Denison Mines Corp.

Wheeler River Operation

Preliminary Decommissioning and Reclamation Plan

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Version # 2

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Approval for Use

Version	Date	Description of Activities	Personnel
1	January 2024	Preparation	Xavier Lu Dac, Project Execution Director Ryan Nagel, Licensing Lead and Environmental Compliance
1	January 2024	Contributions	Nathan Drake, Projects Manager Tracy Gaudry, Senior Coordinator Environment & Quality Management Systems
1	January 2024	Review	Nathan Drake, Projects Manager Xavier Lu Dac, Project Execution Director Janna Switzer, Vice President Environment, Sustainability, Regulatory Ryan Nagel, Licensing Lead and Environmental Compliance
1	January 2024	Approved	Kevin Himbeault, Vice President, Plant Operations and Regulatory Affairs

Revision History

Version	Date	Description of Revision
1	January 2024	Draft for CNSC review
2	April 2025	5.9 Records, Monitoring, and Reporting – *added reference.* 8.2 Engagement – *added references.*

Distribution List

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Acronyms and Abbreviations

Term	Definition
ALARA	As Low As Reasonably Achievable
AST	Above-Ground Storage Tanks
Bq	Becquerel
CNSC	Canadian Nuclear Safety Commission
CSA	Canadian Standards Association
D&R	Decommissioning and Reclamation
DDP	Detailed Decommissioning Plan
Denison	Denison Mines Corp.
DWWTP	Domestic Wastewater Treatment Plant
EA	Environmental Assessment
EIS	Environmental Impact Statement
Freeze Hole	Bore hole in ground outfitted with sealed freeze pipe or temperature sensors
FS	Feasibility Study
HDPE	High Density Poly-Ethylene
HVAC	Heating, ventilation, air conditioning
IAEA	International Atomic Energy Association
ISR	In-Situ Recovery
IWWTP	Industrial Wastewater Treatment Plant
LLRW	Low-Level Radioactive Waste
Mining Solution	A solution prepared onsite by combining reagents such as sulphuric acid, hydrogen peroxide, ferric sulphate and water
Mlbs	Million Pounds
MPa	Megapascal
mSv	Millisievert
NORM	Naturally Occurring Radioactive Material
PAG	Potentially Acid Generating
PDCE	Preliminary Decommissioning Cost Estimate
PDP	Preliminary Decommissioning Plan
PWTP	Potable Water Treatment Plant
SKMOE	Saskatchewan Ministry of Environment
UBS	Uranium Bearing Solution
UST	Underground Storage Tanks
Well	Casing and screen constructed in a bore hole which is open to the natural ground formation in the screened interval

Yellowcake	Dried Uranium Concentrate

1 Introduction

1.1 Project Background

The draft Environmental Impact Statement (EIS) for the Wheeler River Project (the Project) proposed by Denison Mines Corp. (Denison) was issued for regulatory review and approval in October 2022. In August 2023 Denison released the independently authored Feasibility Study for the in-situ recovery (ISR) uranium mine and processing facility for the Phoenix deposit. Denison is advancing the Project towards construction and, as such a Preliminary Decommissioning Plan (PDP) is required as part of the federal and provincial licensing and permitting processes, respectively. The PDP is meant to provide a high-level evaluation of the requirements for decommissioning of the future assets and future disturbed lands required for the development of the mining and processing operation of the Phoenix deposit on the Wheeler River property. Figure **Error! No text of specified style in document.**-1 shows that the Wheeler River Property is located in the eastern part of the Athabasca Basin, approximately 4 kilometres (km) west of Highway 914 and 35 km north of the Key Lake Operation.

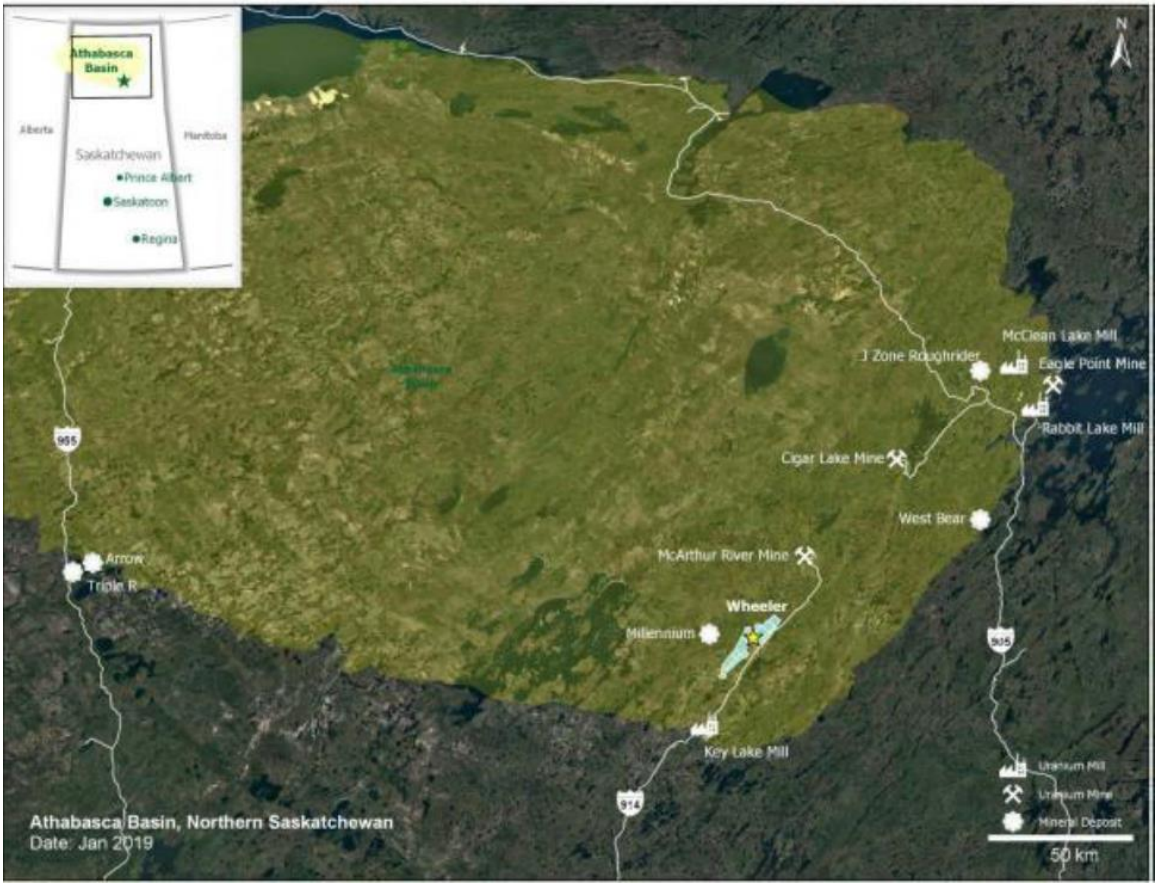

Figure Error! No text of specified style in document.**-1: Wheeler River Property Location Within the Athabasca Basin**

1.2 Regulatory Background

The PDP forms part of the legal obligation to perform an activity upon the retirement of a tangible, long lived asset based on a law, statute, or ordinance, a written or verbal agreement between parties, and a promise to a third party. The purpose of the initial PDP is to outline technically and environmentally sound methodologies for decommissioning the proposed mine and process facilities which will, in turn, be used to inform the amount of future financial assurance required by provincial and federal regulations.

This initial PDP will need to be reviewed and updated prior to construction of the proposed facilities. Additionally, it will also be reviewed and updated every five years during the life of the Project and/or if the Project is to undergo significant changes that were not foreseen at the time of preparation of the previous PDP.

The development of PDPs is part of the development process with the guidelines for the Preparation of Terms of Reference for a proposed project under the Environmental Assessment Act requiring a conceptual level PDP with the following:

- preferred procedures for decommissioning;
- target decommissioning objectives for the mining area;
- alternative procedures for decommissioning the site facilities, if applicable;
- decommissioning, reclamation and closure of all related works and surface disturbance;
- identification of acceptable post-operational land-use options for the Project site;
- post-operational landforms and hydrology;
- environmental impact mitigation and reclamation measures;
- proposed monitoring to determine if species will re-occupy the site; and
- proposed contingency measures.

In advance of the scheduled shutdown of the first step in the decommissioning and reclamation (D&R) process will be the preparation of a Detailed Decommissioning Plan (DDP) for regulatory approval prior to decommissioning. The CNSC Regulation Document (REGDOC)-2.11.2, Waste Management Decommissioning (CNSC 2021f) and the CSA N294 (CSA 2019) both provide guidance on the information to be included in the DDP, and these include:

- a description of the location of the facility;
- the purpose and description of the facility;
- the anticipated post-operational conditions;
- the decommissioning strategy;
- the plan for the decommissioning work;
- the hazardous monitoring and survey commitments;
- a waste management strategy;
- a commitment to prepare a DDP for CNSC acceptance prior to decommissioning;
- a commitment to periodically review and update the PDP in accordance with Section 6.1;

- the physical state of the facility at both end of operations and at the start of decommissioning;
- the records required for decommissioning;
- a public consultation plan, including a public information program and avenues for public participation as per the requirements and guidance of REGDOC-3.2.1 (CNSC 2018b);
- an Indigenous engagement plan as per the requirements and guidance of REGDOC-3.2.2 (CNSC 2022a)]; and
- the conservative cost estimate of decommissioning and a financial guarantee, as described in REGDOC-3.3.1 (CNSC 2021g).

The DDP will build on the last PDP and include detailed design drawings, comprehensive information on the proposed D&R approach and additional information that is not in the PDP such as a summary report on any public and indigenous consultation.

The DDP will form the basis of the submission to regulatory agencies for a decommissioning license. The CNSC indicates that obtaining a license for decommissioning will take about 24 months for the required regulatory review.

Once the decommissioning is complete and long-term monitoring has confirmed the successful completion of decommissioning, the Project will enter the post-decommissioning phase.

Post-decommissioning activities will be conducted once the decommissioning objectives have been met and active controls are no longer required, and the post-closure landforms and waste management areas are safe and stable. It is assumed that Denison will return the surface lease to the Government of Saskatchewan (GOS), and it will enter Saskatchewan's institutional control framework (GOS 2006). This framework allows for administrative controls to be placed on future land use to prevent redevelopment and ensure that the Site is monitored in perpetuity. The CNSC and provincial requirements that support the transfer of sites to institution control include, but are not limited to the following (GOS 2021):

- record keeping or archival of documentation that fully describes past operations (including contamination, spills, malfunctions, and accidents);
- decommissioning plans and assessments, final configurations, and release verification;
- post-closure site monitoring and verification;
- passive site management needs;
- land controls; and
- long-term financial liabilities for monitoring, reporting, care, and maintenance as well as possible contingency remediation.

