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PRESS RELEASE

DENISON REPORTS RESULTS FROM PHOENIX ISR FIELD TESTS CONFIRM ABILITY TO ACHIEVE HYDRAULIC CONDUCTIVITY VALUES CONSISTENT WITH PRE-FEASIBILITY STUDY

Toronto, ON – February 24, 2020. Denison Mines Corp. ("Denison" or the "Company") (DML: TSX, DNN: NYSE American) is pleased to report that the results from hydrogeological test work, completed in 2019 at the high-grade Phoenix uranium deposit ("Phoenix"), have confirmed the ability to achieve bulk hydraulic conductivity values (a measure of permeability) consistent with the Pre-Feasibility Study ("PFS") completed for the Company's 90% owned Wheeler River Uranium Project ("Wheeler River"), located in northern Saskatchewan, Canada.

During the summer and fall months of 2019, Denison collected an extensive database of hydrogeological data as part of an In-Situ Recovery ("ISR") field test program (the "2019 Field Test") at Phoenix. The 2019 Field Test was designed to further evaluate the ISR mining conditions present at Phoenix and is expected to support the completion of a future Feasibility Study ("FS") (see Denison's press release dated December 18, 2019 for additional details regarding the 2019 Field Test).

A key element of the 2019 Field Test was the completion of various pump and injection tests in two large diameter commercial scale wells ("CSWs") installed within the Phoenix orebody. These tests were designed to allow for the simulation of fluid flow under conditions similar to an envisioned commercial ISR production environment – ultimately facilitating a quantitative assessment of the bulk hydraulic conductivity of the Phoenix orebody and surrounding rock formations. For ISR mining operations, the term "hydraulic conductivity" is used to describe the ease with which a fluid can move through the pore spaces or fractures within a host rock. Hydraulic conductivity, commonly represented by the symbol "K", is often stated as a rate of flow (under a unit hydraulic gradient through a unit cross-sectional area of aquifer) and is typically reported in units of metres/sec ("m/s"), or metres/day ("m/d").

Highlights

- Numerical groundwater simulations in the PFS use a K value of approximately 1×10^{-6} (or 0.000001) m/s, or 8.6×10^{-2} (or 0.086) m/d in order to achieve a flow rate of 500 litres per minute;
- Pump and injection tests completed from CSW2 (drill hole GWR-032), after deployment of the MaxPerf Drilling Tool, produced K values ranging from 3.7×10^{-7} (or 0.00000037) to 9.6×10^{-7} (0.00000096) m/s or 3.3×10^{-2} (or 0.033) to 8.4×10^{-2} (or 0.084) m/d, which is consistent with the K values used in the PFS;
- Twenty-three (23) packer tests were conducted as part of the 2019 Field Test. Packer testing also measures bulk hydraulic conductivity, with 14 of 23 results (60%) producing K values in excess of the values used in the PFS, without using the MaxPerf Drilling Tool; and
- Matrix permeability test work demonstrated that several competent high-grade massive uraninite samples contain unique honeycomb-like interconnected pore spaces that exhibit permeability and hydraulic conductivity values consistent with the PFS.

David Bronkhorst, Denison's Vice President Operations, commented, *"The initial data from the 2019 Field Test shows that the K values in the immediate vicinity of GWR-032, after deploying the MaxPerf Drilling Tool, are consistent with the K values used in the PFS for the application of ISR mining at Phoenix. This is an important milestone from a de-risking perspective and is especially rewarding for our technical team – having recently completed the first-of-its-kind ISR field test in the Athabasca Basin region.*

Permeability is an important consideration for the refinement of the wellfield parameters for Phoenix – impacting our future plans for well spacing, number of active wells, pressure differential between wells, and ultimately flow rate required to achieve a desired level of annual production. Combined with the recently announced metallurgical test results, we are encouraged by the potential for additional technical work to support meaningful optimization of the PFS mine plan, and the addition of enhanced operational flexibility, in a future Feasibility Study."

