significant tax problems as reported to the Committee by management; and
  - (x) review any errors or omissions in the current or prior year's financial statements which appear material as reported to the Committee by management;
- (b) with respect to the external auditors:
- (i) be directly responsible for recommending the appointment of the auditor, the auditor's compensation, retention and termination and for oversight of the work of the auditor (including, without limitation, resolution of disagreements between management and the auditor regarding financial reporting) for the purpose of preparing or issuing an audit report or performing other audit, review or services for the Company;
  - (ii) approve, prior to the auditor's audit, the auditor's audit plan (including, without limitation, staffing), the scope of the auditor's review and all related fees;
  - (iii) satisfy itself as to the independence of the auditor. The Committee shall pre-approve any non-audit services (including, without limitation, fees therefor) provided to the Company or its subsidiaries by the auditor or any auditor of any such subsidiary and shall consider whether these services are compatible with the auditor's independence, including, without limitation, the nature and scope of the specific non-audit services to be performed and whether the audit process would require the auditor to review any advice rendered by the auditor in connection with the provision of non-audit services. The Committee shall not allow the auditor to render any non-audit services to the Company or its subsidiaries that are prohibited by Applicable Law;
  - (iv) review and approve the Company's policies concerning the hiring of employees and former employees of the Company's auditor or former auditor.
- (c) with respect to internal controls:
- (i) oversee management's design, testing and implementation of the Company's internal controls and management information systems and review the adequacy and effectiveness thereof.
- (d) with respect to concerns and complaints:
- (i) establish procedures for:
    1. the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters; and
    2. the confidential, anonymous submission by employees of the Company of concern regarding questionable accounting or auditing matters.
- (e) with respect to ethics:
- (i) The Committee shall be responsible for oversight and enforcement of the Code of Ethics for the Chief Executive Officer, Senior Financial Officers and Other Officers of the Company, subject to the supervision of the Board.

- (f) with respect to general audit matters:
- (i) inquire of management and the external auditors as to any activities that may or may not appear to be illegal or unethical;
  - (ii) review with management, the operations analyst and the external auditors any frauds reported to the Audit Committee;
  - (iii) review with the external auditors the adequacy of staffing for accounting and financial responsibilities; and
  - (iv) report and make recommendations to the Board as the Committee considers appropriate.

(2) In addition, the Board may refer to the Committee such matters and questions relating to the Company as the Board may from time to time see fit;

(3) Any member of the Committee may require the auditors to attend any or every meeting of the Committee.

## **E. Meetings**

(1) The times of and the places where meetings of the Audit Committee shall be held and the calling of and procedure at such meetings shall be determined from time to time by the Committee, provided however that the Committee shall meet at least quarterly, and the Committee shall maintain minutes or other records of its meetings and activities. Notice of every such meeting to be given in writing not less than five (5) days prior to the date fixed for the meeting, and shall be given to the auditors of the Company, that the auditors shall be entitled to attend and be heard thereat. Meetings shall be convened whenever requested by the auditors, the operations analyst or any member of the Audit Committee in accordance with the Ontario Business Corporations Act.

(2) As part of each meeting of the Committee at which it recommends that the Board approve the financial statements of the Company, and at such other times as the Committee deems appropriate, the Committee shall meet separately with the auditor to discuss and review specific issues as appropriate.

## **F. Evaluation of Charter and Mandate**

(1) On at least an annual basis, the Committee shall review and assess the adequacy of this Charter and Mandate and recommend any proposed changes to the Board of Directors.

(2) All prior resolutions of the Board relating to the constitution and responsibilities of the Audit Committee are hereby repealed.

## **SCHEDULE B**

### **Glossary of Technical Terms**

Note: The terms related to Mineral resources and mineral reserves presented herein are as defined in “CIM DEFINITION STANDARDS on Mineral Resources and Mineral Reserves” prepared by the CIM Standing Committee on Reserve Definitions, adapted by CIM Council, May 10, 2014.

#### **eU<sub>3</sub>O<sub>8</sub>**

This term refers to equivalent U<sub>3</sub>O<sub>8</sub> grade derived from the downhole logging of drill holes using a calibrated total gamma probe.

#### **Feasibility Study**

A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable Modifying Factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate, at the time of reporting, that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a Pre-Feasibility Study.

#### **Historical Estimate**

A historical estimate means an estimate of the quantity, grade or metal or mineral content of a deposit that an issuer has not verified as a current mineral resource or mineral reserve, and which was prepared before the issuer acquiring, or entering into an agreement to acquire, an interest in the property that contains the deposit.

#### **Indicated Mineral Resource**

An indicated mineral resource is that part of a mineral resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

#### **Inferred Mineral Resource**

An inferred mineral resource is that part of a mineral resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes

#### **Measured Mineral Resource**

A measured mineral resource is that part of a mineral resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

#### **Mineral Reserve**

A mineral reserve is the economically mineable part of a measured or indicated mineral resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of



reporting, that economic extraction can be justified. A mineral reserve includes diluting materials and allowances for losses that may occur when the material is mined.

### **Mineral Resource**

A mineral resource is a concentration or occurrence of diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial materials in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a mineral resource are known, estimated or interpreted from specific geological evidence and knowledge.

### **Modifying Factors**

Modifying Factors are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

### **Preliminary Feasibility Study or Pre-Feasibility Study**

A Pre-Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study.

### **Probable Mineral Reserve**

A 'probable mineral reserve' is the economically mineable part of an indicated, and in some circumstances, a measured mineral resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

### **Proven Mineral Reserve**

A 'proven mineral reserve' is the economically mineable part of a measured mineral resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

### **Qualified Person**

A 'Qualified Person' means an individual who is an engineer or geoscientist with at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these; has experience relevant to the subject matter of the mineral project and the technical report and is a member or licensee in good standing of a professional association of geoscientists and/or engineers meeting the criteria set out in NI 43-101.