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	W6975/2024/1
Applicant	V & V Walsh Pty Ltd
ACN	100 834 455
File number	DER2024/000563
Premises	V & V Walsh Abattoir Lot 1 Rawling Road DAVENPORT WA 6230 Legal description - Part of Lot 1 on Diagram 12060 and Part of Lot 5 on Diagram 50137 As defined by the coordinates in Schedule 1 of the works approval
Date of report	12 November 2025
Proposed Decision	Works approval granted

Michael Greenslade

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MANAGER, HEAVY INDUSTRIES
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, commissioning and time limited operations of a new wastewater treatment system at the premises. As a result of this assessment, works approval W6975/2024/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

V & V Walsh Pty Ltd (the applicant) currently operates the V & V Walsh Abattoir; a dual-species abattoir situated in Davenport, on the outskirts of Bunbury. The premises is operated under Licence L6001/1989/17 for the following activities prescribed under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations):

- Category 15: Abattoir: Premises on which animals are slaughtered;
- Category 16 Rendering operations: premises on which substances from animal material are processed or extracted;
- Category 55: Livestock saleyard or holding pend: premises on which live animals are held, pending heir sale, shipment or slaughter; and
- Category 83: Fellmongering: premises on which animal skins or hides are dried, cured or stored.

A major constraint to premises operations has been the management of wastewater produced from premises operations, due to deficient wastewater treatment and storage infrastructure, and a lack of suitable available land for the discharge (irrigation) of treated wastewater.

On 16 October 2024, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act) for the construction of a new wastewater treatment plant on the premises to improve the quality of wastewater discharge via land irrigation.

The application relates to the categories and assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6975/2024/1. 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 below and in works approval W6975/2024/1.

2.2.1 Background

Wastewater generated onsite is currently managed onsite via a wastewater treatment system (WWTS) utilising a series of ponds for treating wastewater prior to irrigation or reuse. Prior to treatment, all abattoir, rendering plant and biofilter wastewater is directed via a ‘Save All’ unit to the Dissolved Air Flotation (DAF) unit for solids separation. The solids are removed offsite for disposal at a licensed waste management facility and remaining wastewater is treated through the pond system comprising of three anaerobic ponds (Ponds 0 – 2), three facultative ponds (Ponds 3 – 5) and two final treatment (oxidation) ponds (Ponds 6 and 7). Treated wastewater in

the final treatment ponds is used in washdown of lairage yards, turf farm irrigation via a central pivot (year-round), and on-site irrigation of pasture and a treelot (during winter).

Currently about 370,000kL of wastewater is treated via the existing WWTS. The Applicant reported that between July 2023 and June 2024, about 262,000 kL of wastewater was irrigated to land. Of that, 55% (144,000kL) was irrigated to the turf farm and the remaining 45% (117,000kL) irrigated to pasture or the treelot, with remaining water lost to evaporation within the ponds or reused on the premises. The Applicant estimates that 100-150kL of water is reused on the premises each day for washdown of lairage yards and cleaning of the existing WWTS screens, although water ultimately reports back into the WWTS.

Following persistent issues with high levels of contaminants in the treated wastewater (particularly nutrients and salt content) and limited irrigation availability, the applicant proposes to install a new wastewater treatment plant (WWTP). The new WWTP will replace the existing pond system and aims to provide improvements to water quality outputs and allow alternative disposal methods to be explored for improved onsite wastewater management.

2.2.2 Proposed new WWTP Design

The proposed WWTP will utilise biological nutrient removal and activated sludge processes in a series of tanks for the treatment of wastewater. The system is designed to treat a weekly wastewater flow of 11,808m^3 (an average of about 1,686kL/day).

Existing pre-treatment screening units (i.e. existing Save All and DAF unit) will be utilised for solids removal prior to wastewater being transferred to the new treatment system. Wastewater will be received in an equalisation tank before undergoing primary treatment (removal of solids and fats) in a second DAF unit. Secondary treatment will consist of aerobic and anoxic treatment featuring aerators and mixers to facilitate treatment processes.

A membrane bioreactor (MBR) package is proposed for additional treatment and solids removal. A portion of sludge from the MBR (Return Activated Sludge) will be recirculated through the WWTP to facilitate treatment processes. Excess sludge, and sludge from the installed DAF unit, will be stored in a holding tank prior to centrifugal dewatering. Dewatered solids will be removed from the premises and disposed offsite at a licensed waste management facility.

Wastewater will also be subject to disinfection via ultraviolet (UV) and chlorination units. Final treated effluent will be directed to the Treated Water Tank prior to being distributed for reuse onsite or transferred to Ponds 6 and 7 for irrigation per current licensed practices.

Future operations include additional treatment of wastewater via a reverse osmosis plant (refer to section 2.2.3).

An overview of the treatment process is provided in Figure 1.

Flow variations

The premises only operates during the day, five days a week and therefore most wastewater flow will occur Monday – Friday. To handle these flow variations, the equalisation tank will build up during the week and be depleted over the weekend when there are no inputs due to the premises not operating. The system will be sized to cope with flow variation on weekdays associated with transition from day shift to night shift, as well as variations associated with transition to weekends (when the premises is not operational) to ensure that reduced flows do not compromise the downstream performance of the WWTP.

