Preliminary Economic Assessment for the Midwest Property, Northern Saskatchewan, Canada, using the In-Situ Recovery Mining Method

Report Prepared for
Denison Mines Corp.

Orano Canada Inc.

Effective date: **August 6, 2025**
Signature date: **September 12, 2025**

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Preliminary Economic Assessment for the Midwest Property, Northern Saskatchewan, Canada

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1. SUMMARY

1.1. Introduction

This Report is a summary of: (a) the current mineral resource estimate for the Midwest Main and Midwest A deposits; and (b) a Preliminary Economic Assessment (PEA) of the Midwest Main deposit utilizing the In-situ Recovery (ISR) mining method, is subject to the conditions and assumptions disclosed herein. Engcomp Engineering and Computing was retained by Denison Mines Corp. (together with its subsidiaries, referred to herein as Denison) to prepare a technical report consistent with the standards of National Instrument 43-101 *Standards of Disclosure for Mineral Projects* (NI 43-101) to disclose the results of the PEA.

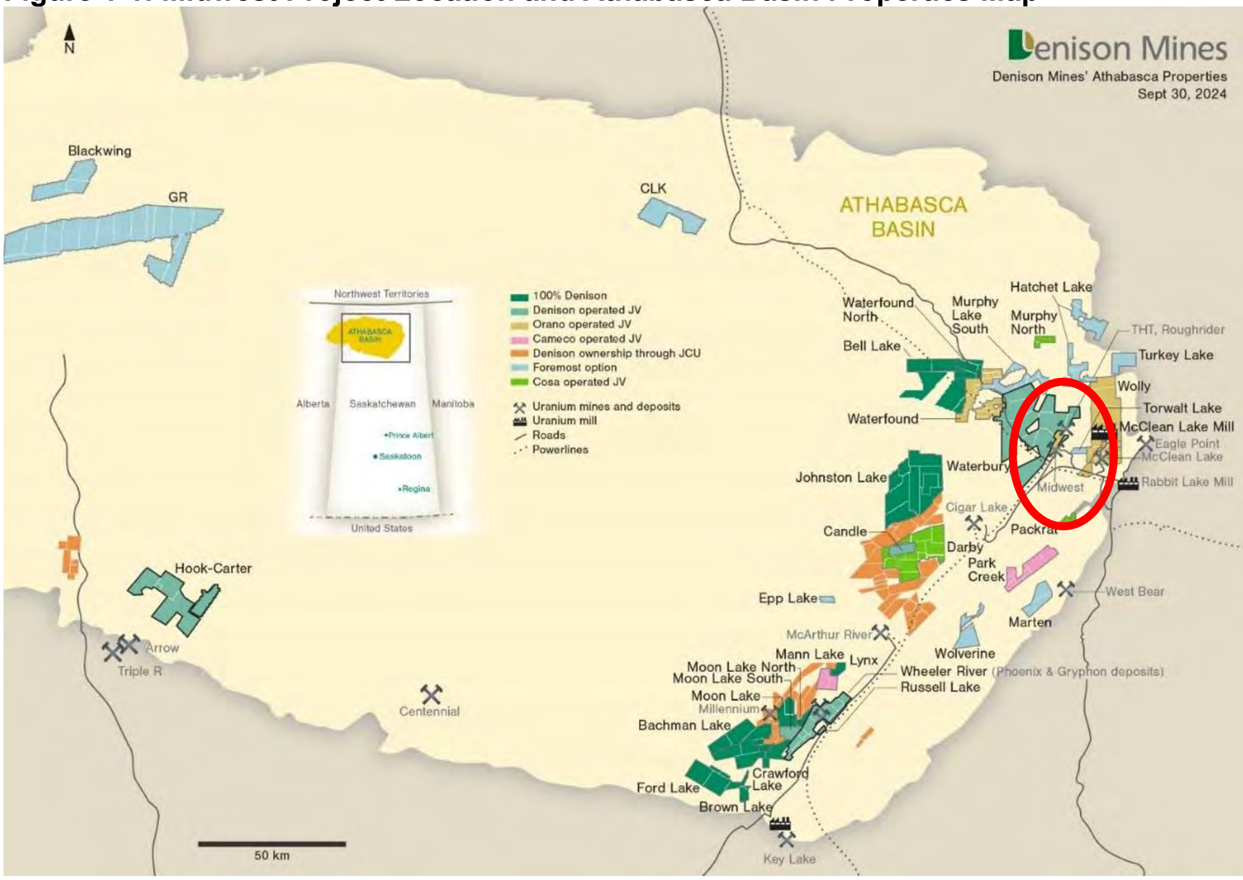
Understood Mineral Resources Ltd. (UMR) was retained by Denison to review and verify that the estimate of the Project's mineral resources appropriate, and in accordance with applicable estimation standards. Matt Batty, MSc, P. Geo, of UMR, is the NI 43-101 qualified person (QP) for the purposes of the mineral estimate review. Mr. Batty is of the opinion that the estimates and associated mineral resource statements are current, a reasonable representation of the uranium mineral resources at the current level of sampling and meets the reporting standard in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Mineral Reserves as required by the NI 43-101.

The Midwest Project is located within the eastern portion of the Athabasca Basin in Northern Saskatchewan and consists of three (3) contiguous mineral leases covering 1,426 ha., on which the Midwest Main and Midwest A uranium deposits have been delineated. The Midwest Project is owned as a contractual joint venture (MWJV) between Orano Canada Inc. (Orano), holding a 74.83% interest, and Denison Mines Inc. (DMI, a wholly owned subsidiary of Denison Mines Corp.), holding a 25.17% interest. Orano is the project operator.

ISR is not the only mining method being considered for development of the Midwest Project deposits, but is the only mining method being considered for the purposes of this PEA.

The application of ISR at other uranium deposits in the Athabasca Basin has been studied extensively by Denison, with compelling economic results, due to its assessed ability to deliver lower capital and costs when compared to other conventional mining methods.

Figure 1-1: Midwest Project Location and Athabasca Basin Properties Map



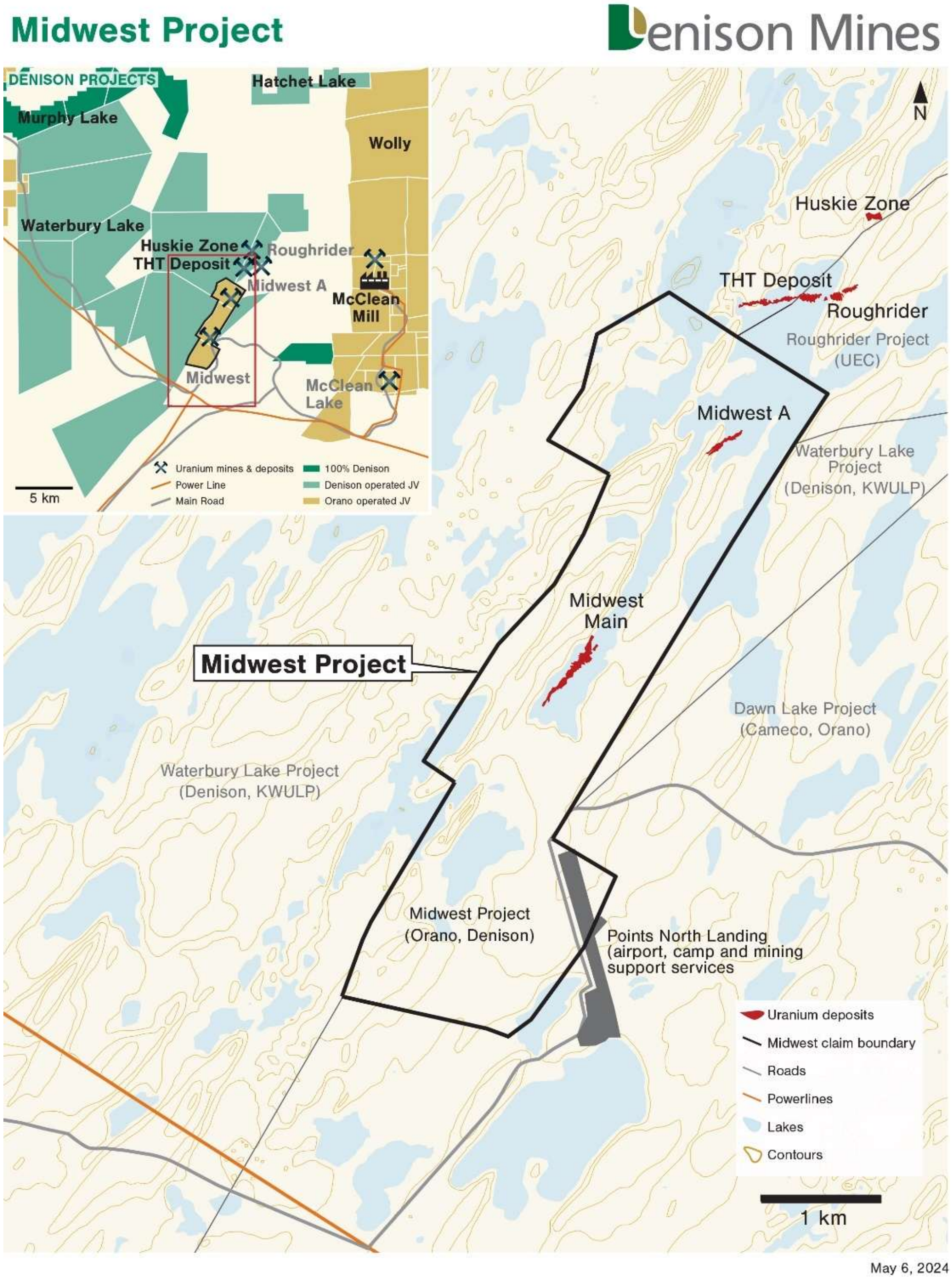
(Source: Denison, 2024)

1.2. Technical Summary

1.2.1. Property Description and Location

The Midwest Project is located within the eastern portion of the Athabasca Basin in Northern Saskatchewan. The Midwest Project consists of three (3) contiguous mineral leases covering 1,426 ha., containing the Midwest Main uranium deposit and the Midwest A uranium deposit. The mineral lease containing the Midwest Main deposit (ML 5115) is 556 ha. in size. The mineral leases containing the Midwest A deposit (ML 5264 and ML 5265) are 870 ha. in size, combined. The mineral lease dispositions are within the 1:50,000 National Topographic System (NTS) map sheet 74I/8. The Midwest Main deposit is centred approximately at 553,600 Easting and 6,462,800 Northing (UTM NAD 83; Zone 13 north). Access to the Midwest Project 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 about 3 kilometres from the project site.

Figure 1-2: Midwest Project Location Map



(Source: Denison, 2024)

1.2.2. Ownership

Denison holds a 25.17% interest in the MWJV, with Orano holding 74.83%. Orano is the project operator. All claims comprising the Midwest Project are currently in good standing as of December 2024.

Denison is a uranium exploration and development company with interests focused on the eastern portion of the Athabasca Basin region in northern Saskatchewan, Canada. In addition to its 25.17% interest in the Midwest Project (Figure 2-1), Denison has an effective 95% interest in the Wheeler River project, which hosts the Phoenix and Gryphon uranium deposits, and a 22.5% ownership interest in the McClean Lake Joint Venture (MLJV), which includes several uranium deposits and the McClean Lake uranium mill. Denison's eastern-Athabasca interests also include an approximately 70% ownership in the Tthe Heldeth Túé (THT) deposit (formerly known as J Zone) and Huskie deposit on the Waterbury Lake property, which lie along strike and within six kilometres of the Midwest Main and Midwest A deposits. Midwest Main, Midwest A, THT and Huskie are all located within 15 kilometres of the McClean Lake Mill.

Orano Canada is a subsidiary of the French nuclear energy company Orano Group. Its origins date back to exploration in the 1960's and the development of the Cluff Lake mine in the 1980's, and continued with mines and a mill at McClean Lake and partnerships in several other sites in the Athabasca Basin such as the Cigar Lake mine. Orano Canada holds a controlling 77.5% interest in the McClean Lake Mill as well as minority interest in the Cigar Lake and McArthur River mines.

1.2.3. Geology and Mineralization

The Midwest property is located near the eastern margin of the Athabasca Basin region in northern Saskatchewan, and overlies the Western Churchill Structural Province of the Canadian Shield. The sub-Athabasca bedrock geology of the area consists of Paleoproterozoic Wollaston Group metasediments and Archean orthogneiss, which are all part of the Wollaston-Mudjatik Transition Zone. The north-northeast-trending ductile to brittle structural trend that hosts the Midwest Main and Midwest A uranium deposits follows a steeply-dipping graphitic pelitic gneiss metasedimentary unit that is bounded by granitic gneisses and Hudsonian granite to the northwest and southeast, respectively.

These basement lithologies are unconformably overlain by the flat-lying, unmetamorphosed sandstones and conglomerates of the Athabasca Group. Extensions of basement fault zones, generally extending over 100 metres into the overlying sandstone, act as hosts for uranium mineralization and form the loci of the quartz dissolution and clay alteration zones that resulted in collapse of the property-scale conglomerate marker horizon.

The uranium mineralization observed at the Midwest Main and Midwest A deposits is considered egress-style unconformity mineralization. This mineralization style resulted from a fluid-fluid mixing process involving oxidized basin brine and relatively reduced fluid emanating from the basement and subsequent precipitation of uraninite (Hoeve and Quirt, 1984). The unconformity zone of the Midwest Main deposit is approximately 1,000 metres long, 20 to 145 metres wide, and up to 25 metres in thickness, not including the basement veins and perched mineralization. The bulk of the mineralization is in the lens-shaped unconformity zone that occurs at depths ranging between 170 and 205 metres below surface. Perched mineralization occurs as discrete lenses located above the Unconformity Zone and up to 100 metres above the unconformity. The Midwest A deposit is approximately 450 metres long, 10 to 60 metres wide, and ranges up to 70 metres in thickness. It occurs at depths ranging between 150 and 235 metres below surface. The mineralization consists of near-massive mixtures of pitchblende/uraninite and Ni-Co-arsenides. The mineralization of both Midwest Main and Midwest A consists of mixtures of pitchblende/uraninite and Ni-Co-arsenides. The minerals and their paragenetic order are similar to those present in other sandstone-hosted unconformity-type deposits, such as Cigar Lake, Key Lake, McClean Lake, Collins Bay B Zone, etc. (Ayres et al., 1983; Hoeve and Quirt, 1984; Wray et al., 1985). The diagenetic and hydrothermal host-rock alteration associated with mineralization comprises varying degrees of illite, chlorite, hematite, bleaching, tourmaline, silicification, de-silicification, and kaolinite alteration (Hoeve and Quirt, 1984).

1.2.4. Exploration and Development

The Midwest property was intensely drilled following discovery of the Midwest Main deposit in 1978. The area was the focus of a property-scale drill-testing program designed to follow-up on the results of airborne and ground geophysical surveys, ground geochemical sampling, and boulder surveys.

The initial indication of the presence of sandstone mineralization was discovered in the 1977 drillhole D7721 as part of that drill-testing program. The Midwest Main deposit itself was discovered the following year, during an extensive exploration campaign which focused on following up on the encouraging mineralized intercept. To date, the best uranium intersection from the deposit area was recorded in MW-574 with 16.42% U over 8.5 metres. Extensive drilling programs and additional geophysical surveys were subsequently carried out in the area during the 1978-1982 period.

The initial indication of the presence of the Midwest A sandstone mineralization was discovered in the 1979 drillhole MW-338. The Midwest A deposit itself was discovered during the 2005 exploration campaign that focused on following-up the historical MW-338 mineralized intercept. High-grade sandstone mineralization, along with several lower-grade zones, extending to the unconformity was encountered (e.g. MW-662), with the best intersection being 1.12% U over 32.2 metres (cut-off grade of 0.05% U). Extensive drilling programs and additional geophysical surveys were subsequently carried out in the area from 2006 to 2009.

There has been no development at the Midwest Project. The Midwest Main deposit has been the subject of many technical reviews and environmental assessments, with the most recent environmental assessment (EA) approved for development as an open pit mine (Areva, 2011). An underground test mine program was conducted at the Midwest Main site in 1988 and 1989 by Denison (Midwest Joint Venture, 1991). This work consisted of constructing a dam across a portion of the Mink Arm of South McMahon Lake that allowed dewatering of that part of the lake and sinking a 185-metre-long shaft and a 180-metre-long drift above the deposit for test work. A small amount of mineralization was extracted and submitted for metallurgical testing. Subsequent evaluation of development alternatives identified a preference for open pit mining, similar to the nearby McClean Lake JEB and Sue pods, thus leading to the advancement of the EA based on open pit mining. Market conditions following the approval of the EA have not supported advancement of the Midwest Main deposit as an open pit and, accordingly, the deposit remains undeveloped and alternative mining methods are under evaluation.

1.2.5. Mineral Resource Estimate

The mineral resource models for both Midwest Main and Midwest A deposits were prepared by Orano in October 2024 and November 2017, respectively. The Midwest A model subsequently underwent revisions from SRK Consulting (SRK) in 2018 after a detailed audit (Sorba et al., 2018). UMR was retained by Denison to review and verify the two estimates are appropriate for public disclosure. Matt Batty, MSc, P. Geo, of UMR, as QP for the mineral resource estimate, is of the opinion that the estimates and associated mineral resource statements are current, a reasonable representation of the uranium mineral resources at the current level of sampling and meets the reporting standard given in the CIM Standards NI 43-101.

Based on the discussed inputs, estimation methodologies, and at a reporting cut-off grade of 0.085% U (0.10% U_3O_8), mineral resources for the Midwest Main and Midwest A deposits are presented in Table 1-1. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into a Mineral Reserve. The Midwest Main Mineral Resource has an effective date of December 2, 2024 and the Midwest A Mineral Resource has an effective date of March 9, 2018.

Table 1-1: Total Mineral Resources at 0.085% U Cut-off

Deposit	Category	Zone	Tonnage (kt)	Grade (% U)	Metal (tonnes U)	Metal (Mlbs U_3O_8)	Denison's Share (Mlbs U_3O_8)
Midwest Main	Indicated	UC	510	2.92	14,900	38.7	9.7
	Inferred	UC	389	0.80	3,100	8.1	2.0
		PER	449	0.36	1,600	4.1	1.0
		BSMT	67	0.30	200	0.4	0.1
Midwest A	Indicated	LG	566	0.74	4,200	10.8	2.7
	Inferred	LG	43	0.23	100	0.4	0.1
		HG	10	24.00	2,400	6.4	1.6
	Total Indicated		**1,076**	**1.78**	**19,100**	**49.5**	**12.5**
	Total Inferred		**958**	**0.77**	**7,400**	**19.4**	**4.9**

Notes:

- The reporting standard for the Mineral Resource Estimate uses the terminology, definitions and guidelines given in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Mineral Reserves (May 2014) as required by NI 43-101.
- Mineral Resources are reported at a cut-off grade of 0.085% U (0.10% U_3O_8).
- Zones are identified as unconformity (UC), perched (PER), basement (BSMT), low grade (LG) and high grade (HG).
- Numbers may not add up due to rounding.
- The effective date of the Midwest Main Mineral Resource estimate is December 2, 2024.
- The effective date of the Midwest A Mineral Resource estimate is March 9, 2018.
- Denison's share of the project is derived from its ownership interest in the MWJV of 25.17%.

1.2.6. Mineral Processing and Metallurgical Testing

Metallurgical testing was conducted in 2023 and focused on bottle roll leach tests conducted on two composite samples that were generated from 4 drill-hole cores. Testing was completed by the Saskatchewan Research Council (SRC) at their facility in Saskatoon. The composite samples were comprised of six different hydrogeological units (HGUs).

The composite samples were generated to represent different conditions of the deposit. The characteristics of the composite samples are shown in the table below.

Table 1-2: Composite Sample Characteristics

Composite	# of Samples	Uranium % (%U)	Arsenic %	Nickel %
1	**23**	**2.1**	5.6	2.4
2	**7**	**9.2**	10.2	5.1

Composite 1 focused on the average ISR focused inferred and indicated portions of the deposit. Composite 2 was generated to analyse the high-grade areas of the deposit, which make up the larger part of the contained resource.

The primary objective of the test work was to determine if the Midwest ore is amenable to ISR leaching and to obtain baseline information for ISR leaching efficiencies, Uranium Bearing Solution (UBS) head grades, and reagent consumptions used in the economic analysis.

Each bottle roll cycle was completed over a 24-hour period, and 5 leaching cycles were performed on each composite sample. The results from the completion of the bottle roll tests indicate that the Midwest Main deposit is amenable to acid leaching.

Table 1-3 below shows the overall uranium recovery after every cycle of the test.

Table 1-3: Composite Uranium Recovery per Cycle

Cycle #	Composite 1 Uranium Recovery (%)	Composite 1 UBS Uranium Concentration (g/L)	Composite 2 Uranium Recovery (%)	Composite 2 UBS Uranium Concentration (g/L)
1	19.3	5.38	2.8	2.11
2	32.4	2.12	13.8	6.31
3	42.3	1.65	22.0	4.57
4	57.3	2.56	33.5	6.60
5	69.9	2.09	44.2	5.74
Washate	78.3	0.57	51.6	1.79
Overall Recovery	80.3	-	66.6	-

Reagent consumptions from the bottle roll leach tests yielded the following:

- Composite 1
    - 10.6 kg H_2SO_4/kgU and 5.6 kg H_2O_2/kgU
- Composite 2
    - 2.9 kg H_2SO_4/kgU and 1.6 kg H_2O_2/kgU

The application of the test work, along with Denison's experience from evaluating other nearby ISR projects, helped to form the basis for the expected recovery of the Midwest ISR operation, estimated UBS grades, and expected production values from the deposit.

Composite sample 2 contained 9.2% uranium, which yielded a UBS grade as high as 6.6 g/L U. The high-grade domain of the Midwest deposit, which makes up approximately 70% of the resource, has an estimated grade of 14.4% U. It is believed that the higher-grade domain will result in a higher-grade UBS concentration, which has been Denison's experience from the evaluation of other Athabasca Basin projects. It is estimated that a UBS concentration of 7.5 g/L U can be achieved through the life of mine.

Bottle roll recoveries ranged from 66.6% to 80.3% at the end of the 5 cycles. The leach efficiencies could have been increased by conducting additional bottle roll cycles and are not expected to be indicative of the efficiencies that can be achieved in an ISR operation. Further leach testing in the form of packed column and core flood leach testing will help refine the basis of the ISR leach efficiency that can be achieved. Other Denison-operated Athabasca Basin ISR projects initially assumed 85% recovery in the early stages of the projects, and after further leach testing was completed as noted above, the ISR design recoveries were decreased slightly to the low eighty-percent range. The life-of-mine ISR recovery used for the Midwest PEA is 81% based on Denison's experience and disclosed results from other Athabasca Basin projects. A sensitivity analysis on the ISR recovery has been presented in Figure 22-7 and Figure 22-8, which shows the impact of decreased ISR recovery on the Project NPV and IRR.

Future leach test work has been recommended to verify the assumptions noted above with respect to the UBS grades and ISR recovery values.

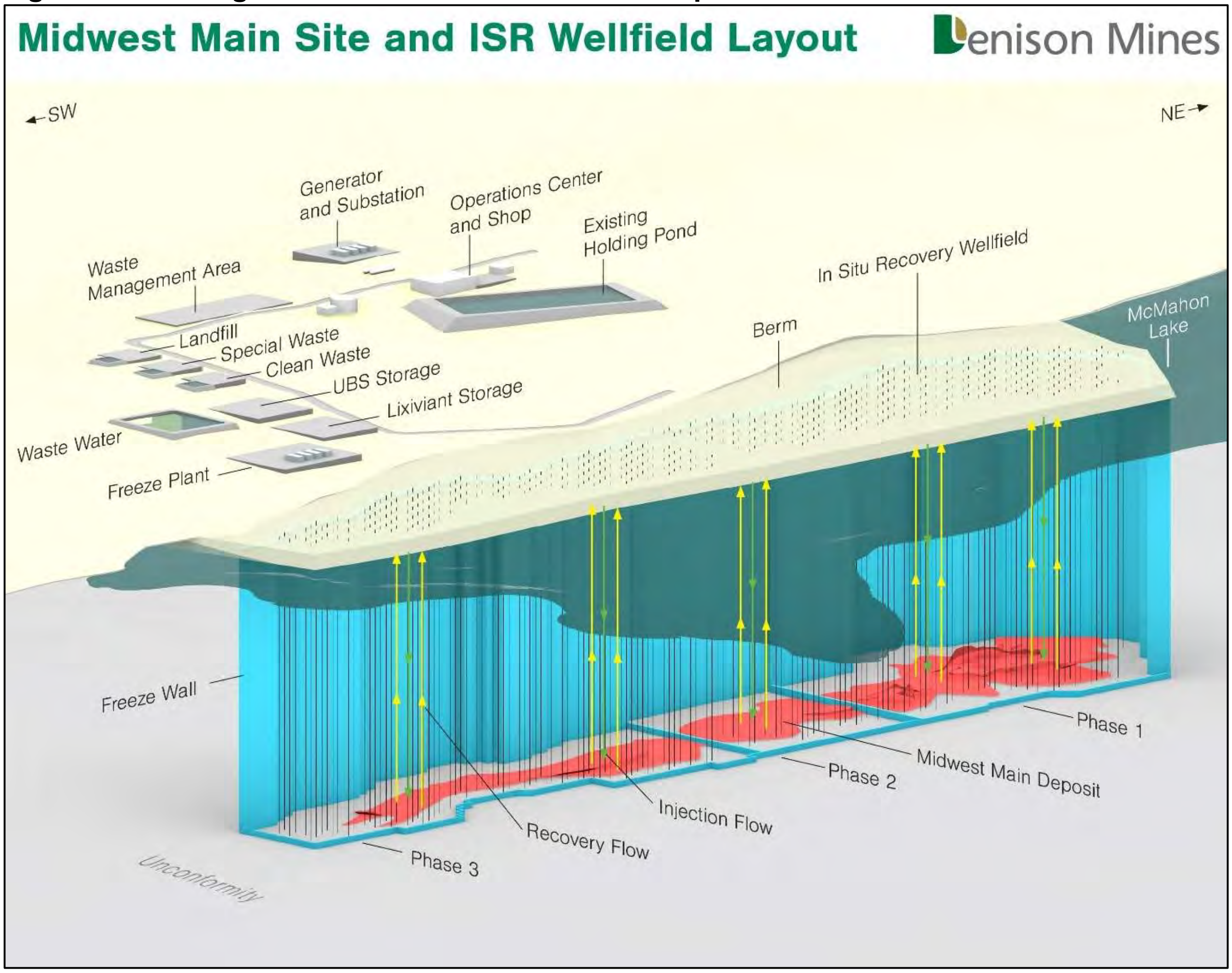
1.2.7. Mining Methods

This PEA summarizes the analysis of the utilization of ISR for mining of the Midwest Main deposit. Only the Midwest Main zone is assessed as part of this report. This study is based on the portion of the Midwest Main deposit at and above the unconformity. For the purposes of the PEA, the mineable portion of the Midwest Main deposit has been divided into three distinct phases to be developed (Figure 1-2).

The staged development approach was selected with an objective to minimize upfront capital and accelerate the time to first production, while maintaining a reasonably consistent rate of production through the project's mine life.

Total mine production from Midwest Main is expected to be 37.4 million pounds of U_3O_8 (100% basis) over approximately 6 years.

Figure 1-3: Mining Phases for the Midwest Main Deposit



(Source: Denison, 2024)

In situ recovery (ISR) mining, also known as solution mining, involves leaving the host rock in the ground and extracting the minerals from the deposit by dissolution, which occurs via a series of drillholes serving as injection and recovery wells and the use of a leaching solution (lixiviant) to dissolve the uranium mineralization contained in the host rock, and recover a uranium bearing solution (UBS) to the surface. Once recovered, the UBS is transported to a mineral processing facility, where the uranium is recovered using processes that are standard for the latter stages of processing in conventional uranium mills. Consequently, when compared to other open pit and underground mining methods, ISR mining has the potential to result in reduced surface disturbances and significantly less tailings and waste rock generation.

Key features of the application of ISR at the Midwest deposit include:

- Utilization of a low pH / acidic mining solution.

- Injection and recovery wells on a 10 m spacing in 5-spot patterns with the recovery wells placed in the centre of a ring of injection wells.
- A total of 676 ISR wells are required for complete coverage of the deposit.
- Use of a freeze wall (curtain) surrounding the mining area, requiring 341 individual freeze holes.
- Utilization of commercial permeability enhancement techniques to increase hydraulic conductivity of the near well environment within the deposit, where necessary.
- Annual steady state production of 6.1 Mlbs/yr.
- Monitoring wells will be installed outside the freeze wall, around the perimeter of the mineralized zone, and within the overlying and underlying aquifers, as dictated by geologic and hydrogeologic parameters, resulting in 50 wells spaced approximately 125 meters apart.

The ISR mining method modelled for utilization at Midwest Main differs from other global applications of ISR mining in four principal ways:

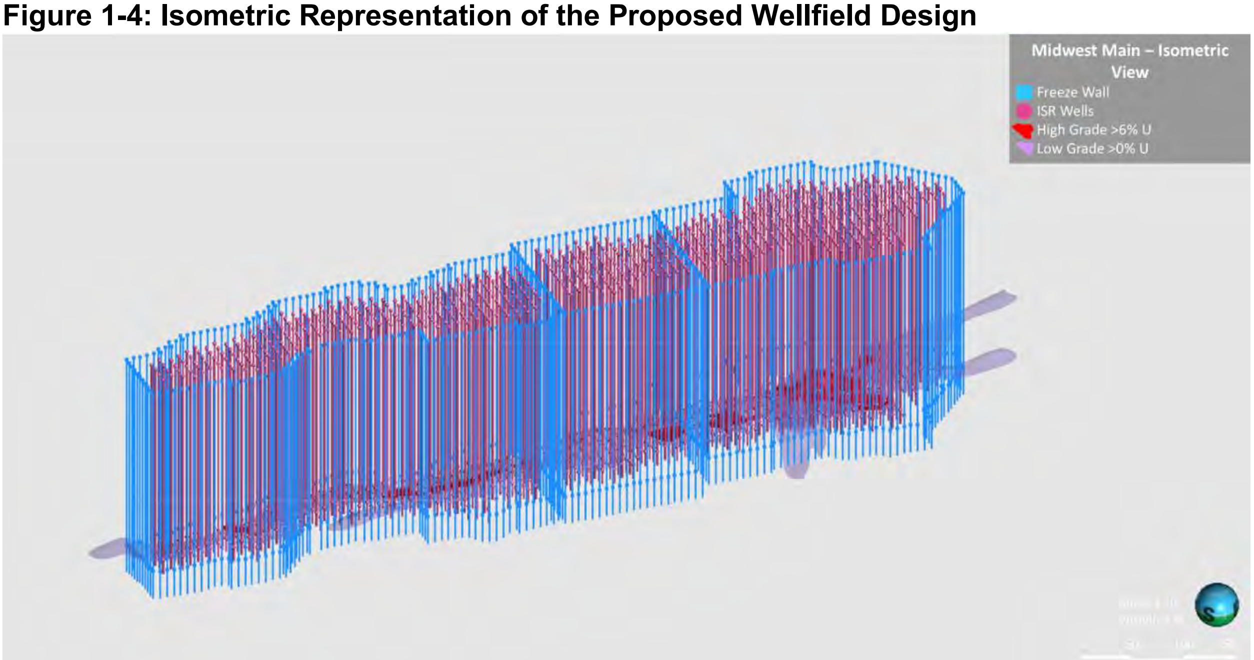
- Firstly, the PEA contemplates a tertiary lixiviant containment method around the perimeter of the mineralized zone through the implementation of an artificial freeze wall (curtain) surrounding the deposit. In conventional ISR operations, containment is typically achieved using natural impermeable layers (horizontal) in the geological strata and/or by creating a natural drawdown of the water table towards the ore zone (i.e. pumping out more solution than injecting). At the Midwest Main deposit, there is a natural impermeable layer below the deposit, but the ground is otherwise hydraulically connected to the regional groundwater associated with the Athabasca Basin. Injection and recovery well flow rates will be targeted to maintain an inward hydraulic gradient (i.e. pumping out more solution than injecting), to achieve containment. The freeze wall has been designed to add a layer of redundancy to the containment. Freezing technology and methodologies that are being considered for containment are either well established throughout the world and in the Athabasca Basin or have been studied extensively at other project sites in the Athabasca Basin.
- Secondly, in conventional ISR operations, the geology of the ore zones is required to be relatively homogeneous in terms of permeability to allow the lixiviant to flow through the host rock and come into contact with the typically low-grade uranium mineralization widely spread throughout the deposit. Conversely, the Midwest Main deposit does not have homogeneous permeability, as the geology of the deposit is highly variable, with severe fracturing, broken and desilicified sands, and zones of high clays and high-grade uranium metals. With the presence of zones grading >10% U_3O_8, mass and volume loss from

uranium leaching is expected. Due to this comparatively complex geology, permeability is expected to increase as the uranium mineralization is dissolved during the mining process. Additionally, permeability enhancement techniques are being explored by Denison to optimize recovery of the deposit.

- Thirdly, in conventional ISR operations, mineralization is typically low-grade and thus UBS mill feed concentrations require the use of ion exchange or solvent extraction processing equipment to concentrate the uranium to allow for the efficient precipitation and packaging of the final product. To meet annual production requirements, the volume of solution to be processed to recover the uranium is quite large in low-grade ISR applications. Conversely, due to the high-grade nature of the Midwest Main deposit, an estimated UBS grade of 7.5 g/L has been modelled, requiring little processing for the purpose of concentrating the uranium for precipitation and packaging
- Fourthly, conventional low-grade ISR operations have mineralization that is typically spread out over several square kilometres. The low-grade nature of these types of deposits necessitate wider drillhole spacing, increased reagent consumption, and larger quantities of surface piping and pumping for distribution systems, which contribute to creating comparatively higher economic thresholds that can adversely impact the economic viability of some deposits.

An isometric representation of the proposed wellfield design is shown in Figure 1-4.

Figure 1-4: Isometric Representation of the Proposed Wellfield Design



(Source: Denison, 2024)

A key hydrologic property that affects ISR mining is the permeability (hydraulic conductivity) of the ore zone and, just as importantly, the hydraulic communication (interconnectedness of the permeability/porosity) across the ore zone. The ability to transmit fluids through the ore body via well injection and recovery is fundamental to the efficacy of ISR mining.

Denison has performed the collection of site-specific hydrogeological data from hydraulic testing and permeameter testing. The hydraulic testing was carried out in different areas of the Midwest Main deposit through a combination of multi-well pump and injection tests with a primary focus on the mineralized zone. Select boreholes were subjected to packer testing during the advancement of drilling and certain other boreholes were tested after the well was completed with casing and or screens. Permeameter tests were completed on drill cores that were recovered from the ore zone and overlying and underlying strata at the site. Denison has developed and applied this hydrogeological testing methodology at other projects within the Athabasca Basin (see section 16.4.2 for detailed permeameter testing methodology).

1.2.8. Recovery Methods

The ISR operation leaches the uranium and other minerals in the deposit underground, leaving behind the host rock that is typically handled and processed as waste in a conventional mining application. Compared to a conventional mining operation, the application of ISR to the Midwest Main deposit is expected to (1) simplify the recovery process primarily by bypassing processing circuits typical for conventional mining operations, such as: Grinding, Leaching, and Countercurrent Decantation (CCD) unit operations, and (2) result in a reduction of tailings requiring management and disposal.

Final mineral processing of UBS recovered from Midwest Main is assumed to occur at the McClean Lake Mill; however, no commercial agreement is in place for such processing. The McClean Lake Mill is owned pursuant to the contractual McClean Lake Joint Venture (MLJV) between Orano (77.5%) and Denison (22.5%), which are the same parties to the MWJV.

Processing Midwest UBS at the McClean Lake Mill is expected to require minor mill modifications. Midwest UBS, trucked to the mill, would be stored in tanks, providing surge capacity for both the mine and mill. From the UBS storage area it would be pumped into the clarification circuit for fines removal prior to solvent extraction. Following clarification, the solution would be processed as per the current mill flowsheet.

The McClean Lake Mill is expected to process the Midwest UBS together with other ores to maximize economics, as the Midwest production rate of 6.1 Mlbs U_3O_8 per year may be insufficient to support the operation of the full mill as a single source of production. Assuming annual production at the mill in the range of 12 to 24 M pounds of U_3O_8, the contaminants in the finished yellowcake are expected to be more reflective of the ores being processed from other sources. Contaminant levels could reach penalty levels at the refinery, especially for arsenic, which is one of the main contaminants of concern for the Midwest Main deposit. A toll milling agreement would likely need to take this into consideration.

Project execution work remaining after the PEA study can be separated into two discrete and sequential work phases, pre-construction and construction.

During the pre-construction phases, work incudes submission and approval of the project EIS, prefeasibility and feasibility study work, baseline studies and field programs, as well as completion of detailed engineering.

Once environmental submissions are in place and advanced study work commences, the Owner's team can be engaged to complete such study work, manage field work in terms of geotechnical hydrogeology, and site scale leach testing programs.

Ideally timing of these pieces of activity will coincide with the execution of a definitive feasibility study should the economics of the project continue to be attractive. It is expected that the pre-construction period will require approximately three full calendar years to complete.

Following receipt of environmental approvals and permits, as well as joint venture sanction of the project, the construction sub-phase may commence which is expected to include the following key construction activities.

- Site Preparation: Establishment of the freeze wall and ISR well fields. This involves building a berm in a portion of the lake adjacent to the western shore to provide a platform for the establishment of all the wells. Clean and special waste pads will also be constructed to facilitate the storage of wellfield and freeze hole drill core and cuttings. Should the project proceed to the next phase of study, considerable effort will be required in the design and execution planning of the berm construction as it will likely be the most significant and expensive piece of infrastructure within the project scope.
- Freeze Hole Drilling: The next step in the development of the project will be the drilling and installation of the ground freezing system, which involves drilling freeze wells, connecting brine manifolds between wells, and establishing supply and return lines to the modular freeze plants. Ground freezing needs to be in operation approximately 12 months ahead of operations to gain freeze closure between wells and establish appropriate freeze curtain thickness. The ground freezing program for the Midwest Main deposit will proceed in three phases as the project areas are prepared for production.

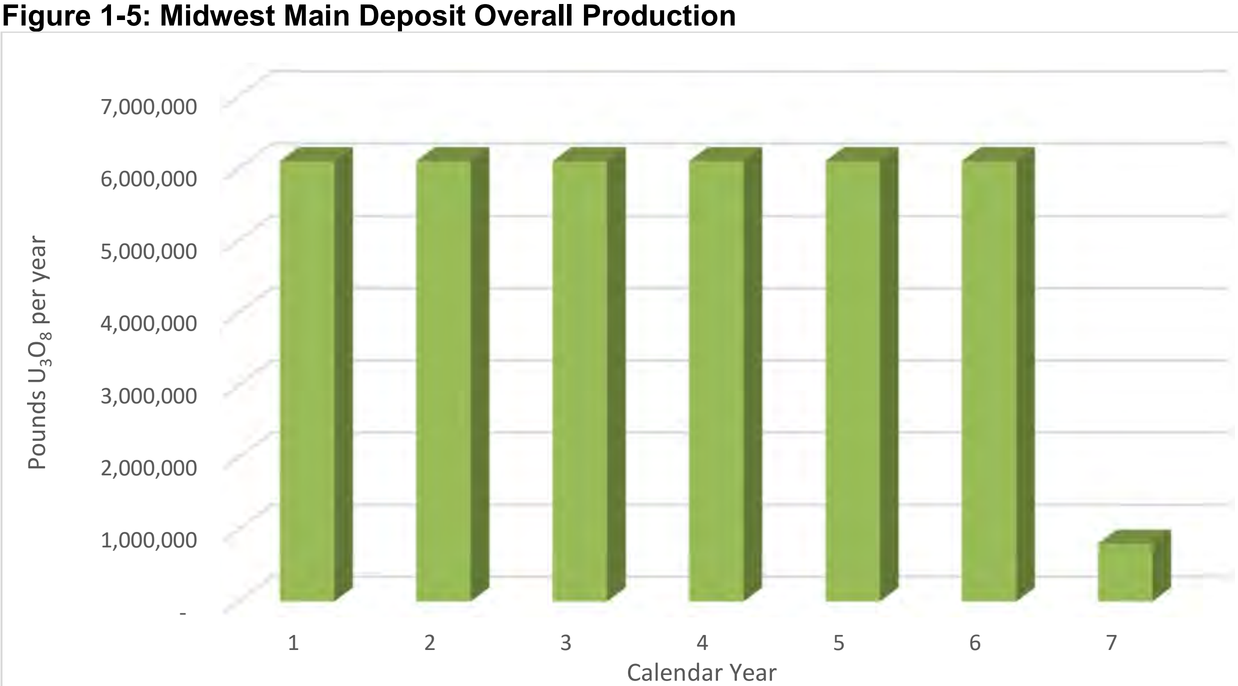
- Well Field Drilling: Wells will be established concurrent with freeze wall development. Wells will be brought online on an annual basis as required to maintain production guidance.
- Remaining project infrastructure: Lastly remaining infrastructure for the site such as office space for operations etc., and any additional infrastructure for lixiviant storage and collection of UBS can be established. Timing of many of these scopes will be relatively modest and final scheduling will direct these to be completed sequentially with establishment of the wellfield for operations

It is expected that the construction period in totality will require approximately 2 full calendar years.

1.2.9. Production Schedule

Production for the unconformity portion of the Midwest Main deposit is expected to achieve nearly 6.1 Mlbs U_3O_8 annually and the project is estimated to have approximately 6.14 years of effective operational life. Total recovered uranium is 37.4 Mlbs life of project (Figure 1-4), which is based on an estimated mining recovery of 81%. Wellfield recovery is one of the projects largest risks at this stage of study and additional test work will be required in subsequent stages of studies to collect sufficient data to support this assumption at a higher level of confidence.

Figure 1-5: Midwest Main Deposit Overall Production



(Source: Denison, 2024)

The production rate has been derived assuming the achievement of (i) a total wellfield flow rate of approximately 600 L/minute, and (ii) an average head grade of 7.5 g/L U.

1.2.10. Infrastructure

The PEA study has considered the following infrastructure elements, which have been scoped and costed at an appropriate level for a PEA study:

- Access Road and Site Preparation
- In-lake Berm
- ISR Wellfield
- Camp
- Operations Centre
- Fuel Storage and Dispensing
- Propane Storage and Dispensing
- Electrical Power Distribution
- Freeze Plant Surface Infrastructure
- Water Supply
- Water Management
- Waste Management
- ISR Wellfield Waste Rock Management
- Lixiviant and UBS Handling Infrastructure

1.2.11. Environmental Studies, Permitting, Social & Community Considerations

On August 28, 2019, the Government of Canada enacted the *Impact Assessment Act* (IAA) outlining the new Federal assessment requirements for projects listed as a Designated Activity within the Physical Activities Regulations. According to these regulations, an EA under the IAA would not be required for a new uranium mine if the mine has an ore production capacity of less than 2,500 t/day. It is not expected that the mining of Midwest Main via ISR would trigger the IAA; however, the Environment and Climate Change Minister may use discretion to designate a project to proceed through IAA based on its characteristics, location, or public concerns. The potential for the Environment and Climate Change Minister to designate the Midwest Main project be subject to the IAA is considered to be low, as the Canadian Nuclear Safety Commission (CNSC) already provides strong federal environmental oversight as a life-cycle regulator for nuclear projects (including uranium mines) in Canada. Additionally, the mining of Midwest Main and the associated milling at McClean Lake is currently approved under a previous federal environmental assessment; the Comprehensive Study Report (CSR) (CNSC, 2012) was completed under the *Canadian Environmental Assessment Act* (CEAA 1992). When considering the existing EA approval and the current requirements under IAA, the Midwest Project is not expected to trigger a new federal assessment under the IAA.

Although an EA under the IAA is not likely required, an environmental protection review (EPR) under the *Nuclear Safety and Control Act* is expected to be required as part of the CNSC licensing process, per REGDOC 2.9.1. The CNSC conducts EPRs for all licence applications with potential environmental interactions in accordance with its mandate under the *Nuclear Safety and Control Act* to ensure the protection of the environment and the health of persons. An EPR is a science-based environmental technical assessment by CNSC staff as set out in the *Nuclear Safety and Control Act*. Where there are potential environmental interactions, an EPR is conducted for projects not subject to the IAA or other applicable EA legislation. As outlined in the McClean Lake Operation's current Licence Conditions Handbook, prior to constructing or operating a mine for Midwest, Orano is required to submit detailed construction and operating plans, as well as designs and programs for mining to the CNSC so that it can be verified that the proposed activities meet CNSC requirements and remain within the licensing basis for the McClean Lake Operation.

Other federal legislation will need to be considered as the project advances. This includes and is not limited to: *Fisheries Act*, *Species at Risk Act*, *Migratory Birds Convention Act*, *Canadian Navigable Waters Act*, and *Transportation of Dangerous Goods Act*. Of the federal legislation listed here, the Harmful Alteration, Disruption or Destruction of Fish (HADD) under the *Fisheries Act* is expected to be a focus, as well as the general considerations for Species at Risk (SAR), including woodland caribou.

1.2.12. Capital and Operating Costs

The capital cost estimate for the PEA meets the requirements of National Instrument: NI 43-101 - Standards of Disclosure for Mineral Projects, and AACE International Recommended Practice 47R-11: Cost Estimate Classification System - As Applied in The Mining and Mineral Processing Industries for a Class 5 estimate.

Accordingly, the expected accuracy of the estimate is in the range of -20% to -50% on the low side and +30% to +100% on the high side at an 80% confidence interval.

The status date of the estimate is Q4 2024. There is no allowance for future cost escalation beyond estimated contingencies.

Pricing received in US dollars was converted to Canadian dollars at an exchange rate of CAD$1.3500:USD$1.000. No allowance for future currency fluctuation is included.

The total estimated capital costs of the project is CAD$701.2M and incudes a contingency of approximately CAD$68.8M.

The initial capital cost includes detailed engineering, procurement, construction, commissioning and start-up, but excludes approximately CA$16.8M of project evaluation and development prior to the start of detailed engineering.

Sustaining capital costs consist of ongoing expansion of the wellfield during the production period, and expansion of the production pad. Sustaining capital costs also include 5 years of remediation followed by 2 years demolition. Table 1-4 presents a summary of the initial and sustaining capital estimates.

Table 1-4: Capital Cost Summary (CA$ 000's)

Description	Initial Note 1	Sustaining	Total
ISR Wellfield	95,630	239,254	334,884
Milling (McClean Mill Modifications)	2,860		2,860
McClean Lake Sustaining Capital		37,400	37,400
Surface Facilities	1,612		1,612
Utilities	884		884
Electrical	11,249		11,249
Civil & Earthworks	46,298	39,735	86,033
Road Upgrades (Midwest to McClean)	1,223		1,223
SaskPower Line to Midwest	2,860		2,860
Surface Mobile Equipment	1,827		1,827
Remediation		86,849	86,849
Demolition		21,570	21,570
Contractor Direct Field Support Costs	12,333	5,393	17,726
Subtotal Direct Costs	176,776	430,201	606,977
Project Indirect Costs	18,816	6,651	25,467
Subtotal Direct + Indirect Costs	195,592	436,852	632,444
Contingency	58,677	10,084	68,761
Total Capital Cost (CAD$ 000's)	**254,629**	**446,936**	**701,205**

Note 1: Initial capital costs exclude $16.8 million of estimated pre-construction project evaluation and development costs

General Notes: Totals may not sum precisely due to rounding. Status date of estimate Q4 2024.

As noted in Table 21-1, certain costs associated with pre-construction project evaluation and development are excluded from the initial capital estimate.

Operating costs were estimated for six years and two months of mine production and are summarized in Table 1-5. A recovery rate of 98.5% has been assumed for processing of the UBS from the Midwest Main deposit at the McClean Lake Mill. The total life-of-mine OPEX of CAD$15.741 per lb of U_3O_8 is equivalent to USD$11.660 per lb of U_3O_8 at a USD to CAD foreign exchange rate of 1.350.

Table 1-5: Operating Cost Summary

Operating Cost Summary	100% Project	Mill Feed	Recovered 98.5%
Midwest Main Deposit	CAD$1,000	CAD$/lb U_3O_8	CAD$/lb U_3O_8
OpEx – Mining	106,490	2.846	2.889
Opex – Milling	430,375	11.500	11.675
Opex – Transport, Weigh, Assay (Converter)	19,703	0.526	0.534
Opex – G&A Site Support	3,958	0.106	0.107
Opex – G&A Administration and Other	19,736	0.527	0.535
Total Opex	**580,262**	**15.505**	**15.741**
Mill Processing Costs	374,239	10.000	10.152
Mill Toll	56,136	1.500	1.523
Milling Total	**430,375**	**11.500**	**11.675**
Transport to Converter - CAD$/lb	7,741	0.207	0.210
Converter Weighing, Sampling & Assaying	11,962	0.320	0.325
Transport Total	**19,703**	**0.526**	**0.534**
Applicable pounds of U_3O_8		**37,423,944**	**36,862,585**

1.2.13. Economic Analysis

For the purpose of assessing the economic merit of the proposed ISR mining plan for the Midwest Main deposit, the economic evaluation has been completed on a 100% project basis, independent of the entity level ownership of the MWJV. All applicable taxes are calculated on a stand-alone project basis, which assumes initial tax pools are set to zero. Actual after-tax results realized by the owners of the MWJV may differ from this assessment for a variety of entity-specific reasons.

Key assumptions in the economic analysis include:

- The evaluation of the project is on a 100% ownership basis;
- Net Present Value ("NPV") calculations use a discount rate of 8% and are measured to the start of construction, which is assumed to occur at year -2; and,.
- Discounting is on a mid-year basis.

The base case cash flow model is based on the inputs noted in Section 7.1 and excludes:

- Toll milling profit attributable to MLJV partners
- $16.8 million in estimated pre-construction project evaluation and development costs.

The highlights of the economic analysis are shown in the following tables.

Table 1-6: 100% Project Cash Flow Evaluation

Cash Flow Evaluation 100% Project	
Project Cash Flow Summary	**From Yr -2 C$1000**
U3O8 Revenue	3,981,159
Opex - Mining	-106,490
Opex - Milling	-430,375
Opex - Transport, Weigh, Assay re Convertor	-3,958
Opex - G&A Site Support	-21,148
Opex - G&A Admin / Other	-19,703
Operating Cash Flow with Tolling	3,399,485
Saskatchewan Resource Surcharge	-118,844
Saskatchewan Basic Royalty	-168,362
Operating Cash Flow With Basic Royalties	3,112,280
Capex - Project Evaluation / Development (Pre-FID)	0
Capex - Off-Site Infrastructure	-4,083
Capex - Surface Infrastructure / Mining / Milling	-566,574
Capex - Decommissioning	-130,546
Project Total Cash Flow - Pre-Tax	2,411,075
Sask. Profit Based Tiered Royalty - Midwest	-389,756
Fed. / Prov. Income Tax - Midwest	-571,100
Project Total Cash Flow - After Tax	1,450,219

Denison Midwest MW35+(DX 2149-CCE-001_RevM_2025-01-21+edit) - LDS 2025-08-18.xlsx

Notes: Values in tables may appear not to sum due to rounding. Capex excludes additional pre-construction expenditures of CAD$16.8 million.

Table 1-7: 100% Project DCF Metrics

100% Projct DCF Metrics				
DCF Metrics Midwest Project			Project "Pre-Tax"	Project After Tax
IRR		%	111.1%	82.7%
Payback		Years	0.5	0.7
NPV	0.0%	C$1000	2,411,075	1,450,219
NPV	8.0%	C$1000	1,618,018	964,268
U3O8 Wtd Avg Price			80.00 US$/lb	
			108.00 C$/lb	
DCF Metrics are measured from Year -2 on				
NPV Discounting from Year -2 with Mid-Year convention				

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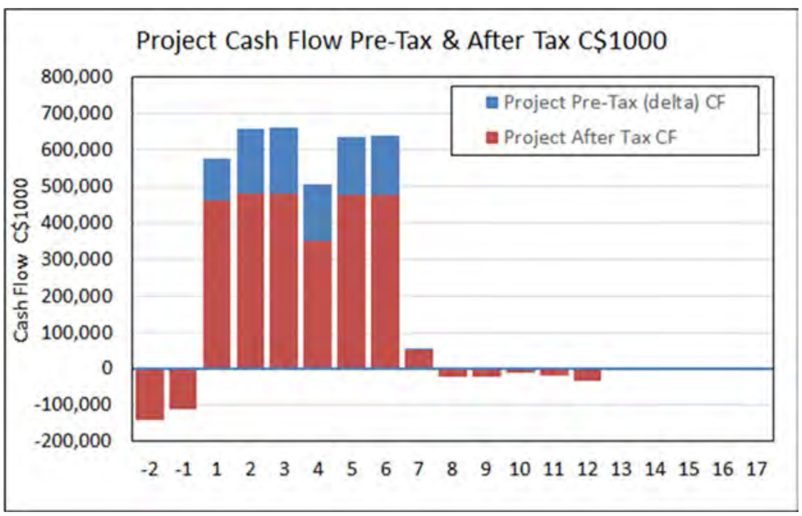
Figure 1-6: 100% Project Cash Flow Pre-Tax & After Tax



(Source: LDS Economic Model, 2025)

1.3. Risks and Opportunities

1.3.1. Risks

- Due to the variable nature of the HG domains and the fact that they represent the majority of the Midwest Main deposit mineral resource, the estimated uranium content could change as a result of additional infill drilling, which would provide further definition of the high-grade uranium mineralization within the deposit footprint.

- The conversion from downhole radiometric data to equivalent uranium grades is common practice by uranium companies in the Athabasca Basin and is accepted in CIM's guidelines for best practices in uranium estimation. However, the use of equivalent grades is used in place of direct measurements and presents a risk of under or over prediction. The equivalent grades were reviewed and deemed to be acceptable, but in areas of poor recovery, the accuracy of the equivalent grades cannot be completely confirmed. The estimate for Midwest A relies heavily on radiometric equivalent grades (representing 64% of the samples used for resource estimation), and as a result is subject to increased risk from the uncertainty of using downhole radiometric data.
- There is a lack of modern density data from the Midwest Main and Midwest A deposits, thus the density regression equations are informed by minimal data resulting in uncertainty in the representativeness of the equations and the resulting estimate of tonnes.
- The permeability of the Midwest Main deposit is based on a preliminary analysis of relevant factors. If the permeability of Midwest Main were to be lower than expected, calculations supporting flow rates and ultimate production levels could be overstated. Future test work to characterize the hydrogeology within and around Midwest could include groundwater elevation measurements, packer tests, single well injection and/or pump tests, cross-hole injection and/or pump tests, well pattern scale tracer tests, pre- and post-permeability enhancement testing, on-core permeability measurement, downhole geophysics, and numerical groundwater flow modelling. Future testing should be designed to reduce hydrologic risks associated with the project.
- Groundwater monitoring wells to verify containment of mining solutions may need to be employed to ascertain that no impact on adjacent waterways or environmental effects will occur during operations.
- Uranium leach rates may be less than expected. This could be due to a variety of factors including differences between site and laboratory conditions, temperature, mineralogy, lixiviant access to uranium mineralization, etc.
- Toll milling and waste disposal agreements with McClean Lake are required, as well as confirmation of the availability of production capacity are required.
- Similar to other ISR cost estimates, project construction indirect costs are currently estimated to represent a lower percent than other typical conventional uranium development and construction projects. This is due to the comparatively simple and lower risk execution scope at Midwest Main and the fact the site is well accessed by existing regional infrastructure. Should further study work be completed indirect costs should be refined through more involved first principles costs buildups.
- Project development and evaluation costs have been estimated using factored and escalated data from other Athabasca Basin ISR projects where possible. The use of data

from other ISR projects that are in further development stages was chosen to leverage the higher level of definition those projects have undergone, but the risk is that the details are not specific to this deposit and require further development in future stages of technical assessment.

- Previous underground test mining may need to be decommissioned prior to deployment of the ISR mining method. Sealing off the existing underground workings from surface may be required. While achievable, this may require significant technical planning and careful execution.
- Although Transportation of Dangerous Goods (TDG) and regulatory requirements for UBS transportation have been considered and studied, further assessment for the method of transportation is expected to be required to support future regulatory approvals.

1.3.2. Opportunities

- Additional review of UBS characteristics and lixiviant composition, including trade-off analysis, is required to support a further assessment of the optimal method of transport of UBS to and lixiviant from the McClean Lake Mill.
- Optimization of the timing of wellfield berm construction and related ISR production phasing to ensure optimal use of capital when required.
- Co-development of other local deposits, including Midwest A, could improve the economics of the project.
- Current operational and decommissioning costs do not include potential reductions in electrical power consumption required to maintain the freeze wall and do not currently consider the potential to progressively decommission early mining phases during active production of later phases.
- Upgrade of inferred resource and definition of subsequent HG areas to concentrate future Berm and ISR pattern designs to reduce the footprint and scope of upfront CAPEX.

1.4. Conclusions & Recommendations

Based on the review and interpretation of existing hydrogeological & metallurgical studies summarized in previous NI 43-101 reports, and data from the field programs and ongoing laboratory testing, the Midwest Main deposit is considered amenable to ISR mining. The application of the ISR mining method has the potential represent a technically sound and economically robust means to extract significant uranium production from the high-grade Midwest Main deposit.

Given favourable technical and economic results from this preliminary evaluation, it is recommended that the study of the application of the ISR mining method to the Midwest Main deposit be advanced to the Pre-Feasibility Stage, and that Pre-Feasibility study work include the following activities:

- Additional work to understand and classify the permeability characteristics of the host rocks, including additional permeability testing and field verification, as well as additional leach tests. Physical testing should also seek to verify the expected results of in-situ permeability enhancement efforts.
- Review existing and ongoing work completed on other projects to ensure that well designs and drilling technologies assumed in the PEA are well suited to application at Midwest Main.
- Detailed review of infrastructure designs to ensure they are fit for purpose for the location and the scope of the project.
- Develop a comprehensive list of trade-off studies to be considered and/or revisited and ensure full decision analyses are completed.
- Verify costing elements through use of higher classification of cost models.
- Further refinement of financial analyses including applicable sensitivities.

1.4.1. Mineral Resources

UMR's resource related conclusions, observations, and recommendations for the Midwest Main Deposit are summarized below.

- Orano's Midwest Main mineral resource estimate, effective date of December 2, 2024, is reasonable and meets the requirements for public disclosure in accordance with NI 43-101.
- Mineral Resources of Midwest Main were classified as Indicated and Inferred based on (1) the sequence of kriging estimation run, (2) kriging slope, and (3) geological confidence. In UMR's opinion, the Mineral Resource classification methodology is reasonable. However, UMR recommends that future mineral resources of Midwest Main are classified on drillhole spacing, while considering geological understanding and complexity.
  - Mineral resources are uncertain because of variability at all scales and sparse sampling. The variables constituting the mineral resource, the volume of the geological interpretation, and the grade estimates within that volume, are the sources of uncertainty. These uncertainties are typically a function of drill spacing, with denser spacing equating to less uncertainty and sparser spaced areas having more uncertainty. This uncertainty is reflected in the reporting of the mineral resources, where resources within areas of more dense drill spacing are categorized as Indicated (or Measured) and the resources within more sparse drill spacing are classified as Inferred. The Midwest Main resource classification is, in

part, an indirect proxy to drillhole spacing. Converting to drillhole spacing for classification will adhere to the well-studied concept that more drilling reduces uncertainty.

- The composite size, block size, variography modeling, and estimation parameters are appropriate for the deposit in UMR's opinion. However, UMR recommends minor changes to the search orientations to better reflect individual wireframe geometry in future iterations of the model.
- The block and composite grades correlate well visually within the Midwest Main Deposit.
- There is a lack of modern density data at Midwest Main, resulting in the density regression equations being informed by minimal data. The density equations correlate well with the historic density measurements, but uncertainty remains in the representativeness of the equations. UMR recommends collecting more density data in future drill programs to reduce the uncertainty in the regressions.
- The density measurements were not used in the mineral resource database; only the regression values were used. UMR recommends implementing a hierarchical approach to the management of density values where the measured values are maintained, and the regression is only used where data is missing.
- UMR recommends that a probabilistic drillhole spacing study be completed on the deposit to better inform future drillhole spacing for mineral resource classification.
- Use of geostatistical techniques to quantify the uncertainty of the deposit to inform decisions as it relates to mining evaluation, planning, and extraction. The uncertainty associated with the volume, grade, and density variables of the deposit are to be the focus of the study, as these variables define the overall metal content of the deposit, the largest input to project economics.
- Detailed studies on the management of high-grade outliers are recommended, such as metal-at-risk evaluations, mean uncertainty analysis, continued sub-domaining, etc.

UMR's independent resource related conclusions, observations, and recommendations for the Midwest A Deposit are summarized below.

- The Midwest A mineral resource estimate was constructed by Orano in November 2017 and subsequently underwent revisions from SRK in 2018. UMR reviewed the final model and determined it is current, reasonable, and meets the requirements for public disclosure in accordance with NI 43-101.
- Mineral Resources of Midwest A were classified as Indicated and Inferred based on drill hole spacing, the geological understanding and continuity of mineralization, data quality, spatial continuity, block model representativeness, and data density. In UMR's opinion, the Mineral Resource classification methodology is reasonable.

- No changes were made to the model since 2018 but the justification for the reporting cutoff grade (0.085% U or 0.1% U_3O_8 grade) is updated in this document to reflect the envisioned ISR extraction method rather than an open pit scenario. Coincidently, the two envisioned mining methods use the same cut-off grade but with different assumptions.
- There are two density datasets at Midwest A: 304 specific gravity (SG) measurements from crushed mineralized sample material and 24 Dry Bulk Density measurements. The measurements from the crushed material were deemed to be inaccurate, and therefore, only the 24 Dry Bulk Density measurements were used to create the multi-element and single-element density regressions. Given a lack of data, UMR recommends collecting more density data in future drill programs to reduce the uncertainty in the regressions.
- The domain models adequately constrain the mineralization for estimation purposes; however, the single low-grade domain represents a combination of basement-hosted, structurally controlled mineralization, unconformity mineralization, and perched mineralization. The generalized wireframe makes estimating discrete features and trends difficult, therefore UMR recommends that individual wireframes be created to represent the three mineralization types observed at the deposit. In estimation, the individual domains can be given specific orientations for interpolation and the use of a soft boundary between the domains will ensure there are not abrupt changes in grade continuity where the domains meet.
- The model uses up to 30 samples per block estimate, which, in UMR's opinion, likely leads to over smoothing (overprediction of low-grade and underprediction of high-grade). The significance of the over smoothing is largely mitigated by the HYL restrictions imposed on the model, therefore, over smoothing is not considered a material risk. UMR recommends that future iterations of the estimate complete sensitivity testing relative to a Discrete Gaussian Model (DGM) to determine an appropriate number of samples per estimate. The DGM is applied to the composites and accounts for change of support using a variogram model, a normal score transformation, and Hermite polynomials. UMR expects the max number of samples per estimate to be somewhere between 5 and 12. In this case, the issues of an oversmoothed model have implications locally rather than globally.
- In estimating the mineral content of each zone at Midwest A, the individual blocks were coded to a zone (1 for the LG zone and 10 for the HG zone) and provided a percentage of how much of the block occupies each zone (e.g. 10% HG zone, 85 % LG zone, and 5% outside either zone). In UMR's opinion, this can be improved upon with a sub-block model and would be in line with the Midwest Main estimation.

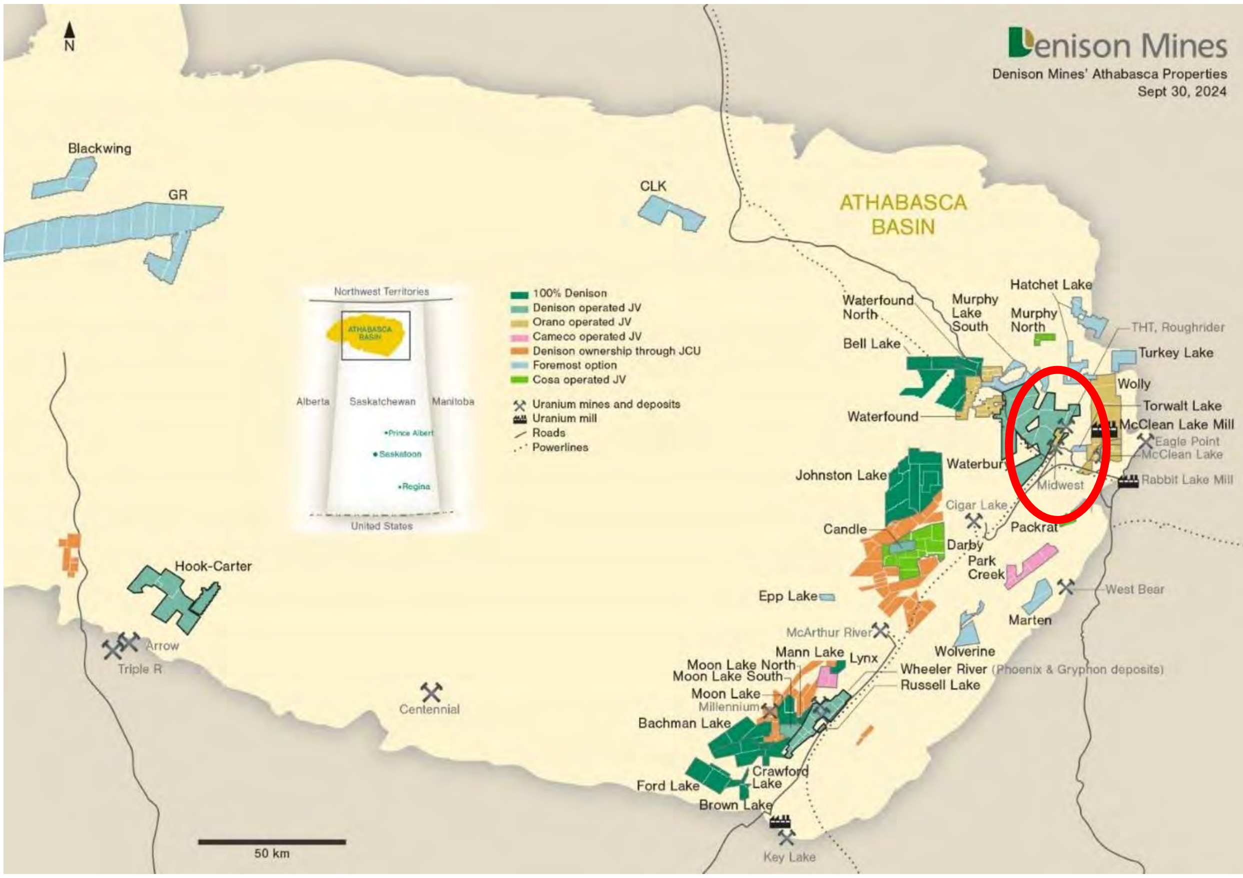
2. INTRODUCTION

2.1. Denison Mines Corp.

Denison Mines Corp. (Denison) is a uranium mining, development and exploration company with interests focused in the eastern portion of the Athabasca Basin region in northern Saskatchewan, Canada. Denison is a Canadian reporting issuer, with its common shares listed for trading on the Toronto Stock Exchange and NYSE American.

The Midwest Project is owned by the Midwest Joint Venture, which is a contractual joint venture between Denison Mines Inc. (DMI, a wholly owned subsidiary of Denison Mines Corp., 25.17%) and Orano (74.83%). In addition, Denison and its subsidiaries have an effective 95% interest in the Wheeler River project, which hosts the Phoenix and Gryphon uranium deposits, and a 22.5% ownership interest in the MLJV, which includes several uranium deposits and the McClean Lake uranium mill. Denison's eastern-Athabasca interests also include 70.55% ownership in the THT and Huskie deposits on the Waterbury Lake property, which lie along strike and within six kilometres of the Midwest Main and Midwest A deposits. Each of Midwest Main, Midwest A, THT, and Huskie are located within 15 kilometres of the McClean Lake Mill.

Figure 2-1: Midwest Project Location Map



(Source: Denison, 2024)

2.2. Terms of Reference

This Report is prepared in accordance with NI 43-101 using the industry accepted "Best Practices and Reporting Guidelines" for disclosing mineral exploration information (CIM, 2010), and the revised Canadian Securities Administrators guidelines for NI 43-101 and Companion Policy 43-101CP (CIM, 2014).

2.3. Purpose of the Report

This Report summarizes: (a) the current mineral resource estimate for the Midwest Main and Midwest A deposits; and (b) the results of the PEA for the development of only the Midwest Main deposit using the ISR mining method.

The mineral resource estimate for both the Midwest Main and Midwest A deposits has an effective date of December 2, 2024. The mineral resource estimates were prepared by Orano and reviewed by Matt Batty of UMR as independent QP, retained by Denison.

2.4. Sources of Information

This technical report is based on the following sources of information:

- Discussions with Denison personnel
- Review of exploration data collected by Orano, Denison, and previous property owners
- Information from internal sources
    - 2023 Midwest Internal Scoping Study – In Situ Recovery (ISR) Methods.
- Additional information from public domain sources
- December 2020 Waterbury Lake NI 43-101 Report “Preliminary Economic Assessment for the Tthe Heldeth Túé (J Zone) Deposit, Waterbury Lake Property, Northern Saskatchewan, Canada” (Engcomp, 2020)
    - March 2016 Cigar Lake Operation NI 43-101 Report “Technical Report on the Cigar Lake Operation Northern Saskatchewan, Canada” (Cameco, 2016)
    - January 2007 McClean North NI 43-101 Report “Technical Report on the Mineral Resource Estimate for the McClean North Uranium Deposits, Saskatchewan (RPA, 2007)
    - March 2018 Midwest NI 43-101 Report “Technical Report with an Updated Mineral Resource Estimate for the Midwest Property, Northern Saskatchewan, Canada” (Denison Mines, 2018)
    - September 2011 Hathor Preliminary Economic Assessment Report “Technical Report for the East and West Zones Roughrider Uranium Project, Saskatchewan” (SRK, 2011)
- October 2018 Wheeler River NI 43-101 “Prefeasibility Study Report for the Wheeler River Uranium Project Saskatchewan, Canada” (SRK, 2018)
    - June 2023 Wheeler River NI 43-101 “Technical Report on The Wheeler River Project Athabasca Basin Saskatchewan, Canada” (Wood, 2023)

2.5. Inspection on Property

In accordance with NI 43-101 guidelines, Mr. Matt Batty of UMR attended the Midwest Project property on July 3, 2024. The purpose of the site visit was as follows:

- Review of drill core from three representative drillholes,
- Confirmation of five drillhole collar locations,
- Review and verification of the geological setting / environment of the Project,
- Review of drilling, logging, sampling, analytical and QA/QC procedures, and
- Review of overall site facilities.

2.6. Abbreviations and Definitions

Abbreviations and acronyms commonly used in this report are presented in this section. Metric (SI System) units of measure are generally used in this report unless otherwise stated. All currency used in this report are in Canadian dollars (CAD) unless otherwise stated.

Analytical results are reported as parts per million (ppm U) contained for uranium; however, they may be converted to U grades in the database. For the purpose of this report chemically analysed samples will be stated as percent %U or % U_3O_8. Uranium values derived from radiometric probe analysis will be stated in this report as equivalent percent uranium (eU%) or equivalent percent uranium oxide (% eU_3O_8).

2.6.1. Abbreviations of Units and Names

Abbreviation	Description
%	Percent
°	degree (degrees)
°C	degrees Celsius
µm	micron or micrometre
CAD	Canadian dollar
cm	Centimetre
cm2	square centimetre
cm3	cubic centimetre
cps	counts per second
Denison	Denison Mines Corp.
eU	equivalent uranium
eU_3O_8	equivalent uranium oxide
g	Gram
ha	Hectares
HADD	Harmful Alteration, Disruption or Destruction of Fish
ICP	inductively coupled plasma emission spectroscopy, an analytical procedure
ID2	inverse-distance squared, an estimation methodology
ID3	inverse-distance cubed, an estimation methodology
kg	Kilograms
km	Kilometre

Abbreviation	Description
kt	thousand tonnes
l	Litre
lb	Pound
M	Million
m	Metre
m2	square metre
m3	cubic metre
Ma	million years
mL	Millilitre
mm	Millimetre
mPa.s	millipascal seconds
m a.s.l.	metres above sea level
MeV	mega-electron volt
NWPA	Navigable Waters Protection Act
KWULP	Korea Waterbury Uranium Limited Partnership
KHNP	Korea Hydro & Nuclear Power
NI 43-101	Canadian National Instrument 43-101
ppm	parts per million
REE	Rare Earth Elements
RQD	Rock Quality Description
s	Second
SAR	Species at Risk
SG	specific gravity
SRC	Saskatchewan Research Council
t	tonne (metric ton) (2,204.6 pounds)
U	Uranium
%U	percent uranium (% U x 1.179 = % U_3O_8)
U_3O_8	uranium oxide (% U_3O_8 x 0.848 = % U)
% U_3O_8	percent uranium oxide
UBS	uranium bearing solution
USD	U.S. Dollar
UTM	Universal Transverse Mercator
WLULP	Waterbury Lake Uranium Limited Partnership
XRD	x-ray diffraction, an analytical procedure
yr	year

3. RELIANCE ON OTHER EXPERTS

This Report was completed by Engcomp and a team of industry experts utilizing available information as listed in Section 2.4. Information contained in the public reports has been reutilized where applicable in this report.

The following is the list of external experts that contributed to the PEA study summarized herein.

- **Engcomp Engineering & Computing Professionals Inc.** – Lead Author
- **Petrotek** – Hydrogeology and Mining
- **Newmans Geotechnique** – Artificial Ground Freezing & Permafrost Engineering
- **Understood Mineral Resources** – Geological Modeling & Mineral Resource Estimation
- **Bennett Hain Consulting Ltd.** – Environmental
- **Lawrence, Devon, Smith & Associates Ltd.** – Economic Modelling
- **CanCost Consulting Inc.** – Cost Estimating

4. PROPERTY DESCRIPTION AND LOCATION

4.1. Location

The Midwest property is located within the eastern part of the Athabasca Basin in Northern Saskatchewan (Figure 4-1) The mineral lease dispositions (Table 4-1) are within the 1:50,000 NTS topographic sheet 74I/8. The Midwest Main deposit is centred approximately at 553,700 Easting and 6,462,935 Northing (UTM NAD 83; Zone 13 north). The Midwest A deposit is centred approximately at 555,000 Easting and 6,465,000 Northing (UTM NAD 83; Zone 13 north).

The Northern portion of the property is located on South McMahon Lake, about one kilometre from the Points North Landing airstrip and about 25 kilometres west by existing roads from the McClean Lake Mill on the McClean Lake property. The north-western portion of the Points North Landing airstrip crosses the Midwest claims. The site is approximately 750 kilometres by air north of Saskatoon and about 420 kilometres by road north of the town of La Ronge.

4.2. Mineral Disposition and Tenure

In Saskatchewan, mineral resources are owned by the Crown and managed by the Saskatchewan Ministry of Energy and Resources using the Crown Minerals Act and the Mineral Tenure Registry Regulations, 2012. Staking for mineral dispositions in Saskatchewan is conducted through the online staking system, Mineral Administration Registry Saskatchewan (MARS). Mineral dispositions for the Project were staked prior to the implementation of MARS but are now recorded within the registry. These dispositions give the stakeholders the right to explore the lands within the disposition area for economic mineral deposits.

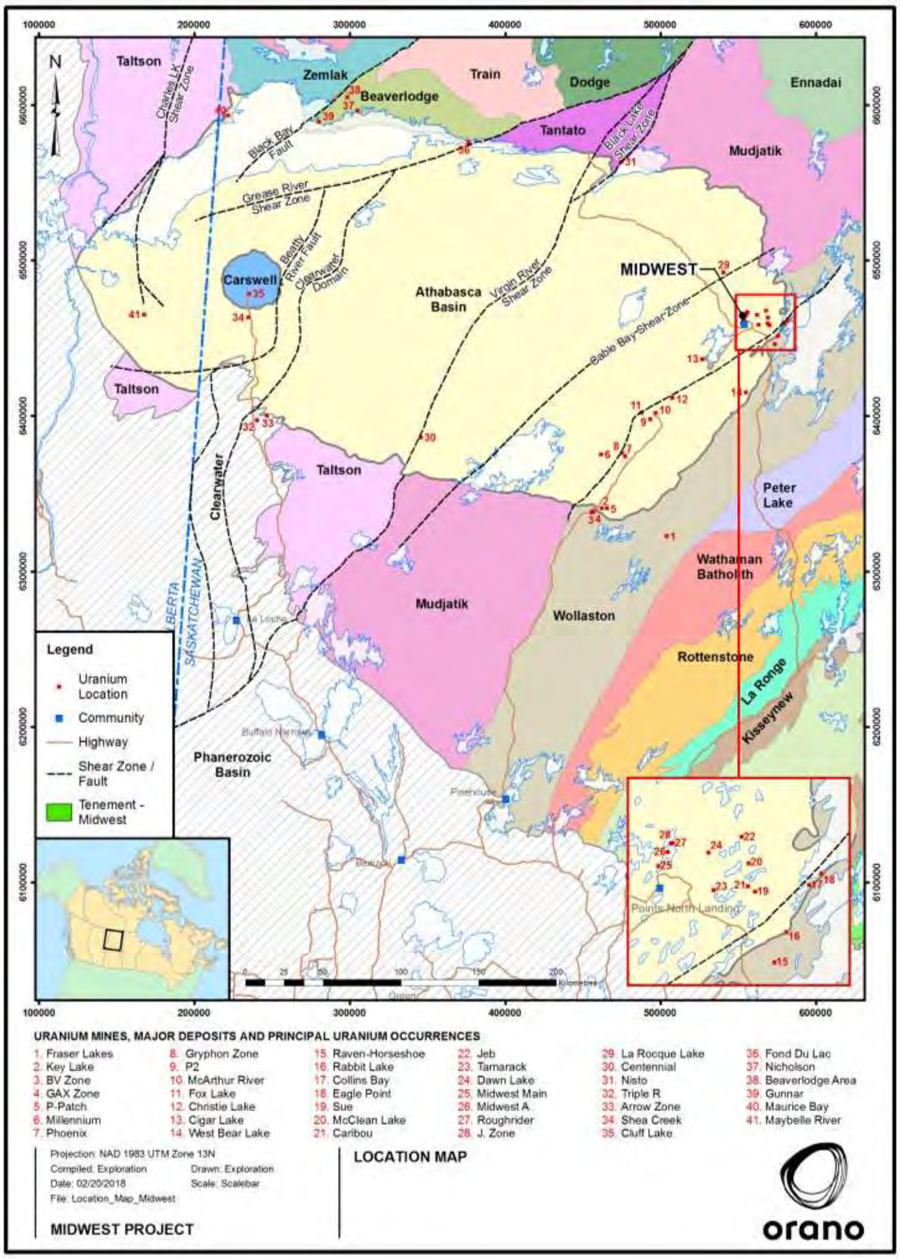
The land disposition on the Midwest Project, as of December 2024, is shown in Table 4-1 and Figure 4-1, and is comprised of three (3) contiguous mineral leases, covering 1,426 ha. The Midwest Main deposit is located within mineral lease ML 5115. The Midwest A deposit is located within mineral leases ML 5264 and ML 5265.

The annual assessment rate for each mineral lease is C$75.00 per hectare. Each mineral lease currently has sufficient approved credits to maintain the ground in good standing until at least 2044. There is no current production from these mineral leases. In addition to the minimum annual expenditures, leases must be renewed with the Government of Saskatchewan every 10 years as part of an administrative process.

Table 4-1: Midwest Project – Land Status Summary

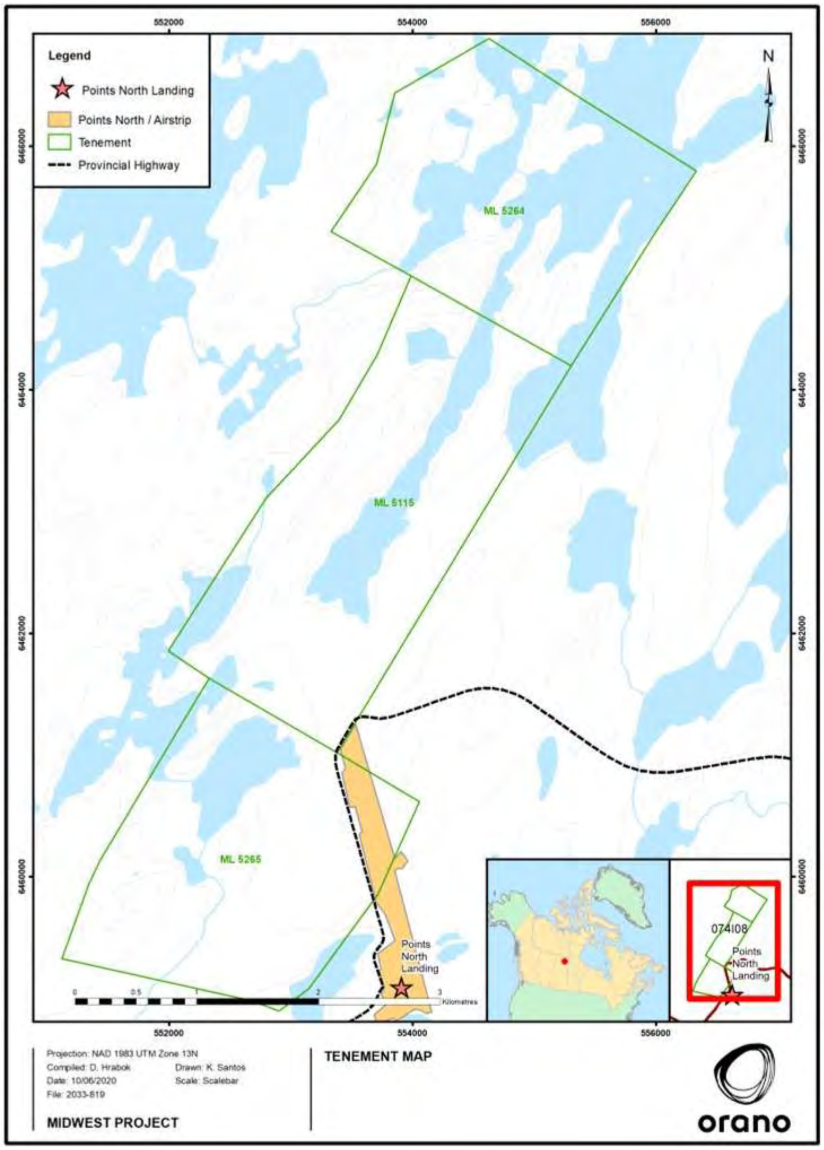
Claim/Lease Number	Size (ha)	Annual Assessment	Excess Credit	Recorded Date	Lapse Date	Good Standing Date
ML 5115	556	$41,700.00	$695,000.00	1973-12-02	2044-12-01	2045-03-01
ML 5264	446	$33,450.00	$635,550.00	1978-12-02	2043-12-01	2044-02-29
ML 5265	424	$31,800.00	$31,800.00	1978-12-02	2043-12-01	2044-02-29
Total:	**1,426**	**$106,950.00**	**$1,934,750.00**			

Figure 4-1: General Location Map, Midwest Project



(Source: Orano, 2018)

Figure 4-2: Location of Mineral Dispositions, Midwest Project



(Source: Orano, 2020)

4.3. Ownership

The Midwest Project is an advanced uranium exploration stage contractual joint venture first established in 1966 and currently held by DMI (25.17%) and Orano (74.83%). Orano is the project operator.

