



# Licence

## *Environmental Protection Act 1986, Part V*

**Licensee:** Shire of Mundaring

**Licence:** L6921/1997/9

**Registered office:** 7000 Great Eastern Highway  
 MUNDARING WA 6073

**Premises address:** Coppin Road Transfer Station  
 Atkins Road  
 MUNDARING WA 6073  
 Being Lot 385 on Plan 404498 as depicted in Schedule 1

**Issue date:** Monday, 27 April 2015

**Commencement date:** Thursday, 30 April 2015

**Expiry date:** Sunday, 29 April 2020

**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
62	Solid waste depot – premises on which waste is stored or sorted pending final disposal or re-use	500 tonnes or more per year	10,000 tonnes per annual period

**Conditions**

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

Date signed: 24 December 2015

.....  
 Alan Kietzmann  
 Manager Licensing (Waste Industries)  
 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**

This licence relates to the Coppin Road Transfer Station (CRTS) located at Atkins Road, Lot 385 on Plan 404498, Mundaring, Western Australia. The Eastern Metropolitan Regional Council (EMRC) has advised that the premises is located within State Forest 50, which is used for passive recreational activities and may contain priority flora and threatened fauna. EMRC have also indicated that an ephemeral creek is located adjacent to the premises. Depth to groundwater has not been measured at the premises, however based on the geology of the area it is estimated that groundwater may be found approximately at 10 to 30 meters (m) below ground level.

The transfer station is located within a Priority 1 Drinking Water Catchment Protection Area for the Mundaring Weir and is therefore considered to be a non-conforming land use. Department of Water must continue to be consulted regarding the ongoing management of the site. EMRC have also indicated that the nearest residential receptors are located approximately 200 m north, 268 m northeast and 304 m northwest

CRTS only receives household waste delivered by residents of the Shire of Mundaring. Each load transferred to the site is inspected by a gate attendant prior to acceptance. Residents are required to separate any recyclable material into a designated bin before depositing landfill waste into a split level pit. Staff separate recyclable material deposited onto tip floor before waste is loaded into open bins by front end loader. Bins are transported to Red Hill Landfill site. Green waste is shredded on site and removed by a contractor.

Stormwater and leachates pose an environmental risk particularly due to the importance of groundwater resource at the premises. Any liquid or leachate emanating from waste receipt area are directed to a lined holding pond for evaporation, and liquids from the green waste storage area are directed to a gravel-lined holding pond.

There is the potential for dust emissions to be generated by vehicle movements and also from general wastes that are deposited into the onsite bins. Most trafficable areas of the site are surfaced and the green waste storage area comprises of compacted gravel. Water sprays are used to control dust generated by green waste mulching activity. The premises is surrounded by a perimeter mesh/chain link fence. A daily waste clean-up of windblown waste on site and surrounding area is done to avoid windblown waste escaping the premises.

There is also a potential for odour generation from the storage of putrescible wastes on site, prior to disposal. Putrescible waste is stored for a maximum of 24 hours prior to being removed from site. This measure ensures that odour emissions on site are reduced.

This amendment is the result of a request to increase the volume of green waste stored at any one time from 1,000 m<sup>3</sup> to 5,000 m<sup>3</sup>. A volume of 2,500 m<sup>3</sup> has been approved based on the storage capacity, risk



to surface water and fire risk. A number of conditions have also been removed in line with DER licensing policy.

The licences and works approvals issued for the Premises since 18/04/2000 are:

Instrument log		
Instrument	Issued	Description
L6921/1997/1	18/04/2000	New application
L6921/1997/2	30/04/2001	Licence re-issue
L6921/1997/3	30/04/2002	Licence re-issue
L6921/1997/4	30/04/2003	Licence re-issue
L6921/1997/5	30/04/2004	Licence re-issue
L6921/1997/6	30/04/2005	Licence re-issue
L6921/1997/7	30/04/2006	Licence re-issue
L6921/1997/8	30/04/2011	Licence re-issue
L6921/1997/9	27/04/2015	Licence re-issue and conversion to new format
L6921/1997/9	28/05/2015	Licence administrative amendment
L6921/1997/9	24/12/2015	Licence amendment to increase green waste storage at any one time and removal of conditions in line with DER policy

### 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:

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

**'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);

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

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

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

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

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

**'CEO'** for the purpose of correspondence means;

Chief Executive Officer  
Department Administering the Environmental Protection Act 1986  
Locked Bag 33  
CLOISTERS SQUARE WA 6850  
Email: [info@der.wa.gov.au](mailto:info@der.wa.gov.au)

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

**'DER Asbestos Guidelines'** means document titled "Guidelines for managing asbestos at construction and demolition waste recycling facilities", published by the Department of Environment and Conservation, as amended from time to time;

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

**'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 L6921/1997/9 and issued under the Act;

**‘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’** 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;

**‘Schedule 1’** means Schedule 1 of this Licence unless otherwise stated;

**‘Schedule 2’** means Schedule 2 of this Licence unless otherwise stated; 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 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 Premises operation**

1.2.1 The Licensee shall only accept waste on to the Premises if:

- (a) it is of a type listed in Table 1.2.1; and
- (b) the quantity accepted is below any quantity limit listed in Table 1.2.1; and
- (c) it meets any specification listed in Table 1.2.1.

