



Application for Works Approval

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

Works Approval Number W2943/2025/1

Applicant Northern Minerals Limited

ACN 119 966 353

APP number APP-0026900

Premises Browns Range Project
Mining Lease M80/627 and Miscellaneous Lease L80/76
As defined by the premises maps attached to the issued works approval

Date of report 09 June 2025

Proposed Decision Works approval granted

Table of Contents

1. Decision summary	1
2. Scope of assessment	1
2.1 Regulatory framework	1
2.2 Application summary and overview of premises	1
2.2.1 Category 12 – Crushing and Screening.....	1
2.2.2 Category 54 – Wastewater Treatment Plant.....	1
2.2.3 Category 89 – Landfill	1
2.2.4 Existing premises	1
2.3 Part IV of the EP Act.....	2
3. Risk assessment.....	2
3.1 Source-pathways and receptors	2
3.1.1 Emissions and controls	2
3.1.2 Receptors.....	6
3.2 Risk ratings.....	8
4. Consultation	14
5. Conclusion	18
References.....	18
Appendix 1: Summary of applicant’s comments on risk assessment and draft conditions	19
Table 1: Expected quality of treated wastewater	1
Table 2: L9009/2016/1 prescribed categories	2
Table 3: Proposed applicant controls	2
Table 4: Sensitive environmental receptors and distance from prescribed activity	6
Table 5: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation.....	9
Table 6: Consultation	14
Figure 1: Option 1 of crushing and screening layout	1
Figure 2: Option 2 of crushing and screening layout	1
Figure 3: Proposed WWTP layout.....	1
Figure 4: WWTP and irrigation field location	1
Figure 5: Irrigation area.....	1

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 W2943/2025/1 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 19 December 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 is to undertake construction works relating to a wastewater treatment plant, mobile crushing and screening plant and landfill facility at the premises. The premises is approximately 160 km southeast of Halls Creek, Western Australia (WA).

The premises relates to the categories 12, 54 and 89 and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W2843/2025/1. 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 2020) are outlined in works approval W2943/2025/1.

Northern Minerals is developing the Browns Range Project, a heavy rare earth elements mine and ore processing facility in the Kimberly Region WA.

Following the granting of MS 986, Northern Minerals constructed and operated a mine and 10% scale pilot plant at Browns Range between 2017 – 2022. The purpose of the pilot plant was to test mining and processing methods. After operating the pilot plant for three years, it was put into care and maintenance in April 2022, pending commencement of developing the full-scale project.

Northern Minerals entered into a strategic partnership with Iluka Resources (Iluka) which includes a concentrate supply agreement for the supply of rare earth element concentrate from the Project to Iluka's Eneabba Rare Earth Refinery. The Project comprises the development of a mining and mineral processing operation. Construction is expected to take approximately 2.5 years and mine life is estimated at 8+ years.

2.2.1 Category 12 – Crushing and Screening

A mobile crushing and screening plant is proposed to be used, as required, for use anywhere needed within the prescribed premises boundary. Crushed and screened material will be used to support early work construction.

The plant will consist of the following equipment:

- Primary jaw crusher;
- Inclined vibrating screen;
- Secondary and tertiary crushers;
- Interconnecting conveyors; and

- Radial stacker.

The mobile crushing and screening plant will arrive as separate components which will be assembled at the Project site. The final design of the plant will depend on the contract chosen to undertake the works, however two indicative layouts are shown in Figure 1 and Figure 2.

Mined material will be moved via excavator or front-end loader to the mobile crushing and screening plant located adjacent to the pit where it will be processed and sized dependent on end use. Crushed material will be sorted and stacked adjacent to the mobile crushing and screening plant. As required, the processed material will be loaded onto haul trucks and transported to its intended destination.

