Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W3048/2025/1
Applicant	Murrin Murrin Operations Pty Ltd
ACN	076 717 505
File number	INS-0003048, APP-0029923
Premises	Murrin Murrin Nickel Cobalt Project Mining tenements M39/343, M39/420, M39/421, M39/423, M39/424, M39/553 As defined by the premises maps attached to the issued works approval
Date of report	7 January 2026
Proposed Decision	Works approval granted

Cathie Derrington

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Cathie Derrington
Senior Environmental Officer, Green Energy
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W3048/2025/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

On 15 July 2025, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application seeks approval to undertake construction works and time-limited operations (TLO) associated with Category 5 activities. These activities include the deposition of tailings and decant liquor into the proposed 8 Series Inpit Tailings Storage Facility (TSF) at the Murrin Murrin Nickel Cobalt Project, located approximately 50 km east of Leonora. The applicant holds EP Act Licence L7276/1996/12 for this premises.

The premises relates to the category and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W3048/2025/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020b) are outlined in works approval W3048/2025/1.

2.2.1 Existing operations

The Murrin Murrin Nickel Cobalt Project consists of open pits, a processing plant, and ancillary infrastructure supporting the production of nickel and cobalt briquettes from extracted nickel laterite ore. Under the existing licence L7276/1996/12, the applicant is permitted to operate multiple discharge and store tailings and decant liquor into multiple existing inpit and paddock TSFs.

The proposed deposition of tailings and decant liquor into the 8 Series Inpit TSF is intended to be generally undertaken in accordance with the requirements outlined in licence L7276/1996/12 for the existing inpit and paddock TSFs at the premises.

2.2.2 Proposed 8 Series Inpit Tailings Storage Facility

The applicant's existing licence (L7276/1996/12) has an assessed production capacity of 5,000,000 tonnes per annual period for category 5 activities. The applicant is proposing to discharge up to 4,620,000 tonnes of dry tailings into the 8 Series Inpit TSF each year, equivalent to approximately 17,111,000 m^3 of tailings slurry (27% solids). The 8 Series Inpit TSF has a total storage capacity for 17,280,000 tonnes of dry tailings, providing a storage life of three years and nine months at the proposed discharge rate.

Discharge of tailings will occur via multiple spigots at one end of the pit to progressively develop and push the supernatant pond to the opposite side of the pit and close to the pit ramp(s). Pit ramp(s) will be utilised as part of decant water recovery operations, and pontoon-mounted pump(s) will be deployed and up the pit access ramp(s) when tailings and water

levels rise within the 8 Series Inpit TSF.

The volume of decant water recovered from the tailing's slurry is anticipated to vary over the life of the 8 Series Inpit TSF and range from approximately 7,971,000 m^3 to 9,566,000 m^3 (46.6% to 55.9%) per year, and 5,966,000 m^3 (46.5%) in the final nine months of deposition. Decant water will be captured and directed to the existing evaporation ponds to maximise removal of water by shallow pan evaporation and may also be pumped to the existing processing plant for reuse.

The layout of the 8 Series Inpit TSF and pipelines is shown in Figure 1.

Pipelines

Tailings will be discharged through a new steel or high-density polyethylene (HDPE) pipeline, which will connect to the existing 19 Series Inpit TSF pipeline. An emergency deposition pipeline will also be installed for the life of the 8 Series In-Pit TSF to address cracks or depressions on the tailings surface. This pipeline will connect to the existing 17 Series In-Pit deposition pipeline.

The new pipeline will be approximately 495 m in length and constructed within a bunded corridor 5 m wide, with a minimum bund height of 600 mm. Two scour sumps, each with a capacity of 360 m^3, will be installed along the pipeline route.

A 5 m wide access track will run alongside the pipeline containment bunds. Both the bunds and the access track will be constructed using suitable mine waste material, with the access track compacted to a thickness of approximately 300 mm.

Where necessary, topsoil (minimum 100 mm thick) will be stripped from areas designated for the pipeline corridor and scour sumps and stored in stockpiles. These stockpiles will have a maximum height of 2 m and side slopes of 1 (vertical) to 1.5 (horizontal).

The proposed pipeline layout is shown in Figure 1, and the general arrangement of the pipeline corridor and scour sumps is shown in Figure 2.

Monitoring bores

Existing monitoring bores at the site were originally designed to allow conversion for seepage recovery if required. However, the department has advised that monitoring bores should remain separate from seepage recovery bores to maintain the integrity and reliability of monitoring data.

In response, the applicant proposes installing seven additional monitoring bores around the 8 Series Inpit TSF at the locations shown in Figure 1. These locations have been selected to provide adequate space for the potential future installation of seepage recovery bores, if necessary. No seepage recovery bores are proposed at this stage; however, the applicant may install one in the future should significant seepage requiring active management occur.

The department's Contaminated Sites Branch has reviewed the proposed bore locations and considers them appropriate, given that deposition into the 8 Series Inpit TSF has not yet commenced. Additional monitoring bores may be required in the future, as outlined in section 3.3 of this decision report.

