



## Application for Works Approval Amendment

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

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<b>Works Approval Number</b>	W6723/2022/1
<b>Works Approval Holder</b>	Onslow Infracore Pty Ltd
<b>ACN</b>	612 668 201
<b>File Number</b>	DER2022/000357~1
<b>Premises</b>	North West Coastal Highway Temporary Camp Miscellaneous licences L08/205, L08/215 and L08/216 Pastoral lease 3114/905 PEEDAMULLA WA 6710  As defined by the Premises maps attached to the Revised Works Approval
<b>Date of Report</b>	2 November 2023
<b>Decision</b>	Revised works approval granted

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REGULATORY SERVICES**

*Officer delegated under section 20 of the Environmental Protection Act 1986*

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# 1. Decision summary

Works Approval W6723/2022/1 is held by Onslow Infracore Pty Ltd (works approval holder) for the North West Coastal Highway (NWCH) Temporary Camp (the Premises), located at Pastoral lease 3114/905.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the construction and operation of the Premises. As a result of this assessment, Revised Works Approval W6723/2022/1 has been granted.

The Revised Works Approval issued as a result of this amendment consolidates and supersedes the existing Works Approval previously granted in relation to the Premises.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department 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

On 1 August 2023, the works approval holder submitted an application to the department to amend Works Approval W6723/2022/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The works approval holder proposes to construct an additional sequencing batch reactor (SBR) wastewater treatment plant (WWTP) and associated treated effluent irrigation spray field to accommodate for an increase in camp personnel (full design capacity of 400 persons). With these upgrades the following amendments are being sought:

- Construction of sequencing batch reactor (SBR) wastewater treatment plant (WWTP) and associated treated effluent irrigation spray field;
- Increase the throughput capacity of treated wastewater from 50 m<sup>3</sup> up to 100 m<sup>3</sup>;
- Increase the throughput capacity of RO water from 34 m<sup>3</sup> up to 80 m<sup>3</sup>;
- Increase irrigation spray field total design size from 3.94 ha up to 4.41 ha (inclusive of overspray buffer, fence, and access track); and
- Increase the minimum irrigation spray field size requirement from 1.22 up to 2.4 ha.

In addition, the applicant is proposing to store a maximum of 80 m<sup>3</sup> of reverse osmosis (RO) reject in the treated effluent tank of the WWTP. The RO reject will be combined with the treated effluent and co-disposed via irrigation to a spray fields. Table 1 below outlines the proposed changes to the existing Works Approval.

**Table 1: Proposed design and throughput capacity changes**

Category	Current design and throughput capacity	Proposed design and throughput capacity
54	50 m <sup>3</sup> /day treated effluent 34 m <sup>3</sup> /day RO water Total of 84 m <sup>3</sup> /day blended effluent	100 m <sup>3</sup> /day treated effluent 80 m <sup>3</sup> /day RO water Total of 180 m <sup>3</sup> /day blended effluent

## 2.3 Part IV of the EP Act

On 23 June 2022, the Environmental Protection Authority (EPA) approved the Ashburton Infrastructure Project (AIP) submitted by Onslow Iron Pty Ltd for minor or preliminary works under Part IV, section 41A(3) of the EP Act for the temporary camp and associated infrastructure.

The AIP includes a fully sealed private haul road, commencing at the boundary of the approved Buckland Project haul road (Ministerial Statement (MS) 960 and MS1147), and continuing approximately 125 kilometers (km) west to link to Onslow Road. Landside and Nearshore Facilities are proposed to be developed to export ore at the Pilbara Ports Authority's (PPA) Port of Ashburton (Port).

A Section 41A(3) request to undertake minor or preliminary works under the EP Act was submitted to the EPA, seeking consent for construction of the temporary NWCH camp, temporary office and workshops, access tracks, a wastewater treatment plant (WWTP) and irrigation spray field. Consent from EPA was granted on 23 June 2022 to progress investigative geotechnical, hydrogeological and ancillary activities (early works), including the development of the NWCH Temporary Camp associated within the AIP.

Authorisation to allow clearing of up to 3.72 ha for the temporary Wastewater Treatment Plant (WWTP) and spray field, subject to the implementation of Terrestrial Construction Environmental Management Plan (TEMP) (A0000-ENPLN-0003, Rev 1, 25/10/2021).

