



Application for Works Approval

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

Works Approval Number W6837/2023/1

Applicant Town of Port Hedland

File number DER2023/000523

Premises South Hedland Landfill Facility
Reserve 41342 North Circular Road
SOUTH HEDLAND WA 6721
Being Lot 5813 on Diagram 89435

Date of report 18 January 2024

Decision Works approval granted

Abbie Crawford

A/Manager, Waste 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 and operation of the premises. As a result of this assessment, works approval W6837/2023/1 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 2 August 2023, the applicant (Town of Port Hedland) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

Town of Port Hedland operates the South Hedland Landfill with a solid waste facility and a liquid waste facility under Licence L6917/1997/8 at Reserve 41342 North Circular Road.

The current liquid waste facility consists of a concrete lined receival pit which feeds into two concrete lined anaerobic ponds (Pond 1 and 2) and one high density polyethylene (HDPE) lined pond (Pond 3). Liquid waste is disposed of to either of Pond 1 or 2, both of which discharge into Pond 3 via an inverted exposed tee which screens out solids. The use of Ponds 1 and 2 is rotated to allow each pond to be fully drained after use. The sludge remaining in the receival ponds is removed by an excavator and dried prior to disposal. Pond 3 is primarily used for aeration of the liquid phase prior to treatment in the Sequencing Batch Reactor (SBR). The treatment plant has a capacity of 90 m³ per day.

The works approval application is to undertake construction works associated with the following:

- Construction of new evaporation pond (pond 4)
- Re-lining of existing evaporation pond (pond 3)
- Installation of three additional groundwater monitoring bores
- Installation of a mechanical septage receival screen
- Construction of new septage unloading bay

Under this application, the Town of Port Hedland is proposing construction of a new evaporation pond (Pond 4) for containment of liquid wastes at the premises. Additionally, a new mechanical septage screen is to be constructed. This screen will reduce the labour of desludging the receival ponds compared to the existing system.

As alternative liquid waste facilities were not identified, the Town of Port Hedland decided to add a new evaporation pond (Pond 4) so it could continue to provide this essential service to the local community while Pond 3 is refurbished. Also, Pond 4 capacity will provide a buffer during peak periods and as a potential baseline to measure anticipated growth into the future.

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 W6837/2023/1. 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 W837/2023/1.

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 time limited operations 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

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Excavation for construction and installation of new pond, new groundwater bores, unloading bays and septage screen.	Air / windborne pathway	Use water carts to wet down liquid waste facility access road Implement vehicle speed limit
Noise	Vehicle movements Liner installation	Air / windborne pathway	Construction time restricted to working hours.
Odour	Refurbishment of existing pond	Air / windborne pathway	Modification and construction works are planned in a manner that will allow the ponds to be taken offline and modified on a sequential basis. Sludge is partially dried before being removed from the pond 3 Periodic removal of scum
Spills of untreated wastewater	Draining of Pond 3 to Pond 4	Overland flow Subsurface leaching	Good housekeeping such as receival pit cleaning and removing spillages straight away
Time limited Operation			
Odour	Operation of	Air / windborne	Modification and construction works are planned in a manner that will allow the

Emission	Sources	Potential pathways	Proposed controls
	evaporation Pond 4 Operation of septage screen and screens bin	pathway	<p>ponds to be taken offline and modified on a sequential basis.</p> <p>Ponds are monitored for temperature, pH and oxygen content to ensure optimum conditions for operation</p> <p>Good housekeeping such as receival pit cleaning and removing spillages straight away</p> <p>Anerobic ponds are used alternatively to allow continual acceptance of liquid waste</p> <p>Once the maximum sludge load is achieved, the active anerobic pond is drained and the sludge removed to the landfill</p> <p>Sludge is partially dried before being removed from the pond</p> <p>Periodic removal of scum</p>
Spills of untreated wastewater	Operation of evaporation Ponds 3 and 4	Overland flow Subsurface leaching	<p>The existing Licence L6917/1997/8 includes various controls for spills and stormwater management.</p> <p>Onsite stormwaters capture and treatment through wastewater treatment systems.</p> <p>Pond volumes controlled to ensure no overflow, freeboard of 0.5m retained at all times.</p> <p>Freeboard of 0.6 m maintained on ponds as part of Pre-Cyclone Checks.</p> <p>Visual site inspections to ensure all onsite water controlled.</p> <p>The septage unloading consist of a concrete pad and sump.</p> <p>Pond inflows and levels are measured to avoid overtopping.</p>
Seepage of liquid waste	Operation of evaporation Ponds 3 and 4	Subsurface seepage	<p>Pond 3 and 4 will be lined with a layer of geotextile and overlaid by a 1.5 mm HDPE with welded panels</p> <p>In addition to the existing groundwater bores, three new groundwater bores will be installed to monitor ambient groundwater quality.</p>

