



Application for Works Approval

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

Works Approval Number W6498/2021/1

Applicant Water Corporation

File Number DER2021/00010

Premises Coral Bay Wastewater Treatment Plant
Lyndon Location 169, Maud's Landing
CORAL BAY WA 6701
Being Lot 318 on Plan 40837

Date of Report 18 May 2021

Proposed Decision Works approval granted

Stephen Checker
MANAGER WASTE INDUSTRIES
REGULATORY SERVICES

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

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1. Decision summary

This Decision Report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6498/2021 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Decision 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 and overview of premises

On 31 December 2020, the Water Corporation (the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act). The application seeks approval for works relating to the construction of 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 at the Coral Bay Wastewater Treatment Plant (premises). The premises currently operates as a Category 54: Sewerage Facility under licence L7927/2003/4 issued under Part V of the EP Act. The evaporation pond will facilitate an increased disposal capacity to cater for average plant inflows of 290 kL/day (m³/day). The premises is approximately 2.6 km east of Coral Bay.

The premises relates to the category and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6498/2021. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guidance Statement: Risk Assessments* (DER 2017) are outlined in works approval W6498/2021.

The applicant has also applied for Time Limited Operations under the works approval to allow operation of the new pond infrastructure under works approval whilst a licence amendment application is submitted and assessed.

The existing Coral Bay Wastewater Treatment Plant consists of a primary (facultative) and secondary (maturation) pond that is capable, and currently licenced, to treat 720 m³/day. However, the applicant only built a portion of the evaporation capacity, which is currently around an average inflow of 250 m³/day. The applicant does not propose to alter the approved treatment capacity of 720 m³/day.

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 *Guidance Statement: Risk Assessments* (DER 2017).

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 1 below. Table 1 also details the proposed control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Vehicle movements, Clearing of overburden, excavation of pond and construction of spillway and desludging hardstand	Air/windborne pathway causing impacts to health and amenity	<ul style="list-style-type: none">Physical separationDust suppression activities such as the use of a water cart during ground disturbance activities to prevent dust liftoff and minimising soil stockpile heights to prevent wind erosion
Noise			<ul style="list-style-type: none">Physical separationLimited hours of machinery operation to minimise potential impacts of construction noise
Commissioning			
Nutrient rich, contaminated treated effluent	Evaporation pond liner leak	Infiltration through soil to groundwater, potentially causing ecosystem disturbance	<ul style="list-style-type: none">Installation of a BGM (Bituminous based waterproof geomembrane) to line the evaporation pond.Applicant to obtain certification confirming the correct permeability and installation of materials (to be submitted as part of Environmental Compliance Report)
Operation			
Nutrient rich, contaminated treated effluent	Evaporation pond liner leak, failure or overtopping	Infiltration through soil to groundwater, potentially causing ecosystem disturbance	<ul style="list-style-type: none">Installation of a BGM (Bituminous based waterproof geomembrane) to line the evaporation pond.Applicant to obtain certification confirming the correct permeability and installation of materials (to be submitted as part of Environmental Compliance Report).Installation of oversized culverts to ensure connectivity between pondsConstruction of a spillway on the existing evaporation pond to protect the pond structure from failure in the event of overtopping during extreme weather eventsGroundwater monitoring to identify contaminant plumes

Emission	Sources	Potential pathways	Proposed controls
Nutrient rich, contaminated treated effluent	Treated effluent overflow via spillway to evaporation pan during major rainfall events	Infiltration through soil to groundwater, potentially causing ecosystem disturbance	<ul style="list-style-type: none"> Sizing of the evaporation pond to ensure that it does not overtop into the environment
Nutrient rich, contaminated treated effluent and suspended sediment	Desludging activities on gravel hardstand	Infiltration through soil to groundwater, potentially causing ecosystem disturbance	<ul style="list-style-type: none"> Applicant to ensure that the desludging hardstand is constructed correctly by getting the contractor to certify the correct installation, and sloped to allow filtrate to drain back into the primary (facultative and maturation) pond (to be provided in the Environmental Compliance report) Placement of sandbags around perimeter of hardstand during desludging activities to provide a flow path back to the primary pond
Odour		Air/windborne pathway causing impacts to health and amenity	<ul style="list-style-type: none"> Physical separation

