Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

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

Works Approval Number	W3016/2025/1
Applicant	Wallcliffe House Pty Ltd
ACN	611 627 340
Application number	APP-0029203
File number	INS-0003016
Premises	Wallcliffe House Wastewater Treatment Plant Lot 101 Wallcliffe Road MARGARET RIVER WA 6285 Legal description - Part of Lot 101 on Deposited Plan 49026 As defined by the premises map attached to the issued works approval
Date of report	19 December 2025
Decision	Works approval granted

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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 commissioning of the premises. As a result of this assessment, works approval W3016/2025/1 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 premises overview

On 19 May 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 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 W3016/2025/1. 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 W3016/2025/1.

The application is to undertake construction works relating to the construction of a wastewater treatment plant (WWTP) to service the proposed new Wallcliffe House hotel. The premises is located approximately 10 kilometres (km) south-west of the town of Margaret River and 680 metres (m) north-east to residential areas of the town of Prevelly. The Leeuwin-Naturaliste National Park is located approximately 28 m south and 26 m east of the southern premises boundary, with Margaret River approximately 200 m north-west of the premises boundary, and the Ngari Capes Marine Park approximately 1 km to the west. Rural residential premises also surround the proposed site, with the closest being approximately 76 m to the north.

2.2.1 WWTP design

The WWTP will be designed to process up to 38.4 kilolitres (kL) per day and will comprise of the following components:

1. **Feed/Equalisation Tank (23 kL capacity)**

   Receives and stores raw wastewater from the Main Pump Station. The tank balances fluctuations in wastewater flow and load caused by daily and seasonal variations. It gradually releases wastewater to ensure consistent flow to downstream processes.

2. **MBR Feed Pump Station (DN1800 Wet Well)**

   Gravity fed from the feed/equalisation tank, this wet well pumps wastewater to the Membrane Bioreactor (MBR) inlet.

3. **Membrane Bioreactor (MBR)**

   Treats wastewater through a combination of biological processes and membrane filtration. Microorganisms first break down organic matter, removing nitrogen via nitrification and denitrification. Phosphorus is removed through chemical dosing with a suitable coagulant, which precipitates it for membrane separation.

   The system includes one tank with multiple chambers, consisting of the following:

- Fine screen
- Denitrification chamber
- Chemical dosing (Coagulant, Carbon Feed Source, Cleaning)
- Nitrification tank and membrane unit
- Treated wastewater chamber
- Sludge storage chamber

The system will operate continuously, with 24/7 recirculation and aeration.

4. **Treated Wastewater Storage Tank (7 kL capacity)**

   Receives treated water from the MBR for storage. The tank is equipped with internal submersible pumps that operate based on water levels. Flow is directed via control valves to one of four TunnelWell Leach Drains in sequence for discharge.

5. **TunnelWell Leach Drains (Infiltration Structures)**

   Used for infiltration of treated wastewater into the soil. The system includes:

   - Four leach drains: two at the premises entry (each 18 m in length) and two in the arrivals paddock (each 19 m in length). Each leach drain will have 18 to 19 kL storage volume and 27 or 29 m^2 infiltration area respectively.
   - Inlets designed to prevent scouring of the compacted sand foundation.
   - Each drain is designed to handle peak flow and includes pressure/high-level monitoring to redirect flow as needed.

6. **Sludge Waste Management**

   The chamber is designed to provide sufficient storage capacity at average flow conditions such that desludging operations using a vacuum truck are required no more frequently than once every six months.

7. **Chemical Storage and Dosing**

   Includes liquid and chemical storage units with 28-day peak operation capacity. All units are bunded and compliant with AS 3780:2023 *The storage and handling of corrosive substances*. Components include:

   - Primary storage tank
   - Secondary containment sump
   - Dosing cabinet
   - Dose pump
   - Valves, fittings, and instruments

   Chemicals used:

   - Coagulants (PAC, alum, ferric chloride or similar)
   - Sodium hypochlorite (for membrane CEB/CIP)
   - Oxalic acid (for membrane CEB/CIP)
   - Carbon feed source (sucrose or similar)

8. **Process analysis system**

   Comprises a PVC sample loop feed and return lines, analyser panel, continuous online turbidity and pH analysers, and collection of analyser and sample wastes.

9. **Odour Treatment Unit**

   Utilises an activated carbon filter for odour control.

10. **Instrumentation, Control and SCADA (supervisory control and data acquisition)**

    Provides remote monitoring of the WWTP and alerts for faults conditions.

A conceptual process flow diagram of the WWTP is shown in Figure 3.

2.2.2 Environmental commissioning

Environmental commissioning is proposed as part of this application. During this phase, the treated wastewater storage tank will be isolated from the infiltration beds to allow for sampling and verification of water quality prior to environmental discharge. This process also facilitates calibration of the SCADA analysers. If sampling results indicate non-compliance with discharge standards, a licensed liquid waste contractor will be engaged to remove the treated wastewater until compliance is demonstrated.

2.3 Climate

The proposed premises is located in a region with a Mediterranean climate, characterised by hot, dry summers and mild, relatively wet winters. However, long-term data indicates a declining trend in rainfall over the last 40 years (Emerge, 2023a). The nearest weather station to the site is Station number 9746, located in Witchcliffe. Figure 1 presents the average annual rainfall determined from data collected from this station between 1999 and 2021.

Table 1: Median annual rainfall from 1999 to 2021 at Witchcliffe (station number 9746) (BoM 2023)

Climate parameter	Month												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Median rainfall (mm)	5.8	6.8	27.3	48.6	123.3	172.7	201.8	161.2	107.6	58.2	32.0	13.6	965.2

Figure 1: Average annual rainfall in Witchcliffe (Emerge, 2023)

2.4 Topography and Soil

2.4.1 Topography

According to Emerge Associates (2023b), the site exhibits varied topography and elevation, with the following key characteristics:

- The land slopes from the south-east (Wallcliffe Road) toward the north-west (Margaret River), with an average gradient of approximately 10-15%.
- Ground levels range from 2 mAHD along the western boundary adjacent to Margaret River, rising to 64 mAHD at the south-eastern extent near Wallcliffe Road.

2.4.2 Soil

As outlined by Douglas Partners (2022), the site comprises a range of geological and soil units with varying characteristics and depths:

- **Sandy Topsoil:** A fine course-grained sand layer, 100-200 mm thick, containing silt, gravel and organic material.
- **Sandy Fill:** Found to depths of up to 1.6 m, this grey-brown sand is variably compacted and includes silt, gravelly sand, and clayey sand. It likely consists of disturbed soils from previous land use.
- **Residual Sand of the Spearwood System:** Fine to medium-grained sand with trace silt, limestone cobbles, and gravel. Encountered to depths of 9.5 m below ground level (mbgl), with density ranging from medium-dense to very loose.
- **Limestone of the Spearwood System:** Cemented limestone with varying strength, found only in upper portions of the site. Sand zones within the limestone ranged from 0.6-2.3 m thick. A localised discontinuity filled with loose sand was found at 6.6 mbgl.
- **Residual Soils of the Leeuwin Complex:** Clayey sand, sandy gravel, and silty soils observed at the lower portions of the site, beneath the Residual Sand of the Spearwood System, and as a thin layer under Limestone of the Spearwood System in mid-slope areas.
- **Granulite and granite of the Leeuwin Complex:** Underlying Residual Soils of the Leeuwin Complex, extending to the maximum test depth of 20 m.

Emerge Associates (2025) noted that, based on recent investigations undertaken by Douglas Partners in 2024, some limestone is expected to be present in the area designated for the construction of infiltration structures. The depth of sand above the limestone layer within the proposed infiltration area varies between approximately 1.5 metres and more than 4.2 metres.

The applicant has proposed ground improvement measures to ensure the performance of the infiltration structures is not compromised by underlying limestone. These include:

- Over-excavation of the construction area to a depth of 1 metre below the proposed invert level of the infiltration structures, followed by deep ripping an additional metre beneath the excavated base.
- The removal of any limestone encountered. Limestone will be re-used on site or disposed of off-site.
- The deep-ripping and inspection of the excavation base by a geotechnical engineer. The area will be backfilled with sand and compacted to provide a stable foundation.
- Sand should be carefully compacted to maintain infiltration capacity, targeting a permeability rate of 5 m per day.

Permeability testing indicates that shallow soils at the site have a high infiltration rate of over 25 m per day, while deeper soils exhibit moderate permeability ranging from 8 to 12 m per day. Soil permeability at the location of the proposed WWTP and arrivals paddock location has been recorded at 17 m per day and 4.9 m per day respectively (Emerge, 2025). However, to take a conservative approach, the applicant has based the design and size of the infiltration structures on a permeability of 2 m per day.

