Denison Announces Successful Completion of Recovered Solution Management Phase of Phoenix ISR Feasibility Field Test

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TORONTO, Nov. 2, 2023 - Denison Mines Corp. ('Denison' or the 'Company') (TSX: DML) (NYSE American: DNN) is pleased to announce the successful completion of the recovered solution management phase of the Phoenix in-situ recovery ('ISR') Feasibility Field Test ('FFT') at the Company's 95% owned Wheeler River project ('Wheeler River' or the 'Project'). View PDF version

The FFT was highlighted by the recovery of 14,400 lbs U_3O_8 dissolved in solution generated during the leaching and neutralization phases of the FFT in late 2022. The solution recovered during the operation of these phases was stored on site in accordance with permit conditions and in anticipation of the recovered solution management phase of the FFT. This phase was initiated during the first half of 2023 and involves the treatment of the recovered solution via an on-site purpose-built treatment system. Following treatment, a uranium bearing mineralized precipitate and a treated effluent were produced. The treated effluent was tested to ensure compliance with permit conditions before being injected into a designated subsurface area. The mineralized precipitates have been recovered from the process and are safely stored on surface in accordance with permit conditions.

Kevin Himbeault, Denison's Vice President Operations & Regulatory Affairs, commented, "The completion of the recovered solution management phase of the FFT has allowed Denison to demonstrate our operational capabilities from start to finish of the ISR mining process - from the construction and commissioning of the FFT facilities and development of the wellfield, to control of mining solutions, recovery of uranium bearing solutions, neutralization of the portion of the ore zone used for the FFT, and finally the treatment of solutions for safe discharge to the environment and storage. We are proud of our team of operators and technical personnel for the safe execution of the entire FFT program."

Completion of the Recovered Solution Management Phase

The recovered solution management phase of the FFT commenced in April 2023 with the set-up and commissioning of the solids management and water treatment circuit. Approximately 560 m^3 of recovered solution plus wash water used for cleaning of storage tanks and site equipment were processed during the operation of the treatment circuit. Treatment of recovered solutions concluded in October 2023, resulting in the safe and successful treatment of all recovered solution, which ensured compliance with all provincial permit conditions.

The approximately 14,400 lbs U_3O_8 estimated to be contained within the recovered solution from the leaching and neutralization phases were precipitated during the recovered solution management phase with over 99.99% efficiency, further validating the Company's processing designs and assumptions for the future Phoenix processing plant.

The treated effluent injected into the subsurface during the recovered solution management phase was monitored for injection pressure and contained to the designated injection area, with no migration of the treated effluent observed above, below or outside of the injection area.

Decommissioning of the Feasibility Field Test Site

With the completion of the recovered solution management phase, Denison has initiated decommissioning of the FFT facilities, in accordance with its permit conditions. Decommissioning involves the cleaning, deconstruction, and shipment of equipment used during the leaching, neutralization, and solution management phases. Given the expected onset of winter weather conditions, Denison expects to complete the majority of the decommissioning of the FFT in 2024.

Northern Indigenous Employment and Business Contributions

Denison is also pleased to recognize the significant contributions of several members of the English River First Nation ('ERFN') and various Indigenous owned businesses to the successful completion of all the phases of the FFT in 2022 and 2023. Tron Construction & Mining, a well-established operator in northern Saskatchewan that is part of the Des Nedhe Group and owned 100% by ERFN, and PBN Construction, a Northern Saskatchewan Indigenous owned and operated contractor, provided qualified support for commissioning, maintenance, and decommissioning work throughout the various phases of the FFT.

Feasibility Field Test Background

The FFT was designed to use the commercial-scale ISR test pattern, installed at the Phoenix deposit in 2021 (see news releases dated July 29, 2021, and October 28, 2021), to facilitate a combined assessment of the deposit's hydraulic flow properties and its leaching characteristics previously determined through the metallurgical core-leach testing program.

The operation of the FFT occurred in three phases: (1) the leaching phase, (2) the neutralization phase, and (3) the recovered solution management phase. The FFT is fully permitted, having been authorized by both the Saskatchewan Minister of Environment (see news release dated July 12, 2022) and the Canadian Nuclear Safety Commission (see news release dated August 8, 2022).

Overall, the FFT provided further verification of the permeability, leachability, and containment parameters needed for the successful application of the ISR mining method at Phoenix and validates and informs various design elements - including the expected production and remediation profiles reflected in the results announced from the Feasibility Study for Phoenix during the summer of 2023.

