Government of Western Australia
Department of Environment Regulation

Licence

Environmental Protection Act 1986, Part V

Licensee: Shire of Ashburton

Licence: L6808/1997/8

Registered office: Lot 246, Poinciana Street
TOM PRICE WA 6751

Premises address: Onslow Waste Disposal Site
Crown Reserve 38336 Being Lot 302 on Plan 45791, Lot 500 on Plan 401881 and Lot 720 on Plan 400253 within coordinates E304511, N7604644; E304438, N7604682; E304242, N7604313;
ONSLOW WA 6710
as depicted in Schedule 1.

Issue date: Thursday, 5 June 2014

Commencement date: Friday, 13 June 2014

Expiry date: Wednesday, 12 June 2019

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	5,000 tyres
64	Class II Class III putrescible landfill site: premises on which waste (as determined by reference to the waste types 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.	500 tonnes or more per year	5,000 tonnes per annual period

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

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Steve Checker
Officer delegated under section 20
of the *Environmental Protection Act 1986*

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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 Shire of Ashburton (the Shire) has operated the Onslow Waste Disposal Ste (the Landfill) since 2000. The Landfill is located on Crown Reserve 38336, Onslow.

The Landfill is opened to the public Monday to Saturday from 8:00am to 3:00pm and is closed on Sunday. The nearest sensitive receptor to the Landfill is the Onslow Township located 800 metres (m) away. All loads are inspected upon entry to the Landfill. The Landfill is also fenced around the boundary with signage of the fence detailing waste that can be accepted at the site. At least one Shire staff member is present at the Landfill during operating hours.

The site accepts Inert Wastes Type 1 and Type 2, Putrescible Waste, Green Waste and Special Wastes Type 1 and Type 2. Special Waste Type 1 requires disposal by appointment made to the Landfill. Waste oil is accepted at the premises and stored in a below ground 2,500 litre (L) oil tank. Waste oil is then removed from the site by a licenced contractor.

Tyres are accepted at the Landfill. The tyres are to be delivered to the Landfill from tyre fitting companies and the general public. All tyres are stored above ground in an open area away from other waste in accordance with Part 6 of the *Environmental Protection Regulations 1987*.

This licence amendment has been initiated by DER to accept the Rehabilitation and Post Closure Management (the Plan) for the current Landfill to enable waste relocation, landfill capping and rehabilitation to facilitate a new road development on the north east corner of the site.

The licences and works approvals issued for the Premises are:

Instrument Log		
Instrument	**Issued**	**Description**
L6808/1997/1	05/07/2000	Licence re-issue
L6808/1997/2	27/06/2001	Licence re-issue
L6808/1997/3	12/06/2002	Licence re-issue
L6808/1997/4	12/06/2003	Licence re-issue
L6808/1997/5	12/06/2004	Licence re-issue
L6808/1997/6	12/06/2005	Licence re-issue
L6808/1997/7	12/06/2009	Licence re-issue
L6808/1997/8	05/06/2014	Licence re-issue to new format
L6808/1997/8	18/12/2014	Licence amendment to remove submission of Environmental Management Plan due to landfill closure
L6808/1997/8	23/7/2015	Amendment to include capping and rehabilitation of the landfill

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);

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

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

'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);

'aspirating cowl' means an aspiromatic ventilation fan that rotates to draw landfill gas into the atmosphere;

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

'CEO' for the purposes of correspondence means:

Manager Licensing (Waste North)
Department of Environment Regulation
Locked Bag 33 Cloisters Square
PERTH WA 6850
Telephone: (08) 9333 7510
Facsimile: (08) 9333 7550
Email: industry.regulation@der.wa.gov.au;

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

'Construction Quality Assurance Plan' means the document developed for the Onslow Waste Disposal Site entitled "Construction Quality Assurance Plan Revision 2. Onslow Landfill – Capping Works, prepared for the Shire of Ashburton by Talis Consultants, July 2015";

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

'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;

'**Excavation Works Management Plan'** means the document developed for the Onslow Waste Disposal Site entitled "Excavation Works Management Plan Revision 2. Onslow Landfill – Capping Works, prepared for the Shire of Ashburton by Talis Consultants, July 2015";

'Fire Control Officer' in relation to a landfill means a person who has qualifications in fire fighting or fire control as are approved, appointed to that position by the occupier of the landfill site;

'Green Waste' means waste that originates from flora and does not contain or has not been treated or coated with, preserving agents, biocides, fire retardants, paint, adhesives or binders;

'Hazardous waste' has the meaning defined in Landfill Waste Definitions;

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

'Inert Waste Type 2' has the meaning defined in Landfill Waste 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 L6808/1997/8 and issued under the *Environmental Protection Act 1986*;

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

'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 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;

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

'Rehabilitation and Post Closure Management Plan' means the document developed for the Onslow Waste Disposal Site entitled "Rehabilitation and Post-Closure Management Plan, Onslow Landfill. Revision 2, prepared for the Shire of Ashburton by Talis Consultants. July 2015";

'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 Waste Definitions;

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

'suitably qualified engineer' means an engineer with demonstrated competence in the design and construction of landfills, including the placement of geosynthetic clay liners;

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

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

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 version of that guideline or code of practice 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.