The AIP has also been referred to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) now Department of Climate Change, Energy, the Environment and Water (DCCEEW) for consideration of potential impacts to Matters of National Environmental Significance (MNES) under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and was deemed a Controlled Action (EPBC 2021/9064). A Section 156A 'Request to Vary a Proposal to Take Action' under the EPBC Act was submitted to DCCEEW on 16 June 2022 and was accepted on 10 August 2022 to excise the NWCH Camp area from the Development Envelope.

## 2.4 WWTP construction and commissioning and TLO

The proposed additional WWTP is a Sequence Batch Reactor (SBR) modular containerised system designed to treat up to 50 m<sup>3</sup> per day with the wastewater disposed of via an irrigation system. The applicant requested the works approval scope include construction, commissioning and TLO of the WWTP and associated infrastructure.

## 2.5 Inputs

With the increase in camp personnel (full design capacity of 400 persons) the main inputs into the WWTP will be domestic sewage from the following sources:

- Accommodation facilities;
- Kitchen and mess areas,

- Workshop ablutions; and
- Administration office.

The Quality of the treated effluent and combined RO reject will be consistent with the discharge criteria previously assessed with in the original works approval (W6723/2022/1). The expected quality of influent is shown in Table 2 below.

**Table 2: Anticipated influent quality**

Parameter	Concentrations
pH	6.5 – 8.5
Total Nitrogen (TN)	60 mg/L
Total Phosphorus (TP)	14 mg/L
Total Suspended Solids (TSS)	350 mg/L
Biochemical Oxygen Demand (BOD)	350 mg/L
RO reject water Total Dissolve Solids (TDS) (indicative)	4,250 mg/L

Chemical inputs for the treatment process include the following, which provides several functions within the treatment process:

- Liquid chlorine dosing;
- Sodium hypochlorite dosing; and
- Poly aluminum chloride dosing.

An anti-scaling chemical will also be used within the RO plant.

## 2.6 Irrigation of blended effluent

The RO plant at the premises will be expanded to provide potable water to the additional personnel housed at the NWCH Temporary Camp. Raw water will be pumped from a nearby bore to the RO plant. The RO plant will separate the filtered feed water into two streams, the RO permeate stream and the concentrate reject stream (RO reject water). The RO reject water will be stored in the Reject Tank that will be connected to the WWTP Irrigation Tank for co-disposal to the irrigation spray field with treated effluent.

As part of the works approval application a site and soil evaluation was undertaken to address the human health and environmental risks raised in accordance with the *Government Sewerage Policy 2019* and *AS/NZS 1547:2012 On-site domestic wastewater management (AS 1547)* (Standards Australia and New Zealand, 2012). The Site and Soil Evaluation report (Pentium Water, 2023) findings are summarised below:

- The minimum calculated Land Application Area (LAA) is 23,737m<sup>2</sup> based on the Department of Health water balance spreadsheet. The available area for the LAA is 40,000m<sup>2</sup> based on design data, however it should be noted that approximately 6,000m<sup>2</sup> is considered unsuitable for the disposal of Treated Waste Water (TWW) due to minimal soil profile and exposed bedrock and as such should be avoided due to the high risk that surface run-off will result. This recommendation results in a reduced maximum available area of 3,4000m<sup>2</sup>.
- The site not in a Sewerage Sensitive Area (SSA). As this area is defined as Rural it is not required to have minimum lot sizes. As the site is not anticipated to impact on any wetlands in proximity to the site, and the minimum LAA can be achieved, the

development is not considered to pose an environmental or human health risk.

- Results of the site and soil assessment indicate the soils have moderate infiltration capacity to accommodate the infiltration of stormwater and TWW, and the site can achieve the required clearance to groundwater. Stormwater management, implementation of appropriate TWW systems and disposal design, adequate LAA design and construction will reduce the risk of potential erosion. Site soils are anticipated to have a high phosphorus retention due to the finer silty sediments of the underlying soils, as such this does not pose an environmental risk due to the lack of nearby sensitive environmental receptors.
- Nutrient loading to the disposal sites has the potential to exceed the recommended loading rates as outlined in *Water Quality Protection Note 22: Irrigation with nutrient-rich wastewater* (DWER 2008) if the worst case expected TWW quality is realised. However, this has been estimated on total nitrogen and phosphorus concentrations, whereas the recommended loading rates are applicable to the bio-available components. If the best-case nutrient quality is realised in the TWW, then the nutrient loading rates will be within the DWER recommendations. The nutrient loading rates to the site are considered to be a low risk as the site geology has the capacity for nutrient attenuation and there are no nearby environmental receptors.
- The site can accommodate a suitable wastewater management system through having sufficient area to accommodate the LAA and through being able to achieve the required groundwater clearance.

