

## **Uranium Development & Exploration**

The Athabasca Basin, Northern Saskatchewan

April 2020 | Corporate Update



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This presentation and the information contained herein is designed to help you understand management's current views, and may not be appropriate for other purposes. This presentation contains information relating to other companies and provincial infrastructure, and the plans and availability thereof, derived from third-party publications and reports which Denison believes are reliable but have not been independently verified by the Company.

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#### **Qualified Persons**

The disclosure of a scientific or technical nature within this presentation, including the disclosure of mineral resources and reserves and PFS results, was reviewed and approved by 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.

#### Wheeler River Technical Reports

For further details regarding the Wheeler River project, please refer to the Company's press release dated September 24, 2018 and the technical report titled "Prefeasibility Study for the Wheeler River Uranium Project, Saskatchewan, Canada" with an effective date of September 24, 2018. For a description of the data verification, assay procedures and the quality assurance program and quality control measures applied by Denison, please see Denison's Annual Information Form dated March 13, 2020. Copies of the foregoing are available on Denison's website and under its profile on SEDAR at www.sedar.com and on EDGAR at www.sec.gov/edgar.shtml.

## The Uranium Investment Thesis: Fundamentals are improving, leading to a positive new uranium cycle



### **Key Market Themes:**

- Long-term contracts from the previous uranium bull cycle have acted as a lifeline to high-cost mines – this is coming to an end, with significant uncovered utility requirements emerging as Denison is expected to enter production
  - Demand story is positive and improving requirements now exceed pre-Fukushima levels, despite much of Japanese fleet remaining shut
- 3. Significant curtailment decisions have been made by largest uranium producers, helping to correct an over-supplied market
- 4. Given sustained low prices, project pipeline may be inadequate to deliver new production in time to replace mines that are dropping off
  - Utilities expected to re-enter the market following long-awaited outcome of section 232 related trade uncertainty in the U.S.

### **D**enison Mines

### Diversified Athabasca Basin Asset Base with Superior Development Leverage

### **Strategic Asset Portfolio:**

- 90% interest in Flagship Wheeler River project
  - Development stage project
  - Largest undeveloped uranium project in the infrastructure rich eastern Athabasca Basin
  - Environmental Assessment ("EA") initiated<sup>(A)</sup>
- 22.5% interest in McClean Lake Uranium Mill
  - Processing +12% of global uranium production prior to suspension<sup>(B)</sup>
  - Excess licensed capacity
- Additional leverage to the uranium price from interests in undeveloped uranium resources at McClean Lake, Midwest, and Waterbury Lake
- 280,000 hectares of prospective exploration ground in the Athabasca Basin
- Internal sources of Cash Flow
  - Uranium Participation Corp. (TSX-U)
  - Closed mine care & maintenance (formerly Denison Environmental Services)

### **P**enison Mines



**\*\*\*IMPORTANT NOTES ON COVID-19 IMPACTS\*\*\*** (A) Given recent social, financial and market disruptions, Denison has suspended

certain activities at Wheeler River, including the Environmental Assessment program, which is on the critical path to achieving the project development

schedule outlined in the PFS. Given the uncertainty associated with the duration of suspension, the Company is not currently able to estimate the impact to the

project development schedule outlined in the PFS, and users are cautioned that the estimates provided therein regarding the start of pre-production activities in

2021 and first production in 2024 should not be relied upon.<sup>(1)</sup>

(B) On March 23, 2020, Cameco Corporation announced that it is temporarily

suspending production at its Cigar Lake uranium mine due to the threat posed by the COVID-19 pandemic. Cigar Lake ore is processed at the McClean Lake mill. The decision to suspend production at Cameco's Cigar Lake mine was made in

### 280,000 Hectares of Prospective Exploration & Development Ground Focused in the Infrastructure Rich Eastern Athabasca Basin