1.1.5 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:
(a) pollution;
(b) unreasonable emission;
(c) discharge of waste in circumstances likely to cause pollution; or
(d) being contrary to any written law.

1.2 General conditions

1.2.1 The Licensee shall operate and maintain all pollution control and monitoring equipment 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 environmentally hazardous materials that are outside an engineered containment system.

1.2.3 The Licensee shall:
(a) implement all practical measures to prevent stormwater run-off becoming contaminated by the activities on the Premises/landfill; and
(b) treat contaminated or potentially contaminated stormwater as necessary prior to being discharged from the Premises/Landfill.[1]

Note1: *The Environmental Protection (Unauthorised Discharges) Regulations 2004* make it an offence to discharge certain materials into the environment.

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; and
(d) in the case of contaminated solid waste is supported by documentation that demonstrates compliance with the acceptance criteria for Class II Landfills.

Table 1.3.1: Waste acceptance

Waste	Waste Code	Quantity Limit tonnes/ year	Specification [1]
Clean fill	N/A	Combined total of up to 5,000	None specified
Hazardous waste	F100, F120, J100, J130, J170, J180		Limited to waste oil, paint, and vehicle batteries
Inert waste Type 1	N/A		None specified
Inert Waste Type 2	N/A		Tyres and plastic only
Putrescible waste	N/A		None specified
Special Waste Type 1	N/A		Cement bonded asbestos only. No fibrous asbestos shall be accepted
Special Waste Type 2	R100, R120, R130, R140		Biomedical / clinical

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 are only subjected to the processes 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. • No waste shall be temporarily stored or landfilled within 35m from the boundary of the premises. • The separation distance between the base of the landfill and the highest groundwater level shall not be less than 3m.
All	Excavation and placement of existing landfilled waste associated with road realignment	• All works must be undertaken in accordance with the Excavation Works Management Plan.
Inert Waste Type 2 - Tyres	Receipt, handling, storage prior to re-use or disposal by landfilling	• Refer to conditions 1.3.14 – 1.3.17.
Putrescible Waste	Receipt, handling, storage prior to disposal by landfilling	None specified
	Disposal by Burning	<u>Burning of Green Waste Only</u> • to be dried and seasoned for at least 2 months before burning; • to take place in a designated burning area at least 25m from the boundary of any active disposal areas; • to take place in trenches or windrows; and • to take place only when an adequate supply of water is available to effectively manage the burning process.
Clean Fill	Receipt, handling and disposal by landfilling	None specified
Inert Waste Type 1		
Special Waste Type 1 (Asbestos Waste)		• Only to be disposed of into a designated asbestos disposal area within the landfill; • Not to be deposited within 2m of the final tipping surface of the landfill; and • 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; • Not to be deposited within 2m of the final tipping surface of the landfill; and • No works shall be carried out on the landfill that could lead to biomedical wastes being excavated or uncovered, other than works undertaken in accordance with the Excavation Works Management Plan.
Waste oil	Receipt, handling and storage prior to reuse or	• Only to be stored in the designated oil storage tank within a low permeability bunded area delineated for recycling.

	disposal by landfilling	
Vehicle batteries	Receipt, handling and storage	• Stored on hardstand area delineated for recycling.

Note 1: Requirements for landfilling tyres are set out in Part 6 of *the Environmental Protection Regulations1987*.
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 30m x 30m;
(b) waste is levelled and compacted to ensure all faces are stable and capable of retaining rehabilitation material;
(c) waste is covered as soon as possible after it is discharged and not later than by the end of the working day;
(d) 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 to waste 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
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	1000mm	By the end of the working day in which the asbestos waste was deposited.
Special Waste Type 2	Solid waste or soil	300mm	As soon as practicable after deposit.
		1000mm	By the end of the working day in which the biomedical / clinical waste was deposited.
Putrescible Wastes	Inert waste type 1, soil or clay	150mm	As soon as practicable and not later than the end of the working day.
	Inert waste type 1, soil, or clay	1000mm	Within 3 months of achieving final waste contours.
Inert Waste Type 2[1]	Inert waste type 1, soil, clay or clean fill	100mm	By the end of the working day in which the waste was deposited. Plastic waste with the potential to become windblown shall be covered 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*.

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 as far as is practicable;
(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 windblown waste escapes from the Premises and that windblown waste is collected on at least a weekly basis and returned to the tipping area.

1.3.9 The Licensee shall ensure that vermin, birds, flies and other insects do not give rise to nuisance at the premises or in the immediate area of the premises. Any method used by the licensee shall not cause environmental pollution.

1.3.10 The Licensee shall ensure fire fighting equipment stored onsite is capable of controlling and extinguishing a tyre fire.

1.3.11 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.