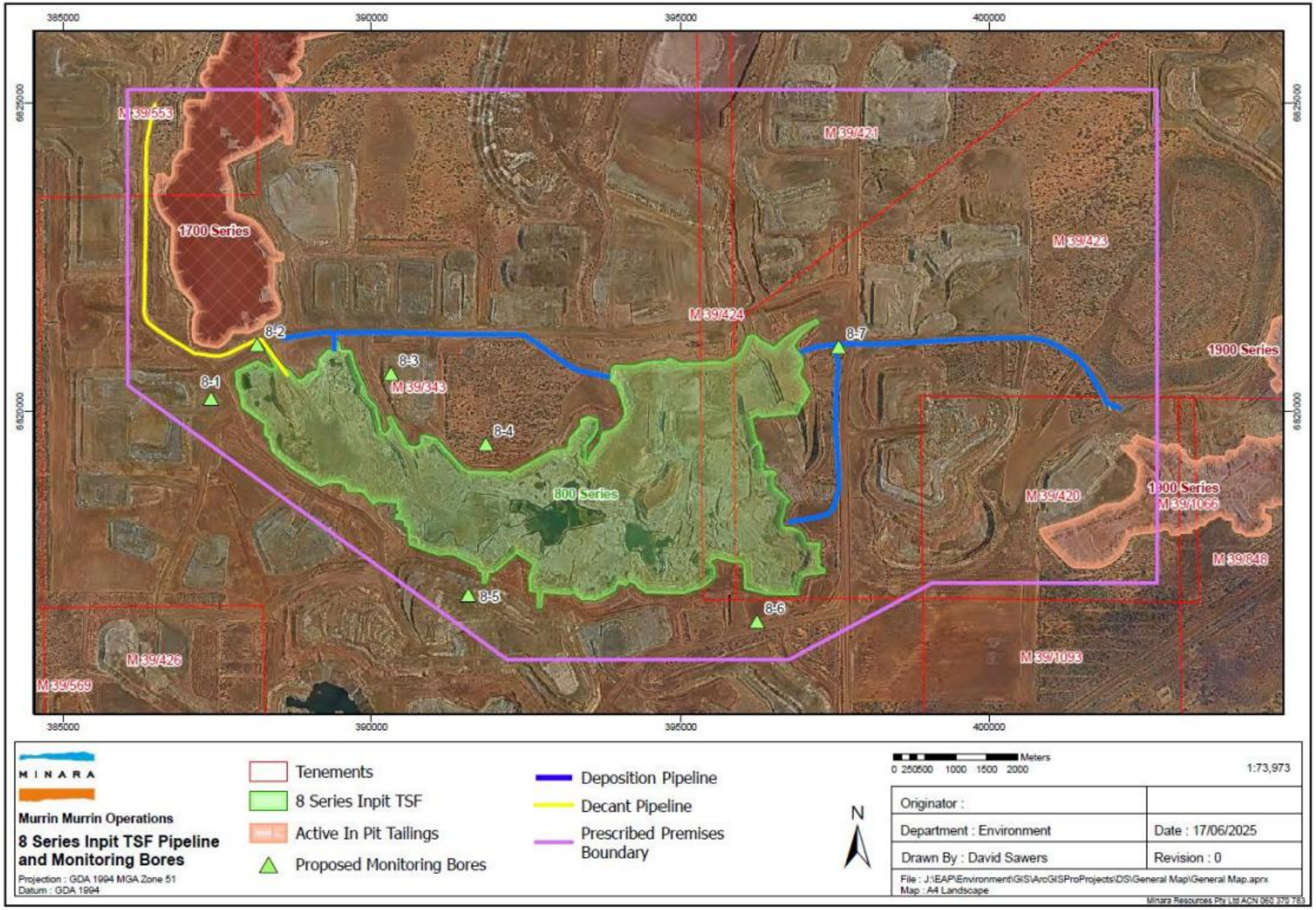

Figure 1: Proposed 8 Series Inpit TSF and pipeline layout

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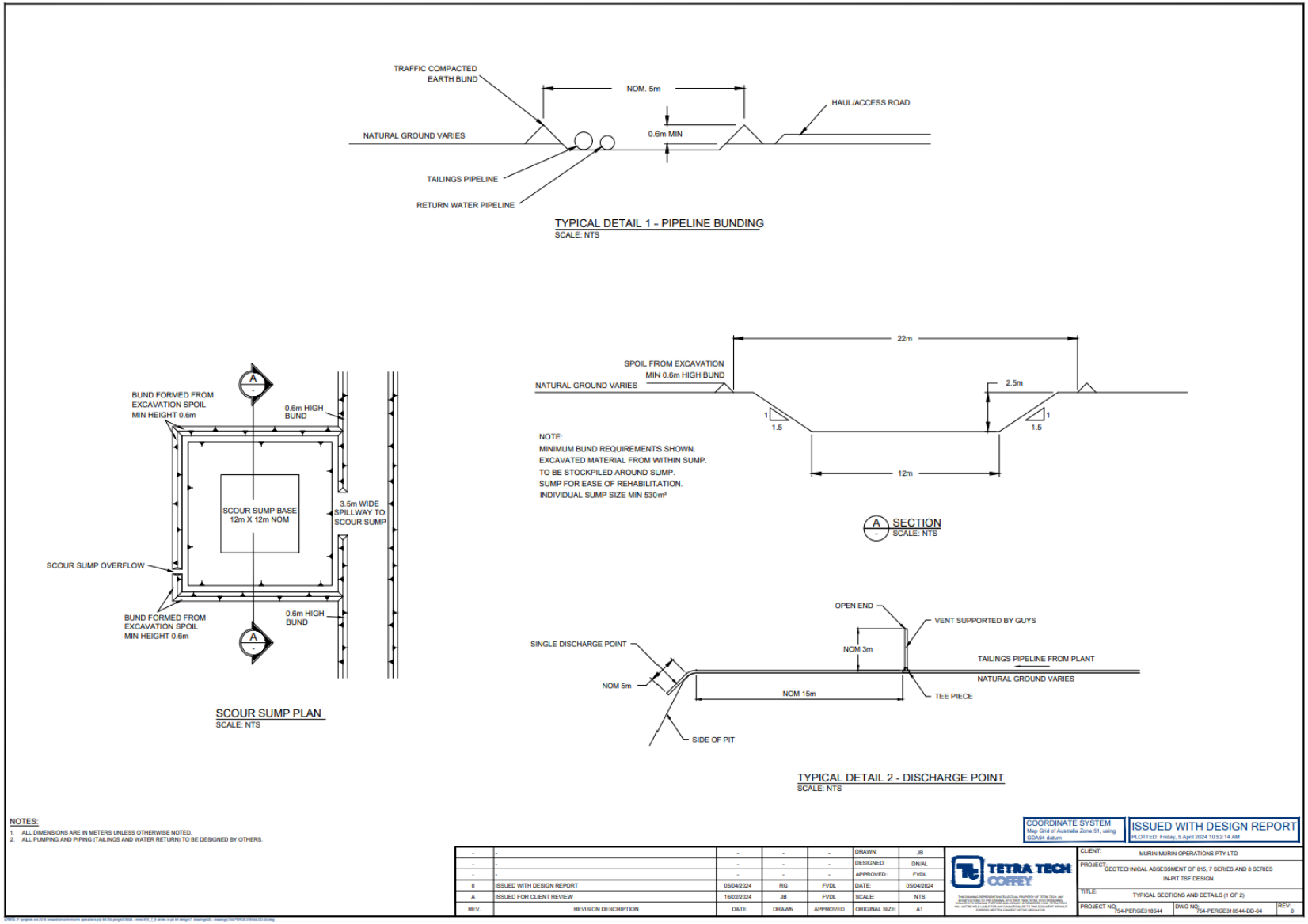