2.2.3 Proposed RO plant

The Application also seeks authorisation to install an RO plant for additional treatment of wastewater in the future. The RO Plant will be sized to treat up to 75% of the daily treatment capacity of the WWTP (accounting for future growth of the facility). Two wastewater streams will be generated; treated water (permeate) and concentrated rejects (brine).

It is expected that permeate will be used within the WWTP for chemical makeup water and other processes (i.e. process equipment cleaning, equipment cooling, filter backwashing) and returned to the WWTP balance tanks for treatment. Water demand for these reuse options is estimated to be 50 – 100 kL per day. Disposal options for the remaining permeate are still being considered.

The applicant proposes to combine brine from the RO Plant with treated water stored in the existing treated water storage ponds to dilute its concentration prior to disposal via the existing land irrigation system. It is anticipated that this blended wastewater will be made up of about 49% pre-RO treated water and 51% RO brine.

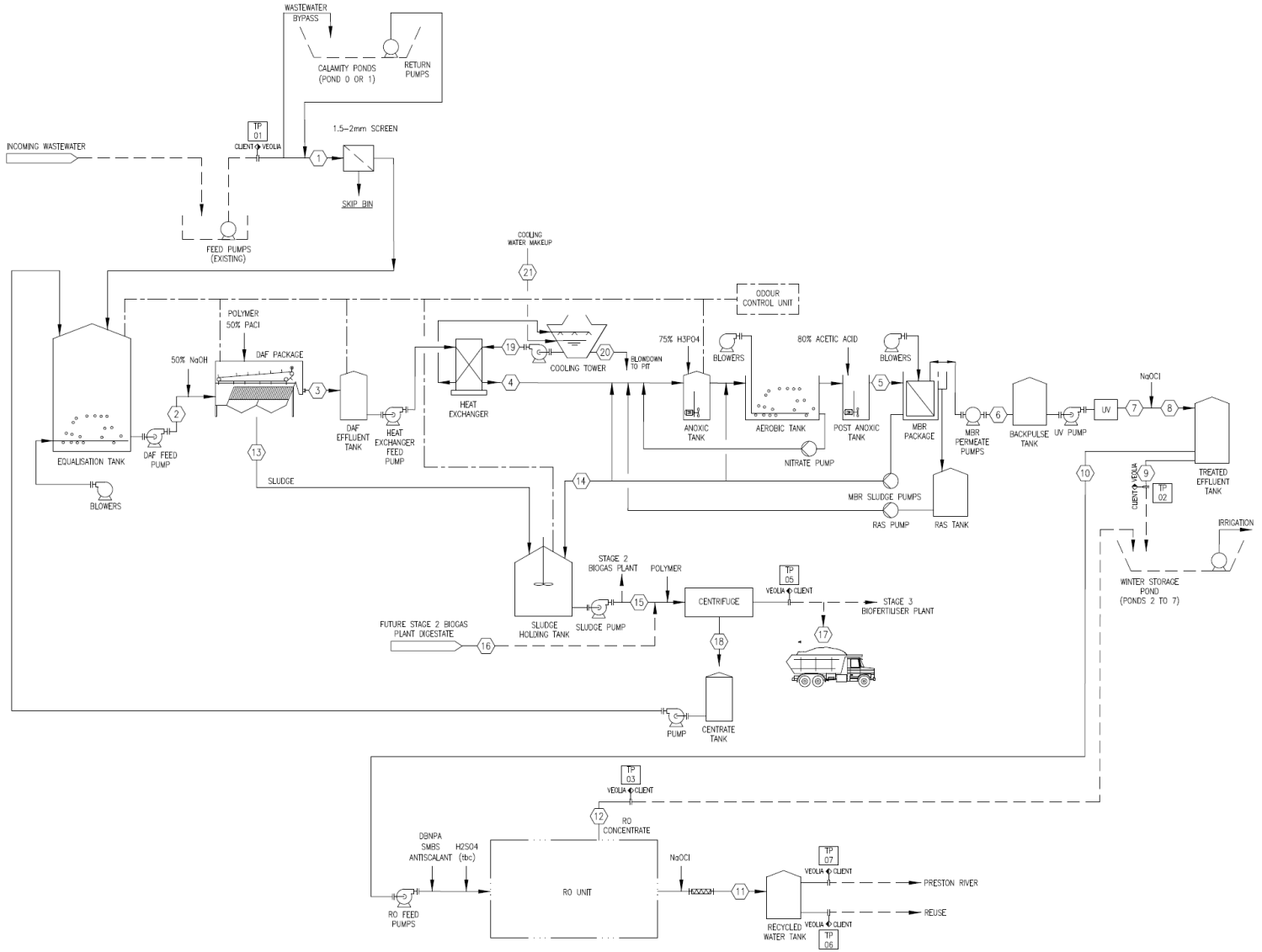

Figure 1: Process overview of the proposed WWTP.

