



Licence Number	L8807/2013/1
Licence Holder	Rottnest Island Authority
File Number:	ILS2013/000004-1
Premises	<p>Rottnest Island Waste Water Treatment Plant Kingsway ROTTNEST ISLAND WA 6160</p> <p>Legal description – Part Lot 10976 on Plan 216860 Certificate of Title Volume LR3096 Folio 976 As defined by the coordinates in Schedule 1 of the Revised Licence and by the Premises map attached to the issued Licence</p>
Date of Report	06/05/2020
Decision	Amendment granted

1. Definitions and interpretation

Definitions

In this Amendment Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
Amendment Report	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 info@dwer.wa.gov.au
CS Act	<i>Contaminated Sites Act 2003 (WA)</i>
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
<i>E. coli</i>	<i>Escherichia coli</i>
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Review
Licence Holder	Rottnest Island Authority
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
NEPM	National Environmental Protection Measure
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>

Term	Definition
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises/	refers to the premises to which this Amendment Report applies, as specified at the front of this Amendment Report.
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act, with changes that correspond to the assessment outlined in this Amendment Report.
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>
SCADA	Supervisory control and data acquisition
WWTP	Wastewater treatment plant

2. Amendment Description

The following guidance statements have informed the assessment and decision outlined in this Amendment Report.

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guideline: Decision Making (June 2019)*
- *Guidance Statement: Risk Assessment (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

2.1. Purpose and scope of assessment

Rottneest Island Authority submitted an application to the Department of Water and Environmental Regulation (DWER) to amend Licence L8807/2013/1 for the Rottneest Island Waste Water Treatment Plant (WWTP). The amendment is in relation to waste types and the Premises boundary. The WWTP is located at Part Lot 109769 on Plan 216860, Kingsway, Rottneest Island. The application was submitted to DWER on 29 January 2020.

The Delegated Officer has assessed the operational impacts of the proposed amendments and these are documented through this Decision Report. The Decision Report explains how DWER has assessed and determined the amendment and provides a record of DWER's decision-making process and how relevant factors have been taken into account.

Stakeholders should note that this document is limited to DWER's assessment and decision-making under Part V of the *Environmental Protection Act 1986* (EP Act). Other legislative requirements may apply to the proposed amendment, and it is the Licence Holder's responsibility to ensure that they have met all relevant requirements for their Premises.

2.2. Premises details

The Rottneest Island WWTP was originally constructed in 1996 and was subsequently upgraded in 2016. The Licence Holder treats sewage using membrane bioreactor (MBR) technology with treated wastewater irrigated on the Island's sports oval and golf course or discharged to an infiltration basin within the Premises.

The key components of the WWTP are:

- Screening and grit removal – The inlet screens remove coarse material prior to treatment. The discharge from the coarse screens discharges to the flow balance tank.
- Flow balance tank (FBT) – The FBT is used to buffer flows to the treatment plant to ensure consistent feed and also allow for storage in case of emergency or outage. It also allows neutralization or dilution of contaminants that may be harmful to the biological process.
- Fine screens – A set of fine screens (1.5 mm aperture) remove solids from the effluent and protect downstream equipment.
- Biological reactor – The biological reactor consists of a pre-anoxic zone, aerobic zone and post anoxic zone. The movement of wastewater between these zones allows for a high level of BOD and nitrogen removal. Coagulant is dosed into the bioreactor to assist in the precipitation of phosphorus.
- Membrane Filtration – Membranes are used to separate the treated water from the mixed liquor suspended solids. The small pore size results in the rejection of the solids and the majority of pathogens.

- Chlorine disinfection – A chlorine tank (CCT) has been installed to provide additional disinfection to the treated water. Residual chlorine is monitored in the recycled water storage tank (RWST) and additional dosing is undertaken via a recirculation loop to ensure a level of chlorine is maintained.
- Associated sewer network within and outside the Premises boundary.
- Emergency storage basin.
- Recycled water storage and distribution.
- Chemical storage and dosing.
- Odour scrubbing/treatment.

The plant provides capacity to treat all current sewage generated on the island plus an additional 30% capacity allowance for future growth. The expected flows per day are:

- Minimum 100kL/day during off-season; and
- Maximum 500kL/day during peak season.

The WWTP has been designed to treat wastewater to the target parameter concentrations listed in Table 2.

Table 2: Target concentrations for treated effluent from the Rottnest Island WWTP.

Parameter	Units	Target concentration
Total suspended solids	mg/L	< 10
Biochemical oxygen demand		< 10
Total nitrogen		< 10
Total phosphorus		< 1

Treated wastewater is then used to irrigate the sporting oval and the golf course on the Island or is discharged to an infiltration basin when in excess of reuse requirements. The percentage of treated water used in each of the proposed end uses is;

- Irrigation – 97%; and
- Infiltration – 3%.

2.3. Proposed amendment

The Licence Holder is seeking to amend their Existing Licence to permit acceptance of septage waste (controlled waste category K210) and a modification of the premises boundary to remove a potable water tank.