4.4. Nature and Extent of Title

The exclusive right to explore for, dig, work, mine, recover, procure, and carry away the minerals within the specified area of the Midwest Project has been granted by the Province of Saskatchewan pursuant to three mineral leases and subject to the future payment of production and profit royalties to the Province of Saskatchewan.

A mineral lease is issued for a term not exceeding ten (10) years and is renewable for further terms of ten (10) years, provided that certain regulatory requirements are met. The renewal process consists of a letter of intent to renew, and there is no fee involved for such renewal. The new renewal dates for the three mineral leases are 2028 for ML 5264 and ML 5265, and 2033 for ML 5115. To maintain the lease, exploration work or equivalent payment needs be applied on the non-producing leases, however, there is no need to perform work on the leases in the following years as significant credits have accumulated from previous year's exploration programs (see Section 4.2 above).

The right to use and occupy the land was granted pursuant to a surface lease agreement with the Province of Saskatchewan. The current surface lease is valid for a term of 33 years, from 2002 to 2035. Obligations under the surface lease agreement primarily relate to annual reporting regarding the status of the environment, the land development, and progress made on northern employment and business development.

4.5. Royalties, Agreements and Encumbrances

Two royalties, with identical terms, are payable on a percentage of the production from the Midwest properties, declining after payout. Orano and Denison are responsible for a portion of these royalties (declining after payout). The individual percentages and payout ratios were not set at the time of this report and are not included in the cash flow model, but it is recommended that they be defined and included in the next phase of the project. It is believed that the property royalties will have a minimal impact on the overall project cash flow and DCF metrics.

4.6. Permitting

For mineral exploration activities on land administered by the Ministry of Environment, surface disturbance permits must be obtained prior to exploration activities. The Saskatchewan Mineral Exploration and Government Advisory Committee (SMEGAC) have developed the Mineral Exploration Guidelines for Saskatchewan to mitigate environmental impacts from industry activity and facilitate governmental approval for such activities. Applications to conduct exploration work need only to address the relevant topics of those listed in the guidelines. Denison has all required permits to conduct its mineral exploration.

4.7. Environmental Liabilities

The Midwest Project has undergone environmental assessment and test mine project activities, both related to the Midwest Main deposit, but the project has not been developed. Environmental liabilities for this site are based on the decommissioning activities for the existing disturbed areas and remaining infrastructure.

An underground exploration program was conducted by a predecessor of Denison in 1988 and 1989 on the Midwest Project, specifically the Midwest Main deposit. This work consisted of constructing a dam across a portion of the Mink Arm of South McMahon Lake that allowed dewatering of that part of the lake and sinking a 185-metre shaft and a 180-metre-long drift above the deposit for test work. Currently, on the Midwest Main site there are:

- Covered shaft and headframe i(includes some underground workings);
- Inactive water treatment plant and pump house;
- Concrete ore pad;
- Settling ponds (x 2);
- Dam across the Mink Arm of the South McMahon Lake (that has been breached);
- Pipelines (on surface);
- Former core storage area;
- One auxiliary building;
- Groundwater monitoring wells;
- Associated access and site roads/trails.

Following this work, the test mine was allowed to flood and the dam was breached using a corrugated steel culvert. The site has been secured and is under an environmental monitoring and site security surveillance program that is conducted by Orano personnel.

All the facilities used in the test-mining program and all of the existing surface facilities are located on lands owned by the province of Saskatchewan. The right to use and occupy the land was granted in a provincial surface lease agreement.

Preliminary decommissioning plans for all remaining infrastructure on the Midwest Main site, were developed and are included in the McClean Lake Operation Preliminary Decommissioning Plan and Financial Assurance (Version 9, Revision 1; Orano, 2020). Financial assurances for the proposed decommissioning activities on Midwest Main site are part of the letters of guarantee provided to the province of Saskatchewan by the parties to the MLJV.

The authors are unaware of any further environmental liabilities concerning the Midwest Main or the Midwest A deposits, and their associated claims (Mineral Leases ML 5115 and ML 5264).

4.8. Other Significant Factors and Risks

There are no known significant factors or risks that may affect access, title, the right, or ability of the operator to perform work at/on the Midwest property other than what is discussed in this Report.

5. ACCESSIBILTY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1. Access to Property

Access to the Midwest property site is both by an all-weather gravel road (Highway 905) and air (both land and water landing).

Goods are transported to the site by truck over Highway 905, which connects to the provincial highway system. Access to the Midwest Main site from Points North Landing is by a two-kilometre dirt road to the old Midwest exploration shaft and dam. An additional two-kilometre-long trail, through boreal forest on the peninsula separating two branches of McMahon Lake, is utilized to access the Midwest A site.

Air transportation is provided through the Points North Landing airstrip, about three kilometres from the Midwest Main deposit. There are regularly scheduled air services between Saskatoon and Points North Landing, provided by Rise Air. Rise Air also provides air charter services for the nearby McClean Lake Mill.

There is road access to the McClean Lake Mill, located about 10 kilometres to the east of Points North Landing. The Cameco Cigar Lake mine site is located approximately 50 kilometres to the southwest of Points North Landing, using Highway 905 and the Cigar Lake haul road.

5.2. Proximity to Population Centres and Transport

The nearest inhabited area is Points North Landing, located approximately three kilometres from the Midwest Main deposit, and partially overlaps the southern portion of the property (Figure 4-2). Points North Landing is comprised of camp accommodations, an 1,829 metre long airstrip, and lumber yard with bulk fuel, transportation, and equipment services. The nearest population centre is the community of Wollaston Lake, approximately 85 kilometres by road and ferry, or winter road, east of Points North Landing.

Points North Landing is located approximately 840 kilometres northeast of Saskatoon, the largest city in the Province of Saskatchewan, and is accessible by provincial highway or by air.

The nearest larger population centre is the town of La Ronge and its three adjoining subdivisions comprising of the Village of Air Ronge, Kitsakie, and Lac La Ronge. There are also a small number of seasonal remote cottages and fishing lodges located on lakes throughout the area. La Ronge is accessible by provincial highway or by air.

5.3. Climate

Site activities can be carried out all year despite the cold weather during the winter months. Climatology, temperature, and precipitation information are collected by the Collins Bay weather station (Environment Canada, n.d.). The mean monthly temperatures are below 0°C for seven months of the year. The annual average monthly temperature ranges between -31°C and 16°C, with daily extremes as low as -45°C, indicating the severity of the winter. The mean annual temperature is -3.2° C and the area lies along the southern margin of the zone of discontinuous permafrost.

The precipitation in the region is relatively heavy with 530 mm annually, of which more than 330 mm is as rain. The wettest period is from May to September, which accounts for approximately 60% of the total annual precipitation.

5.4. Local Resources and Infrastructure

At present there are no modern facilities or infrastructure on the Midwest property. A provincial power distribution station is located 3.5 km to the southwest of Points North, which provides power to the surrounding communities and mines. Power is supplied to this region by hydro-electric power generation plants located over 200 kilometres to the north and south, as well as an interconnection to the Manitoba power grid.

Fresh water can be readily supplied from the numerous surrounding lakes. There are several advanced exploration, development, and mining operations within 20 km of the Project, including THT, Dawn Lake, and McClean Lake.

5.5. Physiography

The elevation in the Project area ranges from 470 to 510 m above sea level, with maximum topographic relief of about 40 m. Topography of the Project area is typical of the recently-glaciated terrains of northern Canada with sand or gravel moraines and drumlins that generally follow northeast – southwest trends. Most of the area is covered by sand and gravel ridges. The drainage is typical of relatively flat, recently glaciated regions, characterized by numerous lakes and wetlands, which covers approximately 25% of the region. Discontinuous muskeg is present throughout the area in topographic depressions and ranges in thickness from one to three metres. Peat bogs, glacial drift, outwash, and lacustrine sands cover the bedrock. The vegetation is consistent with the Boreal Shield Ecozone, a region of extensive boreal forest lying on the Canadian Shield, with sub-tundra ground cover plants (Labrador tea, moss, and lichen) and trees, such as black spruce, jack pine, white spruce, tamarack, birch, and trembling aspen.

6. HISTORY

6.1. Prior Ownership

The Midwest joint venture is currently governed pursuant to a joint venture agreement dated January 1, 1988, as has been subsequently amended and assigned.

Table 6-1 summarizes the prior ownership and historical work that was performed on the Midwest property. The work history performed on the Midwest property was extracted from Mathieu et al. (2009) and from information provided by Orano.

Table 6-1: Historical Work Summary on the Midwest Property

Period	Operator	Summary
1969-1977	Numac Oil & Gas	Initial operator performed regional airborne radiometric surveys, lake sample surveys, radioactive sandstone boulder train surveys, ground reflection seismic, magnetic, VLF-EM, gravity, and AFMAG geophysical surveys, and drilling to unsuccessfully evaluate a mineralized boulder trend. The program generally used shallow drill holes which had a maximum depth of <50 metres and did not reach the sub-Athabasca unconformity.
1977-1987	Esso Resources	The new operator subsequently discovered the Midwest deposit during the 1977 drill program. Further geophysics and drilling to the NE and SW along the main EM-defined conductor were carried out to evaluate the unconformity-type U model.
1987-1994	Denison (PNC conducted exploration)	The project operator performed an EM-37 survey, geotechnical drilling on the Midwest deposit, as well as test mining in the vicinity of the deposit (1988-1989). Exploration drilling was conducted to the east (1988) and along the conductive trend to the north of main deposit (1989).
1994-Current	COGEMA/AREVA/Orano	Active exploration on the Midwest property was resumed in 2005 and resulted in the discovery of the Midwest A (Mae) deposit within the northern lease (ML 5264). Additional geophysical programs were conducted, as was preliminary drill testing of the southern claim (ML 5265). No new drilling has been completed on Midwest A since 2008.

The majority of the drilling for the Midwest Main Zone was undertaken from 1970 to 2006 with some additional drilling in 2018, 2021, and 2024.

Historical and current drilling data within the current Midwest Project disposition (ML 5515, ML 5264, and ML 5265) comprises 1,048 diamond drillholes (211,983.8 metres) as documented in the Orano Exploration database. The sections below describe the work by previous operators.

6.2. Discovery, Past Exploration, and Development

6.2.1. Numac Oil & Gas Limited – Operator 1969-1977

Numac Oil and Gas Limited (Numac) was the acting operator of a joint venture between Esso Resources Canada Limited (Esso; 50%), Numac (10%), Bow Valley Industries Limited (20%), Mink Mining Corporation (10%), and Midwest Mining Corporation (10%). The Midwest Project was part of a large land acquisition acquired by Numac in 1968, which stemmed from an exploration agreement signed in 1966 by Numac and Imperial Oil (parent company of Esso).

Exploration began in 1969 with hydro-geochemical surveys, mapping, and regional airborne radiometric surveys that resulted in the discovery of a well-defined, radioactive sandstone boulder train located at the south-west end of the Mink Arm of McMahon Lake. The source of the boulder train was inferred to be located under the Mink Arm portion of the lake. Some of the boulders in this 3.2-kilometre-long train returned grades of up to 5% U_3O_8 (approximately 4.2% U) (Simpson & Sopuck, 1983).

Exploration continued the following year with grid-based geophysical surveys, including reflection seismic, magnetic, gravimeter, magnetometer, and VLF-EM surveys in the Midwest Lake area. Additionally, 11 BQ drillholes totalling 1,231 metres were drilled as a follow-up to the boulder train discovery. Roughly 1,700 metres of drilling, in 91 shallow drillholes, were drilled in 1971 with no favourable results noted.

Additional surveys were conducted between 1972 and 1975, including analysis of soil, water, and lake sediment samples. No significant anomalies were returned from these surveys and, consequently, the land was greatly reduced to three small claim blocks. In 1975, 25 short, inclined diamond drillholes totalling 800 metres were drilled into the upper part of the Athabasca sandstone. These shallow drillholes did not yield any favourable results.

6.2.2. Esso Resources Canada Limited – Operator 1977-1987

Esso became the principal operator in 1977 at the request of the previous operator (Numac), with no changes in the Midwest Joint Venture. In 1977, further Quaternary studies and a magnetic survey were carried out, as well as a small drilling program consisting of three diamond drillholes totalling 931 metres. Based on the 1975 discovery of the new Key Lake unconformity-related uranium mineralization, and unlike the previous drilling program, these three drillholes were drilled into the sub-Athabasca basement. One of these holes was the Midwest (Main) deposit discovery hole (drillhole 77-2: radioactive core and sand from immediately above the unconformity (Kirwan, 1978)).

An ambitious drilling program was implemented in 1978, including 177 exploration holes and six geotechnical holes (totalling 38,861 metres). The first hole of this program (drillhole 78-1) intersected 8.73% U_3O_8 (7.40% U) over 1.2 metres at the sandstone-basement unconformity contact, confirming the discovery of the Midwest Main deposit. Another 161 exploration and delineation drillholes, as well as 27 geotechnical wells were drilled in 1979 for a total of 37,850 and 3,000 metres, respectively.

In 1980, Canada Wide Mines Limited (CWML), a subsidiary of Esso Resources Canada Limited, took over responsibility for work being carried out at Midwest. Exploration and delineation drillholes included 101 diamond drillholes for 23,872 metres and 13 geotechnical holes for 1,222 metres were drilled in 1980. Delineation drilling continued in 1981 with an additional 80 drillholes. In addition to drilling, various geophysical surveys and a geochemical survey (Dunn, 1980) were carried out, as was an environmental base-line study and a feasibility study pertaining to the mine site development.

The project was shelved by Esso in 1982 and remained dormant until late 1987, with the exception of various research projects with SRC and IAEA/NEA Test Area work: (Hoeve & Quirt, 1984), (Hoeve, 1984), (Hoeve & Quirt, 1987), (Mellinger, Quirt, & Hoeve, 1987), (Quirt & Mellinger, 1988), (Sibbald & Quirt, 1987), (Simpson & Sopuck, 1983), (Mellinger, 1989), (Ramaekers, 1983), (Schreiner, 1983), (Sibbald, 1983).

6.2.3. Denison Mines Limited – Operator 1987 – 1993

In 1988 the current contractual joint venture was formed, comprised of Denison Mines Limited (45%), Bow Valley Industries Limited (20%), Uranerz Exploration & Mining Limited (20%), and PNC Exploration (Canada) Co. Ltd. (PNC; 15%) and the project was reactivated. Evaluation of previous exploration data was undertaken by PNC to delineate possible targets outside of the main mineralized body. After several geotechnical testing programs, work began on site with an earth dam being constructed across the Mink Arm of South McMahon Lake, with the water from Mink Arm then being pumped into McMahon Lake. A test mine with a 185-metre shaft and a 180-metre-long drift located 30 metres above the mineralization was completed. Four piezometer holes were drilled from this crosscut to monitor the pressure in the surrounding rock. Further test mining was conducted the following year with the drilling of two blind bore holes in the fall of 1989.

The mined material was used to confirm the results of the previous surface drilling programs and for metallurgical testing purposes.

In 1989, PNC initiated an exploration program based on the 1988 compilation work. This program comprised an additional gravity survey, a Geonics EM-37 survey, a magnetotelluric survey (CSAMT), and eight diamond drillholes, totalling 2,008 metres. Lithogeochemical analyses were performed on samples from the 1989 drillholes.

Although Denison was the acting operator at this time and conducted the test mine program, PNC conducted all exploration from 1988 to 1990. In 1991, Overseas Uranium Resources Development (OURD) acquired PNC's 20% equity, while exploration remained dormant from early 1990.

6.2.4. Minatco – Operator 1993 – 1994

In 1993, Denison sold part of its interest to Minatco (25.5%) and retained the remainder of their interest under its subsidiary, Tenwest (19.5%). OURD also sold part of its equity to Minatco (10.5%) and Bow Valley sold its entire interest to Minatco (20%). The joint venture equities became: Tenwest/Denison (19.5%), OURD (4.5%), Uranerz (20%), and Minatco (56%), with Minatco as project operator.

6.2.5. COGEMA/AREVA/Orano – Operator 1994 – Present

In 1994, COGEMA Resources Inc. (CR") acquired the uranium assets of TOTAL (Minatco in Canada) and became the operator of the Midwest Project. By 1996, the Minatco entity was completely dissolved. CRI then acquired all of Uranerz's equity (20% - Cameco controlled as of August 1998), of which a portion was later acquired pro-rata by Tenwest/Denison.

In 2001, both CRI and Tenwest sold portions of their equity to Redstone Resources, who, in 2004, then sold back their equity pro-rata to Denison (Tenwest was dissolved earlier in the year). Denison Mines Limited became Denison Energy Inc. in 2002 and Denison Mines Corp. in 2006. CRI became AREVA Resources Canada Inc. in 2006. The joint venture then consisted of AREVA Resources Canada Inc. (69.16%), Denison (25.17%), and OURD (5.67%).

Exploration activities remained dormant until 2004, when an initiative to bring the Midwest database up to date and to determine drilling targets was implemented. In addition to database entry, an inventory of available data was conducted, as was a cursory compilation of various geochemical and lithological data. In 2017, AREVA Resources Canada Inc. changed its name to be Orano Canada Inc. In 2020, Orano acquired OURD's interest, resulting in the joint venture held by Orano (74.83%) and Denison (25.17%).

6.3. Historical Mineral Resource and Mineral Reserve Estimates

There are no historical estimates within the meaning of NI 43-101 to report.

6.4. Historical Production

Test mining on the Midwest property was conducted between 1988 and 1989 at the Midwest Main deposit. A 3.7 metre diameter by 185-metre-deep shaft was sunk on land along the west side of Mink Arm of South McMahon Lake. An approximately 3.0 x 3.5 metre-sized drift was driven 180 metres towards the east at a depth of 170 metres in sandstone beneath the lake and above the deposit. During drift excavation, at a distance of approximately 82 metres from the shaft, the drift passed through a narrow vein of mineralization with a grade of approximately 4.2% U (Midwest Joint Venture, 1991).

The mining method selected for the test mine program was blind hole boring. This method is a variation of the raise boring method which is commonly used underground. For the raise boring technique, first, openings are excavated above and below the area to be bored. A pilot hole is bored between the upper and lower levels and a large, rotating cutting head is drawn upward from the lower to the upper level, grinding up the rock in its path. Cuttings fall to the lower level from where they can be removed. Blind hole boring, on the other hand, only required the upper level. The large cutting head, with or without a pilot hole, is forced downward and the cuttings removed to the upper level by flushing the hole with either air or water.

The blind hole boring method provides maximum protection against radiation hazards since access to the mineralization section can be made remotely with the uranium mineralization being removed via metal pipes and separated from the transport fluid (water or air), in a closed system. In addition, cemented backfill was added to the mined cavity after boring, to minimize the size of unsupported sections (Midwest Joint Venture, 1991).

In the test mine, at the end of the drift, the height of the back (roof) was increased to approximately 9.5 metres in order to accommodate the blind hole boring rig. A short (approximately 15 metres) stub drift was driven near this blind hole chamber to accommodate the ancillary equipment. In total, two blind boring holes were completed from this crosscut through the deposit and into the basement rock. The blind bore holes were 1.2 metres in diameter and were drilled to 30.9 and 33.8 metres deep, with drilling completed to approximately 1.5 metres below the mineralization (Midwest Joint Venture, 1991). The program extracted approximately 245 kilograms of material, the majority of which was used for metallurgical testing (Melis, 1991).

7. GEOLOGICAL SETTING AND MINERALIZATION

The Midwest property is located in northern Saskatchewan, approximately 750 kilometres north of Saskatoon and 400 kilometres north of La Ronge, on the eastern side of the Athabasca Basin. It is about 25 kilometres west of the McClean Lake mine site and mill and approximately 35 kilometres west of the Rabbit Lake mill which is located on the west shore of Wollaston Lake. The property area is within the Western Churchill Structural Province of the Canadian Shield, near the eastern margin of the Athabasca Basin (Figure 7-1). The bedrock geology of the area consists of Precambrian crystalline metamorphic rocks made up of Archean granitic gneisses, Paleoproterozoic metasedimentary gneisses, and Hudsonian intrusive rocks, all unconformably overlain by flat-lying, unmetamorphosed sandstones and conglomerates of the Athabasca Group

7.1. Regional Geology

In northern Saskatchewan, the crystalline metamorphic rocks of the Canadian Shield are divided into two chronotectonic units (Figure 7-1), the Archean Western Churchill Province and the Proterozoic Trans-Hudson Orogen (THO). The Western Churchill Province is subdivided into the Rae Sub-province and the Hearne Sub-province, separated by the Snowbird Tectonic Zone (STZ; Figure 7-1).

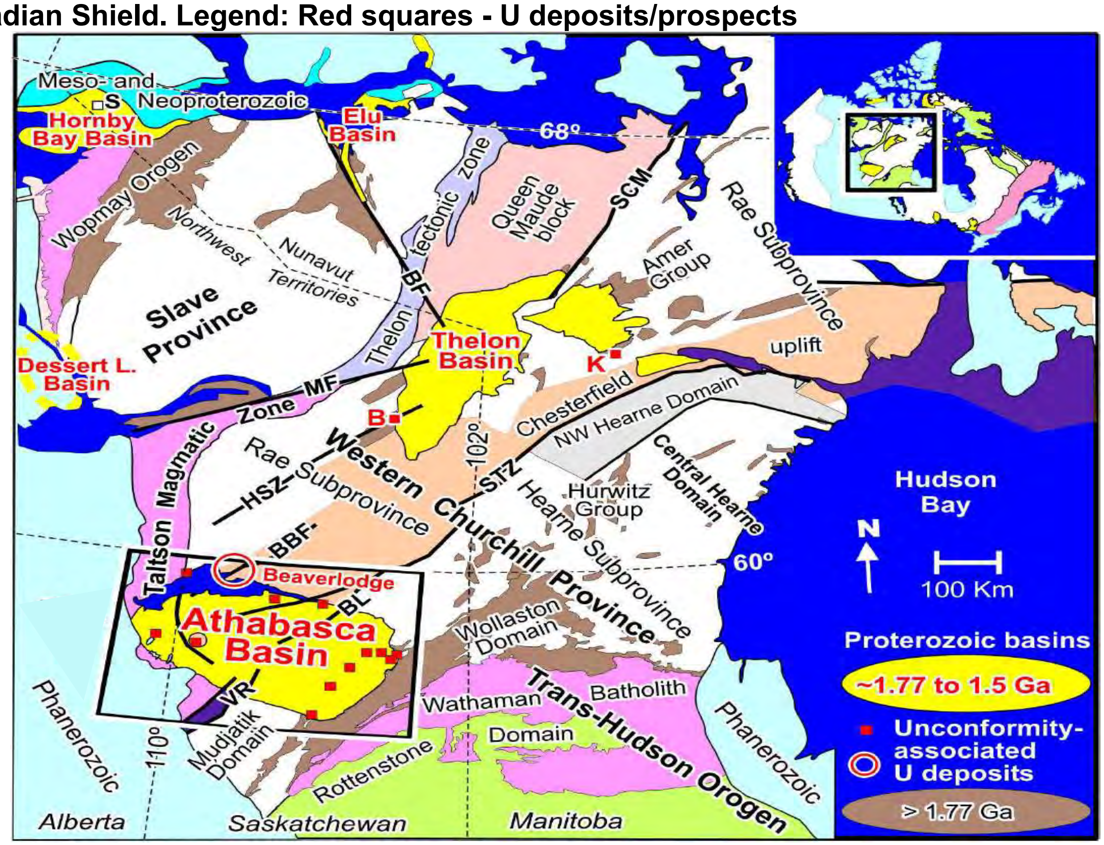
The basement rocks of the Hearne Province were covered by Paleoproterozoic sediments and were then deformed and metamorphosed during the approximately 1,800 Ma continent–continent collision of the THO. The eastern half of the unmetamorphosed approximately 1,700 Ma Athabasca Basin overlies these metamorphic rocks. The Wollaston Domain fold and thrust belt forms the south-eastern part of the Hearne Province (Figure 7-2). The dominant NE-trending strike-slip trans-pressional component of the fold–thrust belt has been described by (Annesley, Madore, & Portella, 2005). Peraluminous S-type granites and pegmatites ("Hudsonian granites"), derived from partial melting of Wollaston Domain metasediments during the THO, also occur along major long-lived NE-trending structures (Annesley, Wheatley, & Cuney, 2010). The unconformity between Paleoproterozoic graphitic pelitic gneiss lithologies of the Wollaston Group and the Athabasca Group is the site of numerous unconformity-type uranium deposits (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Thomas, Matthews, & Sopuck, 2000); (Jefferson C. W., et al., 2007b) (Jefferson C. W., Thomas, Quirt, Mwenifumbo, & Brisbin, 2007c).

The Athabasca Group fills the broad, oval, intra-cratonic Athabasca Basin that extends 425 kilometres in an east-west direction and 225 kilometres in a north-south direction (Figure 7-1, and Figure 7-2). The Athabasca Group has a maximum preserved thickness of approximately 1,500 metres and it consists of flat-lying Paleo- to Mesoproterozoic (Helikian) sandstone (orthoquartzite) with minor conglomerate and siltstone, and is dominantly quartz arenite (Ramaekers, 1990); (Ramaekers, et al., 2007). It lies with a marked angular unconformity above the intensely deformed and metamorphosed Archean and Paleoproterozoic crystalline basement rocks. These

sandstones were deposited in several second-order sequences by braided stream systems and typically show abundant crossbedding and alternating coarser- and finer- grained units.
Mackenzie Swarm diabase dikes, dated at 1267 Ma, dominantly oriented northwest, and ranging from a few to a hundred metres in width, have intruded into both the Athabasca Group and the underlying basement (Quirt D. H., 1993); (Hulbert, Williamson, & Thériault, 1993). In addition, the 1107 Ma Moore Lakes gabbro-diabase complex has intruded the Athabasca sediments in the southeast corner of the basin.

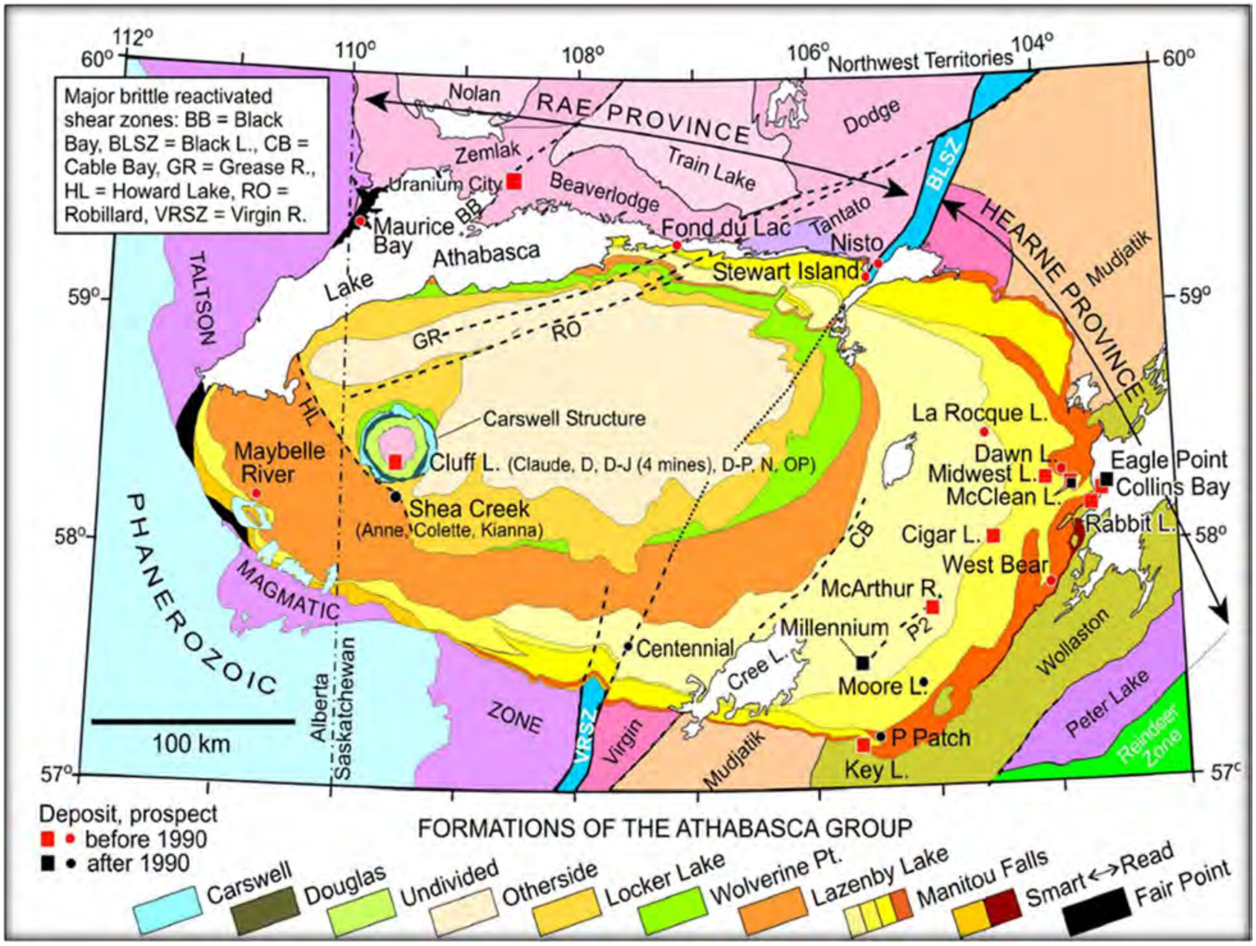
The Athabasca area is mantled by glacial drift, outwash, and lacustrine sands, forming an undulating, lake-covered plain, with generally less than 30 metres of relief. Up to 40 metres, but generally 5 to 20 metres, of glacial materials covers the Midwest Project area, resulting in extremely poor outcrop exposure.

Figure 7-1: Location of the Athabasca Basin relative to the geology of the northwestern Canadian Shield. Legend: Red squares - U deposits/prospects



(Source: (Jefferson et al. 2007b, c))

Figure 7-2: Geological setting of the Athabasca Basin and unconformity type U occurrences, northern Saskatchewan and Alberta



(Source: Jefferson et al. 2007c)

7.1.1. Sub-Athabasca Crystalline Metamorphic Basement

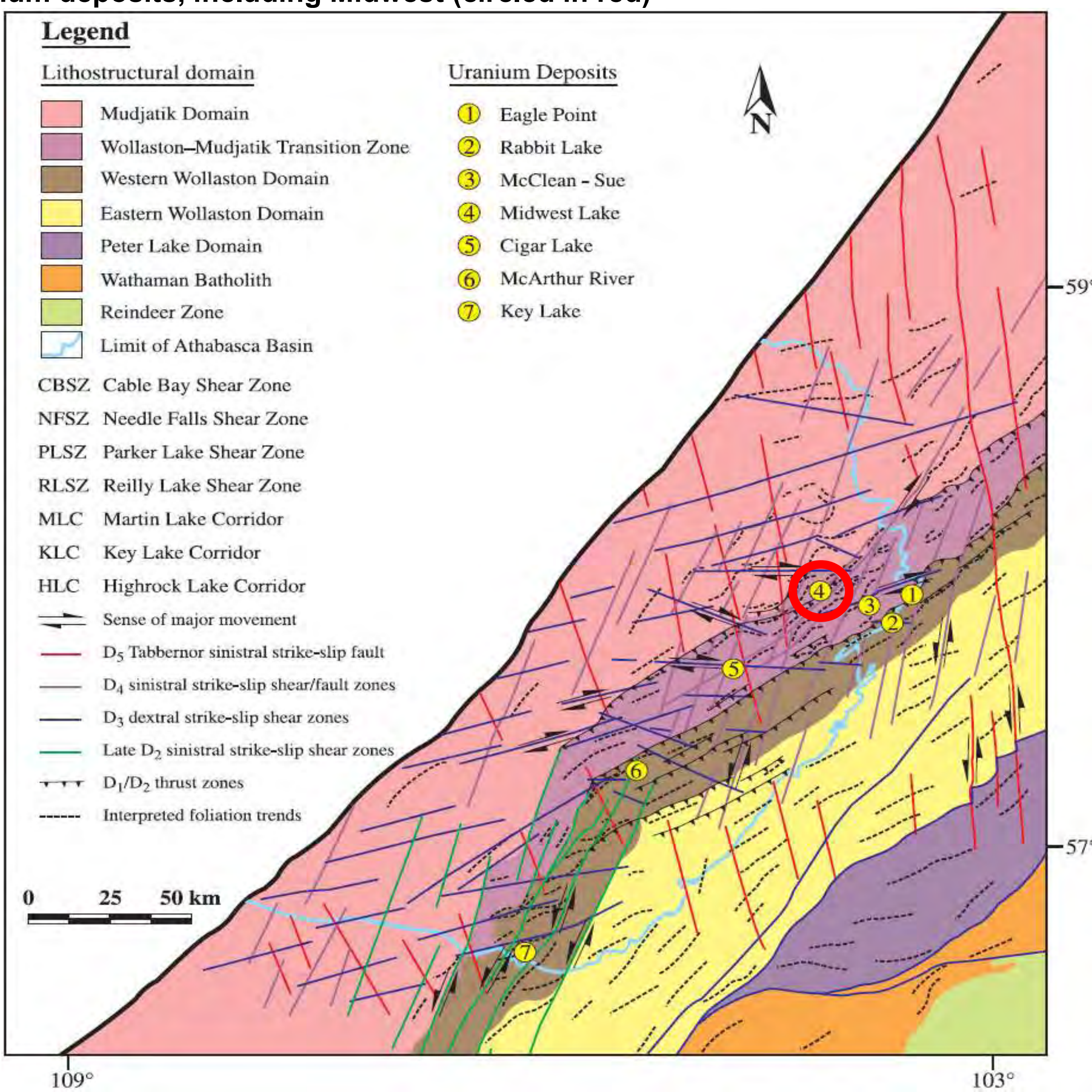
The basement in the eastern half of the Athabasca Basin is composed of rocks of the Wollaston and Mudjatik litho-structural domains (Figure 7-3). The Wollaston Domain is a distinctly northeast-trending fold-thrust belt composed of Paleoproterozoic Wollaston Group metasediments overlying Archean granitoid gneisses. The Mudjatik Domain is a northeast-trending, shear-bounded belt consisting mainly of Archean felsic gneisses ((Annesley, Madore, & Portella, 2005); (Jeanneret, et al., 2016)). Both domains have undergone complex polyphase deformation and metamorphism during the THO, including intrusion of metaluminous and peraluminous granitic bodies.

The Mudjatik Domain consists of variably reworked Archean granitic orthogneisses which are locally charnockitic. It also contains numerous small remnants of poly-deformed paleoproterozoic metasedimentary rocks similar to the Wollaston Group metasediments.

To the east, the metasedimentary rocks of the Wollaston Domain rest unconformably on Archean granitoid gneiss. This Domain comprises the Wollaston–Mudjatik Transition Zone (WMTZ), the western Wollaston Domain, and the eastern Wollaston Domain. The WMTZ forms a transition from the linear Wollaston fold and thrust belt to the dome and basin interference-folded Mudjatik Domain.

The metasedimentary lithologies in the Wollaston Domain comprise three metasedimentary supracrustal successions deposited in rift, passive margin, and foreland basin environments (Tran, Ansdell, Bethune, Ashton, & Hamilton, 2008). These rocks overlie and are locally intercalated with the Archean orthogneisses.

Figure 7-3: Litho-tectonic geology of the eastern Athabasca region with locations of uranium deposits, including Midwest (circled in red)



(Source: Annesley et al. 2005)

The Western Wollaston Domain and the WMTZ are structurally complex, consisting of elongated Archean granitoid domes (mega-boudins), dominant thrust- and strike-slip structures, and related duplex structures (Annesley, Madore, & Portella, 2005). The lower sequence of the Wollaston Group consists mainly of, from the bottom, graphitic pelitic gneiss, followed by garnetiferous, pelitic gneiss, calc-pelitic gneiss, psammopelitic gneiss, psammitic gneiss, and meta-quartzite. The Wollaston Group rocks are interpreted to occupy synclinal structures. They originally consisted of shelf to mio-geosynclinal sediments. Following Hudsonian metamorphism and deformation, these rocks now overlie, and are locally intercalated with, the Archean orthogneissic basement.

The eastern Wollaston Domain (Figure 7-3) is made up of the upper sequence of the Paleoproterozoic Wollaston Group. It consists of calc-silicate- and magnetite-bearing siliciclastic metasediments overlying a lower Wollaston Group sequence of magnetite-rich to magnetite-poor pelitic to psammitic gneisses. Archean orthogneisses are locally infolded. The Midwest Project area is interpreted to be within the Wollaston-Mudjatik Transition Zone (WMTZ).

Sub-vertical, north-northeast-trending ductile and brittle-ductile fault zones that developed during the Hudsonian Orogeny (Figure 7-3) are dominant structural features within the eastern Athabasca ((Annesley, Madore, & Portella, 2005); (Tourigny, Quirt, Wilson, Breton, & Portella, 2007)). These faults were commonly reactivated after the deposition of the Athabasca Group and are commonly associated with graphitic Wollaston Group stratigraphy. Post-Athabasca Group faulting, as recognized within the Wollaston Domain (Harvey & Bethune, Context of the Deilmann orebody, Key Lake mine, Saskatchewan, 2007), is characterized as dominantly reverse with a later, dominantly strike-slip, component.

7.1.2. Hudsonian Granites/pegmatites

The basal Wollaston Group sequence of graphitic pelitic to psammopelitic gneisses contain a large volume of peraluminous S-type granites that have been interpreted to be a partial (anatectic) melting phase of the metasediments near the thermal peak of the THO (Annesley, Madore, & Portella, 2005). These S-type granites developed mostly in zones of structural complexity, such as fold noses, sheared limbs, dilation zones, and fault intersections. It has been postulated that when the host metasediments were enriched in uranium, the anatectic crustal melts derived from partial melting were also enriched in uranium (Cuney & Friedrich, 1987).

U-bearing pegmatites have been found in several areas, including Fraser Lakes (McKechnie, Annesley, & Ansdell, 2013), Kulyk Lake (McKeough & Lentz, 2011), and Moore Lakes (Annesley, Madore, Kusmirski, & Bonli, 2000). These pegmatites are peraluminous and are variably enriched in U (± Th), with Th/U approximately 1 (containing uraninite, thorite, zircon, and allanite) or in Th and LREEs, with Th/U >2 (containing monazite, urano-thorite, and zircon). Formation of the U-, Th-, and REE-enriched pegmatites is ascribed to partial melting of a metasedimentary rock-dominated source, entrainment of accessory minerals as xenocrysts, and assimilation-fractional crystallization (AFC) processes ((McKeough & Lentz, 2011); (McKechnie, Annesley, & Ansdell, 2013)).

7.1.3. Paleoweathering

The unconformable contact between the Paleoproterozoic Athabasca Group sandstone and the underlying crystalline basement rocks is typically marked by several metres of clay mineral-rich and colour- and mineralogically-zoned post-Hudsonian regolith (paleoweathering) that can range in thickness from 0 to >80 m ((Hoeve & Quirt, 1984); (Macdonald, 1985)). The thickness of the profile is highly dependent on the composition of the parent rock, as well as the presence of relatively permeable basement structures. Below an upper clay-rich (kaolinitic) and hematitic red zone, there is an illitic to chloritic red-green zone that is transitional to a chloritic to illitic, variably light to dark green zone. The green zone material grades downward, generally over a few metres, into fresh or retrograde-metamorphic basement.

7.1.4. Athabasca Group Sandstone

The formation of the Athabasca Basin is interpreted to have started with the development of sedimentation into a series of northeast-southwest-oriented sub-basins with subsequent sedimentary coalescence into the greater Athabasca Basin (Armstrong & Ramaekers, 1985). The formation of the sub-basins was linked to movement on major northeast-southwest structures associated with the Trans-Hudsonian Orogeny and rooted in the underlying metasediments and granites (Cuney & Kyser, 2008). Sub-basin formation could have been initiated at circa 1750 Ma (based on timing of rapid uplift in the region of the THO; (Hiatt & Kyser, 2007)). Alternatively, (Rainbird, Stern, Rayner, & Jefferson, 2007) suggests the Athabasca Basin was formed as a result of a broad thermal subsidence mechanism based on the geometry, sequence architecture, east-west elongation, and dish-shaped outline. A depositional age of 1740-1730 Ma for the basal Athabasca Group was estimated by (Rainbird, Stern, Rayner, & Jefferson, 2007). However, actual sedimentary deposition may not have occurred until after circa 1710-1700 Ma (based on ages of greenschist facies retrograde mineral assemblages (Jeanneret, et al., 2016)).

The sub-Athabasca unconformity topography suggests a gentle inward slope from the east, moderate to steep slopes from the north and south, and a steeper slope from the west. Locally, pre-Athabasca fanglomerate (fault scarp talus deposits) is present below the basal Athabasca sandstone, for example, at Sue C, Read Lake, Wheeler River, and McArthur River (Quirt D. , 2000).

In general, the Athabasca Group sediments consist of unmetamorphosed quartz-rich pebbly sandstone (quartz arenite; orthoquartzite) (Ramaekers, 1990); (Ramaekers, et al., 2007), with intercalated conglomerate and minor siltstone intervals. There are four major fining-upwards sequences, separated by unconformities, that are recognized in the Athabasca Group (Ramaekers, et al., 2007). Sequence 1 (Fidler depo-system) comprises the Fair Point Formation, Sequence 2 (Ahenakew, Moosonees and Karras depo-systems) includes the Read, Smart, and Manitou Falls Formations, Sequence 3 (Bourassa depo-system) includes the Lazenby Lake and Wolverine Point Formations, and Sequence 4 (McLeod depo-system) includes the Locker Lake, Otherside, Douglas, and Carswell Formations (Ramaekers & Catuneanu, 2012).

The sandstone is poorly sorted near the base of the Athabasca Group, where conglomerates form discontinuous layers of variable thickness. Minor shale- and siltstone-rich formations occur in the upper half of the succession. Locally, the rocks may be silicified and very well indurated (e.g. upper Manitou Falls Formation – MF Dunlop member) or partly clay-altered and de-silicified.

Most of the Athabasca sandstone strata were deposited in alluvial fans and in braided streams with generally horizontally bedded alternating coarser and finer units, with abundant crossbedding observed. The strata are nearly flat-lying or dip only a few degrees, except within the Carswell Structure and near faults. No regional folds have been recognized. Fractures and faults trend mainly in east-northeast, north-northeast, north south, and northwest directions. Fractures are more abundant in the Athabasca strata above buried faults in the basement, suggesting reactivation along these pre-Athabasca faults. Drilling at several uranium deposits has revealed local block faulting, where the unconformity has been fault-offset vertically by as much as 40 m in a reverse sense. Thrust faulting has affected the sandstone along the eastern margin of the basin (e.g. in the Collins Bay area).

The Manitou Falls Formation, which comprises most of the strata in the eastern half of the basin, is subdivided into four units from bottom to top (Ramaekers, 1990): MFa (poorly sorted sandstone and minor conglomerate); MFb (interbedded sandstone and conglomerate); MFc (sandstone with rare clay intraclasts); and MFd (fine- to medium-grained sandstone with abundant (>1 %) clay intraclasts). Further mapping has subdivided the original MFa unit into two new formations, the Read Formation and the Smart Formation (Ramaekers, et al., 2007). The Manitou Falls strata nomenclature was also reassigned: conglomeratic MFb (Bird Member), sandy MFc (Collins Member), and clay-intraclast rich MFd (Dunlop Member). The sandstone in the eastern portion of the Athabasca Basin ranges in thickness from 0 to over 900 metres.

7.1.5. Quaternary Geology

The surficial deposits in the eastern Athabasca region are of Quaternary age and consist largely of tens of metres-thick Pleistocene bouldery, silty-sand till plain resting directly on the sandstone bedrock. Locally, the upper half to one-metre of underlying sandstone bedrock is frost-heaved (felsenmeer). Drumlins, up to 15 metres in height, trace the latest ice advance from the northeast and are oriented NE-SW. The glacial till is locally overlain by glacio-fluvial sand and gravel, followed by deposition of recent sand and silt.

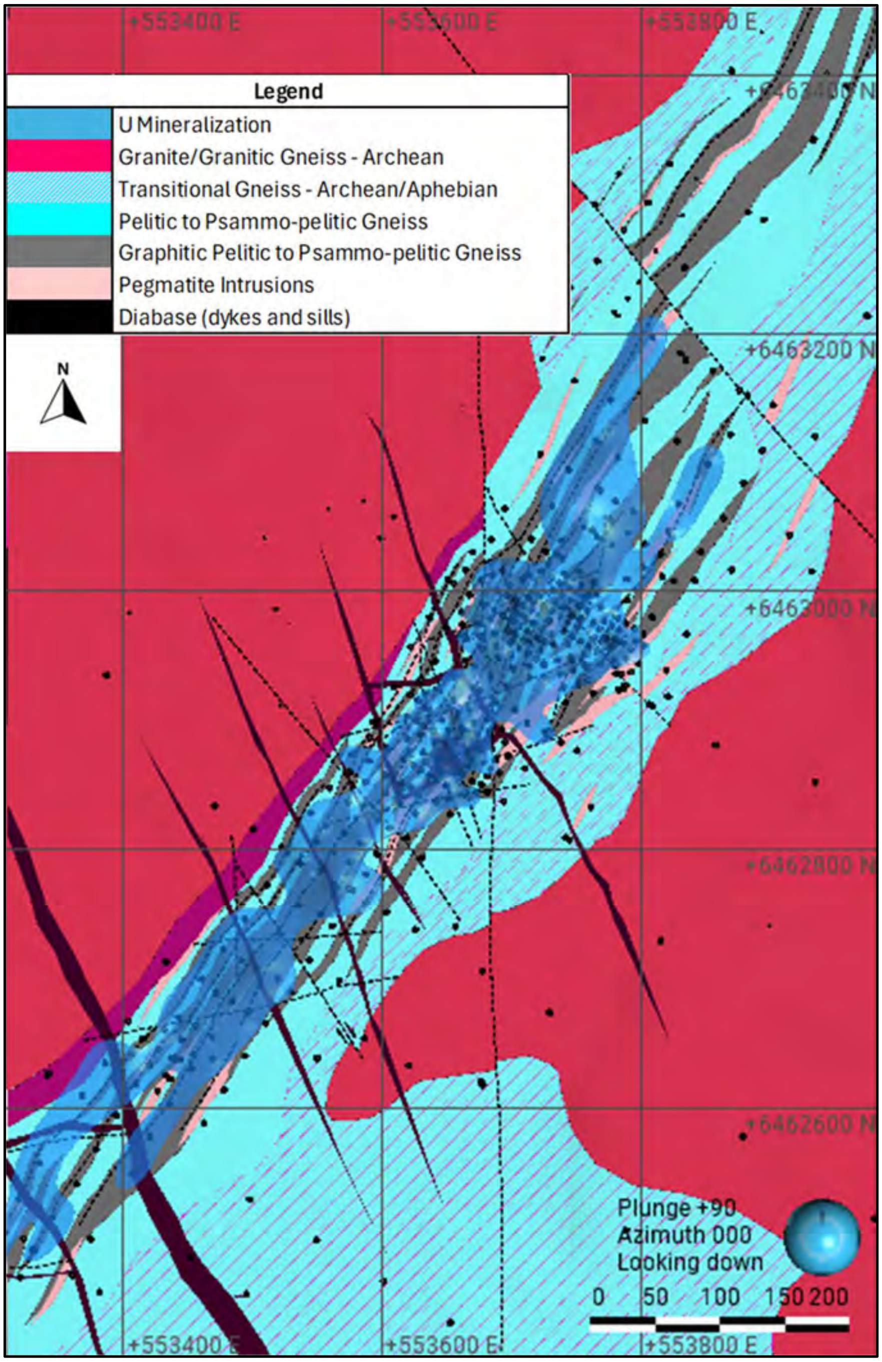
7.1.6. Uranium Mineralization

The uranium mineralization encountered in the eastern Athabasca region is of the diagenetic-hydrothermal unconformity type. The location of this mineralization type is around the unconformity between the basal Athabasca Group and the underlying crystalline basement, particularly graphitic pelitic gneiss of the Wollaston Group (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Wallis, Saracoglu, Brummer, & Golightly, 1985); (Jefferson & Delaney, 2007); among others). See Section 8 for information on the unconformity-type deposit type.

7.2. Local Geology

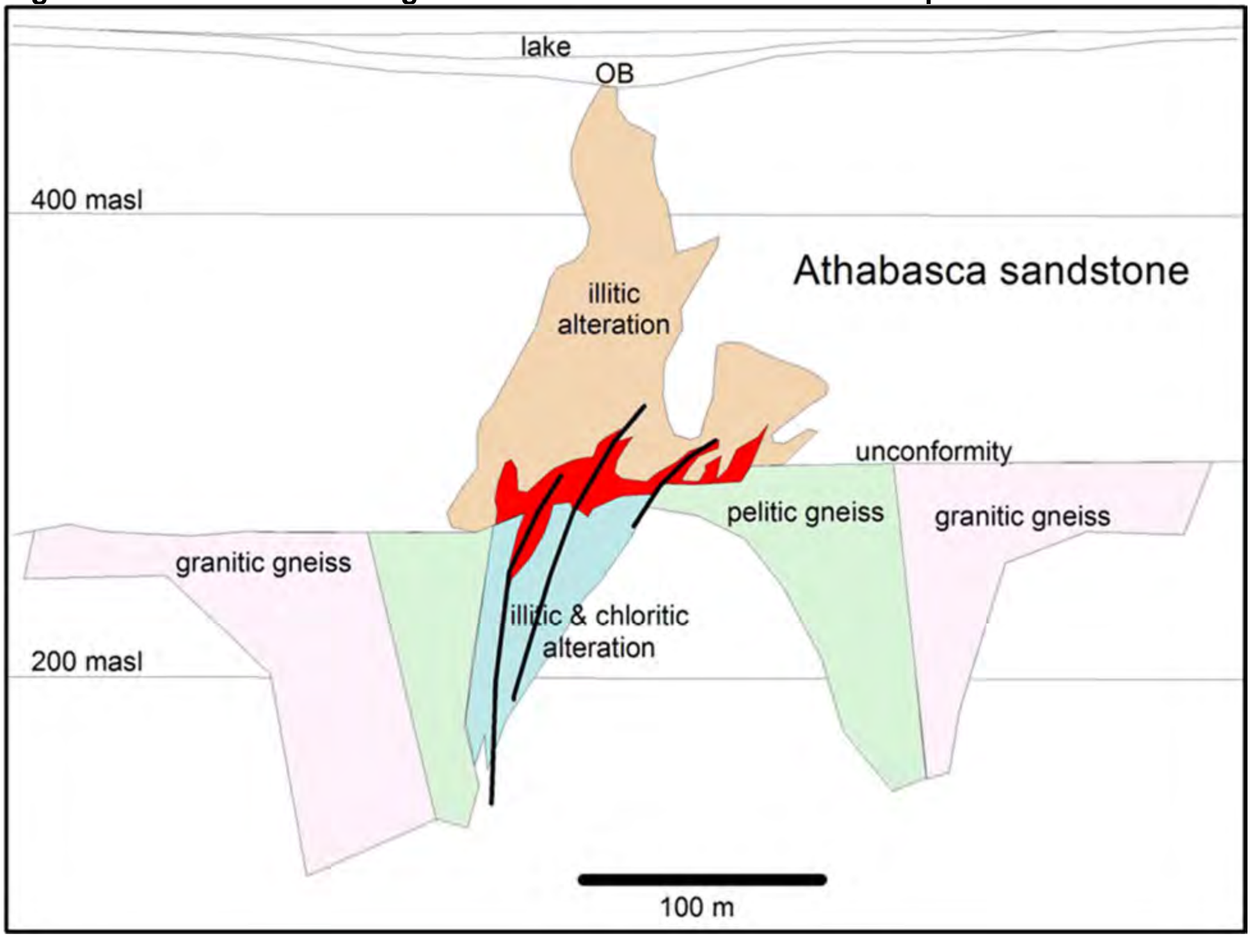
The local geology of the Midwest Main area is very similar to that described under Regional Geology (Section 7.1). It is depicted in plan view in Figure 7-4 and on schematic cross-sections in Figure 7-5 and Figure 7-6. Lithologies present at Midwest A are essentially the same, as depicted in Figure 7-7 and Figure 7-8.

Figure 7-4: Midwest Main Basement Geology at the Unconformity (transluscent blue envelope represents the unconformity mineralization outline at a 0.05% U cut-off)



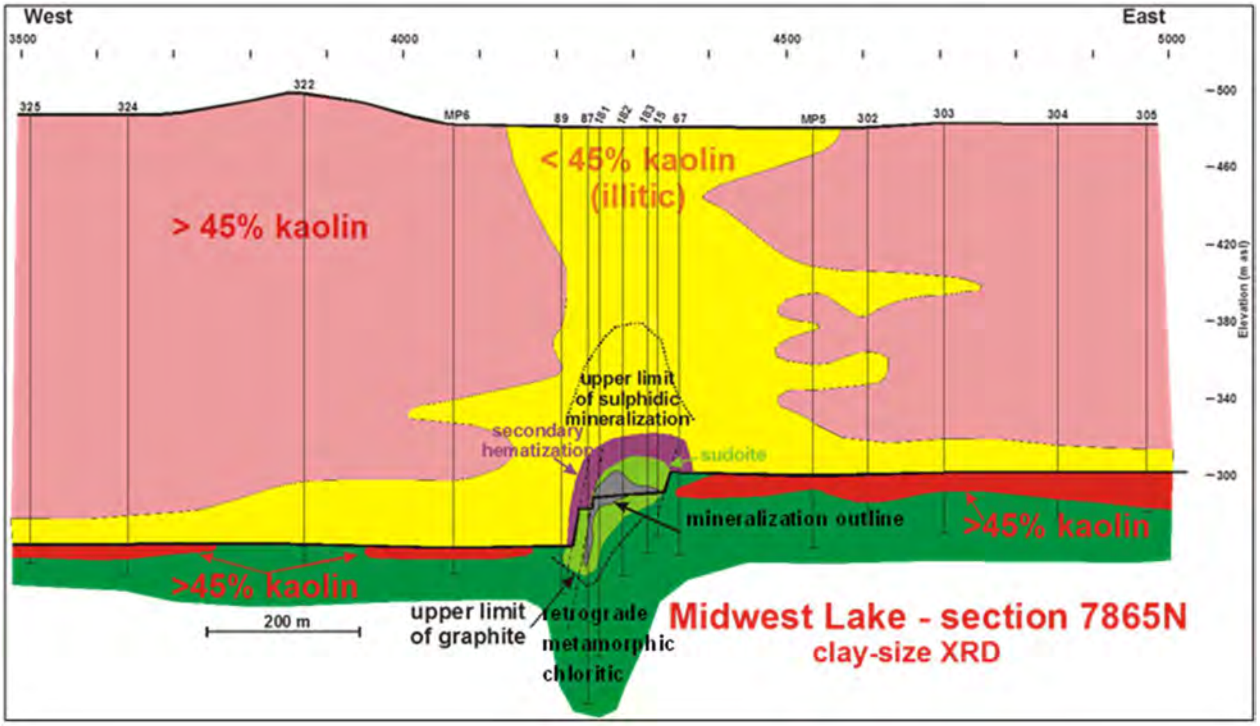
(Source: Denison, 2024)

Figure 7-5: Schematic Geological Section for the Midwest Main Deposit.



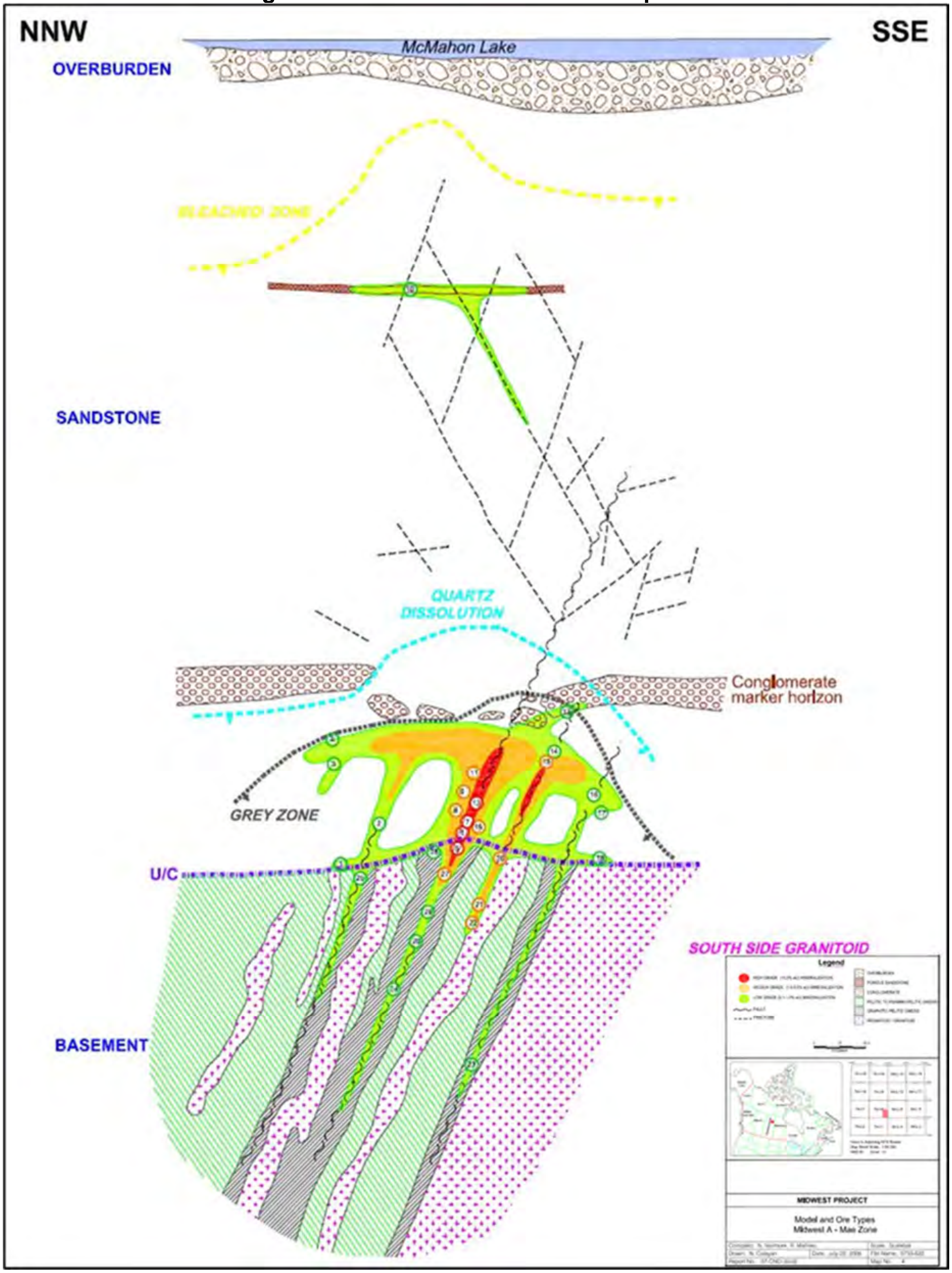
(Source: Orano)

Figure 7-6: Midwest Main (formerly Midwest Lake) deposit cross-section on L7865N, with host-rock alteration and mineralization



(Source: Quirt (2003), after Hoeve and Quirt (1984))

Figure 7-7: Schematic Geological Section for the Midwest A Deposit



(Source: Orano, 2008)

7.2.1. Sub-Athabasca Crystalline Metamorphic Basement

The basement lithologies of the Midwest Project area consist of Paleoproterozoic Wollaston Group metasediments and Archean orthogneiss, all belonging to the Wollaston-Mudjatik Transition Zone (WMTZ; (Annesley, Madore, & Portella, 2005)). The north-northeast Midwest structural trend that hosts the Midwest Main uranium deposit follows a steeply-dipping graphitic pelitic gneiss unit that is bounded by granitic gneisses or Hudsonian granite (Figure 7-4 and Figure 7-7) to both the east and west. The general structure of the project area has been interpreted to be a tightly-folded synform with a northeast trending axial plane parallel to the regional structure.

The unconformity surface is relatively flat on a regional scale; however, there is a slight uplift along the NNE Midwest trend and a generally higher elevation to the east. Typically, the upper eight to ten metres of the basement, immediately below the unconformity, is paleo-weathered with zones of hematization, illitization, and chloritization.

The interpreted geology of the basement at the unconformity is presented in plan view in Figure 7-4 and Figure 7-7. Major geological features include the contacts between the granitic gneiss/pegmatite units and the rheologically-softer graphitic pelitic gneisses. Brittle-ductile fault reactivation along this NE-trending anastomosing graphitic corridor, combined with several cross-cutting structures, is a key element to uranium precipitation in the Midwest Main area. The strongly folded, steeply-dipping, pelitic gneiss unit is composed of psammopelitic to pelitic gneiss. Porphyroblastic garnets, cordierite, and sulphides, are present in the pelitic gneiss, as well as variable amounts of graphite, often remobilized and sheared with a lustrous sheen. Many quartzo-feldspathic anatectic pegmatites are present. They conformably intrude the metasedimentary gneisses and contain chloritized biotite. Late shearing in the pelitic gneisses and contained breccias has occurred at the contacts with the pegmatites. Fault zones in the basement (Figure 7-7) are often characterized by brecciation and strong hydrothermal alteration with clay mineral development. These fault zones generally extend into the sandstone above.

7.2.2. Athabasca Group Sandstone

The Athabasca Group sandstone, ranging from 180 to 210 metres in thickness in the Midwest property area, is comprised of Manitou Falls Formation sandstones and conglomerates of the MFb (Bird) Member. The upper 100 to 140 metres of sandstone is typically bleached to a buff colored, and is medium- to coarse-grained, quartz-rich, and cemented by quartz overgrowths, clay minerals (kaolin, illite), and/or hematite. Bleaching of the sandstone (removal of diagenetic hematite) is noted along much of the Midwest trend.

The lower portion of the sandstone column is more typically conglomeratic and contains less quartz cement. The conglomeratic beds contain quartz pebbles ranging from one to four centimetres in diameter, locally up to 30 centimetres.

Illitic clay-rich zones are commonly associated with areas of intense hydrothermal alteration and uranium mineralization. These zones are generally present in the basal 20 metres of the sandstone and associated with friable sand and conglomeratic beds.

Basement fault zones generally extend over 100 metres into the overlying sandstone, act as hosts for uranium mineralization, and form the loci of the quartz dissolution and clay alteration zones that resulted in collapse of the property-scale conglomerate marker horizon (Figure 7-8).

7.2.3. Quaternary Geology

The surficial sediments in the Midwest Project area consist of a thin layer of Quaternary till and glaciofluvial sand and gravel. Low relief drumlins and eskers are the dominant surficial feature in the area. The till is typically brown, variably compact to dense and is composed of silt, sand, gravel, and boulders.

As defined by drilling, the thickness of this overburden typically ranges from two to four metres in the project area but can be as thick as 15 metres.

7.3. Uranium Mineralization

The uranium mineralization present in the Midwest Project area consists of two unconformity-type deposits: the Midwest Main deposit and the Midwest A deposit. See Section 8 for information on the unconformity-type deposit type.

The larger Midwest Main deposit straddles the unconformity; mostly in the sandstone with a lesser amount in the upper basement (Figure 7-4 and Figure 7-5; (Hoeve, 1984); (Hoeve & Quirt, 1984); (Wray, Ayres, & Ibrahim, 1985)). The deposit is lens to cigar–shaped, 600 metres long with pods of higher grade mineralization separated by lower grade mineralization. The width ranges from 10 metres to over 100 metres. The zone thickness ranges from five metres to ten metres. The Midwest Main Unconformity Zone occurs at depths ranging between 170 and 205 metres below surface. Perched mineralization occurs as discrete lenses located above the Unconformity Zone and up to 100 metres above the unconformity. The high-grade core is surrounded by lower-grade, more dispersed, fracture-controlled mineralization in both sandstone and, in minor amounts, in basement rocks. The high-grade mineralization forms a relatively flat-lying lensoid concentration, with a root extending down into the basement along a steeply-dipping fault. The fault is enclosed in an envelope, up to a few metres thick, of host-rock-altered clayey material that lacks diagnostic textures of either basement or sandstone. Host-rock alteration at Midwest Main is dominated by bleaching and quartz dissolution in the sandstone, illitic clay alteration, and development of grey zone chloritic alteration (Quirt D. H., 2012).

The Midwest Main unconformity mineralization is characterized by hydrogeological units based on measurements of mass (weight), density, porosity and permeability. Together, these units of measurements along with other physical properties help separate the geological domains into Hydrogeological Units (HGUs). The different HGUs defined in the Midwest deposit are divided into 3 main categories.

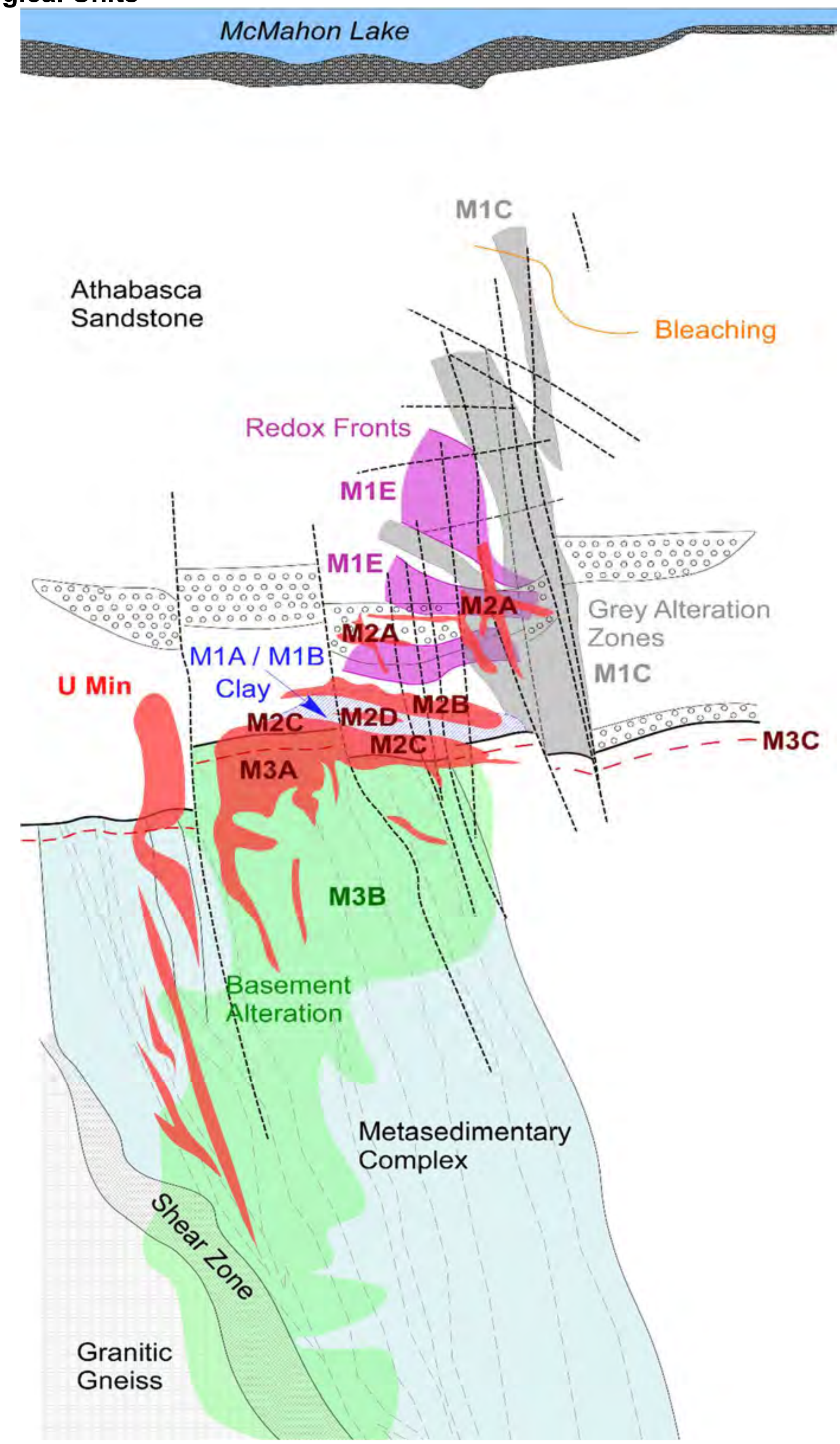
- M1: Non mineralized sandstones or conglomerates
- M2: Uranium mineralized lithologies, referring to mineralization around the unconformity and perched lenses.
- M3: Altered Basement lithologies of varying degrees of mineralization.

The subcategories ranging from A:E; to classify the heterogenous variation of diagenetic and mineralogical characteristics that directly correlate to hydrogeological properties (effective porosity/permeability) as well as the potential uranium grade. See the Table 7-1 below for detailed descriptions of the different HGU's characteristic to the Midwest Main Deposit. The deposition of the HGU's associated with the Midwest Main deposit are depicted in Figure 7-8.

Table 7-1: Description of HGUs Characteristic to the Midwest Main Deposit

	Sandstone, conglomerate	
	M1A	Sandstone friable by leaching, poorly cemented
	M1B	Clayey-sand, sandy-clay (intense alteration)
	M1C	Sand grains darkened, coated with sooty sulphides along fractures
	M1D	Sand soaked by hydrocarbon-like alteration (friable/permeable)
	M1E	Sandstone with redox front coloration
	Rocks altered with Ni-As-S or with U mineralization	
	M2A	Ni sulfarsenides/arsenides with clayey sand (U content none to low)
	M2B	Low to high-grade U ore as dispersed pitchblende aggregates in Ni-As-S / Ni-As
	M2C	High-grade U ore as pitchblende enveloped by crystalline Ni-As-S / Ni-As
	M2D	High grade U ore as pitchblende in clay
	Basement rock	
	M3A	High-grade U in regolith as patchy black pitchblende within red hematite-rich
	M3B	Basement rocks (intense mica/clay alteration, leaching)
	M3C	Regolith hematite-rich zone, or hematite-stained leached zone

Figure 7-8: Geological Section for the Midwest Main Deposit Differentiated by Hydrogeological Units



(Source: Denison, 2024)

At Midwest A, mineralization is found directly at the unconformity contact, within conglomerates and coarse sandstones above the unconformity contact, and in minor amounts immediately below the unconformity in basement structures (Figure 7-7). Lithologies are similar to those present at Midwest Main. The mineralization located at the unconformity locally penetrates into the clay-altered basement units but is mostly in the overlying sandstone. The thicker zones of sandstone mineralization are dominantly in conglomerate units at the base of the Athabasca sandstone. The Midwest A deposit is approximately 450 metres long, 10 to 60 metres wide, and ranges up to 70 metres in thickness. It occurs at depths ranging between 150 and 235 metres below surface. Host-rock alteration at Midwest A is dominated by illitic clay alteration, bleaching and quartz dissolution in the sandstone, and development of grey zone chloritic alteration (Quirt D. H., 2012).

8. DEPOSIT TYPES

8.1. Uranium Deposit Type

The Athabasca Basin is one of the principal uranium producing districts in the world (Jefferson C. W., et al., 2007b) and it contains the world's largest high-grade unconformity-type (also called unconformity-related) uranium deposits (McArthur River and Cigar Lake). The Midwest uranium deposits (Midwest Main and Midwest A) are classified as typical egress-style unconformity-type uranium deposits (Figure 8-1 and Figure 8-2) that formed through diagenetic-hydrothermal basement-sandstone interaction (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Hoeve & Quirt, 1987). The IAEA definition of this type of deposit is: "Unconformity-related deposits comprise massive pods, veins, and/or disseminations of uraninite spatially associated with major unconformities that separate Paleoproterozoic metamorphic basement from overlying Paleoproterozoic to Mesoproterozoic siliciclastic basins" (IAEA, 2009).

Unconformity-type uranium deposits consist of pods, veins, and semi-massive replacements of pitchblende/uraninite resulting from diagenetic-hydrothermal basement-cover fluid-rock interactions and redox mineral reactions located close to unconformities between fluviatile conglomeratic sandstone and metamorphosed basement ((Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984) (Hoeve & Quirt, 1987); (Quirt D. H., 2003); (Jefferson C. W., et al., 2007b)). Complex redox-controlled reactions due to fluid-fluid and fluid-rock interactions resulted in precipitation of massive pitchblende, with associated hematite, and varying amounts of base and other metals.

A broad variety of deposit shapes, sizes, and compositions have been found (Figure 8-1). The deposits range from egress-style polymetallic lenses at and above the unconformity (Figure 8-1, Figure 8-2), with variable Ni, Co, As, and Pb contents and elevated amounts of Cu, Mo, Zn, Au, S, Pt, and REEs, to ingress-style near-monometallic basement-hosted vein sets, with low base metal and REE contents. The ingress-style deposits are now generally recognized as "blind" deposits, having little to no expression in the overlying Athabasca sandstone and few direct clues for exploration (Hoeve & Quirt, 1984); (Quirt D. H., 1989); (Quirt D. H., 2003); (Jefferson C. W., Thomas, Quirt, Mwenifumbo, & Brisbin, 2007c).

The dominant location of egress-style mineralization can occur in the sandstone, directly above the unconformity (Cigar Lake, Sue A and B), straddling the unconformity (Collins Bay B Zone, Midwest Main, Midwest A, McClean North, Key Lake), or perched high above the unconformity (certain zones at McClean Lake, Midwest, Cigar Lake), or solely in the basement (Eagle Point, Sue C, Sue E, Millennium). The Millennium deposit contains mineralization both in the basement and at the unconformity, while the Shea Creek deposits contain mineralization in the basement, deep in the basement, at the unconformity, and perched in the sandstone. In some deposit areas, there is a plunge to the mineralized pods from sandstone-hosted to basement-hosted within deposit–scale strike lengths (Rabbit Lake-Collins Bay-Eagle Point trend, Sue trend deposits, McClean North); (Quirt D. H., 2003).

These mineralization types are also recognized based on fluid flow and varying interactions of fluid with fluid or rock, with two deposit/alteration styles (egress-style and ingress-style) being associated with mineralization (Figure 8-2). The egress-style formed through a fluid-fluid mixing process involving oxidized basin brine and relatively reduced fluid emanating from the basement (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Quirt D. H., 1989). A Fe-U redox couple resulted in precipitation of pitchblende and hematite (plus Fe, Cu, Pb sulphide, and Co-Ni arsenide and sulph-arsenide minerals) at locations of relatively stable sites of this fluid mixing (Hoeve & Quirt, 1987). The presence of mobile hydrocarbons likely also aided in the mineralization process (Hoeve & Quirt, 1984). The ingress-style formed through a fluid-rock interaction process involving the oxidized basin brine entering the basement along fault/fracture zones and interacting/reacting with ferrous iron-bearing wall-rock. This interaction also resulted in a Fe-U redox couple and precipitation of pitchblende and hematite.

The diagenetic-hydrothermal metallogenetic model (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Wallis, Saracoglu, Brummer, & Golightly, 1985); (Quirt D. H., 1989); (Quirt D. H., 2003); (Jefferson C. W., Thomas, Quirt, Mwenifumbo, & Brisbin, 2007c); among others, relates uranium mineralization to diagenetic processes within the Athabasca Group sediments. The model attributes the origin of uranium mineralization to fluid interaction between oxidized Athabasca basin brines and variably reduced basement fluids in an intimate coupling of diagenesis, basin evolution, and formation of mineralization, particularly in periods of active tectonics. The source of metals in the unconformity-type deposits is still a contentious issue (Jefferson & Delaney, 2007); (Jefferson C. W., et al., 2007a); (Jefferson C. W., et al., 2007b); (Jefferson C. W., Thomas, Quirt, Mwenifumbo, & Brisbin, 2007c). Available evidence suggests that the constituents of the Athabasca unconformity-type uranium deposits were derived from both sandstone and basement sources.

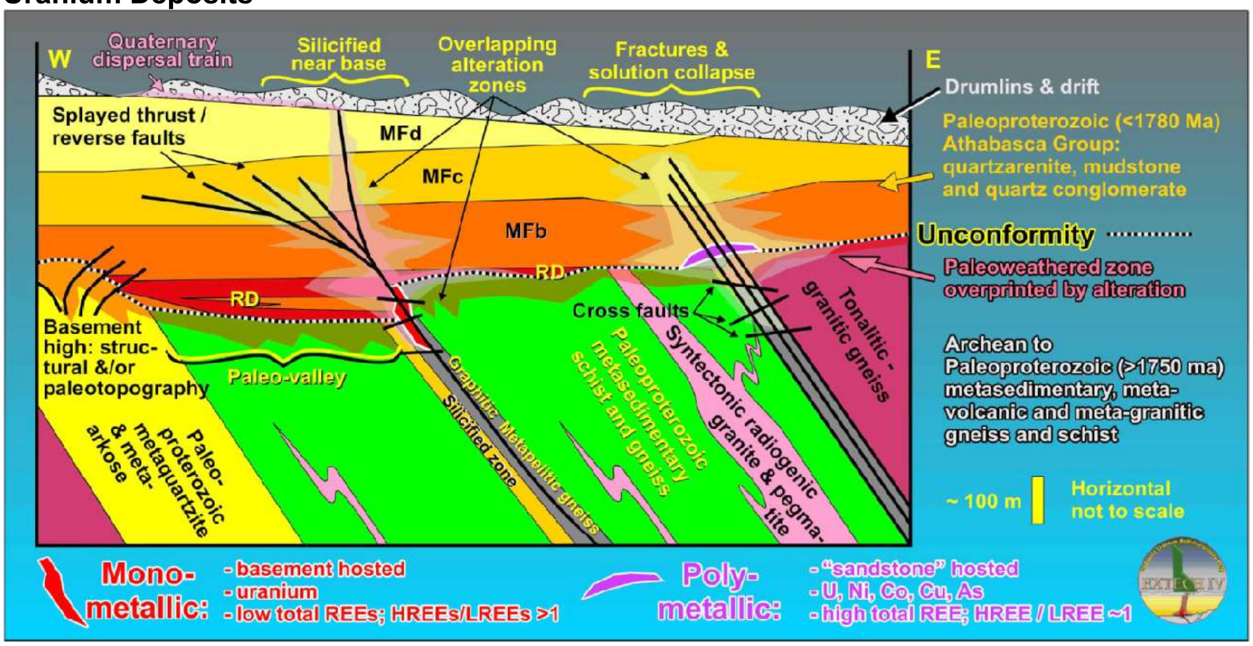
Diagenetic-hydrothermal systems of basement-sandstone interaction developed in many structurally controlled locations along traces of graphitic basement rocks sub-cropping at the unconformity (Hoeve & Quirt, 1984). Significant mineralization precipitated only where local hydrodynamic conditions were conducive to the formation of a stationary redox front (Hoeve & Quirt, 1987).

8.2. Host-Rock Alteration

As noted above, the two main types of unconformity-type uranium deposit paragenesis in the Athabasca Basin are dictated by the form of fluid interaction and can be separated by deposit location (Quirt D. H., 2003; Figure 8-2):

- Sandstone-hosted egress-style (e.g. McClean North, JEB, Sue A and B, Collins Bay, Midwest, Cigar Lake, Key Lake) involving mixing of oxidized sandstone brine with relatively reduced fluids issuing from the basement into the sandstone, and
- Basement-hosted ingress-style (e.g. Sue C, Sue D, Sue E, Eagle Point, Rabbit Lake, Millennium) involving fluid-rock reactions between oxidizing sandstone brine entering basement fault zones and the wall rock.

Figure 8-1: Geological Elements of Mono-metallic and Poly-metallic Unconformity-type Uranium Deposits



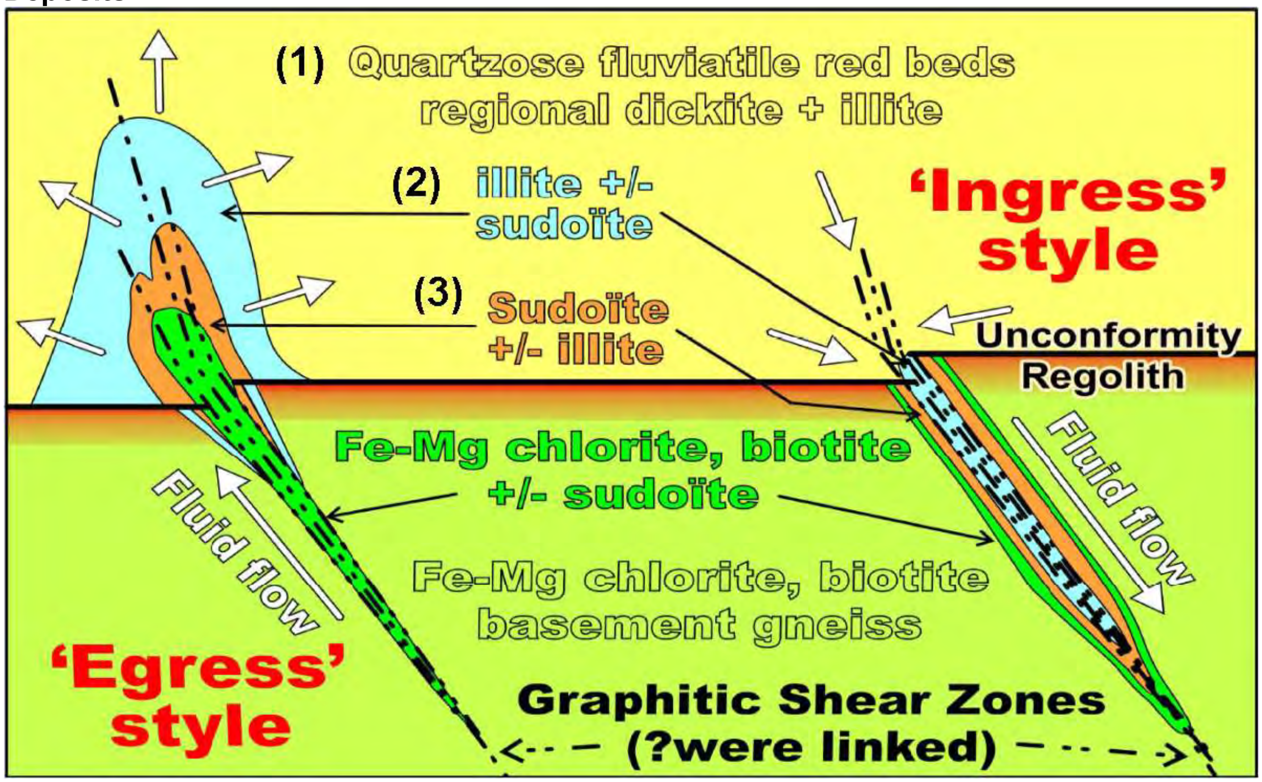
(Source: (Jefferson et al., 2007b))

Both styles of mineralization and associated host-rock alteration occurred at sites of basement-sandstone fluid interaction where a spatially stable redox gradient/front was present. The mineralization-associated host-rock alteration is distinct from the diagenetic alteration in the sandstone and overprints the paleoweathering profile commonly observed in the upper part of the crystalline basement (Hoeve & Quirt, 1984).

