



## Application for Works Approval Amendment

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

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<b>Works Approval Number</b>	W6498/2021/1
<b>Works Approval Holder</b>	Water Corporation
<b>File Number</b>	DER2021/000010
<b>Premises</b>	Coral Bay Wastewater Treatment Plant Lyndon Location 169, Maud's Landing CORAL BAY WA 6701  Legal description – Lot 318 on Plan 40837  As defined by the Premises map attached to the Revised Works Approval
<b>Date of Report</b>	22 August 2022
<b>Proposed Decision</b>	Intent to grant revised works approval

**Marko Pasaich**

**A/MANAGER**

**WASTE INDUSTRIES**

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

# Table of Contents

<b>1. Decision summary</b>	<b>1</b>
<b>2. Scope of assessment</b>	<b>1</b>
2.1 Regulatory framework	1
2.2 Amendment summary	1
<b>3. Risk assessment</b>	<b>2</b>
3.1 Source-pathways and receptors	2
3.1.1 Emissions and controls	2
3.1.2 Receptors	3
3.2 Risk ratings	5
<b>4. Consultation</b>	<b>8</b>
<b>5. Conclusion</b>	<b>8</b>
5.1 Summary of amendments	8
<b>References</b>	<b>8</b>
<b>Appendix 2: Application validation summary</b>	<b>9</b>
Table 1: Assessed design capacity	2
Table 2: Works Approval Holder controls	3
Table 3: Sensitive human and environmental receptors and distance from prescribed activity	4
Table 4. Risk assessment of potential emissions and discharges from the Premises during construction and operation	6
Table 5: Consultation	8
Table 6: Summary of works approval amendments	8
Figure 1: Location of proposed pipeline discharge tower subject to this assessment and proposed new evaporation pond subject to previous assessment	2
Figure 2: Distance to sensitive receptors	5

## 1. Decision summary

Works Approval is held by the Water Corporation (Works Approval Holder) for the Coral Bay Wastewater Treatment plant (the Premises), located at Lot 318 on Plan 40837, Coral Bay.

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 W6498/2021/1 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 Amendment summary

The Works Approval Holder operates the Coral Bay Wastewater Treatment Plant (WWTP) under Licence L7927/2003/4 issued under Part V of the *Environmental Protection Act 1986* (EP Act). The Works Approval Holder was granted Works Approval W 6498/2021/1 on 28 May 2021 to construct an additional lined evaporation pond, the construction of a spillway from the existing evaporation pond to an emergency overflow infiltration pan, as well as a desludging hardstand.

On 21 April 2022 the Works Approval Holder submitted an application to the department to amend Works Approval W6498/2021/1 under section 59 and 59B of the EP Act to modify the discharge pipeline of the pressure main by elevating it in a tower to a height of 4 metres (m).

Following a number of pump failures at the WWTP, the Works Approval Holder conducted a high level hydraulic analysis of the sewage pressure main which identified that intense vibration and premature failure of the pumps was being caused by air trapped within the pressure main.

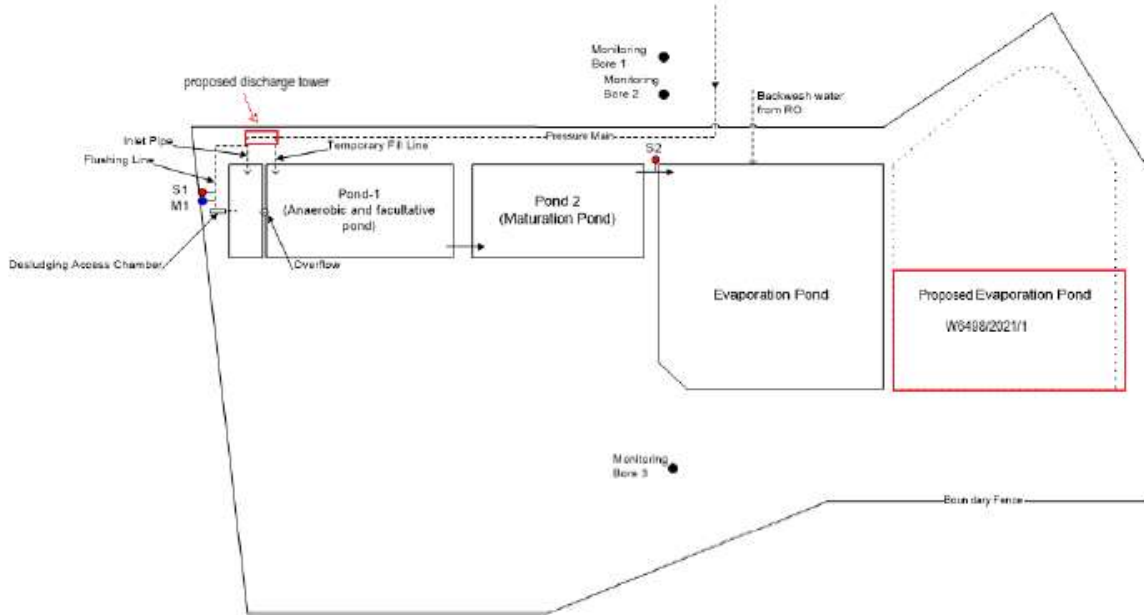
The pressure main rises from 3 m AHD at the pump station to a peak of 16.54 m AHD, until dropping back into the submerged entry at the WWTP, with the top water level of the first pond being at a height of 13.35 m AHD. With crests along the pressure main being higher than the discharge point, any air that enters the system is likely to be trapped in these crests. There are no automatic pressure relief valves on the pipeline. Air becomes trapped in the peaks and creates an air lock that reduces the pumping rate and can lead to excessive vibration issues in pumps and ultimately pump failure.