### 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 and 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. The proposed controls included in the original works approval (W6723/2022/1) have been considered in the risk assessment and are included in Table 3.

**Table 3: Proposed applicant controls**

Emission	Sources	Potential pathways	Proposed controls
<b>Construction</b>			
Dust	Works associated with the construction of the WWTP Vehicle movement on unsealed roads	Air / windborne	<ul style="list-style-type: none"> <li>The SBR will be designed and assembled off site, requiring minimal installation works onsite.</li> <li>All engineering design and manufacturing checks will be undertaken prior to the WWTP being mobilised to site.</li> <li>Vehicles and earth moving equipment will keep to defined roads.</li> <li>Dust suppression will be used as required via water trucks and water spray.</li> <li>Vehicle speed limits.</li> <li>An incident reporting system will be implemented and maintained to assist in managing environmental incidents such as excessive dust emissions</li> </ul>
Noise	Works associated with the construction of the WWTP Vehicle movement on unsealed roads	Air / windborne	<ul style="list-style-type: none"> <li>The SBR will be designed and assembled off site, requiring minimal installation works onsite.</li> <li>All engineering design and manufacturing checks will be undertaken prior to the WWTP being mobilised to site.</li> <li>All equipment and machinery will be regularly maintained in accordance with manufacturer specifications.</li> <li>Compliance with the <i>Environmental Protection (Noise) Regulations 1997</i>.</li> <li>Construction activities will be in accordance with the <i>Australian Standard (AS) 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites</i>.</li> </ul>
Contaminated stormwater	Overland runoff	Discharges to land	<ul style="list-style-type: none"> <li>Appropriate management of surface water flows within and around the NWCH Temporary Camp will be implemented as required.</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
<b>Commissioning and Operation</b>			
Odour	Incorrect wastewater chemical treatment balance; and Storage of wastewater solids.	Air / windborne	<ul style="list-style-type: none"> <li>• Operators of the WWTP will be trained in testing and maintenance procedures to ensure the plant is operated in accordance with the manufacturer's specifications.</li> <li>• Wastewater contained within storage tanks.</li> <li>• Wastewater is treated prior to irrigation.</li> <li>• The WWTP will be commissioned in accordance with manufacturers specifications.</li> <li>• Regular checks for any odours outside of the WWTP, if odours are noted necessary repairs will be made to the WWTP.</li> <li>• Volume of sludge produced from the treatment process will be monitored on a regular basis and removed as required by a licensed controlled waste contractor. The controlled waste will be disposed to appropriate licensed landfill facility.</li> <li>• Chemicals/reagents will be stored in impermeable bunds or be stored in self bunded tanks/containers.</li> <li>• The irrigation spray field will be commissioned in accordance with manufacturers specifications.</li> <li>• The irrigation spray field will be fenced, sign posted and include a spray drift buffer.</li> <li>• Treated and blended effluent generated during the commissioning process will only be discharged via approved discharge points.</li> <li>• An incident reporting system will be implemented and maintained to assist in managing environmental incidents such as excessive odour emissions.</li> </ul>



Emission	Sources	Potential pathways	Proposed controls
Noise	<p>Commissioning and time limited operation of the WWTP equipment and irrigation spray field (including equipment alarms and pumps)</p> <p>Vehicle movement on unsealed roads</p>	Air / windborne	<ul style="list-style-type: none"> <li>Operators of the WWTP will be trained in testing and maintenance procedures to ensure the plant is operated in accordance with the manufacturer's specifications.</li> <li>The WWTP unit will be enclosed in order to attenuate noise.</li> <li>Compliance with the <i>Environmental Protection (Noise) Regulations 1997</i>.</li> <li>An incident reporting system will be maintained to assist in managing environmental incidents such as excessive noise emissions/complaints.</li> </ul>
Solid waste (sludge)	Direct discharge and spills and leaks from storage and disposal	Discharges to land	<ul style="list-style-type: none"> <li>Volume of sludge produced from the treatment process will be monitored on a regular basis and removed as required by a licensed controlled waste contractor.</li> <li>The controlled waste will be disposed to appropriate licensed landfill facility.</li> <li>Store sludge waste from the WWTP in dedicated waste receptacles.</li> <li>An incident reporting system will be implemented and maintained to assist in managing environmental incidents such as the WWTP solid waste emissions.</li> <li>Manage wastes in accordance with the AIP Terrestrial Environmental Management Plan (TEMP).</li> </ul>