In the sandstone, the host-rock alteration halos have a plume-shaped expression in and above the hosting structure, forming a series of onion skin-like mineralogical zones (Figure 8-2). In the sub-Athabasca basement, host-rock alteration comprises extensive clay mineral alteration (chlorite and illite) of original retrograde metamorphic and/or paleoweathering mineralogy, conversion of clay mineral species, quartz dissolution, and bleaching. The alteration associated with basement mineralization is tightly constrained to the fracture- and fault-hosted mineralization, forming a sharp funnel-shaped alteration feature.

The hydrothermal alteration associated with mineralization comprises varying degrees of chlorite, hematite, bleaching, tourmaline, illite, kaolinite, and silicification and/or de-silicification. The alteration types may affect the basement rocks, the overlying sandstone, or both.

Figure 8-2: Egress Versus Ingress-style Alteration Zones for Unconformity-type Uranium Deposits



(Source: (Quirt, 2003))

Visually, the most conspicuous aspect of sandstone alteration is bleaching, the chemical reduction of ferric iron shown by white and creamy, to locally olive-green, bleached colours resulting from the removal of hematite from the normally purple or pink sandstones of the lower Manitou Falls Formation (Hoeve & Quirt, 1984). Discontinuous, patchy, to locally abundant diagenetic bleaching occurs in the sandstone, but host-rock alteration-related bleaching is pervasive in alteration haloes. The sub-Athabasca paleoweathering profile is similarly bleached where affected by host-rock alteration. Frequently, the bleached rock is separated from the purple hematitic rock by a narrow zone of orange-red to brick-red coloration. Basement "bleaching" is a result of destruction (argillization) of ferromagnesian minerals. The bleaching is fracture- and permeability-controlled, forming haloes around micro-fractures, joints, and faults, and it laterally advances along zones parallel to lithological bedding/foliation.

Hematite alteration also occurs both as a diagenetic and a hydrothermal process. The diagenetic alteration occurs disseminated throughout the sandstone and in the paleoweathered basement and is typically a purplish-red colour. Hydrothermal hematite occurs very close to the mineralization, usually within a metre, and where strongly developed is an ochre-red or brick-red colour. It is ubiquitous along well-developed redox fronts.

Most sandstone-hosted deposits display dominant desilicification features resulting from dissolution of quartz (overgrowths and detrital quartz grains in the sandstone and quartz crystals/grains in the basement) reducing the rock to rubbly semi- to unconsolidated material or to clay. It is a result of the interaction of the mineralizing fluids with the host rock and most commonly it occurs surrounding “perched” mineralization or above mineralization located at the unconformity. Desilicified material contains coincident abundant accumulations of clay minerals (resulting from the volume reduction), now dominantly illite, and detrital minerals like zircon and tourmaline.

Silicification (euhedral/drusy quartz) commonly surrounds or overlies desilicified zones around egress-style halos in the sandstone and likely represents deposition of silica obtained from the de-silicified zones. It usually occurs distal to the mineralization.

Illite, particularly the 1Mt polytype, is characteristic of the clay mineral alteration halo around both sandstone-hosted and basement-hosted deposits (Laverret, et al., 2006). Sudoitic chlorite is often found in the core of the altered and mineralized zones. Around basement-hosted deposits, however, the host-rock alteration is relatively tightly restricted to the proximity of the mineralized veins, unlike the massive to semi-massive alteration occurring around the egress-type deposits. The encompassing alteration is dominantly chloritic, at the expense of ferromagnesian minerals like biotite, cordierite, and garnet (Eagle Point, Sue C). The alteration grades from illite, present adjacent to the veins, to illite-sudoite, to sudoite, and then to background Fe-Mg chlorite plus biotite (Quirt D. H., 1989).

Tourmaline alteration (Na-Mg borosilicate) occurs as cream-coloured to light bluish-white “dravite” (alkali-deficient dravite) that both replaces country rock and occurs as vein fillings. Dravite can be porcelain-like in texture and it is common as a proximal alteration mineral.

The Midwest Main and Midwest A deposits are a typical ‘egress-type’ deposit, in which alteration zones (1), (2), and (3) extends into the sandstone.

9. EXPLORATION

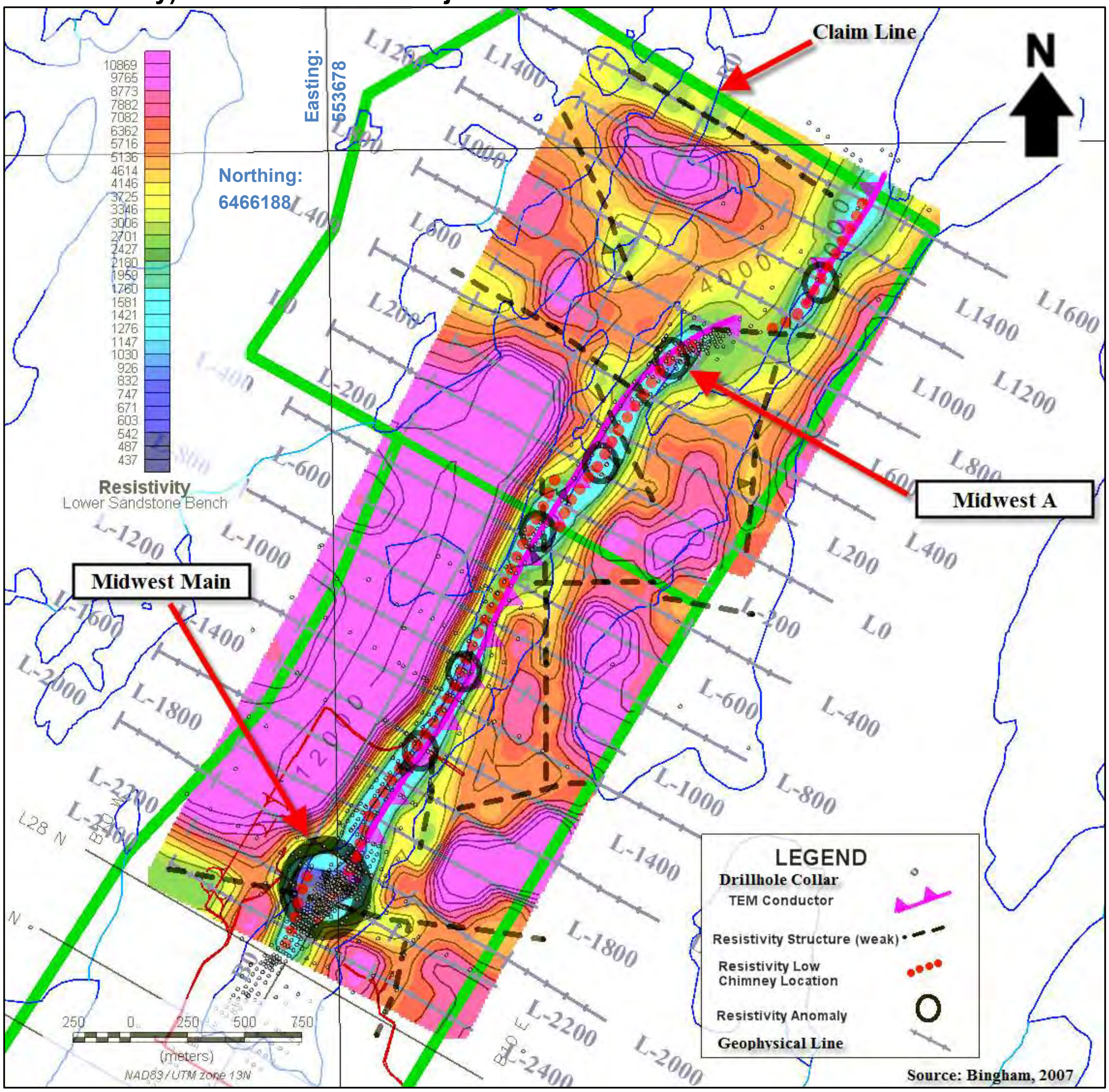
The chronology of exploration on the Midwest property is described in Section 6. The drilling history of the Midwest Main and Midwest A deposits is described in Section 10.

The exploration tools of choice include airborne and ground geophysical surveys. Figure 9-1 displays a colour-enhanced resistivity anomaly map of the lower sandstone bench (comprising the last 30 metres of sandstone above the unconformity) from pole-pole DC-resistivity surveys carried out in 2006 and 2008. The Midwest Main deposit (circled on Figure 9-1) occurs at the intersection of several cross-cutting low-resistivity features, related to faulting, with the NE-trending resistivity-low related to the graphitic pelitic metasediments and associated NE-striking faults.

Figure 9-2 shows a resistivity anomaly map at a depth of 250 metres (30 metres above the unconformity level) from a pole-pole DC-resistivity survey over the Midwest area. The survey was carried out in 2006 and involved 45.5 kilometres of line cutting, 33.3 kilometres of DC-resistivity, as well as 21.5 kilometres of small moving loop EM, along 21 lines spaced at 200 metre intervals (Figure 9-3). The known uranium occurrences in the area lie within a long resistivity low corresponding to the EM conductor associated with the graphitic pelitic gneiss units in the basement. The Midwest A deposit occurs at a jog/bend in the conductor trace where the conductor shifts directions (Bingham, 2007).

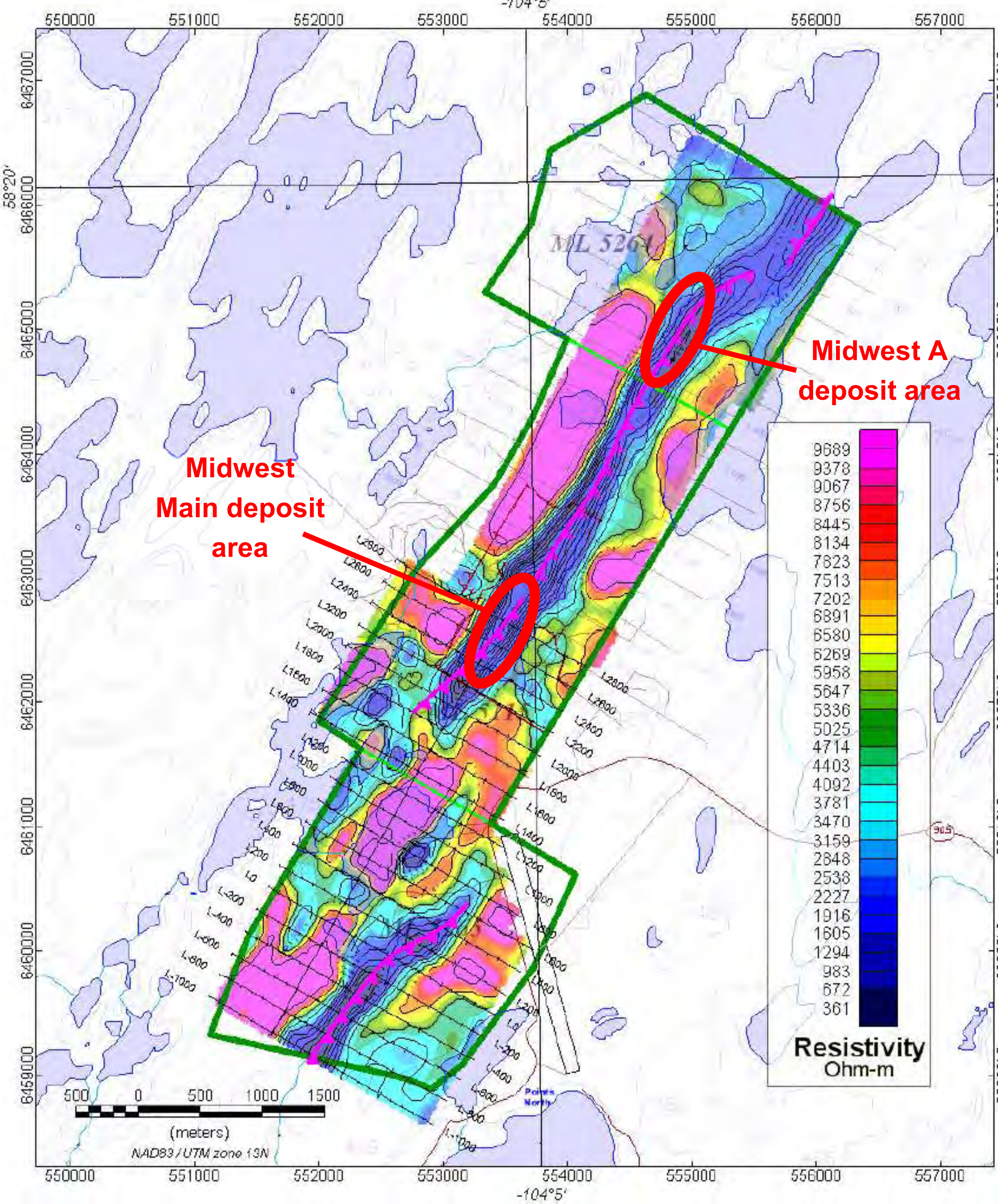
The other exploration tools of choice rock geochemistry and clay mineralogy of drillhole core samples, mostly to define alteration haloes in the overlying Athabasca sandstone and vectors toward mineralization (Source: Quirt (2003), after Hoeve and Quirt (1984) Some historical drillholes on the property have been re-logged for that purpose. Through diagenetic processes, detrital and authigenic kaolinite transforms into well-crystallized dickite and then the kaolin is altered into diagenetic illite. Subsequent diagenetic-

Figure 9-1: Ground Resistivity Anomaly at Depth of 250 Metres (30 Metres Above the Unconformity) over the Midwest Project Area



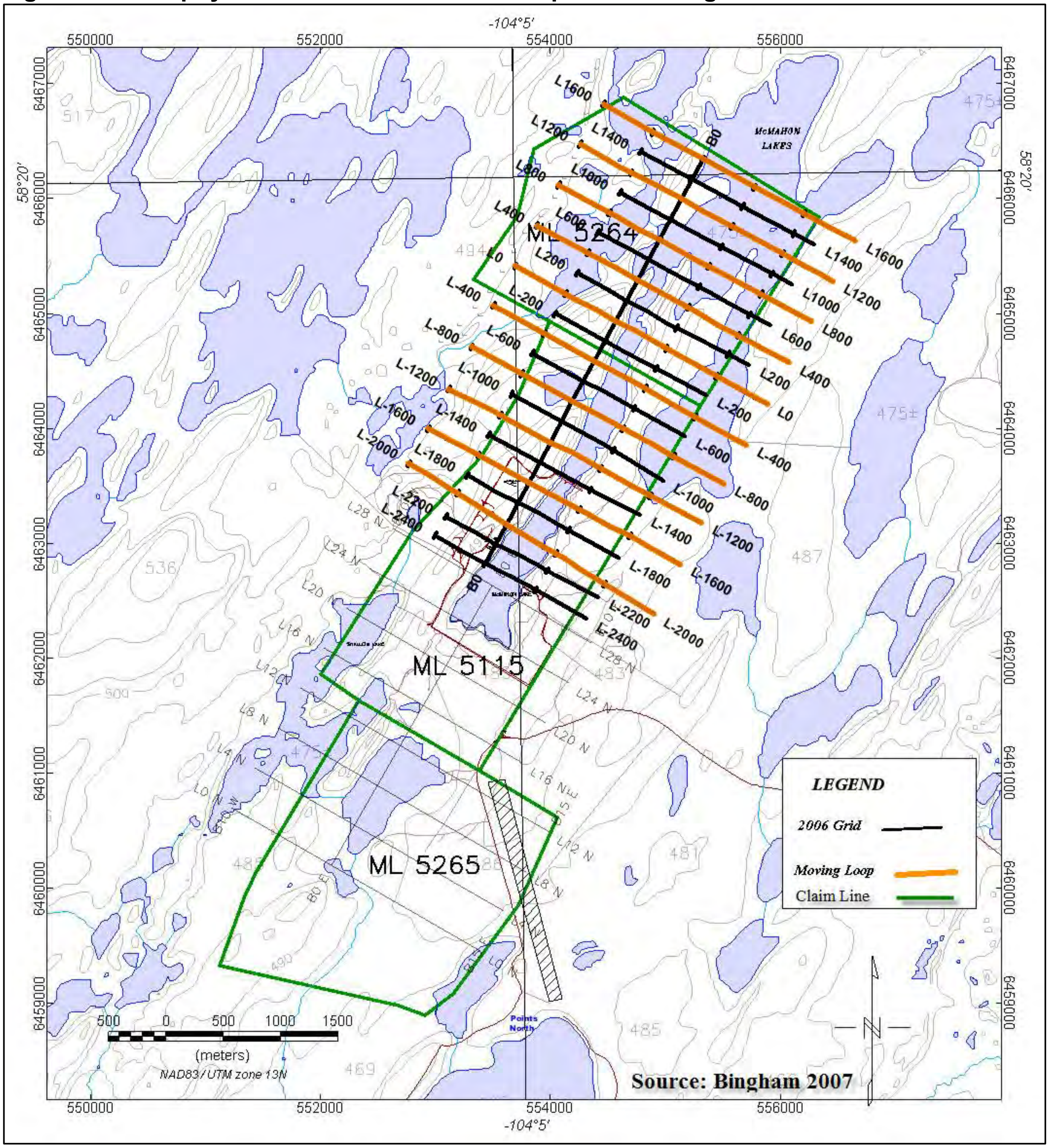
(Source: Denison, 2007)

Figure 9-2: Inverted Ground Resistivity Anomaly (Colour Enhanced) in the Lower Sandstone Bench over the Midwest Project Area (2006 and 2008 Surveys)



(Source: Denison, 2008)

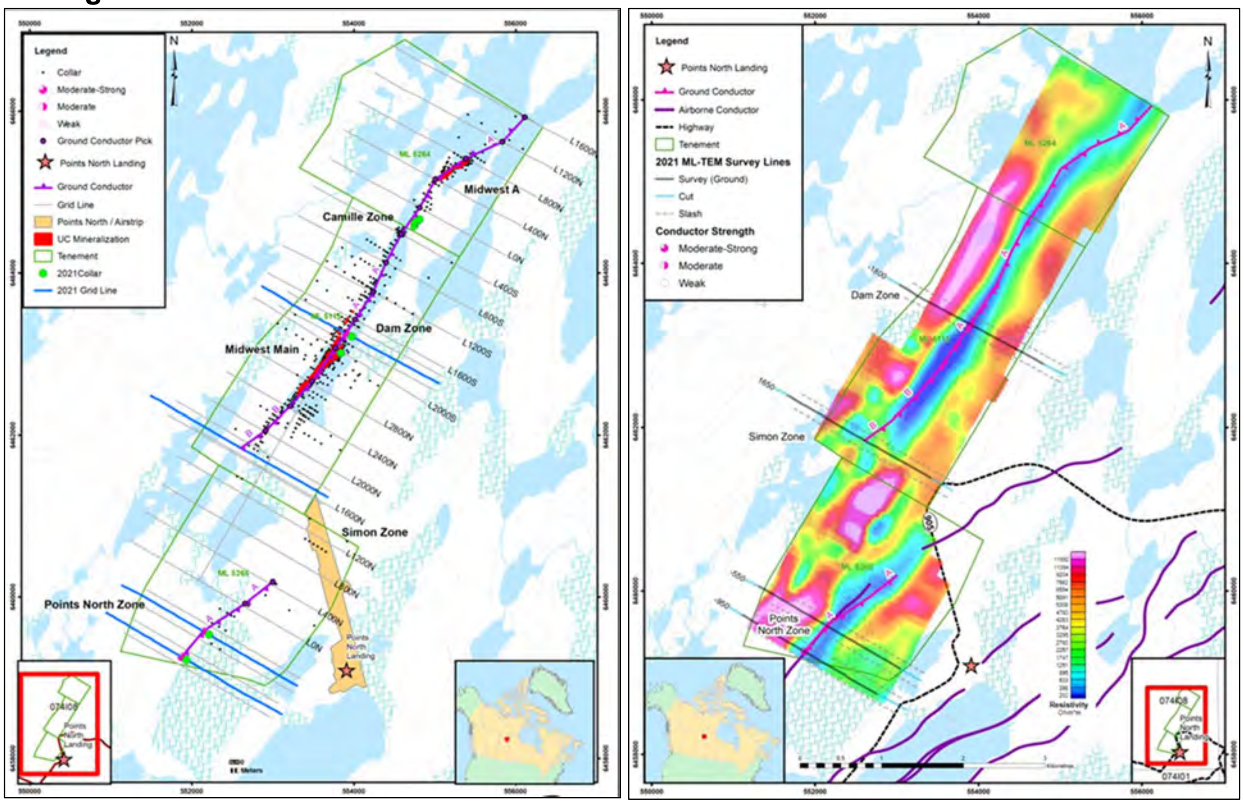
Figure 9-3: Geophysical Lines from the 2006 Exploration Program



(Source: Denison, 2007)

A small ML-TEM survey was completed in 2021 (4 lines for 7.75 km) which focused on the Dam, Simon, and Points North Zones and supplemented the above datasets, see Figure 9-4.

Figure 9-4: 2021 Geophysical Lines and Resistivity Compared to Previous Grids and Drilling



(Source: Orano, 2021)

10. DRILLING

Information in section 10 regarding drilling completed before 2018 is from the 2018 SRK Mineral Resource Estimate report (as provided by Denison and Orano) which was reviewed and accepted by UMR. The information regarding the recent drilling in these subsections was provided by Orano and Denison, which was also reviewed and accepted by UMR.

10.1. Type, Methodology, and Extent of Drilling

Diamond drilling on the Property is the principal method of exploration and delineation of uranium mineralization after initial geophysical surveys. Drilling is completed primarily during the winter months as the majority of uranium mineralization is located under the lake.

Since 1970, a total of 1,058 drillholes have been completed on the Midwest property, totalling 213,215 m. Table 10-1 is the summary of drilling considered "historic", and Table 10-2 is the summary of drilling conducted by or on behalf of Denison. Drilling statistics are sub-divided into regions based solely on the northing location of the collar ("Midwest-Main" = 6,462,350 to 6,463,350 N; "Midwest-A" = 6,465,050 to 6,465,500 N; and "Exploration" = all others external to those ranges) and may not align with drilling statistics discussed in other sections.

Table 10-1: Midwest Property Drilling Summary (Historic)

Company	Year/Region	Metres	# of Holes	Drilling Info	Comments
Esso	**1970**	**1,231.0**	**11**		
	Exploration	1,231.0	11	Unknown	Exploration drilling. No drillholes reached basement. No uranium mineralization was discovered.
	1971	**1,690.2**	**91**		
	Exploration	954.4	51	BQ-size; vertical & inclined	Exploration drilling. No drillholes reached basement. No uranium mineralization was intersected.
	Midwest-Main	735.8	40		
	1975	**800.1**	**25**		
	Exploration	800.1	25	AQ-size; inclined	Exploration drilling. No drillholes reached basement. No radioactivity higher than background was detected in the core.
	1977	**930.6**	**3**		

	Midwest-Main	930.6	3	NQ-size; vertical	Exploration drilling targeting the pre-Athabasca unconformity. Drillhole 77-2 intersected weak uranium mineralization in unconsolidated sand located in a steeply dipping sheared zone above the unconformity.
	1978	**39,784.7**	**179**		
	Exploration	17,628.6	79	NQ-size; vertical & inclined	Exploration drilling assessing the significance of the weak mineralization intersected in 1977 led to the discovery of the Midwest Lake deposit. **The first drillhole (MW-1) intersected two mineralized intervals: 9.5 m at 0.13% U_3O_8 and 1.2 m at 8.73% U_3O_8.** Included some geotechnical drillholes.
	Midwest-Main	22,156.1	100		
	1979	**35,785.5**	**170**		
	Exploration	11,598.3	58	NQ-size; vertical	Delineation drilling for mineralization definition as well as additional exploration and geotechnical drilling. **First mineralized occurrences in the Midwest A area were intersected with the best results encountered in MW-331 (3.27% U over 3 m*).**
	Midwest-A	3,535.7	16		
	Midwest-Main	20,651.5	96		
Canada West Mine Ltd.	**1980**	**26,594.0**	**121**		
	Exploration	4,211.9	23	NQ-size; vertical	Delineation drilling for mineralization definition as well as additional exploration and geotechnical drilling. Follow-up to the north-east of the encouraging results from 1979 encountered HG mineralization at the Midwest A deposit (termed Mae Deposit at the time). Best intersection was MW-338 (6.51% U over 3.8 m*).
	Midwest-A	3,484.1	15		
	Midwest-Main	18,898.0	83		
	1981	**41,571.4**	**193**		

	Exploration	2,611.4	10	NQ & PQ-size; vertical	Delineation drilling for mineralization definition and included additional exploration and geotechnical drilling.
	Midwest-Main	38,960.0	183		
	TOTAL	**148,387.5**	**793**		

Drilling results are based on a cut-off grade of 0.05% U (0.06% U_3O_8).

Table 10-2: Midwest Property Drilling Summary (Conducted by or on Behalf of Denison)

Company	Year/Region	Metres	# of Holes	Drilling Info	Comments
Denison	**1987**	**241.6**	**1**		
	Midwest-Main	241.6	1	NQ-size; vertical	Shaft test drillhole. Started in Dec. 1987, finished in Jan. 1988.
	1988	**357.5**	**14**		
	Exploration	64.0	5	NQ-size; vertical	An additional shaft test drillhole with hydraulic conductivity and grouting tests performed. A series of short drillholes (0.7 m to 16.4 m in depth) with no information were also completed.
	Midwest-Main	293.5	9		
	1989	**2,479.1**	**20**		
	Exploration	1,029.2	4	NQ-size; vertical	Mine testing program. Underground geotechnical blind bore holes (BB Series) and extensometer holes (WRM Series). Drilling records are missing for the additional piezometer holes. Several holes drilled within the Midwest A deposit area, but no HG mineralization was intersected. Weak mineralization was found in three holes with the best results encountered in MW-652 (0.05% U over 3 m*).
	Midwest-A	978.7	4		
	Midwest-Main	471.1	12		
Cogema/ AREVA/Orano	**2004**	**1,227.0**	**4**		
	Midwest-Main	1,227.0	4	NQ-size; inclined	Geotechnical drilling for pit slope design studies around the provisional open pit margins.

	2005	**4,596.0**	**16**		
	Exploration	1,080.0	4	NQ & BQ-size; inclined	Exploration drilling focused in the northern area to follow-up sandstone mineralization encountered within historical drilling (MW-338). Intersection of HG sandstone mineralization with several LG zones extending to the unconformity. Best results occurred in MW-662 (1.12% U over 32.2 m*).
	Midwest-A	3,516.0	12		
	2006	**11,132.0**	**43**		
	Exploration	507.0	2	HQ, NQ, & BQ-size; vertical and inclined	Exploration drilling focused on basement mineralization targets. Geotechnical drilling to determine waste rock pile geochemistry. Several delineation drillholes following up on the 2005 results in the Midwest-A deposit encountered significant uranium mineralization. Best results were encountered in MW-691 (3.42% combined U/eU over 43.7 m*).
	Midwest-A	9,356.2	34		
	Midwest-Main	1,268.8	7		
	2007	**14,273.0**	**51**		
	Exploration	547.6	2	NQ-size; vertical and inclined	Drilling focused on central and SW portions of the Midwest-A deposit. Several new HG intercepts were encountered and three holes contained >10 m of U mineralization with grades locally greater than 10% U. Best results occurred in MW-749 (6.06% combined U and eU over 57.9 m*).
	Midwest-A	13,725.4	49		
	2008	**12,033.5**	**48**		
	Exploration	4,410.3	18	NQ-size; vertical and inclined	Drilling focused on the NE and SW extensions of the Midwest A deposit, increasing the extensions of the LG

	Midwest-A	7,623.2	30		mineralization. Only one hole (MW-766) intersected medium-grade mineralization (0.45% mixed U and eU over 4.6m*).
	2009	**8,895.9**	**34**		
	Exploration	8,895.9	34	NQ-size; vertical and inclined	Drilling tested prospective targets between Midwest Main and Midwest A. Highlight of the program featured 3.06 % U_3O_8 over 0.6 m from MW-828.
	2018	**4,709.0**	**16**		
	Exploration	2,269.4	7	HQ & NQ-size; inclined	Investigate the basement potential under the deposit as well as acquiring oriented structural data to confirm geological 3D model interpretations.
	Midwest-Main	2,439.6	9		
	2021	**2,669.0**	**8**		
	Exploration	1,946.0	6	HQ & NQ-size; inclined	Drillholes were designed to test for continuity of the high-grade basement mineralization intersected in historic drillhole MW-38 as well as additional exploration to the NW and SE of Midwest Main.
	Midwest-Main	723.0	2		
	2024	**2,213.8**	**10**		
	Midwest-Main	2,213.8	10	NQ-sized; vertical	Drillholes targeted the Midwest Main deposit for resource delineation and ISR investigation.
	TOTAL	**64,827.3**	**265**		

Drilling results are based on a cut-off grade of 0.05% U (0.06% U_3O_8).

10.2. Midwest Main Drilling

10.2.1. Summary

Exploration and delineation diamond drilling of the Midwest Main deposit was primarily carried out through continuous NQ (47.6 millimetres diameter) and BQ (36.4 millimetres diameter) wireline coring for exploration holes, and PQ (85.0 millimetres diameter) coring for geotechnical holes. Most drillholes were vertical and extended between 10 to 100 metres below the unconformity. Definition drilling of the high-grade within the Midwest Main deposit has been completed at 7.5 metre drill spacing with drill sections positioned every eight metres.

Prior to 2005, nearly all the drillholes were drilled vertically, with the exception of some PQ-series drillholes that were drilled in 1982 for geotechnical purposes. Post-2005, the drillhole trajectories have included a mix of inclined and vertical drillholes. Inclined drilling techniques were used in part to obtain oriented structural measurements and in part when ice drilling locations were inaccessible due to climatic conditions and land drilling was required to test targets below the lake.

Drilling from 1970 to 1981 was conducted before Denison's involvement in the project, whereas drilling from 1987 to present was conducted by, or on behalf of Denison. Most pre-2005 drilling was carried out in the vicinity of the Midwest Main deposit area, while most 2005-2009 drilling was carried out in the vicinity of the Midwest A deposit and between the two deposits. Some smaller drill programs were completed on Midwest Main in 2018, 2021 and 2024.

Exploration diamond drilling on the Midwest property began in 1970, after the 1960's discovery of a well-defined radioactive boulder train at the southwest end of the Mink Arm of McMahon Lake (Simpson & Sopuck, 1983). The distribution of the uranium mineralization indicated some fracture control. Diamond drilling, aided by various geophysical and till geochemical surveys, was done during subsequent years in attempts to locate the location from which these boulders were derived.

10.2.2. Historic Drilling

The 1970 diamond drill program (11 BQ drillholes for 1,231 metres) was performed in an attempt to confirm the NE and NW-trending structural features indicated by geophysical surveys. They were not confirmed by the diamond drilling and no uranium mineralization was intersected.

The 1971 diamond drill program consisted of 91 short BQ drillholes, totalling ~1,700 metres, designed to test for mineralization of the type discovered in the boulder train. Holes were drilled primarily vertically from 3 to 100m into the bedrock. No mineralization was intersected.

In 1975, Numac contracted Wescore Drilling Ltd. to perform 25 inclined AQ diamond drillholes totalling ~800 metres on ML 5115 to test for uranium-mineralized structures striking parallel to the radon soil gas anomaly and the uranium mineralized boulder at Mink Arm. No radioactivity higher than background was detected in the core.

Following public reporting of the discovery of the Key Lake unconformity-type uranium mineralization in 1975, Esso, who became the project operator in 1977, carried out a small drill program during the winter of 1977 with three drillholes totalling ~930 metres. Unlike all previous drill programs on the property, these drillholes were drilled to reach the sub-Athabasca basement. Intersection of the first mineralized occurrence on the Midwest Project occurred in the second drillhole of the program (drillhole 77-2) within poorly consolidated sandstone directly above the unconformity.

Extensive follow-up drilling was then conducted on the Midwest Project by Esso/Canada West Mines Ltd. from 1978 to 1981, including exploration, delineation, piezometer, and geotechnical drilling. The first drillhole of the 1978 program confirmed the discovery of the Midwest deposit with two mineralized intersections of 9.5 metres at 0.13% U_3O_8 and 1.2 metres at 8.73% U_3O_8. Esso contracted Midwest Drilling to conduct the mostly vertical drilling using NQ rods. In 1980, Canada West Mines Limited, a subsidiary of Esso, took over responsibility for work carried out on the Midwest Project. Drillholes were mostly NQ, being reduced to BQ when warranted by ground conditions, with 29 PQ drillholes completed within the deposit area in 1981 for a bulk sampling program that was aimed to obtain material for use in metallurgical pilot plant testing.

10.2.3. Drilling Completed by or on Behalf of Denison

During 1988 and 1989, the Midwest Joint Venture, then operated by Denison Mines, completed a test mine program under the Mink Arm of South McMahon Lake. The key objective of the test mining was to provide sufficient information on ground conditions, hydrogeology, and potential radiation hazards to be able to establish the mining plan for the Midwest deposit (Bharti Engineering Associates, 1989). In preparation for the test mine, two NQ test shaft holes were drilled in 1987-1988 on either side of the lake with a Longyear HC-150 drill rig under the supervision of Golder Associates. Hydraulic conductivity and grouting tests were performed. The west shore location was used for the construction of the shaft. In 1989, Bharti Engineering Associates (BEA) completed a geotechnical, groundwater, and blind boring evaluation during test mining in conjunction with Adrian Brown Consultants. Thyssen Mining Construction completed the blind boring of two 1.2 metre diameter holes in September and October 1989 in conjunction with MJV personnel. Blind boring was carried out to test the technical feasibility of obtaining high-grade mineralization from a mining station located roughly 25 meters above the mineralized body. A Robbins raisebore machine (RBM 7) with a modified drilling system was installed in the underground cross-cut to bore, without a pilot hole, a 1.2 metre diameter hole was drilled vertically downwards into the mineralization. Extracted cuttings were stored in a containment vessel for hoisting to surface. In conjunction with the blind bore test, methods of sampling, solids/liquids separation, and uranium mineralization containment were being tested for the first time.

Drilling activities then remained dormant until 2004 under Cogema/AREVA/Orano project operatorship.

In 2004, Golder was contracted by Cogema to drill four inclined NQ geotechnical holes to provide data and recommendations regarding pit slope design criteria. The drillholes were oriented using the Ball-Mark system and the drill core was geotechnically logged.

Exploration activities on the Midwest property resumed in 2005 and extended until 2009 under Cogema/AREVA/Orano operatorship. With the discovery of the Midwest A deposit in 2005, most of the drilling between 2005 and 2009 focused on areas outside of the Midwest Main deposit to the northwest (Midwest A, Josie, Camille, and Dam Pod areas). Orano contracted Boart Longyear (Saskatoon, SK) to perform the extensive drilling programs occurring between 2005 and 2009. The drilling equipment consisted of LF-70 diamond drills with HW and NW casing, and HQ, NQ, and BQ rods. An enviro-shack was placed on site to collect drill cuttings if the hole produced return from near or within the mineralized zone.

In 2018, the Midwest Main area was drilled to investigate the basement mineralization potential under the deposit as well as acquiring oriented structural data to confirm and better constrain the 2017 geological 3D model interpretations. Targeting focused on the intersection of major north-south trending faults with east-west structures crosscutting the Midwest north-northeast-trending graphitic trend. Four drillholes were completed in the northern HG zone of the Midwest Main deposit, where basement mineralization was intersected in select historical drillholes. Three of the four drillholes intersected additional basement uranium mineralization down-dip of known mineralization with the deepest mineralization intersection located approximately 85 m (vertical depth) below the unconformity and remains open in several directions. Drilling within the Midwest A deposit was initially planned for 2018 but was cancelled.

In 2021, one drillhole (MW-861) was completed in the Midwest Main deposit to test for continuity of the high-grade basement mineralization intersected in historic drillhole MW-38, approximately 30 m northeast along the Midwest trend. MW-861 intersected weak fracture-hosted and disseminated mineralization in the medial and lower sandstone and did not intersect any high-grade mineralization in the basement, only low-grade fracture-hosted mineralization. It is believed that the basement mineralized intercepts in MW-861 represent the high-grade target zones, however the grade is diminished along strike

The 2024 drill program consisted of ten drillholes positioned throughout the Midwest Main deposit for resource delineation and ISR investigation. Each drillhole was designed to confirm the high-grade extents and in parallel, collect site specific hydrogeological data within the unconformity mineralization.

Most historical drill core material (1971-1989) was stored at the original Midwest Project core storage located adjacent to the east side of Mink Arm of South McMahon Lake (the Mink Arm core storage area). In 1979, most of the non-mineralized sandstone core obtained the previous year was dumped into the lake. In the 1990's, poor-condition core from zones of little interest was disposed of, thus not all the Midwest historical core is currently available for examination. From 2005, all core acquired during drilling campaigns was stored at the Moffatt Lake exploration camp on the McClean Lake property. During the summer 2009, the relocation of all of the historical core remaining at the old Midwest core storage to the Moffatt Lake camp was completed.

10.3. Midwest A Drilling

10.3.1. Summary

Exploration and delineation drilling of the Midwest A deposit was primarily carried out through NQ wireline coring, reducing to BQ when necessary. Drillholes were mostly drilled vertically prior to 2005; whereas post-2005 the drillhole paths are a mix of inclined and vertical drillholes. Inclined drilling techniques were used in part to obtain oriented structural measurements and when ice drilling was inaccessible due to poor weather conditions. Delineation drilling of the Midwest A prospect was completed at a 25-metre line-spacing with unconformity intercepts targeted to be spaced at 12.5 metre spacing. There has been no new drillhole information in the footprint of the Midwest A Deposit since 2008.

10.3.2. Historic Drilling

Following the discovery of the Midwest Main deposit, exploration was completed throughout the property to test several geochemical and geophysical anomalies. Esso contracted Midwest Drilling to conduct exploration drilling in 1979 within the present-day Midwest A deposit area. Several mineralized occurrences were encountered with the best results occurring in MW-331 (3.27% U over 3 metres). All drillholes were vertical and extended from a few metres to approximately 25 metres into the basement rocks using NQ rods. In 1980, additional vertical drillholes were drilled in the present Midwest A area, following-up the encouraging results from 1979. Significant uranium mineralization was encountered in several drillholes, but the results were not deemed economical at the time by the operator and no further drill testing was done in the area until 1989.

10.3.3. Drilling Completed by Current Ownership

In 1989, PNC, on behalf of Denison, contracted Connors Drilling of Kamloops, B.C. to drill NQ diamond drillholes to test targets outside and north-east of the Midwest Main deposit. Three vertical drillholes using a Nodwell-mounted wireline drill were completed in the Midwest A zone, extending less than 50 metres below the unconformity contact. The 1989 exploration program did not result in the intersection of any high-grade mineralization and only weak mineralization was encountered. Further drilling in the vicinity of MW-652 and MW-653 was deemed merited by Denison (Lida, Hasegawa, & Ahuja, 1990); however, exploration remained dormant until 2005.

In 2005, Cogema (now known as Orano), who became the operator in 1994, contracted BOART Longyear Drilling to drill NQ and BQ diamond drillholes to follow-up sandstone mineralization encountered within the historical drilling (MW-338). This drilling led to the discovery of high-grade sandstone mineralization with several lower-grade zones extending from the unconformity. Best results occurred in MW-662 (1.12% U over 32.2 metres). This discovery was called the Mae Zone (now Midwest A). Drilling equipment consisted of one LF70 diamond drill rig with HW and NW casing, and NQ and BQ drill rods. Due to poor ice conditions on McMahon Lake that winter, all drilling activities were conducted from land with inclined drillholes extending out to the east.

In 2006 through 2009, AREVA (name changed from Cogema in 2006, now known as Orano) contracted BOART Longyear Drilling for extensive delineation drill programs in the Midwest A area as well as exploration in the area between Midwest Main and Midwest A. Drilling equipment consisted of LF70 diamond drills with HW and NW casing, and HQ, NQ and BQ drill rods. An enviro-shack was on site to collect cuttings if the hole was producing return near or within the mineralized zone. Due to the poor ground conditions in the quartz dissolution zone around the mineralization, vertical holes proved to be problematic. Numerous holes were prematurely lost before reaching the desired depth. Even with HQ rods the ground problems persisted, so drilling methods were switched again to steeply inclined holes and the completion ratio improved. The inclined holes also worked better for intersecting the mineralized zones that were newly interpreted as steeply-dipping to the north-west, rather than as flat-lying lenses. In 2009, the drilling tested the extension of the Dam Pod, the Camille Zone, and the Josie Zone.

10.4. Drillhole Collar Locations

Drillhole collars prior to 2006 were located by conventional grid survey and the locations were then later updated using a differential base station GPS system. The local mine grid was rotated approximately 32° clockwise from the UTM NAD83 grid north.

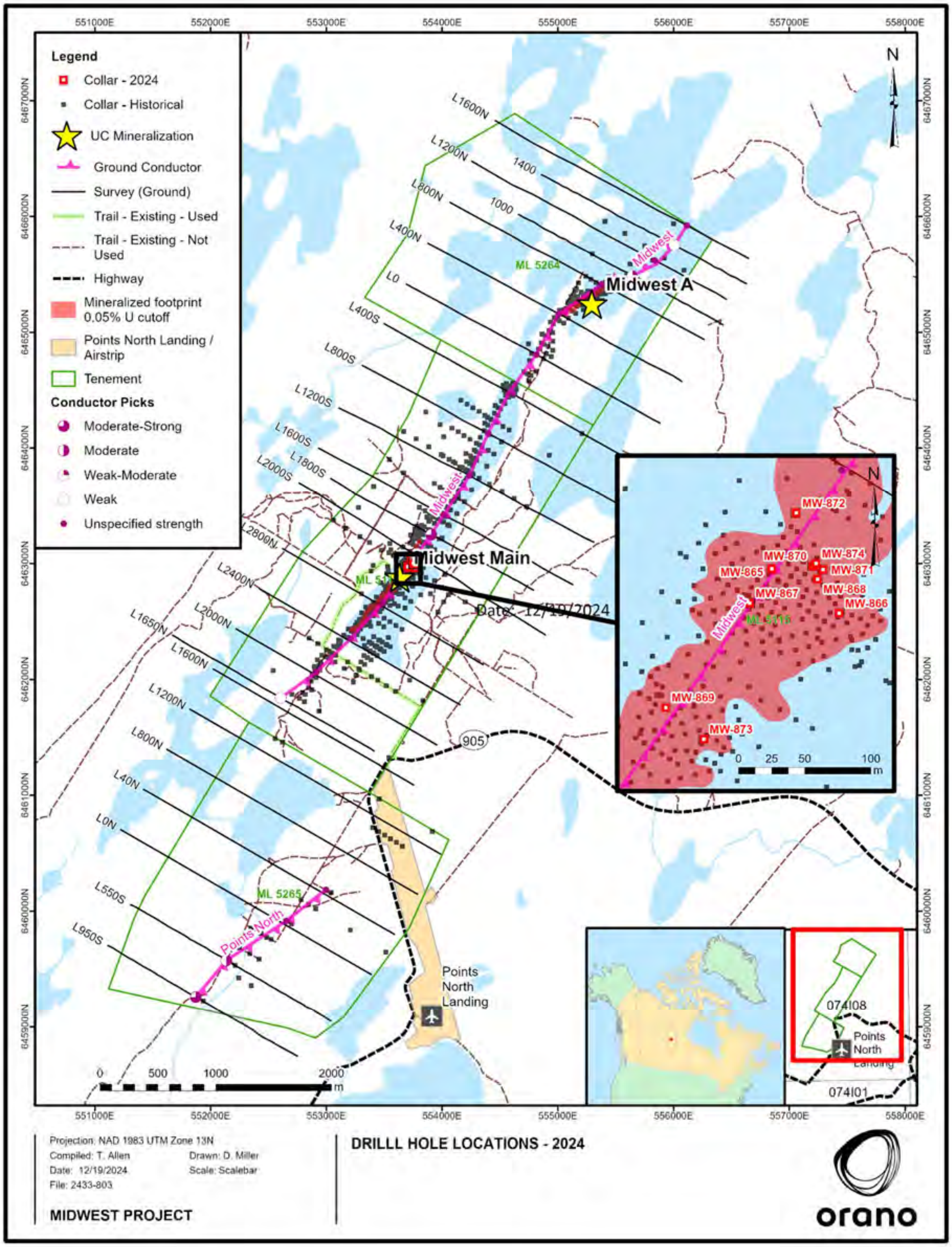
A field survey was performed in 2010 to convert historical grid coordinates to UTM NAD83 (Zone 13) for holes not drilled on McMahon Lake (Mink Arm) and either adjacent to within the formerly proposed open pit outline (Miller, 2011). The survey used a Trimble 5700-5800 RTK rover unit with a Pacific Crest PDL4335 position data link transmitting radio with a base station. Twenty-one historical drillhole collars out of 113 were located, with the majority of the remaining holes being located on the lake.

UTM coordinates for historical drillholes drilled on the McMahon Lake were obtained by derivation from a conversion formula built on the historical coordinates and the results of the 2010 field survey. Derived collar coordinates are noted as LEGACY in the Midwest database.

After 2006, drillhole collar locations were first measured with a Leica GS20 differential GPS unit, and since 2009 with a Trimble R6 differential GPS unit. The coordinate system for all of the drill collars is UTM NAD83 (Zone 13).

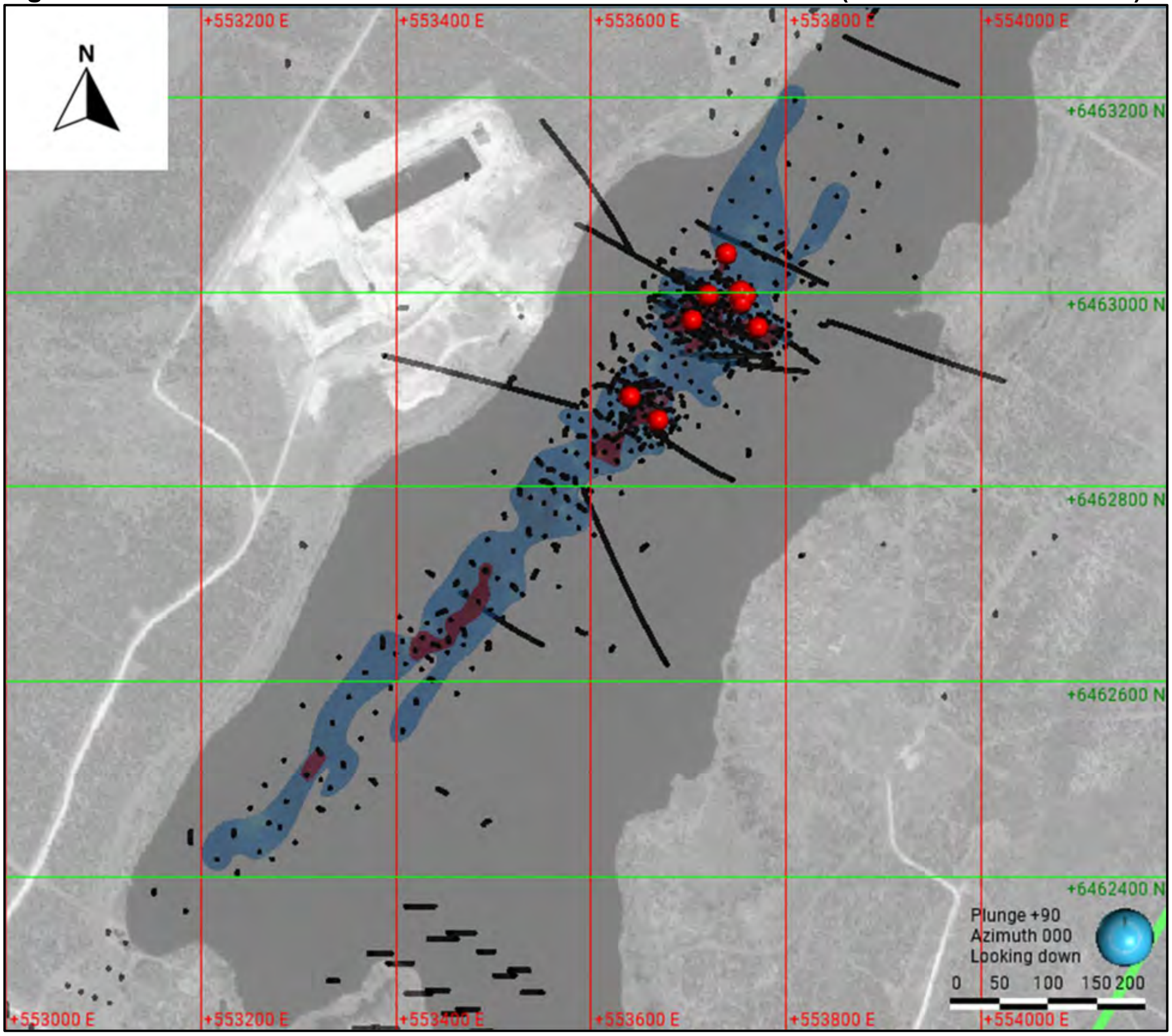
See Figure 10-1, Figure 10-2 and Figure 10-3 for the location of the collar coordinates located on the Midwest property, the Midwest Main area, and the Midwest A area respectively.

Figure 10-1: Disposition and Drillhole Collar Locations on the Midwest Property



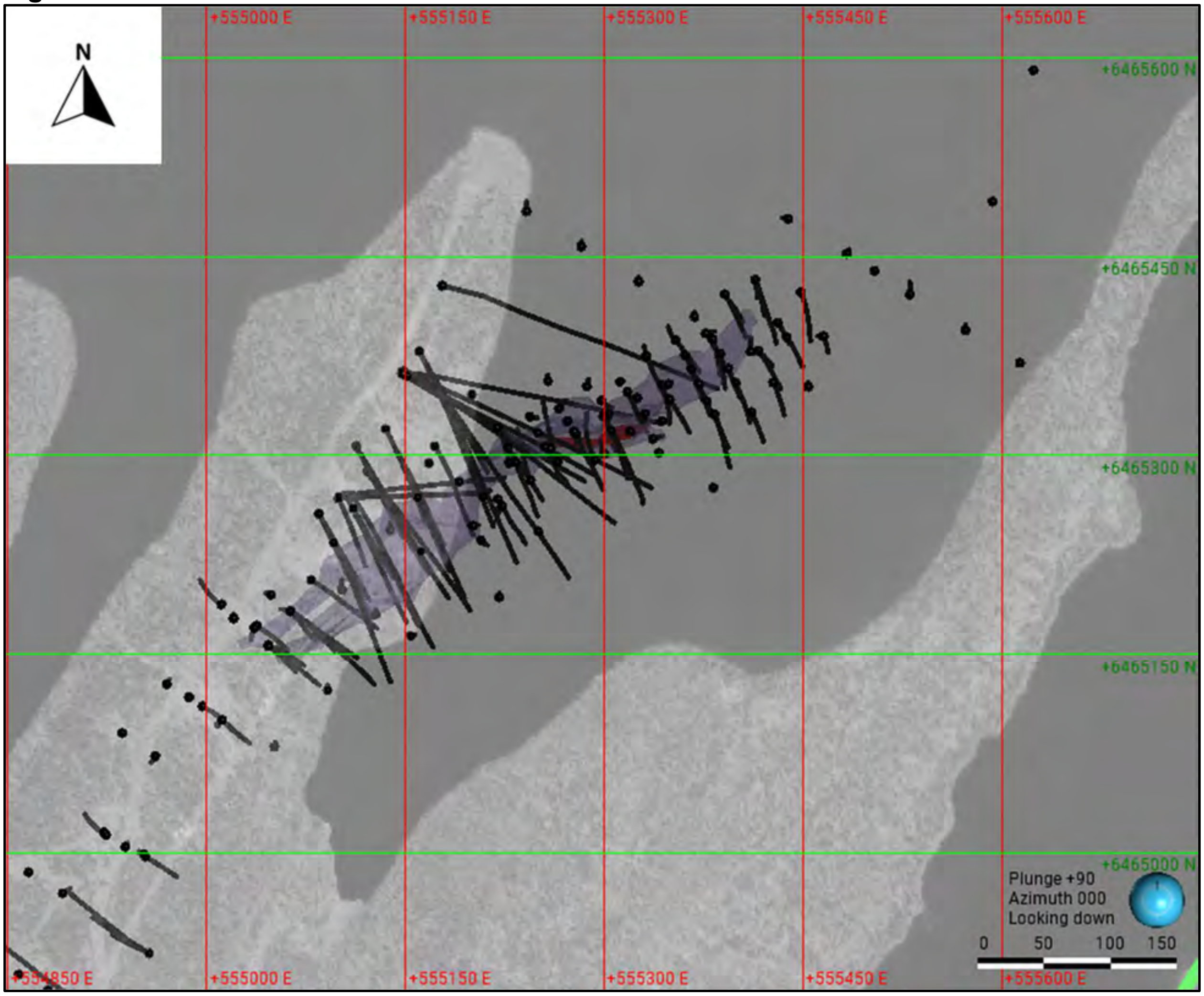
(Source: Orano, 2024)

Figure 10-2: Drillhole Collar Locations in the Midwest Main Area (2024 Drillholes in Red)



(Source: Denison, 2024)

Figure 10-3: Drillhole Collar Locations in the Midwest A Area.



(Source: Denison, 2024)

10.4.1. Downhole Surveying

Downhole survey methodologies have varied during the years of exploration on the Midwest property.

In the early exploration campaigns, from 1971 to 1977, most drillholes were drilled vertically. No information has been found regarding downhole surveys or the type of tool that was used. Post-1977, but prior to 2005, drillhole deviation was measured every 30 to 50 metres using acid tests and with Tropari and Sperry Sun single-shot cameras (in 1981) during normal drilling operations. Since 2006, drillhole deviation has been measured just below the drill casing and subsequently every 30 or 50 metres with a Ranger Survey or a Reflex EZ-single-shot probe during normal drilling operations. All of the drillhole surveys have been updated for variation in magnetic declination.

No borehole calliper surveys have been undertaken at Midwest.

10.4.2. Drilling Procedures

Little is documented concerning drilling procedures prior to 2005, as most of the drilling was conducted between 1977 and 1981. Drilling was mostly conducted on the lake (drilling on ice in the winter and on barge for summer holes), with the remainder drilled on land. Prior to 2005, Midwest drillholes were occasionally cemented. No information is available about the grouting procedure used at the time. However, Canada Wide Mines correspondence (Wray E., 1980) stipulated that "all diamond drillholes at Midwest are to be cemented from the bottom up, to a point 30 metres above the orebody".

The drilling methods used by Orano for drilling after 2005 depended on two factors: weather conditions (ice or land drilling; no barge drilling occurred) and ground conditions around the mineralization (extensive dissolution zone located in the sandstone above the Midwest Main deposit). In 2006, drilling of NQ or HQ vertical drillholes proved to be problematic due to poor ground conditions and numerous holes were prematurely lost before reaching the desired depth. Inclined drilling, which improved completion rates, was adopted thereafter. In general, the overburden was drilled with NW or HW casing, followed by NQ or HQ coring of the sandstone column and basement. When HQ was used, coring would switch to NQ coring once the hole was safely in the basement lithologies. BQ rods were also available when reducing from NQ to BQ was warranted.

All drillholes drilled by AREVA/Orano (i.e. 2005-on), when possible, were grouted with cement to encompass the mineralized zone (usually 10 metres above and below) and from the overburden to 30 metres below. Many holes were entirely cemented. Casing was generally removed. Holes on land were marked with a tagged post.

10.5. Reliability

There are no known drilling, sampling, or recovery factors that could materially impact the accuracy and the reliability of the results. In most cases where core recovery was poor, sufficient probing data was available to represent these intervals.

For Midwest A, holes that were drilled prior to 2005, were not used for the purpose of this resource estimation. These holes do not have available down-hole radiometric probe data and they had been geochemically sampled using a different sampling protocol compared with the drilling completed since 2005. These drillholes however, were used wherever possible to help constrain the 3D interpretation of the mineralization.

11. SAMPLE PREPARATION, ANALYSIS AND SECURITY

Information in section 11 regarding drilling completed before 2018 is from the 2018 SRK Mineral Resource Estimate report (as provided by Denison and Orano) which was reviewed and accepted by UMR. The information regarding the recent drilling in these subsections was provided by Orano and Denison, which was also reviewed and accepted by UMR.

11.1. Drill Core Preparation

Prior to sampling core is washed, core depths are verified, and core recovery and radiometry is recorded. Oriented core measurements are taken, geological and geotechnical logging is completed, and core photographs are typically taken for each hole.

All reasonable attempts were made to reassemble the recovered drill core to its original shape, as extracted from the drillhole, to allow the best estimate of drill core recovery and to provide better overall core logging. The core depths were then verified by the geologist before further work was conducted, as all depth measurements were based on the core depths recorded by the drilling contractor. Core recovery was documented (Section 11.5) and radiometry was measured (Section 11.2), with scintillometer cps data being marked on the box.

Geological and geotechnical logging was then completed on the core (Sections 11.3 and 11.7). After core logging and radiometry determinations, core photos were taken systematically from top to bottom of the hole, with three to four boxes of core in each photo. Infrequent selective photos (close ups) were also taken when something of interest was observed in the core. The quantity of selective photos varied from several per hole to none depending on the complexity and mineralogy encountered. Detailed pictures were also taken of any mineralized intervals. Each individual photo covered approximately 30 centimetres of the box, such that five pictures were taken per box. Core photos exist for all drillholes post-2005, and several holes from the early drilling campaign (1979-1981).

Core was sampled for geochemistry and mineralogy last, as detailed in Sections 11.9 and 11.10.

11.2. Radiometric Logging

The drill core was measured to determine core recovery on a per metre basis. The core was then scanned, in 10-centimetre intervals, for radioactivity. Up to 2003, the core was scanned for radioactivity using a shielded SRAT SPP2 scintillometer (measuring between 10 to 15,000 cps) and Geiger-Müller instruments (GMT-3T or GMT-15, measuring between 0 to 5,000 cps AVP and 0 to 50,000 cps AVP, respectively) were then used to rescan core that produced elevated scintillometer counts. AVP is a now-archaic unit that was created by the French Atomic Energy Commission (CEA); 1 cps AVP ≈ 10 cps SPP2 or SPPγ. From 2004 onwards, the core was scanned for radioactivity using a shielded SPPγ scintillometer (measuring between 10 to 40,000 cps). A color code was used when writing radiometric values on the core box:

- from 0 to 3,000 cps SPP2 or SPPγ ("weakly mineralized"), a black marker was used;
- from 3,000 to 15,000/40,000 cps SPP2 or SPPγ ("moderately to strongly mineralized"), a red marker was used;
- with >15,000/40,000 cps SPP2 or SPPγ ("strongly mineralized"), a blue marker was used.

The radiometric readings over the measured intervals were documented and are recorded in the Orano drillhole database.

If a zone of anomalous radioactivity was intersected, the radiometric values over the length of core were recorded in 10 cm intervals. The measured intervals were documented and are recorded in the drillhole database.

The measured radiometric values on the core were compared to down-hole radiometric probe readings taken of the mineralized interval to determine the probe radiometry-depth correlations and to correct probe recording depths. The recording of down-hole probe depths can be affected by stretching of the small-diameter co-axial cable on which the probe is connected and/or by ice/grit build-up on the cable, especially for deep drillholes. Therefore, adjustments may have been required for the depth intervals of the downhole probe data to correct for this potential source of error and for possible driller error with respect to core depths. See Sections 11.6.1 and 14.4 for Radiometric Grade Correlation explanations.

The core radiometry data from the SPP2 and SPPγ scintillometer readings were used to define the mineralized intervals, if any (AREVA, 2010). These intervals contain radiometric responses greater than 200 cps and were centered on the peak radiometric value(s), as much as is possible.

Radiometric gamma logging using scintillometers is conducted on the core to (1) define which part of the core will be sampled for chemical analysis, and (2) provide a core-based comparison with downhole gamma probe readings to allow correlation of the two data sets with the mineralized intervals and, if necessary, for depth correction of the downhole probing data.

Little is known about which types of scintillometers were used prior to 1990.

From 2005-2024, a SPP2 scintillometer was used. The SPP2 was incrementally replaced by the digital SPPγ scintillometer. The gamma radiometry of the drill core is measured over 10-centimetre intervals near mineralization, and more broadly in regions of background low gamma radiometry. The radiometry of the 10-centimetre intervals is measured by removing the core from the box and scanning it in an area of low background radioactivity. The reading, expressed in cps, is written on the core box and recorded in the database.

11.3. Geological Logging

During geological logging, lithological intervals were recorded for most drillholes on the Midwest property, with this data being stored in the database for all holes except the two Midwest Main shaft test holes (GT-1 and GT-2). The four underground piezometer holes (P-1 to P-4) into the Midwest Main deposit do not appear to have been logged for any lithological information.

Once the core was scanned for radiometry, the drill core was logged by geologists recording their observations on field log sheets at a scale of 1:100. Information captured during the core logging, carried out over one metre intervals, includes lithological descriptions, friability, sandstone grain size, fracture density, alteration features, colour, structural features relative to core axis, descriptions of mineralized intervals (graphite, pyrite, uranium, and other minerals of interest), a descriptive log of the core, and any other noted physical and geotechnical characteristics (recovery, maximum grain size in the sandstone, friability, and fracture count). All Athabasca Group sedimentary formations are distinguished based on grain size (MTG: Maximum Transported Grain-size) and interstitial clay content. These data were then transferred from the field log to computer and imported into the Orano drillhole database.

11.4. Oriented Core Measurements

Nearly all pre-2005 holes were drilled vertically with no core orientation possible and, if a hole was inclined, no oriented core measurements were obtained. The acquisition of oriented core measurements began in 2005 with the AREVA/Orano exploration work.

A core orientation system (Ace Core Tool: A.C.T.TM) was utilized to gather structural data. The A.C.T was utilized to determine the dip and azimuth of features in drill core by setting a reference mark at the lowest point of the drill core when a drill run is completed. Measurements were collected from angled drillholes wherever possible from approximately 40 metres above the unconformity to the end of the drillhole. Structural features were measured with respect to the reference mark. Collected data was processed and interpreted using the Dips 6.0 program by Rocscience. The Dip/Strike Right (right-hand rule) nomenclature is used when describing oriented structural measurements.

11.5. Drill Core Recovery

All drill core recovery completed by drilling contractors was performed using wireline (Q-line or equivalent) retrieval systems. The standard core diameter from recovery of HQ core is 63.5

millimetres, 47.6 millimetres for NQ core, and 36.4 millimetres for BQ core. Drillholes at Midwest have mostly been completed using BQ and NQ coring.

Core recovery was generally, with most intervals being greater than >90-95%. However, low drill core recovery is frequently encountered in and around mineralization due to high degrees of desilicification, clay alteration, and structurally damaged rock in faulted zones. The core recovery in the basement lithologies is generally superior to that in the sandstone. All instances of lost core are recorded on the logging sheets and drill core recovery percentages are calculated for each drill run and recorded in the database.

In general, Orano chooses to not assay/sample a mineralized interval if there is less than 75% recovery of the core over a 50 cm sample width if the hole was probed ((AREVA, 2010) and (Areva Resources Canada, 2012)); however, the mineralized intercepts within the 2024 drillholes were sampled in their entirety. For mineral resource estimations, wherever core recovery was less than 75%, the radiometric equivalent uranium values are substituted for chemical assays where possible.

11.6. Downhole Probing

11.6.1. Gamma Probing

No information is available regarding the historical probing procedures prior to 1996.

At the completion of each drillhole, down hole radiometric surveys are performed using radiometric gamma probes to detect and record the total gamma count along the trace of the diamond drillholes at 10-centimetre intervals. Prior to probing, the drillhole is washed with a combination of water and drilling mud additives. The surveys are recorded through the drill rods and casing from the bottom of the hole upwards. The NGRS natural gamma probe is used in a first run. The Geiger-Muller probe tools are used in a second run only if the NGRS probe records counts >1,000 cps and only from 10 metres above to 10 metres below the radiometric anomaly.

For the drillholes used in the resource estimate, surveys were carried out predominantly by the previous operators and by AREVA/Orano personnel for the few holes drilled after 2007. Down-hole probe radiometric readings are depth-adjusted through comparison with the drill core scintillometer readings and geochemical grades.

11.6.2. Radiometric Gamma Probes

The following down-hole radiometric gamma probes have been used on the Midwest Project:

- 1978 to 1990: various undefined gamma probes were used from 1978 to 1982. Natural gamma 9067 logging tool from Century Geophysical Corp. was used post-1981, and
- 1996 to 2018: DHT27-LF (low flux) and DHT27-HF (high flux), manufactured by Mine Gamma Technology, and
- 2019 to present: the DHT27 probes were replaced with he D28G probes (standard and high flux, same detectors as DHT27 probes), manufactured by Geovista, and
- 2007 to present: HLP-2375 and NGRS (Natural Gamma Ray Spectroscopy), manufactured by Mount Sopris and Geovista, respectively.

The DHT27-LF and DHT27-HF probes are equipped with Geiger-Muller detectors and are used to estimate equivalent uranium grades for mineralized intervals.

11.6.3. Probing Procedures

Prior to 2005, the information regarding the probing procedures used at the time is not known. They are likely similar to what was conducted by Orano (below):

Before radiometric probing begins, the probes are field tested to ensure they are reading properly. The probe is then placed in the drillhole and the depth is zeroed. Down-hole logging can be conducted from the below the mineralized zone of the hole up to the casing or from the casing to below the mineralized zone. Gamma values are measured at 0.1 metres (10 centimetres) intervals and are expressed in cps. Measurements are taken with the drill rods in the hole. As the probe is lowered/raised in the hole, the travel speed and the depth of the probe while it is in operation are measured at the winch which is equipped with a counting wheel. The probe sends a gamma pulse up the cable to the computer every 0.1 metres of travel and the data is recorded by the computer. Logging is typically done from the bottom of the hole upwards to the casing.

Since the fall of 2018, Orano gamma probes are run at the start of the field season in a designated control hole that is located in the Sue D deposit on the McClean Lake property as a duplicate control for gamma probing. During the field season, the probes are then run typically every 2 to 3 weeks to ensure they are functioning properly over varying grade ranges.

Natural gamma emission is measured in cps (counts per second) by a Mount Sopris HLP-2375 or Geovista NGRS scintillometer. Radiometric probing in mineralized intervals is done using the DHT27-LF GM (Geiger Muller) low flux counter.

11.6.4. Probe Calibration and Check

A calibration certificate from Orano's calibration facility in Bessines-sur-Gartempe (France) is provided with the purchase of the DHT27-LF and DHT27-HF probes. Radiometric probes used in drillholes are, as well, calibrated annually using the Saskatchewan Research Council (SRC) gamma-probe calibration facility in Saskatoon, Saskatchewan (AREVA, 2010). The handheld scintillometers are tested semi-annually using 137Cs radioactive test sources (AREVA, 2010).

The radiometric gamma probes are also tested systematically before and after each run downhole using a radioactive source. In the event that the probe readings are inconsistent with the source reference value, the original run dataset is discarded and another probe survey is used to obtain the downhole radiometry.

11.6.5. Equivalent Uranium Grade

Radiometric data obtained from low flux and high flux gamma probes (i.e. DHT27) are converted into equivalent uranium (eU) values by first converting the raw probe counts (cps) into AVP (cps), adjusting the raw probe accounts for drillhole size, fluid type, casing parameters and probe correction factors. AVP (cps) are then converted into eU values based on a deposit-specific radiometric-grade correlation, which is based on comparing the AVP values to the chemical assay grades in areas of good core recovery.

11.6.6. Downhole Resistivity Probing

At the completion of each drillhole, a down-hole resistivity survey can also be performed, after the drill rods have been removed. However, very few resistivity surveys have been carried out on the Midwest Project due to the instability of the ground and the resulting high risk of losing the probe equipment down the hole. The resistivity and natural gamma probes are stacked for the survey to allow for fitting the resistivity data at depth with the other probing runs and the core samples.

All surveys were carried out by AREVA/Orano personnel.

11.7. Geotechnical Logging

During some drill programs, RQD (rock quality designation) measurements were also taken on the core for geotechnical purposes. Geotechnical logging from the pre-1989 drilling was mainly comprised of fracture counts and fracture orientations.

11.8. Drill Core Sample Security

The remaining historical drill core (varying portions of 113 drillholes) and all recent AREVA/Orano drill core from the Midwest Main deposit area are stored in the core storage yard at the Orano Exploration Department camp at Moffatt Lake on the McClean Lake project land. Additionally, drill core from ten Midwest Main holes are stored in the Mineralized Core Collection at the Saskatchewan Geological Survey Precambrian Geological Laboratory in La Ronge, Saskatchewan.

Special security measures are in place on the McClean Lake Project to control access to the property, to authorized personnel only, through use of fencing and a manned security gate. In addition, access to the Moffatt Lake core storage and sample preparation area is also restricted (chain link fence and gate). The core logging facility is locked when unattended. Only Orano staff and drilling contractors are authorized to be at either the drill sites or the logging facility.

During the drilling process, as each hole was being drilled, the drilling contractor placed the drill core into wooden boxes at the drill site. The boxes were then secured with lids and transported to the Midwest or Moffatt Lake logging facility, depending on year, either by drill contractor personnel or project operator staff.

Historically (pre-AREVA/Orano), the Midwest drill core was transported from the drilling site to the original Midwest Project core logging and storage facility, located adjacent to Mink Arm, in standard sealed wooden core boxes. Oriented core measurements were not taken due to the mostly vertical drilling and lack of core orientation tools. Core photography was carried out on a less regular basis than is presently done. Once processed, core boxes were stored in outdoor core storage with mineralized core boxes being lidded to further aid in preservation of the core. The core from the sub-Athabasca basement and mineralized sandstone, plus the basal several metres of Athabasca sandstone, was stored in covered core racks, while the remaining sandstone drill core boxes were cross-stacked. Mineralized samples were bagged and placed into sealed metal pails, while the non-mineralized sample bags were placed in plastic pails. They were temporarily stored outside of the sample preparation room until shipped by truck to the analytical laboratory that carried out the analyses.

The core from the AREVA/Orano drilling was transported from the drilling site to the Moffatt Lake core logging facility in standard sealed wooden core boxes. Once there, the core boxes were moved to the core logging and sample preparation rooms for digital photography, geological core logging, radiometric scanning, and geochemical and spectral sampling. Once processed, core boxes were stored in outdoor core storage with mineralized core boxes being lidded to further aid in preservation of the core. The entire length of drill core was stored in covered core racks. The mineralized bagged samples were placed into sealed IP-3 metal pails, while the non-mineralized sample bags were placed in plastic pails. All pails were temporarily stored outside of the sample preparation room until shipped by truck to the Saskatchewan Research Council (SRC) Geoanalytical Laboratory in Saskatoon, which was, and is, licensed by the CNSC to receive, process, and store radioactive materials.

11.9. Sampling for Chemical Analysis

1977 to 1981 - Esso Resources Canada Limited

No technical drilling reports are available for those years that might include information on the sampling methodologies used. The original drill logs usually contain some data and information; i.e. assay number, sample width (depth from and depth to), length of core recovered, and assay values (in percent) for U_3O_8, and occasionally for some other elements like Ni, Co, As, S, and Fe, from the sampling of specific intervals.

From 1977 to 1980, sampling was only performed selectively where sample lengths and intervals were variable; from 0.3 feet (4 inches; approximately 9 centimetres) to usually less than 5 feet (approximately 1.5 metres).

In 1981, sampling was also performed selectively. Sampling intervals were generally quite variable, from 0.3 metres to about 3 metres, or occasionally in a more methodical manner; every 0.5 metres or 1 metre.

1988 to 1993 - PNC Exploration Canada Co. / Denison Mines Limited

Only minimal records remain concerning sampling during this period. Resampling of historical core was carried out in 1988, as was sampling of then-current drill core from holes MW-650 to MW-657. Underground rod extensometer holes were drilled from the underground development and were also sampled and sent for analysis. Analytical data from the Saskatchewan Research Council for uranium, boron, and base metals (Pb, Ni, Co, Cu, and Zn) have been found for some of these holes and entered into the Midwest database. However, the assay certificates for these analyses were not located.

2005 to present – AREVA/Orano

Samples were collected from all drillholes for geochemical, petrophysical, and SWIR spectral clay analysis. Table 11-1 presents the different sample designations and sampling methodology used at Orano. The Orano sampling procedure is presented in (Areva Resources Canada, 2012).

Table 11-1: Sample designations and methodology

Analyses Type	Sample Type	Description	Sample Methodology
Geochemistry	1SYS	Systematic sandstone	Chip sample taken from the start of every box row. 20 m samples until 100 m above the unconformity. 10 m samples in the basal 100 m sandstone. One metre sample taken directly above the unconformity.
Geochemistry	1SYB	Systematic basement	Chip sample taken from the start of every box row within individual lithological/alteration units (10 m samples). One metre sample taken directly below the unconformity.
Geochemistry	1SYSD/ 1SYBD	Duplicate	One sample is duplicated within the sandstone and the basement of each drillhole.
Geochemistry	HS	Hand Sample	Selective sample chosen in basement and sandstone in areas of specific interest
Geochemistry	1SEL	Selective sandstone	Split core sample taken every 0.5 m (or less) of intervals with SPPγ radiometry ≥ 200 cps or at points of interest.
Geochemistry	1BAS	Selective basement	
Spectral Clay	1TER	Sandstone TerraSpec	Chip sample taken at every 3 m at the run marker. Dark samples and silicified samples avoided. Extra sample taken where an unusual feature is noted.
Spectral Clay	1TERB	Basement TerraSpec	
Petrophysics	1MAS	Petrophysical sample	Approx. 10 cm of unbroken and unfractured core taken. Extra analyses (geochemistry, mineralogy, petrography, etc.) may also be completed on these samples.
Petrography	TS	Thin Section	Approx. 10 cm whole core sample taken within each formation/lithology change.

Core samples were split by geologists or geological technicians (under supervision of geologist) using a hydraulic splitter. One half of the core was placed in a plastic bag and the other half was returned to the core box. Plastic bags containing the individual geochemical samples (selective) are grouped according to lithology (sandstone or basement). Non-radioactive samples were placed in white plastic pails, radioactive mineralized samples were placed into sealed IP-3 metal pails, and all were shipped to the Saskatchewan Research Council (SRC) Geoanalytical Laboratories in Saskatoon. The primary geochemical analysis methods used was ICP-MS (Inductively Coupled Plasma Mass Spectroscopy). Additional geochemical analysis for Boron was done by ICP-OES.

11.9.1. Analytical Laboratories

The majority of core samples collected and assayed between 1978 and 1981 were assayed at Loring Laboratories Ltd. of Calgary (the exceptions were samples from hole MP-3 and some samples from holes 235 and 278). Little is known about these analytical samples. Loring was an independent lab to the Midwest Project operator at that time.

For 1988 and subsequent years, the Geoanalytical Laboratory of the Saskatchewan Research Council in Saskatoon, Saskatchewan was used. The quality management system at this laboratory operates in accordance with ISO/IEC 17025:2005 (CAAN-P-4E), General Requirements for the Competence of Mineral Testing and Calibration Laboratories; and is also compliant to CAN-P-1579, Guidelines for Mineral Analysis Testing Laboratories. The management system and selected methods are accredited by the Standards Council of Canada (Scope of accreditation # 537).

The Geoanalytical Laboratory is an independent laboratory and no associate or employee of Denison or Orano is, or has been, involved in the sample preparation or geochemical analysis of samples from Midwest.

Prior to the 2006 summer drilling program, the primary geochemical analytical method used on the Midwest samples was ICP-OES (Inductively Coupled Plasma Optical Emission Spectroscopy) following near-total tri-acid digestion (total analyses) and by reverse Aqua Regia partial digestion (partial analyses). Additional geochemical analysis for Boron was also done by ICP-OES, following a Na_2O_2 fusion and subsequent dissolution in deionized water.

From the 2006 summer drilling program, the primary geochemical analytical methods used for uranium analysis, as well as a broad suite of additional elements ((SRC, 2007); (Areva Resources Canada Inc., 2013)), on the Midwest samples were ICP-MS (Inductively Coupled Plasma Mass Spectroscopy) for samples containing less than 1,000 ppm U and ICP-OES for samples determined to contain uranium concentrations greater than 1,000 ppm U. Both total and partial analyses, as well as ICP-OES analysis for Boron were carried out.

The samples are initially acid-digested using a 250 mg aliquot of sample pulp. For tri-acid total-digestion analysis, the aliquot is digested to dryness on a hot-block digestion system in a Teflon tube using a mixture of concentrated $HF:HNO_3:HclO_4$. The residue is dissolved in dilute HNO_3 (SRC, 2007). This solution is then analysed by ICP-MS (or ICP-OES). For partial-digestion analysis, the aliquot is digested in a mixture of nitric:hydrochloric acid ($HNO_3:HCl$) in a test tube in a hot water bath, then diluted using de-ionized water.

Uranium assay analysis by ICP-OES is used on samples in which the uranium concentration has been determined by ICP-MS to exceed 1,000 ppm U. The pulp already generated from the first phase of preparation and geochemical analysis is used. One gram of sample pulp is digested for one hour in an HCl: HNO_3 acid solution. The totally-digested sample solution is then made up to 100 mL and a 10-fold dilution is taken for the analysis by ICP-OES. Instruments are calibrated using certified SRM solutions. The instruments used are a Perkin Elmer Optima 300DV, Optima 4300DV, or Optima 5300DV. The detection limit for this method is 0.001% U_3O_8 (approximately 0.0008% U).

11.9.2. Disequilibrium Analysis

Disequilibrium analyses have not been carried out on samples from the Midwest Main or Midwest A deposits. However, the consistent correlation between the equivalent probing grades and the chemical assays indicates that these deposits are in equilibrium. Historically, deposits of this age in the Athabasca Basin have been found to be in equilibrium.

11.9.3. Mineralogical Sampling

Short-Wave InfraRed (SWIR) spectrometer analyses were performed on many sandstone and basement samples from the post-2005 drilling. These were carried out on rock chips taken at approximately three metre intervals. Interpretation of spectral results provide the clay mineral and clay-sized mineral proportions (chlorite, dickite, dravite, illite, and kaolinite) in the samples. Prior to the post-2005 drilling, XRD analyses were carried out on selected samples for determination of the clay mineral suite.

A few whole core samples were also taken for petrographic analysis.

11.9.4. Accompanying Elements and REE Assays

Geochemical analyses prior to 2004 were not very extensive for other elements. Uranium content was routinely tested, with sporadic measurements of Ni, Co, As, Fe_2O_3, Cu, and Mo. The additional elements were typically tested for when something of interest was seen in the drill core by the geologist.

Between 1985 and 2005, 13 holes were drilled by Denison in the Midwest Main area (three MW series, four underground piezometer holes, four underground mineralogical holes, and two shaft holes). With the exception of the four piezometer holes, samples were analysed for uranium and a broad suite of additional elements for most samples. In addition to uranium, every sample was analysed using partial digestion for Ni, Fe_2O_3, Al_2O_3, Pb, Cu, Co, K_2O, MgO, and Zn. Detection limits are unknown.

From 2005, the primary geochemical analyses included uranium, as well as a broad suite of major element oxides and trace elements, including the REEs (SRC, 2007); (Areva Resources Canada Inc., 2013).

11.9.5. Sample Preparation

No information is available on the sample preparation used by the analytical laboratories prior to 1988.

Since 1988, sample preparation (drying, crushing, and grinding) has been done at the SRC in separate facilities for sandstone and basement samples to reduce the risk of sample cross-contamination. Crushing and grinding of radioactive samples are done in another, separate, radioactive sample preparation facility licensed by the Canadian Nuclear Safety Commission (CNSC). Following crushing to 60% -1/4 inch (-6 millimetres) size in a steel jaw crusher, a 100-200 g split is taken using a riffle splitter. This sample split is ground to powder form (pulp: 90% -106 µm [-150 mesh]) in motorized agate mortar and pestle equipment.

11.9.6. Quality Control Samples

During the late 1970's and early 1980's, the use of quality control samples was not common industry practice and only carried out within the analytical lab, and thus little of such information is available for analyses from these early drill programs. The majority of the drillholes for Midwest Main were completed during this time and as a result, there is only QAQC data from the more recent drill programs. Since Midwest A was discovered in 2005 and delineated in 2006 through 2008, it has more QAQC information available.

Some external laboratory uranium assay checks were conducted on 157 samples from the 1978 to 1981 drilling. The laboratories for check assays were X-Ray Assay Laboratories of Toronto during 1978 and 1979 and Bondar Clegg Laboratories of Vancouver in 1980 and 1981. Samples for check assays were divided into low- and high-grade groups based on a 5.0% U_3O_8 threshold.

The 73 high-grade samples showed the original analytical results (Loring Laboratories) to be 0.8% higher on average than the check analyses, with the majority of the check assays being within 5% of the original, with no significant bias. The 84 low-grade samples showed a much larger variation and were approximately 5% lower on average than the check analyses. The individual check analyses varied considerably, mostly within a +40% and -15% envelope. Almost all of the Loring assays reporting less than 0.7% U_3O_8 were approximately 10% to 50% lower than the check analyses. The higher-grade assays exhibited good reproducibility, and it is these assays that have the largest effect on the resource. The uncertainty, and possible negative bias, in the low-grade assays suggests that the mineralization envelope may be volumetrically conservative.

From the PQ series of holes, 30 check assays were taken on the original 300 assays. It indicated that the original assays could have over-reported the U_3O_8 grade by up to 10%. (Hendry, Routledge, & Evans, 2006). Given that the PQ composites make up only 12% of the resource intersections, and the small number of check assays analyzed, the impact is minor.

The AREVA/Orano sampling procedure used since 2005 includes quality control (Areva Resources Canada, 2012) and (Areva Resources Canada Inc., 2013). A series of quality assurance and quality control (QA/QC) checks were performed on all sample batches submitted to the Saskatchewan Research Council (SRC) laboratory. Since 2005, only nine modern drillholes intersected the deposit, and thus the historical data have only had limited QA/QC checks (see above). The Orano QC comprises the following:

- Laboratory Repeat Samples: A laboratory replicate was performed in each batch at a minimum of one per every 35 analyses.
- Laboratory Standards: Two laboratory standard reference materials (SRMs) were inserted in each batch at a minimum of one every 20 analyses. Different SRMs were used for non-mineralized materials and for mineralized materials.

The quality control processes in the laboratory ensure at least one QC measure is applied to each batch of samples to assure the quality of the results generated. These measures include: sample preparation QC checks; analysis of Certified Reference Material (SRM) and/or in-house reference materials and standards; preparation and analysis of pulp duplicates, blanks, and replicates; traceable calibration standards for instrumentation; spiking of samples to monitor process recoveries; and QC monitoring.

The laboratory uses an ISO/IEC 17025:2005 accredited method for the assay determination of U_3O_8 (reported in wt%) in geological samples. The selection of SRMs is based on the radioactivity level of the samples to be analysed. An additional certified Fe_2O_3 standard is analysed to correct for interference of iron with uranium in the analysis. Instruments are recalibrated after every 20 samples; multiple standards are analysed after and before each recalibration.

Between 2005 and 2024, assay samples were collected and analysed with either ICP-MS, for samples containing less than 1,000 ppm U, and ICP-OES, for samples determined to contain uranium concentrations greater than 1,000 ppm U. In 99% of cases a U ppm total to U_3O_8 calculated conversion was within 1% of the U_3O_8 analysis value as determined by uranium assay ICP-OES. In 99% of cases a U ppm total to U_3O_8 calculated conversion was within 1% of the U_3O_8 analysis value as determined by uranium assay ICP-OES analysis.

The quality control measures applied to all methods within the SRC laboratory have been established to ensure they are compliant with the requirements of ISO/IEC 17025:2005. The quality control measures which are applied may vary from method to method and are selected on their suitability.