2.2.4 Wastewater quality design criteria

Wastewater quality design specifications for treated water from the WWTP are provided in Table 1.

The delegated officer has reviewed the expected design specifications and determined that expected wastewater quality generally aligns with current outputs from the existing wastewater treatment system. It is noted that the system upgrade provides a significant reduction in the nutrient content of water irrigated to land and therefore the risk profile associated with nutrients remains the same or lower. Noting that the proposal is not expected to significantly change (increase) the risk profile associated with discharge of wastewater for irrigation, the delegated officer has determined not to reassess risks relating to the wastewater irrigation at this time. Discharges to land will continue to be regulated via the existing Licence however, where necessary, conditions have been applied on the works approval to facilitate commissioning and time-limited operations.

Recognising current challenges with wastewater management on the premises, especially concerning the salt content of wastewater, the delegated officer has identified a need to review the current risks associated with wastewater irrigation. This review will be conducted through a separate application made under Part V of the EP Act seeking authorisation the ongoing operations of the new wastewater treatment system and will assess the suitability of current regulatory controls for mitigating environmental risks. The applicant has indicated that an updated Nutrient Irrigation Management Plan is being developed which will support the assessment.

Table 1: Proposed wastewater quality design specifications compared to existing wastewater outputs.

Parameters	Units	Wastewater quality (Existing WWTP) [1]			Wastewater quality (New WWTP Pre-RO treatment)
		Average	Minimum	Maximum	
Average daily flow rate	m^3/day	1,012[2]	942[2]	1,094[2]	1,686
pH	-	8.2	7.6	8.9	6.5 - 8.5
Total Nitrogen	mg/L	82.8	39	113.5	< 5
NO_x as Nitrogen	mg/L	0.4	0.064	0.82	< 1
Ammonium-nitrogen	mg/L	67.7	22	104.5	< 1
Total Inorganic Nitrogen	mg/L	67.5	22	104.5	<1
Total Phosphorus	mg/L	7.0	1.65	20	< 1
Reactive Phosphorus	mg/L	Not sampled			< 1
BOD	mg/L	Not sampled			< 10
COD	mg/L	155.8	13	300	< 100
Total Suspended Solids	mg/L	62.7	16	139	< 10
Fats, oils and grease	mg/L	Not sampled			< 1
E. coli	cfu/100mL	Not sampled			<1
Major ions					
Bicarbonate	mg/L as CaCO3	224.8	166	290	713
Calcium	mg/L	25.8	21.5	29	60.2
Chloride	mg/L	673.3	620	760	353
Magnesium	mg/L	21.8	18	26	20.2
Potassium	mg/L	78.3	69	93.5	71.5
Sodium	mg/L	288.3	265	335	411
Sulfate	mg/L	17.3	14	23.5	1.2
Total Dissolved Solids	mg/L	1264.1	220	2400	1,788

Parameters	Units	Wastewater quality (Existing WWTP) [1]			Wastewater quality (New WWTP Pre-RO treatment)
		Average	Minimum	Maximum	
Metals and Metalloids					
Aluminium	mg/L	0.015	0.011	0.020	0.05
Arsenic	mg/L	0.417	0.335	0.485	0.0024
Barium	mg/L	Not sampled			0.1680
Boron	mg/L	0.417	0.335	0.485	0.0984
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	0.0002
Chromium	mg/L	Not sampled			0.0149
Copper	mg/L	0.00208	0.00150	0.00285	0.089N
Iron	mg/L	Not sampled			0.05
Lead	mg/L	0.001	<0.001	<0.0015	0.0018
Manganese	mg/L	Not sampled			0.1171
Mercury	mg/L	<0.00005	<0.00005	<0.00005	0.0001
Strontium	mg/L	Not sampled			0.1848
Zinc	mg/L	0.0114	0.0045	0.022	0.3384

Note 1: Based on data recorded between 2020 – 2023 as provided in the 2023 Annual Environmental Report [DWER Record: DWERDT906806]. No data is available for the major ions and metals for the 2020 annual period.
Note 2: Based on current operation flow data ("Monthly Wastewater to be treated") provided by Applicant Daily average flow rate is calculated using monthly totals (i.e. monthly volume / no. days) [DWER Record: A2339588].

2.2.5 Commissioning

Construction of the new WWTP is expected to commence in Q2 2025 with operation to commence in Q4 2026.

It is proposed that during commissioning of the new WWTP, the existing WWTS will continue to be utilised while the new WWTP establishes steady state and is able to achieve design criteria. During commissioning, wastewater will be transferred to Ponds 1 or 2 of the existing WWTS where it will undergo further treatment prior to disposal via current practices. This ensures that wastewater is meeting, as a minimum, current wastewater outputs to ensure that there is no increase to the risk of irrigation activities.