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

2

and

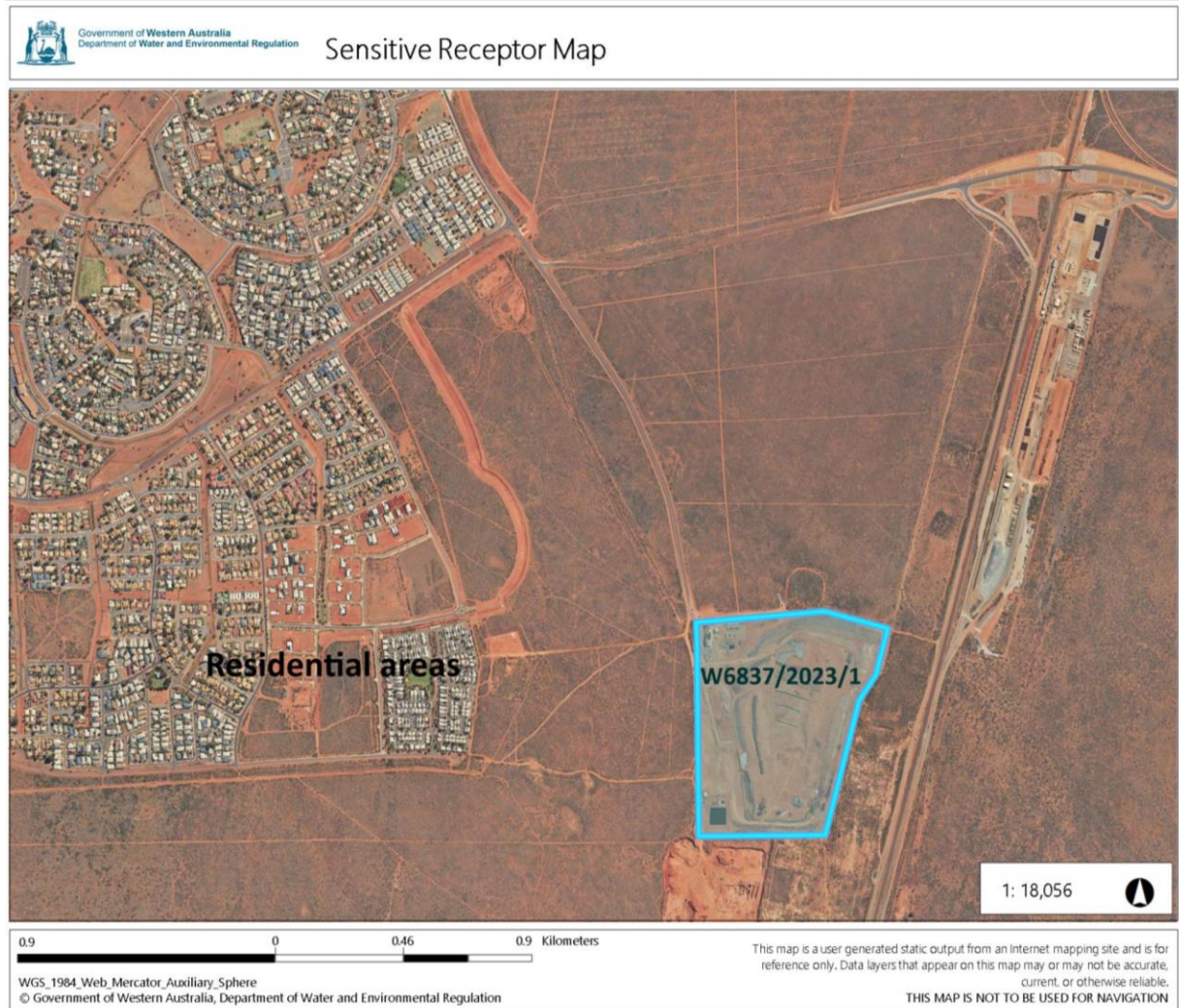


Figure 1 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

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

Human receptors	Distance from prescribed activity
South Hedland residential subdivision	~750m west of Premises
Privately owned Quarry	Immediately south of Premises
Port Hedland International Airport	~3km north of Premises
Environmental receptors	Distance from prescribed activity

<i>Rights In Water Irrigation Act 1914</i>	The Premises is located within proclaimed Pilbara Surface Water area and Pilbara Groundwater Area
Groundwater	4 – 17mbgl
Unallocated crown land containing native vegetation	Immediately surrounding the eastern and southern boundary of the Premises