Figure 2: Pipeline and scour sump general arrangement

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2.3 Geotechnical and hydrogeological assessments

The applicant provided geotechnical and hydrogeological assessments as supporting documentation for the application for a works approval:

- '*Murrin Murrin Operations In-Pit TSFs 815, 7 Series and 8 Series Design – Design Report (Geotechnical Assessment)*' (Tetra Tech Coffey 2024).
- '*Hydrogeological Assessment - Proposed In-pit Tailings Disposal into 7 Series Pits, 8 Series Pits & Pit 8/15*' (Saprolite Environmental 2024).

2.3.1 Geotechnical assessment

The inpit TSFs at the premises (Pits 815, 7 Series, and the 8 Series Inpit TSF proposed as part of this application) were designed in general accordance with Department of Mines, Energy and Petroleum (DMPE, formerly DMP/DMIRS/DEMIRS) guidelines (DMP 2013).

An assessment of the pit wall was undertaken for the 8 Series Input TSF and indicated that the pit was suitable for tailings storage, and that groundwater would not be encountered at design pit depth (Tetra Tech Coffey 2024). The assessment determined that the 8 Series Inpit TSF would have a storage volume of approximately 21,600,000 m^3 (17,280,000 tonnes) of dry tailings (Tetra Tech Coffey 2024).

2.3.2 Hydrogeological assessment

An assessment of seepage migration potential from the inpit TSFs, including the 8 Series In-Pit TSF, was conducted using previous reports and existing data. Key findings include:

- The weathering profile consists of layers with widely varying permeability and storage capacity. Complex chemical processes have removed significant quantities of soluble material, some of which have been re-deposited elsewhere.
- Water levels at proposed in-pit TSF monitoring sites may respond rapidly, particularly during the early stages of deposition. Observed variability in water level mounding at existing facilities suggests a heterogeneous and anisotropic groundwater environment.
- Structural features such as faults, shears, and contact zones may serve as preferential pathways for seepage migration.
- Within the saprolite, structural features have been partially filled by remobilised silica, likely reducing the connectivity of migratory or leaching zones. These features are expected to extend into the underlying semi-weathered ultramafic protolith; however, these units occur below the depth of mining and are unlikely to act as seepage pathways.
- Saprolite forms most of the pit walls and floor and is typically high in magnesium. When exposed to potentially acidic tailings, the saprolite is expected to exhibit neutralising properties, providing some mitigation against pH decline.
- There is potential for shallow flow paths to develop if water levels return to or exceed pre-mining elevations due to natural groundwater inflow or tailings deposition within the pits

2.3.3 Contaminated Sites Branch review

As part of this assessment, the department's Contaminated Sites Branch reviewed the geotechnical and hydrogeological reports submitted in support of the application.

The Contaminated Sites Branch determined that the full extent of potential groundwater contamination from the 8 Series Inpit TSF had not been adequately characterised. Given the geological complexity of the mining area, it was also unclear whether the proposed number and placement of monitoring bores would be sufficient to define the extent and spatial

distribution of contamination resulting from seepage. To address these uncertainties, the Branch recommended additional works, including:

- A review of existing geological and geophysical information for the area.
- A ground-based geophysical investigation near the 8 Series Inpit TSF.

The Branch further advised that additional monitoring bores would be likely to be required and noted that a single seepage recovery bore, as proposed by the applicant, would be insufficient to capture groundwater contaminated by seepage from the TSF.