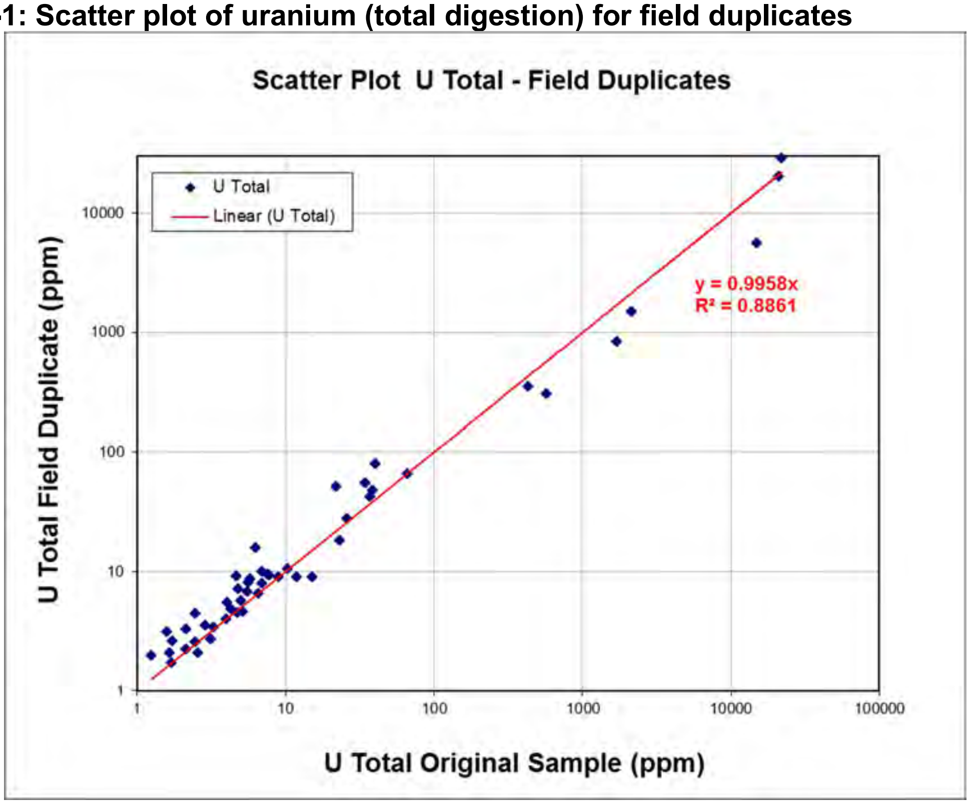
If results are found to be outside quality control limits, actions are taken to ensure that the samples are reprocessed and reanalysed, and the required quality limits are met.

11.9.6.1. Field Duplicates

At Midwest A, internal duplicates were collected by Orano using field duplicates. This comprised 57 field duplicates that were collected between 2007 and 2008. Of these 57 samples, 54 were analysed for uranium. The samples were collected as a mix of systematic and selective sandstone samples as well as systematic and selective basement samples. Systematic field duplicates are chip samples that have been split into two separate samples. Selective samples are quarter core split samples.

The field duplicates showed reasonable reproducibility, as shown with an R^2 value of 0.89 for uranium with total digestion (Figure 11-1). There appears to be a bias with approximately two thirds of the field duplicates returning a larger value than the original sample. This is most likely due to a bias in sampling.

Figure 11-1: Scatter plot of uranium (total digestion) for field duplicates



(Source: AREVA/Orano, 2008)

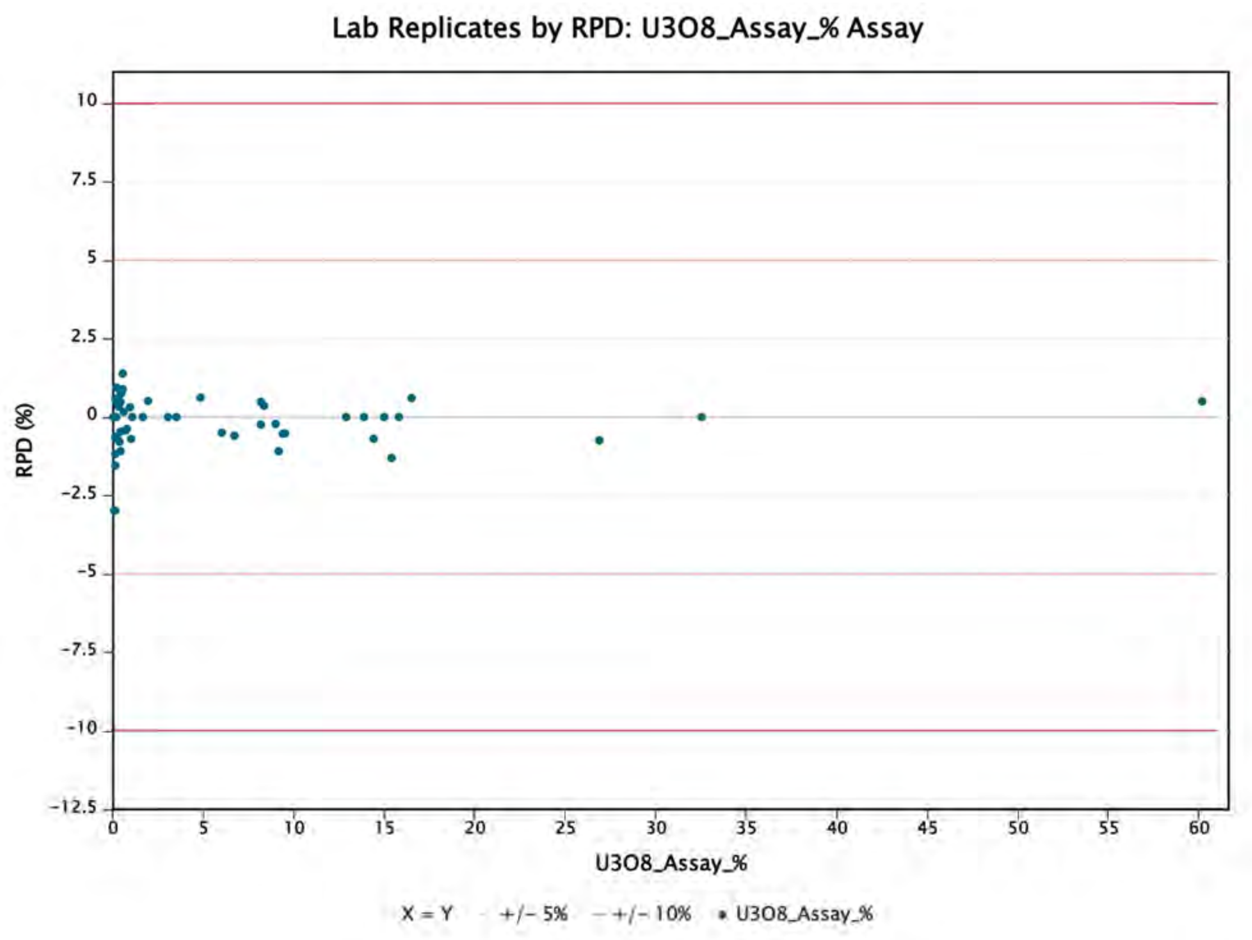
Field duplicates are not currently taken at Midwest as no bias was detected from previous analyses and they provided limited value in enhancing the QAQC of core sampling.

11.9.6.2. Laboratory Repeats

At Midwest Main, laboratory repeat samples (replicates) are analysed once every 40 analyses and the results for the %U_3O_8 assays from 2018 through 2024 are shown in Figure 11-2.

Overall, the correlation is very good and the relative percent differences (RPD) narrows as grade increases. The results are as expected with acceptable correlation.

Figure 11-2: Lab Repeat Comparison 2018 - 2024

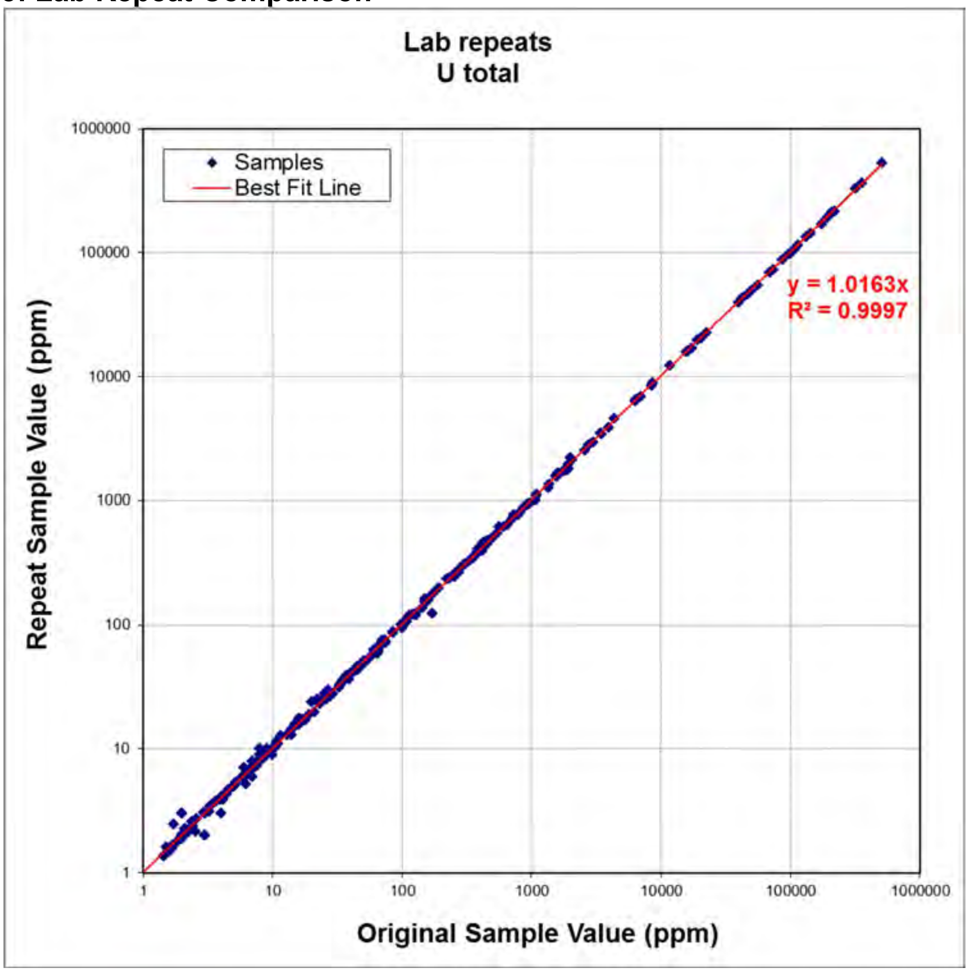


(Source: Orano, 2024)

At Midwest A, lab repeats are done once every 40 analyses. Between 2005 and 2009, 277 repeats were taken over systematic sandstone, selective sandstone, systematic basement, selective basement samples, and samples selected for thin sections.

Overall, the correlation is very good with an R^2 value of almost 1 (Figure 11-3). The results are as expected with acceptable correlation.

Figure 11-3: Lab Repeat Comparison

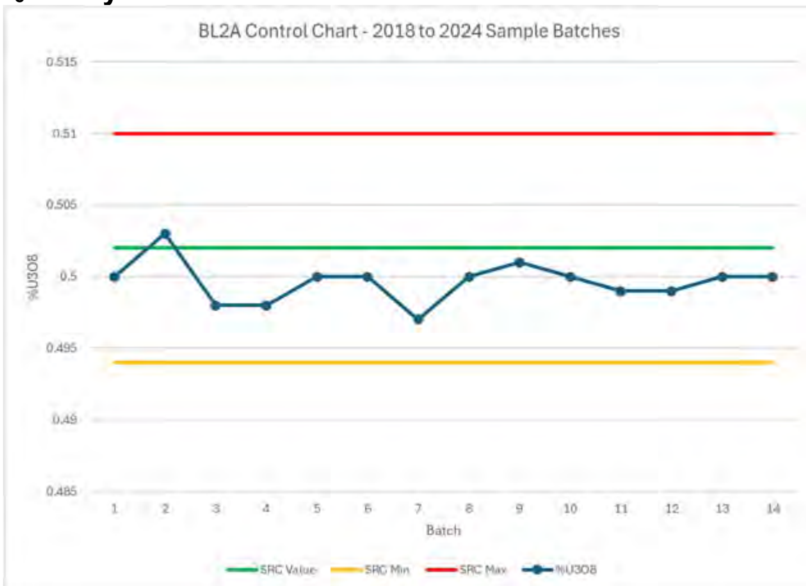


(Source: AREVA/Orano, 2009)

11.9.6.3. U_3O_8 Assay Laboratory Standards

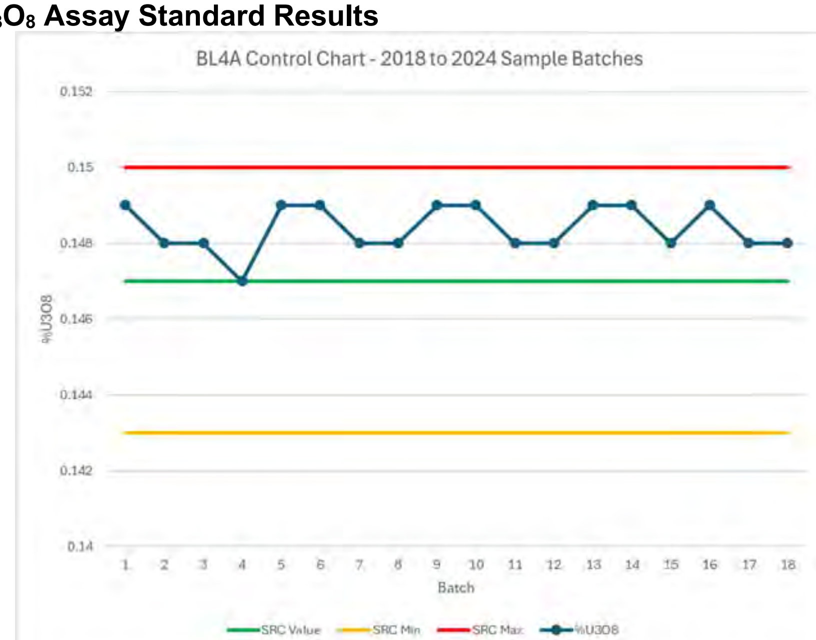
For Midwest Main, 3 lab standards were used (BL2A, BL4A, and BL5) and the results from 2018 through 2024 are shown in Figure 11-4 to Figure 11-6. All results were within the 3 standard deviation limits determined by the SRC lab and don't show any concerning trends to date.

Figure 11-4: U_3O_8 Assay Standard Results



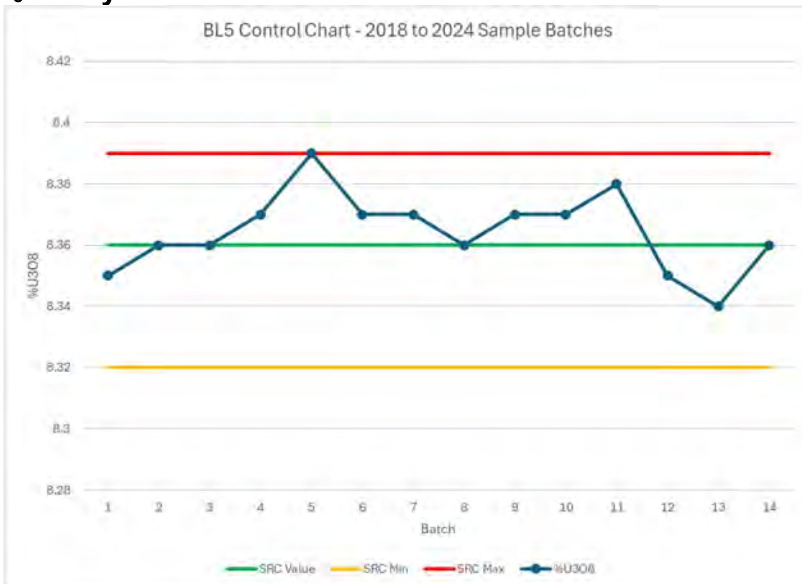
(Source: Denison, 2024)

Figure 11-5: U_3O_8 Assay Standard Results



(Source: Denison, 2024)

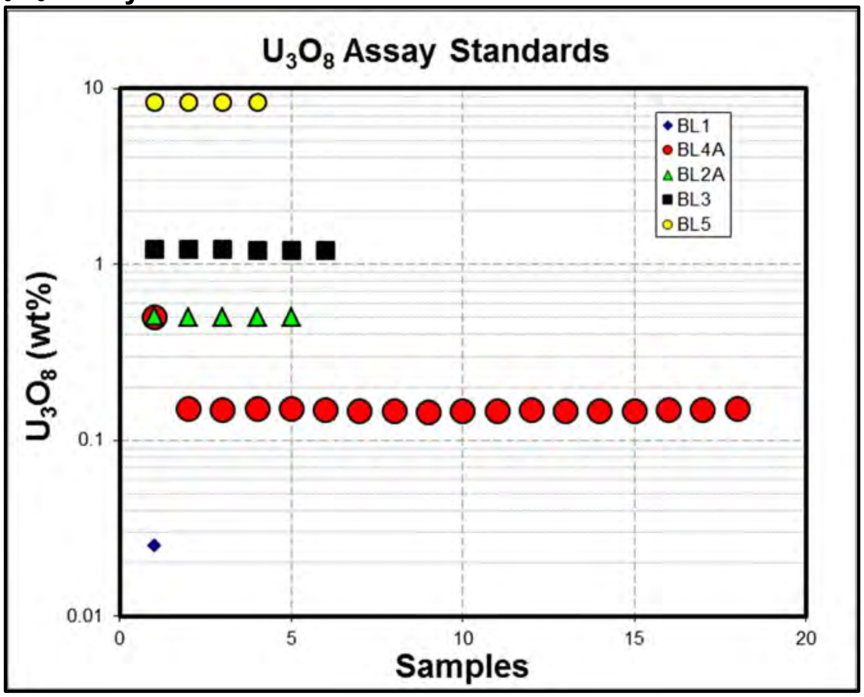
Figure 11-6: U_3O_8 Assay Standard Results



(Source: Denison, 2024)

For Midwest A, five lab standards (BL1, BL-2A, BL3, BL-4A, and BL5) were used in U_3O_8 assays for quality control (Figure 11-7). A total of 34 samples were analysed. All samples show no noticeable differences, except for one BL4A sample. Given that the grades matched the BL2A expected (for uranium and other elements); this was deemed to likely be a standard label mix up.

Figure 11-7: U_3O_8 Assay Standard Results

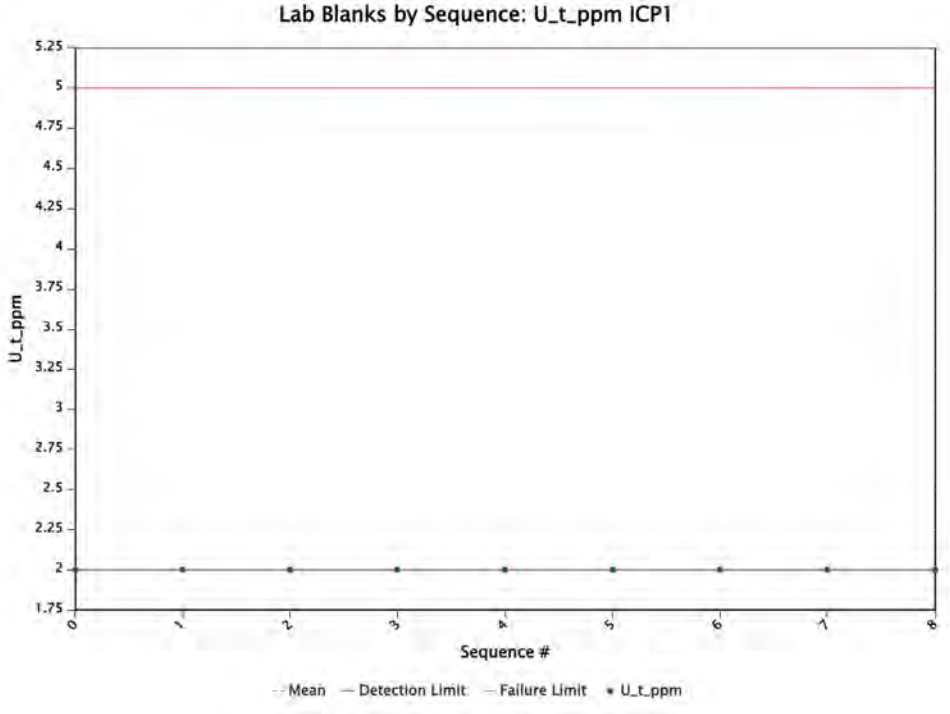


(Source: Orano, 2009)

11.9.6.4. Analytical Blanks

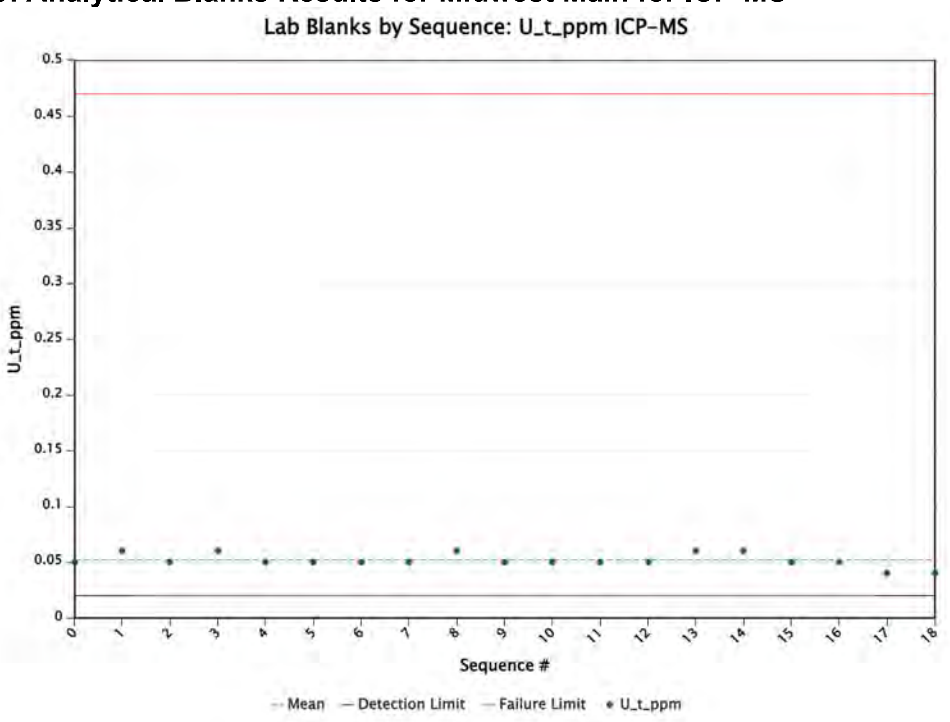
For Midwest Main, a silica sand analytical blank was inserted in every batch of non-mineralized sandstone and basement samples and the results from 2018 to 2024 are shown in Figure 11-8 and Figure 11-9. All blanks returned values at or below the detection limit of 2 ppm U total for ICP-OES and at or below the detection limit of 0.05 ppm U total for ICP-MS.

Figure 11-8: Analytical Blanks Results for Midwest Main for ICP-OES



(Source: Orano, 2024)

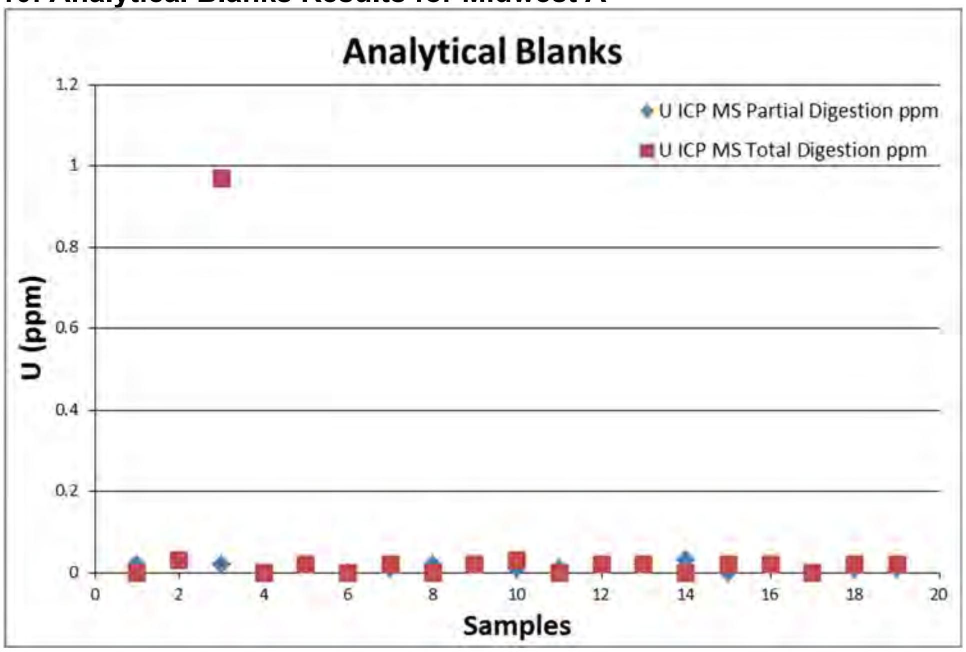
Figure 11-9: Analytical Blanks Results for Midwest Main for ICP-MS



(Source: Orano, 2024)

For Midwest A, a Quintus silica sand analytical blank was inserted in every batch of non-mineralized sandstone and basement samples for a total of 19 analyses (Figure 11-10). All blanks returned values at or below the detection limit of 0.02 ppm U total, with the exception of one which returned a value of 0.97 ppm U total. The failed blank was part of a batch of petrographic samples for which the standards data did not undergo Orano QC evaluation, however, it was not used in the resource estimation.

Figure 11-10: Analytical Blanks Results for Midwest A



(Source: Orano, 2009)

11.10. Dry Bulk Density and Specific Gravity Measurements

3,809 dry bulk density and 207 specific gravity determinations were carried out on samples from the Midwest property between 1978 and 2024. Nearly all of these determinations were carried out on samples from the Midwest Main deposit. This data has been entered into the Midwest database.

Only density data from the 2024 Midwest Main drill program and the 2017 Midwest A resampling campaign was used for mineral resource estimation purposes as the method used for pre-2017 density sample collection was not well documented and the results from those samples are deemed to be imprecise.

Midwest Main

In 2024, Orano and Denison implemented the collection of density measurements in the field on fresh drill core from the Midwest Main Deposit. The methodology includes the collection of 10-centimeter subsamples which underwent drying in a core oven. Following this cycle, each sample was weighed and surveyed with a 3-D scanner. The 3-D scans populate interpolated mesh files with the approximate volume and together with the measured dried weight, density was calculated. Select samples were sent to SRC for density correlation between the field and laboratory measurements. A total of 33 samples were processed in the field for dry bulk density, of which 30 were sent to SRC to be analysed for dry bulk density using wax immersion. The results produced 98.11% correlation between field and laboratory measurements.

Midwest A

For the Midwest A area of the property, very few (3) dry bulk density and no specific gravity (SG) determinations were made prior to 1993.

In 2009, a total of 341 specific gravity measurements via the pycnometer method were obtained from existing crushed mineralized sample material that was warehoused at the SRC facility in Saskatoon or from a resampling campaign.

In 2017, 27 dry bulk density samples were collected of nominal 0.1 metre sample lengths were collected from drill core stored at the Midwest A core storage facility. These core samples underwent whole core bulk density measurements. Of these 27 samples, 24 were processed at the SRC for both dry bulk density using was immersion and specific gravity using a pycnometer.

11.11. Conclusions

The QP has reviewed the data upon which the Mineral Resource estimate is based and is of the opinion that the procedures and systems employed to collect and manage this information meets industry best practice. UMR considers that the QA/QC results demonstrate acceptable levels of accuracy and precision at the laboratories. The QP is of the opinion that the supporting data are representative and adequately support the geological interpretations and estimates to the level of classification assigned.

12. DATA VERIFICATION

12.1. Site Visit

A site visit to the Midwest Property was carried out July 2, 2024, by UMR's QP for Mineral Resources, Matt Batty, MSc, P. Geo. The one-day site visit included:

- Review of drill core from three representative recently completed drill holes,
- Review of drill core from one historic drill hole,
- Confirmation of two recent drill hole collar locations,
- Attempted confirmation of four historic drill hole collar locations,
- Review and verification of the geological setting / environment of the Project,
- Review of drilling, logging, sampling, analytical and QA/QC procedures, and
- Review of overall site facilities.

The core from representative drill holes (MW-867, MW-872, MW-873, & MW-505) was laid out onsite for the review (Figure 12-1). Drill hole MW-505 was drilled in 1981 and the other three holes were completed in 2024. A comparison of the drill logs and assay results with the drill core showed that the information recorded in the drill database matched well with the drill core. The selected drillholes provided examples of low- and high-grade uranium mineralization, an overall sense of the Property's geology, spatial representation, and different drill programs (historic and recent). As part of the review, UMR verified the occurrences of mineralization visually and by way of a hand-held scintillometer (Figure 12-2).

Figure 12-1: Midwest Core Review

(Source: UMR, 2024)

Figure 12-2: Confirmation of Mineralization via a RS 121 Scintillometer in MW-867

(Source: UMR, 2024)

The Midwest Main deposit is hosted under South McMahon Lake, and thus, most of the drill holes defining the deposit were collared on the lake, either during the winter season when ice drilling is possible or through barge drilling in the summer months. UMR attempted to find historic drill hole collars for MW-158, MW-159, WGT1, and MWG-04-3, which were a few of the holes collared on land. UMR could not located the historic drill hole collars but did find the recent collars of MW-858 and MW-860. The locations of these collars were confirmed with a handheld Garmin GPS; the database records of the two holes were within 3 metres of the less accurate handheld measurements; and therefore, were deemed acceptable. The collar locations for the holes were demarked with tree branches or timbers inserted into the ground near the drill collar (Figure 12-3) (Source: UMR, 2024).

Figure 12-3: Drill Collar Demarcation of MW-858 (Left) and MW-860 (Right).

(Source: UMR, 2024)

12.2. Database Validation

12.2.1. Internal Validation

Orano provided Denison with a comprehensive Project database consisting of drillhole data, block models and wireframes for both the Midwest Main and Midwest A deposits. Prior to mineral resource estimation, Orano had performed detailed QAQC and data verification of all datasets, which in Denison’s view are in accordance with industry best practice and consider them to be reasonable and acceptable for resource estimation. Denison has performed additional QAQC and data verification of the database as described in the sub sections below.

Denison conducted audits of select historic records to ensure that the grade, thickness, elevation, and location of uranium mineralization used in preparing the current resource estimates were accurate. Denison performed the following queries on the digital project database. No significant issues were identified.

- Header table: searched for incorrect or duplicate collar coordinates and duplicate hole IDs.
- Survey table: searched for duplicate entries, survey points past the specified maximum depth in the collar table, and abnormal dips and azimuths.
- Core recovery table: searched for core recoveries greater than 100% or less than 75%, overlapping intervals, missing collar data, negative widths, and data points past the specified maximum depth in the collar table.
- Lithology and Probe tables: searched for duplicate entries, intervals past the specified maximum depth in the collar table, overlapping intervals, negative widths, missing collar data, missing intervals, and incorrect logging codes.
- Geochemical and assay table: searched for duplicate entries, sample intervals past the specified maximum depth, negative widths, overlapping intervals, sampling widths exceeding tolerance levels, missing collar data, missing intervals, and duplicated sample IDs.

In addition, a review of selected drilling campaign reports and associated data appendices were reviewed to validate and support the drillhole database content. No inconsistencies or errors in the database were noted.

12.2.2. UMR Validation

UMR completed an independent validation of the diamond drilling database via the following digital queries:

- Header table: searched for incorrect or duplicate collar coordinates and duplicate hole IDs.
- Survey table: searched for duplicate entries, survey points past the specified maximum depth in the collar table, and abnormal dips and azimuths.
- Lithology, alteration, and structure tables: searched for duplicate entries, intervals past the specified maximum depth in the collar table, overlapping intervals, negative lengths, missing collar data, missing intervals, and incorrect logging codes.
- Geochemical, density, and assay tables: searched for duplicate entries, sample intervals past the specified maximum depth, negative lengths, overlapping intervals, sampling lengths exceeding tolerance levels, missing collar data, missing intervals, and duplicated sample IDs.

No significant issues were identified.

12.3. Opinion on Adequacy of Data

Orano and Denison have a robust QA/QC process in place, as described in Section 11. Assay results were actively monitored throughout the drill programs and QA/QC results were summarized. Most of the reference materials performed as expected within tolerances of 2 to 3 standard deviations of the mean grade. UMR is satisfied that the QA/QC process is performing as designed to ensure the quality of the assay data.

12.4. Limitations

UMR was not limited in access to any of the supporting data use for the resource estimation or describing the geology and mineralization in this report. The database verification is limited to the procedures described above. All mineral resource data relies on industry professionalism and integrity of those who collected and handled the database.

12.5. Qualified Person's Opinion

It is the opinion of UMR that the geological data collection and QA/QC procedures carried out by Orano and Denison, are of suitable quality to support the Mineral Resource and Reserve, and they meet industry best practice standards.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

13.1. Midwest Historical Metallurgical Leach Testing

Leach testing, using preserved drill cores from the Midwest deposit, was carried out in 2006 by Service D'Etudes De Procedes et Analyses (SEPA) in France to support a previous feasibility study for Orano Canada (then Areva Resources) and DMI.

13.1.1. Continuously Stirred Tank Reactor (CSTR) Leaching Tests

CSTR leaching tests were undertaken by SEPA on composite samples prepared in support of a feasibility study assessing conventional mining of the Midwest Main deposit and a possible expansion of the McClean Lake mill. The primary objective of the leaching test work was to provide an assessment of the amenability of Midwest mineralization to acid leaching. Also gained from these tests was a better approximation of UBS head grade, contaminant leaching efficiency, and reagent consumption. Type of oxidant and addition rate were also explored, which included hydrogen peroxide and oxygen. Hydrogen evolution was also investigated.

13.1.1.1. Composite Preparation

A composite sample was prepared from 45 core samples from the Midwest deposit, which included a range of uranium, arsenic, and nickel assays. A total of eight sub-samples were prepared to test varying acid and oxidant concentrations. The uranium grade in the prepared bulk composite was 4.1% U, which was similar to the previous Midwest Main indicated resource average grade of 3.4%U at the unconformity. A summary of the range of samples used to make up the composite sample is presented in Table 13-1, and the assays of uranium, arsenic, and nickel for the bulk composites is provided in Table 13-2.

Table 13-1: Summary of Composite Sample Features

Composite Sample #	Number of Individual Samples Included	Total weight (kg)	Sample Source Area
1	45	30.8	Midwest Deposit, holes 2,3,4

Table 13-2: Assays for Uranium, Gold and Other Constituents for the Five Studied Composites Used for Leaching Tests

Composite Sample	U (%)	Ni (%)	As (%)	Mo (%)	Fe (%)
Composite 1	4.11	4.96	9.28	0.15	5.85

13.1.1.2. Leaching Test Methods

CSTR leaching tests involve adding a known quantity of lixiviant to a mass of ore and mixing it for a determined amount of time. Samples are collected periodically to determine the extent of reaction through time, and then analyzing the final solution and solids for a given set of parameters. The consumption of reagents, and extent of recovery can be tracked to provide key performance indicators.

The CSTR leach testing was performed on the composite sub-samples with varying acid and oxidant concentrations. The tests consisted of a 24-hour period of stirring, including measurements of pH, ORP, and metals assay. Hydrogen evolution was also measured on a sample.

13.1.1.3. Leaching Test Results

The results of the CSTR leaching tests show that uranium extraction of over 97% can be obtained (depending on the acid addition) within 24 hours of leaching residence time, indicating that the Midwest ore is amenable to acid leaching. Arsenic leaching efficiency varied between 50 – 85% depending on acid and oxidant addition rates. Similar efficiencies were noted with nickel (40-80%), with lower iron recovery (32 – 47%). Acid consumption was at a minimum 200kg/T and was recommended to be 250kg/T with additional ferric sulfate to aid in arsenic leaching.

Oxidation of ore using oxygen at 2 bar produced excellent uranium recovery in historical testing. The use of hydrogen peroxide as an oxidant produced rapid leaching, however a large amount of reagent was necessary (100 kgH_2O_2/T). It was noted that at this concentration, foam (off-gassing) along with elevated temperature was witnessed, suggesting either a different dosing strategy or lower dosage was required.

Testing was done to measure the potential for hydrogen off-gassing during leaching at 40C and 2 bar pressure. The detector did not measure hydrogen gas during the leaching test. A phenomenon was observed that hydrogen evolution by metallic iron was reduced in the presence of Midwest ore. It was postulated that hydrogen gas could be adsorbed by some components of the Midwest ore.

13.1.2. Conclusions

- High leaching efficiencies (>97%) are achievable for Midwest ore given sufficient reagent dosage and reaction time
- Midwest ore requires at minimum 200 kg/T acid addition.

- Hydrogen peroxide consumption was measured at 100 kg/T, however this resulted in foam and heat generation. Oxygen was the recommended oxidant to leach the Midwest ore at the McClean Lake Mill, however this is not the current configuration of the leaching circuit.
- The leach efficiency of arsenic and nickel was low, especially compared to uranium.

13.2. Midwest PEA Metallurgical Leach Testing

Two composite samples from the Midwest Main portion of the deposit were generated from 25 individual samples from 4 drill-hole cores, which were stored at the Saskatchewan Research Council (SRC) facilities in Saskatoon. The individual samples, collected from a 2018 drill campaign, allowed preparation of deposit representative samples. The composite sample assays are presented in Table 13-3 below. The composites were comprised of six different hydrogeological units (HGUs), with the two main HGUs used in the composites being Nickel-Sulfarsenide/Arsenide with clayey sand, and a low-to-high grade dispersed pitch blende aggregate in Ni-As-S/Ni-As.

Table 13-3: Composite Sample Characteristics

Composite	# of Samples	Uranium % (%U)	Arsenic %	Nickel %
1	**23**	**2.1**	5.6	2.4
2	**7**	**9.2**	10.2	5.1

The individual samples that were used to create the above composites had a wide range of uranium, arsenic, and nickel concentrations and were composited to target representative conditions of the deposit. Composite 1 focused on the average of the ISR-focused inferred and indicated portions of the deposit, whereas Composite 2 was developed to look at higher grade core areas of the deposit which make up the bulk of the contained resource. The composite samples both assayed at higher feed grades than the reconciled values shown in Table 13-3.

The samples were measured for Specific Gravity, as well as uranium (U_3O_8 analysis) and trace metals analysis through ICP Total Digestion and ICP Aqua Regia Digestion.

13.2.1. Bottle Rolls Leach Tests

Metallurgical testing performed for the Midwest PEA focused on bottle roll acid leaching tests, using sulfuric acid (H_2SO_4) and hydrogen peroxide (H_2O_2). Ferric sulfate was not used at this time, however, could be investigated in future longer-term test work.

Bottle roll leaching tests were undertaken by SRC Mining and Minerals Division on composite samples prepared from the sample set discussed in the previous section. The primary objective of the leaching test work was to provide an initial assessment of the amenability of Midwest ore to ISR leaching and to use the recovery of uranium as an indicator of the ISR leaching efficiency.

Also investigated from these tests was a UBS head grade, contaminant leaching efficiency, and reagent consumption.

Specific leach test conditions were as follows:

- Bottle roller with 2 L bottle (cycle 1 conducted with 1 L bottle, switched to 2 L bottle afterwards)
- 500 g mineralized sample of coarse reject material composite
- Initial Lixiviant concentration of 40 g/L sulfuric acid (H_2SO_4) for acidification
- Initial temperature of 10°C (assumed temperature of the Midwest deposit)
- Bottle roll leach cycle duration of 24 hours
- 5 leaching cycles were performed on each composite
- The following parameters were monitored at set intervals during each bottle roll leach cycle:
    - pH / ORP / conductivity
    - Temperature
    - Specific gravity
    - Free acid
    - Metals assay

Table 13-4 below shows the cycle-by-cycle recovery during the test. Overall recovery was determined by the difference in feed and residue mass and uranium assay. Recovery during each cycle was determined by mass balance from aqueous assays to show leach progression during the test.

Table 13-4: Composite Uranium Recovery per Cycle

Cycle #	Composite 1 Uranium Recovery (%)	Composite 1 UBS Uranium Concentration (g/L)	Composite 2 Uranium Recovery (%)	Composite 2 UBS Uranium Concentration (g/L)
1	19.3	5.38	2.8	2.11
2	32.4	2.12	13.8	6.31
3	42.3	1.65	22.0	4.57
4	57.3	2.56	33.5	6.60
5	69.9	2.09	44.2	5.74
Washate	78.3	0.57	51.6	1.79
Overall Recovery*	80.3	-	66.6	-

From the tests, the overall sulfuric acid and hydrogen peroxide consumptions of 10.6 kgH_2SO_4/kgU and 5.6 kgH_2O_2/kgU were calculated for Composite 1, and 2.9 kgH_2SO_4/kgU and 1.6 kgH_2O_2/kgU for Composite 2. The acid consumption is likely biased high, given the elevated free acid in the samples taken throughout the tests. The lixiviant acid concentration was decreased throughout the testing to achieve a more reasonable free acid concentration for each composite.

The tests were started with lixiviant and ore temperatures of 10C. Both samples saw an increase of approximately 10C after 3 hours of reaction time, with temperature rising slightly afterwards likely due to ambient temperature in the laboratory. The leaching of uranium and contaminants such as Ni-As-S within the deposit generate heat, which can lead to faster reaction kinetics during ISR leaching.

The leaching efficiency of arsenic and nickel were generally in line with historical test work done on Midwest, which showed leach efficiencies much lower than uranium.

The bottle roll tests and other historical leach tests show that the Midwest deposit is amenable to acid leaching with appropriate lixiviant contact. Hydraulic sweep efficiency is the limiting factor as it relates to leaching recovery. Additional bottle roll cycles would have continued to improve leaching efficiency for both composite samples. The free acid present at the end of each cycle suggests that longer bottle roll durations would have improved the UBS grade. It is estimated that an average UBS grade of 7.5 g/L U is achievable through wellfield and reagent optimization. To achieve the production rate of 6.1 Mlbs U_3O_8 per year, an average flow rate of 36.3 m^3/h will be required from the wellfield.

13.3. Conclusions

- Lixiviant concentrations for ISR leaching of the Midwest deposit are expected to require 15-40 g/L H_2SO_4 and 0-20 g/L H_2O_2 depending on phase of production.
- A 5-cycle bottle roll test showed that approximately 52 pore volumes of lixiviant injection leached 80.3% of the uranium for Composite 1 sample, and that the UBS grade was relatively constant from cycles 2-5. Composite 2 was leached to 66.6% within 84 pore volumes of lixiviant with consistent uranium assays at the end of cycles 2-5. The difference in pore volumes between the two tests is due to differences in density and estimated in-situ porosity of the ore samples used to make the composites, based on hydrogeological units of the samples chosen.
- The leach efficiencies could have been increased by conducting additional bottle roll cycles and are not indicative of the ultimate efficiencies that can be achieved in an ISR operation. Further leach testing in the form of packed column and core flood leach testing will help form the basis of the ISR leach efficiency that can be achieved. Other Denison Athabasca Basin projects initially assumed 85% ISR recovery in the early stages of the projects, and after further leach testing was completed, as noted above, the ISR design recoveries were decreased to the low eighties. The ISR recovery used for this study is 81%. A sensitivity

analysis on the ISR recovery has been presented in Figures 22-7 and 22-8 which shows the variable impact of ISR recovery on the Project NPV and IRR.

- Leach efficiency for arsenic and nickel were 55.9% and 53.0% respectively for Composite 1, and 44.5% and 32.2% respectively for Composite 2 over the course of the 5-cycle bottle roll test. Additional bottle roll cycles are interpreted to have increased leaching efficiency.
- The free acid was elevated during most bottle roll cycles for both tests, which led to excess acid consumption. Acid addition was decreased throughout the test to reduce acid consumption on a kg H_2SO_4/kgU basis. A free acid of 18g/L was the final measurement for cycle 5 for both composites.
- Through reagent and flow optimization, it is estimated that the average UBS concentration through life of mine of 7.5 g/L U at an average flow rate of 36.3 m^3/h can be achieved. The bottle roll tests showed assay results as high as 6.6 g/L U, however the high-grade domain, which makes up nearly 70% of the resource has an estimated average grade of approximately 14.4% U, therefore it is believed that the high-grade domain will result in a higher bias to the UBS concentration.

13.4. Recommendations

- Conduct HGU specific core flood leach and remediation tests using fresh recovered intact Midwest drill core. These tests will provide data to quantify the expected operational uranium concentration of the UBS and provide data on the pore volume and permeability of the Midwest deposit.
- Conduct HGU specific column leach and remediation test work using fresh drill core to further inform leaching and remediation data, including analyzing the oxidation states of various elements contained within the Midwest deposit before and after leaching. This will also help to inform the necessary acid-base balance to achieve remediated conditions.
- Hydrogen evolution testing should be further investigated to determine potential for generation during ISR mining. Previous tests have not shown hydrogen evolution; this should be confirmed with fresh drill core.
- Quantifying heat generation in the Midwest deposit through ISR leaching is a useful input into a freeze wall model. This should be assessed during test work recommended above.
- Ion-Exchange (IX) testing should be explored for the Midwest site infrastructure to increase UBS grades on site prior to trucking the UBS to McClean Lake for processing. This would decrease trucking costs for the operation.
- McClean Lake circuit testing at bench scale is recommended due to the higher level of contaminants in the Midwest deposit to determine reagent consumption rates and ensure treatment of tailings for long term tailings stability.

14. MINERAL RESOURCE ESTIMATE

14.1. Introduction

The Midwest uranium project is comprised of two primary deposits located 2.3 km from one another: Midwest Main and Midwest A. The mineral resource models for both Midwest Main and Midwest A were prepared by Orano Canada in October 2024 and in November 2017, respectively. The Midwest A model subsequently underwent revisions from SRK in 2018 after a detailed audit. Understood Mineral Resources Ltd. (UMR) was retained by Denison to review and verify the two estimates are appropriate for public disclosure. The Qualified Person (QP), Matt Batty, MSc, P. Geo, of UMR, is of the opinion that the estimates and associated mineral resource statements are current, a reasonable representation of the global uranium mineral resources at the current level of sampling, and meet the reporting standard given in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Mineral Reserves as required by the National Instrument 43-101 (NI 43-101).

The Midwest Main Mineral Resource has an effective date of December 2, 2024, whereas the Midwest A Mineral Resource has an effective date of March 9, 2018.

The database used to estimate the Midwest Uranium project mineral resources was audited by UMR. UMR is of the opinion that the current drilling information is sufficiently reliable to interpret, with confidence, the boundaries for uranium mineralization and that the assay data are sufficiently reliable to support mineral resource estimation.

Orano completed the resource estimate using Vulcan V17.0.0.1094 (2024) and V10.0.3 software in UTM NAD 83 coordinates for Midwest Main and Midwest A, respectively. The block models were constrained by an interpreted 3D mineralized envelope of the mineralization. DG (density x grade in %U) and density were estimated into the unconformity zones using Ordinary Kriging (OK) and Inverse Distance Squared (ID2) for basement and perched zones. Nearest Neighbour (NN) and ID2 estimations were also used for model validation. The resource estimate was internally validated by Orano through check estimations and peer reviews. The mineral resources do not include allowances for dilution and mining recovery.

To audit the mineral resource models for Midwest Main and Midwest A, UMR used Leapfrog and Vulcan to review the block model and conduct estimation sensitivities. The Geostatistical Software Library (GSLib) family of software was used for geostatistical analysis and variography review.

14.2. Midwest Main

Subsections 14.2.1 to 14.2.9 detail the data preparation, analyses and assumptions made by Orano to support the construction of the Midwest Main mineral resource model. These sections include description excerpts taken from an internal Orano report (Allen, Quirt, & Masset, 2017b). Subsection 14.2.10 summarizes UMR's audit findings and recommendations. The Midwest A Model is described in subsection 14.3.

14.2.1. Drillhole Database

The majority of the drilling for the Midwest Main deposit was undertaken from 1970 to 2006 with some additional drilling in 2018, 2021 and 2024. Six drillholes from the 2018 drilling campaign, two from the 2021 drilling campaign, and ten drillholes from the 2024 drilling campaign were added to the database.

To complete the updated resource estimate on the Midwest deposit, Orano and UMR reviewed and assessed the drillhole database in its entirety. Upon review, a total of 62 drillholes were not used in part or entirely for a variety of concerns, as summarized in Table 14-1. The final mineral resource drillhole database consisted of collar locations, downhole survey data, assay data, lithology data, downhole radioactive data, core recovery data, specific gravity data, and updated drillhole data from the 2024 drill program.

Table 14-1: Summary of Parts or Entire Drillholes not used in Estimate

Hole	Region Not Used	Reason
DMIDW50031	All	Uncertainty in drillhole location due to being angled from the shoreline. Would increase the size of the high-grade zone where new drilling shows this is not the case.
DMIDWPZ11	All	Underground piezometer holes with no uranium data
DMIDWPZ21	All	Underground piezometer holes with no uranium data
DMIDWPZ31	All	Underground piezometer holes with no uranium data
DMIDWPZ41	All	Underground piezometer holes with no uranium data
DMIDWRM11	All	Large unsampled intervals, no probing data to fill these gaps, and superseded by nearby holes
DMIDWRM21	All	Underground geotechnical hole with sporadic assay sampling
MW______4___	All	Large gaps in sampling in the Perched and Unconformity Zones with no probing data to fill in the gaps
MW______7___	All	Poor downhole surveying making hole location unreliable
MW______8___	All	Poor downhole surveying making hole location unreliable
MW_____20___	All	Poor downhole surveying making hole location unreliable
MW_____25___	All	Poor downhole surveying making hole location unreliable
MW_____42___	UC	Probe saturated in high grade mineralization
MW____103___	All	Not drilled to completion due to rods getting stuck. Hole was re-drilled with another hole number.
MW____192___	All	Poor downhole surveying making hole location unreliable

MW____240___	All	Large assay grade length (>2m) and poor downhole surveying making hole location unreliable
MW____268___	All	Poor downhole surveying making hole location unreliable
MW____385___	All	Poor downhole surveying making hole location unreliable
MW____388___	All	Poor downhole surveying making hole location unreliable
MW____390___	All	Poor downhole surveying making hole location unreliable
MW____399___	All	Poor downhole surveying making hole location unreliable
MW____400___	All	Poor downhole surveying making hole location unreliable
MW____402___	All	Poor downhole surveying making hole location unreliable
MW____416___	All	Poor downhole surveying making hole location unreliable
MW____420___	All	Poor downhole surveying making hole location unreliable
MW____529___	UC	High amount of core loss, no probing data to fill these gaps, and were superseded by nearby holes.
MW____532W__	All	Does not appear to have been sampled or probed.
MW____580___	Perched	Several missing samples with no probe data available.
MW___PQ17___	Perched	No samples/probing
MW___PQ17___	Perched	No samples/probing
MW___PQ87___	Basement	Poorly sampled in this lens
MW___PQ95___	Perched	Not sampled in this lens
MW___PQ95___	Perched	Not sampled in this lens
MW___PQ95___	Perched	Poorly sampled in this lens
MW___PQ95___	Perched	Not sampled in this lens
MW__PQ182___	Perched	No samples/probing
MW__PQ184___	Perched	No samples/probing
MW__PQ184___	Perched	No samples/probing
MW__PQ184_1_	All	Gap in sampling, and no probe data was available. This hole was superseded by the parent hole (MW-PQ184) which is located immediately nearby with no gaps in sampling, so MW-PQ184 data were used instead.
MW__PQ235___	Perched	No samples/probing
MW__PQ235___	Perched	No samples/probing
MW__PQ235___	Perched	No samples/probing
MW__PQ276A__	Perched	Not sampled in this lens; probing was deemed too high to use
MW__PQ276A__	Perched	Not sampled in this lens; probing was deemed too high to use
MW__PQ276A__	Perched	Not sampled in this lens; probing was deemed too high to use
MW__PQ383___	Perched	No samples/probing
MW__PQ389___	Perched	No samples/probing
MW__PQ389___	Perched	No samples/probing
MW__PQ389___	Perched	No samples/probing
MW__PQ396___	UC	High amount of core loss, no probing data to fill these gaps, and were superseded by nearby holes, such as MW-PQ396-1
MW__PQ396___	Perched	No samples/probing

MW__PQ396_1_	Perched	Not fully sampled
MW__PQ396_1_	Perched	Not sampled in this lens
MW__PQ412___	Perched	Not sampled in this lens
MW__PQ412___	Perched	Not sampled in this lens
MW__PQ415___	Perched	Not sampled in this lens
MW__PQ416___	All	Some missing samples; other nearby holes
MW__PQ532___	All	Several missing samples with no probe data available. Hole was superseded by the nearby MW-PQ532-1.
MW__PQ532_1_	Perched	Not sampled in this lens
MW__PQ532_1_	Perched	Not sampled in this lens
MW__PQ532_1_	Perched	Not sampled in this lens
DMIDW50031	All	Hole location is not certain and followed up with drilling in 2024

The database was reviewed by Orano and UMR for overall validity/quality, correctness against other sources of data (ex. collar surveys vs. lidar topography, mineralized intercepts vs surrounding drillholes, etc.), spot checked against original data files for assay and downhole survey data (including declination applied), and out of range or overlapping values/intervals. Some errors were encountered but were resolved before the estimate was completed. See the list below of examples of the checks completed:

- Unique collar locations;
- Overlapping assays;
- Empty table check for assays, collars, lithology, and surveys;
- Increasing depth field in surveys, assays, lithology, and specific gravity field;
- Consecutive variation tolerance (max of 30 degrees) for dip and azimuth;
- Unique sample ID for assay and specific gravity measurements;
- Ensure azimuth survey measurements are between 0 and 360;
- Ensure dip survey measurements are between 0 and;
- Ensure uranium and uranium equivalent grades (U% and eU%) are between 0 and 100;

The final database contained no overlapping assays or surveys, assay or survey depth errors, or gross numerical errors in recorded assay grades.

Holes that exceeded the azimuth/dip survey tolerance of 30 degrees between neighbouring data locations on the same drill string were reviewed. All of these records were vertical holes that can show large apparent changes in azimuth with little true deviation; therefore, these surveys are deemed to be valid.

14.2.1.1. Calculation of Equivalent Uranium Grades

In 2018, a new radiometric grade correlation was developed for for the Century Geophysics probes used at Midwest Main for several reasons:

1. Large amount of historic probing has been digitized and added to the database.
2. Additional depth shifting was completed for the down hole probing that was in the database (to more closely spatially-relate the probing grades to the geochemical grades).
3. Additional details for the historic probes such as K factors, dead times, and sizes have been added to the database (acQuire) to more accurately calculate AVP grades.
4. Previous correlation work was limited in nature.

In 2024, a new radiometric grade correlation was developed for the drillholes that were measured with gamma probes from Mount Sopris Scintillometer, Geiger-Müller, and Geovista. These probes have well-defined probing parameters and with the addition of the drillholes from the 2018, 2021, and 2024 drilling campaigns, an update to the correlation was possible.

14.2.1.2. Combination of Equivalent and Geochemical Uranium Grades

A database script was created that combines the equivalent uranium probing data and assay uranium datasets to allow small areas of poor core recovery (without usable assay data) to be represented by equivalent probing data. The culmination of equivalent probing and geochemical grades is prioritized by:

1. Assay results for samples in intervals with core recovery above 75%.
2. Equivalent probing results for areas that have poor core recovery (<75%) or could not be sampled for assay.
3. Assay results with core recovery below 75% if no probing data is available.

14.2.1.3. Radiometric Grade Correlation

Scintillometer and Geiger-Muller radiometric readings, from downhole radiometric probing, are corrected for the absorption caused by fluid, casing, and for various probe parameters (dead time; K factor). The K-factor is the coefficient transforming probe radiometric counts values (in cps) into corrected values (cps: eU_{RA}).

The equivalent uranium radiometric values (eU_{RA}) are calculated assuming that the mineralization is in radiometric equilibrium. If the in-hole mud density was not measured, this parameter value is considered to be as water (d=1).

The radiometric-grade correlation equation is used to derive equivalent uranium grades, in 10 cm intervals (i.e. at 10 cm support), or to a lesser extent 20 cm intervals, from the equivalent uranium radiometric values using the following formula:

$$eU\% = \alpha * eU_{RA}^{\beta}$$

eU_{RA} *: equivalent Uranium grade (ppm)*

α *: alpha value derived in radiometric-grade correlation*

β*: beta value derived in radiometric-grade correlation*

Two correlation equations were established based on the type of probe used; 1) Mount Sopris Scintillometer and Geiger Muller probes, and 2) Century Geophysics Scintillometer probes. The K factors for Mount Sopris Scintillometer and Geiger Muller probes were deemed to be reliable; however, there was some uncertainty in the K factor used for the Century Geophysics probes. As the K factor is constant, it was decided to develop a separate correlation to account for this uncertainty with the Alpha and Beta in the formula.

The first probe grade correlation was based on the Mount Sopris Scintillometer and various Geiger Muller probes using measurements from 31 intercepts in 18 drillholes, and is specific to the Midwest Main deposit for these probes:

$$eU\% = 0.0887 * {eU_{RA}}^{1.0042}$$

The second probe grade correlation was based on the Century Geophysics (serial number 9067) and Geovista probes using measurements from 51 intercepts in 35 drillholes which is an increase of 14 additional intervals from eight drillholes. This correlation is specific to the Midwest Main deposit for these probes:

$$eU\% = 0.0855 * {eU_{RA}}^{1.1096}$$

Several of the PQ holes drilled at Midwest Main were noted to have higher than expected equivalent probe grades. Further review indicated that the holes were likely PVC lined and that no casing shielding factor should be used. Without the casing shielding factor being used, the equivalent grades were lowered and are considered to be in line with expected values.

Review of some drillholes showed the equivalent probing grades higher than expected compared to the available assay data. The probing was removed from the database for these suspect drillholes and assay data was relied solely upon (I.e. MW-618 to MW-620). It was unable to be determined what the issue with this probing was. The use of assays, rather than probing, is not expected to make a notable difference on the estimate.

To handle the high grades from the holes at Midwest Main, many holes were probed with more than one probe; one for the low-grade areas and the other for the high-grade zone (shielded to keep the probe from saturating). In most cases, these runs were separated in the database to allow calculation of equivalent probe grades with their probe specific parameters (K factor, deadtime, etc.). Data that was digitized previously had different probes mixed together in the database. These holes were identified and a dead time of 0 seconds was applied until they can be re-digitized from the original logs. This resulted in a conservative value for the equivalent probing with results approximately 2% lower than expected.

14.2.1.4. Density Data

Two density-grade correlations were used on Midwest Main based on; 1) a nickel, cobalt, and uranium correlation equation was used for samples that were geochemically assayed for those elements, and 2) a uranium-only correlation equation for samples that either were not geochemically assayed or for areas where equivalent probing grades were used.

The nickel, cobalt, and uranium multi-element density correlation equation were calculated using dry bulk density and available geochemical analyses. Only the three elements were used for the correlation because other elements were not systematically analysed for. Only data from the 2024 drill program and the 2017 resampling campaign was used in the multielement correlation (58 samples) as the method used for pre-2017 density sample collection was not well documented and the results from those samples are deemed to be imprecise. It is recommended that more density samples are collected from future programs.

The multi-element density correlation is:

$$d = Density \ = 1/(-0.0041 * \%U - 0.0070 * \%Ni - 0.0205 * \%Co + 0.4435)$$

The single element density correlation is:

$$d = \ Density = \ 0.0000286 * (U\%)^3 \ - \ 0.00336 * (U\%)^2 + 0.15013(U\%) + 2.27$$

Where:

- d represents the calculated dry bulk density

Only the regressions were used to define the density values in the database, no measured values were used.

14.2.2. Geological Model

Additional data from the 2018, 2021, and 2024 drilling programs were incorporated into the geological model. The structural interpretation was based on unconformity (UC) contacts, data from oriented core measurements, and televiewer probing logs, which has enhanced the understanding of the relationship between the structural system and the distribution of the mineralization in the Midwest Main deposit. Additionally, the lithological model was updated to reflect the reactivated fault system within the graphitic, pelitic gneiss and the emplacement of post-mineralization diabase intrusions, which locally replaced portions of the mineralization, as shown in .

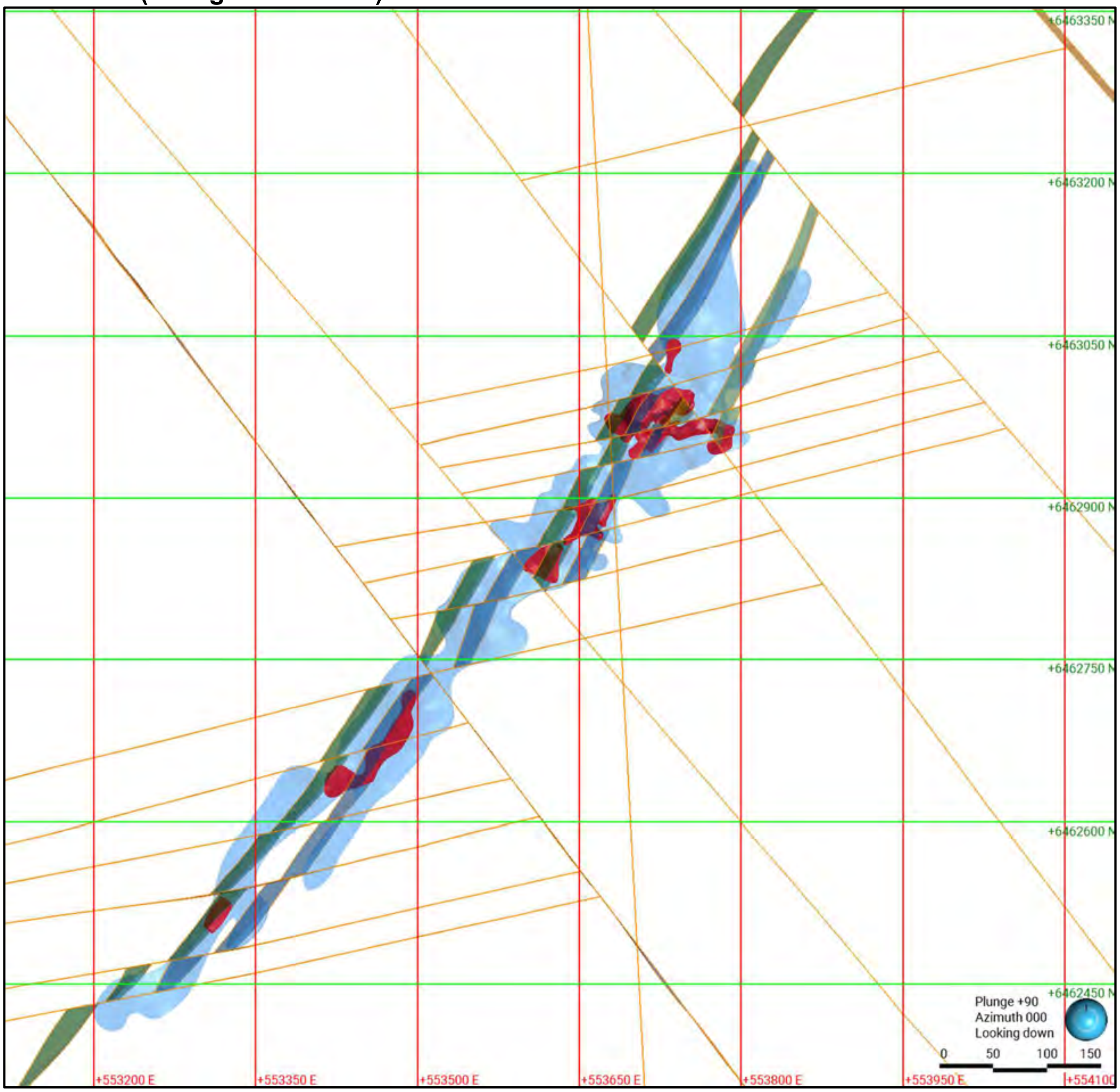
The Midwest Main mineralization is significantly influenced by steeply dipping fault reactivation along graphitic pelitic gneiss, combined with several cross-cutting structures. This complex structural setting is interpreted to control the distribution of the mineralization, as shown in Figures 14-1 and 14-2.

- **Northeast-trending fault system:** The reactivation of steeply dipping faults along a northeast-trending anastomosing graphitic corridor is a key structural feature, extending into the Athabasca sandstone. This system facilitated hydrothermal fluid circulation, which controlled the extent of mineralization. Evidence of fault activity following the deposition of Athabasca sediments includes the displacement of conglomerate markers, and brecciation and fracturing within the sandstone. Additionally, basement-hosted mineralization is interpreted along these northeast-trending fault systems.
- **ENE-trending structures:** A series of N80° or "ENE" cross-cutting structural features locally offset the unconformity within the Midwest Main deposit. These features appear to control the extent of unconformity-related mineralization and certain perched mineralization lenses.
- **Northwest-trending faults:** These faults, interpreted as regional cross-cutting structures in the Midwest trend, show evidence of displacement near the unconformity, controlling the extension of unconformity mineralization in some areas. However, no conclusive evidence suggests that these faults extend into the sandstone. Northwest-trending faults are also strongly visible on magnetic maps and are interpreted to control the emplacement of northwest-trending post-mineralization diabase intrusions, which cut through the southern end of the Midwest deposit area.
- **Tabbernor fault system:** North-south-oriented "Tabbernor" fault structures cross-cut the Midwest Main deposit, controlling the extent of high-grade unconformity mineralization. This fault system appears as a regional structure that occurs throughout the Athabasca Basin.

High-grade mineralization at the Midwest Main deposit is believed to be concentrated in "triple-point" zones, where the reactivated northeast-trending graphitic belt intersects with ENE- and NS-trending fault systems.

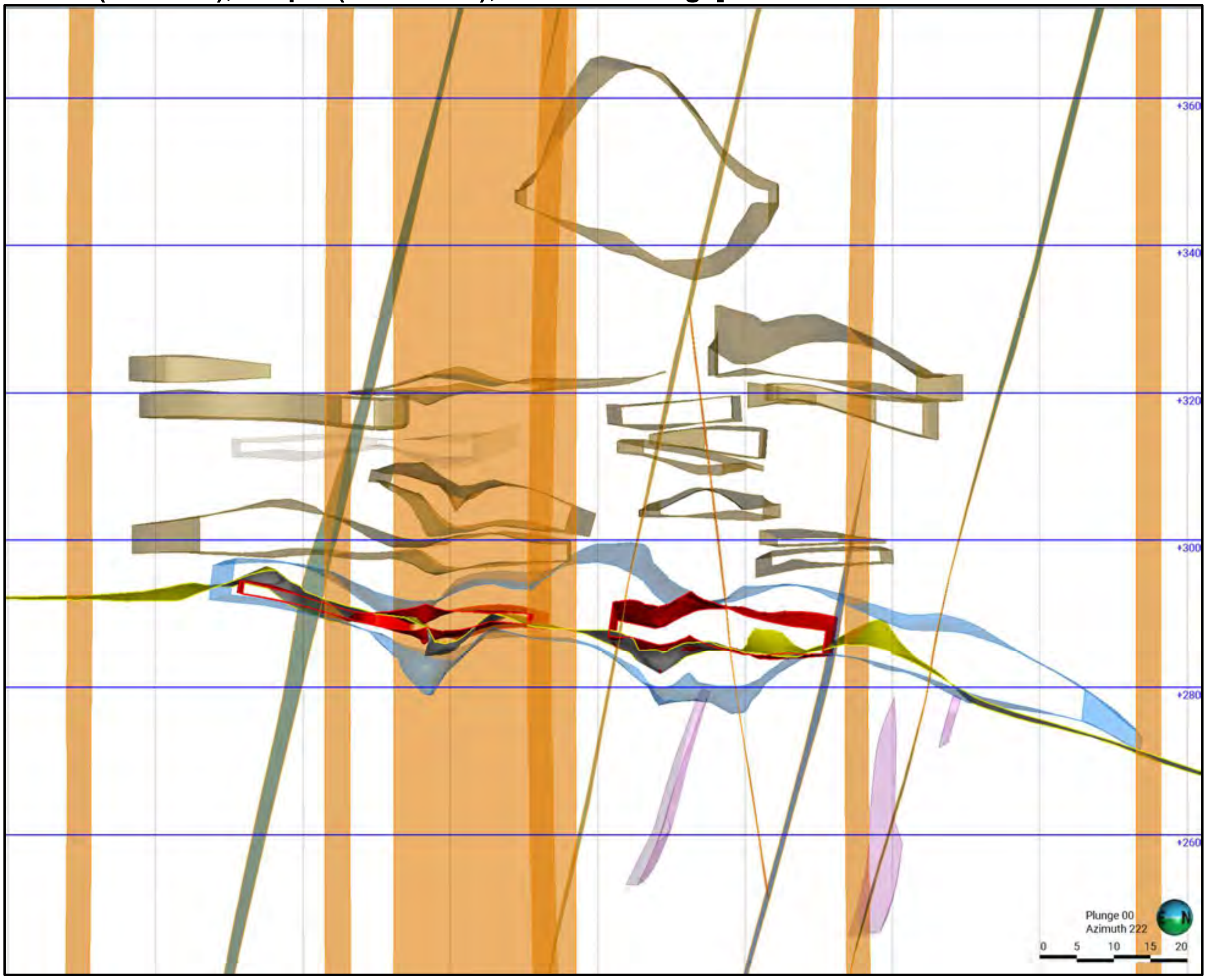
The dominant control for perched mineralization in the sandstone appears to be stratigraphic bedding planes. Mineralizing fluids likely circulated through fault zones, precipitating uraninite/pitchblende along bedding planes at the intersection with certain faults.

Figure 14-1: 70 m Plan Section with UC Mineralized Lenses (LG – Blue, HG – Red) and Structures (Orange and Green) Related to Midwest Main Mineralization



(Source: Denison, 2024)

Figure 14-2: 5 m Cross-Section Looking SW with Structures Related to Midwest Main Mineralization [UC Surface – Yellow; Mineralized Lenses – Blue (UC-LG), RED (UC-HG), Brown (Perched), Purple (Basement); Faults – Orange]



(Source: Denison, 2024)

The Midwest Main deposit has generally been drilled on a 30 m x 30 m grid in the less-drilled areas (southwest and northeast) and on a 7 m x 7 m drill pattern in the high-grade area.

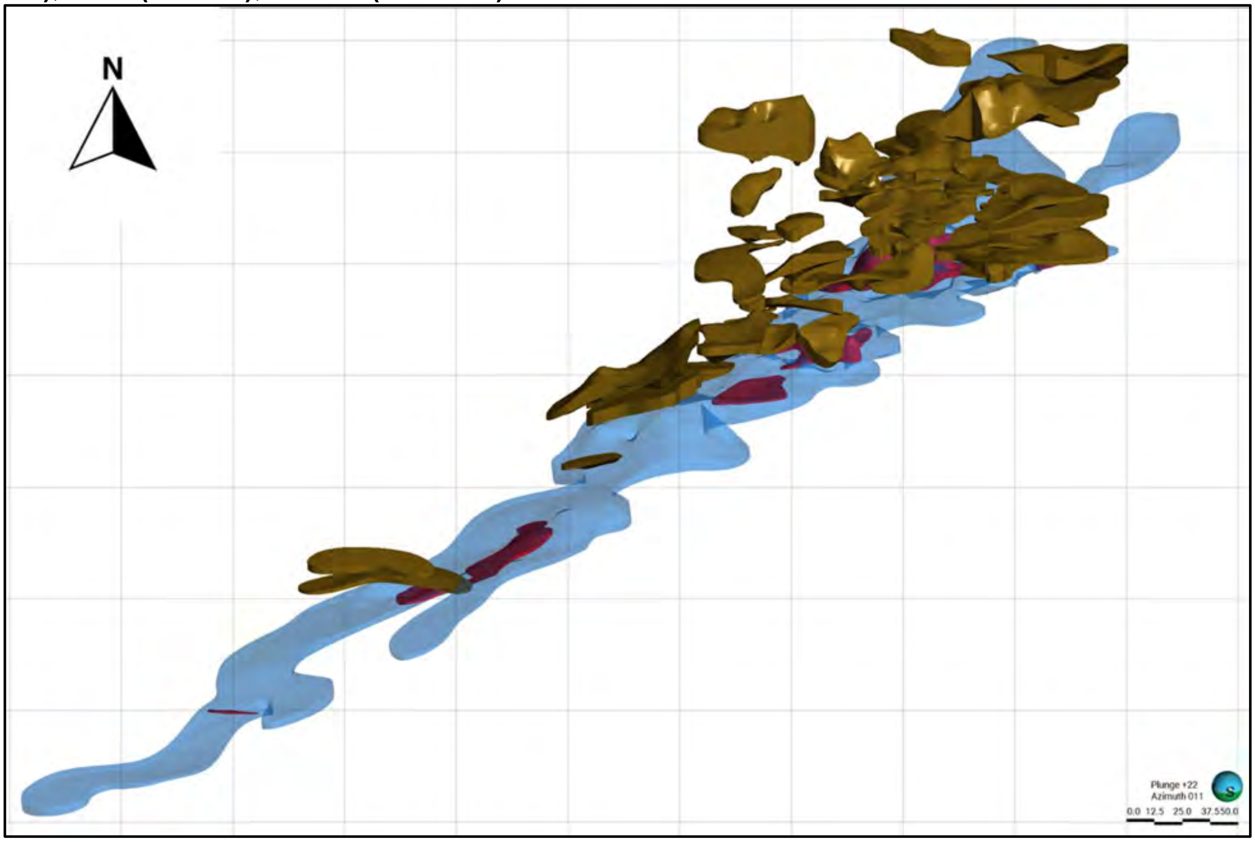
A 3D model of the Midwest Main deposit was created in Leapfrog (version 2023.2.3), using the updated drillhole database. The model was based on the uranium grade data as well as the updated lithological and structural models which gave additional information on the controls and constraints on the mineralization. Mineralization was modelled using a grade cut-off of 0.05% U and 6% U over a minimum of 1 metre of vertical thickness for low-grade and high-grade mineralization, respectively. The high-grade mineralization was modelled across five main unconformity domains, which were used in the resource estimate, as well as two additional domains that were not used in the resource estimate. These two domains were modelled for future evaluation purposes only, as they were represented by two drillholes each. The low-grade mineralization includes an extensive unconformity lens that entirely encompasses the high-grade domains, 51 perched lenses, and five basement-hosted roots, as illustrated in Figure 14-3 and Figure 14-4. The unconformity-related mineralization extends approximately one kilometre in length, varies from 10 to 140 m in width, and reaches up to 40 m in thickness. This deposit is generally situated at depths between 170 and 210 m below the surface. Perched mineralization occurs as discrete lenses above the unconformity, typically concentrated within conglomeratic beds up to 80 m below the surface. Basement-hosted mineralization is interpreted to follow the reactivation of northeast-trending faults, extending up to 150 m below the unconformity.

The unconformity mineralization zones were modelled in Leapfrog using 40° azimuth reference sections which are oriented perpendicular to the northeast-trending graphitic reactivated fault system. The model was verified in 3D and cross-sections, with the zones interpreted to follow the unconformity surface along northeast-trending structures, while lateral extension was controlled by cross-cutting structures.

Basement and perched mineralization zones were modelled using the same section orientation, with spacing generally between 2.5 and 5 m. Since the historical drillholes in the Midwest area were not typically aimed at targeting basement-hosted mineralization, drilling often stopped 10 to 50 m below the unconformity, resulting in incomplete testing of the basement-hosted mineralization. This has made it the least well-defined mineralization zone in the Midwest Main area. Based on available drillhole data, basement mineralization was interpreted as steeply dipping along northeast-trending structures, with widths ranging from 1 to 15 m and limited strike extents. Perched zones were interpreted as flat-lying, occurring along stratigraphic bedding planes in the conglomeratic sandstone and constrained by cross-cutting structures.

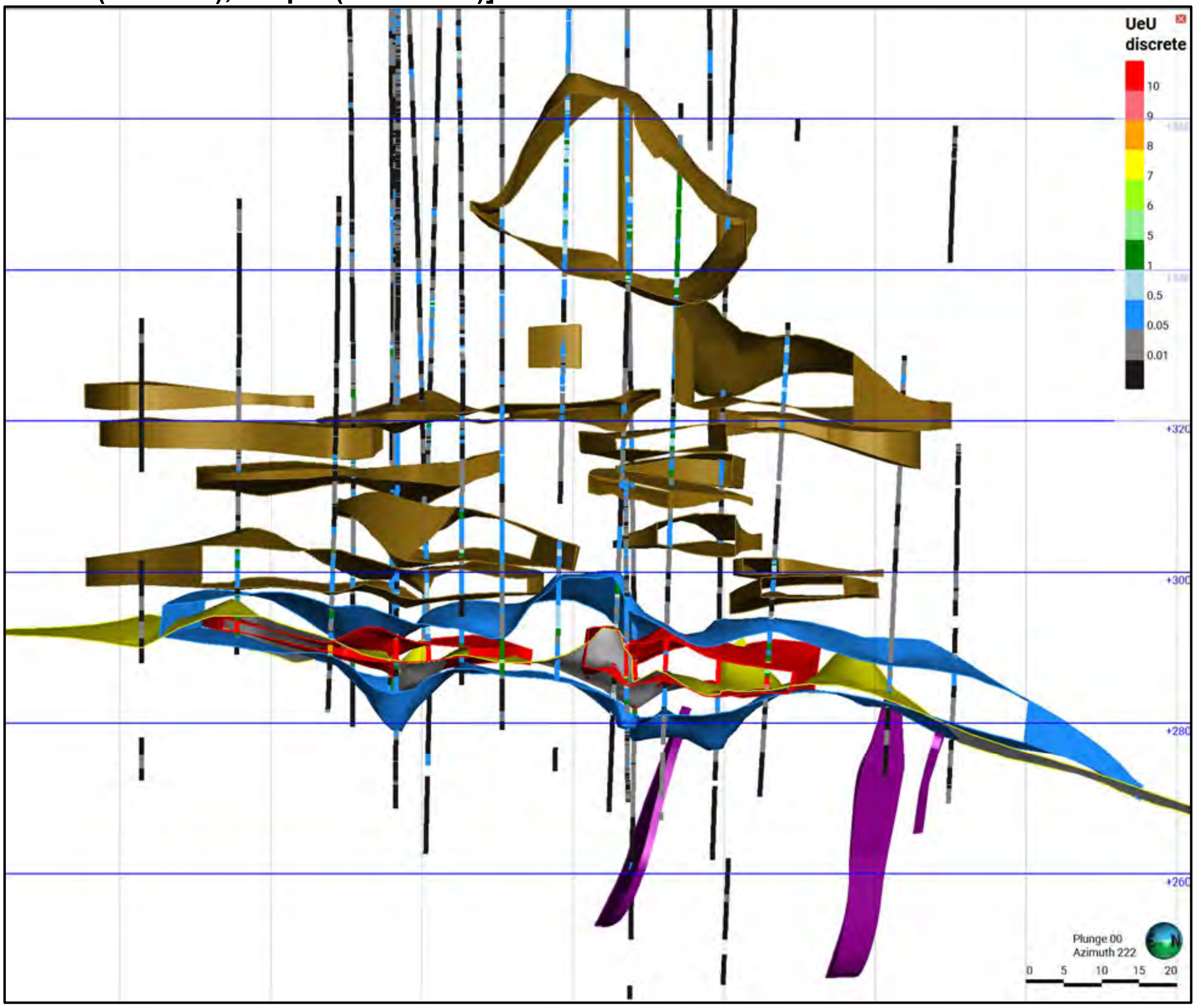
The extent of the mineralization was determined by the halfway distance between a mineralized drillhole and the next non-mineralized drillhole in high-density drilling areas unless structural features were present that controlled the extension of mineralization. In the southern part of the Midwest Main area, where drill density is lower, the unconformity mineralization was modelled up to 10 metres beyond the last mineralized intercept.

Figure 14-3: Inclined View Looking North of the Midwest Main Mineralized Zones (Blue (UC-LG), RED (UC-HG), Brown (Perched)



(Source: Denison, 2024)

Figure 14-4: 10 m Cross-Section Looking SW with Structures Related to Midwest Main Mineralization [UC Surface – Yellow; Mineralized Lenses – Blue (UC-LG), RED (UC-HG), Brown (Perched), Purple (Basement)]



(Source: Denison, 2024)

14.2.3. Statistics and Data Analysis

The 2024 resource model was intersected by a total of 322 drillholes but only 299 were used in the estimate (see section 14.2.1 Drillhole Database for details). Minor sampling gaps were noted in some drillholes. These gaps were deemed minor and assigned a zero grade (0 %U) for the purpose of estimation.

A total of 5,108m of composite data (Table 14-2) was used for the resource estimation and consisted of approximately 83% geochemical assay data and 17% equivalent probing data by total length. Some core loss was noted in the deposit, but core recovery is deemed to be relatively good. Core loss is typically associated with regions of higher grades and higher alteration (quartz dissolution and clay alteration) where core recovery is more difficult.

