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PRESS RELEASE

Denison Announces Completion of Inaugural ISR Field Test Program at Midwest

Toronto, ON – June 3, 2024. Denison Mines Corp. ("Denison") (TSX: DML; NYSE American: DNN) is pleased to announce it has completed the inaugural In-Situ Recovery ("ISR") field test program (the "Program") at Denison's 25.17% owned Midwest Uranium Project ("Midwest"). The Program involved drilling 10 small diameter boreholes within the Midwest Main deposit primarily undertaken to evaluate site-specific conditions for ISR mining. A series of tests were successfully performed on each borehole, creating an extensive database of geological, hydrogeological, geotechnical, and metallurgical data and validating certain key assumptions in the previously completed internal conceptual mining study (the "Concept Study") evaluating the potential use of ISR mining at Midwest (see Press Release dated April 12, 2023).

Denison carried out the Program in collaboration with Orano Canada Inc. ("Orano Canada"), as operator and owner of 74.83% of the Midwest Joint Venture ("MWJV"). Midwest is located approximately 25 kilometres, by existing roads, from the Denison-Orano Canada owned McClean Lake Operation (see Figure 1), which is currently processing ore for the Cigar Lake mine under a toll milling agreement and has excess licensed processing capacity. Orano Canada is part of the Orano Group, which is recognized as a leading international operator in the field of nuclear materials, with activities including uranium mining, conversion, enrichment, and other fuel services.

David Cates, Denison's President and Chief Executive Officer, commented ***"Denison would like to thank Orano Canada for its support and encouragement of our joint efforts to evaluate the Midwest Main deposit for potential future extraction via ISR mining. Orano has significant global expertise in ISR mining and Denison brings industry leadership in the advancement of ISR mining in the Athabasca Basin region – allowing the joint venture to assemble a very strong team to carry out and oversee this inaugural test program.***

The Program achieved its planned objectives, and the results provide preliminary validation that the Midwest Main deposit possesses the characteristics necessary for an ISR operation. Accordingly, further evaluation is warranted and, building on the Concept Study and incorporating the data acquired in the test program, we are proceeding with a Preliminary Economic Assessment ("PEA") for ISR mining. Midwest represents Denison's third project evaluated for potential ISR mining in the Athabasca Basin."

Highlights from the Program include the following:

- **Confirmed Hydraulic Conductivity:** Pump and injection tests validated hydraulic connectivity in the test wells within the mineralized zone and achieved hydraulic conductivity values (a measure of permeability) consistent with the Concept Study. Sufficient permeability within the mineralized zone is a key criterion for the successful deployment of the ISR mining method.
- **Demonstrated the Effectiveness of Permeability Enhancement:** One method of permeability enhancement was successfully deployed within two wells, demonstrating the suitability of the method to the Midwest Main deposit. Efficiency of permeability enhancement was verified by comparison of pre- and post-permeability enhancement hydraulic testing.
- **Metallurgical Samples Defined and Collected for Leaching Characteristics:** Core samples representative of the Midwest deposit were collected during the Program for use in future metallurgical tests to determine the leaching characteristics.

2024 ISR Field Test Program

The 2024 ISR field test program was designed to validate various deposit-specific characteristics of the Midwest Main deposit, and to collect a database of geotechnical, hydrogeological, and metallurgical data to further evaluate the ISR mining conditions present at the deposit.

Ten small-diameter test wells were installed within the Midwest Main deposit during the Program – including a 4-well test pattern (the "Test Pattern") and 6 individual wells to test specific areas of the deposit for various characteristics. The Test Pattern included one injection well, one extraction well, a recharge well, and a monitoring well outfitted with a multi-channel vibrating wire piezometer. The six additional wells were drilled to their target depths and, as applicable, outfitted with well screens and/or pressure monitoring devices to facilitate hydrogeological testing. All wells were decommissioned at conclusion of the Program consistent with regulatory commitments. See Figures 2 and 3 for an illustration of the well locations within the northeast portion of the Midwest Main deposit.

Core collected from the test wells within the mineralized zone is also expected to be used to verify and update the current mineral resource estimate for the deposit and support future wellfield design and mineral processing assessments.