Following this advice, the department requested further information from the applicant, which was provided on 16 October 2025 and subsequently reviewed by the Contaminated Sites Branch. Based on this additional information, the Branch concluded that the initial network of seven monitoring bores would be adequate to detect groundwater mounding caused by seepage from the TSF. However, the Branch recommended implementing several triggers and response actions related to standing water levels, including the installation of additional monitoring or seepage recovery bores if specified thresholds are exceeded. These actions also include undertaking the previously recommended geophysical investigations should water levels rise to defined limits.

These recommendations have been incorporated into the works approval as regulatory controls and are discussed further in section 3.3.

2.4 Compliance with L7276/1996/12

2.4.1 Licence non-compliances and outcomes

Recorded instances of non-compliance with the conditions of licence L7276/1996/12 relevant to this application for a works approval include:

- ICMS 83086 – Nickel concentration of 1.1 mg/L, exceeding licence limit of <1 mg/L.
- ICMS 86146 – Various concerns raised from 2023 annual audit report, including lack of active recovery bores and piezometers, groundwater mounding arounds TSF and evaporation ponds, and elevated levels of nickel, cobalt, and Total Dissolved Solids (TDS) in groundwater.
- ICMS 86531 – Nickel concentration of 4.9 mg/L, exceeding licence limit of <1 mg/L.
- ICMS 91802 – Nickel concentration of 6.6 mg/L, exceeding licence limit of <1 mg/L.
- ICMS 92556 – Nickel concentration of 4.9 mg/L, exceeding licence limit of <1 mg/L.

These non-compliances demonstrate a recurring issue of elevated nickel concentrations in groundwater near the existing TSFs and evaporation ponds, the same area where the applicant intends to discharge decant water from the 8 Series Inpit TSF. In response to these non-compliances, a Trigger Action Response Plan (TARP) was added as a licence condition to respond to elevated nickel, cobalt and TDS concentrations in seepage indication bores.

The above has been considered by the department as part of its assessment of this application for a works approval.

2.4.2 Audit, non-compliances and outcomes

On 6 October 2025, the department provided the applicant with a notification of audit and letter of non-compliance relating to licence L7276/1996/12 and Ministerial Statements 445 and 506. The department identified the following non-compliances and concerns relevant to this application for a works approval:

- Monitoring shows groundwater levels remain very shallow, with some bores at or above surface level, and performance targets for seepage control were not met in

2024 or 2025 (e.g., recovery bore availability was only 49% and 74% and regular inspections and maintenance was not undertaken).

- Non-compliance with condition 1.3.7 of licence L7276/1996/12 due to insufficient maintenance resulting in pump failure.
- Approximately 11 hectares (ha) of native vegetation death, salt crusting, and elevated nickel and chromium in soils and water, likely caused by seepage and groundwater mounding in an area northwest of the Evaporation Pond 4. This issue may have been exacerbated by pooling surface water in the same location.
- Many groundwater recovery bores and trenches were non-operational during the inspection.
- A failure to maintain effective seepage mitigation infrastructure has likely contributed to environmental harm including unacceptable impacts to groundwater, vegetation loss and soil contamination.

The department specified several actions that the applicant was required to take, including but not limited to:

- Restoration of the seepage recovery systems.
- Submit a Seepage Management Corrective Action Plan to the department.
- Develop and implement a Native Vegetation and Soil Remediation Plan for the impacted 11 ha of native vegetation.
- Revise the Seepage Management Plan.

The department notes that some aspects of this application for a works approval application relate to existing site infrastructure, such as directing decant water from the 8 Series Inpit TSF to the existing evaporation ponds or reuse at the existing processing plant.

For the purposes of this assessment, the department considers that the actions outlined in the notification of audit and letter of non-compliance are sufficient to address the identified non-compliances with existing infrastructure related to this application for a works approval.

The non-compliances and concerns outlined in the notification of audit and letter of non-compliance have been considered by the department as part of its assessment of this application for a works approval.

2.5 Part IV of the EP Act

Under Part IV of the EP Act, the premises is currently regulated by Ministerial Statements 445 and 506, which were assessed by the Environmental Protection Authority (EPA) under assessment numbers 1051 and 1229, respectively. The application area is located entirely within Ministerial Statement 506.

Table 1 outlines the current and former Ministerial Statements that relate to the premises.

Table 1: Ministerial statements

Date Granted	Ministerial statement (MS)	Status	Management relating to TSF
6 June 1996	MS 418 Nickel-Cobalt Ore Mining Processing Murrin Murrin, 60 km east of Leonora	Replaced by MS 445	Requirement to design and operate TSF(s) to ensure that the tailings dam do not result in unacceptable impacts to groundwater regime (Commitment 12). Prior to construction and operation of tailings dam to ensure detailed assessment of tailings characteristics, investigation of hydrogeology of tailings dam for aquifer characteristics,
5 May 1997	MS 444 Nickel-Cobalt Ore Mining Processing		

	Alternative Sites Murrin Murrin, 60 km east of Leonora		groundwater flow and quality, rise of groundwater levels (Commitment 13) Groundwater monitoring program up and down gradient of tailing dam prior to construction. (Commitment 14)
6 May 1997	MS 445 Nickel-Cobalt Ore Mining and Processing First proposal Murrin Murrin 60 km east of Leonora	Current	
31 May 1999	MS 506 Murrin Murrin Nickel-Cobalt Project Stage 2 Expansion, 60 km east of Leonora	Current	Requirement to design and operate TSF(s) to ensure that the tailings dam does not result in unacceptable impacts to groundwater regime (Commitment 12). Prior to construction and operation of tailings dam to ensure detailed assessment of tailings characteristics, investigation of hydrogeology of tailings dam for aquifer characteristics, groundwater flow and quality, rise of groundwater levels (Commitment 13) Groundwater monitoring program up and down gradient of tailing dam prior to construction. (Commitment 14) Condition 5 - Tailings storage facility – central thickened discharge, requirements to protect beneficial uses of groundwater, vegetation, surface water quality and fauna.