<b>Table 1.2.1: Waste acceptance</b>		
<b>Waste type</b>	<b>Quantity Limit</b>	<b>Specification<sup>1</sup></b>
Inert Waste Type 1	Combined total of 10,000 tonnes per annual period	Waste containing visible asbestos or ACM shall not be accepted.
Inert Waste Type 2		
Putrescible waste		
Clean fill		Wastes from commercial and industrial premises shall not be accepted.
Hazardous waste		Limited to waste oil and vehicle batteries.
Scrap metal		None specified

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

1.2.2 The Licensee shall ensure that where waste does not meet the waste acceptance criteria set out in condition 1.2.1 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.

1.2.3 The Licensee shall ensure that wastes accepted onto the Premises are only subjected to the processes set out in Table 1.2.2 and in accordance with any process limits described in that Table.

<b>Table 1.2.2: Waste processing</b>		
<b>Waste type</b>	<b>Process</b>	<b>Process limits</b>
Inert Waste Type 1	Receipt, handling, sorting and storage prior to recycling or removal offsite	Crushing and screening of Inert Waste Type 1 is not permitted
Inert Waste Type 2		None specified
Putrescible waste		No more than 2,500 m <sup>3</sup> of mulch and green waste shall be stored at the Premises at any one time.
		All mulch and green wastes must be stored on a crushed gravel lined area, at a maximum size of 50 m long, 20 m wide and 3 m high.
Clean fill		A five metre firebreak shall be maintained around the green waste storage area at all times
Hazardous waste		None Specified
		Waste oil and vehicle batteries must be stored in a fully enclosed quarantined storage area or container.
Scrap metal	The licensee shall immediately recover, or remove and dispose of spills of hazardous waste outside of an enclosed quarantined storage area or container.	
	Scrap metal must be stored in a fully enclosed banded area/container.	

1.2.4 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;

1.2.5 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 appropriately contained.

1.2.6 The Licensee shall ensure that no waste is burnt on the premises.

1.2.7 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.

1.2.8 The licensee shall maintain a minimum 500 mm freeboard on evaporation ponds at all times.



- 1.2.9 The Licensee shall ensure any liquid emanating from the mulch and green waste storage area on the premises shall be captured in a crushed gravel lined evaporation pond.
- 1.2.10 The Licensee shall ensure any liquid emanating from the waste receive and sorting/transfer areas on the premises shall be captured in a HDPE lined leachate pond.
- 1.2.11 The licensee shall ensure any liquid removed from the evaporation ponds is
  - (a) re-used on the premises; or
  - (c) captured and removed off-site by a licenced contractor.
- 1.2.12 The licensee shall ensure there is no vegetation overhanging the green waste storage area or firebreak at any time.

## 2 Monitoring

### 2.1 Monitoring of inputs and outputs

2.1.1 The Licensee shall undertake the monitoring in Table 2.1.1 according to the specifications in that table.

<b>Table 2.1.1: Monitoring of outputs</b>				
<b>Output</b>	<b>Parameter</b>	<b>Units</b>	<b>Averaging period</b>	<b>Frequency</b>
Waste Inputs	Inert Waste Type 1, Inert Waste Type 2, Putrescibles waste, Clean fill, Hazardous waste, Scrap metal.	m <sup>3</sup>	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



### 3 Improvements

- 3.1.1 The Licensee shall complete the improvements in Table 3.1.1 by the date of completion in table 3.1.1.
- 3.1.2 The Licensee, for improvements not specifically requiring a written submission, shall write to the Director stating whether and how the Licensee is compliant with the improvement within one week of the completion date specified in Table 3.1.1.

**Table 3.1.1: Improvement program**

Improvement reference	Improvement	Date of completion
IR1	<p>The Licensee shall prepare and submit to the CEO an Asbestos Management Plan (AMP). As a minimum the AMP shall include;</p> <ul style="list-style-type: none"> <li>• Standard operational procedures (SOP's) for the pre-acceptance and acceptance of waste and how any asbestos detected on site will be managed; and</li> <li>• Identification of each person's roles and responsibilities under the AMP; and</li> <li>• Procedures for detailing incidents or emergencies associated with asbestos that are consistent with the DER Asbestos Guidelines.</li> </ul>	22 February 2016

### 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 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.
- 4.1.3 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.

#### 4.2 Reporting

- 4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 31 calendar days after 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.



<b>Table 4.2.1: Annual Environmental Report</b>		
<b>Condition or table (if relevant)</b>	<b>Parameter</b>	<b>Format or form<sup>1</sup></b>
-	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
2.1.1	Summary of inputs and outputs	
4.1.2	Compliance	Annual Audit Compliance Report AACR
4.1.3	Complaints summary	None specified

Note 1: Forms are in Schedule 2

### 4.3 Notification

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

<b>Table 4.3.1: Notification requirements</b>			
<b>Condition or table (if relevant)</b>	<b>Parameter</b>	<b>Notification requirement<sup>1</sup></b>	<b>Format or form<sup>2</sup></b>
-	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 requirements in the licence shall not negate the requirement to comply with s72 of the Act