The Licence Holder intends to accept septage waste removed by vacuum truck from portable toilets and areas of the island not connected to the reticulated sewer network. The Licence Holder will accept up to 110 m³ of septage per annual period, which is approximately 80 tonnes per year when using a conversion factor of 0.721 tonnes per cubic metre (USEPA, 2006). The capacity of the WWTP does not require any change to incorporate the septage wastes and no new infrastructure is required.

Septage waste will be deposited by vacuum truck into an existing impermeable, covered, concrete sump used for containment and recirculation of supernatant from sludge dewatering. The vacuum truck will then be rinsed within a bunded area of the dewatering plant, with washwater directed towards the same concrete sump. Septage waste and washwater is then

pumped from the sump into the flow balance tank, to mix with reticulated sewage prior to entering the process trains. Figure 1 below depicts the process flow for septage wastes entering the WWTP and the overall process flow is shown in Figure 2.



Figure 1: Process flow for septage wastes entering the Rottnest WWTP.

The Licence Holder is also seeking to remove a potable water tank from the current Premises boundary. The boundary currently encompasses a potable water tank connected to the Island's drinking water system that has no connection to the WWTP conveyance system. It is believed this tank was included in error during a past amendment. The proposed change to the boundary is shown in Figure 3.

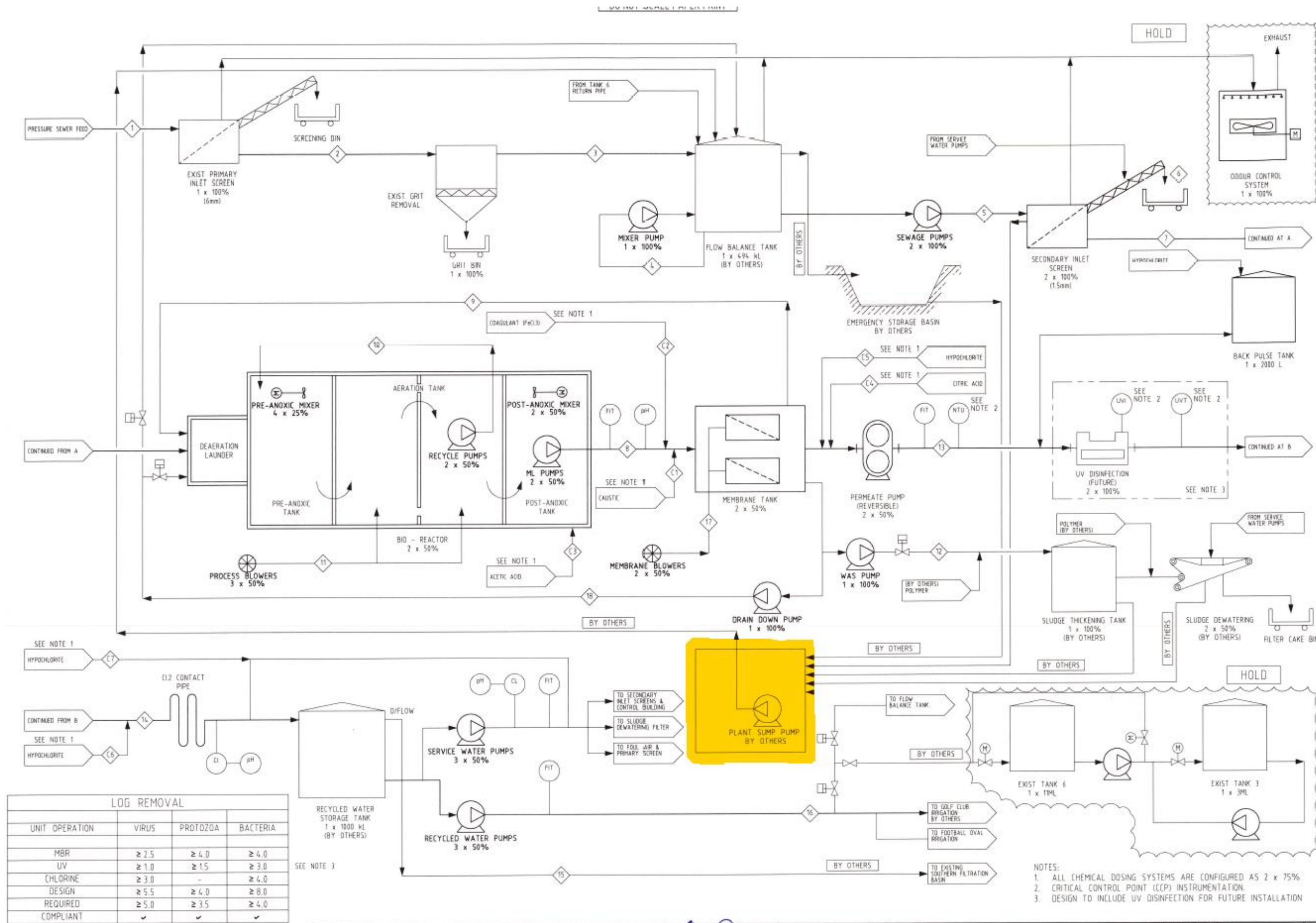


Figure 2: Rottneast Island WWTP process flow schematic. The sump pit for use in the proposed amendment is highlighted yellow.