The department has reviewed both Ministerial Statements to ensure no duplication of conditions occurs. The department notes that no conditions placed on the works approval conflict or duplicate the requirement of the existing Ministerial Statements.

2.6 Other relevant approvals

2.6.1 Mining proposal

The applicant holds multiple Mining Proposals under the *Mining Act 1978* for the premises.

A new Mining Proposal (Reg ID: 127019) and updated Mine Closure Plan for the 8 Series Inpit TSF and associated infrastructure was approved in January 2025 to enable conversion of the existing pit into a TSF.

2.6.2 Aboriginal heritage

Advice received from the Department of Planning, Lands and Heritage (DPLH) indicated that the proposed prescribed premises boundary intersects with 22 registered Aboriginal heritage sites.

The applicant has stated that the required Section 18 *Aboriginal Heritage Act 1972* (AH Act) approvals have been previously obtained for all sites and that no new impacts to Aboriginal heritage sites will occur as part of implementation of the 8 Series Inpit TSF.

It is recommended that the applicant discusses their responsibilities under the AH Act with DPLH to confirm that all required approvals for the proposed 8 Series Inpit TSF and associated infrastructure have been obtained.

2.6.3 Water licences

The applicant currently holds multiple groundwater licences under the *Rights in Water and Irrigation Act 1914* (RiWI Act) for the premises, including:

- GWL206312(2);

- GWL66584(8);
- GWL61171(11);
- GWL154363(10); and
- GWL206313(2).

No changes to these licences are required or proposed in relation to the 8 Series Inpit TSF and associated infrastructure.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020b).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 2 below. Table 2 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 2: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Construction and installation of infrastructure Vehicle movements and earthworks	Air/windborne pathway causing impacts to nearby priority flora and native vegetation	**Proposed controls** • Construction materials moisture conditioned at borrow locations and/or at the TSF embankment area. • Use of water carts and dust suppressants on haul roads as required.
Operation			
Dust	Liftoff from tailings stored within the 8 Series Inpit TSF	Air/windborne pathway causing impacts to nearby priority flora and native vegetation	**Proposed controls** • Rotation of spigot points around the facility to maintain damp tailings beaches by reducing drying time cycles between depositions. • Use of dust suppressants, silt fences and windbreaks as required.

Emission	Sources	Potential pathways	Proposed controls
Leaks and spills of tailings, decant water, and contaminated water (metals/ metalloids)	Tailings and decant water pipeline transferring tailings to the 8 Series Inpit TSF and decant water to the existing evaporation ponds and processing plant	Overland run off causing impacts to nearby priority flora and native vegetation, surface water, groundwater, and/or soils	**Proposed controls** • Routine inspections every 12 hours of pipeline integrity and for signs of leaks. • Pipelines fitted with telemetry system and pressure sensors to allow the detection of leaks and failures. • Bunding along pipelines to contain all spills and leaks constructed with suitable mine waste and have a minimum height of 600 mm. • Two scour sumps, each with a 360 m^3 capacity, constructed along pipeline. • Ceasing transfer of tailings or decant water when pipelines are damaged or when leaks are detected. • Stormwater is diverted aways from the TSF via existing road and trench network.
Overflow of tailings and decant water from the 8 Series Inpit TSF	Disposal of tailings into the 8 Series Inpit TSF		**Proposed controls** • 8 Series Inpit TSF to maintain a freeboard of 1.9 m from the vertical height between the normal operating pond and minimum pit rim level. • Routine inspections every 12 hours of the size and location of the decant pond. **Proposed monitoring** • Monthly water balance inspection and recording.
Seepage of tailings through base and sides of 8 Series Inpit TSF	Storage of tailings in the 8 Series Inpit TSF	Discharge to land causing death or decrease in health of nearby vegetation, or impacts to surface water, groundwater and/or soils	**Existing licence L7276/1996/12 controls** • Trigger levels and actions (Seepage Management Plan) for standing water levels. • Trigger levels and actions (Trigger Action Response Plan) for nickel concentrations in groundwater. **Proposed controls** • Installation of a seepage recovery bore. **Proposed monitoring** • Installation of seven monitoring bores, baseline sampling event, and ongoing quarterly monitoring.

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020b), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 3 and Figure 3 below provides a summary of potential human and environmental receptors that could be affected by activities on, or emissions and discharges from, the prescribed premises (as outlined in the Environmental Siting Guideline, DWER 2020a).