1.3 Purpose

This initial PDP has been developed for licensing and will be used to develop a financial guarantee that provides adequate provision to safely decommission the Project and assurance of financial resources to fund all approved decommissioning activities should the licensee not be able to fulfill its obligations.

A Conceptual Decommissioning Plan was presented within the Wheeler River Draft Environmental Impact Statement which underwent considerable engagement and review by Indigenous communities, the public

and Federal and Provincial regulatory agencies. The end-state objectives will continue to consider the preferences of Denison, communities, and regulators. It is expected that the approaches presented in this document will be discussed with the communities of interest as the Project evolves and will be refined as part of that process. The regulatory review, detailed engineering, future technical studies, and the ongoing EA will also influence subsequent versions of this document. This initial PDP is, therefore, preliminary and is designed to further D&R communications and discussions.

While PDPs generally assume a hypothetical 'decommission tomorrow' scenario in which the Project is closed with little warning, this Plan was developed for consideration of decommissioning at the end of the commissioning stage after initial mining and processing activities have begun. This means that all initial facilities are in existence and that the initial commissioning activities are complete so that some of the facilities have potentially been impacted by radioactive materials resulting from uranium mining and processing operations.

1.4 Scope

The development of the initial PDP can be discussed in terms of the following tasks:

- A description of proposed methods and procedures for the decommissioning and reclamation of various aspects of the Project.
- Identification of the material management approach for the surface infrastructure.
- Development of the reclamation approach to the subsurface ore zone.
- A time frame for monitoring the site for physical and chemical stability and methods for detecting spills or the release of pollutants during and after decommissioning and reclamation.
- Development of a decommissioning material balance.
- Development of the potential cost estimate required to complete the decommissioning and reclamation plan.

Potential disposal/decommissioning options were identified based on best management practices at other Saskatchewan uranium mines and mills. While there is vehicular access to the Wheeler River Project site via Provincial Highway 914, the Project site is relatively isolated, which limits the number of disposal/ decommissioning options that could be reasonably considered.

The decommissioning approach includes the management of radiation that may exist on any facilities or materials used during the Project to render them safe for return to the suppliers, for potential recycling and/or for disposal in an appropriate approved facility.

The reclamation of the Project site uses the generally accepted approaches that have been applied elsewhere in Saskatchewan (e.g., CNSC 2003). The subsurface reclamation makes use of previously conducted technical studies (e.g., SRK (2018) and Newmans Geotechnique Inc. (NGI) 2023) and field and laboratory testing conducted during the Feasibility Study (FS).

1.5 Methodology

The Project is currently in the developmental stage and, as a result, this Plan was based upon a detailed review of the proposed Project and its components. The primary sources of information for the study were information from the FS (Wood, August 2023), and the draft EIS (Denison, October 2022).

This work includes the development of verified strategies associated with similar/actual projects (e.g., *Comprehensive Study Report Cluff Lake Decommissioning Project, CNSC 2003)* wherever possible, along with professional experience and decommissioning planning for various other uranium facilities.

The PDP considers the buildings and facilities as they are currently proposed in the draft EIS and feasibility level engineering plans. The total infrastructure footprint is anticipated to be approximately 74.8 ha. Figure 1-2 details the preliminary site layout that was used to develop this PDP.

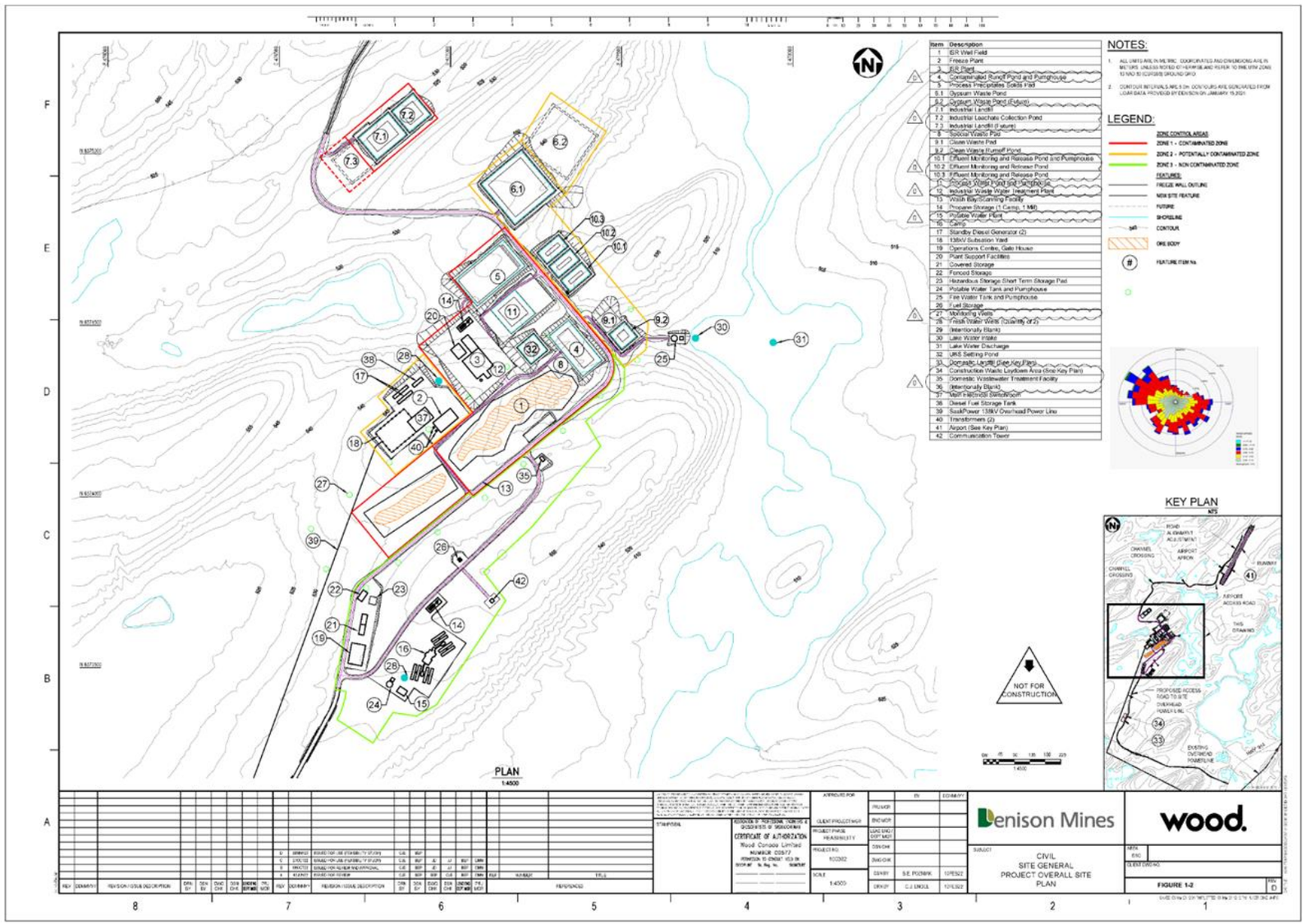

Figure Error! No text of specified style in document.**2: Wheeler River Property Site Layout (from Wood Canada Limited)**

This Plan was developed to provide a reasonable set of preliminary D&R plans for the proposed facilities. It is recognized that during operations Denison will perform progressive reclamation. However, these activities and their impact have not yet been quantified and, therefore, are not considered at this time.

Once construction is underway, the development of the Project will consist of four phases. The phases and their expected duration are (Denison 2022):

- Construction – two years;
- Operations – up to fifteen years;
- Active Decommissioning – five years; and
- Post Decommissioning Monitoring – ten to fifteen years.

As previously indicated, this document assumes that the proposed D&R work that is considered in this Plan will be undertaken after Project commissioning which is the last stage of the construction phase. Using this assumption, some processing waste materials are assumed to be present on the surface, and all facilities are assumed to be built and operational.

D&R planning for the PDP considered the following end state objectives for the site:

- protective of key environmental features in and around the site (as described in the draft EIS (Denison 2022));
- removal or stabilization of all constructed structures; and,
- reclamation of disturbed areas such that:
    - the environment is safe for non-human biota and human use;
    - the long-term adverse effects are minimized;
    - the reclaimed landscape is stable and self-sustaining; and
    - restrictions on future land use are minimized.

The PDP assumes that post-decommissioning the site will have unrestricted access to support casual usage and/or traditional land use of the site for trapping, hunting, and fishing.'

2 Project Components

The following section outlines the proposed mining and surface infrastructure that comprise the components of the project. For further detail and descriptions of components please refer to the Facility Description Manual (Denison, 2023).

2.1 Mining Infrastructure

2.1.1 In-Situ Recovery (ISR) Infrastructure

In-situ recovery (ISR) wellfield infrastructure will be developed to mine the uranium mineralization deposit. The ISR wellfield will be developed with a series of recovery and injection wells throughout the proposed phases of the deposit.

The well patterns are developed for a specific site, and installation for a given wellfield is based on the subsurface geometry of the ore deposit. Various pattern shapes are used, although a five-spot pattern will be the primary design layout. This arrangement includes one recovery well in the centre, surrounded by four injection wells. The spacing is anticipated to be approximately 5 to 10m. Ore body size and geometry will also influence the number of wells in a wellfield. The total wellfield will cover an area measuring 90m wide x 750m long. The wellfield will be constructed in a phased approach to match the freeze wall mining phases.

The pumping wells will have 5.5-inch casings. The injection wells can be either large diameter (5.5-inch casing) wells or small diameter (2.5-inch casing) wells. Additional phases of the wellfield will be completed during Project operations. The Phase 1 wellfield will include approximately:

- 12 large diameter recovery or pumping wells;
- seven large diameter injection wells; and
- nine narrow diameter injection wells.

The Phase 1 wellfield will be analyzed with monitoring wells and piezometers installed in and around the wellfield. The movement of groundwater and chemicals of potential concern within Phase 1 and the integrity of the freeze wall (discussed in Section 2.1.2) will be monitored throughout the Project. There will be two types of monitoring installations, monitoring wells that are cased and have an open screened section and vibrating wire piezometers that have a pressure transducer grouted into place. The monitoring wells will have either 2-inch or 2.5-inch diameter well casings. At the current time, the Phase 1 monitoring infrastructure will include the following:

- monitoring wells;
- existing monitoring wells that were previously completed;
- existing vibrating wire piezometers; and
- monitoring wells associated with the freeze wall.

