

Wheeler River Project

Frequently Asked Questions

Environment

1. *What are the environmental monitoring requirements for the Wheeler River Project?*
 - a. Monitoring plans will be developed based on the results of the Environmental Assessment and regulatory requirements. All monitoring commitments will be detailed in our license and permits prior to project development.
2. *Who is responsible for monitoring the environment?*
 - a. During operation the day-to-day environmental monitoring will be performed by Denison and reported to both the Canadian Nuclear Safety Commission (CNSC) and the Provincial Ministry of Environment (MOE). Private contractors may be hired to perform more specific studies, on a case-by-case basis.
3. *Decommissioning - Once the mine site closes will the environment continued to be monitored?*
 - a. The Wheeler River Project site will be monitored after site operations cease until the site reaches a predetermined acceptable reclamation criteria. Once the criteria is met and accepted by the regulators, the site will be transferred into an institutional control program and the land is released back to the province of Saskatchewan.
4. *Will Interested Parties (stakeholders) and rights holders have confidence that the environment is being looked after?*
 - a. Environmental monitoring will be conducted through each phase of the Wheeler River Project by Denison and by third party consultants. The results are reported to the provincial and federal regulators and will be publicly available.
5. *How does an environmental assessment (EA) protect the trees, rivers, soil, and air?*
 - a. Baseline studies began in 2012 to understand the current environment. The EA will use scientific best practices to predict how the proposed project may change the natural biophysical and human environment. The EA is also used as a planning tool to identify ways Denison can minimize the potential impacts through engineering design and monitoring commitments.

Employment and Business Opportunities

1. *Will northern Saskatchewan residents be hired?*
 - a. Northern Saskatchewan residents have a long history working with previous and existing uranium mining operations. Denison will build on this history in order to strive to maximize northern Saskatchewan employees at the Wheeler River site, with a focus on a number of Communities of Interest.
2. *Will northern Saskatchewan residents be hired in all positions?*
 - a. Yes. Denison is in a position to capitalize on the strength of people throughout northern Saskatchewan who have experience working within the uranium mining industry and the ability to hold all levels of positions.

3. *Will northern Saskatchewan owned companies be hired to carryout environmental monitoring?*
 - a. Denison intends to have northern companies and people working in all aspects of the Wheeler River operation, including in environmental monitoring – where possible.
4. *Will northern Saskatchewan / Indigenous companies be given the opportunity to bid on contracts?*
 - a. Denison is committed to being fully transparent about contract opportunities and the associated procurement processes – which should ensure northern Saskatchewan / Indigenous owned businesses are suitably prepared for proposals / bids for project work.
5. *Will contract opportunities be available to northern Saskatchewan / Indigenous companies?*
 - a. Denison is committed to supporting the development of northern Saskatchewan / Indigenous businesses and will make contract opportunities available accordingly.
6. *Can training take place locally?*
 - a. Denison intends to work with northern Saskatchewan training institutions to help facilitate training initiatives where applicable.
7. *How is the Wheeler River project moving towards production when other mines in the area are slowing production or closing?*
 - a. Denison is pioneering a new method of mining that is more cost-effective than existing methods currently in use throughout northern Saskatchewan. This cost-effective approach allows Denison to advance the project when other mine operations are slowing or even closing. The combination of high-grade uranium ore at Wheeler River and a low-cost mining method have the potential to allow mining activities to withstand price fluctuations in the uranium market

In-Situ Recovery (ISR) Mining (methods and procedures)

1. *What is In-Situ Recovery (ISR)?*
 - a. In-Situ Recovery or ISR is a method of mining an orebody in place. It involves using a liquid mining solution (referred to as a lixiviant), which is pumped through an orebody at depth via the use of injection and recovery wells to recover the uranium. Uranium is dissolved in place as the lixiviant travels from an injection well towards a recovery well and further back to surface as part of the mining process. The active ‘mining’ occurs in ground with recovery of the uranium occurring by leaching, as the mining solution passes through the uranium bearing host rock. Specific to the Phoenix deposit, a freeze wall is installed around the ore body to ensure the lixiviant is fully contained and does not travel into the surrounding environment.
2. *Why is In-Situ Recovery (ISR) only now being introduced in Canada?*
 - a. ISR mining has gained in prominence in the uranium sector in the last 15 years with the development of uranium mines in Kazakhstan. When Cigar Lake and McArthur were developed, ISR mining was less common and was not considered applicable to the Athabasca Basin. Since then, advancements in ISR and ground freezing technology have allowed Denison to design an ISR mine that is expected to work for certain deposits in the Athabasca Basin.

