

Orano Canada Inc.

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Approval for Use

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History of Revisions

Version	Date	Details of Revision
1	October 2023	Initial Issue
2	September 2024	Update to Section 5 – Risk Assessment Update to Summary of Annual Performance with 2023 results Update to 2024 Independent Review
3	January 2026	Update to Summary of Annual Performance with 2024 results Update to 2025 Independent Review

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1 Executive Summary

Orano Canada Inc. is the operator of the McClean Lake uranium production facility in Northern Saskatchewan, Canada. Tailings from the production process report to the JEB Tailings Management Facility. The JEB Tailings Management Facility is a former open pit mine and in 1999 was converted to permanently store tailings.

The JEB Tailings Management Facility has recently undergone expansion to permanently store tailings above natural ground (above the open pit rim). This involved extensive engineering, regulatory approval and construction of the embankment.

Orano Canada Inc. being a subsidiary of Orano Mining, a company member of the International Council on Mining and Metals agreed to apply the Global Industry Standard on Tailings Management to the JEB Tailings Management Facility. The consequence of failure for the JEB Tailings Management Facility was analysed and classified in the “very high” category. With the JEB Tailings Management Facility in the “very high” category, compliance to the Global Industry Standard on Tailings Management was to be met by August 5, 2023.

This disclosure note constitutes the official publication in compliance with Requirement 15.1 components B and C of the Global Industry Standard on Tailings Management (GISTM). Note that component A of requirement 15.1 only concerns new tailings facility projects.

2 Introduction

Orano Canada Inc.'s (OCI) McClean Lake Operation is situated in Northern Saskatchewan, Canada as shown in Figure 2.1 and Figure 2.2. Figure 2.3 and Figure 2.4 depict the location of the JEB Tailings Management Facility (TMF) within the McClean Lake Operation. The JEB TMF is operated and maintained by OCI. Engineering support comes from an Engineer of Record (EOR) team and an Independent Tailings Review Board (ITRB).

The JEB TMF was a former open pit mine which was converted to a tailings facility in 1999. The TMF has recently undergone expansion to store tailings above natural ground. The current Stage 1 expansion embankment of 457.5 masl has the capacity to store an additional 1.5 Mm³ of unconsolidated tailings once complete. The future Stage 2 expansion embankment to 468 masl will provide an additional 2.25 Mm³ of unconsolidated tailings storage.

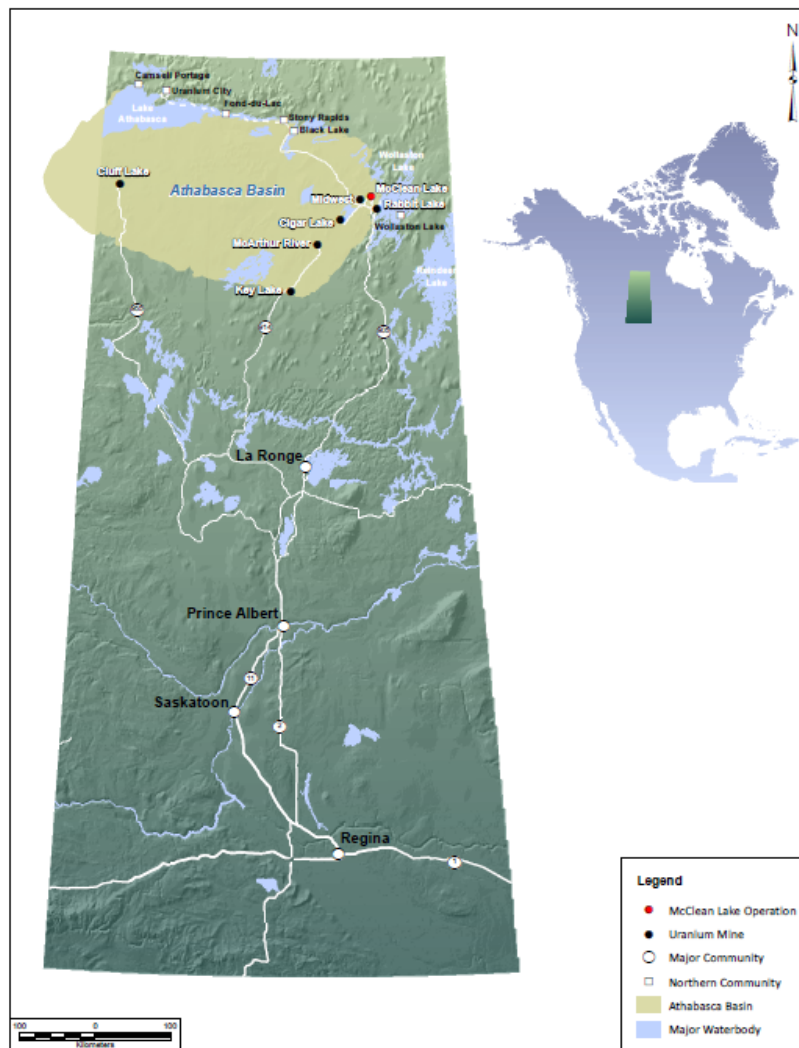


Figure 2.1 Location of the McClean Lake Operation

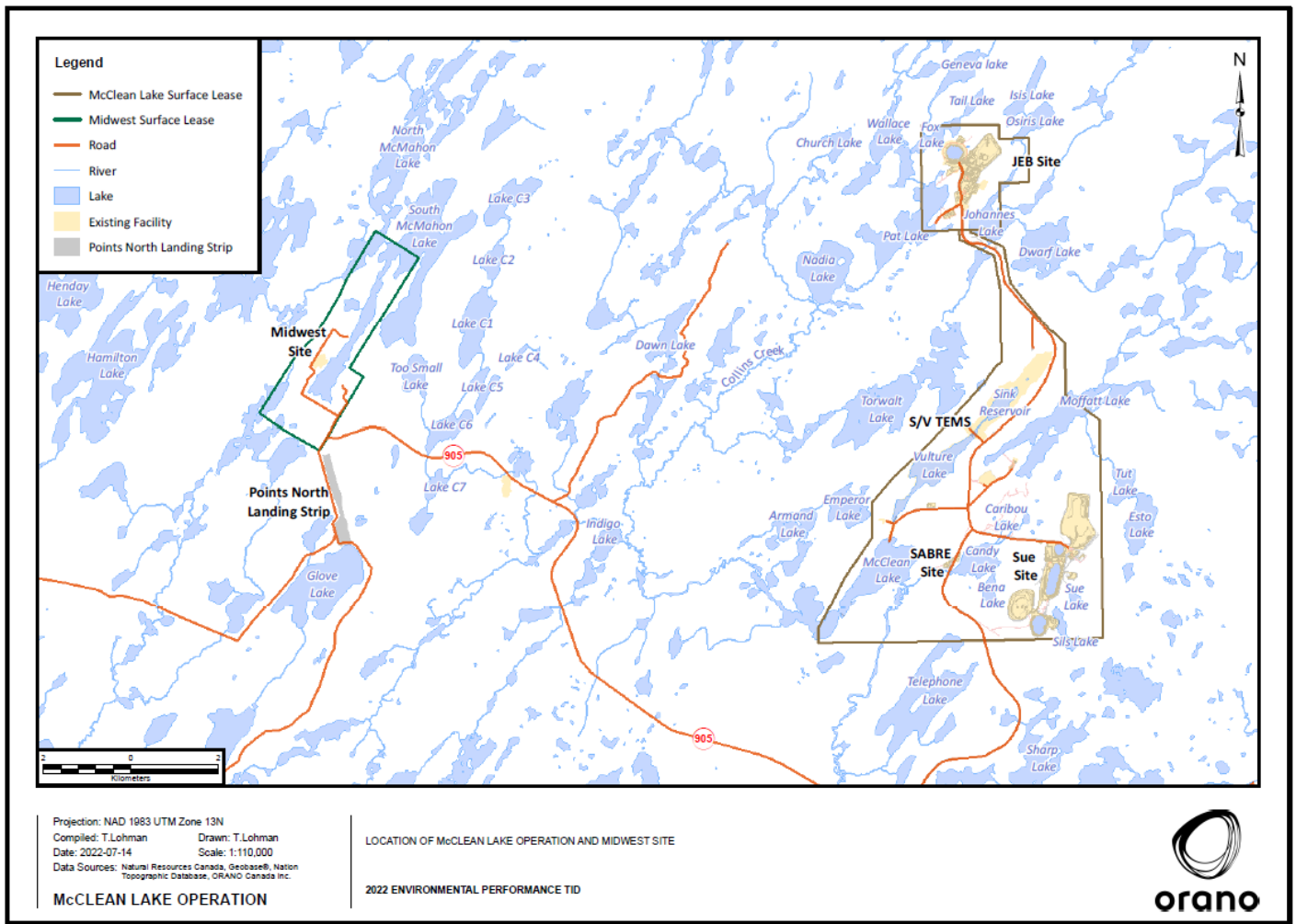


Figure 2.2 Location of the McClean Lake Operation



Figure 2.3 Location of the JEB TMF at the McClean Lake Operation



Figure 2.4 The JEB TMF at the McClean Lake Operation, Looking North

3 Description of the Facility (B.1)

The JEB TMF embankment is constructed from crushed sandstone, and the liner is constructed from a blend of crushed sandstone, till and bentonite. The liner portion is approximately 2 m thick, placed on the upstream side of the embankment and existing pit slopes (flattened as part of optimization of the facility). The liner extends down to the top of the sandstone as shown in Figure 3.1.

Topography surrounding the JEB TMF is defined by muskeg-covered, poorly drained terrain. The lowest natural elevation corresponds to Pat Lake at approximately 443.5 masl, while the highest natural elevation corresponds to two drumlins at approximately 470 masl, located directly to the northeast and southeast of the JEB TMF (Golder Associates Ltd. 2019).