Table 14-2: Sample Statistics by Zone for Uranium (%U) – Density x Length Weighted

Zone	Count	Mean	Standard deviation	Variance	CV	Max	Min
UC - LG	5,473	0.92	1.82	3.32	1.98	19.5	0.00
UC - HG1	683	15.93	6.75	45.5	0.42	41.15	0.06
UC - HG2	253	18.06	9.6	92.18	0.53	48.76	0.02
UC - HG3N	115	10.81	7.5	56.23	0.69	43.08	0.00
UC - HG3S	9	6.42	2.93	8.59	0.46	11.37	2.05
UC - HG4	16	12.94	8.32	69.28	0.64	25.66	0.01
UC - All	6,549	4.72	7.77	60.39	1.65	48.76	0.00
Basement 2	290	0.26	0.88	0.77	3.33	8.91	0.00
Basement 3	331	0.25	0.55	0.3	2.25	3.38	0.01
Basement 4	258	0.07	0.06	0	0.81	0.42	0.00
Basement 5	167	0.44	1.09	1.19	2.46	5.39	0.00
Basement 7	163	0.11	0.14	0.02	1.33	1.23	0.01
Basement All	1,209	0.23	0.7	0.49	3.02	8.91	0.00
Perched 1	164	0.56	1.07	1.15	1.92	12.25	0.00
Perched 2	368	0.67	1.38	1.92	2.06	19.28	0.00
Perched 3	19	0.13	0.2	0.04	1.52	1.1	0.01
Perched 4	32	0.64	1.04	1.09	1.63	4.83	0.05
Perched 5	299	0.32	0.42	0.18	1.3	3.45	0.01
Perched 6	224	0.2	0.12	0.01	0.6	0.69	0.05
Perched 7	229	0.83	1.03	1.07	1.25	4.5	0.01
Perched 8	109	0.27	0.27	0.07	0.98	1.42	0.01
Perched 9	48	0.35	0.41	0.17	1.16	1.53	0.02
Perched 10	1,410	0.61	0.78	0.61	1.28	6.95	0.01
Perched 11	315	0.24	0.32	0.1	1.31	2.19	0.00
Perched 12	509	0.38	0.5	0.25	1.33	3.36	0.00
Perched 13	93	0.14	0.11	0.01	0.77	0.57	0.02
Perched 14	64	0.42	0.56	0.32	1.35	3.79	0.02
Perched 15	79	0.29	0.34	0.12	1.17	2.06	0.05
Perched 16	56	0.13	0.08	0.01	0.6	0.3	0.01
Perched 17	64	0.29	0.43	0.18	1.48	1.71	0.02
Perched 18	67	0.12	0.07	0.01	0.59	0.4	0.02
Perched 19	90	0.25	0.32	0.1	1.27	2.16	0.05
Perched 20	51	0.09	0.07	0.01	0.76	0.37	0.05
Perched 21	24	0.09	0.03	0	0.35	0.2	0.05
Perched 22	258	0.72	1.36	1.84	1.89	9.61	0.03

Perched 23	126	0.59	0.54	0.29	0.92	3.65	0.05
Perched 24	75	0.23	0.19	0.04	0.8	0.79	0.04
Perched 25	137	0.15	0.09	0.01	0.57	0.58	0.05
Perched 26	79	0.24	0.29	0.08	1.18	1.7	0.05
Perched 27	228	0.64	1.13	1.28	1.76	6.28	0.03
Perched 28	92	0.15	0.19	0.04	1.27	2.22	0.02
Perched 29	200	0.31	0.42	0.18	1.37	3.15	0.00
Perched 30	210	0.24	0.44	0.2	1.88	2.8	0.01
Perched 31	79	0.23	0.24	0.06	1.03	1.49	0.03
Perched 32	41	0.25	0.45	0.2	1.78	3.27	0.01
Perched 33	59	0.14	0.14	0.02	0.97	0.66	0.01
Perched 34	10	0.17	0.11	0.01	0.63	0.4	0.05
Perched 35	212	0.3	0.48	0.23	1.59	4.11	0.02
Perched 36	61	0.11	0.08	0.01	0.77	0.29	0.02
Perched 37	95	0.51	1.2	1.45	2.37	8.17	0.01
Perched 38	40	0.07	0.05	0	0.73	0.21	0.01
Perched 39	50	0.11	0.14	0.02	1.23	0.84	0.01
Perched 40	5	0.11	0.08	0.01	0.7	0.27	0.02
Perched 41	20	0.19	0.1	0.01	0.56	0.37	0.05
Perched 42	203	0.16	0.15	0.02	0.9	1.06	0.03
Perched 43	405	0.27	0.27	0.07	0.98	1.64	0.02
Perched 44	136	0.21	0.2	0.04	0.94	0.85	0.02
Perched 45	203	0.38	0.84	0.7	2.18	7.82	0.01
Perched 46	238	1.3	1.39	1.94	1.08	10.09	0.04
Perched 47	52	0.46	0.57	0.33	1.26	2.26	0.01
Perched 48	54	0.45	0.76	0.58	1.69	3.2	0.02
Perched 49	33	0.24	0.26	0.07	1.05	1.34	0.04
Perched 50	24	0.42	0.33	0.11	0.78	2.01	0.07
Perched 51	19	0.18	0.23	0.05	1.3	0.83	0.06
Perched All	7,758	0.42	0.77	0.59	1.83	19.28	0.00

Composites for all zones were generated in Vulcan for Density and DG (Density x Grade). A composite length of one metre was chosen with the composites being length weighted. Composites less than 0.5 metres were merged with the preceding composite. Summary statistics for the density weighted composites are shown in Table 14-3, where grade is calculated by dividing DG by Density.

Table 14-3: Composite Statistics by Zone

Zone	Count	Mean	Standard deviation	Variance	CV	Max	Min
UC - LG	2,066	0.89	1.44	2.08	1.62	9.48	0
UC - HG1	278	15.83	5.47	29.93	0.35	27.69	0.91

UC - HG2	104	17.78	7.65	58.47	0.43	30.35	1.18
UC - HG3N	45	10.76	5.97	35.67	0.56	21.92	0
UC - HG3S	5	6.42	1.07	1.15	0.17	7.52	4.67
UC - HG4	10	12.94	6.66	44.29	0.51	23.22	0.01
UC - All	2,508	4.65	7.32	53.56	1.57	30.35	0
Basement 2	157	0.2	0.41	0.17	2.06	2.13	0
Basement 3	130	0.22	0.38	0.14	1.7	1.51	0.01
Basement 4	59	0.07	0.05	0	0.68	0.24	0
Basement 5	42	0.32	0.56	0.31	1.74	2.01	0.01
Basement 7	53	0.11	0.13	0.02	1.23	0.8	0.01
Basement All	441	0.19	0.37	0.14	1.96	2.13	0
Perched 1	54	0.44	0.54	0.3	1.23	2.68	0.01
Perched 2	120	0.45	0.52	0.27	1.16	2.4	0.01
Perched 3	18	0.13	0.15	0.02	1.1	0.58	0.01
Perched 4	8	0.64	0.71	0.51	1.12	2.08	0.06
Perched 5	95	0.32	0.34	0.11	1.05	1.75	0.06
Perched 6	33	0.2	0.09	0.01	0.45	0.41	0.07
Perched 7	35	0.83	0.96	0.92	1.16	3.54	0.04
Perched 8	34	0.27	0.26	0.07	0.93	1.04	0.03
Perched 9	21	0.35	0.37	0.13	1.04	1.29	0.06
Perched 10	323	0.58	0.6	0.36	1.03	2.78	0.03
Perched 11	98	0.24	0.26	0.07	1.07	1.68	0
Perched 12	129	0.38	0.45	0.21	1.2	2.41	0.02
Perched 13	22	0.14	0.09	0.01	0.63	0.38	0.04
Perched 14	22	0.42	0.46	0.21	1.1	1.77	0.06
Perched 15	26	0.29	0.25	0.06	0.85	0.97	0.05
Perched 16	14	0.13	0.06	0	0.5	0.29	0.07
Perched 17	15	0.29	0.38	0.14	1.32	1.71	0.05
Perched 18	21	0.12	0.06	0	0.5	0.26	0.05
Perched 19	24	0.25	0.27	0.07	1.07	1.95	0.05
Perched 20	10	0.09	0.05	0	0.52	0.22	0.06
Perched 21	10	0.09	0.02	0	0.27	0.12	0.06
Perched 22	61	0.45	0.54	0.29	1.2	3.61	0.05
Perched 23	28	0.59	0.49	0.24	0.83	2.05	0.06
Perched 24	27	0.23	0.18	0.03	0.75	0.79	0.06
Perched 25	39	0.15	0.08	0.01	0.51	0.39	0.05
Perched 26	20	0.24	0.26	0.07	1.05	0.97	0.06
Perched 27	94	0.54	0.76	0.58	1.4	2.49	0.05
Perched 28	79	0.15	0.15	0.02	1.01	1.03	0.03
Perched 29	41	0.31	0.38	0.14	1.23	1.97	0
Perched 30	60	0.24	0.4	0.16	1.7	2.8	0.01
Perched 31	49	0.23	0.21	0.05	0.91	0.89	0.03

Perched 32	38	0.25	0.39	0.15	1.52	2.27	0.01
Perched 33	32	0.14	0.12	0.02	0.87	0.61	0.01
Perched 34	11	0.17	0.11	0.01	0.63	0.4	0.05
Perched 35	55	0.3	0.42	0.18	1.4	2.58	0.06
Perched 36	28	0.11	0.08	0.01	0.76	0.29	0.02
Perched 37	39	0.51	0.92	0.85	1.81	4.54	0.01
Perched 38	20	0.07	0.05	0	0.69	0.21	0.01
Perched 39	40	0.11	0.12	0.01	1.04	0.59	0.01
Perched 40	9	0.11	0.07	0.01	0.67	0.27	0.02
Perched 41	7	0.19	0.06	0	0.33	0.28	0.13
Perched 42	39	0.16	0.13	0.02	0.78	0.61	0.05
Perched 43	62	0.27	0.21	0.04	0.79	1.01	0.03
Perched 44	19	0.21	0.17	0.03	0.8	0.57	0.06
Perched 45	41	0.25	0.31	0.1	1.26	1.57	0.03
Perched 46	70	1.3	1.17	1.38	0.91	7.18	0.04
Perched 47	18	0.46	0.43	0.18	0.93	1.34	0.05
Perched 48	24	0.45	0.64	0.41	1.41	3.2	0.03
Perched 49	8	0.24	0.19	0.04	0.79	0.66	0.06
Perched 50	17	0.42	0.28	0.08	0.66	1.35	0.08
Perched 51	7	0.18	0.16	0.03	0.9	0.55	0.06
Perched All	2,214	0.39	0.55	0.3	1.42	7.18	0

14.2.3.1. Declustering

Given the multiple phases of drilling, along with a much higher concentration of drilling in the high-grade areas, declustering was conducted on the data set to allow better comparison of the estimation results to the dataset. Statistics for declustering were obtained by using the cell declustering method. Declustered statistics are detailed in Table 14-4. A notable difference is observed within three of the UC HG zones (HG1, HG2, and HG4) between the composite and declustered statistics. Given the high amount of drilling in the high-grade areas compared to the rest of the deposit, this result was expected. In Orano's opinion, clustering is not a significant problem for the low-grade zones (Perched and Basement).

Table 14-4: Declustered Statistics – Density x Length Weighted

Model Code	Zone	Grade %U
999	UC - LG	0.65
1000	HG1	14.40
2000	HG2	16.30
3000	HG3N	10.20
3500	HG3S	6.40
4000	HG4	11.20
11-17	Basement - All	0.18
101-151	Perched - All	0.30

14.2.4. Capping and High-Grade Restrictions

High-grade outliers were noted to exist in the UC zones and in the perched/basement zones. Where possible, high grades were modelled (sub-domained) into separate zones to limit the need of further capping or restricting of the high grades. However, even with high-grade domains, minor capping and restrictions of the high-grade mineralization was still deemed to be necessary. This was done for both DG and density to better handle these outliers in the estimation and based on the cumulative probability plots of DG and density (Figure 14-5 to Figure 14-8, pre-capping), the outliers were capped as shown in Table 14-5. The resultant composite statistics from the capping are shown in Table 14-6. For the perched and basement zones only the largest zones (greater than 100 tU) were reviewed in detail for outliers; additional reviews should be done for these smaller zones should they show further promise for extraction.

Table 14-5: Capping Level of Composites

Zone	Parameter	Capping Level	Approximate Grade (%U)
UC - LG	DG	28.0	8.0
	Density	3.5	N/A
UC - HG1	DG	120.0	25.0
	Density	4.8	N/A
UC - HG2	DG	135.0	28.7
	Density	4.7	N/A
UC - HG3N	DG	82.0	18.2
	Density	4.5	N/A
Basement 2	DG	5.0	2.0
	Density	2.5	N/A
Basement 3	DG	5.0	1.5
	Density	3.4	N/A

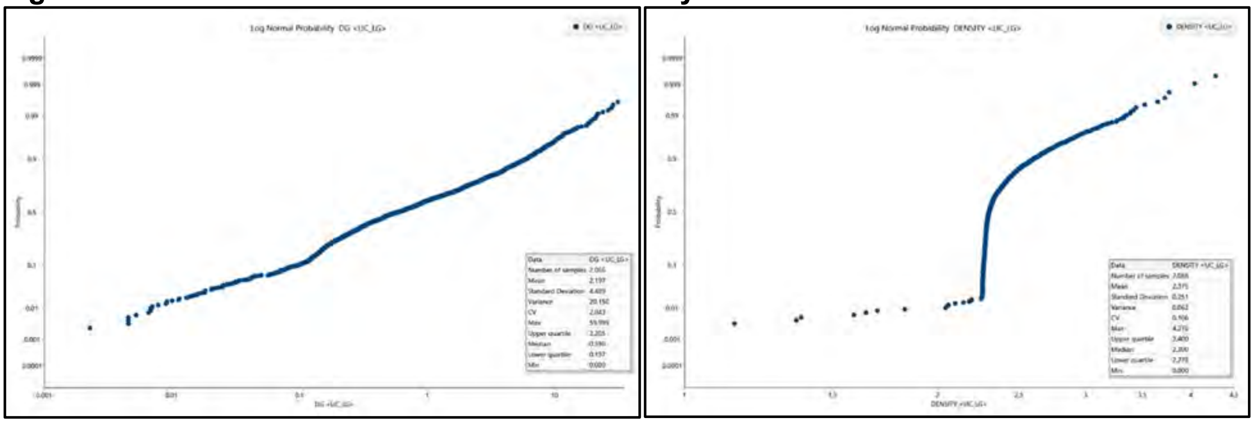
Basement 4	Density	3.0	0.1
Basement 5	DG	5.0	1.8
	Density	2.8	N/A
Perched 2	DG	6.5	2.4
Perched 10	DG	6.5	2.4
	Density	2.7	N/A
Perched 27	DG	6.5	2.4
	Density	2.7	N/A
Perched 43	DG	2.5	1.0

Table 14-6: Comparison of Composites Before and After Capping (Length Weighted Only)

		Composites Avg			Composites Avg (Capped)		
Zone	**Count**	**%U**	**Density**	**DG**	**%U**	**Density**	**DG**
UC_LG	2,066	0.83	2.37	2.19	0.81	2.38	2.12
HG1	278	15.31	3.87	61.66	15.24	3.86	61.13
HG2	104	16.99	3.70	66.89	16.80	3.69	65.59
HG3N	45	9.65	3.22	34.82	9.65	3.20	34.42
HG3S	5	6.47	2.56	16.43	6.47	2.56	16.43
HG4	10	10.88	3.24	41.95	10.88	3.24	41.95
BSMT_2	157	0.24	2.26	0.59	0.19	2.25	0.45
BSMT_3	130	0.21	2.24	0.55	0.20	2.24	0.50
BSMT_4	59	0.07	2.41	0.18	0.07	2.41	0.18
BSMT_5	42	0.40	2.37	1.05	0.30	2.36	0.76
BSMT_7	53	0.11	2.30	0.25	0.11	2.30	0.25
PER_1	54	0.42	2.32	1.02	0.42	2.32	1.02
PER_2	120	0.46	2.28	1.08	0.44	2.28	1.03
PER_3	18	0.13	2.30	0.31	0.13	2.30	0.31
PER_4	8	0.61	1.96	1.25	0.61	1.96	1.25
PER_5	95	0.32	1.84	0.59	0.32	1.84	0.59
PER_6	33	0.20	2.30	0.46	0.20	2.30	0.46
PER_7	35	0.78	2.32	1.92	0.78	2.32	1.92
PER_8	34	0.27	2.31	0.63	0.27	2.31	0.63
PER_9	21	0.35	2.29	0.81	0.35	2.29	0.81
PER_10	323	0.59	2.29	1.40	0.57	2.29	1.33
PER_11	98	0.24	2.12	0.51	0.24	2.13	0.51
PER_12	129	0.37	2.31	0.88	0.37	2.31	0.88
PER_13	22	0.14	2.29	0.33	0.14	2.29	0.33
PER_14	22	0.40	2.33	0.97	0.40	2.33	0.97
PER_15	26	0.29	2.09	0.62	0.29	2.09	0.62
PER_16	14	0.12	2.30	0.29	0.12	2.30	0.29
PER_17	15	0.28	2.31	0.66	0.28	2.31	0.66

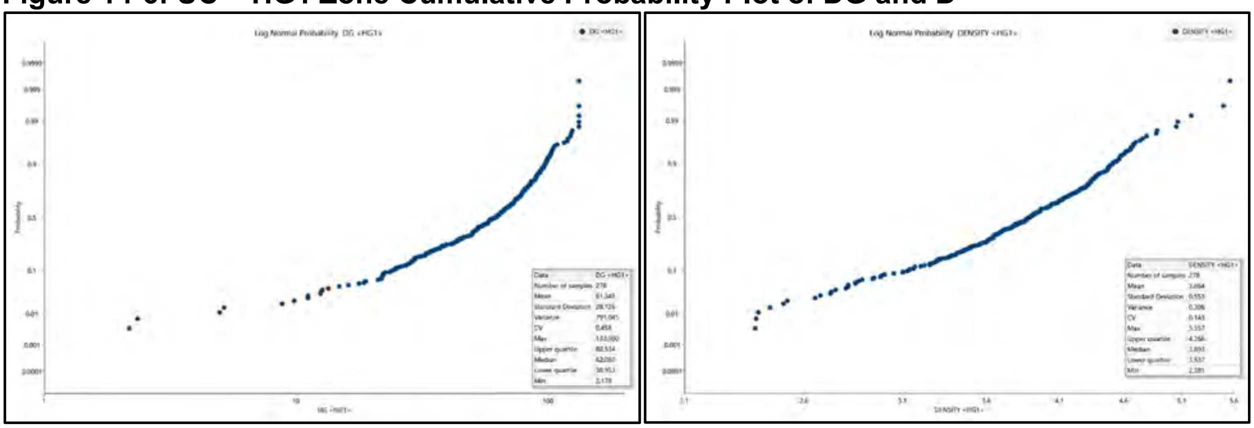
PER_18	21	0.12	2.28	0.27	0.12	2.28	0.27
PER_19	24	0.25	2.30	0.58	0.25	2.30	0.58
PER_20	10	0.09	2.28	0.21	0.09	2.28	0.21
PER_21	10	0.09	2.27	0.21	0.09	2.27	0.21
PER_22	61	0.44	2.32	1.04	0.44	2.32	1.04
PER_23	28	0.57	2.34	1.37	0.57	2.34	1.37
PER_24	27	0.23	2.30	0.54	0.23	2.30	0.54
PER_25	39	0.15	2.29	0.35	0.15	2.29	0.35
PER_26	20	0.24	2.29	0.56	0.24	2.29	0.56
PER_27	94	0.59	2.34	1.51	0.51	2.34	1.27
PER_28	79	0.15	2.28	0.34	0.15	2.28	0.34
PER_29	41	0.31	2.20	0.68	0.30	2.22	0.68
PER_30	60	0.23	2.30	0.54	0.23	2.30	0.54
PER_31	49	0.23	2.30	0.53	0.23	2.30	0.53
PER_32	38	0.25	2.29	0.58	0.25	2.29	0.58
PER_33	32	0.14	2.27	0.32	0.14	2.27	0.32
PER_34	11	0.17	2.27	0.39	0.17	2.27	0.39
PER_35	55	0.29	2.31	0.70	0.29	2.31	0.70
PER_36	28	0.11	2.28	0.25	0.11	2.28	0.25
PER_37	39	0.49	2.30	1.17	0.49	2.30	1.17
PER_38	20	0.07	2.28	0.17	0.07	2.28	0.17
PER_39	40	0.11	2.28	0.26	0.11	2.28	0.26
PER_40	9	0.11	2.28	0.25	0.11	2.28	0.25
PER_41	7	0.18	1.56	0.29	0.18	1.56	0.29
PER_42	39	0.16	2.29	0.37	0.16	2.29	0.37
PER_43	62	0.27	2.31	0.63	0.26	2.31	0.61
PER_44	19	0.21	2.30	0.48	0.21	2.30	0.48
PER_45	41	0.24	2.28	0.56	0.24	2.29	0.56
PER_46	70	1.23	2.43	3.15	1.23	2.43	3.15
PER_47	18	0.43	2.37	1.08	0.43	2.37	1.08
PER_48	24	0.43	2.47	1.12	0.43	2.47	1.12
PER_49	8	0.24	2.33	0.56	0.24	2.33	0.56
PER_50	17	0.42	2.33	0.99	0.42	2.33	0.99
PER_51	7	0.18	2.29	0.41	0.18	2.29	0.41

Figure 14-5: UC – LG Zone Cumulative Probability Plot of DG and D



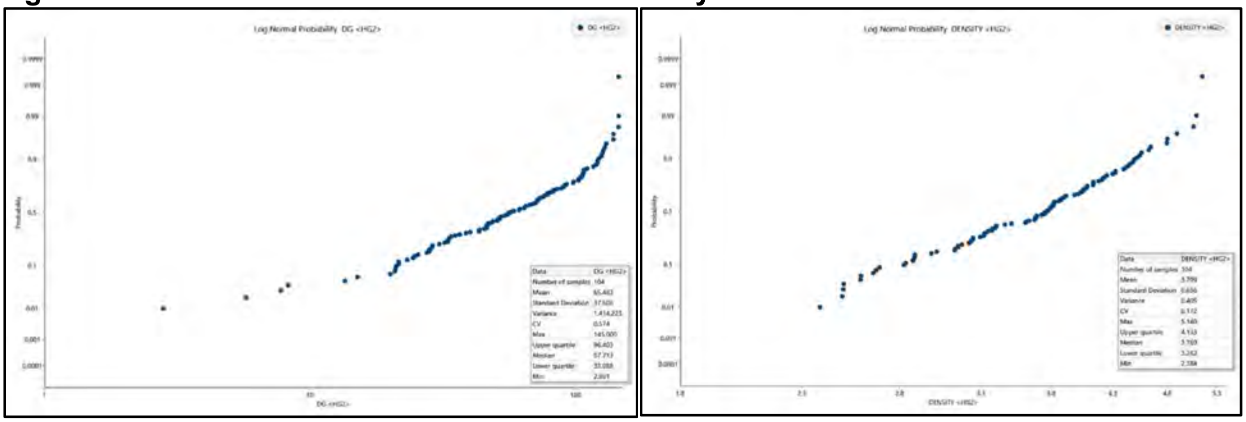
(Source: Orano, 2024)

Figure 14-6: UC – HG1 Zone Cumulative Probability Plot of DG and D



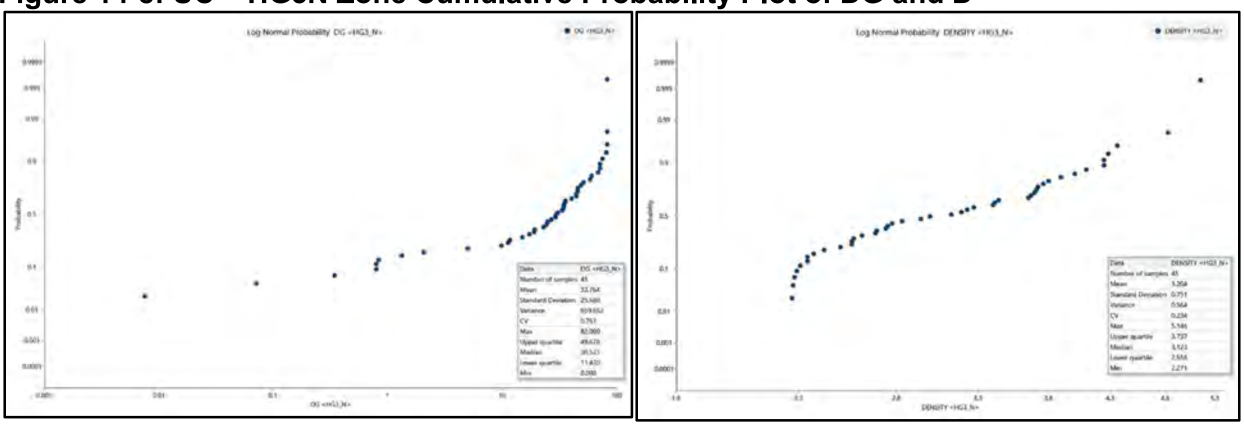
(Source: Orano, 2024)

Figure 14-7: UC – HG2 Zone Cumulative Probability Plot of DG and D



(Source: Orano, 2024)

Figure 14-8: UC – HG3N Zone Cumulative Probability Plot of DG and D

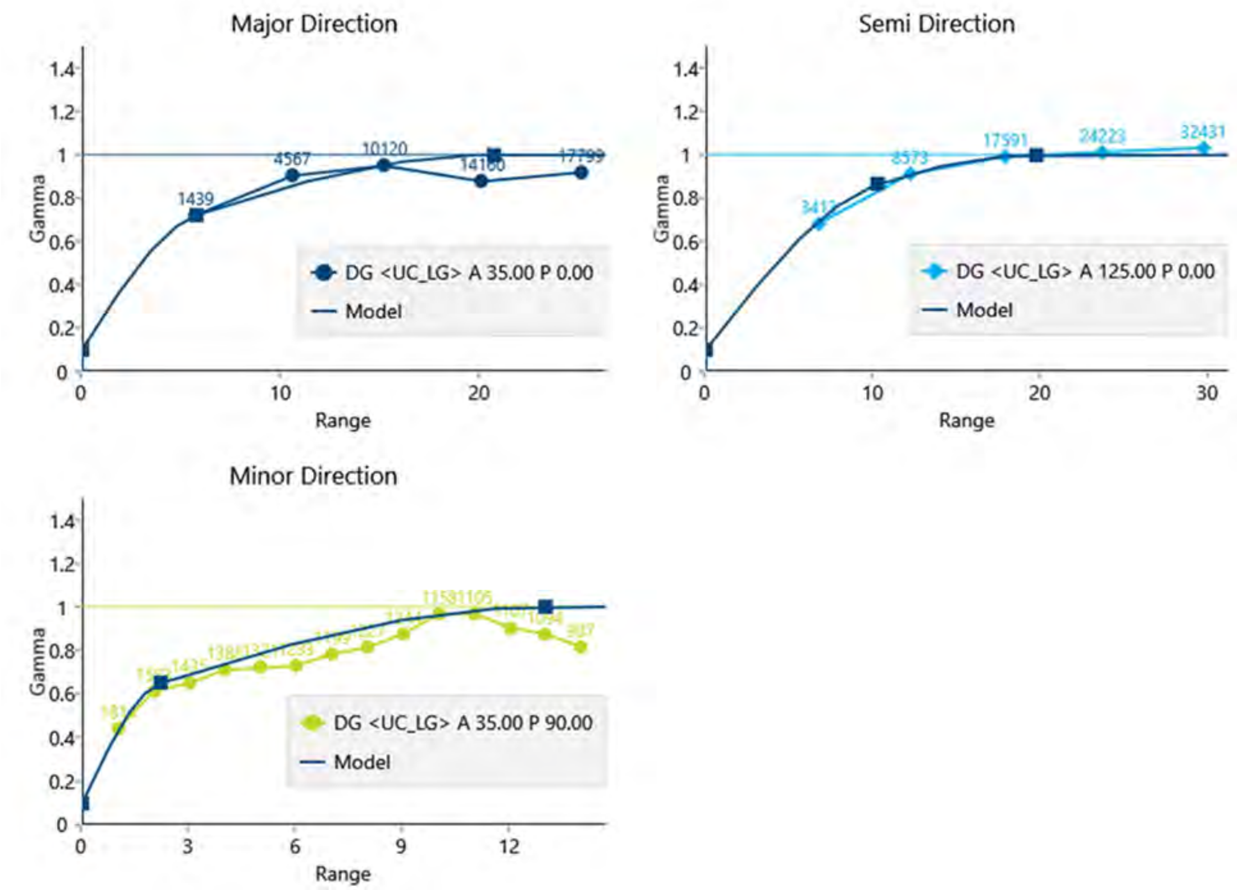


(Source: Orano, 2024)

14.2.5. Variogram Analysis and Modelling

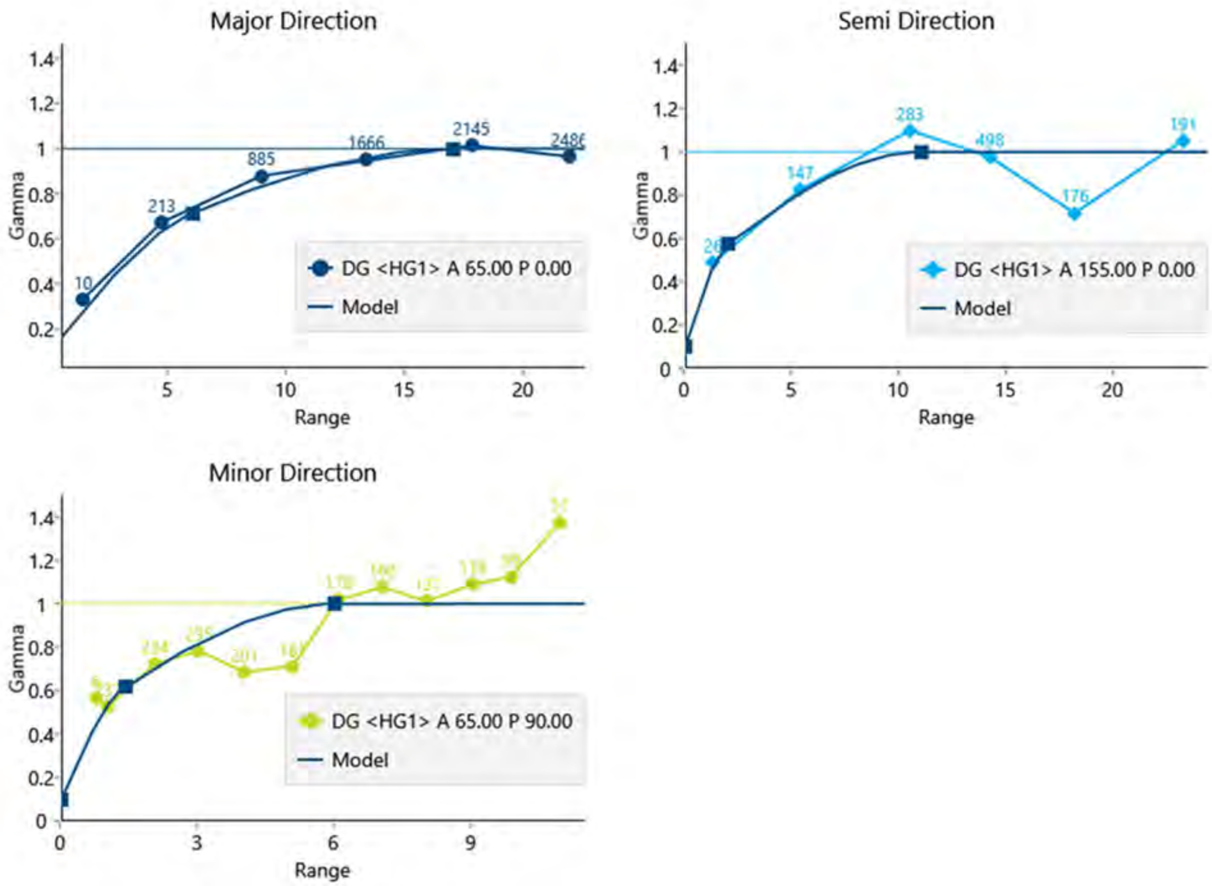
A variogram analysis of DG was performed only for the UC zones (low and high-grade). Given that the perched and basement zones are relatively small (both volumetrically and amount of contained metal), variograms were not attempted. With limited drilling, it is unlikely that good variograms would be achievable. The models generated were derived from experimental correlograms or semi-variograms (Figure 14-9 to Figure 14-12). Variograms were unable to be obtained for the HG3S and HG4 zones, so the combined HG3 North and South variogram was used for these zones. The most continuous variogram ranges were obtained along the strike of the zones and the variogram ranges are shown in Table 14-7.

Figure 14-9: DG Variogram Models for the UC-LG Zone



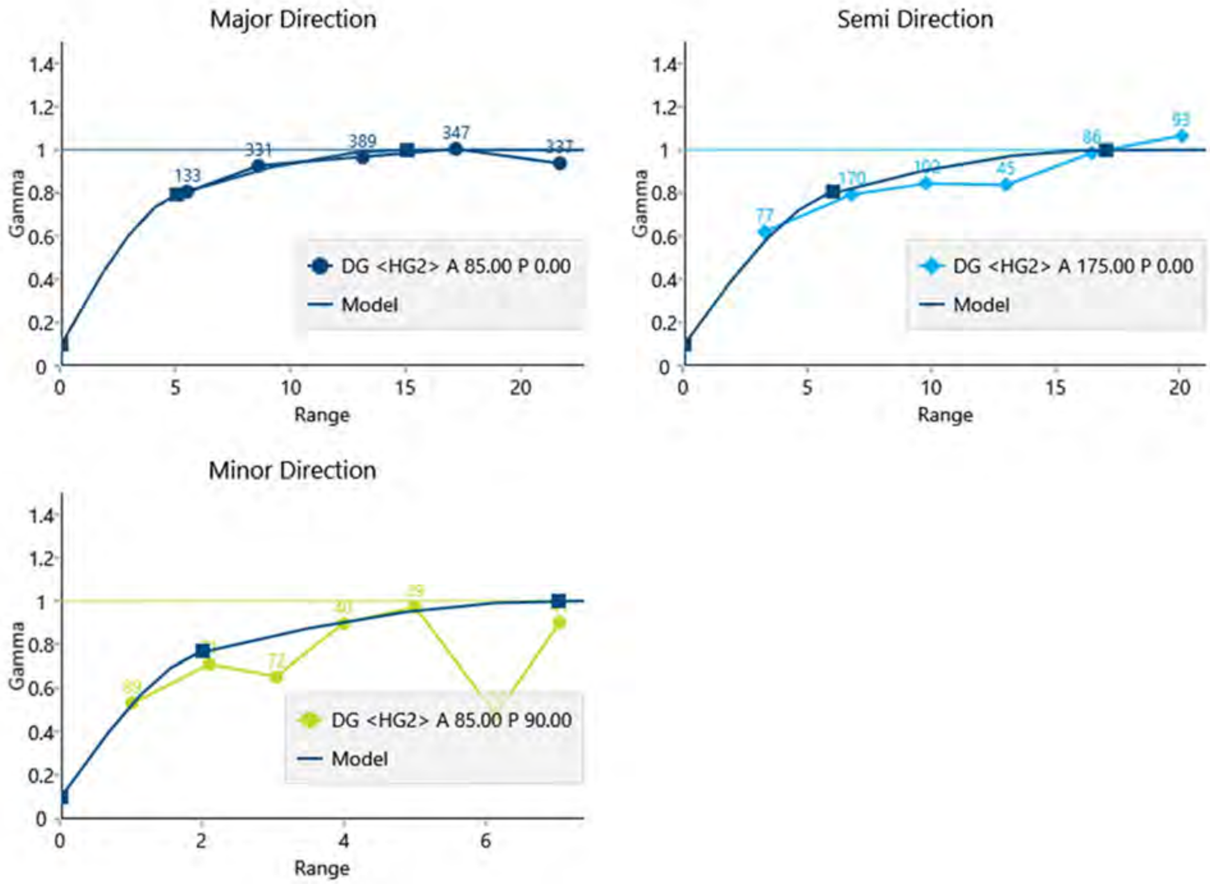
(Source: Orano, 2024)

Figure 14-10: DG Variogram Models for the UC-HG1 Zone



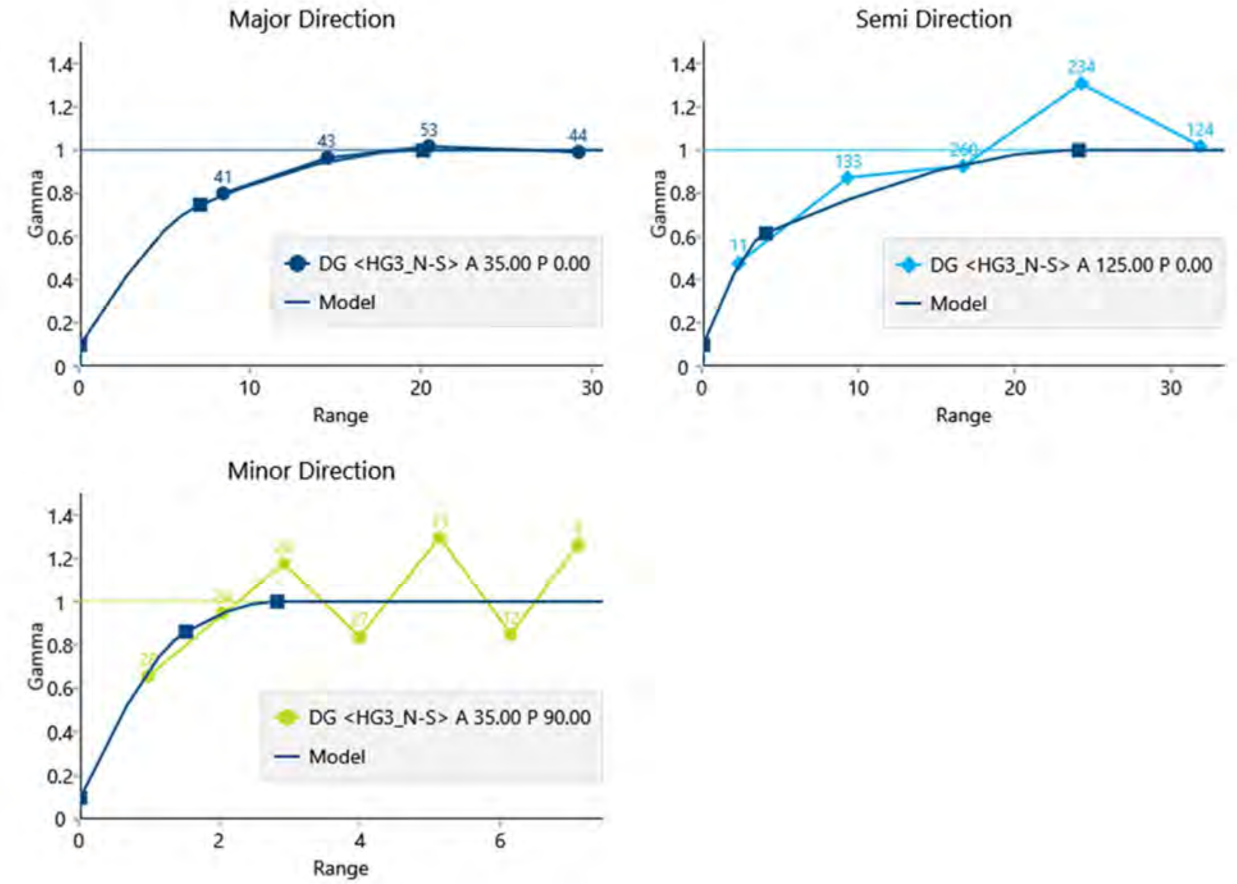
(Source: Orano, 2024)

Figure 14-11: DG Variogram Models for the UC-HG2 Zone



(Source: Orano, 2024)

Figure 14-12: DG Variogram Models for the UC-HG3 North and South (combined) Zones



(Source: Orano, 2024)

Table 14-7: Summary of Variogram Parameters (in Vulcan Convention)

Zone	Direction (dip/azimuth)	Nugget	Structure 1 Type	Sill 1 Differential	Range 1 (m)	Structure 2 Type	Sill 2 Differential	Range 2 (m)
UC - LG	00/035	0.1	Spherical	0.43	5.3	Spherical	0.47	21
	00/125				16			19.5
	-90/035				2.2			13
UC - HG1	00/065	0.1	Spherical	0.32	6	Spherical	0.58	17
	00/155				2			11
	-90/065				1.4			6
UC - HG2	00/085	0.1	Spherical	0.5	5	Spherical	0.4	15
	00/175				6			17
	-90/085				2			7
UC - HG3N	00/035	0.1	Spherical	0.39	7	Spherical	0.51	20
UC - HG3S	00/125				4			24
UC - HG4	-90/035				1.5			2.8

14.2.6. Block Model and Estimation Parameters

The mineral resource block model is comprised of parent blocks that are 5 m x 5 m x 2 m with sub-blocks that are 2.5 m x 2.5 m x 1 m in X, Y, and Z directions, respectively. The block model was rotated so that the blocks were approximately parallel to the strike of the mineralization, with a bearing of 135º (in Vulcan rotation angle convention). Each block contains a zone code as well as a DG and Density value that were calculated during inverse distance squared calculation. A grade value (%U) is then calculated from this by dividing DG by Density.

The volumes of the mineralized shells were compared to the volumes represented by the block model and the difference was negligible overall. However, some smaller perched zones did have some more significant differences in volumes with a difference of up to ~10%. Given the small size of the perched zones and the relatively low grades, this is expected to have a negligible impact on the resource (Table 14-8).

Table 14-8: Comparison of Triangulation Volumes to Block Model Volumes

Zone	Surface Area	Triangulation Volume	Block Model Volume	Volume Difference
UC - LG	152,458	385,390	385,563	0.0%
UC - HG1	5,733	12,964	13,013	0.4%
UC - HG2	4,298	4,590	4,569	-0.5%
UC - HG3N	2,724	2,547	2,613	2.6%
UC - HG3S	1,886	919	913	-0.7%
UC - HG4	4,936	3,423	3,344	-2.3%
UC - All	172,035	409,832	410,013	0.0%
Basement 2	11,842	26,589	26,644	0.2%
Basement 3	7,114	8,193	8,031	-2.0%
Basement 4	1,734	2,183	2,244	2.8%
Basement 5	1,888	2,058	2,019	-1.9%
Basement 7	4,258	4,797	4,781	-0.3%
Basement All	26,836	43,821	43,719	-0.2%
Perched 1	3,021	3,725	3,856	3.5%
Perched 2	7,267	10,528	10,506	-0.2%
Perched 3	2,245	2,252	2,356	4.6%
Perched 4	3,936	2,959	3,025	2.2%
Perched 5	3,185	4,405	4,300	-2.4%
Perched 6	1,731	2,279	2,238	-1.8%

Perched 7	1,879	3,618	3,675	1.6%
Perched 8	960	1,157	1,175	1.5%
Perched 9	1,031	1,435	1,400	-2.5%
Perched 10	6,006	22,530	22,619	0.4%
Perched 11	3,151	3,757	3,694	-1.7%
Perched 12	5,384	11,423	11,506	0.7%
Perched 13	1,110	1,119	1,100	-1.7%
Perched 14	920	1,037	994	-4.1%
Perched 15	1,245	896	938	4.7%
Perched 16	582	401	438	9.2%
Perched 17	592	573	563	-1.9%
Perched 18	2,541	3,151	3,206	1.8%
Perched 19	1,094	1,188	1,169	-1.6%
Perched 20	2,209	2,728	2,725	-0.1%
Perched 21	3,587	2,983	2,925	-1.9%
Perched 22	1,505	2,360	2,319	-1.8%
Perched 23	936	1,378	1,413	2.5%
Perched 24	769	1,065	1,031	-3.2%
Perched 25	2,892	7,123	7,181	0.8%
Perched 26	811	1,159	1,044	-10.0%
Perched 27	4,207	14,416	14,544	0.9%
Perched 28	2,935	4,984	4,988	0.1%
Perched 29	1,142	1,574	1,619	2.8%
Perched 30	4,902	10,448	10,450	0.0%
Perched 31	4,986	11,783	11,675	-0.9%
Perched 32	1,268	2,722	2,663	-2.2%
Perched 33	2,927	5,556	5,669	2.0%
Perched 34	1,715	2,088	2,088	0.0%
Perched 35	2,362	2,455	2,356	-4.0%
Perched 36	1,971	2,006	2,063	2.8%
Perched 37	1,488	2,516	2,544	1.1%
Perched 38	1,099	1,225	1,250	2.1%
Perched 39	3,948	5,621	5,606	-0.3%
Perched 40	257	255	269	5.2%
Perched 41	1,531	1,218	1,169	-4.1%
Perched 42	3,716	4,951	4,969	0.4%
Perched 43	5,159	14,758	14,794	0.2%

Perched 44	4,885	5,143	5,269	2.4%
Perched 45	1,552	1,164	1,144	-1.7%
Perched 46	1,507	3,068	3,119	1.6%
Perched 47	2,767	1,753	1,700	-3.0%
Perched 48	1,708	2,093	2,113	0.9%
Perched 49	2,751	3,749	3,800	1.4%
Perched 50	1,731	1,763	1,756	-0.4%
Perched 51	1,199	1,007	1,038	3.0%
Perched All	124,301	205,546	206,044	0.2%

An ordinary kriging (OK) estimate was conducted for the UC zones with a maximum of three runs. The majority of the blocks were estimated with the first run. The second run filled in almost all of the remaining un-estimated blocks and a third run was conducted to interpolate the few remaining blocks. Hard boundaries were used to prevent the use of composites between the zones and domains. The estimation parameters used are shown in Table 14-9 in addition to the variogram parameters above.

The perched and basement zones were estimated using inverse distance squared (ID^2). All blocks were estimated in a single run. The basement zone was estimated using a spherical search, while the perched zones were estimated using an ellipse with a similar orientation to that of the 3D interpretation.

It was determined that the best way to manage the influence of high grades, in addition to capping, was to restrict the influence of the high-grade composites during estimation, as shown in Table 14-10. These values were chosen from examination of the cumulative probability plots, histograms, and 3D reviews. Zones with less than approximately 100 tU were not reviewed for high-grade restrictions.

Table 14-9: Estimation Parameters

Run	1								2		3
Zone	**UC - LG**	**UC - HG1**	**UC - HG2**	**UC - HG3N**	**UC - HG3S**	**UC - HG4**	**Basement**	**Perched**	**UC - LG**	**UC - HG4**	**UC - HG4**
Estimation Type	OK	OK	OK	OK	OK	OK	ID2	ID2	OK	OK	OK
Major Search (m)	21	17	15	20	20	20	40	40	42	40	80
Major Search Direction (dip/azim.)	00/035	00/065	00/085	00/035	00/035	00/035	N/A	**	00/035	00/035	00/035
Semi-Major Search (m)	19.5	11	17	24	24	24	40	40	39	48	96
Semi-Major Search Direction (dip/azim.)	00/125	00/155	00/175	00/125	00/125	00/125	N/A	**	00/125	00/125	00/125
Minor Search (m)	13	6	7	2.8	2.8	2.8	40	10	26	5.6	11.2
Minor Search Direction (dip/azim.)	-90/035	-90/065	-90/085	-90/035	-90/035	-90/035	N/A	**	-90/035	-90/035	-90/035
Min. Number of Samples	1	1	1	1	1	1	1	3	1	1	1
Max. Number of Samples	7	5	5	5	5	5	12	12	7	5	5
High Grade Restriction Threshold (DG)	20	100	90	75	N/A	40	N/A	*	20	40	40
High Grade Restriction Distance (m)	10 x 10 x 6	5 x 5 x 2	5 x 5 x 2	10 x 12 x 1.5	N/A	10 x 12 x 1.5	N/A	5 x 5 x 2	10 x 10 x 6	10 x 12 x 1.5	10 x 12 x 1.5

Table 14-10: High-Grade Restrictions During Estimation

Zone	Restriction Level (DG)	Relative X Restriction (m)	Relative Y Restriction (m)	Relative Z Restriction (m)	Approximate Grade (%U)
UC - LG	20	10	10	6	6.7
UC - HG1	100	5	5	2	22.1
UC - HG2	90	5	5	2	24.7
UC - HG3N	75	10	12	1.5	21.1
UC - HG4	40	10	12	1.5	17.1
Perched 10	2.9	5	5	2	1.2
Perched 27	6	5	5	2	2.3

14.2.7. Validation of Resource Estimation

The block model was validated using several methods, including but not limited to: visual review of block grades relative to composites, statistical checks, swath plots of block grades relative to composite grades, peer reviews, and estimation via alternate estimation methods. Declustered grades compared very well to the ordinary kriged estimate on the UC zone and the ID2 estimates on the basement and perched zones with the exception of the HG1 zone (Table 14-11). The HG1 zone did not compare well to the declustered grade due to the limitation of cell declustering which is unable to take into account large changes in vertical geometry (thickness). Reviews against the estimates using nearest neighbour and ID2 methodology show the estimated grade is reasonable.

Estimation by nearest neighbour and ID^2, with similar search parameters, were within a few percent of the ordinary kriging resource estimate (Table 14-12).

Table 14-11: Comparison of Capped and Declustered Composite Statistics to Best Estimate Statistics (OK for Unconformity Zones and ID2 for Basement and Perched Zones)

Zone	Count	Composites - Capped Grade %U			Declustered Grade %U	Best Estimate (no cut-off) OK and ID2	Grade %U			Metal
		Min	Max	Avg	Avg	Tonnes	Min	Max	Avg	tU
UC	2,066	0.00	9.48	0.89	0.65	901,615	0.01	6.73	0.62	5,545
HG1	278	0.91	27.69	15.83	14.40	50,008	4.98	23.51	15.43	7,717
HG2	104	1.18	30.35	17.78	16.30	16,436	5.49	26.19	16.59	2,727
HG3N	45	0.00	21.92	10.76	10.20	8,421	3.49	16.74	10.88	916
HG3S	5	4.67	7.52	6.42	6.40	2,349	5.31	7.42	6.40	150
HG4	10	0.01	23.22	12.94	11.20	9,765	4.74	23.22	10.33	1,009
Basement - All	441	0.00	2.13	0.19	0.18	98,459	0.01	1.24	0.19	187
Perched - All	2,214	0.00	7.18	0.39	0.30	476,554	0.04	2.74	0.34	1,601

Table 14-12: Comparison of Estimation Techniques

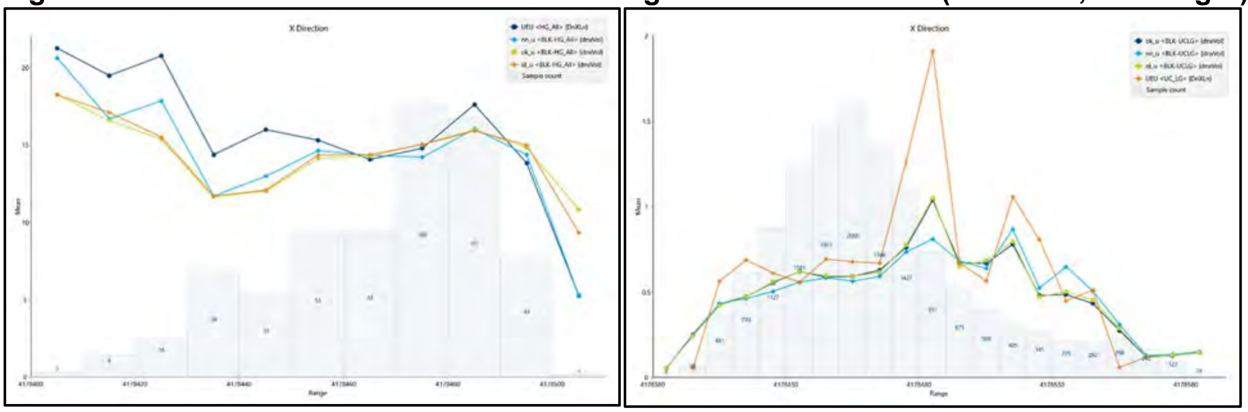
Zone	Ordinary Kriged Estimate					Inverse Distance Squared Estimate					NN Estimate				
		Grade %U			Metal		Grade %U			Metal		Grade %U			Metal
	Tonnes	Min	Max	Avg	tU	Tonnes	Min	Max	Avg	tU	Tonnes	Min	Max	Avg	tU
UC	812,219	0.09	6.73	0.68	5,499	798,700	0.09	6.96	0.69	5,527	649,282	0.09	9.48	0.83	5,396
HG1	50,008	4.98	23.51	15.43	7,717	50,039	4.74	23.93	15.45	7,733	49,672	2.11	27.69	15.37	7,634
HG2	16,436	5.49	26.19	16.59	2,727	16,426	5.44	26.23	16.86	2,770	16,489	1.18	30.35	17.93	2,956
HG3N	8,421	3.49	16.74	10.88	916	8,453	3.19	17.85	11.06	935	8,372	0.15	21.92	12.39	1,037
HG3S	2,349	5.31	7.42	6.40	150	2,358	4.85	7.46	6.34	149	2,375	4.67	7.52	6.27	149
HG4	9,765	4.74	23.22	10.33	1,009	9,766	5.00	23.22	10.32	1,008	9,954	6.18	23.22	11.23	1,118
Bsmnt - All	Not estimated with OK					67,318	0.09	1.24	0.25	168	42,560	0.09	2.13	0.52	223
Perched - All	Not estimated with OK					448,513	0.09	2.74	0.35	1,583	358,874	0.09	4.54	0.44	1,572

Notes:

a. A 0.085% U reporting cut-off was applied.

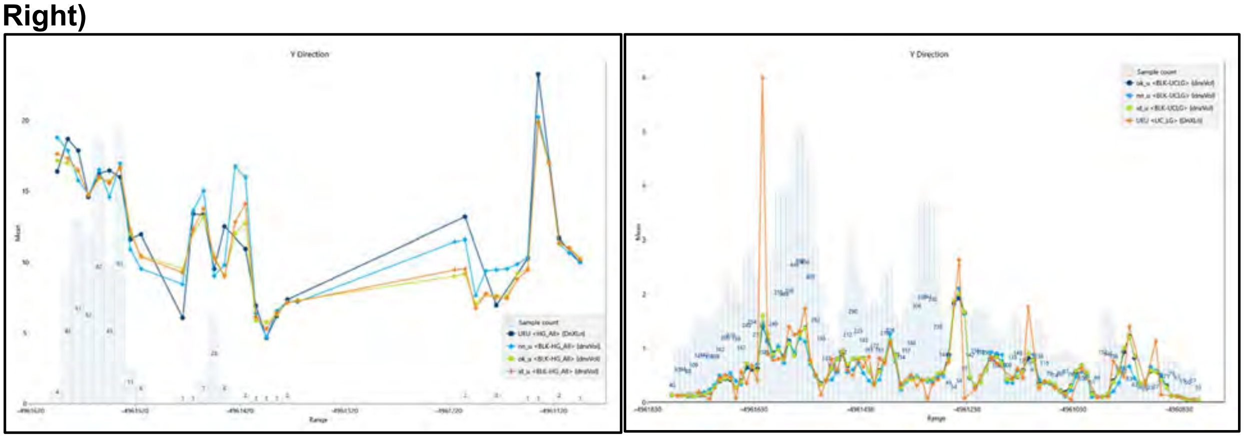
Swath plots were also used to compare the differences between the estimation techniques used and the composites in the X, Y, and Z directions (for the UC zones, after a 135° rotation to be parallel to the strike of the deposit). A strong correlation between the kriged, ID2, and NN estimates is observed in these plots, with the ordinary kriged model showing a greater level of smoothing in the grade profile which is to be expected (Figure 14-13 to Figure 14-15).

Figure 14-13: UC Zones Swath Plot of %U Along Strike – X Direction (HG – Left, LG – Right)



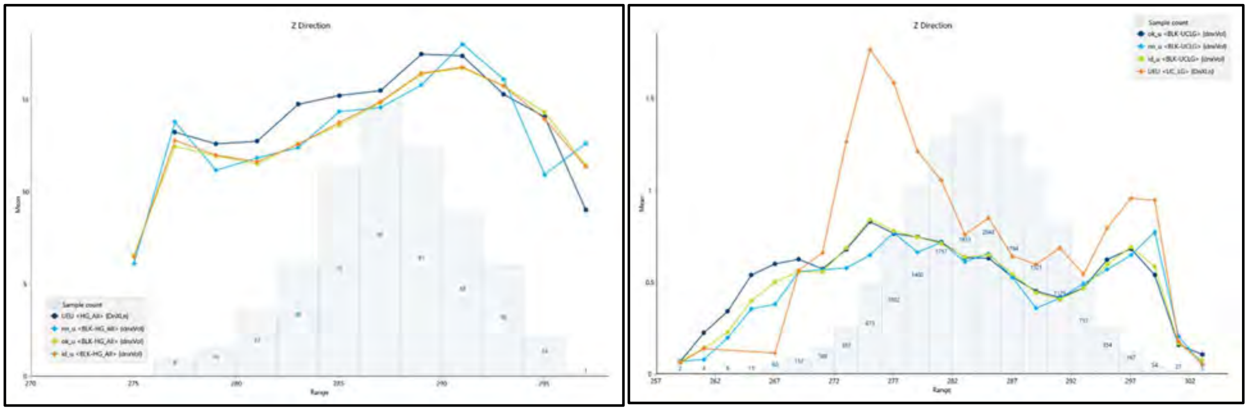
(Source: Orano, 2024)

Figure 14-14: UC Zones Swath Plot of %U Across Strike – Y Direction (HG – Left, LG – Right)



(Source: Orano, 2024)

Figure 14-15: UC Zones Swath Plot of %U – Z Direction (HG – Left, LG – Right)



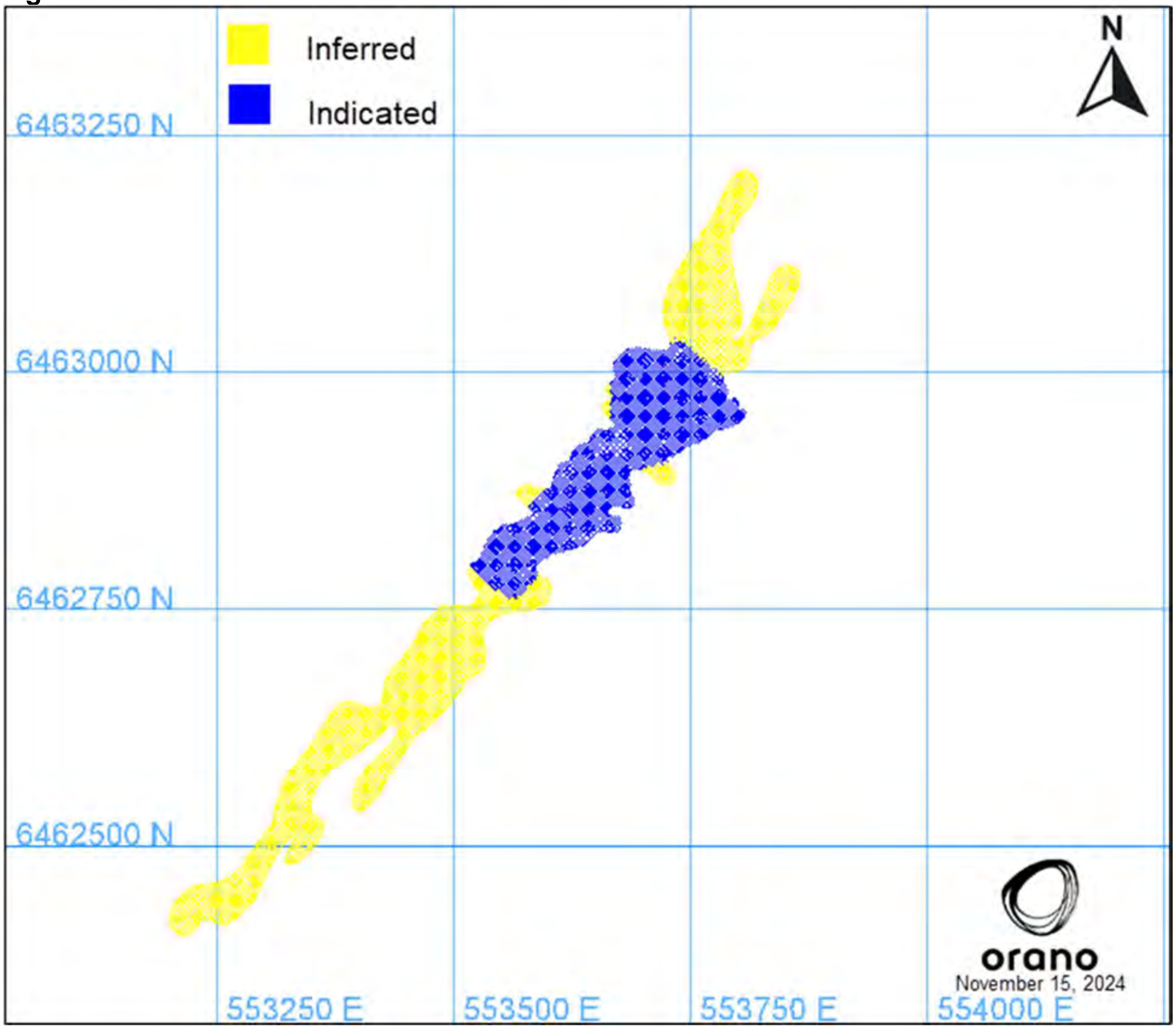
(Source: Orano, 2024)

14.2.8. Resource Classification

The classification of mineral resources for Midwest Main is based on (1) the sequence of kriging estimation runs, (2) kriging slope, and (3) geological confidence. Blocks estimated in the first kriging run were with a good kriging slope in areas well represented with drilling were declared as Indicated resources with the remaining blocks classified as Inferred resources. To have contiguous blocks by resource category, an outline was created around the blocks selected to be Indicated and Inferred and all blocks contained within these outlines were then classified accordingly. The resulting classification of Indicated resources approximates a drillhole spacing of 15 m. The bulk of the mineralization in the UC zone is within the Indicated category.

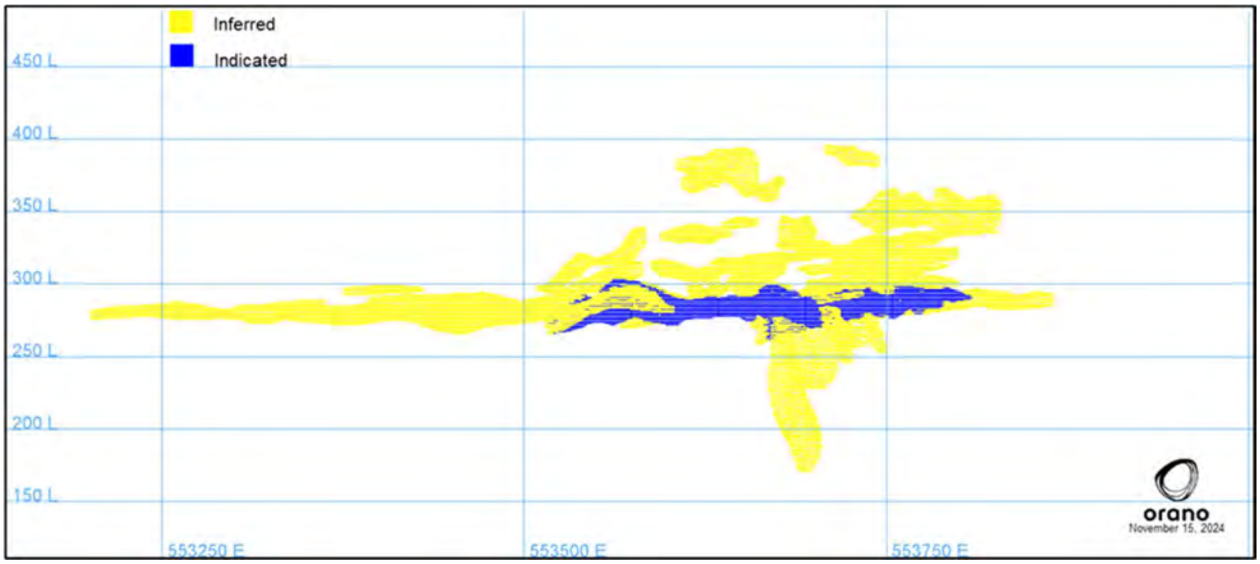
The controls on the Basement and Perched Zones are not as well defined, so these mineralized zones were placed into the Inferred category (Figure 14-16). The Basement and Perched Zones are defined by an average drillhole spacing of less than 25 m and areas of up to 50 m. The extensions of the Unconformity Zone mineralization along strike, and across strike are also categorized as Inferred Resources (Figure 14-16 and Figure 14-17) with similar spacing.

Figure 14-16: Plan View of the Classification of UC Zone Mineral Resources



(Source: Orano, 2024)

Figure 14-17: Longitudinal View of Resource Categories for All Zones (looking West)



(Source: Orano, 2024)

14.2.9. Grade Sensitivity Analysis

The Indicated resources are insensitive to cut-off grade less than 2% U as the bulk of metal from this resource category is located within the higher-grade domains present in the UC zone. The Inferred resources are sensitive to cut-off grades above 0.25% U (or approximately three times the base case of 0.085%). The average grade and tonnes show some sensitivity to the cut-off grade; however, the contained metal is less sensitive to cut-off grade. Table 14-13 summarises the Midwest Main resources at a range of cut-off grades from 0.085% to 2.00% U.

Table 14-13: Cut-Off Grade Sensitivity (Declared Cut-Off Grade is 0.085% U)

Resource Category	Cut-off (%U)	Tonnes	Average Grade (%U)	Metal (Tonnes U)	Metal (Mlbs U_3O_8)
Indicated	0.085	510,000	2.92	14,900	38.7
Inferred		905,000	0.54	4,900	12.7
Indicated	0.15	479,000	3.09	14,800	38.5
Inferred		721,000	0.65	4,700	12.2
Indicated	0.25	422,000	3.48	14,700	38.2
Inferred		506,000	0.83	4,200	10.9
Indicated	0.50	305,000	4.69	14,300	37.2
Inferred		247,000	1.34	3,300	8.6
Indicated	0.75	237,000	5.86	13,900	36.1
Inferred		129,000	2.02	2,600	6.8
Indicated	1.00	184,000	7.28	13,400	34.8
Inferred		86,000	2.56	2,200	5.7
Indicated	1.50	129,000	9.92	12,800	33.3
Inferred		40,000	4.25	1,700	4.4
Indicated	2.00	104,000	11.83	12,300	32.0
Inferred		25,000	5.60	1,400	3.6

14.2.10. Audit Findings and Recommendations

UMR was involved throughout the development of the Midwest Main mineral resource estimate, and at times, collaborated with Orano to develop aspects of the estimate. Discussions were held at all major milestones of the project and decisions were generally agreed upon before moving forward with the next step, although UMR has provided some recommendations for future improvements. Additionally, after reviewing and accepting the mineralization domains, UMR recreated the Midwest Main estimate with independent declustering techniques (that considered volume, unlike cell declustering), outlier analysis, capping levels, estimation strategy, and validation steps. The check model provides an independently validated assessment of the deposit to compare against, facilitating the evaluation of Orano's model. The UMR and Orano models of Midwest Main are approximately ~1.5% different from one another when comparing total metal content, which, in UMR's opinion, is within acceptable limits.

UMR's resource related conclusions, observations, and recommendations for the Midwest Main Deposit are summarized below.

- Orano’s Midwest Main mineral resource estimate, effective date of December 2, 2024 is reasonable and meets the requirements for public disclosure in accordance with NI 43-101.
- Mineral Resources of Midwest Main were classified as Indicated and Inferred based on (1) the sequence of kriging estimation run, (2) kriging slope, and (3) geological confidence. In UMR’s opinion, the Mineral Resource classification methodology is reasonable. However, UMR recommends that future mineral resources of Midwest Main are classified on drillhole spacing, while considering geological understanding and complexity.
    - Mineral resources are uncertain because of variability at all scales and sparse sampling. The variables constituting the mineral resource, the volume of the geological interpretation, and the grade estimates within that volume, are the sources of uncertainty. These uncertainties are typically a function of drill spacing, with denser spacing equating to less uncertainty and sparser spaced areas having more uncertainty. This uncertainty is reflected in the reporting of the mineral resources, where resources with denser spacing are categorized as Indicated (or Measured) and the sparser spaced resources are classified as Inferred. The Midwest Main resource classification is, in part, an indirect proxy to drillhole spacing. Converting to drillhole spacing for classification will adhering to the well-studied concept that drilling reduces uncertainty.
- The composite size, block size, variography modeling, and estimation parameters are appropriate for the deposit in UMR’s opinion. However, UMR recommends minor changes to the search orientations to better reflect individual wireframe geometry in future iterations of the model.
- The block and composite grades correlate well visually within the Midwest Main Deposit.
- There is a lack of modern density data at Midwest Main, resulting in the density regression equations being informed by minimal data. The density equations correlate well with the historic density measurements, but uncertainty remains in the representativeness of the equations. UMR recommends collecting more density data in future drill programs to reduce the uncertainty in the regressions.
- The density measurements were not used in the mineral resource database; only the regression values were used. UMR recommends implementing a hierarchical approach to the management of density values where the measured values are maintained, and the regression is only used where data is missing.
- UMR recommends that a probabilistic drillhole spacing study be completed on the deposit to better inform drillhole spacing for mineral resource classification.

- Use of geostatistical techniques to quantify the uncertainty of the deposit to inform decisions as it relates to mining evaluation, planning, and extraction. The uncertainty associated with the volume, grade, and density variables of the deposit are to be the focus of the study, as these variables define the overall metal content of the deposit, the largest input to project economics.
- Detailed studies on the management of high-grade outliers are recommended, such as metal-at-risk evaluations, mean uncertainty analysis, continued sub-domaining, etc.

14.3. Midwest A

There has been no new drillhole information in the footprint of the Midwest A Deposit since 2008 and the block model described herein was prepared by Orano in November 2017 and subsequently modified by SRK in 2018. Information regarding Midwest A in this section is largely from the 2018 SRK Mineral Resource Estimate report, which was reviewed and accepted by UMR.

After review of the data and model, UMR believes the estimate for Midwest A is current, reasonable, and meets the requirements for public disclosure in accordance with NI 43-101.

The next subsections detail the data preparation, analyses and assumptions made by Orano to support the construction of the mineral resource model. These descriptions are excerpts taken from an internal Orano report (Allen, Quirt, & Masset, 2017a). Subsection 14.1.21 describes the methodology and findings from UMR's audit of the mineral resource model for the Midwest A deposit.

14.3.1. Drillhole Database

Drilling on the Midwest A deposit was started from 1979 through to 2008 comprising 151 diamond drillholes (40,048 metres).

The database used for Midwest A in previous geological modelling and mineral resource estimation has undergone further QA/QC data verification and fixes, updates to allow a more robust calculation for equivalent uranium probing grades, updates to the equivalent uranium radiometric-grade correlation, updated density-grade correlations, and a more robust combination of equivalent and geochemical uranium grades based on core recovery.

14.3.1.1. Database Changes

Depth corrections on drillhole low-flux probing data were conducted to ensure that zones of mineralization defined by downhole probing were correlated with observations made from drill core and geochemical assays. In total, 51 drillholes required low-flux probing run depth adjustments, with corrections ranging from 0.1 to 5.2 m in magnitude, with the average adjustment being just over one metre. During this process three holes were identified to have unreliable low-flux probing data, and they were discarded from the database and geochemical assays were used in this area regardless of core recovery.

Additionally, "noisy" low-flux gamma profiles were identified for a few drillholes where intervals of anomalous low-flux gamma readings were not supported by either SPP2 or Natural gamma profiles. The cause of the noisy low-flux data is uncertain but may be attributable to probe malfunction or contamination of high-grade mineralization along the drillhole column or along the drill rod string. The noisy data were removed from the database to prevent future use in estimation.

The high-grade intercept in drillhole MW-660 (six samples) was identified as erroneous, when compared to probing. The interval was likely miss-sampled around an area of high core loss. These assays were flagged in the database to prevent them from being used for estimation, and probing grades were used instead.

Other small sampling errors were identified around areas of lost core, or due to typographical errors. These were reviewed and compared to core photos, drill logs, and radiometry data. Approximately 70 geochemistry sample records were corrected, added to the database, or were flagged as unreliable to prevent future use.

Radiometry (SPP2) errors were noted in six holes and were corrected in the database. The correlation between the probing and the radiometry data was checked to ensure that these holes did not require additional depth shifting.

14.3.1.2.Calculation of Equivalent Uranium Grades

A new radiometric-grade correlation was developed for the Midwest A mineralization for two reasons:

1. Additional depth shifting was completed for the down hole probing (more closely spatially relating the probing grades to the geochemical grades).
2. New database software (acQuire) was capable of a more accurate calculation of AVP grades. Previously, a universal K factor was used for simplification reasons, however, the K factors (Kf) are probe specific and vary over time.

14.3.1.3.Combination of Equivalent and Geochemical Uranium Grades

For Midwest A before 2017, equivalent and geochemical uranium grades were previously combined by merging two tables: 1) a one metre-support geochemistry (assay) composite table, and 2) a one metre-support equivalent probing (eU) composite table. This method is not ideal and lacks some selectivity using core recovery as a criterion.

An acQuire database script was created in 2017 that combines these datasets to allow small areas of poor core recovery (without usable assay data) to be represented by equivalent probing data. The culmination of equivalent probing and geochemical grades is prioritized by:

1. Assay results for samples in intervals with core recovery above 75%.
2. Equivalent probing results for areas that have poor core recovery (<75%) or were not able to be sampled for assay.
3. Assay results with core recovery below 75% if no probing data is available.

Based on the core recovery data and available assay and eU data, the samples used for resource estimation consisted of 36% geochemical assay data and 64% equivalent probing data. The relatively low percentage of geochemical assay data is due to the significant amount of core loss encountered when drilling through mineralization on the Midwest A deposit.

14.3.1.4.Radiometric Grade Correlation

Scintillometer and Geiger-Muller radiometric readings, from downhole radiometric probing, are corrected for the absorption caused by fluid, casing, and for various probe parameters (dead time; K factor). The K-factor is the coefficient transforming probe radiometric counts values (in cps) into corrected values (cps: eU_{RA}).

The equivalent uranium radiometric values (eU_{RA}) are calculated assuming that the mineralization is in radiometric equilibrium. If the in-hole mud density was not measured, this parameter value is considered to be as water (d=1).

The radiometric-grade correlation equation is used to derive equivalent uranium grades, in 10-centimetre intervals (i.e. at 10 cm support), or to a lesser extent 20 cm intervals, from the equivalent uranium radiometric values using the following formula:

$$eU\% = \alpha * eU_{RA}^{\beta}$$

eU_{RA} *: equivalent Uranium grade (ppm)*

α*: alpha value derived in radiometric-grade correlation*

β*: beta value derived in radiometric-grade correlation*

The following correlation equation was established using measurements from 35 intercepts in 25 drillholes and is specific to the Midwest A deposit.

$$eU\% = 0.1166 * eU_{RA}^{1.0118}$$

Only drillholes that were drilled since 2005 (MW-658 and onward) were used to develop this correlation equation.

14.3.1.5.Density Data

In 2009, a total of 304 SG measurements from 28 drillholes were obtained from existing crushed mineralized sample material that was warehoused at the SRC facility in Saskatoon. This crushed sample material was remaining pulp material from nominal 0.5 metre length selective samples (both basement and sandstone selective samples) collected from the Midwest A deposit (Revering, 2010).

An additional 37 core samples (collected from 17 drillholes of the same 28 drillholes referenced above) of nominal 0.1 metre sample lengths were collected from drill core stored at the Midwest A core storage facility. These core samples were collected for the purpose of whole core bulk density measurements, however due to a communication error with the laboratory these samples were crushed and subjected to ICP analysis for trace element and major oxide content, as well as SG using the pycnometer method (Revering, 2010).

Two density-grade correlation equations were determined for the Midwest A deposit: (1) a multi-element correlation equation for samples that were geochemically assayed, and (2) a uranium-only correlation for intervals with only equivalent probing grades (Figure 14-18). The correlation equations were updated from previous results using the 24 new dry bulk density (DBD) measurements, with corresponding assay grades, which were collected in January 2017 from drill core stored at the Moffatt Lake core facility.

The final multi-element density correlation equation was calculated using dry bulk density, U, Ni, Co, Pb, Cu, Zn, Mo, V, Fe_2O_3, and Al_2O_3 data. Arsenic was removed from the final correlation analysis because it has a co-linear relationship with Ni. The final multi-element density correlation equation is:

$$\begin{aligned} d = Density &= 2.31 + 2.3894E-06 * U + 5.7817E-06 * (Ni + Co) + 2.0915E-05 * Pb \\ &+ 4.6616E-07 * Cu - 7.5528E-06 * Zn + 7.4952E-06 * Mo - 1.8759E-05 \\ &* V + 1.0606E-02 * Fe2O3 + 4.49694E-04 * Al2O3 \end{aligned}$$

where:

- d represents the calculated dry bulk density
- U, Ni, Co, Pb, Cu, Zn, Mo, and V represents the elemental grade in ppm

- Fe_2O_3 and Al_2O_3 represent the major element oxide grade in %

The single element (Uranium-only) density correlation equation was also developed using the 24 dry bulk density measurements as the basis.

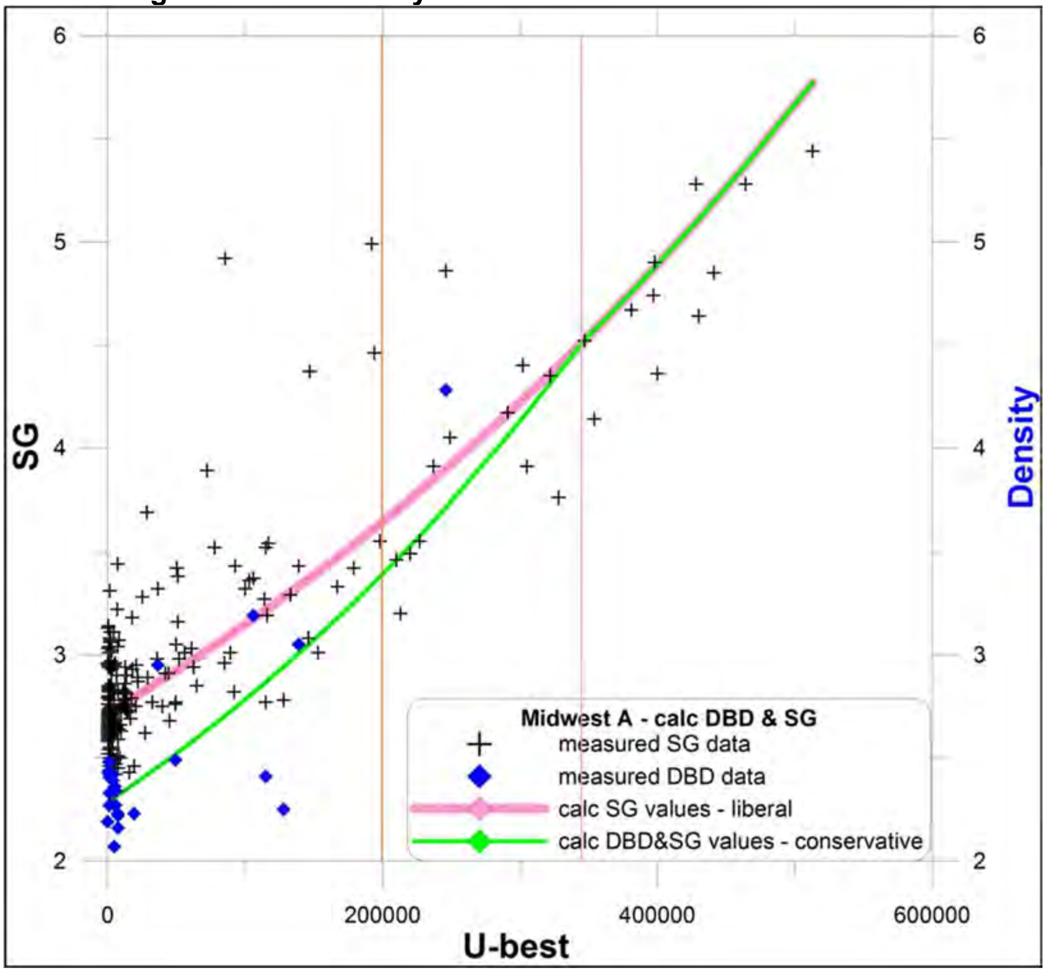
The available specific gravity (SG) measurements were used to constrain both correlations in the high-grade region (> ~34% U), as there were insufficient dry bulk density measurements in this region. The single element density correlation is:

$d = Density = e^\wedge(0.0000019738 * U) * 2.2845$ when Uranium is less than or equal to 34.3%
$d = Density = e^\wedge(0.0000014694 * U) * 2.7161$ when Uranium is greater than 34.3%

where:

- d represents the calculated dry bulk density
- e represents Euler's number (approximately 2.71828)
- U represents the grade in ppm

Figure 14-18: Single Element Density Correlation for Uranium

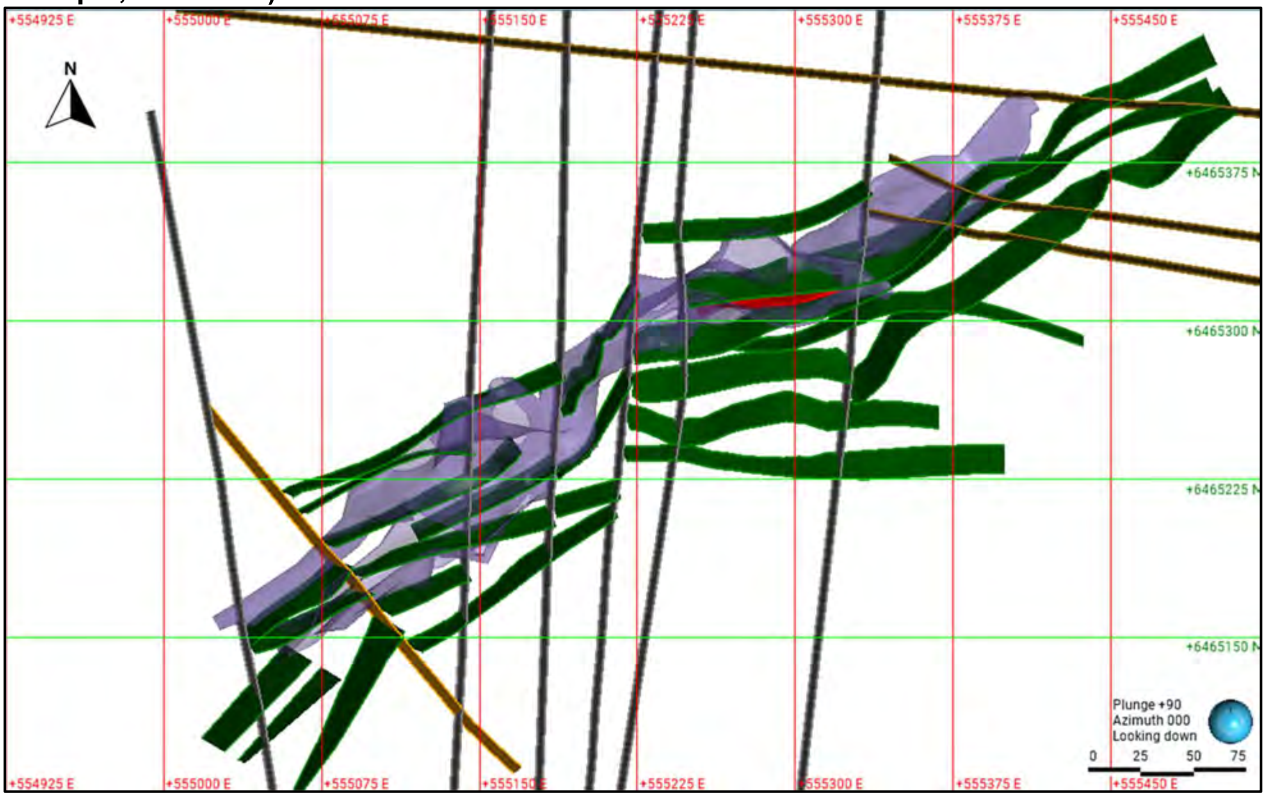


(Source: Orano, 2018)

14.3.2. Geological Model

Three sets of structural interpretations were used along with the interpreted unconformity, basement graphite packages, and quartz dissolution alteration halo during the interpretation of the mineralization envelopes. The structures relative to the low-grade (LG) and high-grade (HG) mineralized shells are depicted in Figure 14-19.