About Wheeler River

Wheeler River is the largest undeveloped uranium project in the infrastructure-rich eastern portion of the Athabasca Basin region, in northern Saskatchewan. The project is host to the high-grade Phoenix and Gryphon uranium deposits, discovered by Denison in 2008 and 2014, respectively, and is a joint venture between Denison (90% and operator) and JCU (Canada) Exploration Company Limited (10%). In August 2023, Denison filed a technical report summarizing the results of (i) the feasibility study completed for ISR mining of the high-grade Phoenix uranium deposit and (ii) a cost update to the 2018 Pre-Feasibility Study for conventional underground mining of the basement-hosted Gryphon uranium deposit. Based on the respective studies, both deposits have the potential to be competitive with the lowest cost uranium mining operations in the world. Permitting efforts for the planned Phoenix ISR operation commenced in 2019 and have advanced significantly, with licensing in progress and a draft Environmental Impact Statement submitted for regulatory and public review in October 2022. More information is available in the technical report titled "NI 43-101 Technical Report on the Wheeler River Project Athabasca Basin, Saskatchewan, Canada" dated August 8, 2023 with an effective date of June 23, 2023, a copy of which is available on Denison's website and under its profile on SEDAR+ at www.sedarplus.ca and on EDGAR at www.sec.gov/edgar.shtml.

About Denison

Denison is a uranium exploration and development company with interests focused in the Athabasca Basin region of northern Saskatchewan, Canada. In addition to the Company's effective 95% interest in its flagship Wheeler River Uranium Project, Denison's interests in Saskatchewan include a 22.5% ownership interest in the McClean Lake Joint Venture, which comprises several uranium deposits and the McClean Lake uranium mill that is contracted to process the ore from the Cigar Lake mine under a toll milling agreement, plus a 25.17% interest in the Midwest Main and Midwest A deposits and a 67.41% interest in the Tthe Heldeth Túé ('THT') and Huskie deposits on the Waterbury Lake property. The Midwest Main, Midwest A, THT and Huskie deposits are located within 20 kilometres of the McClean Lake mill.

Through its 50% ownership of JCU, Denison holds additional interests in various uranium project joint ventures in Canada, including the Millennium project (JCU, 30.099%), the Kiggavik project (JCU, 33.8118%) and Christie Lake (JCU, 34.4508%).

Denison's exploration portfolio includes further interests in properties covering ~285,000 hectares in the Athabasca Basin region.

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Qualified Persons

The technical information contained in this release has been reviewed and approved by Mr. Chad Sorba, P.Geo., Denison's Director, Technical Services, who is a Qualified Person in accordance with the requirements of NI 43-101.

Cautionary Statement Regarding Forward-Looking Statements

Certain information contained in this news release constitutes 'forward-looking information', within the meaning of the applicable United States and Canadian legislation, concerning the business, operations and financial performance and condition of Denison. Generally, these forward-looking statements can be identified by the use of forward-looking terminology such as 'potential', 'plans', 'expects', 'budget', 'scheduled', 'estimates', 'forecasts', 'intends', 'anticipates', or 'believes', or the negatives and/or variations of such words and phrases, or state that certain actions, events or results 'may', 'could', 'would', 'might' or 'will' 'be taken', 'occur' or 'be achieved'.

In particular, this news release contains forward-looking information pertaining to the following: scope, objectives and interpreted results of the FFT program and other evaluation programs conducted with respect to the Phoenix deposit; permitting of the FFT and the ability to satisfy permit conditions; and expectations regarding its joint venture ownership interests and the continuity of its agreements with its partners and third parties.

Forward looking statements are based on the opinions and estimates of management as of the date such statements are made, and they 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 from those expressed or implied by such forward-looking statements. For example, the modelling and assumptions upon which the plans for Wheeler River are based may not be maintained after further work is completed. In addition, Denison may decide or otherwise be required to discontinue testing, evaluation and other work if it is unable to maintain or otherwise secure the necessary resources (such as testing facilities, capital funding, regulatory approvals, etc.). Denison believes that the expectations reflected in this forward-looking information are reasonable but no assurance can be given that these expectations will prove to be accurate and results may differ materially from those anticipated in this forward-looking information. For a discussion in respect of risks and other factors that could influence forward-looking events, please refer to the factors discussed in Denison's Annual Information Form dated March 27, 2023 or subsequent quarterly financial reports under the heading 'Risk Factors'. These factors are not, and should not be construed as being exhaustive.

Contact
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Accordingly, readers should not place undue reliance on forward-looking statements. The forward-looking information contained in this news release is expressly qualified by this cautionary statement. Any forward-looking information and the assumptions made with respect thereto speaks only as of the date of this news release. Denison does not undertake any obligation to publicly update or revise any forward-looking information after the date of this news release to conform such information to actual results or to changes in Denison's expectations except as otherwise required by applicable legislation.

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