Government of Western Australia
Department of Environment Regulation

Licence

Environmental Protection Act 1986, Part V

Licensee: Water Corporation

Licence: L4201/1991/11

Registered office: 629 Newcastle Street
LEEDERVILLE WA 6007

Premises address: Woodman Point Wastewater Treatment Plant
Cockburn Road
MUNSTER WA 6166
Being Lot 9 on Diagram 31097 as depicted in Schedule 1.

Issue date: Thursday, 28 October 2010

Commencement date: Monday, 1 November 2010

Expiry date: Friday, 31 October 2031

Prescribed premises category
Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
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.	100 cubic metres per more per day	180,000 cubic metres per day
61	Liquid waste facility: premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	100 tonnes or more per year	50,000 tonnes per annual period

Conditions
This Licence is subject to the conditions set out in the attached pages.

Date signed: 12 July 2016
.....
Caron Goodbourn
A/ Manager Licensing (Waste Industries)
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Contents

Introduction

This Introduction is not part of the Licence conditions.

DER's industry licensing role
The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements
This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:
http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.

- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.

- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Other Guidelines which you should be aware of include:

- *Western Australian Guidelines for Biosolids Management*, Department of Environment and Conservation, December 2012 (as amended from time to time).

Licence fees
If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions
If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary
The Woodman Point Wastewater Treatment Plant (WWTP) is owned and operated by Water Corporation and is located approximately 25km south west of Perth. The premises is surrounded by 'Special Use' town planning scheme zoned areas to the east, south and west, and is adjacent to the 'Jervoise Bay Cove' to the west. The premises services the southern suburbs of Perth which has a nominal contributing population of approximately 700,000.

The WWTP consists of pre-treatment, primary treatment and secondary treatment, which includes a four quadrant sequencing batch reactor (SBR) and an anaerobic biosolids digestion process.

Treated wastewater is discharged to the Sepia Depression via a 23km Sepia Depression Ocean Outfall Landline (SDOOL) and ocean outfall via the Jervoise Bay Cove.

An Odour Control Facility (OCF) treats odours from the pre-treatment and primary treatment facility, the SBR bio-selectors and the biosolids handling area. The plant also has a Tanker Receiver Facility (TRF), which accepts third party waste. The TRF has a separate dedicated chemical odour scrubber to control odour. Dewatered biosolids is removed from the premises and disposed of to landfill, with the liquid fraction from the WWTP and TRF being discharged to the flow balancing dam.

The plant is designed to treat up to 160 ML influent per day, with the average daily inflow currently at 141ML/d, for the 2014/ 2015 reporting period. As the premises is nearing capacity, the Licensee has proposed an upgrade to the premises which will increase the design capacity to 180 ML/d, on completion of the works upgrade. This will require the current operation to be taken off line and operated through a temporary (150 ML/d) system until the works are completed. The proposed works will be constructed over a 2.5 year period consisting of three stages that will include construction of the following:

Stage one –
- Two new 9.75 m vortex grit tanks;
- Four new primary sedimentation tanks;
- Eight secondary sedimentation tanks (temporarily designed as aeration tanks, four with lift out diffused aeration grids and four operated as clarifiers);
- New recycled water pump station and filtration system.

Stage two –

- Conversion of the SBR to a Modified Ludzack-Ettinger (MLE) configuration (Treated wastewater from the primary sedimentation tanks will bypass the SBR to the temporary secondary sedimentation tanks for a period of nine months).

Stage three –

- Secondary sedimentation tanks retrofitted from temporary aeration tanks to fully functioning secondary sedimentation tanks;
- Mixed liquor transferred to MLE quadrants over 2-3 days and blended with imported seed biosolids.

A desk top assessment of groundwater bore (Site Id. 20022946) on the western boundary of the premises identifies depth to groundwater at approximately 10.4 mBGL, with TDS approximately 5,000 mg/L (saline). The groundwater forms part of the Murray River Basin and Bartram Road Catchment.

The closest sensitive residential receptor has been identified by the Licensee as approximately 0.5 km south of the premises. The premises operation includes an odour buffer of 750 m to the nearest land use.

The premises is subject to conditions within Ministerial Statement 665.

The main potential emissions during construction are expected to be odour issues from the change in operational process and dust emissions from site construction.

This Licence is a DER initiated amendment to undertake administrative changes from the previous amendment process carried out for the works upgrade at the premises. Comments from the draft review process were omitted and are now included through this amendment.

The licences and works approvals issued for the Premises, since 25/10/1998, are:

Instrument log		
Instrument	**Issued**	**Description**
W1013/1991/1	25/10/1993	Works approval
W1330/1991/1	19/12/1995	Works approval
W2710/1991/1	01/04/1999	Works approval
L4201/1991/4	19/09/2000	Licence re-issue
L4201/1991/5	01/07/2001	Licence re-issue
L4201/1991/6	01/07/2002	Licence re-issue
L4201/1991/7	14/01/2003	Licence re-issue
W3793/1991/1	28/04/2003	Works approval
L4201/1991/8	30/06/2003	Licence re-issue
L4201/1991/9	02/07/2004	Licence re-issue
L4201/1991/10	31/10/2005	Licence re-issue
W4319/1991/1	01/10/2007	Works approval
L4201/1991/11	28/10/2010	Licence re-issue
L4201/1991/11	19/11/2015	Licence amendment
L4201/1991/11	14/04/2016	Licence amendment for works upgrade for design capacity increase
L4201/1991/11	12/07/2016	Licence amendment for administrative changes on previous amendment process

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986;*

'annual period' means the inclusive period from 1 July until 30 June in the following year;

'AS/NZS 2031' means the Australian Standard AS/NZS 2031 *Selection of containers and preservation of water samples for microbiological analysis;*

'AS 4323.1' means the Australian Standard AS4323.1 *Stationary Source Emissions Method 1: Selection of sampling positions;*

'AS 4323.3' means the Australian Standard AS4323.3 *Stationary Source Emissions Part 3: Determination of odour concentration by dynamic olfactory*;

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples;*

'AS/NZS 5667.9' means the Australian Standard AS/NZS 5667.9 *Water Quality – Sampling – Guidance on sampling from marine waters*;

'AS/NZS 5667.10' means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters;*

'averaging period' means the time over which a limit is measured or a monitoring result is obtained;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means;
Chief Executive Officer
Department Administering the Environmental Protection Act 1986
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au

'controlled waste' has the definition in *Environmental Protection (Controlled Waste) Regulations 2004*;

'Chemical Scrubber Outlet' means after the chemical scrubber but prior to entering the Odour Control Facility Discharge Stack;

'engineered containment system' means any vessel or tank containment infrastructure associated with the treatment of wastewater;

'g/s' means grams per second;

'hardstand' means a surface with a permeability of 10^{-9} metres/second or less;

'Jervoise Bay Ocean Outlet', '**Sepia Depression Ocean Outlet (SDOOL)'** and **'Woodman Point Ocean Outlet'** mean the marine discharge points labelled and depicted in Schedule 1: Maps of the Licence;

'leachate' means liquid released by or water that has percolated through waste and which contains some of its constituents;

'Licence' means this Licence numbered L4201/1991/11 and issued under the Act;

'Licensee' means the person or organisation named as Licensee on page 1 of the Licence;

'Ministerial Statement 665' means "*Ministerial Statement 665 - Use of the Cape Peron Outlet Pipeline to Dispose of Industrial Wastewater to the Sepia Depression, Kwinana*" as amended from time to time;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'normal operating conditions' means any operation of a particular process (including abatement equipment) excluding start-up, shut-down and upset conditions, in relation to stack sampling or monitoring;

'Odour Control Facility' and '**Odour Control Facility Discharge Stack'** means those structures labelled and depicted in Schedule 1;

'Odour Control Summary' means Woodman Point Wastewater Treatment Plant Upgrade – Odour Control Summary, identified as Appendix 1 within Woodman Point Wastewater Treatment Plant Licence Amendment – Supporting Document, November 2015. Version: 2 February 2016. Doc Id. PM#13945397-V4.)

'OU' means odour units;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'**process equipment**' means any wastewater or biosolids containment infrastructure or wastewater treatment vessel;

'quarterly' means the 4 inclusive periods from, 1 July to 30 September, 1 October to 31 December and in the following year, 1 January to 31 March and 1 April to 30 June;

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'six monthly' means the 2 inclusive periods from 1 July to 31 December and 1 January to 30 June in the following year;

'spot sample' means a discrete sample representative at the time and place at which the sample is taken; and

'stack test' means a discrete set of samples taken over a representative period at normal operating conditions;

'STP' means standard temperature and pressure (0^{o}Celsius and 101.325 kilopascals respectively);

'Tanker Receival Facility" and **'Tanker Receival Facility Discharge Stack'** means those structures labelled and depicted in Schedule 1;

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia.

'USEPA' means United States (of America) Environmental Protection Agency; and

'USEPA Method 2' means the USEPA Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube).

'Waste Code' means the Waste Code assigned to a type of controlled waste for purposes of waste tracking and reporting as specified in the Department of Environment Regulation "Controlled Waste Category List" (July 2014), as amended from time to time; and

'wastewater treatment vessels' means any vessel, pond or tank containment infrastructure associated with the storage and treatment of wastewater.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 General conditions

1.2.1 The Licensee shall operate and maintain all pollution control (odour control facility, covers on process equipment) and monitoring equipment (continuous monitors) to the manufacturer's specification or any relevant and effective internal management system.

1.2.2 The Licensee shall immediately recover, or remove and dispose of spills of waste (as defined in Table 1.3.1) outside an engineered containment system.

1.2.3 Subject to the Conditions of this Licence, the Licensee must construct and operate the Works in accordance with the document listed in Table 1.2.1.