# Flagship Wheeler River Development Project<sup>(1)</sup>

### 90% Denison Owned (10% JCU):

- Host to two high-grade uranium deposits
- NI 43-101 compliant Pre-Feasibility Study ("PFS") considers staged development plan
- **Phoenix** estimated to potentially have lowest costs of any undeveloped uranium deposit
  - In-Situ Recovery ("ISR") mining method
  - On-site processing to finished yellow cake
  - Initiation of EA approved by Board & JV
  - All-in costs of US\$8.90/Ib U<sub>3</sub>O<sub>8</sub>
  - Operating costs of US\$3.33/Ib U<sub>3</sub>O<sub>8</sub>
- Gryphon contributes additional low-cost pounds
  - Conventional underground mining approach
  - Assumes toll-milling at McClean Lake mill
  - All-in cost of US\$22.82/Ib U<sub>3</sub>O<sub>8</sub>
  - Operating costs of US\$11.70/Ib U<sub>3</sub>O<sub>8</sub>
- Combined **109.4M** lbs U<sub>3</sub>O<sub>8</sub> Probable Reserves
- Combined 14 year mine life
- Initial CAPEX (Phoenix) of **\$322.5M** (100%)

## **D**enison Mines

**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018;



### Wheeler River PFS: Potential to be one of the lowest all-in cost uranium mining operations



### Sample of Global Production Costs<sup>(1)(2)</sup> Planned and Producing Operations (with Mining Method)

### **P**enison Mines

**NOTES:** (1) Chart data, including all-in costs, have been derived from UxC's estimates of Worldwide Production Costs as of August 2019. (2) For Phoenix and Gryphon, refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018.

### Wheeler River PFS: Staged development plan with combined 14-year mine life<sup>(1)</sup>

**\*\*\*IMPORTANT**\*\*\* The Wheeler River PFS estimated pre-production activities to begin in 2021, assuming receipt of required regulatory approvals, with first production from the Phoenix deposit expected in 2024. Given recent social, financial and market disruptions, Denison has suspended certain activities at Wheeler River, including the Environmental Assessment programs which is on the critical path to achieving the project development schedule outlined in the PFS. The decision to temporarily suspend the EA process is expected to impact the project development schedule outlined in the PFS for Wheeler River. Given the uncertainty associated with the duration of suspension, the Company is not currently able to estimate the impact to the project development schedule outlined in the PFS, and users are cautioned that the estimates provided therein regarding the start of pre-production activities in 2021 and first production in 2024 should not be relied upon.<sup>(2)</sup>



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## Wheeler River PFS: Uranium price assumptions, commercial strategy, and sensitivities



Assumptions / Results <sup>(1)</sup>	Base Case	PEA Ref. Case	High Case
Uranium selling price	As above	US\$44/lb U <sub>3</sub> O <sub>8</sub>	US\$65/lb U <sub>3</sub> O <sub>8</sub>
Pre-tax NPV <sub>8%</sub> <sup>(2)</sup> (100% Basis)	\$1.31 billion	\$1.41 billion	\$2.59 billion
Pre-tax IRR <sup>(2)</sup>	38.7%	47.4%	67.4%
Pre-tax payback period <sup>(3)</sup>	~24 months	~ 15 months	~ 11 months

### Base Case Price Assumptions Reflect Commercial Strategy:

- Phoenix Operation:
  - Low all-in cost per lb U<sub>3</sub>O<sub>8</sub> suggests contract "base-loading" not required
  - Uranium selling price based on UxC Spot price forecast (Q3'2018 UMO "Composite Midpoint" scenario)
  - ~US\$29/lb U<sub>3</sub>O<sub>8</sub> to US\$45/lb U<sub>3</sub>O<sub>8</sub>
  - Stated in "constant" 2018 dollars
- Gryphon Operation:
  - US50/lb U $_3O_8$  fixed price
  - Market support expected to be trigger for development

### Comparison to 2016 Preliminary Economic Assessment ("PEA"):

- 2016 PEA provided pre-tax project NPV<sub>8%</sub> of \$513 million at fixed uranium price of US\$44/lb U<sub>3</sub>O<sub>8</sub>
- PFS equivalent represents +275% of pre-tax project NPV from PEA

## Penison Mines

**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) NPV and IRR are calculated to the start of pre-production activities for the applicable operation; (3) Payback period is stated as number of years to pay-back from the start of commercial production.