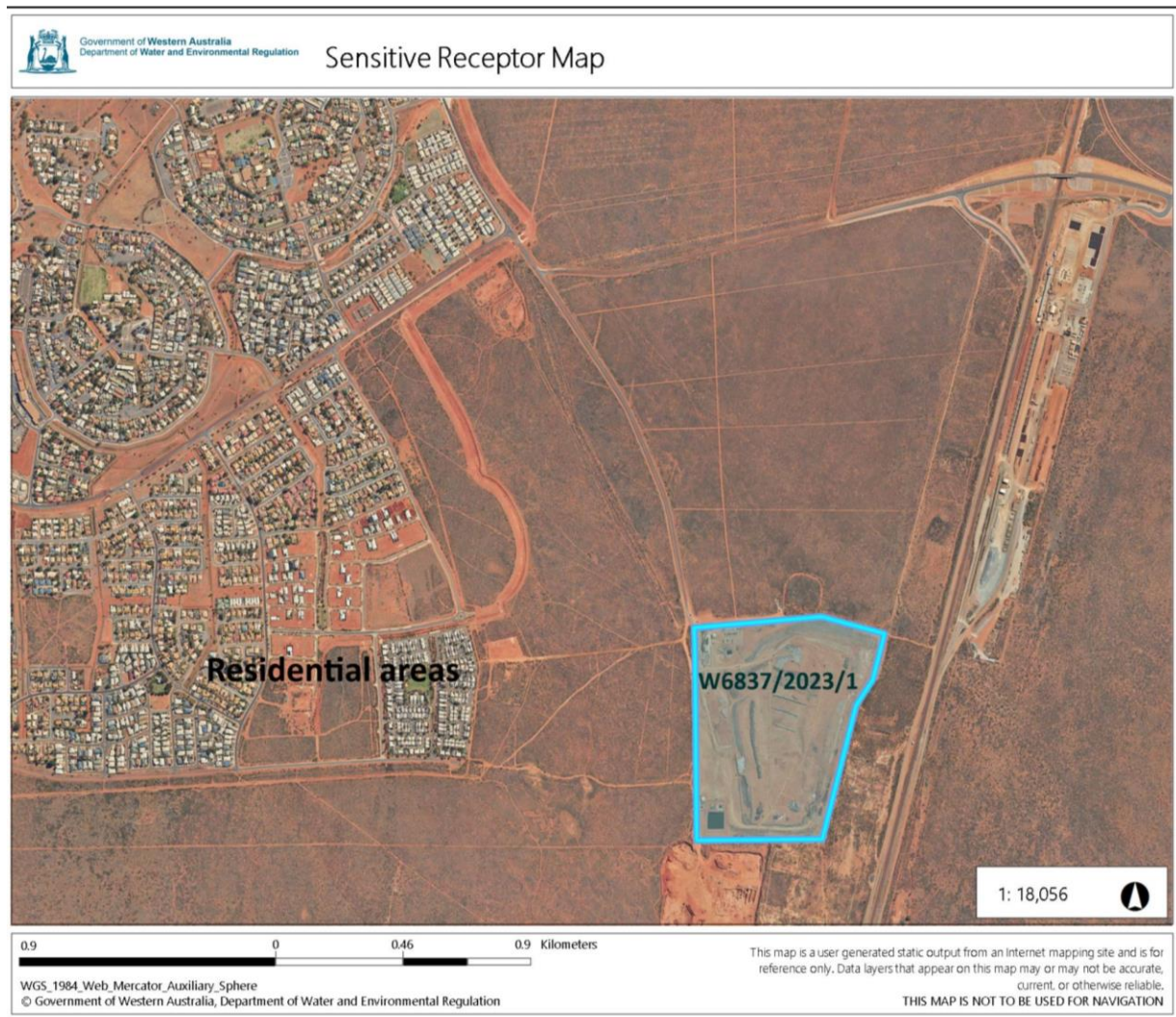


Figure 1: Distance to sensitive receptors

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 3.

