Government of Western Australia
Department of Environment Regulation

# Licence

## *Environmental Protection Act 1986*, Part V

## Licensee: Town of Port Hedland

## Licence: L6917/1997/8

**Registered office:** Town of Port Hedland Administration Centre
13 Mc Gregor Street
PORT HEDLAND WA 6721

**Premises address:** South Hedland Landfill
Reserve 41342 North Circular Road
SOUTH HEDLAND WA 6721
Being Lot 5813 on Plan 189435
As depicted in Schedule 1.

**Issue date:** Thursday, 13 October 2011

**Commencement date:** Monday, 17 October 2011

**Expiry date:** Wednesday, 16 October 2035

**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 |
|---|---|---|---|
| 57 | Used tyre storage (general): premises (other than premises within category 56) on which used tyres are stored | 100 tyres or more | 50 000 tyres |
| 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 | 32 850 tonnes per annual period |
| 64 | Class II or Class III putrescible landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the CEO and as amended from time to time) is accepted for burial | 20 tonnes or more per year | 100 000 tonnes per annual period |

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

Date signed: 28 September 2016
.....
Steve Checker
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.

**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 Town of Port Hedland (ToPH) operate the South Hedland Landfill Site (the Landfill), located on Crown Reserve 41342 at North Circular Road, South Hedland. The Landfill is a prescribed premises under Schedule 1 of the *Environmental Protection Regulations 1987* and is licensed to accept Putrescible Waste, Greenwaste, Inert Wastes Type 1 and Type 2, Special Wastes Type 1 and Type 2 and Industrial Solid Waste including Construction and Demolition Waste and Used Tyres.

The Landfill also has a Liquid Waste Facility (LWF). Liquid waste accepted for treatment at the LWF includes septage waste and grease trap waste mainly generated from mining camps in the Port Hedland area and stormwater pump-out effluent. Industrial liquid waste is not accepted at the LWF.

Groundwater depth at the landfill ranges from 4 to17m below ground level. Limited groundwater data for the area is available, however records indicate that groundwater in the South Hedland townsite is in excess of 4,000 mg/L TDS. There is no groundwater use in the area and no nearby surface water receptors. ToPH are currently disposing of waste in cells 7 to 8m above ground level.

The main emissions from the premises are odour from landfilling putrescible waste and treatment of liquid waste at the LWF. Other potential emissions are emissions to land from spills and leaks of hazardous liquid waste (oils, batteries etc). The site is currently licenced (L6917/1997) for categories 61, 64 and 57. There are no sensitive receptors within 500m of the landfill. The nearest sensitive receptors are a temporary construction camp 600m to the west and several houses approximately 700m to the west.

**2016 Amendment**
The ToPH have requested an amendment to the Licence for the installation of a Sequencing Batch Reactor (SBR) Wastewater Treatment Plant (WWTP). ToPH are licenced to accept 4,056 tonnes of septage waste and grease trap waste, which is being exceeded. The SBR WWTP has a maximum capacity of 90$m^3$/day.

The LWF currently consists of two concrete lined receival ponds (Ponds 1 and 2) and a high density polyethylene (HDPE) lined oxidation pond (Pond 3).Wastewater received at the LWF is directed into Ponds 1 and 2 initially and undergoes settling and anaerobic decomposition. There is no evaporation from Ponds 1 and 2 due to the formation of a surface crust, which forms naturally on the ponds from the solids in the septage. Wastewater is then gravity feed into Pond 3 for aeration.

The SBR WWTP will draw effluent from Pond 3 with a solids handling pump installed on a floating pontoon. A flexible hose links the pontoon to the fixed piping at the edge of Pond 3 to the Balance Tank. The application details that the SBR WWTP consists of the following infrastructure:

- Balance Tank;
- Anoxic Tank;
- Aeration/Decant Tank;
- Filter Feed Tank; and
- Storage Tank.

The treated wastewater (TWW) will be used for dust suppression onsite. The distribution of the recycled effluent is via tankers with spray nozzles. The distribution of the recycled effluent is via tankers with spray nozzles. The SBR WWTP is designed in modular form with catwalk access to all tanks. The instrumentation and control equipment is housed in an air conditioned enclosure.

As part of this amendment process ToPH have requested to use artificial cover for the coverage of waste. ToPH intend to use a tarpaulin base cover system to meet the requirements of waste coverage.

The licences and works approvals issued for the Premises are:

| **Instrument log** | | |
|---|---|---|
| **Instrument** | **Issued** | **Description** |
| L6917/1997/1 | 30/10/2000 | Licence re-issue |
| L6917/1997/2 | 02/11/2001 | Licence re-issue |
| L6917/1997/3 | 25/10/2002 | Licence re-issue |
| L6917/1997/4 | 18/10/2003 | Licence re-issue |
| L6917/1997/5 | 18/10/2004 | Licence re-issue |
| L6917/1997/6 | 18/10/2005 | Licence re-issue |
| L6917/1997/7 | 18/10/2008 | Licence re-issue |
| L6917/1997/7 | 23/09/2010 | Licence amendment to include septage ponds |
| L6917/1997/8 | 17/10/2011 | Licence reissue |
| L6917/1997/8 | 29/04/2016 | Amend to extend licence duration to 2035. |
| L6917/1997/8 | | Licence format updated and include increase capacity for liquid waste and solid waste |

**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;*

**'ACM'** means asbestos containing material and has the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites, Western Australia, (DOH, 2009);

**'AHD'** means the Australian height datum;

**'Acceptance Criteria'** has the meaning defined in Landfill Definitions**;**

**'annual period'** means the inclusive period from 1 January until 31 December;

**'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 5667.11'** means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters;*

**'asbestos'** means the asbestiform variety of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals and includes actinolite, amosite, anthophyllite, chrysolite, crocidolite, tremolite and any mixture containing 2 or more of those;

**'asbestos fibres'** has the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites, Western Australia, (DOH, 2009);

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

**'Clean Fill'** has the meaning defined in Landfill Definitions;

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

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

**'code of practice for the storage and handling of dangerous goods'** means document titled "Storage and handling of dangerous goods: Code of Practice" published by the Department of Mines and Petroleum, as amended from time to time;

**'Compliance Report'** means a report in a format approved by the CEO as presented by the Licensee or as specified by the CEO from time to time and published on the Department's website.