## Phoenix Deposit: Combining the world's lowest-cost uranium mining method with the world's highest-grade undeveloped uranium deposit



### Phoenix Geology: Unique uranium deposit with exceptionally high grades

### Highlights<sup>(1)</sup>:

- Mineralization is situated at or immediately above the unconformity("UC")
- Two distinct zones Phoenix A + B
- Approximately 400m below surface
- World's highest-grade undeveloped uranium deposit
- 70.2 million pounds U<sub>3</sub>O<sub>8</sub> @ 19.14% U<sub>3</sub>O<sub>8</sub>
  Indicated mineral resources (166,400 tonnes)<sup>(2)</sup>
  - Zone A High-Grade Core contains an estimated 59.9 M Ibs U<sub>3</sub>O<sub>8</sub> @ 43.2% U<sub>3</sub>O<sub>8</sub> (62,900 tonnes)
  - Cut-off grade of 0.8% U<sub>3</sub>O<sub>8</sub>
  - 1.1M lbs U<sub>3</sub>O<sub>8</sub> in Inferred mineral resources (8,600 tonnes @ 5.8% U<sub>3</sub>O<sub>8</sub>)<sup>(3)</sup>
- ✓ Geological setting expected to be amenable to ISR mining, with ~90% of the mineral resource (contained metal) hosted in sandstone

## Penison Mines

**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) Indicated resources are inclusive of Reserves; (3) The PFS does not include any economic analysis based on estimated Inferred resources.



### Phoenix Operation: Application of low-cost ISR mining method to high-grade Athabasca Basin



### ISR Mining Process<sup>(1)</sup>:

- Mining solution (also known as "lixiviant") is pumped through a permeable orebody via injection well
- Lixiviant dissolves the uranium as it travels through the orebody
- Uranium bearing mining solution ("UBS") is pumped back to surface via recovery well
- 4. UBS is sent to a processing plant on surface for chemical separation of the uranium and reconditioning of lixiviant
- 5. Lixiviant is returned back to well field for further production

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### Phoenix Freeze Cap: Novel concept to contain mining solution, using established technology



### Artificial freeze cap replicates confining layer typically required for ISR mining operations<sup>(1)</sup>

- Parallel cased holes drilled from surface and anchored into impermeable basement rock surrounding the Phoenix deposit
- Circulation of low-temperature brine solution through cased pipes will freeze groundwater in sandstone surrounding the deposit
- 10 metre thick freeze wall, together with basement rocks will encapsulate Phoenix deposit
- ✓ Eliminates common environmental concerns with ISR mining and facilitates controlled reclamation

### enison Mines

**NOTES:** (1) Indicative design only. Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018.

## Phoenix Test Work: Continues to confirm suitability of ISR mining method

Ongoing and future test work designed to build upon initial data and test results incorporated into the PFS

- PFS Laboratory Tests<sup>(1)</sup>: High rates of recovery in extraction (+90%) and processing (98.5%) from column and agitated leach tests
- 2020 Core Leach Tests<sup>(2)</sup>: Initial data from testing of intact core, from Phoenix Zone A high-grade, includes elemental uranium ("uranium") concentrations, after startup, in the range 200% higher than minimum level used in PFS process plant design (average of 29.8 g/L uranium over 20 days of testing)
- Bulk Hydraulic Conductivity<sup>(3)</sup>: Pump and injection tests completed during the 2019 ISR Field Test from CSW2 (drill hole GWR-032), after use of the MaxPerf Drilling Tool, produced K values (measure of permeability) consistent with the values used in the PFS

## Penison Mines

**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) See Denison's news release from February 19, 2020 for details; (3) See Denison's news release from February 24, 2020 for details



## Phoenix ISR Processing Plant:

Closed loop system and simplified plant design reduces the need for discharge

### **On-Site Processing Plant**<sup>(1)</sup>

- Annual production between 6 and 12 million lbs U<sub>3</sub>O<sub>8</sub> depends on uranium concentrations from wellfield (10 g/L → 6M lbs U<sub>3</sub>O<sub>8</sub> / yr)
- No crushing or grinding circuits required – results in small footprint
- Low impurity solution allows for direct precipitation and eliminates need for ion exchange or solvent extraction circuits
- Potential for closed loop system that recycles mining solution with little to no discharge of treated effluent
- Drying/calcining to be done on-site in preparation for market