Table 1.2.1: Construction Requirements[1]

Document	Parts	Date of Document
Woodman Point Wastewater Treatment Plant Licence Amendment – Supporting Document, November 2015. Version: 2 February 2016. Doc Id. PM#13945397-V4.	All, including appendices and drawings	2 February 2016

Note 1: Where the details and commitments of the documents listed in condition 1.2.1 are inconsistent with any other condition of this Licence, the Conditions of this Licence shall prevail.

1.2.4 The Licensee must ensure that the proposed Works specified in Column 1 of Table 1.2.2 meets or exceeds the specifications in Column 2 of Table 1.2.2 for the infrastructure in each row of Table 1.2.2.

1.2.5 The Licensee must not depart from the specifications in Table 1.2.2 except:
(a) where such departure is minor in nature and does not materially change or affect the infrastructure; or
(b) where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment;
and all other Conditions in this Licence are still satisfied.

Table 1.2.2: Works specifications	
Column 1 Infrastructure	Column 2 Specifications (design and construction)
Stage one	1. Installation of two new 9.75 m vortex grit tanks to replace pre-treatment (cross-flow) detritors; 2. Grit tanks to have trafficable FRP covers; 3. Grit tanks to include ability to have pumped grit removal and separate grit washer; 4. Foul air extraction to be included for the grit washing and classification systems; 5. Construction of four new primary sedimentation tanks (PST); 6. Construction of eight secondary sedimentation tanks (temporarily designed as aeration tanks, four with lift out diffused aeration grids and four operated as clarifiers); 7. SST to each include a pair of direct-piped Return Activated Biosolids (RAS) pumps; 8. New recycled water pump station and filtration system integrated into system with existing recycled water facility decommissioned; 9. New recycled water pump station to include a new junction chamber on the twin outlets to the treated water disposal pump station to allow dam bypass functionality; 10. Incorporation of a new solids-liquids separation system.
Stage two	1. Conversion of the SBR to a continuously aerated Modified Ludzack-Ettinger (MLE) configuration (Treated wastewater from the primary sedimentation tanks will bypass the SBR to the temporary secondary sedimentation tanks for a period of nine months); 2. Treated wastewater to be diverted to the SST from the PST during conversion of the SBR; 3. Decommissioning and removal of two mixed liquor recycle (MLR) pump stations, one WAS pump station, eight mechanical decanters and the existing fixed-to-floor system from each SBR basin; 4. Construction of baffle walls and MLR duct; 5. Height of the existing peripheral channel wall adjacent to basin 1 and 2 increased; 6. New mixed liquor discharge structure intergrated into channel; 7. Installation of three submersible mixers, five submersible MLR pumps and one submersible drain pump into each MLE basin.
Stage three	1. Eight secondary sedimentation tanks retrofitted from temporary aeration tanks to six fully functioning secondary sedimentation tanks; 2. Mixed liquor transferred to MLE quadrants over 2-3 days and blended with imported seed biosolids; 3. Imported seed biosolids to be obtained from Beenyup or Kwinana WWTP's.

1.2.6 If Condition 1.2.5 applies, then the Licensee must provide the CEO with a list of departures which are certified as complying with Condition 1.2.5 at the same time as the certifications under Condition 1.2.8.

1.2.7 The Licensee must submit a construction compliance document to the CEO, within one month, following the construction of each stage (Stages 1 to 3) of the Works at Woodman Point Wastewater Treatment Plant.

1.2.8 The Licensee must ensure the construction compliance document:

(a) is certified by a suitably qualified professional engineer or builder that each item of infrastructure specified in Condition 1.2.5, Table 1.2.2 has been constructed in accordance with the Conditions of the Licence with no material defects; and

(b) be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.

1.2.9 The Licensee must not operate the premises above 160 ML/day until the compliance documents for all stages of the works upgrade have been submitted and in accordance with Licence conditions 1.2.6-1.2.8.

1.3 Premises operation

1.3.1 The Licensee shall only accept waste on to the Premises if:
(a) it is of a type listed in Table 1.3.1;
(b) the quantity accepted is below any quantity limit listed in Table 1.3.1; and
(c) it meets any specification listed in Table 1.3.1.

Table 1.3.1: Waste acceptance

Waste	Waste Code	Quantity Limit	Specification[1]
Putrescible and Organic wastes			
Sewage waste	K130	180 ML/ day	• Accepted through sewer inflows; and/ or • Tankered into the premises and discharged via the WWTP pre-treatment works during emergency events or maintenance works.
Septage waste	K210	Combined total of 50,000 t/annual period	• Tankered into the premises and discharged via the Tanker Receival Facility.
Vegetable oils and derivatives and other wastes	K200		
Wool scouring wastes	K190		
Tannery wastes not containing chromium	K140		
Animal effluent and residues	K100		
Grease waste	K110		
Industrial Strength Wastewater			
Industrial wash water	L150		
Car and truck wash waters	L100		
Inorganic Chemicals			
Non toxic salts	D300		

Note 1: Additional requirements for the acceptance of controlled waste are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

1.3.2 The Licensee shall ensure that where waste does not meet the waste acceptance criteria set out in conditions 1.3.1 it is removed from the Premises by the delivery vehicle or, where that is not possible, the Licensee shall contact the CEO to agree a course of action in relation to the waste.

1.3.3 The Licensee shall ensure that wastes accepted onto the Premises are only subjected to the process(es) set out in Table 1.3.2 and in accordance with any process limits described in that Table.

Table 1.3.2: Waste processing		
Waste type	**Process**	**Process requirements**
Sewage	Physical, chemical and biological treatment	1. Treatment of sewage waste shall be at or below the treatment capacity of 180 ML/day. 2. Sewage biosolids to be directed to ABD; 3. Dewatered biosolids to be removed via a controlled waste carrier to a licenced landfill. 4. Discharged to ocean outfall via SDOOL.
Liquid waste	Physical, chemical and biological treatment	1. Treatment of liquid waste received shall be at or below 50,000 tonnes per annual period; 2. Tested for pH and electrical conductivity prior to being processed at the premises. 3. Leachate from dewatering system to be returned back to the WWTP pre-treatment works.
Biosolids	Physical, biological treatment	1. Dewatered biosolids to be removed to for offsite disposal.

1.3.4 The Licensee shall ensure that waste material is only stored and/or treated within vessels or compounds provided with the infrastructure detailed in Table 1.3.3.

Table 1.3.3: Containment infrastructure		
Vessel or compound	**Material**	**Requirements**
Inlet works (Step Screen)	Grit and Screenings	• Screening wash which returns leachate to the start of the treatment process. • Screenings stored within an enclosed bin which is removed to landfill weekly.
Tanker receival facility	Wastewater	• Covered except during routine maintenance or emergency situations; • Chemical scrubbers; • Odour emission stack.
Primary sedimentation tanks	Wastewater	• Tanks constructed of concrete with splitter box.
Secondary sedimentation tanks	Wastewater	• Tanks constructed of concrete with splitter chamber.
Sequencing batch reactor (SBR)	Treated wastewater	• Constructed of concrete; • Biosolids directed via Dissolved Air Flotation Tank to ABD; • Liquid fraction directed to flow balancing dam.
Flow balancing dam	Treated wastewater	• 2 x 1.5 mm Plastic lined (polyethylene) layers with leak detection layer; • Discharge to ocean outfall via SDOOL.
Odour control facility	-	• Enclosed; • Odour scrubbing equipment; • Odour emission stack.
Anerobic biosolids disgester (ABD)	Sewage biosolids	• Enclosed; • Digested biosolids storage tank; • Dewatering centrifuge; • Biosolid hoppers.

1.3.5 The Licensee shall take the specified management action in the case of an event in Table 1.3.4.

Table 1.3.4: Management actions

Emission point	Event/ action reference	Event	Management action
Odour control facility and Tanker Receival Facility	EA1	Hydrogen sulphide emission levels above 1,500 ppb from the chemical scrubber outlets	a) Assess operation to determine any failure, malfunction or abnormal operation period; b) Implement corrective actions to reduce hydrogen sulphide emission levels; c) Restore normal operation of any failed equipment or replace the failed equipment; d) Notify DER CEO in writing, as per condition 5.3.1.

1.3.6 Following the cessation of emissions/operation under condition 1.3.5, the Licensee shall not restart operation of the process until:
(a) the problem has been rectified; and
(b) the Licensee has complied with condition 1.3.5.

1.3.7 The Licensee shall manage the wastewater treatment vessels such that:
(a) overtopping of the vessels does not occur; and
(b) stormwater runoff is prevented from entering the vessels; and
(c) the integrity of the containment infrastructure and facility operation is maintained; and
(d) vegetation and floating debris (emergent or otherwise) is prevented from growing or accumulating in the vessels.

1.3.8 The Licensee shall:
(a) implement security measures at the site to prevent as far as is practical unauthorised access to the site; and
(b) undertake regular inspections of all security measures and repair damage as soon as practicable; and
(c) ensure the entrance gates are closed and locked when the site is closed or unmanned.

1.3.9 The Licensee must develop an 'Odour Monitoring Strategy' within three months of commencing construction that will:
(a) specify an odour field criteria that can be compared against the odour field assessment results;
(b) undertake a risk assessment of exceedences and the proposed management measures to be employed.

1.3.10 The Licensee must:
(a) undertake an odour verification of the monitoring and modelling programme (MAM) initially completed, within six months of full operation of the new works, to confirm it is compliant against the 'odour control summary'; and
(b) develop contingencies/ mitigation measures where any failures/ exceedences have been found to occur against the MAM verification.