Successful Completion of Hydrogeologic Test Work

The Program included the completion of various pump, injection, and packer tests designed to assess the permeability of the Midwest Main deposit.

The test program measured pressure changes within the mineralized zone, which provides evidence of the deposit's hydraulic conditions and is indicative of the potential for the movement of mining solution in an ISR mining operation. Sufficient permeability within the mineralized zone is a key criterion for the successful deployment of the ISR mining method.

The results from the hydrogeological testing at Midwest Main produced hydraulic conductivity values that are consistent with those assumed in the Concept Study.

Additional supportive test work completed during the Program included permeability and porosity tests conducted either downhole or on mineralized drill core recovered during the test program.

Demonstration of the Effectiveness of Permeability Enhancement Method

One method of permeability enhancement was successfully evaluated on two test wells within the mineralized zone, with efficacy verified by the comparison of pre- and post-permeability enhancement hydraulic conductivity tests. Permeability enhancement has been demonstrated to increase and normalize hydraulic conductivity in the area proximal to the wellbore, allowing for increased contact of injected fluids within the mineralized zone in order to maximize uranium recoveries in an ISR mining environment.

Collection of Other Supporting Datasets

In addition to the tests described above, data and samples were collected from the drill core recovered from the test wells to facilitate: (1) the assessment of matrix permeability, to inform an initial model of the hydrogeological variations of the deposit; (2) geotechnical evaluations; (3) sediment analysis using Standard Penetration Test ("SPT") for measuring mud depths and the overburden below lake bottom; and (4) testing of compressive and tensile strength for incorporation into future geotechnical assessments.

About Midwest

Midwest is situated in the eastern portion of the Athabasca Basin region in northern Saskatchewan. The property is approximately one kilometre from the Points North Landing airstrip and about 25 kilometres west, by existing roads, from the McClean Lake Mill, which is jointly owned by Denison (22.5%) and Orano Canada (77.5%). Access to Midwest 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 (See Figure 1).

Initial exploration work at Midwest began in 1966, and Denison first became an owner of the project in 1987. In 2007, Orano Canada completed an internal study evaluating the feasibility of mining the Midwest Main deposit via open pit mining methods with processing of the resulting ore at the McClean Lake Mill. The MWJV subsequently advanced the project through the environmental assessment process as an open pit mine and the final version of the Midwest Project Environmental Impact Statement was approved in September 2012.

The MWJV is currently evaluating the viability of a number of potential options for the future development of the Midwest Main deposit, including ISR. Even if a mining method is selected, any future development by the MWJV will be subject to various review and approval processes, including MWJV approval processes, provincial and federal regulatory review, and engagement.

About Denison

Denison is a uranium mining, exploration and development company with interests focused in the Athabasca Basin region of northern Saskatchewan, Canada. Denison has an effective 95% interest in its flagship Wheeler River Uranium Project, which is the largest undeveloped uranium project in the infrastructure rich eastern portion of the Athabasca Basin region of northern Saskatchewan. In mid-2023, the Phoenix Feasibility Study was completed for the Phoenix deposit as an ISR mining operation, and an update to the previously prepared 2018 Pre-Feasibility Study was completed for Wheeler River's Gryphon deposit as a conventional underground mining operation. 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 Study submitted for regulatory and public review in October 2022.

Denison's interests in Saskatchewan also include a 22.5% ownership interest in the McClean Lake Joint Venture ("MLJV"), which includes unmined uranium deposits (planned for extraction via the MLJV's SABRE mining method starting in 2025) and the McClean Lake uranium mill (currently utilizing a portion of its licensed capacity to process the ore from the Cigar Lake mine under a toll milling agreement), plus a 25.17% interest in the MWJV's Midwest Main and Midwest A deposits, and a 69.35% 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. Taken together, Denison has direct ownership interests in properties covering ~384,000 hectares in the Athabasca Basin region.

Additionally, through its 50% ownership of JCU (Canada) Exploration Company, Limited ("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%).

In 2024, Denison is celebrating its 70th year in uranium mining, exploration, and development, which began in 1954 with Denison's first acquisition of mining claims in the Elliot Lake region of northern Ontario.