✓ Powered by Provincial power grid



### enison Mines

**NOTES:** (1) Indicative design only. Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018.

### Phoenix ISR Operation: Different mining method and a different type of operation<sup>(1)</sup>



### Advantages of ISR mining compared to existing uranium mining in Canada:

- ✓ Small surface footprint
- ✓ Lower water consumption
- ✓ Lower energy consumption
- ✓ Potentially near zero CO<sub>2</sub> emissions
- Small volume (potentially zero) treated effluent released to surface water bodies
- Potential for lower radiation doses to workers
- ✓ No tailings production
- Very small volumes of clean waste rock (sandstone core from wellfield development)

### Phoenix ISR Field Test: A first of its kind ISR field test in the Athabasca Basin



Installation of Commercial Scale Wells as part of ISR Field test work at Wheeler River Phoenix Deposit, Summer 2019

## Phoenix ISR Field Test: A first of its kind ISR field test in the Athabasca Basin<sup>(1)</sup>

### 2019 ISR Field Test Objectives:

- In-situ field work necessary to increase the confidence / reduce risks associated with use of ISR mining method at Phoenix
  - Data required for detailed
    hydrogeological modelling
  - Forms the basis for ISR wellfield design and supports the EIA process
- Phoenix deposit divided into four (4) representative test areas
  - Designed to represent each of the various fluid flow domains expected within the deposit
  - Expected to cover ~65% of the Indicated Mineral Resources estimated for the Phoenix deposit
- ✓ 2019 Test Program: Acquiring data from Test Area 1 and Test Area 2



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### Phoenix ISR Field Test: Positive initial results reported from Test Area 1

## Confirmed hydraulic connectivity within maximum extent of the ore zone tested

- Initial pump and injection tests completed
- Process involves pumping water from, or injecting water into, pump/injection wells installed in the test area
- Hydraulic response observed over the entire 34 metres of strike length associated with the ore zone formation in the test area
- No hydraulic response observed in underlying basement rocks – supportive of expectation that basement units below the deposit will provide containment of ISR mining solution, in conjunction with the planned freeze dome

## Test Area 1 – Well Screen Locations – Plan View



### Test Area 1 – Well Screen Locations – Long Section



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### Phoenix ISR Field Test: Positive initial results reported from Test Area 2

## Confirmed hydraulic connectivity within a significant portion of the ore zone tested

- Test Area 2 is interpreted to be more geologically complex than Test Area 1 – relating to variable structure and alteration
- Hydraulic connectivity observed over strike length of approximately 15 metres (of a possible 30 metres) and maximum length across-strike (16 metres)
- Lack of response noted in GWR-022 likely associated with the high clay content observed in this hole from drill core – consistent with expectations of fluid flow for that area of the deposit
- Similar to Test Area 1, no hydraulic response observed in underlying basement rocks – supportive of expectation that basement units below the deposit will provide containment of ISR mining solution

### Well Screen Location - Pump/Injection Well Screen Location - Observation Well Collar Location N Vell Trace Mineralized Wireframe >0.05% U<sub>3</sub>O **GWR-021** Multiple (VWP **GWR-023** Ore Zone 6374225 **GWR-019** Ore Zo Test Area 2 GWR-022 GWR-026 Ore Zone 6374200 Y 25 m **GWR-018**

**Penison** Mines

ordinate system: NAD83 UTM Zone 13N



Test Area 2 – Well Screen Locations – Plan View



### **D**enison Mines

NOTES: (1) See Denison's news release dated September 19, 2019 for additional details.

### Phoenix ISR Field Test: Advancement to installation of Commercial Scale Wells<sup>(1)</sup>

### Athabasca Basin's first large-diameter Commercial Scale Wells ("CSWs") for ISR:

- Positive ISR field tests provided confidence required to commence with the installation of higher-cost / larger-diameter CSWs
- Completion of each CSW included the drilling of a large-diameter vertical borehole (~12 inches in diameter) approximately 400 metres from surface, to intersect the Phoenix ore body, and the installation of well materials designed to meet expected environmental and regulatory standards for eventual ISR mining
- Long-duration hydrogeological tests carried out to complete the 2019 ISR Field Test – designed to allow for the simulation of fluid flow under conditions similar to an envisioned commercial production environment.
- Also expected to provide useful information related to costs and schedule



**NOTES:** (1) See Denison's news release dated September 19, 2019, October 31, 2019, and December 18, 2019 for additional details.