<p>Sewage, partially treated sewage and/or nutrient rich treated effluent</p>	<p>Spills, leaks and/or discharges of untreated sewage, treated effluent not meeting discharge criteria, sludge and chemicals.</p> <p>Discharge of wastewater to land prior to treatment.</p> <p>Commissioning and TLO of the irrigation spray field.</p> <p>Incorrect discharge rate to land.</p> <p>Discharge during high rainfall events.</p> <p>Rupture of pipes</p> <p>Irrigation to spray fields</p>	<p>Discharges to land</p>	<ul style="list-style-type: none"> <li>• Appropriate management of surface water flows within and around the NWCH Camp will be implemented as required will reduce potential for contaminants to enter surface water.</li> <li>• Operators of the WWTP will be trained in testing and maintenance procedures to ensure the plant is operated in accordance with the manufacturer's specifications.</li> <li>• Components of the WWTP will be fitted with alarms to warn of high-water levels in the tank or if a pump failure occurs.</li> <li>• The units can be isolated and shut down if required.</li> <li>• A spray drift buffer implemented around the spray field boundary.</li> <li>• Irrigation spray field fenced and sign posted to prevent unauthorised access.</li> <li>• Volume of treated wastewater produced during time limited operations discharge to the irrigation spray field will be recorded.</li> <li>• Weekly visual inspection of vegetation to ensure vegetation health is maintained.</li> <li>• Weekly inspections of wastewater pipeline integrity.</li> <li>• Weekly inspection of irrigation spray field to ensure no visible runoff outside the spray field.</li> <li>• WWTP balance tank will have contingency storage capacity for up to 1 day of normal flow if discharge is suspended while any problems are fixed.</li> <li>• Earthen bunds to be maintained around the WWTP irrigation spray field.</li> <li>• Irrigation will not occur during significant rainfall events to prevent potential unauthorised discharges to surface water flows.</li> <li>• Effluent is disposed of to a dedicated irrigation field by an automated system that is managed by a trained operator.</li> <li>• Regular monitoring of vegetation for changes such as declining condition.</li> </ul>
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Emission	Sources	Potential pathways	Proposed controls
Chemical spill	Spills, leaks and direct discharge of chemicals during loading, unloading, transportation, handling and placement; and vehicle and equipment refuelling.	Overland runoff and direct discharge and migration via soil to groundwater.	<ul style="list-style-type: none"> <li>• Operators of the WWTP will be trained in testing and maintenance procedures to ensure the plant is operated in accordance with the manufacturer's specifications.</li> <li>• Chemicals/reagents will be stored within impermeable bunds or be stored in self-bunded tanks/containers.</li> <li>• Spill kits will be made available at the chemical storage locations and employees trained in their use.</li> </ul>