2.1.2 Pumphouses

Two different types of pumphouses will be required: Injection Solution pumphouses and Recovered Solution pumphouses. A pumphouse is a small building located on the surface where pipes from injection and recovery wells are operated and mining solution flows are monitored.

Pumphouses will distribute the mining solution to the injection wells and collect the uranium bearing solution (UBS) from the recovery wells. Pumphouses will be connected to production pipelines. One of the pipelines will be used for receiving mining solution from the Processing Plant and the other will be used for returning UBS back to the Processing Plant.

Injection Solution Pumphouse

Injection Solution pumphouses will consist of an injection transfer tank, pumps, flow meters, control valves, piping and mixing systems which allow for mining solution to be delivered through the pipelines to the required injection wells at the appropriate reagent concentrations. The mining solution composed of hydrogen peroxide, ferric sulphate, sulphuric acid, and water will then enter the mining area and dissolve uranium in place.

Recovered Solution Pumphouse

The purpose of the Recovered Solution pumphouse will be to ensure that the solution being recovered from the wellfield downhole pumps is directed to the appropriate location within the Processing Plant. The recovered solution after being purged of radon gas will be directed to the UBS Holding Area, Industrial Wastewater Treatment Plant, or recycled back to the wellfield for further concentrating when the UBS uranium content is below target.

2.1.3 Ground Freezing Infrastructure

Denison will install a freeze wall to support a defense in depth containment strategy for mining solutions and to prevent the regional groundwater system from entering the mining zone. Once the freeze holes are constructed, the freezing process will be started, and allow for a 12-month development of the freeze wall before operations begin.

The freeze wall will be established by drilling vertical or steeply dipping holes from surface to the competent basement rock (over 410m below surface). The freeze holes will be spaced six meters apart. The ground will be frozen from the surface down to the competent basement rock to create a continuous freeze wall around the mining area that is completely contained from the surrounding regional area. The freeze wall will be a minimum of 10m thick and installed approximately 25m away from the uranium deposit.

A chilled brine solution (e.g., calcium chloride brine) will be circulate through the cased holes to remove heat from the ground. A freeze plant will be constructed on surface near the deposit where the freeze holes are collared. The freeze plant will be modular to allow for ease of installation and operation as more chiller units will be added as ground freezing needs increase. Each chiller unit produces refrigeration and contains an ammonia compound compressor. A total of six chiller units are expected to be required at peak load later in the mine life. The brine distribution system is handled by a mixing tank that can move brine to freeze holes at the required capacity.

Temperature monitoring holes will be installed in close vicinity to the freeze holes to monitor the thickness of the freeze wall and confirm that containment parameters are achieved.

The freeze wall will be monitored by the installation of temperature string pairs inside and outside of each phase, 4m on either side of the full 10m thick freeze wall, and single temperature strings installed in the cross freeze walls between adjacent phases. A total of 18 monitoring wells are planned amongst all phases and cross panels. These are designed to monitor the thickness of the freeze wall around each phase as well as the presence and absence of a freeze in the cross walls.

2.2 Surface Infrastructure

2.2.1 In-Situ Recovery (ISR) Process Plant Infrastructure

Infrastructure included within the Uranium Bearing Solution (UBS) Processing Plant Infrastructure Envelope is detailed in the following subsections.

Processing Plant

The Processing Plant will be located directly adjacent to the wellfield and will process all recovered solution into yellowcake and process precipitates. The Processing Plant will house all the tanks and equipment required for material processing.

At the Processing Plant, the first step is the removal of impurities such as iron (Fe) and radium (Ra) from the UBS as solids in the stage 1 precipitation circuit. The precipitated solids are dewatered, and the resulting filter cake is deposited in totes on a storage pad, for eventual reprocessing to recover low grade uranium values. Next, the purified solution is run through the stage 2 precipitation circuit. The circuit produces U_3O_8 (yellowcake) product solids which are dried and packaged for shipment.

The solution from the Yellowcake precipitation circuit is treated in the three phases of the industrial wastewater treatment circuit. The first phase neutralization precipitates the majority of the remaining radionuclides, the resulting solids from this stage are stored as filter cake in totes along with the stage 1 process precipitates at the process precipitates pad. The second phase neutralization removes the majority of the remaining dissolved solids, forming a waste solids stream composed mainly of gypsum. Second phase precipitates are pumped as a slurry to the gypsum waste pond for consolidation. The third stage ion exchange and electro reduction (IX/ER) circuit targets selenium (Se) removal. The small Se-bearing precipitates solids stream is blended with the gypsum waste for disposal. The treated effluent is then held in the effluent monitoring ponds for testing, to ensure it meets discharge requirements prior to release to the environment.

The Processing Plant will contain various facilities for the control and management of the mining solution, plant operations, and additional support facilities, including the following:

- radon purge tank;
- uranium bearing solution (UBS) holding area;
- two-stage precipitation process;
- yellowcake drying and packaging area;
- chemical bulk storage tanks;
- mining solution chemicals (e.g., sulfuric acid, iron sulphate, hydrogen peroxide);
- processing chemical storage (e.g., magnesium hydroxide, hydrogen peroxide); and

- industrial wastewater treatment plant (IWWTP), mixing tanks and chemical holding tanks (e.g., barium chloride, calcium hydroxide)

2.2.2 Process Containment Infrastructure

The Processing Plant will require various pads and ponds for the storage of waste materials from several of the above processes. The pads and ponds will be located outside of the Processing Plant. These structures are described below.

2.2.2.1 Uranium Bearing Solution Holding Area

Recovered high-grade UBS will be held in Recovered Solution Tank.

Process Precipitates Pond

The precipitates generated in the Processing Plant will be transferred to the process precipitates pond. Any radioactive precipitates generated during the first stage of the IWWTP will also be directed to the process precipitate pond. The precipitates will be stored in totes inside the pond. This pond design will allow the precipitate totes to be stored below ground level.

The process precipitates pond will have a geosynthetic composite liner system with leak detection capabilities and will be designed to hold up to 50,000 m^3 of precipitates. Any runoff collected in the pond will be directed to the process water pond and recycled through the plant.

Industrial Wastewater Treatment Plant Precipitate Pond

The Industrial Wastewater Treatment Pond (IWWTP) will initially be constructed to hold 50,000 m^3 of waste, with room for expansion to a storage capacity of 150,000 m^3. Gypsum waste material will be transported from the IWWTP by HDPE pipes welded by electro-fusion.

Process Water Pond and Pump House

The process water pond provides surge capacity in the event of an upset. The pond has the capacity to store two (2) weeks of off-specification process flow. Additionally, water collected from the process precipitate storage pad, special waste pad and a variety of mill areas will be sent to the process water pond. The pond will be double lined with leak detection and is designed to hold 30,000 m^3 of water. The pond is located adjacent to the processing plant. Water and sludges from this pond will be sent to the IWWTP for treatment.

Treated Effluent Monitoring and Release Ponds

The treated effluent produced by the IWWTP will be directed to one of three effluent monitoring and release ponds. The effluent monitoring ponds have been designed to hold effluent for 80 hours in order to verify effluent quality prior to discharge. The Project will include three (3) ponds for operational flexibility. The effluent discharge lines will be single walled with insulation/heat tracing to prevent freezing as a result of low temperatures.

2.2.3 Water Management Infrastructure

The infrastructure included within the Water Management Infrastructure Envelope is detailed below.

Wellfield Runoff Pond and Pump House

All runoff generated by the wellfield and other areas of the site, will be directed to the wellfield runoff pond. The pond is designed to hold 38,200 m^3 of water and will be lined with a double composite liner system with leak detection.

Potable Water Treatment Plant and Distribution

Potable water on-site will be generated by a prefabricated modular potable water treatment plant (PWTP). The PWTP will include a treatment plant, a 2,000 L storage tank, and a bottle filling station. Treated potable water will be piped to the main camp buildings, the fire water tank, the operations centre and the processing plant. The PWTP will be placed on a concrete pad.

Domestic Wastewater Treatment Plant and Distribution

The domestic wastewater treatment plant (DWWTP) will be a modular facility comprised of two heated and insulated units, a holding tank, ancillary filtration, ancillary treatment process equipment, and sludge handling system. A 5,000 m^3 pond with a composite liner system will be designed to receive treated effluent from the DWWTP (Denison 2022). The DWWTP will be placed on a concrete pad.

Supplementary Water Management Infrastructure

The following additional infrastructure is included within the water management infrastructure envelope:

- Fresh Water Wells (two);
- Lake Water Intake;
- Lake Water Discharge;
- Clean Waste Runoff Pond; and
- Sanitary Sewers.

2.2.4 Utilities and Essential Services

Infrastructure included within the Utilities, and Essential Services Envelope is detailed below:

SaskPower 138 kV Overhead Power Line

An overhead power line will be constructed to provide electrical service to the Project by an approximate 5-km extension tap from the existing 138 kV overhead transmission line that runs along Highway 914.

Firewater Tank, Pumps and Piping

The fire water tank is 500 m^3 and will include two electric fire water pumps and a backup diesel fire water pump. The firewater reservoir feeds an approximately 2,000 m long firewater pipe network of HDPE fire-main that is dispersed throughout the site as required for fire suppression.

Supplementary Infrastructure

The following additional infrastructure is included within the utilities and essential services infrastructure envelope:

- above ground piping;
- Standard Diesel Generators;
- 138 kV Substation;
- Main Electrical Switch Room;
- Transformers; and
- Communication Tower.

2.2.5 Waste Management Facilities

The domestic and industrial landfills will be the primary waste disposal facilities on the site. The nature and volume of waste material generated by decommissioning of the project are uncertain at this time. For this PDP, it is assumed that both low level radioactive waste (LLRW) and non-LLRW will be present on-site at the time of decommissioning and will require management.

In addition to the landfills, select ponds and pads have been designed to provide permanent storage of waste material. At the time of the DDP, Denison will review existing on-site infrastructure and waste materials and may elect to include additional facilities in its waste management strategy. The following facilities will be reviewed as potential permanent waste storage sites in addition to the domestic and industrial landfills:

- Process precipitates Pond;
- Industrial Wastewater Treatment Pond; and
- Special Waste Pad.

Key waste streams handled by these landfills include sediments, plastics, wood, concrete, metal, and general domestic waste.

