

PRESS RELEASE**DENISON ANNOUNCES RESUMPTION OF ISR FIELD TESTING
ACTIVITIES AT PHOENIX WITH COMMENCEMENT OF
2020 ISR FIELD PROGRAM**

Toronto, ON – July 27, 2020. Denison Mines Corp. (“Denison” or the “Company”) (DML: TSX, DNN: NYSE American) is pleased to announce the successful resumption of In-Situ Recovery (“ISR”) field testing activities focused on the high-grade Phoenix uranium deposit (“Phoenix”), at the Company’s 90% owned Wheeler River Uranium Project (“Wheeler River”). The ISR field test work planned for 2020 (the “2020 Field Test”) is intended to build additional confidence in the results of an independent hydrogeologic model developed for the deposit, and to support further field work expected to be required for the completion of a future Feasibility Study (“FS”). The hydrogeologic model developed for Phoenix is based on actual field data collected during an extensive field test program completed at Phoenix in 2019 (the “2019 Field Test”), with the model and associated simulations having already demonstrated “proof-of-concept” for the application of the ISR mining method at Phoenix, with respect to potential operational extraction and injection rates (see press release dated June 4, 2020).

In order to ensure the Company’s operations comply with all applicable health and safety guidelines associated with the COVID-19 pandemic, all operating procedures at the Company’s Wheeler River site have been reviewed and adapted to incorporate physical distancing and enhanced hygiene protocols, as well as special travel protocols designed by Denison for northern Saskatchewan. Where applicable, the Company’s protocols have incorporated feedback received from potentially impacted communities in northern Saskatchewan to minimize any health and safety risks associated with travel to and from site.

David Cates, Denison’s President & CEO, commented, *“Our team is excited to be back at Phoenix to build on the great success of our 2019 ISR Field Program – which culminated in the development of a hydrogeologic model and simulation of an ISR wellfield for Phoenix, by an independent technical specialist firm, which ultimately demonstrated ‘proof of concept’ for the use of ISR mining at Phoenix. Over the last several months we have developed extensive health and safety protocols and procedures, in response to the COVID-19 pandemic, to ensure that a return to work at the Wheeler River site can be achieved safely for our staff and contractors, as well as the northern communities that we travel through to access the site. With the continuation of ISR field testing at Phoenix in 2020 we hope to minimize the impact of COVID-19 related disruptions to the overall project development schedule and environmental assessment process.”*

2020 ISR Field Test

The 2020 Field Test is fully funded and is included in the Company’s evaluation budget contained within the Company’s current outlook and operating plan for 2020 (see the Company’s Management Discussion and Analysis for the period ended March 31, 2020). The purpose of the additional test work is to further evaluate and de-risk the ISR mining conditions present at Phoenix, by supplementing the extensive dataset acquired as part of the 2019 Field Test. Hydrogeological data collected as part of the 2020 Field Test is expected to build additional confidence in the Company’s understanding of the fluid pathways within Test Area 1 and Test Area 2, to further validate the Company’s hydrogeologic model for Phoenix, and to prepare for field tests in future years, which are expected to support a future FS.

Key elements of the 2020 Field Test include:

- Additional pump/injection tests within Test Area 1 and Test Area 2 of the Phoenix deposit;
- Groundwater sampling to characterize baseline hydrogeochemistry in the deposit area to support the planning and permitting of a potential future in-ground lixiviant test or ISR demonstration;

- Groundwater sampling to support the development of reactive transport models to determine the overall dissolution rate of the ore and flow of lixiviant through the formation;
- Collection and analysis of additional matrix permeability data from drill core previously recovered from within Test Area 1 and Test Area 2, to support further refinement of hydrogeological models with an enhanced understanding of both large- and small-scale fluid flow pathways.
- Rock mechanics tests to collect data to aid in evaluating the potential utility of certain permeability enhancement techniques.

COVID-19 Precautions

During the month of June, the Company's Occupational Health and Safety Committee in Saskatoon developed a comprehensive guide for the safe resumption of work at the Wheeler River site. The protocols consider the unique health and safety risks associated with operating a remote work camp amidst the ongoing COVID-19 pandemic. Public health guidelines and best practices have been incorporated into the Company's plans, which have been reviewed by the Company's Vice President Operations, President & CEO, and the Environmental Health and Safety Committee of the Board of Directors.

In addition to an extensive review of work procedures on site, the Company has designed special travel protocols to minimize any health and safety risks associated with travel to and from site through various communities in northern Saskatchewan. These protocols were developed in consultation with community leaders so as to be coordinated with any localized travel restrictions or roadblocks implemented to minimize the risk of COVID-19 transmission in northern Saskatchewan.

The Company is committed to ensuring that the Wheeler River site is a safe operating environment for its staff and contractors and that the Company's field activities do not compromise the health and safety of the residents of northern Saskatchewan. Despite the Company's current intentions, it is possible that the 2020 Field Test may be disrupted by the continuously evolving social and/or economic disruptions associated with the COVID-19 pandemic, which are outside of the control of the Company – for example, the ability of Company or contractor staff to attend to the site, Provincial or local travel restrictions, and changing public health guidelines.

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 – including combined Indicated Mineral Resources of 132.1 million pounds U₃O₈ (1,809,000 tonnes at an average grade of 3.3% U₃O₈), plus combined Inferred Mineral Resources of 3.0 million pounds U₃O₈ (82,000 tonnes at an average grade of 1.7% U₃O₈). 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%).