Once the new WWTP is operational, the existing WWTS will be decommissioned, however, the ponds will be repurposed and will continue to support wastewater management on the premises as follows:

- Pond 0 will be repurposed as a calamity pond during commissioning of the new WWTP. The calamity pond will provide contingency storage of untreated wastewater in the event of a catastrophic failure of the WWTP resulting in the WWTP being unable to treat wastewater. Pond 0 will provide 3.8 days of contingency storage of untreated wastewater. Wastewater will be transferred back through the WWTP for treatment once it is operational at a balanced flow rate to not overload the WWTP.
- Following commissioning of the new WWTP, Pond 1 will also remain as a contingency storage facility in the event of a failure or malfunction of the new WWTP. The pond has capacity to store up to 5,500kL of wastewater which equates to about three days of storage.
- Ponds 6 and 7 will continue to be used as final storage prior to irrigation.
- As part of decommissioning the existing WWTP, Ponds 2 to 5 will be repurposed as a winter storage ponds. Pond 5 is a HDPE lined pond previously used as a facultative pond has capacity to store 11,000KL of wastewater. Outside of winter, wastewater will be directed to Ponds 6 and 7 for irrigation. During winter, wastewater will be directed to

Pond 2 and cascade through Ponds 3, 4 and 5 to Pond 6.

Repurposed ponds will continue to be managed in accordance with existing licence conditions regarding maintaining a freeboard and integrity of liners.

Commissioning of the RO plant

The Applicant has indicated that the RO plant will not be commissioned at this stage noting that options for disposing of RO permeate and brine are still being investigated. Commissioning of the RO plant is essential in verifying the systems performance, ensuring that water quality specifications are being met, and wastewater is suitable for disposal. Monitoring data collected during commissioning will be used to inform the assessment of any future application(s) made under Part V of the EP Act seeking authorisation to dispose of RO permeate and brine. To facilitate this verification process, the delegated officer has determined to authorise commissioning and time limited operation of the RO Plant under the works approval. This ensures that the necessary verification data is gathered, and available to inform the assessment of any future licence applications seeking authorisation for an alternative disposal option.

The delegated officer recognises that there will be a need to dispose of the RO permeate and brine during commissioning and time limited operations. Until the disposal methods are finalised, the works approval requires that all wastewater streams associated with the WWTP and RO plant (including brine and permeate) are to be comingled and directed to the existing water storage ponds for disposal via land irrigation in accordance with existing practice. The delegated officer considers that combining the wastewater streams will not change the overall composition of waste being irrigated to land (i.e. quality of combined wastewater will not significantly vary from specifications in Table 1) and therefore not alter the risk profile of the emission.

Ongoing operation of the RO plant, and alternative methods of disposing of permeate and brine, will be subject to a separate application (or applications) under Part V of the EP Act. Assessments will consider risks associated with discharges resulting from the premises, including any changes to the current risk profile associated with irrigating RO brine and alternative options for disposing of RO permeate.

2.3 Exclusions

As discussed in sections 2.2.3 and 2.2.5, alternative disposal options for RO permeate are still being investigated by the Applicant. These disposal options are excluded from this assessment noting that any alternative disposal option(s) will be considered under a separate application made under Part V of the EP Act.

2.4 Other approvals

2.4.1 Clearing

The Applicant proposes to clear up to 0.85ha of to construct the WWTP including 0.22ha for fire protection. Clearing for the purpose of constructing the WWTP may be undertaken under the exemption criteria specified in Regulation 5, Item 1 of the *Environmental Protection (Clearing of Native Vegetation) Regulation 2004*, subject to the applicant having obtained any relevant planning approvals (i.e. Development Approval from the City of Bunbury).

2.4.2 Development Approval

Development approval was lodged on 10 October 2025 and is currently under consideration.

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, commissioning and operation 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 pathway	Proposed controls
Construction		
Dust	Source: Vehicle movements, earthworks, etc. Pathway: Air / windborne pathway	• Separation to residential receptors (1.7km). • Short duration of works – April to July 2025. • Exposure areas will be minimised as much as possible. • Dust suppression and/or watering of unsealed roads and exposed surfaces. • Using defined routes for travel.
Noise		• Separation to residential receptors (1.7km). • Short duration of works – April to July 2025. • Works to be undertaken in accordance with AS 2436-2010 (R2016) *Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites* • Construction carried out during daylight hours (7am – 7pm) Monday to Friday in accordance with City of Bunbury requirements. • Night works or works required on Sundays/public holidays will require a noise management plan submitted to the City of Bunbury.
Sediment laden stormwater	Source: Stormwater runoff. Pathway: Direct discharge to land and overland flow to	• Drains and/or swales will be installed upslope to divert “clean” stormwater away from the construction area. • Erosion and sediment control measures such as sediment fences or other appropriate control measures will be installed around the perimeter of the site and on slopes subject to runoff to prevent the