1.3.12 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*.

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

1.3.14 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.

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

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

1.3.17 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.

1.4 Rehabilitation and post closure management

1.4.1 The Licensee shall complete the rehabilitation and post closure activities in Table 1.4.1 by the date of completion in Table 1.4.1.

1.4.2 The Licensee, for activities not specifically requiring a written submission, shall write to the CEO stating whether and how the Licensee is compliant with the requirements within one week of the completion date specified in Table 1.4.1

Table 1.4.1 Rehabilitation and Post Closure Management Program

Activity reference	Activity	Date of completion
R1	The Licensee shall install the capping system as specified in Section 6 of the Rehabilitation and Post Closure Management Plan and ensure that it is undertaken under the full supervision of a suitably qualified engineer.	30 March 2016
R2	The Licensee shall install a landfill gas management system as specified in Section 8 of the Rehabilitation and Post Closure Management Plan.	
R3	The Licensee shall install the surface water management system as specified in Section 7 of the Rehabilitation and Post Closure Management Plan.	
R4	The Licensee shall submit to the CEO a Construction Quality Assurance Validation Report.	Within 30 days of completed

Table 1.4.1 Rehabilitation and Post Closure Management Program		
Activity reference	**Activity**	**Date of completion**
	This report will include, but not be limited to: (a) the verification and review of geosynthetic clay liner (GCL): (i) manufacturer specifications and quality control certificates, (ii) details of delivery, handling and storage of GCL prior to installation, and (iii) inspection prior to placement, conformance testing and sampling (iv) installation against the manufactures specification for design and installation; (b) the construction and environmental performance of the Onslow Landfill rehabilitation and post closure works proposal is installed against the design specification set out in the Rehabilitation and Post Closure Management Plan and the Construction Quality Assurance Plan (QCAP); (c) a discussion of the environmental impacts identified during the construction of the landfill capping; (d) measures implemented to address any environmental impacts identified during construction of the landfill capping; (e) a review of performance against the Rehabilitation and Post Closure Management Plan and the CQAP and where they have not been met, and measures undertaken to meet the design specification and/or the Rehabilitation and Post Closure Management Plan and the CQA plan; and (f) This report is to be signed by a suitably qualified engineer.	rehabilitation activities R1 – R3
R5	The Licensee shall maintain the landfill capping and rehabilitation infrastructure to ensure appropriate: (a) final capping profiles are maintained, and re-profiled as required; (b) surface water management system is maintained that ensures it is free from sediment, debris and vegetation; and (c) erosion control is undertaken, as required.	Ongoing
R6	The Licensee shall submit to the CEO a Landfill Gas Services Infrastructure Management Plan. The plan shall include, but not be limited to: (a) an assessment of the impact on landfill gas migration of any existing or proposed services infrastructure in the vicinity of the Onslow Waste Disposal Site; (b) engineering controls, monitoring and mitigation measures to be implemented to manage the potential accumulation or migration of landfill gas within any pipeline, conduit, bedding material or other service infrastructure; (c) contingency plans to address 'worst-case' scenarios; and (d) plan addendums addressing (a), (b) and (c) above for any future proposed services infrastructure not captured in the initial plan.	30 March 2016 for the initial plan submission; plan addendums to be submitted on an ongoing basis prior to construction of the relevant infrastructure works.

1.4.3 The Licensee shall operate and maintain the gas extraction system, as specified in R2 of Table 1.3.4, for controlling landfill gas generated on the Premises to prevent lateral migration of landfill gas outside the boundary of the Premises.

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	Emission point reference on Map of emission points	Emission Point	Source, including any abatement
A1 - A18	A1- A18	Aspirating cowls	Landfill gas

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 groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
(c) all laboratory samples are submitted to a laboratory with current NATA accreditation for the parameters to be measured unless indicated otherwise in relevant table.

3.1.2 The Licensee shall ensure that :
(a) quarterly monitoring is undertaken at least 45 days apart; and
(b) six monthly monitoring is undertaken at least 5 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.

3.1.5 The Licensee shall undertake the monitoring in Table 3.1.1 according to the specifications in that table.

Table 3.1.1: General monitoring

Attribute	Monitoring method	Frequency
Landfill gas extraction system once installed	Recorded visual inspection of landfill gas management system infrastructure by suitably trained person with demonstrated competence in landfill	Monthly and directly following any 1 in 100 year 72 hour duration storm event during the first annual period following completion of capping works, as specified in Table 1.4.1 (R1).
		Quarterly and directly following any 1 in 100 year 72 hour duration storm event