The general geology encountered in the JEB TMF area includes the following units in descending order:

- Till;
- Upper sandstone;
- Lower sandstone;
- Basement regolith; and
- Intact basement

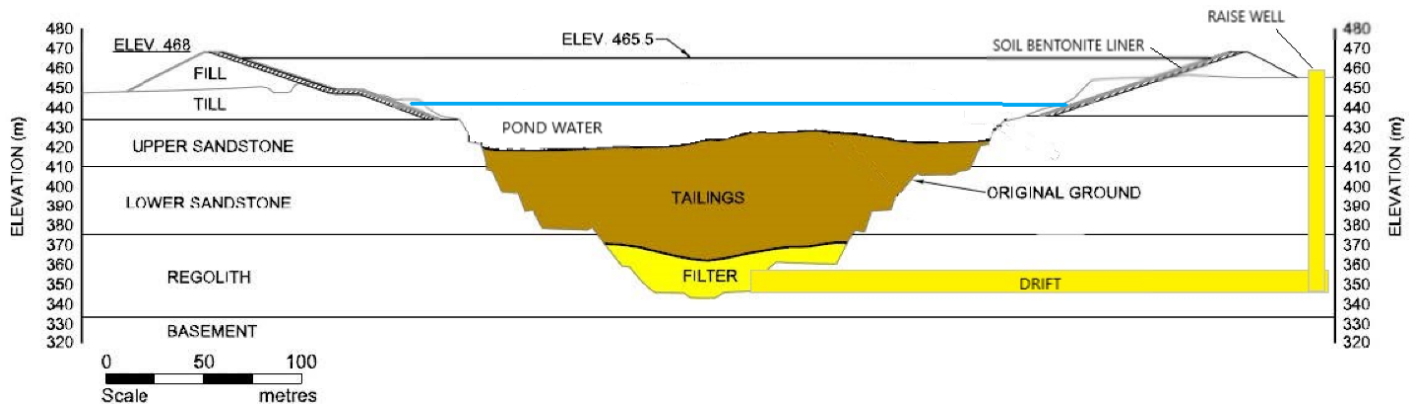


Figure 3.1 Cross Section of the JEB TMF at Future 468 Masl Elevation

The tailings are transported from the mill by pipeline to the JEB TMF where the tailings are deposited in a sub-aqueous manner. The JEB TMF was designed and constructed with a drift at the bottom of the pit and a raise well system. The raise wells are used for maintaining hydraulic containment and water level monitoring. In addition, the raise wells pumps return water back to the mill for use in the process. There is also a reclaim pump house on the JEB TMF pond water surface, which sends water from the JEB TMF pond to the JEB Water Treatment Plant.

A summary of the main characteristics of the JEB TMF is shown in Table 3.1.

Table 3.1 Main Characteristics of the JEB TMF

Type	Downstream constructed rock fill embankment/dam, 3H:1V slopes, up stream soil bentonite liner
Lowest Natural Ground Elevation (Approximately)	448 masl
Current Embankment and Liner Elevation	457.5 masl (embankment) 452.5 masl (liner)
Future Embankment and Liner Elevation	468 masl
Operational Freeboard	2.5 m (embankment 457.5 masl or less) 1.5 m (embankment above 457.5 masl)
Storage Volume	4,100,000 m ³ (current) 6,900,000 m ³ (468 masl expansion)

4 Consequence Classification (B.2)

A preliminary dam consequence classification was provided by the EOR team for the JEB TMF (Golder Associates Ltd. 2021). The predicted incremental flood impacts due to a dam failure were summarized as the following:

- The population at risk within the inundation area is limited to workers who may be periodically in the area or recreational users in the area. The population could be one to ten people, corresponding to a consequence classification of Significant.
- Failure of the JEB TMF would result in flooding and debris flow downstream of the structure. Severe injury or loss of life could occur to a person in the inundation zone. It is expected that there would be between one to ten people that could experience loss of life from a failure, corresponding to a High consequence classification.
- Fox Lake and Pat Lake could receive flows of pond water and tailings solids if a failure of the JEB TMF were to occur. The flows could result in the loss or destruction of freshwater aquatic habitat, effects to water quality resulting in health effects to fauna, and long-term effects associated with metal leaching from tailings solids. Restoration may be possible but would require more than five years to complete, corresponding to a Very High consequence classification.
- Failure of the JEB TMF would result in the cessation of operations that could realistically extend over several years. This would have an effect on the employees of the mine, as well as other businesses in the region. The effects may be considered to a small portion of the population (less than 500 people), corresponding to a consequence classification of Significant.
- There is not any third-party infrastructure within the potential inundation zone. This corresponds to a Low consequence classification.

The preliminary dam consequence classification for the JEB TMF is presented in Table 4.1. Upon completion of the initial Dam Safety Inspection by the EOR in 2022 the consequence classification was confirmed. An overall **Very High** consequence classification is recommended by the EOR team.

Table 4.1 JEB TMF Preliminary Dam Consequence Rating Assessment (Golder Associates Ltd. 2021)

Factor	Consequence Classification
Potential Population at Risk	Significant
Potential Loss of Life	High
Environment	Very High
Health, Social, and Cultural	Significant
Infrastructure and Economics	Low
Overall Rating	Very High

5 Risk Assessment (B.3)

The EOR team conducted a Failure Mode and Effects Analysis (FMEA) for the JEB TMF (WSP Canada Inc. 2023). The FMEA provides an insight into priority areas to be addressed in the construction planning and operations monitoring. The following sections provide discussion of key themes in the Potential Failure Modes (PFMs), mitigation measures and how these could potentially be incorporated into the construction planning and operations. The PFM's serve as the risk register for the JEB TMF with the last update in July 2024. Summaries of PFM categories are shown in Table 5.1.

Table 5.1 Potential Failure Modes Category Definitions (WSP 2023)

Category	Definition
I: Credible PFMs of Greatest Significance	Those PFMs of greatest significance considering need for awareness, potential for occurrence, magnitude of consequence, and likelihood of adverse response. Category I PFMs are those for which physical possibility is evident, fundamental flaw or weakness is identified, and conditions and events leading to failure seem reasonable and credible. The PFMs shall be subcategorized as urgent or less urgent.
II: Credible PFMs Considered but of Lesser Significance	Those PFMs that are physically possible, but there is typically less urgency involved to respond to concerns. Category II PFMs are judged to be of lesser significance and likelihood than those of Category I. A PFM may be placed in Category II because there is no direct or indirect evidence or any indication of problem development; the loading required to initiate the potential adverse response is not as likely as for Category I; or the magnitude of consequences is not as significant as Category I PFMs. A surveillance and monitoring program is normally required for Category II. The PFMs shall be subcategorized as potentially significant or minor.
III: More Information or Analyses Needed in order to Classify	These PFMs to some degree lacked information sufficient to allow a confident judgment of significance. As a result, additional investigative action or analyses is recommended.
IV: PFMs of Least Significance	Those PFMs are physically possible and of least significance because their likelihood is so remote that the failure is negligible, at least over the time period under consideration. The PFMs shall be subcategorized as insignificant or clearly negligible.
V: Other Considerations (Non-credible PFMs)	Candidate PFMs that were ruled out and not developed because the physical possibility does not exist, information came to light which eliminated the concern.

5.1 Key Focus Areas

Several important themes emerged in comparison of the PFMs. Only one Category I PFM is related to a physical failure of the embankment and the remaining ten Category I PFMs are related to the release of contaminated seepage:

- 1) **Embankment Construction and Care** – Seven of the 11 Category I PFMs are related to the JEB TMF construction and its maintenance: five PFMs highlight the importance of Quality Assurance/Quality Control (QA/QC) of the materials during construction; one PFM highlights care of the Soil Bentonite Liner (SBL) surface during other construction activities; and one PFM highlights the importance of QA/QC of embankment foundation preparation. In general, multiple failure modes include mechanisms resulting from poor QA/QC during embankment construction. This FMEA stresses the need for adequate investigation prior to construction to verify ground conditions in advance of construction, and for strict controls during construction.
- 2) **Sampling and Instrumentation** – Three of the 11 Category I PFMS are related to JEB TMF monitoring. In addition to the potential for occurrence, these PFMs are significant because they highlight a need for awareness and a potential weakness associated with monitoring. It must be recognized that even the monitoring necessary to operate the JEB TMF safely has the potential to result in a failure mechanism: although sampling and testing tailings are fundamental to on-going evaluation and to validate the post decommissioning predictions, a poor tailings sample practice has the potential to fail the embankment and release contaminated seepage; and, although the instrumentation installed in the embankment is critical in assessing embankment performance, if care is not taken during installation there exists potential to release contaminated seepage.
- 3) **Pumping Capacity and Pond Operations** – Several PFMs are related to the maintenance of JEB TMF pond water elevations with one Category I PFM related to base drain pumping and loss of containment. Should the base drain become obstructed, the magnitude of consequence is considered great, and the approach to hydraulic containment within the JEB TMF throughout operations and decommissioning would require significant redesign.

5.2 Mitigation Measures and Additional Recommendations Summary

5.2.1 Embankment Construction and Operation

An overarching recommendation for the JEB TMF throughout expansion is to continue construction QA/QC practices by implementation of the JEB TMF QA/QC Plan and to maintain as-built records. Field verification programs are recommended prior to expansion construction to improve confidence in the conditions expected. During operations, routine surveillance and monitoring of the embankment are necessary to observe and monitor changes related to downstream slope instability, internal erosion and seepage. Potential mitigations for PFMs related to downstream instability due to high porewater pressures and reduced shear strength are the following:

- A toe drain may be constructed to reduce porewater pressures and a stability berm at the toe of the embankment may provide a buttress for additional stability.
- Additional instrumentation may be installed in the foundation (e.g., slope indicators and piezometers). Potential mitigations for PFMs related to internal erosion are the following:

- Formal ground disturbance programs may improve the tailings sample practice to mitigate soil bentonite liner damage beneath the tailings.
- Standard well decommissioning practices may be implemented to mitigate preferential flow pathways.
- Footprint preparation that includes a methodological approach to stripping soils mitigates the inadequate removal of buried organics that may result in differential settlement. Potential mitigations for PFMS related to the release of contaminated seepage are the following:
- A seepage collection system may be constructed in the downstream embankment to mitigate releases to the environment.

5.2.2 Overtopping and Pond Water Elevations

Failures related to overtopping can be mitigated by implementing a higher freeboard during operations. Maintaining the design crest elevation is recommended and is the most beneficial when the soil bentonite liner and embankment is constructed to a constant elevation. To achieve a constant elevation in a single construction campaign, advanced construction sequencing and planning is recommended.

5.2.3 Operation, Maintenance and Surveillance Considerations

The Operations Maintenance and Surveillance (OMS) manual describes the plans and procedures that allow the JEB TMF to be operated in accordance with the design intent. The operating procedures will describe performance indicators and the response including actions to be taken if the performance criteria are not within the defined range. A Trigger Action Response Plan (TARP) is a tool to manage risk with trigger levels developed that consider the performance objective and response where performance levels are exceeded.

From the outcomes of the FMEA workshop, potential TARPs include performance indicators for management of water and seepage (e.g., pond water elevations and base drain hydraulic head) and other action levels for risks associated with, but not limited to, ground movement, erosion, pond water chemistry and piezometric levels.

Maintenance for the JEB TMF will identify all components with requirements to achieve performance objectives and will define the preventative and corrective actions to achieve these objectives. From the outcome of the FMEA workshop, maintenance is categorized into the expected preventative (e.g., maintenance of surveillance instruments such as the slope indicator probe), predictive (e.g., diverting surface runoff concentrated on the SBL crest) and corrective (e.g., design crest elevation maintenance) activities.