2 Emissions

2.1 General

2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

2.2 Point source emissions to air

2.2.1 The Licensee shall ensure that where waste is emitted to air from the emission points in Table 2.2.1 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emission points to air

Emission point reference and location on Map of emission points	Emission Point	Emission point height (m)	Source, including any abatement
Odour control facility	Chemical scrubber inlet	-	Hydrogen sulphide emitted. Chemical odour scrubbers in use.
	Chemical scrubber outlet (prior to entering discharge stack)	-	
	Discharge stack	50 m	
Tanker receival facility	Chemical scrubber	-	
	Discharge stack	12 m	

2.3 Point source emissions to surface water

2.3.1 The Licensee shall ensure that where waste is emitted to surface water from the emission points in Table 2.3.1, and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this Licence.

Table 2.3.1: Emission points to surface water

Emission point reference and location on Map of emission points	Description	Source including abatement
Sepia Depression Ocean Outfall Landline (SDOOL)	Discharge pipeline to ocean outfall[1]	Treated effluent.
Woodman Point Ocean Outlet	Discharge pipe to ocean	Treated effluent only discharged during routine maintenance or emergency situations, in order of priority, to: • Woodman Point Ocean Outlet; and • Jervoise Bay Ocean Outlet.
Jervoise Bay Ocean Outlet		

Note 1: Combined discharge volumes are regulated under Ministerial Statement 665.

2.4 Odour

2.4.1 The Licensee must ensure odour emissions are managed in accordance with the documents, or parts of documents, specified in Table 2.4.1.

Table 2.4.1: Management Plans

Management Plan Reference	Parts	Date of Document
Odour Improvement Plan, Water Corporation.	All	December 2006
Odour Management Plan and Mitigation Strategy	All	
Woodman Point Wastewater Treatment Plant Upgrade – Odour Control Summary (Identified as Appendix 1 within Woodman Point Wastewater Treatment Plant Licence Application – Supporting Document, Ref. AQUA #13945397) (Water Corporation independent document reference number AQUA#14290847).	All, including appendices	2 February 2016

3 Monitoring

3.1 General monitoring

3.1.1 The licensee shall ensure that:
- (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
- (b) all surface water sampling is conducted in accordance with AS/NZS 5667.9
- (c) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
- (d) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
- (e) all microbiological samples are collected and preserved in accordance with AS/NZS 2031; and
- (f) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.

3.1.2 The Licensee shall ensure that :
- (a) monthly monitoring is undertaken at least 15 days apart;
- (b) quarterly monitoring is undertaken at least 45 days apart; and
- (c) annual monitoring is undertaken at least 9 months apart.

3.1.3 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.

3.1.4 The Licensee shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

3.2 Monitoring of point source emissions to air

3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to air

Emission point reference	Parameter	Units[1]	Limit	Averaging period	Frequency[2]	Method
Odour control facility	Hydrogen sulphide – Chemical scrubber inlets (S1008217/ S20 & S1008219/ S21)	ppm	-	Monthly to achieve a 90% availability	Continuous	-
	Hydrogen sulphide - chemical scrubber outlet prior to entering discharge stack (S100761/ S27)	ppb	1,500			
	Volumetric flow rate (S1008217 & S1008219)	m^3/hr	-		Continuous	USEPA Method 2
Odour control facility – discharge stack sampling (FT07011/ M48 & AT07002/ M49)	Hydrogen sulphide (concentration)	mg/ m^3	5	Spot sample	Annual	Manual
	Hydrogen sulphide (rate)	g/s	0.25			-
	Volumetric flow rate	m^3/s	-			USEPA Method 2
	Stack exit temperature	°celsius	-			-
	Odour units	OU	-			AS 4323.1 AS 4323.3
Tanker receival facility – stack sampling (S1004857)	Hydrogen sulphide	mg/ m^3	5	Spot sample	Annual	Manual
	Volumetric flow rate	m^3/s	-			USEPA Method 2
	Stack exit temperature	°celsius	-			-
	Odour units	OU	-			AS 4323.1 AS 4323.3

Note 1: All units are referenced to STP dry.
Note 2: Monitoring shall be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.

3.3 Monitoring of point source emissions to surface water

3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Monitoring of point source emissions to surface water

Emission point reference	Parameter	Units	Frequency
Treated Water channel, at new Reclaimed Water pump station (S1002273/ S9)	pH[1]	-	Monthly
	Total suspended solids	mg/L	
	Total dissolved solids		
	Biological oxygen demand		
	Total nitrogen		
	Total phosphorus		
	Ammonium-nitrogen		
	Nitrate+nitrite-nitrogen		
	E. coli[3]	cfu/ 100 ml	
	Cadmium	mg/L	Quarterly
	Copper		
	Chromium		
	Lead		
	Mercury		
	Nickel		
	Zinc		
	Contaminant loading[2]	kg/d	Annual

Note 1: In situ non-NATA accredited sampling permitted.
Note 2: Each parameter identified within the table assessed using flow-weighted data, excluding pH and *E.coli.*
Note 3: Actual units are to be reported except where the result is greater than the highest detectable level of 24,000 cfu/100mL. In this case the reporting of the highest detectable level is permitted.

3.4 Monitoring of inputs and outputs

3.4.1 The Licensee shall undertake the monitoring in Table 3.4.1 according to the specifications in that table.

Table 3.4.1: Monitoring of inputs and outputs

Input/Output	Monitoring point reference	Parameter	Units	Averaging period	Frequency
Wastewater input	WWTP Inflow meter (S1001222/ S1)	Volumetric flow rate (cumulative)	m^3/day; or ML/ day	Monthly	Continuous
	Tanker receival facility	Liquid waste			Each load received to the facility
Wastewater output	WWTP Outflow meter (S1004373/ M10)	Volumetric flow rate (cumulative)			Continuous
Biosolids output	ABD	Sewage biosolids	m^3/day; or tonnes	Monthly	Each load leaving the premises

3.5 Process monitoring

3.5.1 The Licensee shall undertake the monitoring in Table 3.5.1 according to the specifications in that table.

Table 3.5.1: Process monitoring

Monitoring point reference	Process description	Parameter	Units	Frequency	Method
Tanker Receival Facility	Compliance assessment of all tankered controlled waste received against condition 1.3.1	Flow	-	Each load received to or rejected from the premises	Visual
	Tankered controlled waste received	pH	-		None specified
		electrical conductivity			

4 Improvements

4.1.1 The Licensee shall complete the improvements in Table 4.1.1 by the date of completion in Table 4.1.1.

Table 4.1.1: Improvement program

Improvement reference	Improvement	Date of completion
IR1	The Licensee shall install an analyser that can suitably measure and (if applicable) calculate the Hydrogen Sulphide (H2S) emissions from the Tanker Receival Facility stack. Data recorded from the analyser shall be undertaken as per the requirements stated within conditions 1.3.5, 2.2.1 and 3.2.1 of the Licence, on an annual basis.	31/01/2017

5 Information

5.1 Records

5.1.1 All information and records required by the Licence shall:
- (a) be legible;
- (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
- (c) except for records listed in 5.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
- (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  - (i) off-site environmental effects; or
  - (ii) matters which affect the condition of the land or waters.

5.1.2 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.

5.1.3 The Licensee shall:

(a) implement a complaints management system that shall record the following information (if known or provided) about complaints received at the Premises concerning any environmental impact of the activities undertaken at the Premises:

(i) name and address of the complainants (if consented);
(ii) date and time of complaint;
(iii) date and time of alleged incident;
(iv) alleged source of the incident;
(v) general description of the alleged incident, including any environmental or health impacts reported by the complainant;
(vi) wind direction, wind speed and temperature at time of alleged incident;
(vii) likely source of the alleged incident; and
(viii) actions taken by the Licensee to address the complaint, including the outcome of any investigation(s) and action(s) to verify any impacts.

(b) complete an annual analysis and review of complaints recorded under 5.1.3(a) to identify any common factors and root cause of complaints and proposals to address these.

5.2 Reporting

5.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 63 calendar days after the end of the annual period (1 September). The report shall contain the information listed in Table 5.2.1 in the format or form specified in that table.

Table 5.2.1: Annual Environmental Report

Condition or table (if relevant)	Parameter	Format or form[1]
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Table 1.3.4	Summary of Management actions undertaken	None specified
Table 3.2.1	Summary of Monitoring of point source emissions to air	None specified
Table 3.3.1	Summary of Monitoring of point source emissions to surface water	None specified
Table 3.4.1	Summary of Monitoring of inputs/ outputs	None specified
Table 3.5.1	Summary of Process monitoring	None specified
5.1.2	Compliance	Annual Audit Compliance Report (AACR)
5.1.3	Complaints summary	None specified

Note 1: Forms are in Schedule 2

5.2.2 The Licensee shall ensure that the Annual Environmental Report also contains:

(a) any relevant process, production or operational data recorded; and
(b) an assessment of the information contained within the report against previous monitoring results and Licence limits.