Table 3.1.1: General monitoring		
Attribute	**Monitoring method**	**Frequency**
	management.	subsequent to the first annual period following completion of capping works, as specified in Table 1.4.1 (R1).
Differential settlement of waste once cap is installed.	Recorded topographic survey of waste settlement	Annually during the first annual period following completion of capping works, as specified in Table 1.4.1 (R1).
		Every two years subsequent to the first two annual periods following completion of capping works, as specified in Table 1.4.1 (R1).
		Every five years subsequent to the first three annual periods following completion of capping works, as specified in Table 1.4.1 (R1).
Surface water management once installed	Recorded visual inspection of surface water management system infrastructure by suitably qualified engineer with demonstrated competence in landfill management.	Six-monthly and following any 1 in 100 year 72 hour duration storm event during the first 30 annual periods following completion of capping works, as specified in Table 1.4.1 (R1).
	Recorded visual inspection of cap integrity by suitably by qualified engineer.	Monthly and following any 1 in 100 year 72 hour duration storm event during the first two annual periods following completion of capping works, as specified in Table 1.4.1 (R1).
		Quarterly and following any 1 in 100 year 72 hour duration storm event. during the subsequent 28 annual periods following completion of capping works, as specified in Table 1.4.1 (R1).
Revegetation, weed and erosion control on cap once installed.	Recorded visual inspection by a person with demonstrated competence in flora surveying. Inspections to include: • line-intercept method along transects; and • photographic monitoring.	Six-monthly (Spring and Autumn) during the first two annual periods following completion of capping works, as specified in Table 1.4.1 (R1).
		Annually or six-monthly if required based on revegetation, weed control and erosion control success as determined by suitably qualified personnel with demonstrated competence in flora surveying during the subsequent 28 annual periods following completion of capping works, as specified in Table 1.4.1 (R1).

3.2 Monitoring of inputs and outputs

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 inputs and outputs

Input/Output	Parameter	Units	Averaging period	Frequency
Waste Inputs	Inert 1, Inert 2, Special Waste 1, Special Waste 2 Clean Fill, and Putrescible Waste	m^3	N/A	Weekly (estimates recorded during weekly inspections)
Waste Outputs	Waste type as defined in the Definitions			Each load leaving or rejected from the Premises

3.3 Ambient environmental quality monitoring

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 ambient groundwater quality and landfill gas

Monitoring point reference and location	Parameter	Units	Averaging period and Frequency
Landfill gas monitoring bores GW-01 to GW-17, and CW-01 to CW-07 As depicted in Schedule1	Methane gas	Percent volume for volume	Spot sample Monthly for first six months following completion of capping works, as specified in Table 1.4.1 (R1); then every two months for the following 6 months and then annually for the subsequent 30 years
Monitoring Bores CW01 – CW07 As depicted in Schedule	pH[1]	pH units	Spot sample. Six monthly
	Electrical conductivity	µS/cm	
	Standing water level (SWL)[1, 2]	AHD (m) and meters below ground level (mbgl)	
	Chemical oxygen demand	mg/L	
	Biochemical oxygen demand		
	Total Nitrogen		
	Ammonia		
	Nitrate – N		
	Total kjeldahl nitrogen		
	Reactive phosphorus		
	Total phosphorus		
	Chloride		
	Total recoverable hydrocarbons		
	Hexavalent chromium		

Table 3.3.1: Monitoring of ambient groundwater quality and landfill gas			
Monitoring point reference and location	**Parameter**	**Units**	**Averaging period and Frequency**
	Total chromium		
	Cadmium		
	Cobalt		
	Copper		
	Mercury		
	Molybdenum		
	Nickel		
	Lead		
	Zinc		

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

3.3.2 The Licensee shall, implement management actions identified in section 10.1 of the Rehabilitation and Post Closure Management Plan if the methane gas concentration exceeds 1.25% v/v in any of the landfill gas monitoring bores.

4 Information

4.1 Records

4.1.1 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 4.1.1(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.

4.1.2 The Licensee shall ensure that:
(a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
(b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.

4.1.3 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.

4.1.4 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.

4.1.5 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.

4.2 Reporting

4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 91 calendar days of the end of the annual period. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: 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 3.1.1	General rehabilitation monitoring	Table 3.1.1
Table 3.2.1	Monitoring of inputs and outputs	None specified
Table 3.3.1	Ambient monitoring	
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

4.2.2 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.

4.2.3 The Licensee shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: Non-annual reporting requirements

Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form
Table 1.4.1	Construction Quality Assurance Plan Validation Report	Not applicable	Within 30 days of completed rehabilitation activities R1 – R3	None specified
1.4.3	Methane exceeding 1.25%v/v in any of the gas monitoring bores/ wells	Not applicable	Within 5 working days of becoming aware of exceedence	None specified
-	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

4.3 Notification

4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO and in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement[1]	Format or form[2]
1.3.11	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. Part B: As soon as practicable	N1

Note 1: Notification requirement in the Licence shall not negate the requirement to comply with s72 of the Act.
Note 2: Forms are in Schedule 2