The OMS manual describes a surveillance program for the inspection and monitoring of activities to inform decision-making and to verify whether performance objectives, the risk management plan and design intent are being met. Surveillance includes site observations and inspections and instrument monitoring. Analysis of surveillance results should consider the expected range of observations or performance and the timeframes for data analysis reporting. Roles and timelines must be defined and the tools provided so that timely data is collected and reviewed by the appropriate personnel.

6 Breach and Inundation (B.4)

The EOR team conducted detailed dam breach analyses to obtain estimates of flood extents downstream of the JEB TMF embankment (Golder Associates Ltd. 2022). Two potential breach locations were selected for flood-induced overtopping scenarios:

- A potential breach dam breach of SW Dam at the JEB TMF.
- A potential breach dam breach of SE Dam at the JEB TMF.

The selected breach locations represent 'worst-case' scenarios for analyzing downstream impacts of hypothetical failures of the JEB TMF embankment under extremely wet hydrological conditions (i.e., PMP event). The detailed analyses were based on reasonably conservative dam breach parameters and used the topographic contour information obtained from Orano and other sources for the study area. For the detailed modelling, it was conservatively assumed that all tailings and water in the TMF above original natural ground would be released and that the released volume would behave as Newtonian (water-like) and was therefore modelled entirely as water.

6.1 Effects of Potential Dam Failures

6.1.1 Southwest Dam

A hypothetical failure of the SW Dam would impact the downstream environment, including Fox Lake, Wallace Lake, Pat Lake and Nadia Lake. In the event of an overtopping failure of the SW Dam, a total of 3.16 Mm³ of water and tailings was assumed to be released from the dam. The downstream affected areas are summarized as follows:

- The flood peak elevation immediately downstream of the dam was predicted to be 5.6 m above the ground elevation. The peak discharge and maximum flow velocity were estimated to be 2,570 m³/s and 6.1 m/s, respectively.
- The flood peak elevation at Pat Lake Inlet located 0.5 km downstream of the dam was predicted to be 2.4 m above the ground elevation. The peak discharge and flow velocity were estimated to be 2,240 m³/s and 5.1 m/s, respectively.
- The flood peak elevation at Pat Lake Outlet located 3.0 km downstream of the dam was predicted to be 0.7 m below the estimated channel bank elevation. Therefore, the flood flows would be contained within the channel. The peak discharge and flow velocity were estimated to be 78 m³/s and 0.6 m/s, respectively.

6.1.2 Southeast Dam

A hypothetical failure of the SE Dam would impact the downstream infrastructure and environment, including the Waste Rock Runoff Pond, a portion of the Mill Site Complex, the JEB TMF access road and Pat Lake. In the event of an overtopping failure of the SE Dam, a total of 1.53 Mm³ of water and tailings was assumed to be released from the dam. The downstream affected areas are summarized as follows:

- The flood peak elevation immediately downstream of the dam was predicted to be 3.8 m above the ground elevation. The peak discharge and flow velocity were estimated to be 533 m³/s and 4.5 m/s, respectively.
- JEB TMF access road located immediately downstream of the SE Dam would be overtopped with a maximum flow depth of 1.6 m. The peak discharge and flow velocity were estimated to be 526 m³/s and 3.0 m/s, respectively.
- The flood peak elevation at Pat Lake Inlet located 0.7 km downstream of the dam was predicted to be 1.6 m above the ground elevation. The peak discharge and flow velocity were estimated to be 509 m³/s and 2.8 m/s, respectively.
- The flood peak elevation at Pat Lake Outlet located 3.2 km downstream of the dam was predicted to be 1.4 m below the estimated channel bank elevation. Therefore, the flood flows would be contained within the channel. The peak discharge and flow velocity were estimated to be 27 m³/s and 0.4 m/s, respectively.

7 Impact Assessment (B.4)

Two impact assessments were conducted for the implications of the unlikely failure of the JEB TMF embankment. One scenario modeled the impacts of a failure of the embankment at the Stage One elevation of 457.5 masl. The other scenario modeled the impacts at the final elevation of 468 masl. It should be noted in both hypothetical scenarios there are downstream environmental receptors but no downstream communities.

7.1 457.5 Masl Scenario

The hypothetical failure of the JEB TMF embankment is predicted to result in impacted water quality in Fox Lake. Further downstream, exceedances of the available water quality guidelines (WQG) and benchmarks are predicted for the long-term WQG in Pat Lake, and the long-term WQG in Nadia Lake. Exceedances are not predicted in Upper Collins Creek from the JEB TMF failure, which indicates that potential negative effects are limited to Fox Lake, Pat Lake, and Nadia Lake.

The results of this screening-level assessment indicate that the consequences of a dam failure at the JEB TMF would not have catastrophic effects on the Collins Creek watershed downstream of the facility. While water and sediment quality and the health of aquatic biota in Fox Lake would be affected and recovery of the lake could take many months or years, it is not anticipated that water bodies downstream of Fox Lake would be negatively impacted over the short- or long-term (Arcadis Canada Inc. 2016).

7.2 468 Masl Scenario

The hypothetical failure of the JEB TMF embankment is predicted to result in impacted water quality in Fox Lake. Further downstream, limited exceedances of drinking water guidelines are predicted in Pat Lake, with no other exceedances of the available water quality guidelines and benchmarks predicted in Nadia Lake and Upper Collins Creek from the JEB TMF embankment failure, which indicates that potential negative effects are limited to Fox Lake and Pat Lake.

In conclusion, the results of this screening level assessment indicate that the consequences of a JEB TMF embankment failure would not have catastrophic effects on the Collins Creek watershed downstream of the facility. While water and sediment quality and the health of aquatic biota in Fox Lake would be affected and recovery of the lake could take many months or years following remediation, it is not anticipated that water bodies downstream of Fox Lake would be negatively impacted over the short- or long-term (Canada North Environmental Services 2019).

8 Summary of Design (B.5)

The design of the JEB TMF embankments falls into two stages, the first stage of transition from pit to embankments to an elevation of 457.5 masl (current height). The second stage is the transition from an embankment elevation of 457.5 masl to 468 masl. Both stages have a design basis that follows appropriate guidelines, references and professional practice. Both stages were designed with personnel from the EOR company. It should be noted that Golder Associates Ltd. was acquired by WSP Canada Inc. However, the existing design team and EOR team are the same personnel.

8.1 457.5 Masl Design

The Optimization and Expansion Stage 1 of the JEB TMF will allow for additional tailings storage capacity. Detailed design has been completed for various component earth structures associated with the JEB TMF Optimization Stage 2 and Expansion Stage 1, including:

- i) Till re-sloping and soil bentonite liner for the TMF Optimization Stage 2,
- ii) Embankment and soil-bentonite liner for the TMF Expansion Stage 1, and
- iii) Erosion and sediment control for the TMF Optimization Stage 2 and TMF Expansion Stage 1.

The TMF Optimization, to be completed in two stages, involves flattening the till slope to 3H:1V from the till/sandstone contact and construction of a soil-bentonite liner to elevation 443 masl. The construction of Optimization Stage 1 was completed in September 2013. It was confirmed that liner soil material could be produced on site by either crushing sandstone or screening till, and the designed soil-bentonite liner can be constructed to meet the technical specifications. The results of field and laboratory testing of the soil bentonite liner material as part of the Construction Quality Assurance for the Optimization Stage 1 are consistent with those laboratory tests conducted previously for the design of the TMF Optimization and TMF Expansion.

The TMF Expansion Stage 1 involves increasing the elevation of placed un-consolidated tailings to 452.0 masl. An embankment will be constructed around the TMF perimeter to elevation of 457.5 masl. The inside slope of the embankment will be lined with the soil-bentonite liner to contain the operating pond throughout operations. The soil-bentonite liner system will be the same as that of the successfully constructed Optimization Stage 1. Construction drawings and technical specifications have been prepared for the following work packages:

- JEB TMF Optimization Stage 2,
- JEB TMF Expansion Stage 1 Embankment, and
- Waste Rock Pile Runoff Ponds and Diversion Channels.

The detailed design is based upon work previously completed as part of the JEB TMF Expansion and existing information of site topography, foundation conditions, soil properties, and groundwater conditions. Field verification will be required prior to the construction of each design component. Field verification will be provided by conducting a site topographical survey and geotechnical investigation of the site location under consideration. Additional groundwater level monitoring may be required in the vicinity of the component earth structures. Geotechnical and groundwater conditions such as the elevation of the groundwater table,

the depth of peat across the site, and the foundation conditions beneath the proposed earth structures will be determined during the geotechnical investigation. Changes to the design of the new structure may be required upon completion of the geotechnical investigation if the geotechnical conditions are found to be different than those assumed during the design.

The majority of the TMF Expansion Embankment will be constructed of till or compacted waste rock fill with rock sizes up to 0.6 meters. While the compacted waste rock fill will have favourable mechanical and hydraulic properties for the embankment construction compared to till fill, its grain-size distribution may not be compatible with the soil-bentonite material. A transition material may be required between the compacted waste rock material and the soil-bentonite liner material to prevent the migration of fines from the soil-bentonite liner into the compacted waste rock material. An embankment fill test pad will need to be constructed prior to the construction of the embankment in order to design a transitional material if such transitional material is required. The Quality Assurance/Quality Control plan developed for the TMF Optimization and TMF Expansion may require to be updated prior to each construction stage to reflect current construction materials, construction methods, field and laboratory test procedures and standards, and incorporate the experience gained from previous construction stages. Construction materials such as till and sandstone waste rock are erodible. It is expected that surface erosion will occur, particularly after heavy precipitation events and spring runoff. Continuous monitoring and maintenance of the earth structures and surface drainage systems will be required. Monitoring of groundwater quality, seepage through the liner, erosion of earth structures and embankment stability will be required. Monitoring data obtained from early optimization construction and operation stages will be valuable source of information to confirm the design and performance of the structures, to identify any potential problems that need to be addressed prior to the next expansion stage of construction, and to provide inputs for the optimization of the design for the next construction stages (Golder Associates Ltd. 2018).

8.2 468 Masl Design

Expansion Stage 2 of the JEB TMF will allow for additional tailings storage capacity. Detailed design has been completed for various component earth structures associated with the JEB TMF Expansion Stage 2 including:

- i) Embankment and soil-bentonite liner,
- ii) Erosion and sediment control, and
- iii) Alternate site surface water management plan for the management of storm water runoff after the JEB TMF is raised above 457.5 masl and the transportation of runoff via gravity drainage from the site to the JEB TMF is no longer available.