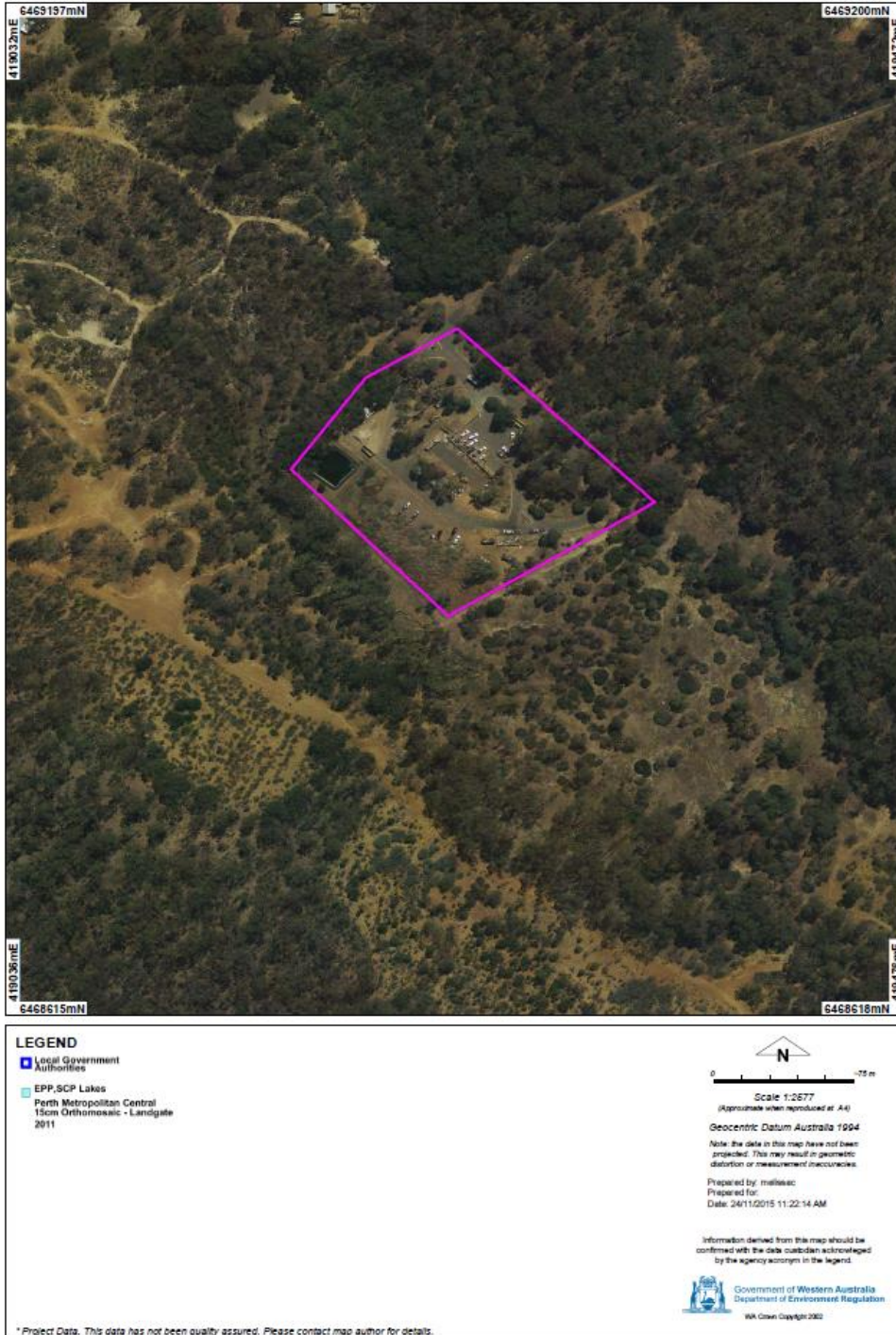
Note 2: Forms are in Schedule 2



# Schedule 1: Maps

## Premises map

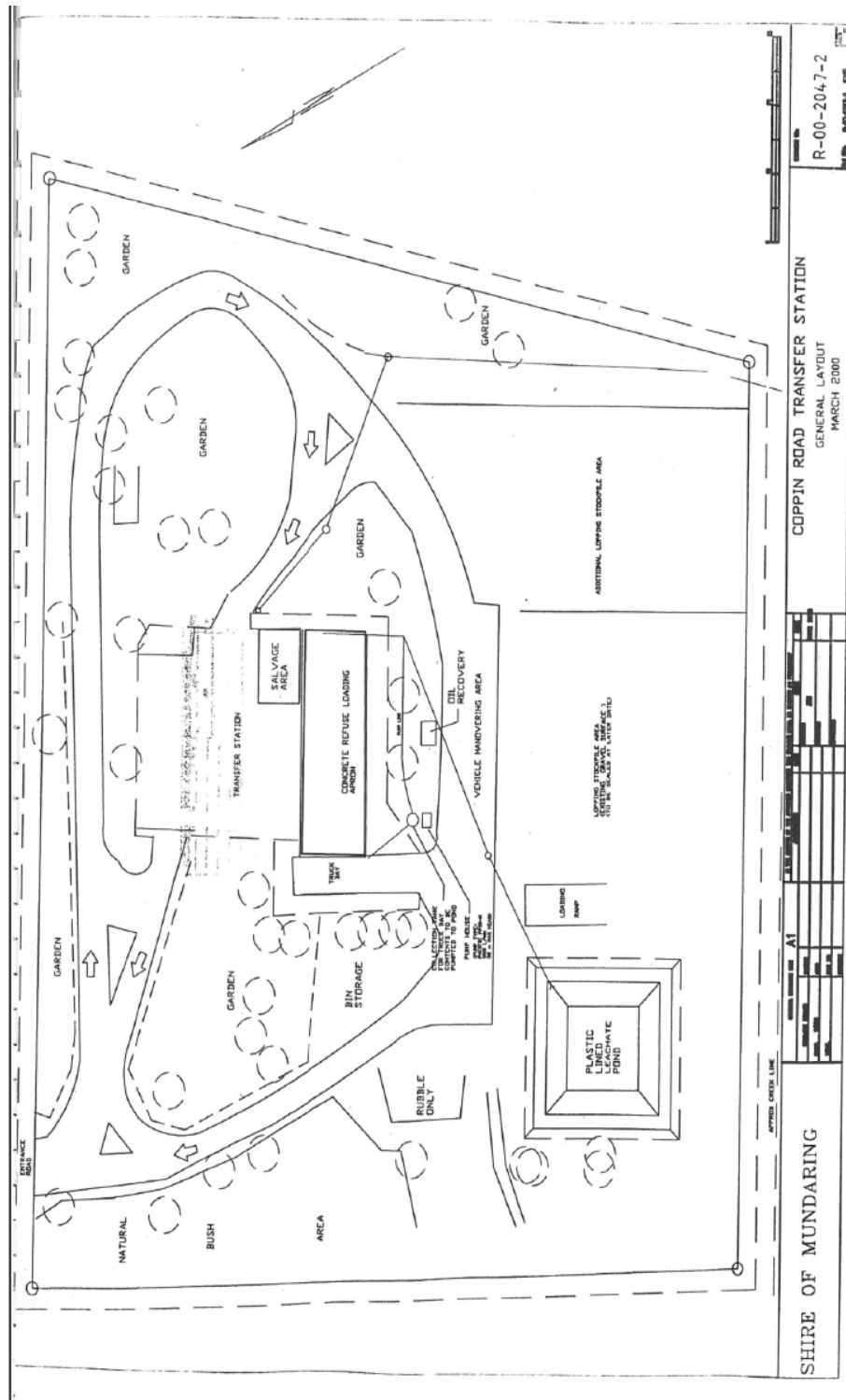
The Premises is shown in the map below. The pink line depicts the Premises boundary.