The solution to this issue is to raise the discharge pipeline by constructing an approx. 4 m discharge tower at the premises to maintain pump performance on required system curve. This should also significantly reduce the possibility and amount of trapped air.

This amendment is limited only to modification of the discharge pipeline from the pressure main. There are no proposed changes to Category 54 activities from the previously assessed Existing Licence L7927/2003/4, as outlined in Table 1. Figure 1 below indicates the location of the proposed sewage discharge tower in relation to the premises and the second evaporation pond previously approved under Works Approval W6498/2021/1.

**Table 1: Assessed design capacity**

Category	Assessed design capacity
Category 54: Sewage facility: premises (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters.	720 m <sup>3</sup> per day



**Figure 1: Location of proposed pipeline discharge tower subject to this assessment and proposed new evaporation pond subject to previous assessment**

### 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 of the air discharge tower which have been considered in this Amendment Report are detailed in Table 2 below. Table 2 also details the proposed control measures the Works Approval Holder has proposed to assist in controlling these emissions, where necessary.

**Table 2: Works Approval Holder controls**

Sources	Emission	Potential pathways	Proposed controls
Construction of sewage discharge tower	Dust	Air / wind pathway	None
	Noise	Air / wind pathway	Works will be conducted in accordance with the <i>Environmental Protection (Noise) Regulations 1997</i> . Construction will be undertaken during the hours of 7 am and 7 pm Monday to Friday. Vehicles and equipment will be fitted with appropriate noise controls.
Operation of sewage discharge tower	Odour	Air / wind pathway	None
	Spills of untreated sewage	Overland flow	The construction of the discharge tower will occur offline immediately adjacent to the incoming pressure main, within the premises boundary. The tower pipework will be constructed using robust structure design, appropriate for Cyclone Region D. The 250 mm diameter (DN250) pipework will be constructed of polyethylene that is manufactured to AS/NZS 4130. At the completion of commissioning, the Works Approval Holder will implement a temporary shutdown on the pump station to allow the tower to be connected to the existing pressure main. If during operations there is a leak detected in the discharge tower infrastructure, there is sufficient storage of at least 6 hours in the Robinson Street sewerage pumping station to enable the discharge tower pipework to be reinstated.

### 3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Works Approval Holder's 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 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 3: Sensitive human and environmental receptors and distance from prescribed activity**

Human receptors	Distance from prescribed activity
Coral Bay townsite	<ul style="list-style-type: none"> <li>• 2.6 km west of premises boundary</li> </ul> <p>The Delegated Officer considers that due to distance there is no likely impact upon these residences, so it is not considered further as a receptor within this assessment.</p>
Environmental receptors	Distance from prescribed activity
Groundwater dependent ecosystems	Subterranean stygofauna communities associated, with the karstic aquifer, approx. 11 m below ground level.
<i>Rights in Water and Irrigation Act 1914</i> surface water area	Within the Pilbara Surface Water Area
<i>Rights in Water and Irrigation Act 1914</i> surface water area	Within the Gascoyne Groundwater Area
Threatened fauna	Six migratory bird species have been identified within 1 km of the premises boundary, including <i>Ardenna pacifica</i> (Wedge-tailed Shearwater), <i>Calidris alba</i> (Sanderling), <i>Calidris ruficollis</i> (Red-necked stint), <i>Actitis hypoleucos</i> (Common Sandpiper), <i>Thalasseus bergii</i> (Crested tern) and <i>Xenus cinereus</i> (Terek sandpiper).