**'Contaminated Solid Waste'** has the meaning defined in Landfill Definitions;

**'dangerous goods'** has the meaning defined in the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*;

**'Department'** means the department established under s.35 of the Public Sector Management Act and designated as responsible for the administration of Division 3 Part V of the *Environmental Protection Act 1986.*

**'designated burning area'** means an area of a landfill site that has been designated by the occupier of the site as a designated burning area;

**'environmentally hazardous material'** means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Mines and Petroleum;

**'freeboard'** means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

**'Green Waste'** means waste that originates from flora;

**'Inert Waste Type 1'** has the meaning defined in Landfill Definitions;

**'Inert Waste Type 2'** has the meaning defined in Landfill Definitions;

**'Landfill Definitions'** means the document titled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer of the Department of Environment as amended from time to time.

**'Licence'** means this Licence numbered L6917/1997/8 and issued under the Act;

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

**'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;

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

**'Putrescible Waste'** has the meaning defined in Landfill Waste Definitions;

**'quarantined storage area or container'** means a hardstand storage area or sealed-bottom container that is separate and isolated from authorised waste disposal areas and is capable of containing all non-conforming waste and its constituents, these areas must be clearly marked and their access restricted to authorised personnel;

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

**'rehabilitation'** means the completion of the engineering of a landfill cell and includes capping and/or final cover;

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

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

**'Special Waste Type 1'** has the meaning defined in Landfill Definitions;

**'Special Waste Type 2'** has the meaning defined in Landfill Definitions;

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

**'tipping area'** means the area of the landfill in which waste other than cover material is being deposited;

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

**'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.

**'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 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 current version of the 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 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.

1.2.2 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<br>Infrastructure | Column 2<br>Specifications (design and construction) |
|---|---|
| General | 1. The SBR treatment system shall be constructed and operated on an impervious concrete hardstand area.<br>2. The overflow piping from the tanks is connected to a common overflow drain pipe which diverts any potential overflow to the existing Ponds 1 & 2.<br>3. Erect signage around the premises outlining the use of treated wastewater used on the premises. |
| Balance Tank | 1. Fully enclosed impervious tank.<br>2. Installed with a Plant Logic Controller. |
| Anoxic Tank | 1. Fully enclosed impervious tank.<br>2. Installed with a Forward Transfer Pump to connect to the Aeration/Decant |

| Table 1.2.2: Works specifications | |
|---|---|
| Column 1<br>Infrastructure | Column 2<br>Specifications (design and construction) |
| | Tank |
| Aeration/ Decant Tank | 1. Impervious tank<br>2. Installed with a Dissolved Oxygen (DO) Monitor/Controller;<br>3. Installed with a Recycle/Sludge Discharge pump to return a constant flow of nitrified mixed liquor back to the Balance Tank and subsequently to the Anoxic Tanks for denitrification.<br>4. Installed with a Mixed Liquor Suspended Solids (MLSS) at the end of a decant cycle. |
| Filter feed tank | 5. Fully enclosed impervious tank.<br>6. Installed with a feed pump to the Continuous Backwashing Upstream Sand Filtration System. |
| Storage Tank | 1. Fully enclosed impervious tank.<br>2. Capable of storing 500$m^3$ of treated wastewater. |
| Process control room | 1. Impervious, bunded flooring |

1.2.3 If departures from the specifications outlined in Table 1.2.2 under Condition 1.2.2 apply, then the Licensee must provide the CEO with a list of departures which are certified as complying with Condition 1.2.2 at the same time as the certifications under Condition 1.2.4.

1.2.4 The Licensee must submit a construction compliance document to the CEO, following the construction of the Works.

1.2.5 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 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.

1.2.6 The licence must not operate the SBR WWTP until the construction compliance document has been submitted in accordance with Condition 1.2.4.

### 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; and
(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] |
| Clean Fill | N/A | Combined total limit of 100 000 tonnes per annual period | None specified |
| Contaminated Solid Waste | N/A | | Must meet the acceptance criteria for Class II landfill |
| Inert Waste Type 1 | N/A | | None specified |
| Inert Waste Type 2 | T140 (used tyres) | | Tyres and plastic only. |
| Putrescible Waste (including green waste) | N/A | | None specified |
| Solid Hazardous Waste | B100, D220, D221, N100 N160 | | Limit to acidic solutions, lead and lead compounds, used lead acid batteries, engine oil filters, aerosol |

| | | | |
|---|---|---|---|
| | | | cans and empty drums |
| Liquid Hazardous Waste | J170, K110, L100, N205 | | Limited to waste oil, oily wastes (e.g. from oil filters), industrial wash waters |
| Special Waste Type 1 | N220 | | Cement bonded asbestos only. No fibrous asbestos shall be accepted |
| Special Waste Type 2 | R100, R120, R140 | | Biomedical / clinical waste |
| Liquid waste (Septage waste, waste from grease traps) | K110, K210 | Combined total limit of 32 850 tonnes per annual period | Biological waste (septage and grease trap waste only)<br><br>Tankered into the premises and discharged in one of the receiving ponds |

Note 1: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) 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 condition 1.3.1 it is removed from the Premises by the delivery vehicle or, where that is not possible, stored in a quarantined storage area or container and removed to an appropriately authorised facility as soon as practicable.

1.3.3 The Licensee shall ensure that wastes accepted onto the Premises [or] landfill 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(s) | Process | Process limits [1,2] |
|---|---|---|
| All | Disposal of waste by landfilling | • Shall only take place within designated landfill trenches or cells;<br>• No waste shall be temporarily stored or landfilled within 35m from the boundary of the premises; and<br>• The separation distance between the base of the landfill and the highest groundwater level shall not be less than 3m |
| Clean Fill | Receipt, handling and disposal by landfilling | None specified |
| Contaminated Solid Waste | | • None Specified |
| Liquid and Solid Hazardous Wastes | | • DrumMuster products must be triple rinsed prior to acceptance on the premises; and<br>• Waste oil, paint, vehicle batteries must be stored in a fully enclosed bunded area/container. |
| Inert Waste Type1 | | None specified |
| Inert Waste Type 2 - Tyres | Receipt, handling, storage prior to re-use or disposal by landfilling | Refer to conditions 1.3.12 – 1.3.15 |
| Putrescible Waste | Receipt, handling and storage prior to disposal | None specified |