For more information, please contact

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Qualified Persons

The disclosure of scientific or technical information contained in this release has been reviewed and approved, as applicable, by Mr. Chad Sorba, P.Geo., Denison's Vice President, Technical Services & Project Evaluation or Mr. Andrew Yackulic, P. Geo., Denison's Vice President, Exploration, who are Qualified Persons 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 ISR test program; future plans and objectives for Midwest, including further studies, analysis and a potential future resource estimate update and PEA; 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 Midwest 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, joint venture approvals, 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 28, 2024 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.

Figure 1: Midwest Site Location Map

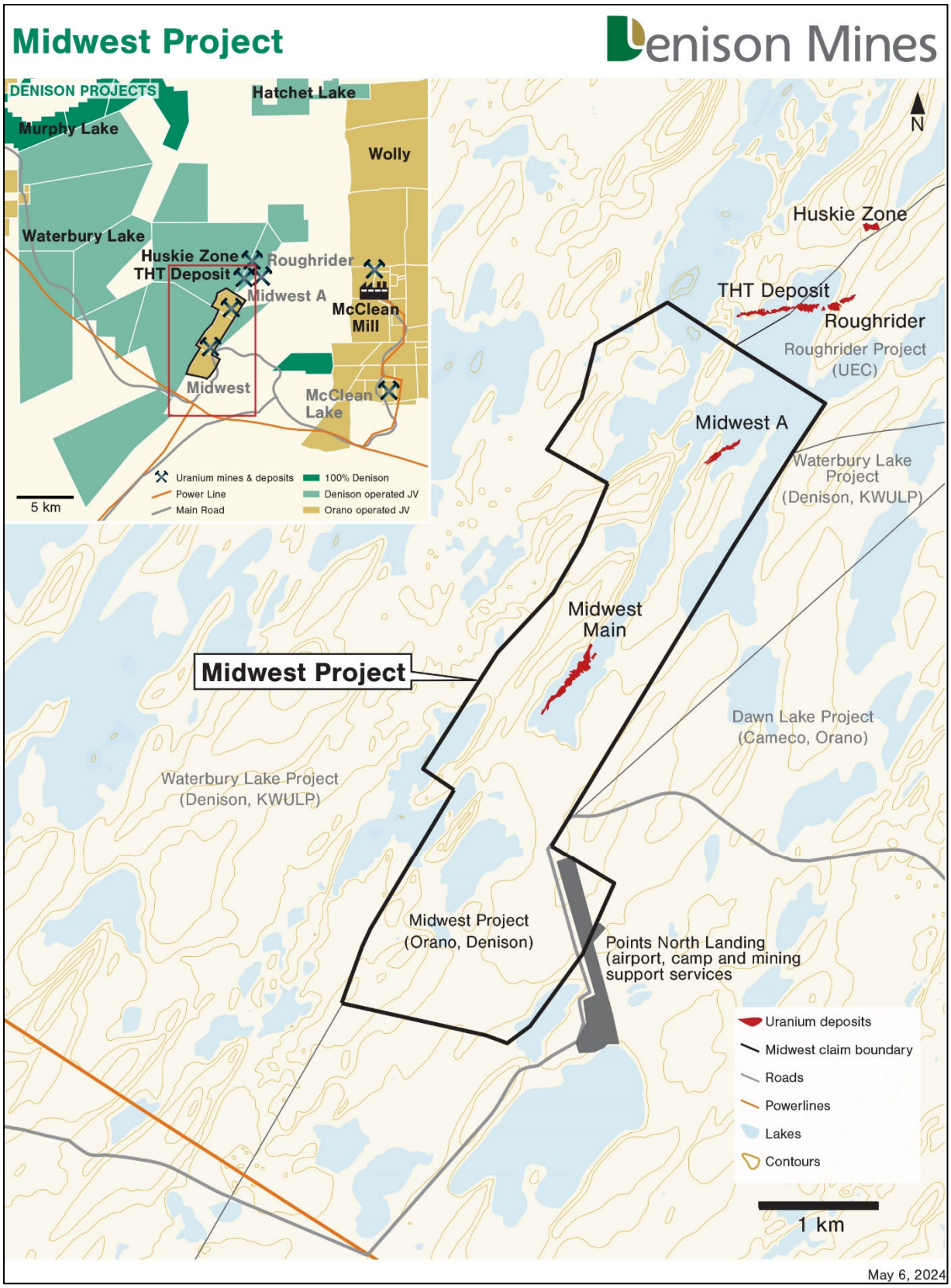

Figure 2: Midwest Main Test Pattern and Well Locations - Plan View

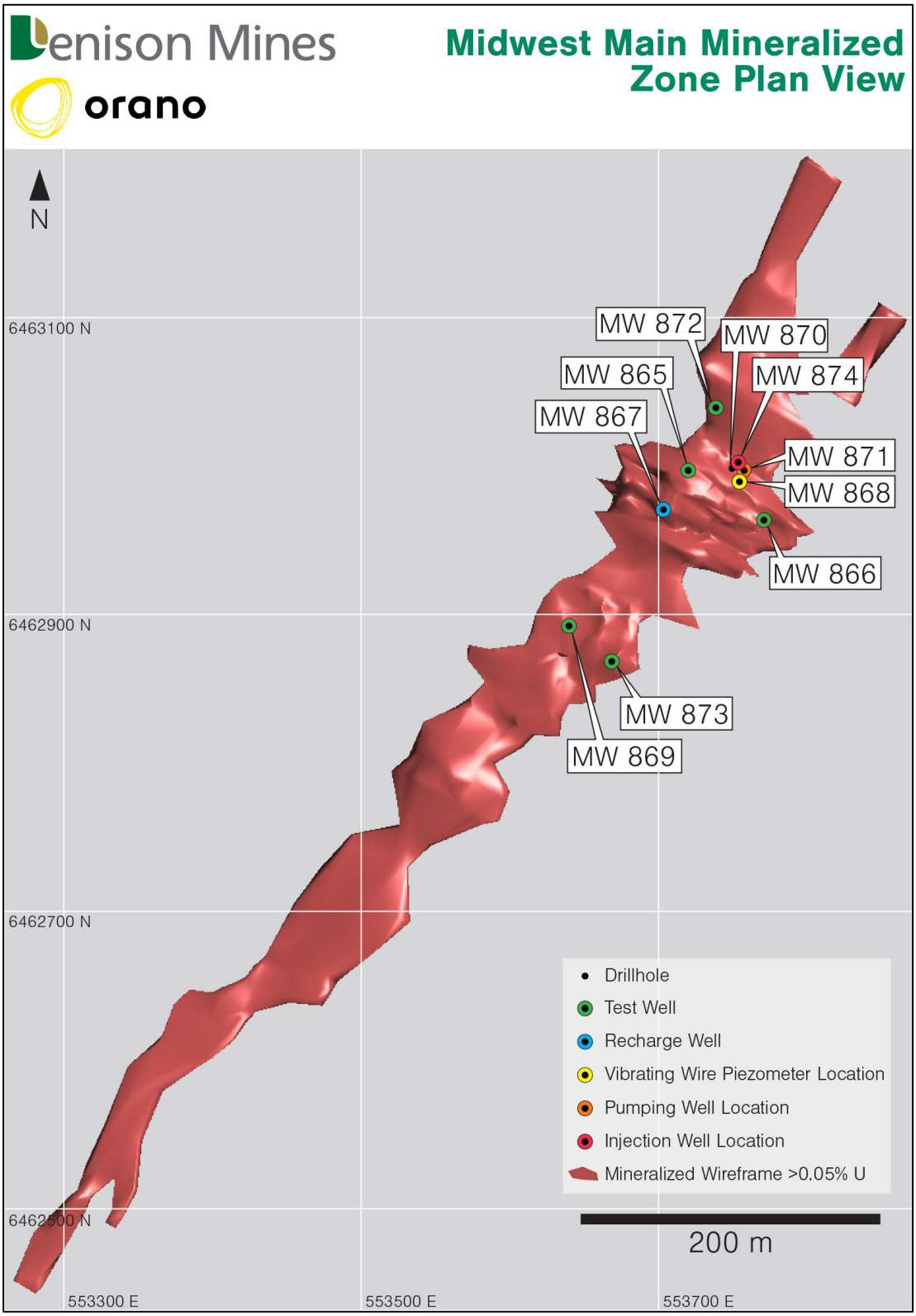

Figure 3: Midwest Main Test Pattern and Well Locations – Long Section View