



## Application for Licence Amendment

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

<b>Licence Number</b>	L8861/2014/1
<b>Licence Holder</b>	Karratha Recycling Pty Ltd
<b>ACN</b>	163 991 106
<b>File Number</b>	DWERVT16174~1
<b>Premises</b>	<p>Karratha Recycling Liquid Waste Facility Lot 120 and 121 Pindan Road</p> <p>GAP RIDGE WA 6714</p> <p>Legal description: Lot 120 on Deposited Plan 424552 Certificate of Title Volume 4027 Folio 393; and Lot 121 on Deposited Plan 424552 Certificate of Title Volume 4027 Folio 394</p> <p>As defined by the Premises map attached to the Revised Licence</p>
<b>Date of Report</b>	20 December 2024
<b>Decision</b>	Revised licence granted

**Grace Heydon**

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

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## 1. Decision summary

Licence L8861/2014/1 (L8861) is held by Karratha Recycling Pty Ltd (Licence Holder) for the Karratha Recycling Liquid Waste Facility (the Premises), located at Lot 120 and 121 Pindan Road. This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L8861 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises. The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Background

On 12 April 2024, the Licence Holder submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application was to originally undertake construction works relating to an additional lined aerobic and anaerobic pond and a drying bed at the Premises. The ponds were to be lined with Elcoseal Geosynthetic Clay Liners (GCL). Elcoseal GCL has been used in the existing wastewater ponds at the Premises and has a permeability of  $2.8 \times 10^{-11}$  m/s, which is below the required maximum allowable permeability of  $1 \times 10^{-9}$  m/s as outlined in Department of Water, Water Quality Protection Notice 27 (WQPN 27).

In correspondence dated 10 July 2024 the Licence Holder confirmed that both the lined anaerobic and aerobic ponds (Ponds) had been constructed prior to granting of the Works Approval. Works Approval W6929/2024/1 (W6929) was subsequently issued for construction of the Drying bed only as DWER does not issue retrospective Works Approvals post construction activities. Given the Ponds had already been constructed, the Licence Holder was required to apply for a licence amendment to add the Ponds to the licence to permit their ongoing operation.

Construction of the Ponds without a valid Works Approval may be in breach of Section 53 of the EP Act. Any consequential action to be taken resulting from the non-compliance with s53 of the EP Act through the construction of the Ponds without a Works Approval will be determined by DWER's Assurance (Compliance) Branch outside of this assessment.

### 2.3 Application summary

On 6 September 2024, the Licence Holder submitted an application to the department to amend Licence L8861 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Operation of a new lined anaerobic pond; and
- Operation on a new lined aerobic pond.