Expansion Stage 2 will provide the ability to place unconsolidated tailings to an elevation of 465.5 masl. The Expansion Stage 2 embankment will be constructed as a downstream raise of the approved Expansion Stage 1 embankment (crest elevation 457.5 masl). The Expansion Stage 2 embankment will be constructed to an elevation of 468 masl. The inside slope of the Expansion Stage 2 embankment will be lined with a soil-bentonite liner to contain the operating pond throughout operations. The soil-bentonite liner system will be the same as that of the successfully constructed JEB TMF Optimization. Construction drawings and technical specifications have been prepared for the following work packages:

- JEB TMF Expansion Stage 2 Embankment,
- Modifications to the Storm Water Storage Pond, and
- The new Mill Site Runoff Pond.

The detailed design is based upon work previously completed as part of the JEB TMF Expansion, and existing information of site topography, foundation conditions, soil properties, and groundwater conditions. Field verification will be required prior to the construction of each design component. Field verification will be provided by conducting a site topographical survey and geotechnical investigation of the site location under consideration. Additional groundwater level monitoring may be required near the component earth structure during operations. Geotechnical and groundwater conditions such as the elevation of the groundwater table, the depth of peat across the site, and the foundation conditions beneath the proposed earth structures will be determined during the geotechnical investigation. Changes to the design of the new structure may be required upon completion of the geotechnical investigation if the geotechnical conditions are found to be different than those assumed during the design.

The majority of the JEB TMF Expansion Stage 2 embankment will be constructed of till or compacted sandstone waste rock fill with rock sizes up to 0.6 meters. While the compacted waste rock fill will have favourable mechanical and hydraulic properties for the embankment construction compared to till fill, its grainsize distribution may not be compatible with the soil bentonite material. A transition material may be required between the compacted waste rock material and the soil-bentonite liner material to prevent the migration of fines from the soil-bentonite liner into the compacted waste rock material. An embankment fill test pad will need to be constructed prior to the construction of the embankment to design a transitional material if such transitional material is required.

The Quality Assurance/Quality Control plan developed for Expansion Stage 2 may be required to be updated prior to construction to reflect current construction materials, construction methods, field and laboratory test procedures and standards, and incorporate the experience gained from previous construction.

Construction materials such as till and sandstone waste rock are erodible. It is expected that surface erosion will occur, particularly after heavy precipitation events and spring runoff. Continuous monitoring and maintenance of the earth structures and surface drainage systems will be required during operations.

Monitoring of groundwater quality, seepage through the liner, erosion of earth structure and embankment stability will be required. Monitoring data obtained from early optimization construction and operation stages will be a valuable sources of information to confirm the design and performance of the structures, to identify any potential problems that need to be addressed prior to the next expansion stage of construction, and to provide inputs for the optimization of the design for the next construction stages (Golder Associates Ltd. 2019).

9 Summary of Annual Performance (B.6 and B.7)

9.1 Dam Safety Inspection

The 2024 Dam Safety Inspection (DSI) of the JEB TMF was completed by Orano’s Engineer of Record, WSP Canada (WSP). The DSI was conducted in accordance with the Canadian Dam Association (CDA) *Dam Safety Guidelines*, 2007 (Revised 2013). The site inspection was conducted on October 16, 2024, by representatives of WSP including the JEB TMF Engineer of Record and Orano and consisted of a visual inspection of the key features of the facility. The report also consisted of a review of instrumentation data.

The JEB TMF has a dam consequence classification of Very High. It is the repository for tailings resulting from uranium processing at the McClean Lake Mill.

Table 9.1 summarizes the condition ratings for the main components of the facility, based on observations from the 2024 DSI. Table 9.2 summarizes conditions from 2024 compared to previous years. Condition ratings have been assigned in accordance with WSP’s condition rating system (WSP 2024):
















- S = Satisfactory. Will fulfill intended purpose.
- F = Fair. Will fulfill intended purpose. Maintenance or further study required.
- P = Poor. May not fulfill intended purpose. Repair or modification required.
- U = Unsatisfactory. Will not fulfill purpose. Repair or modification required.
- N = Not inspected.

Table 9.1 2024 JEB TMF DSI Deficiencies

ID Number	Location	Condition	Priority	Description / Recommended Action
II-FM01	Downstream Dam Slope	S	Medium	<p>Surface Erosion: Minor rilling was observed at the embankment toe near 270°. The rilling has not progressed since the 2022 inspection.</p> <p>Recommended Mitigation: Fill depressions with traffic gravel and nominally compact.</p>
IV-BMP-01	Instrumentation	F	Low	<p>Piezometers: VWP cable leads that encase the transducer wires sit unprotected at the surface, and consideration should be taken to protect the wires at all Monitoring Sections. Where data loggers appear to be detaching from the posts, they should be secured.</p> <p>Recommended Mitigation: Protect VWP cable leads at surface and secure dataloggers.</p>

ID Number	Location	Condition	Priority	Description / Recommended Action
III-NC-05	Instrumentation	U	High	<p>Questionable Piezometer Readings: VW23-01LL, VW21-03FB, and VW23-03FC record errors or unrealistically high temperatures.</p> <p>Recommended Mitigation: Troubleshoot instruments to determine cause of malfunction and confirm if instruments are required as part of the monitoring plan (III-NC-05) or develop remediation plan.</p>

Table 9.2 2024 JEB TMF Condition Rating Summary

Component	Condition				Notes
	2022	2023	2024	Trend	
Upstream Slope: Soil-Bentonite Liner				↔	No change in the condition rating for the soil-bentonite liner.
Downstream Dam Slope				↔	With JEB TMF Pond elevation greater than 448 m ASL and soil-bentonite liner in the 2023 repair zone related to seepage/wet areas remaining satisfactory, snow removal and continuous pumping of the standing water near the northeast embankment toe (I-DS-03) is no longer required. Maintenance is recommended to maintain functionality and address: Minor rilling near the western embankment toe (II-FM-01)
Upstream Slope: Till/Rockfill				↔	No change in the condition rating for the till/rockfill upstream slopes.
Dam Crest				↑	Minor rutting and depressions (II-FM-04) remediated.
Erosion Control Swale and Sedimentation Structures				↑	Minor sloughing of the outer berm of the South Sedimentation Structure (III-NC-01) has been addressed with maintenance. Breach in the erosion control berm near the South Sedimentation Structure (III-NC-04) has been addressed with maintenance (i.e., grading) so that runoff does not short circuit the inlet.

Component	Condition				Notes
	2022	2023	2024	Trend	
Instrumentation	■	■	■	↔	<p>SI21-01-VW1 appears to be broken and following confirmation in 2023 that it is not included in Orano's Environmental Monitoring Plan (III-NC-03), it does not require monitoring and can be abandoned in place</p> <p>VW23-01LL, VW21-03FB, and VW21-03FC record errors or unrealistically high temperatures. Confirm VWPs are not required as part of the monitoring plan (III-NC-05) or develop remediation plan.</p> <p>Additional protection and repair are required to address: Unprotected VWP cable leads sitting at the surface at all Monitoring Stations and data loggers that are detaching from posts (IV-BMP-01)</p>

Legend: ■ Satisfactory ■ Fair ■ Poor ■ Unsatisfactory ■ Not Inspected

↑ Improving ↔ Unchanged ↓ Declining

9.2 Environmental Monitoring

Groundwater monitoring and surface water monitoring is conducted throughout the McClean operation with specific groundwater wells and lakes that are sampled adjacent and downstream of the JEB TMF. This is part of Orano's larger environmental performance monitoring. Pre-development chemistry is compared to operational chemistry. The sampling frequency and parameters are outlined in the Saskatchewan Ministry of Environment (SMOE) Approval to Operate. The results are reported in Orano's Environmental Performance Technical Information Document (Orano 2022), the 2024 McClean Lake Operation Annual Report and provided to the SMOE and CNSC.

To date, only a few minor trends have been observed. The water chemistry observed in the vicinity of the mining areas and JEB TMF show that there are no major changes to the groundwater chemistry to date that would indicate unanticipated migration of solutes. Mostly, the trends are related to the temporary lowering of the water table from mining activities resulting in the oxidation of rock in muskeg areas to the northeast and southwest of the JEB TMF, and from the recharge through the waste rock piles which contains some residual nitrogen from blasting. Overall, the concentrations of dissolved constituents in groundwater remain low (Orano 2024). Locations of the groundwater monitoring wells, and surface water monitoring locations are shown in Figure 9.1 and Figure 9.2 respectively.