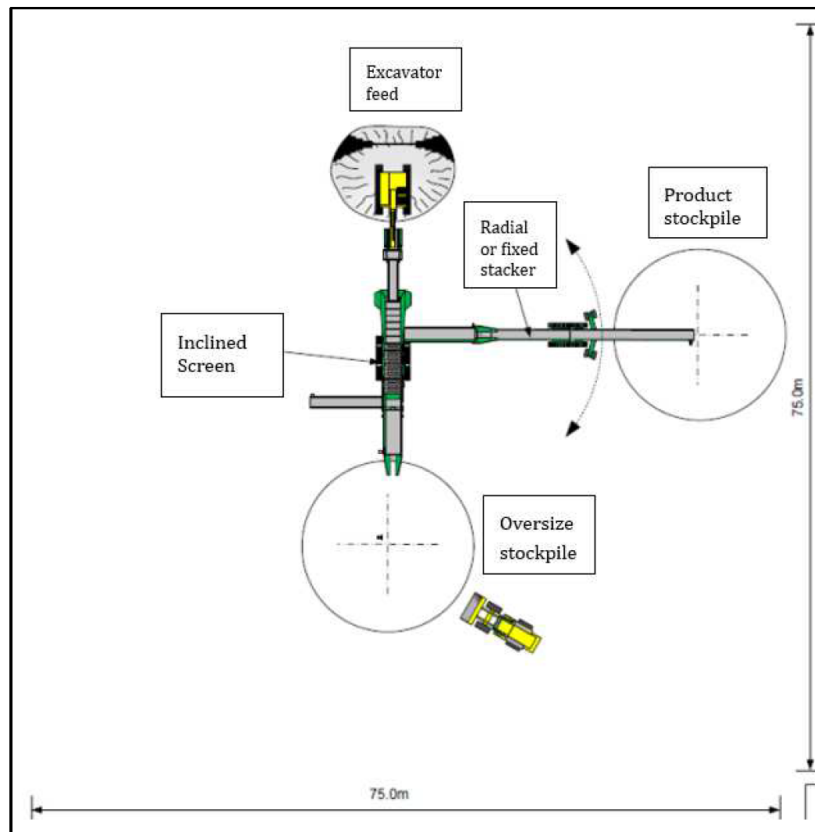


Figure 1: Option 1 of crushing and screening layout

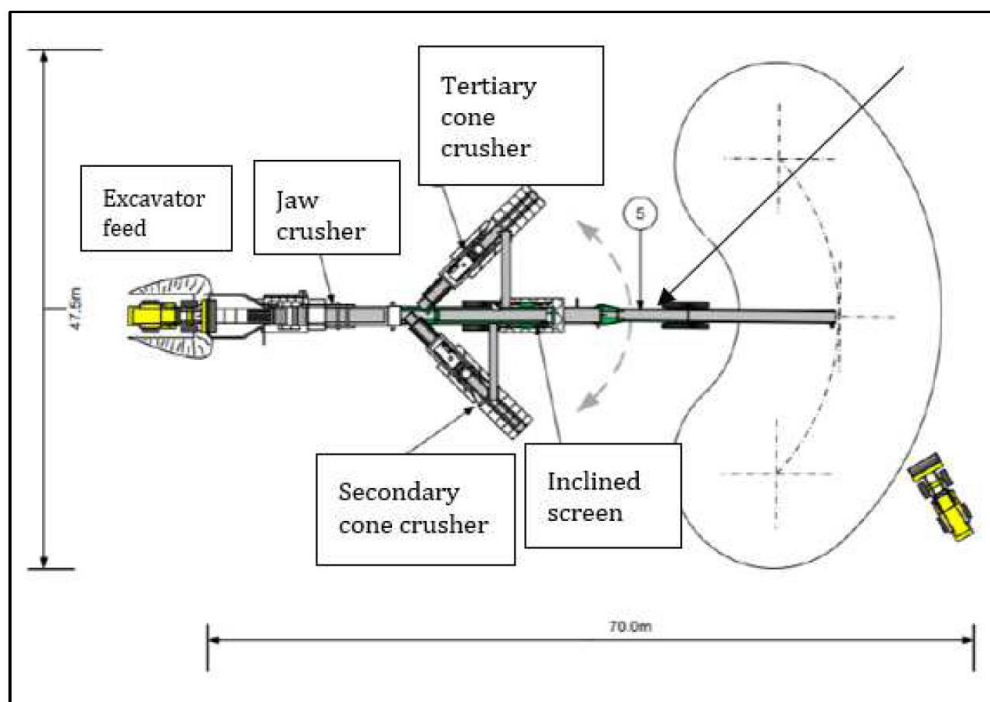


Figure 2: Option 2 of crushing and screening layout

2.2.2 Category 54 – Wastewater Treatment Plant

The wastewater treatment plant (WWTP) will be designed to treat and dispose of wastewater generated for up to 400 people at the Project accommodation camp. An allowance of 300 L per person per day has been used to determine the maximum design capacity of approximately 106 m³/day. .

The incremental system capacity is capable of handling fluctuations in site population and wastewater quality.

The WWTP will comprise a pre-engineered facility that will be installed on-site and connected to the sewerage system servicing the village. A schematic layout of the proposed WWTP is demonstrated in Figure 3. It will comprise of the following infrastructure:

- Two separate pump pit stations;
- Incline grinder
- 2 x 30 kL balance tanks;
- 30 kL sedimentation tank;
- 30 kL mixed liquor return tank;
- Rotating biological contactor;
- 4 kL break tank;
- Lamella clarifier
- 4 kL lift tank
- 30 kL irrigation tank
- Geo-bags for collection of solid waste to be exported off-site to a suitable facility