Figure 3: Proposed boundary change.

Licence: L8807/2013/1

IR-T08 Amendment Notice (Major) template v2.0 (July 2017)

2.4. Consolidation of Licence

As part of this amendment package DWER has consolidated the licence by incorporating changes made under the following Amendment Notices:

- Amendment Notice 1, granted 13 October 2017 – incorporation of infrastructure constructed under works approval W5857/2015/1; and
- Amendment Notice 2, granted 8 January 2018 – change of Premises boundary.

The obligations of the Licence Holder have not changed in consolidating the licence. DWER has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices.

In consolidating the licence, the CEO has:

- updated the format and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 1 of the previous licence and advise the Licensee to obtain the form from the Department's website;
- revised licence condition's numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

Previously issued Amendment Notices will remain on the DWER website for future reference and will act a record of DWER's decision making.

3. Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 3.

Table 3: Relevant approvals

Legislation	Number	Approval
<i>Environmental Protection Act 1984</i> (WA) Part IV	Ministerial Statement 324	Statement that the Integrated Water Supply & Wastewater Treatment System Rottnest Island proposal may be implemented
<i>Health Act 1911</i> (WA)	N/A	Recycled water scheme approval

4. Instrument history

Table 4 provides the instrument history for the Rottnest Island WWTP.

Table 4: Instrument history

Instrument	Issued	Description
W1105/1993/1	09/06/1994	Construction of the original WWTP.
L5782/1993/1	19/09/2000	First licence issued.
L5782/1993/2	24/08/2001	Renewed licence.
L5782/1993/3	10/09/2003	Renewed licence.

Instrument	Issued	Description
L5782/1993/4	13/10/2003	Renewed licence.
L5782/1993/5	04/02/2005	Renewed licence.
L5782/1993/6	23/08/2005	Renewed licence.
L8189/2007/1	12/11/2007	New licence issued due to cessation of the previous licence following non-payment of annual fee.
L8189/2007/2	12/11/2012	Renewed licence.
L8807/2013/1	20/01/2014	New licence issued due to cessation of the previous licence following non-payment of annual fee.
W5857/2015/1	19/10/2015	Major upgrade to the WWTP to increase capacity and treated wastewater irrigation.
L8807/2013/1	13/10/2017	Amendment notice 1 to incorporate infrastructure constructed under works approval W5857/2015/1.
L8807/2013/1	08/01/2018	Amendment notice 2 to change the extent of the premises boundary.
L8807/2013/1	06/05/2020	Proposed acceptance of septage wastes and modification of premises boundary; subject of this amendment report

5. Environmental siting

Rottnest Island is a 1,900 hectare A Class reserve located approximately 19km off the coast of Fremantle in Western Australia. The island is a holiday destination and currently attracts around 500,000 visitors per annum. There are approximately 200 people permanently located on the Island. Due to the distance from the mainland, power, water and wastewater are provided and managed locally.

5.1. Potential receptors

Table 5 below lists the sensitive land uses and Table 6 lists the environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 5: Potential human receptors

Human receptors	Description of receptor	Distance from activity / prescribed premises
Temporary holiday accommodation	Discovery Rottnest Island	Approximately 5m north, south and east of the WWTP boundary. The Delegated Officer has provided further comments regarding this receptor in Section 8.1.

Table 6: Potential environmental receptors

Environmental receptors	Description of receptor	Distance from activity / prescribed premises
Rottnest Island Nature Reserve	A Class nature reserve as described in the <i>Rottnest Island Authority Act 1987</i>	The Premises is located in the reserve.
Priority Ecological Communities	Microbialites and microbial mats of coastal hypersaline lakes (Rottnest Island) – Garden Lake, Lake Baghdad, Herschel Lake and Government House Lake	The Premises irrigation area is within the mapped extent of the PEC buffer.
Threatened Ecological Communities	<i>Callitris preissii</i> (or <i>Melaleuca lanceolata</i>) forest and woodlands (Swan Coastal Plain community type 30A –Gibson <i>et al.</i> 1994)	The Premises irrigation area is within the mapped extent of the TEC buffer.
Surface water	Herschel Lake	Approximately 50m south of the irrigation area boundary.
	Garden Lake	Approximately 10m southeast of the irrigation area boundary.
	Indian Ocean	Approximately 100m north of the WWTP.
Groundwater	<p>Perth – Superficial Rottnest</p> <p>Superficial groundwater occurs in the Tamala Limestone forming a shallow, unconfined aquifer. The aquifer possesses a thin freshwater lens resting on saline water.</p> <p>Groundwater flows radially from the centre of the island, discharging to the salt lakes and the ocean. The inferred groundwater flow direction at the Premises is generally south towards the salt lakes. A groundwater mound from historical infiltration is centered at the WWTP, resulting in radial groundwater flow both south towards the salt lakes and north towards the ocean.</p>	<p>Depth to groundwater at the WWTP ranges from approximately 3.7 – 5 mBGL.</p> <p>Depth to groundwater at the irrigation area ranges from approximately 0.7 – 3.5 mBGL.</p> <p>Groundwater depths are derived from groundwater monitoring conducted by the Licence Holder from 2017 to 2019.</p>
Public Drinking Water Source Area	<p>Rottnest Island Water Reserve –Priority 3 Wellhead Protection Zone.</p> <p>The Rottnest Island Water Reserve includes a salt water bore field and reverse osmosis desalination and water treatment infrastructure.</p> <p>The treatment, storage and irrigation of treated wastewater is a compatible landuse, subject to conditions, within a priority 3 area (DoW 2016).</p>	The Premises irrigation and treated wastewater storage area is within the mapped extent of the PDWSA.

