



Decision Report

Application for Licence

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

Licence Number	L2978/2025/1
Applicant	QSD Hire Pty Ltd
ACN	160 534 805
File number	INS-0002978
Premises	The Landing Wastewater Treatment Plant Lot 5820 on Deposited Plan 189888 - Certificate of Crown Land Title Volume LR3098 Folio 967 being Crown Lease M528702 Part of Lot 5821 on Deposited Plan 189888 - Certificate of Crown Land Title Volume LR3093 Folio 157 being Crown Lease M586142 As defined by the coordinates in Table 11 in Schedule 2 of the licence.
Date of report	28 October 2025
Decision	Licence 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 operation of the premises. As a result of this assessment, licence L2978/2025/1 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 overview of premises

On 10 February 2025, the applicant (QSD Hire Pty Ltd) applied for a licence to the department under section 57 of the *Environmental Protection Act 1986* (EP Act).

The application is for a licence relating to a Category 54 sewage facility at the premises. The premises is within the Port Hedland Townsite and approximately 3.2 km south-east of the nearest residential area of South Hedland.

There is an existing unlicensed wastewater treatment plant (WWTP) consisting of five ponds, including three (3) facultative treatment ponds and two (2) infiltration ponds. No works approval or licence has previously been granted for the WWTP, which is estimated to have been operating for approximately 50 years, receiving wastewater from the adjacent workers and tourist accommodation (The Landing Resort and Walkabout Hotel). Sewer flow meters indicate the existing WWTP has a current daily inflow of between approximately 170-217 m³ per day.

The applicant has recently received a development approval from the local government to expand The Landing Resort and has existing non-conforming use rights under the current Local Planning Scheme for effluent disposal land use on the proposed premises. The development approval is conditional on a licence for the WWTP being granted.

The WWTP has been modelled by the applicant to have a maximum design capacity of 450 m³ per day.

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 licence L2978/2025/1. 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 licence L2978/2025/1.

Prescribed premises category and description (Schedule 1, Environmental Protection Regulations 1987)	Assessed design capacity
Category 54 - Sewage facility: premises — (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters	450m ³ per day design capacity

2.2.1 WWTP design

The applicant has constructed five ponds, including three (3) facultative treatment ponds and two (2) infiltration ponds (Figure 1 and Figure 2). The applicant has 'back-engineered' the WWTP to calculate the maximum production capacity of 450 m³ per day, based on the existing dimensions of the ponds (Figure 3) for treatment capacity and annual water balance, as there is no information to confirm what was originally installed. Historical aerial imagery indicates the size, location and configuration of the ponds has been modified several times. The current WWTP operates by:

- Sewage is received into Treatment Pond 1 via two sewer pumps and flow meters, one each from The Landing and The Walkabout Hotel. There are no inlet screens. The waste stabilisation ponds treatment process is gravity flow (no pumps) and does not require chemical addition.
- Ponds 1, 2 and 3 are facultative treatment ponds and are currently clay lined, but it is not known to what standard, with a freeboard of 500mm.
- Sewage sludge is contained within the treatment process. The applicant proposes to progressively take each treatment pond offline, to desludge and line with a suitable HDPE liner, over a three year period.
- Ponds 1, 2 and 3 each have a single 'Composite Pittboss' evaporator unit.
- Sewage sludge will continue to be contained within the treatment process and future desludging is proposed to occur based on visual inspection of pond sludge levels and effluent quality monitoring parameters.
- Secondary treated wastewater is received into Infiltration Ponds 4 and 5. Ponds 4 and 5 which are unlined, with a freeboard of 1000mm.
- Ponds 4 and 5 each have four 'Composite Pitboss' evaporator units.
- Pond 5 has an emergency overflow pipe outlet which discharges to a road culvert under Great Northern Highway diversion, which discharges into a saline minor waterway west of the Premises.



Figure 1: Applicant's WWTP arrangement. Sewer mains are shown in red, ponds connector pipes in blue, emergency discharge point in yellow