Emerge Associates (2023b) identified that the site is not a risk of acid sulfate soils (ASS) based on regional mapping provided by DWER. While the adjacent Margaret River is mapped as having low to moderate ASS risk within 3 metres of the natural soil surface, no disturbance to the river is proposed by the works. Additionally, construction is not expected to extend below the permanent groundwater table. Therefore, ASS investigations are not required as per the *Guideline: Identification and investigation of acid sulfate soils and acidic landscapes (DER, 2015)*.

2.5 Hydrogeology

Emerge Associates conducted a hydrogeological assessment of the site in 2022. The key findings were:

- The site's topography suggests that surface runoff from rainfall events may naturally flow toward the Margaret River. However, due to the sandy nature of the soils, it is expected that runoff from typical rainfall events will infiltrate within the site boundaries.
- Groundwater levels across the site range from 1.72 mAHD to 3.78 mAHD, with levels generally increasing toward the east, away from the river.
- A deep surficial aquifer, known as the Wallcliffe Aquifer, was identified under the site. This was confirmed through geological observations and investigations conducted by Douglas Partners (2020, 2022) and testing by Emerge Associates, including test pits, cone penetration tests (CPTs), and diamond core drilling.
- The estimated area of this aquifer is 31,776 m^2, with a saturated volume of 230,994 m^3 and a static groundwater volume of 69,298 kL.
- The aquifer receives recharge from a 58-hectare catchment area extending approximately 1.5 km southeast from the southern bank of the Margaret River, encompassing the site. Annual recharge to the aquifer is estimated at 22, 079 kL per year.
- Water quality from production bores installed by Emerge Associates was found to be suitable for irrigation purposes.

Based on these findings, the applicant anticipates that rainfall runoff from the site will infiltrate into the soil and may contribute to recharge of the surficial aquifer.

2.6 Irrigation of Treated Wastewater

The applicant proposes to discharge up to 38.4 kL per day of treated wastewater from the WWTP to a series of TunnelWell leach drain infiltration structures. The infiltration system will consist of two pairs of TunnelWell leach drains, one pair measuring 18 m in length and the other 19 m.

One pair will be located near the entrance of the premises, approximately 375 m from the Margaret River and 240 m from the Wallcliffe Surficial Aquifer. The second pair will be positioned approximately 200 m from the Margaret River and 70 m from the Wallcliffe Surficial Aquifer.

The locations of these infiltration structures are shown in Figure 2.

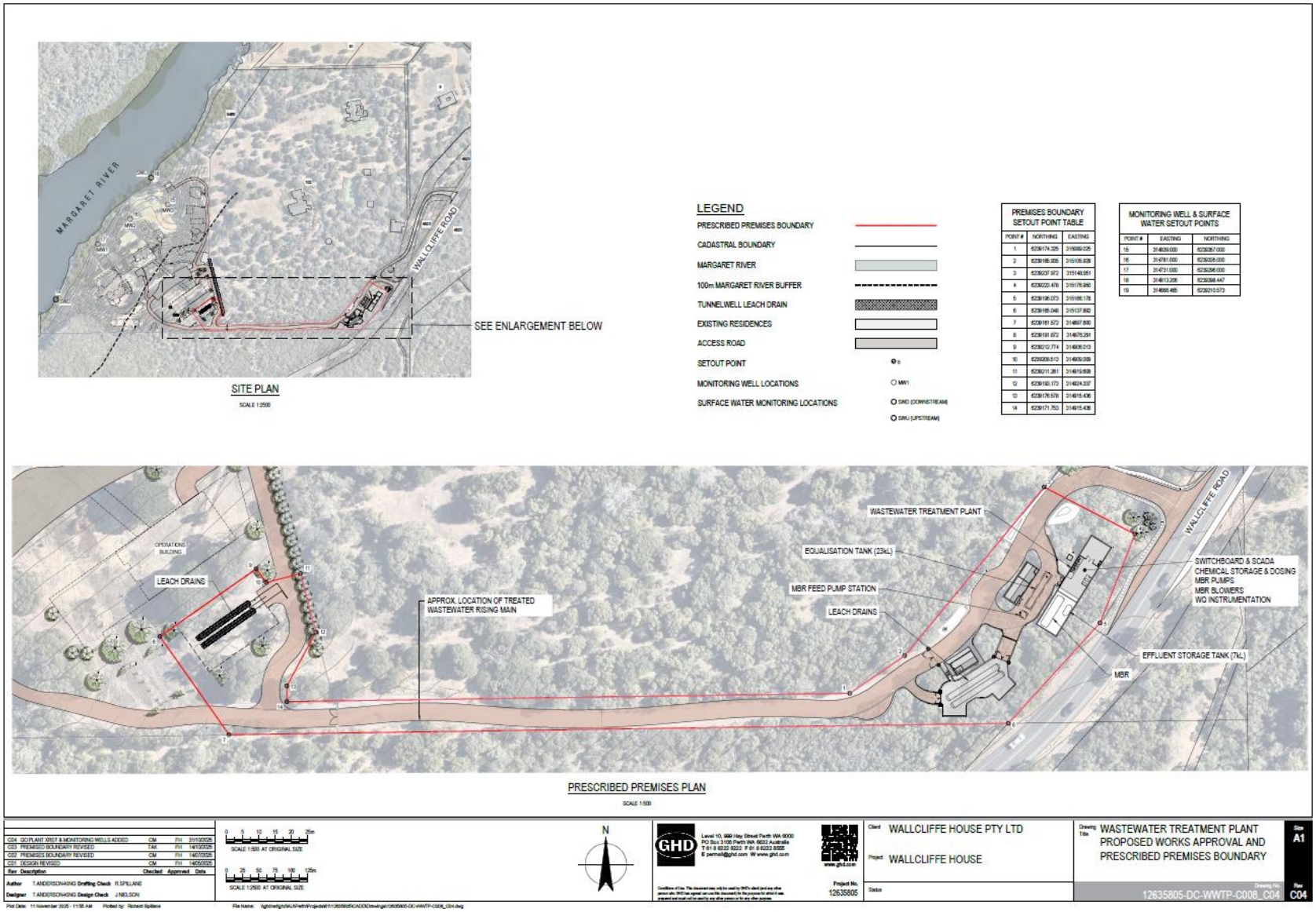
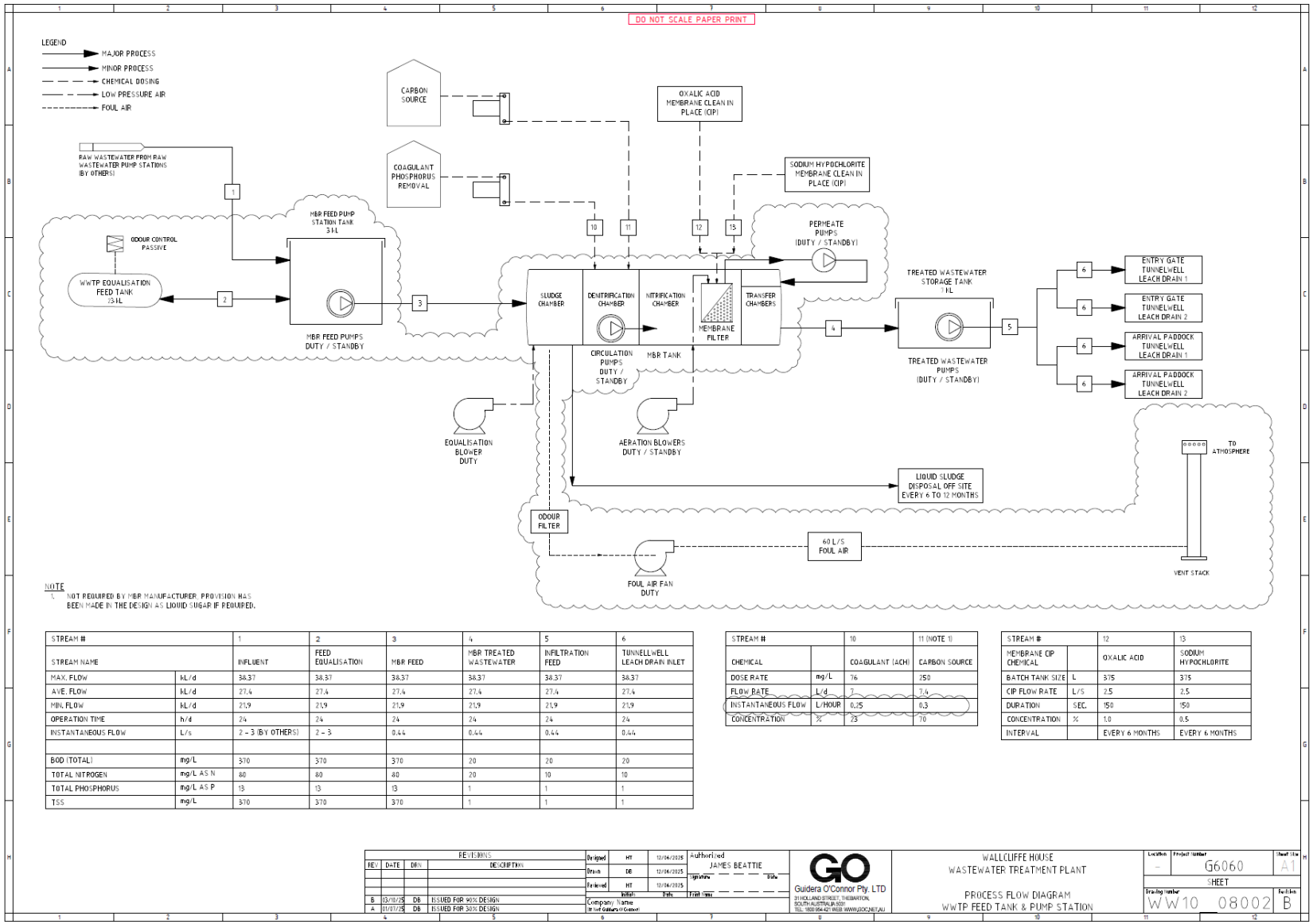