Background

The hydrogeological test work incorporated into the PFS (see Denison's press release dated September 24, 2018) included limited packer (32) and open hole (3) tests, equating to 35 combined tests. An additional 11 permeability tests were completed on intervals of competent core. These data sets were incorporated into a numerical groundwater model to assess the sensitivity of ISR wellfield design and operating practices to various rates of fluid flow.

The PFS production plan is based on many variables, including the assumption that 10 active hexagonal well patterns would produce a sufficient flow-rate (500 litres per minute) at a given uranium concentration (10 g/L) to achieve an overall production level of 6 million pounds U_3O_8 per year. Based on the numerical groundwater model, a well spacing of 10 metres, a pressure differential of 1 MPa, and a K value of approximately 1×10^{-6} (0.000001) m/s or 8.6×10^{-2} (0.086) m/d on average, is expected to be required to achieve the targeted flow-rate of 500 litres per minute.

The 2019 Field Test was designed to build on the hydrogeological data collected as part of the PFS and to further evaluate the ISR mining conditions present at Phoenix as part of the preparations for a future FS. The 2019 Field Test significantly expanded upon the hydrogeological investigations undertaken as part of the PFS – including test work designed to evaluate both the bulk hydraulic conductivity and matrix permeability within the orebody of Test Area 1 and Test Area 2 (see Figure 1), in order to understand the large- and small-scale fluid flow characteristics, respectively.

Further Discussion of the 2019 ISR Field Test Program

Hydrogeological tests of bulk hydraulic conductivity were completed using a series of monitoring wells and CSWs to pump or inject water through the orebody of Test Area 1 and Test Area 2 (see Denison's press release dated December 18, 2019). The most representative test work completed involved CSW2 (GWR-032), installed within the Phoenix orebody. Highlight results from the CSWs can be summarized as follows:

- *Test Area 2 – CSW2 (drill hole GWR-032)*
    - Pump and injection tests completed from CSW2 (drill hole GWR-032) (see Figure 2), after deployment of the MaxPerf Drilling Tool, produced K values ranging from 3.7×10^{-7} (or 0.00000037) to 9.6×10^{-7} (or 0.00000096) m/s or 3.3×10^{-2} (or 0.033) to 8.4×10^{-2} (or 0.084) m/d, which is consistent with the K values used in the PFS;
    - The demonstrated ability to achieve hydraulic conductivity values, estimated from the tests completed in Test Area 2, that are consistent with the values used in the PFS is highly significant – considering Test Area 2 contains approximately 30% of the Phoenix Zone A Indicated Mineral Resource.

- *Test Area 1- CSW1 (drill hole GWR-031)*
    - Pump and injection tests completed from CSW1 (drill hole GWR-031) (see Figure 3), after deployment of the MaxPerf Drilling Tool, produced K values as high as 6.0×10^{-8} (or 0.00000006) m/s or 5.2×10^{-3} (or 0.0052) m/d;
    - While CSW1 was successfully completed to its desired depth, certain technical challenges associated with the installation of the well screen assembly impacted the effectiveness of a significant portion of the well screening. Upon receipt of results, the obstructed well screening has been interpreted to have rendered the well less effective for the purposes of pump and injection testing and ultimately the estimation of K values. These challenges were corrected during the installation of CSW2.

Taken together, the ranges of bulk hydraulic conductivity observed during the 2019 Field Test are supportive of the numerical groundwater modelling conducted as part of the PFS.

Additional Supportive Permeability and Porosity Tests

Additional supportive test work completed during the 2019 Field Test included permeability and porosity tests conducted either downhole, or on mineralized drill core recovered during the test program (see Denison's press release dated December 18, 2019 for further details).