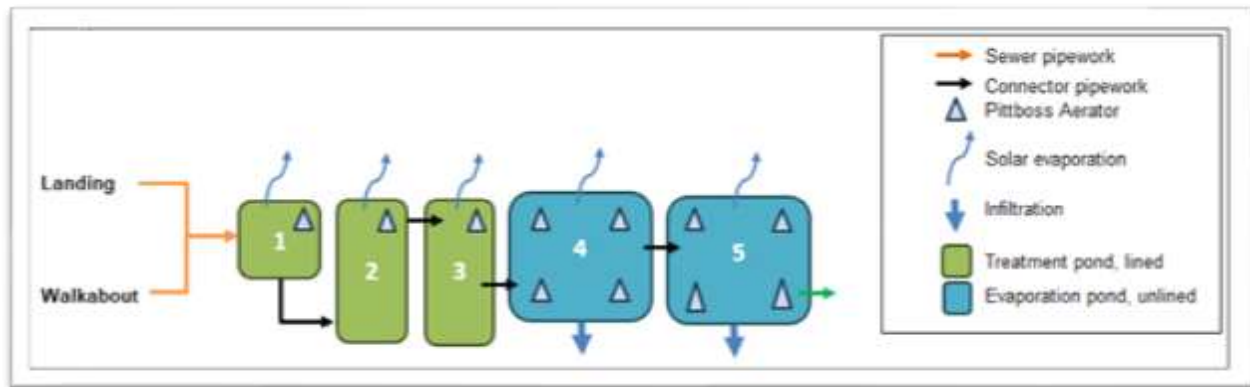


Figure 2: Applicant's WWTP schematic

		Lining	TOB Length (m)	TOB Breadth (m)	Water Depth H (m)	Pond Volume (m ³)
Pond 1	Primary facultative	Clay	45	39	1.45	1728
Pond 2	Secondary facultative	Clay	78	24	1.55	1783
Pond 3	Secondary facultative	Clay	77	28	1.38	2011
Pond 4	Evaporation pond	None	74	70	1.15	4495
Pond 5	Evaporation pond	None	105	70	1.20	6915

Figure 3: Applicant's WWTP Pond dimensions

2.2.2 Water balance

A water balance has been modelled by the applicant Figure 4 for the proposed maximum production capacity of 450m³ per day, assuming evaporator use of between 50% - 75% of capacity, concluding that there is sufficient storage in the infiltration ponds to contain treated wastewater.



Figure 4 : Applicant's WWTP Water Balance model with evaporator use

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 operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Source	Emissions	Potential pathways	Proposed controls
Operation			
Receipt, processing and treatment of wastewater – Normal and abnormal operations of the WWTP	Odour	Air / wind dispersion	None proposed
	Noise	Air / wind dispersion	None proposed
	Seepage of untreated wastewater from facultative treatment ponds 1, 2, 3	Seepage to soil and groundwater	Each treatment pond will be sequentially taken offline, desludged and lined with a HDPE synthetic membrane in accordance with <i>WQPN 26 Liners for containing pollutants, using synthetic membranes</i> (DoW 2013) over a three year period. Groundwater monitoring program proposed - three shallow bores (up to 6.0 m) – 1 upstream, 2 downstream (Figure 5)
	Overtopping of treatment ponds 1, 2,3	Overland flow to waterway	Freeboard of 500 mm WWTP designed to contain up to 1:10 72 hr duration ARI rainfall event. 'Pittboss' evaporators will assist in maintaining volume of treatment ponds below maximum capacity
	Contamination of stormwater	Overland flow to waterway Seepage to soil and groundwater	Freeboard of 500 mm Groundwater monitoring program proposed - three shallow bores (up to 6.0 m) – 1 upstream, 2 downstream (Figure 5)
Discharge of treated wastewater via infiltration and	Treated wastewater containing pathogens and other contaminants (nutrients, metals,	Seepage to soil and groundwater	Sewage sludge contained within the treatment process (Ponds 1,2,3). Desludging to occur based on visual inspection of the pond sludge levels and the effluent quality monitoring,

Source	Emissions	Potential pathways	Proposed controls
evaporation	pathogens, PoPs)		specifically BOD. Groundwater monitoring program proposed - three shallow bores (up to 6.0 m) – 1 upstream, 2 downstream (Figure 5)
	Overtopping of infiltration ponds	Overland flow to waterway	WWTP design includes infiltration ponds and no discharge to land or water under normal operating conditions. Freeboard of 1000mm 'Pittboss' evaporators will assist in maintaining volume of treatment ponds below maximum capacity Emergency overflow pipe Groundwater monitoring program proposed - three shallow bores (up to 6.0 m) – 1 upstream, 2 downstream (Figure 5)
	Contamination of stormwater	Seepage to soil and groundwater	Freeboard of 1000mm WWTP designed to contain up to 1:10 72 hr duration ARI rainfall event. 'Pittboss' evaporators will assist in maintaining volume of ponds below maximum capacity Groundwater monitoring program proposed - three shallow bores (up to 6.0 m) – 1 upstream, 2 downstream (Figure 5)



Figure 5: Applicant's proposed groundwater monitoring network

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3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020b), 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 2 and Figure 6 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 2020a)).