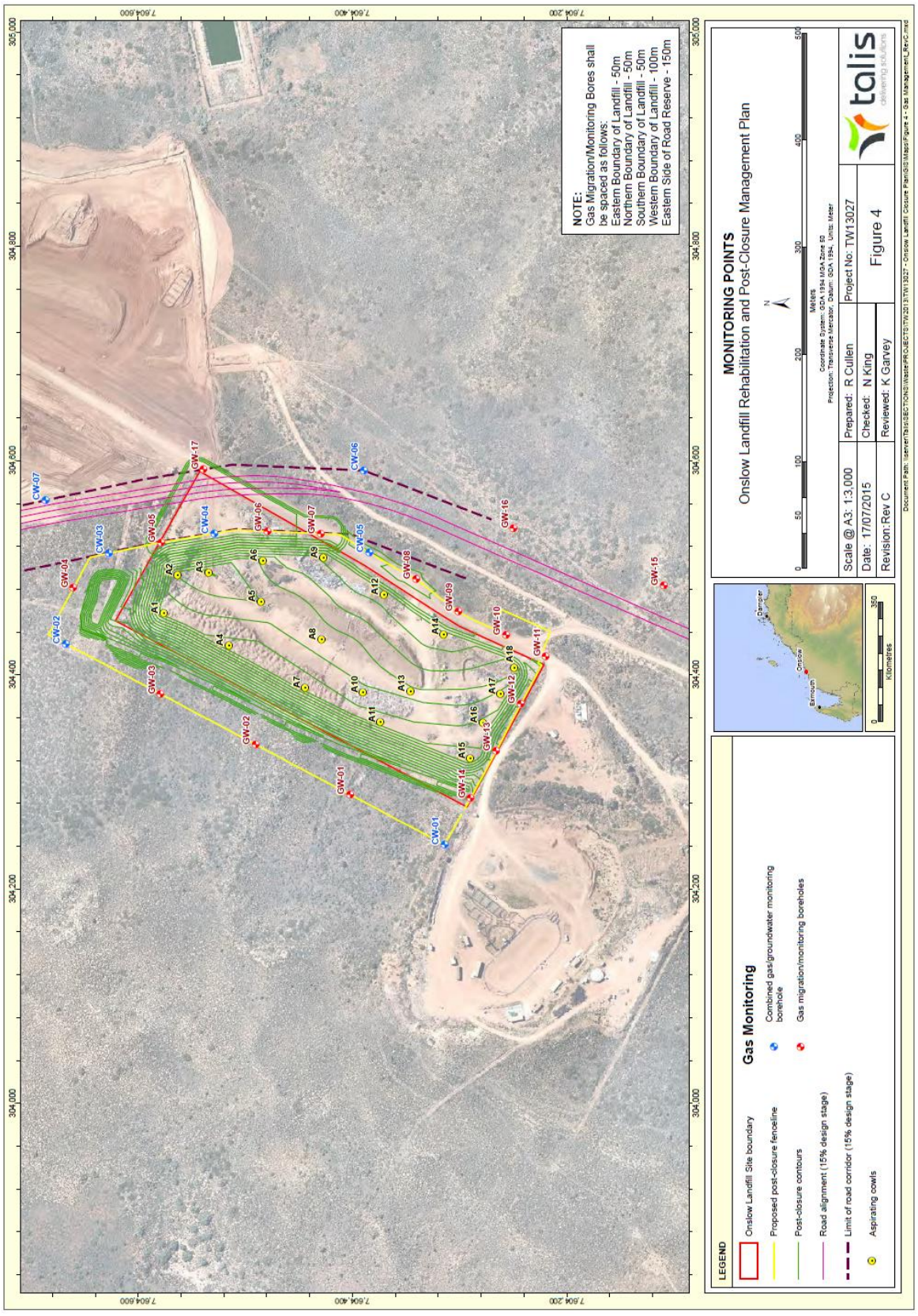
Schedule 1: Maps

Premises Map

The Premises is shown in the map below. The red line depicts the Premises boundary.

Map of monitoring locations

The locations of the emission points (A1-A18) defined in Table 2.1.1 and monitoring points (gas wells GW-01 to GW-17 and combined gas and groundwater wells CW-01 to CW-07) defined in Table 3.3.1 are shown below.



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) must 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: L6808/1997/8
Form: ET1
Name: Unauthorised Fire

Licensee: Shire of Ashburton
Period:

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

Signed on behalf of Shire of Ashburton: …….. Date: ……

Licence: L6808/1997/8 Licensee: Shire of Ashburton
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 Shire of Ashburton	
Date	

Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Shire of Ashburton

Licence: L6808/1997/8

Registered office:	Lot 246, Poinciana Street TOM PRICE WA 6751
Premises address:	Onslow Waste Disposal Site Crown Reserve 38336 Being Lot 302 on Plan 45791, Lot 500 on Plan 401881 and Lot 720 on Plan 400253 within coordinates E304511, N7604644; E304438, N7604682; E304242, N7604313; ONSLOW WA 6710
Issue date:	Thursday 5 June 2014
Commencement date:	Friday 13 June 2014
Expiry date:	Wednesday, 12 June 2019

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 and legal requirements and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by:	Chris Slavin Licensing Officer
Decision Document authorised by:	Steve Checker Manager Licensing

Contents

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1 Purpose of this Document 2
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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**
	57	5,000 tyres
	64	5,000 tonnes per annum
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		
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: 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☒ Department of Water consulted Yes ☐ No ☒	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒ If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes☐ No☒ If Yes, include details here, eg Site is subject to SO_2 requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

The Shire of Ashburton (the Shire) operates the Onslow Waste Disposal Site (the Landfill) located on Crown Reserve 38336, Onslow. The Shire also has Licence L8872/2014/1 to operate the Onslow Waste Transfer Station, which caters for the waste disposal needs in the Town of Onslow.