### Phoenix ISR Field Test: Successful deployment of the MaxPERF Drilling Tool<sup>(1)</sup>

Installation of CSWs allows for testing of MaxPERF Drilling Tool – to increase access to existing permeability of the ore zone

- Successful installation of CSW1 (drill hole GWR-031, in Test Area 1) and CSW2 (drill hole GWR-032, in Test Area 2) allows for additional test work to be completed.
- Completed 28 lateral drill holes (penetration tunnels) using the MaxPERF Drilling Tool in CSW1 – successfully executed within a variety of ore types associated with Phoenix.
- Initial short-duration hydrogeological tests confirmed increased flow rates in Test Area 1 following the completion of the MaxPERF drilling in CSW1.
- Taken together with results from CSW2, tests demonstrate MaxPERF Drilling Tool can mechanically engineer increased access to the existing permeability of the ore formation.

### Jenison Mines

NOTES: (1) See Denison's news releases dated October 31, 2019 and December 18, 2019 for additional details.

## Test Area 1 – Well Screen Locations – Plan View



#### Test Area 1 – Well Screen Locations – Long Section



Wheeler River Development Project: Two-asset project with staged development plan based on market fundamentals



### Phoenix Operation: Proposed site layout highlights ISR wellfield & surface infrastructure



Date: Sept. 2018 Source: Wheeler River Prefeasibility Study, (Sept. 2018)

200 m

### Phoenix Operation: Potential for ISR mining method to produce world's lowest cost per pound $U_3O_8$

Phoenix Operation	PFS Result <sup>(1)</sup>		
Mine life	<b>10 years</b> (6.0 million lbs U <sub>3</sub> O <sub>8</sub> per year on average		
Average cash operating costs	\$4.33 (US\$3.33) per lb U <sub>3</sub> O <sub>8</sub>		
Initial capital costs (100% basis)	\$322.5 million		
Operating margin <sup>(4)</sup>	<b>89.0%</b> at US\$29/lb U <sub>3</sub> O <sub>8</sub>		
All-in cost <sup>(2)</sup>	\$11.57 (US\$8.90) per lb U <sub>3</sub> O <sub>8</sub>		
Assumptions / Results	Base Case High Case		

Assumptions / Results	Dase Case	nigli Case
Uranium selling price	UxC Spot Price <sup>(3)</sup>	US\$65/lb U <sub>3</sub> O <sub>8</sub>
Operating margin <sup>(4)</sup>	91.4%	95.0%
Pre-tax NPV <sub>8%</sub> <sup>(5)</sup> (100%)	\$930.4 million	\$1.91 billion
Pre-tax IRR <sup>(5)</sup>	43.3%	71.5%
Pre-tax payback period <sup>(6)</sup>	~ 21 months	~ 11 months

### **D**enison Mines

**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) All-in cost is estimated on a pre-tax basis and includes all project operating costs and capital costs, divided by the estimated number of total pounds  $U_3O_8$  to be produced; (3) Spot Price is based on the "Composite Midpoint" spot price scenario from UxC's UMO; (4) Operating profit margin is calculated as uranium revenue less operating costs, divided by uranium revenue. Operating costs exclude all royalties, surcharges and income taxes; (5) NPV and IRR are calculated to the start of pre-production activities for the Phoenix operation in 2021; (6) Payback period is stated as number of years to pay-back from the start of uranium production.

### Gryphon Operation: Minimal site infrastructure owing to toll milling & facilities at Phoenix site



## Gryphon Operation: Additional low-cost production with conventional UG mining



### Moderate grades and style of mineralization allows for conventional UG mining<sup>(1)</sup>

- 61.9 million pounds U<sub>3</sub>O<sub>8</sub>
  @ 1.7% U<sub>3</sub>O<sub>8</sub> Indicated mineral resources (1,643,000 tonnes)<sup>(2)</sup>
  - 1.9M lbs U<sub>3</sub>O<sub>8</sub> in Inferred mineral resources (73,000 tonnes @ 1.2% U<sub>3</sub>O<sub>8</sub>)<sup>(3)</sup>
- Mineralization is hosted in basement rock, located 520 to 850 metres below surface – access via shaft and underground ramp
- Longitudinal retreat longhole stoping with 15 metre sub-level intervals
- 600 tonnes per day production
- Generally constrained by available capacity at McClean Lake mill

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**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) Indicated mineral resources are inclusive of Reserves; (3) The PFS does not include any economic analysis based on estimated Inferred mineral resources.