- *Downhole Packer Tests*
    - Twenty-three (23) additional packer tests were conducted as part of the 2019 Field Test. Packer testing measures bulk hydraulic conductivity, with 14 of 23 results (60%) producing K values in excess of the values used in the PFS, without using the MaxPerf Drilling Tool;
    - These packer tests significantly expanded on the previous data sets from the PFS.
- *Matrix Permeability Test Work*
    - The tests were conducted using a gas probe permeameter and included over 1,200 measurements from individual core samples collected from Test Area 1 and Test Area 2;
    - This level of detailed permeability testing is specialized – adding unique value to the ISR industry by providing considerable detail regarding permeability values within the ore zone;
    - The matrix permeability test work examines the porous rock volume, including microfractures and pore spaces, but excludes most of the macroscopic faults or fractures, which are typically evaluated during bulk hydraulic conductivity testing. As such, matrix permeability generally refers to the small-scale fluid flow regimes associated with areas of highly competent host rock;
    - The matrix permeability test work shows hydraulic conductivity values ranging from 1.5 x 10^{-13} to 5.0 x 10^{-6} m/s (or 1.30 x 10^{-8} to 0.43 m/d), which are broadly in line with the PFS and in some instances exceed the values used in the PFS for bulk hydraulic conductivity;
    - Importantly, matrix permeability test work demonstrated that several competent high-grade massive uraninite samples contain unique honeycomb-like interconnected pore spaces that exhibit permeability and hydraulic conductivity values consistent with the PFS.

Taken together, the ranges of bulk hydraulic conductivity and matrix permeability observed during the 2019 Field Test are supportive of the numerical groundwater modelling conducted as part of the PFS. Additional hydrogeological test work is necessary to further understand the small- and large-scale fluid flows at Phoenix to support the completion of a future FS.

The extensive hydrogeological data sets collected during the 2019 Field Test, discussed herein, are expected to be incorporated into the comprehensive hydrogeological model being developed by Petrotek Corporation ("Petrotek") for Phoenix. This exercise, combined with future field testing, is expected to facilitate detailed mine planning as part of a future FS. Petrotek is a specialist in the technical evaluation and field operation of subsurface fluid flow and injection projects, including significant ISR uranium mining experience in various jurisdictions. Denison expects the hydrogeological model and final report to be completed in late Q1 2020, which will also allow for further planning of additional ISR field tests.

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 U_3O_8 (1,809,000 tonnes at an average grade of 3.3% U_3O_8), plus combined Inferred Mineral Resources of 3.0 million pounds U_3O_8 (82,000 tonnes at an average grade of 1.7% U_3O_8). 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 U_3O_8 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 U_3O_8. 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 approximately 280,000 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 currently processing 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 66.57% 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 also engaged in mine decommissioning and environmental services through its Closed Mines Operations division and is the manager of Uranium Participation Corp., a publicly traded company which invests in uranium oxide and uranium hexafluoride.

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Qualified Persons

Certain hydrogeological results and interpretations thereof contained in this release related to the 2019 Field Test (including the hydrogeological investigations carried out via pump and injection tests and associated analyses) were prepared by Mr. Errol Lawrence, PG (Senior Hydrogeologist), and Mr. Aaron Payne, PG (Senior Hydrogeologist), at Petrotek, each of whom is an independent Qualified Person in accordance with the requirements of NI 43-101.

The other technical information contained in this release has been reviewed and approved by Mr. David Bronkhorst, P.Eng, Denison's Vice President, Operations, or Mr. Dale Verran, MSc, P.Geo, Pr.Sci.Nat., Denison's Vice President, Exploration, each of whom 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 2019 Field Test and related evaluation assumptions, interpretations, activities, plans and objectives; the current and continued use and availability of third party technologies, such as MaxPERF, as applicable; 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 and underlying assumptions and interpretations of the field test program 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 testing, evaluation and development work at Wheeler River, and may not complete a FS, if it is unable to maintain or otherwise secure the necessary approvals or resources (such as testing facilities, capital funding, 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 12, 2019 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 news 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, the United States Securities and Exchange Commission ("SEC") does not recognize them. '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.*** *The estimates of mineral reserves in this news release have been prepared in accordance with NI 43-101. The definition of probable mineral reserves used in NI 43-101 differs from the definition used by the SEC in the SEC's Industry Guide 7. Under the requirements of the SEC, mineralization may not be classified as a "reserve" unless the determination has been made, pursuant to a "final" feasibility study that the mineralization could be economically and legally produced or extracted at the time the reserve determination is made. Denison has not prepared a feasibility study for the purposes of NI 43-101 or the requirements of the SEC. Accordingly, Denison's probable mineral reserves disclosure may not be comparable to information from U.S. companies subject to the reporting and disclosure requirements of the SEC.*