The Landfill is currently at capacity, with below ground air space exhausted and landfilling above ground currently being exhausted. It is the Shire's intention to close the Landfill and develop a new facility to cater for waste disposal needs in Onslow and surrounding regions.

A new road is planned to be constructed in Onslow to provide more direct access from the existing Onslow Road to the Onslow town site. This Onslow Ring Road will pass through the northeast toe of the Landfill. The Shire will excavate the waste in this area of the Landfill and redeposit it to the southern and western areas of the landfill. Talis Consultants have submitted a Rehabilitation and Post Closure Management Plan on behalf of the Shire for DER to assess. The rehabilitation and closure involves:

- Excavating landfilled waste on the north west corner of the landfill and re-deposition through an excavation works management plan;
- Capping of the landfill using a geosynthetic clay liner;
- Profiling the capping to suitable grades;
- Installation of a gas collection system;
- Installation of a surface water management system;
- Submission of a construction quality assurance validation report;
- Maintenance of the associated rehabilitation infrastructure; and
- Post closure monitoring of landfill gas emissions and ambient groundwater quality and, landfill settlement and stability.

This Licence amendment has been initiated by the Department of Environment Regulation (DER) in order to add conditions to the Licence which relate to the rehabilitation and post closure works which the Shire will implement. As part of this amendment, DER has also updated wording to reflect the latest licence template requirements, and removed headings under which there were no conditions. This has resulted in altered numbering of sections and Licence conditions. Other landfill operations and conditions have not been revisited.

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**
General conditions		Definition for the code of practice for the storage and handling of dangerous goods has been removed together with condition 1.2.2. Specific requirements of storage of hazardous materials will be included in the Premises operation, if required. The definition of environmentally hazardous material and dangerous goods has subsequently also been removed.	
Premises Operation	L1.3.3 Table 1.3.1 Table 1.4.1 L1.4.1 - L1.4.3	**Waste excavation and re-deposition** <u>Emission description</u> *Emission*: Potential for exposure of airborne asbestos containing material (ACM) fibres and biomedical / clinical waste pathogens from the excavation of buried waste. There is anecdotal evidence (2014 compliance audit) of burial of these wastes in the proposed excavation area, and therefore likely to be encountered. Trial pits also identified possible ACM in this section of the landfill. Approximately 25,583m^3 of waste material will be excavated and redeposited elsewhere within the landfill. *Impact*: The disturbance activity could impact the health of workers on site, and potentially nearest sensitive receptors (600m away). This activity is likely to be short-term and completed prior to any further residential development in the area, or road construction.	*Environmental Protection (Controlled Waste) Regulations 2004* Victorian Environmental Protection Authority's Best Practice Environmental Management – Siting, design, operation and Rehabilitation of Landfills', section 8.1 Excavation Works Management Plan Revision 2. Onslow Landfill – Capping Works, prepared for the Shire of Ashburton by Talis

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Controls: The Licensee has developed an Excavation Works Management Plan which outlines the methodology of waste disturbance and actions to be undertaken should any Special Waste Type be exposed. These wastes, if encountered will be deposited within the landfill and be covered immediately. Access to the site will be restricted to authorised personnel wearing appropriate protective equipment, and there will be continuous supervision of this operation by a suitably qualified person. No excavated waste will be temporarily stockpiled at the excavation area. No waste will be exposed for periods greater than 24 hours. Road construction will only commence once waste has been relocated. <u>Risk Assessment</u> *Consequence*: Major; the health workers on site and at the nearest sensitive receptors could experience long-term health impacts. *Likelihood*: Possible; given that ACM has been encountered in trial pits and anecdotal evidence suggests biomedical wastes are also potentially buried in the excavation area. Likelihood is reduced with excavation management procedures and protocols in place, restricted access and short-term nature of work. *Risk Rating*: High <u>Regulatory Controls</u> Condition 1.3.3 (Table 1.3.2) has been updated to allow the excavation and placement of existing landfilled waste associated with the road realignment in accordance with the Excavation Works Management Plan. This plan outlines work methodologies to be employed for the relocation of existing landfilled waste, and measures to be implemented should asbestos or clinical / biomedical waste be encountered to prevent unnecessary contact with biological waste potentially impacting on human health. Wording has	Consultants, July 2015, Section 4 & 6. Rehabilitation and Post-Closure Management Plan, Onslow Landfill. Revision 2, prepared for the Shire of Ashburton by Talis Consultants. July 2015. Construction Quality Assurance Plan Revision 2. Onslow Landfill – Capping Works, prepared for the Shire of Ashburton by Talis Consultants, July 2015.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		subsequently also been added in the Special Waste Type 2 section to allow excavation and uncovering of this waste type. Covering requirements for Special Type 2 waste has been updated to be consistent with the expectations of other licences and reflect Department of Health requirements to reduce risk of exposure. Existing licence incorrectly allowed for 100mm covering of biomedical waste which was not considered suitable. <u>Residual Risk</u> *Consequence*: Major *Likelihood*: Unlikely *Risk Rating*: Moderate **Landfill capping stability** <u>Emission description</u> *Emission*: Rain falling on the capping can enter the landfill cell if the geosynthetic clay lined capping fails and causes leachate to percolate from the landfill. The landfill base is not lined and groundwater is estimated to be approximately 9m below ground level. Differential settlement (based on differing degradation of waste types) can also result in stresses on the capping layer that could result in failure and potentially result in release of fugitive landfill gases. Furthermore, inappropriate profiles of the capping may result in compromising the capping through erosion of the covering soils or ponding and infiltration of ponding water into the landfill. The GCL liner exceeds $1x10^{-9}$m/s permeability rating when installed in accordance with manufacturer specifications.	