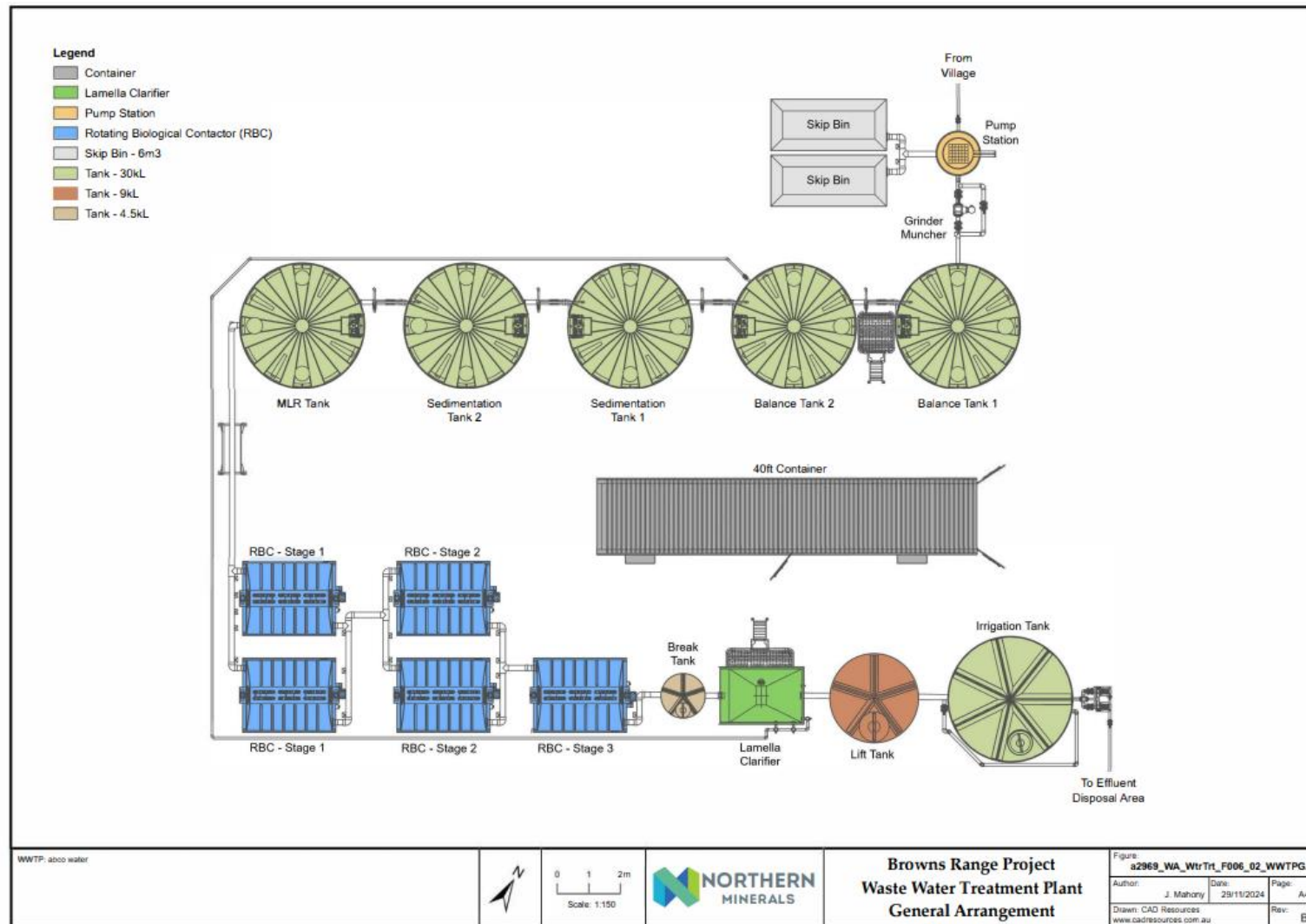


Figure 3: Proposed WWTP layout

Works approval: W2943/2025/1

IR-T13 Decision report template (short) v3.0 (May 2021)

Wastewater will be treated to a low exposure risk level (ERL) quality as outlined in the Department of Health Guidelines for the *Non-potable Uses of Recycled Water in Western Australia 2011*. The treated wastewater contained in the irrigation tanks will comply with the requirements of Low ERL.

Treated wastewater will be disposed of via irrigation to a 6.5 ha spray field. The applicant has calculated the irrigation field size using Total Phosphorous and Total Nitrogen loading figures in Water Quality Protection Note 22. Figure 4 and Figure 5 shows the proposed location of the irrigation area.