Works approval W6837/2023/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence 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 3: Risk assessment of potential emissions and discharges from the premises during construction and time limited operation

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions of works approval ²	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Construction								
Excavation for construction and installation of new pond, new groundwater bores, unloading bays and septage screen. Vehicle movements Liner installation	Dust	Air / windborne pathway causing impacts to health and amenity	Closest human receptors approximately 750m west from the Premises	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	N/A	The Delegated Officer considers that the Applicant's proposed controls and the current conditions within the existing Licence L6917/1997/8 are likely to be sufficient at mitigating dust emissions
	Noise			Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	N/A	The Delegated Officer considers noise emissions associated with the construction and time limited operation can be sufficiently managed through the <i>Environmental Protection (Noise) Regulations 1997</i>
Refurbishment of existing ponds	Odour	Air / windborne pathway causing impacts to health and amenity	Closest human receptors approximately 750m west from the Premises	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Y	N/A	The Delegated Officer considers that the Applicant's proposed controls and the current conditions within the existing Licence L6917/1997/8 are likely to be sufficient at mitigating odour emissions
Draining of Pond 3 to Pond 4	Spills of untreated wastewater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality.	Land immediately surrounding the premises Pilbara Surface Water Area Pilbara	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 1,	The Delegated Officer considers that the Applicant's proposed controls and the current conditions within the W6837/2023/1 are likely to be sufficient at mitigating emissions from spill of

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Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		Subsurface seepage	Groundwater Area Groundwater 4 to 17 metres below ground level					untreated wastewater
Operation (including time-limited-operations)								
Operation of evaporation pond 4 Operation of septage screen and screens bin	Odour	Air / windborne pathway causing impacts to health and amenity	Closest human receptors approximately 750m west from the Premises	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	N/A	The Delegated Officer considers that the Applicant's proposed controls and the current conditions within the existing Licence L6917/1997/8 are likely to be sufficient at mitigating odour emissions
Operation of evaporation pond 3 and 4	Spills or overflows of untreated/partially treated wastewater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality Subsurface seepage	Land immediately surrounding the premises Pilbara Surface Water Area Pilbara Groundwater Area Groundwater 4 to 17 metres below ground level	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1, 8 and 9	The applicant provided a water balance calculation as evidence to demonstrate the capacity of the total proposed upgraded system is sufficient from the expected receipt volumes under a range of environmental conditions. The Delegated Officer considers that the Applicant's proposed controls, water balance calculation and the current conditions within the existing Licence L6917/1997/8 are likely to be sufficient at mitigating spill or overflows of untreated/partially treated wastewater.

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
Operation of evaporation pond 3 and 4	Seepage of liquid waste	Subsurface seepage	Pilbara Groundwater Area Groundwater 4 to 17 metres below ground level	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1, 8 and 9	The Delegated Officer considers that the Applicant's proposed controls are likely to be sufficient at mitigating emissions from seepage of liquid waste

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 5 October 2023	None received	N/A
Applicant was provided with draft documents on 21 December 2023	None received	N/A

5. Conclusion

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

References

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

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY						
Application type						
Works approval	<input checked="" type="checkbox"/>					
Licence	<input type="checkbox"/>	Relevant works approval number:	W6837/2023/1	None	<input type="checkbox"/>	
		Has the works approval been complied with?			Yes <input type="checkbox"/>	No <input type="checkbox"/>
		Has time limited operations under the works approval demonstrated acceptable operations?			Yes <input type="checkbox"/>	No <input type="checkbox"/>
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?			N/A <input type="checkbox"/>	
		Date Report received:				
Renewal	<input type="checkbox"/>	Current licence number:				
Amendment to works approval	<input type="checkbox"/>	Current works approval number:				
Amendment to licence	<input type="checkbox"/>	Current licence number:				
		Relevant works approval number:		N/A	<input type="checkbox"/>	
Registration	<input type="checkbox"/>	Current works approval number:		None	<input type="checkbox"/>	
Date application received		02 August 2023				
Applicant and Premises details						
Applicant name/s (full legal name/s)		Town of Port Hedland				
ACN						
Premises name		South Hedland Landfill facility				
Premises location		41342 North Circular Road, South Hedland				
Local Government Authority		Town of Port Hedland				
Application documents						
HPCM file reference number:		DWERTD815703				
Key application documents (additional to application form):		N/A				
Scope of application/assessment						
Summary of proposed activities or changes to existing operations.		Addition of new facultative treatment pond for Cat 61 activities				

Category number/s (activities that cause the premises to become prescribed premises)
Table 1: Prescribed premises categories

Prescribed premises category and description	Production or design capacity (Assessed – existing licence)	Proposed changes to the production or design capacity (amendments only)
Category 61	14,000 tonnes per annual period	NA

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: N/A Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>	
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: N/A EPA Report No: N/A	
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No: N/A	
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Existing prescribed premises	
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	The Applicant states that planning approval has been applied for internally with the Town	
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	No clearing required	
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A	
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	NA	
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Name: RIWI Pilbara Groundwater Area and Pilbara Surface water Area Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: Serpentine Dam Catchment Area Priority: 1 and 2 Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i>)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004</i>	
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Classification: possibly contaminated – investigation required (PC–IR) Date of classification: 12, 2016	