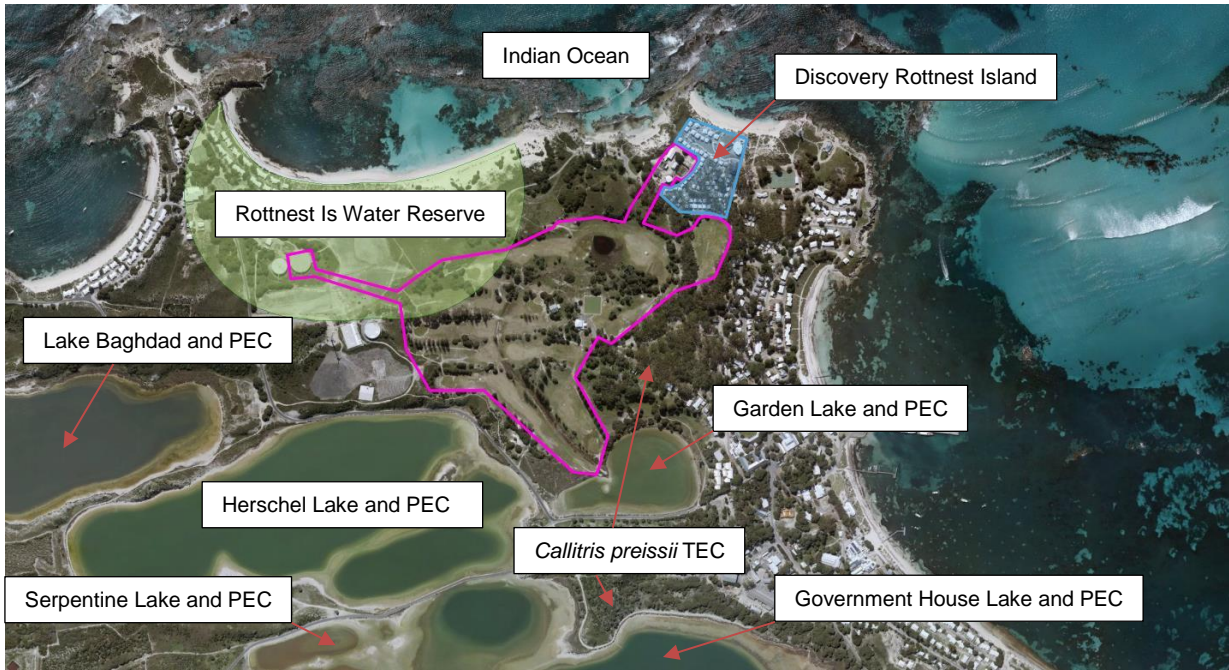


Figure 4: Potential receptors surrounding the Premises

5.2. Potential pathways

Air, soil seepage and surface run-off have been considered potential pathways during the assessment. The meteorological and geological conditions at the Premises have been presented in Table 7 below and this information has been considered in the risk assessment table in Section 6.

Table 7: Potential pathways

Environmental aspects	Description
Soil type and surface geology	<p>The Premises falls within the mapped area of the Quindalup South system described as coastal dunes of the Swan Coastal Plain with calcareous deep sands and yellow sands.</p> <p>The Island is comprised of Tamala Limestone overlain by Herschell Limestone containing predominately shell beds. The weathered limestone forms a surficial sand of unconsolidated, calcareous, quartz sand to approximately 6.5m. Weakly consolidated shelly limestone, calcarenite and shell beds occur beneath the surficial sand.</p> <p>The soil type and surface geology at the Premises would likely exhibit a high degree of permeability.</p>
Prevailing wind direction (Bureau of Meteorology, accessed February 2020)	<p>The Rottne Island 9193 weather station is the closest station to the Premises recording climatic information. Wind speed and direction records taken at the station indicate that the prevailing wind direction at the Premises is likely to be west to southerly in the morning and southerly in the afternoon.</p>

6. Risk assessment

Table 8 below describes the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. The table identifies whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

The proposed amendment to the Premises boundary has not been included in the risk assessment as the change is considered administrative in nature. The boundary change does not remove any infrastructure or management controls associated with a prescribed activity.