### Gryphon Operation: Assumes processing at 22.5% Denison owned McClean Lake mill<sup>(1)</sup>

**Processes +12% of global uranium production:** 

- Operating under 10-year license granted by Canadian Nuclear Safety Comm. in 2017
  - Licensed for 24M lbs  $U_3O_8$  / year
- PFS assumes Cigar Lake production will decline to 15M lbs U<sub>3</sub>O<sub>8</sub>/year (Phase 2) at time of co-processing with Gryphon
  - Up to 9M lbs  $U_3O_8$ /year excess capacity
- **98.2% estimated recovery** from Gryphon under current McClean operating conditions
- Required upgrades: expansion of leaching circuit, addition of filtration system and tailings thickener, expansion of acid plant, various misc. upgrades, plus Highway 914 extension.

✓ Ownership: 22.5% Denison, 70% Orano (formerly "Areva"), 7.5% OURD



**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018.



### Gryphon Operation: Additional low-cost production with conventional UG mining

Gryphon Operation	PFS Result <sup>(1)</sup>
Mine life	<b>6.5 years</b> (7.6 million lbs U <sub>3</sub> O <sub>8</sub> per year on average)
Average cash operating costs	\$15.21 (US\$11.70) per lb U <sub>3</sub> O <sub>8</sub>
Initial capital costs (100% basis)	\$623.1 million
Operating margin <sup>(3)</sup>	<b>77.0%</b> at US\$50/lb U <sub>3</sub> O <sub>8</sub>
All-in cost <sup>(2)</sup>	\$29.67 (US\$22.82) per lb U <sub>3</sub> O <sub>8</sub>

Assumptions / Results	Base Case	High Case
Uranium selling price	US\$50/lb U <sub>3</sub> O <sub>8</sub>	US\$65/lb U <sub>3</sub> O <sub>8</sub>
Operating margin <sup>(3)</sup>	77.0%	82.3%
Pre-tax NPV <sub>8%</sub> <sup>(4)</sup> (100%)	\$560.6 million	\$998.8 million
Pre-tax IRR <sup>(4)</sup>	23.2%	31.0%
Pre-tax payback period <sup>(5)</sup>	~ 37 months	~ 31 months



**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) All-in cost is estimated on a pre-tax basis and includes all project operating costs and capital costs, divided by the estimated total number of pounds  $U_3O_8$  to be produced; (3) Operating profit margin is calculated as uranium revenue less operating costs, divided by uranium revenue. Operating costs exclude all royalties, surcharges and income taxes; (4) NPV and IRR are calculated to the start of pre-production activities for the Gryphon operation in 2026; (5) Payback period is stated as number of years to pay-back from the start of uranium production.

### Wheeler River PFS<sup>(1)</sup>: Statement of Reserves and Denison indicative post-tax results

### Reserves<sup>(2, 3, 4, 7, 8)</sup>

Deposit	Class.	Tonnes	Grade	Lbs U <sub>3</sub> O <sub>8</sub>	Denison (90%)
Phoenix <sup>(5)</sup>	Probable	141,000	19.1% U <sub>3</sub> O <sub>8</sub>	59.7M	53.7M
Gryphon <sup>(6)</sup>	Probable	1,257,000	1.8% U <sub>3</sub> O <sub>8</sub>	49.7M	44.7M
Total	Probable	1,398,000	3.5%	109.4M	98.4M

### **Indicative Denison post-tax results**

Financial Results	Denison (90%)
Initial capital costs	\$290.3 million
Base case post-tax IRR <sup>(9)</sup>	32.7%
Base case post-tax NPV <sub>8%</sub> <sup>(9)</sup>	\$755.9 million
Base case post-tax payback period <sup>(10)</sup>	~ 26 months
High case post-tax IRR <sup>(9)</sup>	55.7%
High case post-tax NPV <sub>8%</sub> <sup>(9)</sup>	\$1.48 billion
High case post-tax payback period <sup>(10)</sup>	~12 months