Facilities included within the Waste Management Facilities Envelope are detailed below:

Industrial Landfill and Leachate Collection Pond

The industrial landfill will be designed to accept industrial waste generated on-site as a result of project activities. This will include wastes that have chemical and/or low-level radiological contamination. The landfill will initially be constructed to accept 50,000 m^3 of waste. The design of the landfill will include the ability for a potential expansion to 100,000 m^3 of waste storage capacity. The landfill will include a laydown area within the lined limits of the landfill. All material that cannot be cleaned to pass the minimum required radiological clearance will be disposed of within the industrial landfill or transported to an approved off-site facility. Waste will be contained within a double lined composite liner system with leak detection and leachate collection. A leachate collection pond will be constructed adjacent to the landfill and will collect leachate generated within the industrial landfill for management. The leachate collection pond will be double lined with a composite liner system. Any collected leachate will be pumped to the IWWTP. An area within the industrial landfill will be dedicated to cleaning contaminated material to allow for off-site removal.

Special Waste Pad

Mineralized cores and cutting from the wellfield development will be managed at the special waste pad. Waste directed to the pad will be uranium containing material. The pad is 2500 m^2 and designed to store approximately 2000 m^3 of special waste rock.

Clean Waste Pad

Sandstone cuttings and cores from the wellfield and drilling activities will be managed at the clean waste pad. Waste directed to the pad will be clean and free of contaminants. The pad is 2500 m^2 and designed to store approximately 7,800 m^3 of clean waste and will be lined with a single geomembrane. If required, a clean waste pond will be constructed to manage run-off from the clean waste pad.

Domestic Landfill and Leachate Collection Pond

Non-recyclable material, inert waste and contamination free materials will be disposed of within the domestic landfill on-site. The domestic landfill is designed to store 34,400 m^3 of waste and will be lined with a composite liner system with leak detection. A leachate collection pond will be constructed adjacent to the landfill and will collect leachate generated within the domestic landfill for management. The leachate collection pond will be double lined with a composite liner system.

Construction/Demolition Waste Laydown Area

A laydown area will be developed adjacent to the domestic landfill for the temporary storage of construction and demolition waste. Clean wood, plastics, metal, and concrete may be stored at the laydown. The construction laydown area will not be lined and will have a berm surrounding the area to minimize run-on and runoff. The base of this laydown will be scarified and recompacted prior to material laydown.

2.2.6 Surface Ancillary and Support Facilities

The main facilities included within the Surface Ancillary and Support Facilities Envelope include but are not limited to the following:

Wash Bay/Scanning Facility

A wash bay will be available to clean items, equipment, and vehicles that may have been in contact with potential contaminants. The wash bay area will have an impermeable floor and a lined water collection sump. Rinse water from the wash bay sump will be routed to the wellfield runoff pond or directly to the process water pond. Items that are too large for the wash bay can be cleaned at the industrial landfill laydown area (Denison 2022).

Camp

The camp will include both common areas such as the Kitchen and dining room and the sleeping trailers. The camp will be located southwest of the wellfield, and it is anticipated to be a turnkey building manufactured off-site and assembled and commissioned on-site. The building's design will be sized to accommodate a peak load of about 190 individuals during Operation; however, due to its modularized design, additional modules can be easily installed should additional beds be required in the future (Denison 2022).

Operations Centre, Gate House

A weigh scale will be installed and will allow for verifying incoming and outgoing loads. The north gate is a simple gate and will not be staffed (Denison 2022).

Airstrip, Apron, and Terminal Buildings

The airstrip consists of a 1,600m long x 30m wide runway, and a 110m x 200m apron pad. The airstrip will be a gravel topped private strip that will be designed for daytime use. The airstrip will include an apron, terminal building, communication tower, small diesel generator and appropriate instrumentation and lighting for low visibility, and/or nighttime landing for emergency purposes.

Composting Facility

The composting system is expected to be in a sea can. After composting is complete, an outdoor curing phase will be required during the summer months. Based on experience with the proposed Brome composting system at other mine sites, the finished compost is not foreseen to be a wildlife attractant (Denison 2022).

Supplementary Infrastructure

The following additional infrastructure is included within the surface ancillary and support facilities infrastructure envelope:

- Covered Storage;
- Fenced Storage;
- Plant Support Facilities;
- Fire Water Tank and Pump House;
- Monitoring Wells (every 150m);
- Construction Trailers; and
- Laydown Areas (assumed and recycling area).

2.2.7 Industrial Waste and Hazardous Material Storage

Facilities and tanks included within the Industrial Waste and Hazardous Material Storage Envelope are detailed below.

Propane Storage Areas

The propane storage area will include: a 100,000 L storage tank, vaporizers, a propane bottle fill station, and a bottle weigh station.

Fuel storage Areas

Diesel, gasoline, and Jet A fuel will be stored on-site in approved fuel storage areas. Fuels will be stored in approved, above-ground, 25,000 L double-walled storage tank(s) equipped with secondary containment in accordance with provincial regulations and standards.

Supplementary Infrastructure

The following additional Infrastructure is included within the industrial waste and hazardous material storage envelope:

- Hazardous Storage Short Term Storage Pad.

Soil testing will be conducted in any areas of known contamination and/or potential spills, including areas around chemical, fuel, and industrial waste storage areas. Testing will be conducted according to industry standard procedures and compared to provincial and federal soil standards.

2.2.8 Site Roads and General Development

Facilities and structures that are included within the General Site Development Envelope are as follows:

- Roads – Primary;
- Roads – Secondary;
- Culverts;
- Chain Link Fence (m);
- Gates; and
- Disturbed Areas (including the borrow area).

Two full span water crossings will be required on the road to the airstrip. These crossings will be designed, constructed, and maintained to avoid causing harm to fish and fish habitat and will be clear span bridges (Denison 2022).

3 Waste Material Balance

This Plan includes a compilation of the design information from the FS to develop a list of preliminary material types for the decommissioning scenario. At this time, the most current data on the surface infrastructure is the information that is in the Site layout presented in Figure **Error! No text of specified style in document.**2 from Wood Canada Limited, which was used to generate these estimates. Where appropriate, the information from the Denison draft EIS (Denison 2022; hereafter referred to as the "2022 Draft EIS") was also used as a source of data to develop the quantities used in this study.

The estimated decommissioning and reclamation quantities were based on the following:

- demolition and decommissioning of all existing Project structures, including buildings, process vessels, ponds, storage tanks, pipelines, roads, and power infrastructure at the end of the proposed development;
- reclaiming the Project area to a boreal forest land use; and
- reclaiming the subsurface to groundwater quality such that it is acceptable to the Saskatchewan Ministry of Environment (SkMOE) as determined through risk assessment and EA process and continual improvements activities.

The effect of the sale or recycling of any operating equipment was not considered in the estimation of the waste quantities. While it is expected that some recycling or reuse of some of this equipment will occur once they are no longer required on-site, the inclusion of this would be premature at this time.

3.1 Waste Streams

3.1.1 Demolition Waste

Demolition waste includes waste from the demolition of both buildings and other ancillary infrastructure associated with the Project. The size of buildings and the various surface infrastructure was established from available site plans. In the future, mechanical equipment lists can also be used to further refine the demolition waste quantities. All facilities include the required electrical, heating, ventilation, and air conditioning (HVAC), fire protection and other services.

Quantities of waste generated during decommissioning will vary depending on the design of the facility. All surface facilities on-site can be categorized as one of the following infrastructure types:

- ***Pre-engineered*** – all process and internal platforms/structures inside these buildings will be stick-built and either supported independently of the shell structure or tied to the pre-engineered columns where possible.
- ***Stick-built*** – each building and its internal platforms/structures will be designed as one structure.
- ***Modular*** – standalone structure fabricated off-site and shipped to site as a single unit or multiple sections supported on independent foundations on grade or on elevated structural platforms.

The amount of waste generated from the demolition of a building and its contents was determined by the volume of the building, the construction of the building, the density of materials, and the infrastructure and equipment contained within that building envelope. The building usage was therefore used to

estimate the total volume of waste generated by the demolition of this structure using a waste factor (as a percent) for three different levels of use or density of internal infrastructure. These waste factors were applied to the total volume of the structure to determine the anticipated volume of waste generated from the demolition of that structure.

The waste factors for heavy, medium, and light usage buildings are presented in Table **Error! No text of specified style in document.**-1 below.

Table Error! No text of specified style in document.**-1: Building Waste Factors**

Building Type	Examples	Waste Factor (%)
Heavy density	Mill (or processing plant), associated piping and tanks	40
Medium density	Water treatment plant, freeze plant(s), repair shops, etc.	20
Low density	Office trailers, camp infrastructure, offices, small buildings etc.	10
Single Use	Pipes, liner, and wells	90

Non-hazardous waste materials, such as roofing materials, insulation, wood, co-mingled concrete, and light steel, may be disposed of on-site or off-site in a licensed landfill.

Low-level radioactive waste (LLRW) is defined as radioactive solid waste that contains material with radionuclide content above established clearance levels and exemption quantities but that generally has limited amounts of long-lived activity. LLRW includes both the demolition waste from buildings that either contain low-level radioactively contaminated equipment and/or have become radioactive themselves through the processing or storage of uranium bearing materials.

The amount of LLRW demolition waste will likely vary slightly during operations as facilities may become radiologically impacted during operations. To be conservative in this study, it has been assumed that the entire processing plant building, and associated infrastructure becomes impacted by LLRW during commissioning, meaning that it is classified as LLRW waste at the beginning of operations.

These LLRW wastes generally require special care and attention during all phases of a mine's life. During decommissioning, non-LLRW is kept separate from LLRW wastes.

3.1.2 Industrial Chemical Waste

At the time of decommissioning, it is assumed that project chemicals, residual industrial wastes, and hazardous materials will be present on-site in various quantities. Residual industrial wastes include the process precipitate solids, gypsum waste and all yellow cake product on-site at the time of decommissioning. The precipitate solids will contain approximately 2% to 3% uranium. This makes the process precipitates of economic value. Decommissioning will include the sale and removal of the process precipitate solids to an off-site facility as part of Decommissioning.

Outlined below in Table **Error! No text of specified style in document.**-2 are the project chemicals that may be on-site at the time of decommissioning. This includes the ISR solution, freeze plant brine and other industrial chemicals for the mill and IWWTP.