Table 8: Risk assessment for proposed amendments during operation

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Licence Holder controls					
Acceptance and treatment of septage waste. Tankering vehicle washdown.	Septage waste discharge (pre and post treatment) at the WWTP	<p>Containment infrastructure breaches and spill incidents: seepage through the soil profile causing increased nutrients, metals and other contaminants in underlying groundwater at the WWTP:</p> <ul style="list-style-type: none"> Depth to groundwater at the WWTP ranges from approximately 3.7 – 5 mBGL. <p>Containment infrastructure breaches and spill incidents: subsequently impacted groundwater discharging to surface water causing a reduction in surface water quality:</p> <ul style="list-style-type: none"> Indian Ocean (100m north). 	<p>Impermeable sump for septage acceptance.</p> <p>Secured hose connection from tanker to sump.</p> <p>Contained underground pipelines.</p> <p>Bunded area for vehicle washdown.</p> <p>Dilution of septage with reticulated sewage.</p> <p>Treatment of septage.</p> <p>Existing groundwater monitoring program.</p> <p>Continuous monitoring of wastewater treatment performance by a SCADA system.</p>	Major - short term impact to an area of high conservation value or special significance (Rottnest Island Nature Reserve)	Unlikely	Medium	<p>The Delegated Officer considers that discharges of septage waste from the Premises are unlikely to occur in most circumstances, due to the existing containment infrastructure proposed to be used by the Licence Holder. The sump and bunded vehicle washdown area are constructed from concrete which is generally considered to have a permeability less than 1x10⁻⁹ m/s. Underground pipework supplying septage wastes from the sump to the flow balance tank is housed in concrete culverts, providing a double containment layer.</p> <p>The quality of final effluent from the WWTP is not expected to change as a result of the amendment. This is due to the low ratio of septage waste to reticulated sewage and the mixing of both in the flow balance tank prior to entering the treatment train. Dilution of the septage waste with vehicle washwater and reticulated sewage will reduce the impact that the more concentrated septage waste would have on the treatment process. Key process indicators are monitored through the SCADA system and adjustments can be made to the treatment process when septage is being treated.</p>	
Irrigation of treated wastewater (with septage in the waste stream).	Treated wastewater irrigated to the sports oval and golf-course	<p>Increased nutrients, metals and other contaminants present in surface water run-off from irrigated areas potentially causing impact to microbialites and microbial mats of coastal hypersaline lakes (Rottnest Island) PECs.</p> <p>Seepage through the soil profile causing increased nutrients, metals and other contaminants in underlying groundwater at the irrigation areas.</p> <ul style="list-style-type: none"> Depth to groundwater at the irrigation area ranges from approximately 0.7 – 3.5 mBGL. Priority 3 Public Drinking Water Source Area (PDWSA) – Rottnest Island groundwater Area (Longreach Bay saltwater bore field) <p>Subsequently impacted groundwater discharging to surface water causing a reduction in surface water quality:</p> <ul style="list-style-type: none"> Garden Lake (10m southeast). Herschel Lake (50m south). 	<p>Treatment of septage.</p> <p>Existing groundwater monitoring program.</p> <p>Existing surface water and hyporheic zone monitoring program.</p> <p>Continuous monitoring of wastewater treatment performance by a SCADA system.</p> <p>Implementation of the <i>Rottnest Island Authority Rottnest Island Recycled Water Scheme Nutrient and Irrigation Management Plan</i> (GHD, 2016) (NIMP).</p>	Major - short term impact to an area of high conservation value or special significance (Rottnest Island Nature Reserve)	Possible	High	<p>The Licence Holder currently monitors 5 groundwater bores at the WWTP and 6 bores at the golf course as part of their Existing Licence conditions. These bores are situated to detect potential groundwater contamination caused by containment loss at the WWTP, limited direct infiltration and through the irrigation of treated wastewater on the Island. As the septage is from domestic sources, the contaminants of concern are expected to be the same as reticulated sewage and expansion of the effluent and groundwater monitoring suite is not required. The existing bore network at the WWTP provides adequate coverage to detect any loss of containment from degraded infrastructure.</p> <p>The proposed additional Licence Holder controls will be specified in the amended licence as regulatory controls.</p> <p>The Delegated Officer considers that the proposed Licence Holder controls in combination with the regulatory controls specified in the Existing Licence are sufficient to manage the potential risks.</p>	<p>Condition 1: <i>Waste Acceptance</i></p> <p>Condition 3: <i>Infrastructure and equipment</i></p>