Figure 9.1 JEB Site Groundwater Monitoring Locations

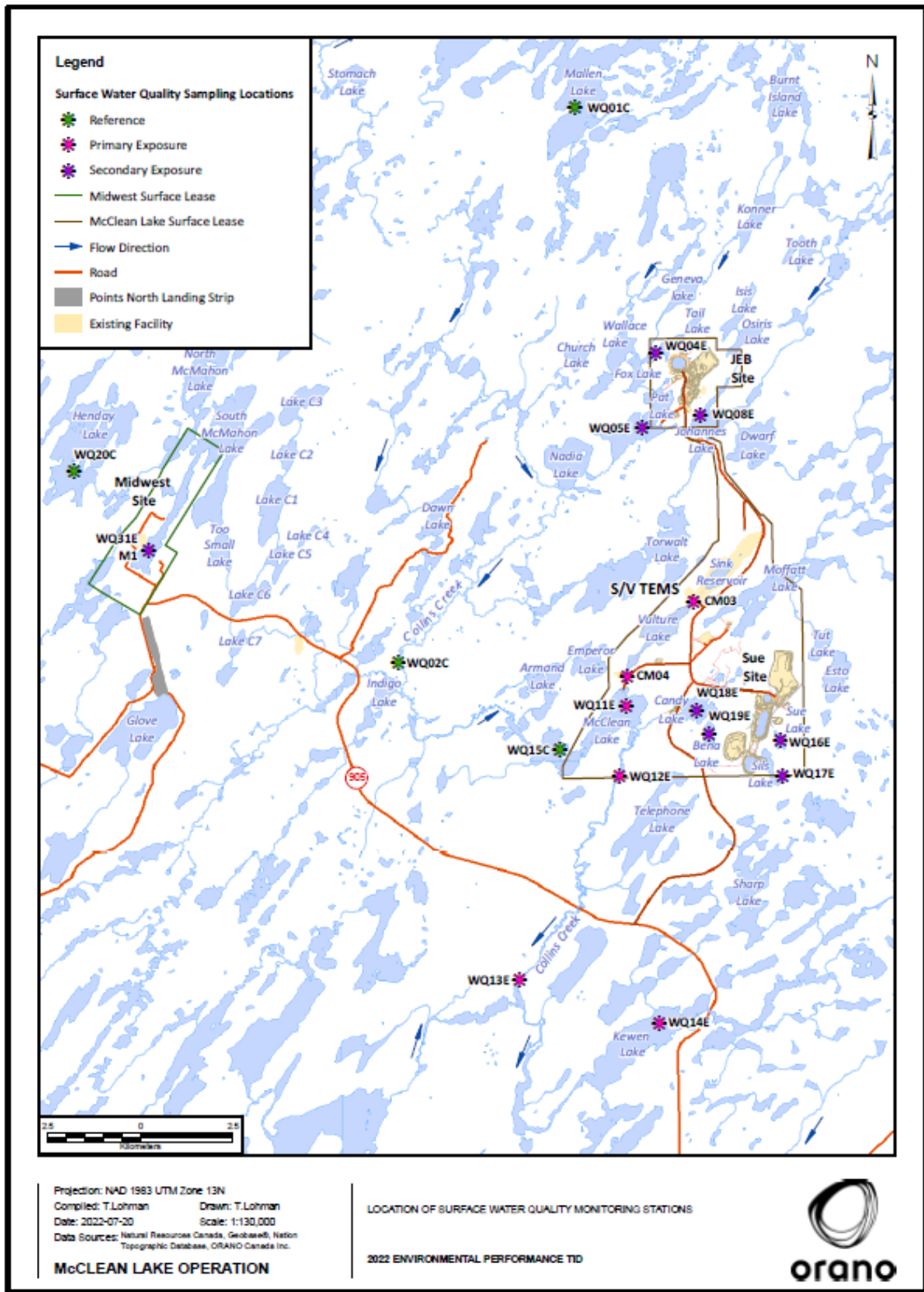


Figure 9.2 Surface Water Quality Monitoring Locations

10 Emergency Preparedness and Response Plan (B.8)

The Emergency Preparedness and Response Plan (EPRP) outlines instructions for emergencies related to the JEB TMF. Instructions on how to be prepared and how to respond to emergencies are established. The emergency situations covered by this document are related to various failure modes of the JEB TMF that could lead to harm to people and the environment.

The EPRP contains the contact information for key personnel in the event of an emergency. The general emergency response procedure is shown in Figure 10.1.

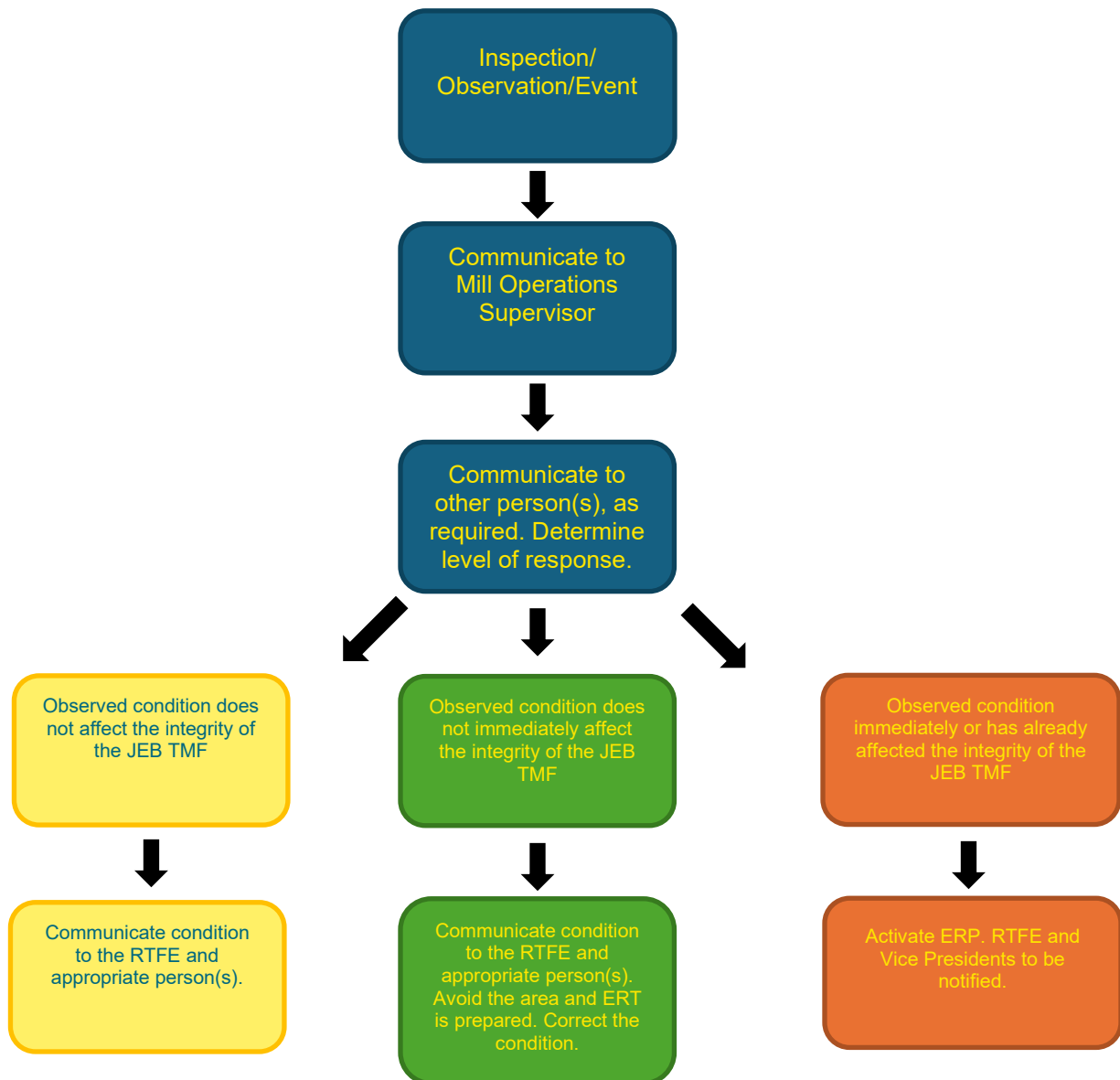


Figure 10.1 ERP General Process

11 Independent Review (B.9)

Orano established an Independent Tailings Review Board (ITRB) for the JEB TMF. The ITRB provided comments and recommendations related to the information and studies presented by Orano and the Engineer of Record, WSP during the meeting held on June 4, 2025. The next meeting is planned for June 2026. The summary of key comments, recommendations, mitigations, and response are shown in Table 11.1.

Table 11.1 Summary of key comments, recommendations, and mitigations

Comment/ Recommendation No.	Comment/Recommendation	Mitigation/Response
2025-01	The ITRB recommends that a summary of groundwater monitoring be included as part of the presentation at the next meeting.	Orano will include a summary of groundwater monitoring results for the next ITRB meeting.
2025-02	The ITRB recommends that consideration should be given to additional groundwater monitoring sector on west side of TMF between the TMF and Fox Lake. This area represents the narrowest distance between Fox Lake and the TMF at full capacity and additional groundwater monitoring will help mitigate potential seepage.	Additional monitoring is planned as part of the 457.5 expansion including sets of three nested monitoring wells through the crest at monitoring Sections 02, 03, and 06 with screened intervals located in the till, upper sandstone, and lower sandstone. Installing this additional instrumentation at Section 02 rather than Section 01 allows for comparison with the existing groundwater monitoring wells (95-05) installed in this Section.
2025-03	The ITRB recommends installation of additional monitoring location northeast of the JEB TMF as it is currently assumed that changes in water quality observed for Well 95-01B is associated with the JEB Waste Rock Pile and not the TMF.	
2025-04	The ITRB recommends that, if not already in practice, Orano and the EoR develop OMS training which should be provided on an annual basis, to all staff responsible for the operations, maintenance and surveillance of the TMF.	OMS training is provided for individuals with named positions (e.g., RTFE, AE). Consideration will be given to deploying a training seminar for other positions.

12 Financial Assurance (B.10)

Uranium mining companies in Saskatchewan are required by the Saskatchewan Ministry of Environment (SMOE) and the Canadian Nuclear Safety Commission (CNSC) to develop preliminary decommissioning plans (PDP), estimate the associated costs for decommissioning, and provide financial assurance (FA).

The PDP is intended to provide a high-level concept of how the facility (in its current state) would be decommissioned and the FA provides financial guarantee ensuring funding is available to conduct the decommissioning activities identified. In keeping with the concept of lifecycle planning, the current updated PDP and FA have been prepared for the McClean Lake Operation with consideration of planned activities within a 5-year period, that is, to the end of 2025. The PDP and FA are updated nominally on a 5-year cycle. It is recognized that should the scope of development vary from that which is currently anticipated, future revisions to the plan will reflect those changes. Completed project developments are included in the PDP and FA calculation upon completion of construction.

Decommissioning requirements are incorporated into the feasibility and design of every development. Orano will provide detailed plans for regulatory approval prior to commencing final decommissioning activities. The current PDP and FA are intended to provide sufficient planning for decommissioning to ensure adequate financial assurances are in place to decommission the McClean Lake Operation should a governmental agency (i.e. SMOE) need to assume responsibility for decommissioning the site in the unlikely event Orano is unable to fulfill its obligations. Stakeholders will be engaged during the preparation of the detailed decommissioning plan.

There is an approved FA amount for the McClean Lake Operation. This amount has been accepted by both the federal and provincial regulators.

13 References

Arcadis Canada Inc. 2016. Environmental Consequence Assessment of the Unlikely Embankment Failure of the JEB Tailings Management Facility Expansion Stage 1.

Canada North Environmental Services. 2019. Environmental Consequence Assessment of the Unlikely Embankment Failure of the JEB Tailings Management Facility Expansion.

Golder Associates Ltd. 2009. JEB Tailings Management Facility Analysis and Design of Soil Liner for JEB Optimization.

Golder Associates Ltd. 2018. JEB Tailings Management Facility Optimization Stage 2 and Expansion Stage 1 Design Report.

Golder Associates Ltd. 2019. JEB Tailings Management Facility 468 m ASL Expansion Stage 2 Design Report.

Golder Associates Ltd. 2021. JEB Tailings Management Facility 468 Expansion Preliminary Dam Classification.

Golder Associates Ltd. 2022. Dam Breach Flood Inundation Study for the JEB TMF Embankment.

Orano Canada Inc. 2022. Technical Information Document 2022 Environmental Performance.

Orano Canada Inc. 2023. 359ML-400-PLA-Z-003 JEB TMF EPRP.

Orano Canada Inc. 2023. 359ML-400-OM-Z-004 JEB TMF OMS Manual

Orano Canada Inc. 2024. 2024 McClean Lake Operation Annual Report.

WSP Canada Inc. 2023. McClean Lake Operation, JEB TMF Expansion - Failure Modes and Effects Analysis Summary.