5.2.3 The Licensee shall submit the information in Table 5.2.2 to the CEO according to the specifications in that table.

Table 5.2.2: Non-annual reporting requirements

Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not applicable	Within 14 days of the CEOs request	As received by the Licensee from third parties
-	Record of tankered third party waste (date/ time)	Not applicable		As recorded by Licensee

5.3 Notification

5.3.1 The Licensee shall ensure that the parameters listed in Table 5.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 5.3.1: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement[1]	Format or form[2]
-	Any maintenance works on the SDOOL that will require the use of the Woodman Point or Jervoise Bay Ocean Outlets	Two weeks prior to planned maintenance operations taking place; or As soon as practicable but no later than 5pm of the next usual working day after becoming aware of any emergency maintenance operations undertaken.	None specified
1.3.5	Limit exceedance where management action taken	As soon as practicable but no later than 5pm of the next usual working day after becoming aware of any confirmed measurement that was not rectified within four hours of detection.	None specified
		Submit to the CEO a written report within five working days of receiving the confirmed measurement and shall include, but not limited to: (i) Date and time of exceedence; (ii) Results of continuous monitoring required by conditions 2.2.1 and 3.2.1 at the time of the exceedence; (iii) Cause of the exceedence; (iv) Indication of potential or known environmental impacts of the exceedence; and (v) Any corrective actions undertaken to prevent recurrence.	Email or letter
1.3.1, 1.3.4 and 3.2.1	Breach of any descriptive or numerical limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1

3.1.4	Calibration report	As soon as practicable.	None specified

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2

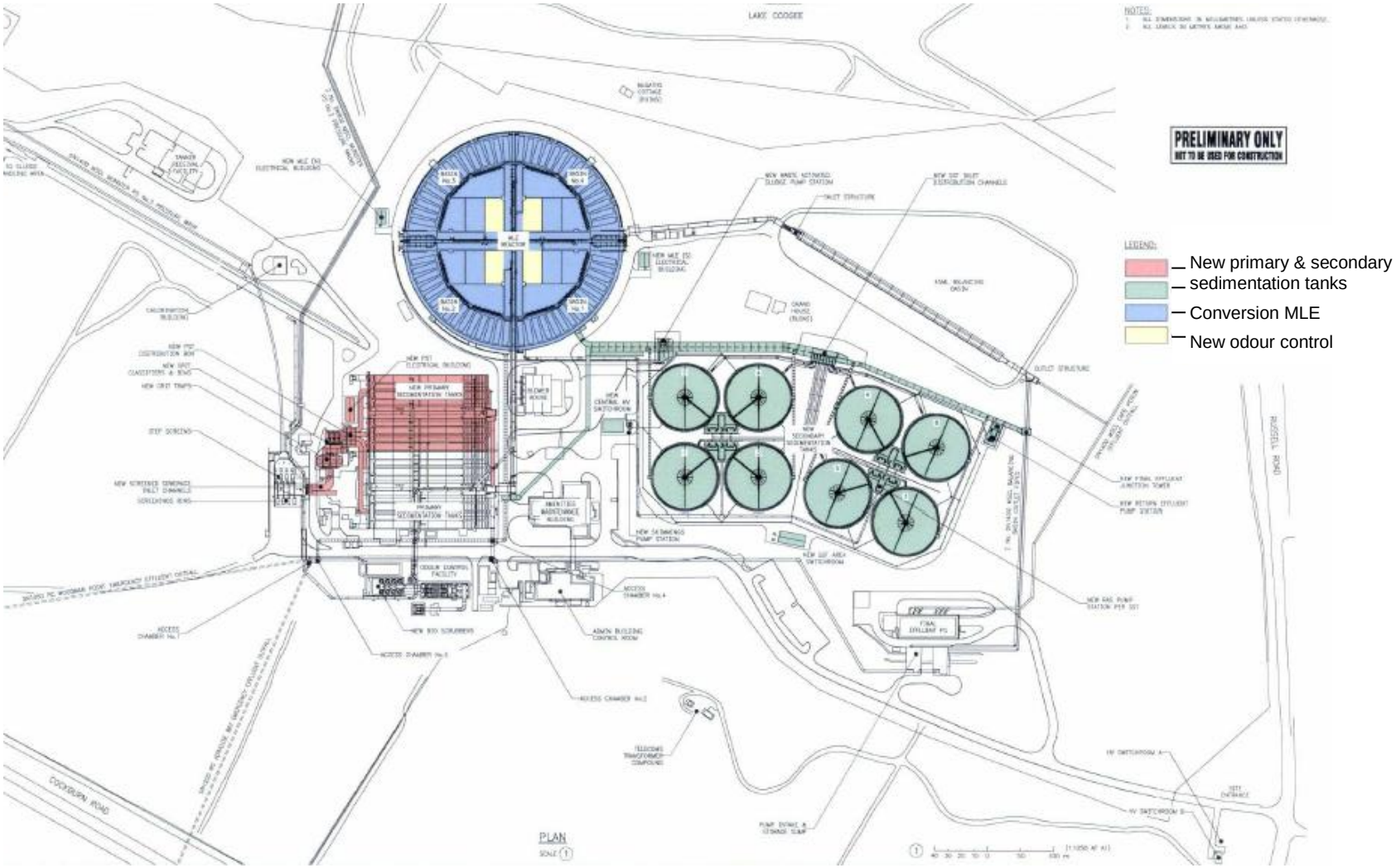
Schedule 1: Maps

Premises map

The Premises is shown in the maps below. The blue line depicts the Premises boundary.

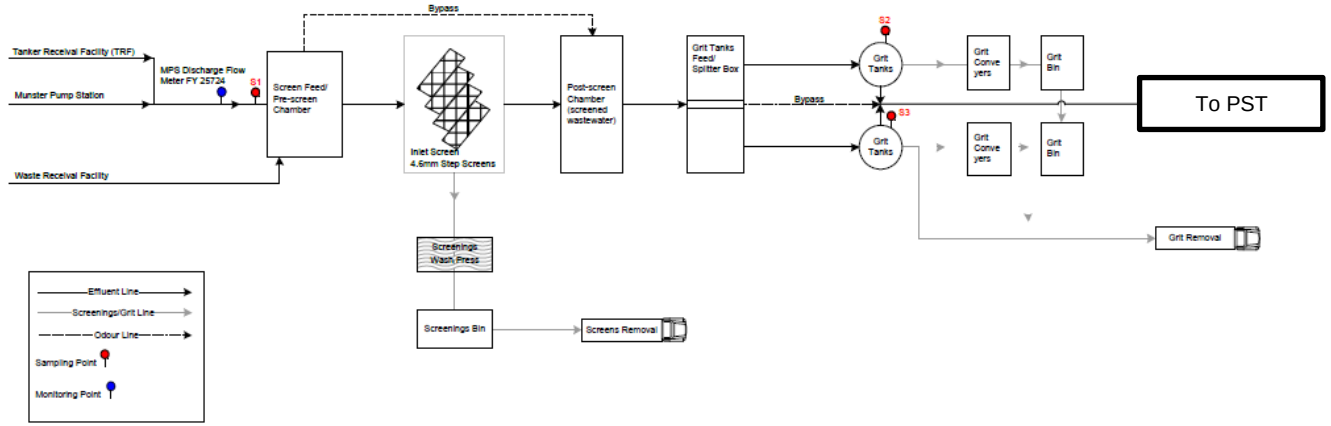
Premises map of discharge pipeline

Map of proposed works upgrade to the premises

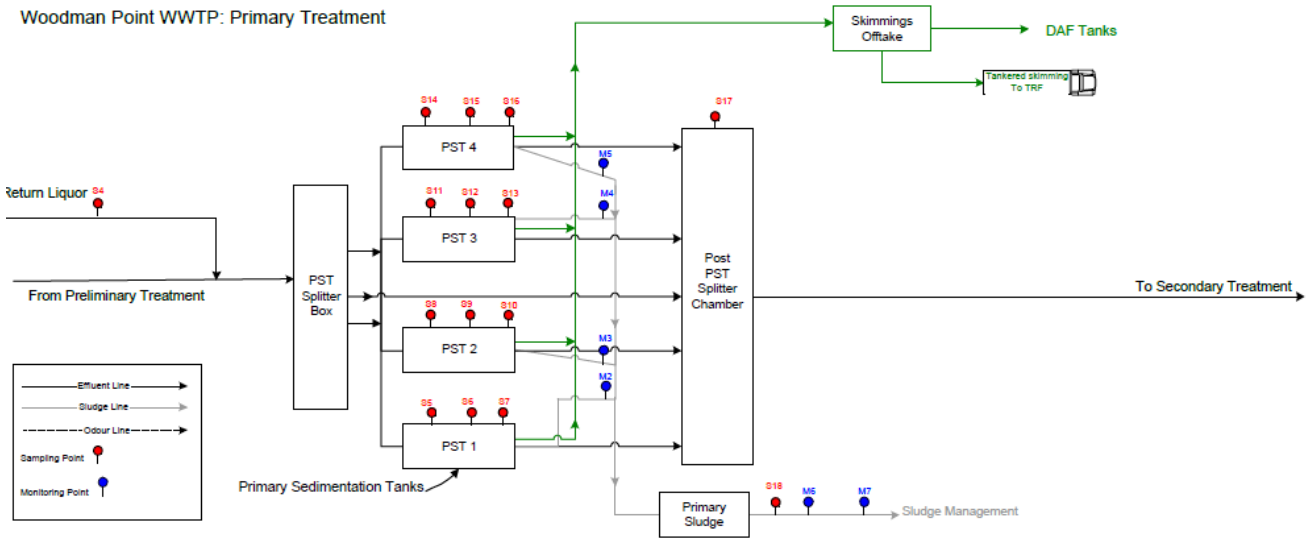


Map of WWTP emission and monitoring points

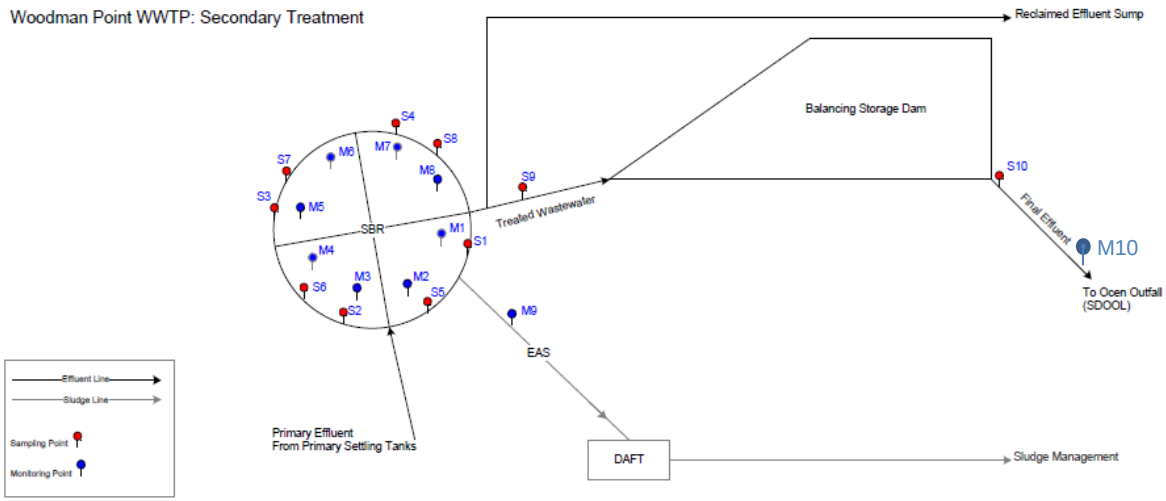
Woodman Point WWTP: Preliminary Treatment