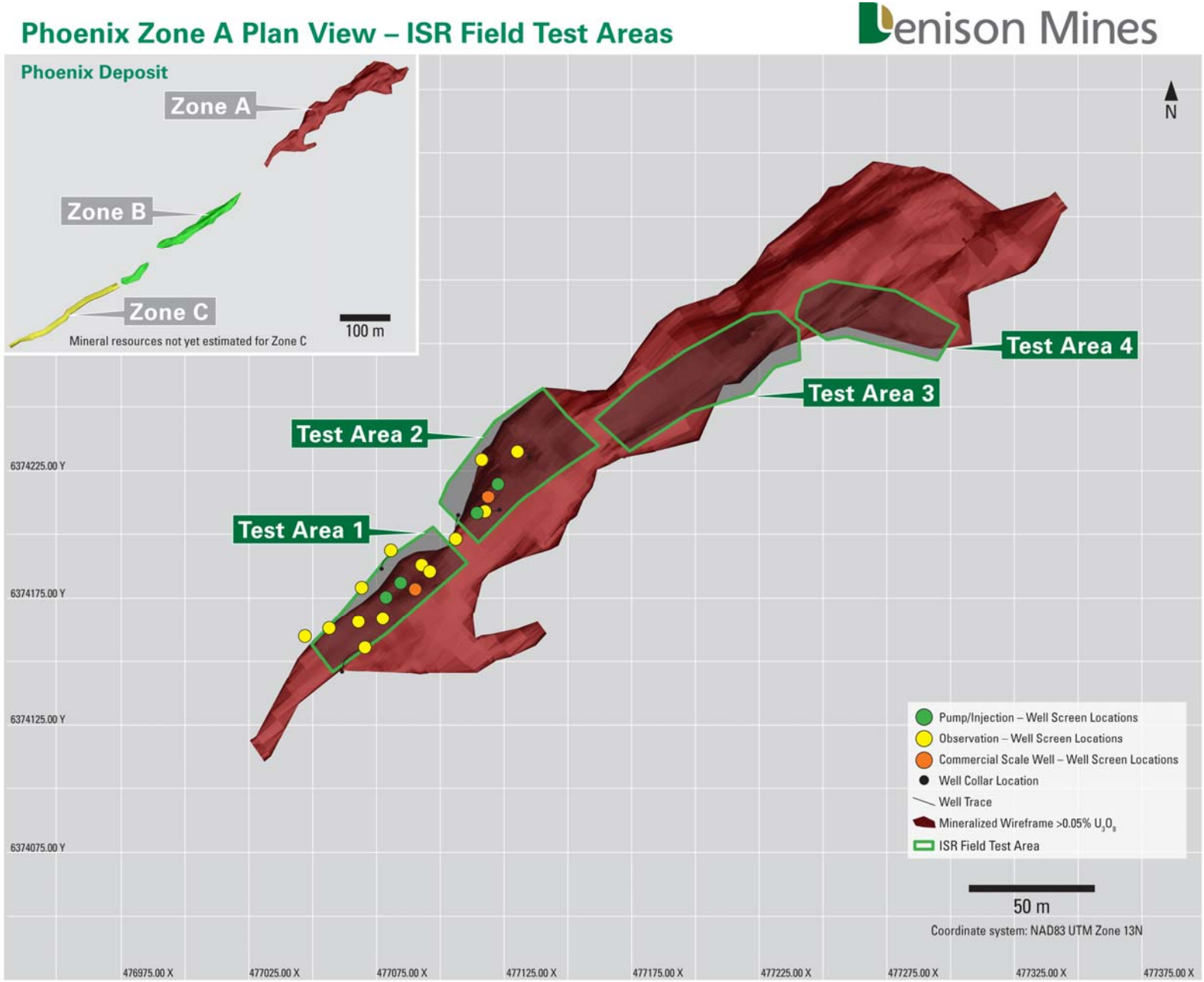

Figure 1: Phoenix Zone A plan view showing Test Areas and well installations completed during 2019.