WSP Canada Inc. 2024. Orano McClean Lake Operation, JEB TMF Expansion – 2023 Dam Safety Inspection.

Appendix A GISTM Self-Assessment JEB TMF

GISTM - Orano Mining
Self-assessment year 2025



Meets
Partially meets
Does not meet
Not applicable

Locations / sites

JEB TMF McClean Lake, Saskatchewan, Canada

Requirement		
TOPIC I: AFFECTED COMMUNITIES		
Principle 1 Respect the rights of project-affected people and meaningfully engage them at all phases of the tailings facility lifecycle, including closure.		
1.1 Demonstrate respect for human rights in accordance with the United Nations Guiding Principles on Business and Human Rights (UNGPR), conduct human rights due diligence to inform management decisions throughout the tailings facility lifecycle and address the human rights risks of tailings facility credible failure scenarios. For existing facilities, the Operator can initially opt to prioritise salient human rights issues in accordance with the UNGPR.	●	<p>As a company member in the International Council on Mining and Metals (ICMM), Orano Mining subsidiaries adhere to ICMM's Mining Principles Performance Expectation 3.1 on human rights. Commitments include conducting business in compliance with the UN Guiding Principles on Business and Human Rights, the Universal Declaration on Human Rights, the fundamental conventions of the International Labour Organization, and the Guidelines for Multinational Enterprises issued by the Organization for Economic Cooperation and Development (OECD).</p> <p>Orano Mining values transparency and dialogue with its stakeholders, in particular on questions relating to human rights. Management of grievances plays an essential part in the quality of relations with stakeholders. Orano Mining deployed a grievance mechanism on all of its sites in 2020.</p> <p>Orano Canada Inc.'s (OCI) Values Charter requires that the company's communication program is transparent, sincere, and open. In keeping with these commitments, OCI's overarching communication program considers the exchange of information with neighbouring Indigenous Nations and municipalities, the public, and other potential stakeholders. The company's Public Information Program related to the McClean Lake Operation (MLO) describes how it ensures that information related to the health, safety and security of persons and the environment is communicated.</p> <p>Furthermore, the Canadian Nuclear Safety Commission (CNSC) decision to amend the uranium mine and mill licence held by OCI for its MLO for the expansion of the JEB TMF followed a public hearing held virtually on October 4, 2021. In which, the CNSC made participant funding available through its Participant Funding Program, and invited interventions from Indigenous Nations and communities, members of the public and stakeholders.</p> <p>In the event of a failure, the Orano Mining corporate policy commits to restoration post-failure.</p>
1.2 Where a new tailings facility may impact the rights of indigenous or tribal peoples, including their land and resource rights and their right to self-determination, work to obtain and maintain Free Prior and Informed Consent (FPIC) by demonstrating conformance to international guidance and recognised best practice frameworks.	●	OCI Corporate Social Responsibility (CSR) Policy recognizes a responsibility to the Indigenous peoples and other community stakeholders in areas in which we have activities and is committed to their meaningful involvement in those activities. The subcommittees under each Collaboration Agreement (Ya Thi Nene, Pinehouse, English River First Nation) include local representation and meet quarterly to discuss uranium mining and community matters such as environmental protection, and health and safety. In the cases where OCI's undertakings may have an impact on traditional activities in the area, meetings with indigenous leaders, their communities, and other interested parties are conducted to agree on consent and how each party will be accommodated or compensated. See Orano McClean Lake Operation Public Information Program CSR-100 Version 3. Most communities are very far from the site, all dam breach assessments show the flood mapping does not reach any downstream community. The agreement documents are confidential, they may be requested if necessary.
1.3 Demonstrate that project-affected people are meaningfully engaged throughout the tailings facility lifecycle in building the knowledge base and in decisions that may have a bearing on public safety and the integrity of the tailings facility. The Operator shall share information to support this process.	●	The 2021 JEB TMF Expansion Indigenous Engagement Report. Section 8 of the McClean Lake Annual Report also speaks to engagement. The collaboration agreements also cover this.
1.4 Establish an effective operational-level, non-judicial grievance mechanism that addresses complaints and grievances of project-affected people relating to the tailings facility, and provide remedy in accordance with the UNGPR.	●	To meet the commitments of its CSR Policy, OCI provides a mechanism for transparent dispute resolution to strengthen trust-based relationships with Indigenous peoples and communities near its activities. Grievance mechanism in place: https://www.orano.group/canada/en/our-commitments/community-engagement#communitiescollaboration
TOPIC II: INTEGRATED KNOWLEDGE BASE		
Principle 2 Develop and maintain an interdisciplinary knowledge base to support safe tailings management throughout the tailings facility lifecycle, including closure.		
2.1 Develop and document knowledge about the social, environmental and local economic context of the tailings facility, using approaches aligned with international best practices. Update this knowledge at least every five years, and whenever there is a material change either to the tailings facility or to the social, environmental and local economic context. This knowledge should capture uncertainties due to climate change.	●	<p>Tailings Technical Information Document (TID): Section 4 covers social considerations given to accidents and clean up, downstream effects which have social impact and also Section 6.1. Sections 4 and 6 cover environmental information. Economic requirements are covered by decommissioning and returning the property to the province.</p> <p>The 2025 version of the TID includes the Failure Modes and Effects Analysis (FMEA) and the Breach and Inundation study completed in December 2022. These analyses cover uncertainties associated with climate change, including precipitation and desiccation.</p> <p>The TID is updated every 5 years or when there is a material change.</p>
2.2 Prepare, document and update a detailed site characterisation of the tailings facility site(s) that includes data on climate, geomorphology, geology, geochemistry, hydrology and hydrogeology (surface and groundwater flow and quality), geotechnical, and seismicity. The physical and chemical properties of the tailings shall be characterised and updated regularly to account for variability in ore properties and processing.	●	Covered by Tailings and Environmental Protection (EPI) TIDs: EP TID Volume 1 covers Climate in Section 3, Tailings TID covers: Geology in Section 2, Hydrogeology in Section 7, Hydrology in Section 4, Geotechnical in Section 2 and in construction documents, Physical and chemical properties of tailings in Sections 5 and 2. Facility Design reports also cover geology, hydrology, hydrogeology, geotechnical and seismic characterisation.
2.3 Develop and document a breach analysis for the tailings facility using a methodology that considers credible failure modes, site conditions, and the properties of the slurry. The results of the analysis shall estimate the physical area impacted by a potential failure. When flowable materials (water and liquefiable solids) are present at tailings facilities with Consequence Classification of "High", "Very High" or "Extreme", the results should include estimates of the physical area impacted by a potential failure, flow arrival times, depth and velocities, and depth of material deposition. Update whenever there is a material change either to the tailings facility or the physical area impacted.	●	Assessment of consequences to the receiving environment has been conducted. Flood mapping, velocity arrival time etc. has also been conducted using the most conservative breach location and fluid properties. The reports are included in the disclosure summary.
2.4 In order to identify the groups most at risk, refer to the updated tailings facility breach analysis to assess and document potential human exposure and vulnerability to tailings facility credible failure scenarios. Update the assessment whenever there is a material change either to the tailings facility or to the knowledge base.	●	JEB TMF Breach and Inundation study completed October 2022. There are no downstream human environments. There would only be Orano personnel potentially working in a downstream flow area. We now know and have document of potential human exposure and vulnerability to tailings flow.
Principle 3 Use all elements of the knowledge base - social, environmental, local economic and technical - to inform decisions throughout the tailings facility lifecycle, including closure.		
3.1 To enhance resilience to climate change, evaluate, regularly update and use climate change knowledge throughout the tailings facility lifecycle in accordance with the principles of Adaptive Management.	●	FMEA considers climate change with higher than design rainfall (PFM 7, 8, 29, 33, 34, 37, 51, 54).
3.2 For new tailings facilities, the Operator shall use the knowledge base and undertake a multi-criteria alternatives analysis of all feasible sites, technologies and strategies for tailings management. The goal of this analysis shall be to: (i) select an alternative that minimises risks to people and the environment throughout the tailings facility lifecycle; and (ii) minimise the volume of tailings and water placed in external tailings facilities. This analysis shall be reviewed by the Independent Tailings Review Board (ITRB) or a senior independent technical reviewer. For existing tailings facilities, the Operator shall periodically review and refine the tailings technologies and design, and management strategies to minimise risk and improve environmental outcomes. An exception applies to facilities that are demonstrated to be in a state of safe closure.	●	Periodic reviews of tailings technology are covered by the TOVP program. Periodic design reviews covered by ITRB reviews of expansion documents.
3.3 For new tailings facilities, use the knowledge base, including uncertainties due to climate change, to assess the social, environmental and local economic impacts of the tailings facility and its potential failure throughout its lifecycle. Where impact assessments predict material acute or chronic impacts, the Operator shall develop, document and implement impact mitigation and management plans using the mitigation hierarchy.	●	Environmental, social, and local economic impact assessments covered by breach analysis. Potential failure scenarios due to climate change are considered in the FMEA. Mitigation measures and management plans are covered in the OMS manual and EPRP through inspections, monitoring and Trigger Action Response Plans (TARPs). The OMS manual and EPRP are reviewed annually.
3.4 Update the assessment of the social, environmental and local economic impacts to reflect a material change either to the tailings facility or to the social, environmental and local economic context. If new data indicates that the impacts from the tailings facility have changed materially, including as a result of climate change knowledge or long-term impacts, the Operator shall update tailings facility management to reflect the new data using Adaptive Management best practices.	●	Material change is defined in the Tailings Governance Standard. Material change of the TMF triggers specific documentation including updates of risks from both internal and external change. The annual OSI assesses the social, environmental, and economic impact of a tailings facility failure.