Site plan

The site plan is shown in the map below





### Location of green waste storage

The location of the green waste stockpile area (circled in red) and the green waste stormwater pond (circled in blue) is shown in the aerial photo 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:	ABN:
Trading as:	
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 C

### SIGNATURE AND CERTIFICATION

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

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

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	<input type="checkbox"/> <input type="checkbox"/>	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	<input type="checkbox"/> <input type="checkbox"/>	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	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	by affixing the common seal of the licensee in accordance with the <i>Corporations Act 2001</i> ; 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)	<input type="checkbox"/> <input type="checkbox"/>	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	<input type="checkbox"/> <input type="checkbox"/>	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: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

NAME:  
(printed) \_\_\_\_\_

NAME:  
(printed) \_\_\_\_\_

POSITION: \_\_\_\_\_

POSITION: \_\_\_\_\_

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

SEAL (if signing under seal)



Licence: L6921/1997/9 Licensee: Shire of Mundaring  
 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	

<b>Notification requirements for the breach of a limit</b>	
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 Mundaring	
Date	



# Decision Document

## *Environmental Protection Act 1986, Part V*

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**Licensee: Shire of Mundaring**

**Licence: L6921/1997/9**

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**Registered office:** 7000 Great Eastern Highway  
MUNDARING WA 6073

**Premises address:** Coppin Road Transfer Station  
Atkins Road  
MUNDARING WA 6073  
Being Lot 385 on Plan 404498

**Issue date:** Monday, 27 April 2015

**Commencement date:** Thursday, 30 April 2015

**Expiry date:** Sunday, 29 April 2020

### **Decision**

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

Decision Document prepared by: Melissa Chamberlain  
Licensing Officer

Decision Document authorised by: Alan Kietzmann  
Delegated Officer



## Contents

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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 <input type="checkbox"/>	New Licence <input type="checkbox"/>
	Licence amendment <input checked="" type="checkbox"/>	Works Approval amendment <input type="checkbox"/>
Activities that cause the premises to become prescribed premises	<b>Category number(s)</b>	<b>Assessed design capacity</b>
	62	10,000 tonnes per annual period
Application verified	Date: N/A	
Application fee paid	Date: N/A	
Works Approval has been complied with	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Compliance Certificate received	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	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 <i>Environmental Protection Act 1986</i> )?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Department of Water consulted Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is the Premises within an Environmental Protection Policy (EPP) Area	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	



### 3 Executive summary of proposal and assessment

This licence relates to the Coppin Road Transfer Station (CRTS) located at Atkins Road, Lot 385 on Plan 404498, Mundaring, Western Australia. The Eastern Metropolitan Regional Council (EMRC) have advised that the premises is located within State Forest 50, which is used for passive recreational activities and may contain priority flora and threatened fauna. EMRC have also indicated that an ephemeral creek is located adjacent to the premises.

The transfer station is located within a Priority 1 Drinking Water Catchment Protection Area for the Mundaring Weir and is therefore considered to be a non-conforming land use. Department of Water must continue to be consulted regarding the ongoing management of the site. EMRC have also indicated that the nearest residential receptors are located approximately 200 metres (m) north, 268 m northeast and 304 m northwest. Depth to groundwater has not been measured at the premises, however based on the geology of the area it is estimated that groundwater may be found approximately at 10 to 30 m below ground level.

CRTS only receives household waste delivered by residents of the Shire of Mundaring. Each load transferred to the site is inspected by a gate attendant prior to acceptance. Residents are required to separate any recyclable material into a designated bin before depositing landfill waste into a split level pit. Staff separate recyclable material deposited onto tip floor before waste is loaded into open bins by front end loader. Bins are transported to Red Hill Landfill site. Green waste is shredded on site and removed by a contractor.

Stormwater and leachates pose an environmental risk particularly due to the importance of groundwater resource at the premises. Any liquids from waste receipt area is captured in a HDPE lined holding pond for evaporation. Any liquids from the green waste storage area are contained in a gravel lined holding pond with an estimated permeability of between  $5.00 \times 10^{-9}$  m/second (m/s) to  $5.00 \times 10^{-6}$  m/s.