3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), the Delegated Officer has excluded employees, visitors and contractors of the applicant from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 and Figure 1 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 (*Guidance Statement: Environmental Siting* (DER 2016)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Receptor ID	Human receptors	Distance from prescribed activity
H1	Coral Bay residents and visitors	Approximately 2.6 km west of premises boundary
H2	Public drinking water source area	Approximately 2.5 km southwest of premises boundary
H3	Aboriginal Sites and Heritage Places - CORAL BAY ACCESS 1 (Stored Data / Not a Site - Artefacts / Scatter, Midden / Scatter)	Approximately 760 m west of premises boundary
H4	Aboriginal Sites and Heritage Places - CORAL BAY 01 (Stored Data / Not a Site - Artefacts / Scatter, Midden / Scatter)	Approximately 1.5 km west of premises boundary
H5	Aboriginal Sites and Heritage Places - CORAL BAY 02 (Registered Site - Artefacts / Scatter, Midden / Scatter)	Approximately 1.02 km west of premises boundary
H6	Aboriginal Sites and Heritage Places - CORAL BAY ACCESS 2 (Registered Site - Artefacts / Scatter, Midden / Scatter)	Approximately 1.7 km west of premises boundary
Receptor ID	Environmental receptors	Distance from prescribed activity
E1	Zuytdorp/Ningaloo groundwater subarea - Subterranean fauna communities associated with karstic aquifer (stygo fauna and troglod fauna)	Underlying premises (0.2 m AHD, approximately 11 m below ground level)
E2	Pastoral property – Cardabia Station	Immediately adjacent premises boundary
E3	Waterpoint Structure, Tank, Unknown	Approximately 550 m northwest of premises boundary
E4	Nonperennial waterbody – Lake	Approximately 700 m west of premise boundary
E5	Inland waters – inundation area	Approximately 770 m northwest of premises boundary
E6	Nonperennial waterbody – Lake	Approximately 970 m west of premises boundary
E7	Reserve 6115 - CONSERVATION AND RECREATION	Approximately 970 m west of premises boundary
E8	Ningaloo Coast World Heritage Area and Ningaloo Marine Park	Approximately 3.3 km west of premises boundary