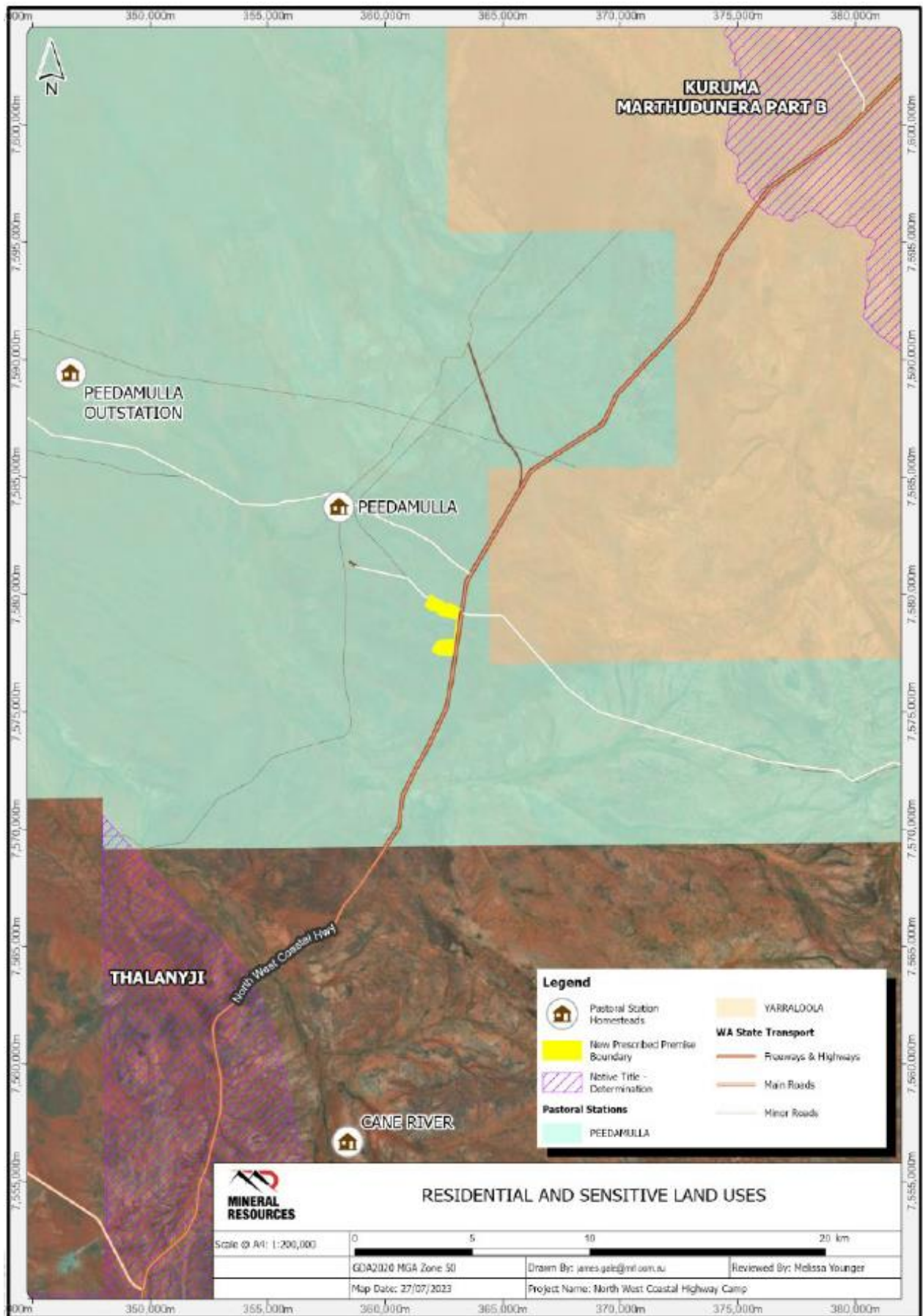
### 3.1.2 Receptors

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, Figure 1 and Figure 2 below provide 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 human and environmental receptors and distance from prescribed activity**