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Impact: Release of fugitive landfill gas or leachate percolating through the base of the landfill. *Controls*: The Licensee has provided a Rehabilitation and Post-closure Management Plan. It details construction and maintenance of the rehabilitation infrastructure to maintain suitable grades (1:20, consistent with Vic BEPM, section 8), detect landfill gas monitor ambient groundwater quality. Equipment preparing the waste surface for capping will reduce waste airspace and differential settlement. <u>Risk Assessment</u> *Consequence*: Moderate, on the basis that impacts could be medium to long term. Onslow has a dry climate which will affect the rate of decomposition and therefore leachate and landfill gas generation and waste types are vary from recent to old waste. While the nearest receptor is 600m away, residential developments are proposed to be much closer to the landfill. *Likelihood*: Unlikely, given the measures proposed in the Rehabilitation and Post-closure plan, including compaction of waste, proposed capping and land profiling, and monitoring systems in place post-closure of the landfill. *Risk Rating*: Moderate <u>Regulatory Controls</u> Table 1.4.1 Outlines the requirements associated with the rehabilitation and post-closure programme. This includes: Installing and maintaining the capping system referred to in the Rehabilitation and Post Closure Management Plan (RPCMP). The capping system is consistent with the Victorian Environmental Protection Authority's Best	

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Practice Environmental Management – Siting, design, operation and Rehabilitation of Landfills' (Vic BPEM) capping requirements for putrescible landfills. The Licensee shall also ensure that the installation of the GCL is supervised at all times, to reduce the potential for damaged GCL's used for the capping system and to also ensure the GCL is installed to the manufacturers specifications. Monitoring requirements are also included in the licence to ensure the Shire maintains the rehabilitation and post closure infrastructure as listed in the Rehabilitation and Post Closure Management Plan to ensure the long term integrity of the cap and to prevent the potential landfill leachate contaminating groundwater and the potential for lateral landfill gas migration. Development and submission of a Construction Quality Assurance Validation Report prepared by a suitably qualified landfill engineer. This will include verification of materials used meeting manufacturer specification and installation requirements, suitability, and construction methodology as identified in the Construction Quality Assurance Plan and RPCMP. Long term monitoring of the landfill profile stability, landfill gas migration and ambient groundwater quality is also proposed. <u>Residual Risk</u> *Consequence*: Moderate *Likelihood*: Rare *Risk Rating*: Moderate	
Emissions general		References to point source emissions and discharges to water, groundwater and emissions to land, and noise have been removed as there are no associated conditions with the heading. Fugitive (dust) and odour emission	