**Figure 2: Distance to sensitive receptors**

### 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), 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 4.

The Revised Works Approval W6498/2021/1 that accompanies this Amendment Report authorises construction and time-limited operations. The conditions in the Revised Works Approval have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

An amendment to Existing Licence L7927/2003/4 is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the Premises. 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 4. Risk assessment of potential emissions and discharges from the Premises during construction and operation**

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Works Approval Holder's controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Source / Activities	Potential emission	Potential pathways and impact	Receptors	Works Approval Holder's controls				
<b>Construction</b>								
Construction of sewage discharge tower	Dust	Air/windborne pathway causing impacts to health and amenity	None present	None	N/A	N/A	Condition 7	N/A
	Noise			Refer to Section 3.1	N/A	Yes	Condition 8	N/A
<b>Operation</b>								
Operation of sewage discharge tower	Odour	Air/windborne pathway causing impacts to health and amenity	None present	Refer to Section 3.1	N/A	N/A	N/A	N/A
	Spills of untreated sewage	Overland flow causing impacts to surface water Subsurface seepage causing impacts to groundwater quality	Surface water and groundwater sources Groundwater dependent stygofauna	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Yes	<b><u>Condition 2</u></b>	The Delegated Officer notes the risk of spills of untreated sewage is directly related to the effectiveness of the controls put into place during construction, and for ongoing operational maintenance, to ensure the sewage



Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Works Approval Holder's controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Source / Activities	Potential emission	Potential pathways and impact	Receptors	Works Approval Holder's controls				
								<p>discharge tower is free of leaks and defects.</p> <p>As such, the Delegated Officer shall apply the controls to existing infrastructure construction requirements on the Revised Works Approval.</p>

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

Note 2: Proposed Works Approval Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

## 4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

**Table 5: Consultation**

Consultation method	Comments received	Department response
Works Approval Holder was provided with draft amendment (20/07/2022)	The Works Approval Holder advised on 10/08/2022 they had no objections to the draft instrument and waive the remaining comment period.	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 6 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 6: Summary of works approval amendments**

Condition no.	Proposed amendments
Condition 2 Table 2	Addition of infrastructure construction / installation requirements for the sewage discharge tower.
Schedule 2 Figure 6 Figure 7 Figure 8	Addition of infrastructure construction / installation plans GE88-03-04, GE87-2-13 and GE87-2-14.

## 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.

## Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY				
Application type				
Works approval	<input type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Has time limited operations under the works approval demonstrated acceptable operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input checked="" type="checkbox"/>	Current works approval number:	W6498/2021/1	
Amendment to licence	<input type="checkbox"/>	Current licence number:		
		Relevant works approval number:	N/A	<input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:		None <input type="checkbox"/>
Date application received	21 April 2022			
Applicant and Premises details				
Applicant name/s (full legal name/s)	Water Corporation			
Premises name	Coral Bay Wastewater Treatment Plant			
Premises location	Lot 318 on Plan 40837 Lyndon Location 169, Maud's Landing Coral Bay WA 6701			
Local Government Authority	Shire of Carnarvon			
Application documents				
HPCM file reference number:	DER2021/000010			
Key application documents (additional to application form):	CS24319 – Coral Bay WWTP Discharge Tower Installation supporting information April 2022			
Scope of application/assessment				
Summary of proposed activities or changes to existing operations.	Works approval amendment Construction of a 4 m tall sewage discharge tower			

**Category number/s (activities that cause the premises to become prescribed premises)**

**Table 1: Prescribed premises categories**

<b>Prescribed premises category and description</b>	<b>Assessed production or design capacity</b>	<b>Proposed changes to the production or design capacity (amendments only)</b>
Category 54: Sewage facility: premises (a) On which sewage is treated (excluding septic tanks); or (b) From which treated sewage is discharged onto land or into waters.	720 m <sup>3</sup> per day	No change to design capacity

**Legislative context and other approvals**

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input checked="" type="checkbox"/>
Has the applicant obtained all relevant planning approvals?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	CPS No: 185/8 Water Corporation intend to use the Statewide Clearing Permit
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any other Acts or subsidiary regulations (e.g. Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises a known or suspected contaminated site under the Contaminated Sites Act 2003?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Coral Bay WWTP ID: 8917 Classification: Incomplete Report