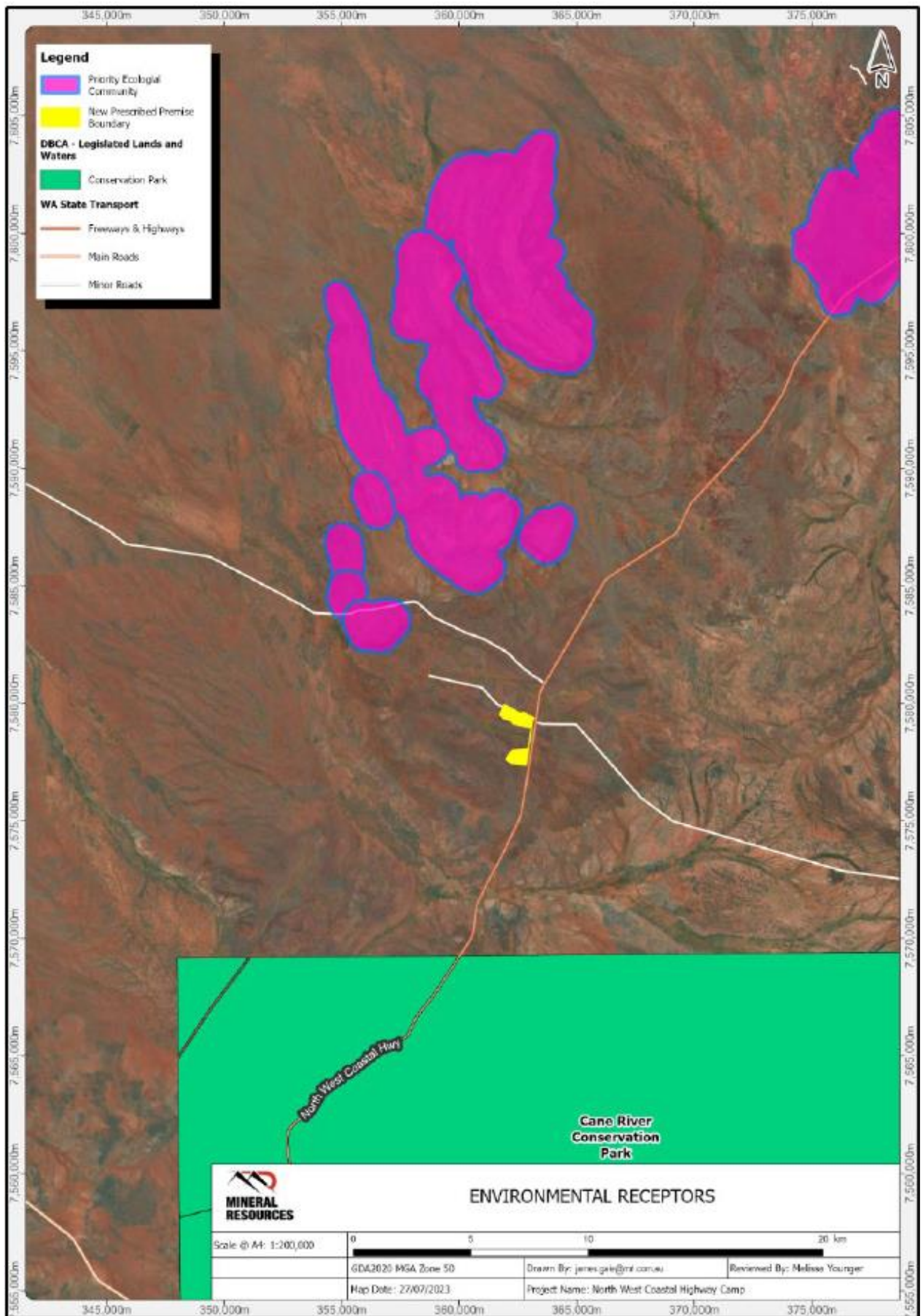
<b>Human receptors</b>	<b>Distance from prescribed activity</b>
Peedamulla Station – Jundaru Corporation	5 km (northwest of the WWTP boundary)
Ex-Peedamulla Lease Exclusion Area (Archaeological & Ethnographic)	154 m (east of the proposed WWTP Boundary)
<b>Environmental receptors</b>	<b>Distance from prescribed activity</b>
<i>Rights in Water and Irrigation Act 1914</i>	The proposed premises is located within the Proclaimed Pilbara Surface Water Area.
Groundwater	Depth to groundwater is approximately 20 to 25 m below ground level (mbgl).
Minor surface water drainage lines	Minor river and surface water lines (non-perennial) are located throughout the prescribed premises area
Threatened species and communities	58 Threatened species and communities were identified in the area. These are managed under the EPBC Act: EPBC2021/9064
Priority Ecological Community	Priority 1 – Tanpool Land System is approximately 5.7 km north west of the premises.



**Figure 1: Distance to sensitive receptors**

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IR-T15 Amendment report template v3.0 (May 2021)



**Figure 2: Location of significant environmental receptors**

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## 3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change 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 works approval holder has proposed mitigation measures/controls (as detailed in Section 3.1.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the works approval holder'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 works approval holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