There is the potential for dust emissions to be generated by vehicle movements and also from general wastes that are deposited into the onsite bins. Most trafficable areas of the site are surfaced and the green waste storage area comprises of compacted gravel. Water sprays are used to control dust generated by green waste mulching activity. The premises is surrounded by a perimeter mesh/chain link fence. A daily waste clean-up of windblown waste on site and surrounding area is done to avoid windblown waste escaping the premises.

There is also a potential for odour generation from the storage of putrescible wastes on site, prior to disposal. Putrescible waste is stored for a maximum of 24 hours prior to being removed from site. This measure ensures that odour emissions on site are reduced.

This amendment is the result of a request to increase the volume of green waste stored at any one time from  $1,000 \text{ m}^3$  to  $5,000 \text{ m}^3$ . A volume of  $2,500 \text{ m}^3$  has been approved based on the storage capacity, risk to surface water and fire risk. A number of conditions have also been removed in line with DER licensing policy.



## 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.

<b>DECISION TABLE</b>			
<b>Works Approval / Licence section</b>	<b>Condition number W = Works Approval L = Licence</b>	<b>Justification (including risk description &amp; decision methodology where relevant)</b>	<b>Reference documents</b>
<b>Interpretation</b>	L1.1.2	Definitions have been altered in line with the DER's current licensing practices.	N/A
<b>General Conditions</b>	N/A	<p>Previous condition 1.2.1 is removed as it is an explanatory statement and not a valid or enforceable condition.</p> <p>Previous conditions 1.2.2, 1.2.3 and 1.2.4 is removed as they are not enforceable as they are not sufficiently clear or certain. The requirements of previous condition 1.2.4 have been replicated in Table 1.2.2 to specifically require spills of hazardous waste types are immediately recovered or removed.</p> <p>Previous condition 1.2.5 is removed as it is unclear what stormwater infrastructure is required, or what specific management actions are required. More clear and certain conditions in relation to stormwater management are included in section 1.2.</p> <p>As there are no longer conditions under this section it has been removed.</p>	N/A
<b>Premises operation</b>	L1.2.1 – 1.2.12	<p>The DER's assessment and decision making are detailed in Appendix A.</p> <p>This section has been renumbered.</p>	N/A
<b>Emissions</b>	N/A	As there aren't any emissions conditions in the licence, this section has been removed.	N/A
<b>Fugitive emissions</b>	N/A	<p><u>Emission Description</u>  <i>Emission:</i> Dust from waste being brought onto the premises and vehicle movements.</p>	General Provisions of the



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><i>Impact:</i> Dust may cause nuisance impacts or exacerbate respiratory issues at nearby receptors. Dust may impact local flora and fauna. The nearest residents are located approximately 250 m to the north. The premises is immediately adjacent to the Beelu National Park.</p> <p><i>Controls:</i> The licensee has not proposed any specific dust controls.</p> <p><u>Risk Assessment</u>  <i>Consequence:</i> Insignificant  <i>Likelihood:</i> Possible  <i>Risk Rating:</i> Low</p> <p><u>Regulatory Controls</u>            It has been assessed that potential dust emissions are of sufficiently low risk that they can be adequately managed under the general provisions of the <i>Environmental Protection Act 1986</i>. Previous conditions relating to dust management have been removed from the licence.</p> <p><u>Risk Assessment</u>  <i>Consequence:</i> Insignificant  <i>Likelihood:</i> Possible  <i>Risk Rating:</i> Low</p>	<i>Environmental Protection Act 1986</i>
<b>Odour</b>	N/A	<p><u>Emission Description</u>  <i>Emission:</i> Odour from acceptance and storage of waste, particularly putrescible waste types.</p> <p><i>Impact:</i> Nuisance impacts on nearby receptors, and impacts to the amenity of surrounding areas. The nearest residents are located approximately 250 m to the north. The premises is immediately adjacent to the Beelu National Park.</p> <p><i>Controls:</i> Green waste is initially deposited onto an open concrete hardstand and then</p>	General Provisions of the <i>Environmental Protection Act 1986</i>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>moved into open top bins. The licensee has previously advised that putrescible wastes (aside from green wastes) are removed by the end of the working day.</p> <p><u>Risk Assessment</u>  <i>Consequence:</i> Insignificant  <i>Likelihood:</i> Possible  <i>Risk Rating:</i> Low</p> <p><u>Regulatory Controls</u>            It has been assessed that potential odour emissions can be adequately managed under the general provisions of the <i>Environmental Protection Act 1986</i>. Previous conditions relating to odour management have been removed from the licence</p> <p><u>Residual Risk</u>  <i>Consequence:</i> Insignificant  <i>Likelihood:</i> Possible  <i>Risk Rating:</i> Low</p>	
<b>Noise</b>		<p><u>Emission Description</u>  <i>Emission:</i> Noise emissions due to vehicle and truck movements at the premises.  <i>Impact:</i> Noise can cause nuisance impacts to nearby receptors and decrease the amenity of the area surrounding the premises. The nearest residents are located approximately 250 m to the north. The premises is immediately adjacent to the Beelu National Park.  <i>Controls:</i> No specific noise reduction controls are used at the premises. The premises operates Saturday, Sunday, Monday and Tuesday during the hours of 8 pm to 4 pm.</p> <p><u>Risk Assessment</u>  <i>Consequence:</i> Insignificant</p>	<p><i>Environmental Protection (Noise) Regulations 1997</i></p> <p>General provisions of the <i>Environmental Protection Act 1986</i></p>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><i>Likelihood: Possible</i> <i>Risk Rating: Low</i></p> <p><u>Regulatory Controls</u> The Licensee must comply with the <i>Environmental Protection (Noise) Regulations 1997</i> at all times. No noise conditions were previously on the licence, and the assessment has determined that additional noise conditions are not necessary.</p> <p><u>Risk Assessment</u> <i>Consequence: Insignificant</i> <i>Likelihood: Possible</i> <i>Risk Rating: Low</i></p>	
<b>Monitoring general</b>	N/A	Sections with 'no specified conditions' have been removed in line with DER current licensing procedures.	
<b>Improvements</b>	L3.1.1 & 3.1.2	<p>The asbestos management plan (AMP) required by Improvement condition IR1 has not been submitted. The Shire was advised on 14 July 2015 that the AMP is still required to be submitted. The condition is retained on the licence with an amended submission date of 22 February 2016. The Shire have advised that they have engaged a consultant to develop the plan.</p> <p>Documentation required by condition IR2 was submitted on 26 June 2015 and has therefore been removed from the licence.</p>	Correspondence 'Coppin Road Transfer Station – Licence L6921/1997/9 – Improvement Program 4 June 2015', Shire of Mundaring, dated 26/06/2015 and response from DER dated 14 July 2015.
<b>Information</b>	L4.1	Previous condition 4.1.2 is removed as it is not enforceable as the requirements for compliance are not clear.	