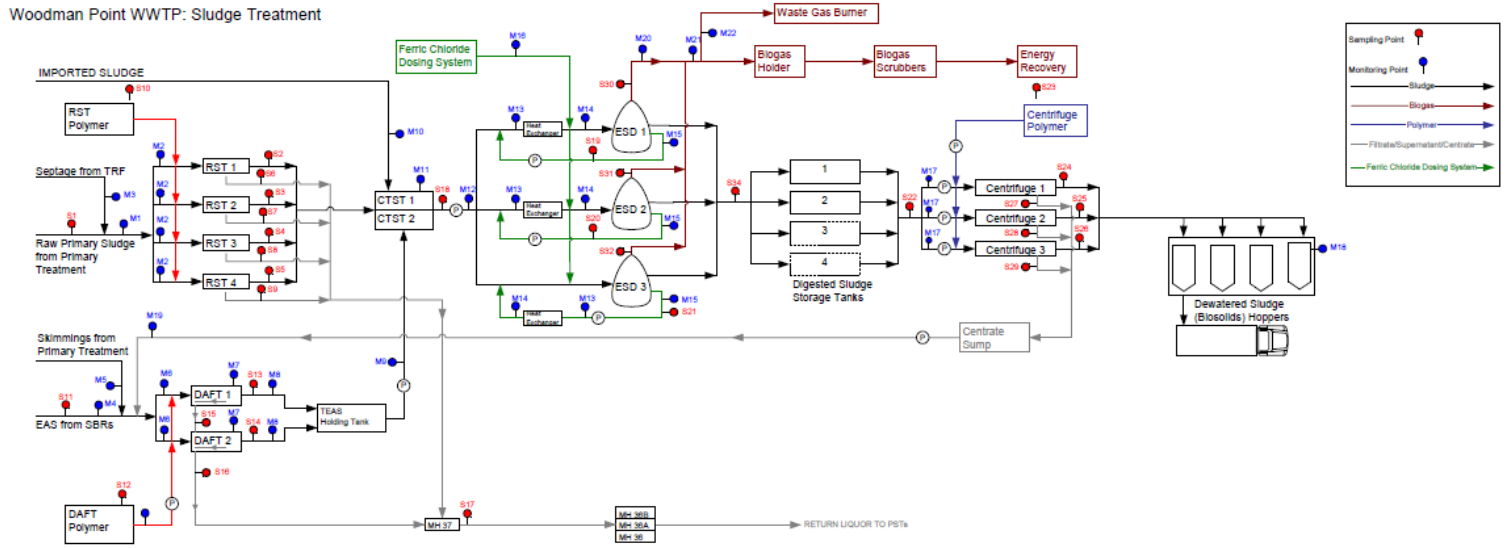
Woodman Point WWTP: Primary Treatment



Woodman Point WWTP: Secondary Treatment

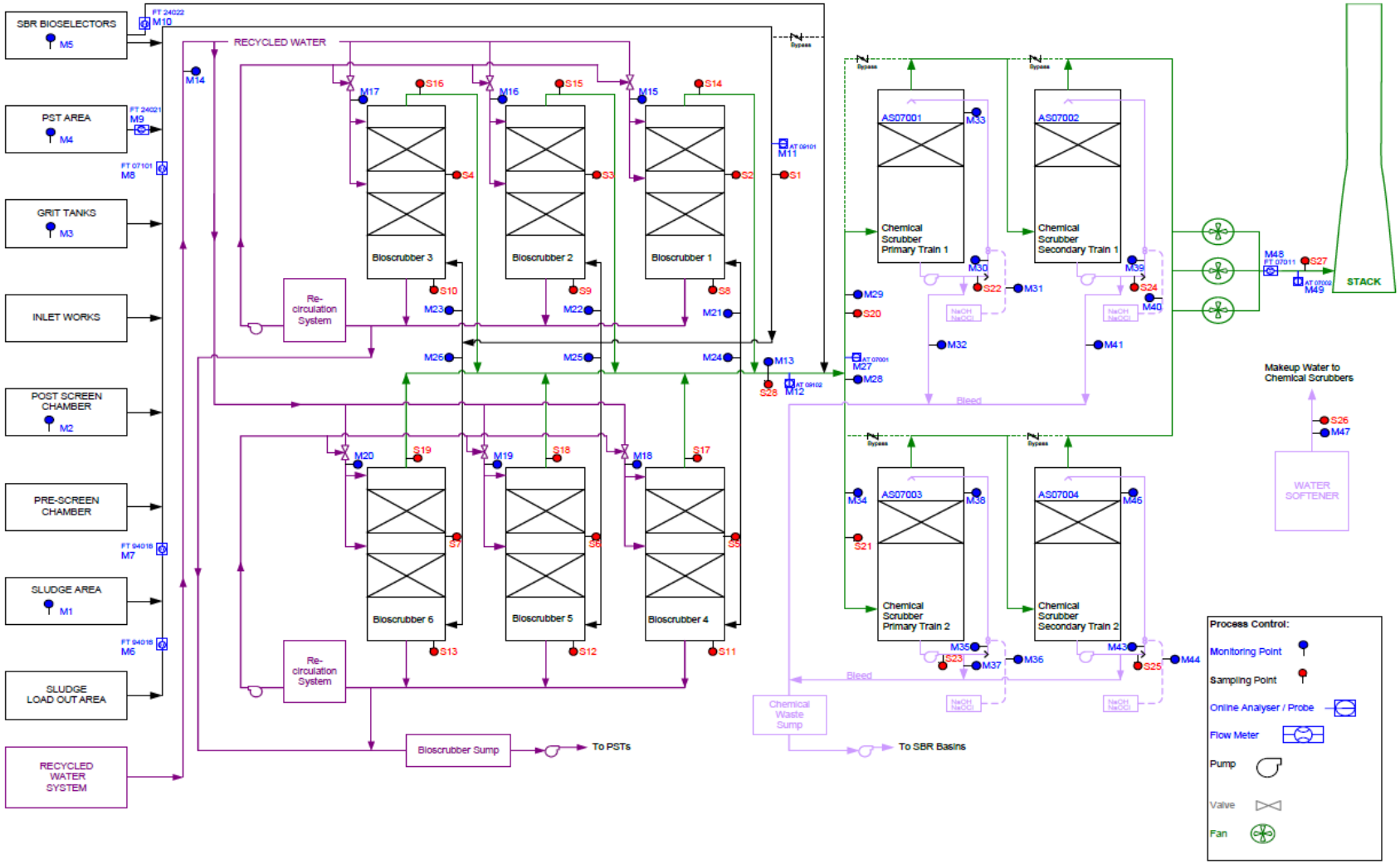


Woodman Point WWTP: Sludge Treatment

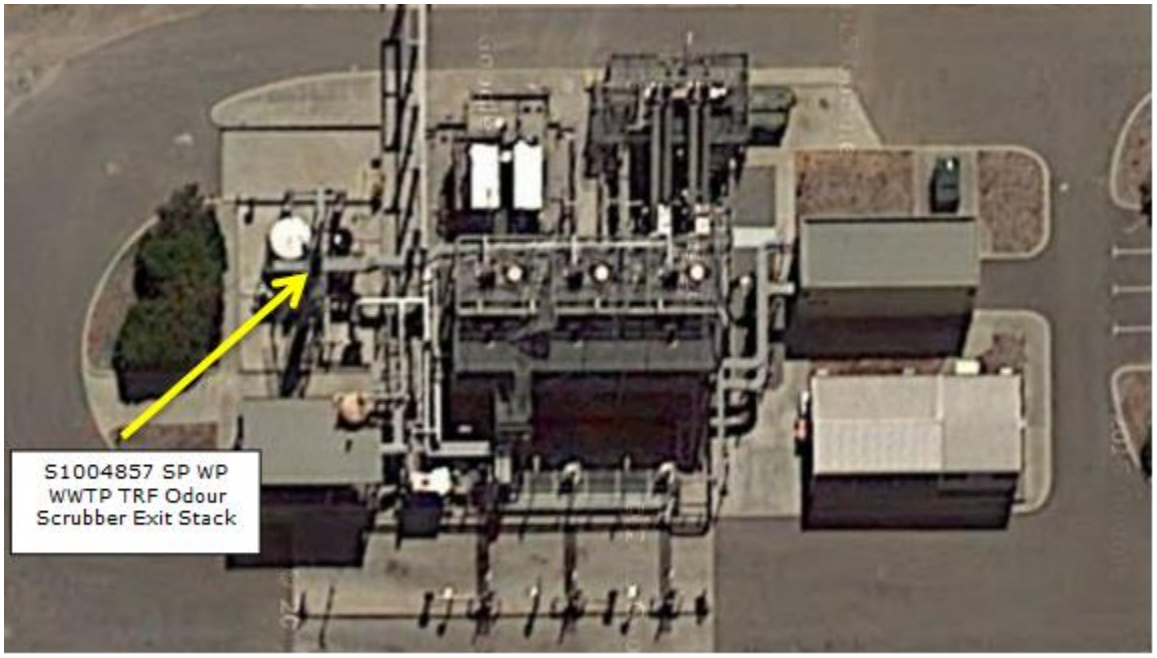


Map of Odour Control Facility emission and monitoring points

Woodman Point WWTP – Odour Control Stage 1



Map of Tanker Receival Facility emission point



Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

SECTION A

LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes ☐ Please proceed to Section C

No ☐ Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:

SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to DER?:	
☐ Yes ☐ Reported to DER verbally Date _____ ☐ Reported to DER in writing Date _____	☐ No
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance, and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:

SECTION C

SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) may only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	□	by the individual licence holder, or
	□	by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	□	by affixing the common seal of the licensee in accordance with the *Corporations Act 2001*; or
	□	by two directors of the licensee; or
	□	by a director and a company secretary of the licensee, or
	□	if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or
	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	□	by the principal executive officer of the licensee; or
	□	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	□	by the chief executive officer of the licensee; or
	□	by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of $50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SEAL (if signing under seal)

Licence: L4201/1991/11 Licensee: Water Corporation
Form: N1 Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.
Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of Water Corporation	
Date	

Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Water Corporation

Licence: L4201/1991/11

Registered office: 629 Newcastle Street
LEEDERVILLE WA 6007

Premises address: Woodman Point Wastewater Treatment Plant
Cockburn Road
MUNSTER WA 6166
Being Lot 9 on Diagram 31097

Issue date: Thursday, 28 October 2010

Commencement date: Monday, 1 November 2010

Expiry date: Friday, 31 October 2031

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue an amended licence. DER considers that in reaching this decision, it has taken into account all relevant considerations.