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Residential Premises (Town of Leonora)	50 km west
Residential Premises (Laverton Township)	55 km east
Environmental receptors	**Distance from prescribed activity**
Native vegetation	A Priority 1 flora species is recorded 1.5 km west of the application area.
Threatened Ecological Community	There is a Priority 1 TEC (Mount Morgan Calcrete groundwater assemblage) located approximately 26 km east of the application area.
Fauna	A threatened fauna species, *Leipoa ocellata* (Malleefowl), has previously been recorded near the application area by the applicant. The applicant has advised that no suitable breeding habitat is located within the prescribed premises boundary. No clearing is proposed as part of this application.
Groundwater	The application area is in the Goldfields Groundwater Area. The Leonora Water Reserve approximately 36 km west of the application area, and the Laverton Water Reserve and Catchment Area are located approximately 47 km to the northeast. Groundwater typically flows in a south-southeasterly direction. Groundwater recharge is limited to specific geological/ topographic sites following high intensity rainfall events, and is relatively low due to low rainfall, high evaporation, heavy soils, and well-developed vegetation cover (Saprolite Environmental 2024). Monitoring data from existing operations indicates that impacts from groundwater abstraction are currently localised to already disturbed areas of current and future mining (Minara Resources 2025a). Groundwater mounding is occurring near existing TSFs and Inpit TSFs at the premises and is related to the anticipated effects of tailings deposition at the site (Minara Resources 2025a). Groundwater pH at most monitoring sites ranges from 6-8.5 (Minara Resources 2025a). Laboratory analysis has indicated high concentrations of dissolved magnesium at several sites (Minara Resources 2025a). It is expected that the prevalence of magnesium carbonate within the weathering profile is providing buffering capacity for acidity, mitigating significant falls in pH (Saprolite Environmental 2024).

Surface water	The application area is within the Katata Creek Catchment, which drains to the south-west via an extensive dendritic drainage system towards Lake Raeside, located approximately 38 km to the southwest. There are multiple non-perennial surface water lines within the application area which flow towards Lake Raeside. Lake Carey is located approximately 24 km southeast of the application area.
Aboriginal heritage	There are multiple (>10) registered Aboriginal heritage sites located within the application area (Figure 3).

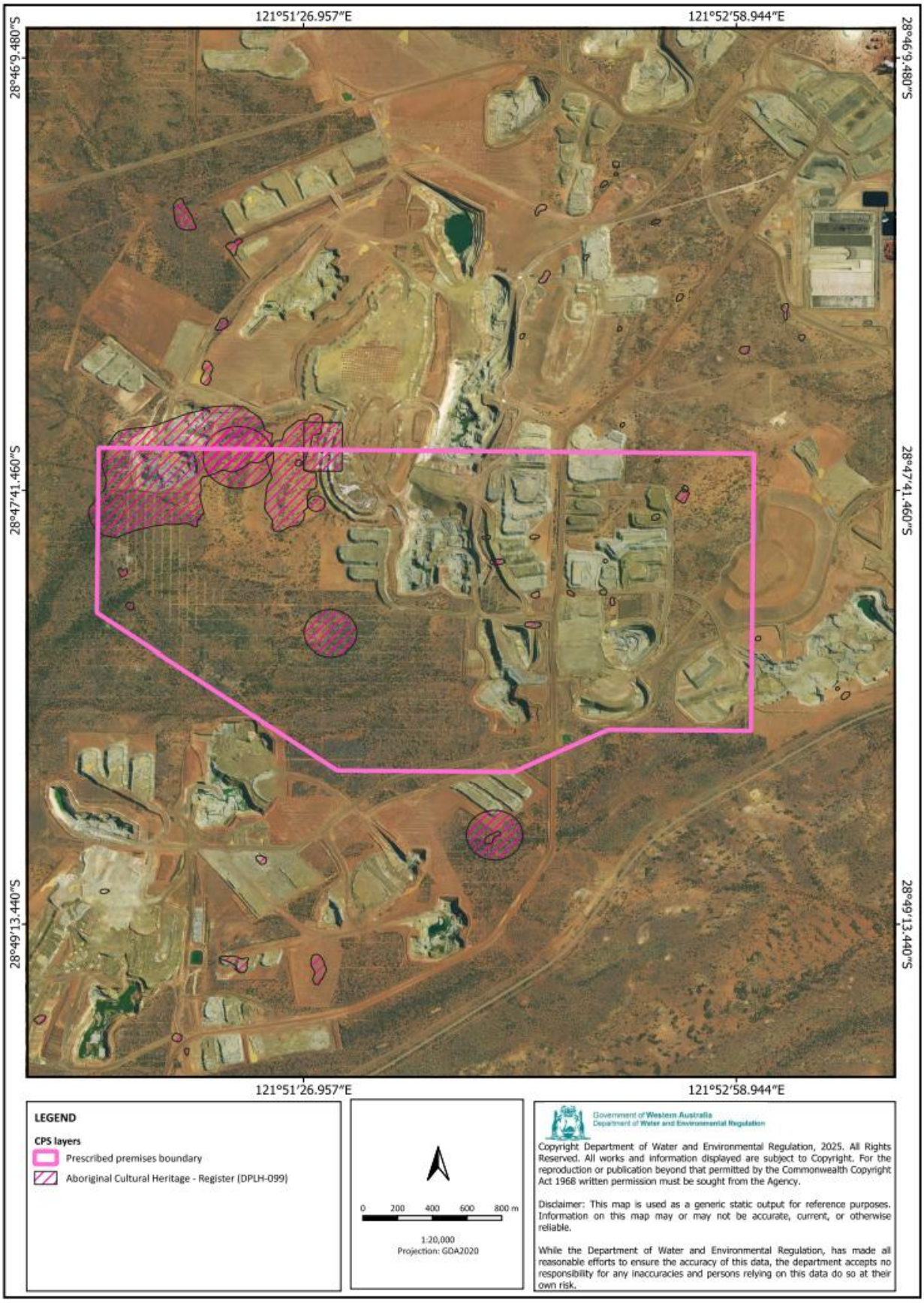

Figure 3: Locations of registered Aboriginal heritage sites

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020b) for each identified emission source and considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