Table Error! No text of specified style in document.**-2: Project Chemicals**

Chemical	Planned Use	On-site Storage
Ammonia	Freeze Plant Operation	Freeze plant piping and dedicated storage tank
Barium Chloride	Recovery Solution Processing and IWWTP Operation	Dedicated storage tank within the processing plant
Flocculant	Recovery Solution Processing	Dedicated storage tank within the processing plant
Hydrogen Peroxide	Mining and Recovery Solution Processing	Dedicated storage tank within the processing plant
Iron Sulphate	Mining and IWWTP Operation	Dedicated storage tank within the processing plant
Lime (Calcium Hydroxide)	Recovery Solution Processing and IWWTP Operation	Dedicated storage tank within the processing plant
Magnesium Hydroxide	Recovery Solution Processing	Dedicated storage tank within the processing plant
Sodium Bicarbonate	Neutralizing of solutions and wellfield	Dedicated storage tank within the processing plant
Sodium Hydroxide	Recovery Solution Processing	Dedicated storage tank within the processing plant
Sulphuric Acid	Mining and IWWTP Operation	Dedicated storage tank within the processing plant

Decommissioning includes the management of all hazardous substances associated with support facilities including fuel, paint, used oil, and chemicals. These hazardous substances will be managed in a safe and secure manner in line with Safety Data Sheets, permit conditions, and applicable regulations such as the Hazardous Substances and Waste Dangerous Goods Regulations. Where possible, chemicals will be mixed to produce a neutral solution and disposed of in an approved manner at the site. Hazardous materials, such as spent chemicals (that cannot be managed on-site), waste oil, and sludges, will be disposed of off-site at licensed facilities.

During operations, Denison will maintain an up-to-date record of the various hazardous substances on-site, Safety Data Sheets, and appropriate procedures for spill response. This list will serve as the starting point during decommissioning.

3.1.3 Recyclables

Recyclables will be generated during construction, operations, and decommissioning. During decommissioning the recyclable collection and disposal systems established during construction and

operations will continue. Any recyclable material will go directly to the recycling bins at the recycling laydown area. During decommissioning, there will be an increased generation of recyclable materials including steel, plastics, wood, cardboard, and paper common household recyclables which will be managed at the recycling laydown area.

Recyclable material generated at the wellfield and processing plant that may have radiological contamination will be scanned where required, cleaned to allow for off-site removal or sent to the industrial laydown for additional potential decontamination. Recyclables that do not meet radiological clearance criteria following reasonable cleaning efforts will be disposed of in the industrial landfill. Where possible, all recyclables will be shipped off-site to approved recycling facilities (Denison 2022).

3.2 Estimated Waste Balance

A high-level review of the potential waste quantities generated during decommissioning was completed for this initial PDP. The estimated volumes of demolition wastes are outlined in Table **Error! No text of specified style in document.**-3. Table **Error! No text of specified style in document.**-3 shows both the estimated volume that will be disposed of on-site and the estimated volume for off-site management or disposal. In the event that a viable option for off-site management or disposal doesn't exist, then on-site disposal may be considered.

Table Error! No text of specified style in document.**-3: Decommissioning Waste Balance**

DECOMMISSIONING PLANNING ENVELOPE	NON-CONTAMINATED WASTE		CONTAMINATED (LLRW) Waste	
	ON-SITE DISPOSAL (m^3)	OFF-SITE MANAGEMENT(m^3)	ON-SITE DISPOSAL (m^3)	OFF-SITE MANAGEMENT (m^3) *1
Subsurface and ISR Mining Facilities	0	0	846	510
Processing Plant Infrastructure	7,936	0	21,829	722
Water Management Infrastructure	1,010	592	7,640	413
Utilities and Essential Services	1,264	1,414	0	0
Industrial Waste and Hazardous Materials Storage	785	785	315	40
Waste Management Facilities	275	0	2,562	0
Surface Ancillary and Support Facilities	3,635	2,512	240	60
Site Roads and General Site Development	714	664	0	0
Totals	**15,618**	**5,966**	**33,431**	**1,745**

*1 Footnote - Assumes that these wastes that are originally classified as LLRW can be effectively cleaned so that they can be shipped off-site, and a recycler would be willing to accept them.

Based on the preliminary decommissioning materials balance described above in Table **Error! No text of specified style in document.**-3, further analyses were conducted to determine if there is sufficient disposal capacity in the two on-site landfills for the estimated quantity of waste that is expected to be generated during the decommissioning of these facilities. These analyses are shown below in Table **Error! No text of specified style in document.**-4. Based on this analysis of the planned on-site volumes and the domestic landfill and industrial landfill space, these facilities will have sufficient capacity for the planned decommissioning activities.

Table Error! No text of specified style in document.**-4: On-Site Disposal Balance**

ITEM	VALUE	UNIT	NOTES
Domestic Landfill Airspace	34,400	m^3	Total airspace available in the domestic landfill for waste
Industrial Landfill Airspace	50,000	m^3	Total airspace available in the industrial landfill for waste
Non-Contaminated Waste to be Disposed of On-Site	15,618	m^3	Estimated volume of non-contaminated decommissioning waste to be disposed of on-site
Contaminated Waste to be Disposed of On-Site	33,431	m^3	Estimated volume of contaminated decommissioning waste to be disposed of on-site
Waste to Cover Ratio	5:1		Assumed waste to cover soil ratio for volume estimate.
Total Airspace Consumed Domestic Landfill	18,742	m^3	Including waste and cover soil
Total Airspace Consumed Industrial Landfill	40,118	m^3	Including waste and cover soil
Domestic Landfill Airspace Remaining After Decommissioning	15,658	m^3	
Industrial Landfill Airspace Remaining After Decommissioning	9,882	m^3	

4 Decommissioning Options

Potential disposal and decommissioning options were identified with consideration for both the ongoing waste management planning and D&R plans from other Saskatchewan uranium mines and mills. The PDPs for operating mines are not publicly available. However, there is detailed public information on the D&R planning of the AREVA (now Orano) Cluff Lake mine, which was used as a reference point (CNSC 2003). While there is vehicular access to the Project via Provincial Highway 914, the Project is relatively isolated, which limits the number of disposal/decommissioning options that could be reasonably considered.

Denison's decommissioning commitment is to return the land back to the Province of Saskatchewan for unrestricted surface land use post-closure. This PDP outlines how radiological, physical, and chemical risks will be managed during Decommissioning, so that no unreasonable risks remain. Denison will prioritize passive controls over active controls during D&R planning to reduce long-term risks.

4.1 Screening of Available Options

Potential decommissioning strategies or options for each waste type were identified for consideration. These options were reviewed relative to the methodology used at other facilities (industry standard), the methods proposed for operations, and against the following six evaluation categories:

- Environmental: Type of potential impact (e.g., water, air, land, wildlife), magnitude, the likelihood of potential impact or benefit, operating or decommissioning.
- Health and Safety: Type of potential impact (e.g., airborne, dust, water) magnitude, the likelihood of potential impact or benefit.
- Community: Indigenous and public perception, socio-economic impact, or benefit, any documented or articulated preference.
- Regulatory: Permitting required (initial and annual reporting) monitoring requirements.
- Engineering and Design: Complexity, implications on planned infrastructure; and
- Operations and Maintenance: Level of effort, frequency.

It is recognized that the use of the assessment criteria mentioned above is subjective and will change with time as more information on various categories becomes available and better understood. These assessment criteria may also evolve with time as considerations change and/or through discussions with either the regulators or the community.

The proposed use of ISR to mine this deposit will reduce the amount of waste rock that is generated during the mining compared to traditional mining methods. Traditional uranium mining generates a large volume of waste rock and other special waste (e.g., LLRW and/or potentially acid generating waste rock). The Project will generate some waste rock and LLRW as a result of the drilling process, the quantities will be much less than traditional methods. These small quantities of waste rock will be stored on the clean and special waste pads. After confirmatory radiation scanning, the clean waste rock will likely be utilized during operations as cover on the one or both landfills.

Denison aims to be a leader in environmental management for uranium mines during all phases of the Project. The general direction for the screening of potential decommissioning options includes the following:

- minimizing the post-decommissioning footprint to lessen potential impacts and to improve monitoring efficiency;
- contouring, covering in place and reclaiming all lagoons and/or ponds; and
- processing of all uranium bearing solution (UBS) through the processing plant and combining as much of the LLRW waste as possible in the contaminated landfill at closure.

Future discussions will be held with the local community to determine the amount of access to the area they wish to maintain in the future (post-decommissioning) and if they would prefer to assume ownership of any of the mine facilities (e.g., camp, airstrip, roads, etc.).

An initial screening relative to these criteria was conducted and the selected approaches for each infrastructure will be made. Additionally, Table A.1 compares the selected management approach with the approach used at the now decommissioned Cluff Lake site.

5 Decommissioning Approach

The PDP assumes that decommissioning and reclamation will be undertaken following the construction and initial operation of the site. The Operation Management System will contain the necessary procedures and work instructions to ensure the protection of workers and the environment with respect to radiation protection, hazardous materials handling, industrial safety, and environmental protection. Where specific decommissioning activities are identified that require additional protection or mitigation measures, documentation will be expanded to address these hazards during the detailed decommissioning planning stage.

The PDP assumes that the Project undergoes a sudden, unexpected closure. There will be an immediate post-operational phase where operations have ceased, and it is necessary to ensure the site and facilities are gradually shut down in a manner that ensures the site is transitioned to a safe and secure state in order to prepare for decommissioning. Under normal conditions, the DDP and associated licenses would be expected, however, these will not have been obtained for a sudden and unexpected closure scenario. As such, the decommissioning strategy assumes that decommissioning will begin immediately following the closure of the site, without any delays and will incorporate in-situ decommissioning strategies in its approach.

To facilitate potential changes to the D&R plan, management options and/or the underlying assumptions, seven planning envelopes were established:

1. Approvals Management
2. Active Decommissioning Management
3. Subsurface Remediation
4. ISR Mining / Freezing Facilities
5. Surface Buildings and Facilities
6. Environmental Monitoring and Reporting
7. Post-Decommissioning Monitoring

These planning envelopes were generally further subdivided into smaller groupings or subdivisions. These subdivisions provided a summary of required activities, individual buildings, and/or structures within each of the planning envelopes and allowed for detailed decommissioning and reclamation assessment of each component.

The general approaches and assumptions used during the preparation of this plan are summarized below:

1. Prior to decommissioning, the information presented in the last PDP shall be refined and expanded on and developed into a Detailed Decommissioning Plan (DDP). The DDP will outline the required scope and timing for regulatory approval and a plan to ensure compliance. Additionally, the DDP will address the preparation of all assessments/permits/license application(s) that will be required to execute the DDP for the Project.
2. Prior to off-site or on-site disposal, all materials will be checked for radioactive surface contamination. If these materials meet the IAEA Regulations for the Safe Transport of

Radioactive Materials (IAEA, TS-R-1) criteria for safe removal, they will be "green tagged" and hauled off-site. If the material exceeds this standard, the material shall be cleaned and retested until the standard is met. Off-site shipments of radioactively contaminated material will be minimized to the greatest extent possible. If the off-site transportation of materials is necessary, then the Transportation of Dangerous Goods Regulations will be followed, and the applications shall be made for the appropriate licenses.

