

Uranium Development & Exploration

The Athabasca Basin, Northern Saskatchewan

September 2018 | Wheeler River PFS Conference Call & Webcast



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Qualified Persons

The disclosure of the results of the PFS contained in this presentation was prepared and approved by Peter Longo, P. Eng, MBA, PMP, Denison's Vice-President, Project Development, who is a Qualified Person in accordance with the requirements of NI 43-101.

The disclosure of a scientific or technical nature regarding the Phoenix and Gryphon deposits, including the resources and reserves thereof, contained in this presentation 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.

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 "Technical Report with an Updated Mineral Resource Estimate for the Wheeler River Property, Northern Saskatchewan, Canada" with an effective date of March 9, 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 27, 2018. 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.



Wheeler River Project Pre-Feasibility Study⁽¹⁾

Highlights:

- Selection of In-Situ Recovery ("ISR") mining method for Phoenix with onsite processing at Wheeler River
- Phoenix estimated to have exceptionally low operating costs for an undeveloped uranium deposit globally US\$3.33/Ib U₃O₈
- Conventional UG Gryphon contributes additional low cost pounds – US\$11.70/Ib U₃O₈
- 109.4M lbs U₃O₈ Probable Reserves
- 14 year mine life (7.8m lbs U_3O_8 /year on avg.)
- Base-case pre-tax $\mathsf{NPV}_{8\%}$ (100%) of \$1.31B
- Base-case pre-tax IRR of 38.7%
- Initial CAPEX of \$322.5M (100%)
- ✓ Denison increasing ownership from 63.3% to up to 90% under two recent agreements⁽²⁾



Penison Mines

NOTES: (1) See Denison news release dated September 24, 2018 for additional details regarding the PFS results. (2) See Denison' news releases from January 17, 2017 and September 4, 2018 for additional details.

Wheeler River PFS: Ownership, uranium price assumptions, and sensitivities



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

Base Case Price Assumptions:

- Phoenix Operation:
 - > ~US\$29/lb U₃O₈ to US\$45/lb U₃O₈
 - UxC Spot price forecast
 - "Composite Midpoint" scenario
 - Stated in "constant" 2018 dollars
- Gryphon Operation:
 - >US50/lb U₃O₈ fixed price

Comparison to 2016 PEA

- 2016 PEA provided pre-tax project NPV_{8%} of \$513 million at fixed uranium price of US\$44/lb U₃O₈
 - PFS equivalent NPV_{8%} at US\$44/lb
 U₃O₈ (\$1.4 billion) represents +275%
 increase in pre-tax project NPV

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NOTES: (1) See Denison news release dated September 24, 2018 for additional details regarding the PFS results; (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 Geology: Unique uranium deposit with exceptionally high grades

Highlights:

- Mineralization is situated at or immediately above the unconformity("UC")
- Two distinct zones Phoenix A + B
- Approximately 400m below surface
- 70.2 million pounds U₃O₈ @ 19.14% U₃O₈ Indicated mineral resources (166,400 tonnes)⁽¹⁾
 - World's highest grade undeveloped uranium deposit
 - ≻Cut-off grade of 0.8% U₃O₈
 - ➤ 1.1M lbs U₃O₈ in Inferred resources (8,600 tonnes @ 5.8% U₃O₈)⁽²⁾
- \checkmark Geological setting is amenable to ISR mining



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NOTES: (1) Indicated mineral resources are inclusive of Reserves; (2) The PFS does not include any economic analysis based on estimated Inferred mineral resources.

Phoenix Operation: Selection of ISR mining method



ISR Mining Process⁽¹⁾:

- 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;
- Lixiviant is returned back to well field for further production

Phoenix Freeze Cap: Novel concept to contain lixiviant, using established technology



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Artificial freeze cap replicates confining layer typically required for ISR mining operations⁽¹⁾

- 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

Phoenix Test Work⁽¹⁾: Confirms suitability of ISR mining method

Field and laboratory work included drill hole injection, permeability, metallurgical leach, agitated leach and column testing

- Excellent Recoveries: High rates of recovery in extraction (+90%) and processing (98.5%)
- High Grade: Agitated leach and column tests returned uranium concentrations of 12 to 20 grams per litre (g/L) – significantly higher than conventional low-grade ISR operations
- High uranium concentrations in the mining solution, plus low level of impurities (deleterious elements), allows for direct precipitation of uranium

 ✓ No need for ion exchange or solvent extraction circuits = reduced costs

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NOTES: (1) See Denison news release dated September 24, 2018 for additional details regarding the PFS results.



Phoenix ISR Processing Plant:

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



May not be to scale. Intended for illustrative purposes only.