Works approval W3048/2025/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 4 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. category 5 activities. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 4: Risk assessment of potential emissions and discharges from the premises during construction and operation under TLO

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction and installation of infrastructure Vehicle movements and earthworks	Dust	Air/windborne pathway causing impacts to nearby priority flora and native vegetation	Nearby priority flora and native vegetation	Refer to Section 3.1	C = Slight L = Possible **Medium Risk**	Y	N/A	N/A
Operation (including time-limited-operations operations)								
Liftoff from tailings stored within the 8 Series Inpit TSF	Dust	Air/windborne pathway causing impacts to nearby priority flora and native vegetation	Nearby priority flora and native vegetation	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1, 10	The applicant proposed controls have been placed on the works approval as regulatory controls.
Tailings and decant water pipeline transferring tailings to the 8 Series Inpit TSF and decant water to the existing evaporation ponds and processing plant	Leaks and spills of tailings, decant water, and contaminated water (metals/ metalloids)	Overland run off causing impacts to nearby priority flora and native vegetation, surface water, groundwater, and/or soils	Nearby vegetation, groundwater (Goldfields Groundwater Area) and/or soils	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	Condition 1, 10	The applicant proposed controls have been placed on the works approval as regulatory controls.
Disposal of tailings into the 8 Series Inpit TSF	Overflow of tailings and decant water from the 8 Series Inpit TSF				C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1, 10	The applicant proposed controls have been placed on the works approval as regulatory controls.
Storage of tailings in the 8 Series Inpit TSF	Seepage of tailings through base and sides of 8 Series Inpit TSF	Discharge to land causing death or decrease in health of nearby vegetation, or impacts to surface water, groundwater and/or soils	Nearby vegetation, groundwater (Goldfields Groundwater Area) and/or soils	Refer to Section 3.1	C = Moderate L = Almost Certain **High Risk**	N	Condition 1, 2, 4, 10 **Condition 11, 12, 13, 14, 15, 16**	Refer to Section 3.3

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020b).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

3.3 Detailed risk assessment for seepage from 8 Series Inpit TSF

3.3.1 Source

The applicant has advised that tailings deposited into the 8 Series Inpit TSF will have similar properties to the tailings deposited into the existing pits under licence L7276/1996/12.

The tailings have a pH of approximately 2.3, and previous testing indicates that the tailings slurry is hyper-saline, with a TDS of approximately 180,000 mg/L, and is enriched in iron, magnesium, manganese, and nickel (Minara Resources 2025a).

The applicant's '*Murrin Murrin Nickel Cobalt Project Annual Environmental Report 2024/2025*' (Minara Resources 2025b) for licence L7276/1996/12 outlines the monitoring results for the most recent annual reporting period. As discussed in section 2.4, monitoring results indicated elevated levels of nickel and TDS at multiple monitoring bores on multiple occasions, including bores adjacent to the existing 17 Series Inpit TSF the 18/3 Inpit TSF. Nickel concentrations were above the levels specified in the licence, triggering the requirement for the applicant to increase monitoring frequency, prepare a Nickel Management Plan, and install seepage recovery bores.

3.3.2 Pathway

The application area is located within the Goldfields Groundwater Area. The nearest water reserve to the application area is the Leonora Water Reserve, located approximately 36 km to the west. The average depth to groundwater at the 8 Series Inpit TSF is 29 m. Groundwater within the application area typically flows in a south-southeasterly direction.

Monitoring data from existing operations indicates that impacts from groundwater abstraction are currently localised to already disturbed areas of current and future mining (Minara Resources 2025b). Groundwater mounding is occurring near existing TSFs and Inpit TSFs at the premises and is related to the anticipated effects of tailings deposition at the site (Minara Resources 2025b). Seepage from the 8 Series Inpit TSF is expected to occur and is likely to result in similar impacts given the similar tailings composition (refer section 2.4).

Groundwater pH at most monitoring sites ranges from 6-8.5 (Minara Resources 2025b). Laboratory analysis has indicated high concentrations of dissolved magnesium at several sites (Minara Resources 2025b).

The department's Contaminated Sites Branch reviewed the geotechnical and hydrogeological information provided by the applicant and considered that further geological and geophysical information would be required to determine the full extent and spatial distribution of groundwater contamination that may be caused by seepage from the 8 Series Inpit TSF (refer section 2.3).

3.3.3 Proposed management and monitoring

Refer to section 3.1.1 for the applicant's proposed management and monitoring measures.

The department sought advice from its Contaminated Sites Branch on the adequacy of the proposed management and monitoring measures, and whether additional measures are required. The advice received from Contaminated Sites Branch is discussed in section 2.3 and has been considered as part of the department's assessment and development of the regulatory controls detailed in section 3.3.4.

3.3.4 Department assessment and regulatory controls

The closest receptors that may be sensitive to impacts from the deposition of tailings into the 8 Series Inpit TSF is the groundwater in the area.

Due to underlying groundwater, the consequence rating for impacts is considered 'moderate'.

Seepage has historically occurred at the other existing Inpit TSFs at the site, and seepage from the 8 Series Inpit TSF is also expected to occur, so the likelihood is considered to be 'almost certain'. The overall risk rating is therefore considered to be 'high'.

Given the risk rating, the regulatory controls outlined in Table 5 will be placed on the works approval.