3 Decommissioning activities will attempt to maximize the quantity of material that is recycled, reused, donated, or sold. The quantity of waste screened and identified for disposal will be minimized. All waste will be disposed of in an appropriate on-site containment facility or taken off-site to a licensed facility of the hauler. This includes all radioactive wastes, ASTs, and inert waste.

4 Materials that are to be taken off-site for disposal at a licensed facility include all hazardous wastes, regulated underground storage tanks (USTs) and above-ground storage tanks (ASTs). It is noted that the nearest licensed facility to receive the USTs and ASTs is Prince Albert, Saskatchewan.

5 After operations cease, proper management of all chemicals brought to the site will occur, with on-site neutralization and/or off-site shipment either to a licensed waste facility or return to the supplier.

6 All materials are to be taken off-site for management or disposal or deposited in an appropriate on-site containment facility.

7 In order to optimize future monitoring and management to the extent possible, similar and chemically compatible materials in ponds will be combined (to reduce the environmental footprint), and all liner systems will be hauled to one of the on-site landfills or placed in a related pond.

8 All surface infrastructure including tanks, piping, and electrical wiring will be emptied, cleaned, tested and then either taken off-site for disposal or deposited in an appropriate on-site containment facility. Any underground piping will be left in place, but piping will be broken up approximately every 5m.

9 Any wash water used in the cleaning of materials prior to shipping off-site will be contained in a lined area. During most of the decommissioning the cleaning will occur in the wash bay. Wash water will be treated by the IWWTP. Any sediment collected during this process will be contained in drums for subsequent disposal at an approved facility.

10 As a worst-case assumption, all roads are assumed to be reclaimed (scarified, contoured and revegetated), and all facilities are assumed to be demolished (i.e., no buildings left standing on-site). This will need to be discussed with the local communities to determine their preference regarding the roads, buildings, and airstrip.

11 On-site disposal facilities will be contoured, covered in place, and reclaimed. The covering of stockpiles, pads and ponds will depend in part on the levels of radioactivity encountered at the

time of decommissioning. This D&R scenario assumes a minimal level of radioactivity will be present on-site and that radioactive material will be mainly in the industrial landfill and/or if necessary, broken up and covered in place. The present plans are:

a. All non-radioactive stockpiles and materials will be contoured and then covered with clean soils and a 0.5m thick layer of growth media (crushed rock or clean fill);

b. All potentially radioactive stockpiles and materials will be disposed of within the industrial landfill; and

c. Once all stockpiles and materials have been covered and contoured, they will be revegetated.

12 The Project area will be surveyed for gamma radiation to identify any potential areas of radioactive contamination of the surficial soils. These soils will then either be buried beneath clean fill, landfilled on-site or hauled off-site to an approved facility. The PDP objective for surface radiation levels is 1 millisievert (mSv) per year above background levels.

13 At this time, it is assumed that the area will be reclaimed to boreal forest conditions.

14 All remaining on-site disposal and containment structures will be closed and reclaimed to minimize disturbance and integrate into the surrounding landscape.

15 Post decommissioning and reclamation activities and monitoring will be completed for 10 to 15 years following final site closure and reclamation.

16 The following subsections describe approaches that are specific to the identified planning envelopes.

5.1 Approvals Preparation and Management

Prior to decommissioning, a DDP shall be prepared for the Project. The decommissioning and reclamation of the Project will be completed in accordance with all provincial regulations and guidance documents, with the fundamental consideration being to ensure the physical and chemical stability of the site in order to protect human and ecological health and the environment.

It is assumed that various approvals, and permits will be required prior to proceeding into the active decommissioning phase. In addition, the proposed management options and the underlying assumptions will need to be reviewed, and the approaches will require further detailing and scheduling to allow for the successful completion of the Project.

The DDP and these approvals will also require reporting of the work after completion. Throughout this process, record keeping will be required. Setting up the required forms and systems to ensure that the records are sufficient and complete will be one focus of the initial approval preparation and management phase.

Routine environmental monitoring will be conducted during the active phases of these D&R activities to confirm and document that the activities are completed as planned. This monitoring will include the environmental, health and safety considerations, listed below.

- Radiation levels of surface facilities after cleaning;

- Radiation clearance for all materials that are to be taken off-site;
- Radiation survey of the facility footprints;
- Radiation survey of soil from areas with elevated radiation relative to background conditions;
- Worker radiation exposure (OSL dosimeter badges and real-time personal dosimeters);
- Decontamination operation monitoring to prevent spills, and to address, document, remediate and report on spills as necessary; and
- Record of all progressive decommissioning and reclamation activities.

During this stage, an initial site inspection will be conducted to confirm the status of the site and the equipment requiring decommissioning. This site inspection will also include a hazardous waste chemical survey to determine all chemical residues that may be present on-site, and that will need to be addressed in the subsequent stages.

During this stage of the project, detailed records of the constructed facilities, operations records, spill reports and waste handling manifests will be collected and digitized to form part of the permanent record of the facility.

It is anticipated that this stage will take up to approximately 18 months to complete.

5.2 Subsurface Remediation

During Operations, acidic lixiviant (mining solution) will be introduced into the ore zone via injection wells to leach and recover the uranium. The 2022 Draft EIS defined the mining zone as the area that is bounded by the freeze walls extending up 50 m above the ore zone (Denison 2022). The groundwater within the mining zone will be remediated as part of the D&R plan for this facility.

At the proposed time of these D&R activities, lixiviant will only have been added to the ore zone in the Phase 1 area (as part of wet commissioning). The freeze wall will be established around the Phase 1 area prior to the addition of lixiviant to the ore zone.

Groundwater remediation will likely be the first major stage in physical works in the PDP program. Remediation of the mining area will involve injecting water (generally expressed in terms of pore volumes of the zone being remediated) into the mining area through injection wells and recovering groundwater through recovery wells, similar to the proposed ISR mining technique.

Groundwater remediation that will occur during the subsurface remediation will include the following.

1. Rinsing Stage: the first step is to inject groundwater into the mineralized zone and recover it back to the surface.
2. Neutralization Stage: the second step is to inject a mild alkaline solution of sodium hydroxide and/or sodium bicarbonate and water and recover it back to the surface.

The recovery and injection rates will be similar to those that are anticipated for ISR operations. The recovered water will be treated by the IWWTP. The rates of groundwater remediation may be limited by the processing capacity of the IWWTP.

Mining area groundwater decommissioning objectives have been established for remediation of the mining zone to ensure groundwater quality in the ore zone requires little or no long-term monitoring and

ensures no significant adverse effect on the environment. The mining area decommissioning objectives have been developed through groundwater modelling work and are achievable based on metallurgical testing. Numerical groundwater modelling was also applied to evaluate the fate and transport of the groundwater from the remediated mining area toward Whitefish Lake, the primary surface water receptor. Refinement of the mining area decommissioning objectives and the length of time to achieve these objectives are expected to continue to evolve as the Project progresses. The final acceptable mining area decommissioning objectives will be developed prior to initiation of groundwater remediation, either during operations and/or as part of the DDP. The current groundwater objectives for the mining area are shown in Table **Error! No text of specified style in document.**-5.

Table Error! No text of specified style in document.**-5: Mining Area Decommissioning Objectives**

PARAMETER	UNITS	RESTORED SOLUTION
pH	Unitless	4.3
Aluminum	mg/L	7
Arsenic mg/L 0.06	mg/L	0.06
Cadmium	mg/L	0.015
Cobalt	mg/L	2
Chromium	mg/L	0.05
Copper	mg/L	0.017
Iron mg/L 100	mg/L	100
Molybdenum	mg/L	0.1
Nickel	mg/L	9.7
Lead	mg/L	3.1
Sulphate	mg/L	703
Selenium	mg/L	0.08
Zinc	mg/L	1.4
Uranium	mg/L	100
Vanadium	mg/L	0.51
^{226}Radium	Bq/L	2.00E+02

During both stages of the groundwater remediation program, the use of one or more test wells and/or injection wells at various locations during this process will assist in ensuring the distribution of neutralized groundwater throughout the mining zone.

The success of the groundwater remediation will be documented through the:

- the monitoring of the groundwater pH and conductivity during the groundwater remediation steps; and

- the collection of groundwater samples from monitoring wells in and around the ore zone to document that the groundwater quality meets these objectives. During the active groundwater remediation groundwater monitoring will occur monthly.

Based on the analyses of laboratory and field test work conducted to date, it is assumed that approximately 35 pore volumes will be required to rinse the ore zone, and an additional 75 pore volumes will be required to neutralize the ore zone. It is conservatively assumed that this process will take up to 1 year of pumping for each mining phase.

Once the mining area decommissioning objectives have been met and maintained (i.e., stable) and all contaminants of potential concern are less than their objective, the perimeter freeze wall will be turned off and allowed to thaw. This will allow the eventual re-establishment of the pre-operational groundwater flow regime in the former mining area. Groundwater in the mining zone will be monitored to ensure that the groundwater quality continues to comply with the decommissioning objectives as the freeze wall thaws. At that time, the chiller units will be decommissioned and/or removed from the site and the remaining freeze wells and above ground piping will be decommissioned.

5.3 Mining Infrastructure

Following completion of the subsurface remediation once groundwater quality is stable and satisfies the remediation objectives detailed in Table **Error! No text of specified style in document.**-5, then the decommissioning mining infrastructure can begin.

The first step in the decommissioning of the mining infrastructure is the decommissioning of the chiller units, freeze wells, pumping systems and freeze solution handling facilities.

All wellheads, piping and electrical will be removed as part of the mining infrastructure prior to well abandonment. This will include the following:

- removal, decontamination, and disposal of all surface piping;
- decontamination and removal of the pumphouses;
- thawing of the freeze wall and decommissioning of all freeze pipes, and freeze plant units;
- removal, decontamination, and disposal of all electrical and monitoring cables; and
- recycling, sale of the asset demolition/infrastructure demolition waste as scrap, or disposal of waste in either the industrial landfill or off-site at an approved licensed facility.

It is expected that the chiller units will be cleaned and shipped off-site for reuse.

The decommissioning of the wells is anticipated to occur in two phases. The initial phase involves decommissioning the majority of the wells and vibrating wire piezometers. Selected wells will remain for ongoing monitoring and will be decommissioned as part of the second phase or left for post-decommissioning monitoring.

Decommissioning of the pumping, injection, freeze wells, and monitoring wells will generally consist of the following:

- The screened portion of the well will be filled with stable precipitates covered with sand from the base to just above the casing.