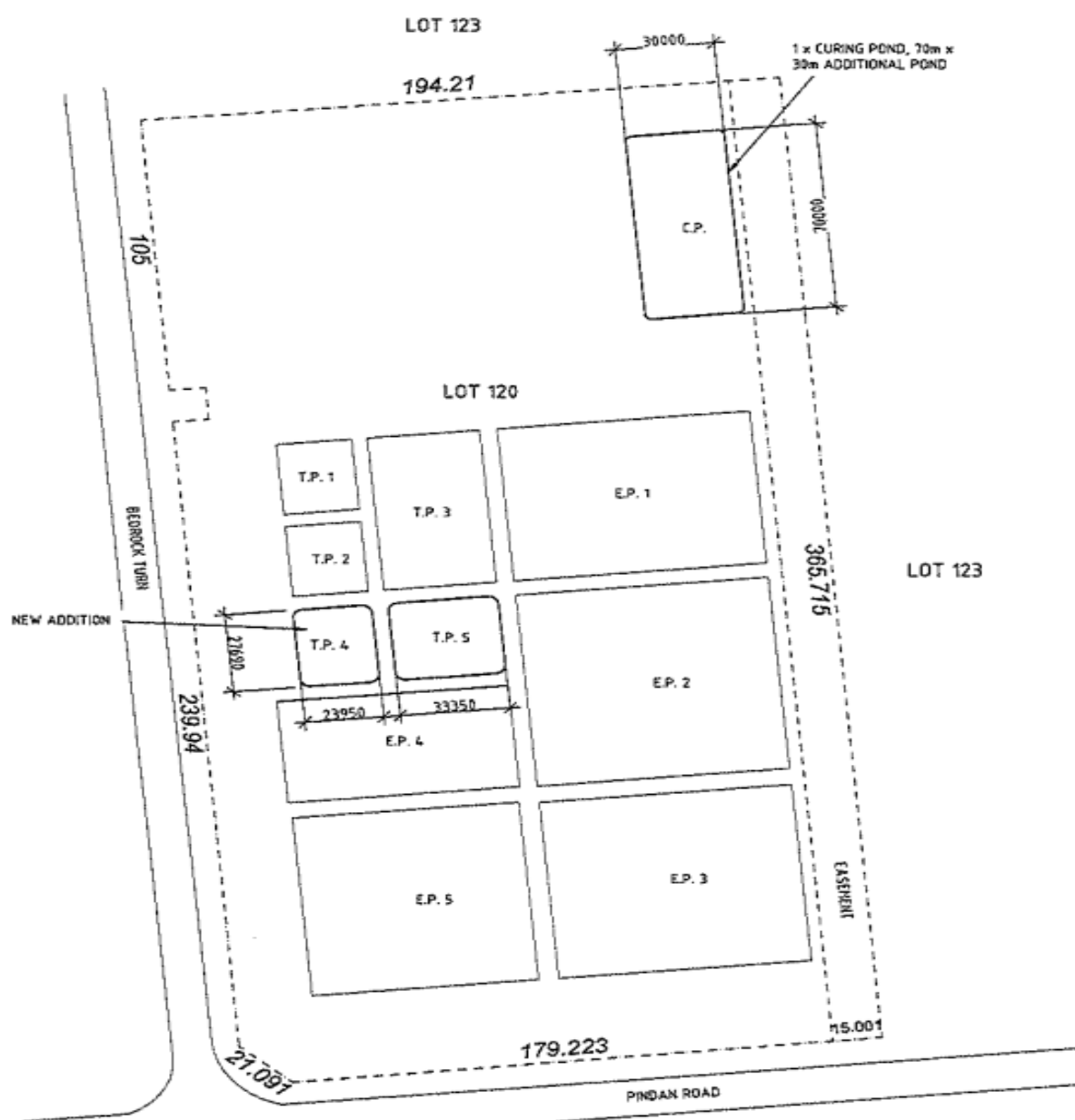
The new anaerobic pond will receive liquid waste K210/K110 which will then be transferred to the new aerobic pond for further treatment before transfer to the existing K210/K110 evaporation pond 1. Figure 1 outlines the new anaerobic pond and aerobic pond layout at the Premises.

This amendment is limited only to changes to allow operation of the Ponds under Category 61 from the Existing Licence. No changes to the aspects of the existing Licence relating to Category 35, 36 and 61A have been requested by the Licence Holder.

Table 1 below outlines the proposed changes to the existing Licence.

**Table 1: Proposed design or throughput capacity changes**

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
61	130,000 tonnes per annual period	130,000 tonnes per annual period	No changes to Production and Design Capacity – amendment to allow operations of the Ponds only.



**Figure 1: Pond layout - Anaerobic Pond (T.P.4) and Aerobic Pond (T.P.5)**

## 2.4 Review of construction quality assurance documentation

The Licence Holder has submitted Construction Quality Assurance (CQA) documentation for the Ponds to confirm that the Ponds have been constructed to the specifications what would be consistent with a granted works approval application. Consideration of the design has also been factored into the assessment.

As a part of this amendment application, a review of the CQA documentation was undertaken and is summarised in Table 2 below.