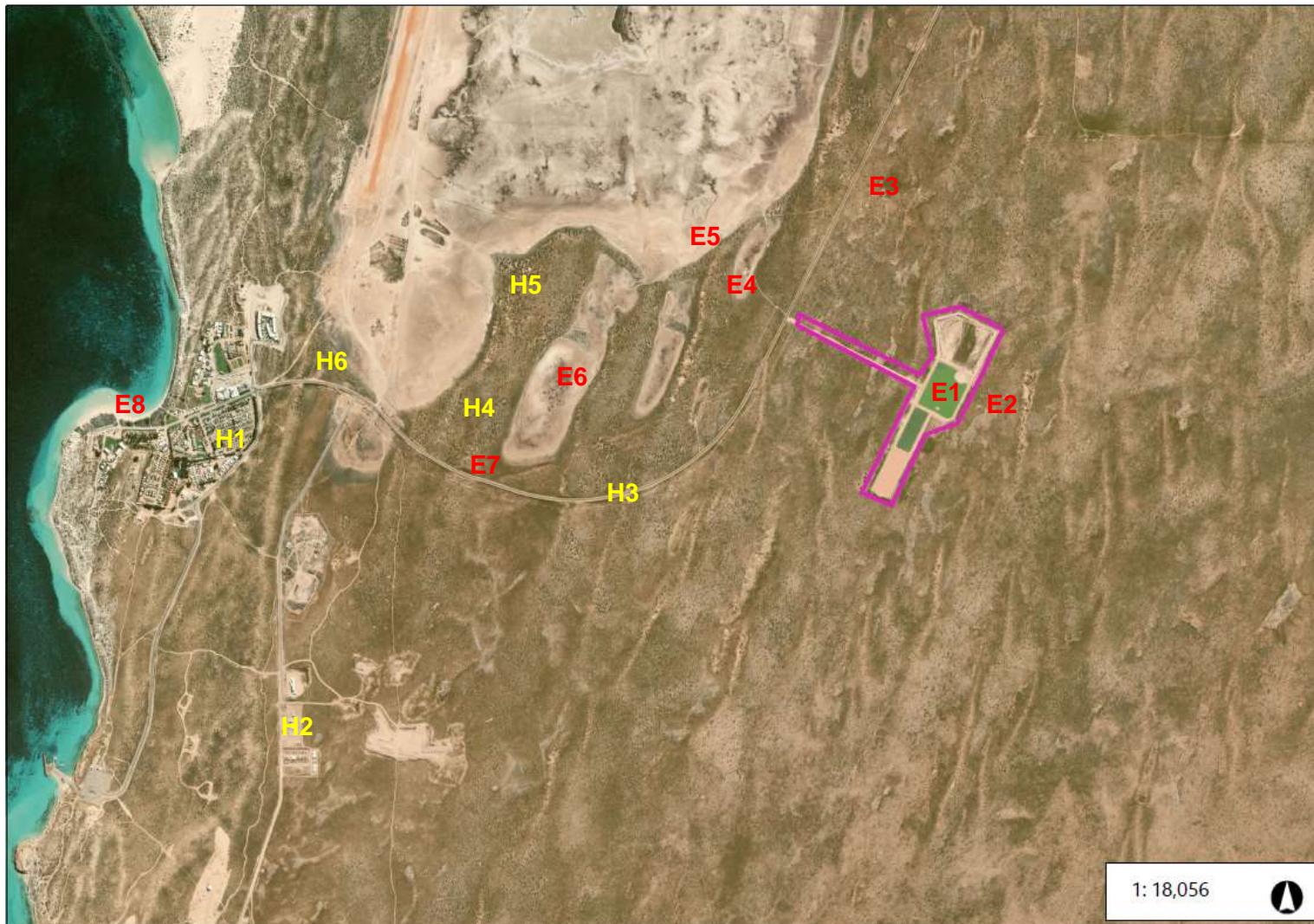


Figure 1: Distance to human and environmental receptors

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File number: DER2021/000010

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) 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 3.

Works approval W6498/2021 that accompanies this Decision Report authorises construction only. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

An amended licence is required to authorise emissions associated with the ongoing operation of the premises i.e. sewage facility. 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 amendment application.

Table 3: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Construction								
Vehicle movements, Clearing of overburden, excavation of pond and construction of spillway and desludging hardstand	Dust	Air/windborne pathway causing impacts to health and amenity	Coral bay residents and visitors	Refer to Section 3.1	C = Slight L = Possible Low Risk	Y	Condition 7	N/A
	Noise			Refer to Section 3.1	C = Slight L = Possible Low Risk	Y	Condition 8	N/A

Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Commissioning								
Evaporation pond liner leak	Nutrient rich, contaminated treated effluent	Infiltration through soil to groundwater, potentially causing ecosystem disturbance	Subterranean fauna communities associated with karstic aquifer (stygofauna and troglofauna)	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1: Condition 3 & 4	In view of the sensitivity of the receiving environment, minimum specifications for the bituminous geomembrane installation have been set. As no specifications were provided in the application, specifications from a similar project have been included. The applicant is requested to review and provide updated specifications as appropriate.
Operation								
Evaporation pond liner leak	Nutrient rich, contaminated treated effluent	Infiltration through soil to groundwater, potentially causing ecosystem disturbance	Subterranean fauna communities associated with karstic aquifer (stygofauna and troglofauna)	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	N	Condition 1	In view of the sensitivity of the receiving environment, minimum specifications for the bituminous geomembrane installation have been set. As no specifications were provided in the

Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
								application, specifications from a similar project have been included. The applicant is requested to review and provide updated specifications as appropriate.
Treated effluent overflow via spillway during major rainfall events	Nutrient rich, contaminated treated effluent	Infiltration through soil to groundwater, potentially causing ecosystem disturbance	Subterranean fauna communities associated with karstic aquifer (stygo fauna and troglo fauna)	Refer to Section 3.1	C = Moderate L = Possible Medium Risk	Y	Condition 10	N/A
Desludging activities on gravel hardstand	Nutrient rich, contaminated treated effluent and suspended sediment	Infiltration through soil to groundwater, potentially causing ecosystem disturbance	Subterranean fauna communities associated with karstic aquifer (stygo fauna and troglo fauna)	Refer to Section 3.1	C = Moderate L = Possible Medium Risk	N	Condition 13 and 14 <u>Condition 2</u>	In view of the sensitivity of the receiving environment, and the fact that the applicant has not provided any permeability information, a risk-based justification or detailed specifications regarding the proposed gravel hardstand, it shall be required that the hardstand is designed to:

Risk Event					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
								<ul style="list-style-type: none"> • accommodate placement of 3 geobags, each with a dimension of 25 m x 10 m; • achieve a longitudinal gradient of 1:200; and • accommodate the temporary installation of a removable high-density polyethylene liner and sand-bag perimeter to direct any filtrate back into the primary (facultative and maturation) pond.
	Odour	Air/windborne pathway causing impacts to health and amenity	Coral bay residents and visitors	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Y	Condition 12, 13 and 14	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