| | | |
|---|---|---|
| | Disposal by Burning | Only greenwaste is to be burnt on site. Greenwaste shall only be burnt if;<br>• It has been dried and seasoned for at least 2 months before burning;<br>• it takes place in a designated burning area at least 25m from the boundary of any active disposal areas;<br>• it takes place in trenches or windrows;<br>• it takes place only when an adequate supply of water is available to effectively manage the burning process; and<br>• it is free of any contaminant |
| Special Waste Type 1 (asbestos waste) | Receipt, handling and disposal by landfilling | • Only to be disposed of into a designated asbestos disposal area within the landfill;<br>• Not to be deposited within 2m of the final tipping surface of the landfill; and<br>• No works shall be carried out on the landfill that could lead to a release of asbestos fibres |
| Special Waste Type 2 (Biomedical and Clinical Waste) | | • Only to be disposed of into a designated biomedical waste disposal area within the landfill;<br>• Not to be deposited within 2m of the final tipping surface of the landfill; and<br>• No works shall be carried out on the landfill that could lead to biomedical wastes being excavated or uncovered |
| Liquid waste (Septage waste, waste from grease traps | Physical, biological and chemical treatment | To be disposed of into either Pond 1 or Pond 2 |

Note 1: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.
Note 2: Additional requirements for the acceptance and landfilling of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

1.3.4 The Licensee shall manage the landfilling activities to ensure:
(a) the size of the tipping face is kept to a minimum and not larger than 30 m x 30 m;
(b) waste is levelled and compacted to ensure all faces are stable and capable of retaining rehabilitation material; and
(c) rehabilitation of a cell or phase takes place within 6 months after disposal in that cell or phase has been completed.

1.3.5 The Licensee shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.3.3 and that sufficient stockpiles of cover are maintained on site at all times.

**Table 1.3.3: Cover requirements**

| Waste Type | Material | Depth | Timescales |
|---|---|---|---|
| Inert Waste Type 1 | N/A | N/A | N/A |
| Inert Waste Type 2[1] | Inert Waste Type 1, soil, or clay | 230 mm | N/A |
| Putrescible Wastes (where TarpArmour Tarpaulin system is in use) | TarpArmour Tarpaulin[2] | N/A | As soon as practicable and not later than the end of the working day |
| Putrescible Wastes (where TarpArmour Tarpaulin system | Inert Waste Type 1, soil, or clay | 230 mm | Daily |

| | | | |
|---|---|---|---|
| not in use) | | | |
| Putrescible Wastes (final cover) | Inert Waste Type 1, soil, or clay | 1,000mm | Within 3 months of achieving final waste contours |
| Special Waste Type 1 | Inert Waste Type 1 or clean fill | 300mm | As soon as practicable after deposit and prior to compaction |
| | Solid waste or soil | 1,000mm | By the end of the working day in which the asbestos waste was deposited |
| Special Waste Type 2 | Solid waste or soil | 1,000mm | As soon as practicable after deposit |

Note 1: Additional requirements for the covering of tyres are set out in Part 6 of the *Environmental Protection Regulations 1987.*
Note 2: Prior to impending cyclonic weather events the Licensee must cease using and secure the TarpArmour Tarpaulin system and revert to using inert waste type 1, soil or clay as cover material.

1.3.6 The Licensee shall implement the following security measures at the site:
(a) erect and maintain suitable fencing to prevent unauthorised access to the site; and
(b) ensure that any entrance gates to the premises are securely locked when the premises are unattended; and
(c) undertake regular inspections of all security measures and repair damage as soon as practicable.

1.3.7 The Licensee shall install and maintain a sign at the entrance to the Premises which clearly displays the following information:
(a) hours of operation;
(b) contact telephone number;
(c) a warning indicating penalties for people lighting fires; and
(d) list of materials accepted for recycling and the location of where they can be deposited on the premises.

1.3.8 The Licensee shall take all reasonable and practical measures to ensure that no wind-blown waste escapes from the Premises and that wind-blown waste is collected on at least a weekly basis and returned to the tipping area.

1.3.9 The Licensee shall ensure that water and other liquid waste that may result from fire fighting on the Premises is captured and contained within the Premises.

1.3.10 The Licensee shall ensure that any fire water is removed from the Premises by a carrier licensed under the *Environmental Protection (Controlled Waste) Regulations 2004*.

1.3.11 The Licensee shall ensure that an unauthorised fire on the Premises is extinguished as soon as possible.

1.3.12 The Licensee shall ensure that all tyres are stacked on their side walls or if stored on their treads, are baled with a non-combustible securing device.

1.3.13 The Licensee shall ensure that tyres are only stacked on level ground at the Premises.

1.3.14 The Licensee shall ensure that tyre storage complies with the following:
(a) each stockpile is located at a minimum of 10 m from any fence, combustible materials or walls;
(b) each stockpile is a maximum of 100 $m^2$ in area; and
(c) each stockpile is a maximum of 3 m in height.

1.3.15 The Licensee shall ensure that tyre stacks at the Premises do not obscure fire protection equipment (including fire hydrants and fire hoses) or related signage.

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

| Table 1.3.4: Containment infrastructure | | |
|---|---|---|
| **Vessel or compound** | **Material** | **Requirements** |
| Pond 1 (Receiving Pond) | Wastewater | Concrete lined. Maintained in an impervious condition. |
| Pond 2 (Receiving Pond) | Wastewater | Concrete lined. Maintained in an impervious condition. |
| Pond 3 (Aerated Receiving Pond) | Wastewater | HDPE lined. Maintained in an impervious condition. |
| Hardstand for situating SBR vessels | Wastewater | Concrete hardstand. Must contain all SBR vessels. Maintained in an impervious condition. |
| Process control room | Sodium Acetate, Ferric Sulphate, Chlorine and any other process chemicals used in the SBR | Modified sea container. Flooring maintained in an impervious condition. |

1.3.17 The Licensee shall manage all wastewater ponds and vessels such that:
(a) overtopping of the ponds or vessels does not occur;
(b) the integrity of the containment infrastructure is maintained;
(c) trapped overflows are maintained on the outlet of ponds to prevent carry-over of surface floating matter; and
(d) vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces or inner pond embankments.

1.3.18 The Licensee shall ensure that only treated wastewater or clean water is used for dust suppression on roads and access ways at the Premises.