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

Human receptors	Distance from activity / prescribed premises
Nearest sensitive receptor	
H1 Residential Premises – 9 Finch Court South Hedland	3.2 km south east of the Premises boundary.
H2 The Landing Resort and Walkabout Motel / short stay accommodation	Adjacent to the eastern boundary of the Premises
H3 Port Hedland International Airport	350m south east of the western Premises boundary
H4 Dampier Salt Limited (L7183/1997/11)	1km north-northeast of the Premises boundary
Environmental receptors	Distance from activity / prescribed premises
Native vegetation No threatened flora	Native vegetation is mapped as occurring adjacent to the southern, northern and western boundaries of the Premises
Groundwater Pilbara Groundwater Area – RIWI Proclaimed	The Premises is located within the proclaimed Pilbara Groundwater Area. Regional groundwater flow is inferred to be northwards towards the Indian Ocean. Geotechnical Investigation report (Douglas Partners, 2012) for The Landing Precinct indicates localised perched groundwater 1.1-1.5mbgl in the vicinity of the site, particularly following heavy rainfall. Seasonal groundwater levels within the aquifers underlying the premises are not available. No other information has been provided regarding local groundwater flows, but is likely to be similar to surface topography with flows directing to the east/northeast towards the minor non-perennial waterway. There are no licensed groundwater users within 2km of the Premises.
Pilbara fractured rock aquifer (unconfined)	The water table in the Pilbara fractured rock aquifer is generally within 5 – 10 m of the surface. Groundwater is mainly fresh, ranging up to brackish towards the coast.
Pilbara - coastal saline aquifer (unconfined)	Near coastal unconfined saline resource with salinity >35,000ms/LTDS that interacts with estuarine/ocean waters. Created to cater for dewatering for construction purposes and aquaculture. Saline resource likely overlain by thin fresh or brackish groundwater.

Pilbara – Alluvial aquifer (unconfined)	The main alluvial aquifers are developed along the Yule, Turner and De Grey Rivers (upgradient of the Premises). These are major aquifers which currently supply Port Hedland with potable water. The area of the alluvium aquifer also includes thinner and less permeable flood plain deposits on the coastal plain, and these are used principally for pastoral purposes.
Surface water Pilbara Surface Water Area – RIWI Proclaimed	The Premises is located within the proclaimed Pilbara Surface Water Area. There are no licensed surface water users within 2km of the Premises.
E1 Minor non-perennial waterway	250m east-northeast of the Premises. The waterway is mapped as traversing the Dampier Salt Limited Premises before discharging into Saline Coastal Flats approximately 4.5km from the Premises. The emergency overflow pipe discharges from Pond 5 into a culvert under Great Northern Highway, which discharges into the waterway.
Port Hedland 1 in 100 (1% AEP Floodplain Development Control Area	The Premises is located within the Floodplain Development Control Area. 1 in 100 AEP flood level data indicates that the Premise should not be affected by flooding during major events.
Cultural receptors	Distance from activity / prescribed premises
Aboriginal Cultural Heritage – Registered Sites	
108 – Finucane Midden	4.2 km north of Premises boundary
23297 - Midden; Shell	4.6 km north-northeast of Premises boundary
23298 - Midden; Shell	4.6 km northeast of Premises boundary
27835 - Sub surface cultural material; Midden; Shell	2.3 km northwest of Premises boundary
27818 - Sub surface cultural material; Midden; Shell	3.1 km northwest of Premises boundary



Figure 6: 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 considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete 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 licence as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Licence L2978/2025/1 that accompanies this decision report authorizes emissions associated with the operation of the premises i.e. Category 54 activities.

The conditions in the issued licence, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

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

Risk Event					Risk rating C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls				
Construction								
Existing Treatment Ponds 1, 2 and 3 decommissioned, deslugged and lined with a HDPE synthetic membrane before being recommissioned	Sewage and partially treated sewage containing contaminants (nutrients, metals, pathogens, PoPs)	Direct discharge to land/ surface water, seepage to groundwater causing ecosystem disturbance.	Surrounding land and native vegetation Soil profile Minor waterway 250m east-northeast of the	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	N	Conditions 1-6; 10, 11, 23 <u>Schedules 3 & 4</u>	The Delegated Officer considers that the applicant's proposed controls are generally sufficient, however additional regulatory controls are required due to the applicant not providing detailed liner technical specifications and a Construction

Risk Event					Risk rating C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls				
	Spill/ contaminated stormwater and treated wastewater	Overland flow and infiltration to soil and groundwater causing ecosystem disturbance	Premises	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk			Quality Assurance Plan for the works. The Delegated Officer has determined to specify the minimum requirements and quality assurance that must be undertaken for the works as regulatory conditions.
Storage and drying of sludge prior to disposal	Sewage and partially treated sewage containing contaminants (nutrients, metals, pathogens, PoPs) Leachate Odour	Discharge to land/ surface water, seepage to groundwater causing ecosystem disturbance.				C = Moderate L = Unlikely Medium Risk	Y	Conditions 7, 9, 10, 11, 23
Operation								
Receipt, processing and treatment of wastewater.	Noise Odour	Air/windborne pathway causing impacts to health and amenity	H2 The Landing Resort and Walkabout Motel / short stay accommodation immediately southeast H3 Port Hedland International	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Nil	There will be very limited access to the WWTP thus vehicle movements will be restricted and infrequent. The WWTP is a pond system with minimal mechanical components.