Figure 2: Location of WWTP and Leach Drains (Infiltration Structures)



STREAM #		1	2	3	4	5	6
STREAM NAME		INFLUENT	FEED EQUALISATION	MBR FEED	MBR TREATED WASTEWATER	INFILTRATION FEED	TUNNELWELL LEACH DRAIN INLET
MAX. FLOW	kL/d	38.37	38.37	38.37	38.37	38.37	38.37
AVE. FLOW	kL/d	27.4	27.4	27.4	27.4	27.4	27.4
MIN. FLOW	kL/d	21.9	21.9	21.9	21.9	21.9	21.9
OPERATION TIME	h/d	24	24	24	24	24	24
INSTANTANEOUS FLOW	L/s	2 – 3 (BY OTHERS)	2 – 3	0.44	0.44	0.44	0.44
BOD (TOTAL)	mg/L	370	370	370	20	20	20
TOTAL NITROGEN	mg/L AS N	80	80	80	20	10	10
TOTAL PHOSPHORUS	mg/L AS P	13	13	13	1	1	1
TSS	mg/L	370	370	370	1	1	1

STREAM #		10	11 (NOTE 1)
CHEMICAL		COAGULANT (ACH)	CARBON SOURCE
DOSE RATE	mg/L	76	250
FLOW RATE	L/d	7	7.4
INSTANTANEOUS FLOW	L/HOUR	0.25	0.3
CONCENTRATION	%	25	70

STREAM #		12	13
MEMBRANE CIP CHEMICAL		OXALIC ACID	SODIUM HYPOCHLORITE
BATCH TANK SIZE	L	375	375
CIP FLOW RATE	L/S	2.5	2.5
DURATION	SEC.	150	150
CONCENTRATION	%	1.0	0.5
INTERVAL		EVERY 6 MONTHS	EVERY 6 MONTHS

Figure 3: Conceptual process flow diagram

2.6.1 Targets for the final quality of treated effluent

The target limits which have been set for the final treated effluent quality are shown in Table 1.

Table 1: Final treated water quality targets

Parameter	Target
Biological Oxygen Demand (BOD)	≤20 mg/L
Total Suspended Solids (TSS)	<5 mg/L
Turbidity (NTU)	≤5
pH	6.5-6.8
Total Nitrogen (TN)	<20 mg/L
Total Phosphorus (TP)	<1 mg/L

2.6.2 Management of nutrients and environmental impacts

The Nutrient Management Plan (NMP) prepared by Emerge Associates (2025) supports the works approval application for the proposed Wallcliffe House hotel WWTP. The plan identifies a hydraulic connection between the receiving aquifer and the Margaret River, highlighting the potential for nutrient leaching to impact the adjacent riverine environment.

In developing the NMP, Emerge Associates considered aquatic organisms within the water column of the Margaret River as the most sensitive receptors to treated wastewater discharged from the hotel site. Accordingly, the NMP was designed to ensure nutrient loading rates and chemical concentrations are appropriate to protect these receptors.

To assess the potential impact, a mass balance approach was applied, accounting for the full volume of the aquifer and its connection to the river system. The assessment was based on a worst-case scenario assuming 100% occupancy over a three-month period, no attenuation of nutrients within the soil profile, and no flow within the Margaret River during the same period. The assessment concluded the following:

- Existing (static) nutrient mass in the river: 115 kg of Total Nitrogen (TN) and 19 kg of Total Phosphorus (TP)
- Nutrient mass in treated wastewater: TN 68.4 kg and TP 3.42 kg
- Resulting nutrient concentrations in the Wallcliffe Aquifer/Margaret River over a 3-month no-flow period and 100% occupancy:
  - TN: 1.275 mg/L
  - TP: 0.339 mg/L
- With anticipated occupancy rates:
  - TN: 1.22 mg/L
  - TP: 0.339 mg/L
- For comparison, without WWTP inputs over a 3-month period:
  - TN: 1.09 mg/L
  - TP: 0.33 mg/L

These results indicate that the additional annual nutrient load from the WWTP effluent is negligible.

Based on this approach, the department considers the NMP to be technically sound and effective in minimising risks to water quality in the Margaret River. This conclusion is supported by the following factors:

- The annual nitrogen and phosphorus load from the WWTP is minimal compared to nutrient inputs from upstream agricultural activities.
- The groundwater travel distance between the discharge area and the river is sufficient to allow for natural attenuation of nitrogen through nitrification and denitrification processes within the aquifer.
- Significant mixing of groundwater discharge within the river's water column is expected to further dilute nutrient concentrations, reducing the likelihood of adverse ecological impacts.

While the NMP appropriately addresses the risks to aquatic organisms, it does not consider potentially more sensitive receptors within the river's hyporheic zone. The hyporheic zone is an area of subsurface flow and ecological exchange beneath and adjacent to the riverbed.

In the vicinity of the Wallcliffe House hotel site, the hyporheic zone may be more vulnerable to nutrient inputs from treated wastewater discharge, as mixing and dilution processes are less effective than in the surface water column. The department raised concerns that rare or endangered stygofauna species inhabiting this zone could be at heightened ecological risk from nutrient loading associated with the proposed WWTP.

As a result, the applicant was required to undertake a stygofauna assessment to evaluate the presence and sensitivity of stygofauna populations in shallow groundwater near the project area. Following review of the submitted assessment, the department concluded that restricted stygofauna species are not expected to be present, and significant impacts to stygofauna from the proposal are unlikely.

2.7 Part IV of the EP Act

The Shire of Augusta-Margaret River referred a scheme amendment (Amendment 67) to the Environmental Protection Authority (EPA) under s48A of the EP Act in March 2020 to modify the special conditions relating to the tourist zone for the premises. The modification would widen the permitted tourism land uses to support the redevelopment of the premises to a hotel.

The EPA determined on 18 May 2020 that the scheme amendment was "*unlikely to have a significant effect on the environment"* and therefore, a formal assessment under Part IV was not required. The EPA concluded that the scheme amendment could be managed to meet EPA environmental objectives through existing planning controls and implementation of the following advice:

- Threatened fauna habitat be retained on site and that any potential impacts to threatened fauna may require referral under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (for impacts to black cockatoo habitat).
- That a fauna management plan is recommended to be prepared prior to development.
- The development of the site into a hotel has the potential to impact the Margaret River and groundwater quality through nutrient runoff from treated wastewater and gardens. These potential impacts may be mitigated through rehabilitation of foreshore vegetation, a suitable buffer distance to the Margaret River, and implementation of water management planning and erosion controls.
- Nutrient and irrigation management, foreshore revegetation, and potential erosion impact to the river are to be addressed through future planning stages.

- Onsite disposal of treated wastewater is to be consistent with the Government Sewerage Policy (2019 Department of Health Department of Planning, Lands and Heritage, Department of Water and Environmental Regulation).

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 commissioning which have been considered in this decision report are detailed in Table 2 below. Table 2 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 2: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Clearing, earthworks, movement of traffic, servicing, refuelling, and construction of WWTP	Air / windborne pathway	• Targeted dust suppression through application of water (via water carts) or chemical dust suppressant. • Vehicles will be restricted to established tracks and will operate at a maximum speed of 25 km/hr on unsealed roads. • A Dust Management Plan and Construction Environment Management Plan will be implemented. • Weather conditions will be monitored daily with changes to activities during strong winds. • Dust complaints will be recorded, investigated and responded to.
Noise	Clearing, earthworks, movement of traffic, servicing, refuelling, and construction of WWTP		• Machinery will be operated in accordance with manufacturer's specifications. • Noise complaints will be recorded, investigated and responded to.