Emission	Sources / Potential pathway	Proposed controls
	surface waters.	transport of soil and silt particles. Construction in accordance with a Construction Environmental Management Plan which will be developed through detailed design phase.
Chemicals	Source: Refuelling or vehicles/machinery & storage of chemicals. Pathway: Direct discharge to land, seepage to soil and groundwater, overland flow to surface waters.	(A) Chemicals (e.g. fuel) will be stored within bunded areas and/or self-bunded tanks that meet requirements of *AS 1940-2004 The storage and handling of flammable and combustible liquids*. • Vehicle servicing will be undertaken within designated service areas to contain potential spillage or leaks. • Vehicle refuelling will be undertaken in designated refuelling area which includes a portable rollover bund to capture potential spillage. Where infield refuelling is required, portable drip trays will be utilised beneath the fill point to capture spills. • Spill kits will be available in work areas, storage locations and refuelling areas. • Where spills occur, hydrocarbon contaminated material will be collected in contained vessels or bin within a low permeability bunded area and removed from the premises for disposal at a licensed controlled waste facility.
Acid sulfate soils (ASS)	Source: Disturbance (oxidation) of acid sulfate soils. Pathway: Direct discharge to land, seepage to soil and groundwater, overland flow to surface waters.	Majority of infrastructure is above ground. No dewatering is expected during construction of the WWTP.
Commissioning & Operation		
Noise	Source: Operation of the WWTP including storage of treated wastewater & sludge Pathway: Air / windborne pathway	• Separation to residential receptors (1.7km). • No specific controls proposed by Applicant. • Noise expected to remain within existing levels. • Subject to the *Environmental Protection (Noise) Regulations 1997*.
Light		• Separation to residential receptors (1.7km). • Lighting will be installed and maintained for safe operations with flood lighting limited to key operations areas and only operated on an “as needs” basis.
Odour		• Separation to residential receptors (1.7km).

Emission	Sources / Potential pathway	Proposed controls
		• Equalisation tanks will be mixed and slightly aerated to prevent anaerobic processes starting early. • The equalisation tank, DAF package, DAF effluent tank, sludge holding tank, centrate tank and anoxic treatment tank will be enclosed with ventilation discharge points directed to a four-stage odour control unit comprising of: (a) acid chemical scrubbing; (b) alkali chemical scrubbing; (c) biofilter; and; (d) activated carbon filter. • Dewatered sludge will be stored onsite for a maximum of 7 days once dewatered. • Sludge holding bins will be covered to prevent odour. • Condition 7 and 8 of the existing licence relating to the management of anaerobic ponds.
Chemicals	Source: Chemicals stored on the premises (e.g. chlorine, flocculant, etc.) Pathway: Direct discharge to land, seepage to soil and groundwater, overland flow to surface waters.	• 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 (i.e. situated in low permeability bunded areas that hold 110% of the volume being stored). • Chemical storage areas will be regularly inspected and maintained. • Spill kits will be available onsite to clean up spills. • Contaminated soil resulting from chemicals spills will be collected and removed offsite for disposal at a waste disposal facility.
Stormwater contaminated with sediments or raw/treated wastewater	Source: Stormwater runoff. Pathway: Direct discharge to land and overland flow to surface waters.	• Main components of the WWTP will be built on raised ground and stormwater directed towards drainage swales. • Diversion drains will be installed to ensure “clean” stormwater is directed towards drainage swales. • Areas where stormwater could be contaminated will be redirected back to the WWTP. • Majority of tanks will be fitted with covers/roofs preventing stormwater ingress. • Sludge holding bins will be situated within a bunded area to capture spills.
Sludge	Source: Spills, leaks and/or overflows from the	• All sludge processing areas drain to a central sump which is recycled back through the WWTP. • Sludge holding tanks are designed with level sensors

Emission	Sources / Potential pathway	Proposed controls
	WWTP. Pathway: Direct discharge to land, seepage to soil and groundwater, overland flow to surface waters.	to indicate high levels, and high-level alarms with automated sludge process isolation to prevent overflow. • Dewatering infrastructure (centrifuge) will be situated within a containment area for capturing spills. • Dewatered sludge will be stored in holding bins awaiting disposal from site. Holding bins are located in a containment area for catching spills with any spilled material returned to the WWTP.
Raw and/or treated sewage	Source: Spills, leaks and/or overflows from the WWTP. Pathway: Direct discharge to land, seepage to soil and groundwater, overland flow to surface waters.	• 0.6m freeboard maintained on the aerobic reactor tanks. • WWTP will be fitted with low-level and high-level alarms. • All tanks are fitted with overflows and bunds that have gravity drains routed to a drain pit. The drain pit is equipped with two drain pumps which direct collected water to either the screens (prior to the equalisation tank) or to Calamity Ponds 0 and 1. • Ponds 0 and 1 will be retained as calamity ponds providing contingency storage in the event of a failure of malfunction of the WWTP. All wastewater will be returned to the WWTP for treatment once any issue is resolved. • Equalisation tank will ensure steady flow into the WWTP to prevent system upsets. • Regular inspections of pipelines will be undertaken to identify leaks and/or spills.
	Source: Discharge of treated wastewater (from the WWPT and RO plant) for reuse/irrigation Pathway: Infiltration to soil and groundwater, migration to surface water	Commissioning: • No wastewater will be discharged direct to land during commissioning. All treated wastewater will report to the existing WWTS (Pond 1 or Pond 2) for additional treatment and be disposed of (irrigated) in accordance with existing licence requirements. • Monitoring of wastewater flow and quality will occur during commissioning to verify plant performance. Operations: During time limited operations, wastewater will be directed to Ponds 5, 6 and 7 prior to being discharged (irrigated) in accordance with the conditions of the existing licence L6001/1989/17. Ongoing operation of the WWTP and RO plant beyond time limited operations will require submission of an application under Part V of the EP Act.
	Source: Storage of raw/treated wastewater within existing WWTS	Commissioning and operation: Storage of material within the existing ponds will be managed in accordance with conditions of the existing licence relating to containment infrastructure (e.g. liners)