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Licence Holder controls					
Acceptance and treatment of septage waste.	Odour	Air/windborne pathway causing impacts to amenity of closest human receptors: <ul style="list-style-type: none"> Discovery Rottnest Island (5m north, east and south) 	Covered sump pit Odour scrubber connected to the flow balance tank and inlet screens.	Minor – local scale, low level impact to amenity	Possible	Medium	<p>Given the close proximity of the nearest sensitive receptor and their location within a prevailing wind direction, the receptor will possibly be impacted by odour emissions from the receipt of septage waste.</p> <p>Odour impacts are expected to be minor due to the intermittent waste deliveries and their short duration. Increased odour emissions as a result of the amendment are only expected to occur when the sump is uncovered during the transfer of septage from the tanker to the sump. After septage waste leaves the sump, potentially odourous air is treated through an odour scrubber to remove H₂S.</p> <p>The Delegated Officer considers that the Licence Holder and regulatory controls specified in the Existing Licence are mostly sufficient to mitigate odour emissions from the acceptance of septage waste. A requirement to cover the sump pit while not actively tankering will be specified as a regulatory control in the amended licence.</p>	Condition 3: <i>Infrastructure and equipment</i>
Operation of the tankering vehicle.	Noise		None proposed	Minor – local scale, low level impact to amenity	Possible	Medium	<p>The Delegated Officer considers that low level off-site impacts may occur as a result of septage waste acceptance by tankering. This risk event would occur sporadically and be of a relatively short duration.</p> <p>The Licence Holder is required to comply with the Noise Regulations and therefore further regulatory controls are not required.</p>	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

7. Consultation

Table 9: Summary of consultation

Method	Comments received	DWER response
Applicant referred draft documents (17 March 2020)	Refer to Appendix 2.	Refer to Appendix 2.

8. Decision

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

As the proposed acceptance of septage waste is below 100 tonnes per annual period, the licence does not require the addition of Category 61: liquid waste facility. Accordingly, acceptance of septage waste at the Premises will be limited to less than 100 tonnes per annual period.

8.1. Proximity of sensitive receptors

The Delegated Officer notes that the proximity of sensitive receptors has substantially reduced since the last time a full risk assessment was conducted for the Premises. Given that sensitive receptors are now located immediately adjacent to the Premises, this would result in an increased likelihood of risk events occurring and may have resulted in the risk rating of the Premises increasing. Rottnest Island Authority should be aware that this may result in an increased level of regulatory control for future applications at the Premises.

8.2. Summary of amendments

Table 10 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 10: Licence amendments

Condition No.	Proposed amendments
Licence category	Category 61: Liquid waste facility has been added to the licence, subject to confirmation of septage quantities from the Licence Holder. The EP Regulations exclude septage from the definition of a Category 54: Sewage facility and the most relevant Category is 61, where accepted quantities exceed 100 tonnes per annual period.
1 (Table 1)	Inclusion of septage as an acceptable waste type at the Premises. Acceptance of septage waste is permitted only by carrier load with a fixed hose connection to the Premises sump pit. Annual septage acceptance is limited to less than 100 tonnes per annual period.
1 (Table 1)	The acceptance specification for sewage has been modified to allow acceptance by carrier load during emergency or maintenance situations only. The Delegated Officer has determined this addition is required to prevent the Licence Holder being in contravention of their licence conditions during such situations.

Condition No.	Proposed amendments
3 (Table 2)	Waste processing requirements for sewage, septage and sludge have been included in the licence. The waste processing condition and table is a standard of the contemporary licence format. The Delegated Officer notes these requirements are already being followed by the Licence Holder with most specifications being sourced from the infrastructure and equipment table in Amendment Notice 1.
4 (Table 3)	An operational requirement has been listed against the plant sump pit requiring it to be covered at all times, excluding during an active tankering connection.
4 (Table 3)	The vehicle washdown area has been added to Table 3 with requirements that washdown must occur above a bunded hardstand and washdown water must be directed to the sump pit for eventual treatment in the WWTP.
10 (Table 6)	A requirement to measure the volume of each load of septage accepted at the Premises in cubic metres or kilolitres
11 (Table 7)	<i>E. coli</i> has been included in the list of monitoring parameters for treated wastewater discharged from the recycled water tank. The Delegated Officer has determined this addition is required as <i>E. coli</i> is a key indicator of faecal contamination relevant to irrigation using treated wastewater. It is noted that recycled water re-use scheme approvals issued by the Department of Health generally require ongoing monitoring of <i>E. coli</i> levels in effluent and the Licence Holder is likely to be already sampling for this indicator.
20 (Table 8)	Further specifications have been added for the annual reporting of treated wastewater irrigation and discharge. The requirements are consistent with the current standard of reporting expected by DWER. The Delegated Officer considers the Licence Holder is already meeting most of these requirements in their recent annual report (2018/19).
20 (Table 8)	Further specifications have been added for the annual reporting of the monitoring program now consolidated in Schedule 2. The requirements are consistent with the current standard of reporting expected by DWER. The Delegated Officer considers the Licence Holder is already meeting most of these requirements in their recent annual report (2018/19).
Schedule 1 (Figure 1)	The Premises map has been updated to reflect the revised boundary.
Schedule 1 (Figure 2)	An additional site layout plan for the WWTP has been added that provides a clearer indicator of infrastructure locations relevant to the amendment.
Schedule 1 (Figure 4)	The irrigation area map has been updated with a higher resolution version provided by the Licence Holder.
Schedule 1 (Premises boundary)	The list of coordinates defining the Premises boundary has been updated to reflect the amended boundary.
Schedule 2 (Quality assurance and quality control requirements)	A specification for quality assurance and quality control requirements has been added to the licence. These requirements are standard conditions added to contemporary licences with detailed monitoring programs. The Delegated Officer notes these requirements are already being followed by the Licence Holder when implementing the monitoring program.