Risk Event					Risk rating C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls				
	Pests / vermin	Breeding of mosquitos causing impacts to human health and amenity	Airport 350 m southeast	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y		Noise emissions can be regulated under the Environmental Protection (Noise) Regulations 1997 (EP Noise Regulations) Based on the design of the plant and separation distance between receptors, the Delegated Officer considers that odour emission and mosquito impacts are unlikely in most circumstances.
Receipt, processing and treatment of wastewater.	Sewage Treated wastewater Solid wastes / sludge	Spills / leaks resulting in migration into surface water ways causing ecosystem disturbance or impacting surface water quality and amenity. Spills / leaks resulting in seepage to soil and groundwater causing contamination and impacting water quality	H2 The Landing Resort and Walkabout Motel / short stay accommodation immediately southeast H3 Port Hedland International Airport 350 m southeast Surrounding land Soil profile Minor waterway 250m east-northeast of the	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Conditions 7-23	The WWTP design and water balance results demonstrate that the applicant's controls are generally sufficient. These key design controls have been specified in the licence as regulatory requirements.

Risk Event					Risk rating C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls				
Disposal of treated wastewater via infiltration	Treated wastewater discharge to the environment	Discharge to land, infiltration to groundwater causing ecosystem disturbance and impacting water quality	Premises	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y		

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

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 20 August 2021	None received	N/A
Local Government Authority advised of proposal on 26 May 2025	None received.	N/A
Department of Health advised of proposal on 26 May 2025	DoH advised that although the WWTP is built, previously requested documents remain outstanding, and this information is still needed to ensure regulatory compliance. DoH provided the following history regarding the Premises: • 2012: Proposal submitted to DoH for a WWTP to serve 600 people with treated effluent reuse. DoH gave conditional "in principle approval." • 2018: Reuse scheme was never implemented; DoH approval was rescinded. • 2020: DoH received a development application from local government to expand The Landing but did not comment, as the existing WWTP system was deemed adequate by DoH. • 2023: Amendment development application referred by local government for further expansion of The Landing. DoH requested certified documentation on WWTP performance, pond design, and detailed site plans, which was not provided.	The applicant is advised to provide the certified documentation to DoH however this outstanding matter does not prevent the licence being granted.
Department of Planning, Lands and	DPLH is investigating a request from the lessees for the freehold	The Delegated Officer has liaised with DPLH and is satisfied that the

Consultation method	Comments received	Department response
Heritage advised of proposal on 26 May 2025	conversion of their respective leases. Initial investigations and due diligence processes have essentially been completed. However, prior to actioning any tenure change, DPLH will be seeking confirmation from the Department of Water and Environmental Regulation that the necessary approvals and regulatory requirements for the proposed activity are in place. Main Roads Western Australia (MRWA) has advised that it has been in consultation with the lessee of M586142, regarding a small 324 m² portion of the lease area that it requires to be surrendered as part of the Great Northern Highway bypass, prior to any freehold conversion of the lease. It is noted the total area MRWA has indicated to DPLH differs to that quoted in your correspondence. DPLH will require confirmation from MRWA of the final area for surrender, supported by approval from the lessee, prior to progressing survey, surrender and freehold conversion of the lease. While no Aboriginal Heritage Sites or Places have been identified to intersect with Lots 5820 and 5821, should the proponent become aware of any Aboriginal Heritage being present in the area, they will need to adhere to their obligations under the <i>Aboriginal Heritage Act 1972</i>.	instrument can be granted based on existing leasehold areas, excluding the 324m ² of area road reserve as shown in Figure 1 of the licence.
Main Roads WA advised of proposal on 26 May 2025	None received	N/A
Applicant was provided with draft documents on 6/10/2025	Updated Figure 2 provided as requested, no further comments.	Figure 2 updated

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Department of Water (DoW) 2013, *Water quality protection note 26 Liners for containing pollutants, using synthetic membranes*, Government of Western Australia [WQPN 26 - Liners for containing pollutants, using synthetic membranes](#)
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Environmental Siting*, Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020b, *Guideline: Risk Assessments*, Perth, Western Australia.
5. Douglas Partners, 2012, *Report on Geotechnical Investigation - The Landing Precinct*, unpublished report for Port Village Accommodation Pty Ltd