A PFS was completed for Wheeler River in late 2018, considering the potential economic merit of developing the Phoenix deposit as an ISR operation and the Gryphon deposit as a conventional underground mining operation. Taken together, the project is estimated to have mine production of 109.4 million pounds U₃O₈ over a 14-year mine life, with a base case pre-tax NPV of \$1.31 billion (8% discount rate), Internal Rate of Return ("IRR") of 38.7%, and initial pre-production capital expenditures of \$322.5 million. The Phoenix ISR operation is estimated to have a stand-alone base case pre-tax NPV of \$930.4 million (8% discount rate), IRR of 43.3%, initial pre-production capital expenditures of \$322.5 million, and industry leading average operating costs of US\$3.33/lb U₃O₈. The PFS is prepared on a project (100% ownership) and pre-tax basis, as each of the partners to the Wheeler River Joint Venture are subject to different tax and other obligations.

Further details regarding the PFS, including additional scientific and technical information, as well as after-tax results attributable to Denison's ownership interest, are described in greater detail in the NI 43-101 Technical Report titled "Pre-feasibility Study for the Wheeler River Uranium Project, Saskatchewan, Canada" dated October 30, 2018 with an effective date of September 24, 2018. A copy of this report is available on Denison's website and under its profile on SEDAR at www.sedar.com 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 Wheeler River project, Denison's Athabasca Basin exploration portfolio consists of numerous projects covering over 250,000 hectares. Denison's interests in the Athabasca Basin also include a 22.5% ownership interest in the McClean Lake joint venture ("MLJV"), which includes several uranium deposits and the McClean Lake uranium mill, which is contracted to process the ore from the Cigar Lake mine under a toll milling agreement, plus a 25.17% interest in the Midwest and Midwest A deposits, and a 66.71% interest in the J Zone and Huskie deposits on the Waterbury Lake property. Each of Midwest, Midwest A, J Zone and Huskie are located within 20 kilometres of the McClean Lake mill.

Denison is engaged in mine decommissioning and environmental services through its Closed Mines group (formerly Denison Environmental Services), which manages Denison's Elliot Lake reclamation projects and provides post-closure mine care and maintenance services to a variety of industry and government clients.

Denison is also the manager of Uranium Participation Corp., a publicly traded company which invests in uranium oxide and uranium hexafluoride.

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Qualified Persons

The technical information contained in this release has been reviewed and approved by Mr. David Bronkhorst, P.Eng, Denison's Vice President, Operations, 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 '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', 'be achieved' or 'has the potential to'.

In particular, this news release contains forward-looking information pertaining to the following: the results of the 2019 Field Test; the hydrogeologic model and its underlying assumptions; the 2020 Field Test, including its intended scope and timing, objectives and evaluation interpretations; the duration and scope of impacts of the COVID-19 pandemic and affiliated operational adjustments; the current and continued use and availability of third party technologies for testing; the results of the PFS and expectations with respect thereto; development and expansion plans and objectives, including plans for a feasibility study; and expectations regarding its joint venture ownership interests and the continuity of its agreements with its partners.

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 results of the 2019 Field Test, hydrogeologic model and/or 2020 Field Test discussed herein may not be maintained after further testing or be representative of actual conditions within the Phoenix deposit. In addition, Denison may decide or otherwise be required to discontinue the 2020 Field Test or other testing, evaluation and development work at Wheeler River if it is unable to maintain or otherwise secure the necessary resources (such as testing facilities, capital funding, regulatory approvals, etc.) or operations are otherwise affected by COVID-19 and its potentially far-reaching impacts. 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 13, 2020 or subsequent quarterly financial reports under the heading 'Risk Factors'. These factors are not, and should not be construed as being exhaustive.

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.

Cautionary Note to United States Investors Concerning Estimates of Measured, Indicated and Inferred Mineral Resources and Probable Mineral Reserves: This press release may use the terms 'measured', 'indicated' and 'inferred' mineral resources. United States investors are advised that while such terms have been prepared in accordance with the definition standards on mineral reserves of the Canadian Institute of Mining, Metallurgy and Petroleum referred to in Canadian National Instrument 43-101 Mineral Disclosure Standards ('NI 43-101') and are recognized and required by Canadian regulations, these terms are not defined under Industry Guide 7 under the United States Securities Act and, until recently, have not been permitted to be used in reports and registration statements filed with the United States Securities and Exchange Commission ('SEC'). '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. In addition, the terms "mineral reserve", "proven mineral reserve" and "probable mineral reserve" for the purposes of NI 43-101 differ from the definitions and allowable usage in Industry Guide 7. Effective February 2019, the SEC adopted amendments to its disclosure rules to modernize the mineral property disclosure requirements for issuers whose securities are registered with the SEC under the Exchange Act and as a result, the SEC now recognizes estimates of "measured mineral resources", "indicated mineral resources" and "inferred mineral resources". In addition, the SEC has amended its definitions of "proven mineral reserves" and "probable mineral reserves" to be "substantially similar" to the corresponding definitions under the CIM Standards, as required under NI 43-101. However, information regarding mineral resources or mineral reserves in Denison's disclosure may not be comparable to similar information made public by United States companies.