Emission	Sources	Potential pathways	Proposed controls
Hydrocarbon spills	Clearing, earthworks, movement of traffic, servicing, refuelling, and construction of WWTP	Direct discharge to ground and infiltration to groundwater or overland runoff to surface water during rainfall	• Implementation of a spill response procedure and training via site induction. • Spill kits will be distributed across the site (at the location of storage infrastructure, refuelling area and temporary servicing areas). • All vehicle and equipment servicing will be undertaken within designated servicing areas. • Mobile equipment will be regularly inspected, operated and maintained in accordance with manufacturer's specifications. • Refueling will be undertaken within a low permeability bunded area or where not practicable, a drip tray or bund will be placed below the refueling point. • Accumulated stormwater and debris will be removed from the refueling bunded area on a regular basis. • Hydrocarbons will be stored within a low permeability bunded area that holds 110% of the volume being stored. • Any contaminated waste will be stored within sealed containers or bins and stored within a bunded area pending transport to a licensed disposal facility.
Silt and erosion runoff during rain events		Overland runoff	• The site will be managed in accordance with the construction and environmental management plan and silt management plan.
Windblown waste (packaging)	Construction of WWTP	Air / windborne pathway	• General construction wastes will be collected in covered skip bins and transported to a licensed landfill for disposal. • Recyclable wastes will be collected in segregated areas or covered skip bins within the premises pending transport to a recycling facility. • Waste storage areas will be included in site inspections to ensure appropriate storage of wastes and regular removal.

Emission	Sources	Potential pathways	Proposed controls
Commissioning and initial operations			
Noise	Commissioning of WWTP	Air / windborne pathway	• The facility is entirely enclosed within a shed to baffle the noise. • The facility has been designed to reduce noise impacts to guests which would also result in reduced noise impacts to other nearby human receptors.
Odour			• WWTP has an activated carbon filter for odour control. • Plant will be maintained, and sludge will be removed off-site. • The facility has been designed not to impact hotel guests with odour emissions, which should also result in reduced odour impacts to other nearby human receptors.
Discharge of treated wastewater		Direct discharge to land, subsurface seepage to groundwater, and subsequent baseflow to surface waters	• Treated wastewater will be of a very high quality. • The WWTP's operating capacity is based on worst case scenario. However, if daily flows exceed the WWTP capacity then flows to the WWTP can be cut-off and re-routed to the emergency storage tanks at the pump station. • There will be four infiltration structures arranged in two pairs. The first pair will provide a combined storage capacity of 36 kL, while the second pair will offer 38 kL, allowing for additional contingency. • Infiltration structures are sized based on infiltration rates of 2 m/day (sands and limestone on the site have a measured permeability of 5-20 m/day) and depth to groundwater of over 2.4m. Mounding of groundwater levels is expected to be very minor. • Nutrients will be reduced to levels which are not anticipated to have significant impacts to ground or surface waters as the MBR system is designed to reduce Nitrogen and Phosphorus levels to less than 20 mg/L and less than 1 mg/L respectively. • Infiltration structures can be diverted between and rested for contingency, maintenance, and opportunity for aerobic microbiological breakdown of organic matter under the infiltration surface.

Emission	Sources	Potential pathways	Proposed controls
Discharge of inadequately treated wastewater	Commissioning of WWTP	Direct discharge to land, subsurface seepage to groundwater, and subsequent baseflow to surface waters	• During commissioning, the treated wastewater tank will be isolated from the infiltration structures to sample water quality before discharge. If the sampling indicates non-compliance, then a registered liquid waste contractor will remove the treated wastewater until it meets the necessary standards. • The WWTP will be fully linked to a SCADA system to permit remote monitoring and operational capabilities. • Alarm signals will be raised when faults occur
Chemical spills during delivery and general use	Reagent storage, delivery and handling	Direct discharge to land and infiltration to groundwater or overland runoff to surface water during rainfall	• All water treatment reagents will be stored within tanks which meet the relevant Australian Standard for the reagent being stored, and concrete bunded areas which meet the requirements of AS 3780-2008 for Class 8 substances and AS 1940:2017 for all other reagents and diesel. • A spill response procedure will be implemented. • Spill kits will be provided within the reagent storage area. • Any hydrocarbon spill will be controlled, contained and removed. • Contaminated soils and spill kit materials will be collected and removed offsite to an approved waste disposal facility. • Mobile equipment will be regularly inspected, operated and maintained in accordance with manufacturer's specifications. • Hydrocarbons will be stored within a low permeability bunded area that holds 110% of the volume being stored.
Pre-treated wastewater spills	Spillage of pre-treated wastewater due to failure of pipework or infrastructure		• Buffering storage will be incorporated into the system to provide contingency storage in the event of maintenance, power outage, or fault with individual system components. • 60 kL of emergency storage will be provided upstream of the WWTP in addition to 23 kL of inlet storage at the WWTP. • The main pumping station will be prevented from pumping to the WWTP Equalisation/Feed Tank if a high level in this tank is reached or a high priority alarm is activated from the WWTP.

Emission	Sources	Potential pathways	Proposed controls
Sludge spills	Sludge removal	Direct discharge to ground and infiltration to groundwater or overland runoff to surface water during rainfall	• Sludge will be extracted from tanks by vacuum removal and delivered offsite to a suitable and appropriately licensed landfill. • No sludge treatment will take place on site.
Odour		Air / windborne pathway	

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 3 and Figure 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 3: Sensitive human and environmental receptors

Human receptors	Distance from prescribed activity
Rural Residential premises	76 m north north-east of premises boundary 144 m north-west of north-eastern point of premises boundary 248 m north of north-eastern point of premises boundary 184 m south-east of premises boundary
Town of Prevelly residential area	680 m south-west of premises boundary
Environmental receptors	**Distance from prescribed activity**
Fauna, including threatened fauna	There have been multiple sitings of threatened fauna within the premises boundary and the surrounding area.
Margaret River	Approximately 200 m north-west of the premises boundary
Ngari Capes Marine Park (Indian Ocean)	Approximately 1 km west of the proposed WWTP

Underlying groundwater	Peak groundwater levels range from 1.72 mAHD to 3.78 mAHD throughout the site, increasing towards the east (away from Margaret River). Portions of the site next to the river have >2 m separation to groundwater. Portions of the site greater than 100 m from the river, have >20 m clearance above groundwater Soils are sandy with observed infiltration capacity of >10 m/day
Threatened Ecological Communities	Approximately 1.2 km north-west of the premises
Cultural and Heritage receptors	**Distance from prescribed activity**
Aboriginal Heritage Sites (Cliffs at Wallcliffe and Margaret River) Registered Heritage Place (Wallcliffe House and Landscape)	Within the premises boundary