3. *What is the freeze solution comprised of, and how does ground freezing work?*
 - a. The freezing solution is composed of a brine liquid, or salt water (water and 30% calcium chloride (CaCl₂)). The brine liquid is cooled to -35 degrees and travels from surface through a piping system along the perimeter of the mining area all the way down to below the mining horizon. The brine circulates through the pipes constantly making the pipes very cold. The brine solution itself does not move into the ground. Eventually the temperature of the ground drops low enough that it starts to freeze the groundwater surrounding the pipe. The frozen area around each pipe expands, merging together, to create a frozen wall all the way around the mining area from surface to depth.
4. *What happens when the freeze wall is removed or melts? Will there be monitoring of ground water during this process?*
 - a. Denison plans to remediate the groundwater within the freeze wall to an acceptable regulatory requirement before the freeze wall is turned off. Continuous monitoring of ground water will occur inside and outside the freeze wall at various depths below surface, prior to the freeze wall being turned off. Monitoring is very important, especially near the ore body. Ground water monitoring will continue throughout the remediation and decommissioning phase to ensure the environment is protected.
5. *What happens to the mining solution after it has been removed from underground?*
 - a. The mining solution, when brought to surface is referred to as a uranium bearing solution or "UBS". Once on surface the UBS is transported to a surface process plant where the dissolved uranium is extracted from the solution. The mining solution is then re-fortified after the extraction of the dissolved uranium and returned to the deposit via injection wells to repeat the process in a closed loop system. A small portion of the solution that is not recycled back underground will be sent to an on-site water treatment plant for further processing to ensure it meets discharge requirements before it is released back into the environment.
6. *How much water is used during the injection process?*
 - a. This volume will vary depending on the number of operating wells at a given time. The current vision for water management at Phoenix is to minimize water usage and release and by recycling as much of the solution as possible through the mining system. The option is currently being tested in the Saskatchewan Research Council.
7. *What is the impact of ISR mining on water quality?*
 - a. The overall environmental impact to surface water quality will be predicted through the environmental assessment process. The operational nature of ISR mining allows Denison to recycle a significant amount of water and we anticipate the volume of water to be released to the environment to be quite low compared to other Northern Saskatchewan mine sites. All site water will be tested and when required, treated to meet regulatory requirements established through the EA and licensing process to ensure the downstream environment remains protected.

8. *Where will the ore be processed?*
 - a. With ISR mining there is no extraction of rock (ore) from the deposit. Instead, the uranium is dissolved in the ground by the mining solution. Then the uranium bearing solution recovered from the wellfield is pumped to a processing plant on surface. The processing plant doesn't have any crushing or grinding or leach circuits because the uranium is already dissolved in solution, instead the processing plant removes iron and then uranium from the mining solution before the uranium is thickened, dried / calcined and then packaged.
9. *What is the percentage of U3O8 in this ore body?*
 - a. According to Denison's Pre-Feasibility Study, the average percentage of U3O8 in the Phoenix ore body is 19.1%.

Infrastructure

1. *What are the timelines for the project? When will both construction and production begin?*
 - a. Project timelines have not been refined since the Prefeasibility Study due to the temporary suspension of the Environmental Assessment (EA) and ongoing timeline challenges due to Covid-19 restrictions.
 - b. The total lifespan of the Wheeler River project is estimated at 20 years. It is anticipated that construction will last for approximately 2 years, the site will be operational for approximately 10 years, closure and reclamation procedures will last for approximately 8 years. Construction and production start dates are dependent on obtaining permits from the Province and the CSNC; as well as completion of detailed project engineering and financing.
2. *Will Denison be building an airport?*
 - a. Yes. Current airstrips in the area are owned privately so Denison would need its own airport to support the project as designed.
3. *What is the planned usage of the existing road near the site?*
 - a. The existing road near the Wheeler River project site will operate as usual, as a means to transport personal, materials etc.
4. *Will chemicals be transported on highway 914? If so, what kinds of chemicals?*
 - a. Denison will be transporting chemicals on highway 914. Those materials are likely to include sulfuric acid, hydrogen peroxide, lime and uranium ore concentrate (yellow cake). These materials will be contained within closed vehicles and not open to the air. It is worth mentioning that similar chemicals are currently being transported on highway 914 to various other operations.

Local Interests

1. *How many years is the mine expected to be in operation?*
 - a. The total lifespan of the Wheeler River project is estimated at 20 years. It is anticipated that construction will last for approximately 2 years, the site will be operational for approximately 10 years, closure and reclamation procedures will last for approximately 8 years.
2. *Will Denison collaborate with local communities in the eventual reclamation and decommissioning of the mine?*
 - a. Denison is open to working with local communities on land reclamation and decommissioning of the mine site. Denison will develop a reclamation plan, and part of that process is to obtain feedback on the proposed plan. Denison will then execute the reclamation plan, and eventually transfer the Wheeler River site into the Provincial Institutional Control Program.

3. *Are Surface Lease Agreements being formulated with the Northern Communities?*
 - a. Once the project receives regulatory approval Denison expects that it will be required to enter into a Surface Lease Agreement with the Province of Saskatchewan. It is anticipated that the employment of northerners and the contracting of northern businesses will be commitments contained within the Surface Lease Agreement, similar to the existing Surface Lease Agreements
4. *Are northern interests being protected?*
 - a. Only northern people can determine what effectively protects their interests and Denison is a willing partner towards understanding those interests. Denison is working hard to consider various interests from various Interested Parties throughout northern Saskatchewan.
5. *What legacy will Denison leave behind for the people of northern Saskatchewan?*
 - a. The people of northern Saskatchewan have clear ideas of how they want to work with the next generation of uranium mining operations, and so determining what kind of positive legacy Denison will have within the north must be determined by the people of northern Saskatchewan and Denison together.

Federal/CNSC/Regulatory/EIA

1. *How long is the Environmental Assessment process?*
 - a. Once the draft Environmental Impact Statement is submitted to the regulators by Denison, it is anticipated that the regulatory review and approval process will take approximately 2 years. This period includes several comment response sessions with the federal and provincial review team and well as public review periods for the Project's interested parties.