On-Site Processing Plant⁽¹⁾

- Designed for UBS concentrations of 10 g/L
- Throughput of 500 litres per min
- Annual production of up to 6 million lbs U₃O₈
- Closed loop system recycles mining solution and eliminates need for discharge of effluent
- No ion exchange or solvent extraction circuits
- Powered by Provincial power grid

Phoenix Operation: Proposed site layout highlighting ISR wellfield



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

Phoenix Operation: ISR mining method delivers industry leading cost per pound U_3O_8

Phoenix Operation	PFS Result ⁽¹⁾		
Mine life	10 years (6.0 million lbs U ₃ O ₈ per year on average)		
Average cash operating costs	\$4.33 (US\$3.33) per lb U ₃ O ₈		
Initial capital costs (100% basis)	\$322.5 million		
Operating margin ⁽⁴⁾	89.0% at US\$29/lb U ₃ O ₈		
All-in cost ⁽²⁾	\$11.57 (US\$8.90) per lb U ₃ O ₈		
Assumptions / Results	Base Case	High Case	
Uranium selling price	UxC Spot Price ⁽³⁾	US\$65/lb U ₃ O ₈	
Operating margin ⁽⁴⁾	91.4%	95.0%	
Pre-tax NPV _{8%} ⁽⁵⁾ (100%)	\$930.4 million	\$1.91 billion	

Pre-tax payback period⁽⁶⁾



Pre-tax IRR⁽⁵⁾

NOTES: (1) See Denison news release dated September 24, 2018 for additional details regarding the PFS results; (2) All-in cost is estimated on a pretax 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.

43.3%

~ 21 months

71.5%

~ 11 months

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



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Moderate grades and style of mineralization allows for conventional UG mining

- 61.9 million pounds U₃O₈
 @ 1.7% U₃O₈ Indicated mineral resources (1,643,000 tonnes)⁽¹⁾
 - 1.9M lbs U₃O₈ in Inferred resources
 (73,000 tonnes @ 1.2% U₃O₈)⁽²⁾
- Mineralization is hosted in basement rock, located 520 to 850 metres below surface – access via shaft and 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

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



Gryphon Operation: Assumes processing at 22.5% Denison owned McClean Lake mill

Processes +12% of global uranium production:

 Operating under 10-year license granted by Canadian Nuclear Safety Comm. in 2017

>Licensed for 24M lbs U₃O₈ / year

- PFS assumes Cigar Lake production will decline to 15M lbs U₃O₈/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

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

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

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



NOTES: (1) See Denison news release dated September 24, 2018 for additional details regarding the PFS results; (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: 14 year mine life producing +7.5M lbs U_3O_8 per year on average⁽¹⁾



NOTES: (1) See Denison news release dated September 24, 2018 for additional details regarding the PFS results.

Wheeler River PFS: Statement of Reserves and Denison indicative post-tax results

Denison is increasing its ownership in the WRJV from 63.3% to up to 90% under two recently announced agreements with partners to the Wheeler River Joint Venture. See Denison press releases dated January 10, 2017 and September 4, 2018 for details.

Reserves^(1, 2, 3, 6, 7)

Deposit	Class.	Tonnes	Grade	Lbs U ₃ O ₈	Denison (63.3%)	Denison (90%)
Phoenix ⁽⁴⁾	Probable	141,000	19.1% U ₃ O ₈	59.7M	37.8M	53.7M
Gryphon ⁽⁵⁾	Probable	1,257,000	1.8% U ₃ O ₈	49.7M	31.5M	44.7M
Total	Probable	1,398,000	3.5%	109.4M	69.3M	98.4M

Indicative Denison post-tax results

Financial Results	Denison (63.3%)	Denison (90%)
Initial capital costs	\$204.1 million	\$290.3 million
Base case post-tax IRR ⁽⁸⁾	31.8%	32.7%
Base case post-tax NPV _{8%} ⁽⁸⁾	\$506.4 million	\$755.9 million
Base case post-tax payback period ⁽⁹⁾	~ 27 months	~ 26 months
High case post-tax IRR ⁽⁸⁾	53.9%	55.7%
High case post-tax NPV _{8%} ⁽⁸⁾	\$1.01 billion	\$1.48 billion
High case post-tax payback period ⁽⁹⁾	~ 12 months	~12 months



NOTES: (1) Reserve statement is as of September 24, 2018; (2) CIM definitions (2014) were followed for classification of mineral reserves; (3) Mineral reserves are inclusive of mineral resources; (4) Mineral reserves for the Phoenix deposit are reported at the mineral resource cut-off grade of 0.8% U₃O₈. 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; (5) Mineral reserves for the Gryphon deposit are estimated at a cut-off grade of 0.58% U₃O₈ 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 are stated at a processing plant feed reference point; (7) Numbers may not add due to rounding; (8) NPV and IRR are calculated to the start of pre-production for the Phoenix operation in 2021; (9) Payback period is stated as number of months to pay-back from the start of uranium production.



Wheeler River PFS: Conference Call Q&A