<b>DECISION TABLE</b>			
<b>Works Approval / Licence section</b>	<b>Condition number W = Works Approval L= Licence</b>	<b>Justification (including risk description &amp; decision methodology where relevant)</b>	<b>Reference documents</b>
	L4.2	The requirement to report 'any failure or malfunction of any pollution control equipment or any incident, which has caused, is causing or may cause pollution' is removed from the licence as this is a duplicate of the requirement to report under section 72 of the <i>Environmental Protection Act 1986</i>	Section 72 of the <i>Environmental Protection Act 1986</i>
<b>Licence Duration</b>	N/A	The Licence duration has not been altered as part of this amendment.	N/A



## 5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
25/08/2015	Application referred to Department of Water (DoW)	<ul style="list-style-type: none"> <li>• Premises is situated in the Middle Helena Catchment Area, and is a Priority 1 (P1) drinking water source protection area.</li> <li>• Waste transfer stations are incompatible within P1 areas due to the water quality contamination risk they pose to drinking water. DoW does not support a large increase in the volume of green waste being stored.</li> <li>• Location and purpose of swale are not detailed.</li> <li>• Details on use of pond not provided.</li> <li>• Report indicates that in the 2013/14 financial year green waste was received in excess of the licence limit.</li> <li>• The permeability of the gravel hardstand where green waste is stored is unknown. The DoW's Water Quality Protection Note (WQPN) 90: Organic material and recycling states that a low permeability hardstand is required near sensitive water resources.</li> <li>• Stormwater from the site drains into a gravel lined pond, which overflows into the adjoining creek which flows further into the P1 area. DoW monitoring indicates that this creek is already high in nutrients and ammonia.</li> <li>• Concerns regarding when the holding pond overflows. WQPN 90 states that wastewater management systems and holding ponds should be designed to handle a 72 hour duration, 1 in 10 year ARI critical rainfall event without overflow, and have sufficient storage freeboard for a 90<sup>th</sup> percentile wet year and any wave action without overflowing.</li> </ul>	<p>Information included within DER's assessment.</p> <p>DER provides the following clarifications:</p> <p>Volume of green waste acceptance for 2013/14 is stated as 6,439 tonnes. The licence limit is 10,000 tonnes. This is therefore not a breach of licence limit.</p> <p>Calculations by the Shire indicate that pond has sufficient volume to hold a 1 in 10 year 72hour rainfall event without overflow.</p> <p>Current gravel lined hardstand is estimated to have a permeability of <math>5.00 \times 10^{-9}</math> m/s to <math>5.00 \times 10^{-6}</math> m/s.</p>



25/08/2015	Application referred to Department of Water (continued)	<ul style="list-style-type: none"><li>Concerns regarding the suitability of pond lining, and recommendations that pond water should be monitored.</li><li>Recommendation that stormwater is reused on site to achieve best-practice in water saving.</li><li>Recommendation that a water management plan be developed in line with WQPN's 26, 27, 30, 65 and 90.</li></ul>	.
25/08/2015	Application referred to Department of Fire and Emergency Services.	<p>No major implications for fire risk from changes requested.</p> <p>Jurisdiction regarding fire protection matters for the premises are the responsibility of the Shire of Mundaring.</p> <p>DFES would expect compliance with the Department of Fire and Emergency Services of Western Australia (DFES) and the Western Australian planning Commission (WAPC) Planning for Bush Fire Protection Guidelines Edition 2 – May 2010 and clause 6 of State Planning Policy 3.4 Natural Hazards and Disasters (SPP 3.4).</p>	Information included within DER's assessment. Provided guidance on size of green waste stockpiles.
25/11/2015	Proponent sent draft copy of amendment	No comments received	N/A



## 6 Risk Assessment

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

**Table 1: Emissions Risk Matrix**

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



## Appendix A

### Potential for leachate generation

It is assumed that a large proportion of the green waste that is stockpiled at the Coppin Road site is shredded wood waste from tree lopping. Research carried out by the Canadian Department of Fisheries and Oceans and Environment Canada (Samis *et al.*, 1999) has indicated that leachate from fresh wood waste can contain a variety of organic compounds including terpenes and phenols which are toxic to aquatic organisms and which can bio accumulate in tissue in some organisms. DER's draft guidance for composting allocates "municipal source-separated kerbside garden waste" is allocated a medium potential risk of harm to human health and the environment.