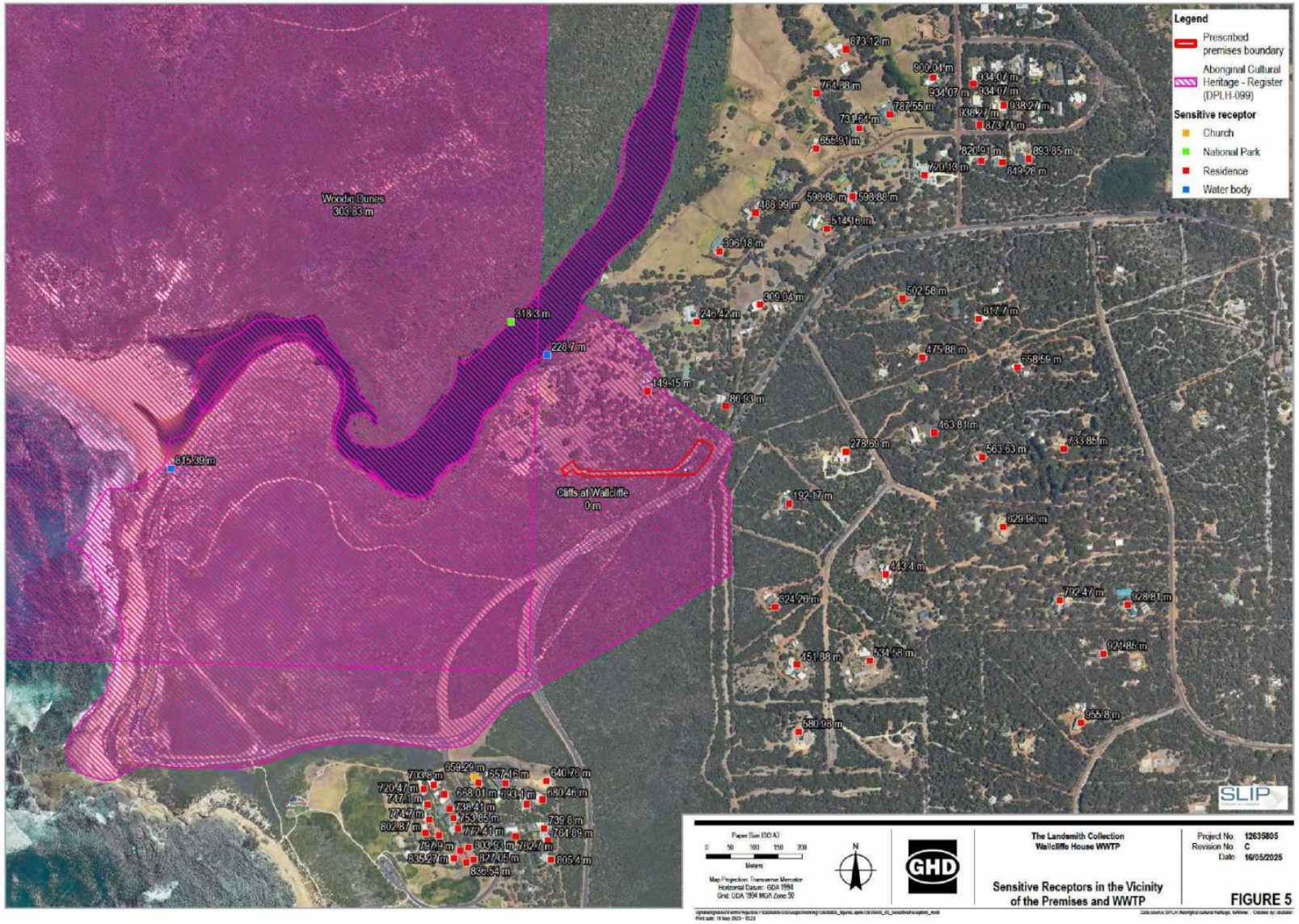


Figure 4: Distance to sensitive receptors

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 4.

Works approval W3016/2025/1 that accompanies this decision report authorises construction, commissioning and initial operations of the WWTP. The conditions in the issued works approval, as outlined in Table 4 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 4: 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/Delegated Officer comments
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Clearing of native vegetation, earthworks, movement of traffic construction of WWTP Construction of WWTP	Dust	**Pathway:** Air/windborne pathway **Impact:** Health and amenity Ecosystem disturbance	Residential premises 76 m north north-east, 144 m north-west,184 m south-east, and 370 m north-east of premises boundary Fauna	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Conditions 1 and 4	Given the short duration of works, their location and the proposed scope, the Delegated Officer considers the proposed controls adequate to manage the risks of emissions from dust during construction. Emissions can be further regulated under the general provisions of the EP Act and the *Environmental Protection (Unauthorised Discharges) Regulations 2004*
	Noise			Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	Condition 1	The nature and location of the proposed construction works is considered to be effective in mitigating the impact of noise emissions during construction. The Delegated Officer considers noise emissions can be effectively regulated by the *Environmental Protection (Noise) Regulations 1997.*
	Hydrocarbon spills	**Pathway:** Direct discharge to ground and infiltration to groundwater or overland runoff to surface water during rainfall **Impact:** Degradation to the beneficial uses of groundwater Ecosystem disturbance	Beneficial uses of groundwater Margaret River	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 6	Given the short duration of works, their location and the proposed scope, the Delegated Officer considers the proposed controls adequate to manage the risks of emissions from spills, silt and erosion during construction. Emissions can be further regulated under the general provisions of the EP Act and the *Environmental Protection (Unauthorised Discharges) Regulations 2004*
	Silt and erosion runoff during rain events	**Pathway:** Overland runoff to surface water **Impact:** Ecosystem disturbance	Residential premises 76 m north north-east, 144 m north-west,184 m south-east, and 370 m north-east of premises boundary Margaret River Indian Ocean	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1	
Construction of WWTP	Windblown waste (packaging)	**Pathway:** Air/windborne pathway **Impact:** Health and amenity Ecosystem disturbance	Residential premises 76 m north north-east, 144 m north-west,184 m south-east, and 370 m north-east of premises boundary Fauna	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	Condition 5	N/A
Commissioning and operational phase								
Commissioning and operation of WWTP	Noise	**Pathway:** Air/windborne pathway **Impact:** Health and amenity	Residential premises 76 m north north-east, 144 m north-west,184 m south-east, and 370 m north-east of premises boundary	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Conditions 1, 7, 8, 10, 15, 16, and 19	Noise emissions can be managed under the *Environmental Protection (Noise Regulations) 1997*

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls/Delegated Officer comments
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Commissioning and operation of WWTP	Odour	**Pathway:** Air/windborne pathway **Impact:** Health and amenity	Residential premises 76 m north north-east, 144 m north-west,184 m south-east, and 370 m north-east of premises boundary	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	Conditions 1,7, 8, 10, 15, 16 and 19	Due to the below-ground placement of the WWTP tanks, the enclosure of supporting infrastructure and equipment within a shed, the use of underground infiltration structures, and the incorporation of an odour control system, the Delegated Officer considers the risk of odour emissions from the facility to be low.
	Discharge of treated wastewater	**Pathway:** Direct discharge to land, subsurface seepage to groundwater, and subsequent baseflow to surface waters **Impact:** **C**ontamination of soil, degradation of groundwater quality and impacts to downgradient receptors.	Beneficial uses of groundwater Indian Ocean Margaret River	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	N	Conditions 7, 8, 10, 11, 12, 13, 14, 15, and 16 **<u>Conditions 1, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28</u>**	The Margaret River and its estuary are recognised for their high environmental and social values, supporting recreational activities such as swimming, canoeing, and ecotourism. These values are particularly vulnerable during the natural closure of the river mouth bar (December to May), when reduced water exchange increases the likelihood of algal blooms, highlighting the importance of effective wastewater management. To protect these values, the Delegated Officer considers it necessary to require installation of an additional groundwater monitoring well to establish background water quality near Wallcliffe House. This will enable differentiation between natural groundwater conditions and potential contamination from wastewater discharges. Due to the superficial aquifer becoming unsaturated at higher elevations, an upslope location is not feasible. Therefore, the well will be positioned cross-gradient near the north-eastern property boundary and will complement existing downgradient wells (M1, M2, and M3). The works approval requires ongoing monitoring of treated wastewater quality, as well as groundwater and surface water, over a two-year period as the applicant has indicated that a registration will be applied for following the works approval for the continued operation of the WWTP. Based on evidence from other wastewater plumes, the monitoring program will include major ions, alongside nitrogen compounds, and total phosphorus, as changes in ion ratios often indicate wastewater influence. These measures will ensure that the WWTP maintains appropriate water quality and does not adversely impact groundwater or the Margaret River.
	Discharge of inadequately treated wastewater			Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**			
Reagent storage, delivery and handling	Chemical spills during delivery or from tanks or pipelines delivering reagents to the plant.	**Pathway:** Direct discharge to ground and infiltration to groundwater or overland runoff to surface water during rainfall **Impact:** **C**ontamination of soil, degradation of groundwater quality and impacts to downgradient receptors.		Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	Conditions 1, 7, 8, 10, 11, 12, 13, 14, 15, 16 and 19	N/A

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls/Delegated Officer comments
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Spillage of pre-treated wastewater due to failure of pipework or infrastructure	Pre-treated wastewater spills	**Pathway:** Direct discharge to ground and infiltration to groundwater or overland runoff to surface water during rainfall **Impact: C**ontamination of soil, degradation of groundwater quality and impacts to downgradient receptors.		Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	N	Conditions 1, 7, 11, 12, 13, 14, 15, and 16 **Condition 8, 10, and 19**	MBR treatment systems can generate high levels of suspended solids if not properly managed or maintained. This increases the risk of clogging in subsurface infiltration structures, potentially leading to system failures, unless wastewater is treated at an appropriate rate with a suitable flocculation agent (US EPA, 2007). Therefore, ongoing management and maintenance of these systems is a critical control point to ensure efficient operation and prevent environmental harm. Considering this, the Delegated Officer deems it appropriate that the MBR system is only operated by suitable personnel with appropriate training in MBR system operation, and that the system be subject to regular ongoing maintenance to ensure continued efficiency. To demonstrate compliance with these requirements, the submission of an Operation and Maintenance agreement has been required. A condition has also been included within the works approval requiring the incorporation of appropriate measures for managing suspended solids in the MBR system.
Sludge removal	Solid waste/sludge spills	**Pathway:** Direct discharge to ground and infiltration to groundwater or overland runoff to surface water during rainfall **Impact: C**ontamination of soil, degradation of groundwater quality and impacts to downgradient receptors.	Beneficial uses of groundwater Indian Ocean Margaret River	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Conditions 8, 10 and 19	Considering the location of the WWTP and that sludge will be removed by a licensed liquid waste contractor via vacuum truck, the Delegated Officer is satisfied that the proposed controls are sufficient to mitigate the risk of sludge spills. This approach substantially reduces the likelihood of uncontrolled discharge to ground or water, as removal is undertaken by trained personnel using sealed equipment designed for liquid waste containment.
Sludge removal	Odour	**Pathway:** Air/windborne pathway **Impact:** Health and amenity	Residential premises 76 m north north-east, 144 m north-west,184 m south-east, and 370 m north-east of premises boundary	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Conditions 8, 10 and 19	Based on the proposed frequency and method of sludge removal, the Delegated Officer considers the proposed controls adequate to manage the risk of odour emissions during sludge removal.