1.3.19 The Licensee shall ensure that no treated wastewater is disposed of to active landfilling areas.

1.3.20 The Licensee shall ensure that no pooling of treated wastewater occurs on areas of the premises used for dust suppression.

# 2 Monitoring

## 2.1 General monitoring

2.1.1 The licensee shall ensure that:
(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
(c) 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].

2.1.2 The Licensee shall ensure that quarterly monitoring is undertaken at least 45 days apart;

2.1.3 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.

2.1.4 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.

## 2.2 Monitoring of inputs and outputs

2.2.1 The Licensee shall undertake the monitoring in Table 2.2.1 according to the specifications in that table.

**Table 2.2.1 Monitoring of inputs and outputs**

| Input/Output | Parameter | Units | Averaging Period | Frequency |
|---|---|---|---|---|
| Waste inputs | Clean Fill, Contaminated Solid Waste, Liquid Hazardous Waste, Solid Hazardous Wastes Inert Waste Type 1, Inert Waste Type 2, Putrescible Waste, Green Waste, Special Waste Type 1, Special Waste Type 2 and Liquid Waste | Tonnes | N/A | Each load arriving at the Premises |
| Waste outputs | Waste type as defined in the Landfill Definitions | | | Each load leaving or rejected from the Premises |

## 2.3 Process Monitoring

2.3.1 The Licensee shall undertake the monitoring in Table 2.3.1 according to the specifications in that table.

| Table 2.3.1: Process Monitoring | | | | |
|---|---|---|---|---|
| **Monitoring point reference** | **Parameter** | **Limit** | **Units** | **Frequency** |
| M1 | Volumetric flow rate (cumulative)[1] | - | $m^3$/day | Continuous |
| | pH[1] | 6.5 – 8.5 | pH units | Quarterly |
| | Biochemical Oxygen Demand | - | mg/L | |
| | Total Suspended Solids | - | | |
| | Total Dissolved Solids | - | | |
| | Total Nitrogen | - | | |
| | Total Phosphorus | - | | |
| | Residual Chlorine | >0.2 | | |
| | *E.coli* | <10 | CFU/100 mL | |

Note 1: In-field non-NATA accredited analysis permitted.

2.3.2 The Licensee shall immediately cease the discharge of treated wastewater for dust suppression onsite upon becoming aware that a limit listed under Table 2.3.1 is exceeded

2.3.3 The Licensee shall not recommence the discharge of treated wastewater ceased under Condition 2.3.2 until a repeat sample is obtained which demonstrates compliance with the limits in Table 2.3.1.

### 2.4 Ambient environmental quality monitoring

2.4.1 The Licensee shall undertake the monitoring in Table 2.4.1 according to the specifications in that table and record and investigate results that do not meet any target specified.

| Table 2.4.1: Monitoring of ambient groundwater quality | | | | |
|---|---|---|---|---|
| **Monitoring point reference and location** | **Parameter** | **Units** | **Averaging period** | **Frequency** |
| BH 1 - 8 | pH[1] | pH units | Spot sample | Quarterly |
| | Electrical conductivity | µS/cm | | |
| | Standing water level (SWL)[2] | m AHD (and m bgl | | |
| | Total phosphorus | | | |
| | Chloride | | | |
| | Total Nitrogen | | | |
| | Ammonia-nitrogen | | | |
| | Total potassium | | | |
| | Total chromium | | | |
| | Cadmium | | | |
| | Copper | | | |
| | Mercury | | | |
| | Molybdenum | | | |
| | Nickel | | | |
| | Manganese | | | |
| | Lead | | | |
| | Zinc | | | |

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: SWL shall be determined prior to collection of other water samples.

# 3 Information

## 3.1 Records

3.1.1 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 3.1.1(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.

3.1.2 The Licensee must submit to the CEO by the 1 February in each year a Compliance Report indicating the extent to which the Licensee has complied with the Conditions in this Licence for the previous Annual Period.

3.1.3 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

3.1.4 The Licensee shall maintain a register of Special Waste Type 1 (asbestos waste) and Special Waste Type 2 (biomedical and clinical waste) disposed of at the Premises which shall include a plan showing the position of Special Waste Type 1 (asbestos waste) and Special Waste Type 2 (biomedical and clinical waste) disposed of at the Premises.

## 3.2 Reporting

3.2.1 The Licensee shall submit to the CEO an Annual Environmental Report by 1 February in each year. The report shall contain the information listed in Table 3.2.1 in the format or form specified in that table.

**Table 3.2.1: 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 2.2.1 | Summary of inputs and outputs | None specified |
| Table 2.3.1 | Summary of process monitoring | None specified |
| Table 2.4.1 | Monitoring of ambient groundwater quality | None specified |
| 3.1.3 | Complaints summary | None specified |

Note 1: Forms are in Schedule 2

3.2.2 The Licensee shall ensure that the Annual Environmental Report also contains an assessment of the information contained within the report against previous monitoring results and Licence limits and/or targets.

## 3.3 Notification

3.3.1 The Licensee shall ensure that the parameters listed in Table 3.3.1 are notified to the CEO in accordance with the notification requirements of the table.

| Table 3.3.1: Notification requirements | | | |
|---|---|---|---|
| **Condition or table (if relevant)** | **Parameter** | **Notification requirement[1]** | **Format or form[2]** |
| 1.3.12 | Unauthorised fire | Within 14 days of unauthorised fire | ET1 |
| 2.1.1 | Breach of any limit specified in the Licence | Part A: As soon as practicable but no later than 5pm of the next usual working day.<br><br>Part B: As soon as practicable | N1 |

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 map below. The pink line depicts the Premises boundary.

**Map of SBR WWTP location at the Landfill**

# 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.

Licence: L6917/1997/8 Licensee: Town of Port Hedland
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 Town of Port Hedland | |
| Date | |

Licence: L6917/1997/8
Form: ET1
Name: Unauthorised Fire

Licensee: Town of Port Hedland
Period:

| **Form ET1: Unauthorised Fire** |
| --- |
| Please provide details of unauthorised fire on the premises, including but not limited to:<br>(a) details of the date, time and location of the fire;<br>(b) the time the fire was declared safe by the Fire Control Officer for the premises;<br>(c) the cause, or suspected cause, of the fire; and<br>(d) a description measures taken or planned to be taken, to prevent recurrence of the unauthorised fires. |
| |

Signed on behalf of the Town of Port Hedland …….. Date: …….