8.3. Summary of licence conversion and amalgamation

Table 11 provides a summary of the changes required to convert the Existing Licence into the new licence format and will act as record of implemented changes. The changes have been incorporated into the Revised Licence as part of the amalgamation process.

Table 11: Licence conversion map for new licence format

Existing licence condition	Condition Summary	Revised licence condition	Conversion notes
G2	Yearly submission of an AACR by a specified date.	20	Changed to current wording and format standard.
1	Infrastructure and equipment operational and maintenance requirements.	4	Changed to current wording and format standard.
2	Waste acceptance, limits and specifications.	1	Changed to current wording and format standard.
W3	Requirement to maintain a sampling point from the WWTP outlet point.	-	Redundant. This requirement is inherent in the monitoring location and method specified by Condition 12.
3	Sludge and biosolids disposal and record keeping	3, 9	Changed to current wording and format standard.
4	Specification of the areas permitted for treated wastewater irrigation.	5, 6, 21	Consolidated. Changed to current wording and format standard. Compliance verification checkpoint (as previously covered under condition 6) has been consolidated in AER requirements under Condition 21.
5	Specification of nutrient loading limits to the irrigation areas.		
6	Requirement to demonstrate compliance with the nutrient irrigation loading limits.		
7	Requirement to establish baseline field capacity prior to treated wastewater irrigation.	7	Minor change to wording
8	Limiting treated wastewater irrigation to periods where soil moisture content is lower than baseline field capacity.	8	Minor change to wording
9	Requirement to demonstrate compliance with soil moisture limits by undertaking soil monitoring.	-	Redundant. Soil monitoring is already required by Condition 14 and demonstrating compliance is inherent in the AER requirements under Condition 21.
10	Requirement for laboratory samples to be tested by a NATA accreditation holder.	15	Changed to current wording and format standard.
11	Treated wastewater discharge quality limits.	5	Changed to current wording and format standard.
12	A requirement to measure waste inflows to the WWTP using a flowmeter.	10	Changed to current wording and format standard.
13	A requirement to monitor treated wastewater quality and volume discharged from the Premises.	11	Changed to current wording and format standard.
14	A requirement for a flow metering device to be installed in accordance with the <i>Guidelines for Water Meter Installation</i> Department of Water 2009.	-	Redundant. The flowmeter has already been installed and the document referenced does not relate to ongoing maintenance and calibration.

Existing licence condition	Condition Summary	Revised licence condition	Conversion notes
15	A requirement to monitor groundwater quality at specified locations for specified parameters.	Schedule 2: Groundwater monitoring	This condition has been consolidated in Schedule 2 in accordance with current wording and format standards used by DWER for extensive ambient monitoring programs.
16	A requirement to maintain specified groundwater monitoring bores in good working order.	4	The monitoring bores have been added to the infrastructure and equipment table with a listed maintenance requirement.
17	A requirement to monitor surface water quality at specified locations for specified parameters.	Schedule 2: Surface water monitoring	These conditions have been consolidated in Schedule 2 in accordance with current wording and format standards used by DWER for extensive ambient monitoring programs.
18	A requirement to monitor fresh groundwater lens/hyporheic zone water quality at specified locations for specified parameters.	Schedule 2: Fresh groundwater lens / hyporheic zone monitoring	
19	A requirement to monitor soil quality and moisture content at specified locations for specified parameters.	Schedule 2: Soil monitoring	
20	A specification to record the details of complaints received in relation to the Premises.	18	Minor change to wording.
21	A required to submit an AER in accordance with listed specifications	20	Minor change to wording.
22	A requirement for the Licence Holder to respond to any CEO request within 7 days or other specified period.	21	Minor formatting change.