- The lower 15-20 m within the casing will be grouted with a bentonite clay-cement blend, cement grout and/or further capped at this level with a mechanical plug.
- Test the plug for proper shut-off by pressure-testing the plug and production casing to 7 MPa for at least 10 minutes.
- The remaining length of casing will be filled with bentonite – cement grout and/or alternating layers of sand and bentonite – cement grout.
- The well casings will be cut off about 1 m below the current ground surface and a cement–grout plug will be placed immediately over top of the casing to near the surface to inhibit water flow down the outside of the casing.
- The ground surface will then be built up by about 0.5 m with a combination of low permeability material and/or local fill amended with 5% bentonite to reduce hydraulic conductivity. These mounds will be graded away from each former well, to make sure no standing water accumulates immediately above the casings.

Mining surface infrastructure and facilities will be decommissioned in the same manner as all other surface infrastructure. As required, surface infrastructure will be broken into pieces that can be easily handled and screened for residual radiation. If necessary, materials will be cleaned and then either shipped off-site for disposal or recycling or disposed of on-site.

5.4 Surface Infrastructure and Decontamination

Permanent structures that remain after asset removal will require demolition. Prior to demolition, process equipment and non-supporting structures will be removed from buildings. At the time of decommissioning, all Project infrastructure will be screened and subsequently prepared for either further cleaning, on-site disposal or shipment off-site. During demolition, an initial wash of the infrastructure to be demolished will be required along with dust control using water. The requirement and duration of dust control will be determined on a case-by-case basis.

Denison will recycle materials and components to the greatest extent possible. Appropriate materials will be transferred to a licensed waste recycler, sold, or donated to local communities, should the materials be desired and if appropriate.

A review prior to the start of demolition will identify areas requiring additional procedures. Where possible, dust generating materials will be removed prior to demolition. Appropriate personal protective equipment and personnel decontamination procedures will be employed. Valuable recyclable materials will be separated and processed for transport and sale concurrent with demolition. Excavators equipped with grapples will sort the recyclable products from the non-recyclables. Shears will be used to size recyclables for shipping and sale. Cleaning procedures of recyclables will be integrated into procedures demolition, as necessary.

Larger concrete foundations (i.e., beneath the Processing Plant) will be left in place. Any portion s of concrete foundations remaining above grade will be levelled and rebar will be cut-off at grade. Large slabs will be perforated on a 2-m grid to permit drainage. Concrete slabs will be covered with 0.5m of development rock or locally stockpiled till. Smaller concrete slabs may be moved to the landfill.

For the purpose of this PDP plan, it has been assumed that the surface infrastructure outlined in the planning tables is assumed to be constructed and requires action to make them safe for removal, disposal, donation and/or reuse.

The Plan summarizes the preliminary decommissioning and reclamation plan for the surface infrastructure. The Plan was developed after consideration of various other decommissioning options and approaches. The plan focuses on returning the site to boreal forest type conditions and the disposal and removal of all waste, buildings, equipment, and material that are on-site. The preliminary decommissioning approach will consider the reuse, donation, and recycling of materials to the greatest extent possible.

The demolition process will produce; saleable recyclable materials (e.g., steel, stainless steel, copper, steel sections, and sheet metal), hazardous materials, (including contaminated material that cannot be decontaminated); building materials (including steel, wood, shingles, insulation, and concrete). All materials will be checked for residual radiation to confirm that they are safe to be disposed of, removed from the site or reused. Every load leaving the site shall be checked and "green tagged" to be free of significant residual radiation as per the Denison Radiation Protection Plan (RPP) (Denison 2022).

Surplus chemicals and other hazardous materials will be removed and stored in designated temporary storage facilities. All hazardous materials will be disposed of at approved off-site facilities. All radiologically contaminated material will be washed and decontaminated on-site. Once decontaminated, materials and facilities shall be disposed of on-site or transported off-site for salvage or disposal. All other contaminated material shall be managed on-site. Soils or material with hydrocarbon contamination shall be remediated at designated areas within the landfill. Remediation will be completed in line with industry best practices to the greatest extent possible, following remediation material will be disposed of or utilized as intermediate cover within the landfill.

The timing of the closure of these facilities will need to be planned out in detail during the DDP stage, as some of the facilities will be required during the planned remediation of other facilities at the site.

5.4.1 Decontamination Procedure

Any infrastructure or facilities that may be contaminated with LLRW will be decontaminated, as necessary, in accordance with Denison's Radiation Protection Plan (RPP).

Denison has been able to clean all materials as per its RPP to a level of 0.3 becquerels per square centimetre (Bq/cm^2) to date (based upon previous work at the site). Materials that are cleaned to 0.3 Bg/cm^2 are safe to be transported off-site.

Removal of surface facilities will incorporate the following steps:

1. Utilizing existing single access control points for the site so that all items, equipment, vehicles, and individuals can be scanned for contamination prior to leaving the site.
2. Maintaining established radiation control zones to minimize the potential spread of contamination.
3. Any contaminated materials (i.e., tanks, piping) will be cleaned and disposed of on-site or transported to an approved facility.

4. Radioactively contaminated material will be washed in appropriate lined area(s). Cleaned materials will be surveyed, “green tagged” and disposed of on-site or transported to an approved facility.

5.5 Radioactively Contaminated Waste

All surface facilities, equipment, and materials generated during the decommissioning will be systematically surveyed and decontaminated as necessary. Decontamination can include cleaning via dry blasting, sand blasting, and/or high pressure washing. Based on historical experience, it can be assumed that all facilities, materials, and equipment that may become radiologically contaminated can be cleaned on-site. However, alternatives have been considered if materials cannot be sufficiently decontaminated.

If the levels of radiation of one or more pieces of equipment cannot be sufficiently reduced for release from site as non-radioactive, other management alternatives can be considered. While this is not expected, the following contingency plan has been prepared should the management of radioactive waste be required. The proposed procedures to address this potential waste are listed below.

1. Materials classified as radioactive that cannot be cleaned shall be temporarily placed in an impermeable radioactive waste storage area with a secondary containment system prior to management off-site.
2. Testing of these materials will be conducted to determine the correct protocols for off-site transportation. Shipments of naturally occurring radioactive material (NORM) contamination may fall under federal transportation regulations, the Packaging and Transport of Nuclear Substances Regulations (PTNSR) and/or the Transportation of Dangerous Goods Regulations (TDGR). Before every shipment of contaminated material leaves the site, the level of radioactivity must be assessed to determine the level of activity and the appropriate transportation class.
3. Radioactive materials can be brought to a licensed facility for disposal and/or to a site for additional decontamination and potential disposal. An appropriate facility could include one of the local uranium mines or mills and/or a decontamination facility (e.g., the NORM management facility operated by Secure Energy in Standard, Alberta or disposal facilities in Unity, SK, and Pembina, AB).

5.5.1 Process Precipitate Management

The PDP estimate assumes that proposed D&R activities will begin at the end of wet commissioning and the start of facility operation. Therefore, at this time, the PDP assumes that a small volume of process precipitates will be present on-site.

Process precipitate solids are produced in the processing plant during the production of uranium. These wastes will contain economically extractable uranium and therefore, it is assumed that Denison will ship these precipitates to a licensed facility for processing.

Prior to shipping, mineralized precipitates must be transferred into shipping containers that meet the federal Transportation of Dangerous Goods Regulations. These containers are currently assumed to be rented containers approved for the transportation of radioactive slurry.

5.6 Confirmatory Radiation Survey

A gamma radiation survey shall be performed of the Project site and the adjacent areas to assess the residual radiation levels in the area after all the infrastructure has been removed and after initial grading has occurred. The confirmatory gamma survey will identify any areas of radiation contamination that may still be present at the surface.

The survey shall be performed using a suitably calibrated gamma radiation dose rate meter and will be conducted at a height of 1m above the ground surface. The entire area, including the perimeter, shall be scanned at a suitable spacing distance to meet the survey requirements in "Northern Mine Decommissioning and Reclamation Guidelines" EPB 38 (SkMOE 2008).

A decommissioning objective of 1 mSv per year above background levels has been used for projects that have been through an Environmental Assessment (EA). As such, this project's PDP objective for the surface radiation levels is 1 mSv per year above background levels.

Survey data shall be recorded at a rate of at least one measurement for every 100 m^2 surveyed across potentially contaminated areas and random spot checks throughout the rest of the project site. Any areas with readings exceeding the criteria shall be remediated to meet those criteria. The first step in remediation of the contaminated area will be to determine the source of the elevated readings and then the area and depth extent of the source of these readings. Impacted soils or material will then be disposed of within an approved on-site containment facility or buried beneath a suitable thickness of soil cover. An appropriate thickness of clean fill is assumed to be between 0.5m and 1m. It is expected that remediation will achieve acceptable gamma radiation exposure rates.

5.7 Site Reclamation

Denison is planning to utilize the As Low As Reasonably Achievable (ALARA) principles to establish the post-decommissioning radiation levels on the surface. The surface radiation decommissioning objective will be to restore impacted areas to a level such that the incremental effective doses to traditional land users do not exceed 1 mSv per year above natural background levels, based on the annual acceptable dose for the general public for one year from Radiation Protection Regulations (CNSC 2021a). Radiological release criteria will be developed as part of the DDP and will be used in future discussions with local stakeholders in the region.

Following the completion of the confirmatory radiation survey, the site will undergo final reclamation to return the area back to pre-project conditions.

Final grading of the area will be conducted to recontour the site to match existing ground profiles and promote surface water drainage and reduce erosion. Efforts will be taken to reduce straight lines of sight and promote a return to natural conditions.

Upon the development of a reclaimed surface, an elevation and location survey shall be completed on-site to capture post decommissioning and reclamation conditions and to assist with future monitoring. Final site reclamation will include consideration for the following:

1. a safe environment for ongoing traditional uses;
2. long-term adverse effects are minimized;
3. reclaimed landscape is stable and self-sustaining; and

4 restrictions on future land use are minimized.

5.8 Equipment Requirements During Decommissioning

The equipment selection will be determined by the prospective contractor during the contracting stage of this plan. At this time, based on the list of proposed activities and the available timelines, the following equipment has been included within the PDP decommissioning assumptions and will be required for all or a portion of the proposed decommissioning and reclamation work:

- Excavator or backhoe equipped with bucket and thumb;
- High reach excavator equipped with jackhammer and shear;
- Tractor *;
- Tracked skid steer *;
- D8 dozer with ripper *;
- D6 dozer with ripper and GPS;
- Articulating rock trucks *;
- Loader with a fork and bucket *;
- Four-wheel articulated pad foot compactor;
- Vacuum truck *;
- Highway transport trucks and trailers.
- Pressure water type cleaning unit(s) *;
- Clean water tank(s), piping and pumps *; and
- Waste and recycling storage bins *.