Government of Western Australia
Department of Environment Regulation

# Decision Document

## *Environmental Protection Act 1986,* Part V

-

## Proponent: Town of Port Hedland

## Licence: L6917/1997/8

**Registered office:** Town of Port Hedland Administration Centre
13 Mc Gregor Street
PORT HEDLAND WA 6721

**Premises address:** South Hedland Landfill
Reserve 41342 North Circular Road
SOUTH HEDLAND WA 6721
Being Lot 5813 on Plan 189435

**Issue date:** Thursday, 13 October 2011

**Commencement date:** Monday, 17 October 2011

**Expiry date:** Wednesday, 16 October 2035

**Decision**

Based on the assessment detailed in this document, the Delegated Officer has decided to issue an amended licence. The Delegated Officer considers that in reaching this decision, all relevant considerations have been taken into account.

Decision Document prepared by: Chris Slavin
Licensing Officer

Decision Document authorised by: Steve Checker
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 ☐<br>New Licence ☐<br>Licence amendment ☒<br>Works Approval amendment ☐ | |
| Activities that cause the premises to become prescribed premises | **Category number(s)** | **Assessed design capacity** |
| | 57 | 50 000 tyres |
| | 61 | 32 850 tonnes per annual period |
| | 64 | 100 000 tonnes per annual period |
| Application verified<br>Application fee paid | Date: N/A<br>Date: N/A | |
| Works Approval has been complied with<br>Compliance Certificate received | Yes☐ No☐ N/A☒<br>Yes☐ No☐ N/A☒ | |
| Commercial-in-confidence claim | Yes☐ No☒ | |
| Commercial-in-confidence claim outcome | N/SA | |
| 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:<br>Managed under Part V ☐<br>Assessed under Part IV ☐ |
| Is the proposal subject to Ministerial Conditions? | Yes☐ No☒ | Ministerial statement No:<br>EPA Report No: |
| 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☒<br>Department of Water consulted Yes ☐ No ☒ | |
| Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒<br>If Yes include details of which EPP(s) here. | | |
| Is the Premises subject to any EPP requirements? Yes☐ No☒<br>If Yes, include details here, eg Site is subject to $SO_2$ requirements of Kwinana EPP. | | |

# 3 Executive summary of proposal and assessment

The Town of Port Hedland (ToPH) operate the South Hedland Landfill Site (the Landfill), located on Crown Reserve 41342 at North Circular Road, South Hedland. The Landfill is a prescribed premises under Schedule 1 of the *Environmental Protection Regulations 1987* and is licensed to accept Putrescible Waste, Greenwaste, Inert Wastes Type 1 and Type 2, Special Wastes Type 1 and Type 2 and Industrial Solid Waste including Construction and Demolition Waste and Used Tyres.

The Landfill also has a Liquid Waste Facility (LWF). Liquid waste accepted for treatment at the LWF includes septage waste and grease trap waste mainly generated from mining camps in the Port Hedland area and stormwater pump-out effluent. Industrial liquid waste is not accepted at the LWF.

Groundwater depth at the landfill ranges from 4 to17m below ground level. Limited groundwater data for the area is available, however records indicate that groundwater in the South Hedland townsite is in excess of 4,000 mg/L TDS. There is no groundwater use in the area and no nearby surface water receptors. ToPH are currently disposing of waste in cells 7 to 8m above ground level.

**2016 Amendment**
The ToPH have requested an amendment to the Licence for the installation of a Sequencing Batch Reactor (SBR) Wastewater Treatment Plant (WWTP). ToPH were previously licenced to accept 4,056 tonnes of septage waste and grease trap waste, which was exceeded historically. The SBR WWTP has a maximum capacity of 90$m^3$/day which approximates to 32 850 tonnes per year.

The LWF currently consists of two concrete lined receival ponds (Ponds 1 and 2) and a high density polyethylene (HDPE) lined oxidation pond (Pond 3).Wastewater received at the LWF is directed into Ponds 1 and 2 initially and undergoes settling and anaerobic decomposition. There is no evaporation from Ponds 1 and 2 due to the formation of a surface crust, which forms naturally on the ponds from the solids in the septage. Wastewater is then pumped into Pond 3 for aeration.

The SBR WWTP consists of the following infrastructure:

- Balance Tank;
- Anoxic Tank;
- Aeration/Decant Tank;
- Filter Feed Tank; and
- Storage Tank.

The application details the following process:

> *"The balance tank is operated with approximately 70% of the buffer storage capacity being available during normal operation. As the screened sewage enters the balance tank, it is blended with a flow of aerated mixed liquor in order to prevent the generation of undesirable odours and to scavenge excess oxygen from the blended liquor before it enters the Anoxic zone. The recycled flow of nitrified liquor from the aeration tank to the balance tank is low in Ammonia Nitrogen and high in Nitrate Nitrogen.*
>
> *The sewage blended with mixed liquor is transferred from the balance tank to the anoxic tank. Biochemical Oxygen Demand (BOD) is removed in the anoxic tank without the presence of oxygen. In this process, the oxygen component of the Nitrate Nitrogen is utilised by the hetrophic bacteria and Nitrogen is liberated as gas to the atmosphere.*
>
> *In the Aeration/Decant Tank BOD is reduced and ammonia nitrogen is converted to nitrate nitrogen in the aeration zone. Mixed liquor blended with sewage is pumped from the anoxic zone to the aeration zone. The dissolved oxygen (DO) is limited to 2.0ppm in order to*

*minimize the carry-over of excessive oxygen to the anoxic zone. Hetrophic bacteria reduce BOD in the presence of oxygen. Simultaneously, autotrophic bacteria convert Ammonia Nitrogen to Nitrate Nitrogen in the presence of oxygen. The sewage treatment process relies on the healthy development of floc forming bacteria that will settle readily to facilitate the decanting of clear supernatant. The recycle flow from the aeration tank to the balance causes a selector effect and inhibits the proliferation of undesirable filamentous bacteria. When the aeration tank reaches the upper working level, the contents of the tank are allowed to settle and the clear supernatant is drawn from the upper section of the tank and discharged to the filter feed tank.*