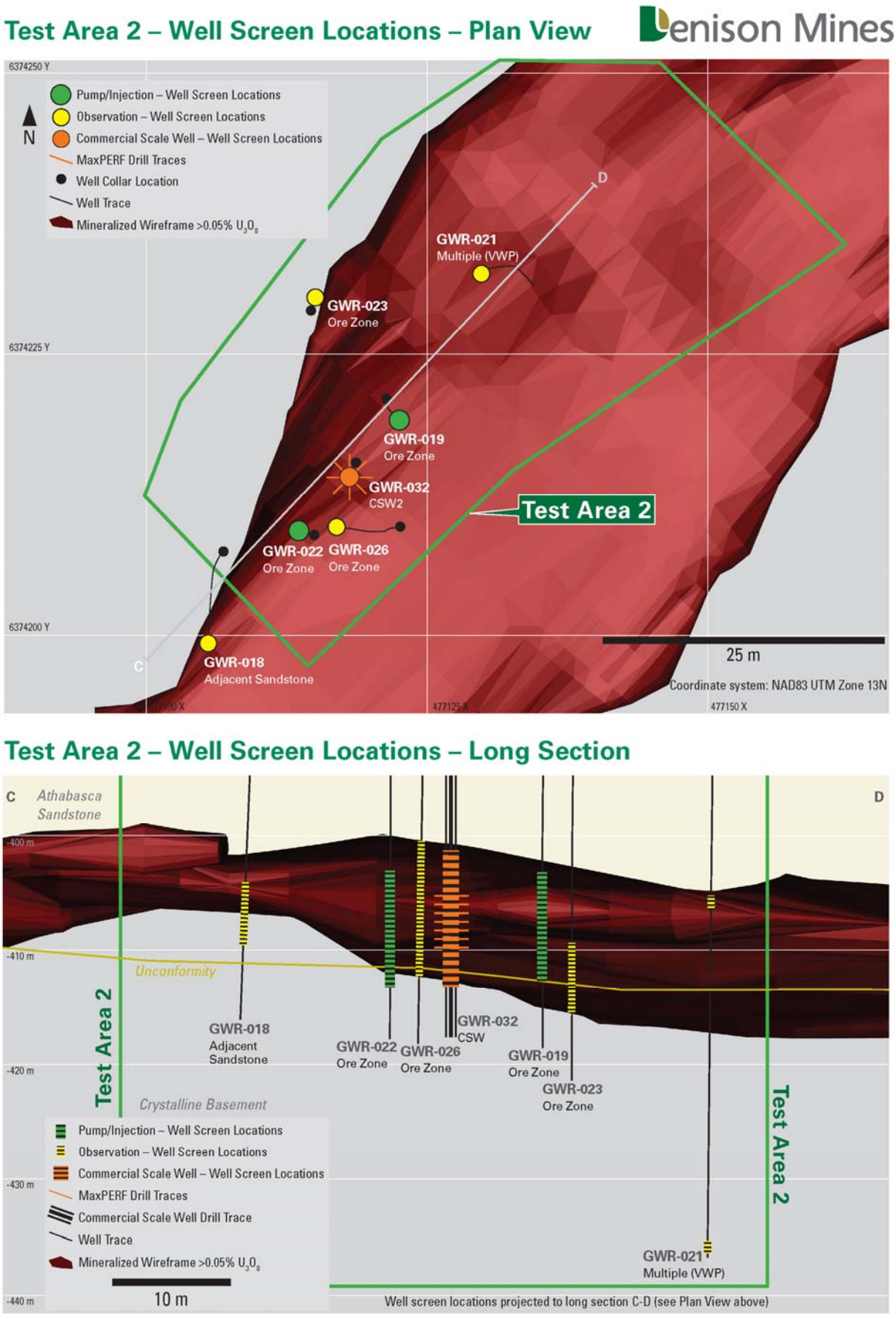

Figure 2: Plan map and long section showing Pump/Injection wells, Observation wells and CSW2 completed for ISR field testing in Test Area 2.