The Revised Works Approval W6723/2022/1 that accompanies this Amendment Report authorises construction, commissioning and time-limited operations. The conditions in the Revised Works Approval 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 ongoing operations. A risk assessment for the operational phase has been included in this Amendment 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 <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Construction</b>								
Construction of additional sequencing batch reactor (SBR) wastewater treatment plant (WWTP) and associated treated effluent irrigation spray field; Vehicle movement on unsealed roads	Dust	Air/windborne pathway causing impacts to native vegetation communities (smothering of foliage and flowers) and disturbance to fauna	Remnant native vegetation	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	N/A	N/A
	Noise and vibration	Air/windborne pathway and vibration through soil with impacts on (disturbance to) native fauna	Native fauna	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	N/A	N/A
	Spills/unintended releases of hydrocarbons or chemicals	Seepage to soil and groundwater with potential impacts on native vegetation	Native fauna (Including soil fauna) and remnant vegetation	Refer to Section 3.1	C = Minor L = Rare <b>Low Risk</b>	Y	Condition 1	N/A
Disturbance to soil during construction and installation of infrastructure and equipment; and Erosion from cleared areas.	Sediment laden stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Surface water / minor surface water drainage lines (located throughout and surrounding the proposed premises); and Threatened species and	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	Condition 1	N/A

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Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
			communities (located throughout and surrounding the proposed Premises).					
<b>Commissioning (including Time Limited Operation (TLO))</b>								
<p>Irrigation of partially treated or untreated wastewater to the irrigation sprayfield</p> <p>Spills and leaks of untreated waste water at the WWTP</p> <p>WWTP tank overflows</p> <p>Ruptured and/or damaged pipework</p> <p>RO water to sprayfield</p> <p>Spills and leaks of untreated RO water</p>	Wastewater	Overland runoff potentially causing ecosystem disturbance and/or impacting surface water quality and/or groundwater quality	<p>Groundwater;</p> <p>Pilbara Surface Water Area;</p> <p>Minor surface water drainage lines; and</p> <p>Threatened species and communities</p>	Refer to Section 3.1	<p>C = Moderate</p> <p>L = Possible</p> <p><b>Medium Risk</b></p>	Y	Conditions 1, 2, 3, 4 and 5	<p>All above ground infrastructure will be required to be located on compacted hardstand with the system to be containerized and banded to retain spills within the hardstand area.</p> <p>Conditions 2 and 3 require the submission of an Environmental Compliance Report to verify the works have been constructed in accordance with the relevant requirements.</p> <p>Conditions 4 and 5 require the submission of an Environmental Commissioning Report to verify infrastructure against manufacturer's specifications.</p>
<p>Spills and leaks of chemicals</p> <p>Ruptured and/or damaged containers</p> <p>Irrigation of incorrect balance of wastewater chemicals</p>	Chemicals	Overland runoff potentially causing ecosystem disturbance and/or impacting surface water quality and/or	<p>Groundwater;</p> <p>Pilbara Surface Water Area;</p> <p>Minor surface water drainage lines; and</p>	Refer to Section 3.1	<p>C = Moderate</p> <p>L = Unlikely</p> <p><b>Medium Risk</b></p>	Y	Conditions 1, 5 and 13	<p>All above ground infrastructure will be required to be located on compacted hardstand with the system to be containerized and banded to retain spills within the hardstand area.</p>

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Risk events					Risk rating <sup>1</sup>	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
		groundwater quality	Threatened species and communities					
Spills, leaks and overflows of effluent via decant for removal from the premises	Effluent	Direct impact to soil; nutrient soil imbalance causing ecosystem disturbance and/or surface water quality.	Soil health	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	Conditions 1, 5 and 13	N/A
Commissioning works	Odour	Air/windborne pathway with impacts on amenity	Accommodation village residents	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Conditions 1, 5, 13 and 20	N/A
WWTP operations and sludge removal								
Infrastructure and equipment failure	Spills/Untreated releases of partially treated wastewater or solid waste	Seepage to soil and groundwater resulting in elevated soil nutrients	Native fauna (Including soil fauna) and remnant vegetation	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Conditions 1, 5 and 13	N/A
Maintenance works (accidental spills)								
Stormwater interaction with plant and irrigation sprayfield	Contaminated or potentially contaminated stormwater	Seepage to soil and groundwater resulting in elevated soil nutrients	Remnant native vegetation	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Conditions 1, 5 and 13	N/A
Chemical handling and storage	Spills/unintended releases of hydrocarbons or chemicals	Seepage to soil and groundwater resulting in damage to vegetation (root systems)	Remnant native vegetation	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Conditions 1, 5 and 13	N/A
Irrigation sprayfield	Treated effluent and disposal of	Direct application to vegetation and	Remnant native	Refer to	C = Minor	Y	Conditions 1, 5-8	The irrigation spray field is appropriately sized to