Decision Document prepared by: Caroline Conway-Physick
Licensing Officer

Decision Document authorised by: Caron Goodbourn
Delegated Officer

Contents

1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	54 – Sewage facility	160,000 cubic metres per day
	61 – Liquid waste facility	50,000 tonnes per annual period
Application verified Application fee paid	Date: N/A Date: N/A	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes☐ No☒	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☒ No☐	Ministerial statement No: 490 & 665 EPA Report No: Mandatory Audit Report, 2013/0000447726.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No☒ Department of Water consulted Yes ☐ No ☒	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☒ No☐ Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 – revoked; Environmental Protection (Kwinana)(Atmospheric Wastes) Policy 1999 and Regulations 1992 (Area C) - enacted. Relates to atmospheric emissions of SO_2 and fugitive (dust emissions).		
Is the Premises subject to any EPP requirements? Yes☐ No☒ Emission types from the primary activities of the premises do not fall within the EPP requirements within which the premises exists.		

3 Executive summary of proposal and assessment

The Woodman Point Wastewater treatment Plant (WWTP) is owned and operated by Water Corporation and is located approximately 25km south west of Perth. The premises is surrounded by 'Special Use' town planning scheme zoned areas to the east, south and west, and is adjacent to the 'Jervoise Bay Cove' to the west. The premises services the southern suburbs of Perth which has a nominal contributing population of approximately 700,000.

The WWTP consists of pre-treatment, primary treatment and secondary treatment, which includes a four quadrant sequencing batch reactor (SBR) and an anaerobic sludge digestion process.

Treated wastewater is discharged to the Sepia Depression via a 23km Sepia Depression Ocean Outfall Landline (SDOOL) and ocean outfall via the Jervoise Bay Cove.

An Odour Control Facility (OCF) treats odours from the pre-treatment and primary treatment facility, the SBR bio-selectors and the sludge handling area. The plant also has a Tanker Receiver Facility (TRF), which accepts third party waste. The TRF has a separate dedicated chemical odour scrubber to control odour. Dewatered sludge is removed from the premises and disposed of to landfill, with the liquid fraction from the WWTP and TRF being discharged to the flow balancing dam.

The plant is designed to treat up to 160 ML influent per day, with the average daily inflow currently at 141ML/d, for the 2014/ 2015 reporting period. As the premises is nearing capacity, the Licensee has proposed an upgrade to the premises which will increase the design capacity to 180 ML/d. This will require the current operation to be taken off line and operated through a temporary (150 ML/d) system until the works are completed. The proposed works will be constructed over a 2.5 year period consisting of three stages that will include construction of the following:

Stage one –

- Two new 9.75 m vortex grit tanks;
- Four new primary sedimentation tanks;
- Eight secondary sedimentation tanks (temporarily designed as aeration tanks, four with lift out diffused aeration grids and four operated as clarifiers);
- New recycled water pump station and filtration system.

Stage two –

- Conversion of the SBR to a Modified Ludzack-Ettinger (MLE) configuration (Treated wastewater from the primary sedimentation tanks will bypass the SBR to the temporary secondary sedimentation tanks for a period of nine months).

Stage three –

- Secondary sedimentation tanks retrofitted from temporary aeration tanks to fully functioning secondary sedimentation tanks;
- Mixed liquor transferred to MLE quadrants over 2-3 days and blended with imported seed sludge.

A desk top assessment of groundwater bore (Site Id. 20022946) on the western boundary of the premises identifies depth to groundwater at approximately 10.4 mBGL, with TDS approximately 5,000 mg/L (saline). The groundwater forms part of the Murray River Basin and Bartram Road Catchment.

The closest sensitive residential receptor has been identified by the Licensee as approximately 0.5 km south of the premises. The premises operation includes an odour buffer of 750 m to the nearest land use.

The premises is subject to conditions within Ministerial Statement 665.

The main potential emissions during construction are expected to be odour issues from the change in operational process and noise and dust emissions from site construction.

This Licence is a DER initiated amendment to undertake administrative changes from the previous amendment process carried out for the works upgrade at the premises. Comments from the draft review process were omitted within the final draft submitted for signing.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Interpretation	L1.1.2	**Construction and operation** Conditions 1.1.1 – 1.1.4 require that terminology used within the Licence is referenced to the appropriate definitions where applicable, and that any reference to a standard or guideline is to the most current version of that standard or guideline. An administrative change has been undertaken to amend minor changes to the Licence from a previous amendment process. Definitions have been updated. Condition 1.1.2 includes additional definitions in relation to an 'engineered containment system' and 'tanker receival facility discharge stack'.	General provisions of the *Environmental Protection Act 1986*.
General conditions	L1.2.3 L1.2.7 L1.2.9	**Construction and operation** An administrative change has been undertaken to amend minor changes to the Licence from a previous amendment process. Condition 1.2.3, Table 1.2.1, Note 1: Updated to reflect conditions under the Licence. Condition 1.2.7 amended to require the submission of the compliance document "within one month" following construction of each stage. The wording "and prior to operating the new works" has been removed as the proponent determined that this would not be feasible/ possible within the previous timeframe. Condition 1.2.9 has been amended with the removal of CEO approval and inclusion of	Application supporting documentation. General provisions of the *Environmental Protection Act 1986*.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		'in accordance with Licence conditions 1.2.6-1.2.8'.	
Premises operation	L1.3.3	**Construction and operation** An administrative change has been undertaken to amend minor changes to the Licence from a previous amendment process. Condition 1.3.3, Table 1.3.2 'Waste processing' has been amended with the removal of pH range from the liquid waste section and with the addition of reporting requirements within condition 4.3.1. Condition 1.3.5, Table 1.3.4, 'Management actions', point a) amended to define "corrective actions" instead of "management actions". Point d) removed from the table, and point e) includes "in writing". Condition 1.3.6 (a) amended to require compliance to condition 1.3.5 and removal of "recorded the actions taken to maintain compliance with the Licence".	General provisions of the *Environmental Protection Act 1986.* Application supporting documentation. *Environmental Protection (Controlled Waste) Regulations 2004* *Environmental Protection (Noise) Regulations 1997* *Environmental Protection (Unauthorised Discharges) Regulations, 2004.* Australian and

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
			New Zealand guidelines for fresh and marine water quality – *2000.*
Improvements	L4.1.1	**Operation** Emission Description *Emission:* Discharge of Hydrogen Sulphide (H2S) from the Tanker Receival Facility stack at the premises *Impact:* Reduced local air quality and odour emissions which could potentially interfere with the health welfare, convenience, comfort or amenity of any person. *Controls:* The proponent monitors parameters for point source emissions at the Tanker Receival Facility (TRF) stack (S1004857) which includes H2S. The TRF includes a chemical scrubber and discharge stack (50 m). Water Corporation have an 'Odour Improvement Plan and Mitigation Strategy' in place and have undertaken an odour control summary to assess emissions from the premises operation (as defined within condition 2.4.1 of the Licence. The closest residential receptor is 500 m south of the premises. Risk Assessment *Consequence*: Moderate *Likelihood:* Possible *Risk Rating:* Moderate Regulatory Controls Condition 1.3.5 has been included to require monitoring of H2S emission levels at the Tanker Receival Facility stack and includes management actions in the event of	General provisions of the *Environmental Protection Act, 1986*.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		exceedences of the limit specified. Condition 2.4.1 defines the operating documents for consideration in and management of odour emissions at the premises. Condition 3.2.1 requires monitoring of point source emissions to air at the premises which includes the Tanker Receival Facility (TRF). Condition 4.1.1, Improvement Programme has been included within the Licence as it has been identified, through the review of the draft Licence amendment documentation by Water Corporation, that the TRF does not have an operational H2S analyser to determine H2S emissions as defined within condition 1.3.5. It is considered that the ability to assess if the TRF is emitting emission levels above the required limit set that the Licensee is able to more promptly respond to the exceedence and implement appropriate management actions to mitigate and manage such issues and potential complaints. It is considered that this will assist in reducing the volume of odour emissions from the premises and improve monitoring of H2S emissions at the premises. <u>Residual Risk</u> *Consequence*: Minor *Likelihood:* Possible *Risk Rating:* Moderate	
Information	L5.2.1	**Operation** Condition 5.2.1, Table 5.2.1 includes a summary for reporting of any exceedences according to guidance as defined within Ministerial Statement 665, relating to the premises. This relates specifically to Table 3.3.1 of the Licence.	N/A