**Table 2: CQA conformance review**

Infrastructure	Design and construction / installation requirements	Conformance with requirements
Ponds As defined on Figure 1	<ul style="list-style-type: none"> <li>Anaerobic pond of 27.69m x 23.95m and Aerobic pond 27.69m x 33.35m and 3 m in depth;</li> <li>Lined with Elcoseal GCL with a permeability great then <math>1 \times 10^{-9}</math> m/s;</li> <li>Compacted base of in-situ soil;</li> <li>Moisture condition and compact to Standard Maximum Dry Density (SMDD) of 95% and Optimum Moisture Content (OMC) of -2% to +2% in layers to FSL not exceeding 300mm and not less than 100mm;</li> <li>Internal batters cut to 1:3 (V:H);</li> <li>The entire surface area of each roll must be inspected by the suitably qualified CQA civil engineer/consultant prior to works commencing or during unrolling/installation, to ensure that there are no tears, punctures, abrasions, indentations, cracks, thin spots or other faults in the material;</li> <li>Installation and seaming must be undertaken by installers with extensive experience in seaming the same type of GCL being installed and using the same seaming procedures to be used on site. They must hold a current independent certification for seaming and installation to a recognised industry standard (national or international);</li> <li>Must be installed to overlay the subgrade so that the GCL remains in direct contact with the subgrade, with sufficient slack given to ensure low areas in the subgrade are not bridged by the GCL;</li> <li>Panel overlap zones must be no less than 300 mm and orientated so the overlap is in the down sloping direction</li> </ul>	<ul style="list-style-type: none"> <li>The ponds have been constructed to fall within the specified dimensions;</li> <li>The in-situ soil of the Pond areas was compacted;</li> <li>The Ponds have been lined with GCL Liner;</li> <li>A CQA has been submitted for the Ponds to demonstrate that liner installation was completed with no material faults and as per the required specifications;</li> <li>Pond Inspection and Test Plan has been submitted which has been signed by authorised officers advising: <ul style="list-style-type: none"> <li>Base layer material was sufficient;</li> <li>Field Density 90% MMDD have all been exceed;</li> <li>Batter slopes were completed;</li> <li>No non-conformance with GCL liner rolls;</li> <li>GCL Rolls placed correctly; and</li> <li>No GCL repairs were required.</li> </ul> </li> <li>The Ponds have been lined with GCL Liner;</li> <li>Anchor trenches completed as required;</li> <li>Soil placement over GCL completed as required;</li> <li>The water table at the Pond location varies between 9-10 mBGL according to sampling results obtained from an adjacent groundwater monitoring bore. The base of the GCL installed are therefore approximately 6-9m from</li> </ul>

Infrastructure	Design and construction / installation requirements	Conformance with requirements
	<p>and across the pond base;</p> <ul style="list-style-type: none"> <li>• Panels installed on Ponds embankments must be fixed in anchor trenches. Anchor trenches must be set back 1.0 m from the top edge of the pond embankment and slopes steeper than 7H : 1V;</li> <li>• Panels must be free of holes, blisters, blemishes, striations, bubble, roughness, contaminants and permanently attached raw materials;</li> <li>• Where the GCL has been damaged during installation, covering with an overlapping piece of GCL can repair such areas. The overlap should be at least 500 mm;</li> <li>• Document the results of the installation of the GCL Liner, inspection, and if required, any repairs done to the liner;</li> <li>• 300mm soil placement over the GCL;</li> <li>• Lined in accordance with the specifications of Water Quality Protection Notice (WQPN) 26, <i>Liners for containing pollutants, using synthetic membranes</i> (Department of Water, August 2013);</li> <li>• Separation distance of at least 2 m must be maintained between the base of the GCL and the highest wet season water table;</li> <li>• Perimeter of Ponds must be bunded;</li> <li>• Constructed to contain rainfall resulting from a 1 in 100 year storm event of 24 hours duration; and</li> <li>• Constructed to allow for a 500 mm freeboard to be maintained.</li> </ul>	<p>the water table;</p> <ul style="list-style-type: none"> <li>• The perimeter of the Ponds are bunded;</li> <li>• The Ponds capacity to contain rainfall resulting from a 1 in 100 year storm event of 24hrs duration;</li> <li>• Ponds allow for a 500 mm freeboard to be maintained; and</li> <li>• Construction photographs have been submitted.</li> </ul>