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

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website (24/02/2021)	None received	N/A
Local Government Authority (Shire of Carnarvon) advised of proposal (03/03/2021)	None received	N/A
Department of Biodiversity, Conservation and Attractions (DBCA) advised of proposal (03/03/2021)	<i>"Noting the Department of Water and Environmental Regulation (DWER) capacity to apply appropriate regulatory measures for environmental management and monitoring of facilities under Part V of the EP Act, DBCA does not have any specific comments on this works approval".</i>	Noted
Applicant was provided with draft documents on (01/04/2021)	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) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
2. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
3. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. DWER 2019, *Industry Regulation Guide to Licensing*, 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
4a	<i>The draft Works Approval requires the Critical Containment Infrastructure Report to be certified by a "Suitably Qualified Structural Engineer". Water Corporation requests that this wording is changed to a 'qualified Construction Assurance Personnel' or similar. The Construction Quality Assurance of liner installation by a qualified structural engineer is not common practice in the industry.</i>	Requirement amended to require that the report is certified by a "geotechnical, environmental or civil engineer".
6a	<i>The draft Works Approval requires the Environmental Compliance Report to be certified by a "qualified civil engineer". Water Corporation requests that this wording is changed to a 'qualified Construction Assurance Personnel'.</i>	Requirement amended to require that the report is certified by a "geotechnical, environmental or civil engineer".
Table 3	<i>Water Corporation requests that the operational requirement 'No discharge via spillway to emergency infiltration during time limited operations' is removed, as an emergency event is outside of Water Corporations control.</i>	Noted and amended
Table 2 - Desludging hardstand (geobag laydown area)	<i>Water Corporation requests that reference to leachate is changed to refer to filtrate. The dewatered product from the geobag laydown area is better referred to as filtrate due to process involved (geobags filter via the geofabric construction).</i>	Noted and amended
Table 2 of Draft Works approval and Decision report – Table 1 (page 3)	<i>In reference to Desludging activities on gravel hardstand, the Water Corporation design allows for the 'leachate' (Water Corporation preference is 'filtrate') to drain back to the primary (facultative and maturation) pond. Please consider inserting 'and maturation' into the wording of the tables.</i>	Noted and amended

Condition	Summary of applicant's comment	Department's response
Table 2 – Design and construction / installation requirements	<p><i>With respect to the geobag dimensions.</i></p> <p><i>Water Corporation does not believe that bag size is an important characteristic to include as this will be dependent on amount of sludge.</i></p> <p><i>It would be preferred if this could not refer to specific dimensions.</i></p>	Noted and amended
Schedule 3	<p><i>Note: Water Corporation was advised that the reference specifications made in the Draft Works Approval were a European Specification that is not available in Australia.</i></p> <p><i>Please find attached geomembrane specifications (COLETANCHE ES2) that will be used by Water Corporation.</i></p>	<p>Noted.</p> <p>References amended to incorporate Australian standards.</p> <p>Testing frequencies amended.</p>

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)					
Application type					
Works approval	<input checked="" 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 type="checkbox"/>	Current works approval number:			
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					
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 as depicted in Schedule 1 Lyndon Location 169 Maud's Landing CORAL BAY WA 6701			
Local Government Authority		Shire of Carnarvon			
Application documents					
HPCM file reference number:		DER2018/001042-4~73			
Key application documents (additional to application form):		Supporting information package			
Scope of application/assessment					

Summary of proposed activities or changes to existing operations.	Works approval Construction of an evaporation pond to increase the disposal capacity to 290kL/day and construction of a sludge drying hardstand for future desludging activities	
Category number/s (activities that cause the premises to become prescribed premises)		
Table 1: Prescribed premises categories		
Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity
Category 54: Sewage facility	720 m3/day (evaporation capacity of 250 kL/day)	Construction of evaporation pond to increase the disposal capacity to 290kL/day
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"/>	Referral decision No: Managed under Part V <input checked="" type="checkbox"/> Assessed under Part IV <input 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"/>	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
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"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Approval: Expiry date: If N/A explain why? WA Recovery infrastructure project
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: CPS 185 and CPS 186 Water Corporation is in possession of a State-wide 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"/>	Application reference No: N/A Licence/permit No: N/A

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"/>	Application reference No: Licence/permit No: Licence / permit not required.
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"/>	Name: N/A Type: Proclaimed Groundwater Area/Surface Water Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Regional office: Swan Avon / Mid-West Gascoyne / Kwinana Peel / North West / South West / Goldfields / South Coast
Is the premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to <u>WQPN 25</u>)? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Is the premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004</i> , <i>Environmental Protection (Controlled Waste) Regulations 2004</i> , <i>State Agreement Act xxxx</i>)	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 <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Coral Bay WWTP, 318 Coral Bay Rd, Lyndon CSS_SITE_ID: 8917 Classification: Incomplete Report