Figure 14-19: 40 m Plan Section with Structures Relative to Midwest A Mineralization (LG = Purple, HG = Red)

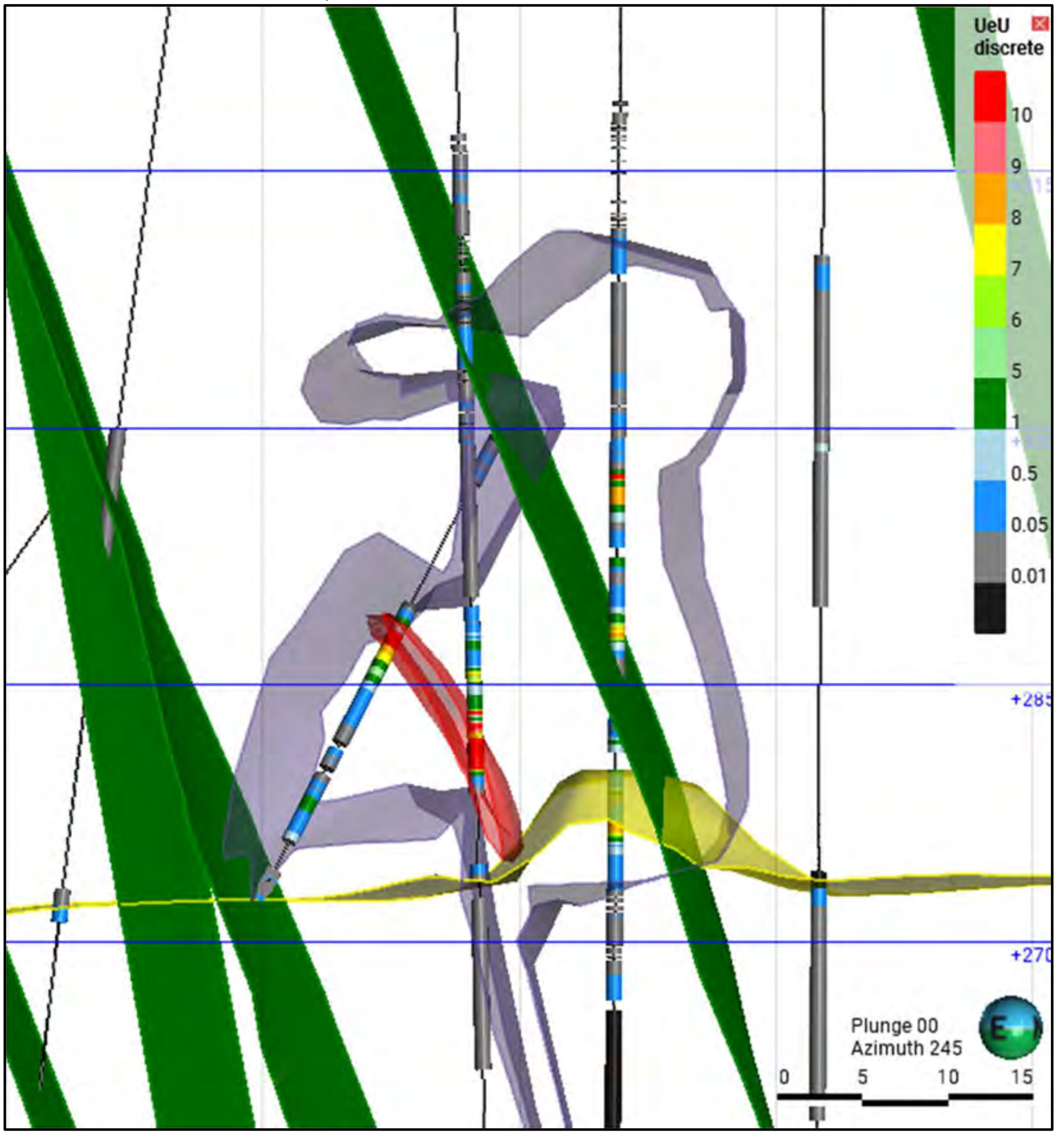


(Source: Denison, 2024)

Uranium mineralization follows the northeast-southwest structures with some broader areas where the north-south structures crosscut the mineralization. These north-south structures appear to limit the extent of the high-grade mineralization along strike, with the unconformity limiting its down-dip extents. The east-west structures do not appear to have a significant effect on the control of the mineralization.

Mineralization was also modelled to reflect the control by the basement graphitic lithologies (locations and contents), and the unconformity on the mineralization. The higher-grade material is generally interpreted to be associated with the graphitic packages and NE-SW structures (Figure 14-20). Some mineralization control is also provided by the unconformity. A relatively minor basement mineralized root was modelled and is interpreted to follow the steeply dipping graphitic packages.

Figure 14-20: 10 m Vertical Section Looking SW Showing Structures and the Unconformity Relative to Mineralization at 555,250 UTM East



(Source: Denison, 2024)

Midwest A is drilled on approximately 25 metre fences, with drillholes spaced at 15 metres along the fences.

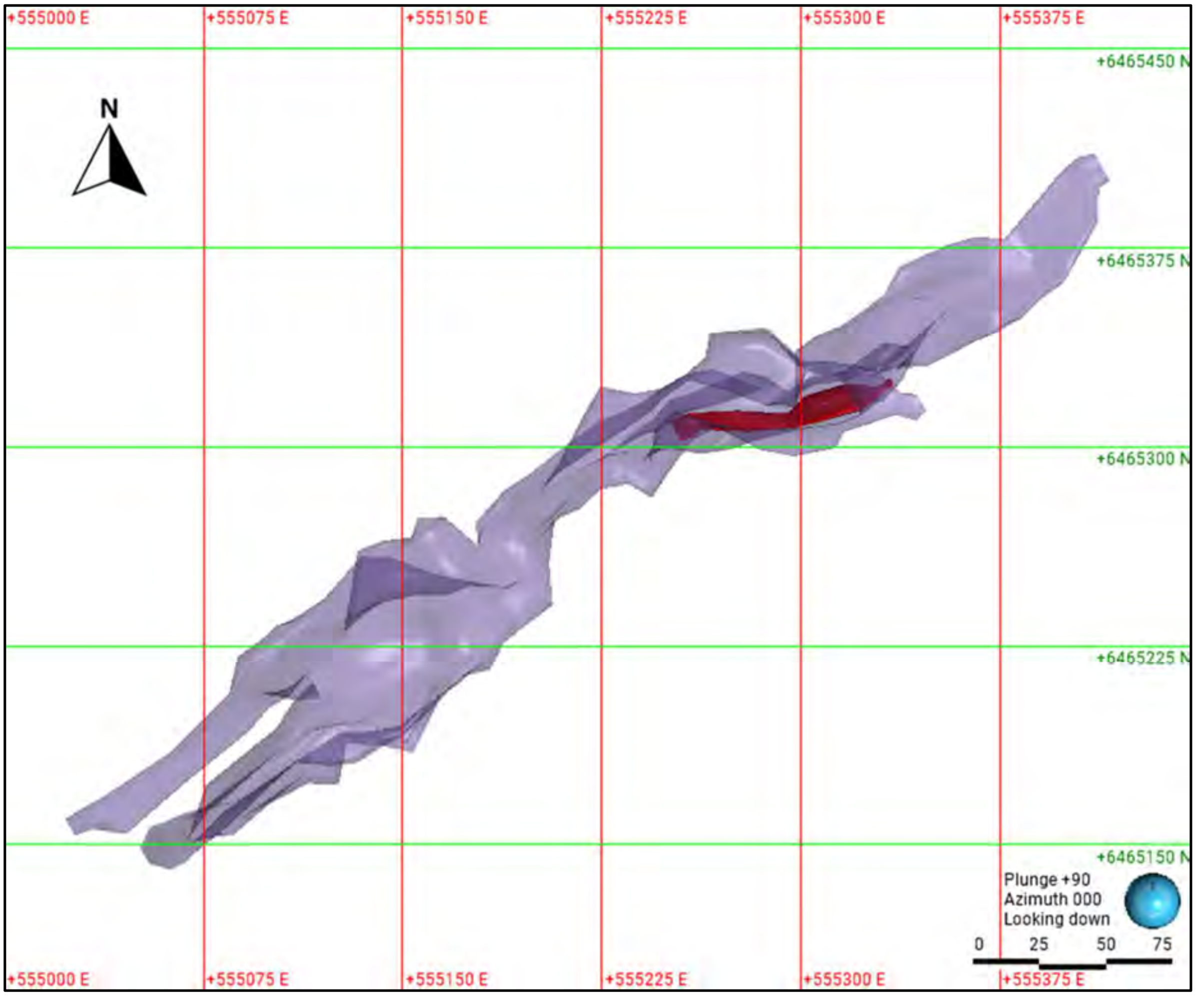
A 3D model of the Midwest A deposit was created in Vulcan (version 10.0.3) using the updated drillhole database. The model was based on the uranium grade data as well as the updated lithological and structural models that provided additional information on the controls and constraints on the mineralization. The mineralization is interpreted to consist of a larger LG zone encompassing an interior HG zone (14-21 and 14-22). Grade The deposit is approximately 450 metres long, 10 to 60 metres wide, and ranges up to 70 metres in thickness. It occurs at depths ranging between 150 and 235 metres below surface.

The LG zone was modelled using sections oriented perpendicular to the general trend of the mineralization (60° azimuth) and spaced every 5 to 30 metres, averaging approximately 10 metres spacing. The model was verified in 3D and in plan section. The cut-off grade used for the LG zone was 0.05% U over 2 metres vertical width.

The HG zone was modelled using sections oriented perpendicular to the general trend of the mineralization (60° azimuth) and spaced every 5 metres with a cut-off grade of 10% U over one metre. The zone was interpreted to be cut off at the unconformity, as there was only one intersection in the basement that was above the cut-off value (11.5% U over 0.5 metres).

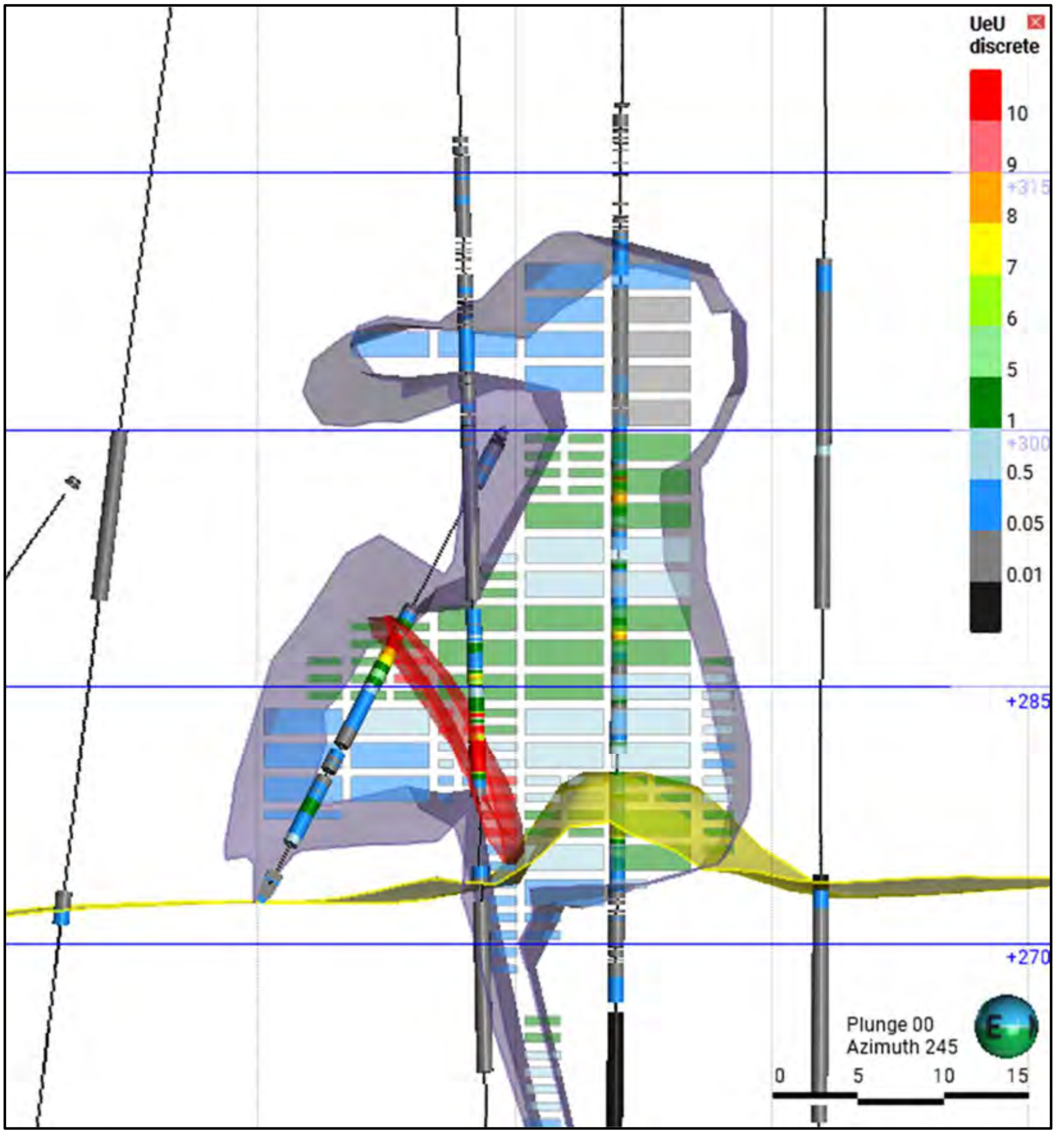
Mineralization in a drillhole was extended half-way to the next non-mineralized drillhole, unless there were structural data to indicate it should be cut off sooner. The 3D model was carried up to 10 metres past the last mineralized intercept for the LG zone and 5 metres for the HG zone.

Figure 14-21: Plan View of LG Zone (Purple) with Internal HG Zone (Red)



(Source: Denison, 2024)

Figure 14-22: 10 m Vertical Section Looking SW Showing Sample Grades Relative to Block Grades



(Source: Denison, 2024)

14.3.3. Statistics and Data Analysis

The 2008 Geostat resource estimate was based on 113 holes (30,215) metres of drilling, including 29 holes drilled from 1979 to 1989, and 84 holes drilled from 2004 to 2007. Since the 2008 Geostat model, an additional 40 holes (9,834 metres) were completed by Orano between September 2007 and July 2008 (Revering, 2010) intersecting the Midwest A deposit.

The 2018 resource domains for Midwest A were intersected by a total of 79 drillholes. It was decided to only use drillholes drilled since 2005 (MW-658 and onward), as the older holes were deemed to be redundant with the new drilling, and there were some data quality and quantity concerns. One of the newer holes was not used for the resource estimate because the hole was lost just into the interpreted mineralized zone. This left 69 holes that were used for resource estimation.

Between probing equivalent uranium grades and geochemical assays, there were a total of 8,488 sample points (Table 14-14). Intense quartz dissolution and intense clay alteration haloes associated with the mineralization are responsible for the core loss.

Table 14-14: Sample Statistics by Zone

Zone	Count	Grade %U			Density g/cc		
		Min	*Max*	*Aver.*	*Min*	*Max*	*Aver.*
LG	8,259	0.00	54.18	0.87	2.18	6.02	2.35
HG	226	0.14	54.41	25.70	2.46	6.04	3.66

Composites for both the LG and HG zones were generated in Vulcan for Density and DG (Density x Grade). A composite length of one metre was chosen, with the composites being length weighted. Composites less than 0.5 metres in length were merged with the preceding composite. Summary statistics for the density-weighted composites are shown in Table 14-15 where grade is calculated by dividing DG by Density.

Table 14-15: Composite Statistics by Zone

Zone	Count	Grade %U			Density g/cc		
		Min	*Max*	*Aver.*	*Min*	*Max*	*Aver.*
LG	1,170	0.00	37.17	0.87	2.21	4.50	2.35
HG	38	5.85	51.39	25.70	2.74	5.78	3.66

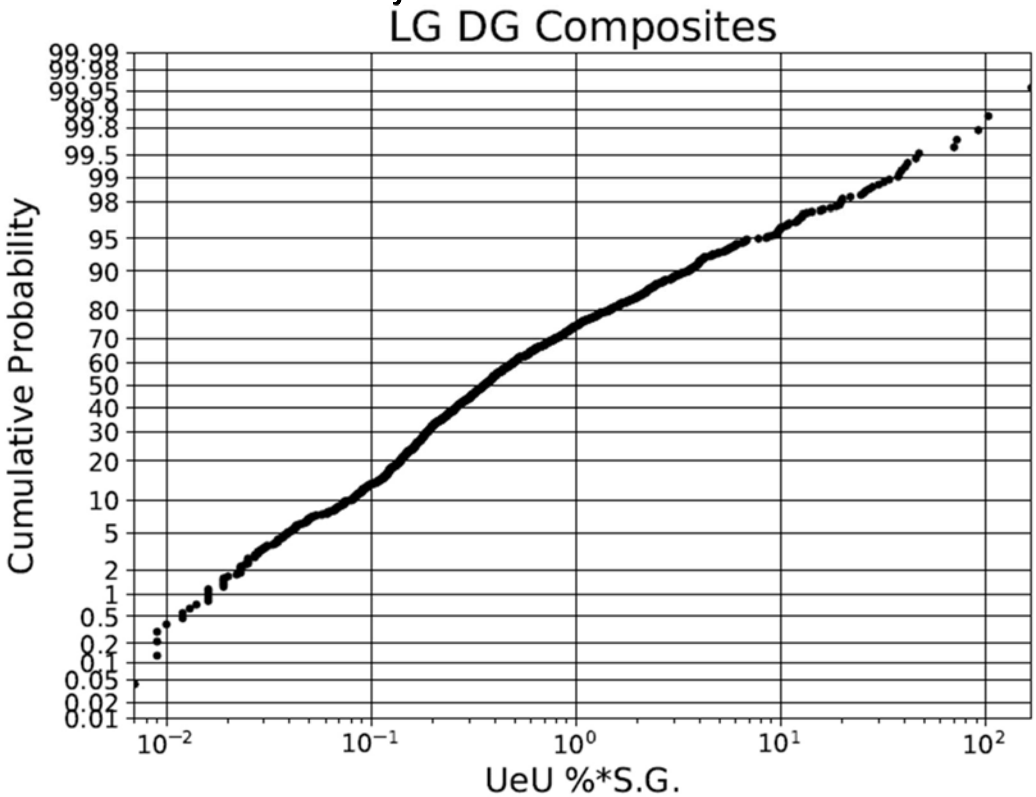
14.3.3.1.Declustering

Orano considers the drilling data to be fairly regularly spaced and did not decluster the dataset.

14.3.4. Capping and High-Grade Restrictions

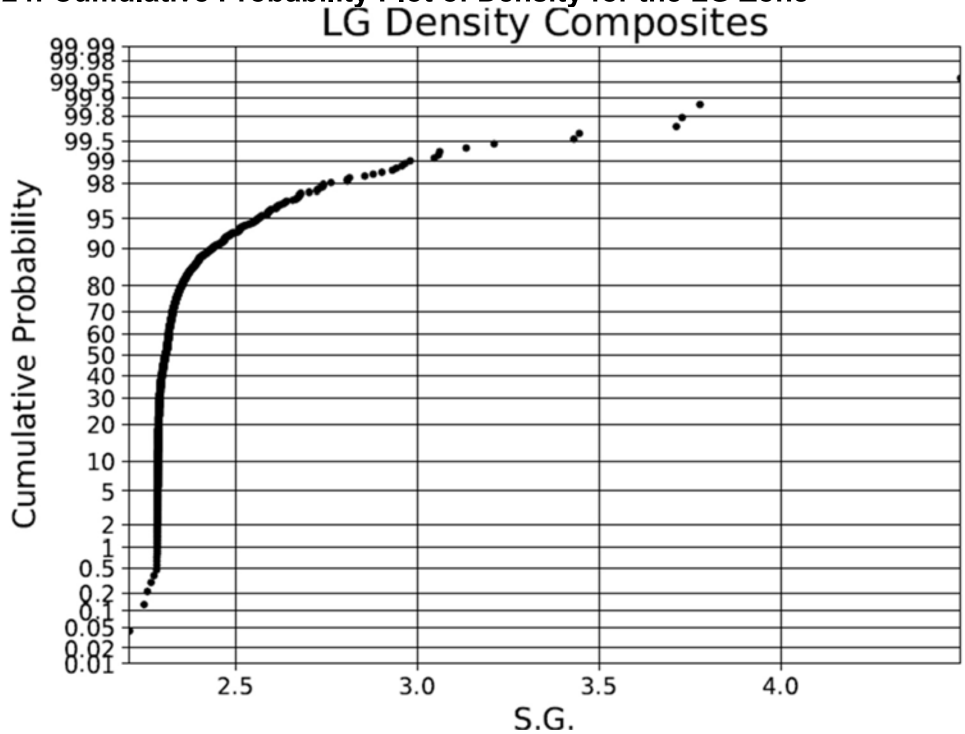
Some high-grade outliers were noted to exist in the LG Zone. These outliers could not be modelled through use of another interior high-grade domain because they were not continuous and defined by more than one or two drillholes. It was decided to restrict the influence of these high-grade composites to half of the drill spacing on section (7.5 metres). This was done for both DG and Density to better handle these outliers in the estimation. Based on the cumulative probability plots of DG and Density, they were restricted based on a DG of 20 (approximately 6.5% U) which corresponds to a density of approximately 3.0 g/cm^3 (Figure 14-23 and Figure 14-24). No restriction or capping was done for the HG zone (Figure 14-25 and Figure 14-26). Orano completed additional sensitivity testing for the HG zone, see section 14.1.17 Estimation Sensitivity for more information.

Figure 14-23: Cumulative Probability Plot of DG for the LG Zone



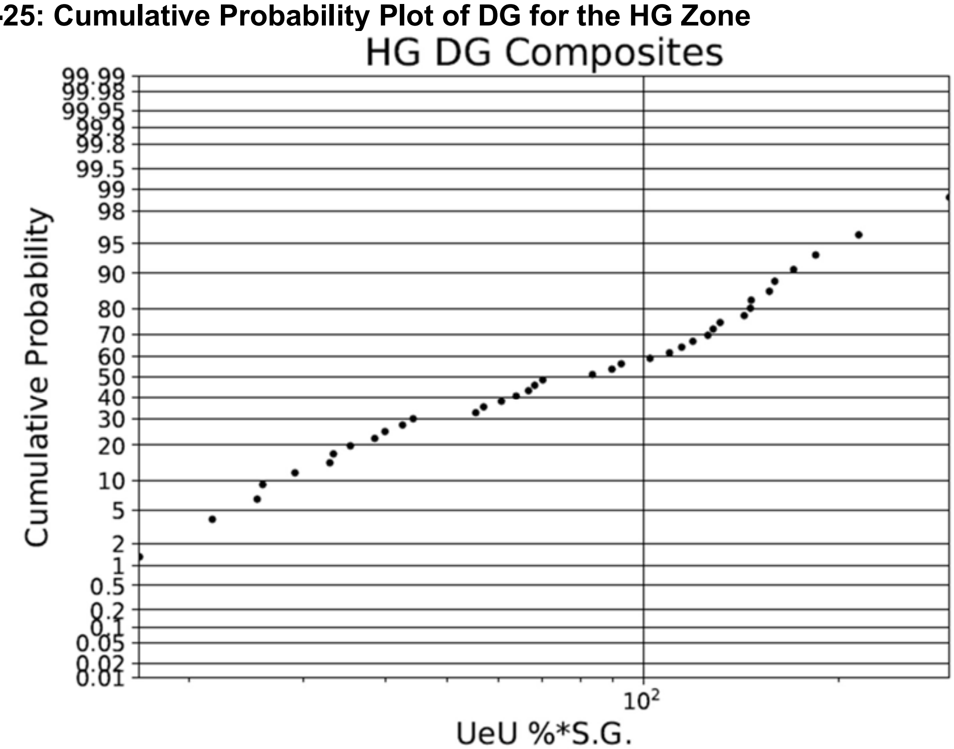
(Source: UMR, 2024)

Figure 14-24: Cumulative Probability Plot of Density for the LG Zone



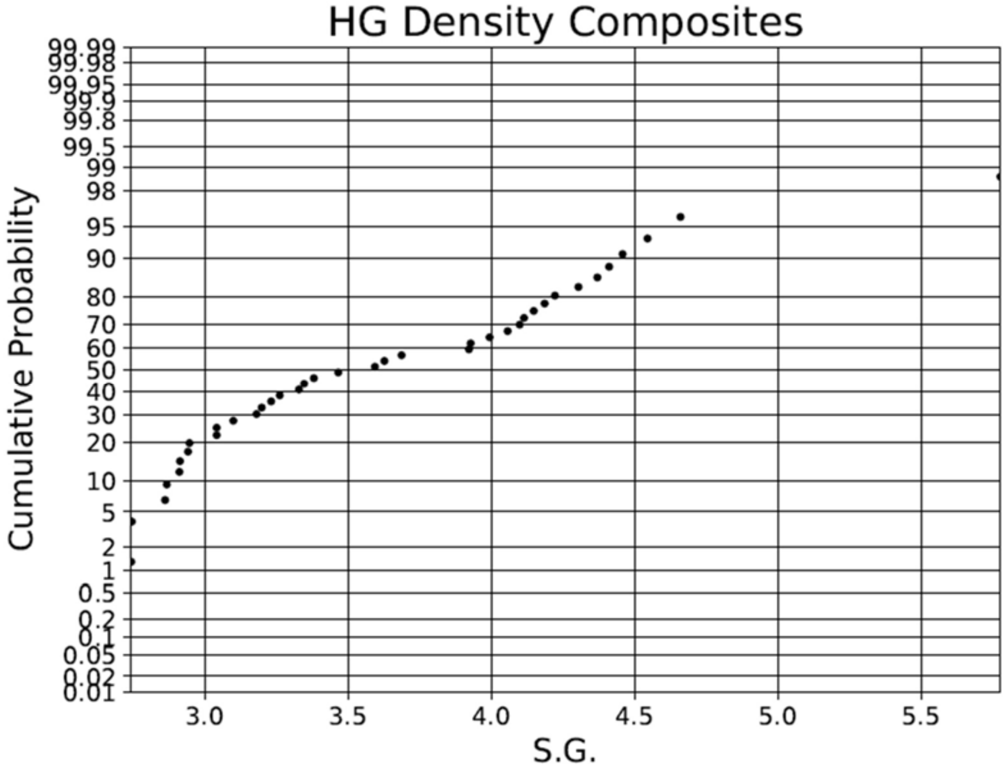
(Source: UMR, 2024)

Figure 14-25: Cumulative Probability Plot of DG for the HG Zone



(Source: UMR, 2024)

Figure 14-26: Cumulative Probability Plot of Density for the HG Zone



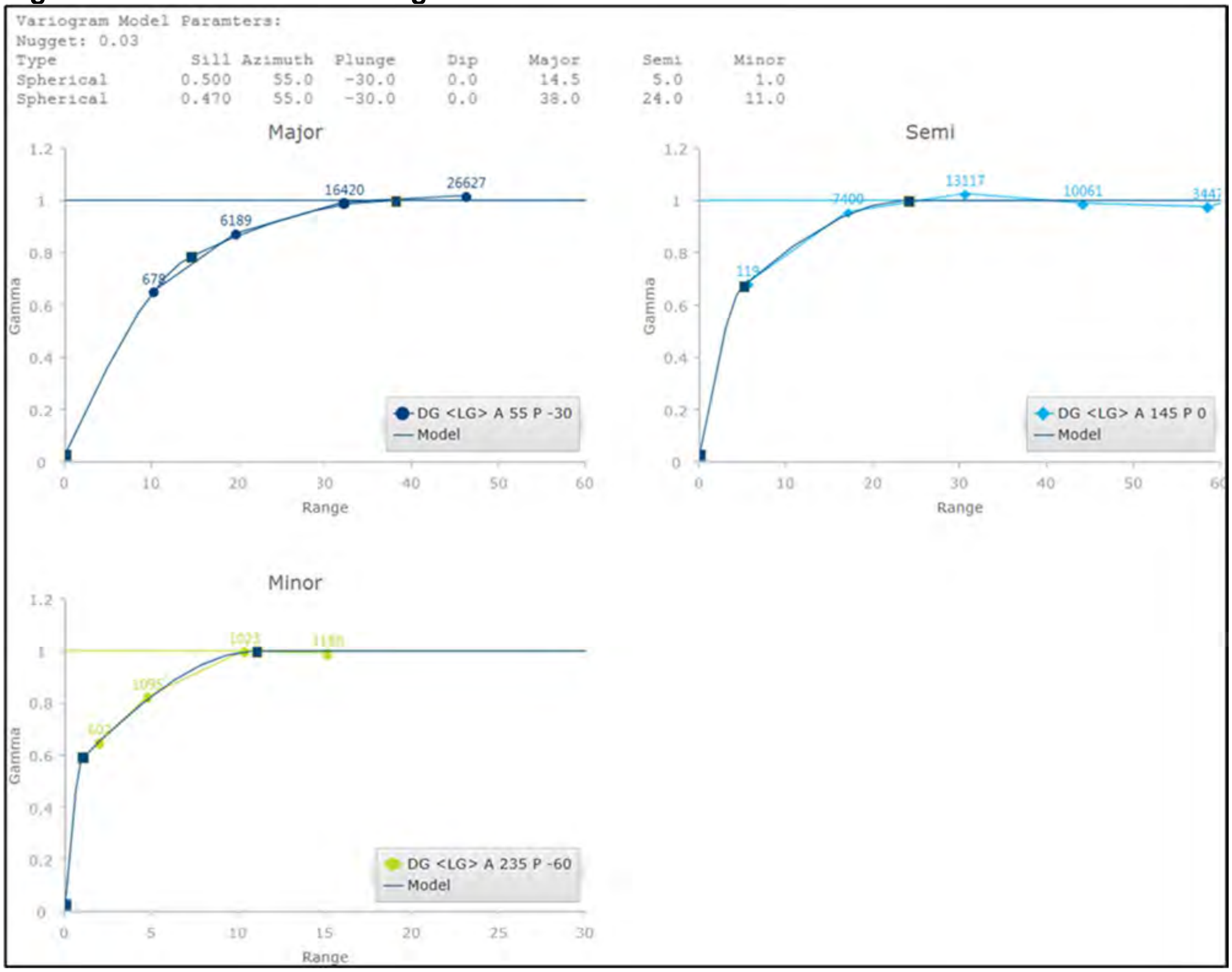
(Source: UMR, 2024)

14.3.5. Variogram Analysis and Modelling

Orano performed variogram analyses of DG and Density on both the LG and HG Zones. The model generated for Midwest A was derived from experimental correlogram variograms for all but the HG zone density, where a General Relative Semi variogram was used (Figure 14-27 to Figure 14-30).

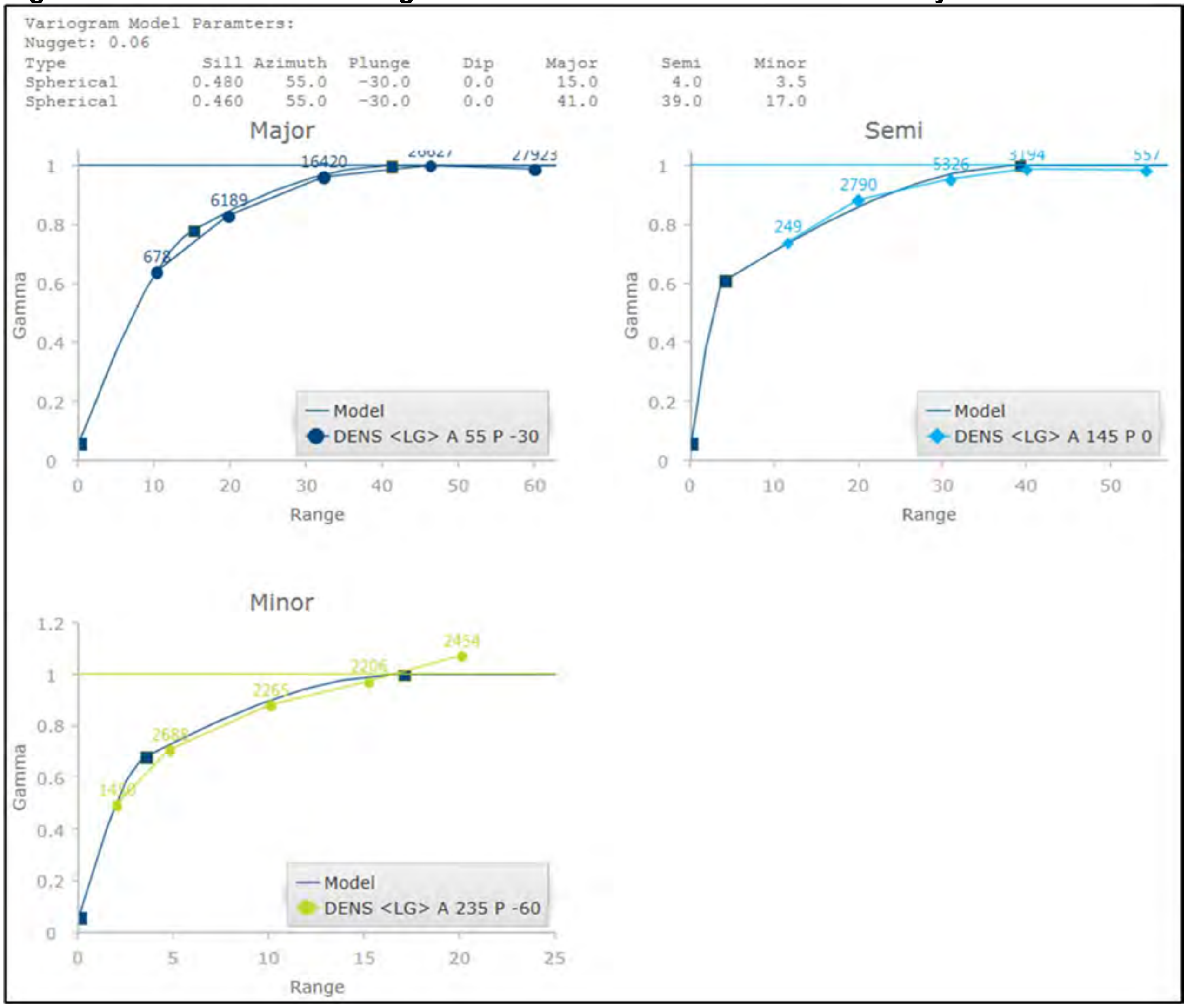
Elliptical directional variograms were used for the LG zone, with the longest direction of continuity along strike. Given that reasonable directional variograms could not be generated due to the relatively sparse amount of drilling data, an omnidirectional spherical variogram was used for the HG zone.

Figure 14-27: Directional Variograms and Models for LG Zone for DG



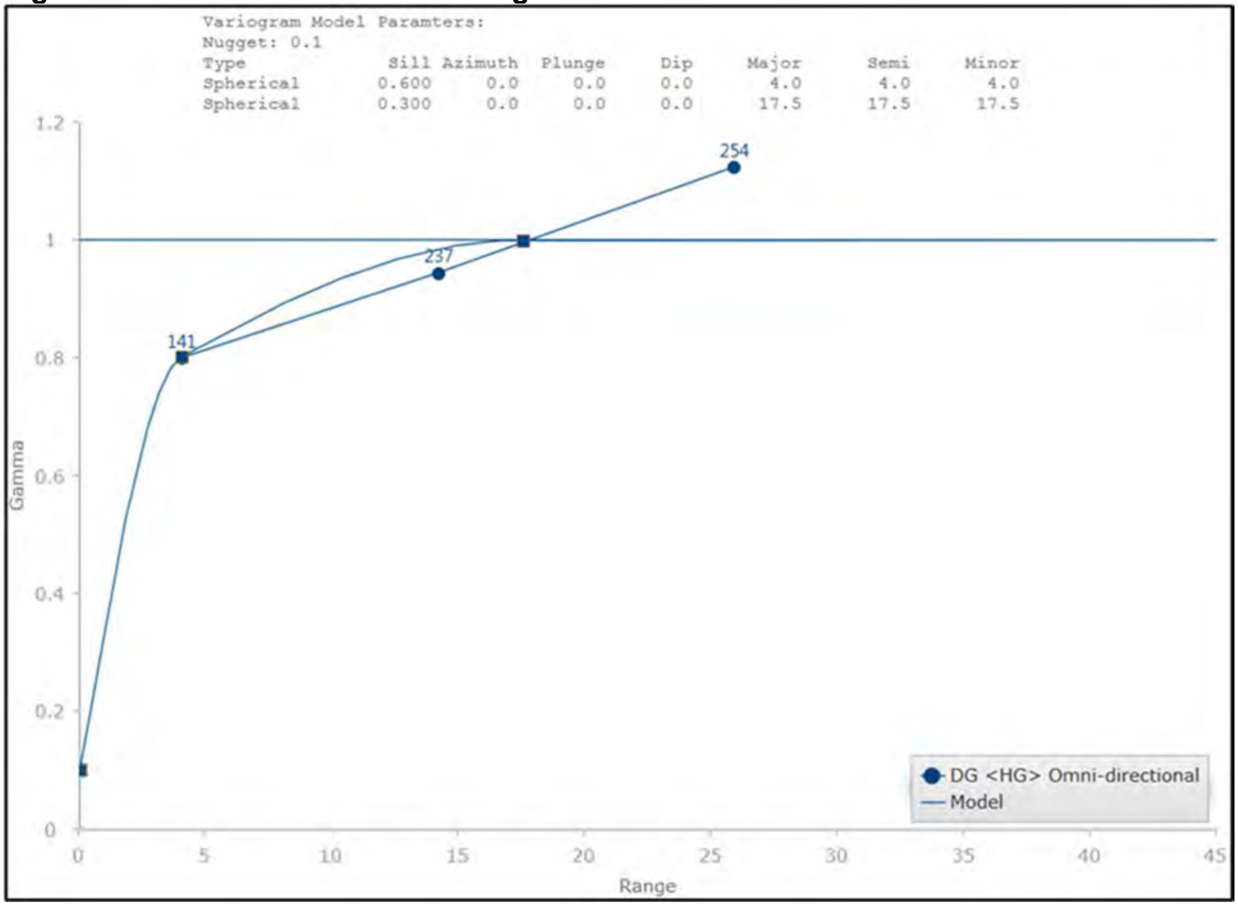
(Source: Orano, 2018)

Figure 14-28: Directional Variograms and Models for LG Zone for Density



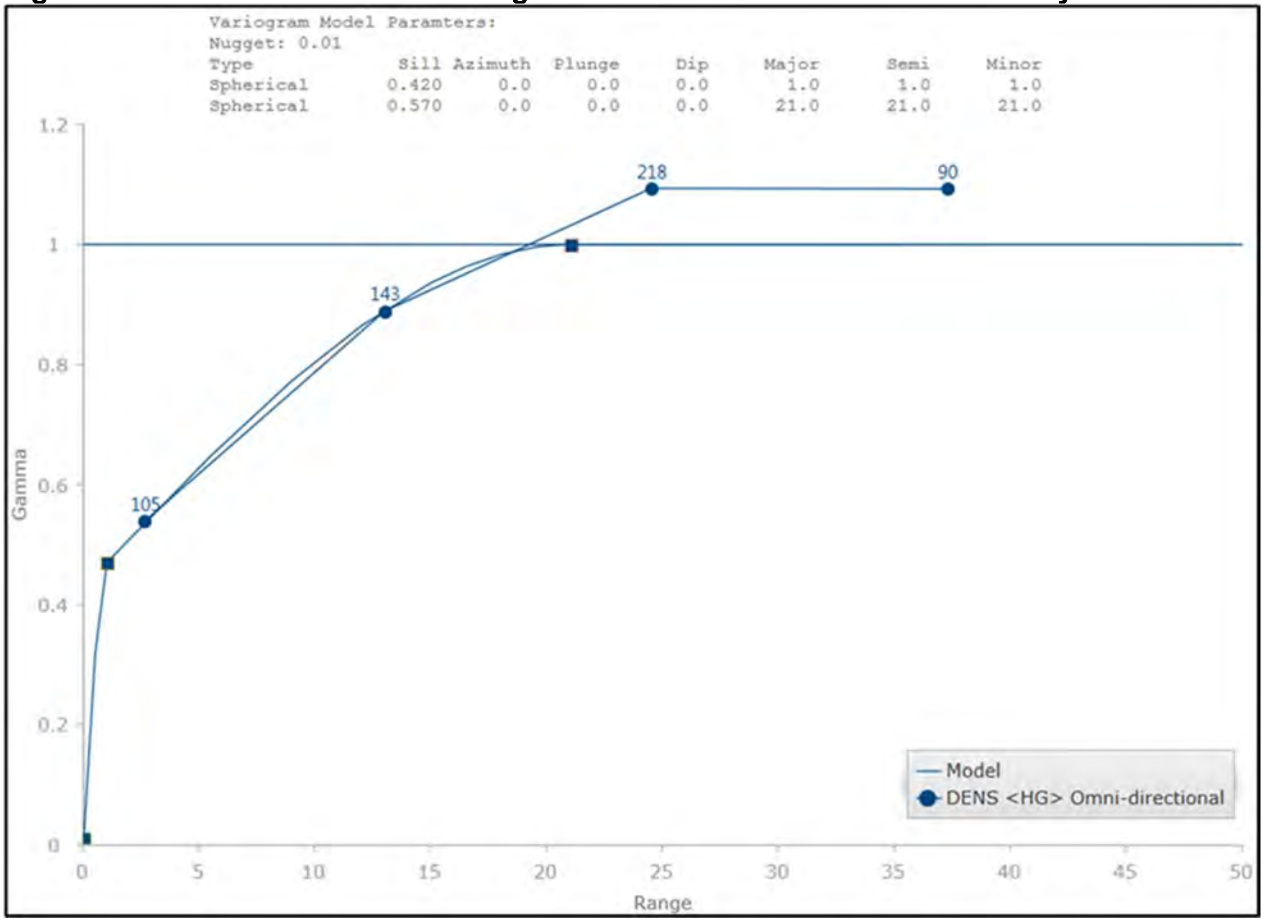
(Source: Orano, 2018)

Figure 14-29: Omni Directional Variogram and Model for HG Zone for DG



(Source: Orano, 2018)

Figure 14-30: Omni Directional Variogram and Model for HG Zone for Density

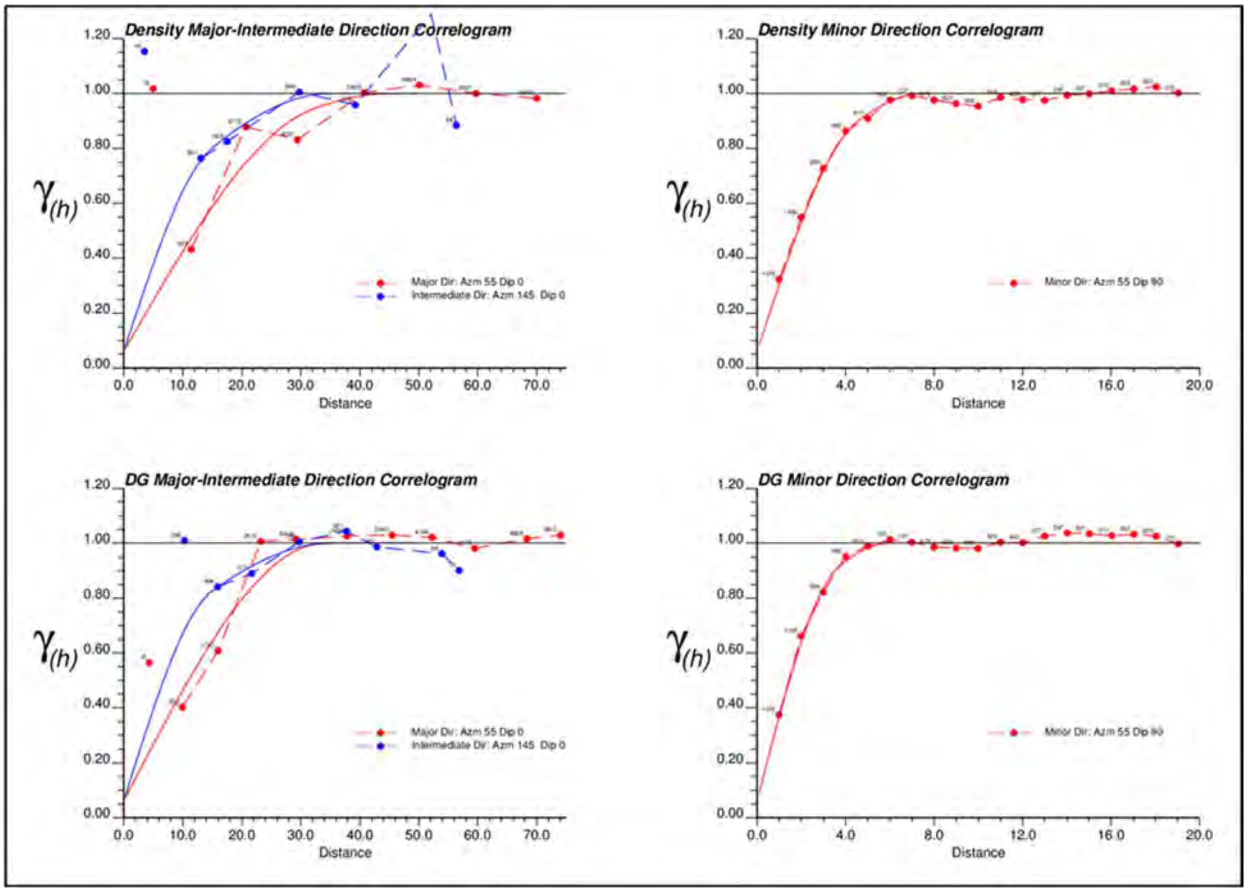


(Source: Orano, 2018)

In 2018, SRK reviewed the variogram used in the estimation of the low-grade domain and found that while the variogram structure and ranges are reasonably modelled, its orientation appears to be too steep for this domain and its geometry. SRK expected a relatively flat variogram, somewhat aligned to the unconformity surface, with the major axis oriented along strike. SRK chose to recalculate and remodel the variogram for both density and DG (Figure 14-31) to have a flattened orientation along strike and generally aligned with the unconformity surface. In general, SRK obtained similar structure and ranges to that modelled by Orano, with the revised orientation. UMR agrees with SRK's observations and the remodelled variogram.

For the final model, the HG omnidirectional variogram created by Orano and the flat-lying directional correlogram created by SRK was used for the low-grade domain.

Figure 14-31: Oblique Northwest View of Low-Grade Domain and Search Ellipsoid in Midwest A Zone



(Source: SRK, 2018)

14.3.6. Block Model and Estimation Parameters

The mineral resource block model is comprised of blocks that are 5 m x 5 m x 2 m in the X, Y, Z directions, respectively. The block model is rotated at a bearing angle of 55 degrees to be aligned with the strike of the mineralization. The blocks were coded to a zone (1 for the LG zone and 10 for the HG zone) and provided a percentage of how much of the block occupies within each zone (e.g. 10% HG zone, 85 % LG zone, and 5% outside either zone). Each interpolated block also contains DG and Density values that were interpolated during ordinary kriging. A grade value (%U) is then calculated from this by dividing DG by Density.

A two-run ordinary kriging estimate was conducted for both the LG and HG zones. The majority of the blocks were estimated within the first run. The second run was used to fill in any remaining un-estimated blocks. The low-grade search orientation was set to mimic the variogram orientation of the informing variogram model, whereas the high-grade is an isometric search along an arbitrary orientation that matches the geometry of the domain. The estimation parameters used are shown in Table 14-16 below.

In order to manage the influence of high-grades within the LG zone, high-grade management was required. It was deemed the best way to deal with this was to restrict the influence of samples with a DG of 20 or greater to a maximum distance of 7.5 metres. The 20 DG value was chosen based on statistics and from visual inspection of the higher grades and their apparent continuity.

Table 14-16: Midwest A Estimation Parameters

	Low Grade Zone		High Grade Zone	
Run 1:	**DG**	**Density**	**DG**	**Density**
Major Axis (m)	38	41	17.5	21
Semi-Major Axis (m)	24	39	17.5	21
Minor Axis (m)	11	17	17.5	21
Bearing	55	55	55	55
Plunge	0	0	-30	-30
Dip	0	0	0	0
Min. Number of Samples	10	10	10	10
Max. Number of Samples	30	30	30	30
Max. Samples Per Hole	5	5	5	5
High Grade Restriction (m)	7.5	7.5	-	-
Run 2:	**DG**	**Density**	**DG**	**Density**
Major Axis (m)	76	82	35	42
Semi-Major Axis (m)	48	78	35	42
Minor Axis (m)	22	34	35	42
Bearing	55	55	55	55
Plunge	0	0	-30	-30
Dip	0	0	0	0
Min. Number of Samples	7	7	7	7
Max. Number of Samples	30	30	30	30
Max. Samples Per Hole	5	5	5	5
High Grade Restriction (m)	7.5	7.5	-	-

14.3.7. Estimation Sensitivity

Several sensitivity tests were run to gauge how much of an impact different estimation parameters have on the resource estimate (Table 14-17). Note that the sensitivity tests were completed on an earlier version of the model and that these outputs may not exactly match the final model. UMR considers the sensitivity testing to be valid.

Table 14-17: Summary of Sensitivity Analyses Conducted with Preferred Scenario Highlighted

Test	Details	Inferred Metal *(tonnes U)*	Indicated Metal *(tonnes U)*
1	Uncapped OK Estimate	2,900	6,200
2	Capped OK estimate at 38DG and 3.1 Density	2,700	4,900
3	Capped OK estimate at 38DG and 3.1 Density and Less Samples	2,600	4,900
4	Capped OK estimate at 38DG and 3.1 Density Using 2010 Estimation Parameters	2,700	4,700
5	Capped OK estimate at 38DG and 3.1 Density and Half the Range	2,800	4,900
6	Capped OK Estimate at 20DG and 3.0 Density	2,700	4,200
7	Restricted OK Estimate for Samples >20DG limited to 7.5m	2,600	4,200

Notes:

a. No cut-off was applied.
b. Numbers are rounded.
c. Preferred scenario in grey. All other scenarios are not being treated as a current resource.

The resource estimate was most sensitive to the management of relatively high-grade samples within the LG zone. Significant differences can be seen between the uncapped and the capped or restricted estimates (test 1 compared to tests 6 and 7). Capping between 32 and 20 DG (test 2 compared to test 6) had a notable impact as well but is not as material.

Differences in ellipse size (test 5), variogram direction (test 4), and number of samples selected (test 3) had a relatively minor impact.

A 20 DG cap (test 6) was investigated compared to a 20 DG restriction of 7.5 metres from the sample (test 7). The difference in contained uranium metal content was relatively small globally but locally had notable high-grade smearing. It was decided to use a 20 DG restriction as it better represented the spatial distribution of the grades in the LG zone.

No restriction or capping was done for the HG zone.

14.3.8. Validation of Resource Estimation

The block model was validated using several methods, including but not limited to visual review of block grades relative to composites, statistical checks, spatial distribution plots of block grades relative to composite grades, peer reviews, and estimation via alternate estimation methods (inverse distance squared (ID^2) and nearest neighbour (NN)). Composite grades compared well overall to the ordinary kriged estimate, especially in the HG zone (Table 14-18). The estimated grades in the LG zone were somewhat lower than the composite grade, which is believed to be mostly due to the use of HG restrictions in this zone.

Table 14-18: Comparison of Composites to Ordinary Kriged Estimate Statistics

		Composites				Ordinary Kriged Estimate			
Zone	Count	Grade %U			Density g/cm³	Grade %U			Density g/cm³
		Min	Max	Aver.	Aver.	Min	Max	Aver.	Aver.
LG	1,170	0.00	37.17	0.87	2.35	0.00	25.34	0.66	2.34
HG	38	5.85	51.39	25.70	3.66	15.15	31.89	24.39	3.66

Estimation by nearest neighbour and ID^2, with similar search parameters, was within 5% of the ordinary kriging resource estimate, with the kriging estimate the lowest of the three (Table 14-19).There were other small adjustments made between the three models listed in the table, but they were deemed to be immaterial for this sensitivity analysis.

Table 14-19: Comparison of Estimation Techniques

Test	LG Zone *tonnes U*	HG Zone *tonnes U*
ID2 Estimate (20DG restricted for LG zone)	4,499	2,576
Nearest Neighbour Estimate (20DG restricted for LG zone)	4,562	2,293
OK Estimate (20DG restricted for LG zone)	4,315	2,442

Notes:

a. A 0.085% U reporting cut-off was applied.
b. Preferred scenario in grey. All other scenarios are not being treated as a current resource.

Volumes of mineralized shells were compared to the volumes represented by the block model and were found to be within 1% (Table 14-20).

Table 14-20: Comparison of Triangulation Volumes to Block Model Volumes

Zone	Triangulation Volume (m^3)	Block Model Volume (m^3)	Difference
LG	285,147	283,343	0.63%
HG	2,748	2,739	0.33%
Total	**287,895**	**285,975**	**0.67%**

14.3.9. Resource Classification

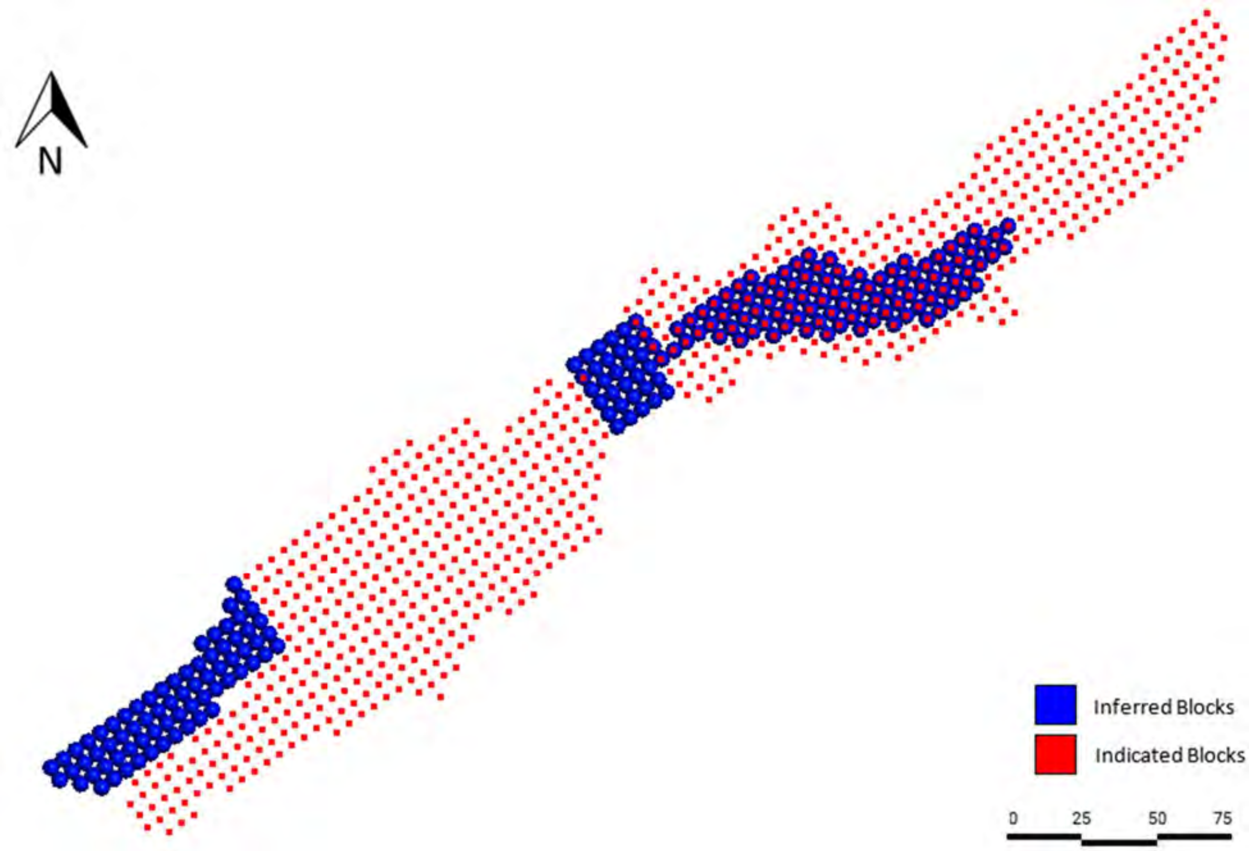
The classification of mineral resources for Midwest A is based on geological confidence and drillhole spacing. Where drillhole spacing was greater than 30 metres, mineralization was placed in the Inferred category.

The bulk of the mineralization is considered to be within the Indicated category. There are four areas that are the exception to this and are categorized as Inferred Resources (Figure 14-32 and Figure 14-33).These areas are:

- The southwestern area of the LG zone. Limited drillhole data defines the extension of the mineralization in this area with drillhole spacing in excess of 30 metres.
- The center of the LG zone (the former “Gap” area). There is some uncertainty in the shape and continuity of the mineralization in this area due to (1) the possibility of a cross-cutting structural feature interpreted from geophysical data, and (2) a lower density of drilling.
- The HG Zone geometry and extents are uncertain and need further confirmation is needed in order to be classified as Indicated.
- A basement-hosted area in the northern ‘pod’ below that is based on significantly less data than material at the unconformity.

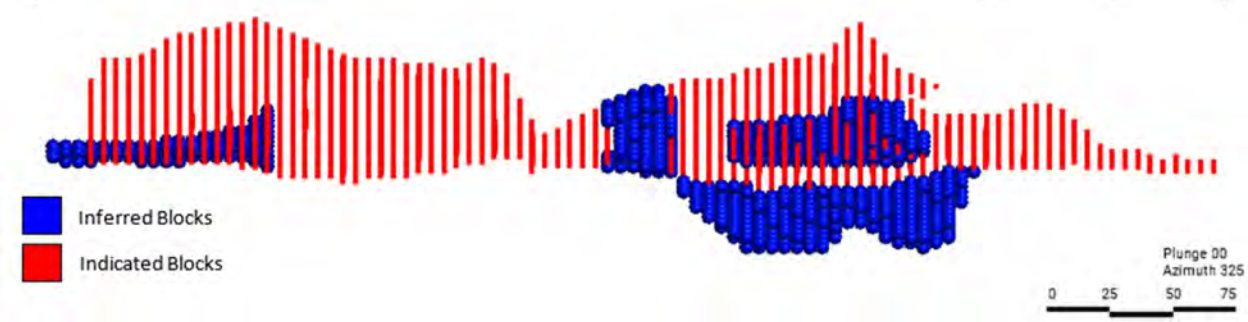
For viewing purposes, the figures show block centres with Indicated blocks as red points and Inferred as blue spheres (3 m radius).

Figure 14-32: Classification of Mineral Resources for Midwest A – Plan View



(Source: UMR, 2024)

Figure 14-33: Classification of Mineral Resources for Midwest A – Long section (325 Azi)



(Source: UMR, 2024)

14.3.10. Grade Sensitivity Analysis

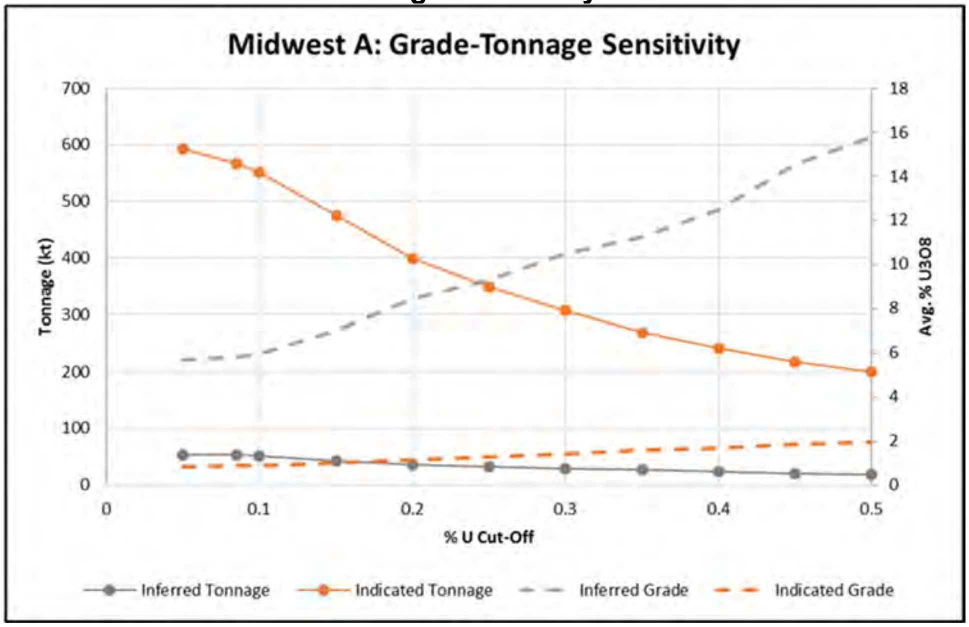
Table 14-21 summarizes the sensitivities of the tonnage, lbs, and grade relative to a range of cut-off grades from 0.00% to 2.00% U within the Orano mineral resource model for the Midwest A deposit. The Indicated resources are sensitive to cut-off grades less than 1% U as all of the metal from this resource category is located within the LG zone. However, the Inferred resources are insensitive to cut-off grades below 2% U as it primarily represented by the HG domain.

Table 14-21: Cut-Off Grade Sensitivity (Chosen Cut-Off Grade is 0.085% U)

Resource Category	Cut-off (%U)	Tonnes	Grade (%U)	Metal (Tonnes U)	Metal (Mlbs U_3O_8)
Indicated	0.000	617,000	0.79	4,900	10.90
Inferred		54,000	5.74	3,100	6.73
Indicated	0.085	566,000	0.87	4,900	10.84
Inferred		53,000	5.85	3,100	6.73
Indicated	0.250	350,000	1.29	4,500	9.93
Inferred		32,000	9.38	3,000	6.64
Indicated	0.500	200,000	1.95	3,900	8.56
Inferred		19,000	15.79	3,000	6.51
Indicated	0.750	134,000	2.54	3,400	7.50
Inferred		13,000	22.31	2,900	6.43
Indicated	1.000	93,000	3.23	3,000	6.58
Inferred		11,000	26.36	2,900	6.39
Indicated	1.250	68,000	3.97	2,700	5.85
Inferred		10,000	29.00	2,900	6.36
Indicated	1.500	51,000	4.71	2,400	5.25
Inferred		10,000	29.00	2,900	6.36
Indicated	1.750	38,000	5.53	2,100	4.73
Inferred		10,000	29.00	2,900	6.35
Indicated	2.000	30,000	6.67	2,000	4.32
Inferred		10,000	29.00	2,900	6.35

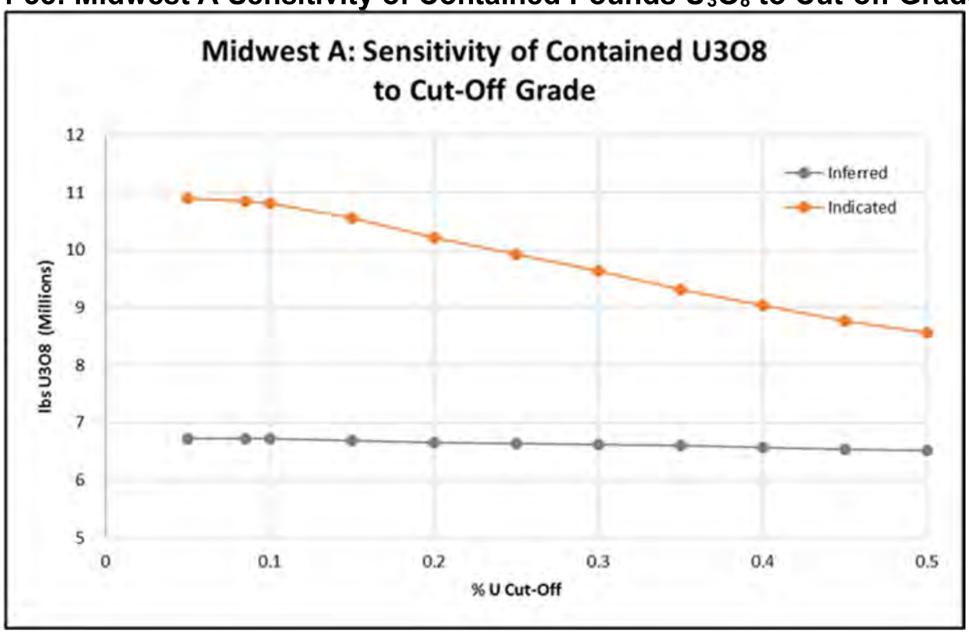
Figure 14-34 shows the sensitivity of the tonnage and grade to the cut-off grade in the mineral resource model, while Figure 14-35 shows this sensitivity in terms of contained U_3O_8. In general, the contained U_3O_8 in the Inferred category is insensitive to the cut-off grade. The contained U_3O_8 in the Indicated category is relatively insensitive up to a cut-off grade of approximately 0.15% uranium.

Figure 14-34: Midwest A Grade-Tonnage Sensitivity Curve



(Source: UMR, 2024)

Figure 14-35: Midwest A Sensitivity of Contained Pounds U_3O_8 to Cut-off Grade



(Source: UMR, 2024)

14.3.11. Audit Findings and Recommendations

UMR summarized and commented on a few key items from SRK's audit findings concerning the Midwest A mineral resource estimate from the 2018 Mineral Resource Estimate report, as per below.

- SRK reviewed the approach taken by Orano to construct the mineral resource model and finds it to be generally consistent with that undertaken for other similar deposits. UMR agrees with this audit finding.
- SRK agrees with Orano's choice of a DG threshold of 20 for its low-grade domain; however, SRK considers that, despite its narrow and limited volume, estimation of the high-grade domain may be slightly optimistic as a result of having applied no capping, or any other high-grade treatment. In UMR's opinion, the high-grade distribution is relatively stationary, the highest-grade samples of the distribution show spatial connectivity, and the values appear to be valid; thus, UMR believes the estimate of HG material to be a reasonable representation of mineralization contained within the boundary. However, UMR recommends detailed studies on the management of high-grade outliers in the low-grade domain, such as metal-at-risk evaluations, mean uncertainty analysis, continued sub-domaining, etc.
- SRK made two modifications to the resource model: (1) grade and density continuity was re-oriented to be flat along strike and estimated accordingly; and (2) blocks below the unconformity surface were re-classified from Indicated to Inferred on the basis of estimation pass and data density. These changes are reflected in the final model. In UMR's opinion, these modifications were necessary to reflect the mineralization trends at the Midwest A Deposit as well as to represent the level of confidence of the estimate across the deposit.

UMR's independent resource related conclusions, observations, and recommendations for the Midwest A Deposit are summarized below.

- The Midwest A mineral resource estimate was constructed by Orano in November 2017 and subsequently underwent revisions from SRK in 2018. UMR reviewed the final model and determined it is current, reasonable, and meets the requirements for public disclosure in accordance with NI 43-101.
- Mineral Resources of Midwest A were classified as Indicated and Inferred based on drill hole spacing, the geological understanding and continuity of mineralization, data quality, spatial continuity, block model representativeness, and data density. In UMR's opinion, the Mineral Resource classification methodology is reasonable.
- No changes were made to the model since 2018 but the justification for the reporting cutoff grade (0.085% U or 0.1% U_3O_8 grade) is updated in this document to reflect the envisioned

ISR extraction method rather than an open pit scenario. Coincidently, the two envisioned mining methods use the same cut-off grade but with different assumptions.

- There are two density datasets at Midwest A: 304 SG measurements from crushed mineralized sample material and 24 Dry Bulk Density measurements. The measurements from the crushed material were deemed to be inaccurate, and therefore, only the 24 Dry Bulk Density measurements were used to create the multi-element and single-element density regressions. Given the lack of informing data, UMR recommends collecting more density data in future drill programs to reduce the uncertainty in the regressions.
- The domain models adequately constrain the mineralization for estimation purposes. However, the single low-grade domain represents basement-hosted, structurally controlled mineralization, unconformity mineralization, and perched mineralization. The generalized wireframe makes estimating discrete features and trends difficult, therefore UMR recommends that individual wireframes be created to represent the three mineralization types observed at the deposit. In estimation, the individual domains can be given specific orientations for interpolation and the use of a soft boundary between the domains will ensure there are not abrupt changes in grade continuity where the domains meet.
- The model uses up to 30 samples per block estimate, which, in UMR's opinion, will lead to oversmoothing (overprediction of low-grade and underprediction of high-grade). The significance of the oversmoothing is largely mitigated by the HYL restrictions imposed on the model, therefore, oversmoothing is not considered a material risk. UMR recommends that future iterations of the estimate complete sensitivity testing relative to a Discrete Gaussian Model (DGM) to determine an appropriate number of samples per estimate. The DGM is applied to the composites and accounts for change of support using a variogram model, a normal score transformation, and Hermite polynomials. UMR expects the max number of samples per estimate to be somewhere between 5 and 12. In this case, the issues of an oversmoothed model have implications locally rather than globally.
- The blocks were coded to a zone (1 for the LG zone and 10 for the HG zone) and provided a percentage of how much the zone occupies in the block (e.g. 10% HG zone, 85 % LG zone, and 5% outside either zone). In UMR's opinion, this can be improved upon with a sub-block model.

14.4. Reasonable Prospects for Eventual Economic Extraction

Mineral resources must demonstrate reasonable prospects for eventual economic extraction which generally implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade taking into account extraction scenarios. Mr. Batty considers the Midwest Main and A deposits amenable to the proposed ISR extraction method and the mineral resources have been constrained to a 0.085% U (0.1% U_3O_8 grade) cut-off grade for mineral resource reporting predicated on a uranium price of USD$80/lb U_3O_8 and total combined operating costs of USD$11.66/lb U_3O_8. With ISR being a non-selective mining method within the wellfield, Denison expects to recover additional mineralization below this cut-off; however, a 0.085% U reporting cut-off provides a reasonable consideration of grade-thickness to support a reasonable assumption of economic extraction.

Additionally, this choice of cut-off aligns with the cut-off chosen by Orano for open pits based on many years of mining experience at the nearby Sue open pits (Sue A, Sue B, Sue C, and Sue E) at the McClean Lake site where a cut-off of 0.085% U was used during mining (AREVA Resources Canada Inc., 2009). Mineralization at the former Sue A and B pits is similar in nature to Midwest Main and Midwest A based on depths, mineralization, distance to the mill, and host rocks.

14.5. Mineral Resource Statement

Based on the discussed inputs, estimation methodologies, and at a reporting cut-off grade of 0.085% U (0.10% U_3O_8), mineral resources for the Midwest Main and Midwest A deposits are presented in Table 14-22. The Midwest Main Mineral Resource has an effective date of December 2, 2024 and the Midwest A Mineral Resource has an effective date of March 9, 2018. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resource will be converted into a Mineral Reserve.

Table 14-22: Total Resources at 0.085% U Cut-off

Deposit	Category	Zone	Tonnage (kt)	Grade (% U)	Metal (tonnes U)	Metal (Mlbs U_3O_8)	Denison's Share (Mlbs U_3O_8)
Midwest Main	Indicated	UC	510	2.92	14,900	38.7	9.7
	Inferred	UC	389	0.80	3,100	8.1	2.0
		PER	449	0.36	1,600	4.1	1.0
		BSMT	67	0.30	200	0.4	0.1
Midwest A	Indicated	LG	566	0.74	4,200	10.8	2.7
	Inferred	LG	43	0.23	100	0.4	0.1
		HG	10	24.00	2,400	6.4	1.6
	Total Indicated		**1,076**	**1.78**	**19,100**	**49.5**	**12.5**
	Total Inferred		**958**	**0.77**	**7,400**	**19.4**	**4.9**

Notes:

- The reporting standard for the Mineral Resource Estimate uses the terminology, definitions and guidelines given in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Mineral Reserves as required by NI 43-101.
- Mineral Resources are reported at a cut-off grade of 0.085% U (0.1 % U_3O_8)
- Zones are identified as unconformity (UC), perched (PER), basement (BSMT), low grade (LG) and high grade (HG).

- Numbers may not add up due to rounding.
- The effective date of the Midwest Main Mineral Resource estimate is December 2, 2024.
- The effective date of the Midwest A Mineral Resource estimate is March 9, 2018.
- Denison's share of the project on an equity basis is 25.17%.

14.6. Mineral Resource Uncertainty

Mineral deposits, including the Midwest Main and A Deposits, are inherently uncertain because of variability at all scales and sparse sampling. In addition to uncertainty associated with estimation, there are specific risks and sources of uncertainty associated with the Midwest Main and A Deposit. These risks should be evaluated by potential and current investors.

NI 43-101 and other similarly purposed International Codes (JORC, 2012; S-K 1300, 2019) are to disclose risks to the public as identified and evaluated by the QP. The QP addresses the technical risks in various sections and considers that no material technical risks are identified.

The risks listed below are not considered exhaustive and there may be additional risks and uncertainties not presently known, such as market or technology changes, which are currently deemed immaterial but may also affect the business.

14.6.1. Specific Identified Risks

- Due to the variable nature of the HG domains and them representing the majority of the Midwest Main deposit mineral resource, additional infill drilling will provide further definition of the high-grade uranium mineralization within the deposit footprint and possibly lead to changes in the estimated uranium content.
- The conversion from downhole radiometric data to equivalent uranium grades is common practice by uranium companies in the Athabasca Basin and is accepted in CIM's best practices in uranium estimation guidelines. However, the use of equivalent grades is used in place of direct measurements and presents a risk of under or over prediction. The equivalent grades were review and deemed to be acceptable, but in areas of poor recovery, the accuracy of the equivalent grades cannot be completely confirmed. The estimate for Midwest A is at particular risk as the samples used for estimation consisted of 36% geochemical assay data and 64% equivalent probing data.
- There is a lack of modern density data at Midwest Main and A, thus the density regression equations are informed by minimal data resulting in uncertainty in the representativeness of the equations and the resulting estimate of tonnes.
- Further advances in geostatistical estimation may be expected including more use of variable anisotropy (through bend models), the use of co-kriging for consideration of

secondary data for estimation (rather than independent estimation of each variable), and conditional simulation to quantify estimation risk.

The drill sampling methods used at the Midwest Main and A Deposits meet or exceed industry standards, and the assay results have been comprehensively reviewed and validated. The geostatistical estimates of in situ tonnages and grades are reasonable and validated by comprehensive reconciliation. The UMR QP considers that these methods are appropriate to produce the declared Mineral Resource.

14.6.2. Generic Mineral Resource Uncertainty

Mineral resources are uncertain because of variability at all scales and sparse sampling. The variables constituting the mineral resource, the volume of the geological interpretation, and the grade estimates within that volume, are the sources of uncertainty. These uncertainties are typically a function of drill spacing, with denser spacing equating to less uncertainty and sparser spaced areas having more uncertainty. The estimate is classified into the Inferred and Indicated mineral resources categories based on geological and grade continuity as well as drillhole spacing; therefore, adhering to the well-studied concept that drilling reduces uncertainty.

Changes to the geologic interpretation would alter the estimation. If new interpretations of geological complexities are presented, the Mineral Resource would need to be updated to reflect the new interpretations.

14.7. Reconciliation with Previous Mineral Resource Estimate

Historically, mineral resources for Midwest Main and Midwest A were reported separately. As such, reconciliation of the current resource estimate to the previous estimates is separated for these two deposits.

14.7.1. Midwest Main

The previous mineral resource estimate for the Midwest Main deposit was prepared by Orano and reviewed by SRK with an effective date of March 9th, 2018. A comparison of the current and previous mineral resource estimates is provided in Table 14-23.

Table 14-23: Comparison of 2024 Estimate to Previous Estimate

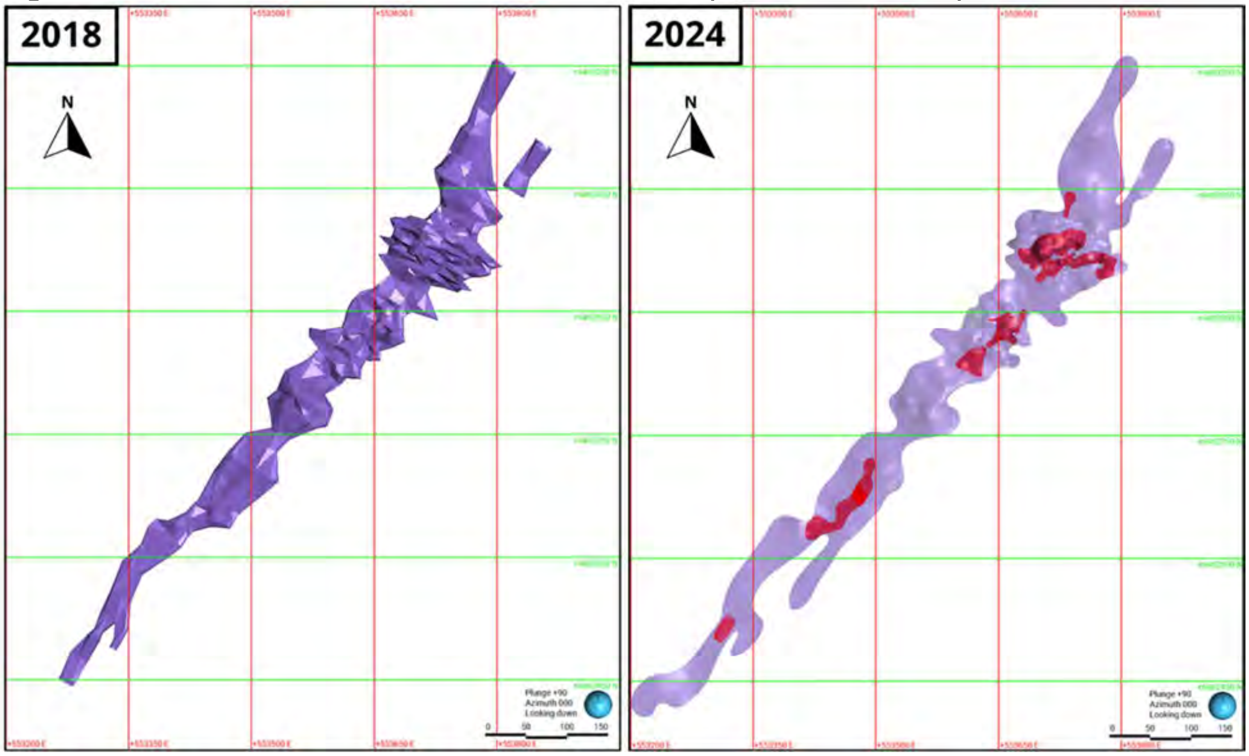
		2023 Year-End (2018 Model)			2024 Model Update			
Category	**Zone**	**Tonnes (kt)**	**Grade (% U_3O_8)**	**Metal (Mlbs U_3O_8)**	**Tonnes (kt)**	**Grade (% U_3O_8)**	**Metal (Mlbs U_3O_8)**	**Change *(Mlbs U_3O_8)***
Indicated	UC	453	4.00	39.9	510	3.44	38.7	**-1.2**
Inferred	UC	257	1.36	7.7	389	0.94	8.1	**0.4**
	PER	513	0.32	3.6	449	0.41	4.1	**0.5**
	BSMT	23	0.38	0.2	67	0.27	0.4	**0.2**
Total Indicated		**453**	**4.00**	**39.9**	**510**	**3.44**	**38.7**	**-1.2**
Total Inferred		**793**	**0.66**	**11.5**	**905**	**0.54**	**12.7**	**1.2**

Comparison between the two mineral resource estimates shows an insignificant change to the global mineral resource with a small decrease in primary UC pod contained metal (reduction in the Indicated resource is offset by an increase in the Inferred resource). However, there is a notable increase in tonnes related to the inclusion of previously unmodeled low-grade mineralization and the updated modeling method for the UC lens.

A summary of the significant changes between the models is as follows:

- Remodel of the UC mineralized shells with LeapFrog with vein and implicit modeling tools
- Domaining of the HG (>6% U) within the UC lens
- Inclusion of 2018 and 2024 drillholes
- Revised probe to grade correlation
- Updated density regressions

Figure 14-36: Plan View of the Midwest UC Lenses (2018 versus 2024)



(Source: Denison, 2024)

14.7.2. Midwest A

The Midwest A mineral resource estimate is unchanged from the 2018 model, but the justification for the reporting cutoff grade (0.085% U or 0.1% U_3O_8 grade) was updated to reflect the envisioned ISR extraction method rather than an open pit scenario. Coincidently, the two mining methods use the same cut-off grade but with different assumptions. The 2018 model, which is now the current model, is described below and compared with the 2008 version.

Table 14-24 shows the comparison of the current mineral resource statement (MRS) TBD determined and the 2008 Geostat mineral resource statement; The Indicated resources have increased by 5.04 million pounds of U_3O_8 (87% increase relative to 2008), while Inferred resources increased by 2.42 million pounds of U_3O_8 (56% increase relative to 2008).

Table 14-24: Comparison to 2008 Geostat Estimate for Midwest A

Category	Zone	2008 Geostat MRS Tonnage (kt)	2008 Geostat MRS Grade (% U_3O_8)	2008 Geostat MRS Contained Metal (M lbs U_3O_8)	2018 & 2024 MRS Tonnage (kt)	2018 & 2024 MRS Grade (% U_3O_8)	2018 & 2024 MRS Contained Metal (M lbs U_3O_8)	Change Contained Metal (M lbs U_3O_8)	Change Denison Equity (M lbs U_3O_8)
Indicated	LG	464	0.57	5.80	566	0.87	10.84	5.04	1.27
Inferred	LG	-	-	-	43	0.4	0.38	0.38	0.09
	HG	9	21.23	4.30	10	28.76	6.35	2.05	0.52
Total Indicated		**464**	**0.57**	**5.80**	**566**	**0.87**	**10.84**	**5.04**	**1.27**
Total Interred		**9**	**21.23**	**4.30**	**53**	**5.81**	**6.72**	**2.42**	**0.61**

Notes:

a. 2008 mineral resource statement used a cut-off grade of 0.05% U
b. 2018/2024 mineral resource statement is reported using a cut-off grade of 0.085% U (0.1% U_3O_8).
c. Totals may not add up due to rounding.
d. Denison's share of the project on an equity basis is 25.17%.

The changes since the 2008 mineral resource statement were largely influenced by:

- Additional core holes from the fall 2007 to summer 2008 drilling program,
- Volumetric increase in modelled mineralization,
- Addition of density measurements that were collected in 2009,
- Estimation of HG Zone,
- New density correlation equations,
- New probe radiometric-grade correlation equation
- Reported at different cut-off grade

Since the 2008, Geostat mineral resource statement, an additional 40 drillholes were drilled from September 2007 to July 2008. This has never been included in a publicly reported mineral resource statement. Further, Orano chose to use only the drillholes from 2005 onwards in the current resource model. The additional holes drilled from September 2007 to July 2008 accounts for approximately 30% of the current resource database.

The interpretation for the Midwest A zone has changed significantly from the disclosed resource estimate in 2008. The main interpretational change is the combination of previous South and North pods have been combined to form the LG Zone. This Zone now includes the intervening zone between the South and North Pods. In addition, the strike length of mineralization has changed from an approximate strike length of 350 meters to about 430 metres. Changes in the interpretation are largely based on the addition of 40 drillholes and related additions from reprocessed probe data including depth corrections, use of corrected low flux gamma values, removal of problematic probe data which allowed the use of a greater number of eU values, and Mineralization in the basement was added to the LG Zone. The reinterpretation comprises a volumetric increase of about 40%.

The majority of the increase in Inferred resources is attributed to the estimation of the HG Zone. In 2008, an average grade (18% U) and density (2.85 g/cm^3) was applied to the entire Zone. This method was done rather than estimating at the time, as additional drilling was planned to be conducted on the Zone. In 2017, Orano chose to estimate the resources in this Zone using an omni-directional ordinary kriging estimate. Given that the HG Zone is tightly constrained within a narrow wireframe and it is classified as Inferred resources, SRK finds this change in estimation methodology to be acceptable. This leads to an overall higher average grade in this domain; some of this is in part due to the density and probe correlations discussed below.

The LG zone contributes some Inferred resources and this is mostly related to the inclusion of interpreted mineralization in the drilling gap between what was previously known as the North and South Pods.