Additionally, anaerobic decomposition of plant material can take place with a period of a few days in large stockpiles (accompanied by large temperature increases), and can produce leachate that has a high biological oxygen demand (BOD) and nutrient concentrations. These factors indicate that, despite the proposed short waste storage time, leachate from green waste stockpiles has the potential to cause environmental harm in downstream water bodies if the wastewater storage pond at the site were to overflow. Therefore there is a need to regulate the green waste stockpile to reduce the risk of leachate generation.

### Potential for groundwater contamination

The green waste storage site is likely to be immediately underlain by a weathered profile on granitic bedrock that is comprised of predominantly clay textured materials and which have a thickness of 10 to 30 m. Small amounts of groundwater are likely to be present in gritty material at the base of the weathered profile. The large thickness of clay that is likely to be present between the land surface and groundwater means that it is unlikely that a significant amount of leachate would be able to percolate through the weathered profile to reach groundwater.

### Leachate risk assessment - groundwater

#### Emission Description

*Emission:* Leachates which may contain organic compounds and/or a high biological oxygen demand (BOD) and nutrient concentrations being generated from green waste stored at the premises.

*Impact:* Leachates may enter surface water or groundwater in the area. The Premises is in a P1 drinkingwater catchment protection area.

*Controls:* The green waste is currently stored on a crushed gravel liner with an estimated permeability between approximately  $5.00 \times 10^{-9}$  m/s to  $5.00 \times 10^{-6}$  m/s. Green waste is typically mulched and removed within 3 weeks of arriving at the premises.

#### Risk Assessment

*Consequence:* Moderate

*Likelihood:* Unlikely

*Risk Rating:* Moderate

#### Regulatory Controls

Due to the predominant clay soils, and the estimation that the groundwater is 10 to 30 m deep it is unlikely that any leachates will be able to migrate to the groundwater. The current gravel lined stormwater pond is considered sufficient to contain potential leachate and no further conditions relating to the protection of groundwater are required.

### Potential for surface water contamination

Currently the green waste storage area drains into a gravel lined evaporation pond which is 20 m by 8 m (area of  $160 \text{ m}^2$ ), and to a depth of 2.5 m for a maximum storage of  $400 \text{ m}^3$ .



A monthly water balance was undertaken to assess whether the existing wastewater pond at the site would have sufficient capacity to store all rainwater in the green waste are catchment (runoff from the green waste storage area and rainfall that falls directly on the pond) without overflowing.

90<sup>th</sup> percentile rainfall data from Bickley was used and evaporation data from Perth Airport. On the basis that the green waste storage has a catchment area of 1000 m<sup>2</sup> (50 m by 20 m), and assuming that the compacted gravel has a runoff coefficient of 0.5, the total volume of runoff from the green waste area is calculated to be 619.752 m<sup>3</sup> per year.

Accounting for the annual direct rainfall on the pond, and maintenance of a 500 mm freeboard, a pond size of 705.656 m<sup>3</sup> is required to contain the potential rainfall run off which is beyond the capacity of the current pond. Additionally, calculations show that there is potential for accumulation over the following years further increasing the potential for overtopping.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
bickley rainfall (m) - 90%	0.0486	0.0514	0.0644	0.1154	0.2117	0.3076	0.3438	0.2452	0.2086	0.1128	0.0764	0.0369
50% run off volume (m <sup>2</sup> )	24.3	25.7	32.2	57.7	105.85	153.8	171.9	122.6	104.3	56.4	38.2	18.45
pan evaporation (m) - Perth Airport	0.0486	0.0514	0.0644	0.1154	0.2117	0.3076	0.3438	0.2452	0.2086	0.1128	0.0764	0.0369
total evap (pond surface area) (m <sup>2</sup> )	7.776	8.224	10.304	18.464	33.872	49.216	55.008	39.232	33.376	18.048	12.224	5.904
accumulation (m <sup>3</sup> )	16.524	34	55.896	95.132	167.11	271.694	388.586	471.954	542.878	581.23	607.206	619.752
plus direct rainfall (m <sup>3</sup> )	24.3	42.224	66.2	113.596	200.982	320.91	443.594	511.186	576.254	599.278	619.43	625.656
plus freeboard (m <sup>3</sup> )	104.3	122.224	146.2	193.596	280.982	400.91	523.594	591.186	656.254	679.278	699.43	705.656

These figures are considered conservative, but appropriate considering the significance of the P1 drinking water area. Additionally, these calculations do not take into account extra water that may be used to wet down the stockpile during total fire ban precautions which can lead to additional leachate generation.

The Shire have not indicated any methods for treatment or re-use of this water and therefore the calculations show this excess water will overflow and enter surface water channels. An open culvert located to the western side of the pond directs water into the ephemeral creek. Department of Water have indicated that they do not support any water overflow entering the creek.

### Leachate risk assessment - surface water

#### Emission Description

*Emission:* Leachates which may contain organic compounds and/or a high biological oxygen demand (BOD) and nutrient concentrations being generated from green waste stored at the premises.

*Impact:* Leachates may enter surface water or groundwater in the area, particularly if the evaporation pond overflows into the adjoining creek which flows further into the P1 area. DoW monitoring indicates that this creek is already high in nutrients and ammonia.