Principle 6 Plan, build and operate the tailings facility to manage risk at all phases of the tailings facility lifecycle, including closure and post-closure.		
6.1 Build, operate, monitor and close the tailings facility according to the design intent at all phases of the tailings facility lifecycle, using qualified personnel and appropriate methodology, equipment and procedures, data acquisition methods, the Tailings Management System (TMS) and the overall Environmental and Social Management System (ESMS) for the mine and associated infrastructure.	<ul style="list-style-type: none"> ● Roles and qualifications for key positions are listed in the OMS. ● Routine monitoring, annual inspections, and construction QA/QC programs are documented. All programs developed in conjunction with the EOR. ● The corporate policy and tailings standard are finalized and in internal management system. 	<p>Designs, plans, and construction works align with Design Basis. EOR is designer of record and oversees QA/QC of construction activities.</p>
6.2 Manage the quality and adequacy of the construction and operation process by implementing Quality Control, Quality Assurance and Construction vs Design Intent Verification (CDIV). The Operator shall use the CDIV to ensure that the design intent is implemented and is still being met if the site conditions vary from the design assumptions.	<ul style="list-style-type: none"> ● QA/QC programs in place for each phase of construction. QA/QC of operations by EOR included in the DSI. ● CDIV included as a component of Construction Records Report. 	
6.3 Prepare a detailed Construction Records Report ("as-built" report) whenever there is a material change to the tailings facility, its infrastructure or its monitoring system. The EOR and the Responsible Tailings Facility Engineer (RTFE) shall sign this report.	<ul style="list-style-type: none"> ● Construction Record Reports exist for each prior phase of construction including the installation of geotechnical instrumentation. ● Construction Record Reports were written and approved by the EOR prior to GISTM. Future construction record reports will be approved by both the RTFE and EOR. 	
6.4 Develop, implement, review annually and update as required an Operations, Maintenance and Surveillance (OMS) Manual that supports effective risk management as part of the TMS. The OMS Manual should follow best practices, clearly provide the context and critical controls for safe operations, and be reviewed for effectiveness. The RTFE shall provide access to the OMS Manual and training to all levels of personnel involved in the TMS with support from the EOR.	<ul style="list-style-type: none"> ● The OMS manual is published and includes the OMS activities required. The OMS manual is reviewed by Orano and the EOR annually during the DSI. Roles, responsibilities, and training of involved personnel is covered in the OMS. All affected parties have access to the OMS manual. 	
6.5 Implement a formal change management system that triggers the evaluation, review, approval and documentation of changes to design, construction, operation or monitoring during the tailings facility lifecycle. The change management system shall also include the requirement for the EOR to prepare a periodic Deviance Accountability Report (DAR), that provides an assessment of the cumulative impact of the changes on the risk level of the as-constructed facility. The DAR shall provide recommendations for managing risk, if necessary, and any resulting updates to the design, DBR, OMS and the monitoring programme. The DAR shall be approved by the Accountable Executive.	<ul style="list-style-type: none"> ● Section 6 of the Tailings Governance Standard defines the change management system including the requirement for the EOR to prepare periodic DARs. 	
6.6 Include new and emerging technologies and approaches and use the evolving knowledge in the refinement of the design, construction and operation of the tailings facility.	<ul style="list-style-type: none"> ● Addressed by TOVP and in design reports (instrumentation technology). 	
Principle 7 Design, implement and operate monitoring systems to manage risk at all phases of the facility lifecycle, including closure.		
7.1 Design, implement and operate a comprehensive and integrated performance monitoring programme for the tailings facility and its associated structures as part of the TMS and for those aspects of the ESMS related to the tailings facility in accordance with the principles of Adaptive Management.	<ul style="list-style-type: none"> ● Design report provides monitoring program (Section 11 for 457.5 and Section 12 for 468). ● Monitoring program is included in the OMS manual, taken from the design report recommendation. 	
7.2 Design, implement and operate a comprehensive and integrated engineering monitoring system that is appropriate for verifying design assumptions and for monitoring potential failure modes. Full implementation of the Observational Method shall be adopted for non-brittle failure modes. Brittle failure modes are addressed by conservative design criteria.	<ul style="list-style-type: none"> ● Monitoring program is in place as described for 7.1 ● TARP values set to implement the Observational Method for non-brittle failure modes. Conservative loading criteria used for design ("extreme" parameters). 	
7.3 Establish specific and measurable performance objectives, indicators, criteria, and performance parameters and include them in the design of the monitoring programmes that measure performance throughout the tailings facility lifecycle. Record and evaluate the data at appropriate frequencies. Based on the data obtained, update the monitoring programmes throughout the tailings facility lifecycle to confirm that they remain effective to manage risk.	<ul style="list-style-type: none"> ● Performance objectives are set based on licensing documents. ● Inspection reports and review of monitoring data are completed at the frequencies stated in the OMS manual and include reports from the RTFE to the EOR. ● Inspection and monitoring program is reviewed annually during the DSI. 	
7.4 Analyse technical monitoring data at the frequency recommended by the EOR, and assess the performance of the tailings facility, clearly identifying and presenting evidence on any deviations from the expected performance and any deterioration of the performance over time. Promptly submit evidence to the EOR for review and update the risk assessment and design, if required. Performance outside the expected ranges shall be addressed promptly through Trigger Action Response Plans (TARPs) or critical controls.	<ul style="list-style-type: none"> ● Technical monitoring data is analysed at the frequencies established by the EOR and included in the OMS manual. Reports summarizing the review of monitoring data is provided to the EOR. ● TARPs are established for the monitoring data. 	
7.5 Report the results of each of the monitoring programmes at the frequency required to meet company and regulatory requirements and, at a minimum, on an annual basis. The RTFE and the EOR shall review and approve the technical monitoring reports.	<ul style="list-style-type: none"> ● Annual reporting requirements included as part of the DSI with formal review by EOR and RTFE. Additional reports are provided to the EOR by the RTFE on a monthly basis. 	
TOPIC IV: MANAGEMENT AND GOVERNANCE		
Principle 8 Establish policies, systems and accountabilities to support the safety and integrity of the tailings facility		
8.1 The Board of Directors shall adopt and publish a policy on or commitment to the safe management of tailings facilities, to emergency preparedness and response, and to recovery after failure.	<ul style="list-style-type: none"> ● Orano Canada, under the Orano Mining corporate policy on tailings, includes response and recovery after failure. 	
8.2 Assess the hazards of the products of mining according to UN Globally Harmonised System of Hazard Classification and Labelling or equivalent relevant regulatory systems and communicate through safety data sheets and labelling as appropriate	<ul style="list-style-type: none"> ● The tailings governance standard document is complete which includes a Tailings Management System (Section 4) ● Environmental and social management systems (ESMS) covered by risk management and community engagement. The AE adopts the design to have ALARA to the environment. 	
8.3 For roles with responsibility for tailings facilities, develop mechanisms such that incentive payments or performance reviews are based, at least in part, on public safety and the integrity of the tailings facility. These incentive payments shall reflect the degree to which public safety and the integrity of the tailings facility are part of the role. Long-term incentives for relevant executive managers should take tailings management into account.	<ul style="list-style-type: none"> ● Tailings-responsible positions have Short Term Incentive (STI) based partially on personal objectives which should include tailings safety through GISTM management (e.g., inspections). Orano does not have Long Term Incentives. Documentation of program in HR-400 Performance and Development Process. 	
8.4 Appoint one or more Accountable Executives who is/are directly answerable to the CEO on matters related to this Standard. The Accountable Executive(s) shall be accountable for the safety of tailings facilities and for avoiding or minimising the social and environmental consequences of a tailings facility failure. The Accountable Executive(s) shall also be accountable for a programme of tailings management training, and for emergency preparedness and response. The Accountable Executive(s) must have scheduled communication with the EOR and regular communication with the Board of Directors, which can be initiated either by the Accountable Executive(s), or the Board. The Board of Directors shall document how it holds the Accountable Executive(s) accountable.	<ul style="list-style-type: none"> ● The accountable executive is Vice President of Safety, Health, Environment and Regulatory and reports to the CEO. The role and qualifications are outlined in the tailings standard. 	
8.5 Appoint a site-specific Responsible Tailings Facility Engineer (RTFE) who is accountable for the integrity of the tailings facility, who liaises with the EOR and internal teams such as operations, planning, regulatory affairs, social performance and environment, and who has regular two-way communication with the Accountable Executive. The RTFE must be familiar with the DBR, the design report and the construction and performance of the tailings facility.	<ul style="list-style-type: none"> ● The JEB TMF has a site-specific RTFE. 	
8.6 Identify appropriate qualifications and experience requirements for all personnel who play safety-critical roles in the operation of a tailings facility, including, but not limited to the RTFE, the EOR and the Accountable Executive. Ensure that incumbents of these roles have the identified qualifications and experience, and develop succession plans for these personnel.	<ul style="list-style-type: none"> ● Qualifications and succession are covered in Section 3 of the tailings governance standard. 	
8.7 For tailings facilities with Consequence Classification of 'Very High' or 'Extreme', appoint an Independent Tailings Review Board (ITRB). For all other facilities, the Operator may appoint a senior independent technical reviewer. The ITRB or the reviewer shall be appointed early in the project development process, report to the Accountable Executive and certify in writing that they follow best practices for engineers in avoiding conflicts of interest.	<ul style="list-style-type: none"> ● The ITRB is composed of two members who report to the AE. 	