At the time of the 2008 Geostat mineral resource evaluation, no density measurements were available for the Midwest A deposit. In 2009, 341 SG measurements were collected from the Midwest A deposit and in 2017, 24 dry bulk density samples were collected. A density correlation was used in this current resource using the 2017 dry bulk density samples, while a constant density was applied to different grade ranges in 2008. The addition of density measurements and the use of a grade-density correlation contributes to an overall increase in density in both the LG and HG Zones, which contributes directly to an increase in tonnage. Orano estimates that the new probe radiometric-grade correlation equation, and updated methodology for calculating the equivalent probing grades, accounted for approximately a 5% increase in the estimated resource.

One other difference between the 2008 and 2018/2024 mineral resource statements is the reporting cut-off grade. Previously, the resource was reported at 0.05% uranium, while the current resource is reported at 0.085% uranium (0.1% U_3O_8).

14.8. Relevant Factors

UMR is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Midwest Main and Midwest A Mineral Resource Estimates that is not discussed in this Technical Report.

A variety of factors may affect the mineral resource estimates, including but not limited to: changes to product pricing assumptions, re-interpretation of geology, geometry and continuity of mineralization zones, mining and metallurgical recovery assumptions, and additional infill or step out drilling.

In UMR's opinion, the estimation methods used are consistent with standard industry practice and the Inferred and Indicated Mineral Resource Estimates for Midwest Main and Midwest A are reasonable and acceptable.

15. MINERAL RESERVE ESTIMATE

A feasibility study was completed in 2007 on the Midwest Main deposit by Orano (then AREVA Resources Canada Inc., 2007). This report assessed the development of the Midwest Main deposit as an open pit mine and is now considered to be obsolete and no longer relevant for the conversion of mineral resources to mineral reserves. Consequently, no mineral reserves exist at the Midwest Main deposit at the present time.

In addition, no pre-feasibility or feasibility studies have yet been completed to allow conversion of the mineral resources to mineral reserves for Midwest A. Consequently, no mineral reserves exist at the Midwest A deposit at the present time.

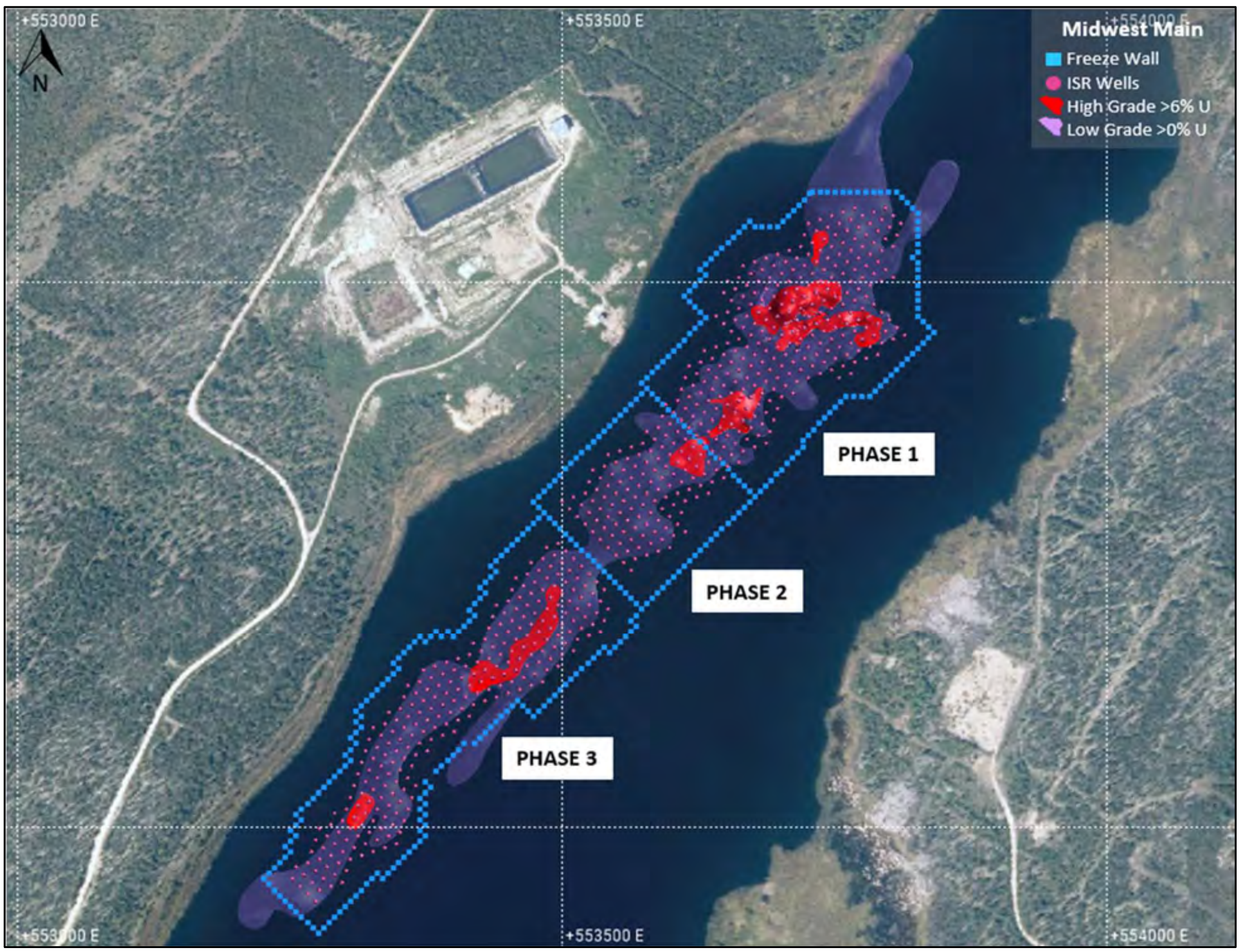
16. MINING METHODS

16.1. Summary

The study is based on the utilization of ISR for mining of the Midwest Main deposit. Other methods of mining the Midwest Main deposit have been considered but are not assessed as part of this report. No assessment of mining has been completed for the Midwest A deposit.

Owing to the mining method, the study assesses the mining, recovery and processing of the Midwest Main unconformity mineralization. Development and mining is set to occur in three phases (Figure 16-1). The staged development sequence is intended to minimize upfront capital and initiate steady production quickly, while establishing a reasonable annual rate of production, with subsequent phases to be developed sequentially.

Figure 16-1: Midwest Main Mining Phases



(Source: Denison, 2024)

The life of mine production for operation is expected to last 6.14 years and produce approximately 37.4 Mlbs of U_3O_8 (100% basis). After initial ramp up, the project will provide annual production on the order of 6.1 Mlbs of U_3O_8 (100% basis).

16.2. Estimated Resources included in Mine Plan

The indicated and inferred resources summarized previously had an 81% mining recovery factor applied, which is consistent with industry standards for ISR mining operations and supported by published metallurgical studies for other Athabasca Basin ISR projects. The assumptions for the 81% mining recovery factor are summarized in Chapter 13.

The mining recovery factor is a product of the metallurgical recovery and sweep efficiencies based on Denison's experience and disclosed results from other Athabasca Basin projects utilizing the ISR method. The sweep efficiency is defined as the percentage of mineralized rock in contact with the lixiviant as it circulates between the injection wells and surrounding recovery wells. The metallurgical recovery is determined by the amount and rate at which the uranium dissolves from the rock when in contact with the lixiviant.

Applying the 81% recovery factor results in an assumed recoverable resource of 37,400,000 lbs of U_3O_8, over an in-ground mass of 650,000 tonnes at an average grade of 2.60% U_3O_8.

16.3. ISR Mining

ISR mining has become a common uranium production method, following early adaptation and use in the 1960s. Its application to amenable uranium deposits in certain sedimentary formations has grown owing to competitive production costs and low surface impacts. ISR operations are found in a number of countries, including USA, Australia, Kazakhstan, Uzbekistan, and India. ISR mining has continued to grow in terms of annual global production levels, and currently accounts for more than half of global production. Technology improvements have been continuous and are further enabling the development of additional ISR projects.

In an ISR operation, a mining solution is pumped through the deposit via a series of injection wells. The mining solution is developed to dissolve the target minerals when flowing through the deposit in-situ. After dissolution, the mineral-rich solution is recovered and pumped to surface by recovery wells. Once on surface, the solution is pumped or transported to a processing plant and the uranium is recovered using processes that are standard for the latter stages of processing in conventional uranium mills. Consequently, when compared to other open pit and underground mining methods, ISR mining has the potential to result in reduced surface disturbances and significantly less tailings and waste rock generation.

Benefits of ISR operations when compared to conventional mining methods include:

- A greatly reduced health and safety risk profile as opposed to conventional underground mining.
- Greatly reduced environmental impacts, minimal surface footprint, no tailings and low noise, dust, and air emissions.
- Flexible production capacity limited only by the number of wells and the plant capacity, production levels can be scaled up or down as required.
- Low initial capital costs and short timeframe to production.
- Low operating costs.

For a deposit to be considered viable for ISR extraction, it must have three general characteristics:

1. Mineralization must be located in permeable ground to allow the mining solution (i.e. lixiviant) to interact with the uranium mineralization.
2. Mineralization must be readily dissolvable by the mining solution.
3. Mineralization must be confined to the resource by either natural geological feature (i.e. clay or other geological formations) or by artificial means (i.e. pumping, freeze walls).

Confinement of the mineralization is useful for a variety of reasons, including:

- Maximizing recovery of the mineralization once the uranium is dissolved into solution by preventing outflow of the uranium-bearing solution into the regional groundwater.
- Minimizing the dilution of the lixiviant with regional groundwater and avoidance of higher treatment costs to recover the uranium.
- Minimizing the potential for environmental effects.

It is believed that the Midwest deposit meets all of these parameters and that suitable confinement can be achieved through a combination of pumping and the installation of a freeze wall.

There are, however, several elements associated with Midwest Main deposit that differ from conventional non-Athabasca Basin applications of the ISR mining method.

Firstly, the basement rock below the unconformity acts as a lower-level barrier to fluid flow, but the balance of the rock above the unconformity is saturated sandstone.

Secondly, there is great variability in the deposit geology which can impact the ability for mining solutions to permeate the ore zone. Most conventional ISR operations cover large horizontal distances with relatively homogenous geology and low-grade mineralization. The Midwest Project, and other projects in the Athabasca Basin, are characterized as higher grade, and contain (i) great variability in geology, minerology, geometry and grade, and (ii) extensive fracturing.

Thirdly, the estimated head grade of the UBS is higher than conventional ISR operations in other jurisdictions. With uranium head grades potentially as high as 15 g/L U, as outlined in previous studies on other Athabasca Basin ISR projects, lower solution volumes are required to meet expected production levels and different recovery techniques are possible. Specifically, direct precipitation can be considered as a practical solution, whereas conventional low-grade ISR operations would require ion exchange and solvent extraction prior to precipitation. As a result of this simplified process, operational complexity is reduced, as are personnel and reagent consumption costs during operations.

Fourthly, due to the compact geometries of these deposits, the overall footprint of the operation is small and the required capital expenditures for drilling, piping, and collection systems are reduced. Accordingly, upfront capital costs are reduced as well as, and operational control is enhanced due to the small surface area of the site.

16.4. Midwest ISR Concept

Summary elements of the application of ISR at the Midwest deposit include:

- Utilization of a low pH mining solution.
- Injection and recovery wells on generally a 10 m well spacing in 5-spot pattern with the recovery wells placed in the centre of a ring of injection wells.
- A total of 676 ISR wells are required for complete coverage of the deposit.
- Installation of 341 individual freeze wells to form a freeze wall (curtain), which is intended to provide a tertiary form of containment, to ensure separation and maximize the isolation of the mining solution from the regional groundwater.
- Utilization of commercial permeability enhancement techniques to increase hydraulic conductivity within the deposit, where necessary.
- Annual steady state production of 6.1 Mlbs/yr.
- 50 monitoring wells installed around the perimeter of the mineralized zone and within the overlying and underlying aquifers, as dictated by geologic and hydrogeologic parameters, and spaced approximately every 125 meters.

16.4.1. Hydrogeology

Hydrogeological conditions have been assessed for Midwest Main from an ISR operations perspective. Site-specific data has been collected along with assumptions regarding hydrogeology drawn from geological characteristics of Midwest Main. Specifically:

- The natural surface groundwater elevation above Midwest Main is assumed to be shallow, within a few metres of ground level.
- The hydrogeology of the area is defined by two primary units. The overlying water bearing unit is comprised of the regionally extensive sandstones of the Athabasca Group and the 15 to 45 m of unconsolidated glacial till which covers it. The other primary hydrogeological unit is the underlying, crystalline basement which is comprised of metasedimentary and granitoid gneisses.
- The Midwest Main deposit is generally flat lying and occurs along the unconformity between these two units at a nominal depth of 250 m below surface. Most of the deposit is located in the 10 to 20 m thick paleoweathered zone of the unconformity, which is anticipated to have similar hydrogeological characteristics to the overlying, permeable sandstone. Midwest is below the natural groundwater elevation and is subject to the full hydrostatic head of the overlying water-bearing units.
- The geologic units hosting the deposit are permeable and water bearing, based on permeability data collected from Midwest Main. The permeability of the formation is also shown by experiences in mining the equivalent geologic units at McArthur River and Cigar Lake and recent hydrologic testing conducted other Athabasca Basin development projects. Permeability at Midwest Main is a combination of matrix permeability and secondary fracture driven permeability.
- At this stage in the project, it is assumed that the underlying crystalline basement units, are not hydraulically connected to the overlying sandstone. This lack of hydrogeological connectivity between the basement and the mining zone requires confirmation through additional field test work.
- Ground conditions are variable and characterized as having zones of higher and lower permeability throughout. Leach rates will vary by area, and an 81% mining recovery factor has been used to account for any leaching losses.
- The ISR mine design considers a freeze wall surrounding each mining phase, freeze wells are keyed into the underlaying basement rock. This is expected to create isolation of the mining zone from the surrounding hydrogeological system. The freeze wall will create a closed groundwater system that will provide a tertiary form of containment.

16.4.2. Assessment of Mineralized Zone Permeability

Permeability of the deposit has been shown to be in the same range as similar Athabasca Basin projects studied for potential ISR mining. This project was subjected to a considerable permeability testing program on fresh and historic drill core to quantify the permeability characteristics of the deposit.

In 2022, Denison proposed that the project be evaluated for the use of ISR methods and collected permeameter data on fresh and historic drill core throughout Midwest Main and Midwest A deposits.

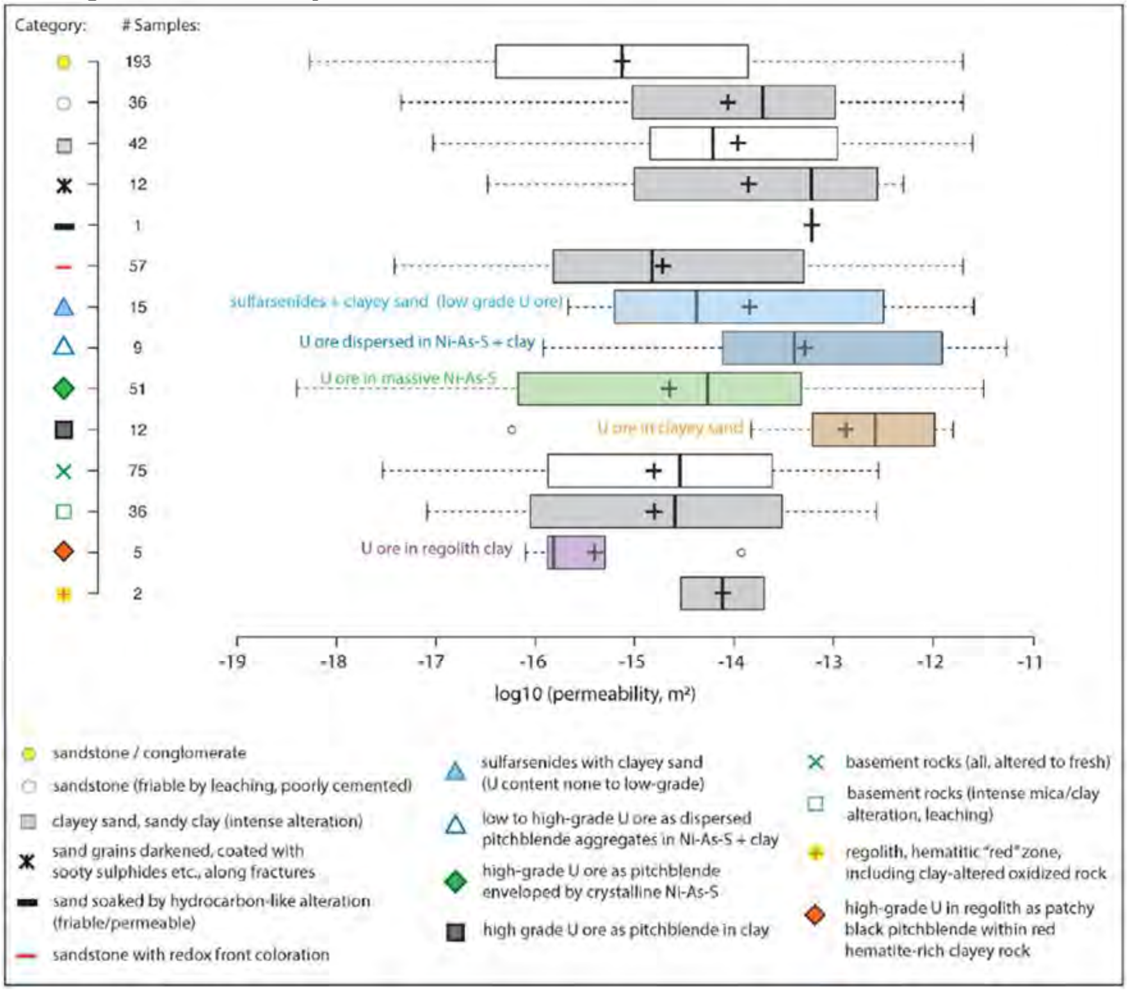
Two field programs to further asses the application of ISR were approved by the MWJV and executed by Denison, with support from Orano, in 2023 and 2024. The 2023 field program focused on permeameter analysis on historic drill core from Midwest Main and Midwest A deposits. The 2024 program featured 10 new boreholes drilled in the Midwest Main deposit, which allowed for permeameter analysis to be conducted on fresh drill core. The collection of this data allowed Dension to compile a database to determine the matrix permeability of the rock. This data provides detailed information of the distribution of permeability in and around both deposits and has been incorporated into geological and hydrogeological models for further analysis and understanding of fluid pathways and hydraulic conductivity. Permeameter analyses were performed by Denison personnel at the Moffat Lake field logging facility using a portable gas probe permeameter. The apparatus has a wide range of permeability detection abilities, which are specially designed for testing drill core onsite (Scibek and Annesley, 2021). The permeability of the rock matrix is measured from the pressure-decay rate of nitrogen (N2) gas. Permeability k values (m^2) are then converted to hydraulic conductivity K values (m/s). Permeameter samples are selected after core has been logged and photographed. For each drill hole, samples must be spaced a minimum of 20 cm from one another, be representative of each hydrogeological domain intercepted, and must be able to withstand being handled without crumbling. Sample number, depth and hydrogeological domain of each sample are recorded. Next, epoxy resin rings of approximately 0.4 cm inner diameter are applied to the rock surface to prepare a seal for the probe, and the sample is photographed. These epoxy spots are applied to a representative portion of the sample that would be part of natural fluid pathways. Cemented areas, desiccation cracks, and mechanical fractures are avoided. Once the epoxy rings dry, the probe is lowered onto the epoxy rings with a rubber ring to create a seal. During the N_2 gas injection, the pressure is charged behind a valve, and after opening the valve the pressure inside the apparatus acts on the rock sample. Pressure decay is recorded by the data logger. For QA during the tests, all samples are sprayed with soapy water to identify leaks and generate bubbles at gas discharge points. Tests with leaks that don't stabilize cannot be used. Test quality is recorded, along with location, size, and speed of discharging gas bubbles in the rock, which show the locations of dominant flow channels.

After analysis of the samples from the Midwest Main and Midwest A deposit, the results revealed suitable average hydraulic conductivity values and prompted Denison to proceed with the next steps necessary to carry out assessment for ISR mining.

The permeability data produced from Midwest is comparable to the results of the permeability testing carried out at other Athabasca Basin uranium deposits evaluated for ISR mining, with some variations due to lithological changes.

Below are the various hydrogeological units (HGUs) with their respective permeability values (m^2) values, and the boxplot of descriptive statistics of measured permeability. Box edges are 25^{th} and 75^{th} percentiles. The median is a vertical line and the mean is a cross in the box. The whiskers extend to 1.5 inter-quartile range in Figure 16-2.

Figure 16-2: Boxplot of Descriptive Statistics of Measured Permeability at Test Spots on Drill Core Using Pressure-decay Permeameter Probe



(Source: Denison, 2024)

During the 2024 field program, ten small diameter test wells were drilled in the Midwest Main deposit. The test wells allowed for collection of hydrogeological data to further support the use of the ISR mining method at the Midwest Main Deposit. These test wells were selectively positioned in different areas of the deposit for hydrogeological investigation. Each test well was drilled to the target depth, cored, and as applicable, outfitted with well screens and/or pressure monitoring devices.

Six holes were selected for packer injection testing to measure bulk hydraulic conductivity across different horizons. A total of 12 packer tests were completed within the sandstone, mineralized zone, and basement horizons. In addition to packer injection testing, 37 single well hydrogeological tests were conducted and analyzed during the program including: falling head, pumping, and injection tests. Four cross-hole tests featuring freshwater circulation tests and an ion tracer test were also completed to acquire measurements of the movement of water (hydraulic pressure changes) within the mineralized zone.

These tests provided evidence of the hydraulic conditions present and are indicative of the potential movement of mining solution in an ISR mining operation. Hydraulic conductivity results in the mineralized zone were between 3.0E-09 and 8.8E-06 m/s. A two-spot ion tracer test was attempted over a 3-day period. As a result of poor field conditions, the test was concluded with no tracer ions observed in the pumping/recovery well.

Permeability enhancement was successfully deployed on two wells demonstrating the suitability of the method to the Midwest Main deposit. Efficiency of permeability enhancement was verified by comparing the pre- and post-permeability enhancement hydraulic tests. The results were an increase in hydraulic conductivity of up to 2 orders of magnitude, leading to flow meeting the individual production well flow rate target of 19 L/min.

16.4.3. Mine Geotechnical

As the ISR mine plan does not require any underground workings, the geotechnical characterization of the Midwest area is not as critical as the hydrogeological characterization. Anticipated direct impacts of geotechnical characteristics on mining are the stability of drillholes to allow for construction of ISR wells and the stability of any potential high porosity zones created during mining as a result of mass loss of uranium and other leachable minerals. It is predicted that geotechnical risks associated with high porosity zones will be low, as the volume will be small, the ground will be saturated with fluid, and any upward propagation will be limited by the volume expansion of broken rock.

Geotechnical characteristics can be determined for future phases of studies with dedicated geotechnical drilling, or rock mass rating (RMR) can be estimated from existing logged geotechnical data, select relogging of core, and core photos. Mine-scale structural interpretation will also be required during future phases of study.

16.5. Mining Methods

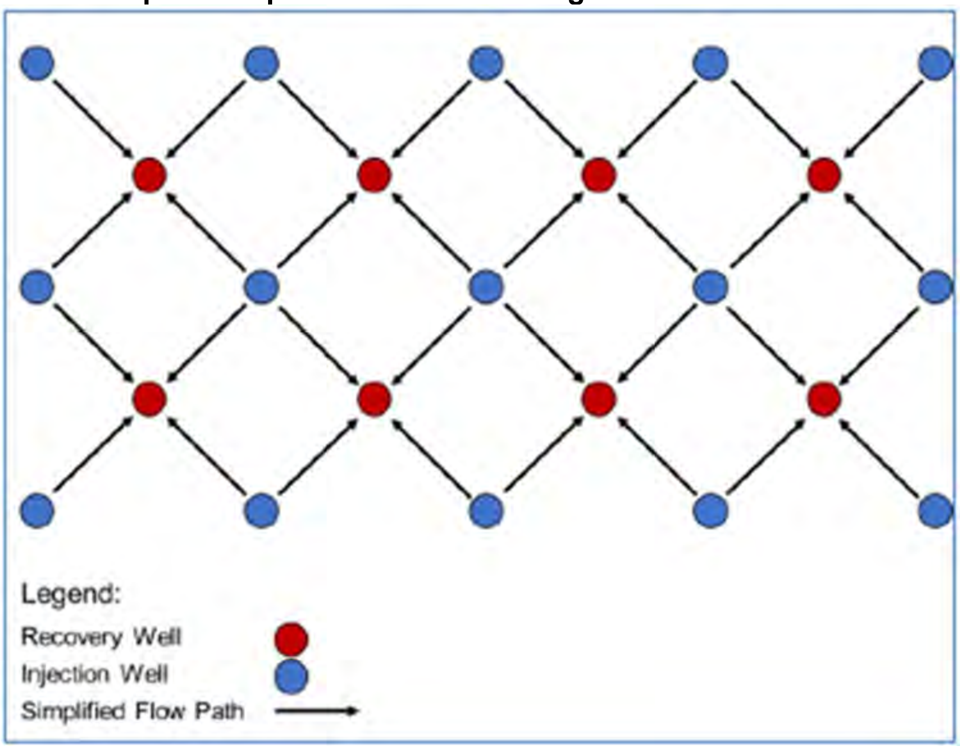
16.5.1. Wellfield

Mining is proposed using a wellfield of 676 ISR wells at generally a 10 m spacing arranged in a 5-spot pattern, with four injection wells around one recovery well. The ISR wells are planned to be drilled entirely from land on berms created in the lake. Wells will generally be vertical.

The ratio of injection wells to recovery wells in this configuration is expected to be ~1.8 to 1.0. The well spacing and pattern may change based on future hydrogeological test work and modelling.

Monitoring wells will be installed outside of the freeze wall to detect and remediate any excursion of lixiviant from the mining zone. The monitoring wells were designed based on 125 m spacing surrounding the freeze wall, but this design will need to be re-evaluated based on regional hydrogeological, geochemical, and environmental modelling.

Figure 16-3: Conceptual 5-Spot ISR Wellfield Design



(Source: Denison, 2024)

16.5.2. Freeze Wall

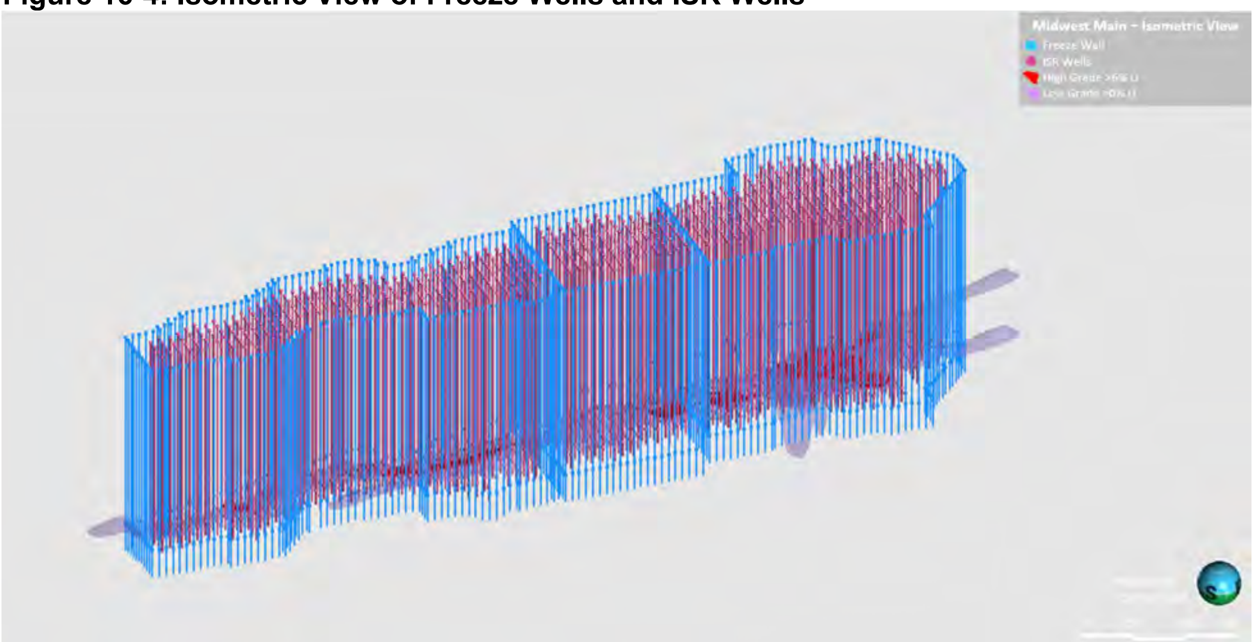
The design of the freeze walls and associated infrastructure has been factored from previously completed designs at other Denison projects, specifically the design of the Phoenix project. The design for that project was completed to a much higher degree of development and inspection of the geometry and the geology at Midwest provided confidence that the factoring of the design and associated cost estimates would produce sufficiently robust results for this level of study.

A freeze wall will be constructed around each mine phase ahead of commencement of ISR mining (Figure 16-4). It will extend from surface down to the competent crystalline basement rock below the unconformity. The freeze holes are planned at a 7 m spacing at the target depth and extend

30 m below the unconformity elevation. This depth into the basement rock creates an impermeable barrier for lixiviant flow.

The freeze wall will hydraulically isolate the mining zone from the surrounding regional groundwater in the water-bearing formations. The freeze wall is an additional form of containment, with the primary means of containment being the control of flow rates in the wellfield to induce an inward hydraulic gradient (i.e. pumping at greater rates than injection). The freeze wall combined with the low permeability basement rocks below will further confine the mining solution. The mining solution will be a higher density than the surrounding groundwater and will be controlled hydraulically by pumping and injection to prevent vertical upward migration. This will limit the total volume of groundwater to remediate after mining is complete.

Figure 16-4: Isometric View of Freeze Wells and ISR Wells



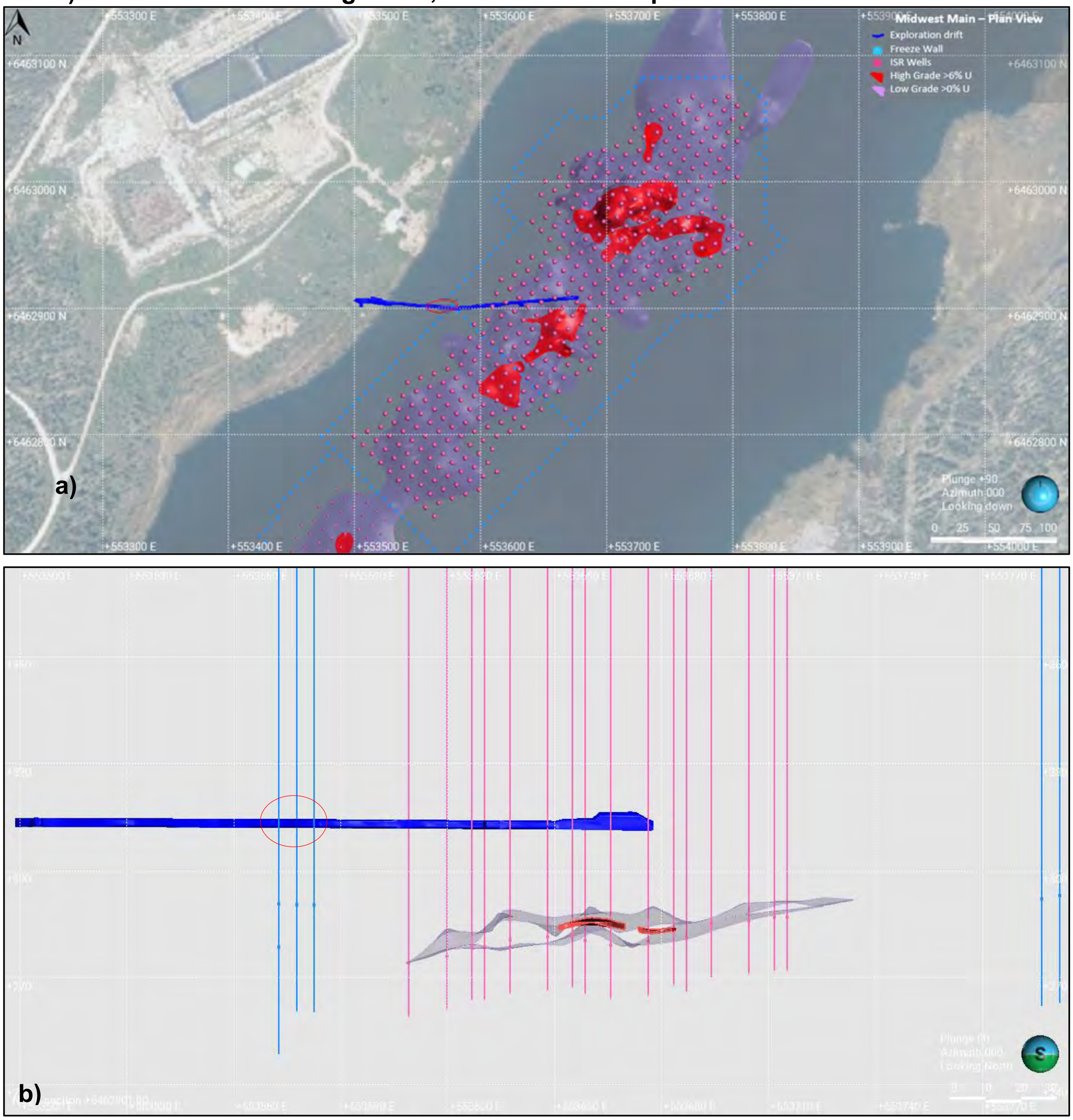
(Source: Denison, 2024)

Ground freezing will be conducted by circulating a chilled brine of calcium chloride through the pattern of freeze holes. The brine will be contained and circulated within each freeze hole casing, which will extract the heat from the surrounding rock until the water in the ground is sufficiently frozen to form an impermeable barrier. The freeze holes and freeze plant will be installed first, and then the ISR wellfield, and other surface infrastructure can be constructed while the freeze wall forms.

Based on the planned cumulative freeze hole length, the estimated freeze capacity requirement for Midwest is expected to require two freeze plants, each with six 250 TR (Tons Refrigeration) freeze plant modules.

The existing historic drift above the deposit (See Section 6.4), will be selectively backfilled as part of construction for an ISR mine. It crosses the planned freeze wall (Figure 16-5) creating a potential flow pathway across the freeze wall. To address this, a large diameter drillhole is proposed to intersect the underground excavation during early stages of wellfield construction. The drillhole would be used to sufficiently backfill the excavation in this area to allow for subsequent freeze hole drilling and ground freezing in the backfilled portion of the underground drift.

Figure 16-5: Location of Historic Exploration Drift in Midwest Main Deposit: a) Plan View and b) Cross-Section Looking North, in Relation to Proposed Freeze Holes



(Source: Denison, 2024)

16.5.3. Drilling Methodology

16.5.3.1. Drilling

The drilling of individual recovery, injection, monitoring, temperature and freeze wells will be carried out utilizing established standard drilling methods including rotary drilling and wireline core drilling.

Diamond drilling provides the recovery of core during the drilling process allowing for the close examination of ground characteristics prior to the completion of any well.

Accuracy will be a key drilling consideration during project execution to avoid operational problems with the freeze wall and wellfield. Mud motors can be used during the drilling process to ensure accuracy of the borehole to within one metre at the ore zone depth of approximately 200 m.

Total depth of all monitoring, recovery, and injection boreholes was set to 257 m to ensure complete penetration of the mineral resource. The average length of ISR wells is 210 to 215 metres. Freeze holes are drilled at least 10 m past the base of the deepest portion of the deposit. Future considerations should be taken to customize individual boreholes to tailor the individual depths.

16.5.3.2. Permeability Enhancement

The PEA assumes that a combination of two methods of permeability enhancement will be utilized in areas of the Midwest Main deposit where natural hydraulic conductivity is deemed inadequate for mining. Other permeability enhancement techniques may be considered/evaluated in future studies for application to the Midwest Main deposit mining.

One method is the MaxPERF drilling tool (tool acquired by Denison in 2024, press release dated Feb 26, 2024). The MaxPERF drilling tool, is deployable from within the planned boreholes and is designed to drill a 0.7 inch (17 mm) roughly horizontal hole up to 72 inches (182 cm) in length. The MaxPERF drilling tool exposes the permeability of the ore zone in more challenging areas by completing multiple arrays of holes at various elevations, potentially providing increased access to hydraulic connectivity associated with the existing fracture network, permeability and natural fluid pathways.

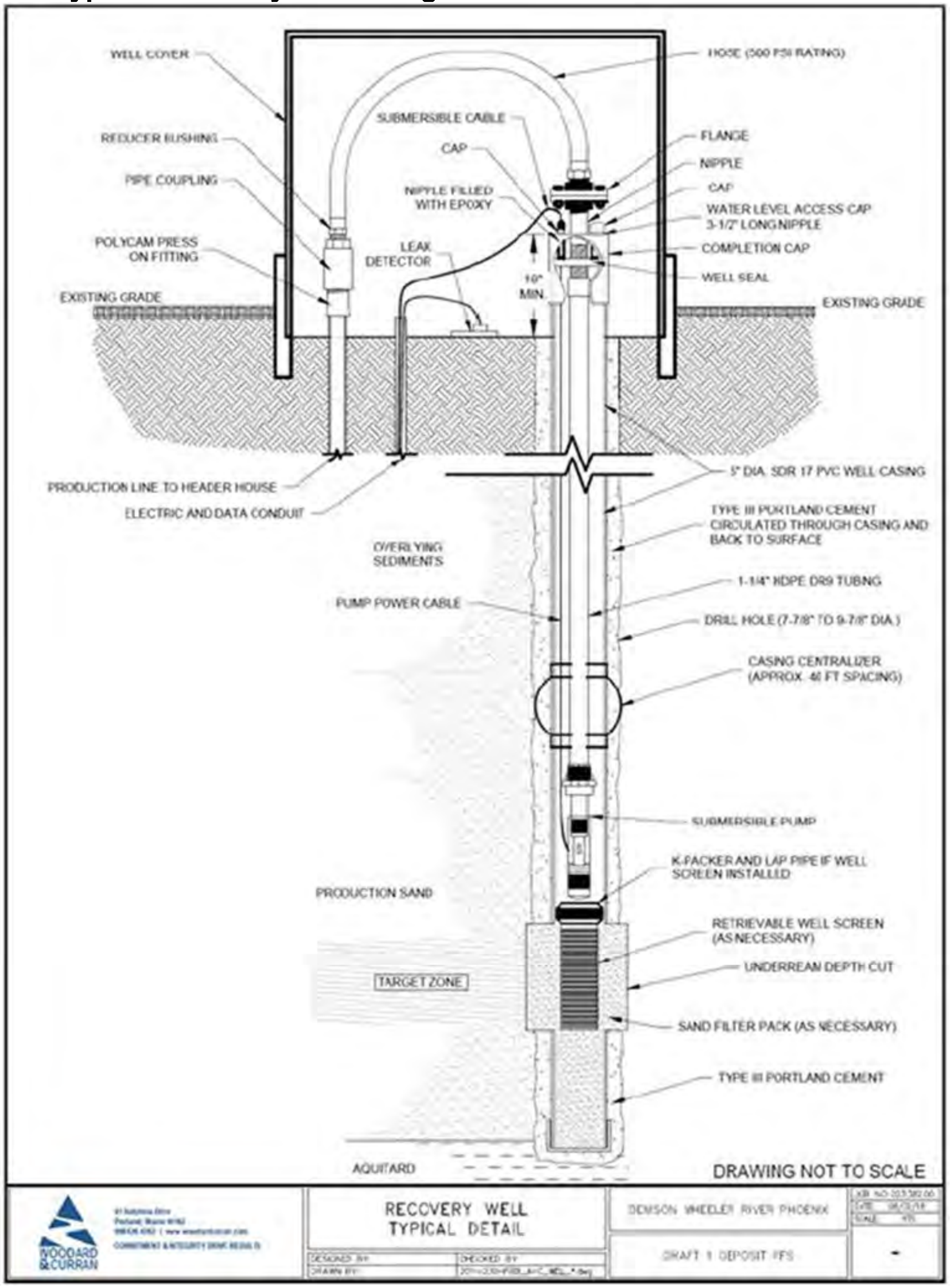
The second method is the GasGun system which connects to a wireline unit to deploy into the wells. The GasGun system involves a slow burning propellent designed to enhance natural fractures as well as create new pathways. GasGun technology generates high-pressure gas which creates pathways that extend up to 11 m into the formation to improve productivity or injectivity. The recovery and injection wells design allow for the well screen to be retrieved, enabling both methods to be used multiple times throughout the life of a well.

16.5.3.3. Well Design

Recovery, Injection, Monitoring

A standard well design will be used for the recovery, injection, and monitoring wells. A typical well is constructed of an outer 5-inch diameter SDR 17 PVC well casing. The outer casing is grouted in place. Well screens are attached to a K-packer and lap pipe to ensure retrievability if necessary. Well screen lengths installed in recovery and injection wells will be customized to match the thickness of the ore zone intersected in a particular well. Monitoring wells will have a standard six-metre screen length. If required, an inner recovery tube constructed of HDPE DR9 pipe attached to a submersible pump is installed within the outer casing. The wellhead is standard construction with multiple ports installed for cables and sensors. A typical recovery well design was provided by Woodard & Curran Inc. and modified by Denison to suit the project's specific needs (Figure 16-6).

Figure 16-6: Typical Recovery Well Design



(Source: Denison, 2023)

16.5.3.4. Freeze Holes

A standard well design will be utilized for all freeze holes. Wells will be drilled and cased with standard PQ diameter drill pipe and set at the specified depth. An additional inner delivery pipe is then installed within the PQ diameter pipe leaving an open annulus between the two. The delivery pipe is designed to deliver chilled brine to the bottom of the freeze hole where it returns up the annulus between the delivery pipe and an outer freeze pipe to a depth of approximately 250 m.

16.5.4. Production

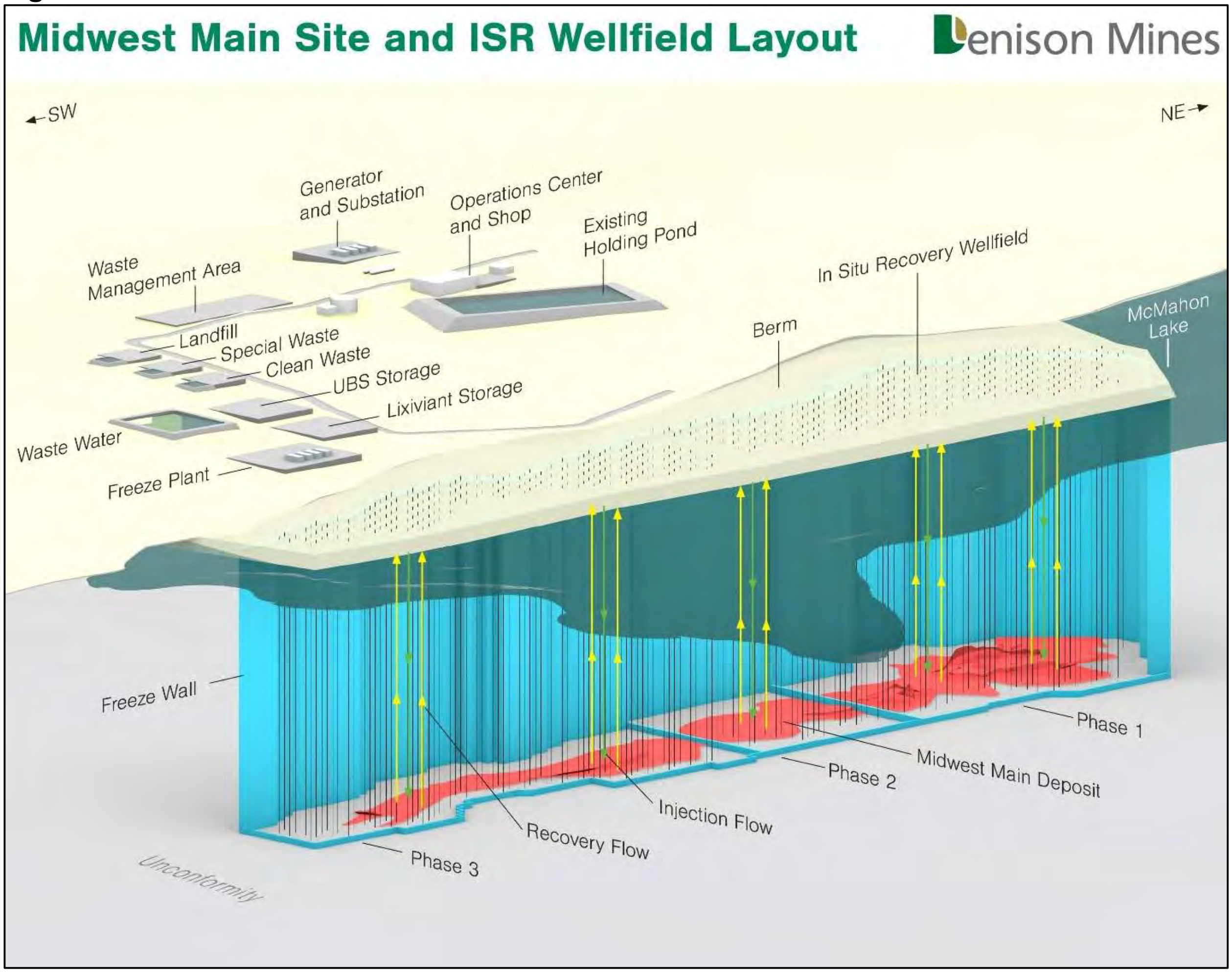
The uranium ISR process proposed in this study will involve the dissolution of soluble uranium from the mineralized host rock at low pH ranges using acidic solutions. The acidic solution will dissolve and mobilize the uranium, allowing the solution containing the dissolved uranium to be pumped to the surface for temporary storage in UBS storage ponds. The UBS will then be transferred from the UBS storage ponds to McClean Lake for uranium removal, drying, and packaging. Production flow rates will be maintained higher than injection rates to induce an inward hydraulic gradient, which is the primary means of preventing potential contaminant migration from the deposit. Additionally, the entire mineral resource will be isolated from the surrounding aquifer by the freeze wall providing a further measure of containment.

16.5.5. Wellfield Piping System

The wellfield pipelines will transport the wellfield solutions from the lixiviant storage tank to the injection wells and from the recovery wells to the UBS storage tanks (Figure 16-7). The flow rates and pressures of the individual well lines will be monitored in header houses. This data will be transmitted to the operations center for remote monitoring through a master control system. Through the master control system, the user will be capable of controlling header house production lines remotely. Double contained high density polyethylene (HDPE) piping (or equivalent) will be used in the wellfields and will be designed and selected to meet design operating and environmental conditions.

The lines from the wellfield, header houses, and individual well lines will be freeze protected and secured to minimize pipe movement.

Figure 16-7: Midwest Site Plan



(Source: Denison and Engcomp, 2025)

16.5.6. Header Houses

Header house buildings (header houses) will be used to distribute the mining solution to injection wells and collect the UBS solution from recovery wells. Each header house will be connected to two production trunk lines. One of the trunk lines will be used for receiving barren mining solution from the feed tank and the other will be used for conveying UBS back to a tank for transportation to the mill via truck. The header houses will include manifolds, valves, flow meters, pressure meters, and other instrumentation, as required, to fully operate and control the process. This monitoring and control of the system allows the operators to individually adjust each recovery or injection well.

16.5.7. Wellfield Reagents, Electricity and Other Consumables

The wellfield production has been targeted at a steady state of 6.1 Mlbs/year. Due to the consistent production rate and assumed consistent nature of the deposit, wellfield reagents, electricity, and other consumable costs are expected to be consistent each year. Reagents, electricity, and other consumables have been estimated based on this production rate and have been included in the annual operating costs.

16.5.8. Mining Equipment

Equipment for establishing the wellfield and drilling the wells are standard wireline diamond drill rigs, skidders, dozers and trucks. Truck mounted pump and coiled units will also be utilized to conduct permeability enhancement of the individual wells at depth. In addition to drilling equipment, wellfield operations will also utilize submersible pumps, hoists and each well will be equipped with a wellhead assembly, with appropriate valves and other instrumentation to facilitate flow in either direction or for operations monitoring.

Operations and maintenance activities will use moderately sized mobile equipment for testing and maintenance, such as a light duty crane, front-end loaders, 4X4 trucks and all terrain vehicles. Additional hoists will also be utilized to change out pumps and maintain wells as necessary.

16.6. Development and Production Schedule

16.6.1. Estimated Production Rates

The mining approach is governed by the rate of mineral extraction and the duration of the mine development, mineral extraction, processing, and closure. The following describes each of these mine development and operation components.

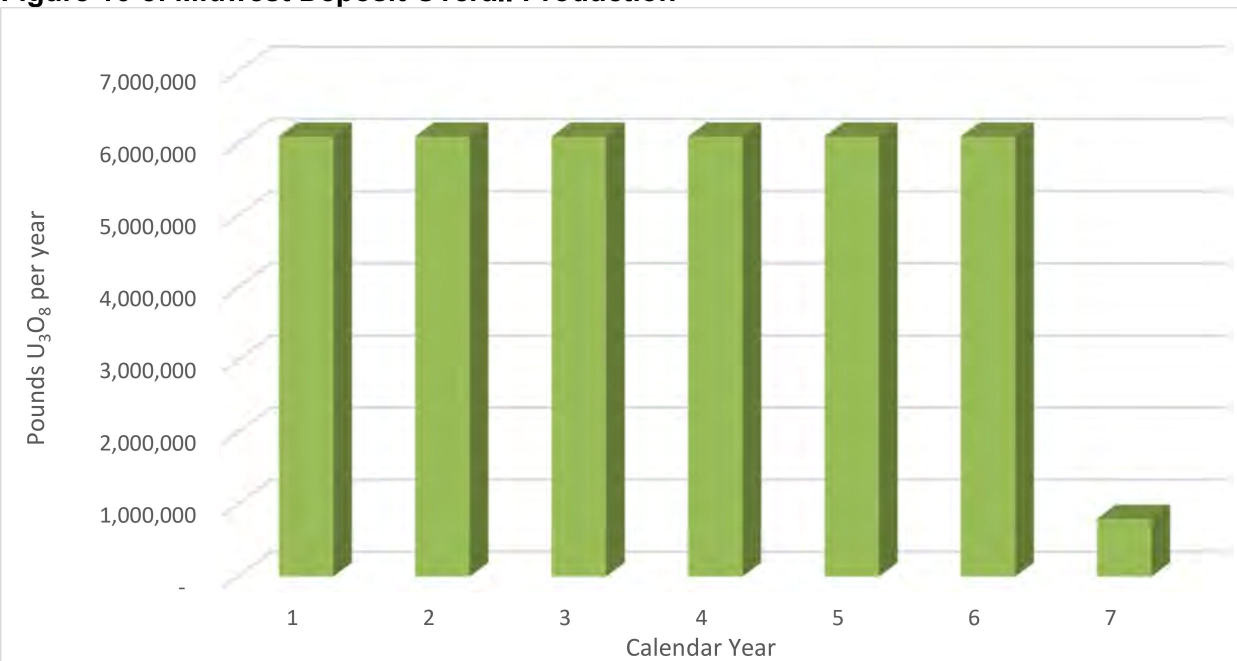
Table 16-1: Midwest Production Rate Assumptions

Project Summary	Rate	Unit
Individual Well – Flow Rate	1.14	m^3/h
Wellfield – Average Flow Rate	36.3	m^3/h
Average Head Grade	7.5	g/L U
Total Annual Production	6,100,000	lbs U_3O_8/yr
Mining Recovery	81	%
Mineable Resource	46,200,000	lbs U_3O_8
Recoverable Uranium	37,400,000	lbs U_3O_8
Mine Life	6.14	Years
Drilling Method	Diamond Drilling	
ISR Pattern	5	Spot Pattern

The development plan is subject to change due to extraction schedules, variations with production area recoveries, plant issues, economic conditions, etc. Uranium recovery head grade, or concentration, of the uranium bearing solution is assumed to average 7.5 g/L over the entire production schedule.

Production is expected to achieve nearly 6.1 Mlbs annually and the project has just over 6.14 years of effective operational life. Total recovered uranium is 37.4 Mlbs U_3O_8 life of project, which is based on an estimated mining recovery of 81%.

Figure 16-8: Midwest Deposit Overall Production



(Source: Denison, 2024)

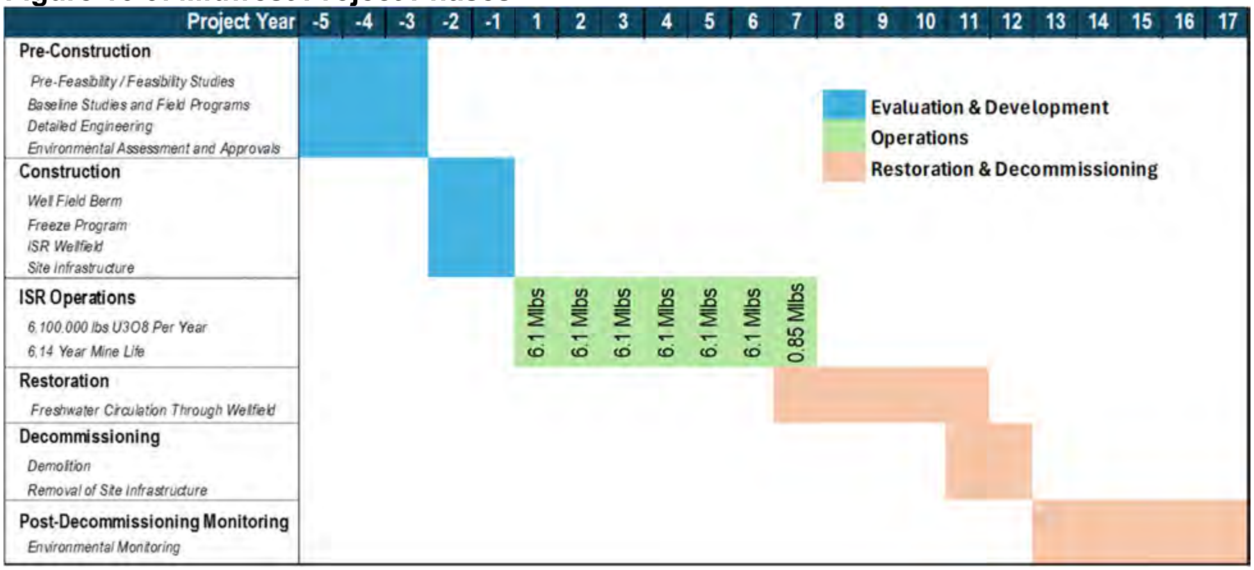
The production rate has been derived on the assumption that a total wellfield flow rate of 36.3 m^3/h can be achieved with an average head grade of 7.5 g/L U.

16.6.2. Mine Development Sequence

Mining of the Midwest Main deposit is expected to involve three phases (Figure 16-9):

1. Evaluation & Mine Development
2. Operations
3. Restoration & Decommissioning

Figure 16-9: Midwest Project Phases



(Source: Denison, 2024)

16.6.2.1. Evaluation and Mine Development Phase

This phase is notionally split into "pre-construction" and "construction" sub-phases. During the pre-construction phases, work incudes submission and approval of the project EIS, prefeasibility and feasibility study work, baseline studies and field programs, as well as completion of detailed engineering.

Once environmental submissions are in place and advanced study work commences, the Owner's team can be engaged to complete such study work, manage field work in terms of geotechnical hydrogeology, and site scale leach testing programs.

Ideally timing of these pieces of activity will coincide with the execution of a definitive feasibility study should the economics of the project continue to be attractive.

Following receipt of environmental approvals and permits, as well as joint venture sanction of the project, the construction sub-phase may commence which is expected to include the following key construction activities.

- Site Preparation:
    - Establishment of the freeze wall and ISR well fields. This involves building a berm in a portion of the lake adjacent to the western shore to provide a platform for the establishment of all the wells. Clean and special waste pads will also be

constructed to facilitate the storage of wellfield and freeze hole drill core and cuttings. Should the project proceed to the next phase of study, considerable effort will be required in the design and execution planning of the berm construction as it will likely be the most significant piece of infrastructure within the project scope.

- Freeze Hole Drilling:
  - The next step in the development of the project will be the drilling and installation of the ground freezing system, which involves drilling freeze wells, connecting brine manifolds between wells, and establishing supply and return lines to the freeze plant. The freeze plant and piping system will need to be in operation for approximately 12 months to develop a sufficient frozen barrier within the surrounding sandstone. The ground freezing program for the Midwest Main deposit will proceed in three phases as the project areas are prepared for production.
- Well Field Drilling:
  - Wells will be established concurrent with freeze wall development. Wells will be brought online on an annual basis as required to maintain production guidance.
- ISR Wellfield drilling, including any PFS based test wells, would have the additional benefit of providing further confirmation of the characteristics of the deposit.

16.6.2.2. Operations Phase

The construction period will end with the first production of yellowcake. Operations for the ISR deposit are planned to last 6.14 years. It is anticipated that the operation will be operated with a total of approximately 20 site employees, excluding those working at the McClean Lake Mill, along with select external contractors.

16.6.2.3. Restoration and Decommissioning Phase

Following operations there is an approximate five-year period where fresh water is circulated through the wellfield to flush all lixiviant and other remaining contaminants from the area that underwent leaching. This is designed to restore the mined area back to near original ground water conditions, and once complete, the freeze wall can be allowed to thaw.

At this point, the wellfield has been flushed and all other required site remediation and infrastructure removal can occur. Site infrastructure will be removed, and the ponds filled in and graded. Upon completion of physical decommissioning activities, an estimated 5-year period of post-decommissioning environmental monitoring will commence.

16.6.3. Definition Drilling

Most of the Mineral Resource is in the Indicated category so it is expected that little additional delineation drilling will be required during the initial phases of development. However, the 3rd phase of development, which currently consists of entirely Inferred Mineral Resources, requires additional delineation drilling to bring those resources into the Indicated category (~15 m nominal drillhole spacing). Additional core will be recovered from drilling required to establish the ISR wellfield and freeze wall providing further opportunity for assessment.

17. RECOVERY METHODS

17.1. Mineral Processing – McClean Lake

Final mineral processing for Midwest UBS production is assumed to occur at the McClean Lake Mill. The mill is owned by Orano (77.5%) and Denison (22.5%) pursuant to the terms of the McClean Lake Joint Venture agreement. Orano is the operator/manager of the mill. The mill is currently processing material from the Cigar Lake mine (up to 18 Mlbs U_3O_8/yr) pursuant to a toll milling agreement; however, the mill has approximately 6 Mlbs U_3O_8/yr in additional licenced processing capacity, being licensed to process up to 24 Mlbs U_3O_8/yr.

Based on an annual production rate 6.1 Mlbs of U_3O_8, UBS from the Midwest deposit will make up a moderate portion of the entire McClean Lake Mill feed (estimated in the range of 25%). Final drummed “yellowcake” will be a blend of the entire feed stream through McClean. The Midwest deposit is a complex feed source containing elevated amounts of contaminants, especially arsenic and nickel. Previous evaluation of processing methods for the Midwest deposit involved feeding raw ore to the McClean Lake Mill. Mining via ISR is expected to reduce tailings deposited to the McClean Lake TMF and reduce contaminant loading to the tailings circuit compared to conventional mining and milling.

The scope of this study has not considered what other ores will be co-milled with the Midwest UBS, and therefore the final product make-up cannot be determined. The McClean Lake Mill currently uses all necessary reagents for ISR mining within the mill. It is assumed that the McClean Lake Mill would be able to process the UBS solution recovered from the ISR wellfield into a sellable yellowcake product.

17.1.1. Transportation

Delivery of reagents either created at the McClean Lake Mill or procured and delivered directly to the Midwest ISR wellfield, and the delivery of recovered UBS solution to the McClean Lake Mill can be accomplished via truck transportation utilizing existing road infrastructure.

It is assumed that standard chemical tanker trucks can be utilized by adhering to the specific regulation conditions that the UBS uranium concentration is kept below 3%, which classifies the solution as LSA-1 (Low Specific Activity) material. The conditions allow the transport of the UBS in IP-1 (Industrial Packaging) rated packaging. IP-1 rated packaging does not require additional radiation shielding if the contents emit less than 10 mSv/h at 3 m distance. Based on Denison’s experience from handling similar UBS concentrations in the Athabasca Basin, it is believed the UBS from the Midwest site will be below 10 mSv/h at 3 m distance and the IP-1 rated packaging designation will be suitable to transport the UBS.

17.1.2. Mill History and Flowsheet

The McClean Lake Mill is specially designed and constructed to process high grade uranium ores in a safe and environmentally responsible manner. The mill uses sulphuric acid and hydrogen peroxide leaching and a solvent extraction recovery process to extract and recover the uranium product from the ore.

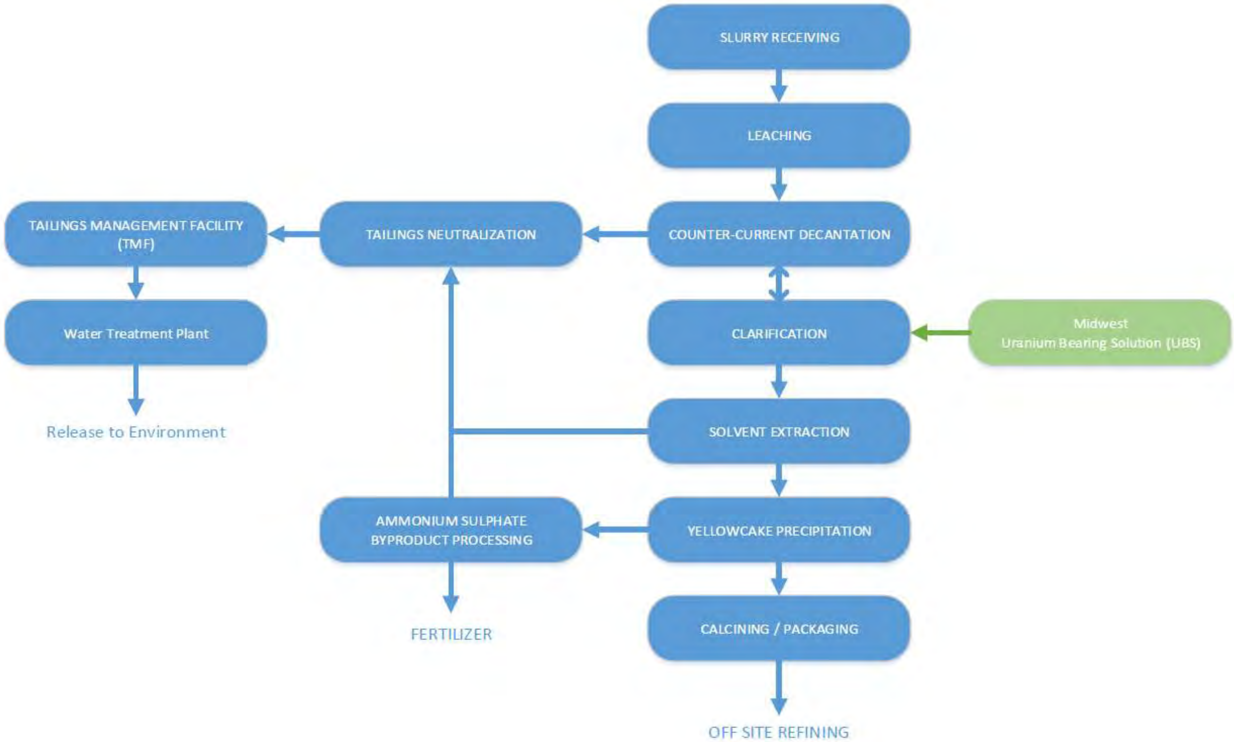
The McClean Lake Mill was designed as a typical acid leach uranium mill. During the design of the mill, allowances were made for potential future mill expansion and for the ability to process high-grade uranium ores, as it was thought that higher grade feed, and feed from other off-site sources, may be processed during its life.

The mill operating licence has been updated and expanded multiple times during the mill's life, with the most recent approval obtained in 2017 to process 24,000,000 lbs U_3O_8/yr with a 10-year licence renewal to June 30, 2027 (CNSC, 2017). In recent years the McClean Lake Mill produced up to 18 Mlbs U_3O_8 pursuant to the toll milling agreement with the Cigar Lake Joint Venture.

The processing cost for Midwest could be significantly higher or lower as compared to the current cost of processing Cigar Lake ore; it will depend on the status of other ore sources at the time of Midwest production.

A process overview of the McClean Lake Mill is provided in Figure 17-1.

Figure 17-1: Mill Process Overview



(Source: Engcomp)

17.1.3. Current Mill Configuration and General Process Description

The design basis for Midwest processing is the co-milling of both Midwest UBS and other ore sources. Current production rates of over 18 Mlbs/yr have been achieved using Cigar Lake ore through the mill. Processing cost per pound of uranium will assume a production rate at McClean of 18 Mlbs/yr; 6 Mlbs/yr of this total will be supplied by Midwest.

The mill is currently configured to be fed from either the ore stockpile and grinding circuit or from the ore slurry receiving facility, which is currently used to receive high-grade material from Cigar Lake. Midwest will require production storage large enough for several days of UBS and lixiviant at both the Midwest and McClean Lake Mill sites to accommodate wellfield production when the McClean Lake Mill is down for maintenance, or if the Midwest operation is down. Any significant production outage or extended shutdown at McClean Lake will result in the Midwest ISR wellfield being idled or recycled. Storage of UBS will be done with tanks.

Midwest UBS held in the McClean Lake UBS storage tanks and will be pumped into the clarification circuit. Note that the processing of UBS through the McClean leaching circuit was considered, but could result in several issues including reduction of residence time through leaching plus added complexity of metallurgical accounting, and thus this approach was deemed unfavourable.

The Mill's Counter Current Decantation (CCD) circuit consists of six thickeners in series and is utilized to separate the uranium containing solution from the barren residual solids. Wash water is added to minimize the aqueous uranium in the final solids from the circuit, which are directed to a tailings neutralization circuit.

In order to prevent crud formation in Solvent Extraction (SX), the UBS from CCD is pumped to the clarification circuit, which consists of a clarifier and a set of sand filters to remove any suspended solids from the solution. It is then sent to the two parallel SX circuits.

In SX, the solution is contacted with an organic solvent, whereby the uranium is selectively transferred to the organic along with molybdenum. The uranium and molybdenum are then stripped out of the organic phase using anhydrous ammonia into an ammonium sulphate solution, resulting in a purified (with the exception of molybdenum) and concentrated uranium solution. Arsenic is highly rejected in this circuit.

The pregnant strip solution is then passed through two trains of carbon columns, used to remove any molybdenum, which is an impurity in the final uranium product. The further purified solution is then advanced to the yellowcake precipitation circuit, where anhydrous ammonia is used to precipitate ammonium diuranate (ADU). The ADU is then thickened, densified, washed, and then dewatered though a centrifuge, where it is then advanced to a calciner. The calciner produces a high purity yellowcake product that is then packaged for off-site shipment and processing.

Ancillary circuits supporting the uranium recovery process include:

- An acid plant used to produce sulfuric acid from molten sulfur used in multiple circuits of the process.
- A ferric sulphate plant used to produce the necessary ferric sulphate for leaching, and tailings neutralization.
- An oxygen plant to support the ferric sulphate plant.
- An ammonium sulphate crystallization plant, which treats the bleed stream from the yellowcake precipitation circuit and produces a saleable ammonium sulphate fertilizer product.
- A tailings management facility (TMF) to safely store the final residues from the process.
- A water treatment plant to treat wastewater from the milling process, and water reclaimed from the TMF prior to discharge to the environment.

- Reagent receiving and storage facilities, including a lime slaking plant, to support the various mill circuits.
- General plant utilities, including process and freshwater systems, cooling water systems, compressed air systems, and steam.

17.1.4. Tailings Neutralization

The flowrate may increase to the tailings neutralization circuit during processing of Midwest UBS. No change to the tailings neutralization circuit is expected.

17.1.5. Clarification

Changes are not expected to the existing clarification circuit, other than new piping for Midwest UBS to feed the circuit. The Midwest feed stream will cause an increase in the aqueous flow rate to the clarification circuit.

17.1.6. Solvent Extraction

Modifications are not expected to be required for the solvent extraction circuits. Maximum sustained capacities to date indicate that continuous operation of the two existing solvent extraction circuits for a combined rate of 24 Mlbs/yr U_3O_8 should be possible without any modifications.

17.1.7. McClean Lake Tailings Management Facility (TMF)

Tailings storage at the McClean Lake facility are provided by the existing tailings management facility. The Canadian Nuclear Safety Commission (CNSC) has approved multiple expansions to the TMF over the last several years. The expansions, along with the existing capacity in the TMF pit, should provide adequate storage for the impurities in the UBS solution from Midwest.

Based on currently available metallurgical information, the expected precipitate by-products generated during the Midwest operation phase are mainly precipitates of iron, arsenic, nickel, and gypsum.

The McClean Lake Mill process equipment and infrastructure is currently able to deposit the precipitates in the TMF. Precipitate volumes resulting from processing UBS from the ISR mining method are expected to be negligible when compared to tailings generated from more conventional mining methods.

17.2. Metallurgy and Mineral Processing – Midwest Mine Site

The Midwest deposit is located in close proximity to the McClean Lake Operation property. Sources for this review included information outlined in Section 2.4.

Discussion of the Midwest ISR method for uranium processing will be focused on the well field lixiviant inputs and characteristics of the UBS transported to the McClean Lake mill.

Figure 17-2: Location of Nearby Deposits in the Athabasca Basin

(Source: Denison, 2024)

17.2.1. Lixiviant

In general, acid leaching tests on suitable uranium ores has shown:

- Increasing reagent concentration generally increases leaching rates but can also increase contaminants of concern in the UBS, as well as increase the tailings generation due to neutralization of acid as gypsum.
- Increasing residence time improves reagent consumption,

- Lower leaching temperatures reduces leaching rate, and
- Increasing host rock surface area with a permeability enhancement technique improves overall recovery.

These are important considerations when contemplating the ISR mining method for high-grade Athabasca Basin deposits, in a low temperature and low permeability environment.

The Midwest ISR mining method is much different than standard ISR in other parts of the world. Above the wellfield collars, processes are very similar to most ISR operations; however, below the collar we see a different process for leaching.

The proposed mining method uses a freeze wall to isolate the mining zone from the regional groundwater system. Ground water and ground temperatures of the deposit are assumed to be approximately 10 degrees C near the mining area. It is likely that the temperature of the deposit, especially interior or higher-grade areas, will warm over time through injection of lixiviant and exothermic reactions between lixiviant and ore. Additional modeling can be conducted in the future to better understand potential interaction of exothermic reactions with the freeze wall.

Lixiviant contact area (‘sweep efficiency’) will be maximized by use of the MaxPERF tool or other permeability enhancement techniques.

Wellfield connectivity will be within specific well patterns, rather than across the entire wellfield. Hydraulic gradient within each well pattern will be created by injection and recovery wells, with the ability to reverse flows to maximize recovery and provide the required leach time.

Historical metallurgical testing has achieved over 20 g/L uranium in the UBS with conventional CSTR leaching, and 6.6 g/L uranium during the bottle roll testing. The bottle roll tests showed assay results as high as 6.6 g/L U; however, the high-grade domain makes up nearly 70% of the resource with an estimated average grade of approximately 14.5% U, and therefore the study uses an average UBS grade of 7.5 g/L U.

Although further test work for reagent addition rates is required, enough work has been done to provide a range for cost estimating the PEA study reagent cost. Midwest metallurgical leach tests on two composite samples provided insights as to the relationship of acid strength, leach time and ore grade as illustrated in Table 17-1.

Table 17-1: Midwest Composite Bottle Roll Leach Tests.

Feed Sample Uranium Assay (%U)	Acid Consumption (kgH_2SO_4/kgU)	Pore Volumes (PV)	Uranium Recovery (%)	Arsenic Recovery (%)	Max UBS Head Grade (g/L)
2.1	10.6	52	80.3	55.9	5.4
9.2	2.9	84	66.6	44.5	6.6

The leaching tests were performed at atmospheric pressure (1 atm), 10 degrees C starting temperature.

The two composites chosen to represent the Midwest deposit were a combination of 25 coarse reject samples from 4 drillholes from the first phase of mining planned for Midwest, which suggest H_2SO_4 consumption rates of between 2.9 to 10.6 kgH_2SO_4/kgU.

17.2.2. Uranium Bearing Solution

The UBS will be similar in nature to the current leached solution at McClean Lake in that it is an acidic and oxidized solution containing uranium and other impurities. It is expected that the arsenic content of the UBS will be elevated due to the nature of the deposit and is assumed that the McClean Lake Mill can process the UBS into an acceptable product, especially when combined with other feed streams.

17.3. Recovery

Table 17-2: Recovery and Production Data

Project Summary	Rate	Unit
Average Head Grade	7.5	g/L U
Total Annual Production	6,100,000	lbs U_3O_8/yr
Mining Recovery	81	%
Resource	46,200,000	lbs U_3O_8
Recoverable Uranium	37,400,000	lbs U_3O_8
Mine Life	6.14	Yr

17.4. Conclusions

- The McClean Lake Mill is suited to process ISR solution from the Midwest deposit.
- The Clarification circuit is the preferred destination for incorporating Midwest ISR UBS solution into the mill. This option does not reduce residence time in the leaching circuit or

increase the rise rate in the CCD thickeners and is easier for metallurgical accounting while co-milling uranium sources from different JVs.

17.5. Recommendations

- Complete a more robust costing and mass balance study on mill inclusion of ISR solution from the Midwest deposit.
- Study the reagent manufacturing supply capacity of the McClean Lake Mill compared to consumption rates to determine bottlenecks.
- Plant upgrades may be required depending on reagent consumption. A trade-off study should be completed for reagent delivery versus plant upgrades, as applicable.
- Tailings aging tests for the McClean Lake TMF should be conducted to ensure stable deposition and no long-term issues with Midwest deposition.
- Tailings characterization tests should be conducted to further understand density, generation rate, and geochemical properties.
- A mill processing study should be completed on co-milling of Midwest ISR UBS solution with other uranium assumed feed sources to the McClean Lake Mill.

18. PROJECT INFRASTRUCTURE

The Midwest Project, which contains the Midwest Main and Midwest A deposits, is not an advanced property at this time. However, some project infrastructure from historical exploration and test mining remains in place at the Midwest Main deposit site, including:

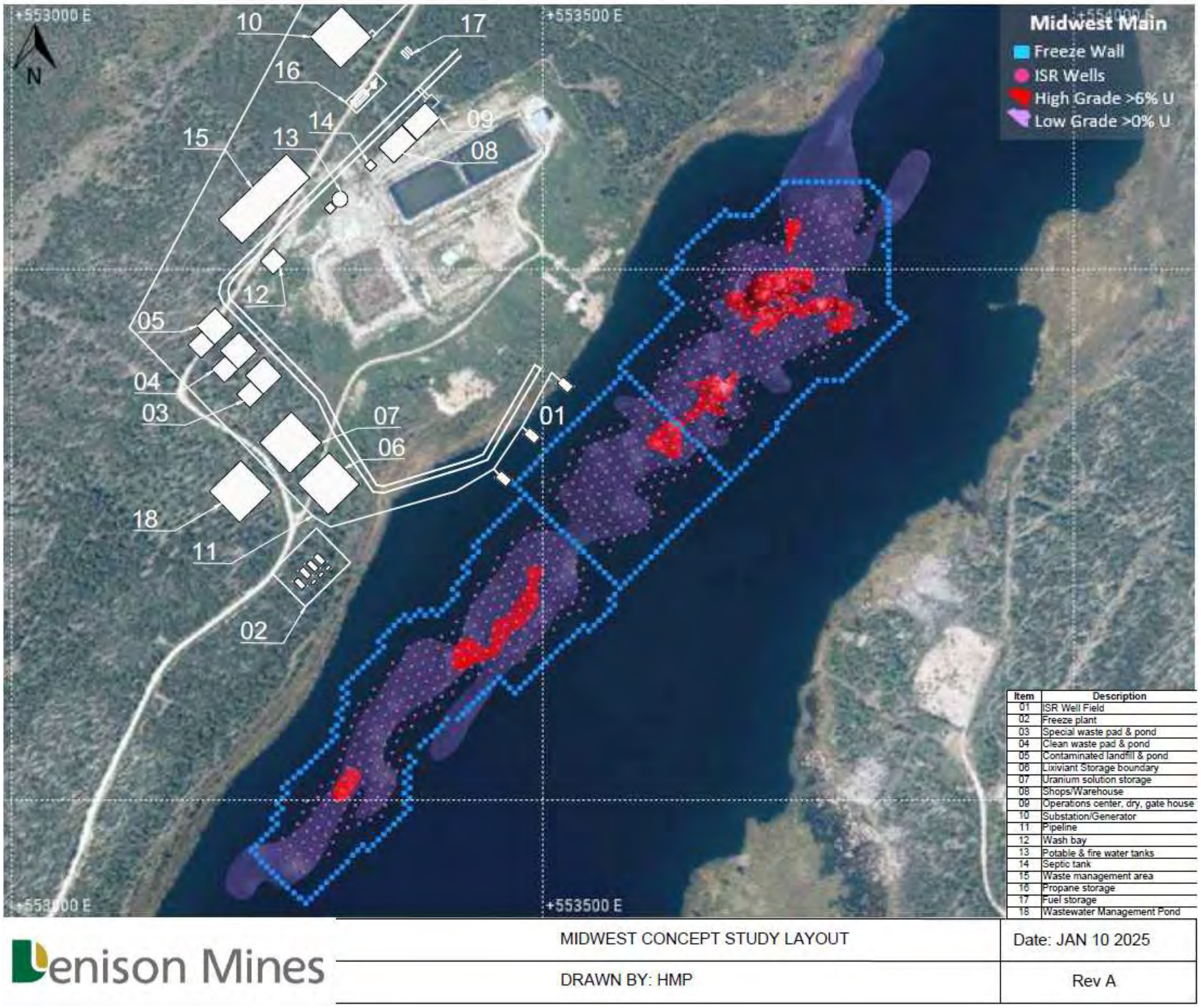
- Covered shaft and test mine headframe (includes some underground workings);
- Inactive water treatment plant and pump house;
- Concrete ore pad;
- Settling ponds (x 2);
- Dam across the Mink Arm of the South McMahon Lake (breached by spillway-type structure);
- Pipelines (on surface);
- Former core storage area;
- One auxiliary building;
- Groundwater monitoring wells; and,
- Associated access and site roads/trails.

The nearby McClean Lake property includes the former mining sites of the JEB and Sue-series deposits, and the unmined Sue D, Sue F, and McClean deposits.

The site surface infrastructure for the Midwest Main ISR operation is modelled after the applicable elements of project infrastructure identified by other Athabasca Basin ISR development projects.

Refer to Figure 18-1 for an overall layout of the Midwest Main site.

Figure 18-1: Midwest Project Site Layout



Item	Description
01	ISR Well Field
02	Freeze plant
03	Special waste pad & pond
04	Clean waste pad & pond
05	Contaminated landfill & pond
06	Lixiviant Storage boundary
07	Uranium solution storage
08	Shops/Warehouse
09	Operations center, dry, gate house
10	Substation/Generator
11	Pipeline
12	Wash bay
13	Potable & fire water tanks
14	Septic tank
15	Waste management area
16	Propane storage
17	Fuel storage
18	Wastewater Management Pond

(Source: Denison, 2025)

18.1. Access Road and Site Preparation

Main land access to the site is from existing roads. On site, access to the wellfield will be achieved through the use of existing on-site roads and the construction of additional on-site roads.

The access road to the ISR well field will form the main transportation route of the project with all infrastructure established near the wellfield berm and on either side of the road. Trucks will use this for transportation of UBS and lixiviant.

Development of the ISR wellfield will be the single largest piece of site preparation of the project. The wellfield site will be comprised of two phases of construction, split approximately in half for an approximate total volume of 1.9 million cubic meters of material. A containment berm will be installed around the outside of the wellfield berm and is expected to be constructed from larger rip rap type rock.

Given that all the freeze and ISR wells are vertical it is expected that production infrastructure can be laid on the ground as production piping will be constantly changing and vehicle transportation between wells should be possible.

18.2. Camp

Due to the relatively short expected duration of mining activities for Midwest and the mine site's proximity to existing lodging facilities (approximately 3 km to Points North Landing), no camp is envisioned to be required on site.

Points North Landing, located within a short drive from site, has current lodging capacity for 90 personnel. Should additional accommodations be required, the camp facilities located at McClean Lake may be considered.

18.3. Operations Centre

The operations centre has been envisioned to hold a maximum of 25 persons. It is anticipated that skid mounted modularized trailers will meet the needs of the project. The modularized units will include an office space, a change facility/dry, washrooms and a nurse station. It is expected that these units will be brought in fit for purpose and will include all relevant septic and power connections.

Minimal maintenance activities are expected to take place at the site with all major repairs completed at surrounding area facilities (Points North Landing & the McClean Lake operations).

18.4. Fuel Storage and Dispensing

A diesel and gasoline split compartment tank will be installed at the Midwest site. This fuel storage will be used to facilitate fueling both owner and contractor equipment. Total tank volume will be 25,000 L and will feature double walled construction providing secondary fuel containment. The fuel tank will be equipped with overfill prevention valves, bottom loading nozzles, and vents. The fuel tank assemblies typically come equipped with full-length platform access and are mounted on I-beam skids for transport to site.

Fuel is also available from Points North Landing or McClean Lake.

18.5. Propane Storage and Dispensing

A propane storage and distribution system will be rented for the project site. The propane infrastructure will feature storage tanks, vaporizers, and a propane bottle fill station. The system capacity will be sufficient to supply eight days of on-site storage at maximum consumption. Propane is anticipated to be delivered to site on a weekly basis.

18.6. Electrical Power

Power to the site is envisioned to come from the existing SaskPower substation southwest of Points North Landing. A trade-off study for sources of power for the Project was completed, comparing on-site generated power against installation of line power, and the results favoured line power. The power transmission line to the site would be approximately 6.5 km long and is envisioned to be a 25 kV service. Estimated by SaskPower, the cost to install an electrical line at CAD$0.4M per km has been included in the project estimate.

18.7. Back-up Electrical Power

Back up power will be available through standalone generators. One generator will be dedicated to the freeze plant system and another one dedicated for imperative services (emergency lights, fire suppression system, etc.).

18.8. Freezing Plant Surface Infrastructure

The Midwest freeze plant is expected to require a total capacity of 2,200 tonnes of refrigeration. It will be constructed on surface based on a modular design for ease of installation and operation. The design includes:

- Modular freeze plant skids,
- One electrical/control skid,
- Evaporative condenser skids, and
- One insulated brine tank.

The freeze plant system being proposed for this project is “modular”, which means that a shutdown in any one unit will not result in complete plant downtime. Having one modular unit offline during early freezing will mean the brine temperature supplied to the ground will warm slightly and extend the freeze duration, but breakdowns in new equipment near to their commissioning are not typical. If breakdown or maintenance takes a freeze module offline once the freeze is established, that is not such a concern since, over time, the ground heat load tends to decay and eventually a module will be intentionally taken offline to serve as back-up.