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Licence Duration	N/A	The current Licence will expire on 31 October 2016 in line with DER 'Licence duration, May 2015', guidance statement. "Woodman Point WWTP (Lot 9) is reserved as 'Public Purposes - Water Authority of WA'. Lot 20 is reserved "Public Purposes - special uses'. Development Approval is not required for Woodman Point WWTP (Note: A Development Approval is not required for development on reserved land that is owned by or vested in a public authority for the purpose of the supply, treatment, drainage or conveyance of water or wastewater (Clause 16(1a) of the MRS) where the land is: reserved for Water Corporation 'Public Purpose' use; vested in, or owned by the Water Corporation, and does not involve the clearing of regionally significant bushland in a Bush Forever Area)."	N/A

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
30/05/2016	Proponent sent a copy of draft instrument	Comments on draft received from Water Corporation, Danielle Berry, via email to Chris Slavin (DER) on 20 April 2016, that were not addressed through the initial works upgrade amendment process: 1) Minor change- Bold "Tanker Receival Facility Discharge Stack" at the top of page 7. 2) Remove the definition for "Freeboard" – it is not referenced in this Licence. 3) Define 'engineered containment system' in the definitions. 4) Note 1 (below table 1.2.1) refers to the Licence as a Works Approval. Please replace the words 'Works Approval' with 'Licence' (as this is not a WA). 5) It doesn't make sense to refer to the Licence Amendment Supporting Document here. A lot of the information in this document is background info (including current operation of the plant), and was submitted to provide information for the DER to enable them to draft this revised Licence. The upgrade information in section 6 is repeating what is listed in table 1.2.2 of the draft Licence. The DER should have extracted the various sections of this document, and used the info to develop conditions relating to the upgrade works. 6) General comment – whilst we have put a lot of effort into defining exactly what we want in the BDC documents eg. 5No. MLR pumps, the Delivery Alliance will still be able to offer	DER initiated amendment on comments not addressed, as follows: 1) Definition placed within condition 1.1.2; 2) Removed; 3) Definition placed within condition 1.1.2; 4) Changed; 5) Statement. No change. This does not relate to the application or premises but a formatting approach. 6) No change. Noted. The Licence is based on current operation with the amendment defining what the proposed works upgrade incorporates. Once the upgrade is completed, then an amendment is required to update the Licence to the new and final operation design. This cannot be done until all works are completed and a compliance document submitted as per condition 1.2.7 and 1.2.8 of the Licence. 7) No change. The specifics of the upgrade must be defined within the documentation in order to define the basis of the risk assessment on what is proposed (DER process). See comment above regarding conditions 1.2.4, 1.2.5 and 1.2.6.

Date	Event	Comments received/Notes	How comments were taken into consideration
		alternatives if they can demonstrate a significant NPV advantage to the Corporation. Stage 1, Item 7: I think that this should be either left out or simplified. The Alliance may be able to come up with a better NPV alternative to the proposed 720kW RAS system, which may only require 4No. pumps instead of 16No. Stage 2 is quite prescriptive, and could be reduced to three Items, in the order No. 3, No. 1 and No. 2. Leave the rest out, as how we reconfigure the SBR to an MLE reactor is entirely up to us? 7) As per Wayne's comment above the licence shouldn't specify the design details. Condition's 1.2.4 and 1.2.5 are confusing and contradict each other. 8) What if the change in specification is not minor, but improves the functionality of the infrastructure? The last line states 'and all other conditions in this Licence are still satisfied'. If you change the specs listed in Table 1.2.2, we may not be compliant with the doc referenced in Table 1.2.1. 9) This doesn't allow time for the compliance report to be written (following construction and prior to commissioning applies commissioning cannot commence until the compliance document has been submitted however the compliance document cannot be written until construction is complete. I.e. this condition implies works will have to stop while the report is written and submitted? 10) We cannot provide a commitment at the end of construction that there are no material defects. Defects are sometimes not discovered until commissioning is undertaken. Remove the reference to /no material defects'.	8) No change – see condition 1.2.5 which clarifies this point. 9) Amended. 10) No change. The requirement for a suitably qualified professional engineer or builder is to give surety that to the best of their ability/ knowledge it has been adequately constructed to operate as defined. This is a standard condition within DER. 11) No change. This will be removed on completion of the upgrade and submission of a compliance report for review, through the final amendment process to reflect the final upgrade once in place. The interim process has been designed at the lower capacity therefore full capacity for the interim operational phase is not permitted. 12) Amended. 13) No change. Defined within Licence – see condition 1.3.4, Table 1.3.3. 14) Removed. Seawater pH range is considered approximately between 7.5-8.4. Emissions to Ocean of pH 4 is not considered appropriate. Assessment of the 2014/ 2015 AER identifies that the premises discharge pH parameter is currently achieving a suitable pH range. 15) No change – comment does not correlate

Date	Event	Comments received/Notes	How comments were taken into consideration
		11) Contradicting to limit the premises capacity to 160 ML/d, when Table 1.3.1, 1.3.2 and the premise category (pg. 1) states 180 ML/d. Cannot control inflow – please remove this condition. 12) If the condition has to stay in, Define 'reviewed'? Does this refer to DER acknowledging the submission of the reports or do we require the CEO's approval? 13) Expand acronym 'ASD' 14) Current pH acceptable range is 4-8 (Licence specifies 6.5-8). Please amend. 15) Fifth entry should be "MLE reactor" 16) We do not have online H2S analyser at the TRF, as such this is not relevant. Please remove the Tanker Receival Facility from this Table. 17) What is the difference between a management action and a corrective action? I would have thought that a corrective action IS a management action. Suggest changing to: "Implement Management Actions including: Assess operation to determine any failure… Undertake corrective action… Restore normal operation… Notify CEO…" 18) It is impractical to state that we shall not restart operations until we have recorded all actions taken to maintain compliance with the Licence. Is the intention of that condition to only mean actions taken in relation to the OCF (not the whole Licence). The top priority is to ensure that the odour control facilities are back up and operational – any report/records will be completed as soon as practicable (but not necessarily before operations are restarted). The problem will be 'rectified' as	to Table 1.3.3? 16) Discharge points are identified at both facilities for H2S and monitoring is required at both facilities. Table 1.3.4 defines management actions/ approach required on emission levels. Please explain how assessment has been undertaken from this part of the facility, and reported in the past, as an emissions stack is present? 17) Amended. 18) Condition 1.3.6 amended. 19) No change. Section 5.5 of the submitted application supporting documentation identifies the 'Odour Control Summary' as Appendix 1, within AQUA no. 13945397. 20) Amended, with inclusion into Table 4.3.1. 21) No change. Table requires continuous monitoring frequency with a monthly averaging by use of inflow/ outflow meters.

Date	Event	Comments received/Notes	How comments were taken into consideration
		part of management actions in accordance with Table 1.3.4. Please remove condition 1.3.6. 19) The Odour Management Plan and Mitigation Strategy for the upgrade refers to doc PM#13945397. This doc is in word version – and DOES NOT include the referenced Appendix 1. In other words, the Licence keeps referencing a document which doesn't contain the specified odour mgt plan. This needs amending to the correct PM#- which is 14290847. 20) Note 2: please exclude pH and E.Coli from the contaminant loading requirements. Note 4: why is MS 665 referenced here? Not sure what this note means or its relevance as MS 665 doesn't define that emission point. 21) How can we monitor cumulative ML/day flow rates each month? Needs to be monthly cumulative flow rates in ML, AND/OR daily averaged flow rates in ML/d. Comments received back from Danielle Berry on 17 June 2016 as a result of 21 day consultation period of the Licence amendment process. Comments included: 1) General comment – there is potential that the contractor tenders may propose slightly different and potentially more efficient/effective infrastructure therefore a reduce level of detail would be prudent to avoid the need for a licence amendment down the track when final design is confirmed. 2) Stage 2, Item 7 should read" into each MLE basin". Stage 3, Item 1 – does the number of SSTs	DER response to comments received on 17 June 2016: 1) Refer to condition 1.2.4, 1.2.5 and 1.2.6 of the Licence with regards to 'Departures' 2) The Licence amendment incorporates a works upgrade as per the details supplied in the application supporting documentation. The risk assessment has been based on the design specification supplied. Any departures from the design specifications supplied are to be addressed through conditions 1.2.4, 1.2.5 and 1.2.6 of the Licence. 3) Incorrect. No change.

Date	Event	Comments received/Notes	How comments were taken into consideration
		need to be specified? Stage 3, Items 2 & 3 – the Construction Alliance may decide on a different configuration. Does the level of detail specified need to be this specific? 3) Condition's 1.2.4 and 1.2.5 contradict each other. 4) 1.2.5: If the construction Alliance change the specs listed in Table 1.2.2, we may not be compliant with the doc referenced in Table 1.2.1. Is this level of infrastructure to be construction required? 5) 1.2.8: Can the reference to no material defects' be removed? Compliance doc will confirm the infrastructure has been constructed as described however defects potentially won't be identified until commissioning and can be reported via the commissioning report. 6) 1.3.3: Expand acronym 'ASD' 7) 1.3.5: We do not have online H2S analyser at the TRF. Please remove the Tanker Receival Facility from this Table. 8) The condition states that we can't restart until we have complied with condition 1.3.5. This is an issue because condition 1.3.5 requires a written notification to DER. We cannot wait until we have notified DER in writing to restart the odour control facility. Please amend Table 1.3.4 to remove "in writing". 9) The TRF stack is 50m. 10) Can the AQUA#13945397 be changed to AQUA#14290847? 11) There is no continuous monitoring device to record volumetric flow rate of the TRF. Can only record volumes of liquid waste as each	4) Any departures from the design specifications supplied are to be addressed through conditions 1.2.4, 1.2.5 and 1.2.6 of the Licence. 5) No change. Condition is consistent with those used by DER. 6) The initial application referenced ASB which was defined as the Anaerobic Biosolids Digester which was defined within the respective condition – addressed in previous comments sent to Water Corporation above (30/5/2016). The acronym has now been changed from ASD to ABD. 7) The condition has been amended however an improvement condition has now been proposed within Section 4 Improvement programme for the installation of an H2S analyser. 8) No change. Written correspondence can be notification via any written form confirming operation is now rectified e.g. email. 9) Amended stack height. 10) As previously stated, the Application Supporting Document does not reference this number however I have included this number as follows within Table 2.4.1: "(Water Corporation independent document reference number AQUA#14290847)". 11) Amended to each load received. 12) Removed and placed within Table 5.2.1. 13) Amended from 3.1.3 to 3.1.4.