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

Table 5: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 25 July 2025	None received	N/A
Local Government Authority advised of proposal on 25 July 2025	The Shire of Augusta Margaret River replied on 26 August 2025 advising that an effluent application for the WWTP had been received by the Shire and referred to the Department of Health (DOH) for approval in December 2024. In June 2025, the DOH advised they had been meeting with applicants and would notify the Shire if there were any changes to the proposal. The Shire recommended referring the works approval application to the DOH for comment. The Shire also noted that the works were not to be within 100 m of the Margaret River which the design is compliant with.	The delegated officer referred the works approval application to the DOH on 25 July 2025 and will not make a final determination on the application until evidence has been provided that the DOH has approved the proposal under the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.
Department of Health (DoH) advised of proposal on 25 July 2025	The DoH replied on 10 September 2025 advising that they had received an Application to Construct/Install an Apparatus for the Treatment of Sewage from the applicant in accordance with the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974. The DoH advised that they were currently assessing the application and would provide the department with an update on the decision to grant or refuse the application once the assessment had been completed. On 1 October 2025, the DoH advised that the system proposed by the applicant was suitable. However, the application remains pending until the required engineering certifications are provided to support final approval. The DoH approved the wastewater treatment plant on 9 December 2025. DWER noted that the approval specified leach drain lengths different to those specified by the applicant. On 17 December 2025, DoH confirmed they were satisfied with the final design and would amend the approval to reflect the correct leach drain lengths.	The delegated officer notes that an approval under the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974 has been granted by the Department of Health for the WWTP.

Consultation method	Comments received	Department response
Department of Planning, Lands and Heritage (DPLH) advised of the proposal on 25 July 2025	DPLH responded on 7 August 2025 advising that a review of the Aboriginal Heritage Register and DPLH database confirms that the amended prescribed premises boundary intersects Aboriginal site *Cliffs at Wallcliffe* (ID 5458). No other Aboriginal sites are recorded within the boundary. On 8 March 2022, the Minister for Aboriginal Affairs granted conditional consent for the Wallcliffe House Redevelopment under section 18(3) of the *Aboriginal Heritage Act 1972*. Therefore, no further approvals under the Act are required for the proposed works. The works are within the South-West Boojarah #2 Indigenous Land Use Agreement Group area represented by the Karri Karrak Aboriginal Corporation (KKAC). DPLH encourages ongoing communication with KKAC to allow for best practice management of the Aboriginal heritage extant in the vicinity of the project.	Noted. The KKAC were consulted regarding the works approval application following this advice.
The South-West Aboriginal Land and Sea Council was advised of the proposal on 25 July 2025	None received	N/A
The Karri Karrak Aboriginal Corporation (KKAC) was advised of the proposal on 8 August 2025	None received	N/A
Applicant was provided with draft documents on 6 October 2025	The applicant provided comments on 31 October 2025. Refer to Appendix 1	Refer to Appendix 1

Consultation method	Comments received	Department response
Applicant was provided with a second draft on 2 December 2025	On 3 December 2025, the applicant advised that the proposed location for MW4 was too close to a steep embankment and would require clearing native vegetation. They recommended relocating MW4 slightly upslope to avoid clearing riparian vegetation. The applicant also requested removal of the reference to ASTM D5092/D5092M-16 for groundwater well construction, proposing instead the wording “to meet industry regulations, standards, and practices.”	The well construction condition referring to ASTM D5092/D5092M-16 is standard for DWER works Approvals and Licences where groundwater monitoring wells are needed. The condition aligns with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM), which references ASTM D5092/D5092M-16 for well design. NEPM provides the national framework for contaminated site assessment, and adherence to these standards ensures reliable hydrogeological data and representative samples. Consistency with NEPM principles also allows monitoring for prescribed premises to integrate with any future contaminated site investigations, avoiding duplication and ensuring methodological consistency. For these reasons, the original wording has been retained. The delegated officer has resolved to relocate MW04 to the location proposed by the applicant.

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.

Given the high environmental, social, and recreational values associated with the Margaret River and estuary, and the significant level of community interest in this catchment, it is recommended that the works approval holder voluntarily apply for a licence under prescribed premises Category 54 rather than proceeding with a registration under Category 85. While either a licence or registration is required to authorise emissions from the ongoing operation of the premises, a licence provides a more robust regulatory framework and greater protection in the event of future community complaints or concerns.

6. References

1. Department of Environment Regulation (DER) 2015, Guideline: Identification and investigation of acid sulfate soil and acidic landscapes, Perth, Western Australia.
2. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. Douglas Partners 2020, *Geophysical Investigation for Subsurface Geological Mapping - Wallcliffe House, 752 Wallcliffe Road, Margaret River Western Australia*, 70585, 0.
5. Douglas Partners 2021, *On-site Sewage Disposal Assessment*, 96717.01.
6. Douglas Partners 2022, *Geotechnical Investigation - Proposed Wallcliffe House Redevelopment, 752 Wallcliffe Road Margaret River WA*, R.001, 0.
7. Douglas Partners 2023, *Potential Treated Water Infiltration Areas - 752 Wallcliffe Road, Margaret River, WA,* R.001.Rev0.
8. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
9. Emerge Associates 2022, *Hydrogeological Assessment*, EP18-128(09)-026 AJI,1.
10. Emerge Associates 2023a, *Environmental Assessment Report Lot 101 (no.752) Wallcliffe Road, Margaret* River, Perth, Western Australia.
11. Emerge Associates 2023b, *Water Management Plan Lot 101 (no.752) Wallcliffe Road, Margaret River*, EP18-128(10).
12. Emerge Associates 2025, *Nutrient Management Plan Lot 101 (no.752) Wallcliffe Road, Margaret River*, EP18-128(19).
13. Unites States Environmental Protection Agency (US EPA) 2007, *Wastewater Management Fact Sheet Membrane Bioreactors*, EPA 932-F-07-018, US EPA, Washington, DC. Available at https://www.epa.gov [Accessed 13 Aug.2025]

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

Condition/Section	Summary of applicant's comment	Department's response
Works Approval		
Condition 3, Table 1	The design requirements for the WWTP have been revised and the design now comprises of one MBR tank instead of two. The stated fine screen volume of 200 kL/day has been revised to 40 kL/day to meet hydraulic capacity. A 7 kL Treated Water Storage tank is to be included. The treated wastewater is stored in this tank before being transferred to the duty TunnelWell leach drain.	The Delegated Officer has determined that the design changes do not alter the overall risk profile of the WWTP and has updated the works approval to reflect the revised design requirements.
Condition 3, Table 1 Condition 12, Table 4	TSS emission standards should be increased from <1 mg/L to <5 mg/L as this is inline with the LOR for testing at NATA.	The Delegated Officer has resolved to amend the TSS emission limit in the works approval from <1 mg/L to <5 mg/L to align with practical laboratory reporting limits and ensure enforceability.
Condition 3, Table 1 Condition 12, Table 4 Condition 21, Table 8	Request the removal of *E.coli* from emission standards. *E.coli* was not included in the original specification and the design of the WWTP has no provision of disinfection. All treated wastewater discharges are below ground.	While subsurface discharge of treated wastewater reduces exposure risk, the Delegated Officer considers pathogen limits (*E.coli*), essential to protect public health and environmental values given the WWTP's proximity to the Margaret River. The *E.coli* limit of <1,000 cfu/100 mL aligns with Table 8 of the Department of Health's *Guidelines for the non-potable uses of recycled water in Western Australia* for a Low Exposure Risk level.
Condition 3, Table 1	Request removal of the requirement for the WWTP to incorporate audible and visual pump fault alarms. The WWTP will monitor equipment failures and overflows via SCADA system with critical alarms being provided to operations staff. Therefore, there is no need for provision of audible and visual alarms.	The Delegated Officer has resolved to amend the condition to: *"an alarm system must be installed to notify the operator in the event of…"* This allows the operator to determine the most appropriate alarm system and provides flexibility while ensuring that an effective system is in place to notify the operator of critical events.