**NOTES:** (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) Reserve statement is as of September 24, 2018; (3) CIM definitions (2014) were followed for classification of mineral reserves; (4) Mineral resources are inclusive of reserves; (5) Mineral reserves for the Phoenix deposit are reported at the mineral resource cut-off grade of  $0.8\% U_3O_8$ . The mineral reserves are based on the block model generated for the May 28, 2014 mineral resource estimate. A mining recovery factor of 85% has been applied to the mineral resource above the cut-off grade; (6) Mineral reserves for the Gryphon deposit are estimated at a cut-off grade of  $0.58\% U_3O_8$  using a long-term uranium price of USD\$40/lb, and a USD\$/CAD\$ exchange rate of 0.80. The mineral reserves are based on the block model generated for the January 30, 2018 mineral resource estimate. The cut-off grade is based on an operating cost of CAD\$574/tonne, milling recovery of 97%, and 7.25% fee for Saskatchewan royalties. Mineral reserves include for diluting material and mining losses; (7) Mineral reserves are stated at a processing plant feed reference point; (8) Numbers may not add due to rounding; (9) NPV and IRR are calculated to the start of pre-production for the Phoenix operation in 2021; (10) Payback period is stated as number of months to pay-back from the start of uranium production.

## Diversified Asset Portfolio: Offers additional leverage to rising uranium prices



### McClean Lake Uranium Project<sup>(1)</sup>: Processing plant licensed for annual production of 24M lbs $U_3O_8$



\*\*\*IMPORTANT\*\*\* On March 23, 2020, Cameco Corporation announced that it is temporarily suspending production at its Cigar Lake uranium mine due to the threat posed by the COVID-19 pandemic. Cigar Lake ore is processed at the McClean Lake mill. The decision to suspend production at Cameco's Cigar Lake mine was made in conjunction with the operator of the McClean Lake Joint Venture (Orano Canada) to suspend production at the McClean Lake mill.

"(the APG) financing allows Denison to benefit immediately from the cash flow expected to be produced from the McClean Lake mill over the next several years, without the overhang of a bullet payment or convert at the end of a debt, and without selling its stake in the mill"

#### David Cates, President & CEO

- Processing ~18M lbs U<sub>3</sub>O<sub>8</sub>/year from Cigar Lake mine
- Cigar Lake toll milling cash flows monetized in transaction with Anglo Pacific Group ("APG") in 2017 for \$43.5M
- Operating license renewed for 10-year period by CNSC in 2017
- ✓ Ownership: 22.5% Denison, 70.0% Orano Canada, 7.5%
  OURD

Deposit	Class.	Tonnes	Grade U <sub>3</sub> O <sub>8</sub>	Lbs U <sub>3</sub> O <sub>8</sub>	Denison Share
McClean North	Indicated	205,800	2.8%	12.4M	2.8M
Caribou	Indicated	47,800	2.6%	2.8M	0.6M
Sue D	Indicated	122,800	1.1%	2.8M	0.6M
Sue E	Inferred	483,400	0.69%	7.3M	1.6M



**Notes:** (1) Technical Report on the Denison Mines Inc. Uranium Properties, Saskatchewan, Canada, dated November 21, 2005, as revised February 16, 2006, by Richard E. Routledge, M.Sc., P. Geo of Scott Wilson RPA (now RPA Inc.); Technical Report on the Sue D Uranium Deposit Mineral Resource Estimate, Saskatchewan, Canada, dated March 31, 2006, by Richard E. Routledge, M.Sc., P. Geo. and James W. Hendry, P. Eng of Scott Wilson RPA (now RPA Inc.); Technical Report on the McClean North Uranium Deposit Mineral Resource Estimate, Saskatchewan, Canada, dated January 31, 2007, by Richard E. Routledge, M.Sc., P. Geo. and James W. Hendry, P. Eng of Scott Wilson RPA (now RPA Inc.); Technical Report on the McClean North Uranium Deposit Mineral Resource Estimate, Saskatchewan, Canada, dated January 31, 2007, by Richard E. Routledge, M.Sc., P. Geo. and James W. Hendry, P. Eng of Scott Wilson RPA (now RPA Inc.); and subsequent revision by letter dated October 20, 2009 from Scott Wilson RPA.