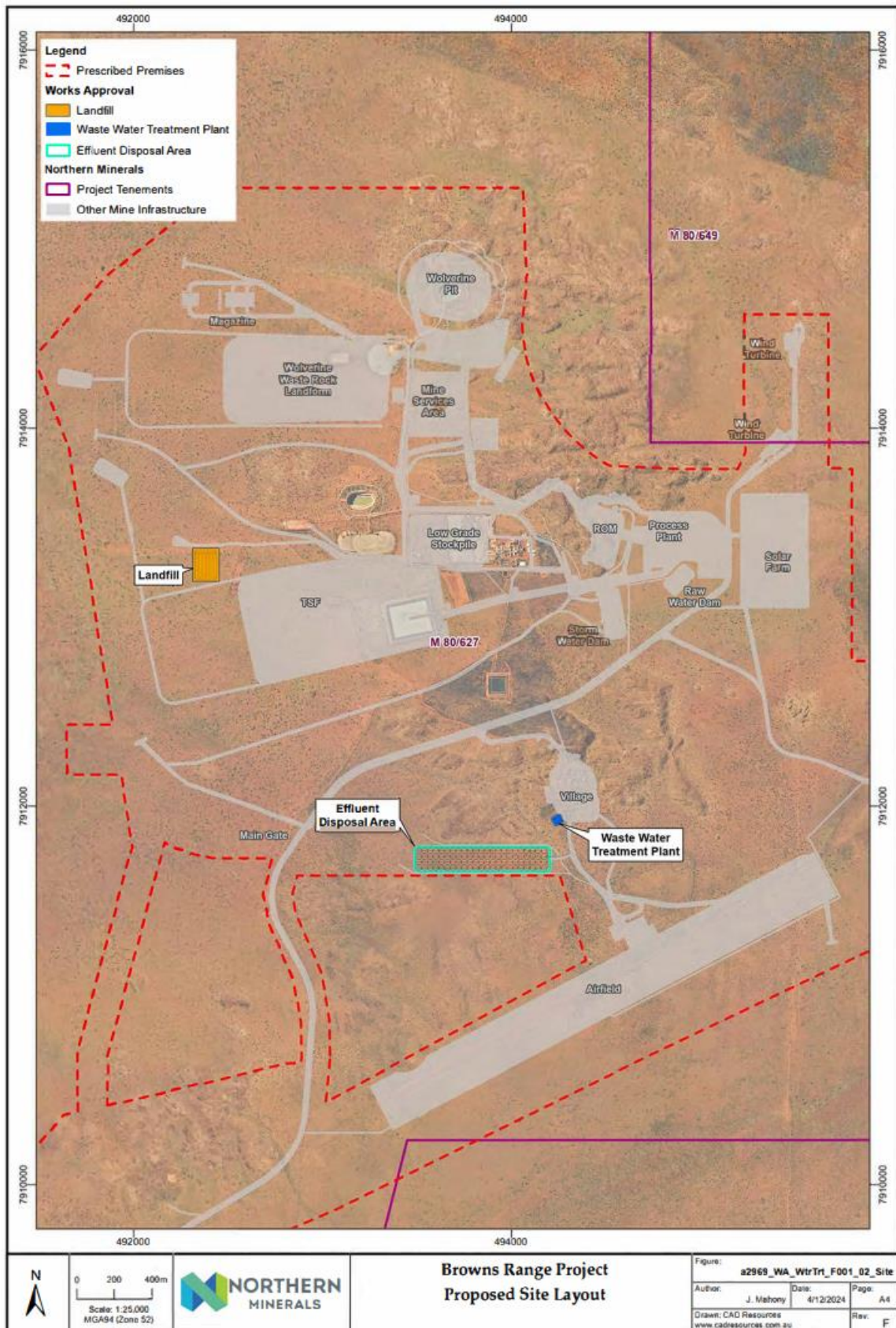


Figure 4: WWTP and irrigation field location

Works approval: W2943/2025/1

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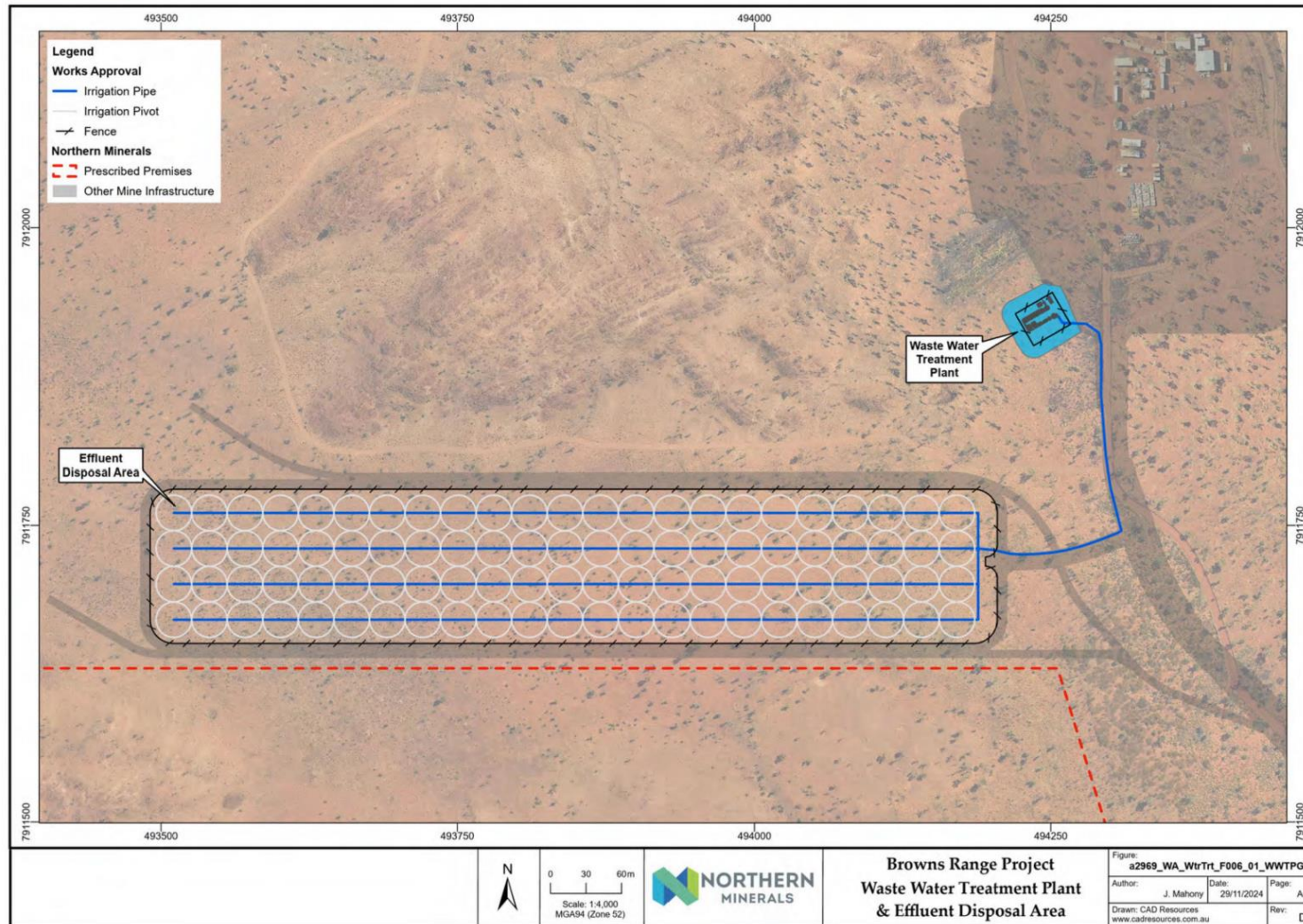


Figure 5: Irrigation area

Works approval: W2943/2025/1

IR-T13 Decision report template (short) v3.0 (May 2021)

The expected quality of treated wastewater to be discharged is shown in the below table.

Table 1: Expected quality of treated wastewater

Output	Units	Parameter	Disposal
BOD	mg/L	<20	Irrigation area
TSS	mg/L	<30	
pH	pH units	6.5 – 8.5	
TN	mg/L	≤30	
TP	mg/L	≤3.34	
E. Coli	cfu/100 mL	<1000	
Free Chlorine	mg/L	0.2 ~2.0	
Solids (dewatered sludge)	L	Removed as needed (typically six monthly)	Onsite landfill (dedicated cell)

The applicant has requested environmental commissioning for the WWTP is included in the works approval. Validation monitoring will be undertaken during the commissioning period in accordance with Department of Health guidelines to demonstrate the WWTP will operate in accordance with manufacturer's specifications.