Condition/Section	Summary of applicant's comment	Department's response
Condition 3, Table 1	Request removal of requirement for a minimum 60 kL of emergency storage to be provided for effluent in the event of a WWTP system failure. There is emergency storage upstream of the WWTP providing 60kL storage in addition to 23 KL of inlet storage at the WWTP. There is no need for provision of another 60 kL treated wastewater storage.	Condition 3 has been amended to clarify that the 60 kL of emergency storage is the storage provided upstream of the WWTP and not for treated wastewater.
Condition 3, Table 1	Amend requirements for infiltration structures *from "4 x duty/standby below-ground modular TunnelWell leach drains, each 20 m long, providing a total of 80 kL storage capacity"* to *"4 x duty/standby below-ground modular TunnelWell leach drains, each **UP TO 19 m** long, providing a total of 80 kL storage capacity"*	The Delegated Officer has determined the proposed changes to leach drain lengths (two 18 m and two 19 m leach drains) are acceptable. However, the phrase "up to 19 m" is considered inappropriate as it would allow leach drains to be constructed at any length up to 19 m creating ambiguity. To provide clarity and ensure compliance, the wording has been amended as follows: *i. Two duty/standby below-ground modular TunnelWell leach drains located at the premises entry, each 18 m long, providing 18 kL storage capacity each.* ii. *An additional two duty/standby below-ground modular TunnelWell leach drains located in the arrivals paddock, each 19 m long, providing 19 kL storage capacity each.*
Condition 3, Table 1	Request amendment to the following requirements: *"The area where infiltration structures are to be placed must be excavated to a depth of 2 m below the proposed invert level of the structures."* *"The base of the excavation and excavation batters must be inspected by a geotechnical engineer to confirm that all limestone has been removed, and the infiltration structures will perform as designed.* The infiltration structures will be excavated one meter below the base and deep ripped a further one metre. Any solidified limestone or capstone shall be excavated one metre below the invert level of the TunnelWell arches and removed. The base of the excavation and excavation batters must be inspected by a geotechnical engineer to confirm that all limestone has been removed. Then the excavation shall be cross-ripped for a further one metre deep.	The Delegated Officer considers the proposed changes appropriate as they are based on recommendations by a qualified engineer and achieve the same intended outcome of ensuring limestone is adequately removed to maintain the performance of the infiltration structures. The works will continue to be inspected by a geotechnical engineer, providing assurance that design requirements and functional outcomes are met. The condition wording has been amended as requested.

Condition/Section	Summary of applicant's comment	Department's response
Condition 3, Table 1	Request removal of requirement for the *"Delivery area for unloading of chemicals and removal of spent IBCs must consist of a bunded hardstand with a permeability of 1x10^{-9} or less."* There is no bunded area included for chemical delivery. Delivery will be via operations staff with quantities of 25 L or less delivered straight to the chemical storage tank bunded area.	This requirement has been removed as requested due to changes in the original delivery method of chemicals proposed.
Condition 4	The works approval holder will manage dust generation but due to the premises size, a water truck may not be possible as it may not fit on site alongside construction activities. Flexible methods will be adopted to manage dust generation. Request rewording of condition to: *"the works approval holder must manage dust generation from construction activities at the premises by wetting down unsealed roads and exposed areas with a water truck or equivalent dust control measure."*	The Delegated Officer has amended the wording to the condition to provide greater flexibility in managing dust emissions by allowing the use of "an equivalent dust suppression technique" to a water truck.
Condition 7	There is a typo in (a) – "their" should be "the". This condition is onerous and not workable where a report must be generated within 30 days for each item of infrastructure or equipment given the project schedule. The Compliance Report should be prepared for the overall installation and not the separate infrastructure components. It is also recommended that the term "equipment" is removed, as it is not defined in the table. It is requested that the condition wording be changed to *"The works approval holder must within 30 calendar days of practical completion:* *(a) undertake an audit of their compliance with the requirements of Condition 3; and* *(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance."*	The use of the word "their" is standard in this condition and is not a typo. The Delegated Officer acknowledges the applicant's concerns and has amended the condition to require submission of the Environmental Compliance Report upon completion of construction and installation of all components of the WWTP, rather than for each individual item of infrastructure.

Condition/Section	Summary of applicant's comment	Department's response
Condition 8	The Environmental Compliance Report should be prepared for the overall commissioned installation and not the separate infrastructure components. The operation and maintenance agreement is unlikely to be finalised within 30 days of practical completion. It is recommended that the condition be amended to: *"an operation and maintenance agreement between the works approval holder and a qualified technician, outlining the arrangements for ongoing maintenance of the WWTP with the final environmental compliance report"*	The condition has been amended to remove the requirement to submit the operation and maintenance agreement with the Environmental Compliance Report. This has been required to be submitted with the final compliance report as requested.
Condition 10, Table 2 Condition 19, Table 6	The infiltration structures will be underground and as described in various sections, the soil profile is pervious and not vulnerable to waterlogging. This type of system would not be developed in this environment (i.e. boutique hotel) if there was a risk of treated wastewater ponding on site. Therefore, commissioning requirements c) and (d) are not relevant to this works approval and it is requested that they are removed from the table.	While the Delegated Officer acknowledges the design intent and the site conditions described, commissioning and operational requirements (c) and (d) remain applicable. The prevention of treated wastewater ponding and infiltration on waterlogged land is a fundamental requirement under the works approval framework to avoid potential impacts on soil, groundwater, and amenity. These conditions provide assurance that the system performs as intended under operational conditions and that residual risks, such as system malfunction, hydraulic overloading, or atypical weather events, are appropriately managed. If ponding is genuinely not an issue for this system, compliance with these requirements should be achievable and will serve as confirmation of the design assumptions. For these reasons, requirements (c) and (d) will remain in the tables. However, the Delegated Officer has resolved to amend condition (d) to remove reference to "following rainfall", as this may not be a relevant factor given the fast-draining nature of the soil.
Condition 10, Table 2	Note type 3 (g) is 3(b)	This has been noted and corrected by the Delegated Officer.
Condition 11	Reword to *"Leach Drains as installed within prescribed premises boundary (Figure 1)"* Figure 1 has been updated	Figure 1 has been updated. The original condition wording still applies.
Condition 14	There is a typo. The condition should refer to Table 5 and not Table 4.	This has been noted and corrected by the Delegated Officer.

Condition/Section	Summary of applicant's comment	Department's response
Condition 17	This condition is only workable if it is for the overall commissioned installation. Please revise to "Practical Completion" rather than for each "item of infrastructure".	The Delegated Officer has resolved to change the wording of the condition from "for each item" to "for all items".
Condition 18	The Proponent advises that given the relatively low volumes of treated wastewater discharged below ground, the high level of treatment, and the management of the system by the Hotel Engineer that registration of the facility will be sought and not a licence under the EP Act 1986.	Noted. The Delegated Officer acknowledges the Proponent's intention to seek registration under the Environmental Protection Act 1986, based on the relatively low volumes of treated wastewater, high level of treatment, and proposed management by the Hotel Engineer. Reference to grant of a licence has been removed to avoid confusion.
Condition 19	Typo identified – (g) should be (b).	This has been noted and corrected by the Delegated Officer.
Condition 21, Table 8	The limits for BOD and TSS in Table 8 should match limits in Tables 1 and 4, please change to; BOD =20 mg/L TSS <5 mg/L Turbidity =5 NTU pH 6.5-8.5 Total N <20 mg/L Total P <1 mg/L	The limit for TSS has been updated as requested to align with the changes made to Condition 3, Table 1 and Condition 12, Table 4. The limit to BOD has been amended to correct an error.
Condition 24	Not all wells will remain post development of the installation. A revised figure with monitoring locations has been provided. The Proposed monitoring wells are MW01, MW02 and MW03.	Table 10 and the corresponding figure have been updated accordingly. Table 10 has also been amended to include the monitoring of major ions as changes in the relative proportions of major ions in groundwater (particularly increases in relative proportions of bicarbonate and potassium ions) are often indicative of groundwater contamination by wastewater. In addition, the works approval requires the installation of a fourth monitoring well cross gradient from Wallcliffe House, near the north-eastern boundary of the premises as a background monitoring well.

Condition/Section	Summary of applicant's comment	Department's response
Condition 24	Please annotate with Note 1, Dissolved Oxygen, for In-Field non-NATA accredited analysis. pH, for In-Field non-NATA accredited analysis. Electrical Conductivity, for In-Field non-NATA accredited analysis.	Annotations have been made as requested.
Condition 24 Definitions Term- AS 5667.4	Typo identified. AS/NZS 5667.4 is for lakes, the relevant standard is AS/NZS 5667.6 (rivers and streams)	This has been noted and corrected by the Delegated Officer.
Decision Report		
Section 2.2.1 Subsection 3	Revise the Design requirements for the WWTP where it is stated that the MBR comprises two MBR tanks. The design now comprises of one MBR tank. Revise Phosphorous is removed through chemical dosing with a suitable coagulant. Revise the stated fine screen volume of 200 kL/day to meet a hydraulic capacity of 40kL/day. Include a 7 kL Treated Wastewater Storage tank, downstream of the MBR the treated wastewater is stored within a 7kL tank before being transferred to the duty TunnelWell leach drain.	These amendments have been made as requested. The Delegated Officer considers the proposed wording changes appropriate to reflect changes to the system design which have been certified by suitably qualified engineers and supported by the Department of Health. The changes do not affect the risk assessment.
Section 2.2.1 Subsection 4	Request that text be corrected as the number of TunnelWell leach drains (infiltration structures) has increased from two to four. The flow is directed to one of four leach drains in sequence.	The Decision Report refers to two TunnelWell Leach Drain areas and not to two individual leach drains. For clarity, the Delegated Officer has resolved to amend this subsection to state that flow is directed to one of four leach drains in sequence as requested.