*Effluent from the filter feed tank is pumped at a fixed rate through a continuously backwashing sand filtration system. The effluent is dosed with liquid chlorine before it enters the sand filter to disinfect and prevent fouling of the filter. The chlorinated and filtered effluent is discharged into the effluent storage tank for re-use.*

*The final effluent is pumped from the 500m$^3$ storage tank to a standpipe for tanker filling. As the final effluent is being pumped to the standpipe, it is subjected to a top up dose of liquid chlorine to guarantee chlorine residual in the dust suppression tanker. The final effluent is monitored for pH, chlorine and turbidity as it is discharged from the storage tank. The monitoring is continuous online and the data is stored on a data logger from where it can be retrieved by the plant operator. An alarm set point is installed so that the discharge of final effluent to the tanker is inhibited if the residual chlorine level falls below a set level of 0.2mg/L.*

*A buried sludge pipeline is plumbed from the WWTP process directly to the primary ponds The waste sludge discharge circuit includes two sludge discharge valves, one located at each primary septic pond. This facilitates the pumping of waste sludge from the sewage plant directly to the selected pond. The primary septic ponds located adjacent to the sewage plant are operated in a duty/standby arrangement. Only one pond is in service at a given time. The change-over to the redundant pond is made by Landfill staff when maintenance or cleaning is required."*

The main emissions from the premises are odour from landfilling putrescible waste and treatment of liquid waste at the LWF. Other potential emissions are emissions to land from spills and leaks of hazardous liquid waste (oils, batteries etc). The site is currently licenced (L6917/1997) for categories 61, 64 and 57. There are no sensitive receptors within 500m of the landfill. The nearest sensitive receptors are a temporary construction camp 600m to the west and several houses approximately 700m to the west.

# 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** | L1.1.1 – L1.1.4 | **Construction and operation**<br>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. | General provisions of the *Environmental Protection Act 1986*.<br><br>*Environmental Protection Regulations 1987* |
| **General conditions** | L1.2.1 – L1.2.5 | Conditions 1.2.1 and 1.2.2 have been added to the Licence to detail the design and construction specifications for approved works at the premises.<br><br>Condition 1.2.3 requires the Licensee to list and report any departures that may be undertaken during the course of the works upgrade to the premises.<br><br>Condition 1.2. 4 requires the Licensee to submit a compliance document for the works upgrade and prior to full operation.<br><br>Condition 1.2.5 defines the detail required within the compliance document.<br><br>Condition 1.2.6 requires that the Licensee does not operate SBR WWTP until the compliance documents for the works upgrade for the premises have been submitted. | General provisions of the *Environmental Protection Act 1986*<br><br>*Environmental Protection (Unauthorised Discharges) Regulations 2004*<br><br>DER's *Guidance Statement: Regulatory* |

| DECISION TABLE | | | |
|---|---|---|---|
| **Works Approval / Licence section** | **Condition number W = Works Approval L= Licence** | **Justification (including risk description & decision methodology where relevant)** | **Reference documents** |
| | | | *Principles*<br><br>DER's *Guidance Statement: Setting Conditions*<br><br>DER's *Guidance Statement: Licence and works approval process* |
| **Premises operation** | L1.3.1<br>L1.3.17 | **Operation**<br>Emission Description<br>*Emission:* Potential discharge of untreated and partially treated wastewater from the SBR WWTP. Spills and leaks of chemicals used in the treatment process such as such as Sodium Acetate, Ferric Sulphate and Chlorine.<br>*Impact:* Contamination of surrounding land and surface water drainage systems. Potential impacts on ecology of surface water from the addition of nutrients and heavy metals. Groundwater depth at the landfill ranges from 4 to17m below ground level.<br>*Controls:* The ToPH have outlined that the SBR WWTP will be installed on a concrete hardstand. All tanks on the SBR are fully enclosed, except for the Aeration/Decant tank which has an open at the top. Overflow piping is installed on the Balance Tank, Anoxic Tank, Aeration/Decant Tank and Effluent Tank. The overflow piping from the tanks is connected to a common overflow drain pipe which diverts any potential overflow to the existing Pond 3. All chemicals will be stored in the process control room which is a modified sea container with impervious flooring.<br><br>Risk Assessment<br>*Consequence*: Minor<br>*Likelihood:* Unlikely<br>*Risk Rating:* Moderate | General provisions of the *Environmental Protection Act 1986*<br><br>DER's *Guidance Statement: Land use planning*<br><br>*Environmental Protection (Unauthorised Discharges) Regulations 2004*<br><br>DER's *Guidance Statement: Regulatory Principles*<br><br>DER's *Guidance* |

| DECISION TABLE | | | |
|---|---|---|---|
| **Works Approval / Licence section** | **Condition number W = Works Approval L= Licence** | **Justification (including risk description & decision methodology where relevant)** | **Reference documents** |
| | | Regulatory Controls<br>Condition 1.3.1 has been added to the licence to ensure only septage and grease trap waste is accepted at the LWF.<br><br>Condition 1.3.17 has been added to the licence to ensure that the SBR WWTP is located on a concrete hardstand<br><br>Residual Risk<br>*Consequence*: Minor<br>*Likelihood:* Unlikely<br>*Risk Rating:* Low | *Statement: Setting Conditions* |
| **Fugitive emissions** | N/A | **Construction and Operation**<br>Emission Description<br>*Emission:* Nuisance dust may be generated from earthmoving activities, vehicle movement from site clearing and levelling of the area where the SBR WWTP will be installed.<br>*Impact:* Dust impacts are expected to be limited as the potential emissions will only be for a fixed time. There are no sensitive receptors within 500m of the landfill. The nearest sensitive receptors are a temporary construction camp 600m to the west and several houses approximately 700m to the west.<br>*Controls:* ToPH will control dust via use of an onsite water cart to wet down access road and active construction areas. Water cars will also be used on an as need basis when landfilling. Vehicular dust will be managed by implementing a speed limit designed to limit generation of excessive dust;<br><br>Risk Assessment<br>*Consequence*: Insignificant<br>*Likelihood:* Unlikely | S49 of the *Environmental Protection Act 1986*<br><br>DER's *Guidance Statement: Regulatory Principles*<br><br>DER's *Guidance Statement: Setting Conditions* |