Table 5: Regulatory controls

Condition	Justification
1	The applicant proposed design and construction/installation requirements for the 8 Series Inpit TSF and tailings and decant pipeline have been added to the works approval as regulatory controls.
4, 5	The applicant proposed groundwater monitoring wells near the 8 Series Inpit TSF have been added to the works approval as regulatory controls.
4, 5	To establish a baseline for the groundwater near the 8 Series Inpit TSF prior to tailings deposition, the department has added a requirement for a singular sampling event to be undertaken prior to commencement of time limited operations. A sample is required to be taken from the new groundwater monitoring wells constructed under this works approval. The parameters to be sampled are the same as those currently outlined in licence L7276/1996/12 for groundwater.
10	The applicant proposed controls for time limited operations have been added to the works approval as regulatory controls including maintenance of the controls. As time limited operations will occur for a maximum of six months, tailings deposition during time limited operations has been limited to 2,310,000 tonnes of dry tailings, half of the assessed annual production/design capacity for category 5 activities.
12, 13, 14, 15	To determine whether there are impacts to groundwater occurring from the deposition of tailings at the 8 Series Inpit TSF, the department has added a requirement for monitoring of groundwater from the specified groundwater monitoring wells. The parameters to be sampled are the same as those currently outlined in licence L7276/1996/12 for groundwater.
12, 13, 16, 17	The department's Contaminated Sites Branch reviewed the documentation provided by the applicant and recommended groundwater level trigger values and actions to be incorporated into the works approval (refer section 2.3). Contaminated Site Branch advised that if standing water levels exceed 10 mbgl, it is considered that there would be a significant risk of hypersaline groundwater rising to within the root-zone of nearby vegetation. Constructing additional monitoring bores near the 8 Series Inpit TSF was recommended if groundwater mounding occurred to this extent. They advised that additional investigations would be required to determine appropriate locations for siting additional monitoring bores. Similarly, the construction of seepage recovery bores in appropriate locations (informed by the investigations recommended above) was recommended if standing water levels reached 5 mbgl. The recommended trigger values and actions have been added to the works approval as regulatory controls. The department notes that these controls will also be considered during the licence application stage.
12	The department has added trigger values and actions relating to nickel concentrations in groundwater to the works approval as a regulatory control. The trigger levels and response actions are consistent with the equivalent condition outlined in licence L7276/1996/12.

4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 25 August 2025	None received.	N/A
Wangkatja Tjungula Aboriginal Corporation advised of proposal on 29 October 2025	None received.	N/A
Shire of Laverton advised of proposal on 29 October 2025	The Shire of Laverton provided a response on 23 November 2025 and advised that the Council has no objections to the application for a works approval.	The delegated officer notes this.
Department of Mines, Petroleum and Energy (DMPE) advised of proposal on 29 October 2025	DMPE provided a response on 18 November 2025 and advised that the activities proposed as part of this application for a works approval are largely consistent with the Mining Proposal (Reg ID: 127019) received on 30 May 2024 and approved on 15 January 2025.	The delegated officer notes this.
Department of Planning, Lands and Heritage (DPLH) advised of proposal on 29 October 2025	DPLH provided a response on 31 October 2025 and advised that the proposed prescribed premises boundary intersects with 22 registered Aboriginal heritage sites.	Approvals under the *Aboriginal Heritage Act 1972* (AH Act) will be required if direct impacts will occur to these sites. The applicant has advised that the required AH Act approvals have previously been obtained. The department recommends that the applicant consults with DPLH to confirm that all required approvals under the AH Act have been obtained.
Applicant was provided with draft documents on 25 November 2025	The applicant provided a response on 11 December 2025 and requested minor wording changes to the conditions of the draft works approval.	As the changes were minor amendments to wording and did not change the intent of the conditions or risk profile, the department accepted and implemented all requested changes.

5. Decision

The delegated officer has determined to grant a works approval for the construction of the 8 Series Inpit TSF and associated infrastructure to enable the deposition and storage of tailings in support of ongoing operations at the Murrin Murrin Nickel Cobalt Project.

Based on the risk assessment outlined in (section 3), the delegated officer identified key risks associated with seepage from the 8 Series Inpit TSF, overtopping, and potential rupture or leakage of infrastructure. To manage these risks, the officer determined that specific construction and operational controls are required, including an expanded groundwater monitoring regime for seepage. In establishing these controls, the officer considered the advice and recommendations provided by the department's Contaminated Sites Branch.

The delegated officer further determined that, once constructed, the 8 Series Inpit TSF may operate under time-limited operations for a maximum of 180 calendar days. This period is considered sufficient for the applicant to submit a licence amendment to Licence L7276/1996/12 to allow continued operation of the facility.

6. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Mines and Petroleum 2013, *Code of practice – tailings storage facilities in Western Australia*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020b, *Guideline: Risk Assessments*, Perth, Western Australia.
5. DWER 2025, *Licence L7276/1996/12 – Murrin Murrin Nickel Cobalt Project*, held by Murrin Murrin Operations Pty Ltd, amended licence granted 16 April 2025.
6. Minara Resources 2025a, *8 Series Inpit TSF Works Approval Application – Supporting Document*.
7. Minara Resources 2025b, *Murrin Murrin Nickel Cobalt Project Annual Environmental Report 2024/2025*.
8. Saprolite Environmental 2024, *Hydrogeological Assessment - Proposed In-pit Tailings Disposal into 7 Series Pits, 8 Series Pits & Pit 8/15*, Perth, Western Australia.
9. Tetra Tech Coffey 2024, *Murrin Murrin Operations In-Pit TSFs 815, 7 Series and 8 Series Design – Design Report (Geotechnical Assessment)*', Perth, Western Australia.