*Note: * - Denotes Items that are anticipated to be purchased by Denison during the construction phase and are therefore assumed to be available to be utilized by the Contractor during the decommissioning process. Maintenance and operation of this equipment are considered.*

5.9 Records, Monitoring, and Reporting

As indicated above, during the Approvals Preparation and Management stage of this PDP, detailed records of the constructed facilities, operations records, any spill reports and waste handling manifests will be collected and digitized to form part of the permanent record of the facility.

Monitoring described below will be conducted during all decommissioning activities and during the post-decommissioning period in order to record the results of the work and to ensure environmental protection.

For more information regarding records, monitoring, and reporting please refer to the management system for the Operation, and more specifically the *Radiation Protection Program.*

5.9.1 Decommissioning Monitoring

Decommissioning period monitoring at the site is that period of time, under a "decommission tomorrow" scenario that covers the approvals period (1.5 years) and the active decommissioning period (5 years).

Subsurface remediation will likely be one of the first decommissioning phase of the D&R plan. Subsurface monitoring during remediation will focus on the area in the immediate vicinity of the ore zone. Groundwater monitoring during remediation will be conducted to demonstrate that the groundwater quality in this area has met or exceeded the remediation criteria (see Table **Error! No text of specified style in document.**-5). Monitoring will ensure that there are no environmental impacts on any environmental receptors. During the subsurface remediation phase, the decommissioning monitoring will include both field measurements of groundwater quality (e.g., pH, specific gravity, and conductivity) and, at a minimum, quarterly sets of groundwater sampling submitted to a laboratory for analysis.

Demolition of surface facilities will likely start during the subsurface remediation process. Demolition monitoring will also include a record of the ways the facilities are demolished, when it was demolished, the equipment used, any unforeseen events, radiation scanning results and where the waste material was placed on-site or if it was shipped off-site. Waste manifests will also be maintained for the Project and each decommissioning envelope.

Environmental monitoring will include both appropriate radiation monitoring (e.g., gamma monitoring) and monitoring of environmental quality (air, surface water and groundwater). Ongoing monitoring will also be conducted for occupational health and safety purposes.

Decommissioning period monitoring will include the following:

- surface water quality;
- ambient air quality (e.g., passive radon monitoring); and
- groundwater quality (both in the ore zone and along the flow path to Whitefish Lake).

The primary goal of monitoring during the decommissioning period is to confirm impacts on the environment are not detrimental and to monitor the change in contaminant concentrations over time.

Monitoring reports will be provided to the SkMOE and any other necessary regulatory agencies at an agreed upon frequency.

5.9.2 Post-Decommissioning Monitoring

Post-decommissioning period monitoring will continue following decommissioning period monitoring until such time that an agreement is reached with the regulatory authorities to stop monitoring or until the regulatory agencies choose to take over these responsibilities.

The frequency and scope of post-decommissioning monitoring are expected to decrease over time. Initial monitoring events will occur at a higher frequency and include a more intensive program than final monitoring events. The monitoring program is expected to decrease in frequency with time. Post-decommissioning monitoring shall include the following:

- surface water quality;
- ambient air quality;
- groundwater quality;

- geotechnical stability of all landforms and waste stockpiles; and
- inspection of the revegetated areas.

It is assumed that the post-decommissioning monitoring period will be ten (10) to fifteen (15) years following decommissioning and include ten (10) monitoring events during this period.

6 Project Schedule

The Feasibility Study completed for the WR project identifies the following Project Schedule for the Phoenix Deposit:

Table Error! No text of specified style in document.**-6: Phoenix Deposit Project Schedule**

YEAR	CONSTRUCTION	PRODUCTION	D & R
Year 1	X		
Year 2	X		
Year 3		X	
Year 4		X	
Year 5		X	
Year 6		X	
Year 7		X	X
Year 8		X	X
Year 9		X	X
Year 10		X	X
Year 11		X	X
Year 12		X	X
Year 13			X
Year 14			X
Year 15			X

The construction phase is expected to take two years. The operation phase is expected to last ten years and will consist of the sequential recovery of uranium using ISR techniques in five mining phases.

Progressive reclamation is expected to be completed as operations within the mining phases are completed. The operation and subsequent progressive reclamation schedule from the feasibility study for each mining phase are shown below.

Table Error! No text of specified style in document.**-7: Proposed Schedule for the Operations and Progressive Rehabilitation of the Subsurface**

MINING PHASE	PERIOD OF OPERATIONS	PERIOD FOR SUBSURFACE RECLAMATION
Phase 1	Years 3 to 8	Years 7 to 11
Phase 2	Years 5 to 9	Years 9 to 12
Phase 3	Years 7 to 12	Years 12 to 15
Phase 4	Years 7 to 12	Years 12 to 15
Phase 5	Years 9 to 12	Years 12 to 15

Table 6-1 indicates that the proposed progressive reclamation of the subsurface will occur immediately after the completion of operations in each mining phase. This reclamation is expected to consist of first rinsing the subsurface with water and then introducing a basic solution to neutralize the subsurface to near natural conditions. The subsurface remediation process is described in Section 5.2. Table **Error! No text of specified style in document.**-5 presents the current objectives for the remediation of the mining zone. The subsurface remediation phase of the D&R plan is expected to take up to five years, with ongoing environmental monitoring occurring for this duration. This active decommissioning phase includes the development of the DDP and obtaining the CNSC license to decommission along with provincial approvals. Work on these applications should start during the operations phase.

Once mining operations cease in year 12, asset removal, remediation and other aspects described in this PDP will occur. All aspect of this D&R plan is expected to be completed by year 15.

Post-decommissioning and reclamation monitoring will be required for ten (10) to fifteen (15) years or until the agreed upon endpoint objectives have been met for the Project site. Monitoring the site will be continued until it has demonstrated physical and chemical stability, both during and after decommissioning and reclamation activities. Monitoring will be used to confirm the environmental concentrations predictions made prior to and during decommissioning.

7 Preliminary Decommissioning Cost Estimate

The estimated preliminary cost estimate (PDCE) will be developed to support the licensing process. Information from the future detailed engineering design phase will provide input into the decommissioning of proposed facilities. The considerations outlined below will affect the PDCE as the Project progresses towards the construction phase.

As previously indicated, this document assumes that the proposed D&R work will be undertaken after Project commissioning which is the last stage of the construction phase. Using this assumption, some process waste materials are assumed to be present on the surface, and all facilities are assumed to be built and operational. This time horizon was selected as it follows the SkMOE guidance.

The key changes between this PDP and subsequent PDPs that are for later time horizons are the following:

- There will be slightly more contaminated materials on the surface to manage.
- There will be some additional structures, such as the gypsum pond expansion and the expansion of the industrial landfill.
- The areas and volume of the subsurface that would require remediation will vary with time.
- The number of wells (production wells, monitoring wells and freeze wells) that require remediation will vary with time.

This PDP considers the scanning of materials for radiation contamination and the cleaning of any materials. The additional radiation contaminated material present for future PDP's may be disposed of in an existing pond on-site. As the lining of some of the ponds will be similar to the industrial landfill, this is not expected to be a major effort. Any new facilities that require expansion will be dealt with in a similar fashion to the original facility type.

The biggest potential change in future PDP revisions will be the phases and volumes of the mining zone that require remediation. Table 6-1 indicates the phases of the deposit that will require remediation. To operate or leach a phase of the deposit will require that all the associated wells and piping are available. The remediation of the various areas of the deposit will utilize the same equipment and procedures.

The subsurface rate of the remediation in any decommissioning scenario is only limited by the treatment capacity of the industrial water treatment plant. The maximum rate of remediation is therefore about 40 m^3/hr after operations. During operations, the treating of the production waters will take precedence so the available capacity will likely be limited to less than 10 m^3/hr. So, while the subsurface remediation will take more time to complete, it is expected that progressive reclamation is conducted, the subsurface remediation during decommissioning will likely be able to be completed within about three years.

The decommissioning of the additional wells will occur in parallel to the subsurface remediation. Once an area has met and maintained water quality that is as good as or better than the remediation objectives, then and only then will the wells in that area be decommissioned. This will mean that wells will likely be decommissioned in an annual or semi-annual campaign.

8 Ongoing Decommissioning Planning Requirements

8.1 Ongoing Development of PDP

The results of this Plan should be considered preliminary and will be updated at a later date. PDPs are conceptual in nature and are refined as they are updated and revised following detailed design, community consultation, and during the eventual detailed decommissioning planning stage. These plans will be reviewed and updated every five years or if developments to the Project occur that would result in significant additional effort or changes in approach.

8.2 Engagement

Ongoing permitting, construction, and decommissioning planning and development will involve engagement with project stakeholders on many subjects. Engagement efforts will likely include discussions around decommissioning planning. The following groups may be engaged with:

- Local First Nation and Metis Communities;
- Neighbouring lease holders;
- Local governments;
- Local and regional businesses and service providers; and
- Non-governmental organizations.

Public and Indigenous engagement for the project adheres to REGDOC-3.2.1, *Public Information and Disclosure*, and REGDOC-3.2.2, *Indigenous Engagement.* For more information please refer to Denison's *Public and Indigenous Information Program.*

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Appendix A Waste Estimates and Decommissioning Approaches

Table A.1 Error! No text of specified style in document. **8: Decommissioning Management Options**

CATEGORY	MANAGEMENT OPTION	SELECTED MANAGEMENT OPTION	
		CLUFF LAKE	WHEELER RIVER
Radiologically Contaminated Material	Repurpose and reuse material on-site		
	On-site surface burial and containment in open pits	X	
	Processing on-site for off-site shipment and management		
	On-Site Disposal		X
Special Wastes Pile, Precipitates and LLRW Sludges	On-site surface burial and containment	X	X
	Ship off-site for processing at another licensed facility Processing on-site for off-site shipment and management		X
	Processing on-site for on-site disposal		
	Off-Site Disposal		
Clean Waste Rock	On-site surface burial and containment		
	Processing on-site for on-site disposal		
	On-site burial and/or use	X	X
	Off-Site disposal		
Hazardous Waste	Ship off-site for processing at another licensed facility Processing on-site for off-site shipment and management	X	X
	Processing on-site for on-site disposal		
	On-site disposal	X	X
	Off-site disposal		
Processing Buildings (LLRW)	Processing on-site for off-site shipment and management		
	Processing on-site for on-site disposal		
	On-site disposal	X	X
	Off-site disposal		

Disposal of Support Facilities and Non-LLRW Buildings	Processing on-site for off-site shipment and management		X
	Processing on-site for on-site disposal	X	X
	On-site disposal		
	Off-site disposal		