| DECISION TABLE | | | |
|---|---|---|---|
| **Works Approval / Licence section** | **Condition number W = Works Approval L= Licence** | **Justification (including risk description & decision methodology where relevant)** | **Reference documents** |
| | | *Risk Rating:* Low<br><br>Regulatory Controls<br>Previous Condition 13 related to generic dust management onsite as follows:<br>"*13 The licensee shall suppress dust from the open landfill face or trench, stockpiled areas and transport activities, to ensure that no visible dust crosses the boundary of the premises*."<br><br>The Delegated Officer noted that DER has no record of dust complaints from the landfill. The Delegated Officer considered that separation to receptors and general onsite housekeeping is expected to mitigate any dust issues. As the risk from dust emissions has been determined as 'Low', previous condition 13 has not been included in the amended licence. The Delegated Officer considers that impacts from emissions from dust can be sufficiently regulated under section 49 of the *Environmental Protection Act 1986*.<br><br>Risk Assessment<br>*Consequence*: Insignificant<br>*Likelihood:* Unlikely<br>*Risk Rating:* Low | |
| **Odour** | NA | **Construction and Operation**<br>Emission Description<br>*Emission:* Odour processed from processing of liquid waste and from landfilling putrescible waste.<br>*Impact:* Objectionable odours emitted from the premises affecting public amenity and persons not on the premises. There are no sensitive receptors within 500m of the landfill. The nearest sensitive receptors are a temporary construction camp 600m to the west and several houses approximately 700m to the west.<br>Controls: The application details that the following odour controls for the SBR WWTP | S49 of the *Environmental Protection Act 1986*<br><br>DER's *Guidance Statement: Regulatory Principles*<br><br>DER's *Guidance* |

| DECISION TABLE | | | |
|---|---|---|---|
| **Works Approval / Licence section** | **Condition number W = Works Approval L= Licence** | **Justification (including risk description & decision methodology where relevant)** | **Reference documents** |
| | | will be implemented:<br>• The SBR WWTP has been designed to prevent the generation of unpleasant odours through the use of aerated liquor streams;<br>• Odour generation is mitigated through the strategic recycling of aerated mixed liquor to potential odour sources;<br>• The self-cleaning influent bar screen is housed in a stainless steel enclosure and the screenings bag is sealed to the screen discharge chute mitigating odour production;<br>• The contents of the balance tank are continuously mixed and a stream of mixed liquor from the aeration tank is continuously recycled to the balance tank to prevent anaerobic conditions from developing and thus mitigates the generation of odour;<br>• The recycled mixed liquor also creates a "selector effect" which favours formation of floc forming bacteria over the slower growing filamentous bacteria. This, in turn improves treated effluent clarity;<br>• If strong odour is detected from the plant it means that there is a failure in the system which will result in shutdown of processing and appropriate actions taken by the ToPH; and<br>• The ToPH will investigate and respond to any complaints received.<br><br>The TOPH have also requested to use tarpaulin cover as a means of odour mitigation from putrescible waste and as a means of complying with condition 1.3.5 which requires putrescible waste to be covered by the end of the working day. ToPH will use a tarpaulin daily cover system called TarpAmour to cover inert and putrescible wastes. The system incorporates a spool that attaches to the blade of the bulldozer or compactor. TarpAmour is an automatic roll out system that as a cable anchoring system sewn into the hem of the tarpaulin. These cables can be increased to provide for higher anchoring in high wind areas during excessive windy conditions. During cyclonic events the ToPH will revert back to using inert waste, soil or clay as a means of daily cover. | *Statement: Setting Conditions* |

| DECISION TABLE | | | |
|---|---|---|---|
| **Works Approval / Licence section** | **Condition number W = Works Approval L= Licence** | **Justification (including risk description & decision methodology where relevant)** | **Reference documents** |
| | | Risk Assessment<br>*Consequence*: Insignificant<br>*Likelihood:* Unlikely<br>*Risk Rating:* Low<br><br>Regulatory Controls<br>The Delegated Officer noted that DER has no record of odour complaints from the landfill. The Delegated Officer considered that separation to receptors, the operation of the new SBR and daily cover of putrescible waste is expected to mitigate any odour issues. The Delegated Officer considered that, although not common in Western Australia, the use of artificial cover has proved to be effective in other jurisdictions and is not expected to be significantly less effective in odour, waste containment and pest management than traditional cover techniques<br><br>As the risk from odour emissions has been determined as 'Low', odour management conditions have not been included in the amended licence. The Delegated Officer considers that impacts from emissions from odour can be sufficiently regulated under section 49 of the *Environmental Protection Act 1986*.<br><br>Residual Risk<br>*Consequence*: Insignificant<br>*Likelihood:* Unlikely<br>*Risk Rating:* Low | |
| **Monitoring of inputs and outputs** | L2.2.1 | Condition 2.2.1 has been added to the Licence to ensure the Licensee monitors all waste being accepted at the landfill and each waste load leaving or rejected from the premises. | N/A |
| **Process monitoring** | L2.3.1 | Emission Description<br>*Emission:* Treated wastewater from the SBR WWTP used for onsite dust suppression. | General provisions of the |

<table>
<tr><th colspan="4">DECISION TABLE</th></tr>
<tr><th>Works Approval / Licence section</th><th>Condition number<br>W = Works Approval<br>L= Licence</th><th>Justification (including risk description & decision methodology where relevant)</th><th>Reference documents</th></tr>
<tr><td></td><td></td><td>
Impact: Potential contamination of soil and groundwater excessive nutrients. Groundwater depth at the landfill ranges from 4 to17m below ground level. Limited groundwater data for the area is available, however records indicate that groundwater in the South Hedland townsite is in excess of 4,000 mg/L TDS and is not suitable for reuse. There are no known uses of groundwater within the area There is no groundwater use in the area and no surface water bodies within 100m of the Landfill. There are no sensitive receptors within 500m of the landfill. The nearest sensitive receptors are a temporary construction camp 600m to the west and several houses approximately 700m to the west.<br>
Controls: ToPH have outlined that TWW will only be used on site as a means of dust suppression. ToPH will erect signage around the premises advising that areas will be irrigated with TWW. The Landfill is fenced to prevent unwanted access to the premises. The applicant has detailed outputs for the WWTP as below :<br><br>
Table 1: WWTP outputs
<table>
<tr><th>Parameter</th><th>Output</th><th>Australian Guidelines[1]</th><th>Percentage of guideline</th></tr>
<tr><td>5 day Biochemical Oxygen Demand</td><td>20mg/L</td><td>20-30</td><td>66.7%</td></tr>
<tr><td>Total Suspended Solids:</td><td>30mg/L</td><td>25-40</td><td>75%</td></tr>
<tr><td>Total Nitrogen (TN):</td><td>20mg/L</td><td>20-50</td><td>40%</td></tr>
<tr><td>Total Phosphorus (TP):</td><td><8mg/L</td><td>6-12</td><td>66.6%</td></tr>
<tr><td>Residual free</td><td>0.2-2.0mg/L</td><td>N/A</td><td>N/A</td></tr>
</table>
</td><td>
Environmental Protection Act 1986<br><br>
DER's Guidance Statement: Land use planning<br><br>
Environmental Protection (Unauthorised Discharges) Regulations 2004<br><br>
DER's Guidance Statement: Regulatory Principles<br><br>
DER's Guidance Statement: Setting Conditions
</td></tr>
</table>