The applicant has noted that during commissioning treated wastewater discharged to the environment may on occasions have higher contaminant concentrations. This should be short-term (approximately six weeks). It is expected that impacts will be minor in the context of a twelve-month discharge period, and nutrient loading will still be maintained within the guideline levels stated in the WQPN 22.

2.2.3 Category 89 – Landfill

The applicant is proposing to construct a putrescible landfill, designed to follow the 'trench and fill method' of waste disposal whereby a trench is dug and the excavated soil is stockpiled alongside each trench for later used as a cover. Topsoil will be moved prior to excavation of each trench and stored separately to capping material for use in rehabilitation after trench closure.

The proposed landfill will comprise of 6 unlined, earthen cells designed to accept putrescible and inert wastes including waste tyres. Each trench is proposed to be developed one at a time and will consist of an area approximately 10 m wide by 140 m in length. The excavation depth will be up to 5 m to allow up to 4 m depth of waste to be capped with 1 m soil. The total capacity of each trench is expected to be approximately 5,600 m³. Based on waste estimates, the 6 trenches are expected to allow the disposal of at least ten years of waste from the Project.

2.2.4 Existing premises

The applicant holds existing licence L9009/2016/1 for the Browns Range Rare Earths Project within mining tenement M80/627. Following construction of the proposed works, a licence amendment will be submitted to include categories 12 and 54 and to increase the design

capacity for category 89. L9009/2016/1 has the following prescribed categories and throughputs:

Table 2: L9009/2016/1 prescribed categories

Prescribed premises category description	Approved design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	131,490 tonnes per annual period
Category 89: Putrescible landfill site	499 tonnes per annual period

2.3 Part IV of the EP Act

The project was assessed by the Environmental Protection Authority (EPA), with Ministerial Statement 986 issued on 20 October 2014. Three changes to the Project have been approved under Section 45C of the EP Act, with the most recent being in 2024. This works approval application is aligned with the current approved MS 986.

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 2020).

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 / operation which have been considered in this decision report are detailed in Table 3 below. Table 3 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 3: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Vehicle movement, excavation, movement and storage of earthen material and dust lift from cleaned surfaces.	Air / windborne pathway	<p>The applicant does not expect significant dust emissions during construction phase of the crusher and screener due to the small scale of the activities and with no human receptors nearby. However, the following management actions have been proposed:</p> <ul style="list-style-type: none"> • Water trucks on unsealed roads and open areas; • Watering of open and exposed areas, including construction material stockpiles;

Emission	Sources	Potential pathways	Proposed controls
			<ul style="list-style-type: none"> Speed limits applied; Ground cover retained or revegetated where appropriate; Adaptive management implemented as required to address monitoring trends; Implement visual dust monitoring, during high-risk weather conditions; Any complaints to be investigated with remedial actions implemented if required.
Contaminated stormwater		Direct discharge via runoff	<ul style="list-style-type: none"> Areas will not be disturbed until they are required to be used, and the size will be minimized where practicable; Stormwater drains will be inspected on a regular basis; The site will be inspected for erosion after significant rainfall events.
Operation			
Dust	Crushing and screening / vehicle movement	Air/windborne pathway	<p>The following controls will be implemented at the crushing plant:</p> <ul style="list-style-type: none"> Water sprays Water tanks to be kept topped up Minimise transfer distances Water will be applied to any roads around the crushing and screening plant or cleared areas that pose a dust risk Opportunistic inspections for dust emissions will be undertaken, with additional controls implemented if required (e.g., water) Weather conditions monitored An incident reporting system will be maintained to assist in any environmental incidents.
Discharge of treated wastewater to irrigation area	Treated wastewater of Low ERL quality	Direct discharge via irrigation	<p>The following controls have been proposed for the irrigation area:</p> <ul style="list-style-type: none"> The disposal area has been sited over land that is relatively flat to limit run-off and infiltration maximised as far as practicable given soil conditions. Irrigation will be designed such that run-off, spray-drift or other discharge

Emission	Sources	Potential pathways	Proposed controls
			<p>will not occur beyond the boundary of the irrigation area.</p> <ul style="list-style-type: none"> • Depth to groundwater within irrigation area has been reviewed to assess contamination risk. The shallowest groundwater depth has been measured at 18 m below ground level. • Surface drainage near the proposed area has been considered, as well as the maximum predicted extent of flood events associated with surface drainage features to avoid the risk of inundation of the irrigation under rainfall and flooding events. • Vegetation will be retained in the area as far as practicable to assist with nutrient uptake. • Pumps, pipelines and sprinklers will be selected, installed and maintained as per suppliers' specifications; • The irrigation area will be enclosed with a two strand 1.2 m high wire fence, with warning signs, to restrict access; • A flow meter will be installed to record the volume of treated wastewater discharged to the irrigation area. • Operational monitoring for the following parameters will occur monthly: <ul style="list-style-type: none"> ○ Total Nitrogen ○ Total Phosphorous ○ 5-Day BOD ○ Total Suspended Solids; and ○ Total Dissolved Solids
Treated or untreated wastewater and biosolids	Leaks and/or spills of wastewater or sludge from tanks or pipelines during operation or sludge removal	Direct discharge to land	<ul style="list-style-type: none"> • All wastewater storage components will be impermeable and corrosion proof. • The WWTP will be installed as per manufacturer's specifications. • Sufficient freeboard will be maintained within each tank; • WWTP will be installed on compacted ground with earthen bund around the facility; • Any incident involving a spill of untreated sewage will be responded to