18.9. Water Supply

The site freshwater distribution system is designed to provide fresh water to the fire water system, the ISR wellfield and the wash bay. The water is expected to be supplied by underground wells or the nearby lake. Potable water consumption requirements are expected to be met through bulk potable water delivery to the infrastructure buildings potable water tanks, with 5-gallon water dispensing stations in buildings for consumption.

18.10. Water Management

Wastewater management at the Midwest site will be handled as two separate wastewater streams. Specifically, there will be domestic wastewater production and operating wastewater production. Domestic wastewater will be discharged into a septic tank and removed from site for offsite processing by vacuum trucks. Operational wastewater will be captured through the use of a 5,000 m^3 wastewater management pond. It will be sized and constructed to capture rainfall during a 1 in 100-year event, as well as all expected operational wastewater. The site will be graded to capture any potentially contaminated water to this pond, and it will ultimately be transported to McClean Lake for treatment or disposal.

18.11. Waste Management

A contaminated landfill will be required on site unless radioactive waste can be transported to the McClean Lake contaminated landfill. All other waste generated by operational activities at Midwest is expected to be temporarily stored onsite and managed through a third-party waste management firm for offsite disposal. The waste management area is shown on the site layout (Figure 18-1).

18.12. ISR Wellfield Waste Rock Management

The waste rock cuttings generated from the ISR drilling will be managed with two waste pads: one special waste pad where mineralized cuttings will be stored in barrels and shipped for milling at McClean Lake and one clean waste pad that will remain onsite through to decommissioning.

18.13. UBS Handling Infrastructure

Two 3,000 m^3 retention ponds are anticipated to be required to facilitate production rate fluctuations of the ISR wellfield. Each pond is expected, at normal production rates, to allow for almost three days retention time of required lixiviant solution and UBS. The ponds are assumed to be double lined with leak detection for environmental protection.

19. URANIUM MARKET AND CONTRACTING

19.1. The Uranium Industry

Throughout 2024, the long-term price of U_3O_8 consistently increased, finishing the year up approximately 16% from the end of 2023. This comes after a historical increase during 2023 of 33% from USD$51 per pound U_3O_8 at 2022 year-end to USD$68 per pound U_3O_8 at 2023 year-end. In January 2024, the spot price for uranium surpassed USD$100 per pound U_3O_8, a level viewed by market commentators as an important threshold. Prior to 2024, the spot uranium price had not been above USD$100 per pound U_3O_8 since 2008. For the balance of 2024, the spot price converged with long-term price at around $80 per pound U_3O_8 before falling slightly near the end of the year.

Recent spot price volatility can largely be attributed to geopolitical turmoil, equity market fluctuations, and spot market illiquidity but is seen as largely disconnected to the positive underlying market fundamentals. The current uranium market environment demonstrates notable similarities to the last time the uranium prices went above USD$70 per pound. In the early 2000s, highly enriched uranium ("HEU") and other former Soviet Union supplies remained a market hangover from the Cold War with elevated inventory levels weighing on prices for years with limited new supply coming online. Ultimately, this period of low prices, compounded by supply shocks, created a favorable environment for uranium prices in future years when paired with significant expected demand growth driven by ambitious plans for nuclear power growth in several countries. Meaningful new sources of supply were scarce, due to years of under investment, at a time of rapid demand growth. The Japanese tsunami and associated Fukushima nuclear incident in 2011 disrupted the market and set in motion a similar period of low prices and excess inventories. Given the sudden shut-down of the Japanese nuclear fleet and other reductions in demand, excess uranium inventories and excess enrichment capacity, which provided the ability to effectively create additional uranium supply through 'underfeeding', catalyzed a downward shock to price. During this extended period, prices were below the cost of production for many producers, leading to the shutdown of multiple mines and a sharp reduction in investment in new exploration and development activities across the sector. After years of supply discipline, and the accumulation of physical uranium positions amongst financial investors, the market reached an inflection point followed by five consecutive years of long-term uranium price increases between 2020 and 2024, reflective of a market transitioning to be driven by the cost of future production rather than by the availability of surplus inventories. Looking ahead, the Company believes increasing demand for nuclear energy, coupled with a prolonged period of limited investment in new supply, creates supply-demand dynamics that are supportive of strong uranium prices for the foreseeable future.

19.2. Uranium Demand

There is global focus on the importance of nuclear power in enabling the achievement of carbon emission goals. This recognition was further enshrined as over 20 nations pledged to triple nuclear energy generation capacity by 2050 at COP28 in Dubai in December 2023. This support continued to grow with now over 30 nations pledging such support as of COP29 in Baku in November 2024. The Company believes this wide-spread government support for nuclear energy represents a paradigm shift that is expected to favorably impact nuclear demand fundamentals and ultimately supports the Company’s expectations for robust uranium markets. In addition to the renewed commitment in recent years to nuclear from powerhouse nations like Japan, Korea, France, and the United States, multiple governments in 2023 and 2024 adopted stances increasingly supportive of nuclear power generation, including the United Kingdom, Belgium, Italy, and Sweden. In 2024, there were numerous positive nuclear demand developments that have further added to the momentum from 2023, including various efforts in the U.S. to restart reactors. Notably, the Palisades plant in Michigan received a USD$1.5 billion loan from the U.S. Department of Energy to support its restart by the end of 2025. There is also increasing support from large technology companies that have announced partnership with nuclear utilities indicating a desire for reliable and emission-free electricity to meet expected growth in artificial intelligence and data centers electricity needs. This includes Microsoft commitment to support the restart of one of the Three Mile Island nuclear reactors and Amazon’s agreement to support small modular nuclear reactor projects with Dominion Energy.

Numerous notable nuclear reactor projects that had been in construction for a decade reached commercial operations in 2023 and 2024 including Vogtle 3 and 4 in the United States, Olkiluoto in Finland, Kakrapar in India, Shin Hanul 2 in South Korea and Barakah 4, in the United Arab Emirates. In China, additional reactors reached commercial operations, and construction began on a further five reactors. China continues to be a major source of growth for nuclear energy, with UxC LLC (“UxC”) projecting in its Q4’2024 Uranium Market Outlook report that China currently has 31 reactors under construction, and 12 new build projects in the licensing process. In Canada, Ontario Power Generation (“OPG”) announced refurbishment plans for its Darlington nuclear plant and ongoing refurbishment continued at the Bruce Power nuclear facility in Ontario. OPG also announced reactor life extension projects at the Pickering B station and has begun planning a new nuclear plant, which would accommodate up to 10,000 megawatts of new generation capacity.

Additionally, small modular reactors are being advanced in both Ontario and Saskatchewan. In Japan, two boiling water reactors (“BWR”) were restarted in 2024, becoming the first BWRs to restart since the 2011 Fukushima accident. Taken together, forecasts from UxC for global reactor units and nuclear capacity in 2035 is 552 units and 514 gigawatts electrical ("GWe") installed capacity (estimated as of Q4'2024) – representing a 30% increase in global nuclear power generation from 438 units producing 395 GWe as of December 2024. With expected growth accelerating, UxC's base case estimate of global uranium demand in 2035 increased 4%, from 240 million pounds U_3O_8 estimated as of Q4'2022, to 250 million pounds U_3O_8 estimated as of Q4'2023, and then increased a further 1% to 253 million pounds U_3O_8 estimated as of Q4'2024.

19.3. Primary Uranium Supply

On the supply side, UxC estimates primary uranium production for 2024 at 153 million pounds U_3O_8, which represents a 7% increase over 2023 production levels, largely due to the ramp-up of the McArthur River mine and various projects in Kazakhstan and the U.S.. On balance, 2024 is expected to result in a significant primary supply shortfall of approximately 18% of total demand, or 38 million pounds U_3O_8. In Q4'2024 UxC estimated 2025 primary production to increase to 170 million pounds U_3O_8, with the production increase being supported by increasing production from Kazatomprom in Kazakhstan. Additionally, UxC estimates secondary supplies for 2025 are projected at 25 million pounds of U_3O_8 equivalent ("U_3O_8e"), which is a significant reduction from 38 million pounds of U_3O_8e in 2024, 61 million pounds U_3O_8e of secondary supplies estimated in 2023, and 69 million pounds U_3O_8e in 2022. Strong secondary demand in past years has accelerated the process of drawing down these secondary sources of supply. With this rapid decline in secondary supplies, the market is expected to continue its shift from an inventory-driven market to a production-driven market in the coming years.

Nuclear sentiment also continues to be supported by an increased focus on energy security in the aftermath of Russia's invasion of Ukraine. While the Russian invasion continues to be the most impactful geopolitical event, the importance of security of supply was further magnified in July of 2023, as a military coup was waged in Niger which led to the withdrawal of foreign embassy personnel, a temporary shutdown of Orano's uranium mining operations, and revocations of the operating license for Orano's Imouraren uranium mine and GoviEx Uranium's Madaouela uranium project. In 2022, Niger ranked as the seventh largest uranium producing country. The Russian invasion of Ukraine in February 2022 continues to cause significant turmoil in the global nuclear fuel market. Russia is a significant supplier of enriched uranium to the rest of the world, operating 46% of the world's uranium enrichment capacity. In 2021, Russian enrichment comprised 31% of European Union enrichment purchases and 28% of US utility enrichment purchases. While deliveries of material from Russia to Western utilities continue, increased demand for non-Russian supply has supported increased prices for Western uranium processing services. From December 2021 to December 2024, the long-term price of conversion and enrichment services increased by 178% and 172%, respectively. In the short- to medium-term, in order to increase enriched uranium production in the supply-constrained Western enrichment market, Western enrichers are expected to input more UF6 ('overfeed') into their centrifuges in order to maximize production capacity. As a consequence, Western utilities in aggregate would require more natural uranium feedstock to produce the same quantity of enriched uranium (i.e., new enrichment contracts require higher tails assay levels). In 2023, US and European utilities demonstrated a path towards reduced reliance on Russian nuclear fuel supply and are understood to be increasingly favoring Western supply chains. In December 2023, a US bill to curb imports of Russian uranium was approved by US Congress. In May 2024, the U.S. President signed law H.R. 1042, the Prohibiting Russia Uranium Imports Act, which prohibits the importation into the U.S. of low enriched uranium produced in the Russian Federations or by a Russian entity. This law includes a waiver provision to allow for imports if the U.S. Secretary of Energy determines no alternative source can be procured or if shipments are deemed in the national interest. This law cements the ongoing shift of Western uranium supply chains away from Russia, which increasingly favors North American uranium supply.

Russia is also a major player in uranium logistics, with significant quantities of uranium from Central Asia typically transported through Russia to Russian ports for delivery to Western uranium conversion facilities. UxC estimates Kazakhstan and Uzbekistan will produce 45% of global primary uranium production in 2024. As a result, logistics of uranium shipped through Russia remains an item of concern to uranium end users. Some uranium has been successfully shipped from Kazakhstan to Canada via the Trans-Caspian International Transport Route, which does not include transit through Russia; however, reports indicate that this route is subject to operational limitations.

19.4. Outlook

Overall, nuclear demand growth appears poised for acceleration led by a shifting energy mix towards reliable decarbonized energy at a time when limited investment over the past decade has supported bringing new uranium mine supply online. While some idled or curtailed production from existing uranium mining operations has retuned to the market, it is expected that (i) production costs associated with further potential restart projects will be higher than previous levels due to inflation and other restart challenges, and (ii) lag times to bring on much of the potential new or greenfield mine supply remains several years away. The accelerated decline in secondary sources of uranium supply in recent years, the depletion of existing mines, the expectation of rising tails assay at Western enrichment plants, and growing future reactor demand, point to larger supply deficits during the second half of this decade that will be difficult to balance without considerable and rapid investment in new large-scale uranium mining projects. Given that uncovered utility uranium requirements for the period from 2024 to 2040, not including typical inventory building or restriction on existing supply agreements with Russia, are estimated at 2.1 billion pounds U_3O_8, it is evident that the necessary new future sources of supply required by the market have not yet been secured by utilities, and that the response from incumbent suppliers that have signed significant long-term supply contracts in recent years has not satisfied the needs of utility customers, meaning that there is good reason to expect further phases of utility procurement directed at incentivizing new projects to meet long-term demand needs.

19.5. Competition

The uranium industry is small compared to other commodity or energy industries. Uranium demand is international in scope, but supply is characterized by a relatively small number of companies operating in only a few countries. Primary uranium production is concentrated amongst a limited number of producers and is also geographically concentrated with 83% of the world's production in 2024 projected to be coming from only four countries: Kazakhstan, Canada, Namibia and Australia. Producers compete for market share and commercial terms necessary to support project economics. This is complicated by the influence of state-owned-enterprises that operate within the uranium mining industry, often producing uranium supply as part of a vertical integration strategy that may be less sensitive to uranium pricing than those operating uranium mines as a commercial business.

Competition is somewhat different amongst exploration & development companies focused on the discovery or development of a uranium deposit. Exploration for uranium is being carried out on various continents, but in recent years development activities by public companies have been generally concentrated in Canada, Africa and Australia. In Canada, exploration has focused on the Athabasca Basin region in northern Saskatchewan. Explorers have been drawn to this area by the high-grade uranium deposits that have produced some of the most successful uranium mining operations in recent history. Within the Athabasca Basin region, exploration is generally divided between activity that is occurring in the eastern portion of the Basin and the western portion of the Basin. The eastern portion of the Basin is a district that is defined by rich infrastructure associated with existing uranium mines and uranium processing facilities. Infrastructure includes access to the provincial power grid and a network of provincial all-weather highways. By comparison, in the western portion of the Basin, there are no operating uranium mines or processing facilities and access to the provincial power grid is not currently available. Several uranium discoveries have been made in the Athabasca Basin region in recent years, and competition for capital, high-quality properties, and professional staff can be intense.

20. ENVIRONMENTAL STUDIES, PERMITTING, SOCIAL AND COMMUNITY IMPACT

20.1. Previous Environmental Assessment and Permitting

The Midwest Property and its supporting infrastructure have been subject to numerous environmental reviews and permitting.

In April 1991, the governments of Canada and Saskatchewan announced a joint federal-provincial Environmental Assessment (EA) review to consider three uranium mine developments in northern Saskatchewan: the Dominique-Janine Extension (at the Cluff Lake Operation), McClean Lake Project, and Midwest Joint Venture (Joint Federal-Provincial Panel, 1993). The reviews were conducted in accordance with *The Environmental Assessment Act* of Saskatchewan and the federal *Environmental Assessment and Review Process (EARP) Guidelines Order*. The *EARP Guidelines Order* was replaced when the *Canadian Environmental Assessment Act* came into force in 1995. The Joint Panel (1993) review for the Midwest Project was primarily based on the Midwest Project EIS (Midwest Joint Venture, 1991). The project was proposed as an underground mine using a conventional shaft and raise method and Midwest ore would be transported along the public highway to McClean Lake Operation for milling. Ultimately, the proposed Midwest Project was rejected by the federal and provincial governments for a number of specific concerns, which did not outweigh the expected economic benefits of the project. The concerns included potential effects to workers associated with the selected mining method, public safety concerns associated with ore transport along a public highway, environmental concerns related to effluent discharge to Smith Creek, and potential cumulative effects given the number of uranium projects west of Wollaston Lake.

In 1995, COGEMA Resources Inc. (COGEMA) submitted an EIS which proposed mining at Midwest via jet-boring in frozen ground conditions (avoiding the need to drain Mink Arm) with off-site ore processing and tailings management at the McClean Lake Operation (COGEMA, 1995). This proposal was the subject of public review by the Joint Federal-Provincial Panel on Uranium Developments in Northern Saskatchewan and was subsequently recommended by the Joint Panel to proceed in 1997 (Joint Panel, 1997). The Joint Panel concluded that the updated proposal to develop the Midwest ore body was substantially better than the one rejected in 1993 on the topics of worker and public safety as well as environmental performance. Both the federal and provincial governments subsequently granted environmental assessment approvals for the Midwest Project in 1998. However, the project did not advance as a jet-boring mine for economic reasons.

In 2005, COGEMA submitted the Midwest Project Description/Proposal. This initiated a lengthy provincial-federal review process for the proposed open pit mining of the deposit. Briefly, the EIS guidelines were issued in 2007 and COGEMA submitted the EIS in three documents in 2007 to 2008. The Project was then brought under the Major Projects Management Office and in 2010, AREVA submitted a draft EIS and ultimately a final EIS in 2011 (AREVA, 2011) to incorporate resolution of EIS review comments. The scope of the assessed project included:

- an open pit mine requiring a dewatering well system,
- permanent, on-site clean waste rock piles,
- temporary special waste rock piles which will be backfilled into the pit at decommissioning;
- options for a new, private transportation and utility corridor for ore haulage, waste water pipeline, and electrical power line between the Midwest site and the McClean Lake Operation, and
- an assessment of the McClean Lake Mill to increase annual production from 24 million lbs U_3O_8 (or 9,230 tonnes U) to 27 million lbs U_3O_8 (or 10,385 tonnes U).

Key environmental considerations for the proposed project were associated with the proposed dewatering of Mink Arm south of the existing dam (Figure 20-1).This portion of Mink Arm of South McMahon Lake is a 51 hectare fish-bearing waterbody with a maximum depth of 6.5 m. Dewatering Mink Arm to allow for open pit mining would result in unavoidable loss of fish habitat and require habitat compensation and authorization from Fisheries and Oceans Canada (DFO) under the *Fisheries Act* for harmful alteration, disruption or destruction (HADD) of fish habitat. To initiate this process, a conceptual fish habitat compensation plan was developed by AREVA and included with the EIS to meet DFO's no net loss principle. Additionally, the proposed draining of Mink Arm would interfere for navigation. During the EIS review process, Transport Canada (TC) issued a *Navigable Waters Protection Act* (NWPA) Approval under section 5(3) of the NWPA which allows for the interference to navigation. An Order in Council in accordance with section 23 of the NWPA was required to dewater the Mink Arm portion of South McMahon Lake, as the dewatering will permanently impede the public's right to navigate. In 2013, the waters of the Mink Arm portion of South McMahon Lake were declared exempt from the operation of section 22 of the NWPA and therefore, it removed the right to public navigation. In this instance, there will be no additional regulatory requirements under the NWPA and no future regulatory requirements for these waters under the Navigable Waters Protection Program and the NWPA.

Figure 20-1: Mink Arm of South McMahon Lake, Showing Location of the Mink Arm Dam

(Source: AREVA, 2011)

In 2012, the Comprehensive Study Report (CSR) for the Midwest Project (CNSC, 2012) was released, based largely on the information presented in the final EIS (AREVA, 2011). The CSR was prepared collaboratively by the Canadian Nuclear Safety Commission (CNSC), TC, DFO, Natural Resources Canada (NRCan), and Saskatchewan Ministry of Environment (SK MOE) as a common basis for a provincial EA under the *Saskatchewan Environmental Assessment Act* and the federal *Canadian Environmental Assessment Act*. In August and September 2012, respectively, the federal Environment Minister and federal authorities provided the decision that the project, following implementation of mitigation measures, was not likely to cause significant adverse environmental effect. SK MOE issued a ministerial approval under section 15 of the *Saskatchewan Environmental Assessment Act.* The assessed and approved project scope (AREVA, 2011 and CSR, 2012) was not advanced by AREVA through to permitting and the deposit was not developed.

20.2. Environmental Assessment

20.2.1. Provincial Requirements

In the Province of Saskatchewan, *The Environmental Assessment Act* is administered by SK MOE. A Ministerial Approval was issued under *The Environmental Assessment Act* for the Midwest Project (approval 2005-207), as described in AREVA, 2011. It is anticipated that ISR mining at Midwest Main, per the scope in this PEA, would require a change to the Ministerial Approval. The project proponent will need to prepare a document outlining changes to the approved development, per section 16(1) of *The Environmental Assessment Act*. For context, Section 16 of *The Environmental Assessment Act* is as follows:

> *Changes in approved development*
> *16(1) Where a proponent:*
> *(a) has received ministerial approval to proceed; and*
> *(b) intends to make a change in the development that does not conform to the terms or conditions contained in the ministerial approval;*
> *he shall inform the minister of the proposed change before proceeding with it.*
> *(2) Where the minister has received notice of a proposed change, he shall:*
> *(a) give ministerial approval of the proposed change and may impose any terms and conditions that he considers advisable;*
> *(b) refuse to approve the change in the development; or*
> *(c) direct the proponent to seek approval for the proposed change in the manner prescribed in sections 9 to 15.*
> *(3) No person shall proceed with a change in a development until he has been given ministerial approval to proceed.*

If ISR mining was to be advanced at Midwest, the notice of proposed change submission should outline how the changes to the approved development are within the assessment basis for previous project plans and highlight the Midwest Project as an activity within the broader McClean Lake Operation. In this way the notice of proposed change submission will aim to:

- reference Orano's existing provincial permits,
- highlight Orano's mature Integrated Management System,
- explain which elements of the ISR scope are within the assessment basis of the previously assessed and approved project scopes,
- outline how previous baseline work is sufficient,
- list commitments (e.g., mitigation measures) including any pre-permitting activities (e.g., collection of additional baseline data),
- describe the strong relationship (and Collaborative agreements) with local Indigenous nations and communities as well as the engagement process in place for the broader McClean Lake Operation.

The Minister will advise on the recommended path based on their review of the notice of proposed changes submission. The Minister may approve the proposed changes to the Midwest Project with additional terms and conditions (per section 16(2)(a) of the *Saskatchewan Environmental*

Assessment Act). If deemed acceptable, this path to permitting would reduce the project's regulatory timeline since a new provincial EIS process would not be required. Alternatively, given the length of time since the Ministerial decision was issued and the change in project scope, the proponent may need to submit a new Technical Proposal and Terms of Refence to start the Provincial EIS process as if it were a new project (per section 16(2)(c) of *The Environmental Assessment Act*).

20.2.2. Federal Requirements

On August 28, 2019, the Government of Canada enacted the *Impact Assessment Act* (IAA) outlining the new Federal assessment requirements for projects listed as a Designated Activity within the Physical Activities Regulations. According to these regulations, an EA under the IAA would not be required for a new uranium mine if the mine has an ore production capacity of less than 2,500 t/day. The mining of Midwest via ISR is not expected to trigger the IAA's EA requirements; however, the Environment and Climate Change Canada Minister may specifically designate and require a project proceed through IAA based on its characteristics, location, or public concerns. For the Midwest Project, the likelihood of this is considered low since the CNSC provides strong federal, environmental oversight as a life-cycle regulator for nuclear projects in Canada. Additionally, the mining of the Midwest ore and the associated milling at McClean Lake is currently approved under previous federal environmental assessment; the CSR (2012) was completed under CEAA, 1992.

Although an EA under the IAA will not likely be required, an environmental protection review (EPR) under the *Nuclear Safety and Control Act* would be completed as part of the CNSC licensing process, per REGDOC 2.9.1. The CNSC conducts EPRs for all licence applications with potential environmental interactions in accordance with its mandate under the *Nuclear Safety and Control Act* to ensure the protection of the environment and the health of persons. An EPR is a science-based environmental technical assessment by CNSC staff as set out in the *Nuclear Safety and Control Act*. Where there are potential environmental interactions, an EPR is conducted for projects not subject to the IAA or other applicable EA legislation. As outlined in the McClean Lake Operation's current Licence Conditions Handbook, prior to constructing or operating a mine for Midwest, Orano is required to submit detailed construction and operating plans, designs and programs for mining to the CNSC so that it can be verified that the proposed activities meet CNSC requirements and remain within the licensing basis for the McClean Lake Operation.

Other federal legislation will need to be considered as the project advances. This includes and is not limited to: *Fisheries Act*, *Species at Risk Act*, *Migratory Birds Convention Act*, *Canadian Navigable Waters Act*, and *Transportation of Dangerous Goods Act*. Of the federal legislation listed here, the HADD under the *Fisheries Act* will be a focus, as well as the general considerations for species at risk, including woodland caribou. Consideration should be given to how the 2013 Mink Arm exemption from the operation of section 22 of the NWPA translates into the current navigation legislation, the *Canadian Navigable Waters Act,* in consideration of the change in project scope.

20.3. Licensing and Permitting

20.3.1. Provincial

Once the new provincial EIS or proposed changes receive a Ministerial decision, the Project will move into the licensing and permitting approval stage. This requires the proponent to obtain a variety of approvals/permits/authorizations from both levels of government. It is assumed likely that the proponent would be able to amend the McClean Lake Operation current Approval to Operate a Pollutant Control Facility for inclusion of ISR mining of the Midwest Main deposit and processing of the ore at the McClean Lake Mill. This will also include updates to the McClean Lake Operation's decommissioning and reclamation plan and associated financial assurance estimates.

20.3.2. Federal

Similar to the Provincial permitting process, it is assumed the proponent will be able to amend the existing CNSC license at McClean Lake Operation to include the ISR mining of Midwest Main and milling of ore at McClean Lake. The proponent will need to submit technical information to support the application to amend the McClean Lake operating licence to construct and mine the Midwest Main ore body.

20.4. Environmental Considerations

20.4.1. Environmental Baseline Studies

Building on previous Midwest baseline programs, the proponent may need to conduct additional baseline studies within and around the proposed project site to support the EIS or permitting/licensing. Studies would include the collection of information on the atmospheric, terrestrial, hydrological, and aquatic environments, as well as focused studies to collect geotechnical and hydrogeological data. In addition, the proponent will work with local land users, Indigenous nations, and communities in the area to collect data on traditional land use, heritage resources, and regional socio-economic environments. Publicly available data from previous environmental studies in the regional area will be used to supplement project-specific baseline surveys, where available and applicable.

20.5. Approval Schedule and Estimated Costs

Based on current knowledge, amendments to the current McClean Lake Operation permits and CNSC licence is expected to take at a minimum 3 years. The estimated costs for the approval process are $3 million, excluding contingency and the costs of the baseline studies.

20.6. Corporate Social Responsibility Considerations

The Midwest and McClean Lake project areas (comprised as part of the McClean Lake Operation) are located within the boundaries of Treaty 10, the Nuhenéné or traditional territory of the Denesųłiné, the Homeland of the Métis, and the Northern Saskatchewan Administration District.

In 2016, a Collaboration Agreement was signed between Orano, Cameco, and the Athabasca Denesųłiné Nations of Hatchet Lake, Black Lake and Fond du Lac, and the northern municipalities of Wollaston Lake, Stony Rapids, Uranium City, and Camsell Portage. The Collaborative Agreement includes the McClean Lake Operation and provisions related to environmental protection, employment, training, business development, and community investment.

21. CAPITAL AND OPERATING COSTS

21.1. Capital Costs

21.1.1 Summary

The capital cost estimate for the PEA for Midwest Main meets the requirements of National Instrument: NI - 43-101 - Standards of Disclosure for Mineral Projects, and AACE International Recommended Practice 47R-11: Cost Estimate Classification System - As Applied in The Mining and Mineral Processing Industries for a Class 5 estimate.

Accordingly, the expected accuracy of the estimate is in the range of -20% to -50% on the low side and +30% to +100% on the high side at an 80% confidence interval.

The status date of the estimate is Q4 2024. There is no allowance for future escalation beyond Q4 2024 or supplemental risk reserve.

Pricing received in US dollars was converted to Canadian dollars at an exchange rate of CAD$1.350:USD$1.000. No allowance for future currency fluctuation is included.

The total estimated cost of the initial capital, sustaining capital, remediation, and closure is approximately CAD$701.2M and incudes a contingency of approximately CAD$68.8M.

The initial capital cost includes detailed engineering, procurement, construction, commissioning, and start-up but excludes approximately CAD$16.8M of project evaluation and development prior to the start of detailed engineering.

Sustaining capital costs consist of ongoing expansion of the wellfield during the production period, and expansion of the production pad. Sustaining capital costs also include 5 years of remediation followed by 2 years of demolition. Table 21-1. Table 1-4 presents a summary of the initial and sustaining capital estimates.

Table 21-1: Capital Cost Summary (CAD$ 000's)

Description	Initial Note 1	Sustaining	Total
ISR Wellfield	95,630	239,254	334,884
Milling (McClean Mill Modifications)	2,860		2,860
McClean Lake Mill Sustaining Capital		37,400	37,400
Surface Facilities	1,612		1,612
Utilities	884		884
Electrical	11,249		11,249
Civil & Earthworks	46,298	39,735	86,033
Road Upgrades (Midwest to McClean)	1,223		1,223
SaskPower Line to Midwest	2,860		2,860
Surface Mobile Equipment	1,827		1,827
Remediation		86,849	86,849
Demolition		21,570	21,570
Contractor Direct Field Support Costs	12,333	5,393	17,726
Subtotal Direct Costs	176,776	430,201	606,977
Project Indirect Costs	18,816	6,651	25,467
Subtotal Direct + Indirect Costs	195,592	436,852	632,444
Contingency	58,677	10,084	68,761
Total Capital Cost (CAD$ 000's)	**254,629**	**446,936**	**701,205**

Note 1: Initial capital costs exclude $16.8 million of estimated pre-construction project evaluation and development costs

General Note: Totals may not sum precisely due to rounding

As noted in Table 21-1, costs associated with pre-construction project evaluation and development are excluded from the initial capital estimate.

21.1.2 Milestone Project Schedule

A project schedule was created for the purpose of this PEA study. Figure 21-1 summarizes it in a project milestone format. The critical path of the project during the pre-construction phase is dependent on obtaining environmental approvals from the regulators which are assumed to be received 2 years after confirmation of baseline studies and field programs to support the ISR mining method.

During the construction period of the project, the critical path activities are related to installing the ground freezing infrastructure and achieving adequate ground freezing to commence production.

Figure 21-1: Milestone Project Schedule

Project Year	-5	-4	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Pre-feasibility Study	x																					
Baseline Study	x	x																				
Field Programs		x																				
Environmental Assessment & Approval		x	x																			
Feasibility Study		x	x																			
Community and Social Responsibility	x	x	x																			
Early Engineering & Procurement			x																			
Detailed Engineering				x																		
Construction, Commissioning and Start-up				x	x																	
Operations						x	x	x	x	x	x	x										
Restoration												x	x	x	x	x						
Infrastructure Removal																x	x					
Post Decommissioning Monitoring																		x	x	x	x	x

(Source: Denison, 2025)

21.1.3 Initial Capital Cost Breakdown

A further breakdown of initial capital costs is provided in Table 21-2 and sustaining capital costs in Table 21-3.

Table 21-2: Capital Cost Summary (CAD$ 000's)

Description	CapEx
1st Freeze Plant Installation	33,297
Special / Clean Waste Ore Pads & Run-Off Ponds	2,414
Freeze Wall Drilling (1 Year to Freeze Phase I)	21,117
Wellfield Pumping, Piping, Electrical & Instrumentation	2,996
Wellfield Drilling (ISR Wells)	24,300
Monitoring Wells (Every 125 m perimeter, 4 per location)	11,506
ISR Wellfield	**95,630**
McClean Mill UBS Receiving Station	2,860
Milling (McClean Lake Mill Modifications)	**2,860**
Operations Complex / Contents	674
Wash Bay / Scanning Facility	703
Fenced Storage	13
Outdoor Covered Storage	162

Security / Gatehouse	60
Surface Facilities	**1,612**
Fuel System	166
Communications	507
Firewater Storage and Distribution System	211
Utilities	**884**
Site Electrical Distribution / Power line	2,089
Freeze Plant Electrical (Includes ground freezing costs)	9,160
Electrical	**11,249**
Wellfield Earthworks (Berm Phase 1)	39,671
Site Civil, Ponds and Landfill	6,627
Civil & Earthworks	**46,298**
Road Upgrades (Midwest to McClean Lake)	1,223
SaskPower Line to Midwest	2,860
Off-Site Infrastructure	**4,083**
Surface Mobile Equipment	1,827
Contractor Direct Field Support Costs	12,333
Subtotal Direct Construction Costs	**176,776**
Detailed Engineering	3,760
Procurement and Contracts	822
Construction Management	4,933
Owners Costs	7,656
Commissioning and Startup	1,645
Subtotal Indirect Construction Costs	**18,816**
Subtotal Direct + Indirect Construction Costs	**195,592**
Contingency on Initial Capital (30%)	58,677
Subtotal Initial Capital Cost	**254,269**

Note: Totals may not sum precisely due to rounding.

Table 21-3: Sustaining Capital Cost Summary (CAD$ 000's)

Description	CapEx
Phase 2 Freeze Plant Installation	33,296
Special / Clean Waste Ore Pads & Run-Off Ponds	2,414
Freeze Wall Drilling	36,580
Wellfield Pumping, Piping, Electrical & Instrumentation	2,891
Wellfield Drilling (ISR wells)	146,815
Monitoring Wells	17,259
ISR Wellfield	**239,255**
McClean Lake Sustaining Capital	37,400
McClean Lake Sustaining Capital	**37,400**
Wellfield Earthworks (Berm Phase 2 and 3)	39,735
Civil & Earthworks	**39,735**
Remediation	86,849
Demolition	21,570
Contractor Direct Field Support Costs	5,393
Decommissioning	**113,812**
Engineering	1,079
Owner's Costs	2,157
Post-decommissioning Monitoring	3,415
Project Indirects	6,651
Subtotal Sustaining Capital and Decommissioning	**436,853**
Contingency on Sustaining Capital and Demolition (30%)	10,084
Total Sustaining Capital & Decommissioning Cost	**446,937**

Note: Totals may not sum precisely due to rounding.

Contingency applies only to Demolition, Contractor Direct Field Support Costs, Engineering, Owner's Costs, and Post-decommissioning Monitoring as these are considered capital improvements. Special / Clean Waste Ore Pads & Run-Off Ponds, Freeze Wall Drilling, Wellfield Pumping, Piping, Electrical & Instrumentation, Wellfield Drilling (ISR wells), Monitoring Wells, Ground Freezing, and Remediation are considered an extension of the operating phase and are not expected to require an allowance for contingency.

21.2 Operating Costs

Operating costs were estimated for the six years and two months of mine production and are summarized in Table 21-4. A recovery rate of 98.5% has been assumed for processing of the UBS from the Midwest deposit at the McClean Lake Mill. The total OPEX of CAD$15.741 per lb of U_3O_8 is equivalent to USD$11.660 per lb of U_3O_8 at a USD to CAD foreign exchange rate of 1.350.

Table 21-4: Operating Cost Summary

Operating Cost Summary	100% Project	Mill Feed	Recovered 98.5%
Midwest Deposit	CAD$1,000	CAD$/lb U_3O_8	CAD$/lb U_3O_8
OpEx – Mining	106,490	2.846	2.889
Opex – Milling	430,375	11.500	11.675
Opex – Transport, Weigh, Assay (Converter)	19,703	0.526	0.534
Opex – G&A Site Support	3,958	0.106	0.107
Opex – G&A Administration and Other	21,148	0.565	0.574
Total Opex	**581,674**	**15.543**	**15.780**
Unit Rates based on pounds of U_3O_8		**37,423,944**	**36,862,585**

Milling costs include the expected cost of processing Midwest UBS at the McClean Mill, as well as a confidential estimated toll milling fee for usage of the McClean Mill, payable to the MLJV. These costs were estimated based on the latest available data obtained from the MLJV.

Transport, weighing, assaying (converter) includes the cost for transporting the yellowcake product from the McClean Mill to a North American conversion facility, where it will be weighted, assayed and then credited to the applicable producer account. Transportation costs are estimated to total CAD$7,741,000 for life of mine (CAD$0.210/lb U_3O_8 recovered).

Site operating costs for the Midwest Project were factored from those reported in other Athabasca Basin ISR studies where applicable, including, Freeze Plant, Surface Facilities, Utilities and Electrical.

Operating costs for the loading and unloading stations at Midwest and the McClean Mill, transport of recycle water between Midwest and the McClean water treatment plant, and road maintenance, were based on historical data for similar scopes of work.

The workforce cost estimate utilized an all-inclusive rate of CAD$150,000 per year per employee with a total of 16 onsite personnel and 5 offsite personnel to support the operation.

The lodging and food costs were calculated with a CAD$150 per day allowance with a total of 16 employees at site for the duration of the operational phase.

The flight costs were calculated using a CAD$900 return trip with a total of 16 employees (includes contract drilling crews) on a two week in/out rotation.

21.3 Decommissioning Costs

The decommissioning costs encompass three main phases. The first decommissioning phase is the ISR restoration phase, where groundwater in the former mining zone is improved to meet acceptable quality objectives. The second decommissioning phase involves site infrastructure removal. The third phase consists of a period of post-decommissioning environmental monitoring.

The total decommissioning costs for mining of the Midwest Main deposit are estimated to be approximately CAD$130.5M, including approximately $10.1M of contingency.

21.3.1 ISR Restoration

The ISR restoration phase at the Midwest site has been estimated based on a five-year duration with a total cost of approximately CAD$86.8M. The restoration phase includes circulating water in the ISR mining zone until ground water quality is restored to acceptable levels. The basis of estimate for the ISR restoration phase considers the requirements of maintaining the freeze wall for two years and ten months after the end of the production phase and using truck transport to bring restoration water from Midwest to the water treatment facility at the McClean Mill for the duration of the restoration period. Additional studies may be required to validate if additional active neutralization is required to achieve environmentally acceptable levels of remediation.

Future study work will consider more significant modelling of flows and, in addition to confirming production flows, will additionally verify restoration flow requirements and provide surety in the ability to restore the wellfield to acceptable conditions.

The estimate includes ground freezing operating costs during this phase, environmental monitoring, CNSC fees, eight full-time equivalent personnel at site and three full-time personnel offsite for 5 years.

21.3.2 Site Infrastructure Removal (Demolition)

The infrastructure removal costs for the Midwest site were estimated to be CAD$30.2M. The estimate includes the following:

1. Removal of the freeze plants, and wellfield pumping, piping, electrical, and instrumentation,
2. Removal of special and clean waste storage stockpiles and pads,

3. Demolition of UBS and Lixiviant loading and unloading station at Midwest and the McClean Mill,
4. Demolition of surface facilities,
5. Decommissioning of wells,
6. Contractor direct field support costs,
7. Engineering, and
8. Owner's costs.

Two major assumptions were made with respect to demolition:

1. The wellfield production pad / berm will remain in place, and
2. The surface mobile equipment will be transported for use at the Owners' other uranium operations in the region.

21.3.3 Post-decommissioning Monitoring

The infrastructure removal costs for the Midwest site are estimated to be CAD$3.4M. The estimate includes the following:

1. Environmental monitoring and reporting, regulatory site inspections and engagement with stakeholders and interested parties,
2. CNSC fees post-decommissioning, and
3. Fish habitat and caribou habitat offset study.

22. ECONOMIC ANALYSIS

The Midwest deposit is jointly owned by Denison at 25.17% and Orano at 74.83%.

However, the project economic evaluation is done on a 100% basis, independent of ownership, for the purpose of assessing the economic merits of developing an ISR mine to extract uranium from the Midwest Main deposit. All applicable royalties and income taxes are included and are calculated on a stand-alone project basis. Initial tax pools are set to zero.

Table 22-1 - Taxes Included in the Full Project "After-Tax" Case

Tax Item	Rate
Sask Uranium Resource Surcharge	3.0%
Sask Basic Royalty Rate	5.00%
Sask Basic Royalty Resource Credit	-0.75%
Sask Basic Royalty Net	4.25%
Sask Profit Based Tiered Royalty	10% / 15%
Sask Income Tax	12%
Federal Income Tax	15%

(Source: LDS Economic Model, 2025)

- **Project Years** - The years referred to in the economic model developed for the Project are counted from the start of production (Year 1). Years prior to that are shown as negative years, numbering backward from the start of production (Year -1, Year -2, etc.).
- **PEA Study Level** - This study is a Preliminary Economic Assessment (PEA) of the Midwest uranium project, undertaken for the purpose of assessing the economic merits of deploying ISR mining for the extraction of the Midwest Main deposit. A PEA has a lower level of certainty than a Pre-Feasibility Study or a Feasibility Study. Materials identified for potential future production in this PEA are not necessarily Mineral Resources above the Inferred category and are not Mineral Reserves (which requires a PFS), and do not have demonstrated economic viability.

Inputs and assumptions to the PEA cash flow include:

- In-situ Resource containing 46.2 million lbs of U_3O_8.
- Total mine production of 37.4 million lbs of U_3O_8 at an ISR recovery rate of 81.0%.
- Planned mine production at an annual capacity of 6.1 million lbs of U_3O_8 mined.
- Planned processed production of 6.0 million lbs of U_3O_8 at an estimated 98.5% metallurgical process uranium recovery.
- A mine production period of approximately 6.1 years.
- Assumes operation at full capacity in Year 1, the first year, and operating at that rate for 6 years, declining to 0.9 million lbs of U_3O_8 in Year 7, the final year.
- An estimated 2-year construction period from Year -2 through Year -1.

Table 22-2: 100% Project Production

Mine & Mill Production 100% Project		
Midwest Project	**Units**	**100% Project**
Mined Ore	lbs U3O8	46,202,400
Mined Ore Grade	% U3O8	81.00%
Mill Feed	lbs U3O8	37,423,944
Mill Recovery	%	98.5%
Recovered U3O8	lbs U3O8	36,862,584
Uranium Price US$	US$/lb U3O8	80.00
FX	C$/US$	1.350
Uranium Price C$	C$/lb U3O8	108.00
Revenue	C$1000	3,981,159

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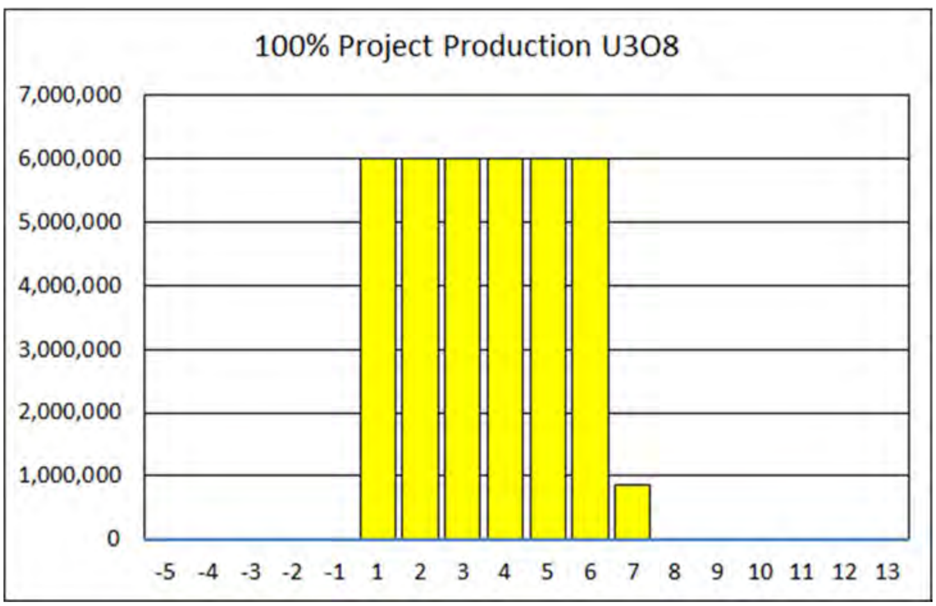
(Source: LDS Economic Model, 2025)

Figure 22-1: 100% Project U_3O_8 Production



(Source: LDS Economic Model, 2025)

The Base Case uranium price is provided by Denison in constant / uninflated 2024 dollars, at USD$80.00 per pound U_3O_8 in all years of the Midwest Main mine production period, translated to CAD using an exchange rate of 1.35 CAD/USD.

Project operating costs are shown in Table 22-3.

Table 22-3: 100% Project Operating Costs

Operating Costs 100% Project			
Midwest Project	**LOM Total** C$1000	**$C/lb U3O8** Mill Feed	**$C/lb U3O8** Recovered
Mining	106,490	2.846	2.889
Milling Processing	430,375	11.500	11.675
Transport, Weigh, Assay (Convertor)	19,703	0.526	0.534
G&A Site Support	3,958	0.106	0.107
G&A Admin / Other	21,148	0.565	0.574
Total	581,674	15.543	15.780
U3O8 in Mill Feed and Recovered - 1000 lb		37,424	36,863

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(Source: LDS Economic Model, 2025)

- McClean Lake Toll Milling Fees – The Milling operating cost comprises two parts (processing fees and toll milling fees) which are charged by the McClean Lake Joint Venture (MLJV) processing facility. These fees are per pound of U_3O_8 in the mill feed (not the recovered U_3O_8) and are subject to change upon commercial negotiation.
- The MLJV is jointly owned 22.5% by Denison's wholly owned subsidiary, DMI and 77.5% by Orano Canada (the operator) and there would be a profit component within these fees which the JV partners would share. The MLJV profit component is not included in the economic evaluation.
- Project capital costs total $717.9 million, comprised of $254.2 million in initial capital, $316.4 million in sustaining capital, and $130.5 million in decommissioning.
- Capital expenditures of $16.8 million incurred prior to a construction decision are considered sunk and so are not included in the calculation of the discounted cash flow (DCF) metrics which are calculated from the beginning of Year -2.
- The allocation and timing of the capital costs is summarized in Table 22-4.

Table 22-4: 100% Project Capital Costs

100% Project Capital Costs				
100% Project Capital Costs By Years C$1000	**Yr-5 to Yr-3**	**Yr-2 to Yr-1**	**Year 1 Onward**	**Total**
Capex - Project Evaluation / Development (Pre-FID)	16,768	0	0	16,768
Capex - Off-Site Infrastructure	0	4,083	0	4,083
Capex - Surface Infrastructure / Mine / Mill	0	250,185	316,389	566,574
Capex - Decommissioning	0	0	130,546	130,546
Total	16,768	254,269	446,936	717,972
100% Project Capital Costs By WBS C$1000	**Eval / Develop**	**Initial Capital**	**Sustaining + Decom**	**Total**
Capex - Project Evaluation / Development (Pre-FID)	16,768			16,768
Capex - Off-Site Infrastructure		4,083		4,083
Capex - Surface Infrastructure / Mine / Mill		250,185	316,389	566,574
Capex - Decommissioning			130,546	130,546
Total	16,768	254,269	446,936	717,972

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*Values in tables may appear not to sum due to rounding.

(Source: LDS Economic Model, 2025)

- The Midwest economic model does not include any charges that may be borne by the project in the future from the use of Athabasca Basin ISR related intellectual property or proprietary information.
- The evaluation is done in real terms with no inflation or escalation of revenue or costs. Costs and revenues are expressed in 2024 Canadian dollars.
- Adjustments for financing (via debt or equity) and any associated carrying charges thereon (interest, other financing charges) are not included.
- Adjustments for working capital (timing adjustments in cash receipts regarding uranium sales and / or OPEX payments) are not included.

Production and cost data have been reviewed, confirmed and / or developed by Engcomp in collaboration with Denison's in-house evaluation team.

22.1. Taxes and Royalties

In the economic evaluation, the following taxes are calculated using a tax model provided by Denison.

22.1.1. Saskatchewan Uranium Resource Surcharge

Resource corporations in Saskatchewan are subject to a uranium resource surcharge equal to 3.0% of the value of uranium resource sales from production in Saskatchewan. The value of resource sales can be reduced by specified costs allowances, which include transport, weighing, assaying, and convertor costs.

22.1.2. Saskatchewan Basic Royalty and Resource Credit

Resource corporations in Saskatchewan are subject to a Basic Royalty at a rate of 5.0% of the value of uranium resource sales from production in Saskatchewan, less a Resource Credit at a rate of 0.75% of the value of uranium resource sales. The value of resource sales can be reduced by specified costs allowances, which include transport, weighing, assaying, and convertor costs. Under the current system, each owner or joint venture participant in a uranium mine is a royalty payer. Individual interests are consolidated on a corporate basis for the computation and reporting of royalties due to the province.

22.1.3. Saskatchewan Profit-Based Tiered Royalty

Computations are based on a \$9.979 profit per pound U_3O_8 threshold set in 2012 and scaled annually using the Bank of Canada GDP index. For 2024 the threshold is updated to \$13.02 using an index of 130.60. This threshold marks the level at which the net profit taxation rate goes from 10% to 15%.

22.1.4. Saskatchewan and Canada Income Taxes

Saskatchewan and Canada income taxes are calculated on the taxable income at a combined rate of 27.0% (Federal – 15% / Saskatchewan – 12%).

22.1.5. Property Royalties

Two royalties, with identical terms, are payable on a percentage of the production from the Midwest properties, declining after payout. Orano and Denison are responsible for a portion of these royalties (declining after payout). The individual percentages and payout ratios were not set at the time of this report and are not included in the cash flow model, but it is recommended that they be defined and included in the next phase of the project. It is believed that the property royalties will have a minimal impact on the overall project cash flow and DCF metrics.

22.2. Basis of the Discount Rate

A discount rate of 8% was selected for assessing the time value of money for the project's economics based on the following rationale:

- It is common industry practice for companies to assess early study-stage projects at their internal discount rate, typically their Weighted Average Cost of Capital (WACC).
- All values are expressed in real terms in 2024 dollars, so inflation impacts on the discount rate are not considered.
- Project country risks (political stability, established taxation regime, extent of corruption and civil unrest) are considered low in Canada and in Saskatchewan and so do not impact the discount rate.
- Note that third parties, when assessing a study-stage project for acquisition, would typically use higher discount rates to reflect project risks and uncertainties at an early stage.

22.3. Economic Analysis

- The evaluation of the project is on a 100% ownership basis.
- Net Present Value ("NPV") calculations use a discount rate of 8% and are measured from the start of the construction period at the beginning of Year -2.
- Discounting is on a mid-year basis.

22.3.1. Economic Analysis - 100% Project After Tax

The base case cash flow model is based on the inputs noted in Section 7.1 and the following additional notes:

- The following items are excluded:
    - Toll milling profit attributable to MLJV partners.
    - Pre-construction project evaluation and development capital costs.

Table 22-5 shows the base case cash flow model for the Midwest Main deposit.

Table 22-5: Midwest 100% Project After Tax Annual Cash Flow Model

Midwest 100% Project After Tax Cash Flow Model

Denison Midwest PEA			**Total**	**-2**	**-1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Mine Stage - Level 1 - Midwest																						
Mine Stage - Level 2 - Midwest				Construct	Construct							Recl'm	Recl'm	Recl'm	Recl'm	Recl'm	Recl'm	Recl'm	Recl'm	Recl'm	Recl'm	Recl'm
Mine Stage - Level 3 - Midwest						Prod'n	Prod'n	Prod'n	Prod'n	Prod'n	Prod'n	Prod'n										
Production & Revenue 100% Project			**Total**	**-2**	**-1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Mill Feed		U3O8 1000lb	37,424	0	0	6,091	6,091	6,091	6,091	6,091	6,091	875	0	0	0	0	0	0	0	0	0	0
Mill Process Recovery		%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%	98.50%
Recovered U3O8		U3O8 1000lb	36,863	0	0	6,000	6,000	6,000	6,000	6,000	6,000	862	0	0	0	0	0	0	0	0	0	0
Metal Prices	U3O8 in US$	US$/lb U3O8	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
	FX (C$/US$)	FX	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
	U3O8 in C$	C$/lb U3O8	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00	108.00
Project Revenue	U3O8 Revenue	C$1000	3,981,159	0	0	648,011	648,011	648,011	648,011	648,011	648,011	93,094	0	0	0	0	0	0	0	0	0	0
Cash Flow - Project After Tax			**Total**	**-2**	**-1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
U3O8 Revenue		C$1000	3,981,159	0	0	648,011	648,011	648,011	648,011	648,011	648,011	93,094	0	0	0	0	0	0	0	0	0	0
Opex - Mining		C$1000	-106,490	0	0	-15,465	-15,465	-15,465	-15,465	-20,855	-20,855	-2,920	0	0	0	0	0	0	0	0	0	0
Opex - Milling		C$1000	-430,375	0	0	-70,052	-70,052	-70,052	-70,052	-70,052	-70,052	-10,064	0	0	0	0	0	0	0	0	0	0
Opex - Transport, Weigh, Assay re Convertor		C$1000	-3,958	0	0	-645	-645	-645	-645	-645	-645	-90	0	0	0	0	0	0	0	0	0	0
Opex - G&A Site Support		C$1000	-21,148	0	0	-3,444	-3,444	-3,444	-3,444	-3,444	-3,444	-482	0	0	0	0	0	0	0	0	0	0
Opex - G&A Admin / Other		C$1000	-19,703	0	0	-3,207	-3,207	-3,207	-3,207	-3,207	-3,207	-461	0	0	0	0	0	0	0	0	0	0
Operating Cash Flow with Tolling		C$1000	3,399,485	0	0	555,198	555,198	555,198	555,198	549,808	549,808	79,078	0	0	0	0	0	0	0	0	0	0
Saskatchewan Resource Surcharge		C$1000	-118,844	0	0	-19,344	-19,344	-19,344	-19,344	-19,344	-19,344	-2,779	0	0	0	0	0	0	0	0	0	0
Saskatchewan Basic Royalty		C$1000	-168,362	0	0	-27,404	-27,404	-27,404	-27,404	-27,404	-27,404	-3,937	0	0	0	0	0	0	0	0	0	0
Operating Cash Flow With Basic Royalties		C$1000	3,112,280	0	0	508,449	508,449	508,449	508,449	503,060	503,060	72,362	0	0	0	0	0	0	0	0	0	0
Capex - Project Evaluation / Development (Pre-FID)		C$1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capex - Off-Site Infrastructure		C$1000	-4,083	-4,083	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capex - Surface Infrastructure / Mining / Milling		C$1000	-566,574	-138,584	-111,601	-45,513	-27,864	-27,864	-160,037	-27,864	-26,395	-853	0	0	0	0	0	0	0	0	0	0
Capex - Decommissioning		C$1000	-130,546	0	0	0	0	0	0	0	0	-20,244	-22,041	-22,041	-11,262	-19,318	-31,722	-784	-784	-784	-784	-784
Project Total Cash Flow - Pre-Tax		C$1000	2,411,075	-142,668	-111,601	462,937	480,586	480,586	348,412	475,196	476,665	51,265	-22,041	-22,041	-11,262	-19,318	-31,722	-784	-784	-784	-784	-784
Sask. Profit Based Tiered Royalty - Midwest		C$1000	-389,756	0	0	-31,887	-75,190	-75,190	-55,364	-74,382	-71,296	-6,446	0	0	0	0	0	0	0	0	0	0
Fed. / Prov. Income Tax - Midwest		C$1000	-571,100	0	0	-81,215	-104,294	-105,772	-103,485	-85,288	-91,046	0	0	0	0	0	0	0	0	0	0	0
Project Total Cash Flow - After Tax		C$1000	1,450,219	-142,668	-111,601	349,834	301,102	299,624	189,563	315,526	314,323	44,819	-22,041	-22,041	-11,262	-19,318	-31,722	-784	-784	-784	-784	-784

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(Source: LDS Economic Model, 2025)

The indicative economic results for Midwest Main development are shown in Table 22-6.

Table 22-6: 100% Project Cash Flow Evaluation

Cash Flow Evaluation 100% Project	
Project Cash Flow Summary	**From Yr -2 C$1000**
U3O8 Revenue	3,981,159
Opex - Mining	-106,490
Opex - Milling	-430,375
Opex - Transport, Weigh, Assay re Convertor	-3,958
Opex - G&A Site Support	-21,148
Opex - G&A Admin / Other	-19,703
Operating Cash Flow with Tolling	3,399,485
Saskatchewan Resource Surcharge	-118,844
Saskatchewan Basic Royalty	-168,362
Operating Cash Flow With Basic Royalties	3,112,280
Capex - Project Evaluation / Development (Pre-FID)	0
Capex - Off-Site Infrastructure	-4,083
Capex - Surface Infrastructure / Mining / Milling	-566,574
Capex - Decommissioning	-130,546
Project Total Cash Flow - Pre-Tax	2,411,075
Sask. Profit Based Tiered Royalty - Midwest	-389,756
Fed. / Prov. Income Tax - Midwest	-571,100
Project Total Cash Flow - After Tax	1,450,219
Denison Midwest MW35+(DX 2149-CCE-001_RevM_2025-01-21+edit) - LDS 2025-08-18.xlsx	
Additional Project Pre-FID Expenses	-16,768

*Values in tables may appear not to sum due to rounding.

(Source: LDS Economic Model, 2025)

Table 22-7: 100% Project DCF Metrics

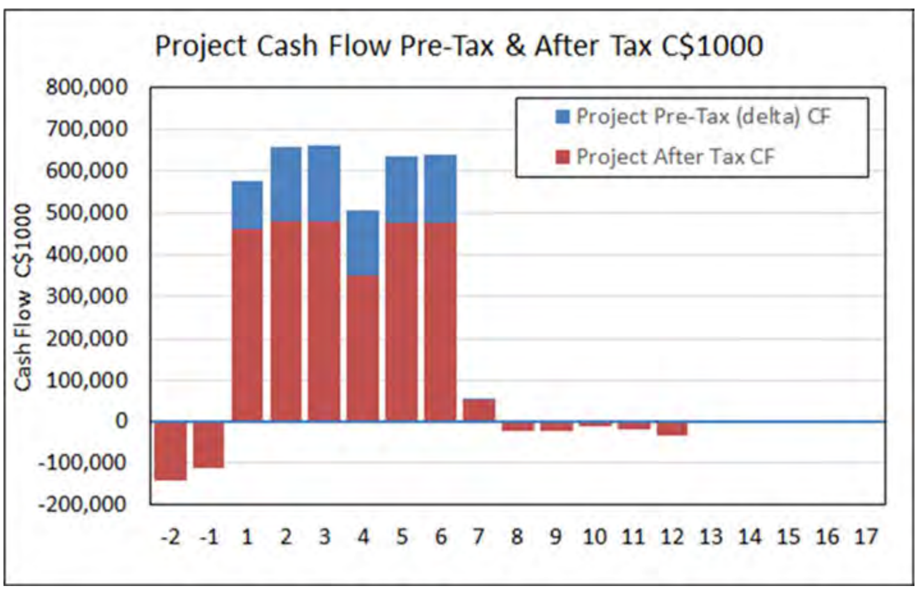
100% Projct DCF Metrics				
DCF Metrics Midwest Project			**Project "Pre-Tax"**	**Project After Tax**
IRR		%	111.1%	82.7%
Payback		Years	0.5	0.7
NPV	0.0%	C$1000	2,411,075	1,450,219
NPV	8.0%	C$1000	1,618,018	964,268
U3O8 Wtd Avg Price			80.00 US$/lb	
			108.00 C$/lb	

DCF Metrics are measured from Year -2 on
NPV Discounting from Year -2 with Mid-Year convention

Denison Midwest MW35+(DX 2149-CCE-001_RevM_2025-01-21+edit) - LDS 2025-08-18.xlsx

(Source: LDS Economic Model, 2025)

Figure 22-2: 100% Project Cash Flow Pre-Tax & After Tax



(Source: LDS Economic Model, 2025)

22.4. Sensitivity Analysis

A sensitivity analysis has been prepared by varying the basic inputs of price, capital cost, and operating costs. As with most mining projects, the most sensitive parameter is the commodity price.

Sensitivity - Table 22-8 shows the impact on NPV (8%), in thousands of dollars, of varying these input values on the base case economic indicators. Figure 22-3 presents these sensitivities in graphical format.

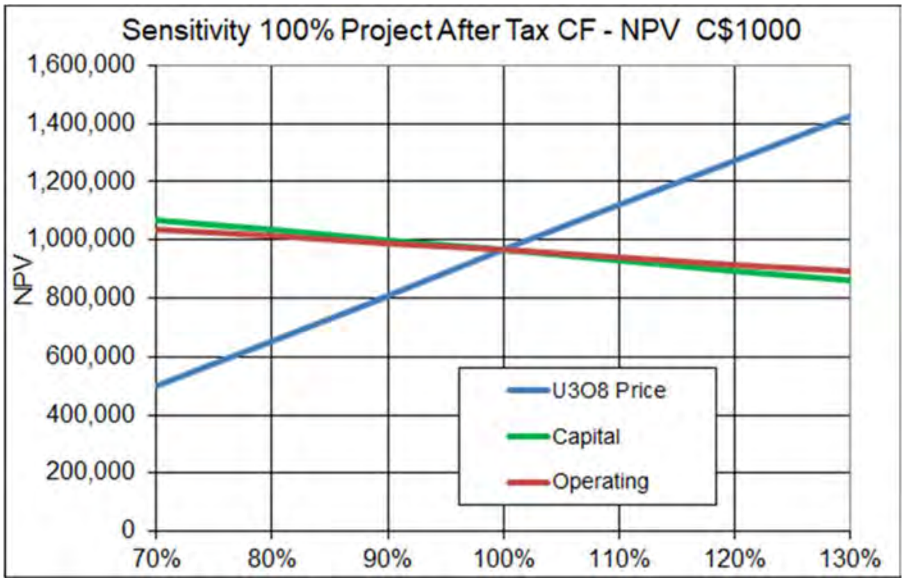
Table 22-8: Sensitivity Analysis – 100% Project After Tax

Sensitivity Analysis - Midwest Project Values for 100% Project (Year -2 on)			
	Capital C$1000	Operating C$/lb Rec	U3O8 US$/lb
	717,972	15.78	80.00
100% Project After Tax			
Variance From Base %	Capital Cost NPV 8% C$1000	Operating Cost NPV 8% C$1000	U3O8 Price NPV 8% C$1000
-30%	1,069,633	1,038,245	500,081
-20%	1,035,011	1,013,586	655,076
-10%	999,640	988,927	809,049
0%	964,268	964,268	964,268
10%	928,897	939,609	1,119,521
20%	894,188	914,950	1,274,773
30%	859,772	890,291	1,429,580

Denison Midwest MW35+(DX 2149-CCE-001_RevM_2025-01-21+edit) - LDS 2025-08-18.xlsx

(Source: LDS Economic Model, 2025)

Figure 22-3: Sensitivity Analysis – 100% Project After Tax



(Source: LDS Economic Model, 2025)

22.5. Price Variances – 100% Project After Tax

The economic results are quite sensitive to the price of uranium. To illustrate the impact on the project of varying uranium price assumptions, the study considers several pricing scenarios:

- Base Case flat price = USD$80.00/lb U_3O_8
- Low case flat price = USD$65.00/lb U_3O_8
- High case flat price = USD$95.00/lb U_3O_8

Table 22-9 shows the impact on various DCF metrics of varying uranium price input.

Table 22-9: Price Variance – 100% Project After Tax

Price Variance Analysis - Midwest Project 100% Project After Tax				
Price Deck	Avg Price US$/lb	CashFlow C$1000	NPV 8% C$1000	IRR %
Midwest Base Case	80.00	1,450,219	964,268	82.7%
Low Flat	65.00	1,024,639	674,323	66.5%
High Flat	95.00	1,877,560	1,255,366	97.1%

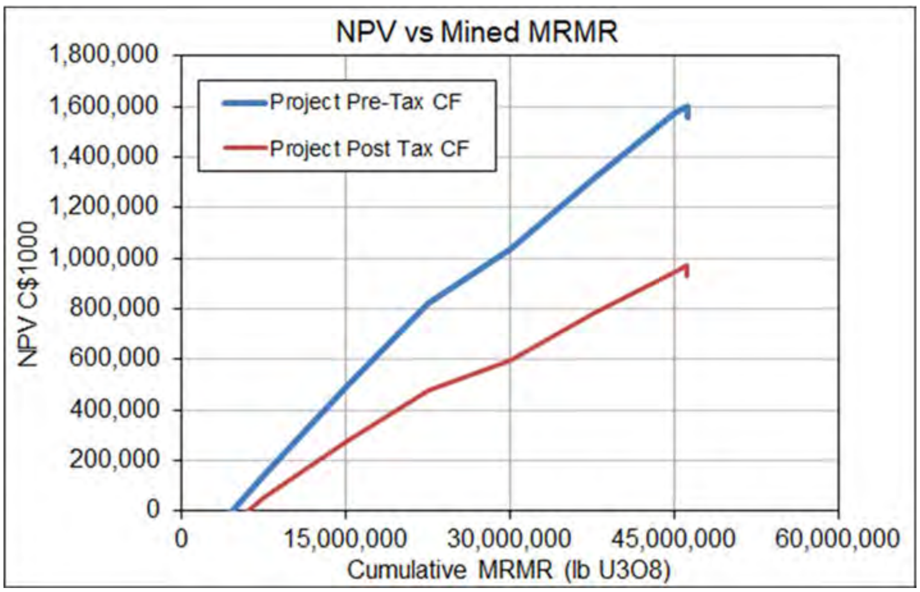
*Values in tables may appear not sum due to rounding.

(Source: LDS Economic Model, 2025)

22.6. MRMR Variance – 100% Project Pre and Post Tax

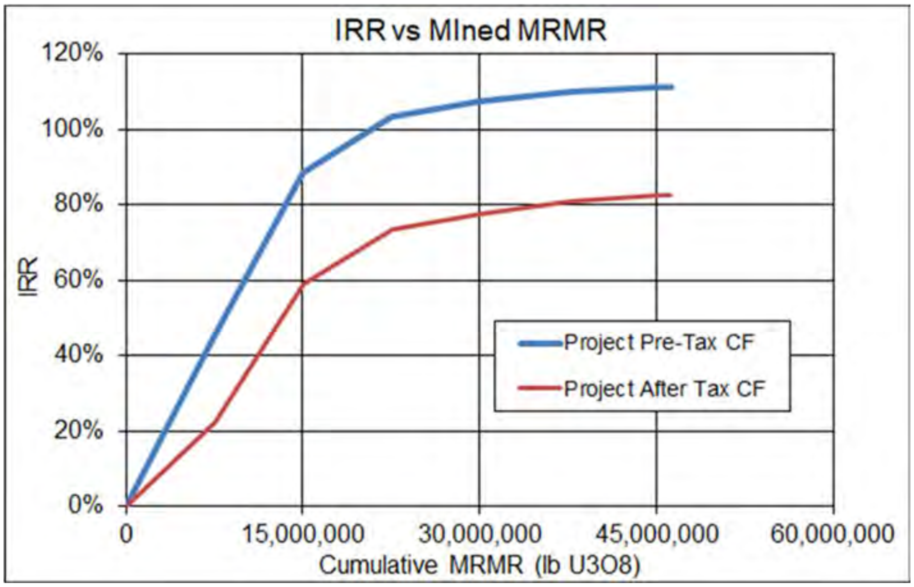
The graphs below show project NPV (8%) and IRR plotted against the quantity of material mined in pounds of U_3O_8. This material is referred to generically as “MRMR” (Mineral Resources and Mineral Reserves) as it is not yet classified. In these graphs, the cumulative quantity of mine production is a proxy for the mined MRMR in tonnes. The principal observation from the graphs is that the DCF metrics could still be acceptable for moderate reductions in MRMR – achieving an after-tax NPV in excess of $200 million and after-tax IRR of approximately 60% in the case of only 15 million pounds U_3O_8 being produced.

Figure 22-4: Impact of MRMR on NPV – 100% Project Pre-tax and Post-tax



(Source: LDS Economic Model, 2025)

Figure 22-5: Impact of MRMR on IRR – 100% Project Pre and Post Tax

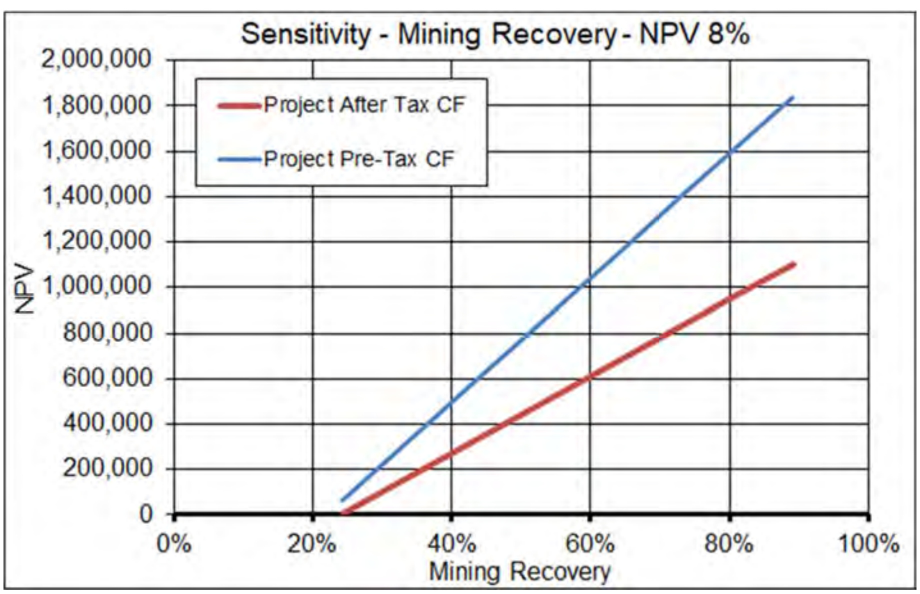


(Source: LDS Economic Model, 2025)

22.7. Mining Recovery Variance – 100% Project After Tax

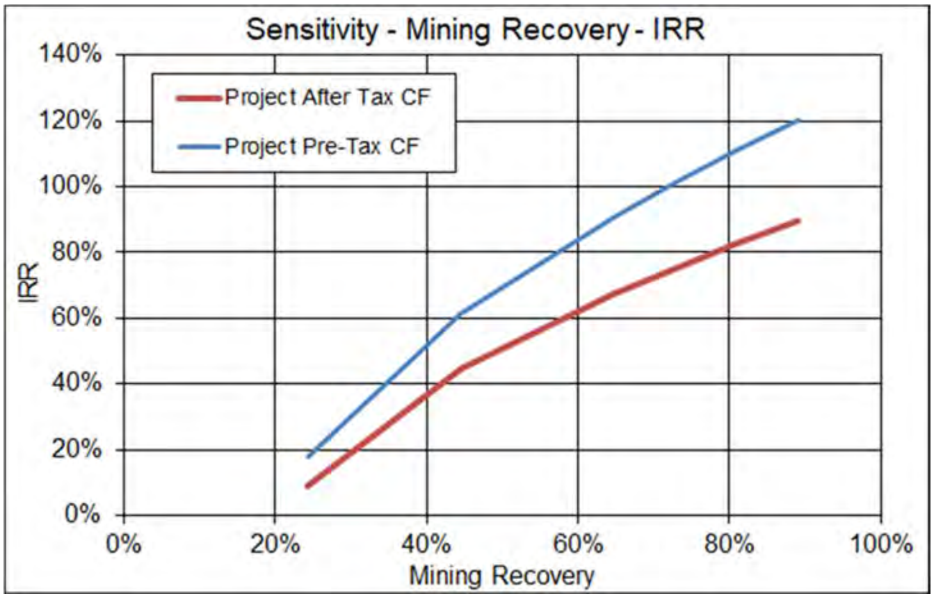
The graphs below show after-tax project NPV and IRR plotted against the Mining Recovery factor. This is the recovery from the in-situ resources fed to the processing plant (there is an additional metallurgical recovery factor in the processing plant).

Figure 22-6: Impact of Mining Recovery on NPV – 100% Project After Tax



(Source: LDS Economic Model, 2025)

Figure 22-7: Impact of Mining Recovery on IRR – 100% Project After Tax



(Source: LDS Economic Model, 2025)

23. ADJACENT PROPERTIES

The property that immediately surrounds the Midwest property on the west, north, and north-east sides is the Waterbury Lake project, which is owned by the Waterbury Uranium Limited Partnership between Denison (70.55%) and the Korea Waterbury Uranium Limited Partnership (29.68%). The property contains the Tthe Heldeth Túé (THT) uranium deposit, which is classified as unconformity-related deposit and is located at the sub-Athabasca unconformity (Armitage & Sexton, 2013). The property is also host to the Huskie Zone of basement-hosted uranium mineralization discovered by Denison in 2017 (Denison Mines, 2017).

To the east and south-east of the Midwest property is the Dawn Lake property, which is owned by a Joint Venture between Cameco and Orano, and which hosts the Dawn Lake deposits and the Tamarack deposit. The Dawn Lake deposits (11 Zone, 11A Zone, 11B Zone, and 14 Zone) are hosted at the unconformity between the Athabasca sandstone and the uppermost basement rocks of the WMTZ within northeast-trending, steeply-dipping, strike-slip shear zones, with mineralization developed both in the basal sandstone and in the underlying basement rocks (Hirsekorn, Barker, & Milne, 2013). The Tamarack poly-metallic unconformity-related uranium deposit occurs at the intersection of a splay off of the east-west-trending Tent-Seal fault and the sub-Athabasca unconformity, with uranium mineralization present mostly within the basal sandstone and lesser amounts in the upper basement rocks.

The Roughrider property is located immediately north-east of the Midwest property. It is owned and operated by Uranium Energy Corp. The property hosts the Roughrider uranium deposit that is composed of the basement-hosted Roughrider East, Roughrider Far East, and Roughrider West zones. The Roughrider West zone is centred on the same east-west trending structural corridor as THT, but is interpreted to plunge into the basement rather than the flat-lying THT deposit, which occurs at the unconformity. The Roughrider East zone occurs at the intersection of the north-east-trending Midwest structural trend and the east-west trending structural corridor (Keller & Bernier, 2011). Uranium mineralization in these three zones is mainly developed at the unconformity and plunges into the underlying basement rocks.

The authors have not verified by inspection all the above information about mineralization on adjacent properties around the Midwest property.

Although not directly adjacent to the Midwest property, the McClean Lake property is located immediately east of the Dawn Lake property. The McClean Lake project is a joint venture between Orano and Denison. The McClean Lake property hosts a number of uranium deposits, some of which have been mined out (JEB, Sue A, Sue B, Sue C, Sue E) and several not yet exploited (Sue D, Sue F, McClean North, McClean South). The McClean Lake Mill, also located on the

McClean Lake property, has previously processed the ores from these deposits and is presently processing ore from Cameco's Cigar Lake mine.

24. OTHER RELEVANT DATA AND INFORMATION

24.1. Risks

- Due to the variable nature of the HG domains and them representing the majority of the Midwest Main deposit mineral resource, additional infill drilling will provide further definition of the high-grade uranium mineralization within the deposit footprint and possibly lead to changes in the estimated uranium content.
- The conversion from downhole radiometric data to equivalent uranium grades is common practice by uranium companies in the Athabasca Basin and is accepted in CIM's best practices in uranium estimation guidelines. However, the use of equivalent grades is used in place of direct measurements and presents a risk of under or over prediction. The equivalent grades were review and deemed to be acceptable, but in areas of poor recovery, the accuracy of the equivalent grades cannot be completely confirmed. The estimate for Midwest A is at particular risk as the samples used for estimation consisted of 36% geochemical assay data and 64% equivalent probing data.
- There is a lack of modern density data at Midwest Main and A, thus the density regression equations are informed by minimal data resulting in uncertainty in the representativeness of the equations and the resulting estimate of tonnes.
- The permeability of the Midwest Main deposit has been assumed to be the same as that published for the Phoenix deposit; however, it may be lower. This risk has been incorporated in the calculations supporting flow rates and ultimate production levels. Future test work to characterize the hydrogeology within and around Midwest could include groundwater elevation measurements, packer tests, single well injection and/or pump tests, cross-hole injection and/or pump tests, well pattern scale tracer tests, pre- and post-permeability enhancement testing, on-core permeability measurement, downhole geophysics, and numerical groundwater flow modelling. Future testing should be designed to reduce hydrologic risks associated with the project.
- Additional groundwater monitoring wells may be needed to verify containment of mining solutions and to determine that no impact on adjacent waterways or environmental effects are occurring.
- Uranium leach rates may be less than expected. This could be due to a variety of factors including differences between site and laboratory conditions, temperature, mineralogy, lixiviant access to ore etc.

- The ability to execute Toll Milling and possibly waste disposal agreements with the MLJV and confirmation of the availability of the McClean Lake Mill, as well as confirming processing costs and toll rates are required.
- Like other ISR cost estimates, Project construction indirect costs are currently estimated to represent a lower percent than other typical Uranium development and construction projects due to the very simple and low risk execution scope at Midwest and the fact the site is well accessed and comparatively mature. This should be verified through more involved first principles costs buildups in subsequent studies.
- Project evaluation costs have been estimated using data from the published Phoenix Feasibility Study where possible. These estimates may not be appropriate.
- Additional studies will be required to better understand the timeline and technical approach for the ISR restoration phase of decommissioning and the associated costs.

24.2. Opportunities

- Additional review of UBS and lixiviant transportation tradeoff work to firm up the optimal method of transport from the Midwest site to the McClean Lake Mill.
- Optimization of the timing of berm construction and related production phasing to ensure optimal use of capital when required.
- Co-development of other local deposits amenable to ISR methods (i.e., Midwest A and/or THT) could improve the economics of the project.
- Current operational and decommissioning costs do not include potential reduction of electrical power required to maintain the freeze wall after initial establishment, and do not currently consider the potential to progressively decommission early mining phases during active production of later phases.
- Upgrade of inferred resource and definition of subsequent HG areas to concentrate future Berm and ISR pattern to reduce footprint and upfront CAPEX.

25. INTERPRETATION AND CONCLUSIONS

Through the review and interpretation of existing geological & metallurgical studies summarized in previous NI 43-101 reports and data from ongoing laboratory testing, it is believed that the Midwest Main deposit is amenable to ISR mining, and that this unique application has the potential to unlock significant economic potential associated with the extraction of the contained resource.

The application of the ISR method to the Midwest Main deposit is another example that has shown that comparatively small uranium deposits, in close proximity to an existing uranium processing plant, can be successfully extracted from an economic point of view.

25.1. Mineral Resources

UMR's resource related conclusions, observations, and recommendations for the Midwest Main Deposit are summarized below.

- Orano's Midwest Main mineral resource estimate, effective date of December 2, 2024 is reasonable and meets the requirements for public disclosure in accordance with NI 43-101.
- Mineral Resources of Midwest Main were classified as Indicated and Inferred based on (1) the sequence of kriging estimation run, (2) kriging slope, and (3) geological confidence. In UMR's opinion, the Mineral Resource classification methodology is reasonable.
- The composite size, block size, variography modeling, and estimation parameters are appropriate for the deposit in UMR's opinion.
- The block and composite grades correlate well visually within the Midwest Main Deposit.
- There is a lack of modern density data at Midwest Main, resulting in the density regression equations being informed by minimal data. The density equations correlate well with the historic density measurements, but uncertainty remains in the representativeness of the equations.
- The density measurements were not used in the mineral resource database; only the regression values were used.

UMR's independent resource related conclusions, observations, and recommendations for the Midwest A Deposit are summarized below.

- The Midwest A mineral resource estimate was constructed by Orano in November, 2017, and subsequently underwent revisions from SRK in 2018. UMR reviewed the final model and determined it is current, reasonable, and meets the requirements for public disclosure in accordance with NI 43-101.

- Mineral Resources of Midwest A were classified as Indicated and Inferred based on drill hole spacing, the geological understanding and continuity of mineralization, data quality, spatial continuity, block model representativeness, and data density. In UMR's opinion, the Mineral Resource classification methodology is reasonable.
- No changes were made to the model since 2018 but the justification for the reporting cutoff grade (0.085% U or 0.1% U_3O_8 grade) is updated in this document to reflect the envisioned ISR extraction method rather than an open pit scenario. Therefore, the effective date of the model was updated to December 2, 2024. Coincidently, the two envisioned mining methods use the same cut-off grade but with different assumptions.
- There are two density datasets at Midwest A: 304 SG measurements from crushed mineralized sample material and 24 Dry Bulk Density measurements. The measurements from the crushed material were deemed to be inaccurate, and therefore, only the 24 Dry Bulk Density measurements were used to create the multi-element and single-element density regressions.
- The domain models adequately constrain the mineralization for estimation purposes. However, the single low-grade domain represents basement-hosted, structurally controlled mineralization, unconformity mineralization, and perched mineralization. The generalized wireframe makes estimating discrete features and trends difficult.
- The model uses up to 30 samples per block estimate, which, in UMR's opinion, will lead to oversmoothing (overprediction of low-grade and underprediction of high-grade). The significance of the oversmoothing is largely mitigated by the HYL restrictions imposed on the model, therefore, oversmoothing is not considered a material risk.
- The blocks were coded to a zone (1 for the LG zone and 10 for the HG zone) and provided a percentage of how much the zone occupies in the block (e.g. 10% HG zone, 85 % LG zone, and 5% outside either zone). This is an acceptable way for zone designation, but not optimal for future evaluations.

26. RECOMMENDATIONS

Based on the body of knowledge developed through field work and previous project studies, and the economics demonstrated in this PEA study, the authors fully endorse advancing this study to the Prefeasibility (PFS) Stage.

It is recommended that a Prefeasibility Study includes the following activities:

- Drilling of approximately 5 holes totalling 1,100 m to facilitate permeability enhancement testing, geophysical logging, hydraulic testing, and metallurgical sampling, for an estimated total of $3.1 million.
- Additional laboratory and bench scale hydrogeological investigations to further understand the permeability characteristics of the host rocks and conduct additional leach tests.
- Review existing work completed on other projects to ensure that well designs and drilling technologies are well suited to this application.
- Detailed review of infrastructure designs to ensure they are fit for purpose for the location and the scope of the project.
- Develop a comprehensive list of trade-off studies to be considered and/or revisited and ensure full decision analyses are complete.
- Verify costing elements through a higher classification of cost models.
- Further refinement of financial analyses including sensitivities.

26.1. Mineral Resources

UMR's resource related recommendations for the Midwest Main Deposit are summarized below.

- Future mineral resources of Midwest Main are to be classified on drillhole spacing, while considering geological understanding and complexity.
    - Mineral resources are uncertain because of variability at all scales and sparse sampling. The variables constituting the mineral resource, the volume of the geological interpretation, and the grade estimates within that volume, are the sources of uncertainty. These uncertainties are typically a function of drill spacing, with denser spacing equating to less uncertainty and sparser spaced areas having more uncertainty. This uncertainty is reflected in the reporting of the mineral resources, where resources with denser spacing are categorized as Indicated (or Measured) and the sparser spaced resources are classified as Inferred. The Midwest Main resource classification is, in part, an indirect proxy to drillhole

spacing. Converting to drillhole spacing for classification will adhering to the well-studied concept that drilling reduces uncertainty.

- UMR recommends that a probabilistic drillhole spacing study be completed on the deposit to better inform drillhole spacing for mineral resource classification.

- Minor changes to the search orientations to better reflect individual wireframe geometry in future iterations of the model.
- Collecting more density data in future drill programs to reduce the uncertainty in the regressions.
- Implementing a hierarchical approach to the management of density values where the measured values are maintained, and the regression is only used where data is missing.
- Use of geostatistical techniques to quantify the uncertainty of the deposit to inform decisions as it relates to mining evaluation, planning, and extraction. The uncertainty associated with the volume, grade, and density variables of the deposit are to be the focus of the study, as these variables define the overall metal content of the deposit, the largest input to project economics.
- Detailed studies on the management of high-grade outliers are recommended, such as metal-at-risk evaluations, mean uncertainty analysis, continued sub-domaining, etc.

UMR's independent resource related recommendations for the Midwest A Deposit are summarized below.

- A probabilistic drillhole spacing study be completed on the deposit to better inform drillhole spacing for mineral resource classification.
- Collecting more density data in future drill programs to reduce the uncertainty in the regressions.
- Individual wireframes be created to represent the three mineralization types observed at the deposit. In estimation, the individual domains can be given specific orientations for interpolation and the use of a soft boundary between the domains will ensure there are not abrupt changes in grade continuity where the domains meet.
- Future iterations of the estimate complete sensitivity testing relative to a Discrete Gaussian Model (DGM) to determine an appropriate number of samples per estimate.
- The blocks were coded to a zone (1 for the LG zone and 10 for the HG zone) and provided a percentage of how much the zone occupies in the block (e.g. 10% HG zone, 85 % LG zone, and 5% outside either zone). In UMR's opinion, this can be improved upon with a sub-block model.

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