**DECISION TABLE**

| Works Approval / Licence section | Condition number W = Works Approval L= Licence | Justification (including risk description & decision methodology where relevant) | Reference documents |
|---|---|---|---|

| | | | |
|---|---|---|---|
| chlorine: | | | |
| Thermo-tolerant Faecal Coliforms | <10 CFU/ 100 mL | N/A | N/A |
| pH | 6.5 – 8.5 pH units | 6 – 9 pH units | N/A |

*The Australian Guidelines referred to in Table 1 are taken from the National Water Quality Management Strategy "Australian Guidelines for Sewerage Systems – Effluent Management", (ANZECC, 1997).

The Delegated Officer considers that 2.19 hectares (ha) of irrigation area is required for sustainable irrigation based on nutrient loading calculations at a maximum throughput of 90$m^3$/day. The Licensee has allocated 4 ha for dust suppression.

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

Regulatory Controls
Condition 1.3.18 has been added to the Licence to ensure only TWW is used for dust suppression on roads and access ways within the Landfill. The Delegated Officer considers this condition necessary to ensure that there is no leaching and infiltration of excessive nutrients to groundwater and the reduce the risk of pathogens affecting persons at the Premises.

Condition 1.3.19 has been added to the Licence to ensure no TWW is disposed of to active landfilling areas. The Delegated Officer considers this condition necessary to

| DECISION TABLE | | | |
|---|---|---|---|
| **Works Approval / Licence section** | **Condition number W = Works Approval L= Licence** | **Justification (including risk description & decision methodology where relevant)** | **Reference documents** |
| | | reduce the impact from the excessive leaching of nutrients to groundwater which potentially already occurring from the decomposition of putrescible waste.<br><br>Condition has been added to the Licence to ensure no pooling of TWW occurs in areas used for dust suppression. The Delegated Officer considers this condition necessary to ensure that there is no excessive infiltration from TWW to groundwater and reduce the potential for mosquito breeding in the pooled water.<br><br>Condition 2.3.1 has been added to the Licence to require the monitoring of TWW used for dust suppression on a quarterly basis. This will enable review of the TWW discharged against the SBR's specifications. The Delegated Officer considers that the pathogen levels and residual chlorine content of TWW used for dust suppression must remain within plant specifications to mitigate risks to the health of users of the facility from direct or aerosol exposure to TWW and has therefore placed limits on these parameters in accordance with the plant design specification. pH has also been limited to plant design specifications as pH levels outside of the optimum range will reduce the effectiveness of chlorination and therefore may increase risks to public health.<br><br>Conditions 2.3.2.and 2.3.3 have been added to the licence to ensure that the discharge of TWW is ceased if a limit under condition 2.3.1 is breached. This will mitigate risks to public health from the discharge of inadequately chlorinated or high-pathogen TWW.<br><br><u>Residual Risk</u><br>*Consequence*: Minor<br>*Likelihood:* Unlikely<br>*Risk Rating:* Moderate | |
| **Ambient quality monitoring** | L2.4.1 | Condition 2.4.1 is a continuation of the existing monitoring requirements under previous condition 17 (a) the Delegated Officer has reviewed the monitoring requirements and considers them appropriate. | DER's *Guidance Statement: Regulatory* |

| DECISION TABLE | | | |
|---|---|---|---|
| **Works Approval / Licence section** | **Condition number W = Works Approval L= Licence** | **Justification (including risk description & decision methodology where relevant)** | **Reference documents** |
| | | | *Principles*<br><br>DER's *Guidance Statement: Setting Conditions* |
| **Information** | | Condition 3.1.1 has been added to the Licence to ensure all records required by the Licence are legible and retained for a period of at least 6 years.<br><br>Condition 3.1.2 has been added to the Licence to ensure the Licensee submits a Compliance Report outlining compliance with the condition s of the Licence during the reporting period.<br><br>Condition 3.1.4 has been added to the Licence to ensure a register for Special Waste Type 1 and Special Waste Type 2 is maintained on the premises for the purpose of noting the location of disposal. This condition replaces part of conditions 2 and 3 respectively of the previous Licence. The Delegated Officer has reviewed the condition and considers the requirements appropriate.<br><br>Condition 3.2.1 has been added to the Licence to ensure ToPH submits an Annual Environmental Report (AER) within 60 calendar days at the end of the reporting period. The AER is required to enable the review of monitoring data collected during the reporting period.<br><br>Condition 3.2.2 has been added to the Licence to ensure the AER also contains an assessment from previous years monitoring data where relevant. This will enable proper assessment of trending data.<br><br>Condition 3.3.1 has been added to the Licence to ensure DER is notified when there is a breach of any specified limit in the licence and includes the requirements of previous conditions 17 (a) and (b) to report unauthorised fires at the Landfill. | DER's *Guidance Statement: Regulatory Principles*<br><br>DER's *Guidance Statement: Setting Conditions* |

| 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 Licence was amended on 29 April 2016 in accordance with DER's *Guidance Statement: Licence Duration* to extend the Licence duration until 16 October 2035. No further changes to this date are proposed. | DER's *Guidance Statement: Licence Duration* |

# 5 Advertisement and consultation table

| Date | Event | Comments received/Notes | How comments were taken into consideration |
|---|---|---|---|
| 09/09/2016 | Proponent send copy of draft Licence | Minor comments received regarding the process of the WWTP. | Changes made to the Licence document accordingly. |

# 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 |