*Controls:* The premises contains an evaporation pond which is gravel lined and has a maximum storage capacity of 400 m<sup>3</sup>.

#### Risk Assessment

*Consequence:* Moderate

*Likelihood:* Likely

*Risk Rating:* High

#### Regulatory Controls

Condition 1.2.9 specifies that liquid emanating from the mulch and green waste area shall be captured in a gravel lined evaporation pond. This accurately reflects the activities that occur at the premises as liquid from the green waste area directs to a different pond than the HDPE liner for the



rest of the facility. This also reiterates that all liquids from the green waste storage area are to be captured in the evaporation pond.

Condition 1.2.8 is included in the licence to require a 500 mm freeboard at all times on the evaporation ponds to avoid overtopping and discharge to surface water.

Condition 1.2.11 further specifies that any liquid removed from the evaporation ponds must either be re-used on the premises or captured and removed off-site by a licenced contractor. This condition ensures that the contaminated stormwater captured in the evaporation pond is use appropriately and not discharged to the environment.

#### Risk Assessment

*Consequence:* Moderate

*Likelihood:* Unlikely

*Risk Rating:* Moderate

#### **Stockpile management and fire risk**

The report provided by the EMRC indicates that the green waste materials will be deposited in one large stockpile on the site with dimensions of 50 m long by 20 m wide and with a height of up to 4 m. With these dimension the maximum volume of green waste that could be stored is 4,000 m<sup>3</sup> at any one time.

During an inspection by DER on 26 August 2015 it was identified that current 1,000 m<sup>3</sup> storage at the premises provides little space for customer drop off, and that the required 5 m firebreak is not being maintained with current volumes. It is therefore unlikely that significant additional volumes can be appropriately managed.

Research undertaken on similar wood waste stockpiles elsewhere (Manchester and Bardos, 2004) indicates that there is a significant risk that self-heating through microbiological processes could cause a stockpile of this size to reach temperatures where combustion could take place, and therefore pose a fire hazard. The best way of minimising the risk of combustion taking place is to ensure that these materials are loosely deposited in a number of smaller stockpiles which have sufficient ventilation to prevent temperatures within the waste material reaching ignition point.

Department of Fire and Emergency Services (2014) recommends a maximum storage pile dimensions of 50 m by 10 m by 5 m (2,500 m<sup>3</sup>) for the safe storage of green waste to appropriately manage fire risks. However increased height leads to increased compaction rates and therefore more potential for anaerobic conditions to occur and contribute to additional leachates. Therefore to balance the fire risk and need to minimise leachate generation dimensions of 50 m by 20 m by 3 m is proposed at the premises, with a licence condition of 3 m high to account for curvature of the pile. This also reflects the current green waste storage area of 50 m by 20 m.

#### **Fire risk assessment**

##### Emission Description

*Emission:* Smoke emissions from fire at premises and/or contaminated fire-fighting water used to suppress fire entering the environment. Fire spreading to neighbouring forest or properties.

*Impact:* Smoke may cause nuisance impacts or exacerbate respiratory issues at nearby receptors. Smoke may impact local flora and fauna. The nearest residents are located approximately 250 m to the north. The premises is immediately adjacent to the Beelu National Park. Contaminated fire-fighting water may enter nearby surface water streams.

*Controls:* The licensee has a procedure in place in the event that a total fire ban is declared which includes notifying DFES, nominating a fire spotter, and retaining a fire unit close to any operations. During normal operations the licensee maintains a 5 m firebreak, and the green waste stockpile is



periodically dampened using an onsite hose during summer conditions. The licensee has also advised that a second staff member mans a fire hose during operating the front end loader.

Risk Assessment

*Consequence:* Major

*Likelihood:* Possible

*Risk Rating:* High

Regulatory Controls

Condition 1.2.3, Table 1.2.2 limits the volume of green waste that can be stored at any one time to 2,500 m<sup>3</sup>, in line with DFES recommended maximum storage pile size. The mulch and green waste stockpile is limited to a maximum size of 50 m by 20 m by 3 m high. These dimensions are wider and flatter than the recommendation by DFES to further limit the generation of leachates from compaction of the stockpile, due to the significant risk to groundwater at this specific premises and to align with the current green waste storage area.

This figure provides for a requested increase to manage times of machine breakdown, while still maintaining an appropriate control of fire risk.

Condition 1.2.3, Table 1.2.2 retains the requirement for a 5 m firebreak to be maintained around the perimeter of the green waste storage at all times

Condition 1.2.12 further specifies that there shall be no vegetation overhanging the green waste stockpile or 5 m firebreak. Recent compliance inspections have identified that vegetation is overhanging the green waste storage area. In the event of a fire this increases the risk of fire spreading to nearby forest.

Risk Assessment

*Consequence:* Major

*Likelihood:* Unlikely

*Risk Rating:* Moderate

### References

Manchester, S. and Bardos, P., 2004. *Fire Hazards at Composting and Waste Processing Sites*. Technical report produced by r<sup>3</sup> Environmental Consultants available from web site [www.researchgate.net](http://www.researchgate.net)

Samis, S.C., Liu, S.D., Wernick, B.G. and Nassichuk, M.D., 1999. *Mitigation of Fisheries Impacts from the Use and Disposal of Wood Residue in British Columbia and the Yukon*. Canadian Department of Fisheries and Oceans Technical Report No 2296. The report is available from web site <http://www.dfo-mpo.gc.ca/Library/243104.pdf>.

Department of Fire and Emergency Services, Bulk Green Waste Storage Fires, September 2014.