Emission	Sources	Potential pathways	Proposed controls
			<p>immediately with contaminated soil removed and taken by a licensed transporter to a licensed facility.</p> <ul style="list-style-type: none"> • Bagged solids are to be removed every six months, or as required, and placed into landfill or taken offsite to a suitable waste facility; • All pipelines will be inspected on a regular basis for leaks or damage; • The WWTP to be inspected prior to filling with water to ensure construction has occurred to manufacturers' specifications; • Fresh water will be used to test the WWP for leaks prior to filling with wastewater
Putrescible waste and dust	Landfilling activities	Air / windborne	<p>Windblown waste be controlled via:</p> <ul style="list-style-type: none"> • Waste will be covered by a minimum of 30 cm of soil material with frequency being in-line with requirements of Regulation 6 of the <i>Rural Landfill Regulations (2002)</i>. • Minimising the size of the active tipping area; • Cleaning of litter from surrounding fences and areas; • Construction of trenches perpendicular to prevailing winds to allow stockpiled excavation material along the trench to act as wind protection; • Water will be applied to any areas or activities that pose a dust risk; • Biodegradable stabilizing agents may be used to minimise dust lift off; • Consideration of delaying waste disposal during high wind conditions until conditions have settled; and • Cells will be capped with 1 m of fill when completed and rehabilitated.
Leachate	Landfilling activities	Infiltration through base of trenches	<ul style="list-style-type: none"> • The base of the landfill will be greater than 3 m above the highest groundwater at the site; • Implement workforce education, random load checks, signage and incident reporting to ensure waste is segregated appropriately;

Emission	Sources	Potential pathways	Proposed controls
			<ul style="list-style-type: none"> No liquid wastes will be disposed of at the landfill; Uncontaminated stormwater will be directed away from operational areas A series of groundwater monitoring bores are located east (up-gradient) of the landfill and an additional monitoring bore will be constructed to the west. Monitoring at these locations will determine if there are any impacts to groundwater quality
Contaminated stormwater	Landfilling activities	Surface water runoff	<ul style="list-style-type: none"> Perimeter drainage channel will be constructed around the upslope edge of the landfill site which will direct uncontaminated stormwater around the landfill and onwards towards natural flow paths. It is expected that stormwater from within the operating cells will be contained by the cell excavation itself (the cells will not be free draining).

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), 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 4 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

Table 4: Sensitive environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
Native vegetation	No TEC's or PECs have been identified within the vicinity of the project. The dominant native vegetation type within the areas related to prescribed activities is <i>Corymbia opaca</i> , <i>Eucalyptus brevifolia</i> , <i>Eucalyptus pruinosa</i> mid open woodland over <i>Gossypium australe</i> , <i>Acacia sericophylla</i> , <i>Halgania solanacea</i> var. <i>solanacea</i> over <i>Aristida inaequiglumis</i> , <i>Eulalia aurea</i> , <i>Eriachne obtuse</i> , <i>Triodia epactia</i> mid open hummock grassland.
Fauna	Fauna surveys showed twenty-three species of conservation significance but many considered unlikely to occur in the area regularly or in large numbers

Surface water	<p>No permanent water bodies within project area. The project area lies within the Sturt Creek catchment which flows to the southwest, ultimately discharging into Lake Gregory which is 280 km downstream of the site. The main water course of Sturt Creek is located approximately 45 km west-northwest of the site and is classified as an ephemeral system.</p> <p>Lake Gregory is recognized as an important wetland and significant site for waterbirds.</p>
Groundwater	<p>Depth to groundwater in the area is variable, ranging from about 5 m to > 25 m below ground level (mbgl).</p> <p>Groundwater quality is generally fresh to brackish. Some localized areas are known to have higher salinity (>20,000 mg/L), however generally the water is suitable for watering of livestock. The nearest DWER registered bore is over 20 km from the Premises.</p>
Cultural receptors	Distance from prescribed activity
<p>Aboriginal heritage site</p> <p>5 sites identified on the Aboriginal Cultural Heritage Register (DPLH-099).</p>	<p>All located on the eastern edge of the premises boundary.</p> <p>Application states that none of the works require disturbance of any registered Aboriginal Heritage sites.</p>

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account 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 5.

Works approval W2943/2025/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 5 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. crushing and screening, waste water treatment plant and landfill. 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 5: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

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								
Placement of screen and associated equipment including vehicle movements (reversing beepers)	Dust	Pathway: Air/windborne pathway	Native surrounding vegetation and fauna	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Infrastructure and equipment condition: 1 Compliance reporting: 2 and 3	The Delegated Officer is satisfied that standard construction and reporting conditions are satisfactory to control the risk of dust emissions.
Construction of landfill cells, including vehicle movement.		Impact: Smothering of native vegetation	Heritage sites	Refer to section 3.1	C = Moderate L = Unlikely Medium Risk	Y		
Commissioning								
Commissioning of WWTP	Treated wastewater	Pathway: Direct discharge to irrigation area Impact: High nutrient loading may cause contamination to groundwater and affect the health of surrounding native vegetation	Groundwater, native vegetation and nearby surface water	Refer to Section 3.1	C = Moderate L = Possible Medium Risk	Y	Monitoring conditions: 4 – 10 Compliance reporting: 11 and 12	The Delegated Officers notes that the applicant has stated emission during commissioning may have higher contaminant concentrations. The likelihood of the consequence has therefore been rated as <i>Possible</i> . Monitoring of treated water during commissioning is required to validate the WWTP is functioning as

Works approval: W2943/2025/1

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				
								expected. Standard commissioning reporting requirements will be included in the works approval, for monitoring results to be presented to the Department.
	Contaminated stormwater	Pathway: Overland runoff Impact: High nutrient loading may cause contamination to surface water and affect the health of surrounding native vegetation.	Surrounding native vegetation and surface waters	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Environmental commissioning conditions: 5	N/A
Operation (including time-limited-operations operations)								
Screening, crushing, unloading, loading and storage of material Vehicle movements	Dust	Pathway: Air/windborne pathway Impact: Smothering of native	Native surrounding vegetation and fauna Aboriginal Heritage Sites	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Time limited operations requirements and emission limits: Condition 15	N/A