Condition/Section	Summary of applicant's comment	Department's response
Section 2.2.1 Subsection 5	Request wording to be changed from: *"The system includes:* *• Four 20 m leach drains: two at the premises entry and two in the arrivals paddock. Each leach drain will have 20 kL storage volume and 30.4 m2 infiltration area.* *• Inlets designed to prevent scouring of the compacted sand foundation.* *• Each drain is designed to handle peak flow and includes pressure/high-level monitoring to redirect flow as needed."* to: *"Four leach drains: two at the premises entry (18m long) and two in the arrivals paddock (19m long). Each leach drain will have 18 to 19 kL storage volume and 27 or 29 m2 infiltration area respectively."*	The wording to the first dot point has been amended as requested. The Delegated Officer considers the proposed amendment appropriate as it reflects updated design specifications certified by qualified engineers. The revised leach drain lengths and associated storage volumes and infiltration areas achieve the same functional outcome as the original design. The Department has consulted the Department of Health, which is the regulatory authority responsible for approving leach drains for use in Western Australia under the *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974*, and they have confirmed that they have no concerns regarding the reduced lengths.
Section 2.2.1, Subsection 6	Request wording to be changed from: *"Sludge and screenings are stored in an internal chamber with sufficient capacity to avoid pump-out more than once every six months. Sludge removal is via vacuum truck."* to: *"The chamber has been sized to provide sufficient storage capacity at average flow conditions such that desludging operations using a vacuum truck are required no more frequently than once every six months."*	This subsection has been amended as requested. The Delegated Officer considers the proposed amendment achieves the same intended outcome of ensuring sufficient storage capacity to limit desludging frequency to no more than once every six months.
Section 2.2.1, Subsection 7	CIP cleaning chemicals have change from sulphuric acid to oxalic acid and/or Sodium Hypochlorite Carbon feed source has changed to sucrose. There is no bunded delivery area, load in apron or buried drainage pipework, chemical quantities are <25L for deliveries and will be installed straight to storage bund.	This subsection has been amended as requested. The Delegated Officer considers the proposed changes appropriate as they reflect updated operational requirements and achieve the same intended outcome of safe chemical handling and storage. The change in CIP cleaning chemicals from sulphuric acid to oxalic acid and/or sodium hypochlorite, and the change in carbon feed source to sucrose, do not increase environmental or health risks. Additionally, chemical delivery quantities are less than 25 L, and all chemicals will be installed directly into a storage bund, eliminating the need for a bunded delivery area, loading apron, or buried drainage pipework.

Condition/Section	Summary of applicant's comment	Department's response
Section 2.2.1, Subsection 8	Remove the word "conductivity" from *"Comprises a PVC sample loop feed and return lines, analyser panel, continuous online turbidity, conductivity and pH analysers, and collection of analyser and sample wastes."* Conductivity is not included or required in the design.	This subsection has been amended as requested. The Delegated Officer considers the proposed wording change appropriate to reflect changes to the system design. The changes do not affect the risk assessment.
Section 2.2.1	The conceptual process flow diagram of the WWTP has been updated.	Process flow diagram has been replaced with the update version.
Section 2.4.2	Request that reference to Emerge be changed to "as outlined by Douglas Partners".	Reference has been corrected.
Section 2.4.2	For the first bullet point, change 2 metres to 1 metre. Deep rip a further one meter below excavated base level.	This section has been amended to the following: *"The applicant has proposed ground improvement measures to ensure the performance of the infiltration structures is not compromised by underlying limestone. These include:* • *Over-excavation of the construction area to a depth of 1 metre below the proposed invert level of the infiltration structures, followed by deep ripping an additional metre beneath the excavated base*."
Section 2.4.2	Delete this sentence that says 16,000 m² of land area and change to: *"Infiltration area is provided by four leach drains: two at the premises entry (18m long) and two in the arrivals paddock (19m long). Each leach drain will have 18 to 19 kL storage volume and 27 or 29 m2 infiltration area respectively."*	The sentence referring to 16,000 m² has been deleted as requested. However, it has not been replaced with the requested information as this is already detailed in Section 2.2.1.
Section 2.5, Subsection C	Amend first sentence to say *"A deep surficial aquifer known as the Wallcliffe Aquifer was identified under the site."*	This sentence has been corrected.

Condition/Section	Summary of applicant's comment	Department's response
Section 2.6	Request amendment to length of leach drains (previously 20 m each) as follows: *"The applicant proposes to discharge up to 38.4 kL per day of treated wastewater from the WWTP to a series of TunnelWell leach drain infiltration structures. The primary infiltration system will consist of two pairs of TunnelWell leach drains, one pair 18m long and the other 19m long. With one pair located near the Entrance of the premises, approximately 375 m from the Margaret River and 240 m from the Wallcliffe Surficial Aquifer and a second pair of TunnelWells at the Arrivals Paddock.* *Leach drains will be positioned approximately 200 m from the Margaret River and 70 m from the Wallcliffe Surficial Aquifer in the Arrivals Paddock. The location of the infiltration structures is shown in Figure 1*."	Length of leach drains amended as requested. Figures have been updated. The Delegated Officer considers the proposed wording changes appropriate to reflect changes to the system design. The changes do not affect the risk assessment.
Section 2.6.1, Table 1	Remove *E.coli* from emission standards. *E coli* was not included in the original specification. The design has no provision of disinfection and all treated wastewater discharges are below ground.	*E.coli* has not been specified as a parameter in this table. However, the Delegated Officer considers pathogen limits (*E.coli*), essential to protect public health and environmental values given the WWTP's proximity to the Margaret River and these have remained within the works approval.
Section 3.1.1, Table 2 – Proposed controls for dust	Lists the following control: *"A Dust Management Plan and Construction Environment Management Plan will be implemented."* The Gildail Construction Environmental Management and Monitoring Plan (CEMMP) does already address this and it has been accepted by AMR Shire.	The control stating *"A Dust Management Plan and Construction Environment Management Plan will be implemented."* was proposed by the applicant in the supporting documentation submitted with the Works Approval application. The Delegated Officer has listed the controls proposed by the applicant. It is noted that the Gildail Construction Environmental Management and Monitoring Plan (CEMMP), which addresses these requirements, has already been accepted by the Shire of Augusta-Margaret River.

Condition/Section	Summary of applicant's comment	Department's response
Section 3.1.1, Table 2 Discharge of treated wastewater - proposed controls	Change to structures include: Four leach drains: two at the premises entry (18m long) and two in the arrivals paddock (19m long). Each leach drain will have 18 to 19 kL storage volume and 27 or 29 m2 infiltration area respectively.	Leach drain storage capacities have been updated as requested. The Delegated Officer considers the proposed wording changes appropriate to reflect changes to the system design. The changes do not affect the risk assessment.
Section 3.3.1, Table 2	Original text states: *"Nutrients will be reduced to levels which are not anticipated to have significant impacts to ground or surface waters through the additional polishing that will occur in the WWTP and a flow path of 350 m before the water reaches the Margaret River. Wastewater will be treated to reduce Nitrogen and Phosphorus levels to less than 20 mg/L and less than 1 mg/L respectively."* Change text to: "nutrients will be reduced to levels which are not anticipated to have significant impacts on ground or surface waters. Since the MBR system is designed to reduce"	The information has been updated as requested. The Delegated Officer considers the proposed wording changes appropriate to reflect changes to the system design. The changes do not affect the risk assessment.
Section 3.3.1, Table 2 (x)	Original text states: *The main pumping station is equipped with 60 kL of emergency storage in addition to the operating capacity of the wet well."* We have emergency storage upstream of the WWTP providing 60kL storage in addition to 23kL of inlet storage at the WWTP. There is no need for provision of another 60kL treated wastewater storage.	This information has been updated as requested. The Delegated Officer considers the proposed wording changes appropriate to clarify that the 60 kL of emergency storage is upstream of the WWTP.
Section 5	The Proponent advises that given the relatively low volumes of treated wastewater discharged below ground, the high level of treatment, and the management of the system by the Hotel Engineer that registration of the facility will be sought and not a licence under the EP Act 1986.	This has been noted by the Delegated Officer.