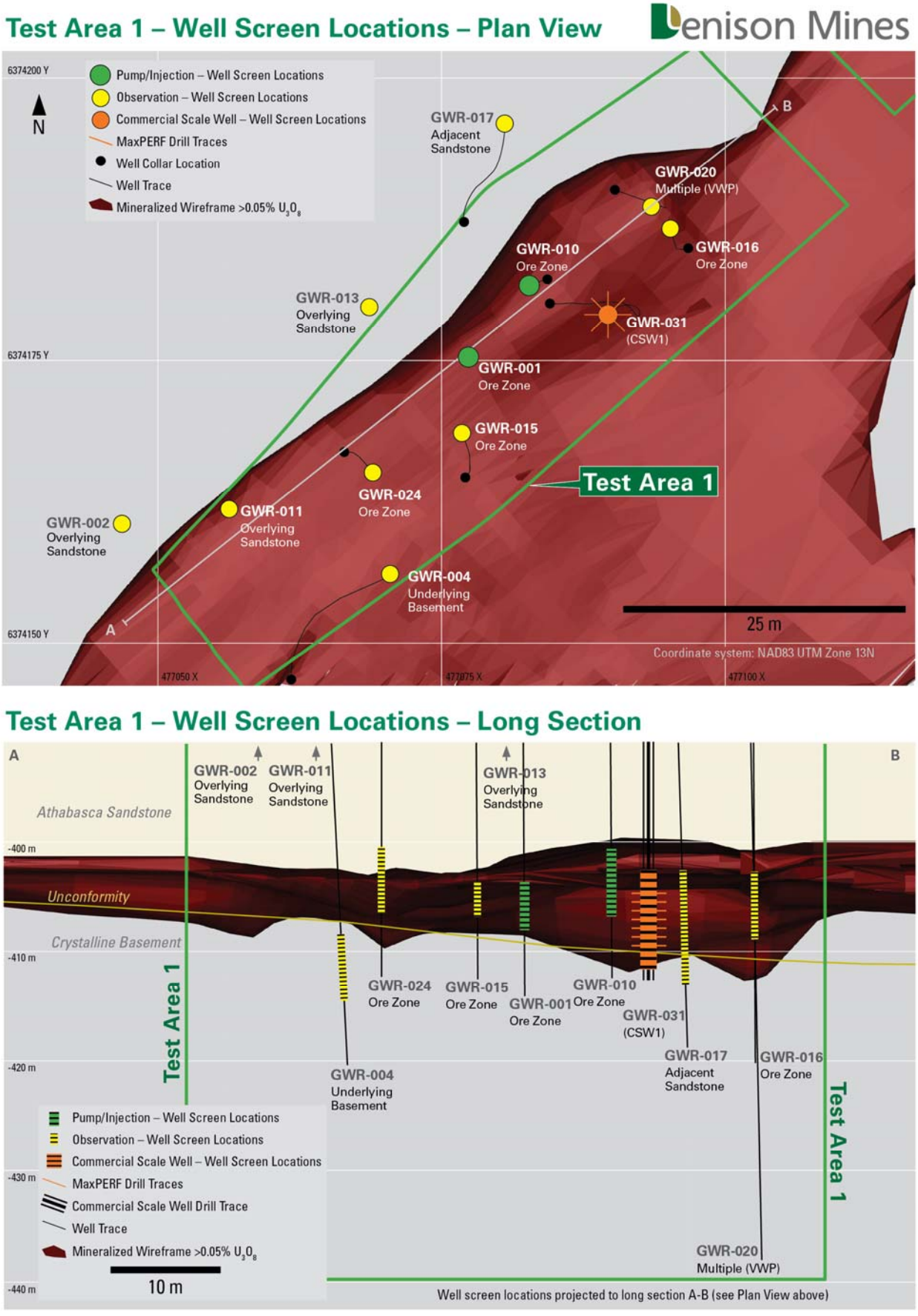

Figure 3: Plan map and long section showing Pump/Injection wells, Observation wells and CSW1 completed for ISR field testing in Test Area 1.