Emission	Sources / Potential pathway	Proposed controls
	(seepage). Pathway: Infiltration to soil and groundwater, migration to surface water	and maintenance of freeboards.
	Source: Storage of raw/treated wastewater within existing WWTS (overflow). Pathway: Direct discharge to land, seepage to soil and groundwater, overland flow to surface waters.	

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

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from activity / prescribed premises
Residential areas (zoned: "Residential" under the City of Bunbury Local Planning Scheme No. 8)	1.7km north-northwest and 1.8km north of the proposed WWTP boundary
Various industrial premises within industrial area (zoned: "Light Industry" and "General industry" under the City of Bunbury Local Planning Scheme No. 8)	Halifax Business Park Nearest industrial premises are located 560m west and 750m northwest of the proposed WWTP boundary
Public facility (zoned: "Public Purposes" and "General industry" under the City of Bunbury Local Planning Scheme No. 8)	Bunbury Regional Animal Management Facility located 650m south-southwest of the proposed WWTP boundary
Environmental receptors	**Distance from activity / prescribed premises**

Threatened/Priority Fauna	A number of species are present in the area which are listed under the Federal *Environment Protection and Biodiversity Conservation Act 1999* and State *Biodiversity Conservation Act 2016.* These includes Forest Red-Tailed Black Cockatoo (*Calyptorhynchus banksii naso),* Baudin's Cockatoo (*Zanda baudinii*), Carnaby's Cockatoo (*Zanda latirostris*) and Western Ringtail Possum *(Pseudocheirus occidentalis)*.
Underlying groundwater (non-potable purposes)	Groundwater at the premises is generally shallow (<1 – 6mgbl). Groundwater monitoring indicates that groundwater flow is towards the Preston River. Monitoring bore GQ1 located immediately down-hydraulic gradient of the WWTS ponds (north of the WWTP) has a standing water level between 1 - 2.5 mbgl. Monitoring bore GQ2 located southwest of the turf farm (southwest of the WWTP) has recorded a standing water level between 0.71 and 2.31 mbgl.
Public drinking water sources areas	There are no Protection Areas proclaimed under the *Country Areas Water Supply Act 1947* within the boundary of the premises. The nearest are Bunbury East Water Reserve (Priority 1) located 2.1km north and the Bunbury Water Reserve (Priority 3) located 3.1km west.
Conservation Category Geomorphic Wetlands of the Swan Coastal Plain	Preston River (UFI 14501) – 150m east. Flat Palusplain (UFI 14516) – 320m west
Acid sulphate soils	The western area of the WWTP is within an area of High to Moderate risk of ASS. The eastern area of the WWTP is located in an area with Moderate to Low risk of ASS.
TECs/PECs	Numerous occurrences of the TEC "Banksia Woodlands of the Swan Coastal Plan" have been mapped within a 5 km buffer of the WWTP location.
Cultural receptors	**Distance from activity / prescribed premises**
Aboriginal heritage site	There are 11 sites within a 5km radius of the WWTP although none are within the proposed boundary. Of note is: Preston River (ID19795) located directly east & 170m north of the WWTP site. Site ID: 4873 situated 200m southwest of the WWTP site.