Date	Event	Comments received/Notes	How comments were taken into consideration
		truck comes in. Please amend to reflect this process. 12) This new text needs to be removed. MS 665 is not specifically on Woodman Point WWTP - it is on the SDOOL line (which includes a number of dischargers/participants). An exceedance of criteria therefore cannot be attributed necessarily to Woodman Point WWTP. MS 665 exceedances are managed through the MMP (which states that the DER is to be notified), and should not be regulated through the DER Licence. 13) This should reference condition 3.1.4 (not condition 3.1.3), as the condition refers to the calibration reports that need to be developed if calibration requirements can't be met. Final comments received from Danielle Berry via email (6 July 2016) through the draft referral process included: 1) 1.3.1: Table 1.3.2 states that dewatered biosolids to be sent to registered landfill. Biosolids sent to storage facility or to farm (licenced facilities) - not to landfill. Please amend/remove. 2) 1.3.5: Table 1.3.4 should refer to 5.3.1, not 4.3.1 3) 1.3.6: States that we cannot restart operations until we have complied with all the management actions in Table 1.3.4. We cannot wait until we have assessed H2S issue, rectified and notified DER before we restart operations. We need to be able to restart operations as soon as possible to avoid unnecessary odour emissions. Please amend. 4) 2.2.1: amended the height of the wrong	 DER response to comments received from draft referral process, as follows: 1) Changed biosolids to read: "Dewatered biosolids to be removed for offsite disposal 2) Typographical error: changed to 5.3.1 3) Condition 1.3.5 and 1.3.6 must be read in the context of Table 5.3.1 – No change. 4) Amended. 5) Removed. The summary of exceedences does incorporate other premises and as such the independent reporting of any exceedence should be emailed through to DER CEO, outside of the Licence. 6) Awaiting confirmation of construction details/ permeability from Licensee. 7) Typographical error. Amended. 8) Amended to 31/01/2017 (six months). 9) Amended to read: "… and ocean outfall

Date	Event	Comments received/Notes	How comments were taken into consideration
		stack. OCF is 50m high, TRF is 12 m high. Please amend 5) 5.2.1: the requirements in MS665 relate to overall SDOOL discharge, not individual plants. It is unreasonable to include a summary of any exceedance relating to Woodman Point operations, as a MS exceedance cannot necessarily be attributed to Woodman Point WWTP (or effluent quality as referred to in the decision doc). DER will be notified of EQO exceedances as per the Ministerial. Please amend or remove. 6) 1.3.4: Table 1.3.3 refers Flow Balancing Dam as "constructed of concrete". Please amend to "plastic lined". 7) 1.3.4: Table 1.3.3 – Please correct "Anerobic biosolids disgestor" to "Anaerobic biosolids digester" (typo) 8) IR condition - September 2016 is not feasible (need 6-12 months). 9) Premises Description: Talks about discharge of final effluent through the SDOOL and 4.2km Ocean Outlet through "Jervoise Bay Cove". Ocean outlet is 4.2 km from Point Peron to Sepia Depression. 10) 2.3.1, Table 2.3.1: Spelt "Priority" wrong.	via the Jervoise Bay Cove." 10) Typographical error. Amended.

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

Appendix A

Point source emissions to air including monitoring
For the Woodman Point Wastewater Treatment Plant facility, the principle emissions of concern are emissions to air (odour from Hydrogen sulphide emissions). DER has reviewed the proponent's impact assessment for emissions to air from the premises and is satisfied with the assessment provided by the proponent.

The proponent has an 'Odour Management Plan and Mitigation Strategy' and 'Odour Improvement Plan' and is required to comply with Ministerial requirements for the reduction of odour emissions by at least 50% since 2005 within three years for the premises. The long term objective has been defined by the Licensee as "*achieving [a] long term 73% reduction in odour emissions as envisaged in the SER (Strategic Environmental Review),...to the extent that there are no noticeable odour beyond the existing buffer zone*" (Appendix 1 – Odour Control Summary, application supporting documentation).

The proposed works upgrade is considered by the Licensee to have the ability to further improve odour emissions from the premises through improved technology installation (conversion of SBR to MLE and providing separate secondary clarifiers within the new MLE).

The proponent has undertaken two Odour monitoring and modelling programmes (MAM) since 2008/ 2009 to assess compliance against Ministerial requirements and in 2010 determined that the premises has reduced emissions by 55% since the Ministerial determination in 2005.

The upgraded premises, at full capacity of 180 ML/ day, is expected to have odour emissions of 118,500 OU/s as compared to emissions before 2009 of 297,100 OU/s.

The odour analysis/ assessment and modelling (Appendix A 'Odour modelling' within Odour Control Summary Appendix 1 of the application supporting documentation) provided was submitted to DER Air Quality Branch on 29 February 2016 for review. The review determined that the risk is considered low once operational, with low to moderate risk during the operation of the temporary facility configuration (construction phase/ concurrent operation). The secondary treatment facility is considered to be overloaded during the SBR retrofitting phase.

The drafting of the Odour Improvement Plan (OIP) in accordance with the East Rockingham Wastewater Treatment Plant is considered appropriate, which the proponent has committed to undertaking. The OIP is to comprehensively assess risk related to:
- sources and operations on site;
- their monitoring;
- corrective actions to be implemented if necessary; and
- contingencies should the corrective actions not be effective.

The WWTP is expected to continue growing to its anticipated ultimate capacity of 320ML/ day in the future, based on the capacity of the catchment and the main sewer system feeding the Munster Pumping Station. An upgrade to 220ML/ day will require a separate plant to be built onto the site which may impact the current buffer separation distance currently within the premises (750 m). This expansion is approximately 40 years into the future.

Emission Risk Assessment – Construction and Operation
Emission Description
Emission: Odorous emissions (Hydrogen sulphide) from the Tanker Receival Facility, Odour Control Facility operations, pre-treatment works, stack emissions, SBR operation (normal operation) and as a

result of the proposed works upgrade (abnormal operations/ alteration of process by taking current process off line to operate through a temporary process).
Impact: Reduction in local air quality. Nearest sensitive residential receptor is approximately 1.2 km south of the premises.
Controls: All odour emissions from the operation of the premises are directed through to the Odour Control Facility (OCF). The enclosed OCF and enclosed Tanker Receival Facility (TRF) both have chemical scrubbers to assist in the reduction of odour emissions. Sewage sludge is processed and stored within the enclosed Anaerobic Sludge Digestors (ASD) facility prior to discharge off site to an authorised landfill.

The following has been determined from Appendix 1 – Odour Control Summary (from the application supporting documentation):

Preliminary/ Pre-treatment: Grit removal
Entire process train from each tank to collection container for the inlet screening is to be enclosed to minimise fugitive emissions. Foul air extraction incorporated for the grit washing and classification systems.

Primary treatment (PST's)
The new PST's 5-8 will be covered and sealed as per the existing PST's 1-4 but with improved sealing on the skimming (scum) line. Foul air collection ductwork will be extended from the current PST's to service the new PST's.

SBR to MLE Conversion
Conversion to MLE continuous process with separate clarifiers is considered to be a more stable operation. The proponent has determined that similar operations at the Beenyup WWTP have "confirmed that there will be a considerable reduction in odour from a continuously aerated reactor as in the MLE format." This has predominantly been determined as a result of the spike in odour emissions caused from the start-up of the aeration process within the current SBR, which will be eliminated from the MLE conversion.

Additional covers and ventilation will be provided for the first anoxic zones in each MLE basin to counteract potential emissions from turbulence caused by mixing of the Mixed Liquor Recycle (MLR) and selector outlet streams. The Odour Control Summary, section 5.2, (Appendix 1 of the application supporting documentation) further identifies odour control efficiency requirements for the odour control facility for OU and H_2S and in relation to upgrades on the odour covers (section 5.3, Appendix 1, of the application supporting documentation).

Solids treatment area (ASD)
The works upgrade will not alter or increase any aspect of the current process, therefore no change to odour emissions from this area of the premises is expected.

Risk Assessment
Consequence: Moderate
Likelihood: Possible
Risk Rating: Moderate

Regulatory Controls
Condition 1.2.10 limits the increase in design capacity until review of the compliance documents for all stages of the works upgrade has been completed.

Condition 1.3.5 requires the management of hydrogen sulphide emission levels at the premises.

Condition 1.3.9 requires the Licensee to develop an 'Odour Monitoring Strategy' for the premises.

Condition 1.3.10 requires an odour monitoring and modelling (MAM) programme verification and the development of contingencies/ mitigation measures where any failures/ risks have been identified.

Condition 2.4.1 requires the Licensee to manage odour emissions according the specific management plans relevant to the premises operation.

Condition 3.2.1 requires the Licensee to monitor odour emissions for hydrogen sulphide from the premises operations.

Condition 4.1.3 includes a detailed complaints management system requirement for the recording of complaints.

Condition 4.2.1 requires the reporting of all complaints.

Condition 4.3.1 requires the reporting/ notification of all limit exceedences where management action was taken.

Residual Risk
Consequence: Minor
Likelihood: Possible
Risk Rating: Moderate