### 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 Amendment Report are detailed in Table 3 below. Table 3 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

**Table 3: Licence Holder controls**

Emission	Sources	Potential pathways	Proposed controls
Dust	Operation of Ponds Machinery movements	Air / windborne pathway	Water cart on site. Restricted vehicle speed due to size of Premises.
Noise			Compliance with the <i>Environmental Protection (Noise) Regulations 1997</i> (Noise Regulations). Size of premises restricts vehicle speeds.
Odour	Liquid waste acceptance and storage at Ponds		Grease trap, sewage and septage wastes are deposited into the receival Anaerobic Pond so as to not disturb the post crust, which assists in reducing odour emissions. Grease trap, sewage and septage wastes is transferred from the Anaerobic Pond to the Aerobic pond for further treatment prior to discharged to Evaporation Pond 1 and are less odour generating than when first received at the Premises. Siting.
Leachate	Seepage from Ponds	Seepage to soils and infiltration to groundwater	GCL lined Ponds constructed to meet not less than $1 \times 10^{-8}$ m/s permeability. Siting. Depth to groundwater 6 – 10 mbgl.
Overtopping	Liquid waste acceptance and storage at Ponds	Seepage to soils and overflow to surface water	A 500 mm freeboard will be maintained and managed through daily operations with regard to current pond capacity and potential inflows. The Ponds have capacity to contain
Contaminated Stormwater			

Emission	Sources	Potential pathways	Proposed controls
			<p>stormwater resulting from a 1 in 20 year storm event of 24 hours duration.</p> <p>Ponds are bunded which directs stormwater away from the Ponds.</p>

### 3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 4 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020)).

**Table 4: Sensitive human and environmental receptors and distance from prescribed activity**

Human receptors	Distance from prescribed activity
Commercial Premises	Adjacent to the Premises
Stayover Kingfisher Village	1.4 km southeast of the Premises
Cievo Karratha Village	2.2 km northeast of the Premises
Residential Properties	3 km northeast of the Premises
Environmental receptors	Distance from prescribed activity
Pilbara Groundwater Area (RIWI Act 1914) <ul style="list-style-type: none"> <li>Groundwater typically 6-10 m below existing ground level</li> <li>Hyper saline brackish</li> </ul>	Premises mapped within this designated area
Pilbara Surface Water Area (RIWI Act 1914)	Premises mapped within this designated area
Threatened ecological communities. Roebourne Plains gilgai grasslands	Premises mapped within this area
Surface water lines <ul style="list-style-type: none"> <li>Seven Mile Creek</li> <li>Minor non perennial water course</li> </ul>	500 m east of Premises



## 3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account 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 Licence Holder 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 Licence Holder'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 Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

The Revised Licence L8861 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 5. Risk assessment of potential emissions and discharges from the Premises operation

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
Receival and Operation of the Ponds  Vehicle movements	Dust	Air/windborne pathway causing impacts to health and amenity	Adjacent commercial premises	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Condition 14	N/A
	Noise		Stayover Kingfisher Village 1.4 km southeast of Premises	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	N/A	N/A
	Odour		Civeo Karratha Village 2.2 km northeast of Premises	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	N/A	N/A
	Leachate	Liquid waste infiltration to groundwater through the base of the Ponds	Residential properties 3 km northeast of Premises	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	Condition 1, 2, 3, 4, 5, 23 and 28	N/A
	Overtopping	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Groundwater 6-10mbgl	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	Condition 6	N/A
	Contaminated stormwater		Threatened ecological community.	Refer to Section 3.1	C = Minor L = Unlikely <b>Low Risk</b>	Y	Condition 13	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

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

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## 4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

**Table 6: Consultation**

Consultation method	Comments received	Department response
Local Government Authority advised of proposal 30/09/2024.	<p>The City of Karratha replied on 11/10/2024.</p> <p><i>Thank you for your referral dated 30 September 2024 relating to a Category 61 Licence Amendment for the Liquid Waste Facility at Lot 121 Pindan Road, Gap Ridge.</i></p> <p><i>The City has no objection to the Licence Amendment based on the information provided.</i></p>	Noted.
Licence Holder was provided with draft amendment on 22 November 2024.	Licence Holder requested to Waive the comment period in an email dated 12 December 2024.	Noted.