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 W6975/2024/1 that accompanies this decision report authorises construction, commissioning and time-limited operations of both the WWTP and RO plant. The conditions in the issued works approval, as outlined in Table 4 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence amendment is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 4: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events					**Risk rating [1]** **C = consequence** **L = likelihood**	**Applicant controls sufficient?**	**Reasoning**	**Regulatory controls**
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Earthworks, installation of WWTP and RO, vehicle/ machinery movements.	Dust	Air / windborne pathway causing impacts to health and amenity	Industrial premises 560m west & 750m northwest.	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	The delegated officer considers that there is sufficient separation to residential receptors and therefore these receptors are not likely to be impacted by noise and dust during construction. Applicant controls for management noise and dust are considered appropriate for managing potential impacts to nearby industrial receptors.	N/A
	Noise			Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y		N/A
	Sediment laden stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Preston River immediately east	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	The delegated officer considers that the Applicant's proposed controls for stormwater management during construction will reduce risks associated with stormwater to a suitably low level.	N/A
	Groundwater acidification with disturbance (oxidation) of ASS	Leaching from in-situ ASS material	Preston River immediately east Shallow groundwater - <1mgbl – 2.5mbgl	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Noting that the majority of proposed infrastructure is above ground, the delegated officer considers that ASS are unlikely to be intercepted during construction of the WWTP. Similarly, dewatering is also not expected to be required during construction. Conditions have been applied on the works approval ensuring that, should dewatering be required or ASS be intercepted, material is prevented from being stored on the premises and must be removed from site for disposal at an appropriately authorised facility or reused onsite once it can be demonstrated that it has been appropriately neutralised. Evidence of offsite disposal is required to be reported in an Environmental Compliance Report.	Conditions 2 – 6
Refuelling / storage of chemicals	Chemical spills/leaks	Direct discharge to land, overland flow causing contamination of groundwater, soil and surface waters impacting ecological health.	Preston River immediately east Shallow groundwater - <1mgbl – 2.5mbgl	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	The delegated officer considers that the controls proposed by the applicant for managing the storage and handling of chemicals on the premise during construction will allow this risk to be managed to an appropriately low level. Applicant controls include storage of material within bunded containers and providing containment for spills during refuelling activities.	The premises is subject to the *Environment Protection (Unauthorised Discharges) Regulations 2004* relating to the discharge of certain materials such as petrol, diesel and hydrocarbons.
Commissioning and operation (including time-limited-operations operations)								
Operation of the RO plant and WWTP including, storage and handling of sludge, and discharge of treated wastewater to	Noise	Air / windborne pathway causing impacts to health and amenity	Industrial premises 560m west & 750m northwest.	Refer to Section 3.1	C = Slight L = Rare **Low Risk**	Y	The delegated officer considers that there is sufficient separation to residential receptors and therefore these receptors are not likely to be impacted by noise and light during commissioning or operations. Noise and light emissions are not expected to exceed existing levels. Applicant controls for management noise and light are considered appropriate for managing potential impacts to nearby industrial receptors.	Condition 1 – Siting
	Light			Refer to Section 3.1	C = Slight L = Rare **Low Risk**	Y		Condition 1 – Siting

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Reasoning	Regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
land via irrigation.	Odour	Air / windborne pathway causing impacts to health and amenity	Industrial premises 560m west & 750m northwest.	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	The Applicant has incorporated a four-stage odour control unit into the design of the WWTP which will capture and treat emissions from potentially odorous treatment components such as the equalisation tank, sludge holding tank and primary treatment tanks. Noting this and the distance to receptors, the delegated officer considers that odours will be managed to an acceptably low level. Applicant controls have been conditioned on the works approval.	Condition 1 - Infrastructure requirements Condition 5 - Commissioning requirements
	Breach of containment of wastewater and sludge treatment and storage tanks / containers (including overflow.	Direct discharge to land, overland flow causing contamination of groundwater, soil and surface waters impacting ecological health.	Preston River immediately east Shallow groundwater - <1mgbl – 2.5mbgl	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Applicant controls relating to containment of untreated/treated effluent and sludge include installation of secondary containment (bunds) around sludge handling as well as installation and operation of alarms and warning systems to prevent spills. The delegated officer considers that these controls are sufficient to manage the impacts associated with the potential breach of containment infrastructure and has conditioned these commitments on the works approval.	Condition 1 - Infrastructure requirements Condition 5 - Commissioning requirements The premises is subject to the *Environment Protection (Unauthorised Discharges) Regulations 2004* relating to the discharge of certain materials such as animal waste, and animal oil, fat or grease.
	Irrigation of treated wastewater			The existing WWTS currently receives wastewater generated on the premises for treatment prior to discharge to land for irrigation purposes. Environmental risks associated with the existing WWTS and associated discharge to land are managed under the existing Licence. During commissioning, the Applicant proposes to direct all “treated” wastewater from the new WWTP to Pond 1 and Pond 2 of the existing WWTS to ensure that the wastewater is receiving the same level of treatment as current operations. Following commissioning, existing ponds will remain operational as contingency storage (Ponds 0 and 1), winter storage (Ponds 2 - 5) and storage prior to irrigation (Ponds 6 and 7). The proposal is not expected to significantly alter the risk profile associated with storage of waste within the existing WWTS ponds and subsequent irrigation of treated wastewater and, therefore, these risks have not been reassessed. Storage and discharge of treated wastewater will continue to be managed through conditions of the existing licence which include requirements relating to the management of freeboards, maintaining integrity of pond liners, wastewater quality monitoring (prior to irrigation) and managing discharge to land via irrigation. The delegated officer acknowledges that treatment efficiency of the WWTP will be reduced during commissioning until steady state is reached and has determined that the works approval shall require that all wastewater treated via the new system is directed to the existing WWTS Ponds 1 and 2 prior to discharge for irrigation purposes. This ensures that wastewater from the WWTP during this upset period is, as a minimum, treated to existing water quality levels prior to disposal via land irrigation, thereby not increasing the risk of irrigation operations. The works approval also includes conditions requiring the monitoring of wastewater outputs from the new WWTP during commissioning to verify performance of the plant. Monitoring requires analysis of a comprehensive suite of parameters considered in Table 1 to confirm design targets are being achieved. Noting that the proposed WWTP has a greater treatment capacity than the existing WWTS, the works approval limits the volume of inflow into the WWTP during commissioning to ensure it is consistent with current operations. The Applicant has indicated that the volume of wastewater reporting to the WWTP will not change but is investigating options for expansion in the future that may result in increased WWTP throughputs. Limits applied are based on the annual average discharge volume provided by the Applicant (369,375kL/year) averaged over 365 days. Any expansion or change to premises operation that results in an increase in the volume of wastewater treated and/or discharged via the new WWTP will require consideration under a separate application made under Part V of the EP Act. The works approval authorises a period of time limited operations (TLO), allowing continued operation of the facility under the works approval pending amendment to the existing Licence. Discharges from the WWTP during TLO will be generally managed under the existing licence however conditions have been applied on the works approval to facilitate updates to the monitoring program and repurposing of the existing storage ponds. Ongoing operation of the WWTP beyond commissioning will be subject to further assessment under Part V of the EP Act (i.e. licence amendment) and conditions amended as required. **RO plant:** As outlined in sections 2.2.5 and 2.3, the Applicant is investigating alternative options for disposal of the RO permeate. These have not been considered or authorised under this works approval. The works approval authorises commissioning and time limited operation of the RO plant provided that all wastewater is directed to the existing WWTS ponds prior to irrigation via the existing irrigation system. The delegated officer considers that combining all waste streams prior to irrigation will ensure that the overall composition of the wastewater remains consistent with that of direct discharge from the upgraded WWTP system. Data collected during commissioning will support any future application made under Part V seeking authorisation for an alternative disposal method.				
Operation of the RO plant and WWTP: Storage of treated wastewater within existing WWTS (contingency/ winter storage)	Seepage of wastewater							
	Overflow of wastewater							
Chemicals stored on the premises (e.g. chlorine, flocculant, etc.)	Spills/leaks / overflows	Direct discharge to land, overland flow causing contamination of groundwater, soil and surface waters impacting ecological health.	Preston River immediately east Shallow groundwater - <1mgbl – 2.5mbgl	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	The delegated officer considers that the controls proposed by the applicant for managing the storage and handling of chemicals on the premise during operation will allow this risk to be managed to an appropriately low level. Applicant controls include storage of material within bunded containers.	The premises is subject to the *Environment Protection (Unauthorised Discharges) Regulations 2004* relating to the discharge of certain materials such as acids and alkalis.