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		conditions have been removed as they adequately covered in the provisions of the EP Act.	
Point source emissions to air including monitoring	L2.2.1 L3.1.5	Emission Description *Emission:* Landfill gas in the form of methane and carbon dioxide generated from the degradation of putrescible and biodegradable waste migrating laterally from the from the landfill cap impacting on local residences. The subterranean pathways are not well understood and a characterisation of potential landfill gas generation has also not been determined. Waste characterisation from 34 trial pits was reported to consist typically of general domestic waste with the bulk being commercial/construction waste with relatively low organic content (putrescible). Given the volume and age of the waste, the likelihood of an impact with proposed controls is expected to be unlikely. *Impact:* Potential fire and explosion event at local residences and other sensitive receptors from concentrations of methane in the landfill causing irreversible harm, loss of life and long term health effects. Future planned residences are located within 500m of the landfill and there are proposed pipelines to be installed along the new road (location yet to be finalised). The pipeline and trench conduit could provide a pathway for landfill gas migration to existing or proposed developments in the vicinity. The nearest existing sensitive receptor is 600m from the landfill. *Controls*: The Shire have designed the landfill cap to include a bed of sandy soil which acts as a collection blanket which generally attracts the gas beneath the restoration soils. The Shire will also constructed a 25m longitudinal trench and lay a perforated pipe which will be backfilled with sand. A geotextile wrap will surround the pipe to prevent the pipes being	NSW EPA Draft Environmental Guidelines: Solid waste landfills, Second edition, 2015, Section 5.3.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		clogged up. The pipes are then connected to a series of shallow gas wells, which are not designed to penetrate the waste, but anchor what is an extension of the well into the air reaching a height of around 2.5m above ground level. The Licensee intends placement of 18 aspirating cowls in the body of the waste stream, which will draw the gas from the waste body and vent vertically into the atmosphere. The aspirating cowls induce a small negative pressure in the gas field which sucks the landfill gas from the horizontal pipes. The Shire have outlined that due to the low organic content of waste landfilled, there is expected to be negligible landfill gas produced from the waste. Landfill gas monitoring bores are also to be installed around the landfill boundary, spaced at 20m apart to detect elevated methane levels. Risk Assessment *Consequence*: Major, as lateral gas (methane) migration can move from the premises along preferential pathways and into the proposed residential estate nearby; this could be explosive when reaching 5-15% volume levels. *Likelihood:* Possible, given that existing levels of landfill gas generated is unknown and potential pathways have not been characterised, despite the age and anticipated volumes of organic materials within the landfill. *Risk Rating:* High Regulatory Controls Licence conditions have been included to ensure landfill gas infrastructure is properly installed (requiring construction quality assurance validation report) and maintained to manage landfill gas migration and the potential for lateral landfill gas migration (R1-R4 in Table 1.4.1). A landfill gas monitoring regime is also required and DER requires (L3.3.2) that a management response, as described in the Rehabilitation and Post Closure Management Plan, is	

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		implemented when the methane levels in any of the monitoring exceeds 1.25%v/v; consistent with the requirements of New South Wales. A licence requirement to submit to the CEO a Landfill Services Infrastructure Management Plan. This is included to ensure that any existing or proposed utility pipelines and associated trenches do not become a preferential pathway for landfill gas migration to any existing or proposed development in the vicinity of the landfill. <u>Residual Risk</u> *Consequence*: Major *Likelihood*: Rare *Risk Rating*: Moderate	
General monitoring	L3.1.1 – L3.1.5	Condition 3.1.1 has been added to the licence to ensure all groundwater samplings are collected in accordance with the relevant Australian Standards to ensure quality control and quality assurance with all samples to taken. Condition 3.1.2 is included as a requirement for adequate time between sampling events. Condition 3.1.3 is included as a requirement to record process parameters relevant to non-continuous monitoring. Condition 3.1.4 has been added to the Licence to ensure if there is a discrepancy with calibration, it is brought to the attention of the CEO. Condition 3.1.5 has been added to the Licence to ensure that that the Shire	AS/NZS 5667.1; AS/NZS 5667.11

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		monitors the infrastructure of the landfill cap, following a severe weather event, including the: • landfill gas management system to ensure potential landfill gas is diverted vertically to the atmosphere; • conducting topographic surveys of the capping profile to monitor differential settlement of the waste. These surveys is required to be conducted as waste settlement can impact upon the integrity GCL, if settlement is significant can potential cause GCL damage impacting on the hydraulic conductivity. • surface water management system to ensure excessive stormwater does not have an impact on the capping system and infiltrate the GCL; • vegetation layer on the top of the cap to ensure weed prevention and the vegetation on the cap remains intact. References to point source emissions and discharges to water, groundwater and emissions to land, and associated monitoring, including process monitoring has been removed as there are no associated conditions with the heading.	
Ambient environmental quality monitoring	L3.3.1	Condition 3.3.1 has been added to the Licence to ensure the Shire monitor groundwater quality and ambient methane levels at the Landfill. There is potential for landfill leachate to be generated from the landfill which could contaminate groundwater (increased nutrients) causing nutrient leaching at the site. Groundwater flows westerly to the Indian Ocean. The analytes included are standard for landfill licences. Detection of methane concentrations in the gas monitoring bores (wells). Exceedence of 1.25%v/v methane gas levels in any of the monitoring bores will require intervention actions in accordance with the RPCMP.	NSW EPA Draft Environmental Guidelines: Solid waste landfills, Second edition, 2015, Section 5.3.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Information	L4.2.2 L4.2.3	Condition 4.2.2 has been reinserted into the licence to enable trends to be monitored and assessed. The submission of the Construction Quality Assurance Validation Report is stipulated to ensure it is consistent with approvals and presented plans.	N/A

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
22/07/2015	Proponent sent a copy of draft instrument	The signed waiver form was returned on 23 July 2015 with the following comments: Request for the premise map to reflect the amended boundary (boundary was amended in 2015 to allow profiling of landfill capping); Issue if amended licence on Friday 24 July 2015.	Updated map included.

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