Melissa Chamberlain
A/MANAGER WASTE INDUSTRIES
REGULATORY SERVICES

An officer delegated by the CEO under section 20 of the EP Act

Appendix 1: Key documents

Document title	In text ref	Availability
Licence L8807/2013/1 – Rottnest Island Waste Water Treatment Plant	L8807/2013/1	accessed at www.dwer.wa.gov.au
Application and supporting documentation	-	DWER records (DWERDT248742)
Rottnest Island Authority Waste Water Treatment Plant L8807/2013/1 Annual Environmental Report July 2018 – June 2019	-	DWER records (DWERDT203072)
Ministerial Statement 324	MS 324	accessed at www.epa.wa.gov.au/
DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	-	accessed at www.dwer.wa.gov.au
DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	-	
DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	-	
DWER, June 2019. <i>Guideline: Decision Making</i> . Department of Environment Regulation, Perth.	-	
DoW, April 2016. <i>Water quality protection note no. 25: Land use compatibility tables for public drinking water source areas</i> .	DoW 2016	accessed at www.water.wa.gov.au
USEPA, February 2006. <i>Standard volume to weight conversion factors</i> .	USEPA 2006	accessed at www.epa.gov/sites/production/files/2016-03/documents/conversions.pdf

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Report on 17 March 2020 for review and comment. The Licence Holder responded between 6 April 2020 and 5 May 2020. The following comments were received on the draft Amendment Report.

Condition	Summary of Licence Holder comment	DWER response
1 (Table 1 Acceptance specifications)	The quantity of septage waste accepted each year will be up to 110m ³ (80 tonnes).	80 tonnes per year is below the threshold of 100 tonnes per year listed in the EP Regulations for a Category 61: liquid waste facility. Accordingly Category 61 will not be added to the licence and the acceptance of septage waste at the Premises will be limited to less than 100 tonnes per annual period.
4 (Table 3 Row 4 Infrastructure and equipment)	The emergency storage basin is manually pumped to the plant sump rather than draining via gravity.	Noted and corrected in the licence.
4 (Table 3 Row 12 Infrastructure and equipment)	Storage tank 6 is constructed of concrete not galvabond steel.	Noted and corrected in the licence.
4 (Table 3 Row 12 Operational requirements)	Tank 6 has a high level alarm which triggers at 98% capacity and shuts off the transfer pump from the WWTP to the tank. In the event of an overflow treated wastewater is sent to Tank 3 and not the emergency overflow pond.	The operational requirements listed in Table 3 Row 12 will be changed to the following: <ul style="list-style-type: none"> Fitted with an alarm to shut off treated wastewater intake when the tank is at 98% capacity. In the event of an overflow treated wastewater must be diverted to Tank 3.
4 (Table 3 Row 13 Infrastructure and equipment)	Storage tank 3 is constructed of concrete not galvabond steel.	Noted and corrected in the licence.
4 (Table 3 Row 13 Operational requirements)	Tank 3 is operated as a back-up storage tank only, providing contingency capacity for Tank 6. As the tank is located away from the WWTP overflows are not able to be directed to the emergency storage basin.	The operational requirements listed in Table 3 Row 13 will be changed to the following: <ul style="list-style-type: none"> Must be operated as backup treated wastewater storage if capacity of Tank 6 is exceeded.
4 (Table 3 Row 13 Infrastructure location)	An error has resulted in Tank 3 being excluded from the premises boundary map supplied with the application. Please amend the boundary to the updated map provided.	Noted. The updated map has been included in the revised licence and decision report.

Condition	Summary of Licence Holder comment	DWER response
4 (Table 3 Row 16 Operational requirements)	Full sludge storage bins are not stored on the listed hardstand due to lack of space. Once full the bins are secured and sealed on the Premises, pending removal from the island by barge. Only sludge storage bins in the process of filling are stored above the hardstand.	<p>The original wording of this requirement may have been in error. The condition did not require the storage bin being actively used for sludge deposition to be located above a hardstand, but specified this requirement for full bins only. DWER considers that spills or leachate emissions are more likely to occur while sludge is being deposited into storage bins and not once the full bins have been sealed for storage. The operational requirements listed in Table 3 Row 16 will be changed to the following:</p> <ul style="list-style-type: none"> • Filter presses to be located in a 7.5m x 4.5m area bunded with one row of 90mm x 190mm x 390mm concrete blocks that drains to the Plant Sump. • Polymer storage tank to be located within a concrete bunded area 4.6m x 3.6m and bunded with one row of 90mm x 190mm x 390mm concrete blocks. • Sludge must be discharged to enclosed sludge storage bins located above a concrete hardstand with a 600mm wide x 50mm high roll over bund and drain to the Plant Sump. • Full sludge storage bins must be sealed and secured prior to storage.
5 (Table 4 Row 2)	Figure 4 does not specify any discharge points and the locations are inconsistent with where samples are taken.	The table lists the areas in which treated wastewater may be discharged to land. Due to the many individual discharge points associated with the irrigation scheme it was considered cumbersome to list each point in the licence. Instead the locations in which discharge is permitted were listed. For clarity the header of column 1 will be changed to Discharge Location rather than Discharge Point.
20 (Table 8 Row 3 (d))	A BOD loading rate has been listed in the AER requirements but RIA do not sample for BOD at the discharge area and have not provided this information previously in the AER.	This is a transcription error from adding the standard wording of the condition into the licence. BOD has been removed from the summary requirements.

Condition	Summary of Licence Holder comment	DWER response
20 (Table 8 Row 4 (h) and (j))	Sub conditions (h) and (j) are duplicated.	Transcription error. The duplication has been removed.