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 7 November 2024	None received	N/A
Local Government Authority	The City of Bunbury provided comment on the 2 December 2024 advising that the proposal will require development approval, and that whilst the applicant has liaised with the City about the proposed works, no formal application for development approval has been submitted. The proposal, and associated works, can be considered within the current planning framework provided a DA is submitted.	Noted. The delegated officer understands that following this comment, the applicant has submitted an application for development approval, and this remains under assessment. The delegated officer notes that approvals under planning legislation are separate regulatory processes, and it is the responsibility of the works approval holder to comply with relevant planning approval requirements.
Department of Primary Industries and Regional Development (DPIRD)	DPIRD indicated that it supports the proposed upgrades to the WWTP as it will reduce nutrient loading rates of wastewater discharges. DPIRS also noted that the increased wastewater storage using treatment ponds that will no longer be required for wastewater treatment, will help to reduce nutrient export during the wet winter period. Concern was raised concern regarding the salinity of blended wastewater resulting from RO treatment.	As discussed in section 2.3, risks associated with the operation of the RO plant has not been considered in this assessment. Discharges associated with the commissioning and operation of the RO plant will be considered under a separate application made under Part V of the EP Act.
Applicant was provided with draft documents on 7 March 2025 and 29 October 2025	The Applicant provided a response on 3 October 2025 including a number of clarifications and minor updates to proposed infrastructure. The Applicant did not request any changes to the draft conditions. The Applicant provided additional comment on 29 October 2025 requesting updates to Tables 2 and 4 to allow discharge to various ponds during commissioning and TLO.	Works approval updated to reflect to minor infrastructure changes and additional detail provided by the Applicant. The delegated officer accepted the changes noting that they align with the operational strategy of the system

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.

Construction of the proposed WWTP has been authorised noting that the improved system will not negatively alter the current risk profile of the premises and therefore, that discharges to land can continue to be regulated under the conditions of the existing Licence (L6001/1989/17). As outlined in sections 2.2.4, conditions have been applied on the works approval to facilitate commissioning and time limited operations to the existing premises via the existing licence.

The works approval also authorises construction, commissioning and time limited operation of the proposed RO plant to verify the plant's ability to achieve water quality specifications and confirm the suitability of wastewater for discharge via alternative methods that are being investigated. Conditions of the works approval require that any waste from the RO plant and WWTP must be combined prior to irrigation using the existing network to ensure that wastewater quality remains consistent with that directly discharged from the WWTP. Alternative options for disposing of RO permeate and brine were not assessed and will be subject to assessment via a separate application made under Part V of the EP Act. Ongoing operation of the WWTP and RO plant will be subject to a separate assessment under Part V of the EP Act, where ongoing or alternate disposal options can be considered.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.