## Midwest Uranium Project<sup>(1)</sup>: Significant increase in mineral resources with updated estimate in 2018



"With the application of more rigorous and robust estimation procedures, in accordance with NI 43-101, we are pleased to see a significant increase in overall project resources, without additional recent drilling."

Dale Verran, VP Exploration

- Mineral resource estimate updated in March 2018
- 25 kilometres by existing roads to the McClean Lake mill
- Environmental Impact Statement ("EIS") approved in 2012
- ✓ Ownership: 25.17% Denison, 69.19% Orano, 5.67% OURD

Deposit	Class.	Tonnes	Grade U <sub>3</sub> O <sub>8</sub>	Lbs U <sub>3</sub> O <sub>8</sub>	Denison Share
Midwest	Indicated	453,000	4.0%	39.9M	10.1M
Midwest	Inferred	793,000	0.66%	11.5M	2.9M
Midwest A	Indicated	566,000	0.87%	10.8M	2.7M
Midwest A	Inferred	53,000	5.8%	6.7M	1.7M

### **P**enison Mines

**Notes:** (1) Technical Report with an Updated Mineral Resource Estimate for the Midwest Property, Northern Saskatchewan, Canada, dated March 26, 2018, by Dale Verran, MSc, P.Geo, Pr.Sci.Nat. and Chad Sorba, P.Geo, of Denison Mines Corp. and G. David Keller, PGeo, and Oy Leuangthong, PEng, of SRK Consulting.

## Waterbury Lake Uranium Project<sup>(1)</sup>:

Mineral resources in close proximity to Roughrider & the McClean Lake mill



"The high-grade mineralization at Huskie appears to be controlled by the intersection of east-west striking faults, associated with the graphitic gneiss unit, and cross-cutting northeast striking faults, possibly related to the regional Midwest structure."

#### Dale Verran, VP Exploration

- Host to J-Zone and Huskie deposits approximately 12 kilometres from the McClean Lake mill
- Adjacent to Rio Tinto's Roughrider project and Denison's Midwest project
- Over 40,000 hectares of exploration ground
- ✓ Ownership: 66.57% Denison, 33.43% KHNP

Deposit	Classification	Tonnes	Grade U <sub>3</sub> O <sub>8</sub>	Lbs U <sub>3</sub> O <sub>8</sub>	Denison Share
J-Zone	Indicated	291,000	2.0%	12.8M	8.5M
Huskie	Inferred	268,000	0.96%	5.7M	3.8M

## Capital Structure & Corporate Information

## LUNDINGROUP

Market Summary <sup>(1)</sup>		
Exchanges	TSX: DML, NYSE MKT: DNN	
Shares Outstanding	597.2 M	
Share Units	4.8 M	
Options	13.5 M	
Fully Diluted Shares	615.5 M	
Market Cap – DML @ C\$0.42/share <sup>(2)</sup>	CAD \$261 M	
Daily Trading Volume – DML <sup>(3)</sup>	532K Shares	
Market Cap – DNN @ U\$0.30/share <sup>(2)</sup>	USD\$183 M	
Daily Trading Volume – DNN <sup>(3)</sup>	868K Shares	

### **Management & Directors**

- David Cates (President & CEO, Director)
- Mac McDonald (Exec. VP & CFO)
- Dave Bronkhorst (VP Operations)
- Tim Gabruch (VP Commercial)
- Dale Verran (VP Exploration)
- Catherine Stefan (Non-Executive Chair)
- W. Robert Dengler (Director)
- Brian D. Edgar (Director)
- Ron F. Hochstein (Director)
- Jack Lundin (Director)
- William A. Rand (Director)
- Geun Park (Director)
- Patricia M. Volker (Director)

## Penison Mines

Website: www.denisonmines.com

**NOTES:** (1) As per Denison's Q4 2019 Financials; (2) Based on shares outstanding above and DML/DNN share prices as of April 14<sup>th</sup>, 2020; (3) Average daily trading volume over 90 day period as atApril 14<sup>th</sup>, 2020

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