Works approval: W2943/2025/1

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				
		vegetation						
Screening, crushing, unloading, loading and storage of material	Contaminated stormwater	Pathway: Overland runoff Impact: Contamination of surface waters and potentially groundwater	Groundwater and nearby surface waters	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Time limited operations requirements and emission limits: Condition 15	N/A
Operation of wastewater treatment plant	Treated wastewater	Pathway: Direct discharge to irrigation area Impact: High nutrient loading may cause contamination to groundwater and affect the health of surrounding native vegetation	Groundwater, native vegetation and nearby surface water	Refer to Section 3.1	C = Moderate L = Possible Medium Risk	Y	Time limited operations requirements and emission limits: Conditions 15 – 19	The Delegated Officer notes that the applicant has used WQPN 22 to calculate the irrigation field size. WQPN 22 is currently under review. However, given there are no highly sensitive receptors in the vicinity, and based on the risk assessment, the Delegated Officer is satisfied that the irrigation field has been sized appropriately and that applicant controls are sufficient. Conditions relating to the management of the sprayfield have been included, as well as monitoring of

Works approval: W2943/2025/1

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				
								discharge parameters.
	Contaminated stormwater	Pathway: Overland runoff Impact: High nutrient loading may cause contamination to groundwater and affect the health of surrounding native vegetation	Surrounding native vegetation and surface waters	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Time limited operations requirements and emission limits: Conditions 15	N/A
	Pipeline rupture/spill	Pathway: Direct discharge to land Impact: Contamination to surrounding native vegetation and potential runoff into surface waters	Surrounding native vegetation and surface waters	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Time limited operations requirements and emission limits: Conditions 15	N/A
Operation of putrescible landfill	Leachate	Pathway: Seepage through base of landfill Impact: Contamination	Groundwater	Refer to Section 3.1	C = Moderate L = Possible Medium Risk	Y	Time limited operations requirements and emission limits: Conditions 15	N/A

Works approval: W2943/2025/1

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				
		to groundwater						
	Windblown waste	Pathway: Air/windborne pathway Impact: Potential contamination to surface water or native fauna	Surrounding native fauna and surface waters Aboriginal heritage sites	Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Y	Time limited operations requirements and emission limits: Conditions 15	N/A

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

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

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 18 March 2025	None received	N/A
Local Government Authority advised of proposal on 18 March 2025	None received	N/A
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised of proposal via email on 10 April 2024 to verify whether a Mining Proposal is under assessment or not.	DEMIRS replied on 11 April 2025 stating that approved Mining Proposal and Mine Closure Plan (Reg ID 92208) for the pilot plant is the only existing Mining Proposal for the project. No Mining Proposals have been submitted since.	DWER notes that no Mining Proposal has been submitted for the works associated with this works approval.
Department of Health advised of proposal on	<p>DoH has stated they have no objection to the proposal in relation to wastewater management, so long as the wastewater treatment plant complies with the Department's legislative requirements, the <i>Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974</i> and policy objectives including Government Sewerage Policy 2019 (GSP).</p> <p>Other comments from DoH include:</p> <ul style="list-style-type: none"> The proposed survey area appears to be located within a major river system and within a sewage sensitive area 	<p>DWER offers the following responses to the DoH comments:</p> <ul style="list-style-type: none"> The closest main surface water body has been identified as Sturt Creek, which is located 45 km northwest of the site. This has been taken account into DWER's risk assessment.