Principle 9 Appoint and empower an Engineer of Record		
9.1 Engage an engineering firm with expertise and experience in the design and construction of tailings facilities of comparable complexity to provide EOR services for operating the tailings facility and for closed facilities with "High", "Very High" and "Extreme" Consequence Classification, that are in the active closure phase. Require that the firm nominate a senior engineer, approved by the Operator, to represent the firm as the EOR, and verify that the individual has the necessary experience, skills and time to fulfil this role. Alternatively, the Operator may appoint an in-house engineer with expertise and experience in comparable facilities as the EOR. In this instance, the EOR may delegate the design to a firm ("Designer of Record") but shall remain thoroughly familiar with the design in discharging their responsibilities as EOR. Whether the EOR or the DOR is in-house or external, they must be competent and have experience appropriate to the Consequence Classification and complexity of the tailings facility.	●	EOE has been selected and documented by proposal (including CVs) and work authorizations.
9.2 Empower the EOR through a written agreement that clearly describes their authority, role and responsibilities throughout the tailings facility lifecycle, and during change of ownership of mining properties. The written agreement must clearly describe the obligations of the Operator to the EOR, to support the effective performance of the EOR.	●	EOE role is documented by proposal, tailings governance standard and work authorizations.
9.3 Establish and implement a programme to manage the quality of all engineering work, the interactions between the EOR, the RTE and the Accountable Executive, and their involvement in the tailings facility lifecycle as necessary to confirm that both the implementation of the design and the design intent are met.	●	Covered in Section 3 of the tailings governance standard.
9.4 Given its potential impact on the risks associated with a tailings facility, the selection of the EOR shall be decided by the Accountable Executive and informed, but not decided, by procurement personnel.	●	The EOR was selected based on qualifications without influence from procurement personnel. The work authorization for the EOR was approved by senior management.
9.5 Where it becomes necessary to change the EOR (whether a firm or an in-house employee), develop a detailed plan for the comprehensive transfer of data, information, knowledge and experience with the construction procedures and materials.	●	Succession plan in scope of proposal. Succession planning of EOR also included in Sections 3 and 6 of tailings governance standard.
Principle 10 Establish and implement levels of review as part of a strong quality and risk management system for all phases of the tailings facility lifecycle, including closure		
10.1 Conduct and update risk assessments with a qualified multi-disciplinary team using best practice methodologies at a minimum every three years and more frequently whenever there is a material change either to the tailings facility or to the social, environmental and local economic context. Transmit risk assessments to the TRB or senior independent technical reviewer for review, and address with urgency all unacceptable tailings facility risks.	●	Captured by FMEA. Risk assessment is updated every 3 years or when there is material change (e.g., construction/expansion). FMEA is reviewed by the TRB.
10.2 Conduct regular reviews of the TMS and of the components of the ESMS that refer to the tailings facility to assure the effectiveness of the management systems. Document and report the outcomes to the Accountable Executive, Board of Directors and project-affected people. The review shall be undertaken by senior technical reviewers with the appropriate qualifications, expertise and resources. For tailings facilities with "High", "Very High" or "Extreme" Consequence Classification, conduct the review at least every three years.	●	The EOR can review the OMS and EPP to meet this objective. Review of the OMS and EPP is conducted annually by the EOR as part of the DSI
10.3 Conduct internal audits to verify consistent implementation of company procedures, guidelines and corporate governance requirements consistent with the TMS and aspects of the ESMS developed to manage tailings facility risks.	●	Covered in Section 8 of the tailings governance standard.
10.4 The EOR or senior independent technical reviewer shall conduct tailings facility construction and performance reviews annually or more frequently, if required.	●	Covered by the DSI.
10.5 Conduct an independent DSR at least every five years for tailings facilities with "Very High" or "Extreme" Consequence Classifications and at least every 10 years for all other facilities. For tailings facilities with complex conditions or performance, the TRB may recommend more frequent DSRs. The DSR shall include technical, operational and governance aspects of the tailings facility and shall be completed according to best practices. The DSR contractor cannot conduct consecutive DSRs on the same tailings facility and shall certify in writing that they follow best practices for engineers in avoiding conflicts of interest.	●	Independent DSR to be conducted every 5 years or when the TRB recommends.
10.6 For tailings facilities with "Very High" or "Extreme" Consequence Classifications, the TRB, reporting to the Accountable Executive shall provide ongoing senior independent review of the planning, siting, design, construction, operation, water and mass balance, maintenance, monitoring, performance and risk management at appropriate intervals across all phases of the tailings facility lifecycle. For tailings facilities with other Consequence Classifications, this review can be done by a senior independent technical reviewer.	●	TRB is formed and meets annually. Designs are provided to the TRB for review prior to finalization.
10.7 The amount of estimated costs for planned closure, early closure, reclamation, and post-closure of the tailings facility and its appurtenant structures shall be reviewed periodically to confirm that adequate financial capacity (including insurance, to the extent commercially reasonable) is available for such purposes throughout the tailings facility lifecycle, and the conclusions of the review shall be publicly disclosed annually. Disclosure may be made in audited financial statements or in public regulatory filings. Subject to the provisions of local or national regulations on this matter, Operators shall use best efforts to assess and take into account the capability of an acquirer of any of its assets involving a tailings facility (through merger, acquisition, or other change in ownership) to maintain this Standard for the tailings facility lifecycle.	●	There is financial assurance confirmed, as part of the McClean operations Preliminary Decommissioning Plan and Financial Assurance.
Principle 11 DEVELOP AN ORGANISATIONAL CULTURE THAT PROMOTES LEARNING, COMMUNICATION AND EARLY PROBLEM RECOGNITION.		
11.1 Educate personnel who have a role in any phase of the tailings facility lifecycle about how their job procedures and responsibilities relate to the prevention of a failure.	●	Covered in Section 3 of the tailings governance standard.
11.2 Establish mechanisms that incorporate workers' experience-based knowledge into planning, design and operations for all phases of the tailings facility lifecycle.	●	Covered in Section 3 of the tailings governance standard.
11.3 Establish mechanisms that promote cross-functional collaboration to ensure effective data and knowledge sharing, communication and implementation of management measures to support public safety and the integrity of the tailings facility.	●	Annual meeting of multi-disciplined team in a tailings working group. Members include geotechnical engineers, process engineers, metallurgists, and environment personnel.
11.4 Identify and implement lessons from internal incident investigations and relevant external incident reports, paying particular attention to human and organisational factors.	●	Incident and near miss investigation policy is in IMS.
11.5 Establish mechanisms that recognise, reward and protect from retaliation, employees and contractors who report problems or identify opportunities for improving tailings facility management. Respond in a timely manner and communicate actions taken and their outcomes.	●	Whistle blower and grievance mechanisms in place (Orano employee handbook and for service providers). In the tailings governance standard it specifically speaks to recognize, reward and protect whistleblowers which is not in the HR guidelines.
Principle 12 ESTABLISH A PROCESS FOR REPORTING AND ADDRESSING CONCERNS AND IMPLEMENT WHISTLEBLOWER PROTECTIONS.		
12.1 The Accountable Executive shall establish a formal, confidential and written process to receive, investigate and promptly address concerns from employees and contractors about possible permit violations or other matters relating to regulatory compliance, public safety, tailings facility integrity or the environment.	●	Covered in Communication Section of tailings governance standard. Also covered in Section 4 of the Orano Canada CSR procedure for complaints/grievances. The AE will refer to this.
12.2 In accordance with international best practices for whistleblower protection, the Operator shall not discharge, discriminate against, or otherwise retaliate in any way against a whistleblower who, in good faith, has reported possible permit violations or other matters relating to regulatory compliance, public safety, tailings facility integrity or the environment.	●	Covered by Orano whistleblower policy.

TOPIC V: EMERGENCY RESPONSE AND LONG-TERM RECOVERY		
Principle 13 PREPARE FOR EMERGENCY RESPONSE TO TAILINGS FACILITY FAILURES.		
13.1 As part of the TMS, use best practices and emergency response expertise to prepare and implement a site-specific tailings facility Emergency Preparedness and Response Plan (EPRP) based on credible flow failure scenarios and the assessment of potential consequences. Test and update the EPRP at all phases of the tailings facility lifecycle at a frequency established in the plan, or more frequently if triggered by a material change, either to the tailings facility or to the social, environmental and local economic context. Meaningfully engage with employees and contractors to inform the EPRP, and co-develop community-focused emergency preparedness measures with project-affected people.	●	EPRP has TARP's from EOR and potential failure modes from the FMEA. There is reference to training and testing. Exercises were done.
13.2 Engage with public sector agencies, first responders, local authorities and institutions and take reasonable steps to assess the capability of emergency response services to address the hazards identified in the tailings facility EPRP, identify gaps in capability and use this information to support the development of a collaborative plan to improve preparedness.	●	Due to remote nature of the site, emergency response would be handled by environment and site services departments and the emergency response team. Notification to regulators included as part of EPRP. Mock exercises have been conducted.
13.3 Considering community-focused measures and public sector capacity, the Operator shall take all reasonable steps to maintain a shared state of readiness for tailings facility credible flow failure scenarios by securing resources and carrying out annual training and exercises. The Operator shall conduct emergency response simulations at a frequency established in the EPRP but at least every 3 years for tailings facilities with potential loss of life.	●	Annual training conducted by site emergency response team. Tabletop exercise conducted in 2024.
13.4 In the case of a catastrophic tailings facility failure, provide immediate response to save lives, supply humanitarian aid and minimise environmental harm.	●	There are no downstream communities, however there is an immediate response plan in the event of failure documented in the EPRP.
Principle 14 PREPARE FOR LONG-TERM RECOVERY IN THE EVENT OF CATASTROPHIC FAILURE.		
14.1 Based on tailings facility credible flow failure scenarios and the assessment of potential consequences, take reasonable steps to meaningfully engage with public sector agencies and other organisations that would participate in medium- and long-term social and environmental post-failure response strategies.	●	The OMS manual and EPRP cover post-incident communications.
14.2 In the event of a catastrophic tailings facility failure, assess social, environmental and local economic impacts as soon as possible after people are safe and short-term survival needs have been met.	⊗	Not applicable for routine operations. Covers post-incident actions taken.
14.3 In the event of a catastrophic tailings facility failure, work with public sector agencies and other stakeholders to develop and implement reconstruction, restoration and recovery plans that address the medium- and long-term social, environmental and local economic impacts of the failure. The plans shall be disclosed if permitted by public authorities.	⊗	Not applicable for routine operations. Covers post-incident actions taken.
14.4 In the event of a catastrophic tailings facility failure, enable the participation of affected people in reconstruction, restoration and recovery works and ongoing monitoring activities.	⊗	Not applicable for routine operations. Covers post-incident actions taken.
14.5 Facilitate the monitoring and public reporting of post-failure outcomes that are aligned with the thresholds and indicators outlined in the reconstruction, restoration and recovery plans and adapt activities in response to findings and feedback.	⊗	Not applicable for routine operations. Covers post-incident actions taken.
TOPIC VI: PUBLIC DISCLOSURE AND ACCESS TO INFORMATION		
Principle 15		
15.1 Publish and regularly update information on the Operator's commitment to safe tailings facility management, implementation of its tailings governance framework, its organisation-wide policies, standards or approaches to the design, construction, monitoring and closure of tailings facilities. A. For new tailings facilities for which the regulatory authorisation process has commenced, or that are otherwise approved by the Operator, the Operator shall publish and update, in accordance with Principle 21 of the UNGP, the following information: 1. A plain language summary of the rationale for the basis of the design and site selected as per the multi-criteria alternatives analysis, impact assessments, and mitigation plans (information may be obtained from the output of multiple Requirements including, but not limited to, Requirements 3.2, 3.3, 5.1, 5.3, 6.4, 6.6, 7.1 and 10.1); and 2. The Consequence Classification. (Requirement 4.1). B. For each existing tailings facility and in accordance with Principle 21 of the UNGP, the Operator shall publish and update at least on an annual basis, the following information: 1. A description of the tailings facility (information may be obtained from the output of Requirements 5.5 and 6.4); 2. The Consequence Classification (Requirement 4.1); 3. A summary of risk assessment findings relevant to the tailings facility (information may be obtained from the output of Requirement 10.1).	●	Orano Mining publishes, and discloses the requirements under Principle 15.
15.2 Respond in a systematic and timely manner to requests from interested and affected stakeholders for additional information material to the public safety and integrity of a tailings facility. When the request for information is denied, provide an explanation to the requesting stakeholder.	●	Covered by Orano's grievance mechanism and CSR policy.
15.3 Commit to cooperate in credible global transparency initiatives to create standardised, independent, industry-wide and publicly accessible databases, inventories or other information repositories about the safety and integrity of tailings facilities.	●	Member of ICMM, Saskatchewan Mining Association and other industry groups. Orano has regular communication and sharing with the Canadian Nuclear Safety Commission and Saskatchewan Ministry Of Environment on JEB TMF related matters. To meet the commitments of its CSR Policy, OI communicates with and provides opportunities for dialogue with Indigenous Peoples and interested stakeholders and consider those views in our activities in order to build consensus.