## 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

### 5.1 Summary of amendments

Table 1 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

**Table 1: Summary of licence amendments**

Condition no.	Proposed amendments
Condition 1 Table 1	Added Anaerobic Pond to condition.
Condition 3 Table 2	Added Anaerobic Pond and Aerobic Pond to condition.
Condition 4 Table 3	Added Anaerobic Pond and Aerobic Pond to condition.
Condition 23 Table 9	Amended Monitoring Point to include Monitoring Bore 3 as the Bore has been constructed.
Schedule 1 Map	New Maps to compliment the Licence Amendment.

## 5.2 Summary of Licence conversion

Table 8 provides a summary of the conversion of the Existing Licence that has been reformatted into the current Licence template.

**Table 2: Consolidation of licence conditions in this amendment**

Existing condition	Condition summary	Revised licence condition	Conversion notes
1	Maintain pollution control and monitoring equipment	N/A	Redundant condition. Deleted from licence.
2	Recover, remove and dispose environmentally hazardous materials.	Condition 9 and 10	Revised to current licensing format.
3	Stormwater	Condition 13	Revised to current licensing format.
4	Infrastructure and equipment requirements	Condition 5	Revised to current licensing format.
5	Investigate any exceedances	N/A	Redundant condition. Deleted from licence.
6	Waste Acceptance	Condition 1	Revised to current licensing format.
N/A	Removal of non-conforming waste	Condition 2	Revised to current licensing format.
7	Waste Processing	Condition 3	Revised to current licensing format.
8	Containment Infrastructure	Condition 4	Revised to current licensing format.
9	Management of Wastewater Treatment Ponds	Condition 6	Revised to current licensing format.
10	Asphalt ignition safeguards	Condition 7	Revised to current licensing format.
11	Baghouse Filters	Condition 8	Revised to current licensing format.
12	Minimisation of Dust	Condition 14	Revised to current licensing format.
13	General Emissions exceedances	N/A	Redundant condition. Deleted from licence
14	Point source air emissions	Condition 11	Revised to current licensing format.
15	Air emission limits	Condition 12	Revised to current licensing format.
16	Specific Action – additional groundwater monitoring bore	N/A	Deleted from Licence as Licence Holder has complied with this condition in 2021. Monitoring Bore 3 is now part of groundwater monitoring.
17	Monitoring bore Construction Report	N/A	Deleted from licence as compliance in 2021.

Existing condition	Condition summary	Revised licence condition	Conversion notes
18	General Monitoring	Condition 15	Revised to current licensing format
19	Monitoring Frequency	Condition 16	Revised to current licensing format
20	Production Date Throughput	N/A	Redundant condition. Deleted from licence
21	Monitoring equipment calibration	Condition 17	Revised to current licensing format
22	Monitoring equipment calibration notification to CEO	Condition 18	Revised to current licensing format
23	Monitoring point source air emissions	Condition 20	Revised to current licensing format
24	Air Sample Requirements	Condition 21	Revised to current licensing format
25	Air Samples to NATA laboratory	Condition 22	Revised to current licensing format
26	Monitoring of Input and Outputs.	Condition 19	Revised to current licensing format
27	Ambient groundwater monitoring	Condition 23	Revised to current licensing format
28	Information Records	Condition 24	Revised to current licensing format
N/A	Records	Condition 24 and 25	Revised to current licensing format
29	Annual Audit Compliance Report	Condition 27	Revised to current licensing format
30	Complaints management	Condition 24	Revised to current licensing format
31	Annual Environmental Report.	Condition 28	Revised to current licensing format
32	Annual Environmental Report trends history	N/A	Revised to current licensing format and captured under Condition 28
33	Notification	Condition 29	Revised to current licensing format
Schedule 1: Maps	Premises map	Schedule 1: Maps	New naming convention and new maps

## 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.