	<ul style="list-style-type: none"> • The proposal also appears to be located upstream from the Kundat Djaru Community. DoH has concerns about potential for mining operations to lead to contamination or other public health impacts to the Community's drinking water. DoH requires assurance from the proponent that drinking water sources for the Community will not be compromised. • The proposal does not appear to contain a site and soil evaluation, and greater clarity will be required in the formal application as to how the 6.5 Ha land application area was determined and whether other wastewater sources are added to this. The proponent will also be required to provide the following: <ul style="list-style-type: none"> ○ Engineering Certification of the WWTP for structural integrity of the system for a minimum of 15 years, sizing for proposed volumes peak and non-peak performances and to meet the minimum water quality criteria; ○ The proposed development is in proximity to a major river system. Therefore a site-specific, Site and Soil Evaluation (SSE) needs to be undertaken by a qualified consultant during the wettest time of year (Feb – March) as per AS/NZS 1547:2012 to ensure the land application area is located and sized appropriately; ○ Details of sludge management for the tanks; ○ Detailed plans showing the proposed building envelopes, proposed and existing onsite wastewater systems, all trafficable areas, parking bays and land application area/s including setback distances, exclusion/riparian zones with 	<ul style="list-style-type: none"> • The Kundat Djaru Community is approximately 33 km northwest from the prescribed premises boundary and due to this distance has been screened out as a sensitive receptor in DWER's assessment. • DWER has completed a risk assessment on the irrigation area using the source-pathway-receptor model. Soil type 'B' was referenced within the application, which is generally soils with a higher drainage class. The Detailed Flora and Vegetation Assessment, provided as Appendix 3, demonstrates the soil to be generally found as sandy clay and sandy clay loams. Soil type B is therefore considered appropriate, if not conservative. • Information that DoH requires from the proponent for the DoH approval assessment, which is independent to DWER assessment, has been noted.
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	<p>all measurement are required at building stage;</p> <ul style="list-style-type: none"> ○ The DoH requires a minimum of 30 metre setbacks from rivers, creeks and seasonal creeks and it is undetermined whether this has been met. The GSP requires 100 metre setbacks that DWER may wish to implement or relocate the proposed system. <ul style="list-style-type: none"> • The proponent will be required to submit a formal application for each onsite WWTP, upgrade and/or relocation of a system to the Local Government for assessment who will forward onto the DoH for assessment and approval. • There is little reference as to the source of drinking water and whether a reverse osmosis (RO) system is used or proposed. DoH states that should an RO system be used, the reject water may adversely impact the ground water and assessment of disposal method may be required by DWER. • Should the proposal later utilise recycled water or brine water for beneficial purposes, sewage intended to be reused or recycled for landscaping, garden bed irrigation, toilet flushing, industrial reuse or other purposes, will require prior approval from the DoH. • All drinking water provided on site must meet the health-related requirements of the Australian Drinking Water Quality Guidelines 2011. • The proposed facilities are in proximity to the existing mine workers accommodation/village. The Environmental Protection Authority (EPA) (2005) guideline Separation Distances between Industrial and Sensitive Land Uses recommends that appropriate separation/buffer distances 	<ul style="list-style-type: none"> • DWER notes a formal application for the WWTP must be made to DoH from the applicant. • DWER has assessed all aspects of what was in the application. The application does not mention a reverse osmosis plant. Should this be the case, the proponent would be required to advise DWER for assessment • Noted for the applicant to be aware. Not within DWER scope of assessment. • Noted for the applicant to be aware. Not within DWER scope of assessment. • DWER has undertaken a risk assessment of potential emissions from both the discharge or wastewater and landfilling activities, including dust, noise and discharges to land/water using the risk assessment
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	<p>should be established around land uses where there may be significant impacts. The DoH recommends that potential off-site impacts (dust, noise, odour, light) from these facilities are considered prior to determining the suitability of these sites for the current proposal, to minimise the impacts and public health risks arising from the encroachment of incompatible land uses.</p> <ul style="list-style-type: none"> • Management of odour from the wastewater and landfill facilities will depend on the effectiveness of proposed effluent, odour and dust assessment and management procedures. The proponent should compile a comprehensive odour/dust assessment to determine that under typical operational conditions and capacities, the impact of odour and dust on nearby worker accommodation will be minimal. The proponent should also provide contingency measures and immediate response actions in the event of facility malfunction and be committed to ongoing monitoring, reporting and worker engagement. 	<p>framework from <i>Guideline: Risk Assessments</i> (DWER 2020). This can be found in Table 5 of this Decision Report.</p> <ul style="list-style-type: none"> • DWER excludes employees, visitors and contractors of the works approval holder in the risk assessment, as protection of these parties often involves different exposure risks and prevention strategies, provided for under other State legislation.
Applicant was provided with draft documents on 15 May 2025	Refer to Appendix 1	Refer to Appendix 1

5. 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 Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Northern Minerals -Preston Consulting, *Browns Range Project Works Approval Application Supporting Document Category 12, 54 and 89*, 2024, Perth, Western Australia

Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
Condition 1, Table 1 – Crushing and screening	Applicant confirmed the crusher is a 'portable jaw crusher'	DWER requested the applicant clarify the kind crusher. This has been included into Table 1.
	Dust suppression – NTU proposed to use a water cart as the key dust suppression control. The water cart will be fitted with attachments that allow targeted and broad-scale spray to be applied as required to the plant, traffic surfaces and/or stockpiles The use of a water cart will also remove the requirement for a separate water tank to be placed at the work site.	Dust suppression detail updated in Table 1.
Condition 1, Table 1 - WWTP	Works approval application states 106m ³ /day is the design capacity. Therefore please replace 300 m ³ /day with 106 m ³ /day.	Design capacity error amended.
Condition 1, Table 1 - Landfill	Typographical error identified with 2,880 tonnes per year (incorrectly written as 2.880).	Numerical error amended.
	Typographical error identified with the word 'earther'.	Typographical error amended to read 'earthen'
Condition 5	Typographical error identified with 'requirementsmay' – no space between the words.	Typographical error amended
Condition 5 – Table 2	Applicant has requested the commissioning period for the WWTP be extended from 90 days to 120 days to allow for contingencies for the variable numbers of people on site during the early commissioning phase, which creates intermittent flow rates through the WWTP, hence variable effluent treatment while the biological treatment process matures to steady state.	The DO agrees the request is reasonable and the commissioning period has been extended to 120 days.
Condition 7, Table 4	Numerical errors identified: Total Phosphorous - ≤3.3.4 should be 3.34 Chlorine Residual – 0.2 ~ 2.0 mg/L should be 0.2 – 2.0 mg/L	Numerical errors amended

Condition	Summary of applicant's comment	Department's response
Condition 7, Table 4	The applicant has requested a footnote is added to Table 4 to allow for field testing of analytes where laboratory NATA holding times cannot be realistically met due to the remoteness of Browns Range Project.	The DO determined this is a reasonable request and appropriate footnote has included.
Condition 9	<p>The condition requires all non-continuous sampling and analysis undertaken by condition 7 is undertaken by a holder of a current accreditation from NATA for the methods of sampling and analysis relevant to the corresponding relevant parameter.</p> <p>The applicant has states they will commit to engage a laboratory which complete NATA analysis. They state that sample collection is planned to be completed as per <i>AS/NZS 5667.10:1998 Water Quality Sampling Part 10</i>; Guidance on Sampling of wastewaters.</p>	The DO determined this is a reasonable request and updated the condition. Definitions for the Australian Standards of sampling referenced have been added.
Condition 16, Table 6	The applicant has requested a footnote added to allow for field testing of analytes where laboratory NATA holding times cannot be realistically met due to the remoteness of Browns Range Project.	The DO determined this is a reasonable request and appropriate footnote has included.