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Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
	RO reject.	seepage to soil and groundwater resulting in nutrient accumulation and toxicity	vegetation	Section 3.1	L = Possible <b>Medium Risk</b>		and 13-17	manage the irrigation of the expanded wastewater treatment plant and RO reject.  Application of undiluted, highly saline RO brine has the potential to result in salt scaling and death of native vegetation.  The applicant has proposed to dilute the brine with treated effluent. A monitoring condition has been included to ensure TDS levels are monitored prior to irrigation

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
Department of Health (DoH) advised of proposal on 3 October 2023	<p>The Department of Health had no objection to the application subject to the below:</p> <ul style="list-style-type: none"> <li>When the proposal is submitted to DoH, details of current specifications and loadings will be compared to regulatory requirements and volumes that may require an upgrade to the plant.</li> <li>The treatment and disposal including peak and non-peak performance, volumes and disposal rates will be reassessed for re-approval.</li> <li>The proposal is required to comply with the requirements of the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations, 1974 and meet any required setbacks.</li> </ul>	<p>Noted. The Delegated Officer noted that the DoH Approval (dated 19 October 2023) to Construct or Install an Apparatus for the Treatment of Sewerage is for a Tristar Water Solutions 25kL SBR WWTP leading to a 17,500 m<sup>2</sup> irrigation area. This approval is not in line with the works approval application.</p> <p>It is important to note that the granting of a works approval under Part V of the EP Act does not exempt an occupier from the need to obtain relevant approvals under other legislation nor does it preclude them from the requirements of other Government regulatory functions.</p>
Works approval holder was provided with draft amendment on 31 October 2023	The works approval holder waived the consultation period on 1 November 2023 and requested the amendment be finalised.	Noted

## 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Works Approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

### 5.1 Summary of amendments

Table 7 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Works Approval as part of the amendment process.

**Table 7: Summary of works approval amendments**

Condition no.	Proposed amendments
Condition 1 Table 1	<p>Part 1</p> <p>Addition of a further 50 m<sup>3</sup>/day Sequential Batch Reactor (SBR) containerised modular system</p> <p>Additional Balance pump and balance tank (50 kL)</p>

	<p>Two additional raw water tank (50 kL)</p> <p>Two additional sludge storage tanks (50 kL)</p> <p>Combined sewage inflow total increased from 84 m<sup>3</sup>/day to 180 m<sup>3</sup>/day.</p> <p>Minor wording change for the pumping out of sludge storage tanks</p> <p>Part 2 (a)</p> <p>Minimum irrigation spray field size increased from 1.22 ha to 2.4 ha.</p>
Condition 5 Table 2	<p>Part 2 (a)</p> <p>Maximum blended effluent to be released to spray field increased from 84 m<sup>3</sup> per day to 180 m<sup>3</sup> per day.</p>
Condition 13 Table 5	<p>Part 2 (a)</p> <p>Maximum blended effluent to be released to the designated spray field increased from 84 m<sup>3</sup> per day to 180 m<sup>3</sup> per day.</p> <p>Part 3 (c)</p> <p>Maximum RO brine supplied to the WWTP increased from 34 m<sup>3</sup> per day to 80 m<sup>3</sup> per day.</p>
Schedule 1: Maps	<p>Figure 1</p> <p>Map of the premises boundary updated to reflect the proposed changes to the locations of the WWTP and irrigation spray field infrastructure.</p> <p>Figure 2</p> <p>WWTP and RO plant diagram updated to display new equipment.</p> <p>Figure 3</p> <p>Diagram added to display the indicative layout of irrigation spray field equipment.</p>

## 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. Department of Water (DOW), July 2008. Water Quality Protection Note 22 (WQPN22): Irrigation with nutrient rich wastewater. Perth, Western Australia. Accessed at: [www.dwer.wa.gov.au](http://www.dwer.wa.gov.au)
5. Department of Health (DOH), 2011. Guidelines for the Non-potable Uses of Recycled Water in Western Australia. Perth, Western Australia. Accessed at: [www.health.wa.gov.au](http://www.health.wa.gov.au)
6. Pentium Water, 2023. Site And Soil Evaluation, Northwestern Central Highway. Pentium Water Pty Ltd, 16 October 2023.